Preprint - Submitted July 15, 2002 for publication in Nuclear Data Sheets

Table of Superdeformed Nuclear Bands and Fission Isomers* Third Edition (July 2002)

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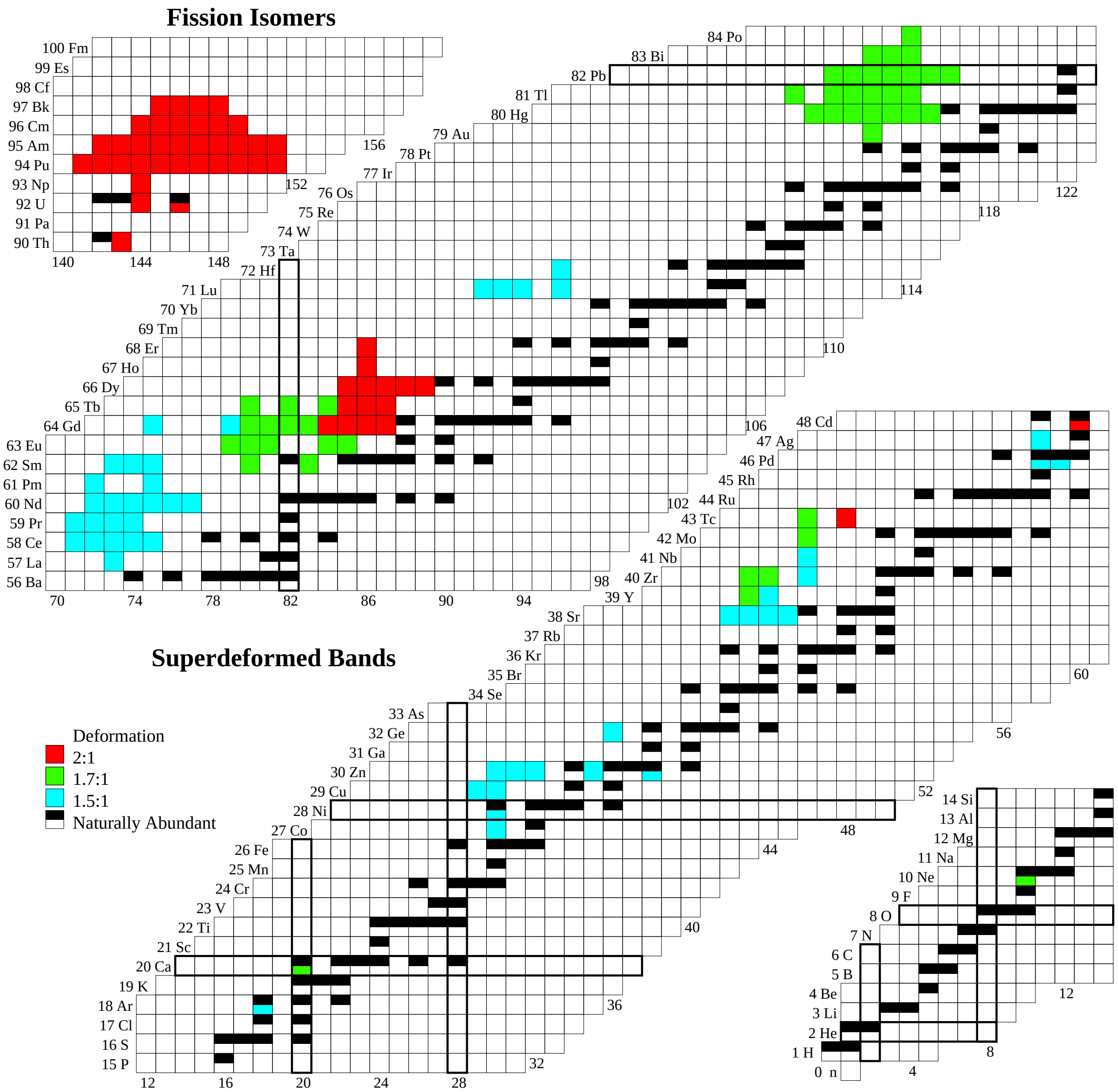

*This work was supported by Division of Nuclear Physics, U.S. Department of Energy;
and the Natural Sciences and Engineering Research Council (NSERC) of Canada.

Most data presented here were extracted from the ENSDF (Evaluated Nuclear Structure Data File) database at Brookhaven.

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Introduction

A minimum in the second potential well of deformed nuclei was predicted by Strutinsky [(1)], and the associated shell gaps are illustrated in the harmonic oscillator potential shell energy surface calculations shown in figure 1 [(2,3)]. A strong superdeformed minimum in ^{152}Dy was predicted for $\beta_2\sim0.75$ [(4,5,6)]. Subsequently, a discrete set of γ-ray transitions in ^{152}Dy was observed [(7)] and assigned to the predicted superdeformed band. Extensive research using γ-ray detector arrays (Gammasphere, Euroball, and GASP) at several laboratories has since focused on searching for superdeformation and predicted hyperdeformation in different mass regions [(8−12)], together with search for feeding and decay modes of these structures. These bands have been found in several distinct regions near A=40, 80, 130, 150, 163, and 190. Superdeformation ($\beta_2\approx0.75$) is also predicted [(13)] in low mass region for particle numbers 4 and 10 which correspond to ^{8}Be, ^{14}Be and ^{20}Ne nuclides. Quadrupole moment measurements for a large number of cases in each mass region are consistent with assigning the bands to excitations in the second local minimum.

This research extends upon previous work in the actinide region near A=240 where fission (shape) isomers were identified and also associated with the second potential well [(14)]. A third strong hyperdeformed minimum at $\beta_2\sim0.9$ is also predicted as indicated in the figure. Tentative reports for such structures in ^{152}Dy/^{153}Dy [(15,16,17)] and in ^{147}Gd [(18)] have not been confirmed in higher statistics data [(19−22)]

As part of our committment to maintain nuclear structure data as current as possible in the Evaluated Nuclear Structure Data File (ENSDF) [(23)], we have been updating the information on superdeformed nuclear bands on a continuous basis since 1992. As of July 2002, we have compiled data for about 320 superdeformed bands and 47 fission isomers identified in 146 nuclides for this publication. This is an increase of about 160 superdeformed bands and 53 new nuclides since the second edition in 1996 [(24)]. The ground state band in ^{20}Ne is also included as possibly a superdeformed structure, although deformation parameter deduced from transition quadropole moment follows an expected $A^{-1/3}$ trend for normal deformed structures. Several bands included here in the A=60 and A=130 regions are highly deformed bands which may or may not correspond to band structures in the second potential well. Partial data for superdeformed bands and fission isomers are shown in the band drawings.

For each nuclide there is a complete level table listing both normal (taken mostly from the ENSDF file, but updated when considered necessary) and superdeformed band assignments; level energy, spin, parity, half-life, magnetic moments, decay branchings; and the energies, final levels, relative intensities, multipolarities, and mixing ratios for transitions deexciting each level. In a few cases normal deformed data from some current references are not included in this table; these references are listed at the end of a table. Proton and neutron separation energies are also provided from the evaluation of Audi and Wapstra [(25)]. For superdeformed and hyperdeformed bands we provide the following quantities.

Level energies: For SD bands, since the absolute level energies, in most cases, are not yet known, only relative values are given. In the drawings the SD bands are shown with a common baseline for convenient display of multiple bands in a nucleus.

Level half-lives: Measured values are quoted in the tables only.

Level spins: The spin value is generally given only for the first member of the SD band. This value is typically suggested by the authors and has some uncertainty ($\sim$1-2$\hbar$) associated with it. Since linking to normal states is mostly unobserved, except for assignments in ^{133,135,137}Nd, ^{194}Hg, and ^{194}Pb, there is no direct confirmation of these spins. The cascading transitions are all assumed as E2 which is consistent with angular correlation data and short level lifetimes in several cases. The parities are not generally shown because of insufficient evidence at this time.

γ-ray energies: The energies are adopted from the most complete set of data for each band. We have not averaged values because uncertainties are not usually available. Typical energy uncertainties range from 0.1-0.3 keV for intense transitions to 1 keV for weaker γ-rays.

γ-ray intensities: The values given are total relative intensities normalized to $\sim$1.0 for the most intense transition in a superdeformed band or, for multiple bands, to the most intense transition in the superdeformed band. These values are typically read off of the intensity figures in the papers. Correction for internal conversion is assumed to have been applied by the authors. When more than one measurement exists, the most complete set of intensities has been chosen. Absolute intensities can be obtained by multiplying the relative intensities by the %-feeding in Table I.

Moments: Transition Quadrupole moments for SD states are deduced from Doppler broadening of γ-rays. The SD quadrupole moment is typically an average value for the band corresponding to the intrinsic (transition) moment. In the tables the transition quadrupole moments for superdeformed bands are listed as Q_0 values. For fission isomers the quadrupole moments are also intrinsic. The values appear in table 3 and figures 2 and 3, together with β_2(deformation parameter for a quadrupoloid) and X(major to minor axis ratio of an ellipsoid) deduced from measured transition quadrupole moments using the following formulae[(26,27)]:

$$Q_t = 0.757\ ZR^2\beta_2(1 + 0.36\beta_2)\ 10^{-2}\ \text{eb}$$

$$Q_t = \frac{2}{5}\ ZR^2\ \frac{X^2-1}{X^{2/3}}\ 10^{-2}\ \text{eb}$$

Where R = 1.2 $A^{1/3}$ fm, A is the atomic mass number and Z is the atomic number.

The dynamic moments of inertia, calculated [28,29] from γ-ray data and with the following definitions have been plotted as a function of rotational frequency at the beginning of the data section:

Rotational frequency:

$$\hbar\omega(J) = \frac{E_\gamma((J+2)\rightarrow J) + E_\gamma(J\rightarrow(J-2))}{4}\ \mathrm{MeV}$$

Dynamic moment of inertia:

$$\mathfrak{I}^{(2)}(J) = \frac{4}{E_\gamma((J+2)\rightarrow J) - E_\gamma(J\rightarrow(J-2))}\ \hbar^2\ \mathrm{MeV}^{-1}$$

Kinetic moment of inertia:

$$\mathfrak{I}^{(1)}(J) = \frac{4}{E_\gamma((J+2)\rightarrow J) + E_\gamma(J\rightarrow(J-2))}\ \hbar^2\ \mathrm{MeV}^{-1}$$

We have not attempted to label bands according to particle or intruder configurations or according to their isospectral behavior. The reader is referred to the original papers for information about reactions populating these bands and fission isomers. All data published or available untill July 15, 2002 have been included. References with keyword abstracts have been provided from the Nuclear Science Reference (NSR) file [30]. They are divided into three sections for fission isomers, superdeformed band theory, and superdeformed band experimental. The theoretical references before 1986 were not completely scanned for superdeformation.

Acknowledgements:

We express our gratitude to the many nuclear data evaluators for creating the ENSDF file, to the staff at the National Nuclear Data Center at Brookhaven National Laboratory for maintaining ENSDF. We thank J.C. Waddington for useful suggestions and Noel Novo for preparing some of the plots. This work was supported by the Division of Nuclear Physics, Office of High-Energy and Nuclear Physics of the U.S. Department of Energy; and by the Natural Sciences and Engineering Research Council (NSERC) of Canada.

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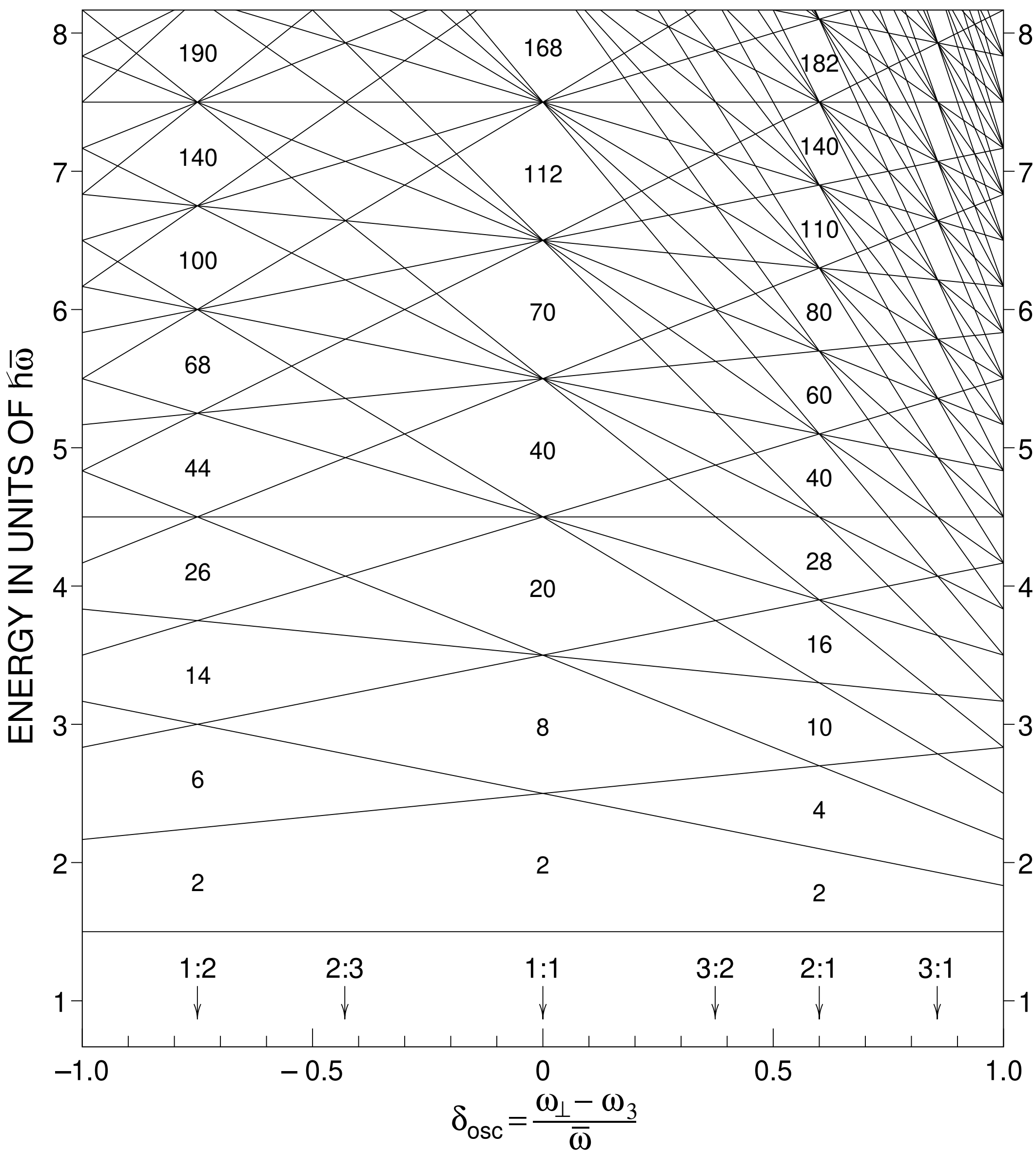

Figure 1. Single-particle level energies calculated for an axially symmetric harmonic oscillator (from reference 2).

Table 1
Summary of SD Bands

Nuclide	Band	Eγ-range	Nγ	J$^\pi$ range
^{20}Ne	SD-1	1633-3174	4	$0^+ \to 8^+$
^{36}Ar	SD-1*	622-4066	8	$(0^+) \to (16^+)$
^{40}Ca	SD-1*	913-3563	7	$0^+ \to (16^+)$
^{57}Co	SD-1†*	1361-3763	7	$(25/2^-) \to (53/2^-)$
	SD-2†	1588-3367	6	$(27/2^-) \to (51/2^-)$
^{58}Ni	SD-1*	1663-3157	5	$(15^-) \to (25^-)$
	SD-2*	1685-3006	5	$(12^+) \to (22^+)$
^{59}Ni	SD-1†	1767-3303	4	$(21/2^+) \to (37/2^+)$
	SD-2†	1224-3418	5	(23/2)→(43/2)
	SD-3†	1771-3060	5	(J)→(J+10)
	SD-4†	1294-3170	5	(J)→(J+10)
^{58}Cu	SD-1*	830-3181	7	$(9^+) \to (23^+)$
^{59}Cu	SD-1*	1433-3857	8	$(25/2^+) \to (57/2^+)$
^{60}Zn	SD-1*	1136-3641	11	$(8^+) \to (30^+)$
^{61}Zn	SD-1*	1432-3466	9	(25/2)→(61/2)
^{62}Zn	SD-1	1993-3236	6	(18)→(30)
^{65}Zn	SD-1	1341-3349	9	(J)→(J+18) J>(25/2)
	SD-2†	1621-2987	6	(J)→(J+12)
	SD-3†	1745-3123	5	(J)→(J+10)
^{68}Zn	SD-1	1506-3073	8	(17)→(33)
^{68}Ge	SD-1	1620-2689	6	(14)→(26)
^{80}Sr	SD-1	1443-2860	10	(18)→(38)
	SD-2	1688-2575	7	(18)→(32)
	SD-3	1712-2747	7	(20)→(34)
	SD-4	2140-2764	5	(20)→(30)
^{81}Sr	SD-1	1214-2748	12	(J)→(J+24) J>(27/2)
	SD-2	1773-2537	6	(J)→(J+12) J>(31/2)
	SD-3	1881-2845	7	(J)→(J+14)
	SD-4	1938-2541	5	(J)→(J+10)
^{82}Sr	SD-1	1430-2736	9	(19)→(37)
^{83}Sr	SD-1	1307-2646	10	(41/2)→(81/2)
^{82}Y	SD-1	1455-2755	9	(20)→(38)
^{83}Y	SD-1	1870-2710	7	(J)→(J+14)
^{83}Zr	SD-1	1378-2938	11	(31/2)→(75/2)
	SD-2	1448-2623	8	(33/2)→(65/2)
^{84}Zr	SD-1	1526-2761	9	(21)→(39)
^{86}Zr	SD-1	1518-2696	9	(23)→(59)
	SD-2	1577-2708	9	(22)→(40)
	SD-3	1866-2429	7	(25)→(39)
	SD-4	1648-2491	7	(23)→(37)
^{87}Nb	SD-1	1250-2585	9	(35/2)→(71/2)
	SD-2	1492-2543	9	(41/2)→(77/2)
	SD-3	1508-2587	8	(45/2)→(77/2)
	SD-4	1697-2537	6	(39/2)→(63/2)
^{88}Mo	SD-1	1238-2305	8	(J)→(J+16)
	SD-2	1458-2229	6	(J)→(J+12)
	SD-3	1260-2298	8	(J)→(J+16)
^{89}Tc	SD-1	1147-2625	11	$(35/2^-) \to (79/2^-)$
^{91}Tc	SD-1	1350-2424	11	$(51/2^-) \to (95/2^-)$
^{104}Pd	SD-1	1263-2709	7	(24)→(38)
^{105}Pd	SD-1	1209-2240	10	(43/2)→(83/2)
^{105}Ag	SD-1	705-1753	10	(27/2)→(67/2)
^{108}Cd	SD-1	1686-2336	10	(40)→(60)
	SD-2	1534-2303	11	(J)→(J+22)
^{130}La	SD-1	762-1412	9	(16)→(34)
^{129}Ce	SD-1	547-1451	14	$(17/2^+) \to (73/2^+)$
^{130}Ce	SD-1	865-2064	18	(18)→(54)
	SD-2	841-1996	16	(J)→(J+32)
	SD-3	904-1999	14	(J)→(J+28)
	SD-4	1261-1862	9	(J)→(J+18)
^{131}Ce	SD-1	591-1822	17	(29/2)→(97/2)
	SD-2	847-1723	13	(47/2)→(99/2)
^{132}Ce	SD-1	770-2119	19	(16)→(54)
	SD-2	794-1687	13	(J)→(J+26)
	SD-3	947-1725	12	(J)→(J+24)
^{133}Ce	SD-1	748-1927	17	(43/2)→(111/2)
	SD-2	720-1910	17	(37/2)→(105/2)
	SD-3	957-1764	15	(45/2)→(105/2)
^{130}Pr	SD-1†*	509-1267	12	$(10^-) \to (34^-)$
	SD-2†*	462-1238	12	$(9^-) \to (33^-)$
^{131}Pr	SD-1†*	379-1040	11	$(9/2^+) \to (53/2^+)$
	SD-2†*	411-1182	12	$(11/2^+) \to (59/2^+)$
^{132}Pr	SD-1	696-1508	12	(15)→(39)
	SD-2	565-1465	13	(12)→(38)
	SD-3	709-1527	11	(12)→(34)
	SD-4	736-1609	14	(16)→(44)
^{133}Pr	SD-1	840-1489	10	(53/2)→(93/2)
	SD-2	800-1530	11	(51/2)→(95/2)
	SD-3	784-1736	13	(53/2)→(105/2)
	SD-4	821-1656	12	(55/2)→(103/2)
^{132}Nd	SD-1*	764-1634	13	$(17^-) \to (43^-)$
	SD-2*	830-1519	12	$(18^+) \to (42^+)$
	SD-3*	794-1623	13	(17,18)→(42,43)
	SD-4*	848-1603	12	(18,19)→(42,43)
^{133}Nd	SD-1*	345-1632	18	$(17/2^+) \to (89/2^+)$
^{134}Nd	SD-1*	668-1535	13	$(17^-) \to (43^-)$
	SD-2*	726-1345	11	$(18^+) \to (40^+)$
^{135}Nd	SD-1*	545-1692	17	$(25/2^+) \to (93/2^+)$
^{136}Nd	SD-1*	657-1815	17	$(17^-) \to (51^-)$
	SD-2	909-1525	9	(J)→(J+18)
^{137}Nd	SD-1*	635-1683	17	$(29/2^+) \to (97/2^+)$
^{133}Pm	SD-1*	369-910	7	$(11/2^+) \to (39/2^+)$
	SD-2*	338-946	8	$(9/2^+) \to (41/2^+)$
^{136}Pm	SD-1†	533-1442	13	(J)→(J+26)
	SD-2†	675-1310	10	(J)→(J+20)
	SD-3†	679-1446	12	(J)→(J+24)
	SD-4†	753-1419	11	(J)→(J+22)
^{135}Sm	SD-1*	619-1339	10	$(29/2^+) \to (69/2^+)$
^{136}Sm	SD-1†	888-1629	11	$(22^+) \to (44^+)$
^{137}Sm	SD-1†*	379-1115	10	$(17/2^+) \to (57/2^+)$
^{142}Sm	SD-1	680-1798	19	(25)→(63)
	SD-2	726-1635	17	(J)→(J+34)
^{145}Sm	SD-1	1011-1567	12	(J)→(J+24)
	SD-2	945-1430	10	(J)→(J+20)
^{142}Eu	SD-1	700-1548	15	(27,29)→(57,59)
^{143}Eu	SD-1[a]	483-1805	23	(33/2)→(125/2)
	SD-2	865-1740	16	(61/2)→(125/2)
^{144}Eu	SD-1	879-1479	12	(36)→(60)
	SD-2	507-1467	18	(22)→(58)
	SD-3	603-1589	17	(J)→(J+34)
^{147}Eu	SD-1	737-1638	17	(J)→(J+34)
	SD-2	703-1583	18	(J)→(J+36)
	SD-3	708-1421	13	(J)→(J+26)
	SD-4	944-1645	12	(J)→(J+24)
	SD-5	836-1620	15	(J)→(J+30)
	SD-6(?)	1244-1601	8	(J)→(J+16)
^{148}Eu	SD-1	748-1555	16	(J)→(J+32)
	SD-2	844-1544	14	(J)→(J+28)
^{139}Gd	SD-1†*	245-1158	12	$(13/2^+) \to (61/2^+)$
^{143}Gd	SD-1	546-1383	15	(47/2)→(107/2)
^{144}Gd	SD-1	803-1645	19	$(22^+) \to (60^+)$
	SD-2	775-1540	14	$(25^+) \to (53^+)$
	SD-3	744-1452	13	$(24^+) \to (50^+)$
	SD-4	853-1437	11	$(29^+) \to (51^+)$
	SD-5	937-1410	9	$(32^+) \to (50^+)$
^{145}Gd	SD-1	723-1576	17	(J)→(J+34)
	SD-2	793-1510	16	(J)→(J+32)
	SD-3	920-1432	10	(J)→(J+20)
^{146}Gd	SD-1	826-1554	15	(33)→(63)
	SD-2	806-1582	15	(32)→(62)
	SD-3(?)	959-1369	9	(J)→(J+18)

Nuclide	Band	Eγ-range	Nγ	J$^\pi$ range
^{147}Gd	SD-1	697-1628	19	(55/2)→(131/2)
	SD-2	730-1623	17	(61/2)→(129/2)
	SD-3	705-1523	17	(51/2)→(119/2)
	SD-4	742-1563	16	(61/2)→(125/2)
	SD-5	899-1484	13	(71/2)→(123/2)
	SD-6	891-1596	15	(J)→(J+30)
^{148}Gd	SD-1	700-1700	19	(29)→(67)
	SD-2	742-1546	17	(30)→(64)
	SD-3	830-1472	16	(J)→(J+32)
	SD-4	850-1537	14	(J)→(J+28)
	SD-5	854-1562	16	(J)→(J+32)
	SD-6	802-1542	15	(J)→(J+30)
	SD-7	912-1529	13	(J)→(J+26)
	SD-8	887-1503	13	(J)→(J+26)
	SD-9	868-1352	12	(J)→(J+24)
^{149}Gd	SD-1*	618-1730	22	(47/2)→(135/2)
	SD-2	859-1620	18	(63/2)→(135/2)
	SD-3	650-1647	20	(57/2)→(137/2)
	SD-4	726-1575	19	(63/2)→(139/2)
	SD-5	756-1595	16	(63/2)→(127/2)
	SD-6	688-1686	19	(57/2)→(133/2)
	SD-7	803-1641	17	(J)→(J+34)
	SD-8	878-1549	15	(J)→(J+30)
	SD-9	874-1615	16	(J)→(J+32)
	SD-10	748-1588	16	(J)→(J+32)
	SD-11	828-1586	14	(J)→(J+28)
	SD-12	855-1639	16	(J)→(J+32)
	SD-13	850-1474	13	(J)→(J+26)
^{150}Gd	SD-1	815-1602	18	(30$^+$)→(66$^+$)
	SD-2	910-1645	18	(32$^+$)→(68$^+$)
	SD-3	728-1588	19	(27$^-$)→(65$^-$)
	SD-4	688-1658	19	(27$^-$)→(65$^-$)
	SD-5	713-1569	17	(28$^-$)→(62$^-$)
	SD-6	772-1590	19	(27$^+$)→(65$^+$)
	SD-7	733-1645	18	(29$^+$)→(65$^+$)
	SD-8	711-1618	18	(28$^+$)→(64$^+$)
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	SD-13	815-1557	17	(29$^+$)→(63$^+$)
	SD-14	809-1592	18	(28$^+$)→(64$^+$)
^{151}Gd	SD-1	746-1674	20	(57/2$^+$)→(137/2$^+$)
	SD-2	726-1701	21	(55/2$^+$)→(139/2$^+$)
	SD-3	756-1743	19	(59/2$^-$)→(135/2$^-$)
	SD-4	833-1606	17	(65/2$^-$)→(133/2$^-$)
	SD-5	809-1635	18	(63/2$^-$)→(135/2$^-$)
	SD-6	818-1555	17	(61/2$^-$)→(129/2$^-$)
^{145}Tb	SD-1	627-1387	14	(J)→(J+28)
^{147}Tb	SD-1	826-1281	9	(J)→(J+18)
^{149}Tb	SD-1	740-1444	14	(J)→(J+28)
	SD-2	646-1542	18	(J)→(J+36)
	SD-3	786-1357	12	(J)→(J+24)
	SD-4	824-1451	13	(J)→(J+26)
	SD-5	804-1383	12	(J)→(J+24)
^{150}Tb	SD-1	597-1600	20	(24)→(64)
	SD-2	663-1453	16	(J)→(J+32)
	SD-3	877-1494	14	(J)→(J+28)
^{151}Tb	SD-1	726-1535	18	(57/2)→(129/2)
	SD-2	602-1495	20	(49/2)→(129/2)
	SD-3	682-1505	18	(55/2)→(127/2)
	SD-4	769-1485	16	(63/2)→(127/2)
	SD-5	709-1501	16	(53/2)→(117/2)
	SD-6	739-1474	15	(55/2)→(115/2)
	SD-7	758-1489	15	(55/2)→(115/2)
	SD-8	785-1356	12	(57/2)→(105/2)
^{152}Tb	SD-1	823-1446	14	(31)→(59)
	SD-2	801-1367	13	(30)→(56)
^{151}Dy	SD-1*	527-1542	21	(43/2)→(127/2)
	SD-2	633-1493	19	(J)→(J+38)
	SD-3	729-1450	16	(J)→(J+32)
	SD-4	712-1425	16	(J)→(J+32)
	SD-5	959-1366	9	(J)→(J+18)

Nuclide	Band	Eγ-range	Nγ	J$^\pi$ range
^{152}Dy	SD-1	602-1546	21	(24$^+$)→(66$^+$)
	SD-2	826-1477	16	(34)→(66)
	SD-3	793-1605	16	(36)→(68)
	SD-4	670-1376	15	(27$^-$)→(57$^-$)
	SD-5	642-1304	14	(26$^-$)→(54$^-$)
	SD-6	762-1434	16	(32$^-$)→(64$^-$)
^{153}Dy	SD-1	721-1500	18	(63/2)→(135/2)
	SD-2	679-1485	18	(59/2)→(131/2)
	SD-3	702-1460	17	(61/2)→(129/2)
	SD-4	723-1428	16	(59/2)→(123/2)
	SD-5	743-1452	16	(65/2)→(129/2)
^{154}Dy	SD-1	702-1504	18	(J)→(J+36)
^{155}Dy	SD-1	910-1552	15	(J)→(J+30)
^{153}Ho	SD-1	651-1390	18	(51/2$^-$)→(123/2$^-$)
	SD-2	713-1425	16	(57/2$^-$)→(121/2$^-$)
	SD-3	657-1351	16	(49/2$^-$)→(113/2$^-$)
^{154}Er	SD-1	696-1349	14	(24$^+$)→(52$^+$)
	SD-2	745-1301	13	(26$^+$)→(52$^+$)
^{163}Lu	SD-1*	197-1307	21	(13/2$^+$)→(97/2$^+$)
	SD-2*	407-1249	16	(27/2$^+$)→(91/2$^+$)
	SD-3*	506-1112	12	(33/2$^+$)→(81/2$^+$)
	SD-4*	645-1086	9	(J)→(J+18)
^{164}Lu	SD-1*	374-1135	14	(14$^-$)→(42$^-$)
	SD-2*	354-1211	16	(13$^+$)→(45$^+$)
	SD-3	537-1171	13	(J)→(J+26)
	SD-4	633-1105	8	(J)→(J+16)
	SD-5	546-1134	11	(J)→(J+22)
	SD-6	511-1070	11	(J)→(J+22)
	SD-7	752-1042	6	(J)→(J+12)
	SD-8	732-976	5	(J)→(J+10)
^{165}Lu	SD-1*	445-962	10	(25/2$^+$)→(65/2$^+$)
^{167}Lu	SD-1*	551-904	8	(29/2$^+$)→(61/2$^+$)
^{168}Hf	SD-1	677-1273	12	(21)→(45)
	SD-2	771-1285	11	(24)→(46)
	SD-3	811-1256	9	(28)→(46)
^{191}Au	SD-1	187-869	20	(19/2)→(99/2)
	SD-2	398-746	11	(35/2)→(79/2)
	SD-3	383-790	13	(33/2)→(85/2)
^{189}Hg	SD-1	366-708	10	(29/2)→(69/2)
^{190}Hg	SD-1	317-802	15	(12)→(42)
	SD-2	481-707	8	(23)→(39)
	SD-3	279-652	11	(14)→(36)
	SD-4	446-791	12	(J)→(J+24)
^{191}Hg	SD-1	311-789	14	(31/2)→(87/2)
	SD-2	252-797	16	(21/2)→(85/2)
	SD-3	272-801	16	(23/2)→(87/2)
	SD-4	281-789	14	(25/2)→(81/2)
^{192}Hg	SD-1	214-889	20	(8)→(48)
	SD-2	241-819	18	(10)→(46)
	SD-3	333-681	11	(J)→(J+22)
^{193}Hg	SD-1	233-881	20	(19/2$^-$)→(99/2$^-$)
	SD-2^b	254-876	19	(21/2$^-$)→(97/2$^-$)
	SD-3	234-861	19	(19/2$^+$)→(95/2$^+$)
	SD-4^b	254-876	19	(21/2$^+$)→(97/2$^+$)
	SD-5	291-861	17	(27/2$^-$)→(95/2$^-$)
	SD-6	241-858	17	(21/2$^-$)→(89/2$^-$)
^{194}Hg	SD-1*	212-903	21	(8$^+$)→(50$^+$)
	SD-2*	222-884	20	(9$^-$)→(49$^-$)
	SD-3	201-867	20	(8)→(48)
^{195}Hg	SD-1	294-887	19	(25/2$^+$)→(101/2$^+$)
	SD-2	274-874	19	(23/2$^+$)→(99/2$^+$)
	SD-3	244-868	19	(21/2$^-$)→(97/2$^-$)
	SD-4	342-899	17	(31/2$^-$)→(99/2$^-$)
^{189}Tl	SD-1	326-671	10	(27/2)→(67/2)
	SD-2	305-648	10	(25/2)→(65/2)
^{191}Tl	SD-1	277-721	13	(23/2$^+$)→(75/2$^+$)
	SD-2	296-728	13	(25/2$^+$)→(77/2$^+$)
^{192}Tl	SD-1	283-708	12	(15)→(39)
	SD-2	338-715	11	(18)→(40)
	SD-3	233-745	15	(10)→(40)
	SD-4	213-727	15	(9)→(39)

Nuclide	Band	Eγ-range	Nγ	J^{π} range
^{193}Tl	SD-1	207-783	17	$(17/2^{+})\rightarrow(85/2^{+})$
	SD-2	227-782	16	$(19/2^{+})\rightarrow(83/2^{+})$
	SD-3	188-734	16	$(15/2)\rightarrow(79/2)$
	SD-4	251-748	14	$(23/2)\rightarrow(79/2)$
	SD-5	272-719	13	$(21/2)\rightarrow(73/2)$
^{194}Tl	SD-1	268-704	13	$(12)\rightarrow(38)$
	SD-2	209-686	14	$(9)\rightarrow(37)$
	SD-3	241-718	14	$(10)\rightarrow(38)$
	SD-4	220-703	14	$(9)\rightarrow(37)$
	SD-5	188-628	13	$(8)\rightarrow(34)$
	SD-6	207-613	12	$(9)\rightarrow(33)$
^{195}Tl	SD-1	146-777	18	$(11/2^{+})\rightarrow(83/2^{+})$
	SD-2	168-778	18	$(13/2^{+})\rightarrow(85/2^{+})$
^{192}Pb	SD-1*	215-640	12	$(8^{+})\rightarrow(32^{+})$
^{193}Pb	SD-1	277-708	12	$(23/2)\rightarrow(71/2)$
	SD-2	190-690	13	$(17/2)\rightarrow(69/2)$
	SD-3	252-709	13	$(21/2)\rightarrow(73/2)$
	SD-4	273-707	13	$(23/2)\rightarrow(75/2)$
	SD-5	213-701	14	$(17/2^{+})\rightarrow(73/2^{+})$
	SD-6	235-718	14	$(19/2^{+})\rightarrow(75/2^{+})$
	SD-7	261-664	12	$(J)\rightarrow(J+24)$
	SD-8	282-647	11	$(J)\rightarrow(J+22)$
	SD-9	213-575	10	$(J)\rightarrow(J+20)$
^{194}Pb	SD-1*	125-740	17	$(4^{+})\rightarrow(38^{+})$
	SD-2	241-544	9	$(10)\rightarrow(28)$
	SD-3(?)	261-563	9	$(11)\rightarrow(29)$
^{195}Pb	SD-1	182-689	14	$(15/2)\rightarrow(71/2)$
	SD-2	163-689	14	$(13/2)\rightarrow(69/2)$
	SD-3	198-684	14	$(15/2)\rightarrow(71/2)$
	SD-4	214-632	12	$(17/2)\rightarrow(65/2)$
^{196}Pb	SD-1	171-752	16	$(6^{+})\rightarrow(38^{+})$
	SD-2	205-665	13	$(8^{-})\rightarrow(34^{-})$
	SD-3	227-680	13	$(9^{-})\rightarrow(35^{-})$
	SD-4	405-557	5	$(17^{-})\rightarrow(27^{-})$
^{197}Pb	SD-1	123-807	18	$(9/2^{-})\rightarrow(81/2^{-})$
	SD-2	143-803	18	$(9/2^{-})\rightarrow(81/2^{-})$
	SD-3	200-705	14	$(17/2)\rightarrow(73/2)$
	SD-4	222-721	14	$(19/2)\rightarrow(75/2)$
	SD-5(?)	238-733	14	$(19/2)\rightarrow(75/2)$
	SD-6(?)	216-718	14	$(17/2)\rightarrow(73/2)$
^{198}Pb	SD-1	304-890	16	$(12)\rightarrow(44)$
	SD-2(?)	281-759	14	$(10)\rightarrow(38)$
	SD-3(?)	216-696	13	$(8)\rightarrow(34)$
^{195}Bi	SD-1	262-495	7	$(J)\rightarrow(J+14)$
^{196}Bi	SD-1	166-653	13	$(6)\rightarrow(32)$
^{197}Bi	SD-1(?)	187-545	10	$(15/2)\rightarrow(55/2)$
^{198}Po	SD-1	176-543	10	$(6)\rightarrow(26)$
^{236}U	SD-1*	20-101	4	$(0^{+})\rightarrow(8^{+})$
	SD-2(?)			$(0^{+})\rightarrow(2^{+})$
^{238}U	SD-1*	20	1	$(0^{+})\rightarrow(2^{+})$
	SD-2(?)			(0^{+})
^{239}Pu	SD-1	24-32	2	$(5/2^{+})\rightarrow(9/2^{+})$
^{240}Pu	SD-1	20-126	5	$(0^{+})\rightarrow(10^{+})$
	SD-2			$(2^{-})\rightarrow(7^{-})$
	SD-3			$(1^{-})\rightarrow(10^{-})$
	SD-4			$(1^{-})\rightarrow(10^{-})$
	SD-5			$(1^{-})\rightarrow(3^{-})$
	SD-6			$(0^{+})\rightarrow(10^{+})$
	SD bandheads			7 (0^{+}) states

† Highly-deformed structure.

* This SD band is linked to normal deformed states.

a Tentative linking transitions to the normal deformed states suggest the lowest SD member at 8582 keV.

b Unresolved bands.

Table 2
Fission (Shape) Isomers

Nuclide	E(Isomer)[a]	J^{π}	$t_{1/2}$	%IT[b]
^{233}Th	1850_{250}		1-100 ns	
^{236}U	2750_{10}[cd]	(0^{+})	120_{2} ns	87_{6}
^{238}U	2557.6_{5}[cd]	0+	298_{18} ns	~95
	2557.6+y		>1 ns	
^{237}Np	2800_{400}		45_{5} ns	[e]
^{235}Pu	3000_{200}		25_{5} ns	
^{236}Pu	~3000	(0^{+})	37_{4} ps	
	4000_{200}		34_{8} ns	
^{237}Pu	2600_{200}		85_{15} ns	
	2900_{250}		1.1_{1} ms	
^{238}Pu	~2400		0.6_{2} ns	
	~3500	(0^{+})	6.0_{15} ns	
^{239}Pu	3100_{200}[c]	$(5/2^{+})$	7.5_{10} ms	
	~3300[d]	$(9/2^{-})$	2.6^{40}_{12} ns	
^{240}Pu	~2800[c]	(0^{+})	3.7_{3} ns	
^{241}Pu	~2200		21_{3} ms	
	~2300		32_{5} ns	
^{242}Pu	~2200		3.5_{6} ns	
	2200+y		28 ns	
^{243}Pu	1700_{300}		45_{15} ns	
^{244}Pu	x		0.40_{10} ns	
^{245}Pu	2000_{400}		90_{30} ns	
^{237}Am	2400_{200}		5_{2} ns	
^{238}Am	~2500		35_{10} ms	
^{239}Am	2500_{200}	$(7/2^{+})$	163_{12} ns	
^{240}Am	3000_{200}		0.94_{4} ms	
^{241}Am	~2200		1.0_{3} ms	
^{242}Am	2200_{80}		14.0_{10} ms	
^{243}Am	2300_{200}		5.5_{5} ms	
^{244}Am	2800_{400}		0.90_{15} ms	
	2800+y		~6.5 ms	
^{245}Am	2400_{400}		0.64_{6} ms	
^{246}Am	~2000		73_{10} ms	
^{240}Cm	~3000		55_{12} ns	
^{241}Cm	~2300		15.3_{10} ns	
^{242}Cm	1900_{200}		40_{15} ps	
	~2800		0.18_{7} ms	
^{243}Cm	1900_{300}		42_{6} ns	
^{244}Cm	~2200		<5 ps	
	~3500		>100 ns	
^{245}Cm	2100_{300}		13.2_{18} ns	
^{242}Bk	x		9.5_{20} ns	
	x+y		0.60_{10} ms	
^{243}Bk	~2200 (?)		5 ns (?)	
^{244}Bk	x		0.82_{6} ms	
^{245}Bk	~1560		2_{1} ns	

a Systematics of fission isomers suggest x=1600-2600; y<1000.

b %SF(^{236}U isomer)=13_{6}, %SF(^{238}U isomer)~5. For all other isomers, only SF decay has been observed.

c Rotational bands built on these states are shown in the figures.

d Deexcitation to normal states is shown in the figures.

e Some evidence for isomeric decay has been reported.

Table 3
Transition quadrupole moments and deformation parameters in SD Bands

Nucleus	SD Band	Q_t	β_2	X	Reference
^{20}Ne		0.56_{3}	0.58_{3}	1.70_{4}	1971Ha26
^{36}Ar		1.18_{9}	0.47_{3}	1.55_{4}	2001Sv02
^{40}Ca		1.80^{39}_{29}	0.58^{10}_{8}	1.70^{15}_{12}	2001Id01
^{57}Co	1	1.9^{6}_{4}	0.38^{10}_{7}	1.43^{14}_{9}	2002Re09
^{57}Co	2	1.9^{7}_{5}	0.38^{12}_{9}	1.43^{16}_{12}	2002Re09
^{59}Ni	1	1.3_{2}	0.26_{4}	1.27_{4}	2002Yu01
^{59}Ni	2	1.5_{5}	0.29_{9}	1.32_{11}	2002Yu01
^{58}Cu		2.0_{2}	0.37_{3}	1.42_{4}	1998Ru01
^{59}Cu		2.24_{40}	0.41_{6}	1.46_{8}	2000An32
^{60}Zn		2.75_{25}	0.47_{4}	1.55_{5}	1999Sv01
^{61}Zn		3.0^{5}_{4}	0.50^{7}_{6}	1.59^{10}_{8}	1999Yu10
^{62}Zn		2.7^{7}_{5}	0.45^{10}_{8}	1.52^{14}_{10}	1997Sv02
^{65}Zn	1	2.6_{3}	0.43_{4}	1.49_{6}	2000Yu02
^{65}Zn	2	2.1_{3}	0.35_{4}	1.39_{6}	2000Yu02
^{65}Zn	3	2.1_{3}	0.35_{4}	1.39_{6}	2000Yu02
^{68}Zn		2.5^{7}_{4}	0.40^{10}_{6}	1.45^{13}_{7}	1999De20
^{80}Sr	1	3.42^{26}_{23}	0.39^{3}_{2}	1.44_{3}	1999Le56,1997De51
^{80}Sr	2	2.2^{6}_{5}	0.26_{6}	1.28^{8}_{6}	1997De51
^{80}Sr	3	3.6^{20}_{11}	0.41^{19}_{11}	1.46^{26}_{14}	1997De51
^{80}Sr	4	2.8^{11}_{8}	0.33^{11}_{9}	1.36^{14}_{10}	1997De51
^{81}Sr	1	3.30^{18}_{16}	0.37_{2}	1.42_{2}	1999Le56,1997De51, 1995Ch56
^{81}Sr	2	3.8^{7}_{5}	0.43^{7}_{5}	1.49^{9}_{7}	1997De51,1995Ch56
^{82}Sr		3.54^{15}_{14}	0.40_{1}	1.45_{2}	1999Le56,1998Yu01
^{83}Sr		3.60^{20}_{18}	0.40_{2}	1.45^{3}_{2}	1999Le56,1997De51, 1995La21
^{82}Y		4.8	0.51	1.60	1995Da30
^{83}Y		4.4_{7}	0.47_{6}	1.54_{9}	1999Le56
^{83}Zr	1	5.0_{20}	0.51_{17}	1.60_{24}	1996Ru16
^{84}Zr		5.6^{6}_{5}	0.56^{5}_{4}	1.67^{7}_{6}	1999Le56
^{86}Zr	1	4.6^{7}_{6}	0.46^{6}_{5}	1.54^{8}_{7}	1998Sa01
^{86}Zr	2	4.0^{3}	0.41_{3}	1.47_{4}	1998Sa01
^{86}Zr	3	5.4^{22}_{11}	0.53^{18}_{10}	1.63^{26}_{13}	1998Sa01
^{86}Zr	4	3.8^{6}_{5}	0.39_{5}	1.44^{7}_{6}	1998Sa01
^{87}Nb	1	5.2^{11}_{8}	0.50^{9}_{7}	1.59^{13}_{9}	1997La02
^{87}Nb	2	5.0^{7}_{10}	0.49^{6}_{9}	1.57^{8}_{12}	1997La02
^{87}Nb	3	5.3^{12}_{10}	0.51^{10}_{9}	1.60^{14}_{12}	1997La02
^{88}Mo	1	6.0^{20}_{14}	0.55^{15}_{11}	1.66^{22}_{16}	1999Bb13
^{89}Tc		6.7^{30}_{23}	0.59^{21}_{18}	1.72^{31}_{25}	1999Ce09
^{91}Tc		8.1^{19}_{14}	0.69^{13}_{10}	1.85^{21}_{15}	2000Id01
^{105}Ag		4.5^{3}_{2}	0.35^{2}_{1}	1.39^{3}_{2}	1995Je05
^{108}Cd	1	>9.5	>0.65	>1.80	2001Cl06
^{108}Cd	2	8.5	0.59	1.72	2002Go03
^{129}Ce		6.3_{4}	0.35_{2}	1.38_{3}	1996Ga13
^{131}Ce	1	7.3_{4}	0.39_{2}	1.44_{2}	1998Pe01,1996Cl03, 1993Mu09,1990He12
^{131}Ce	2	8.5_{4}	0.45_{2}	1.52_{2}	1996Cl03
^{132}Ce	1	7.4_{3}	0.40_{1}	1.45_{2}	1996Cl03,1998Jo16, 1995Ha28,1990Di01, 1987Ki02
^{132}Ce	2	7.3_{4}	0.39_{2}	1.44_{2}	1996Cl03
^{132}Ce	3	7.6_{4}	0.40_{2}	1.46_{2}	1996Cl03
^{133}Ce	1	7.4_{7}	0.39_{3}	1.44_{4}	1995Ha28
^{133}Ce	2	7.5_{8}	0.40_{4}	1.45_{5}	1995Ha28
^{130}Pr	1	6.1_{5}	0.33_{2}	1.36_{3}	1998Ko34
^{130}Pr	2	6.1_{5}	0.33_{2}	1.36_{3}	1998Ko34
^{131}Pr	1	5.3_{4}	0.29_{2}	1.31_{2}	1998Ko34,1994Ga31
^{131}Pr	2	5.3_{4}	0.29_{2}	1.31_{2}	1998Ko34,1994Ga31
^{132}Pr	1	4.1_{3}	0.23_{2}	1.24_{2}	1999Ko21
^{132}Pr	2	7.0_{7}	0.37_{3}	1.41_{4}	2002La09
^{132}Pr	3	7.0_{7}	0.37_{3}	1.41_{4}	2002La09
^{133}Nd		7.4_{4}	0.38_{2}	1.43_{2}	1999Br29,1999Ko28, 1992Mu09,1995Me08
^{134}Nd	1	6.8_{3}	0.35_{1}	1.39_{2}	1998Pe01
^{134}Nd	2	6.4_{4}	0.33_{2}	1.37_{2}	1998Pe01
^{135}Nd		5.7_{2}	0.30_{1}	1.33_{1}	1999Ko28,1998Pe01, 1990Di01
^{137}Nd		4.0_{5}	0.21_{2}	1.22_{3}	1992Mu09,1996Pe18
^{133}Pm	1	5.0_{4}	0.26_{2}	1.28_{2}	2002La09,1996Ga17
^{133}Pm	2	5.0_{4}	0.26_{2}	1.28_{2}	2002La09,1996Ga17
^{136}Pm	1	5.2_{3}	0.27_{1}	1.29_{2}	2000Pf01
^{136}Pm	2	5.2_{4}	0.27_{2}	1.29_{2}	2000Pf01
^{136}Pm	3	5.7_{6}	0.29_{3}	1.32_{3}	2000Pf01
^{136}Pm	4	5.7_{6}	0.29_{3}	1.32_{3}	2000Pf01
^{135}Sm		6.4_{4}	0.32_{2}	1.35_{2}	2002La09,1992Re05
^{137}Sm		4.8_{4}	0.25_{2}	1.26_{2}	2002La09,1992Re05
^{142}Sm	1	11.7_{14}	0.53_{5}	1.63_{8}	1998Ha06
^{142}Sm	2	13.2_{18}	0.59_{7}	1.72_{10}	1998Ha06
^{143}Eu	1	13.0_{15}	0.57_{6}	1.69_{8}	1995Fo02,1993At01, 1993At03
^{139}Gd		7.0_{15}	0.33_{6}	1.37_{8}	1992Mu09,1992Pa04
^{144}Gd	1	13.7^{11}_{9}	0.59^{4}_{3}	1.71^{6}_{5}	1999Ur02
^{145}Gd	1	11.8_{8}	0.52_{3}	1.61_{4}	2000Rz01
^{145}Gd	2	13.2_{10}	0.57_{4}	1.68_{5}	2000Rz01
^{146}Gd	1	13.9_{4}	0.59_{1}	1.72_{2}	2001Cl05,1990He14
^{146}Gd	2	13.9_{3}	0.59_{1}	1.72_{2}	2001Cl05,1992StZU
^{148}Gd	1	14.6_{2}	0.61_{1}	1.75_{1}	1996Sa15
^{148}Gd	2	14.8_{3}	0.62_{1}	1.76_{2}	1996Sa15
^{148}Gd	3	17.8_{13}	0.72_{4}	1.91_{7}	1996Sa15
^{149}Gd	1	15.0_{2}	0.62_{1}	1.76_{1}	1996Sa15,1998Kh09, 1988Ha02
^{149}Gd	2	15.6_{3}	0.65_{1}	1.80_{2}	1996Sa15
^{149}Gd	3	15.2_{5}	0.63_{2}	1.78_{3}	1996Sa15
^{149}Gd	4	17.5_{6}	0.71_{2}	1.89_{3}	1996Sa15
^{150}Gd	1	17.0^{5}_{4}	0.69^{2}_{1}	1.86^{3}_{2}	1998Be06,1991Fa07
^{150}Gd	2	16.8_{12}	0.68_{4}	1.85_{6}	1998Be06
^{150}Gd	3	17.4^{5}_{4}	0.70^{2}_{1}	1.88^{3}_{2}	1998Be06
^{150}Gd	4	15.0^{6}_{4}	0.62^{2}_{1}	1.76^{3}_{2}	1998Be06
^{150}Gd	5	16.2_{4}	0.66_{1}	1.82_{2}	1998Be06
^{150}Gd	6	15.4^{8}_{5}	0.64^{3}_{2}	1.78^{4}_{3}	1998Be06
^{149}Tb	1	15.3_{2}	0.63_{1}	1.77_{1}	1998Kh09
^{149}Tb	2	15.8^{4}_{3}	0.64_{1}	1.79_{2}	1998Kh09
^{149}Tb	3	16.4^{3}_{4}	0.66_{1}	1.82_{2}	1998Kh09
^{149}Tb	4	16.0^{6}_{5}	0.65_{2}	1.80_{3}	1998Kh09
^{151}Tb	1	17.2_{7}	0.69_{2}	1.86_{4}	1998Fi01,1997Ni01
^{151}Tb	2	18.4_{8}	0.73_{3}	1.92_{4}	1998Fi01
^{151}Dy	1	16.9^{2}_{3}	0.67_{1}	1.83_{1}	1997Ni01
^{151}Dy	2	18.2_{4}	0.71_{1}	1.89_{2}	1997Ni01
^{151}Dy	3	17.9_{6}	0.70_{2}	1.88_{3}	1997Ni01
^{151}Dy	4	17.5^{11}_{7}	0.69^{4}_{2}	1.86^{5}_{3}	1997Ni01
^{152}Dy	1	17.5^{4}_{2}	0.69_{1}	1.85^{2}_{1}	1997Ni01,1996Sa15, 1995Ce08,1991Be12
^{154}Dy		15.9^{31}_{21}	0.63^{10}_{7}	1.77^{15}_{10}	1996Fi08
^{155}Dy		17.9^{39}_{26}	0.69^{12}_{9}	1.86^{19}_{13}	1996Fi08
^{163}Lu	1	8.2^{10}_{6}	0.32^{3}_{2}	1.35^{4}_{3}	1993Sc13
^{164}Lu	1	7.1^{5}_{6}	0.28_{2}	1.30^{2}_{3}	2002Sc11
^{168}Hf	1	11.4	0.42	1.47	2001Am02
^{190}Hg	1	17.7_{25}	0.52_{6}	1.61_{9}	1997Am06,1991Dr04
^{190}Hg	2	17.6_{25}	0.52_{6}	1.61_{9}	1997Am06
^{191}Hg	1	17.5_{8}	0.51_{2}	1.60_{3}	1998ReZV,1990Ca18
^{191}Hg	2	17.5_{8}	0.51_{2}	1.60_{3}	1998ReZV,1990Ca18
^{192}Hg	1	20.2_{12}	0.58_{3}	1.69_{4}	1998Bu03,1997Mo12, 1994Wi06,1990Mo16
^{192}Hg	2	19.5_{15}	0.56_{4}	1.67_{5}	1995Ko17
^{193}Hg	1	18.4^{8}_{9}	0.53_{2}	1.63_{3}	1998Bu03
^{193}Hg	2	17.3^{11}_{9}	0.50^{3}_{2}	1.59^{4}_{3}	1998Bu03
^{193}Hg	3	17.3^{11}_{9}	0.50^{3}_{2}	1.59^{4}_{3}	1998Bu03
^{193}Hg	4	16.1^{15}_{14}	0.47_{4}	1.55_{5}	1998Bu03
^{193}Hg	5	16.7_{10}	0.49_{3}	1.57_{3}	1998Bu03
^{193}Hg	6	16.7^{14}_{13}	0.49^{4}_{3}	1.57_{5}	1998Bu03
^{194}Hg	1	16.8_{7}	0.49_{2}	1.57_{2}	2001De42,1997Mo12, 1997Ku03,1994Hu05
^{194}Hg	2	19.0_{20}	0.54_{5}	1.65_{7}	2001De42,1997Mo12, 1997Ku03,1994Hu05
^{194}Hg	3	18.8_{25}	0.54_{6}	1.64_{9}	2001De42,1997Mo12, 1997Ku03
^{191}Tl	1	18.0_{10}	0.52_{2}	1.61_{3}	1998Re04
^{191}Tl	2	18.0_{10}	0.52_{2}	1.61_{3}	1998Re04
^{193}Tl	1	18.3_{10}	0.52_{2}	1.62_{3}	1999Kr19
^{193}Tl	2	17.4_{10}	0.50_{2}	1.59_{3}	1999Kr19
^{193}Pb	1	17.3^{7}_{8}	0.49_{2}	1.58^{2}_{3}	1998Va18
^{194}Pb	1	20.1^{3}_{5}	0.56_{1}	1.67^{1}_{2}	1998Va18,1994Kr18
^{195}Pb	1	19.5^{10}_{9}	0.54_{2}	1.65_{3}	1998Va18
^{195}Pb	2	19.5^{9}_{10}	0.54_{2}	1.65_{3}	1998Va18
^{196}Pb	1	19.5^{4}_{3}	0.54_{1}	1.64_{1}	1998Va18,1993Mo19
^{236}U		$32_{5}{}^{\dagger}$	0.67_{9}	1.84_{13}	1980Me15
^{238}U		$29_{3}{}^{\dagger}$	0.62_{5}	1.75_{8}	1979Ul01
^{236}Pu		$37^{14\dagger}_{8}$	0.75^{22}_{14}	1.95^{36}_{21}	1977Me08
^{239}Pu		$36.5_{25}{}^{\dagger}$	0.73_{4}	1.93_{6}	1977Ha01
^{240}Am		$29.0_{13}{}^{\dagger}$	0.60_{2}	1.72_{3}	1985Jo04,1979Be46

†: Intrinsic quadrupole moment.

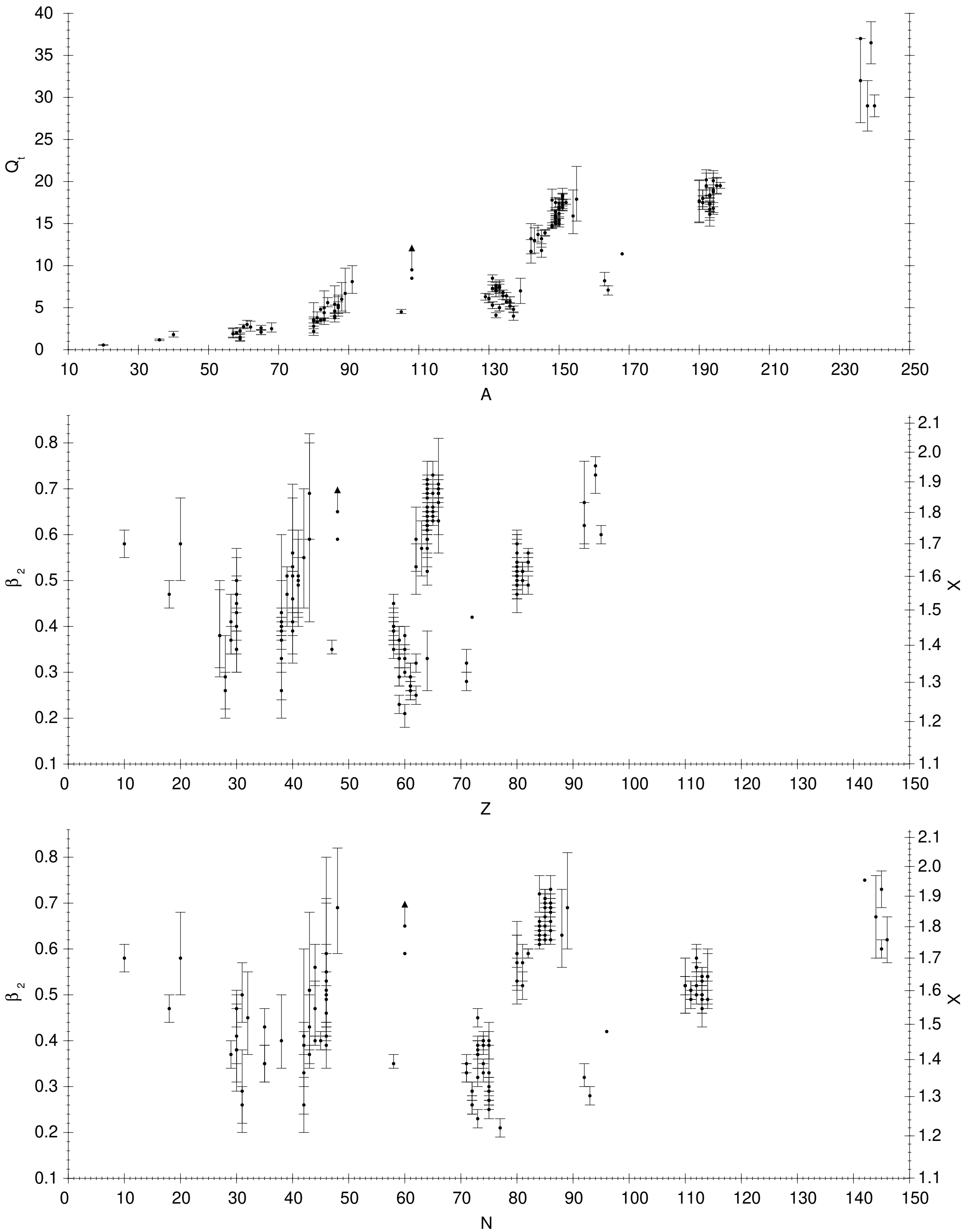


Figure 2.
Q_t vs A; Deformation vs Z and N

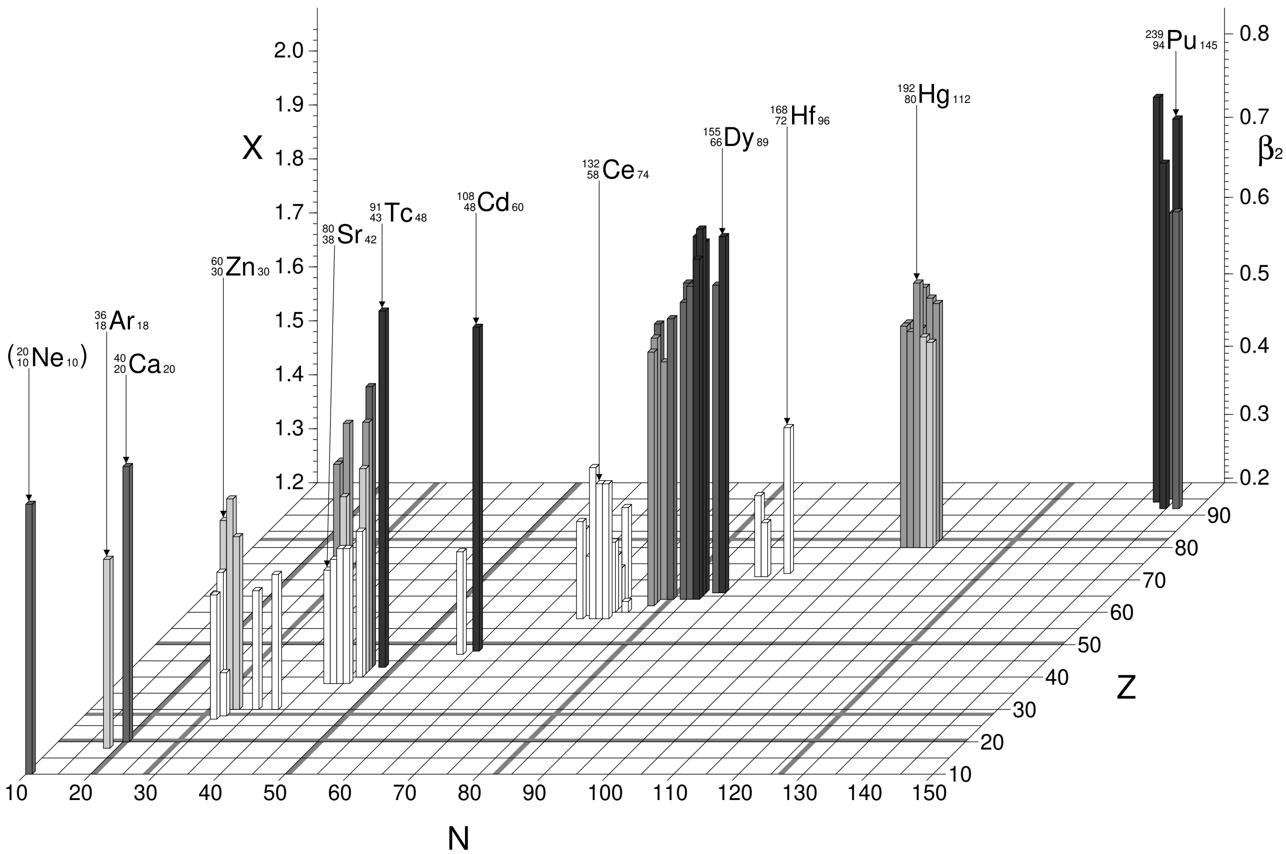


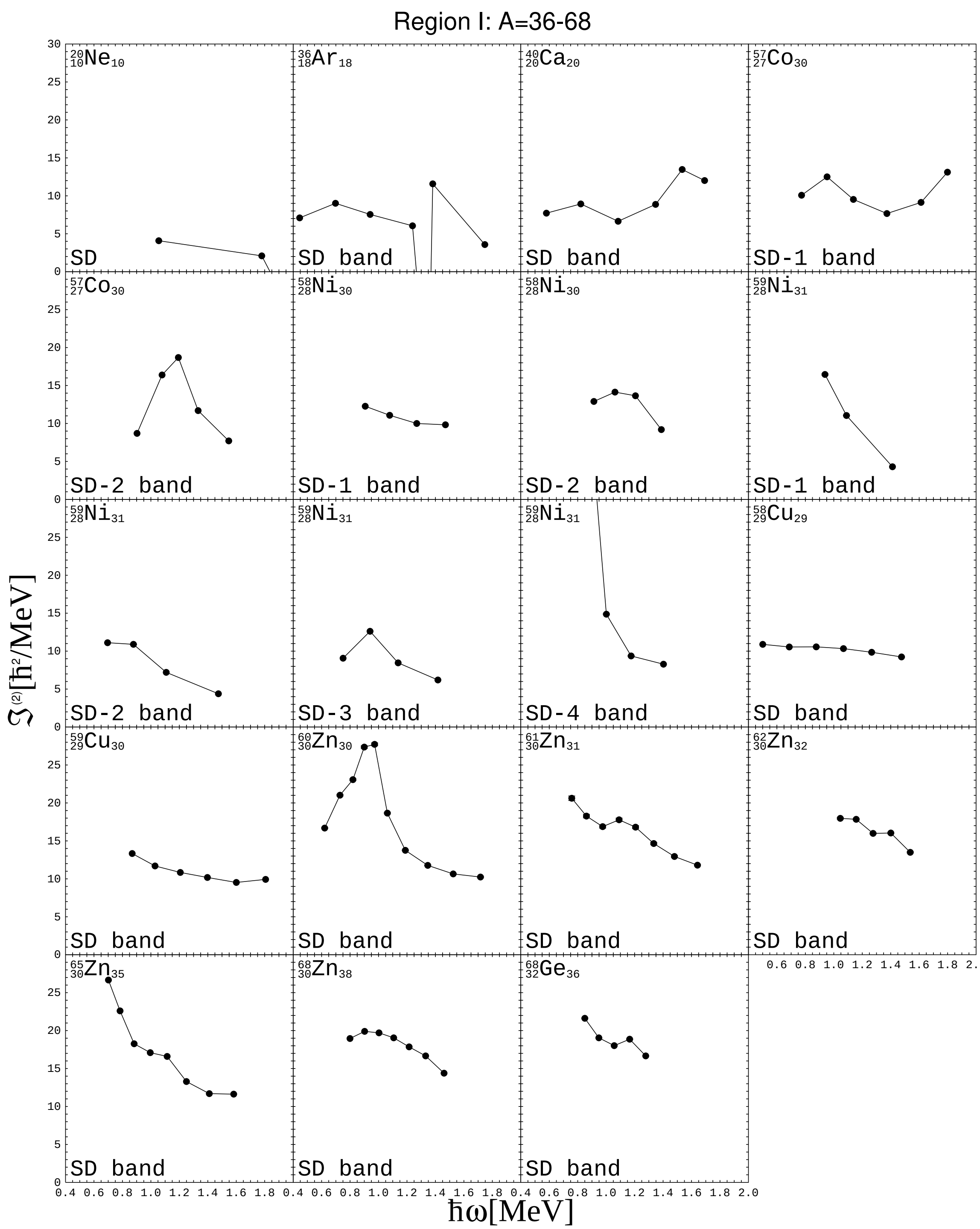
Figure 3.
Deformation vs Z vs N

Legend	
	$X \geq 1.8$
	$1.7 \leq X < 1.8$
	$1.6 \leq X < 1.7$
	$1.5 \leq X < 1.6$
	$X < 1.5$

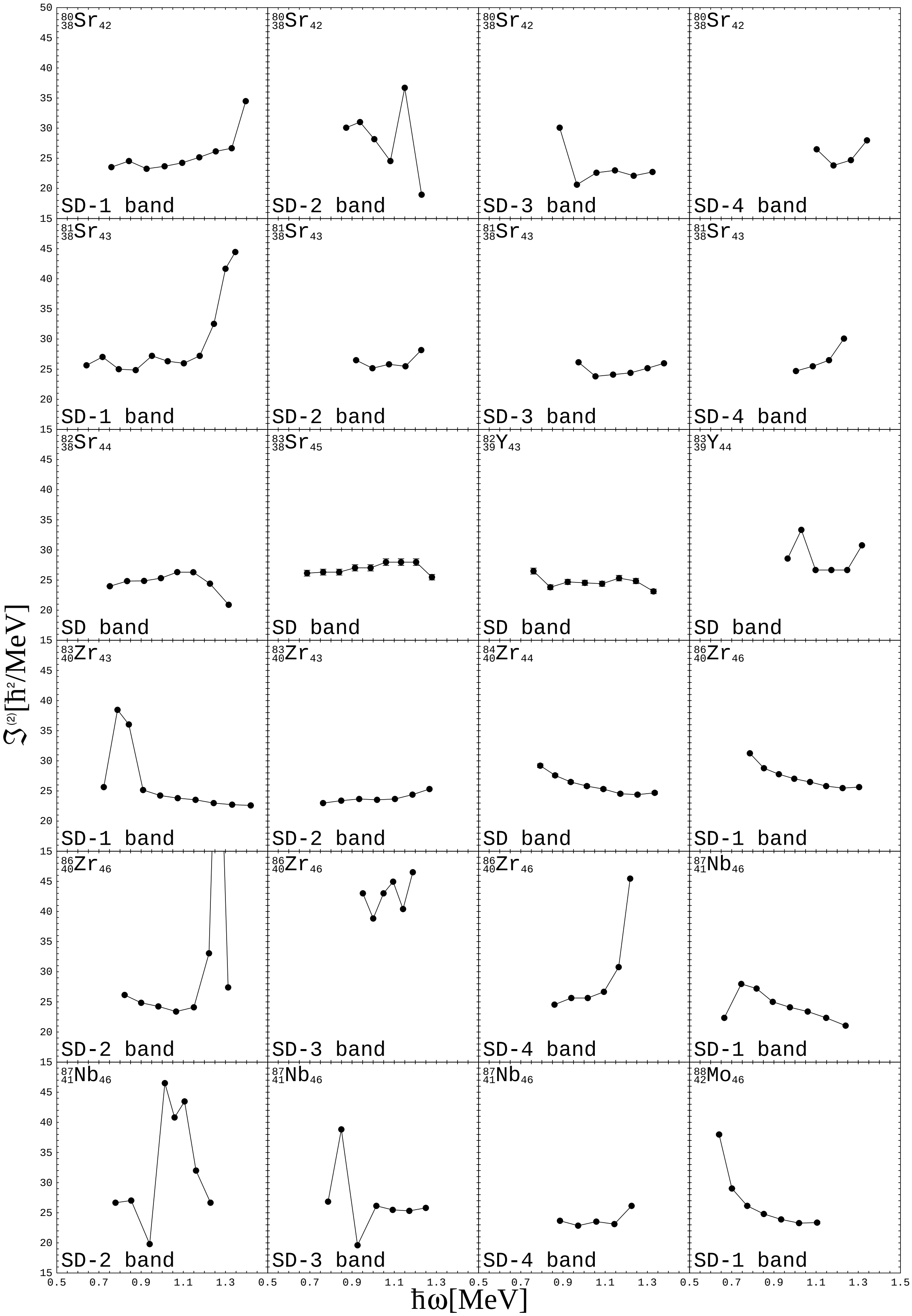
Deformation paramaters for superdeformed structures.
X: major to minor axis
β_2: quadrupole deformation
Z: proton number
N: neutron number

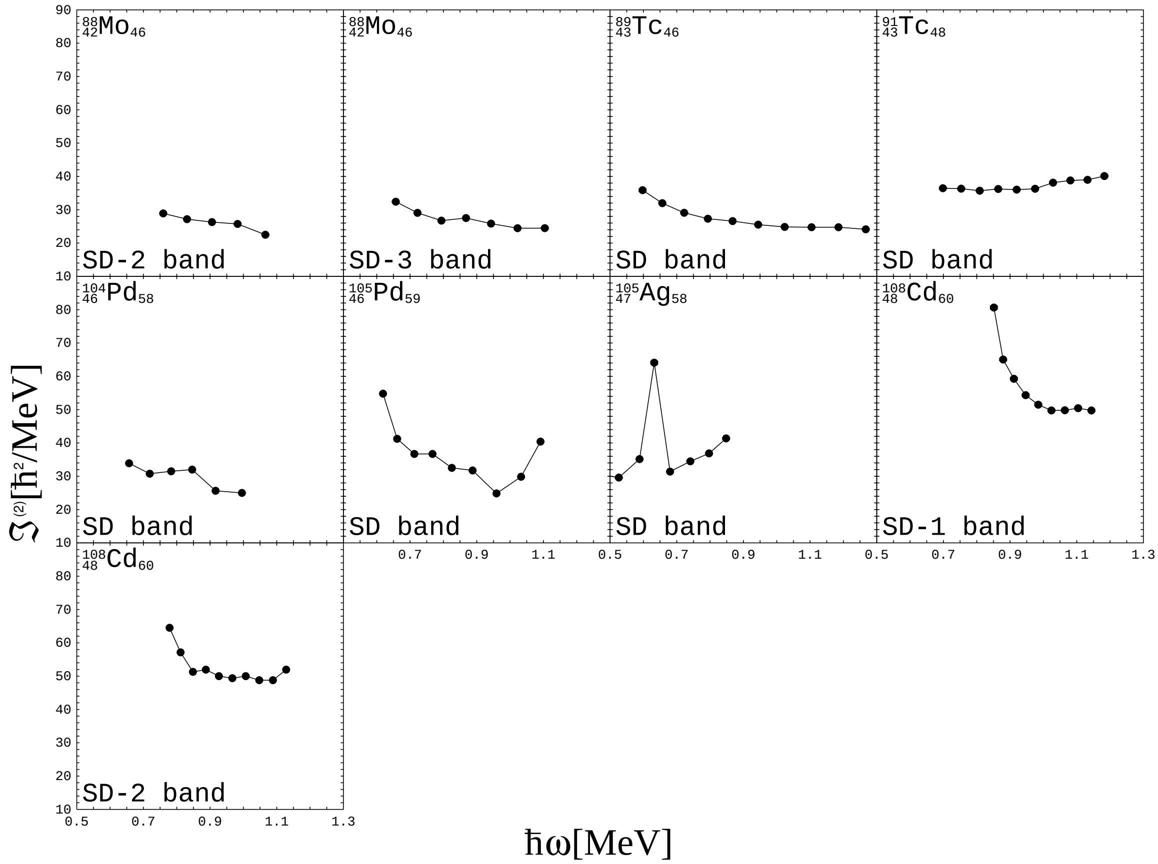
Plots of Dynamic Moments of Inertia

The dynamic momoents of inertia ($\Im^{(2)}$) are plotted as a function of rotational frequency ($\hbar\omega$). Experimental uncertainties, calculated assuming the γ-ray energy uncertainties can be added in quadrature are shown when available.



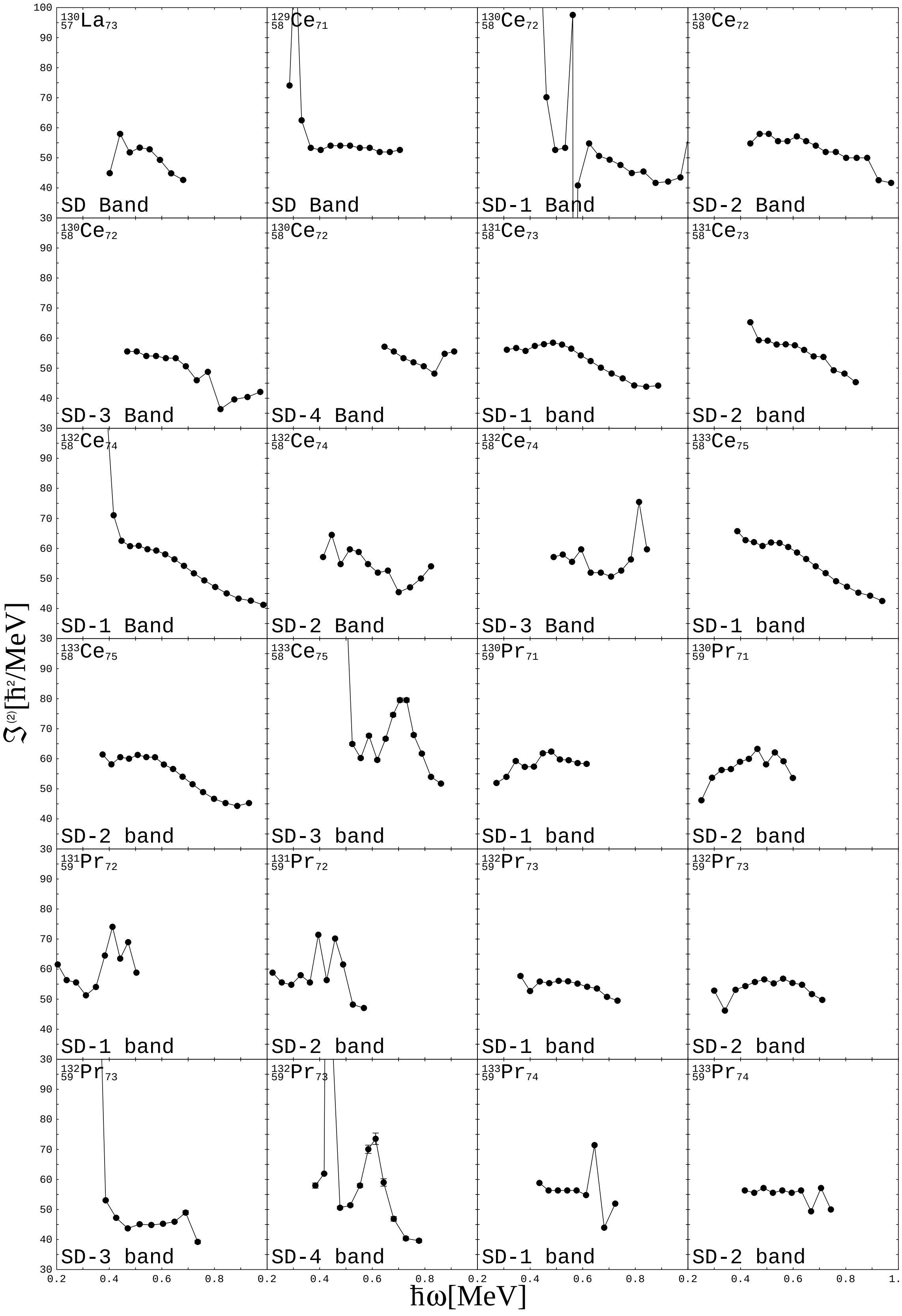
Region II: A=80-91

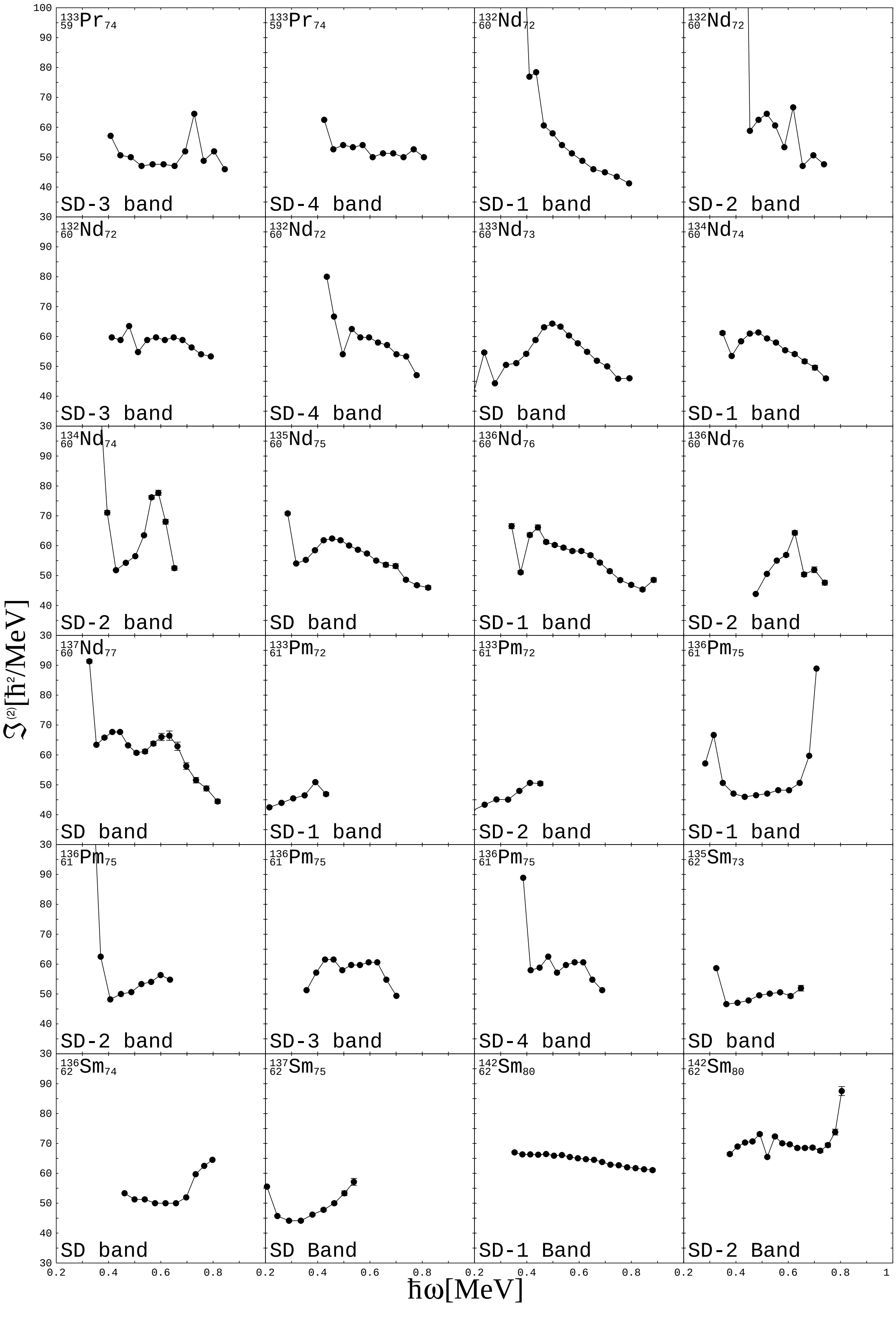




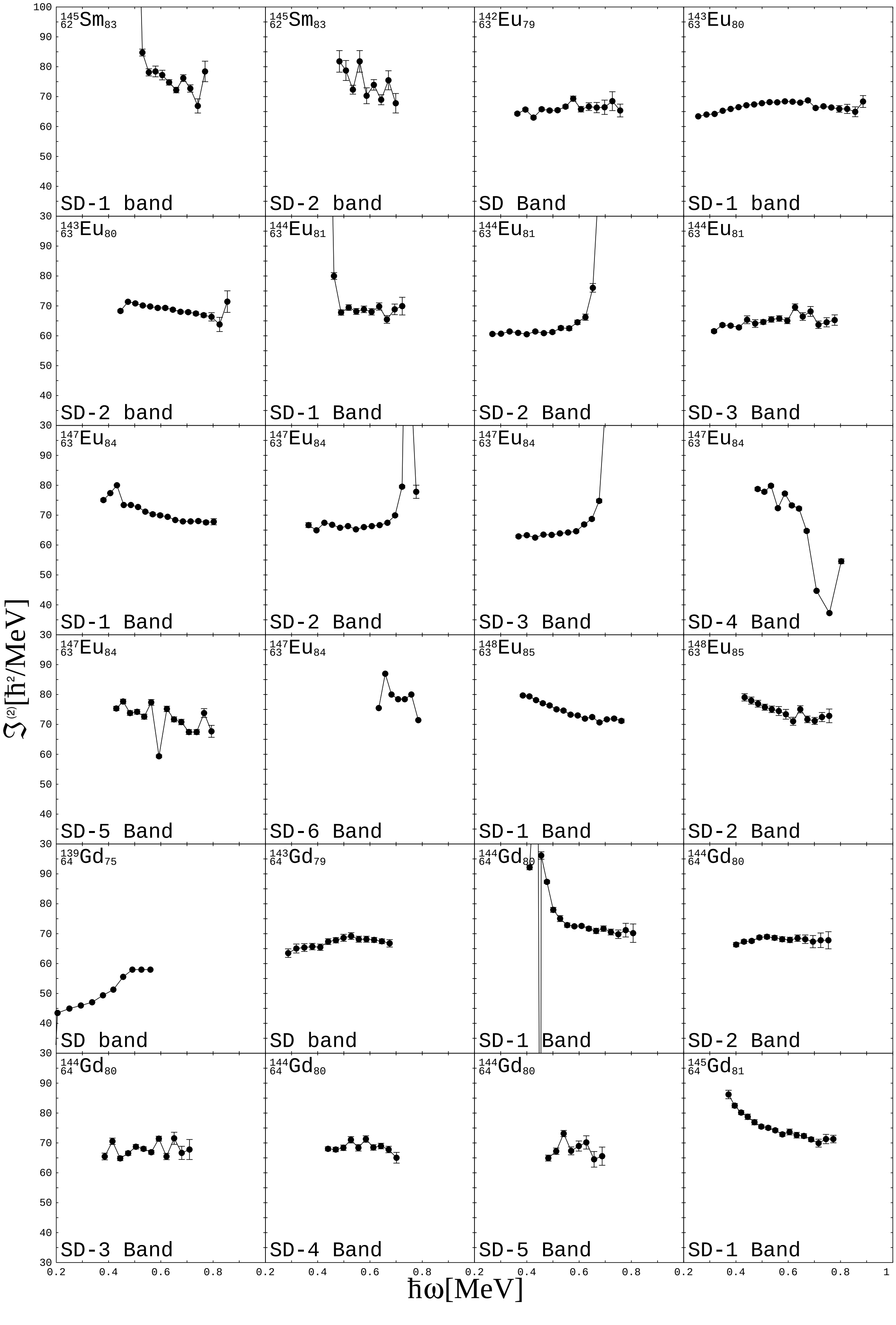
$^{88}_{42}Mo_{46}$
SD-2 band
$^{88}_{42}Mo_{46}$
SD-3 band
$^{89}_{43}Tc_{46}$
SD band
$^{91}_{43}Tc_{48}$
SD band
$^{104}_{46}Pd_{58}$
SD band
$^{105}_{46}Pd_{59}$
SD band
$^{105}_{47}Ag_{58}$
SD band
$^{108}_{48}Cd_{60}$
SD-1 band
$^{108}_{48}Cd_{60}$
SD-2 band
$\Im^{(2)}[\hbar^2/MeV]$
$\hbar\omega[MeV]$

Region III: A=129-155

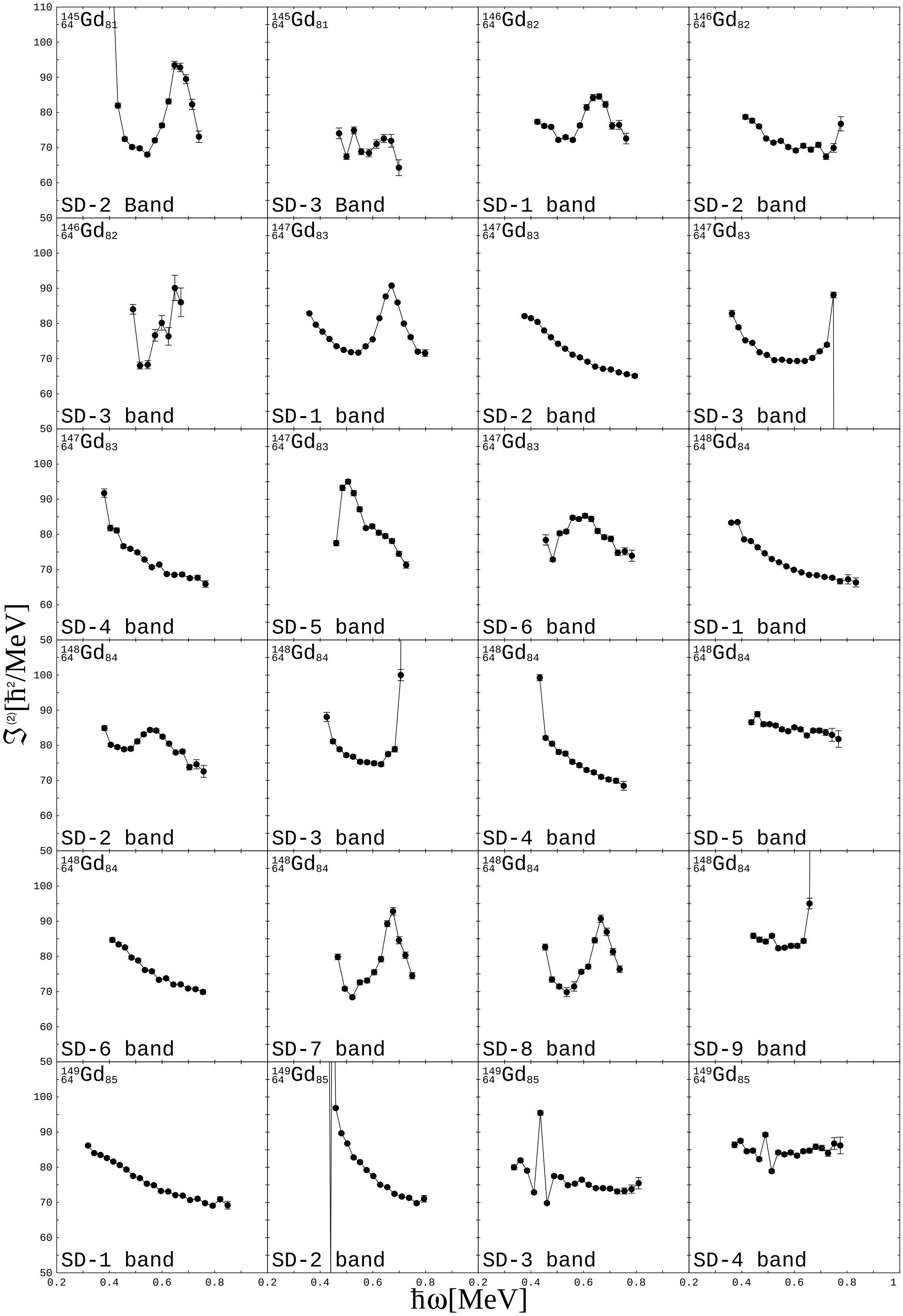




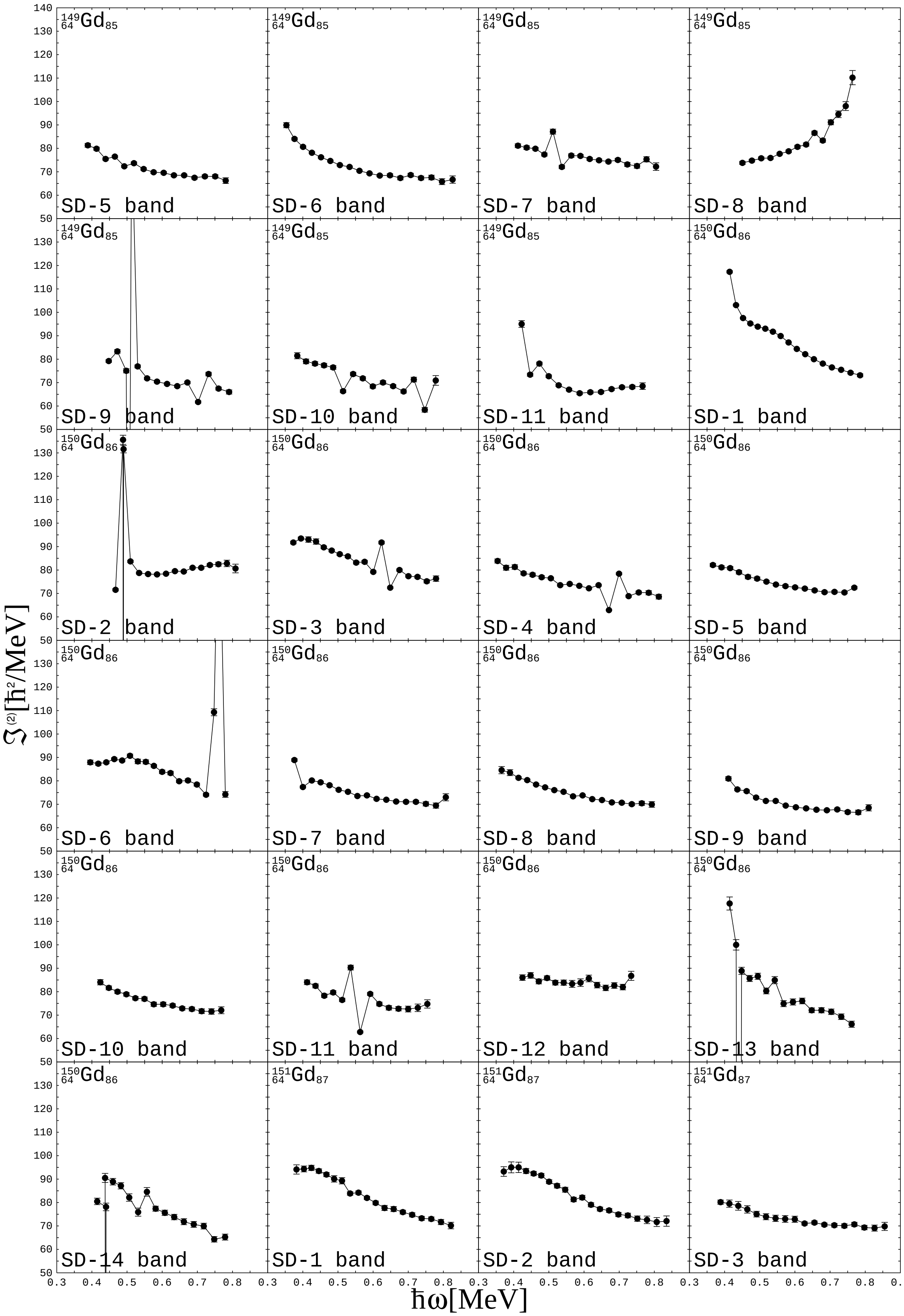
$^{133}_{59}$Pr$_{74}$ SD-3 band
$^{133}_{59}$Pr$_{74}$ SD-4 band
$^{132}_{60}$Nd$_{72}$ SD-1 band
$^{132}_{60}$Nd$_{72}$ SD-2 band
$^{132}_{60}$Nd$_{72}$ SD-3 band
$^{132}_{60}$Nd$_{72}$ SD-4 band
$^{133}_{60}$Nd$_{73}$ SD band
$^{134}_{60}$Nd$_{74}$ SD-1 band
$^{134}_{60}$Nd$_{74}$ SD-2 band
$^{135}_{60}$Nd$_{75}$ SD band
$^{136}_{60}$Nd$_{76}$ SD-1 band
$^{136}_{60}$Nd$_{76}$ SD-2 band
$^{137}_{60}$Nd$_{77}$ SD band
$^{133}_{61}$Pm$_{72}$ SD-1 band
$^{133}_{61}$Pm$_{72}$ SD-2 band
$^{136}_{61}$Pm$_{75}$ SD-1 band
$^{136}_{61}$Pm$_{75}$ SD-2 band
$^{136}_{61}$Pm$_{75}$ SD-3 band
$^{136}_{61}$Pm$_{75}$ SD-4 band
$^{135}_{62}$Sm$_{73}$ SD band
$^{136}_{62}$Sm$_{74}$ SD band
$^{137}_{62}$Sm$_{75}$ SD Band
$^{142}_{62}$Sm$_{80}$ SD-1 Band
$^{142}_{62}$Sm$_{80}$ SD-2 Band
$\Im^{(2)}[\hbar^2/\mathrm{MeV}]$
$\hbar\omega[\mathrm{MeV}]$



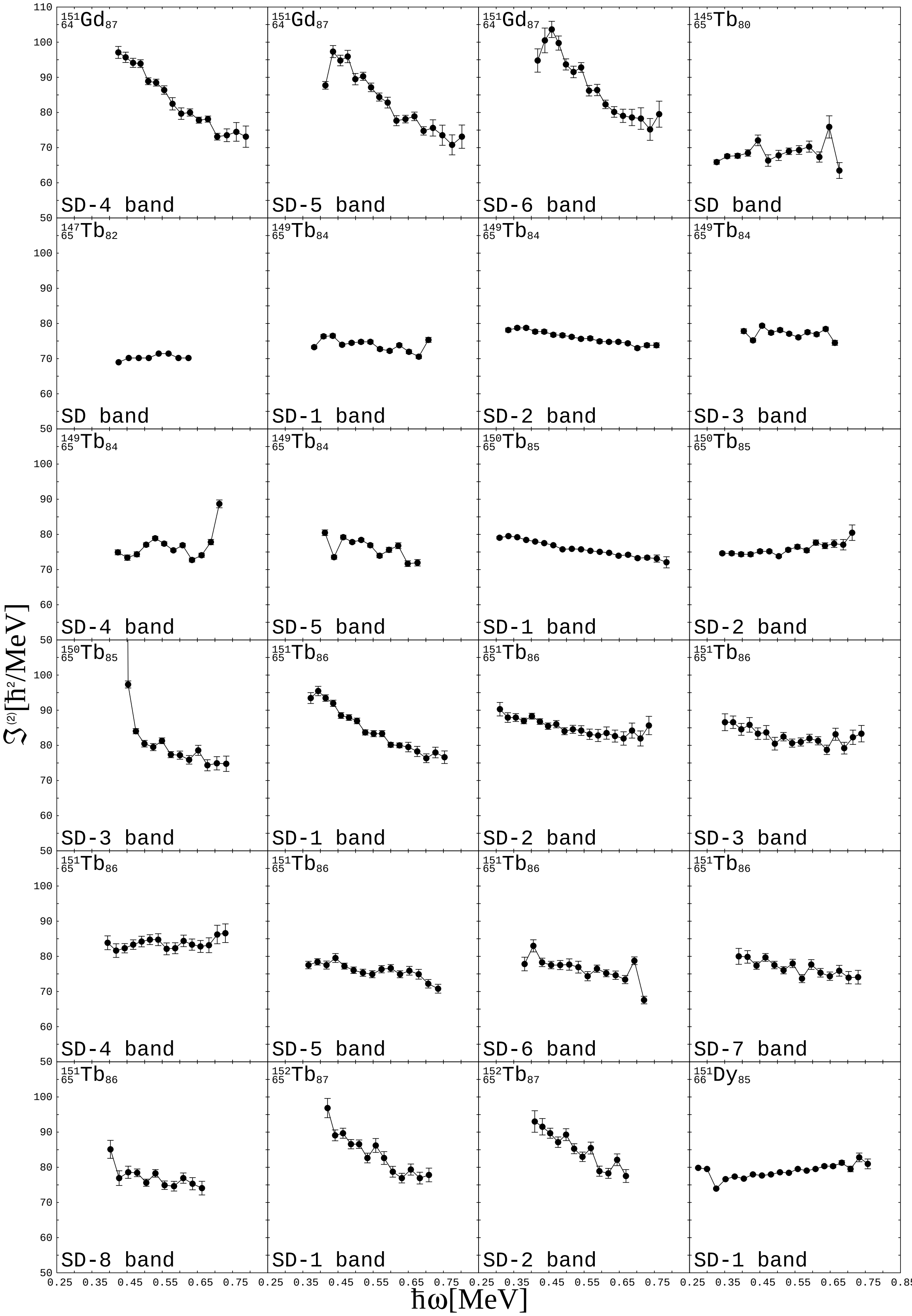
$^{145}_{62}Sm_{83}$
SD-1 band
$^{145}_{62}Sm_{83}$
SD-2 band
$^{142}_{63}Eu_{79}$
SD Band
$^{143}_{63}Eu_{80}$
SD-1 band
$^{143}_{63}Eu_{80}$
SD-2 band
$^{144}_{63}Eu_{81}$
SD-1 Band
$^{144}_{63}Eu_{81}$
SD-2 Band
$^{144}_{63}Eu_{81}$
SD-3 Band
$^{147}_{63}Eu_{84}$
SD-1 Band
$^{147}_{63}Eu_{84}$
SD-2 Band
$^{147}_{63}Eu_{84}$
SD-3 Band
$^{147}_{63}Eu_{84}$
SD-4 Band
$^{147}_{63}Eu_{84}$
SD-5 Band
$^{147}_{63}Eu_{84}$
SD-6 Band
$^{148}_{63}Eu_{85}$
SD-1 Band
$^{148}_{63}Eu_{85}$
SD-2 Band
$^{139}_{64}Gd_{75}$
SD band
$^{143}_{64}Gd_{79}$
SD band
$^{144}_{64}Gd_{80}$
SD-1 Band
$^{144}_{64}Gd_{80}$
SD-2 Band
$^{144}_{64}Gd_{80}$
SD-3 Band
$^{144}_{64}Gd_{80}$
SD-4 Band
$^{144}_{64}Gd_{80}$
SD-5 Band
$^{145}_{64}Gd_{81}$
SD-1 Band
$\Im^{(2)}[\hbar^2/MeV]$
$\hbar\omega[MeV]$



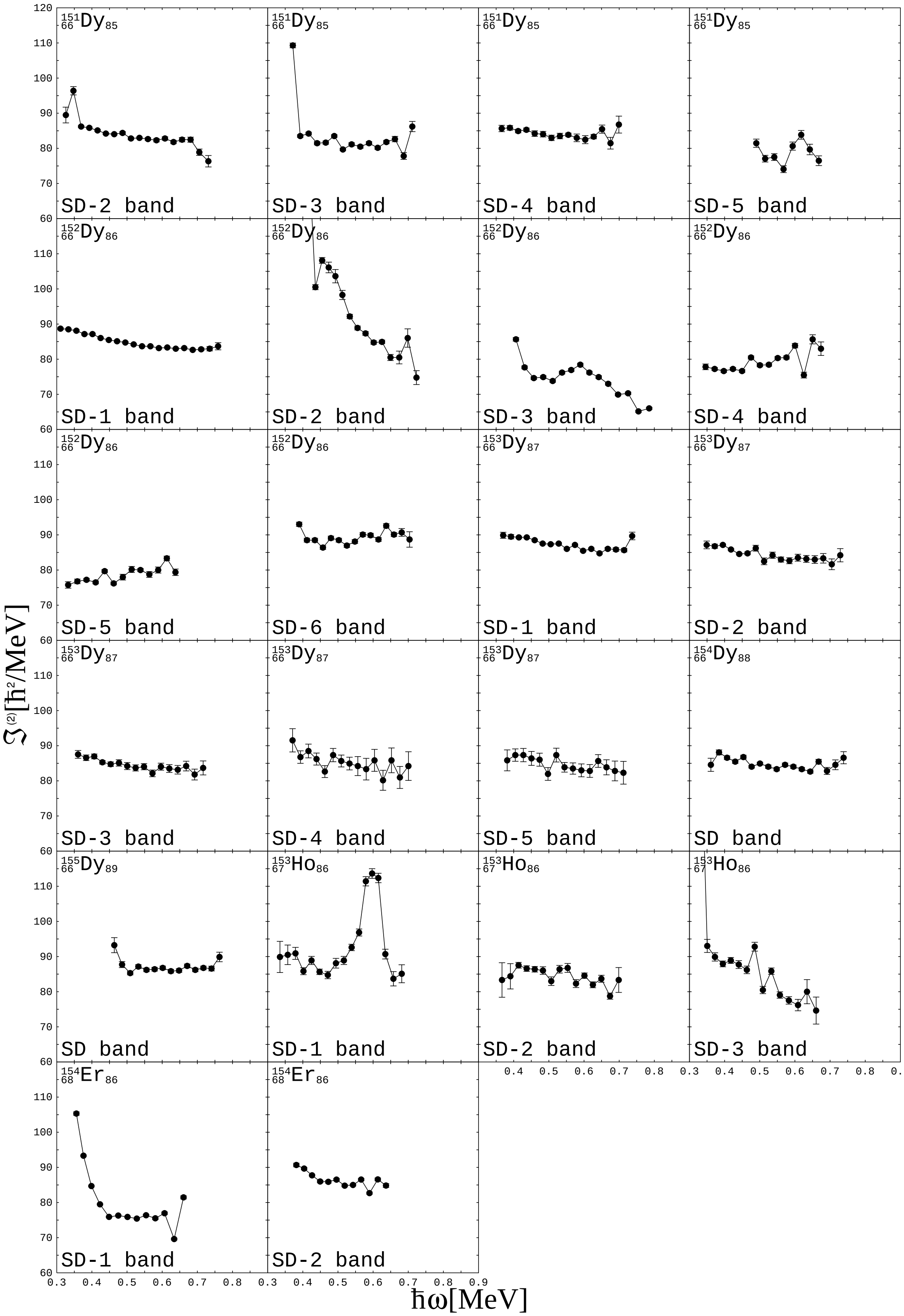
${}^{145}_{64}Gd_{81}$ SD-2 Band
${}^{145}_{64}Gd_{81}$ SD-3 Band
${}^{146}_{64}Gd_{82}$ SD-1 band
${}^{146}_{64}Gd_{82}$ SD-2 band
${}^{146}_{64}Gd_{82}$ SD-3 band
${}^{147}_{64}Gd_{83}$ SD-1 band
${}^{147}_{64}Gd_{83}$ SD-2 band
${}^{147}_{64}Gd_{83}$ SD-3 band
${}^{147}_{64}Gd_{83}$ SD-4 band
${}^{147}_{64}Gd_{83}$ SD-5 band
${}^{147}_{64}Gd_{83}$ SD-6 band
${}^{148}_{64}Gd_{84}$ SD-1 band
${}^{148}_{64}Gd_{84}$ SD-2 band
${}^{148}_{64}Gd_{84}$ SD-3 band
${}^{148}_{64}Gd_{84}$ SD-4 band
${}^{148}_{64}Gd_{84}$ SD-5 band
${}^{148}_{64}Gd_{84}$ SD-6 band
${}^{148}_{64}Gd_{84}$ SD-7 band
${}^{148}_{64}Gd_{84}$ SD-8 band
${}^{148}_{64}Gd_{84}$ SD-9 band
${}^{149}_{64}Gd_{85}$ SD-1 band
${}^{149}_{64}Gd_{85}$ SD-2 band
${}^{149}_{64}Gd_{85}$ SD-3 band
${}^{149}_{64}Gd_{85}$ SD-4 band
$\Im^{(2)}[\hbar^2/MeV]$
$\hbar\omega$[MeV]



$^{149}_{64}$Gd$_{85}$ SD-5 band
$^{149}_{64}$Gd$_{85}$ SD-6 band
$^{149}_{64}$Gd$_{85}$ SD-7 band
$^{149}_{64}$Gd$_{85}$ SD-8 band
$^{149}_{64}$Gd$_{85}$ SD-9 band
$^{149}_{64}$Gd$_{85}$ SD-10 band
$^{149}_{64}$Gd$_{85}$ SD-11 band
$^{150}_{64}$Gd$_{86}$ SD-1 band
$^{150}_{64}$Gd$_{86}$ SD-2 band
$^{150}_{64}$Gd$_{86}$ SD-3 band
$^{150}_{64}$Gd$_{86}$ SD-4 band
$^{150}_{64}$Gd$_{86}$ SD-5 band
$^{150}_{64}$Gd$_{86}$ SD-6 band
$^{150}_{64}$Gd$_{86}$ SD-7 band
$^{150}_{64}$Gd$_{86}$ SD-8 band
$^{150}_{64}$Gd$_{86}$ SD-9 band
$^{150}_{64}$Gd$_{86}$ SD-10 band
$^{150}_{64}$Gd$_{86}$ SD-11 band
$^{150}_{64}$Gd$_{86}$ SD-12 band
$^{150}_{64}$Gd$_{86}$ SD-13 band
$^{150}_{64}$Gd$_{86}$ SD-14 band
$^{151}_{64}$Gd$_{87}$ SD-1 band
$^{151}_{64}$Gd$_{87}$ SD-2 band
$^{151}_{64}$Gd$_{87}$ SD-3 band
$\Im^{(2)}[\hbar^2/\mathrm{MeV}]$
$\hbar\omega$[MeV]

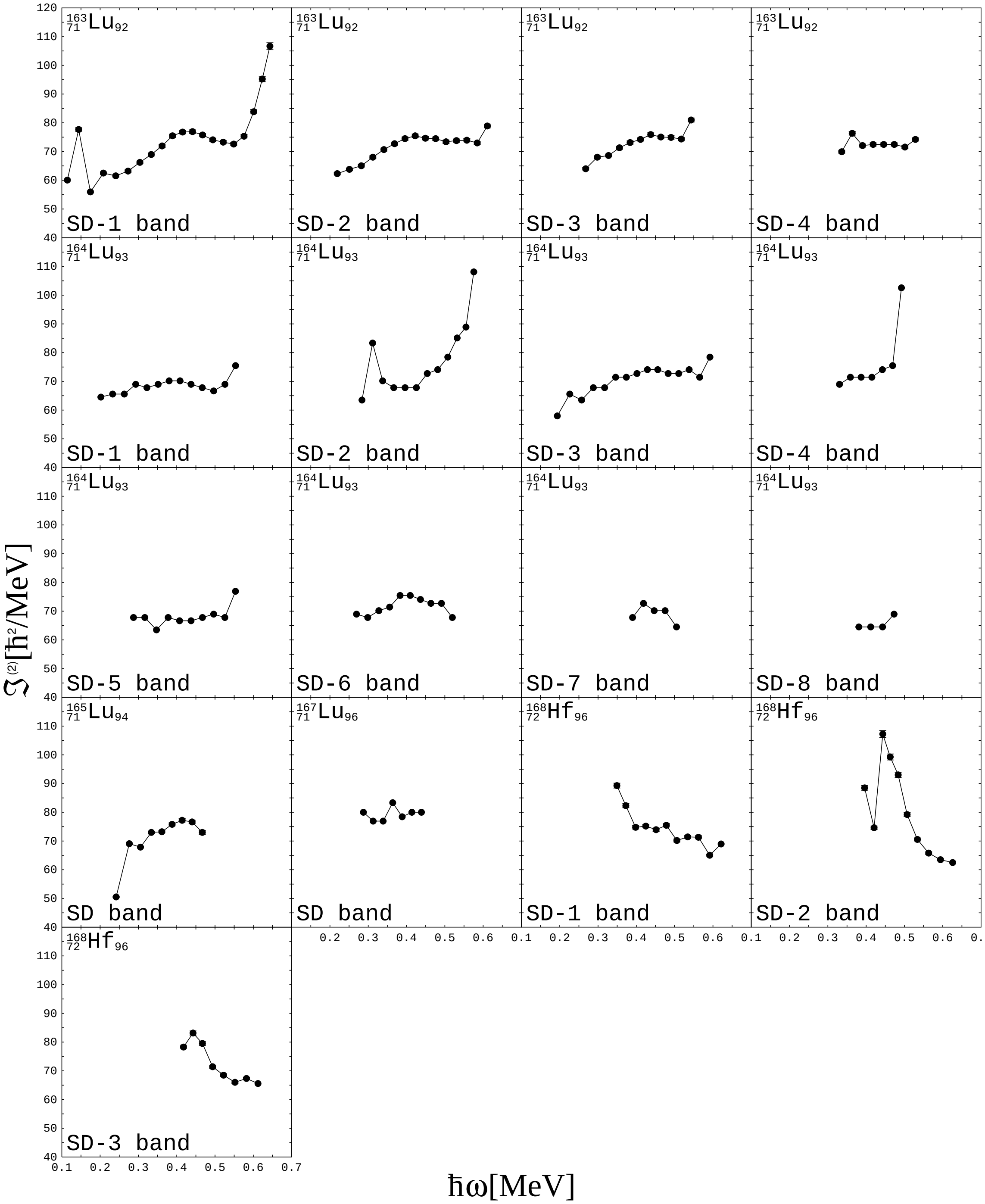


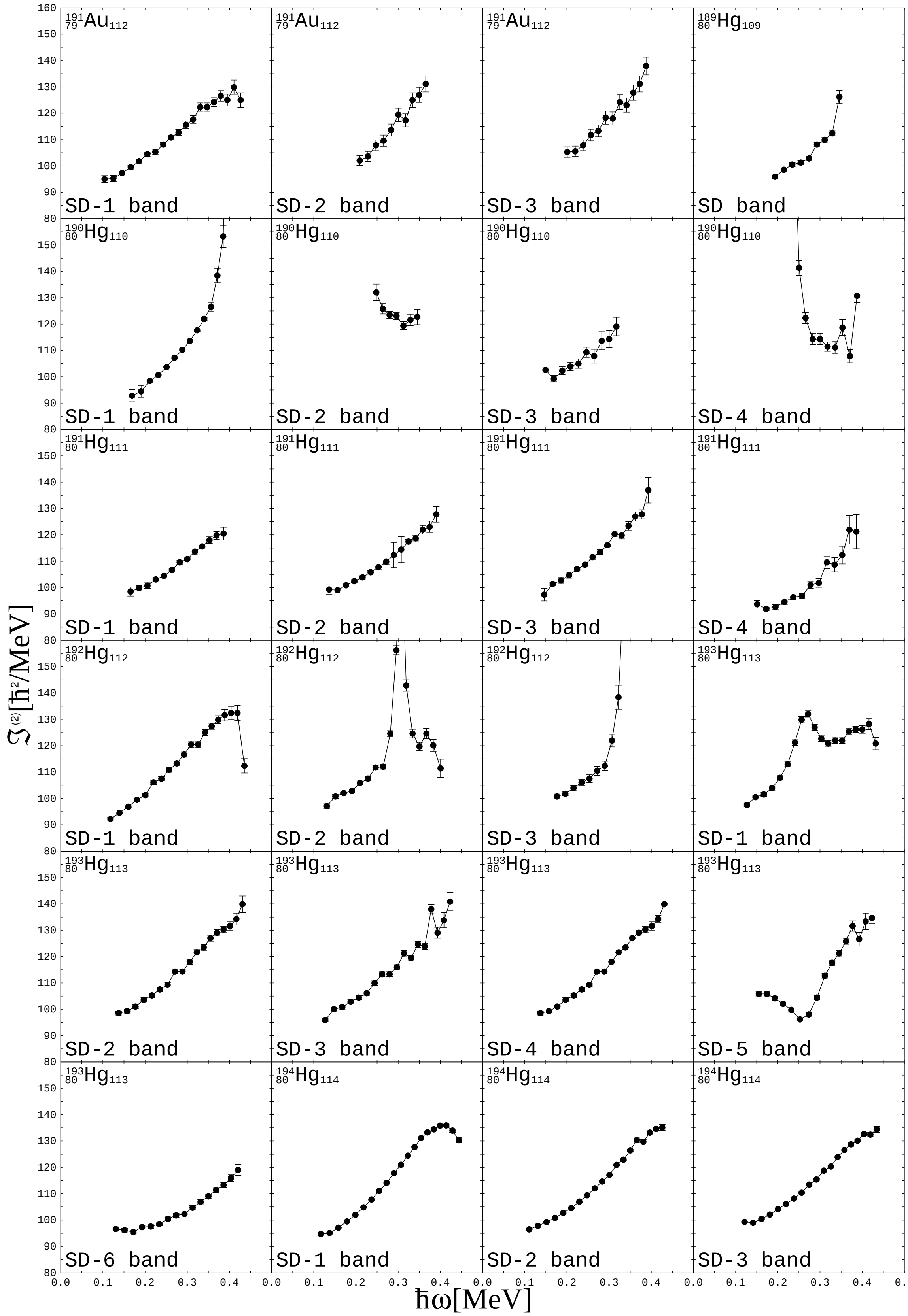
$^{151}_{64}Gd_{87}$ SD-4 band
$^{151}_{64}Gd_{87}$ SD-5 band
$^{151}_{64}Gd_{87}$ SD-6 band
$^{145}_{65}Tb_{80}$ SD band
$^{147}_{65}Tb_{82}$ SD band
$^{149}_{65}Tb_{84}$ SD-1 band
$^{149}_{65}Tb_{84}$ SD-2 band
$^{149}_{65}Tb_{84}$ SD-3 band
$^{149}_{65}Tb_{84}$ SD-4 band
$^{149}_{65}Tb_{84}$ SD-5 band
$^{150}_{65}Tb_{85}$ SD-1 band
$^{150}_{65}Tb_{85}$ SD-2 band
$^{150}_{65}Tb_{85}$ SD-3 band
$^{151}_{65}Tb_{86}$ SD-1 band
$^{151}_{65}Tb_{86}$ SD-2 band
$^{151}_{65}Tb_{86}$ SD-3 band
$^{151}_{65}Tb_{86}$ SD-4 band
$^{151}_{65}Tb_{86}$ SD-5 band
$^{151}_{65}Tb_{86}$ SD-6 band
$^{151}_{65}Tb_{86}$ SD-7 band
$^{151}_{65}Tb_{86}$ SD-8 band
$^{152}_{65}Tb_{87}$ SD-1 band
$^{152}_{65}Tb_{87}$ SD-2 band
$^{151}_{66}Dy_{85}$ SD-1 band
$\Im^{(2)}[\hbar^2/MeV]$
$\hbar\omega[MeV]$



$^{151}_{66}$Dy$_{85}$ SD-2 band
$^{151}_{66}$Dy$_{85}$ SD-3 band
$^{151}_{66}$Dy$_{85}$ SD-4 band
$^{151}_{66}$Dy$_{85}$ SD-5 band
$^{152}_{66}$Dy$_{86}$ SD-1 band
$^{152}_{66}$Dy$_{86}$ SD-2 band
$^{152}_{66}$Dy$_{86}$ SD-3 band
$^{152}_{66}$Dy$_{86}$ SD-4 band
$^{152}_{66}$Dy$_{86}$ SD-5 band
$^{152}_{66}$Dy$_{86}$ SD-6 band
$^{153}_{66}$Dy$_{87}$ SD-1 band
$^{153}_{66}$Dy$_{87}$ SD-2 band
$^{153}_{66}$Dy$_{87}$ SD-3 band
$^{153}_{66}$Dy$_{87}$ SD-4 band
$^{153}_{66}$Dy$_{87}$ SD-5 band
$^{154}_{66}$Dy$_{88}$ SD band
$^{155}_{66}$Dy$_{89}$ SD band
$^{153}_{67}$Ho$_{86}$ SD-1 band
$^{153}_{67}$Ho$_{86}$ SD-2 band
$^{153}_{67}$Ho$_{86}$ SD-3 band
$^{154}_{68}$Er$_{86}$ SD-1 band
$^{154}_{68}$Er$_{86}$ SD-2 band
$\Im^{(2)}[\hbar^2/\mathrm{MeV}]$
$\hbar\omega$[MeV]

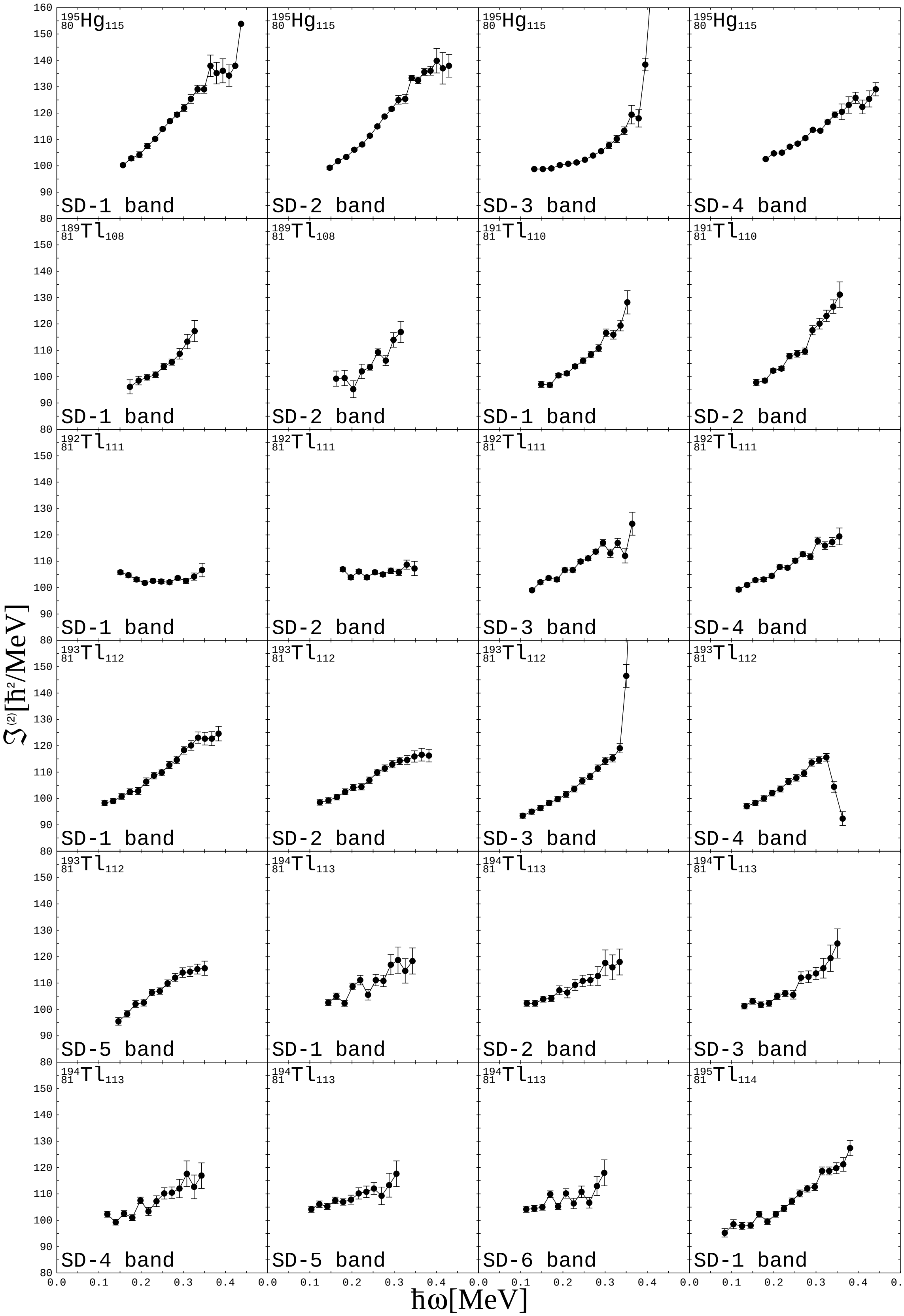
Region IV: A=163-168

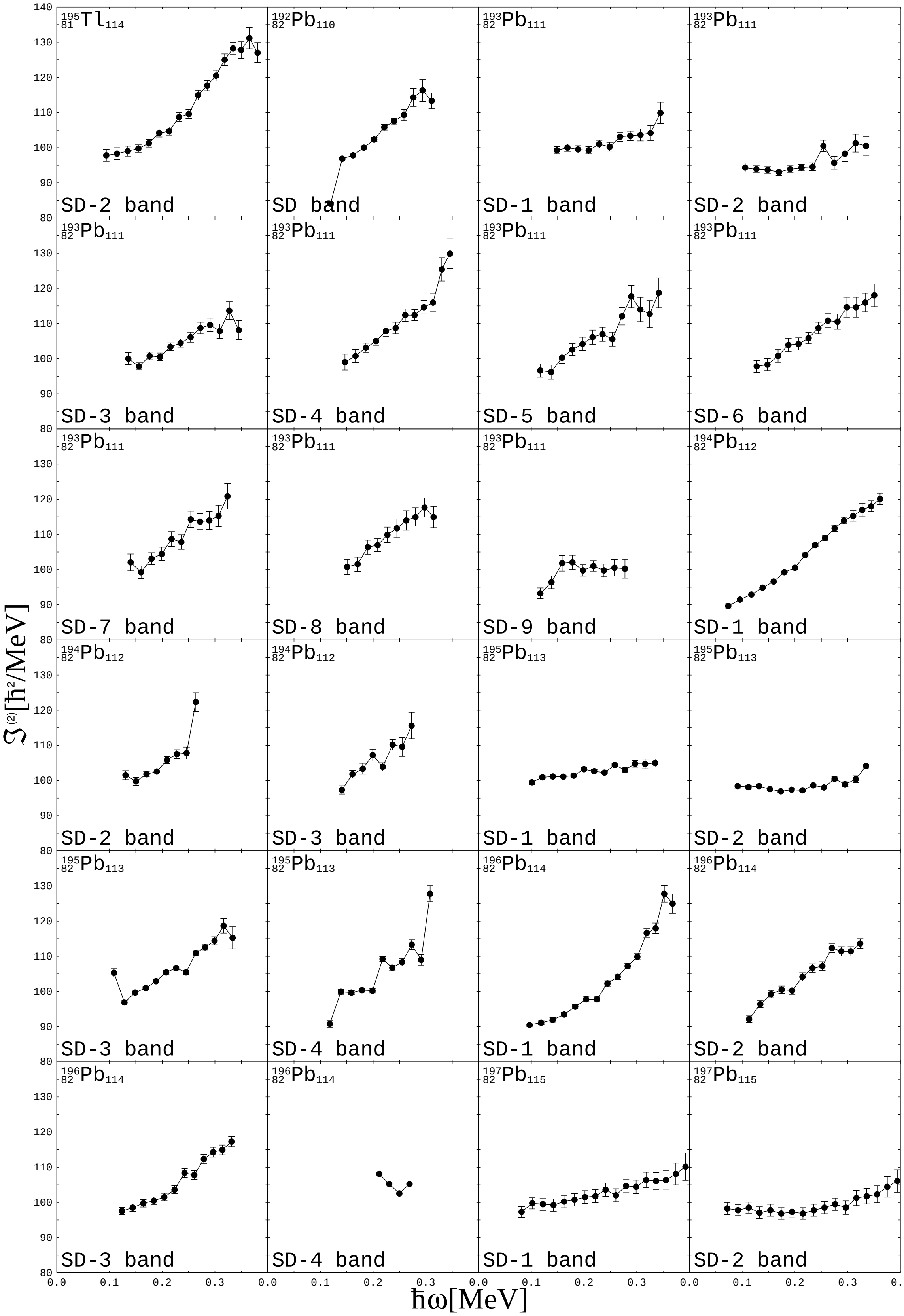


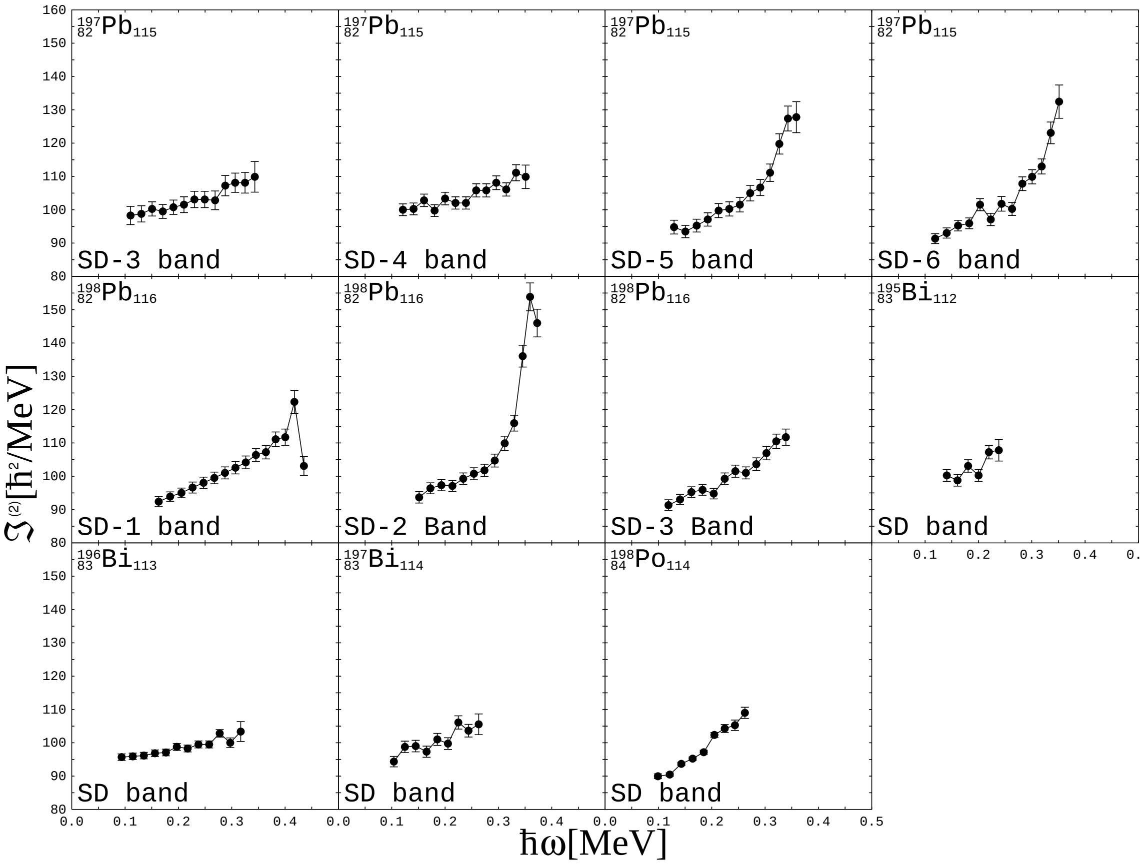


$^{191}_{79}$Au$_{112}$ SD-1 band
$^{191}_{79}$Au$_{112}$ SD-2 band
$^{191}_{79}$Au$_{112}$ SD-3 band
$^{189}_{80}$Hg$_{109}$ SD band
$^{190}_{80}$Hg$_{110}$ SD-1 band
$^{190}_{80}$Hg$_{110}$ SD-2 band
$^{190}_{80}$Hg$_{110}$ SD-3 band
$^{190}_{80}$Hg$_{110}$ SD-4 band
$^{191}_{80}$Hg$_{111}$ SD-1 band
$^{191}_{80}$Hg$_{111}$ SD-2 band
$^{191}_{80}$Hg$_{111}$ SD-3 band
$^{191}_{80}$Hg$_{111}$ SD-4 band
$^{192}_{80}$Hg$_{112}$ SD-1 band
$^{192}_{80}$Hg$_{112}$ SD-2 band
$^{192}_{80}$Hg$_{112}$ SD-3 band
$^{193}_{80}$Hg$_{113}$ SD-1 band
$^{193}_{80}$Hg$_{113}$ SD-2 band
$^{193}_{80}$Hg$_{113}$ SD-3 band
$^{193}_{80}$Hg$_{113}$ SD-4 band
$^{193}_{80}$Hg$_{113}$ SD-5 band
$^{193}_{80}$Hg$_{113}$ SD-6 band
$^{194}_{80}$Hg$_{114}$ SD-1 band
$^{194}_{80}$Hg$_{114}$ SD-2 band
$^{194}_{80}$Hg$_{114}$ SD-3 band
$\Im^{(2)}$[$\hbar^2$/MeV]
$\hbar\omega$[MeV]
80 90 100 110 120 130 140 150 160
0.0 0.1 0.2 0.3 0.4 0.5

Region V: A=189-198




$^{195}_{81}$Tl$_{114}$ SD-2 band
$^{192}_{82}$Pb$_{110}$ SD band
$^{193}_{82}$Pb$_{111}$ SD-1 band
$^{193}_{82}$Pb$_{111}$ SD-2 band
$^{193}_{82}$Pb$_{111}$ SD-3 band
$^{193}_{82}$Pb$_{111}$ SD-4 band
$^{193}_{82}$Pb$_{111}$ SD-5 band
$^{193}_{82}$Pb$_{111}$ SD-6 band
$^{193}_{82}$Pb$_{111}$ SD-7 band
$^{193}_{82}$Pb$_{111}$ SD-8 band
$^{193}_{82}$Pb$_{111}$ SD-9 band
$^{194}_{82}$Pb$_{112}$ SD-1 band
$^{194}_{82}$Pb$_{112}$ SD-2 band
$^{194}_{82}$Pb$_{112}$ SD-3 band
$^{195}_{82}$Pb$_{113}$ SD-1 band
$^{195}_{82}$Pb$_{113}$ SD-2 band
$^{195}_{82}$Pb$_{113}$ SD-3 band
$^{195}_{82}$Pb$_{113}$ SD-4 band
$^{196}_{82}$Pb$_{114}$ SD-1 band
$^{196}_{82}$Pb$_{114}$ SD-2 band
$^{196}_{82}$Pb$_{114}$ SD-3 band
$^{196}_{82}$Pb$_{114}$ SD-4 band
$^{197}_{82}$Pb$_{115}$ SD-1 band
$^{197}_{82}$Pb$_{115}$ SD-2 band
$\Im^{(2)}[\hbar^2/\text{MeV}]$
$\hbar\omega[\text{MeV}]$


$^{197}_{82}$Pb$_{115}$
SD-3 band
$^{197}_{82}$Pb$_{115}$
SD-4 band
$^{197}_{82}$Pb$_{115}$
SD-5 band
$^{197}_{82}$Pb$_{115}$
SD-6 band
$^{198}_{82}$Pb$_{116}$
SD-1 band
$^{198}_{82}$Pb$_{116}$
SD-2 Band
$^{198}_{82}$Pb$_{116}$
SD-3 Band
$^{195}_{83}$Bi$_{112}$
SD band
$^{196}_{83}$Bi$_{113}$
SD band
$^{197}_{83}$Bi$_{114}$
SD band
$^{198}_{84}$Po$_{114}$
SD band
$\Im^{(2)}[\hbar^2/\mathrm{MeV}]$
$\hbar\omega$[MeV]

$^{20}_{10}$Ne$_{10}$

S$_n$: 16864.4 $_6$, S$_p$: 12843.50$_7$

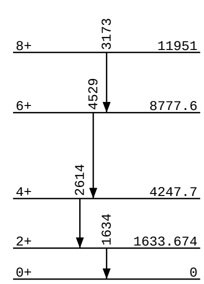
Nuclear Bands

A SD (?) band (1961Li17,1972Al05,1971Ha26)
Q$_0$=0.56$_3$

Levels and γ-ray branchings:

A **0**, 0^+, *stable*
A **1633.674**$_{15}$, 2^+, *0.73$_4$ ps*, μ=+1.08$_8$, Q=-0.23$_3$, $\gamma_{\mathbf{0}}$ **1633.602**$_{15}$(100)
A **4247.7**$_{11}$, 4^+, *64$_6$ fs*, μ=+0.5$_6$, $\gamma_{\mathbf{1633.674}}$**2613.8**$_{11}$(100)
4966.51$_{20}$, 2^-, *3.34 ps*, $\gamma_{\mathbf{1633.674}}$**3332.54**$_{20}$(99.4$_2$), $\gamma_{\mathbf{0}}$**4965.85**$_{20}$(0.6$_2$)
5621.4$_{17}$, 3^-, *139$_{35}$ fs*, %IT=7$_3$, %α=93$_3$, $\gamma_{\mathbf{4966.51}}$**654.9**$_{18}$(4.8$_{16}$), $\gamma_{\mathbf{1633.674}}$**3987.3**$_{17}$(87.6$_{10}$), $\gamma_{\mathbf{0}}$**5620.6**$_{17}$(7.6$_{10}$)
5787.7$_{26}$, 1^-, *0.028$_3$ keV*, %IT=0.016$_3$, %α=100, $\gamma_{\mathbf{1633.674}}$**4154**$_3$(82$_5$), $\gamma_{\mathbf{0}}$**5787**$_3$(18$_5$)
6706$_{47}$
6725$_5$, 0^+, *19.0$_9$ keV*, %IT=1.7x10^{-4}, %α=100 , $\gamma_{\mathbf{1633.674}}$**5090**$_5$(100), $\gamma_{\mathbf{0}}$**6724**$_5$
7004.0$_{36}$, 4^-, *305$_{62}$ fs*, $\gamma_{\mathbf{5621.4}}$**1383**$_4$(25), $\gamma_{\mathbf{4966.51}}$**2037**$_4$(11), $\gamma_{\mathbf{4247.7}}$**2756**$_4$(63.5), $\gamma_{\mathbf{1633.674}}$**5369**$_4$(0.5$_2$)
7156.3$_5$, 3^-, *8.2$_3$ keV*, %IT=2.0x10^{-3}x10^{-5} $_2$, %α=100 , $\gamma_{\mathbf{5787.7}}$**1369**$_3$(40$_5$), $\gamma_{\mathbf{4247.7}}$**2908.4**$_{12}$(60$_5$)
7191$_3$, 0^+, *3.4$_2$ keV*, %IT=1.29x10^{-4} $_{25}$, %α=100 , $\gamma_{\mathbf{1633.674}}$**5556**$_3$(100), $\gamma_{\mathbf{0}}$**7190**$_3$
7421.9$_{12}$, 2^+, *15.1$_7$ keV*, %IT=1.9x10^{-4} $_3$, %α=100 , $\gamma_{\mathbf{4247.7}}$**3173.9**$_{17}$(≤ 7.6), $\gamma_{\mathbf{1633.674}}$**5787.3**$_{12}$(≥ 89.2) $\delta = +8.4^{15}_{10}$, $\gamma_{\mathbf{0}}$**7420.4**$_{12}$(≤ 10.8)
7833.4$_{15}$, 2^+, *2 keV*, %IT=3.4x10^{-3}, %α=100 , $\gamma_{\mathbf{4247.7}}$**3585.4**$_{19}$(< 2), $\gamma_{\mathbf{1633.674}}$**6198.7**$_{15}$(17$_1$), $\gamma_{\mathbf{0}}$**7831.8**$_{15}$(83$_1$)
8453$_4$, 5^-, *0.013$_4$ keV*, %IT=0.10$_4$, %α=99.90$_4$, $\gamma_{\mathbf{5621.4}}$**2832**$_5$(100)
≈**8700**, 0^+, *>800 keV*, %α=100
8708$_7$, 1^-, *2.1$_8$ keV*, %IT=3.3x10^{-3} $_{15}$, %α=100 , $\gamma_{\mathbf{1633.674}}$**7073**$_7$(13$_8$), $\gamma_{\mathbf{0}}$**8706**$_7$(87$_8$)
A **8777.6**$_{22}$, 6^+, *0.11$_2$ keV*, %IT=0.091$_{21}$, %α=100 , $\gamma_{\mathbf{4247.7}}$**4529.3**$_{25}$(100)
8820, (5^-), *<1 keV*, %α=100
8854$_5$, 1^-, *19 keV*, %α=100
90.0x10^2$_{18}$, 2^+, *≈800 keV*, %α=?
9031$_7$, 4^+, *3 keV*, %IT=0.011, %α=100 , $\gamma_{\mathbf{4247.7}}$**4782**$_7$(< 2), $\gamma_{\mathbf{1633.674}}$**7396**$_7$(100)
9116$_3$, 3^-, *3.2 keV*, %IT=8x10^{-4}, %α=100 , $\gamma_{\mathbf{5621.4}}$**3495**$_4$(17$_4$), $\gamma_{\mathbf{4966.51}}$**4149**$_3$(33$_5$), $\gamma_{\mathbf{1633.674}}$**7480**$_3$(50$_5$)
9196$_{30}$, 2^+
9318$_2$, (2^-), $\gamma_{\mathbf{1633.674}}$**7682.7**$_{20}$(100)
9487$_5$, 2^+, *29$_{15}$ keV*, %IT=9x10^{-4} $_6$, %α=100 , γ**7848**$_3$(100), γ**9481**$_3$
9873$_4$, 3^+, $\gamma_{\mathbf{7421.9}}$**2451**$_5$(≈ 3), $\gamma_{\mathbf{5621.4}}$**4252**$_5$(≈ 7), $\gamma_{\mathbf{4966.51}}$**4905**$_4$(≤ 5), $\gamma_{\mathbf{4247.7}}$**5624**$_5$(12$_3$), $\gamma_{\mathbf{1633.674}}$**8237**$_4$(78), $\gamma_{\mathbf{0}}$**9870**$_4$(< 0.5)
9935$_{12}$, (1^+), *<24.3 fs*, $\gamma_{\mathbf{4966.51}}$**4967**$_{12}$(22$_5$), $\gamma_{\mathbf{1633.674}}$**8299**$_{12}$(78$_5$)
9990$_8$, 4^+, *155$_{30}$ keV*, %IT=6x10^{-4} $_3$, %α=100 , $\gamma_{\mathbf{1633.674}}$**8354**$_8$(100), $\gamma_{\mathbf{0}}$**9987**$_8$
10262$_5$, 5^-, *145$_{40}$ keV*, %α=100
10273.2$_{19}$, 2^+, *≤0.3 keV*, %IT=?, %α=? , $\gamma_{\mathbf{7833.4}}$**2440.4**$_{33}$(0.22$_6$), $\gamma_{\mathbf{7421.9}}$**2852**$_4$(6.9$_4$), $\gamma_{\mathbf{5621.4}}$**4652**$_4$(2.1$_2$), $\gamma_{\mathbf{4966.51}}$**5306**$_3$(1.3$_1$), $\gamma_{\mathbf{1633.674}}$**8638**$_3$(88.9$_5$), $\gamma_{\mathbf{0}}$**10271**$_3$(0.65$_{14}$)
10406$_5$, 3^-, *80 keV*, %α=100
10553$_5$, 4^+, *16 keV*, %α=100
10584$_5$, 2^+, *24 keV*, %α=100
10609$_6$, 6^-, *16$_5$ fs*, $\gamma_{\mathbf{8453}}$**2156**$_8$(4.5$_{12}$), $\gamma_{\mathbf{7004.0}}$**3605**$_8$(95.5$_{12}$)
10694$_6$, $4^-,3^+$, $\gamma_{\mathbf{4966.51}}$**5726**$_6$(75$_4$), $\gamma_{\mathbf{4247.7}}$**6445**$_6$(25$_4$)
10800$_{75}$, 4^+, *350 keV*, %α=100
10840$_6$, 3^-, *45 keV*, %IT=?, %α=?
10843$_4$, 2^+, *13 keV*, %α=100
10884$_3$, 3^+, *<21 fs*, $\gamma_{\mathbf{4247.7}}$**6635**$_4$(23$_5$), $\gamma_{\mathbf{1633.674}}$**9248**$_3$(77$_5$)
10917$_6$, 3^+
10940$_9$, 2^+
109.7x10^2$_{12}$, 0^+, *580 keV*, %α=100
11020$_8$, 4^+, *24 keV*, %α=100
11090$_3$, 4^+, *≤0.5 keV*, %IT=?, %α=? , $\gamma_{\mathbf{4247.7}}$**6841**$_4$(99.50$_{25}$), $\gamma_{\mathbf{1633.674}}$**9454**$_3$(0.50$_{25}$)
11116$_9$, 2^+
11240$_{23}$, 1^-, *175 keV*, %α=100
11262.3$_{19}$, 1^+, $\gamma_{\mathbf{1633.674}}$**9626.1**$_{19}$(16$_5$), $\gamma_{\mathbf{0}}$**11258.9**$_{19}$(84$_5$)
11270$_5$, 1^-, *≤0.3 keV*, %IT=?, %α=? , $\gamma_{\mathbf{9318}}$**1952**$_6$(9$_1$), $\gamma_{\mathbf{8854}}$**2416**$_7$(27.0$_{15}$), $\gamma_{\mathbf{4966.51}}$**6302**$_5$(6.5$_{10}$), $\gamma_{\mathbf{1633.674}}$**9634**$_5$(2.5$_{10}$), $\gamma_{\mathbf{0}}$**11267**$_5$(55$_2$)
11320$_9$, 2^+, *40$_{10}$ keV*, %α=100
11528$_6$, $3^+,4^-$, *≤21 fs*, $\gamma_{\mathbf{7004.0}}$**4523**$_7$, $\gamma_{\mathbf{4966.51}}$**6560**$_6$(70$_3$), $\gamma_{\mathbf{4247.7}}$**7279**$_6$(30$_3$)
11555$_6$, (3^+), $\gamma_{\mathbf{7004.0}}$**4550**$_7$, $\gamma_{\mathbf{1633.674}}$**9918**$_6$
11558$_4$, 0^+, *1.1$_4$ keV*, %IT=?, %α=?, $\gamma_{\mathbf{4247.7}}$**7309**$_5$(< 8), $\gamma_{\mathbf{1633.674}}$**9921**$_4$(100)
11601$_{10}$, 2^-
11653$_5$, (3^+), $\gamma_{\mathbf{4247.7}}$**7404**$_6$(86$_3$), $\gamma_{\mathbf{1633.674}}$**10016**$_5$(14$_3$)
11885$_7$, 2^+, *46 keV*, %IT=?, %α=?
11928$_4$, 4^+, *0.44$_{15}$ keV*, %IT=6x10^{-3} $_3$, %α=100, $\gamma_{\mathbf{4247.7}}$**7678**$_5$(79$_{11}$), $\gamma_{\mathbf{1633.674}}$**10291**$_4$(21$_{11}$)
A **11951**$_4$, 8^+, *0.035$_{10}$ keV*, %IT=0.022$_7$, %α=100, $\gamma_{\mathbf{8777.6}}$**3173**$_5$(100)
11985$_{16}$, 1^-, *30$_5$ keV*, %IT=?, %α=?
12098$_6$, 2^-
12137$_5$, 6^+, %α=100
12221$_4$, 2^+, *<1 keV*, %IT=?, %α=?, $\gamma_{\mathbf{1633.674}}$**10584**$_4$(100)
12253$_{10}$, 4^+, *155$_{15}$ keV*, %α=100
12256$_3$, 3^-, *<1 keV*, %IT=?, %α=? , $\gamma_{\mathbf{5621.4}}$**6634**$_4$(37.0$_{15}$), $\gamma_{\mathbf{1633.674}}$**10619**$_3$(63.0$_{15}$)
12327$_{10}$, 2^+, *390$_{50}$ keV*, %α=100
12401$_5$, 3^-, *37.3$_9$ keV*, %IT=5x10^{-4}, %α=100 , $\gamma_{\mathbf{4247.7}}$**8151**$_6$(≈ 70), $\gamma_{\mathbf{1633.674}}$**10764**$_5$(≈ 29), $\gamma_{\mathbf{0}}$**12397**$_5$(≈ 1)
12436$_4$, 0^+, *24.4$_5$ keV*, %IT=7.0x10^{-4} $_{21}$, %α=100, γ**10796**$_5$(100)
12472$_{10}$, (2^+), *124$_6$ keV*, %α=100
12585$_5$, 6^+, *72$_9$ keV*, %α=100
12592$_{15}$, (2^+), *145$_{25}$ keV*, %α=100
12713$_5$, 5^-, *84$_8$ keV*, %α=100
12743$_{10}$, (2^+), *61$_{12}$ keV*, %α=100
12836$_5$, 1^-, *30$_5$ keV*, %α=100
12957$_5$, 2^+, *38$_4$ keV*, %α=100
13048$_5$, 4^+, *18$_3$ keV*, %α=100
13060.7$_{21}$, 2^-, *1.0 keV*, %P=?, %α=?
13095$_6$, 2^+, *162$_{13}$ keV*, %α=100
13105$_5$, 6^+, *102$_5$ keV*, %α=100
13137$_5$, 3^-, *48$_4$ keV*, %α=100
13171.3$_{21}$, 1^+, *2.3$_2$ keV*, %IT=?, %P=?, %α=?
13222$_{10}$, 0^+, *40$_{13}$ keV*, %α=100
13224$_{15}$, 1^-, *80 keV*, %P=?, %α=?
13226$_5$, 3^-, *53$_4$ keV*, %α=100
13307.5$_{21}$, 1^+, *0.9$_1$ keV*, %IT=?, %P=?, %α=?
13338$_5$, 7^-, *0.08$_3$ keV*, %α=100
13341$_5$, 4^+, *26$_3$ keV*, %α=100
13414$_2$, 3^-, *24$_3$ keV*, %α=100
13426$_5$, (5^-), *49$_7$ keV*, %α=100
13461$_{10}$, 1^-, *195$_{25}$ keV*, %P=?, %α=?
13484$_2$, 1^+, *6.4$_3$ keV*, %IT=?, %P=?, %α=? , $\gamma_{\mathbf{4966.51}}$**8515.6**$_{20}$(5), $\gamma_{\mathbf{1633.674}}$**11846.5**$_{20}$(95)
13507$_5$, 1^-, *24$_8$ keV*, %P=?, %α=?
13529$_5$, 2^+, *61$_8$ keV*, %α=100
13530$_{15}$, (0^+), *76$_{32}$ keV*, %α=100
13573$_5$, 2^+, *12$_5$ keV*, %α=100
13586$_3$, 2^+, *9$_1$ keV*, %P=?, %α=?
13642$_3$, 0^+, *17$_1$ keV*, %P=?, %α=?
13676.0$_{23}$, (2^-), *4.5$_2$ keV*, %IT=?, %P=?, %α=?
13677$_5$, 5^-, *11$_2$ keV*, %α=100
13692$_{10}$, 7^-, *310$_{30}$ keV*, %α=100
13736.0$_{25}$, 1^+, *7.7$_5$ keV*, %IT=?, %P=?, %α=?
13744$_{20}$, 0^+, *≈80 keV*, %α=100
13827$_{10}$, 3^-, *136$_{15}$ keV*, %α=100
13866$_{30}$, 1^-, *≈175 keV*, %P=?, %α=?
13881.0$_{23}$, 2^+, *0.14$_5$ keV*, %IT=?, %P=?, %α=? , $\gamma_{\mathbf{4966.51}}$**8912**$_{23}$(80), $\gamma_{\mathbf{1633.674}}$**12243**$_{23}$(20)
13908$_5$, 2^+, *74$_{10}$ keV*, %α=100
13926.0$_{23}$, (0^+), *3.5$_4$ keV*, %P=?, %α=?
13928$_5$, 6^+, *65$_3$ keV*, %α=100

13948$_{10}$, 0^{+}, 79_{15} keV, %α=100
13965$_{5}$, 4^{+}, 8.1_{10} keV, %α=100
14020, 1^{-}, ≈ 70 keV, %P=?, %α=?
14063.0$_{23}$, 2^{+}, ≈ 140 keV, %P=?, %α=?
14115$_{5}$, 2^{+}, 42_{6} keV, %α=100
14128$_{2}$, 2^{-}, 4.7_{7} keV, %IT=?, %P=?, %α=?
14150.0$_{23}$, 2^{-}, 11.8_{10} keV, %IT=?, %P=?, %α=?
14200, 1^{+}, 14_{1} keV, %IT=?, %P=?
14270$_{10}$, 4^{+}, 92_{9} keV, %α=100
14304$_{10}$, (6^{+}), 60_{13} keV, %α=100
14311$_{5}$, 6^{+}, 117_{8} keV, %α=100
14313$_{15}$, (3^{-}), ≈ 45 keV, %α=100
14370$_{3}$ ≈ 5 keV, %P=?, %α=?
14454$_{5}$, 5^{-}, ≈ 15 keV, %α=100
14455$_{3}$, $(0^{+},2^{+})$, 33_{3} keV, %P=?, %α=?
14475$_{6}$, 0^{+}, 68_{2} keV, %P=?, %α=?
14593$_{10}$, 4^{+}, 260_{25} keV, %α=100
14597$_{7}$, 1^{-}, 116_{5} keV, %P=?, %α=?
14653$_{10}$, (0^{+}), 25 keV, %P=?, %α=?
14699.0$_{33}$, (1^{+}), 36_{10} keV, %P=?, %α=?
14731$_{10}$, (4^{+}), 60_{25} keV, %α=100
14761$_{5}$, 6^{+}, 7.3_{48} keV, %α=100
14776$_{4}$, (1^{-}), 110_{20} keV, %P=?, %α=?
14807$_{5}$, 6^{+}, 86_{7} keV, %α=100
14816$_{5}$, 5^{-}, 117_{13} keV, %α=100
14839$_{10}$, (4^{+}), 79_{15} keV, %α=100
14888$_{10}$, 2^{+}, 100_{30} keV, %P=?, %α=?
15047$_{10}$, 2^{+}, 66_{20} keV, %P=?, %α=?
15073$_{10}$, 5^{-}, 160_{25} keV, %α=100
15142$_{15}$, (2^{+}), ≈ 60 keV, %α=100
15159$_{5}$, 6^{+}, 60_{15} keV, %α=?
15174$_{10}$, 5^{-}, 230_{25} keV, %α=100
15230 28 keV, %P=?, %α=?
15270, (1^{-}), 285 keV, %P=?, %α=?
15330$_{5}$, 4^{+}, 34_{10} keV, %α=100
15346$_{15}$, 6^{+}
15366$_{5}$, 7^{-}, 110_{10} keV, %α=100
15436$_{15}$, (3^{-}), 90_{20} keV, %P=?, %α=?
15500 55 keV, %P=?, %α=?
15700$_{15}$, (8^{-}), %α=100
15874$_{9}$, 8^{+}, 100_{15} keV, %α=100
15970, (6^{+}), %α=100
16010$_{25}$, (2^{+}), 100 keV, %P=?, %α=?
16139$_{15}$ 38 keV, %α=100
16250, %α=100
16329$_{11}$, 4^{+}, 45 keV, %P=?, %α=?
16437$_{11}$, $(0,2,4)^{+}$, 35 keV, %α=100
16505$_{15}$, 6^{+}, 24_{4} keV, %α=100
16559$_{15}$, 5^{-}, 90_{30} keV, %α=100
16581$_{15}$, 7^{-}, 92_{8} keV, %α=100
16628$_{20}$, 3^{-}, 80_{25} keV, %α=100
16630$_{20}$, (7^{-}), %α=100
16667$_{15}$, 4^{+}, 100_{25} keV, %α=100
16717$_{15}$, 5^{-}, ≈ 25 keV, %α=100
16732.9$_{27}$, 0^{+}, 2.0_{5} keV, %IT=?, %P=?, %α=? ,
γ$_{11262.3}$**5469**$_{6}$(100), γ$_{5787.7}$**10941**$_{6}$, γ**15092**$_{5}$
16746$_{25}$, 8^{+}, 160_{50} keV, %α=100
16847$_{15}$, 5^{-}, 16_{8} keV, %α=100
16871$_{20}$, 6^{+}, 350_{50} keV, %α=100
17072$_{20}$, 4^{+}, 180_{30} keV, %α=100
17155$_{15}$, 5^{-}, 26_{5} keV, %α=100
17213$_{15}$, 4^{+}, 225_{30} keV, %α=100
17284$_{15}$, 3^{-}, 86_{25} keV, %α=100
17295$_{15}$, 8^{+}, 200_{25} keV, %α=100
17390$_{15}$ <10 keV, %α=100
17430$_{15}$, 9^{-}, 220_{25} keV, %α=100
17541$_{15}$, 6^{+}, 86_{9} keV, %α=100
17550$_{10}$, (2^{+}), 19 keV, %N=?, %P=?, %α=?
17606$_{15}$, 5^{-}, 140_{20} keV, %α=100
17769$_{20}$, 4^{+}, ≈ 125 keV, %P=?, %α=?
17851$_{15}$, 5^{-}, 200_{30} keV, %α=100
17910$_{20}$, (0^{+}), %N=?, %P=?
18005$_{15}$, 7^{-}, <10 keV, %α=100
18024$_{5}$, 5^{-}, 34_{7} keV, %α=100
18083$_{25}$, 4^{+}, 140_{60} keV, %α=100
18125$_{5}$, 7^{-}, 29_{6} keV, %α=100
18286$_{10}$, 6^{+}, 190_{30} keV, %α=100
18430$_{7}$, 2^{+}, 9.5_{30} keV, %IT=3x10^{-3}, %N=?, %P=?, %α=? ,
γ$_{12221}$**6208**$_{21}$(100)
18430$_{20}$, 7^{-}, 185_{40} keV, %α=100
18494$_{20}$, 5^{-}, 130_{30} keV, %α=100
18538$_{7}$, 8^{+}, 138_{33} keV, %α=?
18621$_{20}$, 8^{+}, 185_{30} keV, %α=100
18745$_{25}$, 6^{+}, 140_{50} keV, %α=?
18768$_{20}$, 7^{-}, 140_{35} keV, %α=100
18960$_{25}$, 8^{+}, 200_{60} keV, %α=100
19051$_{15}$, 5^{-}, ≈ 90 keV, %α=100
19150$_{20}$, 6^{+}, 200_{50} keV, %α=100
19284$_{15}$, 6^{+}, 140_{25} keV, %α=100
19298$_{25}$, 7^{-}, 430_{60} keV, %α=100
19443$_{10}$, 6^{+}, 130_{15} keV, %α=100
19536$_{25}$, 6^{+}, 250_{60} keV, %α=100
19655$_{20}$, 6^{+}, 140_{35} keV, %α=100
19731$_{20}$, 8^{+}, 330_{60} keV, %α=100
19845$_{40}$, 6^{+}, $3.6e2_{12}$ keV, %α=100
19859$_{10}$, 5^{-}, 170_{25} keV, %α=100
19884$_{40}$, 7^{-}, ≈ 120 keV, %α=100
19991$_{30}$, 4^{+}, $1.3e2_{10}$ keV, %α=100
20027$_{15}$, 6^{+}, 80_{35} keV, %α=100
20106$_{25}$, 7^{-}, 190_{35} keV, %α=100
201.5x10$^{2}{}_{15}$, %IT=?, %N=?
20168$_{35}$, 6^{+}, $2.9e2_{10}$ keV, %α=100
20296$_{15}$, 7^{-}, 255_{40} keV, %α=100
20341$_{20}$, 5^{-}, 190_{40} keV, %α=100
20344$_{15}$, 7^{-}, 135_{35} keV, %α=100
20419$_{30}$, 6^{+}, 215_{90} keV, %α=100
20445$_{25}$, 6^{+}, 370_{55} keV, %α=100
20468$_{30}$, 5^{-}, 280_{70} keV, %α=100
20686$_{6}$, 9^{-}, 78_{11} keV, %α=100
20760$_{30}$, 7^{-}, 240_{50} keV, %α=100
20800$_{25}$, 5^{-}, 170_{60} keV, %α=100
20950$_{40}$, 7^{-}, 300_{50} keV, %α=100
21062$_{6}$, 9^{-}, 60_{6} keV, %α=100
21300$_{100}$, 7^{-}, 300 keV, %α=100
21800$_{100}$, 7^{-}, 300 keV, %α=100
22300$_{100}$, 7^{-}, 500 keV, %α=100
22600$_{300}$, %IT=?, %N=?
22800$_{60}$, 9^{-}, 500 keV, %α=100
22870$_{40}$, 9^{-}, 225_{40} keV, %α=100
23400$_{200}$, 8^{+}, 500 keV, %α=100
23700$_{30}$, (9^{-}), ≤ 200 keV, %α=100
24210$_{25}$, 8^{+}, 350 keV, %α=100
24900$_{500}$, %IT=?, %N=?
25100$_{50}$, 8^{+}, ≈ 200 keV, %α=100
25670$_{50}$ ≈ 400 keV, %α=100
27100$_{100}$, (9^{-}), 700 keV, %α=100
27500, 10^{+}, %IT=?, %N=?
28000, 8^{+}, 1600 keV, %α=100
28200$_{300}$ 700 keV, %α=100



SD band
(1961Li17,1972Al05)
$^{20}_{10}$Ne$_{10}$

$^{36}_{18}\mathrm{Ar}_{18}$

S_n: 15253.5 $_8$, S_p: 8506.90$_{25}$

Nuclear Bands

A GS band

B SD band (2001Sv02,2000Sv02,2002RoAA)

Q_0=1.18$_9$, β_2=0.46$_3$

Levels and γ-ray branchings:

A **0**, 0^+, *stable*

A **1970.39**$_5$, 2^+, *320$_{30}$ fs*, Q=+0.11$_6$, γ_0**1970.33**(100) E2

4178.33$_{11}$, 3^-, *2.3$_3$ ps*, $\gamma_{1970.39}$**2207.87**(100.0$_4$) E1+M2 $\delta=-0.05_2$, γ_0**4178.07**(7.0$_4$) E3

B **4329.1**$_{10}$, (0^+), *>490 fs*, $\gamma_{1970.39}$**2358.6**(100), γ_0**4328.8**(< 10)(?)

A **4414.36**$_{17}$, 4^+, *75$_{11}$ fs*, $\gamma_{1970.39}$**2443.88**(100) E2(+M3) $\delta=+0.05_3$, γ_0**4414.07**(< 2)

4440.5$_3$, 2^+, *75$_{14}$ fs*, $\gamma_{1970.39}$**2470.0**(54$_5$) E2(+M1) $\delta>1.5$, γ_0**4440.2**(100$_5$) E2

B **4951.2**$_5$, 2^+, *33$_{17}$ fs*, $\gamma_{4414.36}$**536.8**(< 8), $\gamma_{4329.1}$**622**(< 1)(?), $\gamma_{4178.33}$**772.9**(< 2.4), $\gamma_{1970.39}$**2980.7**(18$_4$), γ_0**4949.8**$_{16}$(100$_4$) E2

4974.05$_{19}$, 2^-, *10$_3$ ps*, $\gamma_{4440.5}$**533.55**(< 0.4), $\gamma_{4414.36}$**559.69**(< 0.5), $\gamma_{4178.33}$**795.71**(100$_3$) M1+E2 $\delta=-1.1_7$, $\gamma_{1970.39}$**3003.52**(5.1$_{11}$), γ_0**4973.68**(22$_3$) M2

5171.14$_{16}$, 5^-, *88$_3$ ps*, $\gamma_{4974.05}$**197.09**(< 4.8), $\gamma_{4440.5}$**730.63**(< 0.36), $\gamma_{4414.36}$**756.77**(14.3$_4$) E1(+M2) $\delta=+0.05_2$, $\gamma_{4178.33}$**992.80**(100.0$_5$) E2(+M3) $\delta=-0.04_2$, $\gamma_{1970.39}$**3200.60**(7.0$_5$) E3(+M4) $\delta\approx 0$, γ_0**5170.74**(< 1.2)

5194.4$_8$, $(0^+\to 3^-)$, *70$_{20}$ fs*, $\gamma_{4440.5}$**753.9**(< 3), $\gamma_{4414.36}$**780.0**(< 3), $\gamma_{1970.39}$**3223.9**(100), γ_0**5194.0**(< 10)

5836.0$_4$, 1^-, *6$_2$ fs*, $\gamma_{5171.14}$**664.9**(< 1), $\gamma_{4974.05}$**861.9**(< 1), $\gamma_{4440.5}$**1395.5**(< 1), $\gamma_{4414.36}$**1421.6**(< 1), $\gamma_{4178.33}$**1657.6**(2.2$_9$), $\gamma_{1970.39}$**3865.4**(7.7$_{22}$), γ_0**5835.5**(100.0$_{22}$) E1

5856.6$_2$, 3^-, *310$_{100}$ fs*, $\gamma_{5171.14}$**685.5**(< 1.2), $\gamma_{4974.05}$**882.5**(< 2.4), $\gamma_{4440.5}$**1416.1**(< 3.6), $\gamma_{4414.36}$**1442.2**(< 3.6), $\gamma_{4178.33}$**1678.2**(17$_3$), $\gamma_{1970.39}$**3886.0**(100$_3$) E1(+M2) $\delta=+0.02_2$, γ_0**5856.1**(3.6$_{12}$) E3

5895.9$_2$, 4^-, *350$_{140}$ fs*, $\gamma_{5171.14}$**724.8**(< 1), $\gamma_{4974.05}$**921.8**(< 1), $\gamma_{4440.5}$**1455.4**(< 2), $\gamma_{4414.36}$**1481.5**(< 2), $\gamma_{4178.33}$**1717.5**(100) M1+E2 $\delta=+0.16_2$, $\gamma_{1970.39}$**3925.3**(< 3), γ_0**5895.4**(< 3)

B **6137.1**$_3$, 4^+, *132$_{21}$ fs*, $\gamma_{4951.2}$**1186.0**$_3$(27.7$_{11}$), $\gamma_{4440.5}$**1696.7**$_4$(8.6$_5$), $\gamma_{1970.39}$**4165.6**$_{10}$(100.0$_{12}$) E2

6217.3$_3$, 5^-, *200$_{35}$ fs*, $\gamma_{5171.14}$**1046.1**(< 2.2), $\gamma_{4974.05}$**1243.2**(< 1.2), $\gamma_{4440.5}$**1776.8**(< 1.2), $\gamma_{4414.36}$**1802.9**(10.4$_{14}$) E1(+M2) $\delta=-0.03_7$, $\gamma_{4178.33}$**2038.9**(100.0$_{14}$) E2(+M3) $\delta=+0.01_2$, $\gamma_{1970.39}$**4246.6**(< 2.2), γ_0**6216.7**(< 2.2)

6356.0$_6$, 4^+, *300$_{100}$ fs*, $\gamma_{4440.5}$**1915.4**(29$_6$), $\gamma_{4414.36}$**1941.6**(76$_4$), $\gamma_{1970.39}$**4385.3**(100$_4$), γ_0**6355.4**(< 14)

6611.2$_4$, 2^+, *15$_6$ fs*, $\gamma_{4440.5}$**2170.6**(9.7$_{15}$), $\gamma_{4414.36}$**2196.8**(< 6), $\gamma_{4178.33}$**2432.8**(100$_3$) E1+M2 $\delta=-0.12_6$, $\gamma_{1970.39}$**4640.5**(2.3$_4$), γ_0**6610.5**(23$_3$) E2

6645.6$_{15}$, $(2\to 4^+)$, $\gamma_{4440.5}$**2205.0**(100)

6730$_2$, 2^+, $\gamma_{4440.5}$**2289**(< 3.6), $\gamma_{1970.39}$**4759**(82$_{18}$), γ_0**6729**(100$_{18}$) E2

6835.2$_2$, 4^-, *550$_{180}$ fs*, $\gamma_{5856.6}$**978.6**(11$_3$), $\gamma_{5171.14}$**1664.0**(95$_5$), $\gamma_{4974.05}$**1861.1**(100$_5$), $\gamma_{4440.5}$**2394.6**(< 5), $\gamma_{4178.33}$**2656.8**(43$_5$), $\gamma_{1970.39}$**4864.5**(< 5), γ_0**6834.5**(< 2.6)

6836.5$_2$, 3^-, *170$_{40}$ fs*, $\gamma_{5171.14}$**1665.3**(53$_9$) E2(+M3) $\delta=+0.07_9$, $\gamma_{4974.05}$**1862.4**(16$_4$), $\gamma_{4951.2}$**1885.2**(6.1$_9$), $\gamma_{4440.5}$**2395.9**(< 3.6), $\gamma_{4414.36}$**2422.1**(< 3.6), $\gamma_{4178.33}$**2658.1**(100$_9$) M1+E2 $\delta=-1.9_5$, $\gamma_{1970.39}$**4865.8**(< 3.6), γ_0**6835.8**(< 1.8)

6866.9$_{10}$, $(1,2)^+$, $\gamma_{1970.39}$**4896.1**(100$_{13}$), γ_0**6866.2**(41$_{13}$)

7136.5$_9$, $(1^-,2^+)$, *9$_3$ fs*, $\gamma_{4974.05}$**2162.4**(< 2.6), $\gamma_{4440.5}$**2695.9**(< 3.8), $\gamma_{4414.36}$**2722.0**(< 2.6), $\gamma_{4178.33}$**2958.0**(< 5), $\gamma_{1970.39}$**5165.7**(27$_3$), γ_0**7135.7**(100$_3$)

7139.7$_3$, 3^+, *70$_{35}$ fs*, $\gamma_{5856.6}$**1283.1**(< 4), $\gamma_{4440.5}$**2699.1**(100$_7$), $\gamma_{4178.33}$**2961.2**(< 6), $\gamma_{1970.39}$**5168.9**(85$_7$), γ_0**7138.9**(< 4)

7178.4$_5$, $(1,2)^+$, $\gamma_{1970.39}$**5207.6**(75$_{11}$), γ_0**7177.6**(100$_{11}$)

7247.4$_6$, $(1,2,3)^-$, *<20 fs*, $\gamma_{4178.33}$**3068.9**(< 5), $\gamma_{1970.39}$**5276.6**(100), γ_0**7246.6**(< 6)

7258.6$_8$, 3^-, *<15 fs*, $\gamma_{1970.39}$**5287.8**(100) E1(+M2) $\delta=-0.14_{14}$

7337.1$_9$, 3^+, *11$_5$ fs*, $\gamma_{4974.05}$**2363.0**(< 6), $\gamma_{4440.5}$**2896.5**(100$_4$) M1(+E2) $\delta=+0.02_7$, $\gamma_{4414.36}$**2922.6**(21$_4$), $\gamma_{4178.33}$**3158.6**(17$_4$), $\gamma_{1970.39}$**5366.3**(54$_4$), γ_0**7336.3**(< 6)

7353.9$_3$, 6^-, *125$_{30}$ fs*, $\gamma_{5856.6}$**1497.3**(< 6), $\gamma_{5171.14}$**2182.7**(100) M1+E2 $\delta=-6.0_9$, $\gamma_{4974.05}$**2379.8**(< 4), $\gamma_{4440.5}$**2913.3**(< 3), $\gamma_{4414.36}$**2939.4**(< 4), $\gamma_{4178.33}$**3175.4**(< 7), $\gamma_{1970.39}$**5383.1**(< 5), γ_0**7353.1**(< 3)

7432.2$_7$, 1^+, *1.5$_3$ fs*, $\gamma_{1970.39}$**5461.4**(56$_{17}$), γ_0**7431.4**(100$_{17}$)

7573.1$_3$, 4^-, *160$_{50}$ fs*, $\gamma_{5895.9}$**1677.2**(8.5$_{22}$), $\gamma_{5171.14}$**2401.9**(100$_9$), $\gamma_{4974.05}$**2598.9**(15.4$_{15}$), $\gamma_{4440.5}$**3132.5**(< 3.8), $\gamma_{4414.36}$**3158.6**(15$_7$), $\gamma_{4178.33}$**3394.6**(43$_9$), $\gamma_{1970.39}$**5602.2**(3.7$_7$), γ_0**7572.2**(< 1.8)

7672.1$_6$, 3^-, $\gamma_{4974.05}$**2697.9**(25$_9$), $\gamma_{1970.39}$**5701.2**(100$_9$)

7709.5$_6$, 1^+, $\gamma_{1970.39}$**5738.6**(100$_8$), γ_0**7708.6**(56$_8$) M1

7749.7$_5$, 2^-, $\gamma_{1970.39}$**5778.8**(100)

B **7767.0**$_4$, 6^+, *76$_{11}$ fs*, $\gamma_{6137.1}$**1629.8**$_3$(100.0$_{17}$), $\gamma_{4414.36}$**3352.5**$_8$(42.9$_{17}$) E2

7879$_2$, $(1,2)^-$, $\gamma_{5836.0}$**2043**(100$_{10}$), $\gamma_{4974.05}$**2905**(67$_{10}$)

7970.5$_7$, $(1,2)^+$, γ_0**7969.5**(100)

8015.9$_{10}$, $(3,4)^-$, $\gamma_{5856.6}$**2159.2**(51$_7$), $\gamma_{5171.14}$**2844.6**(40$_4$), $\gamma_{4974.05}$**3041.7**(100$_9$), $\gamma_{4440.5}$**3575.2**(< 4.4), $\gamma_{4414.36}$**3601.3**(4.4$_{13}$), $\gamma_{4178.33}$**3837.3**(27$_4$), $\gamma_{1970.39}$**6045.0**(< 6), γ_0**8014.9**(< 2.2)

8132.7$_9$, 1^+, *1.6$_4$ fs*, $\gamma_{1970.39}$**6161.7**(59$_8$), γ_0**8131.7**(100$_8$) M1

8230$_{10}$

8288$_4$, $^-$, $\gamma_{5895.9}$**2392**

8303$_3$, 2^-

8332.5$_{15}$, 3^-, $\gamma_{4178.33}$**4153.9**(100)

8352$_3$, $(1^-,2^+,3^-)$

8365$_3$, 2^-

8397$_3$, $(1^-,2^+,3^-)$

8448$_{10}$

8472.0$_{10}$, $(3^-\to 5^-)$, *30$_7$ fs*, $\gamma_{6217.3}$**2254.6**(13$_3$), $\gamma_{5895.9}$**2576.0**(41$_6$), $\gamma_{5856.6}$**2615.3**(66$_6$), $\gamma_{5171.14}$**3300.7**(100$_6$), $\gamma_{4974.05}$**3497.8**(< 6), $\gamma_{4440.5}$**4031.3**(< 6), $\gamma_{4414.36}$**4057.4**(88$_6$), $\gamma_{4178.33}$**4293.4**(6.3$_{19}$)

8506$_4$

8555.5$_6$, 2^+, $\gamma_{1970.39}$**6584.5**(100)

8593$_4$, $^-$, $\gamma_{6217.3}$**2376**

8672$_3$

8739$_4$, $^-$, $\gamma_{5171.14}$**3568**

8806.4$_{18}$, $(1\to 3^-)$

8847$_4$, $(1^-,2^+,3^-)$

8909.0$_{10}$, 2^+

8921$_3$, $\gamma_{5171.14}$**3746**

8938.0$_7$, $(2^+,3)$

9013.9$_3$, $(3^-\to 5^-)$

9024.3$_6$, 2

9065.6$_9$, 3^-

9117.3$_{11}$, 1^-

9132.2$_6$, 3^-

9144.4$_7$, $(2^+,3^-)$

A **9182.7**$_{10}$, (6^+), $\gamma_{5171.14}$**4012**(100$_{20}$), $\gamma_{4414.36}$**4768**(100$_{20}$)

9191.8$_{11}$, $(3^-,4^+)$

9219.5$_7$, 1^+

9240.2$_{11}$, $(1^-\to 3^-)$

9248.1$_{11}$, $(1^-\to 3^-)$

9258.0$_{12}$, 3^-

9300.2$_3$, 4^-

9342.6$_3$, 3^-, *12 eV*

9355.7$_8$, 2^+

9365.6$_8$, 1^-

9373.7$_{13}$, $(1^-,2^+,3^-)$

9380.7$_{10}$, $(2^+,3)$

9393.1$_{10}$, $(2^+\to 4^+)$

9408$_4$, (8^-), $\gamma_{7353.9}$**2054**

9438.9$_{14}$, $(2^+\to 4^+)$

9447.7$_9$, $(2^+,3^-)$

9465.5$_6$, 2^+

9473.7$_8$, $(1,2)$

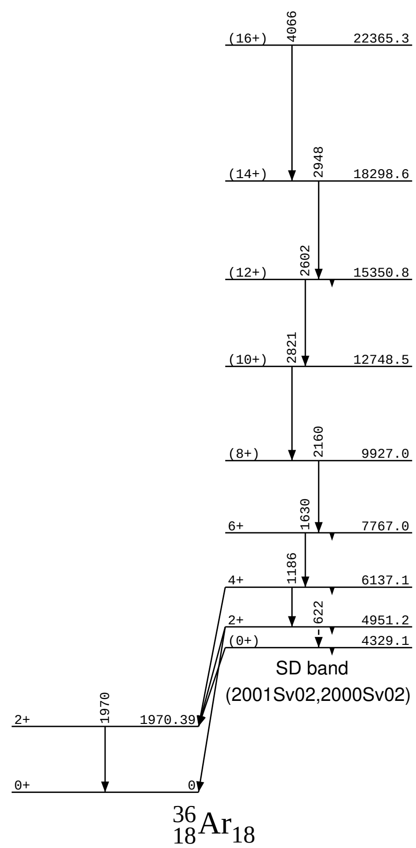
9494.0$_{12}$

9502.4$_5$, $(2,3)^+$

9509.2$_7$, $(2^+,3^-)$

9541.6$_{11}$, $(1,2,3)^-$

9550.0$_{4}$, $(0^+ \to 4^+)$
9574.0$_{3}$, 4^-
9595.1$_{7}$, 2^+
9606.4$_{6}$, $(0,1,2)^-$
9666.7$_{10}$, 3^-
9681.6$_{6}$, $(2^+ \to 6^+)$, $\gamma_{\mathbf{4414.36}}$**5267**
9700$_{30}$, 0^+
9705$_{3}$, $(1^-,2^+)$
9734.0$_{6}$, $(1^- \to 4^+)$
9737.5$_{7}$, 3^-, *400 eV*
9764.2$_{6}$, $(3^- \to 5^-)$
9811.8$_{6}$, $(1 \to 3^-)$
9862.3$_{6}$, 3^+
9878.2$_{6}$, $(2,3)^+$
9888.9$_{6}$
9901.7$_{6}$, 4^+
B **9927.0**$_{5}$, (8^+), *27.4*$_{43}$ *fs*, $\gamma_{\mathbf{7767.0}}$**2160.0**$_{3}$(100)
9927.1$_{6}$, $(3^- \to 5^-)$, $\gamma_{\mathbf{6137.1}}$**3790**, $\gamma_{\mathbf{5856.6}}$**4070**, $\gamma_{\mathbf{4414.36}}$**5513**
9942.2$_{6}$, $(2,3^-)$
9956.5$_{6}$, $(1,2^+)$
9982.2$_{16}$, $(1,3)^-$
9982.9$_{6}$, $1^+,(2^+)$
9991.5$_{16}$, 2^+
9992.5$_{9}$
10002.0$_{10}$, $(1^- \to 3)$
10044.0$_{12}$, 1^-, *900 eV*
10050.2$_{15}$, 3^-, *400 eV*
10076.4$_{6}$, $(1^- \to 3)$
10092$_{3}$
10094.6$_{15}$, 2^+
10099.0$_{7}$, 1^-, *400 eV*
10139.2$_{9}$, $(2^+,3^-)$
10142.7$_{7}$, $(1^-,2)$
10149.3$_{6}$, $(3^-,4)$
10167.1$_{6}$, 3^-
10173.0$_{6}$, $(1^-,2^+)$
10186$_{5}$, 1^-
10193.2$_{10}$, $(3^- \to 6^+)$
10202$_{2}$
10217$_{5}$, 2^+
10219.9$_{6}$, 4
10255.6$_{10}$, $(3^-,4)$
10257.2$_{10}$, $(3^-,4)$
10260$_{2}$
10266.9$_{6}$, 1^-, *400 eV*
10271.4$_{7}$, $(3^- \to 5^-)$
10280.7$_{10}$, 3^-
10301.1$_{9}$, 4^+
10308.3$_{8}$, $(2,3)^-$
10319.1$_{15}$, 2^+
10327$_{3}$, 2^+
10328.6$_{15}$, $(3^- \to 5^-)$
10377$_{2}$
10420.5$_{10}$, 3^-
10434.4$_{14}$
10439$_{2}$, 2^+
10461.9$_{9}$, 2^-, *5.1 keV*
10475$_{2}$
10488$_{2}$, 3^-
10499.9$_{6}$, $(1,2,3)^-$, *2.5 keV*
10523$_{2}$
10539.2$_{12}$, 3^-
10558$_{2}$, 2^+
10561.7$_{9}$, 3^-
10568$_{2}$
10582.5$_{7}$, 5^-
10593$_{2}$, 2^+
10596$_{12}$, 3^-
10613$_{10}$, $(1,2,3)^+$
10615.3$_{7}$, 4^-
10616$_{2}$, $(4^+,5^-,6^+)$
10635.4$_{6}$, 1^-, *4.1 keV*
10646.4$_{10}$
10650.3$_{11}$, 1^-, *1.5 keV*
10663$_{2}$, $(0^+,1^-,2^+)$
10674$_{2}$, $(3^-,4^+)$
10675.5$_{10}$, 5
10683.5$_{10}$, 1^-, *6.2 keV*
10700.0$_{15}$, 2^+, *300 eV*
10701.4$_{12}$, $(0^+,1^-,2^+)$
10738$_{10}$
10759$_{2}$, 4^+
10760$_{2}$, $(2,3)^-$
10764$_{2}$, 4^+
10780$_{2}$, 4^+
10789$_{2}$, 2^+
10808.6$_{12}$
10816$_{3}$
10823.1$_{15}$
10831.9$_{15}$, $(1^-,3^-,4^+)$
10845.3$_{15}$
10851.6$_{15}$, 2^+
10853$_{12}$, 3^-
10853.4$_{15}$, 0^+, *<4 fs*
10968.8$_{15}$, $(1^-,2^+,3^-)$
11035$_{10}$, 3^+
11056$_{3}$, 2^+
11224$_{3}$, $(1,2,3)^+$
11639$_{20}$, 2^+
11902.1$_{9}$, (10^+), *0.43*$_{7}$ *ps*, $\gamma_{\mathbf{9927.0}}$**1974.8**$_{10}$(100)
B **12748.5**$_{7}$, (10^+), *10.1*$_{23}$ *fs*, $\gamma_{\mathbf{9927.0}}$**2821.4**$_{4}$(100)
B **15350.8**$_{8}$, (12^+), *14.1*$_{28}$ *fs*, $\gamma_{\mathbf{12748.5}}$**2602.2**$_{4}$(100.0$_{15}$), $\gamma_{\mathbf{11902.1}}$**3448.4**$_{10}$(22.4$_{15}$)
B **18298.6**$_{9}$, (14^+), *11.0*$_{25}$ *fs*, $\gamma_{\mathbf{15350.8}}$**2947.7**$_{5}$(100)
B **22365.3**$_{15}$, (16^+), *<6.0 fs*, $\gamma_{\mathbf{18298.6}}$**4066.4**$_{12}$(100)



$^{40}_{20}\mathrm{Ca}_{20}$

S_n: 15641.2$_{18}$, S_p: 8328.24$_9$

Nuclear Bands

A 0^+ band
B γ sequence based on 8^+
C 3^+ band
D SD band (2001Id01)
Q_0=1.80$^{39}_{29}$

Levels and γ-ray branchings:

0, 0^+, *stable*
A **3352.62**$_9$, 0^+, *2.16$_6$ ns*, γ_0**3352.47** E0
3736.69$_5$, 3^-, *47$_2$ ps*, μ=+1.63, γ_0**3736.50**(100) E3
A **3904.38**$_3$, 2^+, *34$_2$ fs*, $\gamma_{3352.62}$**551.76**(0.081$_7$) E2, γ_0**3904.17**(100) E2
4491.43$_4$, 5^-, *290$_{10}$ ps*, μ=+2.6$_5$, $\gamma_{3904.38}$**587.05**(< 1), $\gamma_{3736.69}$**754.73**(100) E2(+M3) $\delta=-0.01_2$, γ_0**4491.16**(< 0.5)
D **5211.56**$_{17}$, 0^+, *1.1$_2$ ps*, $\gamma_{3904.38}$**1307.16**(100) E2
5248.79$_5$, 2^+, *110$_{30}$ fs*, $\gamma_{3904.38}$**1344.39**(19.2$_{11}$) M1+E2 $\delta=-13_5$, $\gamma_{3736.69}$**1512.07**(< 0.8), $\gamma_{3352.62}$**1896.12**(6.1$_8$) E2, γ_0**5248.42**(100.0$_{15}$) E2
A **5278.80**$_6$, 4^+, *230$_{35}$ fs*, $\gamma_{4491.43}$**787.36**(< 1.1), $\gamma_{3904.38}$**1374.39**(100) E2(+M3) $\delta=0.00_3$, $\gamma_{3736.69}$**1542.08**(< 0.9)
5613.52$_3$, 4^-, *0.67$_{10}$ ps*, $\gamma_{4491.43}$**1122.07**(43$_3$) M1+E2 $\delta=-0.7_2$, $\gamma_{3736.69}$**1876.78**(100$_3$) M1+E2 $\delta=-0.27_5$
D **5629.41**$_6$, 2^+, *53$_{12}$ fs*, $\gamma_{5278.80}$**350.61**(< 1.2), $\gamma_{5248.79}$**380.62**(< 1.1), $\gamma_{3904.38}$**1724.99**(< 0.9), $\gamma_{3736.69}$**1892.67**(< 1.2), $\gamma_{3352.62}$**2276.72**(13.6$_{10}$) E2, γ_0**5628.98**(100$_1$) E2
5902.63$_7$, 1^-, *18$_3$ fs*, $\gamma_{5248.79}$**653.83**(< 0.5), $\gamma_{3904.38}$**1998.20**(< 0.8), $\gamma_{3736.69}$**2165.88**(< 6), γ_0**5902.16**(100) E1
6025.47$_5$, 2^-, *0.15$_3$ ps*, $\gamma_{5629.41}$**396.06**(< 0.5), $\gamma_{5613.52}$**411.95**(< 0.5), $\gamma_{5248.79}$**776.67**(< 0.5), $\gamma_{3904.38}$**2121.03**(20.9$_{11}$) E1(+M2) $\delta=0.0_1$, $\gamma_{3736.69}$**2288.71**(100.0$_{11}$) M1+E2 $\delta=-2.8_5$, γ_0**6024.98**(< 2.4)
C **6029.71**$_6$, 3^+, *0.38$_7$ ps*, $\gamma_{5629.41}$**400.30**(< 2.5), $\gamma_{5613.52}$**416.19**(< 2.5), $\gamma_{5278.80}$**750.90**(< 1.3), $\gamma_{5248.79}$**780.91**(27$_3$) (M1+)E2 $\delta<-4$, $\gamma_{3904.38}$**2125.27**(100$_3$) (M1+)E2 $\delta<-10$, $\gamma_{3736.69}$**2292.95**(< 7.6)
6285.15$_4$, 3^-, *0.34$_5$ ps*, $\gamma_{5629.41}$**655.73**(< 0.8), $\gamma_{5613.52}$**671.62**(1.4$_3$), $\gamma_{5278.80}$**1006.34**(< 0.6), $\gamma_{5248.79}$**1036.35**(< 0.4), $\gamma_{4491.43}$**1793.68**(100.0$_{15}$) E2+M3 $\delta=+0.03_2$, $\gamma_{3904.38}$**2380.69**(27.3$_8$), $\gamma_{3736.69}$**2548.37**(4.8$_6$), γ_0**6284.62**(4.3$_7$)
6422.4$_{10}$(?), 2^+, *9.1$_{11}$ fs*, γ_0**6421.8**(100) E2
6507.87$_{13}$, 4^+, *125$_{25}$ fs*, $\gamma_{5629.41}$**878.45**(< 2.4), $\gamma_{5613.52}$**894.34**(< 2.4), $\gamma_{5278.80}$**1229.05**(3.6$_{24}$), $\gamma_{5248.79}$**1259.06**(15$_4$), $\gamma_{4491.43}$**2016.39**(< 2.4), $\gamma_{3904.38}$**2603.40**(100$_4$) E2(+M3) $\delta=-0.09_9$, $\gamma_{3736.69}$**2771.08**(< 3.6)
D **6542.80**$_9$, 4^+, *125$_{25}$ fs*, $\gamma_{5629.41}$**913.38**(32$_3$), $\gamma_{5613.52}$**929.27**(< 3.4), $\gamma_{5278.80}$**1263.98**(14$_3$), $\gamma_{5248.79}$**1293.99**(24$_3$), $\gamma_{4491.43}$**2051.31**(< 3.4), $\gamma_{3904.38}$**2638.33**(100$_3$) E2(+M3) $\delta=-0.07_7$, $\gamma_{3736.69}$**2806.00**(< 5)
6582.47$_{10}$, 3^-, *175$_{30}$ fs*, $\gamma_{5629.41}$**953.05**(< 0.8), $\gamma_{5613.52}$**968.94**(26.8$_{23}$), $\gamma_{5278.80}$**1303.65**(< 1.4), $\gamma_{5248.79}$**1333.66**(< 1.2), $\gamma_{4491.43}$**2090.98**(< 1.0), $\gamma_{3904.38}$**2677.99**(23.8$_{15}$), $\gamma_{3736.69}$**2845.67**(100$_2$) M1+E2 $\delta=+3.1_{19}$, γ_0**6581.89**(< 3)
6750.41$_7$, 2^-, *100$_{25}$ fs*, $\gamma_{5629.41}$**1120.98**(< 7), $\gamma_{5613.52}$**1136.87**(< 2), $\gamma_{5248.79}$**1501.59**(< 8), $\gamma_{3904.38}$**2845.92**(< 10), $\gamma_{3736.69}$**3013.60**(100) M1+E2 $\delta=-0.84_{16}$, γ_0**6749.79**(< 8)
6908.70$_8$, 2^+, *2.4$_3$ fs*, $\gamma_{5629.41}$**1279.27**(< 0.6), $\gamma_{5278.80}$**1629.86**(< 0.9), $\gamma_{5248.79}$**1659.87**(< 0.4), $\gamma_{3904.38}$**3004.20**(< 0.7), $\gamma_{3736.69}$**3171.87**(< 0.9), γ_0**6908.06**(100) E2
6931.29$_6$, $(3^-,4^+)$, *1.4$_6$ ps*, $\gamma_{5629.41}$**1301.86**(7.0$_4$), $\gamma_{5613.52}$**1317.75**(2.4$_4$), $\gamma_{5278.80}$**1652.45**(< 0.36), $\gamma_{5248.79}$**1682.46**(7.4$_4$), $\gamma_{4491.43}$**2439.78**(1.7$_4$), $\gamma_{3904.38}$**3026.79**(2.4$_6$), $\gamma_{3736.69}$**3194.46**(100.0$_9$), γ_0**6930.64**(< 3.6)
A **6932**$_1$, (6^+), *0.21$_{10}$ ps*, $\gamma_{5278.80}$**1653**(100), $\gamma_{3736.69}$**3195**(< 6)(?)
6938.0$_{18}$(?) *0.42$_{17}$ ps*, $\gamma_{3736.69}$**3201.2**(100)
6950.48$_7$, 1^-, *0.95$_4$ fs*, $\gamma_{5629.41}$**1321.05**(< 2), $\gamma_{5248.79}$**1701.65**(< 2), $\gamma_{3904.38}$**3045.97**(< 4), $\gamma_{3736.69}$**3213.65**(< 5), γ_0**6949.83**(100) E1
7113.1$_{10}$, 1^-, *55$_{30}$ fs*, $\gamma_{5629.41}$**1483.7**(4.6), $\gamma_{5248.79}$**1864.3**(22), $\gamma_{3904.38}$**3208.6**(28), γ_0**7112.4**(100) E1
7113.73$_5$, 4^-, *75$_{30}$ fs*, $\gamma_{6025.47}$**1088.24**(1.7$_5$), $\gamma_{5613.52}$**1500.18**(9.5$_6$), $\gamma_{5278.80}$**1834.88**(2.6$_5$), $\gamma_{4491.43}$**2622.21**(39.8$_8$), $\gamma_{3736.69}$**3376.89**(100.0$_{11}$)
7239.07$_8$, $(3^-\to5^-)$, *95$_{50}$ fs*, $\gamma_{5613.52}$**1625.51**(50), $\gamma_{4491.43}$**2747.54**(100), $\gamma_{3736.69}$**3502.21**(100)
7277.82$_8$, $(2,3)^+$, *50$_{35}$ fs*, $\gamma_{5629.41}$**1648.37**(< 5), $\gamma_{5613.52}$**1664.26**(< 4), $\gamma_{5278.80}$**1998.97**(< 10), $\gamma_{5248.79}$**2028.97**(< 6), $\gamma_{3736.69}$**3540.96**(100), γ_0**7277.10**(< 3)
7300.67$_{11}$, 0^+, *120$_{35}$ fs*, $\gamma_{5629.41}$**1671.22**(5.3$_{16}$) E2, $\gamma_{5248.79}$**2051.82**(100.0$_{16}$) E2, $\gamma_{3904.38}$**3396.13**(< 5), $\gamma_{3736.69}$**3563.81**(< 2)
C **7399**$_1$, (5^+), *0.47$_{14}$ ps*, $\gamma_{6029.71}$**1369**, $\gamma_{5278.80}$**2120**(100)
7421.9$_{15}$ *0.20$_{14}$ ps*, $\gamma_{3736.69}$**3685.0**(100)
7446.23$_6$, $(3,4)^+$, *0.14$_5$ ps*, $\gamma_{5629.41}$**1816.78**(30.0$_{16}$), $\gamma_{5613.52}$**1832.66**(48.5$_{19}$), $\gamma_{5278.80}$**2167.37**(56$_3$), $\gamma_{5248.79}$**2197.37**(100$_3$), $\gamma_{4491.43}$**2954.68**(< 3.3), $\gamma_{3904.38}$**3541.68**(< 4.7), $\gamma_{3736.69}$**3709.35**(< 2.1)
7466.35$_7$, 2^+, *8$_4$ fs*, $\gamma_{5629.41}$**1836.89**(< 1.1), $\gamma_{5278.80}$**2187.49**(< 1.1), $\gamma_{5248.79}$**2217.49**(24$_4$), $\gamma_{3904.38}$**3561.80**(36.2$_{25}$), $\gamma_{3736.69}$**3729.47**(< 3.1), $\gamma_{3352.62}$**4113.50**(21.1$_{18}$) E2, γ_0**7465.60**(100$_4$) E2
7532.26$_5$, 2^-, *165$_{30}$ fs*, $\gamma_{6285.15}$**1247.09**(23.1$_{21}$), $\gamma_{6025.47}$**1506.76**(11.3$_9$), $\gamma_{5902.63}$**1629.59**(8.0$_{24}$), $\gamma_{5629.41}$**1902.80**(< 1.4), $\gamma_{5613.52}$**1918.69**(57$_3$), $\gamma_{5248.79}$**2283.40**(< 7.1), $\gamma_{3904.38}$**3627.70**(36$_3$), $\gamma_{3736.69}$**3795.38**(100$_4$), γ_0**7531.49**(< 4.7)
7561.17$_7$, 3^+, *0.14$_4$ ps*, $\gamma_{6029.71}$**1531.43**(49$_5$), $\gamma_{5629.41}$**1931.71**(< 1.3), $\gamma_{5613.52}$**1947.60**(< 1.5), $\gamma_{5278.80}$**2282.30**(< 1.5), $\gamma_{5248.79}$**2312.31**(100$_7$), $\gamma_{3904.38}$**3656.61**(< 6.6), $\gamma_{3736.69}$**3824.28**(15$_3$)
7623.11$_8$, $(2^-\to4^+)$, *0.11$_3$ ps*, $\gamma_{5629.41}$**1993.65**(100$_3$), $\gamma_{5613.52}$**2009.54**(90$_3$), $\gamma_{5278.80}$**2344.24**(< 2.5), $\gamma_{5248.79}$**2374.24**(31.5$_{19}$), $\gamma_{4491.43}$**3131.55**(< 1.9), $\gamma_{3904.38}$**3718.54**(< 2.8), $\gamma_{3736.69}$**3886.22**(57.4$_{19}$), γ_0**7622.33**(< 1.4)
7658.23$_5$, 4^-, *< 10 fs*, $\gamma_{6285.15}$**1373.05**(33$_5$), $\gamma_{5613.52}$**2044.65**(100$_8$), $\gamma_{5278.80}$**2379.35**(< 5), $\gamma_{4491.43}$**3166.66**(56$_8$), $\gamma_{3736.69}$**3921.33**(67$_8$)
7677$_1$, (6^+), *0.21$_5$ ps*, $\gamma_{5278.80}$**2397.7**(100)
7694.08$_4$, 3^-, *< 10 fs*, $\gamma_{5629.41}$**2064.61**(< 1.3), $\gamma_{5613.52}$**2080.50**(10.1$_{13}$), $\gamma_{5278.80}$**2415.20**(< 1.7), $\gamma_{5248.79}$**2445.21**(< 1.7), $\gamma_{4491.43}$**3202.51**(< 2.2), $\gamma_{3904.38}$**3789.51**(< 2.2), $\gamma_{3736.69}$**3957.18**(100.0$_{13}$), γ_0**7693.28**(< 3.3)
7701.8$_4$, 0^+, $\gamma_{3904.38}$**3797.2**(100) E2
7769.4$_{10}$, $(3\to5^-)$, *165$_{35}$ fs*, $\gamma_{5613.52}$**2155.8**(52$_9$), $\gamma_{3736.69}$**4032.5**(100$_9$)
7814.7$_6$, 0^+, $\gamma_{5248.79}$**2565.8**(43), $\gamma_{3904.38}$**3910.1**(100)
7872.18$_9$, 2^+, *2.0$_2$ fs*, γ_0**7871.34**(100$_7$) E2
7928.42$_{10}$, 4^+, *50$_{35}$ fs*, $\gamma_{5629.41}$**2298.94**(< 8), $\gamma_{5613.52}$**2314.83**(100$_{18}$), $\gamma_{5278.80}$**2649.53**(< 6), $\gamma_{5248.79}$**2679.53**(< 12), $\gamma_{4491.43}$**3436.83**(100$_{18}$), $\gamma_{3904.38}$**4023.82**(< 10), $\gamma_{3736.69}$**4191.49**(< 14)
D **7975**$_1$, (6^+), $\gamma_{6542.80}$**1432**, $\gamma_{5278.80}$**2696**
7976.5$_5$, 2^+, *< 40 fs*, $\gamma_{5278.80}$**2697.6**(20), $\gamma_{3904.38}$**4071.9**(100), $\gamma_{3352.62}$**4623.6**(60) E2, γ_0**7975.6**(20) E2
8018.8$_{10}$, 0^+, $\gamma_{5248.79}$**2769.9**(100)
8051.8$_6$
8091.61$_{17}$, 2^+, *3.1$_2$ fs*, γ_0**8090.73**(100) E2
B **8102**$_1$, (8^+), *12.5$_{17}$ ps*, γ_{6932}**1170**(100)
8113.2$_5$, 1, *38$_{17}$ fs*, γ_0**8112.3**(100)
8134.77$_{10}$, $(2\to4^+)$, *< 30 fs*, $\gamma_{5629.41}$**2505.28**(82$_9$), $\gamma_{5613.52}$**2521.16**(24$_9$)(?), $\gamma_{4491.43}$**3643.16**(< 15), $\gamma_{3904.38}$**4230.15**(100$_{29}$)
8187.5$_8$, $(3\to5^-)$, *< 17 fs*, $\gamma_{3736.69}$**4450.5**(100)
8195.9$_6$
8271$_1$, $(0\to3)^-$, $\gamma_{6950.48}$**1320**(100), $\gamma_{6025.47}$**2245**(67)
8276$_1$, 0^+, $\gamma_{5629.41}$**2646**(100)

8323.16$_{8}$, $(1^-,2^+)$, *55_{20} fs*, $\gamma_{6750.41}$**1572.72**(12.5_{10}), $\gamma_{6285.15}$**2037.95**(2.2_{5}), $\gamma_{6025.47}$**2297.62**(26.4_{17}), $\gamma_{5902.63}$**2420.45**(1.9_{12}), $\gamma_{5629.41}$**2693.65**(<0.7), $\gamma_{5613.52}$**2709.54**(<0.5), $\gamma_{5278.80}$**3044.24**(<0.5), $\gamma_{5248.79}$**3074.24**(4.6_{9}), $\gamma_{4491.43}$**3831.53**(<0.8), $\gamma_{3904.38}$**4418.52**(<2.2), $\gamma_{3736.69}$**4586.19**(100_{3}), γ_{0}**8322.22**(3.4_{12})

8338.0$_{3}$, $(2^+\to5^-)$, $\gamma_{6542.80}$**1795.2**(100_{10}), $\gamma_{6507.87}$**1830.1**(42_{10})

8358.9$_{6}$, $(0,1,2)^-$, *100_{25} fs*, $\gamma_{6950.48}$**1408.4**(100)

8373.94$_{15}$, 4^+, $\gamma_{3904.38}$**4469.29**(100_{29})

8424.81$_{11}$, 2^-, *<17 fs*, $\gamma_{6025.47}$**2399.26**(19_{4}), $\gamma_{5902.63}$**2522.09**(24_{4}), $\gamma_{5613.52}$**2811.18**(<4.3), $\gamma_{5248.79}$**3175.88**(<5.7), $\gamma_{3904.38}$**4520.15**(<5.7), $\gamma_{3736.69}$**4687.82**(100_{6}), γ_{0}**8423.85**(<2.1)

8439.0$_{5}$, 0^+, $\gamma_{5629.41}$**2809.5**(100)

8484.02$_{13}$, 0^+, *25_{14} fs*, $\gamma_{3736.69}$**4747.03**(100) E3

8540$_{4}$ *<30 fs*, $\gamma_{3352.62}$**5187**(67), γ_{0}**8539**(100)

8551.1$_{7}$, 5^-, *<17 fs*, $\gamma_{4491.43}$**4059.4**(100)

8578.80$_{9}$, 2^+, *4.9_{6} fs*, $\gamma_{5629.41}$**2949.27**(<4), $\gamma_{5278.80}$**3299.85**(<5), $\gamma_{5248.79}$**3329.86**(<5), $\gamma_{3904.38}$**4674.13**(<4), $\gamma_{3736.69}$**4841.79**(<6), γ_{0}**8577.81**(100) E2

8587$_{6}$, $\gamma_{6025.47}$**2561**(25), $\gamma_{5278.80}$**3308**(25), $\gamma_{3904.38}$**4682**(17), $\gamma_{3736.69}$**4850**(100)

8631$_{5}$

8665.3$_{8}$, 1^-, γ_{0}**8664.3**(100)

8678.29$_{10}$, 4^+, *40_{35} fs*, $\gamma_{6285.15}$**2393.06**(20_{8}), $\gamma_{3736.69}$**4941.27**(100_{23})

8710$_{8}$

8748.22$_{9}$, 2^+, *7_{2} fs*, γ_{0}**8747.19**(100) E2

8764.18$_{6}$, 3^-, $\gamma_{6029.71}$**2734.37**(47_{18}), $\gamma_{5629.41}$**3134.64**(56_{21}), $\gamma_{5278.80}$**3485.22**(100_{29}), $\gamma_{3904.38}$**4859.48**(65_{18})

8810$_{7}$

8850.6$_{9}$, $(6,7,8)^-$

8909.0$_{9}$

8934.81$_{7}$, 2^+

C **8937**$_{1}$, (7^+), γ_{7399}**1538**, γ_{6932}**2004**

8938.4$_{9}$, 0^+

8980$_{5}$, $(5,6,7)^+$

8980.6$_{12}$, 2^+, *9_{2} fs*, γ_{0}**8979.5**(100) E2

8994.50$_{11}$, $(1^-,2^+)$, γ_{0}**8993.41**(100)

9031.9$_{3}$, 4^-, $\gamma_{7694.08}$**1337.8**(25_{8}), $\gamma_{6285.15}$**2746.6**(25_{8}), $\gamma_{5613.52}$**3418.2**(100_{13}), $\gamma_{5278.80}$**3752.9**(30_{12}), $\gamma_{4491.43}$**4540.2**(70_{13})

9050.1$_{10}$

9080.3$_{11}$

9091.70$_{6}$, 3^-

9135.66$_{5}$, $(2,3)^-$

9162.1$_{11}$

9171$_{10}$

9185.3$_{12}$

9197$_{10}$

9209.77$_{5}$, $(2,3)^-$

9226.69$_{5}$, $(1^-\to3^-)$

9227.43$_{7}$, $(1,2^+)$

9237$_{3}$, $(6,7,8)^-$

9246.0$_{12}$

9274.5$_{12}$

9304$_{5}$, 0^+

A **9306**$_{1}$, (8^+), γ_{7677}**1629**, γ_{6932}**2374**

9362.54$_{6}$, 3^-

9377.8$_{2}$

9388.20$_{19}$, 2^+

9395.7$_{3}$, $(3^-,4^+)$

9404.85$_{19}$, 2^-, *0.14 keV*

9406.4$_{6}$, 0^+

9412.4$_{2}$

9418.8$_{2}$, 3^-

9429.11$_{5}$, $(3,4)^-$

9432.46$_{18}$, 1^-, *0.23 keV*

9453.95$_{5}$, 3^-, *0.09 keV*

9500.0$_{15}$

9536.35$_{16}$, $(3,4)^+$

9537.9$_{5}$, 1^-, *0.4 keV*

9564$_{5}$, 2^+

9603.0$_{4}$, 3^-

9604.6$_{4}$, 1^-, *0.19_{5} keV*

9640.89$_{7}$, 2^-

9655.6$_{9}$, $(1,2^+)$

9662.3$_{2}$, $(0\to3)^-$

9668.71$_{8}$, 3^-

9779.47$_{7}$, 3

9785.3$_{2}$, $(1,2^+)$

9802.2$_{7}$, $(1,2,3)^-$

9811.1$_{2}$, $(3\to5^-)$

9829.54$_{16}$, $(1^-\to4^+)$

9835.08$_{19}$, $(2^+\to5^-)$

9854.54$_{17}$, $(1,2,3)^-$

D **9855**$_{1}$, (8^+), γ_{7975}**1880**, γ_{7677}**2178**, γ_{6932}**2923**

9859.7$_{3}$, $(4,5,6)^-$

9865.15$_{11}$, 1, *0.10_{2} keV*

9869.3$_{4}$, $(1,2^+)$, *0.9_{2} keV*

9898.6$_{3}$

9921.4$_{2}$, $(3\to5^-)$

9939.8$_{2}$

9954.00$_{9}$, 4^+

9977.20$_{17}$, $(3,4,5)$

9993.7$_{15}$

10040.54$_{9}$, $(2,3)^-$

10045.7$_{5}$, $(3^-\to7^-)$

10049.38$_{7}$, 4^-

10058.0$_{3}$

10065$_{2}$, $(1^-,2^+)$

10080.7$_{2}$

10130.70$_{19}$, $(3^-,4^+)$

10154$_{7}$, $(3^-,4^+,5^-)$

10193$_{7}$, $(3^-,4^+,5^-)$

10199.2$_{4}$, 1^-, *0.27 keV*

10205.1$_{8}$

10210.6$_{2}$, $(3,4)^-$

10232.8$_{7}$

10262.53$_{10}$, 3^-, *0.4 keV*

10267.7$_{5}$

10274.8$_{3}$, $(3,4,5)^+$

10277.9$_{2}$, 1^-, *1.1 keV*

10285.0$_{3}$

10318.8$_{4}$, 1^+, *91_{15} eV*

10332.6$_{15}$, 3^-

10358.6$_{15}$

10361.5$_{15}$, 3^-, *3.9 keV*

10375.5$_{15}$

10383.90$_{16}$, $(1^-,2^+)$

10415.06$_{6}$, 3

10420.7$_{10}$, $(0^+,1^-,2^+)$

10430.58$_{19}$

10441.4$_{6}$

10443.9$_{2}$, 3^-, *0.44 keV*

10470.0$_{15}$, $(3,5)^-$

10478.7$_{15}$

10503.1$_{15}$, $(3,4,5)^-$

10514.8$_{15}$, $(3^-,4^+,5^-)$

10527.8$_{15}$, $(1^-\to4^+)$

10540.0$_{15}$, 2^+

10552.2$_{15}$

10583$_{5}$, $(3,4,5)$

10597$_{2}$, 3^-

10623$_{3}$, 1^-, *5.0 keV*

10632.7$_{2}$

10639.07$_{7}$, $(3^-\to5^-)$

10646.4$_{4}$

10653.23$_{16}$, $(1^-\to4^+)$

10658$_{3}$, 2^+, *0.35 keV*

10670.4$_{3}$, 1^-, *5.7 keV*

10673.69$_{17}$, $(1^-\to4^+)$

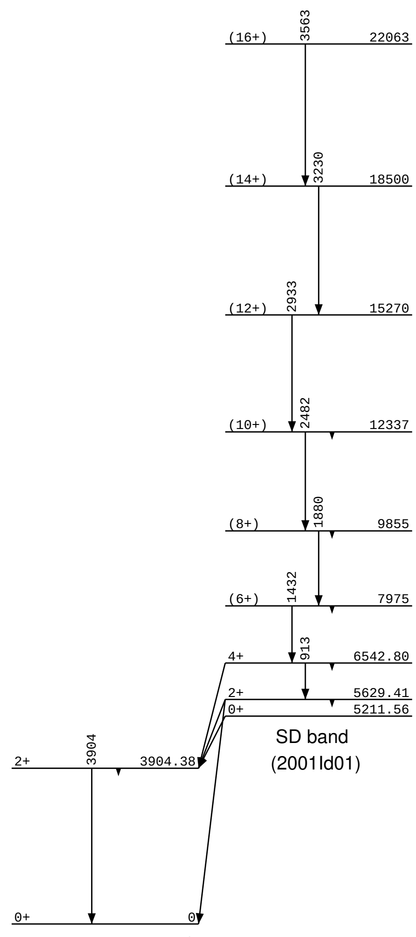
10676$_{3}$, 1^-, *0.33 keV*

10691.0$_{3}$, 2^+, *0.14 keV*

10699.50$_{10}$, 3

10720.8$_{3}$, $(3,5)^-$

10737.7$_3$, 1^-, *0.5 keV*
10747.8$_4$, 4^+
10753.85$_{18}$, $(3,4,5)$
10770.2$_3$, $(1,2^+)$
10776.3$_3$, 3^-, *12 keV*
10780.9$_3$, 2^+, *0.18 keV*
10787.7$_3$
10800.0$_{10}$, $(1^-,2^+)$
10813.7$_5$, $(3^-,4^+,5^-)$
10830.6
10848.5$_4$, $(3,5)^-$
10862$_3$, 2^+, *0.045 keV*
10868.8$_4$
10910.0$_4$, $(3,4,5)$, *2.3 keV*
10921.1$_4$, $(2^+ \rightarrow 4^+)$
10934$_3$, 1^-, *5 keV*
10947$_3$, 2^+, *0.23 keV*
10951.5$_4$, 1^-, *10 keV*
10956.0$_4$, $(3^-,4^+,5^-)$
10976.3$_{15}$, $(3,4,5)$
10988.0$_4$, $(3^-,4^+,5^-)$
10994.7$_4$, (1^-), *6.7 keV*
11002.4$_5$, $(1,3)^-$
B **11004**$_1$, (10^+), γ_{9306}**1698**, γ_{8102}**2902**
11011.0$_4$, 3^-, *0.3 keV*
11023.8$_5$, 1^-, *0.27 keV*
11038$_7$, $(3,4,5)$
11042.0$_5$, 2^+, *0.50 keV*
11070.6$_4$, $(1^- \rightarrow 4^+)$
11078$_3$
11087$_3$, $(3^-,4^+)$
11108$_3$, 0^-, *5.2 keV*
11117.1$_5$
11127.2$_5$, (4^+)
11143$_6$, $(3,4,5)^-$
11158$_3$
11165.3$_4$, (4^+)
11205$_5$, $(3,5)^-$
11217$_3$, 3^-, *25 keV*
11227$_3$, $(1,2,3)^-$
11236$_3$, 1^-, *12 keV*
11249$_3$, (3^-)
11266$_3$, 2^+
11311$_4$, $(3^-,4^+,5^-)$
11324$_3$, $(1^-,2^+)$
11333$_3$
11350$_3$
11369$_3$, 2^+
11384$_3$, 2^+
11405$_4$
11417$_3$, 4^+
11429$_4$
11435$_4$, 2^+
11440$_3$, 2^+
11448$_3$
11456$_4$
11459$_2$, 2^+
11468$_3$, $(3^-,4^+,5^-)$
11549$_5$, $(3,5)^-$
11617$_{10}$, $(3,4,5)$
11663$_6$, $(3^-,4^+,5^-)$
A **11687**$_1$, (10^+), γ_{9306}**2381**, γ_{8102}**3585**
C **11710**$_1$, (9^+), γ_{8937}**2773**
11726$_5$, $(3,5)^-$
11792$_{10}$, $(3,4,5)$
11841$_6$, $(3^-,4^+,5^-)$
11988$_2$, 0^+, *81$_{10}$ eV*, $\gamma_{10318.8}$**1669**(75_9) M1, $\gamma_{9865.15}$**2123**(100_9) D
12000$_5$, $(3,5)^-$
12035$_{10}$, $(3,4,5)^-$
12066$_6$, $(3,5)^-$
D **12337**$_1$, (10^+), γ_{9855}**2482**, γ_{9306}**3031**
12593$_1$, (10^+), γ_{9306}**3287**, γ_{8102}**4491**
B **13116**$_1$, (12^+), γ_{11687}**1429**, γ_{11004}**2112**
C **13537**$_2$, (11^+), γ_{11710}**1827**
13921$_{15}$, (4^-)
A **14233**$_2$, (12^+), γ_{11687}**2546**, γ_{11004}**3229**
14283$_{15}$, 6^-
B **15154**$_2$, (13^+), γ_{13537}**1617**, γ_{13116}**2037**
D **15270**$_2$, (12^+), γ_{12337}**2933**
15749$_2$, (12^+), γ_{12593}**3156**
A **16530**$_2$, (14^+), γ_{14233}**2297**, γ_{13116}**3414**
C **16581**$_2$, (13^+), γ_{13537}**3044**
17699$_2$, (14^+), γ_{14233}**3466**
18055$_2$, (14^+), γ_{14233}**3822**
D **18500**$_2$, (14^+), γ_{15270}**3230**
18724$_2$, (14^+), γ_{15270}**3454**
B **19197**$_2$, (15^+), γ_{15154}**4043**
A **20580**$_2$, (16^+), γ_{16530}**4050**
D **22063**$_2$, (16^+), γ_{18500}**3563**



$^{40}_{20}Ca_{20}$

$^{57}_{27}Co_{30}$

S_n: 11376.0 $_{20}$, S_p: 6027.6 $_4$

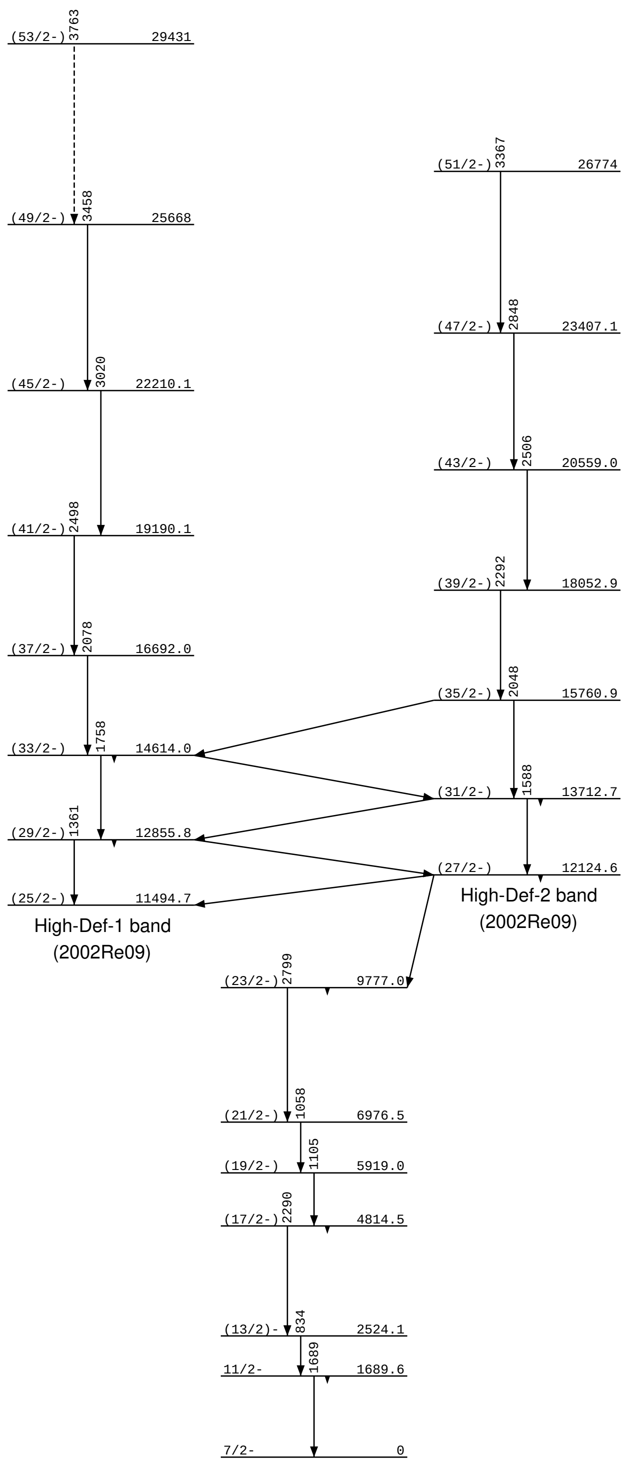
Nuclear Bands

A Band based on ($17/2^-$)
B Highly-deformed-1 band (?), α=+1/2 (2002Re09)
$Q_0=1.9^6_4$
C Highly-deformed-2 band (?), α=-1/2 (2002Re09)
$Q_0=1.9^7_5$

Levels and γ-ray branchings:

0, $7/2^-$, *271.74$_6$ d*, μ=+4.720$_{10}$, Q=+0.52$_9$
1223.98$_4$, $9/2^-$, *54$_5$ fs*, γ_0 **1224.00**$_4$(100) M1+E2 $\delta=+0.26_1$
1377.663$_{21}$, $3/2^-$, *19$_4$ ps*, μ=+3.0$_6$, Q=+0.22$_3$, γ_0 **1377.63**$_3$(100) (E2)
1504.826$_{21}$, $1/2^-$, *0.21$_2$ ns*, $\gamma_{1377.663}$ **127.164**$_3$(100) M1+E2 $\delta=+0.008_{14}$
1689.6$_5$, $11/2^-$, *0.24$_2$ ps*, $\gamma_{1223.98}$ **465.7**(100$_4$) (M1+E2) $\delta=+0.08_1$, γ_0 **1689.4**(85$_4$) E2
1757.606$_{19}$, $3/2^-$, *0.27$_2$ ps*, $\gamma_{1504.826}$ **252.5**(0.5), $\gamma_{1377.663}$ **379.94**$_2$(1), γ_0 **1757.55**$_3$(100$_2$) E2
1897.40$_3$, $7/2^-$, *110$_{10}$ fs*, $\gamma_{1223.98}$ **673.44**$_4$(100$_2$) (M1+E2) $\delta=+0.02_1$, γ_0 **1897.42**$_4$(87$_8$) (M1(+E2)) $\delta=-0.04_{22}$
1919.50$_3$, $5/2^-$, *22$_3$ fs*, $\gamma_{1757.606}$ **161.86**$_3$(0.20$_1$) (M1), $\gamma_{1377.663}$ **541.9**$_1$(0.03), $\gamma_{1223.98}$ **696.0**$_4$(0.01$_1$), γ_0 **1919.52**$_5$(100$_3$) M1+E2 $\delta=-0.23_3$
2133$_5$, $3/2^+,5/2^+$
2133.06$_5$, $5/2^-$, *0.34$_6$ ps*, $\gamma_{1504.826}$ **628.9**(4$_1$) E2, $\gamma_{1377.663}$ **755.3**$_1$(17$_2$) M1+E2 $\delta=-0.35^{18}_9$, γ_0 **2133.04**$_5$(100$_2$) (M1(+E2)) $\delta=0.00_5$
2311.4$_5$, $7/2^-$, *0.21$_4$ ps*, $\gamma_{1377.663}$ **933.8**(14$_3$) E2, $\gamma_{1223.98}$ **1087.6**(100$_3$) M1+E2 $\delta=+0.13_2$, γ_0 **2311.3**(29$_4$) (M1(+E2)) $\delta=-0.4_6$
2479.0$_{10}$
2486.1$_6$, $9/2^-$, *59$_8$ fs*, $\gamma_{1897.40}$ **588.9**(17$_5$) (M1), $\gamma_{1689.6}$ **796.4**(18$_6$) (M1,E2), $\gamma_{1223.98}$ **1262.1**(18$_6$) (M1,E2), γ_0 **2485.8**(100$_9$) (M1,E2)
2514.0$_{10}$
2524.1$_6$, $(13/2)^-$, *0.26$_5$ ps*, $\gamma_{1689.6}$ **834.2**(100) M1+E2 $\delta=-0.15_7$
2559.8$_6$, $(7/2^-,9/2,11/2^-)$, *0.45$_8$ ps*, $\gamma_{1689.6}$ **870.2**(38$_{12}$), $\gamma_{1223.98}$ **1335.9**(100$_{17}$), γ_0 **2559.6**(100$_{17}$)
2611.2$_{10}$, $7/2^-$, *85$_9$ fs*, $\gamma_{1919.50}$ **691.6**(?), γ_0 **2611.1**(100)
2614.5$_{10}$
2723.0$_{10}$, $\gamma_{1223.98}$ **1499.0**(100)
2730.98$_4$, $3/2^-,5/2$, *91$_{12}$ fs*, γ_0 **2730.91**$_4$(100)
2743.5$_{12}$, $(9/2,11/2,13/2)$, *47$_{21}$ fs*, $\gamma_{1689.6}$ **1053.9**(100) (D)
2804.293$_{22}$, $(3/2^-,5/2)$, *37$_7$ fs*, $\gamma_{1897.40}$ **906.98**$_5$(46$_2$) D, $\gamma_{1757.606}$ **1046.68**$_3$(100$_3$) D, γ_0 **2804.20**$_3$(73$_3$)
2879.2$_6$, $3/2^-$, *111$_{21}$ fs*, $\gamma_{1919.50}$ **959.8**(100$_{18}$), $\gamma_{1757.606}$ **1121.4**(50$_{15}$), γ_0 **2879.1**(100$_{18}$) E2
2980.9$_7$, $1/2^+$, $\gamma_{2133.06}$ **847.8**(?), $\gamma_{1757.606}$ **1223.3**, $\gamma_{1377.663}$ **1603.2**
2982.05
3108.16$_4$, $(3/2)^-$, *54$_{12}$ fs*, $\gamma_{2804.293}$ **304.1**$_1$(4$_1$), $\gamma_{1757.606}$ **1350.52**$_6$(4$_2$), $\gamma_{1504.826}$ **1603.28**$_6$(8$_1$), $\gamma_{1377.663}$ **1730.44**$_6$(100.0$_5$), γ_0 **3108.3**
3121.4$_9$, $\gamma_{2311.4}$ **810.1**(?), $\gamma_{1223.98}$ **1897.4**(?)
3164.9$_{11}$, $\gamma_{1897.40}$ **1266**(?), γ_0 **3165**(?)
3177.39$_4$, $5/2^-,7/2^-$, *152$_{35}$ fs*, $\gamma_{1897.40}$ **1279.99**$_6$(87$_7$), γ_0 **3177.28**$_5$(100$_5$)
3184.2$_{10}$, $3/2^+,5/2^+$, $\gamma_{1377.663}$ **1806.4**(?), γ_0 **3184.1**
3246.3$_{10}$, $\gamma_{1223.98}$ **2022.3**(?)
3262.7$_7$, $(3/2^-,5/2,7/2^-)$, $\gamma_{1757.606}$ **1505.2**(100$_{10}$), γ_0 **3262.4**(92$_{10}$)
3272.2$_{11}$, $5/2^-,7/2^-$
3296
3343$_{10}$
3356.7$_7$, $3/2^-$, $\gamma_{1377.663}$ **1979.0**, γ_0 **3356.6**
3365$_5$, $1/2^-,3/2^-$
3393.7$_{10}$
3431$_2$
3460.6$_6$, $(3/2^-,5/2,7/2^-)$, $\gamma_{1919.50}$ **1541**, $\gamma_{1377.663}$ **2083**, γ_0 **3460.5**
3468.6$_7$, $3/2^-$, $\gamma_{1919.50}$ **1549**, $\gamma_{1377.663}$ **2091**
3522.1$_{12}$, $\gamma_{2486.1}$ **1036**
3540.4$_{10}$, $\gamma_{2980.9}$ **560**(?)
3553.9$_7$, $3/2^+,5/2^+$, $\gamma_{1757.606}$ **1796.3**(85), $\gamma_{1377.663}$ **2176.2**(100)
3622.3$_{11}$
3665$_{10}$
3671.6$_7$, $\gamma_{1897.40}$ **1774.1**, γ_0 **3671.5**
3681.3$_{11}$, $5/2^-,7/2^-$
3701.1$_{10}$, $(7/2^-)$, γ_0 **3701**(100)
3719.7$_{10}$, γ_0 **3719.6**(100)
3722, $(1/2^+)$
3728$_{20}$, $7/2^+,9/2^+$
3762.0$_{11}$
3769.6$_{13}$
3833.7$_{11}$
3851$_2$
3854.2$_6$, $3/2^+,5/2^+$, $\gamma_{1504.826}$ **2349.3**(≈ 100), $\gamma_{1377.663}$ **2476.4**(≈ 100), γ_0 **3854.1**
3901.1$_{10}$, γ_0 **3901**(100)
3909.2$_{12}$
3918.1$_{10}$, $5/2^-,7/2^-$, $\gamma_{1504.826}$ **2413.2**
3921$_{20}$, $1/2^-,3/2^-$
3973$_{10}$
3990.9$_7$, $5/2$, $\gamma_{1757.606}$ **2233.2**(11), γ_0 **3990.8**(100) D+Q $\delta=+0.06_8$
3999.5$_{10}$, $\gamma_{1757.606}$ **2241.8**, $\gamma_{1504.826}$ **2495**(?)
4036.0$_{12}$, $(15/2^-)$, *0.05$_2$ ps*, $\gamma_{2524.1}$ **1511.9**(100) D(+Q) $\delta=+0.03^7_{13}$
4036.7$_6$, γ_0 **4036.5**
4046.1$_{13}$
4057.5$_{14}$
4064$_{20}$, $3/2^-$
4111.2$_{11}$
4186.9$_{12}$
4195.2$_{10}$, $1/2^-,3/2^-$, γ_0 **4195**(100)
4216.8$_{12}$
4237.7$_{10}$, γ_0 **4237.5**
4250.8$_{12}$, $5/2^-,7/2^-$
4271.6$_{13}$
4284.1$_{13}$
4297.1$_{10}$, γ_0 **4296.9**
4308.0$_{13}$
4318$_5$, $(3/2^+,5/2^+)$
4329.5$_{12}$
4356.8$_{12}$
4377.4$_6$, $\gamma_{1689.6}$ **2687.4**$_5$
4391.3$_{13}$
4398.7$_{14}$
4416.2$_{12}$
4438.1$_{12}$
4447.9$_{13}$
4454$_{20}$
4465.6$_{12}$
4475.1$_{20}$
4496.8$_{12}$
4511.4$_{15}$
4519.9$_{14}$
4530$_5$, $1/2^-,3/2^-$
4550.1$_{12}$
4575.8$_{18}$
4586.3$_8$, $9/2^{(+)}$, $\gamma_{2311.4}$ **2275**(100), γ_0 **4586**(54)
4597.3$_8$, $9/2^+$, $\gamma_{2311.4}$ **2286**(100$_{40}$) (E1(+M2)) $\delta=-0.18_{18}$, γ_0 **4597**(100$_{50}$)
4608.4$_{23}$
4619.5$_{14}$, $(3/2^+,5/2^+)$
4644.9$_{13}$
4659.2$_{13}$
4674.6$_{10}$, $5/2^+$, $\gamma_{1377.663}$ **3296.8**
4701.0$_6$, $(15/2^-)$, $\gamma_{2524.1}$ **2175.9**$_5$, $\gamma_{1689.6}$ **3010.1**$_5$
4719.5$_{13}$
4752.7$_{13}$
4761.9$_{14}$
4772.1$_{15}$, $(3/2^+,5/2^+)$
4780, $5/2^-,7/2^-$
4793.4$_{13}$
4800.5$_8$, $\gamma_{2559.8}$ **2240.7**$_5$
4814.5$_6$, $(17/2^-)$, *9.9$_2$ ps*, $\gamma_{4701.0}$ **115.1**$_5$, $\gamma_{4036.0}$ **777.8**$_5$, $\gamma_{2524.1}$ **2290.3**$_5$ (Q)
4845.3$_6$, $(13/2^-)$, $\gamma_{4377.4}$ **467.7**$_5$, $\gamma_{2524.1}$ **2320.9**$_5$, $\gamma_{1689.6}$ **3156.0**$_5$

4852.8$_{17}$
4871.6$_{14}$
4880.9$_{14}$, $(5/2^-,7/2^-)$
4911.4$_{13}$
4921.9$_{14}$
4933.7$_{15}$, $1/2^+$
4948.1$_{15}$
4959.6$_{14}$
4971.0$_{15}$
4981(?)
5057$_5$, $(1/2^-,3/2^-)$
5103$_5$, $3/2^+,5/2^+$
5138
5157$_5$, $(1/2^-,3/2^-)$
5167
5222$_5$, $3/2^+,5/2^+$
5223$_{15}$, $1/2^+$
5296
5384$_5$, $1/2^-,3/2^-$
5425$_{20}$, $1/2^-,3/2^-$
5434.6$_6$, $(15/2^-)$, $\gamma_{4845.3}$**589.4**$_5$, $\gamma_{4377.4}$**1056.9**$_5$, $\gamma_{2524.1}$**2910.7**$_5$
5459$_5$, $(5/2^-,7/2^-)$
5524$_5$, $1/2^-,3/2^-$
5559$_{20}$, $1/2^-,3/2^-$
5572.9$_{10}$, $(17/2^-)$, $\gamma_{4800.5}$**771.0**$_5$, $\gamma_{2524.1}$**3048**
5638$_5$, $1/2^-,3/2^-$
5653$_{20}$
5707.3$_7$, $(17/2^-)$, $\gamma_{4701.0}$**1007.3**$_5$, $\gamma_{2524.1}$**3183.1**$_5$
5715$_5$, $(1/2^-,3/2^-)$
5743$_{20}$, $1/2^-,3/2^-$
5756.6$_7$, $(17/2^-)$, $\gamma_{5434.6}$**322.2**$_5$, $\gamma_{4701.0}$**1057.0**$_5$
5799$_{20}$
5845.9$_7$, $(17/2^-)$, $\gamma_{4036.0}$**1809.4**$_5$, $\gamma_{2524.1}$**3321.4**$_5$
5877$_5$, $3/2^+,5/2^+$
5919.0$_8$, $(19/2^-)$, *0.13$_4$ ps*, $\gamma_{4814.5}$**1104.5**$_5$(100)
M1+E2 $\delta=+0.16_7$
5987$_5$, $3/2^+,5/2^+$
6013$_{20}$, $3/2^+,5/2^+$
6093$_{20}$
6148$_5$, $1/2^-,3/2^-$
6184$_{20}$
6228$_5$
6268$_{20}$, $1/2^-,3/2^-$
6306$_5$, $1/2^-,3/2^-$
6344$_{20}$
6391, $1/2^-,3/2^-$
6398$_5$, $3/2^+,5/2^+$
A **6442.1**$_7$, $(17/2^-)$, $\gamma_{5845.9}$**596.1**$_5$, $\gamma_{4036.0}$**2405.2**$_5$
6492$_{20}$
6504, $(5/2^-,7/2^-)$
6518.8$_7$, $(19/2^-)$, $\gamma_{5756.6}$**761.8**$_5$
6540
6594$_{20}$
6671$_5$, $(3/2^+,5/2^+)$
6739$_{20}$
6768$_{20}$
6817$_5$, $(3/2^+,5/2^+)$
6859.3$_7$, $(19/2^-)$, $\gamma_{5707.3}$**1151.8**$_5$
6901$_5$, $(1/2^-,3/2^-)$
6976.5$_{10}$, $(21/2^-)$, $\gamma_{5919.0}$**1057.5**$_5$
7020$_{20}$, $(1/2^-,3/2^-)$
7066
7115$_{20}$, $(1/2^-,3/2^-)$
7162$_{20}$, $1/2^-,3/2^-$
7187, $1/2^-,3/2^-$
7230$_{20}$
7254$_2$, $3/2^-$
7267$_2$, $3/2^-$
7272$_2$, $3/2^-$
7288$_7$, $(3/2^-)$
7296$_{20}$
7324$_{20}$
7367$_{20}$
7400
7411$_3$, $5/2^{(-)}$
7419$_3$, $5/2^{(-)}$
7423$_3$, $5/2^{(-)}$
7480$_{20}$
A **7512.2**$_7$, $(19/2^-)$, $\gamma_{6442.1}$**1070.0**$_5$
7527.5$_{10}$, $(21/2^-)$, $\gamma_{5919.0}$**1608.4**$_5$
7598$_2$, $3/2^-$
7622$_2$, $3/2^-$
7642$_2$, $3/2^-$
7648$_2$, $3/2^-$
7663, $(3/2)^-$
7708
7782.4$_7$, $(19/2^-)$, $\gamma_{6442.1}$**1340.0**$_5$, $\gamma_{4814.5}$**2968.0**$_5$
7809, $3/2^+,5/2^+$
7839, $3/2^+,5/2^+$
7982
7992.7$_9$, $\gamma_{6518.8}$**1473.9**$_5$
8056, $3/2$
8087.1$_8$, $\gamma_{5756.6}$**2330.6**$_5$
A **8409.6**$_7$, $(21/2^-)$, $\gamma_{7782.4}$**627.2**$_5$, $\gamma_{7512.2}$**897.4**$_5$, $\gamma_{6859.3}$**1550.1**$_5$
8632.9$_7$, $\gamma_{8087.1}$**546.0**$_5$, $\gamma_{6518.8}$**2113.5**$_5$, $\gamma_{5756.6}$**2876.6**$_5$
8874.3$_{11}$, $(23/2^-)$, $\gamma_{6976.5}$**1897.7**$_5$
A **9280.0**$_7$, $(23/2^-)$, $\gamma_{8632.9}$**647.5**$_5$, $\gamma_{8409.6}$**870.1**$_5$, $\gamma_{6518.8}$**2761.0**$_5$
9317.5$_8$, $\gamma_{8632.9}$**684.2**$_5$, $\gamma_{6518.8}$**2799.0**$_5$
9600
9682$_1$, $9/2^+$
9689$_1$, $9/2^+$
9735$_1$, $5/2^+$
9755$_1$, $5/2^+$
9777.0$_{15}$, $(23/2^-)$, $\gamma_{7527.5}$**2250**(?), $\gamma_{6976.5}$**2799**
A **10076.1**$_{15}$, $(25/2^-)$, $\gamma_{9280.0}$**797.1**$_5$, $\gamma_{8409.6}$**1667**
10103.6$_{16}$, $(25/2^-)$, $\gamma_{8874.3}$**1228**(?), $\gamma_{7527.5}$**2577**
10165.4$_{18}$, $(25/2^-)$, $\gamma_{6976.5}$**3188**
10294.4$_9$, $\gamma_{9317.5}$**976.9**$_5$
11004.0$_{18}$, $(25/2^-)$, $\gamma_{8874.3}$**2129**
A **11069.0**$_{17}$, $(27/2^-)$, $\gamma_{10076.1}$**993.0**$_5$
11291.5$_{11}$, $\gamma_{10294.4}$**997.1**$_5$
11420.4$_{16}$, $(27/2^-)$, $\gamma_{10076.1}$**1344**
11428.6$_{19}$, $(27/2^-)$, $\gamma_{10103.6}$**1325**
11459.9$_{16}$, $(25/2^-)$, $\gamma_{7527.5}$**3933**(?)
B **11494.7**$_{17}$, $(25/2^-)$
A **11953.0**$_{18}$, $(29/2^-)$, $\gamma_{11069.0}$**885**
C **12124.6**$_{16}$, $(27/2^-)$, $\gamma_{11494.7}$**630**, $\gamma_{11459.9}$**665**, $\gamma_{9777.0}$**2347**
B **12855.8**$_{16}$, $(29/2^-)$, $\gamma_{12124.6}$**731**, $\gamma_{11494.7}$**1361**, $\gamma_{11459.9}$**1396**(?)
12957.4$_{20}$, $(29/2^-)$, $\gamma_{10165.4}$**2792**(?)
A **12965.5**$_{18}$, $(31/2^-)$, $\gamma_{11953.0}$**1013**(?)
C **13712.7**$_{16}$, $(31/2^-)$, $\gamma_{12855.8}$**857**, $\gamma_{12124.6}$**1588**, $\gamma_{11420.4}$**2292**(?)
B **14614.0**$_{16}$, $(33/2^-)$, $\gamma_{13712.7}$**901**, $\gamma_{12965.5}$**1649**(?), $\gamma_{12855.8}$**1758**
C **15760.9**$_{17}$, $(35/2^-)$, $\gamma_{14614.0}$**1147**, $\gamma_{13712.7}$**2048**
B **16692.0**$_{19}$, $(37/2^-)$, $\gamma_{14614.0}$**2078**
C **18052.9**$_{20}$, $(39/2^-)$, $\gamma_{15760.9}$**2292**
B **19190.1**$_{22}$, $(41/2^-)$, $\gamma_{16692.0}$**2498**
C **20559.0**$_{22}$, $(43/2^-)$, $\gamma_{18052.9}$**2506**
B **22210.1**$_{24}$, $(45/2^-)$, $\gamma_{19190.1}$**3020**
C **23407.1**$_{25}$, $(47/2^-)$, $\gamma_{20559.0}$**2848**
B **25668**$_3$, $(49/2^-)$, $\gamma_{22210.1}$**3458**
C **26774**$_3$, $(51/2^-)$, $\gamma_{23407.1}$**3367**
B **29431**$_3$, $(53/2^-)$, γ_{25668}**3763**(?)


(53/2-) 3763 29431
(49/2-) 3458 25668
(45/2-) 3020 22210.1
(41/2-) 2498 19190.1
(37/2-) 2078 16692.0
(33/2-) 1758 14614.0
(29/2-) 1361 12855.8
(25/2-) 11494.7
High-Def-1 band
(2002Re09)
(51/2-) 3367 26774
(47/2-) 2848 23407.1
(43/2-) 2506 20559.0
(39/2-) 2292 18052.9
(35/2-) 2048 15760.9
(31/2-) 1588 13712.7
(27/2-) 12124.6
High-Def-2 band
(2002Re09)
(23/2-) 2799 9777.0
(21/2-) 1058 6976.5
(19/2-) 1105 5919.0
(17/2-) 2290 4814.5
(13/2)- 834 2524.1
11/2- 1689 1689.6
7/2- 0

$^{57}_{27}Co_{30}$

$^{58}_{28}$Ni$_{30}$

S$_n$: 12219 $_3$, S$_p$: 8172.3 $_6$

Nuclear Bands

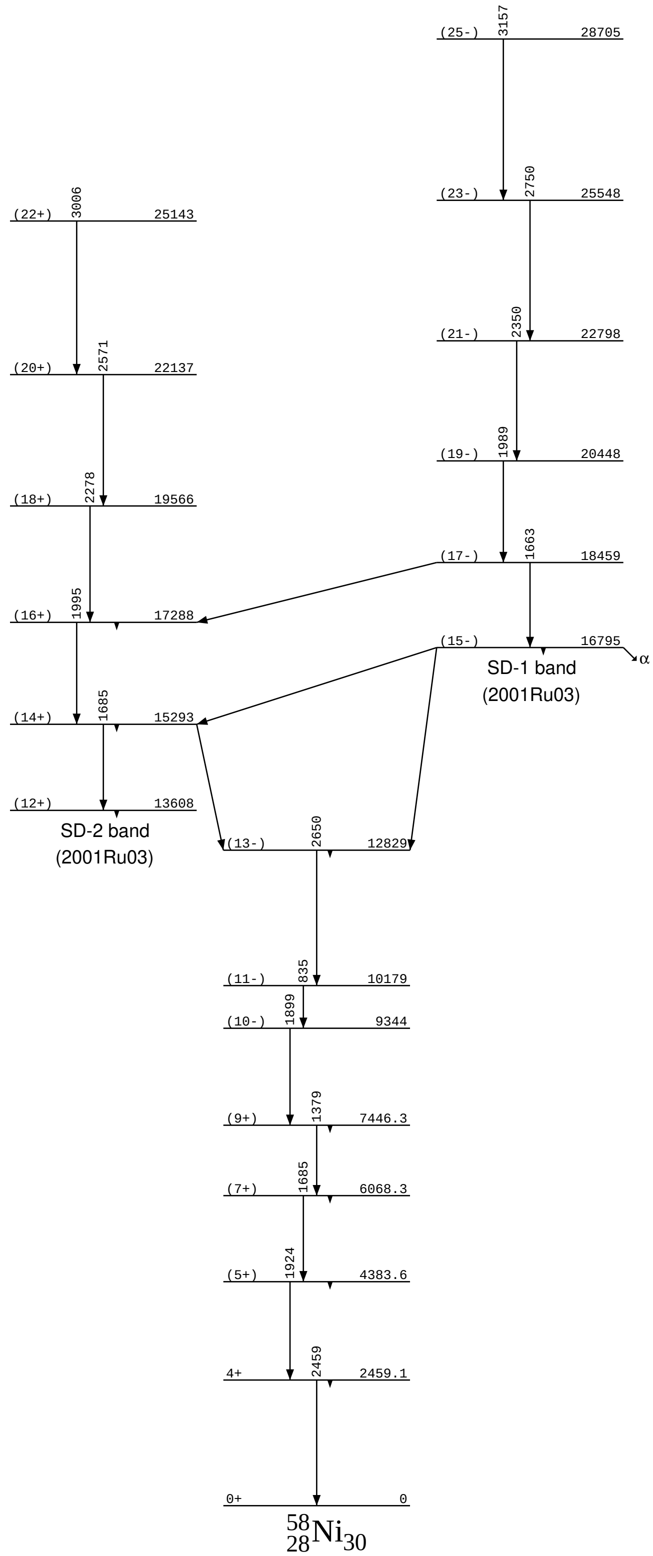
A Yrast structure
B SD-1 band (2001Ru03)
C SD-2 band (2001Ru03)

Levels and γ-ray branchings:

A **0**, 0^+, *stable*
A **1454.0**$_1$, 2^+, *667$_{28}$ fs*, μ=-0.12$_{24}$, Q=-0.10$_6$, γ_0**1454.28**$_{10}$(100) E2
A **2459.1**$_3$, 4^+, *>970 fs*, $\gamma_{1454.0}$**1004.80**$_{15}$(100) E2, γ_0**2459.1**(≤ 0.5)
2775.2$_2$, 2^+, *0.38$^{12}_{9}$ ps*, $\gamma_{2459.1}$**316.1**(≤ 0.06), $\gamma_{1454.0}$**1321.2**$_2$(100.0$_3$) E2+M1 $\delta=-1.1_1$, γ_0**2775.5**$_4$(4.5$_3$) E2
2901.8$_2$, 1^+, *69$^{15}_{14}$ fs*, $\gamma_{2459.1}$**442.7**(≤ 0.15), $\gamma_{1454.0}$**1448.2**$_4$(100.0$_6$), γ_0**2901.3**$_5$(6.4$_6$) D
2942.4$_2$, 0^+, *2.01$_7$ ns*, $\gamma_{2901.8}$**40.3**$_4$(100$_4$), $\gamma_{2775.2}$**167.2**$_2$(18.4$_{19}$), $\gamma_{1454.0}$**1488.3**$_3$(19.9$_{19}$), γ_0**2942.3**(0.058$_8$) E0
3037.6$_3$, 2^+, *52$_{10}$ fs*, $\gamma_{2942.4}$**95.2**(≤ 0.5), $\gamma_{2901.8}$**135.8**(≤ 0.2), $\gamma_{2775.2}$**262.6**$_3$(1.7$_3$) M1+(E2) $\delta=-0.03_5$, $\gamma_{2459.1}$**578.5**(≤ 0.5), $\gamma_{1454.0}$**1583.8**$_3$(100.0$_{17}$) M1+E2 $\delta=+0.21_3$, γ_0**3037.7**$_3$(68.4$_{19}$)
3263.4$_2$, 2^+, *35$_4$ fs*, $\gamma_{2942.4}$**321**(≤ 0.3), $\gamma_{2901.8}$**361.6**(≤ 0.3), $\gamma_{2775.2}$**488.2**(≤ 0.3), $\gamma_{2459.1}$**804.3**(≤ 1.7), $\gamma_{1454.0}$**1809.5**$_3$(65.8$_{18}$) E2+M1 $\delta=+0.7_4$, γ_0**3263.4**$_4$(100.0$_{18}$)
3420.3$_3$, 3^+, *0.26$^{22}_{10}$ ps*, $\gamma_{3037.6}$**382.9**$_3$(5.7$_3$) D+(Q) $\delta=+0.08_9$, $\gamma_{2942.4}$**477.9**(≤ 0.6), $\gamma_{2901.8}$**518.5**(≤ 0.7), $\gamma_{2775.2}$**645.1**(≤ 1.2), $\gamma_{2459.1}$**961.0**$_2$(100.0$_3$) M1+(E2) $\delta=-0.02_3$, $\gamma_{1454.0}$**1966.3**(≤ 2.1), γ_0**3420.3**(≤ 0.4)
3524$_5$, 4^+
3530.9$_3$, 0^+, *0.19$_6$ ps*, $\gamma_{3037.6}$**493.3**(≤ 1.0), $\gamma_{2942.4}$**588.5**(≤ 1.0), $\gamma_{2901.8}$**629.1**(≤ 1.1), $\gamma_{2775.2}$**755.7**(≤ 1.8), $\gamma_{2459.1}$**1071.8**(≤ 2.9), $\gamma_{1454.0}$**2076.9**$_3$(100), γ_0**3530.9**(0.068$_{11}$) E0
3558
3593.4$_3$, $(1,2^+)$, *40$_7$ fs*, $\gamma_{3263.4}$**330.0**(≤ 1.1), $\gamma_{3037.6}$**555.8**(≤ 2.4), $\gamma_{2942.4}$**652.8**$_{10}$(8.3$_{10}$), $\gamma_{2901.8}$**691.6**(< 1.5), $\gamma_{2775.2}$**818.4**$_4$(27.2$_{15}$), $\gamma_{2459.1}$**1134.3**(≤ 3.5), $\gamma_{1454.0}$**2139.2**$_5$(18.0$_{10}$), γ_0**3593.3**$_6$(100.0$_{22}$)
3620.0$_4$, 4^+, *0.11$^8_5$ ps*, $\gamma_{3037.6}$**582.4**(< 3.8), $\gamma_{2775.2}$**844.8**(< 3.8), $\gamma_{2459.1}$**1161.2**$_3$(100$_5$) M1+(E2) $\delta=+0.6^3_6$, $\gamma_{1454.0}$**2166.3**$_5$(27$_3$), γ_0**3620.0**(< 4.4)
3774.4$_4$, 3^+, *0.28$^{14}_7$ ps*, $\gamma_{3420.3}$**354.5**$_3$(33$_3$) M1+(E2) $\delta=+0.05^{21}_{12}$, $\gamma_{3037.6}$**736**$_2$(16$_3$), $\gamma_{2901.8}$**872.6**(< 4.3), $\gamma_{2775.2}$**999.2**, $\gamma_{2459.1}$**1316.4**$_{15}$(100$_7$) M1+E2 $\delta=+0.19_{15}$, $\gamma_{1454.0}$**2320.5**$_8$(24$_3$), γ_0**3774.4**(< 5)
3870
3898.3$_3$, 2^+, *27$_{10}$ fs*, $\gamma_{1454.0}$**2444.7**$_4$(100.0$_{13}$), γ_0**3898.0**$_7$(31.6$_{13}$)
3932.1, $\gamma_{2459.1}$**1475**(100)
4020
4107.7$_3$, 2^+, *110$_{25}$ fs*, $\gamma_{3420.3}$**687.4**(4.3$_{22}$), $\gamma_{2901.8}$**1205.9**(11$_4$), $\gamma_{2775.2}$**1332.5**(13$_4$), $\gamma_{1454.0}$**2654.6**$_4$(87$_5$) M1+E2 $\delta=-0.58^8_9$, γ_0**4107.4**$_7$(100$_5$)
4260$_{80}$, 2^+
4294$_5$, 4^+, *24$^{22}_{18}$ fs*, $\gamma_{2459.1}$**1835**(100), $\gamma_{1454.0}$**2841.1**$_{10}$(100)
4348.0$_{13}$ *17$^{15}_{13}$ fs*, $\gamma_{1454.0}$**2893.6**$_{12}$(100)
4361$_2$, $\gamma_{2775.2}$**1584**, $\gamma_{2459.1}$**1901.7**$_{12}$, γ**2902**
4383.6$_5$, (5^+), $\gamma_{4107.7}$**275.6**$_4$(9$_3$), $\gamma_{3620.0}$**762.9**$_3$(100$_6$) (D), $\gamma_{2459.1}$**1924.0**$_7$(37$_6$)
4404.8$_{13}$, 4^+, *43$^{17}_{14}$ fs*, $\gamma_{1454.0}$**2951.6**$_8$(100)
4450.0$_4$, $1^+,2^+$, $\gamma_{3593.4}$**855.0**$_4$(100$_{10}$), $\gamma_{2901.8}$**1547.0**$_7$(11$_3$), $\gamma_{2775.2}$**1673.8**$_6$(12.4$_{17}$)
4475.3$_8$, 3^-, *22$_6$ fs*, $\gamma_{2775.2}$**1697.5**$_9$(25$_8$), $\gamma_{1454.0}$**3021.1**$_6$(100$_{17}$)
4518$_5$, $\gamma_{2459.1}$**2059**, $\gamma_{1454.0}$**3064**
4538.3$_7$, 0^+, *31$_{11}$ fs*, $\gamma_{1454.0}$**3083.7**$_6$(100)
4578$_7$
4752$_3$, 4^+, $\gamma_{3620.0}$**1132**(100), $\gamma_{2459.1}$**2293**(25)
4920$_5$, $\gamma_{3620.0}$**1300**, $\gamma_{3263.4}$**1656**, $\gamma_{2459.1}$**2461**
4963.8$_{14}$, $\gamma_{3620.0}$**1342**(25), $\gamma_{2459.1}$**2504.2**$_{13}$(100)
5064$_5$, $\gamma_{2459.1}$**2605**(100)
5084$_5$
A **5128.2**$_7$, 6^+, $\gamma_{4383.6}$**744.6**$_3$(100$_{10}$) D+Q, $\gamma_{2459.1}$**2668.6**$_{10}$(53$_{10}$)
5156$_{11}$, 2^+
5166$_7$, 1^+
5171$_{10}$
5386.0$_7$, (6^+), $\gamma_{4383.6}$**1002.0**$_{10}$, $\gamma_{3620.0}$**1764.8**$_{11}$(100$_{40}$), $\gamma_{2459.1}$**2926.5**$_{15}$(60$_{20}$)
5408
5436$_5$, 4^+, $\gamma_{2459.1}$**2977**(100)
5460$_{10}$
5472$_5$, 4^+, $\gamma_{2459.1}$**3013**, $\gamma_{1454.0}$**4018**
5503$_5$, $\gamma_{2775.2}$**2728**(100)
5585$_{15}$, 4^+
5588, (5^-), $\gamma_{2459.1}$**3129**
5592$_8$, 2^+, $\gamma_{3774.4}$**1817**, $\gamma_{2459.1}$**3133**, $\gamma_{1454.0}$**4138**, γ_0**5592**
5664, 7, $\gamma_{5128.2}$**536.5**(100) D+Q $\delta=-0.20^5_9$
5706$_5$, $\gamma_{2775.2}$**2931**(?), $\gamma_{2459.1}$**3247**, $\gamma_{1454.0}$**4252**
5748$_4$, 2^+, $\gamma_{3593.4}$**2155**, $\gamma_{2459.1}$**3289**, $\gamma_{1454.0}$**4294**(?)
5766$_4$, 4^+, $\gamma_{2459.1}$**3307**, $\gamma_{1454.0}$**4312**
5803$_5$, $\gamma_{1454.0}$**4349**, γ_0**5803**
5824$_5$, $\gamma_{3420.3}$**2404**
5846$_{10}$
5896$_5$, $\gamma_{1454.0}$**4442**, γ_0**5896**
5903$_{15}$, 1^-
5906$_5$, 2^+
5924$_{10}$, (0^+)
5942$_5$, (0^+), $\gamma_{1454.0}$**4488**(100)
5963$_{10}$, (0^+)
5982$_{10}$, (0^+)
6018$_5$, 3^-, $\gamma_{1454.0}$**4564**(100)
6024$_5$, 1^-, *1.4$^8_4$ fs*, $\gamma_{2459.1}$**3565**, γ_0**6024** D
6068.3$_7$, (7^+), $\gamma_{5386.0}$**682.4**$_5$(5$_5$), $\gamma_{5128.2}$**940.1**$_4$(100$_{10}$), $\gamma_{4383.6}$**1684.7**$_{10}$(42$_{10}$)
6084.9$_8$, (7^-), γ_{5588}**496**, $\gamma_{5386.0}$**698.8**$_5$(40$_{20}$), $\gamma_{5128.2}$**956.9**$_7$(100$_{20}$), $\gamma_{2459.1}$**3626.2**$_{16}$
6116$_{10}$
6145$_{15}$, 3^-
6174$_5$, $\gamma_{2459.1}$**3715**, $\gamma_{1454.0}$**4720**(?), γ_0**6174**
6199$_{10}$
6220.6$_8$, (7), $\gamma_{5128.2}$**1092.4**$_5$(100)
6228$_5$, $\gamma_{2901.8}$**3326**, $\gamma_{1454.0}$**4774**, γ_0**6228**
6248$_{10}$
6274$_5$, 4^+, $\gamma_{2459.1}$**3815**(100)
6308$_4$, 3^-
6323$_{10}$
6360$_5$, $\gamma_{3420.3}$**2940**(100)
6389$_{10}$
6402$_5$, γ_0**6402**(100)
6417$_5$, 2^+
6420$_{15}$, 3^-
6437$_{10}$
6447$_{10}$
6460$_5$, 4^+
6468$_5$, $\gamma_{1454.0}$**5014**, γ_0**6468**
6478$_4$, 2^+, $\gamma_{1454.0}$**5024**, γ_0**6478**
6500$_{10}$
6507$_5$, $\gamma_{3620.0}$**2887**(100)
6549$_{10}$, (4^+)
6571$_4$, 2^+, $\gamma_{1454.0}$**5117**(100)
6598$_{10}$, (4^+)
6601$_5$, γ_{5664}**939**, $\gamma_{3620.0}$**2981**, $\gamma_{2459.1}$**4142**
A **6605.0**$_8$, (8^+), $\gamma_{6068.3}$**536.7**$_3$(100$_7$), $\gamma_{5128.2}$**1476.8**$_{11}$(100$_{14}$)
6665$_5$, $\gamma_{1454.0}$**5211**, γ_0**6665**
6674$_{10}$
6695$_{15}$, 3^-
6717$_{10}$, $\gamma_{1454.0}$**5263**, γ_0**6717**
6742$_8$, 3^-
6752$_5$, 2^+
6763$_{10}$, 3^-, $\gamma_{1454.0}$**5309**(100)
6793$_{10}$, 3^-
6805$_{10}$, 3^-, $\gamma_{1454.0}$**5351**(100)
6813$_{10}$
6854$_3$, 3^-, $\gamma_{1454.0}$**5400**(100)
6862$_{25}$, (6^+)
6886$_{10}$, $(2^+,3^-)$
6912$_{10}$, $(2^+,3^-)$
6925$_{10}$, 4^+

6935$_{10}$, 4^+
6960$_{10}$
6983$_{5}$, 2^+
6992$_{10}$, $\gamma_{\mathbf{1454.0}}$**5538**(100)
7017$_{10}$
7042$_{10}$
7051$_{3}$, 1, 0.67^{41}_{18} *fs*, $\gamma_{\mathbf{0}}$**7051**$_{3}$(100) D
7051$_{5}$, 4^+
7054$_{10}$, $\gamma_{\mathbf{0}}$**7054**(100)
7068$_{5}$, 4^+
7089$_{10}$
7100$_{15}$, 4^+
7111$_{5}$, 3^-
7113, $(1,2^+)$, $\gamma_{\mathbf{1454.0}}$**5659**, $\gamma_{\mathbf{0}}$**7113**
7131$_{7}$, $\gamma_{\mathbf{0}}$**7131**(100)
7141$_{5}$, 4^+
7180$_{25}$, 3^-
7206$_{11}$, 4^+
7210$_{5}$, 3^-, $\gamma_{\mathbf{2459.1}}$**4751**(100)
7231.9, $\gamma_{\mathbf{6605.0}}$**626.8**$_{5}$(100)
7255$_{5}$, 2^+
7270, 2^+, $\gamma_{\mathbf{1454.0}}$**5816**, $\gamma_{\mathbf{0}}$**7270**
7300$_{5}$, 3^-, $\gamma_{\mathbf{1454.0}}$**5846**(100)
7315, (8^+), $\gamma_{\mathbf{6068.3}}$**1246**, $\gamma_{\mathbf{5386.0}}$**1929**
7380, $(1,2^+)$, $\gamma_{\mathbf{0}}$**7380**(100)
7420$_{5}$, 3^-
7446.3$_{9}$, (9^+), $\gamma_{\mathbf{6605.0}}$**841.3**$_{4}$(100), $\gamma_{\mathbf{6068.3}}$**1379**
7450$_{10}$
7514$_{5}$, 3^-, $\gamma_{\mathbf{1454.0}}$**6060**(100)
7530$_{30}$
7570$_{5}$, 2^+, $\gamma_{\mathbf{0}}$**7570**(100)
7618$_{5}$, 4^+
7680, $\gamma_{\mathbf{1454.0}}$**6226**(100)
7710$_{3}$, 1, 0.94^{65}_{27} *fs*, $\gamma_{\mathbf{0}}$**7710**$_{3}$(100) D
7721$_{10}$, 4^+
7751$_{10}$
7810, $(1,2^+)$, $\gamma_{\mathbf{1454.0}}$**6356**, $\gamma_{\mathbf{0}}$**7810**
7848$_{15}$, 4^+
7858$_{5}$, 3^-
7860$_{5}$, 4^+
7862, $(1,2^+)$, $\gamma_{\mathbf{1454.0}}$**6408**, $\gamma_{\mathbf{0}}$**7862**
7937$_{25}$, 8^-
8100$_{15}$, 4^+
8110, $(1,2^+)$, $\gamma_{\mathbf{0}}$**8110**(100)
8121.6$_{10}$, (9^+), $\gamma_{\mathbf{6605.0}}$**1516.5**$_{7}$(100)
8134$_{5}$, 3^-
8143$_{10}$
8240$_{3}$, 1, 0.15^{3}_{2} *fs*, $\gamma_{\mathbf{0}}$**8240**$_{3}$(100) D
8316$_{10}$
8392$_{10}$
8433$_{10}$, 1^+
8493$_{15}$, $(3^-,1^-)$
8556$_{10}$, $1^{(+)}$
8654$_{9}$, $(3^-,1^-)$
8682$_{3}$, 1, 0.40^{21}_{11} *fs*, $\gamma_{\mathbf{0}}$**8682**$_{3}$(100) D
8692
8716$_{10}$
8797$_{5}$, 3^-
8808$_{25}$, 8^-
8830$_{40}$, 2^+
8841$_{5}$, 3^-
8902$_{5}$, 4^+
8965$_{25}$
9012$_{5}$, 3^-
9062, (10^+), $\gamma_{\mathbf{8121.6}}$**942**
9193$_{3}$, 1, 0.46^{30}_{13} *fs*, $\gamma_{\mathbf{0}}$**9193**$_{3}$(100) D
9238$_{10}$
9295$_{10}$, 1^+
9304$_{5}$, 3^-
9310$_{40}$, 4^+
9320, (11^+)
9336$_{10}$
9344, (10^-), $\gamma_{\mathbf{7446.3}}$**1899**
9368$_{3}$, 1, 0.36^{22}_{10} *fs*, $\gamma_{\mathbf{0}}$**9368**$_{3}$(100) D
9379$_{5}$, 3^-
9436$_{5}$, 4^+
9458$_{5}$, 3^-
9557$_{3}$, 1, 0.30^{20}_{8} *fs*, $\gamma_{\mathbf{0}}$**9557**$_{3}$(100) D
9588$_{5}$, 4^+
9632$_{5}$, 4^+
9670$_{3}$, 1, 0.24^{13}_{6} *fs*, $\gamma_{\mathbf{0}}$**9670**$_{3}$(100) D
9672$_{5}$, 3^-
9835$_{5}$, 3^-
9843$_{5}$, 1^+, 0.26^{27}_{10} *fs*, $\gamma_{\mathbf{0}}$**9843**$_{5}$(100) (M1)
9870$_{5}$, 3^-
9890$_{40}$, 2^+
9929$_{5}$, 3^-
9956$_{5}$, 3^-
10029$_{5}$, 3^-
10059$_{5}$, 4^+
10120$_{5}$, 4^+
10179, (11^-), $\gamma_{\mathbf{9344}}$**835**
10180$_{40}$, 1^+
10190$_{25}$, 8^-
10191, (11^+), $\gamma_{\mathbf{9062}}$**1129**
10209$_{5}$, 3^-
10249$_{5}$, 4^+
10304$_{10}$
10365$_{5}$, 4^+
10430$_{10}$
10460$_{5}$, 4^+
10523$_{5}$, 4^+
10550$_{40}$, 1^+
10586$_{5}$, 3^-
10589, (11^-), $\gamma_{\mathbf{10179}}$**410**
10590$_{50}$, 0^+
10630$_{40}$, 4^+
10638$_{5}$, 3^-
10662$_{10}$, 1^+
10744$_{5}$, 4^+
10804$_{10}$
10823$_{5}$, 4^+
10902$_{5}$, 4^+
10967$_{5}$, 4^+
11015$_{10}$
11063$_{10}$
11158$_{5}$, 3^-
11203$_{5}$, 4^+
11240$_{25}$, 8^-
11266$_{10}$
11295, (12^-), $\gamma_{\mathbf{10589}}$**706**, $\gamma_{\mathbf{10179}}$**1116**
11300$_{5}$, 4^+
11341$_{10}$
11434$_{5}$, 4^+
11450$_{25}$, (6^+)
11472, (12^+), $\gamma_{\mathbf{10191}}$**1281**
11497$_{10}$, (3^-)
11588$_{10}$
11728$_{5}$, 4^+
11785$_{10}$
11884$_{10}$, (3^-)
12500$_{25}$, 8^-
12829, (13^-), $\gamma_{\mathbf{11295}}$**1533**, $\gamma_{\mathbf{10179}}$**2650**
13013, (13^-), $\gamma_{\mathbf{11295}}$**1717**
13045, (13^-), $\gamma_{\mathbf{11295}}$**1750**
13400$_{25}$
C **13608**, (12^+), $\gamma_{\mathbf{9320}}$**4288**
13900$_{25}$
14470$_{40}$, (0^+)
14850, (15^-), $\gamma_{\mathbf{13013}}$**1836**, $\gamma_{\mathbf{12829}}$**2021**
15264, (14), $\gamma_{\mathbf{12829}}$**2435**
C **15293**, (14^+), $\gamma_{\mathbf{13608}}$**1685**, $\gamma_{\mathbf{13013}}$**2280**, $\gamma_{\mathbf{12829}}$**2463**
15320, (14^+), $\gamma_{\mathbf{11472}}$**3848**
15410, (13^-)

15431, (13^-)
B **16795**, (15^-), %α=3.9$_3$, γ_{15431}**1364**, γ_{15410}**1385**, γ_{15320}**1474**, γ_{15293}**1503**, γ_{15264}**1531**, γ_{13045}**3750**, γ_{12829}**3964**
C **17288**, (16^+), γ_{15320}**1965**, γ_{15293}**1995**, γ_{14850}**2436**
B **18459**, (17^-), γ_{17288}**1171**, γ_{16795}**1663**
C **19566**, (18^+), γ_{17288}**2278**
B **20448**, (19^-), γ_{18459}**1989**
C **22137**, (20^+), γ_{19566}**2571**
B **22798**, (21^-), γ_{20448}**2350**
C **25143**, (22^+), γ_{22137}**3006**
B **25548**, (23^-), γ_{22798}**2750**
B **28705**, (25^-), γ_{25548}**3157**



$^{59}_{28}$Ni$_{31}$

S$_n$: 8999.43$_{14}$, S$_p$: 8598.7 $_{12}$

Nuclear Bands

A p$_{3/2}$(?)

B f$_{5/2}$(?)

C g$_{9/2}$(?)

D 11/2$^-$ band (?)

E Highly-deformed-1 band (2002Yu01)

F Highly-deformed-2 band (2002Yu01)

G Highly-deformed-3 band (2002Yu01)

H Highly-deformed-4 band (2002Yu01)

Levels and γ-ray branchings:

A **0**, $3/2^-$, *7.6e+4$_5$ y*, %ε+%β$^+$=100

B **339.421**$_{13}$, $5/2^-$, *68$_8$ ps*, μ=+0.35$_{15}$, $\gamma_{\mathbf{0}}$**339.411**$_{16}$(100) M1(+E2) $\delta = 0.00_2$

464.976$_{18}$, $1/2^-$, *20$_4$ ps*, $\gamma_{\mathbf{0}}$**465.02**$_5$(100)

877.947$_{16}$, $3/2^-$, *0.47$_9$ ps*, $\gamma_{\mathbf{339.421}}$**538.55**$_5$(1.44$_{23}$), $\gamma_{\mathbf{0}}$**877.97**$_3$(100.0$_9$) M1+E2 $\delta = +0.08_3$

A **1188.792**$_{20}$, $5/2^-$, *0.23$_4$ ps*, $\gamma_{\mathbf{877.947}}$**310.9**$_2$(5.1$_5$), $\gamma_{\mathbf{464.976}}$**723.85**$_{16}$(1.00$_{22}$), $\gamma_{\mathbf{339.421}}$**849.38**$_5$(4.8$_{11}$), $\gamma_{\mathbf{0}}$**1188.82**$_5$(100.0$_{24}$) M1+E2 $\delta = -0.43_9$

1301.409$_{19}$, $1/2^-$, *0.111$_{20}$ ps*, $\gamma_{\mathbf{877.947}}$**423.462**$_{18}$(18.8$_{14}$), $\gamma_{\mathbf{464.976}}$**836.47**$_3$(14.9$_{10}$), $\gamma_{\mathbf{339.421}}$**962.0**$_5$(0.34$_7$), $\gamma_{\mathbf{0}}$**1301.46**$_7$(100.0$_{13}$)

A **1337.89**$_5$, $7/2^-$, *0.95$_{19}$ ps*, $\gamma_{\mathbf{339.421}}$**998.52**$_8$(100$_5$) M1+E2 $\delta = +4.5_6$, $\gamma_{\mathbf{0}}$**1337.85**$_9$(40.3$_{20}$) E2

1679.704$_{23}$, $5/2^-$, *196$_{31}$ fs*, $\gamma_{\mathbf{877.947}}$**801.81**$_{21}$(2.0$_5$), $\gamma_{\mathbf{464.976}}$**1214.2**$_7$(2.14$_5$), $\gamma_{\mathbf{339.421}}$**1340.30**$_4$(100.0$_{14}$), $\gamma_{\mathbf{0}}$**1679.65**$_5$(17.3$_8$) (M1+E2) $\delta = -1.6^{7}_{22}$

1695$_7$(?)

1734.722$_{21}$, $3/2^-$, *108$_{19}$ fs*, $\gamma_{\mathbf{1188.792}}$**545.89**$_6$(21$_3$), $\gamma_{\mathbf{464.976}}$**1269.70**$_4$(21.1$_{11}$), $\gamma_{\mathbf{339.421}}$**1395.27**$_4$(32$_3$), $\gamma_{\mathbf{0}}$**1734.76**$_4$(100.0$_{15}$)

1739.24$_{20}$, $(9/2^-)$, $\gamma_{\mathbf{339.421}}$**1399.8**$_2$(100) (E2)

1746.1$_{10}$, $5/2^-,7/2^-$, *76$_{44}$ fs*, $\gamma_{\mathbf{0}}$**1746.1**$_{10}$(100)

B **1767.45**$_6$, $(9/2)^-$, *0.60$_{13}$ ps*, $\gamma_{\mathbf{1337.89}}$**429.58**$_8$(10.1$_8$) M1+E2 $\delta = -0.10_4$, $\gamma_{\mathbf{339.421}}$**1428.03**$_8$(100$_8$) E2

B **1947.93**$_8$, $7/2^-$, *123$_{21}$ fs*, $\gamma_{\mathbf{1337.89}}$**610.0**$_2$(11.9$_{24}$), $\gamma_{\mathbf{1188.792}}$**759.0**$_2$(25.3$_{23}$) (M1+E2) $\delta = +0.27^{13}_{10}$, $\gamma_{\mathbf{877.947}}$**1070.2**$_2$(3.4$_7$), $\gamma_{\mathbf{339.421}}$**1608.31**$_{20}$(64$_7$), $\gamma_{\mathbf{0}}$**1948.00**$_{17}$(100$_4$) E2

2330(?), $5/2^-,7/2^-$

2414.970$_{20}$, $3/2^-$, *37$_5$ fs*, $\gamma_{\mathbf{1301.409}}$**1113.0**$_3$(1.6$_8$), $\gamma_{\mathbf{1188.792}}$**1226.11**$_4$(26$_4$), $\gamma_{\mathbf{877.947}}$**1536.95**$_4$(44$_5$), $\gamma_{\mathbf{464.976}}$**1950.05**$_5$(100$_4$), $\gamma_{\mathbf{339.421}}$**2075.45**$_7$(5.1$_5$), $\gamma_{\mathbf{0}}$**2414.97**$_4$(29$_3$)

2428$_5$

2480, $(3/2^+,5/2^+)$

A **2530.40**$_{13}$, $(9/2^-)$, $\gamma_{\mathbf{1337.89}}$**1192.5**$_2$(45$_8$) D+Q $\delta = -0.9^{6}_{13}$, $\gamma_{\mathbf{1188.792}}$**1341**(100$_{21}$), $\gamma_{\mathbf{339.421}}$**2191.12**$_{20}$(42$_8$) Q

2535.50$_{22}$, $(\geq 5/2)$, $\gamma_{\mathbf{1739.24}}$**796.26**$_9$(100)

2553.4, $\gamma_{\mathbf{339.421}}$**2214**(100)

2627.07$_{12}$, $7/2^-$, $\gamma_{\mathbf{339.421}}$**2287.12**$_{20}$(75$_{10}$), $\gamma_{\mathbf{0}}$**2627.22**$_{20}$(100$_{19}$) Q

2640, $(1/2^-,3/2^-)$

2681.4$_5$, $(5/2^-)$, $\gamma_{\mathbf{877.947}}$**1802.7**$_7$(76$_9$), $\gamma_{\mathbf{0}}$**2682.0**$_9$(100$_{31}$)

2692$_5$

A **2705.02**$_8$, $(11/2)^-$, *0.35$_8$ ps*, $\gamma_{\mathbf{1767.45}}$**937.7**$_3$(11.2$_{13}$) (M1+E2) $\delta = -0.95^{17}_{60}$, $\gamma_{\mathbf{1337.89}}$**1367.03**$_7$(100$_{10}$) E2

2713$_2$, $\gamma_{\mathbf{877.947}}$**1835**$_2$(100)

2893.623$_{22}$, $3/2^-$, *30$_6$ fs*, $\gamma_{\mathbf{1734.722}}$**1158.8**$_4$(0.37$_{12}$), $\gamma_{\mathbf{1679.704}}$**1213.92**$_5$(4.5$_9$), $\gamma_{\mathbf{1301.409}}$**1592.22**$_{11}$(2.5$_5$), $\gamma_{\mathbf{1188.792}}$**1704.86**$_5$(6.8$_{14}$), $\gamma_{\mathbf{877.947}}$**2015.70**$_5$(30$_3$), $\gamma_{\mathbf{464.976}}$**2428.57**$_4$(17.4$_{19}$), $\gamma_{\mathbf{339.421}}$**2554.14**$_4$(100$_{10}$)

3025.83$_4$, $1/2^-,3/2^-$, $\gamma_{\mathbf{1188.792}}$**1837.4**$_4$(3.7$_{15}$), $\gamma_{\mathbf{877.947}}$**2147.91**$_6$(95$_9$), $\gamma_{\mathbf{464.976}}$**2560.55**$_{13}$(4.8$_7$), $\gamma_{\mathbf{0}}$**3025.73**$_6$(100$_5$)

3037.5$_{20}$, $7/2^-$, $\gamma_{\mathbf{339.421}}$**2698**$_2$(100)

C **3054.33**$_{11}$, $9/2^+$, $\gamma_{\mathbf{2705.02}}$**349.1**$_2$(1.9$_4$), $\gamma_{\mathbf{2627.07}}$**427.0**$_2$(< 16), $\gamma_{\mathbf{1947.93}}$**1106.6**$_2$(100$_{20}$) E1, $\gamma_{\mathbf{1337.89}}$**1716.4**$_2$(52$_{11}$) E1

3061$_5$

3125.43$_{15}$, $7/2^-$, $\gamma_{\mathbf{1767.45}}$**1358.0**$_2$(< 36), $\gamma_{\mathbf{339.421}}$**2786.0**$_2$(100$_{20}$), $\gamma_{\mathbf{0}}$**3128**$_2$(16$_3$)

3132$_{10}$, $(1/2^-,3/2^-)$

3164, $7/2^-$

3181.634$_{19}$, $3/2$, *26$_3$ fs*, $\gamma_{\mathbf{3025.83}}$**155.3**(< 6)(?), $\gamma_{\mathbf{2893.623}}$**289.6**(< 6)(?), $\gamma_{\mathbf{2414.970}}$**766.61**$_5$(4.9$_{10}$), $\gamma_{\mathbf{1734.722}}$**1446.90**$_4$(19$_4$), $\gamma_{\mathbf{1679.704}}$**1501.88**$_4$(28$_6$), $\gamma_{\mathbf{1301.409}}$**1880.26**$_5$(7.3$_{17}$), $\gamma_{\mathbf{1188.792}}$**1992.83**$_5$(27$_6$), $\gamma_{\mathbf{877.947}}$**2303.69**$_7$(8.5$_8$), $\gamma_{\mathbf{464.976}}$**2716.62**$_6$(5.2$_6$), $\gamma_{\mathbf{339.421}}$**2842.10**$_4$(100$_{10}$), $\gamma_{\mathbf{0}}$**3181.59**$_6$(23.8$_{12}$)

3196$_{10}$

3296.7$_{15}$, $\gamma_{\mathbf{1188.792}}$**2106**$_2$(92$_{19}$), $\gamma_{\mathbf{339.421}}$**2959**$_2$(100$_{19}$)

3308.1$_{20}$, $\gamma_{\mathbf{0}}$**3308**$_2$(100)

3320$_4$, $\gamma_{\mathbf{877.947}}$**2440**$_5$(32$_{16}$), $\gamma_{\mathbf{339.421}}$**2982**$_5$(100$_{32}$)

3339.4$_{13}$, $\gamma_{\mathbf{1679.704}}$**1659**$_2$, $\gamma_{\mathbf{1337.89}}$**2002**$_3$, $\gamma_{\mathbf{1188.792}}$**2151**$_2$

3353.5$_{20}$, $\gamma_{\mathbf{339.421}}$**3014**$_2$(100)

B **3376.89**$_{10}$, $(11/2)^-$, $\gamma_{\mathbf{2705.02}}$**671.75**$_{11}$(50$_8$) E2(+M1), $\gamma_{\mathbf{1767.45}}$**1609.5**$_2$(100$_{11}$) D, $\gamma_{\mathbf{1337.89}}$**2039.1**$_2$(8.4$_{17}$) Q

3377.40$_5$, $(1/2^-,3/2)$, $\gamma_{\mathbf{464.976}}$**2912.28**$_{12}$(11.4$_{13}$), $\gamma_{\mathbf{339.421}}$**3037.94**$_6$(100$_5$), $\gamma_{\mathbf{0}}$**3377.14**$_9$(40.5$_{25}$)

3380.5$_{19}$, $(7/2^-)$, $\gamma_{\mathbf{1947.93}}$**1432**$_2$, $\gamma_{\mathbf{0}}$**3384**$_5$

3414$_5$

3429

3447$_5$, $(1/2^+)$

3452.46$_5$, $3/2^-$, $\gamma_{\mathbf{1734.722}}$**1717.3**$_3$(20$_7$), $\gamma_{\mathbf{877.947}}$**2574.62**$_{11}$(70$_9$), $\gamma_{\mathbf{464.976}}$**2987.12**$_{15}$(28$_4$), $\gamma_{\mathbf{339.421}}$**3112.8**$_3$(24$_4$), $\gamma_{\mathbf{0}}$**3452.37**$_8$(100$_7$)

3515$_5$

3528$_3$, $\gamma_{\mathbf{339.421}}$**3188**$_5$(35$_{14}$), $\gamma_{\mathbf{0}}$**3528**$_3$(100$_{20}$)

3538.54$_{21}$, $(9/2^-)$, $\gamma_{\mathbf{1337.89}}$**2200.6**$_2$(40$_8$), $\gamma_{\mathbf{1188.792}}$**2348.0**$_2$(100$_{20}$) Q

3540.08$_5$, $5/2^+$, $\gamma_{\mathbf{877.947}}$**2661.38**$_{24}$(7.3$_{16}$), $\gamma_{\mathbf{339.421}}$**3200.46**$_6$(100$_5$)

3546.0$_3$ *0.21$_5$ ps*, $\gamma_{\mathbf{1767.45}}$**1778.5**$_3$(100)

D **3559.42**$_8$, $(11/2)^-$, $\gamma_{\mathbf{3125.43}}$**434.10**$_{24}$(14.8$_{21}$), $\gamma_{\mathbf{2705.02}}$**854.33**$_{19}$(52$_7$) M1(+E2) $\delta = -0.07_5$, $\gamma_{\mathbf{2530.40}}$**1029.2**$_2$(15$_3$) D, $\gamma_{\mathbf{1947.93}}$**1611.3**$_2$(26$_5$), $\gamma_{\mathbf{1767.45}}$**1792.06**$_{18}$(100$_{11}$) M1+E2 $\delta = +0.12_4$, $\gamma_{\mathbf{1337.89}}$**2222.0**$_2$(15$_3$)

3563.12$_4$, $1/2^-,3/2^-$, $\gamma_{\mathbf{2414.970}}$**1148.31**$_{19}$(2.9$_7$), $\gamma_{\mathbf{877.947}}$**2685.13**$_4$(100$_{10}$), $\gamma_{\mathbf{0}}$**3562.91**$_7$(57$_3$)

3600$_{10}$

3640$_4$, $5/2^-$

3686.206$_{25}$, $(3/2^+)$, $\gamma_{\mathbf{1301.409}}$**2384.80**$_7$(49$_6$), $\gamma_{\mathbf{1188.792}}$**2497.47**$_5$(41$_4$), $\gamma_{\mathbf{877.947}}$**2808.19**$_4$(60$_6$), $\gamma_{\mathbf{464.976}}$**3221.11**$_6$(100$_6$), $\gamma_{\mathbf{339.421}}$**3346.65**$_6$(42.8$_{23}$), $\gamma_{\mathbf{0}}$**3685.97**$_7$(69$_4$)

3730$_{10}$, $7/2^-$

3730.43$_5$, $(1/2^-,3/2)$, $\gamma_{\mathbf{1679.704}}$**2050.78**$_{10}$(23$_3$), $\gamma_{\mathbf{1188.792}}$**2541.49**$_{12}$(11.1$_{16}$), $\gamma_{\mathbf{464.976}}$**3265.31**$_6$(100$_5$), $\gamma_{\mathbf{339.421}}$**3391.23**$_{14}$(20.0$_{16}$), $\gamma_{\mathbf{0}}$**3730.19**$_{17}$(52$_3$)

3745$_{10}$

3791$_{10}$

3807

3818

3853.72$_5$, $(1/2^-,3/2)$, $\gamma_{\mathbf{3025.83}}$**828.3**$_3$(17$_5$), $\gamma_{\mathbf{877.947}}$**2975.5**$_3$(10.3$_{17}$), $\gamma_{\mathbf{464.976}}$**3388.79**$_{13}$(62$_5$), $\gamma_{\mathbf{339.421}}$**3514.06**$_7$(100$_5$), $\gamma_{\mathbf{0}}$**3853.72**$_9$(74$_3$)

3858.29$_6$, $3/2^-$, $\gamma_{\mathbf{1679.704}}$**2178.63**$_8$(100$_{10}$), $\gamma_{\mathbf{877.947}}$**2980.59**$_{19}$(13.8$_{13}$), $\gamma_{\mathbf{0}}$**3858.04**$_{10}$(31.3$_{25}$)

3889.67$_8$, $1/2,3/2,5/2^+$, $\gamma_{\mathbf{877.947}}$**3012.1**$_4$(10.3$_{17}$), $\gamma_{\mathbf{0}}$**3889.53**$_8$(100$_5$)

3910$_{10}$

3944$_{10}$

4005$_{10}$

4021.92$_5$, $1/2,3/2,5/2^+$, $\gamma_{\mathbf{3181.634}}$**841.0**$_3$(14$_4$), $\gamma_{\mathbf{1734.722}}$**2287.8**$_4$(16$_4$), $\gamma_{\mathbf{877.947}}$**3143.84**$_6$(100$_6$), $\gamma_{\mathbf{0}}$**4021.96**$_{18}$(50$_7$)

4036$_{10}$, $(3/2)^-$

4087$_{10}$

C **4103.03**$_{17}$, $(11/2^+)$, $\gamma_{\mathbf{1767.45}}$**2335.6**$_2$(100)

4120$_{10}$

4133$_{10}$

4140.34$_4$, $(1/2^-,3/2)$, *4.5$_{10}$ fs*, $\gamma_{\mathbf{3025.83}}$**1114.0**$_3$(3.23$_{15}$), $\gamma_{\mathbf{1679.704}}$**2460.76**$_{17}$(1.46$_{21}$), $\gamma_{\mathbf{1188.792}}$**2951.58**$_9$(6.4$_{18}$), $\gamma_{\mathbf{877.947}}$**3262.32**$_{11}$(4.5$_3$), $\gamma_{\mathbf{464.976}}$**3675.23**$_7$(100$_5$), $\gamma_{\mathbf{339.421}}$**3800.79**$_7$(7.5$_4$), $\gamma_{\mathbf{0}}$**4140.05**$_7$(22.7$_{11}$)

D **4141.06**$_9$, $(13/2)^-$, $\gamma_{\mathbf{3559.42}}$**581.80**$_9$(100$_{12}$) M1(+E2) $\delta = +0.07_5$, $\gamma_{\mathbf{3376.89}}$**764.10**$_{14}$(92$_{13}$) M1, $\gamma_{\mathbf{2705.02}}$**1436.1**$_2$(1.9$_9$),

$\gamma_{1767.45}$**2373.4**$_{2}(9.4_{19})$ Q

4154$_{10}$, $1/2^-,3/2^-$

4160$_{20}$, $7/2^-$

4177$_{10}$, $(1/2^-,3/2^-)$

4213$_{10}$, $(3/2^+,5/2^+)$

4230$_{20}$, $7/2^-$

4253.03$_{4}$, $(3/2^-)$, $\gamma_{3540.08}$**712.75**$_{7}(60_{13})$, $\gamma_{2414.970}$**1837.4**$_{4}(24_{10})$, $\gamma_{1734.722}$**2517.8**$_{6}(5.6_{14})$, $\gamma_{1301.409}$**2951.58**$_{9}(85_{10})$, $\gamma_{464.976}$**3787.85**$_{8}(56_{3})$, $\gamma_{339.421}$**3913.2**$_{3}(8.3_{14})$, γ_{0}**4253.05**$_{9}(100_{6})$

4286$_{10}$, $7/2^-$

4328$_{10}$, $(7/2^-)$

4352.42$_{6}$, $(1/2^-,3/2)$, $\gamma_{1301.409}$**3051.14**$_{15}(25.0_{17})$, $\gamma_{1188.792}$**3163.55**$_{11}(28.3_{17})$, γ_{0}**4352.19**$_{8}(100_{5})$

4397$_{11}$, $7/2^-$

4418.78$_{21}$, $(13/2^-)$, $\gamma_{3559.42}$**858.5**$_{2}(11.8_{24})$, $\gamma_{1767.45}$**2651.3**$_{2}(100_{18})$

4419$_{10}$, $(1/2^+)$

4441$_{10}$, $5/2^-,7/2^-$

C **4455.10**$_{14}$, $(13/2)^+$, $\gamma_{3054.33}$**1400.5**$_{2}(100_{19})$ Q, $\gamma_{2705.02}$**1750.11**$_{17}(81_{16})$ E1+M2 $\delta=-0.18_{5}$

4470$_{10}$, $7/2^-$

4506$_{10}$, $5/2^+$

4542$_{7}$, $5/2^-,7/2^-$

4557$_{10}$

4615, $7/2^-$

4615.75$_{23}$, $(9/2^+)$, $\gamma_{3054.33}$**1561.4**$_{2}(100)$

4648, $(1/2^+)$

4650$_{10}$, $5/2^-,7/2^-$

4709$_{10}$, $5/2^-,7/2^-$

4709$_{10}$, $9/2^+$

4715.38$_{5}$, $(1/2^-,3/2)$, $\gamma_{3858.29}$**857.75**$_{23}(3.9_{11})$, $\gamma_{2414.970}$**2300.8**$_{3}(8.5_{14})$, $\gamma_{1734.722}$**2980.59**$_{19}(3.9_{4})$, $\gamma_{1188.792}$**3526.66**$_{14}(4.9_{4})$, $\gamma_{464.976}$**4250.06**$_{12}(14.8_{11})$, $\gamma_{339.421}$**4375.83**$_{8}(22.2_{11})$, γ_{0}**4715.04**$_{8}(100_{5})$

4728$_{10}$, $1/2^-,3/2^-$

4769

4799$_{10}$, $5/2^+$

4822$_{10}$

4856$_{10}$

4869$_{10}$

4887$_{10}$

4920$_{10}$

4939$_{10}$

D **4947.19**$_{11}$, $(15/2)^-$, $\gamma_{4141.06}$**806.18**$_{8}(100_{21})$ M1+E2 $\delta=+0.23_{4}$, $\gamma_{3377.40}$**1569.3**$_{2}(2.6_{13})$

4960$_{10}$, $1/2^-,3/2^-$

4968.92$_{5}$, $1/2^-,3/2^-$, $\gamma_{1734.722}$**3234.08**$_{18}(4.4_{4})$, $\gamma_{1301.409}$**3667.42**$_{8}(21.4_{12})$, $\gamma_{1188.792}$**3779.94**$_{7}(100_{5})$, $\gamma_{877.947}$**4090.79**$_{15}(4.4_{4})$, $\gamma_{464.976}$**4503.57**$_{13}(19.4_{16})$, $\gamma_{339.421}$**4629.2**$_{3}(7.5_{4})$

4977, $7/2^-$

5029

5044

5062$_{10}$

5068.97$_{5}$, $1/2^-,3/2^-$, $\gamma_{3858.29}$**1210.2**$_{5}(4.5_{18})$, $\gamma_{3452.46}$**1615.2**$_{6}(6_{3})$, $\gamma_{1734.722}$**3334.59**$_{25}(6.4_{9})$, $\gamma_{1301.409}$**3767.43**$_{9}(29.1_{18})$, $\gamma_{1188.792}$**3880.1**$_{3}(4.5_{9})$, $\gamma_{877.947}$**4190.96**$_{8}(100_{5})$, $\gamma_{464.976}$**4603.9**$_{4}(10.9_{9})$, $\gamma_{339.421}$**4729.19**$_{15}(15.5_{9})$, γ_{0}**5068.63**$_{9}(99_{5})$

5098.15$_{21}$, $(13/2^-)$, $\gamma_{4141.06}$**958**(71_{14}), $\gamma_{3559.42}$**1538.7**$_{2}(100_{20})$, $\gamma_{2705.02}$**2392.1**$_{2}(57_{11})$

5110, $(1/2^+)$

5149$_{10}$, $1/2^+$

5201, $7/2^-$

5213$_{10}$, $5/2^+$

C **5251.33**$_{16}$, $(17/2)^+$, $\gamma_{4455.10}$**796.0**$_{2}(100)$ E2

5258$_{10}$

5269

5292$_{10}$, $(1/2^-,3/2^-)$

5292.98$_{22}$, $(15/2^-)$, $\gamma_{4141.06}$**1151.9**$_{2}(100)$

5310$_{35}$, $5/2^-,7/2^-$

5372$_{10}$, $7/2^-$

C **5381.28**$_{15}$, $(15/2^+)$, $\gamma_{4455.10}$**926.0**$_{2}(38_{8})$, $\gamma_{4141.06}$**1240.3**$_{2}(63_{13})$, $\gamma_{4103.03}$**1278.3**$_{2}(100_{20})$

5384.72$_{5}$, $(3/2)^+$, $\gamma_{4021.92}$**1362.80**$_{6}(100_{21})$, $\gamma_{1734.722}$**3648.3**$_{8}(3.8_{19})$, $\gamma_{1679.704}$**3705.2**$_{5}(9.4_{19})$, $\gamma_{1301.409}$**4083.23**$_{11}(30.2_{19})$, $\gamma_{877.947}$**4506.5**$_{3}(75_{8})$, $\gamma_{464.976}$**4919.54**$_{11}(64_{4})$, $\gamma_{339.421}$**5044.89**$_{11}(57_{4})$, γ_{0}**5384.52**$_{13}(47_{4})$

5429$_{10}$, $(9/2)^+$

5451, $7/2^-$

5458$_{10}$, $(5/2)^+$

5508$_{10}$

5528$_{10}$, $1/2^+$

5569$_{10}$, $(1/2^+)$

5608$_{10}$

5617.30$_{7}$, $1/2^{(-)},3/2,5/2^+$, $\gamma_{4021.92}$**1595.2**$_{6}(7_{3})$, $\gamma_{2893.623}$**2723.93**$_{23}(15_{3})$, $\gamma_{1679.704}$**3937.49**$_{18}(13.3_{18})$, $\gamma_{1188.792}$**4426.3**$_{8}(9_{5})$, $\gamma_{1188.792}$**4428.49**$_{16}(49_{5})$, $\gamma_{339.421}$**5277.35**$_{15}(28.0_{13})$, γ_{0}**5617.04**$_{12}(100_{5})$

5632.12$_{5}$, $1/2^-,3/2^-$, $\gamma_{4253.03}$**1378.96**$_{6}(100_{20})$, $\gamma_{3730.43}$**1901.75**$_{18}(39_{9})$, $\gamma_{3377.40}$**2254.8**$_{3}(27_{5})$, $\gamma_{3181.634}$**2450.52**$_{19}(21_{4})$, $\gamma_{2893.623}$**2738.70**$_{13}(30_{4})$, $\gamma_{1734.722}$**3897.11**$_{19}(14.3_{18})$, $\gamma_{1679.704}$**3952.24**$_{9}(57_{4})$, $\gamma_{1301.409}$**4332.4**$_{8}(5.4_{18})$, $\gamma_{1188.792}$**4442.54**$_{23}(14.3_{18})$, $\gamma_{877.947}$**4753.6**$_{4}(10.7_{18})$, $\gamma_{464.976}$**5167.6**$_{3}(12.5_{18})$, $\gamma_{339.421}$**5292.69**$_{13}(68_{4})$, γ_{0}**5631.99**$_{22}(28.6_{18})$

5648$_{10}$, $1/2^+$

5692$_{10}$, $1/2^+$

5702.17$_{7}$, $(1/2^-,3/2)$, $\gamma_{1301.409}$**4401.8**$_{7}(6.7_{22})$, $\gamma_{877.947}$**4823.91**$_{11}(51.1_{22})$, $\gamma_{464.976}$**5237.0**$_{6}(6.7_{22})$, $\gamma_{339.421}$**5362.67**$_{11}(100_{4})$, γ_{0}**5701.76**$_{14}(87_{4})$

5747$_{10}$

5754.78$_{9}$, $(1/2^-,3/2)$, $\gamma_{4140.34}$**1615.2**$_{6}(25_{11})$, $\gamma_{3889.67}$**1865.3**$_{3}(43_{11})$, $\gamma_{1734.722}$**4019.88**$_{20}(100_{18})$, $\gamma_{1301.409}$**4452.8**$_{3}(25_{4})$, $\gamma_{1188.792}$**4565.99**$_{23}(32_{4})$, γ_{0}**5754.36**$_{17}(64_{4})$

5771

5783$_{10}$

5805$_{10}$, $(3/2^+,5/2^+)$

5821$_{10}$

5844$_{10}$, $(3/2^+,5/2^+)$

5872$_{10}$, $1/2^+,3/2^+,5/2^+$

5894$_{10}$, $(5/2)^+$

5924$_{10}$

D **5943**$_{1}$, $\gamma_{4947.19}$**997**$_{1}(100)$

5946$_{10}$, $(7/2^-)$

5957.23$_{5}$, $1/2^+$, $\gamma_{4352.42}$**1605.0**$_{3}(18_{4})$, $\gamma_{4140.34}$**1816.76**$_{8}(72_{15})$, $\gamma_{3452.46}$**2504.83**$_{18}(19_{3})$, $\gamma_{2893.623}$**3063.63**$_{7}(100_{6})$, $\gamma_{1734.722}$**4223.2**$_{4}(5.9_{15})$, $\gamma_{877.947}$**5078.92**$_{12}(35.3_{15})$, γ_{0}**5956.75**$_{12}(85_{4})$

5988$_{10}$, $1/2^-,3/2^-$

C **5989.02**$_{24}$, $(19/2^+)$, $\gamma_{4455.10}$**1533.9**$_{2}(100)$

5994.10$_{7}$, $1/2^{(-)},3/2,5/2^+$, $\gamma_{3452.46}$**2541.49**$_{12}(36_{5})$, $\gamma_{3377.40}$**2616.66**$_{19}(59_{9})$, $\gamma_{2414.970}$**3578.6**$_{7}(5.1_{17})$, $\gamma_{1679.704}$**4314.5**$_{3}(18.6_{17})$, $\gamma_{1188.792}$**4805.10**$_{10}(100_{5})$, $\gamma_{877.947}$**5115.9**$_{3}(11.9_{17})$, γ_{0}**5993.84**$_{14}(49_{3})$

6013$_{10}$, $(7/2^-)$

6030.54$_{5}$, $1/2^-,3/2^-$, $\gamma_{2893.623}$**3136.75**$_{9}(49_{4})$, $\gamma_{1734.722}$**4295.55**$_{12}(37_{2})$, $\gamma_{1301.409}$**4729.19**$_{15}(33_{2})$, $\gamma_{1188.792}$**4841.20**$_{19}(24_{2})$, $\gamma_{877.947}$**5152.30**$_{10}(92_{6})$, $\gamma_{464.976}$**5565.96**$_{24}(37_{4})$, γ_{0}**6030.34**$_{14}(100_{8})$

6071$_{10}$, $(9/2^+)$

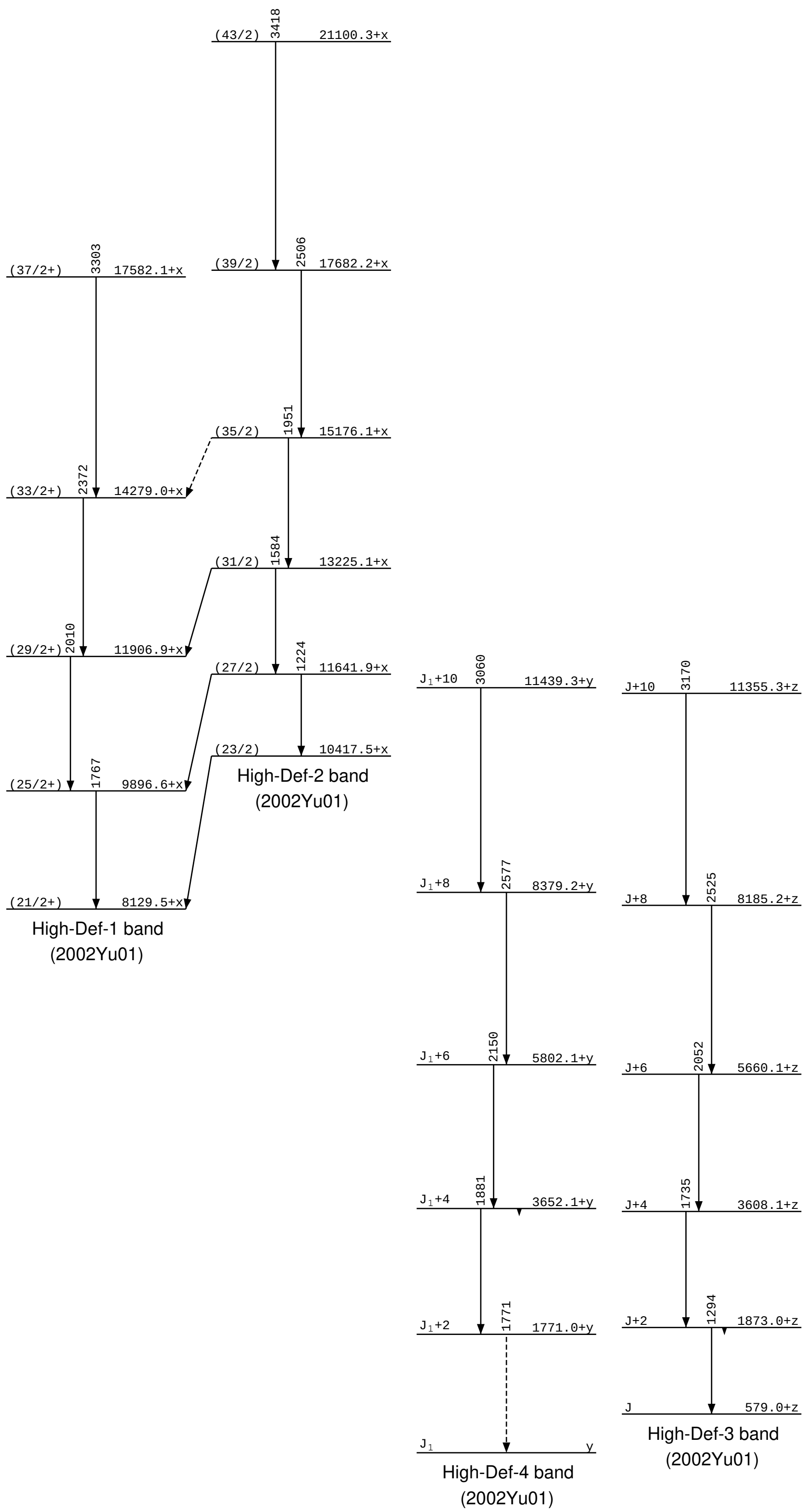
6076.10$_{16}$, $(15/2,17/2)^-$, $\gamma_{4947.19}$**1129.0**$_{2}(30_{6})$, $\gamma_{4141.06}$**1935.1**$_{2}(100_{20})$ M1,E2

6082, $\leq 7/2$

6101.46$_{9}$, $3/2^+,5/2^+$, $\gamma_{4968.92}$**1132.21**$_{16}(56_{11})$, $\gamma_{3853.72}$**2248.1**$_{4}(41_{11})$, $\gamma_{3377.40}$**2723.93**$_{23}(41_{7})$, $\gamma_{1679.704}$**4420.8**$_{7}(7_{4})$, $\gamma_{1188.792}$**4912.8**$_{4}(19_{4})$, $\gamma_{877.947}$**5223.38**$_{13}(100_{7})$, $\gamma_{464.976}$**5636.8**$_{4}(0.010_{1})$

6141.52$_{8}$, $1/2^-,3/2^-$, $\gamma_{3853.72}$**2287.8**$_{4}(18_{5})$, $\gamma_{3377.40}$**2763.92**$_{12}(30_{3})$, $\gamma_{1734.722}$**4406.5**$_{10}(4.9_{16})$, $\gamma_{1679.704}$**4459.2**$_{9}(3.3_{16})$, $\gamma_{464.976}$**5676.80**$_{24}(23.0_{16})$,

$\gamma_{\mathbf{0}}$**6141.20**$_{12}(100_5)$
6189$_{10}$, $(3/2^+)$
6206$_{10}$, $(5/2)^+$
6225$_{10}$, $3/2^+,5/2^+$
6245$_{10}$
6269$_{10}$
6284$_{10}$
6305$_{10}$, $(5/2)^+$
6339$_{10}$, $3/2^+,5/2^+$
6354$_{10}$
6380$_{10}$, $1/2^+$
6434$_{10}$
6454$_{10}$, $3/2^+,5/2^+$
6481$_{10}$, $3/2^+,5/2^+$
6502.46$_{19}$, $(19/2^-)$, $\gamma_{\mathbf{6076.10}}$**426.5**$_2(<128)$, $\gamma_{\mathbf{4947.19}}$**1555.0**$_2(100_{20})$ Q
6507$_{10}$, $(3/2^+,5/2^+)$
6521$_{10}$
6535$_{10}$
6567$_{10}$
6583$_{10}$
6598.37$_7$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{5754.78}}$**843.57**$_{17}(17_4)$, $\gamma_{\mathbf{3686.206}}$**2912.28**$_{12}(18.4_{20})$, $\gamma_{\mathbf{2893.623}}$**3705.2**$_5(5.1_{10})$, $\gamma_{\mathbf{339.421}}$**6258.74**$_{15}(38.8_{20})$, $\gamma_{\mathbf{0}}$**6597.67**$_{12}(100_5)$
6648$_{10}$, $3/2^+,5/2^+$
6679$_{10}$, $(1/2^+)$
6690$_{10}$, $(3/2^+,5/2^+)$
6709$_{10}$, $3/2^+,5/2^+$
6726$_{10}$, $3/2^+,5/2^+$
6749$_{10}$, $3/2^+,5/2^+$
6771$_{10}$
6788$_{10}$
6806$_{10}$
6834$_{10}$, $3/2^+,5/2^+$
6859$_{10}$
6880$_{10}$
6895
6919$_{10}$, $1/2^+$
6942, $7/2^-$
6955$_{10}$, $1/2^+$
6978
6994$_{10}$
7023$_{10}$
7042$_{10}$, $(7/2)^-$
7073$_{10}$, $1/2^+,3/2^+,5/2^+$
7092$_{10}$
7111$_{10}$
7124$_{10}$
7141$_{10}$
7160$_{10}$, $1/2^+$
7164.0$_3$, $(19/2^-,21/2^-)$, $\gamma_{\mathbf{6502.46}}$**661.5**$_2(100)$
7187$_{10}$
7204$_{10}$, $1/2^+,3/2^+,5/2^+$
7237$_{10}$, $3/2^+,5/2^+$
7263$_{10}$, $(7/2)^-$
7270.41$_9$, $1/2^{(-)},3/2,5/2^+$, $\gamma_{\mathbf{5702.17}}$**1568.48**$_{26}(41_9)$, $\gamma_{\mathbf{4968.92}}$**2300.8**$_3(71_{12})$, $\gamma_{\mathbf{3858.29}}$**3412.03**$_{16}(32_3)$, $\gamma_{\mathbf{3686.206}}$**3585.2**$_5(12_3)$, $\gamma_{\mathbf{3452.46}}$**3818.5**$_5(15_3)$, $\gamma_{\mathbf{3025.83}}$**4244.70**$_{25}(26_3)$, $\gamma_{\mathbf{1679.704}}$**5590.0**$_5(15_3)$, $\gamma_{\mathbf{877.947}}$**6391.93**$_{14}(100_6)$
7282$_{10}$, $3/2^+,5/2^+$
7302$_9$, $7/2^-$
7324$_{10}$, $(7/2)^-$
7342$_9$, $(7/2)^-$
7353$_{10}$, $3/2^+,5/2^+$
7384$_{10}$, $3/2^+,5/2^+$
7408$_{10}$, $3/2^+,5/2^+$
7434$_{10}$, $3/2^+,5/2^+$
7455$_{10}$, $3/2^+,5/2^+$
7478$_{10}$
7491$_{10}$
7504$_{10}$
7521$_{10}$
7539$_{10}$, $3/2^+,5/2^+$
7564, $1/2^+$
7574
7584
7604, $3/2^+,5/2^+$
7626, $3/2^+,7/2^+$
7654, $3/2^+,5/2^+$
7684, $3/2^+,5/2^+$
7707
7733
7753
7775
7802, $3/2^+,5/2^+$
7825, $3/2^+,5/2^+$
7845
7865, $1/2^+$
7884, $3/2^+,5/2^+$
7914
7930
7950.5$_3$, $(19/2^-,21/2^-)$, $\gamma_{\mathbf{7164.0}}$**786.5**$_2(100)$
7972, $3/2^+,5/2^+$
8019, $3/2^+,5/2^+$
8055, $3/2^+,5/2^+$
C **8129.5**$_{10}$, $(21/2^+)$, $\gamma_{\mathbf{5251.33}}$**2878**$_1(100)$
E **8129.5+x**, $(21/2^+)$
8183, $3/2^+,5/2^+$
8216, $3/2^+,5/2^+$
8240, $3/2^+,5/2^+$
8269, $3/2^+,5/2^+$
8296, $3/2^+,5/2^+$
8337, $3/2^+,5/2^+$
8377, $3/2^+,5/2^+$
8417, $3/2^+,5/2^+$
8469, $3/2^+,5/2^+$
8482, $(3/2)^-$
9081, $(7/2)^-$
E **9896.6+x**, $(25/2^+)$, $\gamma_{\mathbf{8129.5+x}}$**1767**$_1(1.66_{10})$ Q
10085, $(1/2)^+$
F **10417.5+x**, $(23/2)$, $\gamma_{\mathbf{8129.5+x}}$**2288**$_1(0.61_7)$ D
10527, $(3/2)^+$
10600, $1/2^+$
F **11641.9+x**, $(27/2)$, $\gamma_{\mathbf{10417.5+x}}$**1224**$_1(0.63_7)$ Q, $\gamma_{\mathbf{9896.6+x}}$**1745**$_1(0.83_{13})$ D
E **11906.9+x**, $(29/2^+)$, $\gamma_{\mathbf{9896.6+x}}$**2010**$_1(1.07_1)$ Q
F **13225.1+x**, $(31/2)$, $\gamma_{\mathbf{11906.9+x}}$**1318**$_1$, $\gamma_{\mathbf{11641.9+x}}$**1584**$_1(0.91_{11})$ Q
E **14279.0+x**, $(33/2^+)$, $\gamma_{\mathbf{11906.9+x}}$**2372**$_1(1.00_8)$ Q
F **15176.1+x**, $(35/2)$, $\gamma_{\mathbf{14279.0+x}}$**897**$_1$(?), $\gamma_{\mathbf{13225.1+x}}$**1951**$_1(1.01_{11})$ Q
16464.1+x, $\gamma_{\mathbf{14279.0+x}}$**2185**$_1(0.17_6)$
17.04x10$^3{}_{30}$, $(3/2^-)$
E **17582.1+x**, $(37/2^+)$, $\gamma_{\mathbf{14279.0+x}}$**3303**$_1(0.23_8)$ Q
F **17682.2+x**, $(39/2)$, $\gamma_{\mathbf{15176.1+x}}$**2506**$_1(0.59_1)$ Q
F **21100.3+x**, $(43/2)$, $\gamma_{\mathbf{17682.2+x}}$**3418**$_1(0.17_7)$ Q
H **y**, J_1,
H **1771.0+y**, J_1+2, $\gamma_{\mathbf{y}}$**1771**$_1(0.12_4)$(?)
2704.1+y
H **3652.1+y**, J_1+4, $\gamma_{\mathbf{2704.1+y}}$**948**$_1(0.44_4)$, $\gamma_{\mathbf{1771.0+y}}$**1881**$_1(0.60_4)$ Q
H **5802.1+y**, J_1+6, $\gamma_{\mathbf{3652.1+y}}$**2150**$_1(1.00_4)$ Q
H **8379.2+y**, J_1+8, $\gamma_{\mathbf{5802.1+y}}$**2577**$_1(0.56_4)$ Q
H **11439.3+y**, J_1+10, $\gamma_{\mathbf{8379.2+y}}$**3060**$_1(0.08_4)$
z
G **579.0+z**, J
G **1873.0+z**, $J+2$, $\gamma_{\mathbf{579.0+z}}$**1294**$_1(0.60_7)$ Q, $\gamma_{\mathbf{z}}$**1873**$_1(0.29_3)$(?)
G **3608.1+z**, $J+4$, $\gamma_{\mathbf{1873.0+z}}$**1735**$_1(1.00_{10})$ Q
G **5660.1+z**, $J+6$, $\gamma_{\mathbf{3608.1+z}}$**2052**$_1(0.88_{10})$ Q
8020.2+z, $\gamma_{\mathbf{5660.1+z}}$**2360**$_1(0.26_5)$ Q
G **8185.2+z**, $J+8$, $\gamma_{\mathbf{5660.1+z}}$**2525**$_1(0.43_5)$ Q
G **11355.3+z**, $J+10$, $\gamma_{\mathbf{8185.2+z}}$**3170**$_1(0.07_3)$


(43/2) 3418 21100.3+x
(39/2) 2506 17682.2+x
(37/2+) 3303 17582.1+x
(35/2) 1951 15176.1+x
(33/2+) 2372 14279.0+x
(31/2) 1584 13225.1+x
(29/2+) 2010 11906.9+x
(27/2) 1224 11641.9+x
(23/2) 10417.5+x
(25/2+) 1767 9896.6+x
(21/2+) 8129.5+x
High-Def-1 band
(2002Yu01)
High-Def-2 band
(2002Yu01)
J1+10 3060 11439.3+y
J1+8 2577 8379.2+y
J1+6 2150 5802.1+y
J1+4 1881 3652.1+y
J1+2 1771 1771.0+y
J1 y
High-Def-4 band
(2002Yu01)
J+10 3170 11355.3+z
J+8 2525 8185.2+z
J+6 2052 5660.1+z
J+4 1735 3608.1+z
J+2 1294 1873.0+z
J 579.0+z
High-Def-3 band
(2002Yu01)

$^{59}_{28}Ni_{31}$

$^{58}_{29}\mathbf{Cu}_{29}$

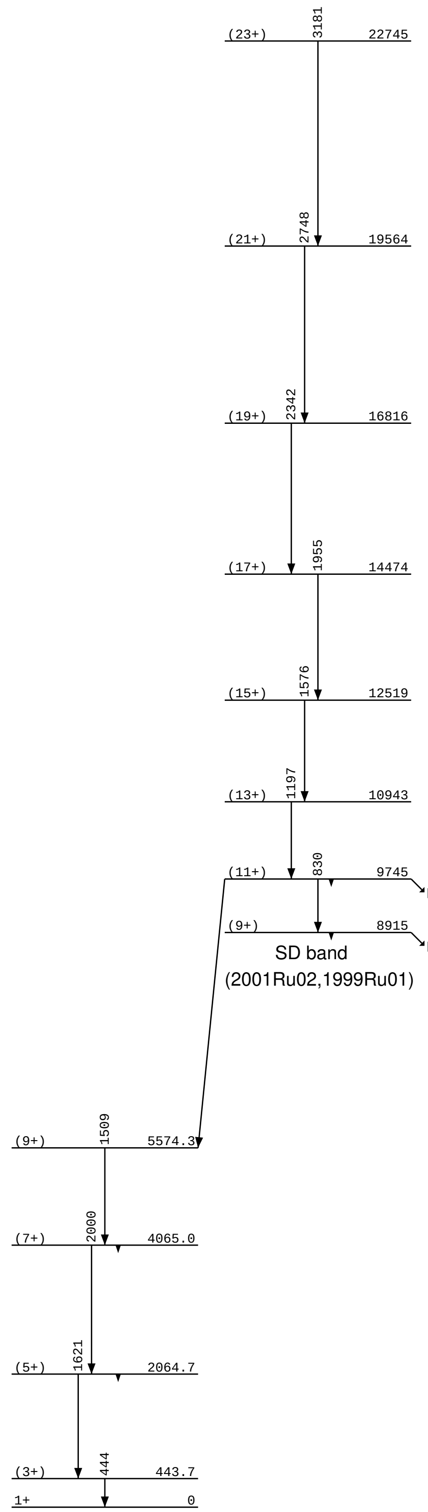
S_n: 12426 $_{16}$, S_p: 2873 $_3$

Nuclear Bands

A SD band (2001Ru02,1999Ru01,1998Ru01,2002RuAA)
Q_0=2.0$_2$

Levels and γ-ray branchings:

0, 1^+, *3.204$_7$ s*, %ε+%β^+=100
202.6$_3$, 0^+, $\gamma_{\mathbf{0}}$**203.0**$_3$(100)
443.7$_2$, (3^+), $\gamma_{\mathbf{0}}$**443.5**$_2$(100)
1051.0$_3$, (1^+), *79$^{20}_{13}$ fs*, $\gamma_{\mathbf{202.6}}$**848.5**$_2$(100)
1427.8$_3$, 2^+, *>670 fs*, $\gamma_{\mathbf{0}}$**1427.8**$_3$(100)
1549.1$_3$, (4^+), *>350 fs*, $\gamma_{\mathbf{443.7}}$**1105.2**$_3$(100)
1647.4$_2$, (3^+), *>910 fs*, $\gamma_{\mathbf{0}}$**1647.4**$_2$(100)
1651.6$_3$, 2^+, *35$_7$ fs*, $\gamma_{\mathbf{1051.0}}$**601.2**$_4$(5$_2$), $\gamma_{\mathbf{443.7}}$**1207.5**$_3$(100)
2064.7$_4$, (5^+), $\gamma_{\mathbf{1647.4}}$**418**$_1$(13$_2$), $\gamma_{\mathbf{1549.1}}$**515.4**$_3$(43$_2$), $\gamma_{\mathbf{443.7}}$**1621.2**$_4$(100$_3$)
2070$_{20}$
2170$_{20}$
2270$_{20}$
2690$_{20}$, 4^+
2780$_{20}$
2840$_{20}$
2919.9$_5$, (5^+), $\gamma_{\mathbf{443.7}}$**2476.4**$_8$(100)
2940$_{20}$, (5^+)
3230$_{20}$
3310$_{20}$
3420.4$_5$, (7^+), $\gamma_{\mathbf{2919.9}}$**500.5**$_3$(8$_1$), $\gamma_{\mathbf{2064.7}}$**1355.6**$_4$(100$_3$)
3511.9$_7$(?), $\gamma_{\mathbf{2919.9}}$**592.0**$_5$(100)
3570$_{20}$
3740$_{20}$
3820$_{20}$
3890$_{20}$
4065.0$_7$, (7^+), $\gamma_{\mathbf{2919.9}}$**1145.2**$_5$(60$_7$), $\gamma_{\mathbf{2064.7}}$**2000**$_1$(100$_7$)
4210$_{20}$
4440.8$_6$, (8^+), $\gamma_{\mathbf{3420.4}}$**1020.4**$_4$(100)
5190$_2$(?), $\gamma_{\mathbf{2064.7}}$**3125**$_3$(100)(?)
5347.2$_9$, (9^+), $\gamma_{\mathbf{4440.8}}$**906**$_1$(24$_3$), $\gamma_{\mathbf{3420.4}}$**1927**$_1$(100$_6$)
5574.3$_8$, (9^+), $\gamma_{\mathbf{4065.0}}$**1509.3**$_5$(100)
6386.5$_{10}$, (10^+), $\gamma_{\mathbf{5347.2}}$**1039**$_1$(21$_4$), $\gamma_{\mathbf{4440.8}}$**1946**$_1$(100$_8$)
6586$_2$(?), $\gamma_{\mathbf{5190}}$**1396**$_1$(50$_{50}$)(?), $\gamma_{\mathbf{3511.9}}$**3073**$_3$(100$_{50}$)(?)
6793$_1$, (9), $\gamma_{\mathbf{5347.2}}$**1446**$_1$(100)
7391$_2$, (11^+), $\gamma_{\mathbf{5347.2}}$**2044**$_2$(100), $\gamma_{\mathbf{5574.3}}$**1818**
8127$_1$, (11), $\gamma_{\mathbf{6386.5}}$**1740**$_1$(100)
8226$_2$(?), (9^+), $\gamma_{\mathbf{5574.3}}$**2652**$_2$(100$_{25}$), $\gamma_{\mathbf{5190}}$**3035**$_3$(50$_{25}$)(?)
8487$_2$, (12^+), $\gamma_{\mathbf{6386.5}}$**2100**$_2$(100)
8880$_2$, $\gamma_{\mathbf{7391}}$**1489**$_1$(100$_{20}$), $\gamma_{\mathbf{6793}}$**2087**$_2$(80$_{20}$)
A **8915**$_2$, (9^+), *0.22$_{18}$ ps*, %P≈97, $\gamma_{\mathbf{6586}}$**2330**$_2$(?)
9679$_3$, $\gamma_{\mathbf{7391}}$**2288**$_2$(100)
A **9745**$_2$, (11^+), *0.38$_4$ ps*, %P≈8, $\gamma_{\mathbf{8915}}$**830.2**$_3$(100$_5$), $\gamma_{\mathbf{8226}}$**1519**$_1$(23$_5$), $\gamma_{\mathbf{5574.3}}$**4171**$_3$(27$_5$)
9804$_2$, (12), $\gamma_{\mathbf{8487}}$**1317**$_1$(50$_{12}$), $\gamma_{\mathbf{8127}}$**1677**$_1$(100$_{12}$)
10775$_2$, $\gamma_{\mathbf{8880}}$**1895**$_1$(100)
A **10943**$_2$, (13^+), *0.104$_{14}$ ps*, $\gamma_{\mathbf{9745}}$**1197.3**$_5$(100)
11553$_4$, $\gamma_{\mathbf{8487}}$**3066**$_3$(100)
11842$_3$, $\gamma_{\mathbf{9804}}$**2038**$_2$(100)
A **12519**$_2$, (15^+), *0.035$_7$ ps*, $\gamma_{\mathbf{10943}}$**1576.4**$_4$(100)
13128$_3$, $\gamma_{\mathbf{10775}}$**2353**$_2$(100)
A **14474**$_2$, (17^+), $\gamma_{\mathbf{12519}}$**1955**$_1$(100)
14881$_4$, $\gamma_{\mathbf{11842}}$**3039**$_3$(100)
A **16816**$_3$, (19^+), $\gamma_{\mathbf{14474}}$**2342**$_2$(100)
A **19564**$_4$, (21^+), $\gamma_{\mathbf{16816}}$**2748**$_2$(100)
A **22745**$_5$, (23^+), $\gamma_{\mathbf{19564}}$**3181**$_3$(100)



$^{58}_{29}\mathrm{Cu}_{29}$

$^{59}_{29}$Cu$_{30}$

S_n: 12762.9 $_{23}$, S_p: 3417.5 $_{9}$

Nuclear Bands

A Band based on $19/2^+$, α=+1/2
B Band based on $19/2^+$, α=-1/2
C Band based on $17/2^+$, α=+1/2
D Band based on $17/2^+$, α=-1/2
E $g_{9/2}$, α=+1/2
F $f^{-1}_{7/2}$, α=+1/2
G $f^{-1}_{7/2}$, α=-1/2
H $p_{3/2}$
I $f_{5/2}$
J Band based on $(23/2^-)$
K SD band (2000An32,2002Ru06)

Levels and γ-ray branchings:

H **0**, $3/2^-$, *81.5$_5$ s*, %ε+%β$^+$=100
491.09$_{10}$, $1/2^-$, *0.58$_{21}$ ps*, γ_{0}**491.13**$_{11}$(100) M1(+E2) $\delta<0.37$
I **913.98**$_{17}$, $5/2^-$, *>1.1 ps*, $\gamma_{491.09}$**422.6**$_2$(≈ 1)(?), γ_0**913.85**$_9$(100) M1+E2 $\delta=-0.21_2$
H **1398.51**$_{11}$, $7/2^-$, *0.40$_{17}$ ps*, $\gamma_{913.98}$**484.70**$_{20}$(13.1_{12}) M1+E2 $\delta=-0.09_{12}$, γ_0**1398.5**$_4$(100.0_{17}) E2
G **1865.24**$_{11}$, $7/2^-$, $\gamma_{1398.51}$**465.55**$_{25}$(27.3_{18}), $\gamma_{913.98}$**951.22**$_{18}$(100.0_{18}) M1(+E2) $\delta=0.00_5$, γ_0**1865.2**$_4$(55_2) E2
1987.80$_{15}$, $5/2^{(+)}$, γ_0**1988.03**$_{20}$(100) D+Q $\delta=-1.23_9$
2266.30$_{19}$, $3/2^+$, *0.22$_{10}$ ps*, $\gamma_{491.09}$**1775.4**$_4$(92.3_{19}) D+Q $\delta=+1.9_7$, γ_0**2266.1**$_5$(100.0_{19}) D+Q $\delta=+1.0_6$
2318.1$_8$, $1/2^{(-)},5/2^{(-)}$, $\gamma_{491.09}$**1827**$_1$(20.5_{12}), γ_0**2318**(100.0_{12})
2323.85$_{18}$, $3/2$, *254 fs*, $\gamma_{1987.80}$**337**$_1$(?), $\gamma_{913.98}$**1409.1**$_4$(11.1_{11}) D+Q $\delta=-1.4_{12}$, γ_0**2324.0**$_2$(100.0_{11}) D
2360, $3/2^+,5/2^+$
I **2390.83**$_{16}$, $9/2^-$, $\gamma_{1398.51}$**992.1**$_2$(10.5), $\gamma_{913.98}$**1476.8**$_2$(100) E2
H **2587.2**$_3$, $11/2^{(-)}$, $\gamma_{1865.24}$**722.8**$_2$(≈ 1.2), $\gamma_{1398.51}$**1189.2**$_2$(100)
F **2664.40**$_{17}$, $(9/2^-)$, $\gamma_{1865.24}$**799.3**$_2$(100) D+Q $\delta=+0.32_4$, $\gamma_{1398.51}$**1265.7**$_2$(12)
2705.94$_{22}$, $5/2^{(-)}$, $\gamma_{1398.51}$**1310**(25.7_{17}), $\gamma_{913.98}$**1792.0**$_2$(100.0_{17}) D(+Q) $\delta=-0.09_{10}$, $\gamma_{491.09}$**2218**(45.8_{17}) Q
2714.80$_{19}$, $7/2^{(-)}$, $\gamma_{1987.80}$**727.5**$_2$(40.5_{20}), $\gamma_{1398.51}$**1317**(54_2) D+Q $\delta=+1.3_4$, $\gamma_{913.98}$**1801.0**$_2$(76_2) D+Q $\delta=-3.3_6$, γ_0**2714.6**$_2$(100_2) Q
2928.2$_{16}$, $5/2^{(-)}$, $\gamma_{1987.80}$**940**(24.4_{22}) D+Q $\delta=+2.4_{27}$, $\gamma_{913.98}$**2014**(100_2) D(+Q) $\delta=+0.15_{25}$, $\gamma_{491.09}$**2437**(22.2_{22}), γ_0**2928**(76_2)
2992.9$_{21}$, $(7/2^-)$, $\gamma_{1987.80}$**1005**(8.6_{17}), $\gamma_{913.98}$**2079**(100.0_{17}), γ_0**2993**(63.8_{17})
3024.8$_{10}$, $5/2^{(-)}$, $\gamma_{913.98}$**2110**(33.3_{22}), $\gamma_{491.09}$**2533**(89_2), γ_0**3024**(100_2)
E **3042.58**$_{12}$, $9/2^+$, *0.80$_{35}$ ps*, $\gamma_{2587.2}$**455.1**$_2$(1.9), $\gamma_{1865.24}$**1177.45**$_{14}$(26.3_{13}) (E1+M2) $\delta=0.00_3$, $\gamma_{1398.51}$**1644.3**$_2$(100.0_{13}) E1+M2 $\delta=+0.027_{10}$, $\gamma_{913.98}$**2128**(4.0_{13}), γ_0**3042**(1.3_{13})
3114.1$_5$, $5/2^-$, *14$_8$ fs*, $\gamma_{491.09}$**2624**(38.8_{14}), γ_0**3114.0**$_5$(100.0_{14}) M1+E2
3121.6$_7$(?), $\gamma_{913.98}$**2207**$_1$, $\gamma_{491.09}$**2631**$_1$
3129.64$_{15}$, $3/2^-$, *6.9$_{28}$ fs*, $\gamma_{913.98}$**2215.7**$_3$(100_3), $\gamma_{491.09}$**2638.6**$_3$(97_3), γ_0**3129.5**$_2$(81_3)
3309.0$_{20}$, $7/2^{(-)}$, $\gamma_{1398.51}$**1910**(67_2), $\gamma_{913.98}$**2395**(100_2), γ_0**3309**(56_2)
3309, $(7/2^+,9/2^+)$
G **3329.43**$_{16}$, $(11/2^-)$, $\gamma_{2664.40}$**665.2**$_2$(100) M1+E2 $\delta=+0.09_5$, $\gamma_{2587.2}$**741.8**$_2$(41), $\gamma_{1865.24}$**1464.1**$_2$(38), $\gamma_{1398.51}$**1931.3**$_2$(26) Q
3434$_4$, $5/2$, $\gamma_{913.98}$**2520**(100.0_{14}), γ_0**3434**(42.9_{14})
3437(?), $(7/2^+,9/2^+)$
3438$_4$, $(1/2)$, γ_0**3438**(100)
I **3447.68**$_{18}$, $(13/2)^-$, $\gamma_{2587.2}$**860.2**$_2$(17.5) Q+D $\delta\approx-1$, $\gamma_{2390.83}$**1056.5**$_2$(100) E2
3550.6$_{12}$, $5/2^-$, *<10 fs*, $\gamma_{913.98}$**2637**(100.0_{15}), γ_0**3550.5**$_{13}$(53.8_{15})
3573.9$_8$, $5/2,7/2$, $\gamma_{1398.51}$**2175**(42.9_{14}), $\gamma_{913.98}$**2660**(100.0_{14})
3578.1$_6$, $3/2^{(-)},5/2,7/2^{(-)}$, $\gamma_{1865.24}$**1713**(97_3), $\gamma_{913.98}$**2664**(97_3), γ_0**3578**(100_3)
3580.25$_{14}$, $5/2^+$, *1.7$_{10}$ ps*, $\gamma_{3042.58}$**536.4**$_{11}$(9), $\gamma_{2266.30}$**1314.0**$_2$(68) (E2+M1) $\delta=+0.07_5$, $\gamma_{1987.80}$**1592.3**$_4$(29) Q+D $\delta=-0.4_3$, $\gamma_{1865.24}$**1714.8**$_4$(32), $\gamma_{1398.51}$**2182.3**$_4$(41) (E1+M2) $\delta=+0.27_{20}$, $\gamma_{913.98}$**2666.3**$_2$(100) (E1(+M2)) $\delta=-0.13_{14}$, γ_0**3579.9**$_3$(15) (E1+M2)
3615.0$_{10}$, $3/2^-$, *<24 fs*, $\gamma_{491.09}$**3124**(100.0_{15}) (M1+E2), γ_0**3614.9**$_{10}$(53.8_{15})
3654$_{10}$, $1/2^-,3/2^-$
3699$_4$, $7/2^-$, $\gamma_{913.98}$**2785**(100)
3728.9$_{21}$, $3/2,5/2$, $\gamma_{2323.85}$**1405**(100_2), $\gamma_{1987.80}$**1741**(78_2), $\gamma_{1398.51}$**2330**(56_2)
3741.8$_{16}$, $3/2^-$, $\gamma_{1987.80}$**1754**(25_8) D+Q $\delta=-1.7_{16}$, $\gamma_{913.98}$**2828**(98_{10}) (M1(+E2)) $\delta=-0.06_{17}$, $\gamma_{491.09}$**3250**(100_{13}) (M1+E2) $\delta=-0.7_6$, γ_0**3741**(28_5) (E2(+M1)) $\delta\le-0.25$
3757.7$_9$, $5/2^{(+)},7/2,9/2^{(-)}$, $\gamma_{1398.51}$**2357**(66.7_{17}), $\gamma_{913.98}$**2842**(100.0_{17})
3885.5$_{21}$, $3/2^-$, $\gamma_{1987.80}$**1896**(21.7_{17}) D, $\gamma_{491.09}$**3393**(45_8) (M1+E2), γ_0**3884**(100_{12}) (M1+E2) $\delta=-0.20_6$
3905.2$_{18}$, $3/2^-$, $\gamma_{1987.80}$**1916**(20_4) D, $\gamma_{913.98}$**2992**(31_7) (M1), $\gamma_{491.09}$**3413**(31_7) (M1+E2), γ_0**3906**(100_{11}) (M1+E2) $\delta=-0.21_7$
3930.0$_{24}$, $5/2^+$, $\gamma_{1398.51}$**2531**(100.0_{14}), $\gamma_{913.98}$**3016**(33.3_{14})
4000$_2$, $(1/2)^-$, $\gamma_{2323.85}$**1676**(100_7), $\gamma_{491.09}$**3509**(93_9), γ_0**4000**(34_5)
4051.0$_{10}$, $1/2^-,3/2^-$, $\gamma_{3024.8}$**1026**(16), $\gamma_{2323.85}$**1727**(18), $\gamma_{491.09}$**3560**(45), γ_0**4051**(100)
4072$_3$, $3/2^{(-)}\rightarrow 7/2^{(-)}$, $\gamma_{1987.80}$**2084**(100.0_{13}), $\gamma_{913.98}$**3158**(33.3_{13})
F **4100.13**$_{18}$, $(13/2^-)$, $\gamma_{3447.68}$**652.3**$_2$(13), $\gamma_{3329.43}$**770.9**$_2$(100) D+Q $\delta=+0.07_5$, $\gamma_{2664.40}$**1435.4**$_2$(54)
4108.0$_{10}$, $3/2^-$, $\gamma_{913.98}$**3194**(100_{11}) (M1+E2), $\gamma_{491.09}$**3617**(34_7) (M1(+E2)), γ_0**4108**(7.0_{28}) (M1,E2)
4154
4183$_4$, $5/2,9/2^{(-)}$, $\gamma_{2705.94}$**1474**(100.0_{17}), $\gamma_{1398.51}$**2784**(66.7_{17})
4207.0$_{18}$, $5/2,7/2^{(-)}$, $\gamma_{2323.85}$**1883**(93_4), $\gamma_{1398.51}$**2808**(79_4), $\gamma_{913.98}$**3293**(100_4), γ_0**4207**(86_4)
4213$_9$, $7/2^+,9/2^+$
4258$_2$(?)
4267$_7$, $1/2^-,3/2^-$
4295.2$_{20}$(?), γ_0**4295**$_2$(100)
4301.3$_{15}$, $5/2^{(-)}$, $\gamma_{1398.51}$**2902**(100.0_{17}) D(+Q), $\gamma_{913.98}$**3387**(66.7_{17}) D(+Q), γ_0**4301**(16_3) D(+Q)
4307$_4$, $5/2^{(-)}$, $\gamma_{913.98}$**3393**(100)
4348.9$_{10}$, $(1/2)^-$, $\gamma_{3129.64}$**1217**(63_4), $\gamma_{3024.8}$**1323**(30_4), $\gamma_{2323.85}$**2023**(100_4), $\gamma_{2318.1}$**2029**(33_4), $\gamma_{2266.30}$**2081**(30_4), $\gamma_{491.09}$**3856**(59_4), γ_0**4347**(22_4)
4409.9$_{24}$(?)
4441.0$_{24}$, $7/2^+$, $\gamma_{1398.51}$**3042**, $\gamma_{913.98}$**3527**
4465$_4$, $5/2^{(+)},7/2,9/2^{(-)}$, $\gamma_{913.98}$**3551**(100)
4500.0$_7$, $(1/2)^-$, *7.8$_7$ fs*, γ_0**4500.2**$_7$(100)
E **4528.4**$_3$, $(13/2^+)$, $\gamma_{3042.58}$**1485.7**$_2$ Q, $\gamma_{2587.2}$**1941**
4530.0$_{10}$, $(7/2)^+$, $\gamma_{913.98}$**3616**(100)
4622.2$_7$, γ_0**4622.2**$_7$(100)
4699$_4$, $(3/2)$, $\gamma_{2323.85}$**2375**(25.4_{16}), $\gamma_{491.09}$**4208**(33.3_{16}), γ_0**4699**(100.0_{16})
4711.2$_{22}$, $(1/2)^-$
4770.1$_5$, $3/2^-$, *3.5$_3$ fs*, $\gamma_{3741.8}$**1027**(5.6_{28}), γ_{3438}**1331**(11_3) D(+Q), $\gamma_{3129.64}$**1639**(5.6_{28}), $\gamma_{2928.2}$**1841**(5.6_{28}), $\gamma_{2714.80}$**2053**(2.8_{28}), $\gamma_{2705.94}$**2060**(5.6_{28}), $\gamma_{2318.1}$**2452.0**$_{10}$(19_3) D+Q, $\gamma_{2266.30}$**2504.0**$_{10}$(22_3) (E1), $\gamma_{1987.80}$**2782.0**$_{10}$(31_3) D+Q $\delta=-0.34_{15}$, $\gamma_{1865.24}$**2904**(8.3_{28}), $\gamma_{913.98}$**3855.8**$_{10}$(53_3) (M1+E2) $\delta=+0.54_{11}$, $\gamma_{491.09}$**4279.4**$_{10}$(100_3) (M1+E2), γ_0**4769**(8.3_{28})
4810, $7/2^+,9/2^+$
4817.6$_5$, $3/2^-$, *50$_{50}$ eV*, γ_{3438}**1376**(< 1.8), γ_{3434}**1380**(1.8_{18}) D(+Q), $\gamma_{2323.85}$**2493.6**$_{10}$(5.5_{18}) D, $\gamma_{2266.30}$**2551.6**$_{10}$(3.6_{18}) (E1), $\gamma_{1987.80}$**2829.3**$_{10}$(12.7_{18}) D+Q $\delta=+0.07_2$, $\gamma_{913.98}$**3903.2**$_{10}$(9.1_{18}) (M1+E2) $\delta=+0.22_3$, $\gamma_{491.09}$**4326.6**$_{10}$(100.0_{18}) (M1+E2), γ_0**4818.6**$_9$(49.1_{18}) (M1+E2)
G **4903.39**$_{21}$, $(15/2^-)$, $\gamma_{4100.13}$**803.0**$_2$(100) D+Q $\delta=+0.31_6$, $\gamma_{3329.43}$**1574.2**$_2$(45) Q, $\gamma_{2587.2}$**2317**
4914.2$_{21}$, $5/2^{(+)},7/2,9/2^{(-)}$, $\gamma_{913.98}$**4003**(100)

4931.4$_{22}$, $7/2^+,9/2^+$

4972.7$_{22}$, $3/2^+,5/2^+$

5042.5$_{22}$

5053.7$_{10}$, $(5/2)^-$, $\gamma_{3114.1}$**1936**(25.0_{28}), $\gamma_{2714.80}$**2335**(19.4_{28}), $\gamma_{2714.80}$**2342**(8.3_{28}), $\gamma_{1987.80}$**3063**(100_3), $\gamma_{913.98}$**4137**(42_3), γ_0**5053.7**$_{10}(83_3)$

5105.7$_9$, $(1/2^-,3/2,5/2^-)$, $\gamma_{913.98}$**4188**, $\gamma_{491.09}$**4611**, γ_0**5105.7**$_9$

5218.6$_6$, $9/2$, *10.5$_{10}$ fs*, $\gamma_{3309.0}$**1910**(≈ 6.9), $\gamma_{3042.58}$**2177**(6.0), $\gamma_{2714.80}$**2503**(2.8), $\gamma_{2664.40}$**2555**(3.0), $\gamma_{1865.24}$**3354**(16.6), $\gamma_{1398.51}$**3820.0**$_5(100)$ D

5230.7$_4$, $1/2^-$, *100$_{50}$ eV*, γ_{3438}**1789**(1.2_{12}), $\gamma_{3024.8}$**2203**(1.2_{12}), $\gamma_{2266.30}$**2963.3**$_{10}(7.0_{12})$, $\gamma_{491.09}$**4739.3**$_{10}(7.0_{12})$, γ_0**5230.9**$_5(100.0_{12})$ D

5255.0$_{10}$(?), γ_0**5255.0**$_{10}(100)$(?)

5264$_3$, $3/2^-$, $\gamma_{3905.2}$**1358**(9) (M1(+E2)), $\gamma_{3615.0}$**1649**(<3), γ_{3438}**1826**(3), γ_{3434}**1830**(3), $\gamma_{3114.1}$**2149**(34_9) (M1+E2) $\delta=+0.10_8$, $\gamma_{2928.2}$**2336**(20_9) D, $\gamma_{2705.94}$**2555**(20_9) D(+Q) $\delta=+0.09_{11}$, $\gamma_{2323.85}$**2940**(20_9), $\gamma_{2318.1}$**2946**(11_8), $\gamma_{2266.30}$**2998**(<3), $\gamma_{1987.80}$**3276**(3), $\gamma_{913.98}$**4350**(11_8), $\gamma_{491.09}$**4773**(51_9) (M1+E2), γ_0**5264**(100_9) (M1+E2) $\delta=+0.18_9$

5306$_3$, $(1/2)^-$, $\gamma_{3905.2}$**1400**(3.0), $\gamma_{3615.0}$**1691**(3.0), γ_{3438}**1868**(6.1_{36}), $\gamma_{3129.64}$**2176**(15_5), $\gamma_{3024.8}$**2282**(11_5), $\gamma_{2323.85}$**2982**(100_5), γ_0**5306**(14_4)

E **5427.8**$_4$, $(17/2^+)$, $\gamma_{4903.39}$**522**, $\gamma_{4528.4}$**899.4**$_2$ E2

5431$_4$

5443.6$_9$, $(3/2)^+$, $\gamma_{3024.8}$**2418**(13.0_{20}), $\gamma_{2928.2}$**2514**(43_6), $\gamma_{2714.80}$**2726**(8.7_{13}), $\gamma_{2705.94}$**2733**(8.7_{13}), $\gamma_{2323.85}$**3118**(52_8), $\gamma_{2266.30}$**3176**(22_3), $\gamma_{1987.80}$**3454**(100_{15}), $\gamma_{913.98}$**4528**(61_9), $\gamma_{491.09}$**4951**(78_{12}), γ_0**5443.7**$_9(48_7)$

5474.0$_9$, γ_0**5474.0**$_9$

5482$_4$, $(5/2)^-$, $\gamma_{3578.1}$**1904**(13.3_{20}), $\gamma_{3114.1}$**2367**(16.7_{25}), $\gamma_{3042.58}$**2440**(10.0_{15}), $\gamma_{3024.8}$**2458**(16.7_{25}), $\gamma_{2323.85}$**3158**(50_8), $\gamma_{2266.30}$**3216**(53_8), $\gamma_{1987.80}$**3494**(20_3), $\gamma_{1865.24}$**3617**(30_5), $\gamma_{1398.51}$**4083**(10.0_{15}), $\gamma_{913.98}$**4568**(13.3_{20}), $\gamma_{491.09}$**4991**(100_{15})

5522.3$_4$, $5/2$, $\gamma_{2714.80}$**2805**(1.1_{11}), $\gamma_{1398.51}$**4122**(4.5_{11}), $\gamma_{913.98}$**4607**(6.7_{11}), γ_0**5522.3**$_4(100.0_{11})$ D(+Q) $\delta=-0.04_2$

5542$_3$, $1/2^-,3/2^-,5/2^-$

5550.0$_6$, $5/2$, $\gamma_{3741.8}$**1808**(8.1_{27}), $\gamma_{3615.0}$**1935**(13.5_{27}), γ_{3438}**2112**(8.1_{27}), γ_{3434}**2116**(2.7_{27}), $\gamma_{3114.1}$**2435**(10.8_{27}), $\gamma_{2928.2}$**2622**(18.9_{27}), $\gamma_{2266.30}$**3284**(45.9_{27}), $\gamma_{1865.24}$**3685**(62.2_{27}) D+Q $\delta=-0.11^{7}_{6}$, γ_0**5550.0**$_6(100.0_{27})$ D+Q $\delta=-0.19_3$

5584$_4$

5589$_4$

5596$_3$, $(1/2^+)$

5600.8$_7$, $(3/2)$, $\gamma_{3024.8}$**2578**(26_2), $\gamma_{2318.1}$**3284**(20_2), $\gamma_{2266.30}$**3336**(22_2), $\gamma_{913.98}$**4688**(6_2), $\gamma_{491.09}$**5111**(26_2), γ_0**5600.8**$_7(100_2)$

5608$_4$, $(1/2)^-$

5620$_4$, $7/2^{(-)}$, γ_{4183}**1437**(23_6), $\gamma_{3042.58}$**2578**(6_6) D, $\gamma_{2928.2}$**2692**(2), $\gamma_{2714.80}$**2904**(4), $\gamma_{2705.94}$**2911**(23_6), $\gamma_{2664.40}$**2956**(40_6), $\gamma_{1987.80}$**3632**(9_6), $\gamma_{1398.51}$**4221**(4) D+Q $\delta=+0.78_{10}$, γ_0**5620**(100_6)

5645.0$_8$, $(3/2)^-$, γ_{3699}**1943**(7_3), $\gamma_{3121.6}$**2527**(10_3), $\gamma_{2992.9}$**2649**(23_3), $\gamma_{2323.85}$**3318**(10_3), $\gamma_{2323.85}$**3324**(23_3), $\gamma_{2266.30}$**3376**(33_3), $\gamma_{1987.80}$**3654**(7_3), $\gamma_{1865.24}$**3777**(7_3), $\gamma_{1398.51}$**4243**(13_3), $\gamma_{913.98}$**4728**(60_3) D+Q $\delta=-0.16^{12}_{14}$, $\gamma_{491.09}$**5151**(40_3) D+Q $\delta=+0.15^{7}_{9}$, γ_0**5645.2**$_8(100_3)$ D+Q $\delta=-0.10^{5}_{6}$

5657$_4$, $5/2^-$, $\gamma_{3615.0}$**2043**(12_2) (M1), $\gamma_{3578.1}$**2080**(7_2), $\gamma_{3550.6}$**2107**(2_2), $\gamma_{3024.8}$**2634**(2_2), $\gamma_{2928.2}$**2730**(5_2), $\gamma_{2714.80}$**2942**(28_2) D+Q $\delta=-0.10_5$, $\gamma_{2318.1}$**3340**(7_2), $\gamma_{2266.30}$**3392**(18_2) (E1+M2) $\delta=+0.05_4$, $\gamma_{1987.80}$**3670**(12_2) D, $\gamma_{1865.24}$**3793**(7_2) (M1), $\gamma_{1398.51}$**4259**(100_2) (M1), $\gamma_{913.98}$**4744**(30_2) (M1+E2) $\delta=+0.27_{13}$

5694$_4$, γ_0**5694**

5711$_4$, $5/2^-$, $\gamma_{3741.8}$**1970**(3.6_{18}), $\gamma_{3578.1}$**2134**(10.7_{18}), γ_{3434}**2278**(7.1_{18}), $\gamma_{3114.1}$**2597**(7.1_{18}), $\gamma_{2714.80}$**2996**(7.1_{18}), $\gamma_{2266.30}$**3446**(12.5_{18}), $\gamma_{1398.51}$**4313**(17.9_{18}), $\gamma_{913.98}$**4798**(12.5_{18}), γ_0**5712**(100.0_{18})

5719$_4$, $3/2,5/2^{(-)}$, $\gamma_{3024.8}$**2695**(14_3), $\gamma_{2928.2}$**2791**(20_3), $\gamma_{2323.85}$**3395**(63_3), $\gamma_{2318.1}$**3401**(43_3), $\gamma_{1987.80}$**3731**(100_3), $\gamma_{491.09}$**5228**(9_3), γ_0**5719**(37_3)

F **5721.8**$_3$, $(17/2^-)$, $\gamma_{4903.39}$**818.1**$_2(33)$, $\gamma_{4100.13}$**1621.7**$_2(100)$

5777.5$_{16}$, γ_0**5777.5**$_{16}(100)$

5801$_4$

5822$_4$

5832.7$_{10}$, γ_0**5832.7**$_{10}(100)$

5839$_3$, $5/2^+$

5846$_3$, $(1/2^-)$

5854.2$_{18}$, $5/2^-$, γ_0**5855**$_2$

5880.7$_7$, $3/2^-,5/2^-$, γ_{3699}**2182**(1.4_{14}), $\gamma_{2714.80}$**3165**(4.3_{14}), $\gamma_{2318.1}$**3563**(18.6_{14}), $\gamma_{1987.80}$**3893**(5.7_{14}), $\gamma_{913.98}$**4967**(8.6_{14}), γ_0**5880.7**$_7(100.0_{14})$

5897$_4$, $7/2^{(-)}$, $\gamma_{3114.1}$**2782**(6.8_{11}) D, $\gamma_{1987.80}$**3909**(6.8_{11}) D+Q $\delta=-2.5_{11}$, $\gamma_{1398.51}$**4498**(100.0_{11}) D(+Q) $\delta=-0.07_{10}$

5914$_4$, $5/2$, $\gamma_{3024.8}$**2889**(100) D

5923$_9$, $1/2^-,3/2^-$

5931.0$_9$, $5/2$, γ_0**5931.2**$_9$

5941$_4$, $3/2,5/2$, $\gamma_{2318.1}$**3623**, $\gamma_{2266.30}$**3675**, γ_0**5941** D+Q

5950$_9$, $(9/2)^+$

5958.4$_6$, γ_0**5958.4**$_6$

5968$_4$, $\gamma_{1398.51}$**4569**(?), $\gamma_{913.98}$**5054**(?), γ_0**5968**(?)

5971$_4$, $\gamma_{1398.51}$**4572**(?), $\gamma_{913.98}$**5057**(?), γ_0**5971**(?)

6033$_4$, $1/2^-,3/2^-$

6039$_4$, $3/2^{(+)}$, γ_{3699}**2340**(2.2_{22}), $\gamma_{3578.1}$**2461**(8.7_{22}) D+Q, $\gamma_{3550.6}$**2488**(<2.2), $\gamma_{2928.2}$**3111**(4.3_{22}), $\gamma_{2714.80}$**3323**(4.3_{22}), $\gamma_{2323.85}$**3715**(19.6_{22}) D,Q, $\gamma_{2266.30}$**3773**(15.2_{22}) D+Q $\delta=-1.5_7$, $\gamma_{1987.80}$**4051**(17.4_{22}) D+Q $\delta=-1.0_7$, $\gamma_{913.98}$**5125**(19.6_{22}) D,Q, $\gamma_{491.09}$**5548**(26.1_{22}) D(+Q), γ_0**6039**(100.0_{22}) Q(+D)

6076$_4$, $3/2$, $\gamma_{491.09}$**5585** D+Q $\delta=-0.10_8$

6086$_3$, $(1/2^+)$

6091.8$_7$, $3/2$, $\gamma_{3578.1}$**2513**(1.4_{14}), $\gamma_{3024.8}$**3067**(4.3_{14}), $\gamma_{2323.85}$**3767**(15.7_{14}) D+Q, $\gamma_{491.09}$**5600**(21.4_{14}) Q(+D), γ_0**6091.8**$_7(100.0_{14})$ Q(+D)

6103$_3$, $(5/2^+)$

6127.5$_{14}$, $3/2^-$, $\gamma_{491.09}$**5634** (M1(+E2)) $\delta=+0.06_{10}$, γ_0**6127.9**$_{15}$ (M1+E2) $\delta=-0.23_9$

6197$_4$, $(3/2^-)$, $\gamma_{3578.1}$**2619**(56.4_{26}), $\gamma_{2714.80}$**3481**(20.5_{26}), $\gamma_{2323.85}$**3873**(59.0_{26}), $\gamma_{2266.30}$**3931**(20.5_{26}), $\gamma_{491.09}$**5706**(100.0_{26})

6201$_4$, $3/2$, γ_{3438}**2763**(29_5), $\gamma_{3114.1}$**3086**(62_5), $\gamma_{3024.8}$**3177**(24_5), $\gamma_{2928.2}$**3273**(19_5), $\gamma_{2705.94}$**3492**(19_5), $\gamma_{2323.85}$**3877**(86_5), $\gamma_{2266.30}$**3935**(24_5), $\gamma_{1987.80}$**4213**(100_5) D, $\gamma_{913.98}$**5287**(29_5), $\gamma_{491.09}$**5710**(62_5) D(+Q) $\delta=-0.08_5$, γ_0**6201**(24_5) D(+Q) $\delta=-0.11_8$

6206$_4$, $9/2^+$, $\gamma_{3114.1}$**3091**(3.6_{12}), $\gamma_{3042.58}$**3164**(100.0_{12}) (M1(+E2)) $\delta=+0.3_4$, $\gamma_{2714.80}$**3490**(3.6_{12}), $\gamma_{2587.2}$**3619**(7.1_{12}) D, $\gamma_{1987.80}$**4218**(4.8_{12}) Q

6210$_{30}$, $(5/2^-,7/2^-)$

6229$_3$, $(1/2^-)$

6236.7$_9$, $3/2^-$, $\gamma_{3578.1}$**2660**(26_3), $\gamma_{3024.8}$**3214**(12_3), $\gamma_{2266.30}$**3972**(21_3), $\gamma_{1987.80}$**4250**(12_3), $\gamma_{1398.51}$**4839**(41_3), $\gamma_{491.09}$**5747**(82_3) (M1), γ_0**6236.6**$_9(100_3)$ (M1+E2) $\delta=-1.3^{4}_{0}$

6296$_3$, $(1/2^-)$

6303.9$_{10}$, $3/2^{(-)}$, $\gamma_{3615.0}$**2685**(9_5), $\gamma_{3121.6}$**3185**(36_5) Q(+D), $\gamma_{2928.2}$**3372**(91_5) Q(+D), $\gamma_{2714.80}$**3584**(23_5), $\gamma_{2705.94}$**3591**(9_5), $\gamma_{2323.85}$**3982**(23_5), $\gamma_{2266.30}$**4034**(18_5) Q(+D), $\gamma_{1987.80}$**4312**(82_5) Q(+D), $\gamma_{1865.24}$**4435**(23_5), $\gamma_{491.09}$**5809**(100_5) D(+Q), γ_0**6304.1**$_{10}(41_5)$ D(+Q)

6310$_9$, $(9/2)^+$

6323.9$_{24}$, $(5/2)$, *20$_{10}$ eV*, $\gamma_{2714.80}$**3606**(11.1_{22}), $\gamma_{2318.1}$**4004**(24.2_{22}), $\gamma_{2266.30}$**4056**(8.9_{22}), $\gamma_{1865.24}$**4457**(100.0_{22}), $\gamma_{1398.51}$**4923**(20.0_{22}), $\gamma_{913.98}$**5408**(11.1_{22}) D, $\gamma_{491.09}$**5831**(28.9_{22}), γ_0**6322**(17.8_{22})

6326$_4$, $(3/2^-)$, $\gamma_{2318.1}$**4008**(9.2_{15}), $\gamma_{2266.30}$**4060**(18.5_{15}), $\gamma_{1865.24}$**4461**(18.5_{15}), $\gamma_{491.09}$**5835**(7.7_{15}), γ_0**6326**(100.0_{15})

6336$_4$, $(5/2^+)$, *20$_{10}$ eV*

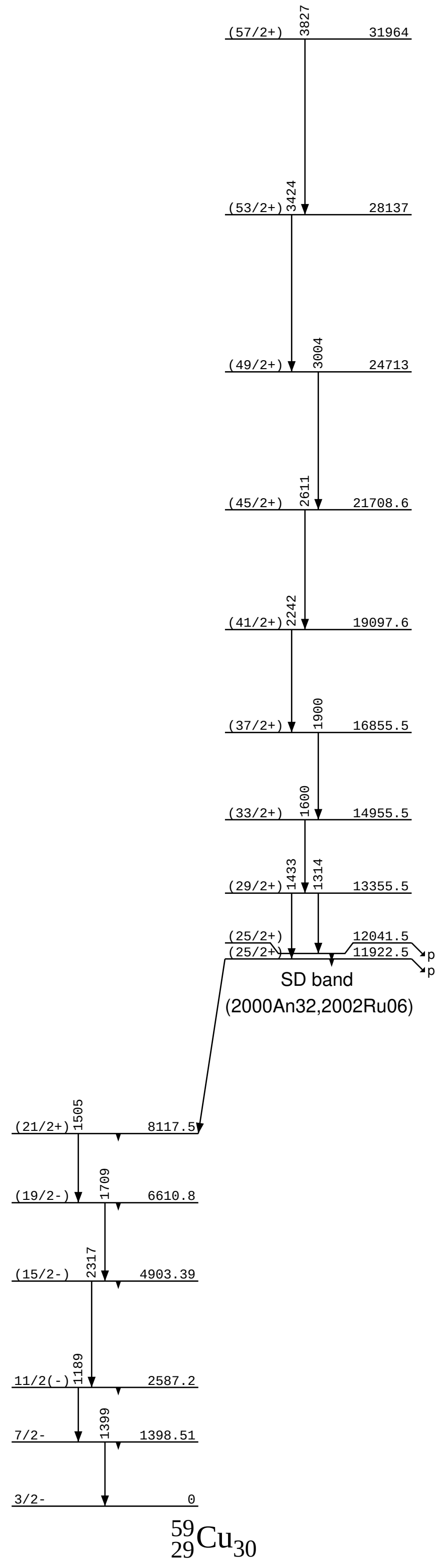
6344.2$_{12}$, $(3/2^-,5/2^-)$, γ_{3699}**2642**(<2.2), $\gamma_{3580.25}$**2763**(6.5_{22}), $\gamma_{3550.6}$**2790**(17.4_{22}), $\gamma_{3024.8}$**3317**(2.2_{22}), $\gamma_{2992.9}$**3348**(6.5_{22}), $\gamma_{2714.80}$**3625**(15.2_{22}), $\gamma_{2266.30}$**4075**(39.1_{22}) D+Q, $\gamma_{913.98}$**5427**(100.0_{22}) D+Q, $\gamma_{491.09}$**5850**(15.2_{22}) D, γ_0**6344.2**$_{12}(15.2_{22})$ D+Q

6365$_3$, $(3/2^+)$, *60$_{12}$ eV*

6365.5$_9$, $3/2^-$, $\gamma_{3580.25}$**2784**(20.0_{25}), $\gamma_{2714.80}$**3653**(7.5_{25}), $\gamma_{913.98}$**5448**(35.0_{25}) (M1+E2) $\delta=+0.11_6$, $\gamma_{491.09}$**5871**(100.0_{25})

(M1+E2), γ_0**6365.5**$_9$(88.5$_{25}$) (M1+E2) $\delta=-0.14_7$
6381$_4$
6396$_4$
6404$_4$
6410$_4$, $\gamma_{1987.80}$**4422**, γ_0**6410**
6419.0$_{25}$, $3/2^{(-)}$, *90_{18} eV*, $\gamma_{2323.85}$**4095**(83) D+Q $\delta=-0.45^{19}_{27}$, $\gamma_{2266.30}$**4153**(100) D+Q $\delta=-0.5^{2}_{5}$, $\gamma_{913.98}$**5505**(83) D(+Q) $\delta=-0.15_{10}$, $\gamma_{491.09}$**5928**(86) D(+Q) $\delta=+0.04_5$, γ_0**6419**(79)(?)
6444$_4$
6451$_4$, γ_0**6451.4**$_7$
6457$_4$, $5/2$, $\gamma_{4301.3}$**2156**(14.1$_{26}$) D+Q $\delta=-0.3_2$, γ_{3699}**2758**(12.1$_{26}$) D+Q $\delta=-1.4_{12}$, $\gamma_{3573.9}$**2883**(17.2$_{26}$) D(+Q), $\gamma_{3550.6}$**2906**(3.8$_{26}$), γ_{3438}**3019**(3.1$_{26}$), γ_{3434}**3023**(4.4$_{26}$), $\gamma_{3129.64}$**3327**(3.6$_{26}$), $\gamma_{3114.1}$**3342**(4.4$_{26}$), $\gamma_{2992.9}$**3464**(6.9$_{26}$) D,Q, $\gamma_{2928.2}$**3529**(2.8$_{26}$), $\gamma_{2705.94}$**3748**(30.5$_{26}$) D(+Q), $\gamma_{2323.85}$**4133**(15.9$_{26}$) D+Q $\delta=-0.2_1$, $\gamma_{1987.80}$**4469**(9.7$_{26}$), $\gamma_{1398.51}$**5058**(11.3$_{26}$) Q(+D) $\delta>+0.27$, $\gamma_{913.98}$**5543**(100.0$_{26}$) D(+Q) $\delta=-0.09_{12}$, γ_0**6457**(16.6$_{26}$)
6461$_4$, $3/2^{(-)}$, $\gamma_{3615.0}$**2846**(8$_4$) Q(+D), $\gamma_{3578.1}$**2883**(18$_4$) D+Q, $\gamma_{3129.64}$**3331**(29$_4$) D,Q, $\gamma_{3024.8}$**3437**(12$_4$) Q,D, $\gamma_{2705.94}$**3752**(27$_4$), $\gamma_{2323.85}$**4137**(46$_4$) D(+Q), $\gamma_{2318.1}$**4143**(49$_4$) D+Q, $\gamma_{2266.30}$**4195**(22$_4$) D+Q $\delta=-0.4_1$, $\gamma_{1987.80}$**4473**(10$_4$), $\gamma_{913.98}$**5547**(100$_4$) D(+Q), $\gamma_{491.09}$**5970**(53$_4$) D+Q $\delta=-0.6_2$, γ_0**6461**(18$_4$)
6470$_4$, $3/2,5/2^{(-)}$, $\gamma_{2705.94}$**3761**, $\gamma_{2318.1}$**4152**, $\gamma_{2266.30}$**4204**, $\gamma_{913.98}$**5556**, $\gamma_{491.09}$**5979**
6481$_4$
6487$_4$
6493$_4$, $7/2^{(-)}$, γ_{4307}**2186**(8$_6$) D, $\gamma_{4301.3}$**2192**(7$_6$) D(+Q), $\gamma_{4207.0}$**2286**(30$_6$) D(+Q), γ_{4183}**2310**(24$_6$) D(+Q), γ_{4072}**2421**(14$_6$), $\gamma_{3930.0}$**2563**(8$_6$), $\gamma_{3905.2}$**2587**(7$_6$), $\gamma_{3885.5}$**2606**(11$_6$), γ_{3699}**2794**(23$_6$) D+Q $\delta=-0.5_2$, $\gamma_{3573.9}$**2919**(27$_6$) D+Q, $\gamma_{3550.6}$**2942**(12$_6$), γ_{3434}**3059**(40$_6$) D, $\gamma_{3309.0}$**3184**(90$_6$) D+Q $\delta=-0.16_6$, $\gamma_{3114.1}$**3378**(9$_6$) D, $\gamma_{3042.58}$**3451**(11$_6$) D, $\gamma_{2928.2}$**3565**(45$_6$) D+Q $\delta=-0.9_2$, $\gamma_{2714.80}$**3777**(100$_6$) D, $\gamma_{2705.94}$**3784**(39$_6$) D, $\gamma_{2664.40}$**3829**(14$_6$) D+Q $\delta=-1.2_9$, $\gamma_{1987.80}$**4505**(2$_6$), $\gamma_{1865.24}$**4628**(55$_6$) D+Q $\delta=-0.15_8$, $\gamma_{1398.51}$**5094**(29$_6$) D, $\gamma_{913.98}$**5579**(16$_6$)
6519$_6$, $5/2^-,7/2^-$
6530.2$_{25}$, $(3/2^-)$, γ_0**6532**
6559$_4$, γ_0**6559**
6598$_9$, $5/2^-,7/2^-$
G **6610.8**$_{11}$, $(19/2^-)$, $\gamma_{5721.8}$**888**, $\gamma_{4903.39}$**1709**
6624.9$_{22}$, $3/2^{(+)}$, *45_5 eV*, $\gamma_{3578.1}$**3049**(6.5$_{13}$) D, γ_{3434}**3193**(8.3$_{13}$), $\gamma_{2928.2}$**3699**(2.7$_{13}$), $\gamma_{2323.85}$**4303**(6.3$_{13}$), $\gamma_{2318.1}$**4309**(7.0$_{13}$), $\gamma_{491.09}$**6136**(5.3$_{13}$), γ_0**6627**(100.0$_{13}$) D(+Q)
6632$_9$, $7/2^+,9/2^+$
6644.0$_{25}$, $(3/2^-)$, *60_{12} eV*, γ_0**6644**
6661.0$_{13}$, $7/2^+,9/2^+$, γ_0**6660.9**$_{14}$
6690.5$_{14}$, γ_0**6690.3**$_{15}$
C **6690.6**$_{13}$, $(17/2^+)$, $\gamma_{4903.39}$**1788** D
6708.3$_7$, $3/2^{(-)}$, γ_{3437}**3272**(5.5$_{20}$), $\gamma_{3129.64}$**3580**(5.1$_{20}$), $\gamma_{2928.2}$**3782**(5.5$_{20}$), $\gamma_{2323.85}$**4386**(3.5$_{20}$), $\gamma_{2318.1}$**4392**(2.0$_{20}$), $\gamma_{2266.30}$**4444**(6.9$_{20}$), $\gamma_{491.09}$**6219**(100.0$_{20}$) D+Q, γ_0**6708.2**$_7$(75.5$_{20}$) D(+Q)
6727.4$_6$, $(3/2^-,5/2^-)$, $\gamma_{3905.2}$**2821**(2.4$_{13}$), $\gamma_{3885.5}$**2840**(2.9$_{13}$), $\gamma_{3578.1}$**3149**(5.1$_{13}$), $\gamma_{2714.80}$**4011**(3.5$_{13}$), $\gamma_{2323.85}$**4403**(4.1$_{13}$), $\gamma_{1398.51}$**5328**(3.1$_{13}$), $\gamma_{491.09}$**6236**(100.0$_{13}$), γ_0**6727.4**$_6$
6745.9$_6$, $5/2^{(+)}$, *140_{41} eV*, $\gamma_{3885.5}$**2862**(2.6$_{11}$) D, $\gamma_{3573.9}$**3171**(2.6$_{11}$) D+Q $\delta=+2_1$, $\gamma_{2318.1}$**4425**(3.3$_{11}$) D(+Q), $\gamma_{1398.51}$**5350**(4.8$_{11}$) D+Q $\delta=+0.05_2$, γ_0**6745.7**$_6$(100.0$_{11}$) D+Q $\delta=+0.21_3$
6760$_4$, $(3/2^-)$, $\gamma_{1987.80}$**4772**(6), $\gamma_{1398.51}$**5361**(8), γ_0**6760**(100) D+Q $\delta=-0.19^{3}_{4}$
6798.4$_{12}$, $(19/2^+)$, $\gamma_{5427.8}$**1371**
6810.1$_{21}$, $3/2^{(-)}$, *110_{11} eV*, $\gamma_{2928.2}$**3883**(100$_{20}$) D+Q $\delta=+0.55^{9}_{20}$, $\gamma_{1987.80}$**4823**(32$_6$) D+Q, $\gamma_{491.09}$**6320**(56$_{11}$) D+Q $\delta=-0.30^{12}_{25}$, γ_0**6811**(11.0$_{22}$) D(+Q) $\delta=-0.02^{25}_{14}$
6833.9$_{21}$, $9/2^+$, *11.2_4 eV*, $\gamma_{4914.2}$**1919**(2.8$_{15}$), $\gamma_{3042.58}$**3794**(100.0$_{15}$) (M1), $\gamma_{2714.80}$**4120**(2.0$_{15}$), $\gamma_{2587.2}$**4249**(18.6$_{15}$) D, $\gamma_{1398.51}$**5437**(30.7$_{15}$) (E1)
6842.3$_7$, $3/2$, $\gamma_{2323.85}$**4519**(7.8$_{18}$), $\gamma_{2266.30}$**4577**(5.7$_{18}$), $\gamma_{913.98}$**5929**(8.9$_{18}$), $\gamma_{491.09}$**6352**(55.2$_{18}$) D+Q, γ_0**6842.3**$_7$(100.0$_{18}$) D+Q
6864.9$_{21}$, $(3/2^-)$, *85_8 eV*, $\gamma_{2266.30}$**4602**(7.9$_{16}$), $\gamma_{913.98}$**5954**(10.5$_{21}$), $\gamma_{491.09}$**6377**(100$_{20}$), γ_0**6868**(13.2$_{26}$)
6877.1$_{21}$, $(5/2^+)$, *70_4 eV*, $\gamma_{3578.1}$**3301**(14$_3$), $\gamma_{3114.1}$**3764**(13$_3$), $\gamma_{2992.9}$**3886**(44$_3$), $\gamma_{2705.94}$**4170**(19$_3$), $\gamma_{2323.85}$**4555**(24$_3$), $\gamma_{1398.51}$**5480**(43$_3$), $\gamma_{913.98}$**5965**(100$_3$), γ_0**6879**(62$_3$)
6885$_4$, $(3/2^-,5/2)$, $\gamma_{4301.3}$**2584**(21$_5$), $\gamma_{2705.94}$**4176**(26$_5$), $\gamma_?$**4564**$_{AP}$(32$_5$), $\gamma_{2266.30}$**4619**(47$_5$), $\gamma_{1987.80}$**4897**(53$_5$), $\gamma_{1865.24}$**5020**(42$_5$), $\gamma_{1398.51}$**5486**(95$_5$), $\gamma_{913.98}$**5971**(100$_5$), γ_0**6885**(63$_5$)
6894$_4$, $5/2^{(-)}$, $\gamma_{3550.6}$**3343**(28$_5$) D+Q $\delta=-0.5_3$, $\gamma_{3114.1}$**3779**(18$_5$), $\gamma_{2714.80}$**4178**(30$_5$), $\gamma_{2705.94}$**4185**(25$_5$), $\gamma_{2323.85}$**4570**(53$_5$) D, $\gamma_{2266.30}$**4628**(65$_5$) D+Q $\delta=+0.5_2$, $\gamma_{1987.80}$**4906**(71$_5$) D(+Q) $\delta=-0.2_2$, $\gamma_{1398.51}$**5495**(100$_5$) Q+D $\delta=-1.4_{11}$, $\gamma_{913.98}$**5980**(56$_5$) Q(+D), γ_0**6894**(55$_5$)
6902.9$_5$, $9/2^+$, *35.1_{15} eV*, $\gamma_{5218.6}$**1686**(3.0$_4$) D+Q $\delta=-0.12_4$(?), $\gamma_{4914.2}$**1988**(2.4$_{13}$), $\gamma_{4530.0}$**2375**(1.4$_{13}$), γ_{4465}**2440**(1.2$_{13}$), $\gamma_{4441.0}$**2464**(2.6$_{13}$) (M1), $\gamma_{3757.7}$**3149**(2.0$_{13}$), $\gamma_{3042.58}$**3863**(100.0$_{13}$) (M1+E2) $\delta=-0.031_{23}$, $\gamma_{2714.80}$**4189**(3.5$_{13}$) D, $\gamma_{2587.2}$**4318**(8.8$_{13}$) D, $\gamma_{1865.24}$**5040**(1.4$_{13}$), $\gamma_{1398.51}$**5506**(4.6$_{13}$) (E1+M2) $\delta=+0.023_{16}$, $\gamma_{913.98}$**5991**(3.4$_{13}$)
6921.5$_{21}$, $(5/2^+)$, *230_{23} eV*, $\gamma_{3578.1}$**3345**(34.3$_{22}$), $\gamma_{1987.80}$**4935**(100.0$_{22}$), $\gamma_{913.98}$**6009**(83.0$_{22}$)
6939$_4$, $3/2^{(-)}$, $\gamma_{3728.9}$**3210**(73$_5$) Q(+D), $\gamma_{2992.9}$**3946**(21$_5$), $\gamma_{2714.80}$**4223**(36$_5$), $\gamma_{2323.85}$**4615**(44$_5$), $\gamma_{2318.1}$**4621**(17$_5$), $\gamma_{2266.30}$**4673**(100$_5$) Q(+D), $\gamma_{1865.24}$**5074**(26$_5$), $\gamma_{913.98}$**6025**(39$_5$) Q(+D) $\delta>+0.3$, $\gamma_{491.09}$**6448**(60$_5$) D+Q, γ_0**6939**(35$_5$)
6940$_{30}$, $5/2^-,7/2^-$
6946.1$_9$, $(3/2)^-$, $\gamma_{2323.85}$**4621**(15.6$_{22}$), $\gamma_{2318.1}$**4627**(28.5$_{22}$), $\gamma_{2266.30}$**4679**(52.0$_{22}$), $\gamma_{491.09}$**6454**(23.2$_{22}$), γ_0**6946.2**$_9$(100.0$_{22}$)
6959$_4$, $(3/2)$, $\gamma_{2266.30}$**4693**, γ_0**6959** D(+Q) $\delta=+0.10_9$
6967.7$_{21}$, $(3/2,5/2)$, $\gamma_{3578.1}$**3389**(6.8$_{17}$), $\gamma_{3129.64}$**3837**(3.5$_{17}$), $\gamma_{2266.30}$**4701**(10.2$_{17}$), $\gamma_{1987.80}$**4979**(10.9$_{17}$), $\gamma_{913.98}$**6053**(42.2$_{17}$), γ_0**6967**(100.0$_{17}$)
7013.8$_{10}$, γ_0**7013.7**$_{10}$
7027.7$_9$, $(3/2^-)$, *82_8 eV*, γ_0**7027.7**$_{10}$
7045.0$_{10}$, γ_0**7044.8**$_{10}$
7136.8$_{10}$, $(5/2^+)$, γ_0**7136.6**$_{10}$
7180, $7/2^+,9/2^+$
7197$_4$, $(3/2)$, $\gamma_{913.98}$**6283**(32) D(+Q) $\delta=+0.11^{11}_{10}$, $\gamma_{491.09}$**6706**(100) D(+Q) $\delta=+0.04_3$
7251$_4$, $(3/2^-,5/2)$, $\gamma_{2705.94}$**4542**(23), $\gamma_{2664.40}$**4587**, $\gamma_{2266.30}$**4985**(19), $\gamma_{1398.51}$**5852**(31), $\gamma_{913.98}$**6337**(25), γ_0**7251**(100) D(+Q) $\delta=+0.03_3$
7299$_4$, $(3/2^+)$, $\gamma_{3129.64}$**4169**(11.1$_{14}$), $\gamma_{2928.2}$**4371**(20) D+Q $\delta=+0.17_{13}$(?), $\gamma_{2705.94}$**4590**(17) D(+Q) $\delta=-0.16^{22}_{26}$(?), $\gamma_{2266.30}$**5033**(8.3$_{14}$), $\gamma_{1987.80}$**5311**(8.3$_{14}$) D(+Q) $\delta=-0.12_{13}$, $\gamma_{1398.51}$**5900**(7.7)(?), $\gamma_{913.98}$**6385**(11.1$_{14}$) D+Q $\delta=-0.27^{19}_{28}$, γ_0**7299**(100.0$_{14}$) D+Q $\delta=-0.23^{3}_{2}$
7331$_4$, $3/2$, γ_0**7332**(100)
7348$_4$, $3/2^{(-)}$, $\gamma_{3578.1}$**3770**(29.4$_{15}$), $\gamma_{913.98}$**6434**(17.6$_{15}$), γ_0**7348**(100.0$_{15}$) D+Q
D **7353.9**$_{19}$, $(19/2^+)$, $\gamma_{6798.4}$**555**, $\gamma_{6690.6}$**662**, $\gamma_{5721.8}$**1631**, $\gamma_{5427.8}$**1926**
7391.6$_{14}$, $5/2^+$, $\gamma_{3573.9}$**3816**(100.0$_{14}$) D+Q $\delta=+0.13_5$, $\gamma_{1987.80}$**5406**(18.1$_{14}$), $\gamma_{1865.24}$**5529**(11.1$_{14}$), γ_0**7391.3**$_{15}$(9.7$_{14}$)
7407$_4$, γ_0**7407**(100)
7444$_4$, $(3/2)^+$, $\gamma_{3615.0}$**3829**(21.4$_{14}$), $\gamma_{3578.1}$**3866**(21.4$_{14}$), γ_0**7444**(100.0$_{14}$)
F **7445.5**$_{12}$, $(21/2^-)$, $\gamma_{6610.8}$**835**, $\gamma_{5721.8}$**1724**
7450, $7/2^+,9/2^+$
7471.1$_{14}$, γ_0**7471.1**$_{14}$
7474.2$_{22}$, $(1/2^-)$
7503$_4$, γ**7498**$_3$
7518.2$_{21}$, $(5/2^-)$, *51_{11} eV*, $\gamma_{1398.51}$**6118**(100.0$_{14}$), γ_0**7517**(42.9$_{14}$)
7523$_4$, γ_0**7523**
7536.4$_{21}$, $(3/2^-)$, *0.35_4 keV*, $\gamma_{913.98}$**6625**(36.4$_{18}$), $\gamma_{491.09}$**7048**(100.0$_{18}$), γ_0**7539**(45.4$_{18}$)

7650$_4$, $5/2^{(+)}$, $\gamma_{\mathbf{1398.51}}$**6251**$(66.7_{17})$ D(+Q) $\delta=+0.1_1$, $\gamma_{\mathbf{0}}$**7650**(100.0_{17}) D(+Q) $\delta=-0.1_1$
7697$_4$, $(5/2)$, $\gamma_{\mathbf{1987.80}}$**5709**$(26.3_{26})$, $\gamma_{\mathbf{1865.24}}$**5832**$(44.7_{26})$, $\gamma_{\mathbf{1398.51}}$**6298**$(47.4_{26})$, $\gamma_{\mathbf{0}}$**7697**(100.0_{26})
7730, $7/2^+,9/2^+$
7793.3$_{13}$, $(17/2^+)$, %P=11$_3$, $\gamma_{\mathbf{5721.8}}$**2071**, $\gamma_{\mathbf{4903.39}}$**2891** D
7810$_{30}$
7826.3$_{13}$, $(17/2^+)$, %P=2$_1$, $\gamma_{\mathbf{5721.8}}$**2105**, $\gamma_{\mathbf{5427.8}}$**2403**, $\gamma_{\mathbf{4903.39}}$**2923** D
7920$_{30}$, $3/2^+,5/2^+$
7940, $7/2^+,9/2^+$
8013$_4$, $(3/2)$, $\gamma_{\mathbf{491.09}}$**7522**(49.3_{15}), $\gamma_{\mathbf{0}}$**8013**(100.0_{15})
8077$_4$, $3/2^{(-)},5/2$, $\gamma_{\mathbf{0}}$**8077**(100) D+Q
C **8117.5**$_{14}$, $(21/2^+)$, $\gamma_{\mathbf{7353.9}}$**763**, $\gamma_{\mathbf{6690.6}}$**1427**, $\gamma_{\mathbf{6610.8}}$**1505**
B **8153.9**$_{12}$, $(19/2^+)$, $\gamma_{\mathbf{7826.3}}$**328**, $\gamma_{\mathbf{7793.3}}$**361**, $\gamma_{\mathbf{5721.8}}$**2432**, $\gamma_{\mathbf{5427.8}}$**2726**
8193$_6$, $(5/2)^+$
8223$_4$, $3/2^{(-)},5/2$, $\gamma_{\mathbf{0}}$**8223**(100) D+Q
8230, $7/2^+,9/2^+$
8258$_3$, $(5/2)^+$, $\gamma_{\mathbf{0}}$**8259**(100) D(+Q) $\delta=-0.02_3$
8390$_{30}$
8550$_8$, $7/2^+,9/2^+$
8659.4$_{13}$, $(21/2^+)$, $\gamma_{\mathbf{5427.8}}$**3231** Q
A **8728.5**$_{12}$, $(21/2^+)$, $\gamma_{\mathbf{8153.9}}$**574**, $\gamma_{\mathbf{6610.8}}$**2117**, $\gamma_{\mathbf{5427.8}}$**3302**
G **8814.9**$_{13}$, $(23/2^-)$, $\gamma_{\mathbf{7445.5}}$**1370**, $\gamma_{\mathbf{6610.8}}$**2205**
D **8944.9**$_{16}$, $(23/2^+)$, $\gamma_{\mathbf{8117.5}}$**827**, $\gamma_{\mathbf{7445.5}}$**1498**, $\gamma_{\mathbf{7353.9}}$**1591**
9060, $^+$
9280, $^+$
B **9456.2**$_{13}$, $(23/2^+)$, $\gamma_{\mathbf{8728.5}}$**728**, $\gamma_{\mathbf{8153.9}}$**1302**
C **9674.2**$_{16}$, $(25/2^+)$, $\gamma_{\mathbf{8944.9}}$**729**, $\gamma_{\mathbf{8117.5}}$**1557**
9780, $^+$
10130, $^+$
10145.0$_{13}$, $(21/2^+)$, $\gamma_{\mathbf{5427.8}}$**4717**
A **10277.7**$_{14}$, $(25/2^+)$, $\gamma_{\mathbf{9456.2}}$**821**, $\gamma_{\mathbf{8728.5}}$**1549**
10364.3$_{12}$, $(21/2^+)$, $\gamma_{\mathbf{6610.8}}$**3753**, $\gamma_{\mathbf{5427.8}}$**4937**
10500, $^+$
D **10607.1**$_{17}$, $(27/2^+)$, $\gamma_{\mathbf{9674.2}}$**933**, $\gamma_{\mathbf{8944.9}}$**1662**
11100
B **11212.8**$_{14}$, $(27/2^+)$, $\gamma_{\mathbf{10277.7}}$**935**, $\gamma_{\mathbf{9456.2}}$**1757**
K **11922.5**$_{12}$, $(25/2^+)$, %P=9$_2$, $\gamma_{\mathbf{10364.3}}$**1558**, $\gamma_{\mathbf{10145.0}}$**1777**, $\gamma_{\mathbf{9456.2}}$**2462**, $\gamma_{\mathbf{8814.9}}$**3109**, $\gamma_{\mathbf{8659.4}}$**3262**, $\gamma_{\mathbf{8117.5}}$**3803**
J **11984**, $(23/2^-)$, %P=53$_8$
K **12041.5**$_{14}$, $(25/2^+)$, %P=8$_3$, $\gamma_{\mathbf{9456.2}}$**2585** D+Q, $\gamma_{\mathbf{8117.5}}$**3924**
A **12249.1**$_{15}$, $(29/2^+)$, $\gamma_{\mathbf{11212.8}}$**1036**, $\gamma_{\mathbf{10277.7}}$**1971**
J **13127**, $(27/2^-)$, $\gamma_{\mathbf{11984}}$**1143**
K **13355.5**$_{14}$, $(29/2^+)$, $\gamma_{\mathbf{12041.5}}$**1314** Q, $\gamma_{\mathbf{11922.5}}$**1433** Q
B **13359.2**$_{16}$, $(31/2^+)$, $\gamma_{\mathbf{12249.1}}$**1110**, $\gamma_{\mathbf{11212.8}}$**2147**
A **14584.6**$_{17}$, $(33/2^+)$, $\gamma_{\mathbf{13359.2}}$**1226**, $\gamma_{\mathbf{12249.1}}$**2335**
J **14653**, $(31/2^-)$, $\gamma_{\mathbf{13127}}$**1526**
K **14955.5**$_{17}$, $(33/2^+)$, $\gamma_{\mathbf{13355.5}}$**1600** Q
B **16031.2**$_{19}$, $(35/2^+)$, $\gamma_{\mathbf{13359.2}}$**2672**
J **16560**, $(35/2^-)$, $\gamma_{\mathbf{14653}}$**1907**
K **16855.5**$_{20}$, $(37/2^+)$, $\gamma_{\mathbf{14955.5}}$**1900** Q
J **18882**, $(39/2^-)$, $\gamma_{\mathbf{16560}}$**2322**
K **19097.6**$_{22}$, $(41/2^+)$, $\gamma_{\mathbf{16855.5}}$**2242** Q
J **21640**, $(43/2^-)$, $\gamma_{\mathbf{18882}}$**2758**
K **21708.6**$_{25}$, $(45/2^+)$, $\gamma_{\mathbf{19097.6}}$**2611** Q
K **24713**$_3$, $(49/2^+)$, $\gamma_{\mathbf{21708.6}}$**3004** Q
J **24768**, $(47/2^-)$, $\gamma_{\mathbf{21640}}$**3128**
27900 7.0_{10} *MeV*
K **28137**$_3$, $(53/2^+)$, $\gamma_{\mathbf{24713}}$**3424**
K **31964**$_3$, $(57/2^+)$, $\gamma_{\mathbf{28137}}$**3827**



${}^{60}_{30}Zn_{30}$

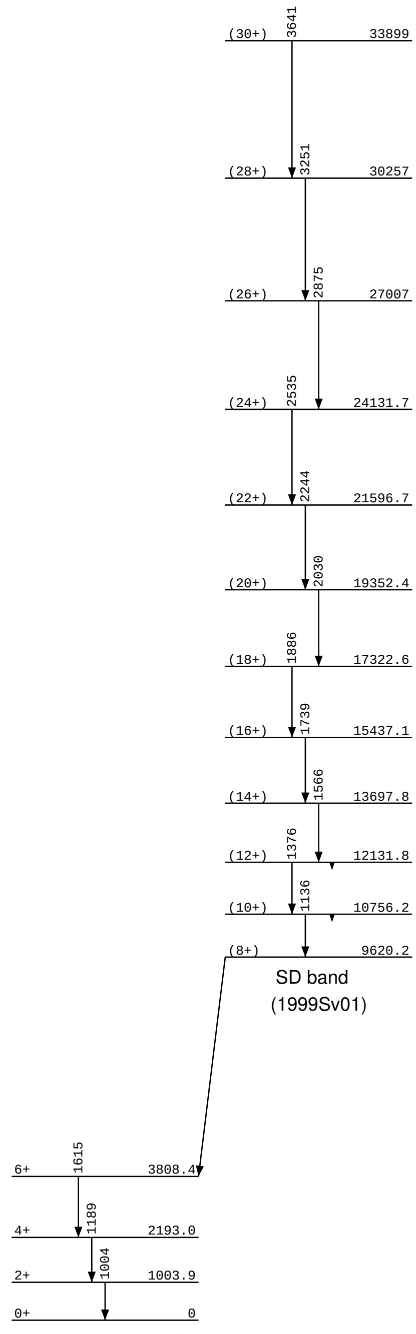
S_n: 14997 $_{39}$, S_p: 5121 $_{11}$

Nuclear Bands

- A GS band
- B Band structure
- C Band structure
- D SD band (1999Sv01)
  Q_0=2.75$_{25}$

Levels and γ-ray branchings:

A **0**, 0^+, *2.38$_5$ min*, %ε+%β^+=100
A **1003.9**$_2$, 2^+, $\gamma_{\mathbf{0}}$**1003.9**$_2$(100)
A **2193.0**$_5$, 4^+, $\gamma_{\mathbf{1003.9}}$**1189.2**$_4$(100)
2558.8$_5$, (2^+), $\gamma_{\mathbf{1003.9}}$**1554.9**$_6$(92$_{38}$), $\gamma_{\mathbf{0}}$**2559.0**$_8$(100$_{38}$)
3034.7$_{11}$, $\gamma_{\mathbf{1003.9}}$**2031**$_1$(100)
3.2x10^3$_1$(?)
3510.1$_6$, $(2^+,4^+)$, $\gamma_{\mathbf{2193.0}}$**1318**$_1$(14), $\gamma_{\mathbf{1003.9}}$**2506**$_1$(100) (M1+E2) $\delta=-3_1$
3626.8$_{11}$, $\gamma_{\mathbf{1003.9}}$**2623**$_1$(100)
3710$_{50}$, (4^+)
A **3808.4**$_7$, 6^+, $\gamma_{\mathbf{2193.0}}$**1615.4**$_5$(100)
3811.8$_{11}$, $\gamma_{\mathbf{1003.9}}$**2808**$_1$(100)
3972.3$_8$, 2, $\gamma_{\mathbf{3510.1}}$**462**$_1$(9), $\gamma_{\mathbf{2193.0}}$**1780**$_1$(20), $\gamma_{\mathbf{1003.9}}$**2968**$_2$(14), $\gamma_{\mathbf{0}}$**3971**$_2$(100)
4180$_{30}$, $(0^+,2^+)$
4199.9$_8$, $5^{(+)}$, $\gamma_{\mathbf{3510.1}}$**690**$_1$(49), $\gamma_{\mathbf{2193.0}}$**2006.8**$_{10}$(100) (M1+E2) $\delta=+4_2$
4350.8$_{11}$, $5^{(+)}$, $\gamma_{\mathbf{2193.0}}$**2158**$_1$(100) (M1+E2) $\delta=+3.5_5$
4400$_{50}$(?), (5^-)
4775.8$_{11}$, $5^{(+)}$, $\gamma_{\mathbf{2193.0}}$**2583**$_1$(100) (M1+E2) $\delta<+4.5$
4852.2$_7$, (2^+), $\gamma_{\mathbf{2558.8}}$**2293.0**$_{10}$(18$_9$), $\gamma_{\mathbf{1003.9}}$**3848.3**$_7$(100$_{23}$)
4913.1$_9$, 2^+, $\gamma_{\mathbf{3510.1}}$**1403**$_1$(39), $\gamma_{\mathbf{1003.9}}$**3909**$_2$(100)
5200$_{60}$, 2^+
A **5291.9**$_9$, 8^+, $\gamma_{\mathbf{3808.4}}$**1483.7**$_6$(100)
5300$_{50}$, (7^-)
5337.1$_{11}$, $3^{(+)}$,$4^{(+)}$, $\gamma_{\mathbf{3510.1}}$**1827**$_1$(100) (M1+E2), $\gamma_{\mathbf{1003.9}}$**4333**$_2$(54)
5503.3$_{13}$, 2^+, $\gamma_{\mathbf{3972.3}}$**1531**$_1$(100)
5970$_{70}$
6360$_{70}$
6639.1$_{10}$, 0^+, $\gamma_{\mathbf{4913.1}}$**1726**$_1$(40), $\gamma_{\mathbf{4199.9}}$**2439**$_1$(100), $\gamma_{\mathbf{3510.1}}$**3129**$_2$(72)
6950$_{50}$, (8^+)
7130$_{70}$
7372.4$_{22}$, 4, $\gamma_{\mathbf{3972.3}}$**3400**$_2$(100)
7380$_{30}$, 0^+
7660$_{70}$
7980$_{50}$, (8^+)
8300$_{50}$, (6^+)
8475.5$_{14}$, 10^+, $\gamma_{\mathbf{5291.9}}$**3183.6**$_{12}$(100) E2
8636.1$_{18}$, (10^+), $\gamma_{\mathbf{5291.9}}$**3344.1**$_{20}$(100)
8702.1$_{13}$, (4^+), $\gamma_{\mathbf{6639.1}}$**2063**$_1$(100), $\gamma_{\mathbf{4199.9}}$**4502**$_2$(43)
D **9620.2**$_{19}$, (8^+), $\gamma_{\mathbf{3808.4}}$**5810**$_5$(100)
D **10756.2**$_{18}$, (10^+), $\gamma_{\mathbf{9620.2}}$**1135.9**$_9$(100$_9$), $\gamma_{\mathbf{5291.9}}$**5464**$_4$(60$_{11}$)
10.8x10^3$_2$(?)
D **12131.8**$_{17}$, (12^+), $\gamma_{\mathbf{10756.2}}$**1375.6**$_7$(100$_6$), $\gamma_{\mathbf{8636.1}}$**3495.7**$_{20}$(11.2$_{19}$), $\gamma_{\mathbf{8475.5}}$**3656.4**$_{14}$(54$_4$) E2
13.2x10^3$_2$(?)
D **13697.8**$_{18}$, (14^+), $\gamma_{\mathbf{12131.8}}$**1565.9**$_6$(100)
D **15437.1**$_{19}$, (16^+), $\gamma_{\mathbf{13697.8}}$**1739.3**$_6$(100)
D **17322.6**$_{20}$, (18^+), $\gamma_{\mathbf{15437.1}}$**1885.5**$_7$(100)
D **19352.4**$_{21}$, (20^+), $\gamma_{\mathbf{17322.6}}$**2029.8**$_7$(100)
D **21596.7**$_{23}$, (22^+), $\gamma_{\mathbf{19352.4}}$**2244.2**$_8$(100)
D **24131.7**$_{25}$, (24^+), $\gamma_{\mathbf{21596.7}}$**2535.0**$_9$(100)
D **27007**$_3$, (26^+), $\gamma_{\mathbf{24131.7}}$**2874.8**$_{10}$(100)
D **30257**$_3$, (28^+), $\gamma_{\mathbf{27007}}$**3250.5**$_{12}$(100)
D **33899**$_5$, (30^+), $\gamma_{\mathbf{30257}}$**3641.3**$_{35}$(100)
B **0+x**
B **567.3+x**, $\gamma_{\mathbf{0+x}}$**567.3**$_9$(100)
B **1575.6+x**, $\gamma_{\mathbf{567.3+x}}$**1008.3**$_{21}$(100)
B **3046+x**, $\gamma_{\mathbf{1575.6+x}}$**1470.1**$_{12}$(100)
B **4967+x**, $\gamma_{\mathbf{3046+x}}$**1921.2**$_9$(100)
B **7300+x**, $\gamma_{\mathbf{4967+x}}$**2332.5**$_{11}$(100)
C **0+y**
C **756.6+y**, $\gamma_{\mathbf{0+y}}$**756.6**$_9$(100)
C **2005.0+y**, $\gamma_{\mathbf{756.6+y}}$**1248.4**$_9$(100)
C **3697.0+y**, $\gamma_{\mathbf{2005.0+y}}$**1692.0**$_8$(100)
C **5832.7+y**, $\gamma_{\mathbf{3697.0+y}}$**2135.6**$_{10}$(100)
C **8414.4+y**, $\gamma_{\mathbf{5832.7+y}}$**2581.7**$_{12}$(100)



${}^{60}_{30}Zn_{30}$

$^{61}_{30}\mathbf{Zn}_{31}$

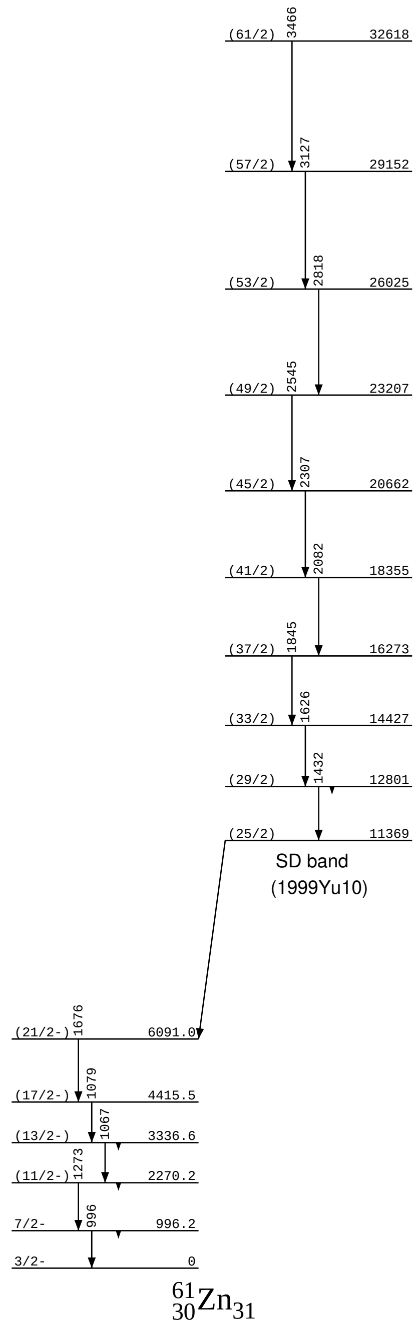
S$_n$: 10231 $_{19}$, S$_p$: 5290 $_{16}$

Nuclear Bands

A γ cascade
B γ cascade
C SD band (1999Yu10)
Q$_0$=3.0^{5}_{4}

Levels and γ-ray branchings:

A **0**, $3/2^-$, *89.1$_2$ s*, %ε+%β$^+$=100
88.4$_1$, $1/2^-$, *<430 ms*, $\gamma_{\mathbf{0}}$**88.4**$_1$(100)
B **123.8**$_1$, $5/2^-$, $\gamma_{\mathbf{0}}$**123.8**$_1$(100) M1+E2 $\delta=+0.05_2$
418.10$_{15}$, $3/2^-$, *0.14$_7$ s*, $\gamma_{\mathbf{123.8}}$**294.9**$_4$(5.8$_7$) M1+E2 $\delta=+0.44_{37}$, $\gamma_{\mathbf{88.4}}$**329.8**$_5$(11$_3$) M1+E2 $\delta=-0.27_{13}$, $\gamma_{\mathbf{0}}$**418.4**$_1$(100$_2$) M1+E2 $\delta=+0.10_5$
756.02$_{18}$, $5/2^-$, *<0.13 s*, $\gamma_{\mathbf{418.10}}$**338.6**$_2$(5.3$_2$), $\gamma_{\mathbf{123.8}}$**631.0**$_{10}$(6$_3$), $\gamma_{\mathbf{0}}$**755.0**$_3$(100$_2$) M1+E2 $\delta=+0.07_4$
937.7$_4$, $1/2^-$, $\gamma_{\mathbf{418.10}}$**519.0**$_5$(16$_4$), $\gamma_{\mathbf{88.4}}$**849.0**$_{10}$(27$_2$), $\gamma_{\mathbf{0}}$**938.4**$_5$(100$_6$)
A **996.2**$_2$, $7/2^-$, $\gamma_{\mathbf{418.10}}$**578.0**$_2$(12.0$_{14}$), $\gamma_{\mathbf{123.8}}$**872.4**$_6$(100$_2$) M1+E2 $\delta=-1.7_3$, $\gamma_{\mathbf{0}}$**996.1**$_2$(44$_2$) E2
B **1265.0**$_2$, $9/2^-$, $\gamma_{\mathbf{123.8}}$**1141.2**$_1$(100) E2
1362.3$_4$, $3/2^-,5/2^-$, $\gamma_{\mathbf{756.02}}$**606.0**$_5$(14$_2$), $\gamma_{\mathbf{418.10}}$**944.0**$_{10}$(34$_6$), $\gamma_{\mathbf{123.8}}$**1240**(47), $\gamma_{\mathbf{0}}$**1362.0**$_{10}$(100) M1+E2
1402.2$_3$, $7/2^-$, $\gamma_{\mathbf{756.02}}$**646.8**$_5$(3), $\gamma_{\mathbf{418.10}}$**984.0**$_{10}$(23$_8$), $\gamma_{\mathbf{123.8}}$**1279.0**$_{10}$(22$_4$), $\gamma_{\mathbf{0}}$**1401.7**$_4$(100$_{20}$)
1657.3$_6$, $5/2^-,7/2^-$, $\gamma_{\mathbf{418.10}}$**1239.0**$_7$(28), $\gamma_{\mathbf{123.8}}$**1534.0**$_{10}$(100) M1+E2 $\delta=+1.4_9$
2000.9$_3$, $9/2^-$, $\gamma_{\mathbf{996.2}}$**1004.7**$_9$(100$_8$) M1+E2 $\delta=+0.4_4$, $\gamma_{\mathbf{756.02}}$**1246.3**$_7$(90$_8$) E2
2030$_{10}$
2098.8$_{10}$, $\gamma_{\mathbf{123.8}}$**1975**(100)
2198$_{20}$
2250$_{10}$
2270.2$_3$, $(11/2^-)$, $\gamma_{\mathbf{1265.0}}$**1005.4**$_3$(8.2$_{17}$), $\gamma_{\mathbf{996.2}}$**1273.0**$_5$(100$_{15}$)
A **2399.9**$_2$, $(9/2^-)$, $\gamma_{\mathbf{996.2}}$**1403.3**$_2$(100$_{11}$) D, $\gamma_{\mathbf{123.8}}$**2276.1**$_3$(11$_2$)
2440, $7/2^-$
2520$_{10}$
2646$_{20}$
2710$_{10}$
2770, $9/2^+$
B **2797.4**$_2$, $(13/2^-)$, $\gamma_{\mathbf{1265.0}}$**1532.2**$_1$(100)
3090$_{10}$
3245.0$_4$, $(13/2^-)$, $\gamma_{\mathbf{1265.0}}$**1980.5**$_5$(100)
3300$_{10}$
A **3336.6**$_3$, $(13/2^-)$, $\gamma_{\mathbf{2399.9}}$**936.6**$_3$(100$_9$) Q, $\gamma_{\mathbf{2270.2}}$**1066.6**$_4$(22$_2$)
3380, $3/2^-$
3645$_{20}$
3880$_{60}$
B **4264.3**$_3$, $(15/2)$, $\gamma_{\mathbf{3245.0}}$**1019.4**$_2$(18$_7$), $\gamma_{\mathbf{2797.4}}$**1466.7**$_3$(100$_{21}$)
4380$_{80}$
A **4415.5**$_4$, $(17/2^-)$, $\gamma_{\mathbf{3336.6}}$**1078.9**$_2$(100) Q
4646.4$_{11}$, $(17/2^-)$, $\gamma_{\mathbf{2797.4}}$**1849**$_1$(100)
4670$_{30}$
5100$_{30}$
5320$_{30}$
B **5553.0**$_5$, $(19/2)$, $\gamma_{\mathbf{4264.3}}$**1288.7**$_3$(100)
5590$_{90}$
A **6091.0**$_4$, $(21/2^-)$, $\gamma_{\mathbf{4415.5}}$**1675.5**$_1$(100) Q
B **7292**, $\gamma_{\mathbf{5553.0}}$**1741**
7487.9$_6$, $\gamma_{\mathbf{6091.0}}$**1396.9**$_4$(100)
A **7629.9**$_5$, $\gamma_{\mathbf{6091.0}}$**1538.9**$_3$(100)
A **9163.0**$_7$, $\gamma_{\mathbf{7629.9}}$**1533.1**$_4$(100)
9990$_{70}$, $3/2^-$
C **11369**, $(25/2)$, $\gamma_{\mathbf{6091.0}}$**5278**$_4$ (E2)
C **12801**, $(29/2)$, $\gamma_{\mathbf{11369}}$**1432**$_2$, $\gamma_{\mathbf{7629.9}}$**5172**$_4$ (Q)
C **14427**, $(33/2)$, $\gamma_{\mathbf{12801}}$**1626**$_2$
C **16273**, $(37/2)$, $\gamma_{\mathbf{14427}}$**1845**$_2$
C **18355**, $(41/2)$, $\gamma_{\mathbf{16273}}$**2082**$_2$
C **20662**, $(45/2)$, $\gamma_{\mathbf{18355}}$**2307**$_2$
C **23207**, $(49/2)$, $\gamma_{\mathbf{20662}}$**2545**$_2$
C **26025**, $(53/2)$, $\gamma_{\mathbf{23207}}$**2818**$_2$
C **29152**, $(57/2)$, $\gamma_{\mathbf{26025}}$**3127**$_2$
C **32618**, $(61/2)$, $\gamma_{\mathbf{29152}}$**3466**$_2$



$^{62}_{30}\mathrm{Zn}_{32}$

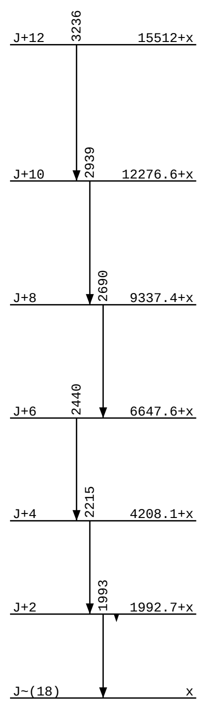
S_n: 12896 $_{19}$, S_p: 6477 $_{10}$

Nuclear Bands

A GS band
B $K^\pi=2^+$, $\alpha=0$
C $K^\pi=2^+$, $\alpha=1$
D $K^\pi=3^-$, $\alpha=1$
E $K^\pi=3^-$, $\alpha=0$
F $K^\pi=9^+$, $\alpha=1$
G $K^\pi=9^+$, $\alpha=0$
H $K^\pi=11^+$, $\alpha=1$
I $K^\pi=11^+$, $\alpha=0$
J $K^\pi=13^-$, $\alpha=1$
K $K^\pi=13^-$, $\alpha=0$
L SD band (1997Sv02)
$Q_0=2.7^{7}_{5}$

Levels and γ-ray branchings:

A $\mathbf{0}$, 0^+, 9.186_{13} *h*, %ε+%β^+=100
A $\mathbf{954.0}_4$, 2^+, 2.91_{21} *ps*, μ=0.74$_{20}$ $\gamma_{\mathbf{0}}\mathbf{953.9}_4(100)$ E2
B $\mathbf{1804.7}_4$, 2^+, 2.63_{42} *ps*, $\gamma_{\mathbf{954.0}}\mathbf{850.6}_4(100)$ M1+E2 $\delta=-1.2^{4}_{5}$, $\gamma_{\mathbf{0}}\mathbf{1804.8}_4(65)$ E2
A $\mathbf{2186.1}_5$, 4^+, 0.53^{24}_{14} *ps*, $\gamma_{\mathbf{954.0}}\mathbf{1232.0}_4(100)$ E2
$\mathbf{2330}_{10}$, 0^+
C $\mathbf{2384.5}_4$, 3^+, $\gamma_{\mathbf{1804.7}}\mathbf{580.0}_4$ M1+E2, $\gamma_{\mathbf{954.0}}\mathbf{1431}_1$ M1+E2 $\delta=-0.5_1$
B $\mathbf{2743.5}_4$, 4^+, 2.36_{21} *ps*, $\gamma_{\mathbf{2384.5}}\mathbf{359.1}_2(11_3)$ M1+E2 $\delta=-0.9^{4}_{6}$, $\gamma_{\mathbf{2186.1}}\mathbf{557.3}_5(100_{23})$ M1+E2 $\delta=-0.35_3$, $\gamma_{\mathbf{1804.7}}\mathbf{938.2}_5(71_{17})$ E2+M3 $\delta=-0.13^{11}_{5}$
$\mathbf{2810}_{10}$, 2^+
$\mathbf{2890}_{10}$, 2^+
$\mathbf{3060}_{10}$, 2^+
$\mathbf{3160}_{10}$
D $\mathbf{3209.2}_{13}$, 3^-, $\gamma_{\mathbf{2186.1}}\mathbf{1024}_{10}(100)$
$\mathbf{3310}_{50}$, (4^+)
$\mathbf{3350}_{20}$
$\mathbf{3470}_{10}$, 2^+
C $\mathbf{3586.2}_7$, (5^+), 0.63^{63}_{21} *ps*, $\gamma_{\mathbf{2743.5}}\mathbf{842.7}_5(100_5)$ D+Q $\delta=-2.17^{84}_{5}$, $\gamma_{\mathbf{2384.5}}\mathbf{1202.2}_6(80_6)$ Q, $\gamma_{\mathbf{2186.1}}\mathbf{1400}$
$\mathbf{3640}_{10}$, 2^+
A $\mathbf{3707.5}_6$, 6^+, 0.25^{17}_{7} *ps*, $\gamma_{\mathbf{2186.1}}\mathbf{1521.5}_4(100)$ E2
$\mathbf{3730}_{10}$
$\mathbf{3830}_{10}$, 2^+
$\mathbf{3870}_{30}$, 1^-
$\mathbf{3920}_{10}$
$\mathbf{4000}_{10}$, 0^+
D $\mathbf{4042.6}_8$, $(5)^-$, 0.7^{1}_{5} *ps*, $\gamma_{\mathbf{3209.2}}\mathbf{833.4}_{10}(27_4)$, $\gamma_{\mathbf{2743.5}}\mathbf{1299.3}_{12}(48_6)$, $\gamma_{\mathbf{2186.1}}\mathbf{1856.4}_8(100_5)$
$\mathbf{4090}_{10}$, (4^+)
$\mathbf{4220}_{10}$, (3^-)
$\mathbf{4330}_{20}$
B $\mathbf{4347.8}_6$, (6^+), 0.28^{28}_{14} *ps*, $\gamma_{\mathbf{3707.5}}\mathbf{640.3}_2(8_1)$, $\gamma_{\mathbf{3586.2}}\mathbf{761}$, $\gamma_{\mathbf{2743.5}}\mathbf{1604.2}_7(100_6)$
$\mathbf{4380}_{20}$, (4^+)
$\mathbf{4440}_{20}$
$\mathbf{4500}_{20}$, 6^+
$\mathbf{4535}$(?), $\gamma_{\mathbf{2186.1}}\mathbf{2349}$
$\mathbf{4600}$, (7^-)
$\mathbf{4620}_{20}$, (0^+)
$\mathbf{4680}_{10}$, 4^+
$\mathbf{4810}_{30}$
$\mathbf{4860}_{30}$
D $\mathbf{4904.1}_8$, (7^-), 8.3_{35} *ps*, $\gamma_{\mathbf{4535}}\mathbf{370}$(?), $\gamma_{\mathbf{4347.8}}\mathbf{556.9}_5(63_{15})$, $\gamma_{\mathbf{4042.6}}\mathbf{861}$, $\gamma_{\mathbf{3707.5}}\mathbf{1196.6}_6(100_4)$ D
$\mathbf{4910}_{30}$
$\mathbf{5050}_{30}$
$\mathbf{5090}_{20}$, (1^-)
$\mathbf{5122.8}_9$, $(5,7)$, $\gamma_{\mathbf{4042.6}}\mathbf{1080.2}_3(100)$
E $\mathbf{5130.4}_9$, (6^-), $\gamma_{\mathbf{4042.6}}\mathbf{1087.8}_3(100)$
C $\mathbf{5142.9}_{10}$, (7^+), 0.42^{21}_{14} *ps*, $\gamma_{\mathbf{4347.8}}\mathbf{796}$, $\gamma_{\mathbf{3586.2}}\mathbf{1556.7}_7(100)$
$\mathbf{5190}_{30}$
$\mathbf{5240}_{20}$
$\mathbf{5340}_{30}$, 0^+
$\mathbf{5370}_{20}$, (4^+)
$\mathbf{5470}$
A $\mathbf{5482.7}_{14}$, (8^+), 0.28^{14}_{7} *ps*, $\gamma_{\mathbf{3707.5}}\mathbf{1775.1}_{12}(100)$
$\mathbf{5560}_{20}$
$\mathbf{5700}_{30}$
D $\mathbf{6081.0}_9$, (9^-), $\gamma_{\mathbf{4904.1}}\mathbf{1176.9}_4(100)$ Q
E $\mathbf{6112.8}_{11}$, (8^-), $\gamma_{\mathbf{5130.4}}\mathbf{983}$, $\gamma_{\mathbf{4904.1}}\mathbf{1208.7}_7(100)$
$\mathbf{6300}_{50}$, (8^+)
$\mathbf{6628.8}_{22}$, $\gamma_{\mathbf{5122.8}}\mathbf{1506.0}_{20}(100)$
$\mathbf{7200}$
$\mathbf{7400}$
D $\mathbf{7422.6}_{11}$, (11^-), $\gamma_{\mathbf{6081.0}}\mathbf{1341.5}_6(100)$ Q
E $\mathbf{7423}_2$, (10^-), $\gamma_{\mathbf{6112.8}}\mathbf{1310}$
A $\mathbf{7500}_1$, (10^+), $\gamma_{\mathbf{5482.7}}\mathbf{2018}$
$\mathbf{7540}_{50}$, (8^+)
$\mathbf{7630}_1$, $\gamma_{\mathbf{6081.0}}\mathbf{1548}$
$\mathbf{7701.8}$(?), $\gamma_{\mathbf{7422.6}}\mathbf{279}$
F $\mathbf{7976}_1$, (9^+), $\gamma_{\mathbf{5142.9}}\mathbf{2833}$
$\mathbf{8300}_{50}$, (6^+)
G $\mathbf{8438}_1$, (10^+), $\gamma_{\mathbf{6081.0}}\mathbf{2356}$
F $\mathbf{9049}_1$, (11^+), $\gamma_{\mathbf{8438}}\mathbf{611}$, $\gamma_{\mathbf{7976}}\mathbf{1072}$
D $\mathbf{9215}_1$, (13^-), $\gamma_{\mathbf{7422.6}}\mathbf{1792}$
G $\mathbf{9466}_1$, (12^+), $\gamma_{\mathbf{9049}}\mathbf{417}$, $\gamma_{\mathbf{8438}}\mathbf{1028}$, $\gamma_{\mathbf{7422.6}}\mathbf{2043}$
$\mathbf{9800}$
H $\mathbf{10247}_1$, (11^+), $\gamma_{\mathbf{7500}}\mathbf{2747}$
$\mathbf{10300}$
F $\mathbf{10317}_1$, (13^+), $\gamma_{\mathbf{9466}}\mathbf{851}$, $\gamma_{\mathbf{9049}}\mathbf{1268}$
G $\mathbf{10375}_1$, (14^+), $\gamma_{\mathbf{9466}}\mathbf{910}$, $\gamma_{\mathbf{9215}}\mathbf{1160.8}_4$
I $\mathbf{10636}_1$, (12^+), $\gamma_{\mathbf{10247}}\mathbf{388.3}_3$, $\gamma_{\mathbf{7630}}\mathbf{3006}$, $\gamma_{\mathbf{7422.6}}\mathbf{3213}$
$\mathbf{10800}$
H $\mathbf{11183}_1$, (13^+), $\gamma_{\mathbf{10636}}\mathbf{546.9}_3(100_6)$, $\gamma_{\mathbf{10247}}\mathbf{935.5}_5(24_2)$
J $\mathbf{11655}_1$, (13^-), $\gamma_{\mathbf{7422.6}}\mathbf{4232}$
I $\mathbf{11756}_1$, (14^+), $\gamma_{\mathbf{11183}}\mathbf{573.1}_3(100_6)$, $\gamma_{\mathbf{10636}}\mathbf{1119.8}_4(64_4)$
G $\mathbf{11962}_1$, (16^+), $\gamma_{\mathbf{10375}}\mathbf{1587}$
K $\mathbf{12333}_1$, (14^-), $\gamma_{\mathbf{11655}}\mathbf{677.7}_4(100_{10})$, $\gamma_{\mathbf{9215}}\mathbf{3118}$
H $\mathbf{12537}_1$, (15^+), $\gamma_{\mathbf{11756}}\mathbf{780.6}_3(100_7)$, $\gamma_{\mathbf{11183}}\mathbf{1353.8}_5(68_5)$
$\mathbf{12815}_1$, (15^-), $\gamma_{\mathbf{10375}}\mathbf{2440}$
J $\mathbf{12997}_1$, (15^-), $\gamma_{\mathbf{12333}}\mathbf{663.6}_3(100_7)$, $\gamma_{\mathbf{11655}}\mathbf{1342.0}_{10}(95_{23})$
I $\mathbf{13237}_1$, (16^+), $\gamma_{\mathbf{12537}}\mathbf{699.6}_3(88_6)$, $\gamma_{\mathbf{11756}}\mathbf{1481.2}_4(100_6)$
$\mathbf{13400}$
K $\mathbf{13731}_1$, (16^-), $\gamma_{\mathbf{12997}}\mathbf{733.6}_3(100_8)$, $\gamma_{\mathbf{12333}}\mathbf{1397.6}_4(76_6)$
H $\mathbf{14125}_1$, (17^+), $\gamma_{\mathbf{13237}}\mathbf{888.7}_3(100_6)$, $\gamma_{\mathbf{12537}}\mathbf{1589.0}_6(79_6)$
$\mathbf{14447}_1$, (17^-), $\gamma_{\mathbf{13731}}\mathbf{717}$, $\gamma_{\mathbf{12815}}\mathbf{1632}$, $\gamma_{\mathbf{11962}}\mathbf{2485}$
J $\mathbf{14546}_1$, (17^-), $\gamma_{\mathbf{13731}}\mathbf{815.0}_3(100_8)$, $\gamma_{\mathbf{12997}}\mathbf{1549.3}_5(92_8)$, $\gamma_{\mathbf{11962}}\mathbf{2585}$
I $\mathbf{15049}_1$, (18^+), $\gamma_{\mathbf{14125}}\mathbf{924.1}_4(75_6)$, $\gamma_{\mathbf{13237}}\mathbf{1813.0}_5(100_6)$
K $\mathbf{15420}_1$, (18^-), $\gamma_{\mathbf{14546}}\mathbf{873.7}_3(78_7)$, $\gamma_{\mathbf{13731}}\mathbf{1689.2}_5(100_7)$
$\mathbf{15707}_2$, (19^-), $\gamma_{\mathbf{14447}}\mathbf{1260}$
H $\mathbf{16373}_1$, (19^+), $\gamma_{\mathbf{15049}}\mathbf{1323.3}_6(94_{12})$, $\gamma_{\mathbf{14125}}\mathbf{2246.7}_8(100_{12})$
J $\mathbf{16379}_1$, (19^-), $\gamma_{\mathbf{15420}}\mathbf{959.0}_8(81_{22})$, $\gamma_{\mathbf{14546}}\mathbf{1833.1}_5(100_8)$, $\gamma_{\mathbf{14447}}\mathbf{1931}$
K $\mathbf{17485}_1$, (20^-), $\gamma_{\mathbf{16379}}\mathbf{1105.9}_4(48_4)$, $\gamma_{\mathbf{15420}}\mathbf{2065.4}_6(100_8)$
I $\mathbf{17590}_1$, (20^+), $\gamma_{\mathbf{16373}}\mathbf{1217.5}_7(33_6)$, $\gamma_{\mathbf{15049}}\mathbf{2541.4}_9(100_{11})$
J $\mathbf{18509}_1$, (21^-), $\gamma_{\mathbf{17485}}\mathbf{1024.3}_4(57_6)$, $\gamma_{\mathbf{16379}}\mathbf{2130.3}_8(100_{11})$
H $\mathbf{19507}_2$, (21^+), $\gamma_{\mathbf{16373}}\mathbf{3134.7}_{12}(100)$
K $\mathbf{19684}_1$, (22^-), $\gamma_{\mathbf{18509}}\mathbf{1174.6}_{12}(40_{20})$, $\gamma_{\mathbf{17485}}\mathbf{2199.5}_7(100_8)$
J $\mathbf{21046}_1$, (23^-), $\gamma_{\mathbf{19684}}\mathbf{1362.3}_7(56_7)$, $\gamma_{\mathbf{18509}}\mathbf{2537.4}_9(100_{11})$
K $\mathbf{23190}_2$, (24^-), $\gamma_{\mathbf{21046}}\mathbf{2143.8}_{12}(40_{10})$, $\gamma_{\mathbf{19684}}\mathbf{3505.7}_{14}(100_{20})$
L $\mathbf{x}$, $J\approx(18)$
L $\mathbf{1992.7+x}$, $J+2$, $\gamma_{\mathbf{x}}\mathbf{1992.7}_{12}(0.14_7)$, $\gamma_{?}\mathbf{3986}(\approx 0.08)$(?)
L $\mathbf{4208.1+x}$, $J+4$, $\gamma_{\mathbf{1992.7+x}}\mathbf{2215.3}_8(0.93_{13})$
L $\mathbf{6647.6+x}$, $J+6$, $\gamma_{\mathbf{4208.1+x}}\mathbf{2439.5}_9(1.02_{15})$
L $\mathbf{9337.4+x}$, $J+8$, $\gamma_{\mathbf{6647.6+x}}\mathbf{2689.7}_{10}(0.86_{13})$
L $\mathbf{12276.6+x}$, $J+10$, $\gamma_{\mathbf{9337.4+x}}\mathbf{2939.1}_{12}(0.43_{11})$
L $\mathbf{15512+x}$, $J+12$, $\gamma_{\mathbf{12276.6+x}}\mathbf{3235.6}_{14}(0.10_5)$



SD band
(1997Sv02)

$^{62}_{30}Zn_{32}$

$^{65}_{30}$Zn$_{35}$

S$_n$: 7979.6 $_5$, S$_p$: 7775.9 $_9$

Nuclear Bands

A Highly-deformed-1 band (2000Yu02)

B Highly-deformed-2 band (2000Yu02)

C SD band (2000Yu02)

Q$_0$=2.6$_3$

Levels and γ-ray branchings:

0, $5/2^-$, *244.06$_{10}$ d*, μ=+0.7690$_2$, Q=-0.023$_2$, %ε+%β$^+$=100

53.928$_{10}$, $(1/2)^-$, *1.6$_6$ μs*, γ_{0}**53.93**$_1$(100) E2

115.127$_{14}$, $3/2^-$, *444$_9$ ps*, μ=-0.78$_{20}$, $\gamma_{53.928}$**61.20**$_1$(21.1$_{20}$) M1(+E2) $\delta < 0.4$, γ_{0}**115.09**$_4$(100$_{15}$) M1+E2 $\delta = -0.29_3$

206.94$_8$, $3/2^-$, *150$_7$ ps*, μ=+0.73$_{25}$, $\gamma_{115.127}$**92.0**$_{10}$($\leq$ 4.5), $\gamma_{53.928}$**153.0**$_2$(100$_{10}$) M1+E2 $\delta = +0.19_5$, γ_{0}**206.9**$_2$(29$_3$) M1+E2 $\delta = +0.87_{20}$

768.70$_8$, $5/2^-$, *1.3$^{7}_{4}$ ps*, $\gamma_{206.94}$**561.66**$_{21}$(0.67$_{17}$), $\gamma_{115.127}$**653.5**$_1$(59$_6$) M1+E2 $\delta = -0.14_{12}$, $\gamma_{53.928}$**714.69**$_{21}$(12.8$_{13}$), γ_{0}**768.7**$_2$(100$_9$) M1+E2 $\delta = +0.51^{10}_{28}$

864.21$_7$, $7/2^-$, *3$^{5}_{2}$ ps*, $\gamma_{206.94}$**657.33**$_{19}$(0.71$_{12}$), $\gamma_{115.127}$**749.1**$_2$(18.2$_{14}$) (E2+M3) $\delta = +0.04_3$, γ_{0}**864.2**$_1$(100$_1$) M1+E2 $\delta = -2.27_3$

866.92$_{12}$, $1/2^-$, *0.55$^{27}_{15}$ ps*, $\gamma_{206.94}$**659.9**$_3$(1.56$_{16}$), $\gamma_{115.127}$**751.8**$_2$(100$_6$), $\gamma_{53.928}$**813.0**$_2$(1.40$_{13}$), γ_{0}**866.8**$_4$(1.60$_{20}$)

909.65$_9$, $3/2^-$, *1.4$^{5}_{3}$ ps*, $\gamma_{768.70}$**140.2**$_4$(3.8$_7$), $\gamma_{206.94}$**702.7**$_2$(15.7$_{16}$), $\gamma_{115.127}$**794.6**$_2$(52$_5$) M1+E2 $\delta = +0.40_{12}$, $\gamma_{53.928}$**855.8**$_2$(34$_3$) (M1+E2) $\delta = -0.96_{20}$, γ_{0}**909.7**$_2$(100$_{10}$) M1+E2 $\delta = +0.25_4$

1047.39$_{12}$, $5/2^-$, *0.37$_9$ ps*, $\gamma_{768.70}$**278.2**$_5$(0.79$_{17}$), $\gamma_{206.94}$**840.3**$_{10}$(< 3.2)(?), $\gamma_{115.127}$**932.2**$_2$(100$_5$) M1+E2 $\delta = -0.42_5$, $\gamma_{53.928}$**993.7**$_4$(3.0$_6$), γ_{0}**1047.4**$_2$(53$_5$) (M1+E2)

1062.1$_7$(?), $\gamma_{864.21}$**197.9**$_{10}$(?), $\gamma_{206.94}$**855.2**$_{10}$(?)

1065.51$_{10}$, $9/2^+$, *575$_{26}$ ps*, μ=-1.73$_{49}$, $\gamma_{864.21}$**201.3**$_1$(100$_1$) E1(+M2) $\delta = +0.00_1$, γ_{0}**1065.49**$_{14}$(9.9$_{10}$) M2+E3 $\delta = -0.13_2$

1252.66$_{12}$, $7/2^-$, *1.1$_5$ ps*, $\gamma_{768.70}$**483.9**$_2$(28$_3$) M1+E2 $\delta = +0.07_{10}$, $\gamma_{206.94}$**1045.7**$_2$(100$_4$), $\gamma_{115.127}$**1137.5**$_2$(38$_3$) E2, γ_{0}**1252.8**$_3$(17.9$_{22}$)

1263.42$_{16}$, $9/2^-$, $\gamma_{864.21}$**399.22**$_{22}$(4.5$_6$) M1+E2 $\delta = -0.023_{10}$, γ_{0}**1263.4**$_2$(100$_1$) E2(+M3) $\delta = +0.03_3$

1343.85$_{11}$, $5/2^-$, *≈1.7 ps*, $\gamma_{864.21}$**479.7**$_3$(3.8$_6$), $\gamma_{768.70}$**574.9**$_4$(4$_4$), $\gamma_{206.94}$**1137.0**$_2$(20.4$_{17}$) (M1+E2), $\gamma_{115.127}$**1228.7**$_2$(100$_7$) M1+E2 $\delta = -0.33_3$, $\gamma_{53.928}$**1289.8**$_4$(1.7$_5$), γ_{0}**1343.8**$_2$(28$_3$) (M1+E2)

1369.08$_{18}$, $5/2^+$, *≈1.4 ps*, $\gamma_{115.127}$**1253.9**$_2$(100$_5$) E1+M2 $\delta = -0.14_2$, γ_{0}**1369.2**$_4$(59$_5$) (E1+M2) $\delta = -0.11_8$

1469.73$_{10}$, $3/2^-$, *0.16$_4$ ps*, $\gamma_{1047.39}$**422.2**$_3$(7.1$_{17}$), $\gamma_{909.65}$**560.1**$_2$(10.3$_{14}$), $\gamma_{866.92}$**602.7**$_3$(8.4$_2$), $\gamma_{768.70}$**700.8**$_{10}$(?), $\gamma_{206.94}$**1262.2**$_7$(9.7$_{10}$), $\gamma_{115.127}$**1354.5**$_2$(100$_{11}$) M1+E2 $\delta = +0.21_3$, $\gamma_{53.928}$**1415.9**$_2$(29$_3$) (M1+E2) $\delta = +0.24_5$, γ_{0}**1469.8**$_2$(8.4$_9$)

1577.05$_{25}$, $3/2^-$, *0.17$_4$ ps*, $\gamma_{768.70}$**807.6**$_{10}$(?), $\gamma_{206.94}$**1370.0**$_5$, $\gamma_{115.127}$**1461.9**$_{10}$(?), $\gamma_{53.928}$**1523.3**$_4$(64$_3$) (M1+E2) $\delta = -2.5_3$, γ_{0}**1576.9**$_4$(100$_3$)

1588.08$_{25}$, $7/2^-$, *0.15$_6$ ps*, $\gamma_{768.70}$**818.9**$_5$(14.7$_{15}$) M1+E2 $\delta = -0.23_3$, $\gamma_{115.127}$**1473.1**$_4$(33$_3$), γ_{0}**1588.2**$_4$(100$_3$) M1+E2 $\delta = +0.31_2$

1603(?)

1779.6$_7$(?), $\gamma_{53.928}$**1725.6**$_{10}$(?), γ_{0}**1779.6**$_{10}$(?)

1793.5$_7$(?), $\gamma_{53.928}$**1739.5**$_{10}$(?), γ_{0}**1793.5**$_{10}$(?)

1907.5$_4$, $(9/2)$, $\gamma_{768.70}$**1138.8**$_4$, γ_{0}**1906.7**$_8$(?)

1908$_5$, $1/2^+$

1941.1$_6$, $(1/2,3/2,5/2^+)$, $\gamma_{115.127}$**1826.1**$_{10}$(?), $\gamma_{53.928}$**1887.1**$_{10}$(?), γ_{0}**1941.1**$_{10}$(?)

1956$_5$, $(5/2^-,7/2^-)$

1957.3$_8$, $7/2^+$, *0.42$_7$ ps*, $\gamma_{1369.08}$**588**$_1$(26.6$_{13}$) M1+E2 $\delta = +0.11_1$, $\gamma_{1065.51}$**892**$_1$(100$_1$) M1+E2 $\delta = -0.27_1$

1976$_5$

2052.2$_{12}$

2053.8$_3$, $13/2^+$, *>1.4 ps*, $\gamma_{1065.51}$**988.2**$_3$(100) E2(+M3) $\delta = +0.01_2$

2081.54$_{20}$, $(1/2,3/2,5/2^+)$, $\gamma_{206.94}$**1874.6**$_2$(100$_{12}$)(?), $\gamma_{115.127}$**1966.4**$_4$(87$_{11}$)(?)

2135.2$_8$, $9/2^+$, *>1.4 ps*, $\gamma_{1369.08}$**766**$_1$, $\gamma_{1065.51}$**1069**$_1$(?), $\gamma_{864.21}$**1271**$_1$ E1+M2 $\delta = -0.06_1$

2137$_5$

2137.7$_4$, $11/2^+$, *0.67$_{12}$ ps*, $\gamma_{1065.51}$**1072.4**$_4$(100) M1+E2 $\delta = +1.4^{2}_{6}$

2202$_5$, $(1/2,3/2,5/2^+)$, $\gamma_{909.65}$**1294**(100), $\gamma_{115.127}$**2086**(77)

2216$_5$, $(1/2,3/2,5/2^+)$

2248$_5$, $(5/2^-,7/2^-)$

2302.1$_4$, $\gamma_{768.70}$**1533.4**$_4$(100)

2310$_5$

2342$_5$

2410$_5$

2419.18$_{21}$, $1/2^-$, $\gamma_{206.94}$**2212.1**$_3$(100$_8$), $\gamma_{115.127}$**2304.3**$_{13}$(7$_4$), $\gamma_{53.928}$**2365.2**$_3$(29$_4$), γ_{0}**2419.7**$_8$(2.4$_{20}$)

2430$_5$, $(1/2,3/2,5/2^+)$

2458$_5$, $(1/2,3/2,5/2^+)$, $\gamma_{866.92}$**1592**(100)

2486$_5$

2491$_5$, $1/2^+$

2522$_5$

2528$_5$, $3/2^+,5/2^+$

2549.4$_4$(?), $5/2^-,7/2^-$, $\gamma_{864.21}$**1685.4**$_4$(61$_{16}$)(?), $\gamma_{115.127}$**2432.9**$_8$(20$_9$)(?), γ_{0}**2549.6**$_4$(100$_{16}$)(?)

2575$_{10}$, $(1/2,3/2,5/2^+)$

2639(?)

2674$_{10}$, $3/2^+,5/2^+$

2730$_5$, $(1/2,3/2,5/2^+)$

2740$_5$

2803$_5$, $(1/2^-,3/2^-)$

2830$_5$, $(7/2^+,9/2^+)$

2860$_5$

2870$_5$, $5/2^-,7/2^-$

2902$_5$

2914$_5$, $5/2^-,7/2^-$

2923.1$_4$, $13/2$, $\gamma_{2137.7}$**785.7**$_3$(100$_{12}$) D+Q $\delta = +0.6_2$, $\gamma_{2053.8}$**870**(?), $\gamma_{1065.51}$**1857.5**$_5$(56$_{13}$)

2931.8$_9$, $(9/2,13/2)$, $\gamma_{1263.42}$**1668.4**$_8$(100) (Q+O) $\delta = -0.07_5$

2953$_5$

2971$_5$

2994$_5$, $(1/2,3/2,5/2^+)$

3010$_5$, $3/2^+,5/2^+$

3023$_5$, $(7/2^+,9/2^+)$

3053$_5$, $1/2^+$

3095$_5$

3108$_5$, $3/2^+,5/2^+$

3150$_5$, $1/2^-,3/2^-$, γ_{0}**3150**(100)

3170$_{20}$, $5/2^-,7/2^-$

3192, $(1/2,3/2,5/2^+)$

3211$_5$

3221$_5$

3227.3$_5$, $17/2^+$, *0.30$^{12}_{10}$ ps*, $\gamma_{2053.8}$**1173.5**$_4$(100) E2+M3 $\delta = -0.07_8$

3239$_5$, $(7/2^+,9/2^+)$

3329, $(1/2,3/2,5/2^+)$

3335.8$_6$(?), $\gamma_{2137.7}$**1199**(?), $\gamma_{2053.8}$**1282.0**$_5$(?)

3340$_5$

3350$_5$, $3/2^+,5/2^+$

3409$_{10}$, $(1/2,3/2,5/2^+)$, $\gamma_{206.94}$**3202**(100)

3465$_5$, $(1/2,3/2,5/2^+)$

3472.6$_4$, $(15/2)$, $\gamma_{2137.7}$**1334.8**$_5$(100$_9$) (Q+(O)) $\delta = -0.00_6$, $\gamma_{2053.8}$**1418.5**$_5$(47$_9$) (D+Q) $\delta = +0.8_4$

3550$_5$, $3/2^+,5/2^+$

3563$_5$, $5/2^-,7/2^-$

3589, $(1/2,3/2,5/2^+)$

3618$_{10}$, $3/2^+,5/2^+$

3672$_{10}$, $1/2^+$

3712(?), $\gamma_{2137.7}$**1575**(100)(?)

3730$_5$, $(1/2,3/2,5/2^+)$

3776$_5$

3784.9$_6$, $17/2^+,13/2^+$, *≥0.28 ps*, $\gamma_{3227.3}$**557.6**$_3$(52$_{12}$), $\gamma_{2052.2}$**1732.7**(100$_{12}$) E2+M3 $\delta = -0.13_{25}$

3810$_5$, $(1/2,3/2,5/2^+)$

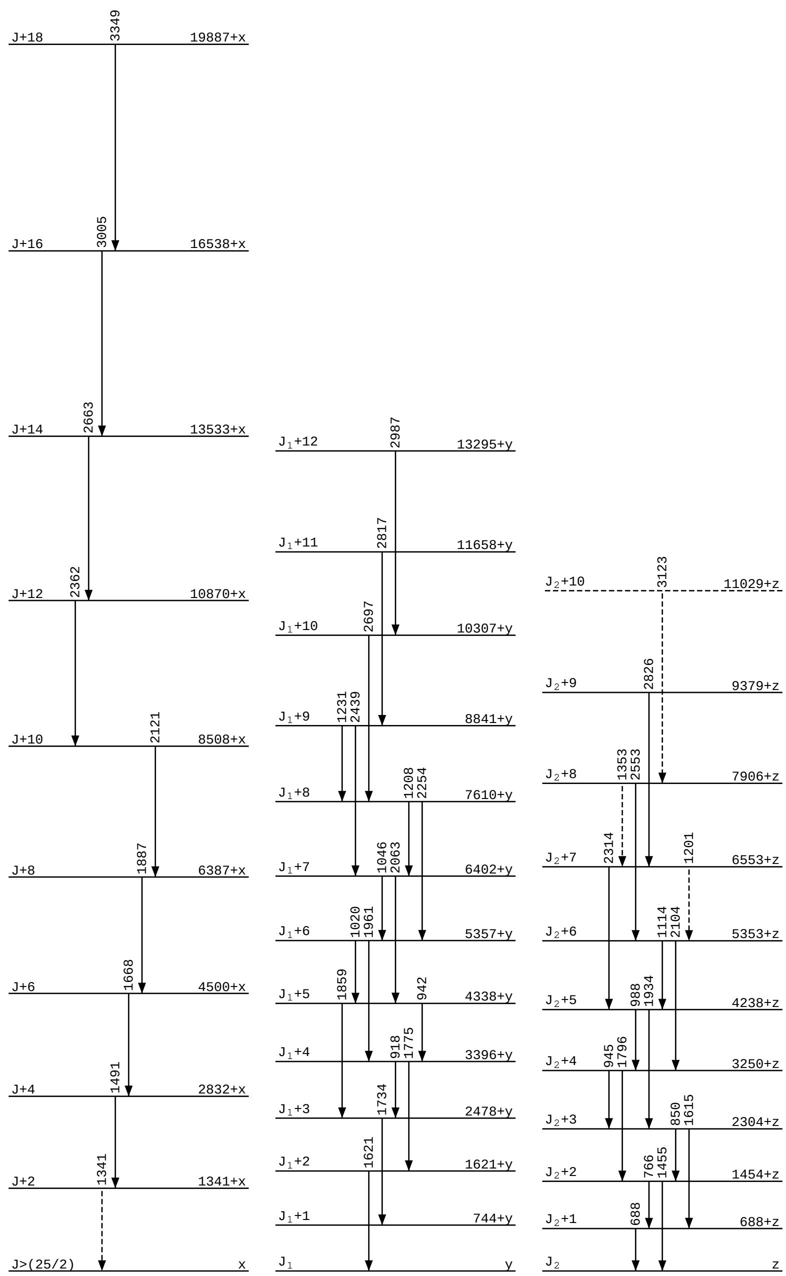
3844$_5$, $1/2^+$

3880$_5$

3889$_5$

3902$_5$, $(7/2^+,9/2^+)$

4024, $(1/2,3/2,5/2^+)$
4039, $(1/2,3/2,5/2^+)$
4079.2$_5$, $(13/2,15/2)$, $\gamma_{3472.6}$**606.2**$_4$(≈ 100), $\gamma_{2923.1}$**1156.5**$_5$(80_{10}) D+Q
4086$_5$, $3/2^+,5/2^+$
4200$_5$, $3/2^+,5/2^+$
4270$_{20}$
4350$_5$, $1/2^+$
4393, $1/2^+$
4490$_{20}$, $5/2^-,7/2^-$
4500$_{30}$, $(1/2^+)$
4580$_{20}$, $(5/2^-,7/2^-)$
4620, $(1/2,3/2,5/2^+)$
4624.7$_7$, $\gamma_{3227.3}$**1397.3**$_5$(100)
4639, $(1/2,3/2,5/2^+)$
4660$_{20}$, $5/2^-,7/2^-$
4740$_5$, $1/2^+$
4780$_5$, $5/2^-,7/2^-$
4887.7$_{10}$, $\gamma_{3227.3}$**1660.3**$_8$(100)
4920$_{20}$, $(7/2^+,9/2^+)$
4937.9$_{10}$, 21/2, $\gamma_{3227.3}$**1710.5**$_8$(100) Q+O $\delta=-0.03_{15}$
4970$_5$
4980$_5$
4990$_5$, $(1/2^-,3/2^-)$
5066.9$_8$, (19/2), $\gamma_{3784.9}$**1282.0**$_5$(100) (D+Q) $\delta=-0.07_9$
5100$_5$
5120$_5$
5360$_{20}$, $(5/2^-,7/2^-)$
5413.6$_9$, (21/2), $\gamma_{5066.9}$**346.6**$_3$(100) (D(+Q)) $\delta=+0.04^{2}_{5}$
5547, $(1/2,3/2,5/2^+)$
5772.9$_{14}$, $\gamma_{5066.9}$**704**, $\gamma_{866.92}$**835**
5810$_{20}$, $5/2^-,7/2^-$
6847, $\gamma_{5772.9}$**1074**, $\gamma_{5413.6}$**1431**
7450$_{20}$, $1/2^-,3/2^-$
8003(?), γ_{6847}**1156**(100)(?)
8210$_{20}$, $(1/2^-,3/2^-)$
8560$_{20}$
8920$_{20}$
9060$_{20}$
9120$_{20}$
9520$_{20}$
10030$_{50}$(?)
C **x**, $J\geq(25/2)$
C **1341+x**, $J+2$, γ_{x}**1341**(0.42_{18})(?)
C **2832+x**, $J+4$, γ_{1341+x}**1491**(1.90_{20})
C **4500+x**, $J+6$, γ_{2832+x}**1668**(2.9_3) E2
C **6387+x**, $J+8$, γ_{4500+x}**1887**(2.9_3) E2
C **8508+x**, $J+10$, γ_{6387+x}**2121**(2.8_3) E2
C **10870+x**, $J+12$, γ_{8508+x}**2362**(2.5_3) E2
C **13533+x**, $J+14$, $\gamma_{10870+x}$**2663**(2.2_3)
C **16538+x**, $J+16$, $\gamma_{13533+x}$**3005**(0.73_{18})
C **19887+x**, $J+18$, $\gamma_{16538+x}$**3349**(0.30_{20})
A **y**, J
A **744+y**, $J+1$
A **1621+y**, $J+2$, γ_{y}**1621**
A **2478+y**, $J+3$, γ_{744+y}**1734**(100)
A **3396+y**, $J+4$, γ_{2478+y}**918**, γ_{1621+y}**1775**
A **4338+y**, $J+5$, γ_{3396+y}**942**, γ_{2478+y}**1859** E2
A **5357+y**, $J+6$, γ_{4338+y}**1020**, γ_{3396+y}**1961**
A **6402+y**, $J+7$, γ_{5357+y}**1046**, γ_{4338+y}**2063** E2
A **7610+y**, $J+8$, γ_{6402+y}**1208**, γ_{5357+y}**2254**
A **8841+y**, $J+9$, γ_{7610+y}**1231**, γ_{6402+y}**2439**
A **10307+y**, $J+10$, γ_{7610+y}**2697**(100) E2
A **11658+y**, $J+11$, γ_{8841+y}**2817**(100) E2
A **13295+y**, $J+12$, $\gamma_{10307+y}$**2987**(100)
B **z**, J
B **688+z**, $J+1$, γ_{z}**688**
B **1454+z**, $J+2$, γ_{688+z}**766**, γ_{z}**1455**
B **2304+z**, $J+3$, γ_{1454+z}**850**, γ_{688+z}**1615**
B **3250+z**, $J+4$, γ_{2304+z}**945**, γ_{1454+z}**1796**
B **4238+z**, $J+5$, γ_{3250+z}**988**, γ_{2304+z}**1934**
B **5353+z**, $J+6$, γ_{4238+z}**1114**, γ_{3250+z}**2104**
B **6553+z**, $J+7$, γ_{5353+z}**1201**(?), γ_{4238+z}**2314**
B **7906+z**, $J+8$, γ_{6553+z}**1353**(?), γ_{5353+z}**2553**
B **9379+z**, $J+9$, γ_{6553+z}**2826**
B **11029+z**(?), $J+10$, γ_{7906+z}**3123**(?)



SD band (2000Yu02) High-Def-1 band (2000Yu02) High-Def-2 band (2000Yu02)

$^{65}_{30}Zn_{35}$

$^{68}_{30}\mathrm{Zn}_{38}$

S_n: 10198.2 $_5$, S_p: 9993 $_8$

Nuclear Bands

A Yrast band (2000Wi18,1997Be77)

B SD band (1999De20)

Q_0=2.5^{7}_{4}

Levels and γ-ray branchings:

$\mathbf{0}$, 0^+, *stable*

$\mathbf{1077.37}_4$, 2^+, 1.59_{19} *ps*, μ=0.88_{10}, Q=-0.11_2, $\gamma_{0}\mathbf{1077.34}_5(100)$ E2

$\mathbf{1655.91}_8$, 0^+, 70_{35} *ps*, $\gamma_{1077.37}\mathbf{578.52}_{13}(100_5)$ E2, $\gamma_{0}\mathbf{1659}_7(4.2x10^{-2}{}_{10})$ E0

$\mathbf{1883.20}_5$, 2^+, 1.6_3 *ps*, $\gamma_{1655.91}\mathbf{227.31}_{15}(0.09_4)$ (E2), $\gamma_{1077.37}\mathbf{805.83}_7(68.9_{17})$ M1+E2 $\delta=-1.46_{10}$, $\gamma_{0}\mathbf{1883.16}_6(100.0_{19})$ (E2)

$\mathbf{2338.45}_5$, 2^+, 0.24^{11}_{6} *ps*, $\gamma_{1655.91}\mathbf{682.57}_{16}(0.33_2)$ E2, $\gamma_{1077.37}\mathbf{1261.08}_6(100_2)$ M1+E2 $\delta=-0.17_4$, $\gamma_{0}\mathbf{2338.40}_8(1.19_{17})$ (E2)

$\mathbf{2370.3}_{15}$, $\gamma_{1077.37}\mathbf{1292.9}_{15}(100)$

$\mathbf{2417.40}_6$, $(4)^+$, $\gamma_{1883.20}\mathbf{534.22}_{20}(0.56_{16})$, $\gamma_{1077.37}\mathbf{1339.96}_5(100_3)$ (E2(+M3)) $\delta=-0.05_6$

$\mathbf{2510.2}_{15}$, $\gamma_{1077.37}\mathbf{1432.8}_{15}(100)$

$\mathbf{2750.76}_8$, 3^-, 0.44^{10}_{8} *ps*, $\gamma_{2338.45}\mathbf{412.41}_{12}(7.7_6)$ (E1), $\gamma_{1077.37}\mathbf{1673.29}_{10}(100_7)$ (E1)

$\mathbf{2821.79}_8$, 2^+, 0.15_3 *ps*, $\gamma_{2338.45}\mathbf{483.35}_{16}(2.8_3)$ M1+E2, $\gamma_{1883.20}\mathbf{938.61}_{20}(1.86_{17})$ M1+E2 $\delta=-0.7_3$, $\gamma_{1655.91}\mathbf{1165.92}_{15}(0.17_{10})$ E2, $\gamma_{1077.37}\mathbf{1744.42}_{13}(100_5)$ M1+E2 $\delta=+0.28_5$, $\gamma_{0}\mathbf{2821.73}_{14}(4.9_4)$ (E2)

$\mathbf{2955.9}_{22}$, $\gamma_{2370.3}\mathbf{585.6}_{15}(100)$

$\mathbf{2959.49}_{13}$, (4^+), $\gamma_{2417.40}\mathbf{542.05}_{16}(12_2)$, $\gamma_{1077.37}\mathbf{1883.1}_3(100_{27})$

$\mathbf{3009.27}_7$, $(3)^+$, 0.28^{14}_{8} *ps*, $\gamma_{2417.40}\mathbf{591.71}_{16}(5.7_6)$, $\gamma_{2338.45}\mathbf{670.89}_{17}(4.8_6)$, $\gamma_{1883.20}\mathbf{1126.07}_6(100_5)$ (M1+E2) $\delta=-0.36^{20}_{27}$, $\gamma_{1077.37}\mathbf{1932.1}_3(11.7_{12})$

$\mathbf{3102.51}_{11}$, 0^+, $\gamma_{1883.20}\mathbf{1219.3}_1(100)$, $\gamma_{1077.37}\mathbf{2025.1}(\leq 3)$(?)

$\mathbf{3153.8}_4$(?), $\gamma_{2338.45}\mathbf{815.7}_5(100_{21})$(?), $\gamma_{1883.20}\mathbf{1270.0}_5(68_{11})$(?)

$\mathbf{3160.1}_3$, $\gamma_{1883.20}\mathbf{1275.9}_3(\leq 200)$(?), $\gamma_{1077.37}\mathbf{2082.7}_3(100_{28})$

$\mathbf{3164.4}_{14}$, $\gamma_{2417.40}\mathbf{747.0}_{14}(100)$(?)

$\mathbf{3184.18}_{13}$, $1,2^+$, 22_6 *fs*, $\gamma_{2338.45}\mathbf{845.2}_6(6.5_{15})$, $\gamma_{1883.20}\mathbf{1300.87}_{20}(25.5_{20})$, $\gamma_{1077.37}\mathbf{2106.83}_{18}(100_{15})$, $\gamma_{0}\mathbf{3184.3}_6(32_4)$

$\mathbf{3186.6}_{11}$, $(1,2^+)$, $\gamma_{1655.91}\mathbf{1529.7}_{15}(56_{17})$, $\gamma_{1077.37}\mathbf{2110.1}_{15}(100_{28})$

$\mathbf{3281.58}_{16}$, 4^+, $\gamma_{2417.40}\mathbf{864.17}_{14}(100_{17})$, $\gamma_{1883.20}\mathbf{1397.0}_6(21_5)$(?)

$\mathbf{3287.09}_{13}$, $1,2^+$, 0.08^{2}_{1} *ps*, $\gamma_{2821.79}\mathbf{465.20}_{18}(1.6_3)$(?), $\gamma_{1883.20}\mathbf{1403.7}_3(4.3_{14})$, $\gamma_{1655.91}\mathbf{1630.9}_3(14.5_{14})$, $\gamma_{1077.37}\mathbf{2209.75}_{16}(100_{12})$ (M1+E2), $\gamma_{0}\mathbf{3287.2}_3(48_5)$

$\mathbf{3346.09}_{20}$, 1^+, 8.4_{22} *fs*, $\gamma_{1883.20}\mathbf{1462.0}_{23}(27_{10})$(?), $\gamma_{1077.37}\mathbf{2270}_3(34_{11})$, $\gamma_{0}\mathbf{3346.0}_2(100_{17})$ (M1)

$\mathbf{3386}_3$(?), $\gamma_{1077.37}\mathbf{2310}_3(100_{50})$(?), $\gamma_{0}\mathbf{3383}_5(30_{17})$(?)

$\mathbf{3400.9}_5$, $1,2^+$, 45^{17}_{14} *fs*, $\gamma_{1883.20}\mathbf{1517.7}_5(89_{22})$, $\gamma_{1077.37}\mathbf{2322}_3(100_{44})$(?), $\gamma_{0}\mathbf{3402}_5(24_{12})$

$\mathbf{3425.07}_{15}$, $(2,3,4)^+$, $\gamma_{2750.76}\mathbf{670.7}_{15}(\leq 39)$(?), $\gamma_{1883.20}\mathbf{1542.0}_2(53_5)$, $\gamma_{1077.37}\mathbf{2347.5}_2(100_{15})$

$\mathbf{3429.46}_{15}$, $(1,2^+)$, $\gamma_{2338.45}\mathbf{1091.04}_{18}(28_2)$(?), $\gamma_{1883.20}\mathbf{1546.13}_{16}(100_8)$, $\gamma_{1077.37}\mathbf{2352.4}_3(50_{10})$, $\gamma_{0}\mathbf{3430.2}_{11}(12_4)$

$\mathbf{3451.0}_3$(?), $\gamma_{2821.79}\mathbf{630.0}_{13}(46_{19})$(?), $\gamma_{2338.45}\mathbf{1115.8}_{18}(67_{20})$(?), $\gamma_{1077.37}\mathbf{2373.5}_3(100_{26})$(?)

$\mathbf{3458.83}_{16}$, 5^-, $\gamma_{2959.49}\mathbf{499.9}_3(15_5)$, $\gamma_{2417.40}\mathbf{1041.26}_{16}(100_{24})$ (E1+M2) $\delta=+0.07_5$

$\mathbf{3487.7}_{15}$, $(2,3,4)^+$, $\gamma_{2750.76}\mathbf{736.9}_{15}(100)$

$\mathbf{3496.08}_{11}$, $3^+,4^+$, 62_{10} *fs*, $\gamma_{2750.76}\mathbf{744.8}_6(3.1_{15})$, $\gamma_{1883.20}\mathbf{1612.2}_6(5.4_{15})$, $\gamma_{1077.37}\mathbf{2418.7}_1(100_{12})$

$\mathbf{3586.64}_{10}$, 4^+, $\gamma_{2750.76}\mathbf{835.87}_6(100_{19})$, $\gamma_{1077.37}\mathbf{2508}_4(46_{13})$

$\mathbf{3610.8}_6$, $(6)^-$, $\gamma_{3458.83}\mathbf{152.0}_5(100)$ (M1+E2) $\delta=-0.05_8$

$\mathbf{3620}_{10}$, 3^-

$\mathbf{3624.32}_{21}$, $(1,2^+)$, $\gamma_{1077.37}\mathbf{2546.9}_2(100_{24})$, $\gamma_{0}\mathbf{3626}_5(26_{12})$

$\mathbf{3630.32}_{11}$, (2^+), $\gamma_{3281.58}\mathbf{348.7}_3(3.5_7)$(?), $\gamma_{3009.27}\mathbf{621.06}_{14}(42_4)$, $\gamma_{2750.76}\mathbf{879.59}_{15}(100_{13})$, $\gamma_{2417.40}\mathbf{1212.7}_3(23_3)$, $\gamma_{0}\mathbf{3630.2}_6(68_8)$

$\mathbf{3664.7}_3$, $(1,2)^+$, $\gamma_{1883.20}\mathbf{1781.5}_3(100_{10})$, $\gamma_{1077.37}\mathbf{2587.2}_7(65_{19})$, $\gamma_{0}\mathbf{3664.8}_{10}(36_9)$

$\mathbf{3687.5}_5$, (6^+), $\gamma_{2417.40}\mathbf{1270.1}_5(100)$ (E2+M3) $\delta=+0.14_5$

$\mathbf{3709.8}_3$, 2^+, $\gamma_{2338.45}\mathbf{1371.6}_3(100_{19})$, $\gamma_{0}\mathbf{3708.2}_8(71_{10})$

$\mathbf{3717.47}_{20}$, $1,2^+$, 23_8 *fs*, $\gamma_{1655.91}\mathbf{2061.5}_2(58_9)$, $\gamma_{0}\mathbf{3717.5}_5(100_{10})$

$\mathbf{3725.79}_{17}$ 33^{9}_{6} *fs*, $\gamma_{2821.79}\mathbf{904.6}_4(11_3)$, $\gamma_{2750.76}\mathbf{975.4}_4(13_3)$(?), $\gamma_{2338.45}\mathbf{1387.21}_{19}(63_5)$, $\gamma_{1077.37}\mathbf{2648.1}_6(100_{30})$

$\mathbf{3732.4}_{10}$(?), $\gamma_{2510.2}\mathbf{1222.2}(100)$(?)

$\mathbf{3776.32}_{23}$, $(1,2^+)$, $\gamma_{2338.45}\mathbf{1437.76}_{24}(62_5)$, $\gamma_{1077.37}\mathbf{2699.5}_{10}(35_{11})$, $\gamma_{0}\mathbf{3777.0}_9(100_{18})$

$\mathbf{3806}_{10}$, (3^-)

$\mathbf{3814.83}_{21}$, 1^-, 24^{8}_{6} *fs*, $\gamma_{1077.37}\mathbf{2737.4}_2(100_{16})$ (E1), $\gamma_{0}\mathbf{3817}_5(17_5)$ (E1)

$\mathbf{3849.30}_{22}$, 4^+, 0.16^{15}_{6} *ps*, $\gamma_{2417.40}\mathbf{1431.86}_{22}(100_8)$, $\gamma_{2338.45}\mathbf{1511.1}_7(13_6)$

$\mathbf{3895.83}_{17}$, 4^+, $\gamma_{2959.49}\mathbf{936.7}_3(22_5)$, $\gamma_{2417.40}\mathbf{1478.31}_{18}(100_8)$, $\gamma_{2338.45}\mathbf{1557.1}_6(8_4)$

$\mathbf{3910.99}_{24}$, $^-$, $\gamma_{3281.58}\mathbf{629.3}_3(29_7)$(?), $\gamma_{2417.40}\mathbf{1493.5}_3(95_{12})$, $\gamma_{2338.45}\mathbf{1572.5}_9(22_7)$, $\gamma_{1883.20}\mathbf{2027.9}_4(100_{15})$

$\mathbf{3929}_4$(?), $\gamma_{1077.37}\mathbf{2852}_4(100)$(?)

$\mathbf{3935.08}_{18}$, 3^+, $\gamma_{2821.79}\mathbf{1113.34}_{20}(9.6_{12})$, $\gamma_{2750.76}\mathbf{1184.5}_3(12_3)$(?), $\gamma_{2338.45}\mathbf{1596.3}_5(7.6_{20})$, $\gamma_{1077.37}\mathbf{2857.6}_4(100_{28})$, $\gamma_{0}\mathbf{3935.1}_{13}(6_3)$

$\mathbf{3942.9}_8$, (8^-), $\gamma_{3610.8}\mathbf{332.1}_5(100)$ (E2)

$\mathbf{3970.7}_{12}$(?), $^+$, $\gamma_{2955.9}\mathbf{1014.5}_{15}(100_{45})$(?), $\gamma_{2821.79}\mathbf{1149.4}_{20}(32_{13})$(?)

$\mathbf{3989}_5$(?), $\gamma_{0}\mathbf{3989}_5(100)$(?)

$\mathbf{4027.7}_4$, (2^+), $\gamma_{3009.27}\mathbf{1018.3}_4(16_5)$, $\gamma_{2750.76}\mathbf{1276.9}_6(27_{11})$, $\gamma_{0}\mathbf{4028.3}_8(100_{14})$

$\mathbf{4061.0}_3$, (2^+), 62^{21}_{17} *fs*, $\gamma_{2338.45}\mathbf{1724}_3(65_{20})$, $\gamma_{1077.37}\mathbf{2983.5}_3(100_{15})$

$\mathbf{4102}_5$, $\gamma_{0}\mathbf{4102}_5(100)$(?)

$\mathbf{4110}$, 4^+

$\mathbf{4124}_{10}$, $4^-,5^-,6^-$

$\mathbf{4139.2}_{17}$, $1,2^+$, 33^{12}_{9} *fs*, $\gamma_{1077.37}\mathbf{3062.4}_5(100_{10})$(?), $\gamma_{0}\mathbf{4139.1}_{17}(19_9)$

$\mathbf{4148}_7$, 0^+

$\mathbf{4215.4}_6$, $(1,2)^+$, $\gamma_{1077.37}\mathbf{3137.8}_6(100_{14})$, $\gamma_{0}\mathbf{4215.9}_{15}(27_{10})$

$\mathbf{4229}_4$, $\gamma_{1077.37}\mathbf{3152}_4(100)$(?)

$\mathbf{4234}_4$, $^{(-)}$, $\gamma_{1077.37}\mathbf{3157}_4(100)$(?)

$\mathbf{4284.0}_4$, $(1,2^+)$, $\gamma_{3009.27}\mathbf{1274.8}_8(20_8)$, $\gamma_{2750.76}\mathbf{1533.2}_4(39_8)$, $\gamma_{1077.37}\mathbf{3206.4}_9(100_{14})$

$\mathbf{4325}_6$, $\gamma_{0}\mathbf{4325}_6(100)$

$\mathbf{4339.1}_{20}$, $1,2^+$, 12_3 *fs*, $\gamma_{0}\mathbf{4339}_2(100)$

$\mathbf{4345}_{10}$, $3^+,4^+,5^+$

$\mathbf{4355}_{10}$, $^-$

$\mathbf{4389}_{10}$, $3^+,4^+$

$\mathbf{4396.8}_7$, (8^+), $\gamma_{3687.5}\mathbf{709.3}_5(100)$ (E2(+M3)) $\delta=+0.05^{2}_{8}$

$\mathbf{4408.4}_4$, $\gamma_{2959.49}\mathbf{1448.8}_5(13_3)$, $\gamma_{1077.37}\mathbf{3331.0}_4(100_{10})$

$\mathbf{4414}_6$, $1^+,2^+,3^+$, $\gamma_{0}\mathbf{4414}_6(100)$

$\mathbf{4437}_5$, $^-$, $\gamma_{1077.37}\mathbf{3360}_5(100)$(?)

$\mathbf{4444}_6$, $^+$, $\gamma_{0}\mathbf{4444}_6(100)$

$\mathbf{4466.2}_{20}$, 1^-, 7.0_{21} *fs*, $\gamma_{0}\mathbf{4466}_2(100)$ (E1)

$\mathbf{4496}_6$, $\gamma_{0}\mathbf{4496}_6(100)$

$\mathbf{4503.2}_{20}$, (1), 12_4 *fs*, $\gamma_{1077.37}\mathbf{3427}_5(\leq 135)$(?), $\gamma_{0}\mathbf{4503}_2(100_{40})$ D

$\mathbf{4512.2}_3$, (2^+), $\gamma_{2417.40}\mathbf{2094.6}_3(100_{12})$, $\gamma_{1077.37}\mathbf{3434.9}_8(78_{16})$, $\gamma_{0}\mathbf{4513.3}_8(80_{14})$

$\mathbf{4520.6}_4$, $1,2^+$, $\gamma_{2821.79}\mathbf{1697}_3(25_7)$(?), $\gamma_{2338.45}\mathbf{2181.7}_5(46_8)$, $\gamma_{0}\mathbf{4521.0}_6(100_9)$

$\mathbf{4535.6}_4$, $1,2^+$, $\gamma_{1077.37}\mathbf{3458.1}_4(100_{12})$, $\gamma_{0}\mathbf{4535.5}_9(30_6)$

$\mathbf{4578}_6$, $\gamma_{0}\mathbf{4578}_6(100)$

$\mathbf{4587}_4$, $1^+,2^+,3^+$, $\gamma_{1077.37}\mathbf{3511}_5(100_{16})$, $\gamma_{0}\mathbf{4585}_6(28_9)$

$\mathbf{4608}_6$, $^-$, $\gamma_{0}\mathbf{4608}_6(100)$

$\mathbf{4642}_4$, $\gamma_{2338.45}\mathbf{2300}_3(37_{30})$(?), $\gamma_{1077.37}\mathbf{3567}_5(100_{18})$, $\gamma_{0}\mathbf{4639}_6(42_{18})$

$\mathbf{4670}_6$, $2^-,3^-$, $\gamma_{1077.37}\mathbf{3592}_5(100_{60})$(?), $\gamma_{0}\mathbf{4670}_6(60_{40})$

$\mathbf{4680}_6$, $\gamma_{0}\mathbf{4680}_6(100)$

$\mathbf{4724.1}_5$, $1^+,2^+,3^+$, $\gamma_{2821.79}\mathbf{1902.2}_5(61_{16})$, $\gamma_{0}\mathbf{4724.3}_8(100_{14})$

$\mathbf{4732.8}_{11}$, $1,2^+$, $\gamma_{3009.27}\mathbf{1723.5}_5(42_9)$(?), $\gamma_{1655.91}\mathbf{3077.2}_8(100_{20})$(?), $\gamma_{1077.37}\mathbf{3655.2}_{16}(44_{22})$, $\gamma_{0}\mathbf{4732.8}_{14}(38_{11})$

$\mathbf{4743}_5$, $2^-,3^-$, $\gamma_{1077.37}\mathbf{3666}_5(100)$(?)

$\mathbf{4792}_6$, $\gamma_{0}\mathbf{4792}_6(100)$

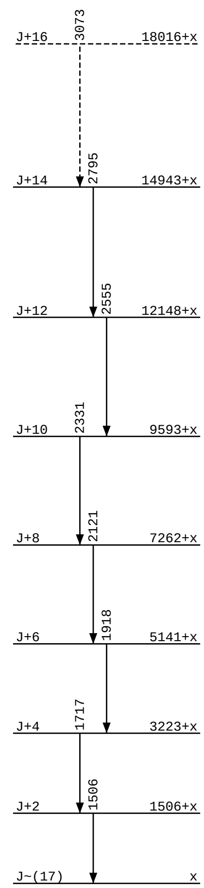
$\mathbf{4851.2}_6$, $2^-,3^-$, $\gamma_{3935.08}\mathbf{916.1}_4(9_4)$(?), $\gamma_{3664.7}\mathbf{1186.9}_6(16_6)$(?), $\gamma_{2338.45}\mathbf{2512.7}_6(100_{30})$

$\mathbf{4857.9}_6$, $0^-,1,2^+$, $\gamma_{1655.91}\mathbf{3201.1}_9(88_{21})$, $\gamma_{0}\mathbf{4858.4}_8(100_{15})$

$\mathbf{4865.9}_8$, (10^-), $\gamma_{3942.9}\mathbf{923.0}_3(100)$

$\mathbf{4873}_4$, $2^-,3^-,4^-$, $\gamma_{2750.76}\mathbf{2122}_3(100_{55})$(?), $\gamma_{1883.20}\mathbf{2990}_4(\leq 1115)$

4910.6$_4$, $1,2^+$, $\gamma_{1883.20}$**3027.7**$_{14}$(11_5)(?), $\gamma_{1655.91}$**3254.4**$_{10}$(13_5), $\gamma_{1077.37}$**3833.1**$_4$(100_{11})
4951.5$_4$, $1^-,2^-,3^-$, $\gamma_{3184.18}$**1767.2**$_4$(30_5), $\gamma_{1883.20}$**3068.8**$_8$(37_9), $\gamma_{1077.37}$**3874.1**$_8$(100_{23})
4963.0$_7$, $\gamma_{1077.37}$**3885.5**$_7$(100)
4982$_6$, γ_0**4982**$_6$(100)
4992.0$_{10}$, $1,2^+$, $\gamma_{1883.20}$**3107.5**$_{15}$(85_{41})(?), $\gamma_{1077.37}$**3913.9**$_{18}$(100_{29}), γ_0**4992.0**$_{11}$(76_{15})
5019$_{10}$, $^-$
5120$_{10}$, $^-$
5146$_5$, $\gamma_{2417.40}$**2732**$_4$(<3)(?), $\gamma_{1077.37}$**4069**$_5$(100_{16})
5162$_{10}$
5187.7$_7$, $\gamma_{2417.40}$**2770.4**$_7$(100_{29}), $\gamma_{1077.37}$**4109.8**$_{13}$(31_{14})
5200$_{10}$, $2^-,3^-$
5283.4$_6$, $\gamma_{2417.40}$**2866.1**$_7$(100_{30}), $\gamma_{2338.45}$**2944.5**$_9$(52_{15})(?), $\gamma_{1883.20}$**3399.8**$_{11}$(52_{17})
5298.0$_4$, $1^-,2^+$, $\gamma_{2750.76}$**2547.0**$_4$(100_{30}), $\gamma_{2338.45}$**2959.7**$_8$(43_{13})(?), $\gamma_{1883.20}$**3415.6**$_9$(91_{26}), $\gamma_{1077.37}$**4221.7**$_{17}$(29_{14}), γ_0**5297.3**$_{11}$(30_7)
5307.5$_{10}$, $^-$, $\gamma_{1655.91}$**3651.5**$_{10}$(100)
5400.4$_5$, $\gamma_{3009.27}$**2391.2**$_6$(50_{11}), $\gamma_{2417.40}$**2982.9**$_6$(100_{30})
5403.2$_5$, $1,2^+$, $\gamma_{1883.20}$**3519.4**$_6$(100_{22}), γ_0**5403.9**$_8$(76_{10})
5415.3$_8$, $1,2^+$, $\gamma_{1077.37}$**4337.3**$_{15}$(100_{37}), γ_0**5415.3**$_9$(57_{10})
5420, $2^-,3^-$
5565.0$_8$, $\gamma_{2750.76}$**2814.4**$_{11}$(58_{18}), $\gamma_{2417.40}$**3147.3**$_{11}$(52_{16}), $\gamma_{2338.45}$**3226.4**$_7$(100_{14})(?)
5610, $2^-,3^-$
5635$_{10}$
5693.8$_6$, $\gamma_{2417.40}$**3276.3**$_6$(100)
5860, $^-$
5990.7$_9$, (12^-), $\gamma_{4865.9}$**1124.7**$_3$(100)
6760, $^-$
7110, $2^-,3^-$
7362.3$_5$, 1^-, *0.240*$_{10}$ *fs*, $\gamma_{2821.79}$**4540**, $\gamma_{1655.91}$**5706**, $\gamma_{1077.37}$**6285**, γ_0**7362** E1
B **x**, $J\approx(17)$
B **1506.0+x**, $J+2$, γ_x**1506**
B **3223.0+x**, $J+4$, $\gamma_{1506.0+x}$**1717**
B **5141.1+x**, $J+6$, $\gamma_{3223.0+x}$**1918**
B **7262.1+x**, $J+8$, $\gamma_{5141.1+x}$**2121**
B **9593.1+x**, $J+10$, $\gamma_{7262.1+x}$**2331**
B **12148.2+x**, $J+12$, $\gamma_{9593.1+x}$**2555**
B **14943+x**, $J+14$, $\gamma_{12148.2+x}$**2795**
B **18016+x**(?), $J+16$, $\gamma_{14943+x}$**3073**(?)



SD band
(1999De20)
$^{68}_{30}Zn_{38}$

$^{68}_{32}\mathbf{Ge}_{36}$

S_n: 12394 $_8$, S_p: 7389 $_6$

Nuclear Bands

- A GS band
- B Oblate band based on 0^+
- C γ band
- D Octupole band based on 3^-
- E Band based on 4^-
- F Proton-aligned Band
- G Band based on 7^-
- H Neutron-aligned band
- I Side band based on 12^+
- J Side band based on 12^+
- K Side band based on 13^+
- L Band based on 13^-
- M Band based on 15^-
- N Band based on 18^-
- O SD band (2001Wa02)

Levels and γ-ray branchings:

A **0**, 0^+, *270.95$_{16}$ d*, %ε=100

A **1015.70**$_{16}$, 2^+, *1.8$_2$ ps*, $\gamma_{\mathbf{0}}$**1015.1**$_3$(100) E2

B **1755.0**$_3$, 0^+, $\gamma_{1015.70}$**738.4**$_5$(100.0)

C **1777.37**$_{16}$, 2^+, *4.2$_7$ ps*, $\gamma_{1015.70}$**761.8**$_3$(100_4) M1+E2 $\delta=-0.15_3$, $\gamma_{\mathbf{0}}$**1778.1**$_3$(44.2_{17}) E2

A **2267.81**$_{17}$, 4^+, *0.8$_1$ ps*, $\gamma_{1015.70}$**1252.4**$_3$(100) E2(+M3) $\delta=0.0_1$

C **2428.61**$_{17}$, 3^+, *2.1$_7$ ps*, $\gamma_{1777.37}$**651.12**$_{10}$(100_5) (M1+E2) $\delta=+0.06_2$, $\gamma_{1015.70}$**1412.93**$_{15}$(36.5_{19}) (M1+E2) $\delta=+0.16_2$

B **2457.28**$_{16}$, 2^+, $\gamma_{2267.81}$**190.3**(47_5), $\gamma_{1755.0}$**702.1**$_3$(29_3), $\gamma_{1015.70}$**1441.0**(22_3), $\gamma_{\mathbf{0}}$**2457.1**$_2$(100_{12})

2617$_3$, 0^+

D **2648.81**$_{17}$, 3^-, *1.7$^{14}_{10}$ ps*, $\gamma_{1777.37}$**871.50**$_{16}$(7.4_{22}) (E1), $\gamma_{1015.70}$**1633.14**$_{10}$(100_5) (E1+M2) $\delta=+0.09_3$

C **2832.00**$_{16}$, 4^+, *0.8$^7_3$ ps*, $\gamma_{2428.61}$**403.8**(2.5_3) (M1,E2), $\gamma_{2267.81}$**564.0**(6.8_8) (M1,E2), $\gamma_{1777.37}$**1054.72**$_{10}$(100_8) E2, $\gamma_{1015.70}$**1816.41**$_{20}$(30_3) E2

E **2900.4**$_3$, 4^-, $\gamma_{2648.81}$**251.5**(100)

2947.2$_4$, 2^+, $\gamma_{1777.37}$**1169.8**$_3$(100)

3023.0$_5$, 2^+, $\gamma_{1777.37}$**1245.1**$_{10}$(13.0_{22}), $\gamma_{1015.70}$**2007.4**$_5$(100_9)

3040.54$_{18}$, (4), $\gamma_{2428.61}$**611.84**$_{10}$(100_5) D+Q $\delta=+0.24_4$, $\gamma_{1777.37}$**1263.35**$_{15}$(46_9), $\gamma_{1015.70}$**2025.3**$_{10}$(5.6_8)(?)

3061.89$_{17}$, 4^+, $\gamma_{2832.00}$**230.0**$_1$(18_{28}), $\gamma_{2648.81}$**413.2**$_1$(?), $\gamma_{2428.61}$**633.3**$_1$(18_{28}), $\gamma_{2267.81}$**793.91**$_{15}$(100_{28}), $\gamma_{1015.70}$**2045.8**$_2$(73_{28})

3086.9$_4$, $(1,2^+)$, $\gamma_{1777.37}$**1309.6**$_{10}$(47_7), $\gamma_{1755.0}$**1331.78**$_{22}$(100_7), $\gamma_{1015.70}$**2071.8**$_{10}$(27_7), $\gamma_{\mathbf{0}}$**3088.3**$_{10}$(87_7)

B **3182.39**$_{16}$, 4^+, $\gamma_{2457.28}$**725.1**$_1$(60_6), $\gamma_{2267.81}$**915.0**(35.8_{20}), $\gamma_{1777.37}$**1405.13**$_{20}$(100_{10}) (E2+M3) $\delta=-0.1_1$, $\gamma_{1015.70}$**2166.4**$_2$(28_3)

3204$_3$, 0^+

3287.8$_8$, $(1,2^+)$, $\gamma_{1015.70}$**2271.3**$_{10}$(100_{10}), $\gamma_{\mathbf{0}}$**3288.4**$_{10}$(40_{10})

3400.3$_4$, $(1,2^+)$, $\gamma_{1777.37}$**1622.5**$_5$(100_6), $\gamma_{1755.0}$**1645.9**$_{10}$(24.1_{19}), $\gamma_{1015.70}$**2384.6**$_{10}$(22.2_{19}), $\gamma_{\mathbf{0}}$**3401.3**$_{10}$(5.6_{19})

3417.0$_5$, $\gamma_{2428.61}$**988.3**$_5$(59_5), $\gamma_{1777.37}$**1639.9**$_7$(100_5)

3474.5$_{11}$, 0^+, $\gamma_{1015.70}$**2458.8**$_{10}$(100)

3509.77$_{17}$, (4^-), $\gamma_{2648.81}$**861.0**$_1$(63_6), $\gamma_{2428.61}$**1081.1**$_1$(100_9)

3521.9$_{11}$, 2^+, $\gamma_{1015.70}$**2506.2**$_{10}$(100)

D **3582.05**$_{17}$, 5^-, *1.2$_4$ ps*, $\gamma_{3061.89}$**520.1**$_1$(?), $\gamma_{2832.00}$**750.10**$_{20}$(16_3) (E1), $\gamma_{2648.81}$**933.19**$_{10}$(22.5_{15}) E2, $\gamma_{2267.81}$**1314.31**$_{12}$(100_5) E1+M2 $\delta=+0.05_2$

3604$_3$, 4^+

3631.3$_4$, 4,5, $\gamma_{2648.81}$**982.5**(100)

F **3649.17**$_{17}$, 5^-, *1.4$^{14}_7$ ps*, $\gamma_{3061.89}$**587.22**$_{14}$(7.5_6), $\gamma_{2832.00}$**817.2**$_1$(2.6_{14}), $\gamma_{2648.81}$**1000.48**$_{10}$(14.1_7) (E2), $\gamma_{2267.81}$**1381.26**$_{10}$(100_6) E1+M2 $\delta=-0.01_2$

C **3675.48**$_{19}$, 5^+, $\gamma_{2832.00}$**843.2**(29_4), $\gamma_{2428.61}$**1246.83**$_{22}$(100_{10})

A **3695.97**$_{17}$, 6^+, *0.48$_{14}$ ps*, μ=+2.4, $\gamma_{2267.81}$**1428.24**$_{10}$(100) E2(+M3) $\delta=-0.1_1$

3735$_3$, (2^+)

3809.2$_{11}$, 2^+, $\gamma_{1015.70}$**2793.4**$_{10}$(100)

E **3883.12**$_{17}$, 6^-, *132$_{35}$ ps*, μ=0.53$_{11}$, $\gamma_{3675.48}$**207.6**$_1$(1.1_{16}), $\gamma_{3649.17}$**233.90**$_{10}$(100_8) (M1(+E2)) $\delta=+0.01_2$, $\gamma_{3631.3}$**251.8**$_1$(?), $\gamma_{3509.77}$**373.3**$_1$(1.44_{12}) (E2), $\gamma_{2900.4}$**982.7**(1.34_{11}) (E2)

4021$_3$, 4^+

4037$_3$, (2^+)

F **4053.90**$_{17}$, 7^-, *118$_{21}$ ps*, μ=0.78$_{12}$, $\gamma_{3883.12}$**170.72**$_{12}$(100_{16}) M1+E2 $\delta=+0.05_1$, $\gamma_{3695.97}$**358.01**$_{15}$(20_6) (E1(+M2)) $\delta=-0.07^{10}_{20}$, $\gamma_{3649.17}$**404.81**$_{10}$(31.7_{17}) E2(+M3) $\delta=+0.0^3_1$, $\gamma_{3582.05}$**471.78**$_{10}$(52_3) E2(+M3) $\delta=-0.07_{10}$

4078$_3$, 0^+

B **4144.21**$_{17}$, 6^+, $\gamma_{3695.97}$**448.2**(6.4_7), $\gamma_{3182.39}$**961.8**$_1$(100_8), $\gamma_{2832.00}$**1312.2**$_1$(39_4), $\gamma_{2267.81}$**1876.2**$_1$(74_6)

4238.4$_{11}$, (2^+), $\gamma_{1015.70}$**3222.6**$_{10}$(100)

4322$_3$, 2^+

4358$_3$, 0^+

D **4454.17**$_{18}$, 7^-, *0.97$_{21}$ ps*, $\gamma_{4053.90}$**400.08**$_{10}$(100_7) M1+E2 $\delta=+0.5_2$, $\gamma_{3883.12}$**571.01**$_{16}$(24_3) (M1,E2), $\gamma_{3649.17}$**804.9**$_{10}$(14_{11}) (E2), $\gamma_{3582.05}$**872.36**$_{15}$(35_9) (E2)

4567.4$_{11}$, (2^+), $\gamma_{1015.70}$**3551.6**$_{10}$(100)

4614$_3$, (3^-)

G **4659.69**$_{17}$, 7^-, $\gamma_{4454.17}$**205.5**$_1$, $\gamma_{4053.90}$**605.81**$_3$(100_6) Q, $\gamma_{3883.12}$**776.4**$_1$(29_3)

4736$_3$, 0^+

4789$_3$, 0^+

A **4837.13**$_{17}$, 8^+, *1.04$_{21}$ ps*, μ=+0.80$_{32}$, $\gamma_{4144.21}$**692.9**$_1$(9.1_9) (E2), $\gamma_{4053.90}$**783.25**$_{15}$(13.1_{10}) (E1), $\gamma_{3695.97}$**1141.30**$_{10}$(100_5) E2(+M3) $\delta=+0.0_1$

4857$_{10}$

4877.8$_{11}$, $\gamma_{2648.81}$**2229.0**$_{10}$(100)

E **4957.79**$_{18}$, 8^-, *0.9$^4_2$ ps*, $\gamma_{4053.90}$**903.79**$_{20}$(14.6_{21}) D, $\gamma_{3883.12}$**1074.96**$_{10}$(100_5) E2

H **5049.70**$_{17}$, 8^+, *0.49$^{21}_{14}$ ps*, μ=-2.2$_{11}$, $\gamma_{4837.13}$**212.6**$_1$(3.3_4) (M1), $\gamma_{4144.21}$**905.5**$_1$(20.7_{18}) (E2), $\gamma_{4053.90}$**995.9**(7.1_7) (E1), $\gamma_{3695.97}$**1353.57**$_{12}$(100_9) E2

5074$_{10}$

G **5149.01**$_{18}$, (8^-), *1.2$_3$ ps*, $\gamma_{4659.69}$**489.1**(7.4_4) (M1,E2), $\gamma_{4454.17}$**695.4**(?), $\gamma_{4053.90}$**1095.5**(100_9) (M1,E2), $\gamma_{3883.12}$**1265.7**$_1$(15.5_{16}) (M1,E2)

5217$_{10}$

C **5266.7**$_4$, 7^+, $\gamma_{3675.48}$**1591.2**(100)

F **5330.32**$_{18}$, 9^-, *0.69$^{21}_{14}$ ps*, $\gamma_{4053.90}$**1276.39**$_{12}$(100) E2

B **5366.30**$_{18}$, 8^+, *0.8$^3_2$ ps*, $\gamma_{5049.70}$**316.5**$_1$(11.5_{12}) (M1), $\gamma_{4144.21}$**1222.0**$_1$(73_{28}) (E2), $\gamma_{3695.97}$**1670.43**$_{15}$(100_9) E2

5560$_{50}$

D **5678.25**$_{18}$, 9^-, *0.5$_2$ ps*, $\gamma_{5330.32}$**347.9**$_1$(29_9) (M1), $\gamma_{4957.79}$**720.6**$_1$(30.5_{12}) (M1,E2), $\gamma_{4454.17}$**1223.74**$_{18}$(100_6) E2, $\gamma_{4053.90}$**1624.3**$_2$(8_8)

G **5822.01**$_{18}$, 9^-, *0.8$_4$ ps*, $\gamma_{5330.32}$**491.83**$_{15}$(67_6) (M1,E2), $\gamma_{5149.01}$**672.9**$_1$(34_3) (E2), $\gamma_{4837.13}$**985.1**(24_{11}) (E1), $\gamma_{4659.69}$**1162.9**(100_9) (E2)

5873.59$_{21}$, 9^+, *1.5$^{10}_6$ ps*, $\gamma_{4837.13}$**1036.46**$_{12}$(100) (M1,E2)

A **5961.87**$_{18}$, 10^+, *0.76$^{21}_{14}$ ps*, $\gamma_{5330.32}$**631.6**$_3$(5.2_{15}) (E1), $\gamma_{4837.13}$**1124.83**$_{10}$(100_5) E2(+M3) $\delta=+0.0_1$

H **6215.07**$_{18}$, 10^+, *<0.7 ps*, $\gamma_{5366.30}$**848.5**(3.2_3) (E2), $\gamma_{5049.70}$**1165.35**$_{25}$(100_8) E2, $\gamma_{4837.13}$**1377.9**$_1$(17.4_{14}) (E2)

6300$_{50}$

E **6420.38**$_{20}$, 10^-, $\gamma_{4957.79}$**1462.68**$_9$(100)

G **6556.89**$_{19}$, (10^-), $\gamma_{5330.32}$**1226.4**$_1$(?), $\gamma_{5149.01}$**1407.8**$_1$

B **6596.03**$_{20}$, 10^+, $\gamma_{5366.30}$**1229.6**$_1$(100_9), $\gamma_{4837.13}$**1759.4**(28_{28})

6663.41$_{22}$, 10^+, $\gamma_{5873.59}$**789.82**$_7$(100)

6671.32$_{20}$(?), $\gamma_{5366.30}$**1305.0**$_1$

6960$_{50}$

F **7045.13**$_{20}$, 11^-, *1.0$^4_3$ ps*, $\gamma_{5330.32}$**1714.72**$_{20}$(100) E2

D **7145.61**$_{19}$, (11^-), $\gamma_{6556.89}$**588.0**(2.81_{25}), $\gamma_{5678.25}$**1467.41**$_{15}$(100_{10}) Q

7242.3$_4$(?) *0.7$^7_4$ ps*, $\gamma_{5366.30}$**1876.0**$_3$(?)

7251.49$_{18}$, 11^-, $\gamma_{6556.89}$**694.6**$_1$(13.6_{12}), $\gamma_{5961.87}$**1289.6**$_1$(37_6), $\gamma_{5822.01}$**1429.5**$_1$(100_9), $\gamma_{5678.25}$**1573.2**$_3$(51_5), $\gamma_{5330.32}$**1921.0**$_2$(1.78_{16})

7320.3$_{11}$, (12^+)

A **7371.47**$_{19}$, 12^+, *0.7$^{14}_3$ ps*, $\gamma_{5961.87}$**1409.57**$_{20}$(100) E2

7496.33$_{20}$, (11^-), $\gamma_{6420.38}$**1077.1**(24.4_{24}), $\gamma_{5678.25}$**1817.9**$_2$(100_{10})

H **7517.15**$_{18}$, 12^{+}, $\gamma_{6215.07}$**1302.0**$_{1}$(100)

I **7532.9**$_{4}$, 12^{+}, $\gamma_{5961.87}$**1571.0**(100)

J **7559.65**$_{19}$, 12^{+}, 0.8^{6}_{4} *ps*, $\gamma_{6596.03}$**963.1**(5.8_{6}) (E2), $\gamma_{6215.07}$**1344.40**$_{20}$(100_{9}) E2, $\gamma_{5961.87}$**1597.9**$_{2}$(18.1_{15}) (E2)

7762.14$_{19}$, 12^{+}, $\gamma_{7559.65}$**202.5**$_{1}$(20.6_{21}), $\gamma_{7517.15}$**245.0**$_{1}$(9.2_{8}), $\gamma_{5961.87}$**1800.4**$_{2}$(100_{9})

7881.9$_{4}$, $\gamma_{5961.87}$**1920.0**(100)

K **8043.64**$_{19}$, 13^{+}, $\gamma_{7762.14}$**281.5**$_{1}$(18.2_{16}), $\gamma_{7371.47}$**672.2**$_{1}$(100_{9}), $\gamma_{7320.3}$**723.3**$_{10}$(42_{12})

L **8172.25**$_{18}$, 13^{-}, $\gamma_{7762.14}$**409.6**(11.3_{4}), $\gamma_{7559.65}$**612.5**$_{1}$, $\gamma_{7517.15}$**655.0**$_{1}$(6.7_{6}), $\gamma_{7496.33}$**676.0**$_{1}$(3.2_{4}), $\gamma_{7371.47}$**800.7**$_{1}$(13.8_{12}), $\gamma_{7251.49}$**920.8**$_{1}$(100_{8}), $\gamma_{7145.61}$**1026.6**$_{1}$(40_{4}), $\gamma_{7045.13}$**1127.1**$_{1}$(22.8_{19})

8621.7$_{4}$, $\gamma_{7559.65}$**1062.1**(100)

J **8660.76**$_{19}$, 14^{+}, $\gamma_{7762.14}$**898.7**$_{1}$(24.9_{22}), $\gamma_{7559.65}$**1101.2**$_{1}$(100_{9}), $\gamma_{7517.15}$**1143.7**$_{1}$(45_{4})

8663.6$_{4}$, $\gamma_{7045.13}$**1618.5**(100)

8781.6$_{4}$, $\gamma_{7045.13}$**1736.5**(100)

L **8790.68**$_{20}$, $15^{(-)}$, $\gamma_{8172.25}$**618.3**$_{1}$(100) (E2)

8868.48$_{21}$, $14^{(-)}$, $\gamma_{8172.25}$**696.0**(100_{8}), $\gamma_{8043.64}$**824.9**$_{1}$(48_{4})

8931.2$_{4}$, (14^{+}), $\gamma_{7371.47}$**1559.7**

H **9012.36**$_{25}$, 14^{+}, $\gamma_{7559.65}$**1452.6**(14.5_{13}), $\gamma_{7517.15}$**1495.2**(100_{10})

9112.70$_{25}$, 14^{+}, $\gamma_{8043.64}$**1068.8**(100_{9}), $\gamma_{7517.15}$**1595.0**(48_{4})

A **9169.4**$_{3}$, 14^{+}, $\gamma_{7762.14}$**1410.0**(?), $\gamma_{7371.47}$**1798.1**(100_{10})

9386.96$_{20}$, (15^{-}), $\gamma_{8790.68}$**596.1**(20.0_{18}), $\gamma_{8172.25}$**1214.6**$_{1}$(100_{10})

I **9419.3**$_{5}$, (14^{+}), $\gamma_{7532.9}$**1886.4**(100)

M **9564.2**$_{3}$, (15^{-}), $\gamma_{8660.76}$**904.0**(100)

K **9606.0**$_{3}$, (15^{+}), $\gamma_{8660.76}$**945.4**(74_{6}), $\gamma_{8043.64}$**1562.1**(100_{4})

9803.8$_{4}$(?), (16^{+}), $\gamma_{8660.76}$**1143.0**(?)

10024.3$_{3}$(?), $\gamma_{9169.4}$**854.4**(?), $\gamma_{8660.76}$**1364.0**(?)

10127.0$_{3}$, (16^{-}), $\gamma_{8790.68}$**1336.7**(100)

J **10217.42**$_{24}$, (16^{+}), $\gamma_{8790.68}$**1425.8**(14.8_{15}), $\gamma_{8660.76}$**1557.0**$_{2}$(100_{10})

L **10296.01**$_{23}$, (17^{-}), $\gamma_{9386.96}$**908.5**(5.2_{5}), $\gamma_{8790.68}$**1505.2**$_{2}$(100_{3})

10493.7$_{3}$, (16^{-}), $\gamma_{9386.96}$**1106.4**(41_{4}), $\gamma_{8868.48}$**1625.7**(70_{6}), $\gamma_{8790.68}$**1702.9**(100_{9})

H **10664.2**$_{3}$, (16^{+}), $\gamma_{9012.36}$**1651.7**(100)

10666.0$_{3}$, (17^{-}), $\gamma_{10296.01}$**369.2**(15.9_{14}), $\gamma_{9386.96}$**1278.8**(100_{9})

10689.2$_{4}$, $\gamma_{8790.68}$**1898.5**(100)

10896.0$_{3}$, (16^{+}), $\gamma_{9169.4}$**1727.3**(100_{10}), $\gamma_{8790.68}$**2105.8**(93_{8})

10897.2$_{4}$, $\gamma_{9012.36}$**1884.8**(100)

M **10927.42**$_{24}$, (17^{-}), $\gamma_{10296.01}$**631.4**(9.0_{10}), $\gamma_{10127.0}$**800.8**(50_{5}), $\gamma_{9564.2}$**1363.8**(99_{8}), $\gamma_{9386.96}$**1540.4**(100_{8}), $\gamma_{8790.68}$**2136.2**(54_{27})

10958.1$_{3}$, (16^{+}), $\gamma_{9112.70}$**1845.0**(100)

10988.3$_{3}$, (16^{+}), $\gamma_{9112.70}$**1875.2**(94_{10}), $\gamma_{9012.36}$**1975.8**(100_{10}), $\gamma_{8660.76}$**2328.1**(43_{4})

A **10989.4**$_{4}$, (16^{+}), $\gamma_{9169.4}$**1820.0**(100)

K **10990.0**$_{5}$, (17^{+}), $\gamma_{9606.0}$**1384.0**(100)

I **11085.9**$_{6}$, (16^{+}), $\gamma_{9419.3}$**1666.0**(100)

11358.1$_{5}$(?), (18^{+}), $\gamma_{9803.8}$**1554.3**(?)

11406.8$_{4}$, (18^{-}), $\gamma_{8790.68}$**2616.1**(100)

11417.8$_{6}$, (16^{+}), $\gamma_{9419.3}$**1999.0**(100)

11542.9$_{6}$, (17^{+})

11793.8$_{5}$, $\gamma_{10127.0}$**1666.8**(100)

11794.7$_{4}$, (19^{-}), $\gamma_{10296.01}$**1498.7**(100)

11832.7$_{4}$, (20^{-}), $\gamma_{10296.01}$**1536.7**(100)

J **11994.5**$_{3}$, (18^{+}), $\gamma_{10988.3}$**1006.4**(36_{4}), $\gamma_{10958.1}$**1036.3**(14.6_{15}), $\gamma_{10664.2}$**1330.5**(15.7_{18}), $\gamma_{10217.42}$**1776.9**(100_{15})

L **12137.1**$_{3}$, (19^{-}), $\gamma_{10666.0}$**1470.0**(32_{3}), $\gamma_{10296.01}$**1841.3**(100_{9})

12165.4$_{4}$, (19^{-}), $\gamma_{10296.01}$**1870.0**(100)

H **12246.2**$_{3}$, (18^{+}), $\gamma_{10958.1}$**1287.8**(58_{6}), $\gamma_{10896.0}$**1351.3**(66_{6}), $\gamma_{10664.2}$**1581.9**(100_{9}), $\gamma_{10296.01}$**1949.5**(39_{4})

N **12262.9**$_{4}$, (18^{-}), $\gamma_{10296.01}$**1967.0**(100)

M **12363.8**$_{3}$, (19^{-}), $\gamma_{10927.42}$**1436.7**(100_{9}), $\gamma_{10296.01}$**2067.4**(55_{19})

12502.0$_{5}$, $\gamma_{10664.2}$**1837.8**(100)

12535.7$_{4}$, $\gamma_{10217.42}$**2318.2**(100)

12642.1$_{6}$, (18^{+}), $\gamma_{11417.8}$**1224.9**(100), $\gamma_{11085.9}$**1555.5**(100)

12652.7$_{5}$, (18^{-}), $\gamma_{10127.0}$**2525.6**(100)

I **12719.8**$_{6}$, (18^{+}), $\gamma_{11085.9}$**1633.8**(100)

12779.3$_{5}$, $\gamma_{10664.2}$**2115.1**(100)

K **12817.4**$_{5}$, (19^{+}), $\gamma_{11542.9}$**1274.5**(100_{21}), $\gamma_{10990.0}$**1827.4**(79_{21})

12884.3$_{5}$, $\gamma_{10664.2}$**2220.1**(100)

13104.8$_{4}$, $\gamma_{10296.01}$**2808.7**(100)

13265.8$_{4}$(?), $\gamma_{10296.01}$**2969.7**(100)

13617.5$_{4}$, $\gamma_{11994.5}$**1623.0**(100)

13751.8$_{4}$, $\gamma_{10296.01}$**3455.7**(100)

H **13953.2**$_{4}$, (20^{+}), $\gamma_{12246.2}$**1707.0**(100)

13991.1$_{4}$, $\gamma_{11994.5}$**1996.6**(100)

N **14085.8**$_{4}$, (20^{-}), $\gamma_{12262.9}$**1823.0**(40_{40}), $\gamma_{12165.4}$**1921.0**(20.9_{20}), $\gamma_{12137.1}$**1948.0**(100_{9})

J **14116.6**$_{4}$, (20^{+}), $\gamma_{11994.5}$**2122.0**(100)

14361.1$_{5}$, $\gamma_{12137.1}$**2224.0**(100)

L **14402.1**$_{5}$, (21^{-}), $\gamma_{12137.1}$**2265.0**(100)

14426.9$_{6}$(?), (21^{-})

M **14485.9**$_{4}$, (21^{-}), $\gamma_{12363.8}$**2122.1**(100_{20}), $\gamma_{12137.1}$**2348.7**(27_{20})

K **14505.2**$_{6}$, (21^{+}), $\gamma_{12817.4}$**1687.7**(100)

14560.3$_{6}$, (21)

J **15562.9**$_{5}$, (22^{+}), $\gamma_{14116.6}$**1446.3**(100)

H **15835.3**$_{5}$, (22^{+}), $\gamma_{14560.3}$**1275**, $\gamma_{13953.2}$**1882.0**(100_{29})

N **16130.9**$_{5}$, (22^{-}), $\gamma_{14426.9}$**1703.9**(39_{4}), $\gamma_{14085.8}$**2045.0**(100_{10})

K **16734.2**$_{7}$, (23^{+}), $\gamma_{14505.2}$**2229.0**(100)

17360.7$_{7}$, $\gamma_{14505.2}$**2855.5**(100)

L **17496.2**$_{6}$, (23^{-}), $\gamma_{14402.1}$**3094.0**(100)

H **18022.3**$_{6}$, (24^{+}), $\gamma_{15835.3}$**2187.0**(100)

N **18132.9**$_{6}$, (24^{-}), $\gamma_{16130.9}$**2002.0**(100)

18274.3$_{6}$, $\gamma_{15835.3}$**2439.0**(100)

K **19785.3**$_{8}$, (25^{+}), $\gamma_{16734.2}$**3051.0**(100)

N **20356.9**$_{6}$, (26^{-}), $\gamma_{18132.9}$**2224.0**(100)

H **20821.4**$_{7}$, (26^{+}), $\gamma_{18022.3}$**2799.0**(100)

N **22959.0**$_{7}$, (28^{-}), $\gamma_{20356.9}$**2602.0**(100)

O **x**, (14)

1575.0+x(?), (16)

O **1620.0+x**, (16), γ_{x}**1620.0**

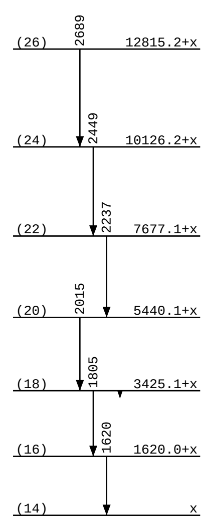
O **3425.1+x**, (18), $\gamma_{1620.0+x}$**1805.0**, $\gamma_{1575.0+x}$**1850.0**(?)

O **5440.1+x**, (20), $\gamma_{3425.1+x}$**2015.0**

O **7677.1+x**, (22), $\gamma_{5440.1+x}$**2237.0**

O **10126.2+x**, (24), $\gamma_{7677.1+x}$**2449.0**

O **12815.2+x**, (26), $\gamma_{10126.2+x}$**2689.0**



SD Band

(2001Wa02)

$^{68}_{32}$Ge$_{36}$

$^{80}_{38}Sr_{42}$

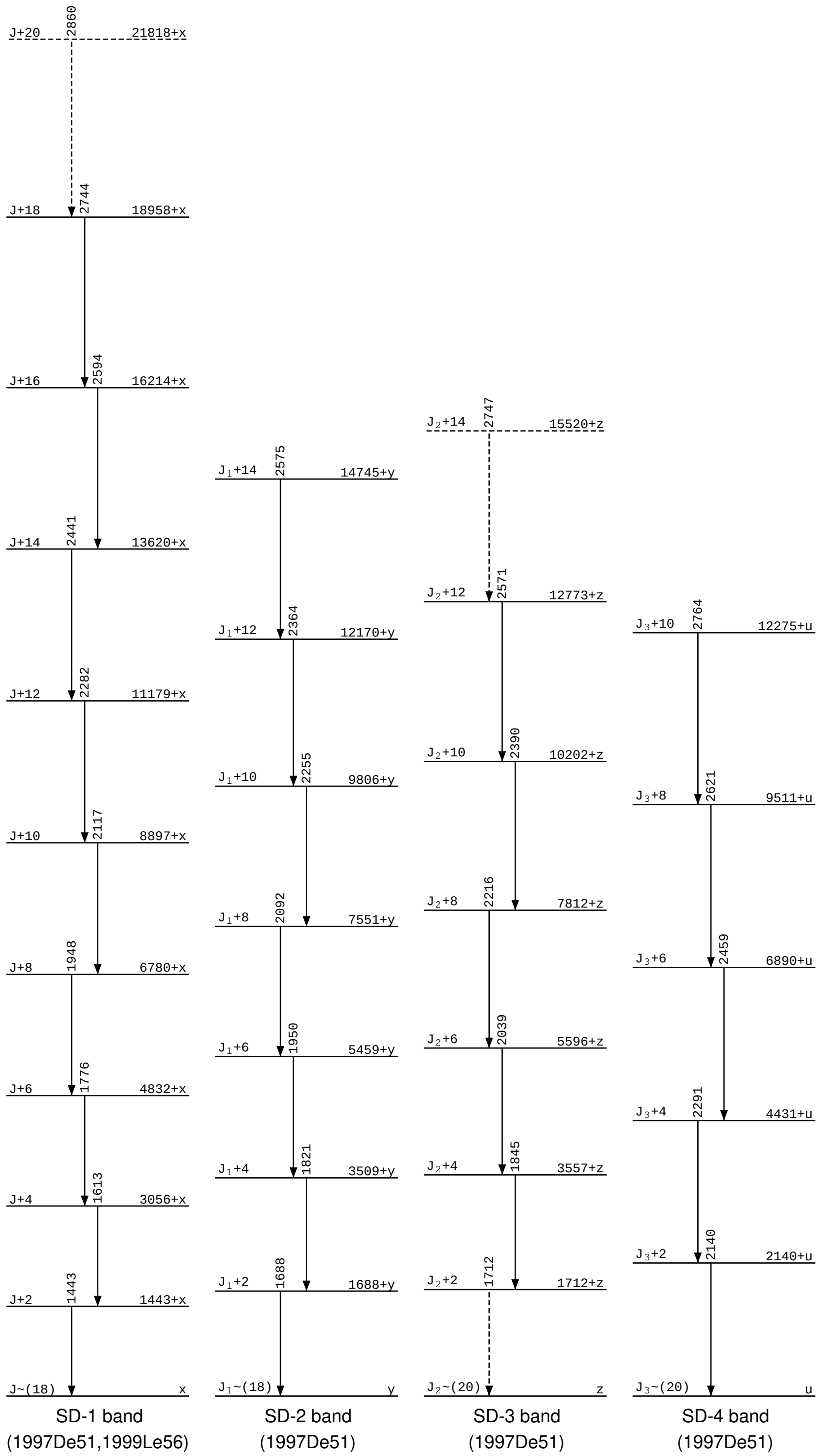
S_n: 12899 $_{11}$, S_p: 6797 $_{10}$

Nuclear Bands

A GS band
B Band based on (7^+)
C Band based on (2^+)
D Band based on (5^-)
E Band based on (9)
F Band based on (20^+)
G Band based on (15)
H Band based on (11)
I SD-1 band (1997De51,1999Le56)
$Q_0=3.42^{26}_{23}$
J SD-2 band (1997De51)
$Q_0=2.2^{6}_{5}$
K SD-3 band (1997De51)
$Q_0=3.6^{20}_{11}$
L SD-4 band (1997De51)
$Q_0=2.8^{11}_{8}$

Levels and γ-ray branchings:

A **0**, 0^+, *106.3_{15} min*, %ε+%β^+=100
A **385.86**$_4$, 2^+, *35.0_{13} ps*, γ_{0}**385.86**$_4$(100) E2
A **980.88**$_8$, 4^+, *2.90_{14} ps*, $\gamma_{385.86}$**595.06**$_7$(100) E2
1.00x10$^3{}_{10}$, (0^+)
C **1142.40**$_9$, (2^+), $\gamma_{385.86}$**756.53**$_8$(100)
C **1571.18**$_{12}$, (4^+), $\gamma_{1142.40}$**429**, $\gamma_{385.86}$**1185.20**$_{12}$(100) D+Q $\delta=+0.45_8$
1663.4$_3$, $\gamma_{385.86}$**1277.5**$_3$(100)
A **1763.6**$_2$, 6^+, *0.82_8 ps*, $\gamma_{980.88}$**782.71**$_{15}$(100) E2
1780.5$_3$, $\gamma_{385.86}$**1394.6**$_3$(100)
1832.93$_{12}$, $\gamma_{1142.40}$**690.50**$_{25}$(33), $\gamma_{980.88}$**852.05**$_{10}$(100)
C **2295.89**$_{19}$, (6^+), $\gamma_{1571.18}$**724.4**$_2$(77_1) (E2), $\gamma_{980.88}$**1315.7**$_3$(100_1) (E2)
A **2700.4**$_3$, (8^+), *0.284_7 ps*, $\gamma_{1763.6}$**936.8**$_2$(100) E2
D **2837**, (5^-), $\gamma_{980.88}$**1856**
2895, (5^-), $\gamma_{980.88}$**1914**(100) D+Q
C **3172.5**$_4$, (8^+), *0.8_6 ps*, $\gamma_{2295.89}$**876.6**$_3$(100) E2
D **3394**, (7^-), γ_{2895}**499**, γ_{2837}**557**, $\gamma_{2295.89}$**1099**
3580.3$_5$, (7^+), *>21 ps*, $\gamma_{1763.6}$**1816.8**$_6$(100) (M1+E2) $\delta=-4.7_{15}$
B **3601.8**$_5$, (7^+), *>21 ps*, $\gamma_{2700.4}$**901**(57_6) M1+E2, $\gamma_{1763.6}$**1838.1**$_6$(100_4) (M1+E2) $\delta=-2.8_4$
A **3765.7**$_4$, (10^+), *0.125_7 ps*, $\gamma_{2700.4}$**1065.3**$_2$(100) E2
D **4056.1**$_3$, (9^-), *0.5^{15}_{5} ps*, γ_{3394}**662.1**$_1$(96_2) (E2), $\gamma_{3172.5}$**884**(100_1) (E1)
C **4169.2**$_4$, (10^+), *<3.2 ps*, $\gamma_{3172.5}$**996.7**$_2$(100)
B **4378.6**$_5$, (9^+), *0.9^{12}_{6} ps*, $\gamma_{3601.8}$**776.7**$_2$(100_3) (E2), $\gamma_{3580.3}$**798.3**$_2$(55_3) (E2), $\gamma_{2700.4}$**1678.1**$_6$(45_{11})(?)
E **4469**, (9), $\gamma_{2700.4}$**1768**
D **4922.7**$_4$, (11^-), *1.2^{15}_{5} ps*, $\gamma_{4169.2}$**754**, $\gamma_{4056.1}$**866.6**$_1$(100) (E2)
A **4951.9**$_4$, (12^+), *0.090_7 ps*, $\gamma_{3765.7}$**1186.2**$_2$(100) (E2)
H **4995**, (11), $\gamma_{3765.7}$**1229**
C **5273.9**$_5$, (12^+), $\gamma_{4169.2}$**1104.7**$_3$(100) (E2)
B **5348.6**$_6$, (11^+), *0.291_{21} ps*, $\gamma_{4378.6}$**970.0**$_2$(100) E2
E **5499**, (11), γ_{4469}**1030**, $\gamma_{3765.7}$**1733**
D **5957.6**$_4$, (13^-), *<1.1 ps*, $\gamma_{4922.7}$**1034.9**$_2$(100) E2
H **6079**, (13), γ_{4995}**1084**, $\gamma_{4951.9}$**1127**
A **6276.2**$_5$, (14^+), *0.118_7 ps*, $\gamma_{4951.9}$**1324.3**$_3$(100) (E2)
B **6468.4**$_6$, (13^+), *0.132_{21} ps*, $\gamma_{5348.6}$**1119.8**$_3$(100)
C **6494.1**$_6$, (14^+), $\gamma_{5273.9}$**1220.2**$_3$(100) (E2)
E **6664**, (13), γ_{5499}**1165**
H **6967**, (15), γ_{6079}**888**
D **7155.8**$_5$, (15^-), $\gamma_{5957.6}$**1198.2**$_2$(100) E2
B **7728.8**$_8$, (15^+), *0.083_{21} ps*, $\gamma_{6468.4}$**1260.4**$_4$(100) E2
A **7750.3**$_6$, (16^+), *0.028_7 ps*, $\gamma_{6276.2}$**1474.1**$_3$(100) (E2)
G **7772**, (15), $\gamma_{6276.2}$**1496**
C **7833.5**$_{11}$, (16^+), $\gamma_{6494.1}$**1339.4**$_9$(100)
E **7971**, (15), γ_{6664}**1307**
H **8132**, (17), γ_{6967}**1165**(100) Q
D **8498.8**$_6$, (17^-), $\gamma_{7155.8}$**1343.0**$_2$(100) (E2)
B **9096.5**$_9$, (17^+), *0.042_{21} ps*, $\gamma_{7728.8}$**1367.7**$_5$(100) (E2)
9319, (17^+), $\gamma_{7728.8}$**1589**
A **9328.8**$_7$, (18^+), *0.040_{21} ps*, $\gamma_{7750.3}$**1578.4**$_4$(100)
E **9413**, (17), γ_{7971}**1442**
G **9447**, (17), γ_{7772}**1675**
D **9880.5**$_6$, (19^-), $\gamma_{8498.8}$**1381.7**$_3$(100)
B **10537.3**$_{10}$, (19^+), *<0.27 ps*, $\gamma_{9096.5}$**1440.8**$_4$(100) (E2)
F **10875**, (20^+), $\gamma_{9328.8}$**1547**(100) (Q)
E **10955**, (19), γ_{9413}**1542**
A **11065.1**$_{10}$, (20^+), *<0.14 ps*, $\gamma_{9328.8}$**1736.3**$_6$(100)
11120, (20), $\gamma_{9328.8}$**1792**
G **11307**, (19), γ_{9447}**1860**
D **11372**, (21^-), $\gamma_{9880.5}$**1492**
B **12069.8**$_{12}$, (21^+), $\gamma_{10537.3}$**1532.5**$_6$(100)
F **12625**, (22^+), γ_{10875}**1750**
12938, (22), γ_{11120}**1818**
D **13058**, (23^-), γ_{11372}**1686**(100) (E2)
A **13096**$_2$, (22^+), $\gamma_{11065.1}$**2031**
G **13390**, (21), γ_{11307}**2083**
B **13718.5**$_{13}$, (23^+), $\gamma_{12069.8}$**1648.7**$_6$(100)
F **14558**, (24^+), γ_{12625}**1933**
D **14995**, (25^-), γ_{13058}**1937**(100) (E2)
B **15569**$_2$, (25^+), $\gamma_{13718.5}$**1851**
F **16671**, (26^+), γ_{14558}**2113**(100) (Q)
I **x**, $J\approx(18)$
I **1443+x**, $J+2$, γ_{x}**1443**
I **3056+x**, $J+4$, γ_{1443+x}**1613**
I **4832+x**, $J+6$, γ_{3056+x}**1776**
I **6780+x**, $J+8$, γ_{4832+x}**1948**
I **8897+x**, $J+10$, γ_{6780+x}**2117**
I **11179+x**, $J+12$, γ_{8897+x}**2282**
I **13620+x**, $J+14$, $\gamma_{11179+x}$**2441**
I **16214+x**, $J+16$, $\gamma_{13620+x}$**2594**
I **18958+x**, $J+18$, $\gamma_{16214+x}$**2744**
I **21818+x**(?), $J+20$, $\gamma_{18958+x}$**2860**(?)
J **y**, $J_1\approx(18)$
J **1688+y**, J_1+2, γ_{y}**1688**
J **3509+y**, J_1+4, γ_{1688+y}**1821**
J **5459+y**, J_1+6, γ_{3509+y}**1950**
J **7551+y**, J_1+8, γ_{5459+y}**2092**
J **9806+y**, J_1+10, γ_{7551+y}**2255**
J **12170+y**, J_1+12, γ_{9806+y}**2364**
12236+y, J_1+12, γ_{9806+y}**2430**
J **14745+y**, J_1+14, $\gamma_{12170+y}$**2575**
K **z**, $J_2\approx(20)$
K **1712+z**, J_2+2, γ_{z}**1712**(?)
K **3557+z**, J_2+4, γ_{1712+z}**1845**
K **5596+z**, J_2+6, γ_{3557+z}**2039**
K **7812+z**, J_2+8, γ_{5596+z}**2216**
K **10202+z**, J_2+10, γ_{7812+z}**2390**
K **12773+z**, J_2+12, $\gamma_{10202+z}$**2571**
K **15520+z**(?), J_2+14, $\gamma_{12773+z}$**2747**(?)
L **u**, $J_3\approx(20)$
L **2140+u**, J_3+2, γ_{u}**2140**
L **4431+u**, J_3+4, γ_{2140+u}**2291**
L **6890+u**, J_3+6, γ_{4431+u}**2459**
L **9511+u**, J_3+8, γ_{6890+u}**2621**
L **12275+u**, J_3+10, γ_{9511+u}**2764**


J+20 2860 21818+x
J+18 2744 18958+x
J+16 2594 16214+x
J+14 2441 13620+x
J+12 2282 11179+x
J+10 2117 8897+x
J+8 1948 6780+x
J+6 1776 4832+x
J+4 1613 3056+x
J+2 1443 1443+x
J~(18) x
J1+14 2575 14745+y
J1+12 2364 12170+y
J1+10 2255 9806+y
J1+8 2092 7551+y
J1+6 1950 5459+y
J1+4 1821 3509+y
J1+2 1688 1688+y
J1~(18) y
J2+14 2747 15520+z
J2+12 2571 12773+z
J2+10 2390 10202+z
J2+8 2216 7812+z
J2+6 2039 5596+z
J2+4 1845 3557+z
J2+2 1712 1712+z
J2~(20) z
J3+10 2764 12275+u
J3+8 2621 9511+u
J3+6 2459 6890+u
J3+4 2291 4431+u
J3+2 2140 2140+u
J3~(20) u
SD-1 band
(1997De51,1999Le56)
SD-2 band
(1997De51)
SD-3 band
(1997De51)
SD-4 band
(1997De51)

$^{80}_{38}Sr_{42}$

$^{81}_{38}Sr_{43}$

S_n: 9293 $_{11}$, S_p: 6643 $_{10}$

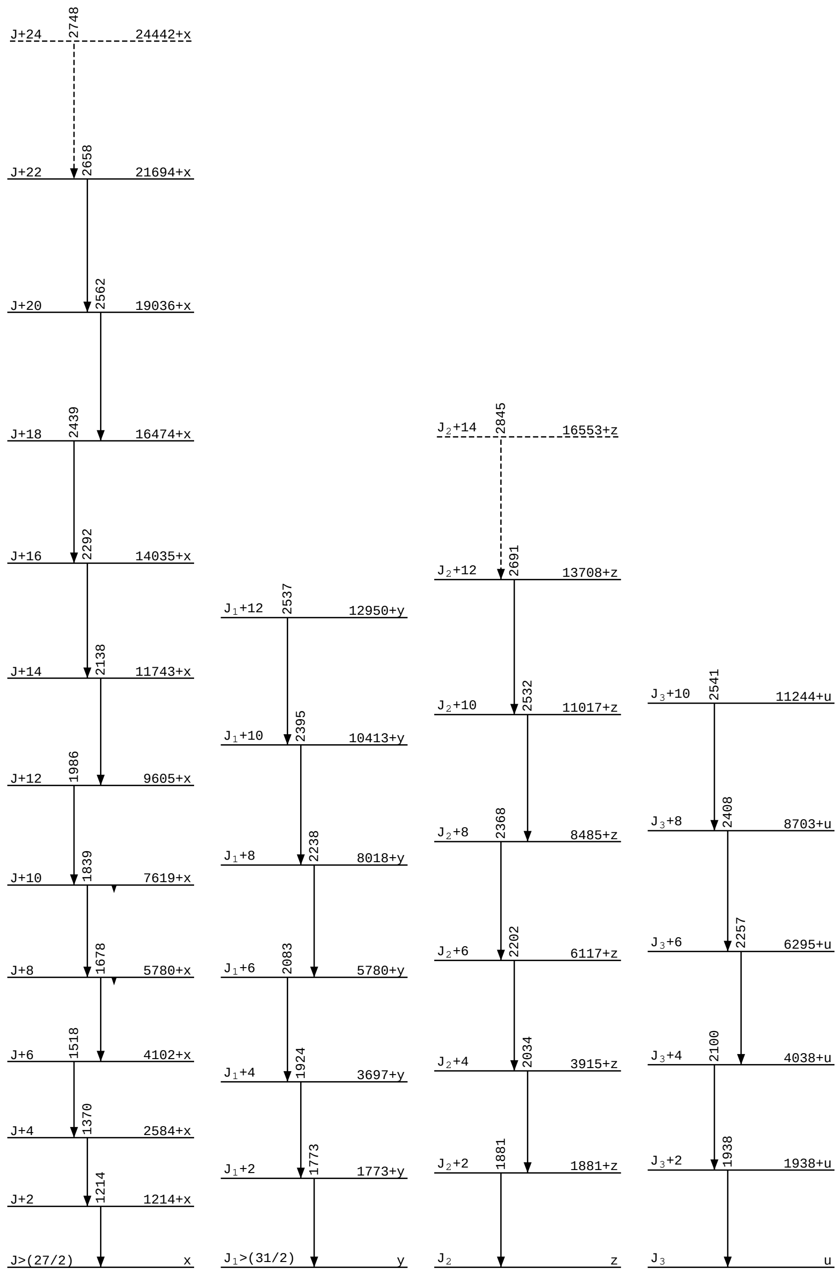
Nuclear Bands

A α=-1/2, ν5/2[422]π$g^2_{9/2}$
B α=-1/2, 5qp
C 5/2[422], α=-1/2
D 5/2[422], α=+1/2
E 1/2[431], α=-1/2
F 1/2[431], α=+1/2
G 3qp Eab, α=-1/2
H 3qp Fab, α=+1/2
I 5/2[303], α=+1/2
J 5/2[303], α=-1/2
K 1/2[301], α=-1/2
L 1/2[301], α=+1/2
M SD-1 band (1995Ch56,1999Le56) $Q_0=3.30^{18}_{16}$
N SD-2 band (1995Ch56) $Q_0=3.8^{7}_{5}$
O SD-3 band (1995Ch56)
P SD-4 band (1995Ch56)

Levels and γ-ray branchings:

L **0**, $1/2^-$, *22.3$_4$ min*, %ε+%β^+=100 , μ=+0.543$_4$
I **79.23**$_4$, $(5/2)^-$, *0.39$_5$ μs*, γ_{0}**79.23**$_4$(100) E2
C **89.05**$_7$, $(7/2^+)$, *6.4$_5$ μs*, $\gamma_{79.23}$**(9.82)**$_8$(100) (E1)
F **119.76**$_4$, $(1/2^+)$, *24$_4$ ns*, γ_{0}**119.76**$_4$(100) (E1)
D **132.2**$_4$, $(9/2^+)$, *<9 ns*, $\gamma_{89.05}$**43.2**$_4$(100) M1+E2 $\delta=-0.08_3$
K **155.21**$_{10}$, $(3/2^-)$, *74$_{20}$ ps*, γ_{0}**155.20**$_{10}$(100) (M1+E2) $\delta=+0.1_1$
D **203.39**$_5$, $(5/2^+)$, *1.1$_3$ ns*, $\gamma_{89.05}$**114.34**$_4$(10.3$_3$), $\gamma_{79.23}$**124.16**$_3$(100.0$_8$) (E1)
E **220.82**$_7$, $(3/2^+)$, *0.63$_{20}$ ns*, $\gamma_{119.76}$**101.05**$_5$(80$_8$) M1+E2 $\delta=-0.5^2_0$, γ_{0}**221.0**$_4$(100$_7$) (E1)
294.9$_4$, $(3/2^-)$, γ_{0}**294.9**$_4$(100) M1
F **336.22**$_9$, $(5/2^+)$, *0.16$_5$ ns*, $\gamma_{220.82}$**115.39**$_6$(100$_{13}$) (M1+E2) $\delta=-0.2_1$, $\gamma_{119.76}$**216.7**$_4$(< 39) (E2)
J **366.5**$_3$, $(7/2)^-$, *53$_{15}$ ps*, $\gamma_{89.05}$**277.5**$_4$(56$_5$) (E1), $\gamma_{79.23}$**287.3**$_4$(100$_5$) M1+E2 $\delta=+2.2_8$
L **379.25**$_{22}$, $(5/2^-)$, *12$_6$ ps*, $\gamma_{155.21}$**224.3**$_4$(103$_{13}$) M1+E2 $\delta=+0.13_8$, $\gamma_{79.23}$**300.0**$_4$(20), γ_{0}**379.4**$_4$(100$_{20}$) E2
535.8$_6$, $(5/2^-)$, $\gamma_{294.9}$**240.9**$_4$(100) (D)
E **558.2**$_3$, $(7/2^+)$, *17$_{17}$ ps*, $\gamma_{336.22}$**221.9**$_4$(15$_3$), $\gamma_{220.82}$**337.4**$_4$(100$_9$) E2
611.57$_8$, $(7/2^+)$, *<7 ns*, $\gamma_{203.39}$**408.18**$_6$(100.0$_{24}$) (M1), $\gamma_{132.2}$**479.3**
K **632.6**$_3$, $(7/2^-)$, $\gamma_{379.25}$**253.5**$_4$(32$_9$) M1, $\gamma_{155.21}$**477.0**$_4$(100$_{15}$)
I **707.0**$_4$, $(9/2)^-$, $\gamma_{366.5}$**339.8**(3.8$_{13}$), $\gamma_{79.23}$**627.7**$_4$(100$_6$) E2
F **796.5**$_4$, $(9/2^+)$, $\gamma_{558.2}$**238.1**(17$_3$) D, $\gamma_{336.22}$**460.3**$_4$(100$_9$) (Q)
C **810.7**$_5$, $(11/2^+)$, *2.8$_9$ ps*, $\gamma_{132.2}$**678.6**$_4$(100) M1+E2 $\delta=-0.41^2_6$
D **904.6**$_5$, $(13/2^+)$, *4.6$_{13}$ ps*, $\gamma_{132.2}$**772.3**$_3$(100) E2
L **999.9**$_4$, $(9/2^-)$, $\gamma_{632.6}$**367.2**$_4$(< 14), $\gamma_{379.25}$**620.8**$_4$(100$_{22}$) (Q)
J **1055.5**$_5$, $(11/2^-)$, $\gamma_{707.0}$**347.7**(< 2.4) (M1), $\gamma_{366.5}$**689.1**$_4$(100$_5$) E2
E **1109.2**$_5$, $(11/2^+)$, $\gamma_{796.5}$**311.9**(< 4.1) D, $\gamma_{558.2}$**551.1**$_4$(100$_7$) (E2)
K **1332.6**$_5$, $(11/2^-)$, $\gamma_{999.9}$**333.2**, $\gamma_{632.6}$**700.0**$_4$
F **1470.5**$_5$, $(13/2^+)$, *≥0.76 ps*, $\gamma_{1109.2}$**361.1**, $\gamma_{796.5}$**674.0**$_4$ (E2)
I **1505.7**$_6$, $(13/2^-)$, $\gamma_{707.0}$**798.6**$_4$(100) (E2)
C **1739.8**$_6$, $(15/2^+)$, $\gamma_{904.6}$**835.0**$_4$(100) M1+E2, $\gamma_{810.7}$**929.3**$_4$(40)
L **1804.1**$_6$, $(13/2^-)$, $\gamma_{999.9}$**804.2**$_4$(100)
E **1862.2**$_6$, $(15/2^+)$, *0.62$_{14}$ ps*, $\gamma_{1109.2}$**753.0**$_4$(100) E2
D **1865.3**$_6$, $(17/2^+)$, *1.0$_3$ ps*, $\gamma_{904.6}$**960.7**$_3$(100) E2
J **1910.2**$_{10}$, $(15/2^-)$, *≥1.2 ps*, $\gamma_{1055.5}$**855**$_1$(100) (E2)
K **2212.6**$_6$, $(15/2^-)$, $\gamma_{1332.6}$**880.0**$_4$(100)
F **2324.4**$_{12}$, $(17/2^+)$, *0.30$_8$ ps*, $\gamma_{1470.5}$**853.9**(100) E2
I **2447.7**$_7$, $(17/2^-)$, *0.60$_{21}$ ps*, $\gamma_{1505.7}$**942.0**$_4$(100) E2
L **2739.6**$_{12}$, $(17/2^-)$, $\gamma_{1804.1}$**935.5**(100)
E **2791.3**$_{12}$, $(19/2^+)$, *0.14$_4$ ps*, $\gamma_{1862.2}$**929.1**(100) E2
J **2904.0**$_{11}$, $(19/2^-)$, *0.36$_{10}$ ps*, $\gamma_{1910.2}$**994**$_1$(100) (E2)
D **2962.7**$_7$, $(21/2^+)$, *0.22$_5$ ps*, $\gamma_{1865.3}$**1097.4**$_3$(100) E2
K **3145.1**$_{10}$, $(19/2^-)$, $\gamma_{2212.6}$**932.6**(100)
F **3330.2**$_{15}$, $(21/2^+)$, *0.17$_5$ ps*, $\gamma_{2324.4}$**1005.8**(100) E2
3406.6$_9$, $(21/2^+)$, $\gamma_{2962.7}$**443.3**, $\gamma_{1865.3}$**1541** (E2)
I **3496.1**$_{11}$, $(21/2^-)$, *0.38$_{14}$ ps*, $\gamma_{2447.7}$**1048**$_1$(100)
A **3713.6**$_9$, $(23/2^+)$, *0.40$_{16}$ ps*, $\gamma_{3406.6}$**306.2**(11.7$_9$) (M1), $\gamma_{2962.7}$**750.5**(100$_5$) (M1+E2) $\delta=0.3_1$
L **3799.6**$_{16}$(?), $(21/2^-)$, $\gamma_{2739.6}$**1060**(100)(?)
3857.6$_{13}$(?), $(23/2^-)$, $\gamma_{2904.0}$**953.4**(100)(?)
E **3887.3**$_{16}$, $(23/2^+)$, *0.13$_4$ ps*, $\gamma_{2791.3}$**1096.0**(100) E2
G **3977.6**$_{13}$, $(23/2^-)$, *<0.55 ps*, $\gamma_{2904.0}$**1074**$_1$(100) E2
4044.2$_{12}$(?), $(23/2^-)$, $\gamma_{3145.1}$**899.2**(100)(?)
J **4059.0**$_{15}$(?), $(23/2^-)$, $\gamma_{2904.0}$**1155**(100)(?)
D **4107.0**$_8$, $(25/2^+)$, *0.17$_4$ ps*, $\gamma_{3713.6}$**392.7**(13.6$_6$) (M1), $\gamma_{2962.7}$**1144.6**$_5$(100$_5$) E2
K **4143.4**$_{15}$, $(23/2^-)$, $\gamma_{3145.1}$**998.3**(100)
F **4473.3**$_{18}$, $(25/2^+)$, *0.09$_3$ ps*, $\gamma_{3330.2}$**1143.1**(100) E2
H **4551.4**$_{12}$, $(25/2^-)$, *<0.55 ps*, $\gamma_{3496.1}$**1055**$_1$(100)
I **4730.2**$_{15}$(?), $(25/2^-)$, $\gamma_{3496.1}$**1234.1**(100)(?)
A **4752.6**$_{10}$, $(27/2^+)$, *0.20$_4$ ps*, $\gamma_{4107.0}$**645.3**(100$_4$) (M1+E2) $\delta=0.1_1$, $\gamma_{3713.6}$**1038.6**(79$_4$) E2
L **4934.4**$_{19}$(?), $(25/2^-)$, $\gamma_{3799.6}$**1134.8**(100)(?)
B **4998.2**$_{11}$, $(27/2^-)$, $\gamma_{4551.4}$**446.4**(37$_4$), $\gamma_{4044.2}$**954.1**(7.7$_{13}$), $\gamma_{3977.6}$**1021**$_1$(100$_4$) Q, $\gamma_{3857.6}$**1140.4**(?)
E **5084.4**$_{19}$, $(27/2^+)$, *<0.21 ps*, $\gamma_{3887.3}$**1197.1**(100) E2
G **5102.6**$_{16}$, $(27/2^-)$, $\gamma_{3977.6}$**1125**$_1$(100) (Q)
5174.4$_{19}$, $(27/2^+)$, $\gamma_{3887.3}$**1287.1**(100) (Q)
D **5242.3**$_{11}$, $(29/2^+)$, *<0.35 ps*, $\gamma_{4752.6}$**489.3**(100$_{38}$) (M1), $\gamma_{4107.0}$**1136**$_1$(< 25)
K **5248.4**$_{18}$, $(27/2^-)$, $\gamma_{4143.4}$**1105**(100)
J **5264.0**$_{18}$(?), $(27/2^-)$, $\gamma_{4059.0}$**1205**(100)(?)
H **5705.4**$_{15}$, $(29/2^-)$, $\gamma_{4551.4}$**1154**$_1$(100) (Q)
F **5752.7**$_{21}$, $(29/2^+)$, *<0.07 ps*, $\gamma_{4473.3}$**1279.3**(100)
A **6002.0**$_{12}$, $(31/2^+)$, *<0.28 ps*, $\gamma_{5242.3}$**759.9**(14$_5$), $\gamma_{4752.6}$**1249.0**(100$_{11}$) (E2)
L **6068.4**$_{21}$(?), $(29/2^-)$, $\gamma_{4934.4}$**1134.0**(100)(?)
I **6114.4**$_{18}$(?), $(29/2^-)$, $\gamma_{4730.2}$**1384.2**(100)(?)
B **6134.2**$_{15}$, $(31/2^-)$, $\gamma_{4998.2}$**1136**$_1$(100) (Q)
6265.6$_{21}$, $31/2^+$, $\gamma_{5084.4}$**1181.2**(100)
G **6357.6**$_{19}$, $(31/2^-)$, $\gamma_{5102.6}$**1255**$_1$(100) (Q)
E **6465.0**$_{21}$(?), $(31/2^+)$, $\gamma_{5084.4}$**1380.6**(100)(?)
D **6484.2**$_{13}$, $(33/2^+)$, $\gamma_{6002.0}$**482.1**(40.0$_{19}$) D, $\gamma_{5242.3}$**1242**$_1$(100$_{12}$)
J **6520.0**$_{21}$(?), $(31/2^-)$, $\gamma_{5264.0}$**1256**(100)(?)
6792.6$_{24}$, $(33/2^+)$, $\gamma_{6265.6}$**527**(100)
H **6989.5**$_{19}$, $(33/2^-)$, $\gamma_{5705.4}$**1284**$_1$(100)
7135.7$_{23}$, $(33/2^+)$, $\gamma_{5752.7}$**1383**(100)
F **7184.2**$_{23}$, $(33/2^+)$, $\gamma_{5752.7}$**1431.5**(100)
B **7402.2**$_{18}$, $(35/2^-)$, $\gamma_{6134.2}$**1268**$_1$(100) Q
A **7448.8**$_{14}$, $(35/2^+)$, $\gamma_{6484.2}$**964.9**(75$_6$), $\gamma_{6002.0}$**1446.6**(100$_{12}$) Q
I **7642.1**$_{21}$(?), $(33/2^-)$, $\gamma_{6114.4}$**1527.7**(100)(?)
G **7760.6**$_{22}$, $(35/2^-)$, $\gamma_{6357.6}$**1403**$_1$(100) Q
D **7860.3**$_{15}$, $(37/2^+)$, $\gamma_{7448.8}$**411.6**(12.0$_{13}$) D, $\gamma_{6484.2}$**1376**$_1$(100$_7$)
E **7935.3**$_{24}$(?), $(35/2^+)$, $\gamma_{6465.0}$**1470.3**(100)(?)
H **8403.5**$_{21}$, $(37/2^-)$, $\gamma_{6989.5}$**1414**$_1$(100)
8673.7$_{25}$(?), $(37/2^+)$, $\gamma_{7135.7}$**1538**(100)(?)
F **8771.5**$_{25}$, $(37/2^+)$, $\gamma_{7184.2}$**1587.3**(100) Q
B **8822.2**$_{21}$, $(39/2^-)$, $\gamma_{7402.2}$**1420**$_1$(100) Q
G **9249.6**$_{24}$, $(39/2^-)$, $\gamma_{7760.6}$**1489**$_1$(100)
I **9313.5**$_{23}$(?), $(37/2^-)$, $\gamma_{7642.1}$**1671.4**(100)(?)
D **9405.3**$_{18}$, $(41/2^+)$, $\gamma_{7860.3}$**1545**$_1$(100) Q
E **9475**$_3$(?), $(39/2^+)$, $\gamma_{7935.3}$**1540.0**(100)(?)
H **9929.5**$_{23}$, $(41/2^-)$, $\gamma_{8403.5}$**1526**$_1$(100)
B **10396.2**$_{23}$, $(43/2^-)$, $\gamma_{8822.2}$**1574**$_1$(100) Q
F **10483**$_3$, $(41/2^+)$, $\gamma_{8771.5}$**1711**(100)
G **10829**$_3$, $(43/2^-)$, $\gamma_{9249.6}$**1579**$_1$(100) Q
D **11257.3**$_{20}$, $(45/2^+)$, $\gamma_{9405.3}$**1852**$_1$(100)
H **11615**$_3$, $(45/2^-)$, $\gamma_{9929.5}$**1685**$_1$(100)
B **12114.3**$_{25}$, $(47/2^-)$, $\gamma_{10396.2}$**1718**$_1$(100)
F **12376**$_3$(?), $(45/2^+)$, γ_{10483}**1893**(100)(?)
G **12525**$_3$, $(47/2^-)$, γ_{10829}**1696**$_1$(100)

D **13427.4**$_{23}$, $(49/2^+)$, $\gamma_{\mathbf{11257.3}}$**2170**$_1$(100)
H **13487**$_3$, $(49/2^-)$, $\gamma_{\mathbf{11615}}$**1872**$_1$(100)
B **14010**$_3$, $(51/2^-)$, $\gamma_{\mathbf{12114.3}}$**1896**$_1$(100) Q
G **14424**$_3$, $(51/2^-)$, $\gamma_{\mathbf{12525}}$**1899**$_1$(100)
H **15577**$_3$, $(53/2^-)$, $\gamma_{\mathbf{13487}}$**2090**$_1$(100)
D **15924.4**$_{25}$, $(53/2^+)$, $\gamma_{\mathbf{13427.4}}$**2497**$_1$(100)
B **16176**$_3$, $(55/2^-)$, $\gamma_{\mathbf{14010}}$**2166**$_1$(100)
G **16794**$_3$, $(55/2^-)$, $\gamma_{\mathbf{14424}}$**2370**$_1$(100)
H **17957**$_3$, $(57/2^-)$, $\gamma_{\mathbf{15577}}$**2380**$_1$(100)
B **18720**$_3$, $(59/2^-)$, $\gamma_{\mathbf{16176}}$**2544**$_1$(100)
M **x**, $J\geq(27/2)$
M **1214+x**, $J+2$, $\gamma_{\mathbf{x}}$**1214**(0.65_{10})
M **2584+x**, $J+4$, $\gamma_{\mathbf{1214+x}}$**1370**(0.95_{10})
M **4102+x**, $J+6$, $\gamma_{\mathbf{2584+x}}$**1518**(1.25_{15})
4115+x, $J+6$, $\gamma_{\mathbf{2584+x}}$**1531**
M **5780+x**, $J+8$, $\gamma_{\mathbf{4115+x}}$**1665**, $\gamma_{\mathbf{4102+x}}$**1678**(1.10_{10})
5792+x, $J+8$, $\gamma_{\mathbf{4102+x}}$**1690**
M **7619+x**, $J+10$, $\gamma_{\mathbf{5792+x}}$**1827**, $\gamma_{\mathbf{5780+x}}$**1839**(1.45_{15})
M **9605+x**, $J+12$, $\gamma_{\mathbf{7619+x}}$**1986**(1.50_{15})
M **11743+x**, $J+14$, $\gamma_{\mathbf{9605+x}}$**2138**(1.70_{15})
M **14035+x**, $J+16$, $\gamma_{\mathbf{11743+x}}$**2292**$(1.60_{15})$
M **16474+x**, $J+18$, $\gamma_{\mathbf{14035+x}}$**2439**$(1.15_{15})$
M **19036+x**, $J+20$, $\gamma_{\mathbf{16474+x}}$**2562**$(0.80_{10})$
M **21694+x**, $J+22$, $\gamma_{\mathbf{19036+x}}$**2658**$(0.20_{10})$
M **24442+x**(?), $J+24$, $\gamma_{\mathbf{21694+x}}$**2748**$(0.10_5)$(?)
N **y**, $J_1\geq(31/2)$
N **1773+y**, J_1+2, $\gamma_{\mathbf{y}}$**1773**(0.95_{15})
N **3697+y**, J_1+4, $\gamma_{\mathbf{1773+y}}$**1924**(0.90_{15})
N **5780+y**, J_1+6, $\gamma_{\mathbf{3697+y}}$**2083**(1.20_{20})
N **8018+y**, J_1+8, $\gamma_{\mathbf{5780+y}}$**2238**(0.80_{20})
N **10413+y**, J_1+10, $\gamma_{\mathbf{8018+y}}$**2395**(0.75_{20})
N **12950+y**, J_1+12, $\gamma_{\mathbf{10413+y}}$**2537**$(0.45_{20})$
O **z**, J_2
O **1881+z**, J_2+2, $\gamma_{\mathbf{z}}$**1881**(0.60_{20})
O **3915+z**, J_2+4, $\gamma_{\mathbf{1881+z}}$**2034**(0.80_{20})
O **6117+z**, J_2+6, $\gamma_{\mathbf{3915+z}}$**2202**(0.50_{15})
O **8485+z**, J_2+8, $\gamma_{\mathbf{6117+z}}$**2368**(0.50_{15})
O **11017+z**, J_2+10, $\gamma_{\mathbf{8485+z}}$**2532**(0.45_{15})
O **13708+z**, J_2+12, $\gamma_{\mathbf{11017+z}}$**2691**$(0.20_{10})$
O **16553+z**(?), J_2+14, $\gamma_{\mathbf{13708+z}}$**2845**(?)
P **u**, J_3
P **1938+u**, J_3+2, $\gamma_{\mathbf{u}}$**1938**(0.50_{20})
P **4038+u**, J_3+4, $\gamma_{\mathbf{1938+u}}$**2100**(0.70_{20})
P **6295+u**, J_3+6, $\gamma_{\mathbf{4038+u}}$**2257**(0.55_{20})
P **8703+u**, J_3+8, $\gamma_{\mathbf{6295+u}}$**2408**(0.95_{25})
P **11244+u**, J_3+10, $\gamma_{\mathbf{8703+u}}$**2541**(0.55_{20})



SD-1 band (1995Ch56,1999Le56) SD-2 band (1995Ch56) SD-3 band (1995Ch56) SD-4 band (1995Ch56)

$^{81}_{38}Sr_{43}$

$^{82}_{38}Sr_{44}$

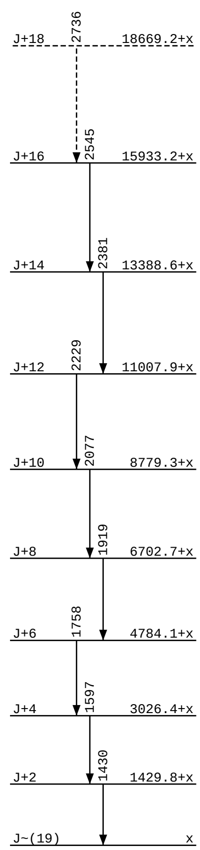
S_n: 12554 $_9$, S_p: 7841 $_8$

Nuclear Bands

A Band structure
B Band structure
C Band structure
D Band structure
E Band structure, π=-, yrast odd spin
F Band structure, π=-, yrare odd spin
G Band structure
H Band structure, π=-, yrast even spin
I Band structure, π=-, yrare even spin
J SD band (1995Sm08,1998Yu01,1999Le56)
Q_0=3.54$^{15}_{14}$

Levels and γ-ray branchings:

C **0**, 0^+, *25.55$_{15}$ d*, %ε=100
C **573.54**$_8$, 2^+, *8.9$_4$ ps*, γ_0**573.64**$_{10}$(100) E2
B **1175.71**$_8$, 2^+, *7.5$_{24}$ ps*, $\gamma_{573.54}$**602.15**$_{10}$(100$_7$) M1(+E2) $\delta=+1.2_{14}$, γ_0**1175.6**$_1$(10.4$_8$)
1310.89$_{13}$, 0^+, *<3.5 ns*, $\gamma_{573.54}$**737.35**$_{10}$(100)
C **1328.54**$_{10}$, 4^+, *1.0$_2$ ps*, $\gamma_{573.54}$**754.9**$_1$(100) E2
A **1688.96**$_{11}$, 3^+, $\gamma_{1328.54}$**359.9**$_3$(9$_3$), $\gamma_{1175.71}$**512.9**$_2$(80$_{12}$), $\gamma_{573.54}$**1115.8**$_2$(100$_{15}$)
1865$_5$, 2^+
B **1996.02**$_{10}$, 4^+, *1.3$_4$ ps*, $\gamma_{1328.54}$**667.53**$_{10}$(60$_9$) M1(+E2) $\delta=+0.3_7$, $\gamma_{1175.71}$**820.25**$_{10}$(100$_{12}$) E2, $\gamma_{573.54}$**1422.4**$_3$(5$_2$)
2195$_5$, 2^+
C **2229.47**$_{11}$, 6^+, *0.37$^{15}_{11}$ ps*, $\gamma_{1328.54}$**900.84**$_{10}$(100) E2
E **2401.82**$_{10}$, 3^-, $\gamma_{1688.96}$**712.4**$_1$(100$_8$), $\gamma_{573.54}$**1828.4**$_1$(29$_8$)
A **2525.80**$_{12}$, 5^+, $\gamma_{1996.02}$**529.8**$_2$(13$_4$), $\gamma_{1688.96}$**837.1**$_1$(100$_{22}$), $\gamma_{1328.54}$**1197.1**$_2$(21$_6$)
2665$_5$, 0^+
E **2817.31**$_{11}$, 5^-, *3.0$_6$ ps*, μ=+1.5$_{20}$, $\gamma_{2401.82}$**415.17**$_{10}$(13$_{13}$), $\gamma_{1328.54}$**1489.00**$_{10}$(100$_{13}$) E1
I **2824.40**$_{12}$, 4^-, $\gamma_{2401.82}$**422.6**$_3$(7$_2$), $\gamma_{1996.02}$**828.4**$_2$(16$_4$), $\gamma_{1688.96}$**1135.52**$_{10}$(100$_{13}$) E1(+M2) $\delta=+0.03_5$, $\gamma_{1328.54}$**1494.9**$_3$(5$_2$)
B **2836.26**$_{12}$, 6^+, *0.6$_4$ ps*, $\gamma_{2229.47}$**606.65**$_{10}$(50$_3$) M1(+E2) $\delta=+0.2_3$, $\gamma_{1996.02}$**840.24**$_{10}$(100$_8$) E2
2885$_5$, (2^+)
2920$_5$
H **3006.91**$_{12}$, 4^-, $\gamma_{2401.82}$**605.1**$_1$(60$_{20}$), $\gamma_{1996.02}$**1010.7**$_2$(20$_{10}$), $\gamma_{1688.96}$**1318.3**$_3$(100$_{20}$), $\gamma_{1328.54}$**1677.6**$_4$(40$_{10}$)
F **3073.28**$_{14}$, (5^-), $\gamma_{2817.31}$**255.4**$_3$(7$_7$), $\gamma_{2229.47}$**843.6**$_2$(64$_{14}$), $\gamma_{1996.02}$**1077.4**$_2$(100$_{21}$)
I **3086.23**$_{12}$, 6^-, $\gamma_{2824.40}$**261.83**$_{10}$(100$_9$), $\gamma_{2817.31}$**269.02**$_{10}$(78$_9$), $\gamma_{2525.80}$**560.8**$_2$(22$_4$)
G **3142.30**$_{22}$, (5^-), $\gamma_{1328.54}$**1812.8**$_4$(100)
C **3242.82**$_{12}$, 8^+, *0.24$^{10}_{6}$ ps*, μ=+5.6$_8$, $\gamma_{2229.47}$**1013.36**$_{10}$(400) E2
H **3339.57**$_{12}$, 6^-, $\gamma_{3073.28}$**266.2**$_2$(4$_1$), $\gamma_{3006.91}$**332.5**$_2$(8$_2$), $\gamma_{2817.31}$**522.1**$_1$(100$_{12}$), $\gamma_{2525.80}$**813.9**$_1$(16$_3$), $\gamma_{2229.47}$**1110.3**$_2$(16$_3$)
A **3476.96**$_{15}$, 7^+, $\gamma_{2525.80}$**951.15**$_{10}$(100)
3511.15$_{13}$, $(7)^-$, $\gamma_{3086.23}$**424**(?), $\gamma_{2817.31}$**694.04**$_{10}$(100$_7$) E2, $\gamma_{2229.47}$**1281.1**$_2$(4.6$_8$)
E **3525.75**$_{12}$, 7^-, $\gamma_{3086.23}$**439.88**$_{10}$(8$_2$), $\gamma_{3073.28}$**451.9**$_3$(4$_1$), $\gamma_{2817.31}$**707.9**$_2$(7$_2$), $\gamma_{2229.47}$**1296.19**$_{10}$(100$_{12}$) D+Q $\delta=+0.5_5$
F **3565.75**$_{13}$, 7^-, $\gamma_{3086.23}$**479.3**$_2$(17$_6$), $\gamma_{3073.28}$**492.7**$_4$(1$_1$), $\gamma_{2817.31}$**748.3**$_2$(14$_1$), $\gamma_{2229.47}$**1336.5**$_2$(100$_{13}$)
G **3607.94**$_{13}$, 7^-, $\gamma_{3142.30}$**465.4**$_2$(30$_8$), $\gamma_{3086.23}$**521.5**$_2$(100$_{14}$) (M1+E2) $\delta=-0.7_5$, $\gamma_{3073.28}$**534.6**$_2$(35$_8$), $\gamma_{2836.26}$**771.8**$_2$(68$_{68}$), $\gamma_{2817.31}$**790.6**$_2$(32$_8$), $\gamma_{2229.47}$**1378.6**$_2$(73$_{19}$)
B **3622.78**$_{12}$, 8^+, *0.7$_4$ ps*, μ=+5.6$_8$, $\gamma_{3242.82}$**379.96**$_{10}$(8.8$_9$), $\gamma_{2836.26}$**786.36**$_{10}$(100$_7$) E2, $\gamma_{2229.47}$**1393.5**$_1$(18$_6$)
D **3686.07**$_{15}$, (8^+), $\gamma_{3242.82}$**443.28**$_{10}$(100$_{15}$), $\gamma_{2229.47}$**1456.2**$_3$(36$_{11}$)
H **4033.49**$_{15}$, 8^-, $\gamma_{3525.75}$**507.9**$_3$(8$_2$), $\gamma_{3339.57}$**693.9**$_1$(100$_{22}$)
I **4142.60**$_{14}$, 8^-, $\gamma_{3607.94}$**534.7**$_2$(26$_8$), $\gamma_{3565.75}$**577.0**$_2$(31$_8$), $\gamma_{3525.75}$**617.1**$_4$(8$_3$), $\gamma_{3086.23}$**1056.3**$_1$(100$_{23}$) E2
4248.4$_{10}$, $\gamma_{3242.82}$**1005.6**(100)
C **4350.30**$_{15}$, 10^+, *0.14$^{6}_{4}$ ps*, $\gamma_{3242.82}$**1107.47**$_{10}$(100) (E2)
E **4366.82**$_{14}$, 9^-, $\gamma_{3607.94}$**758.8**$_1$(30$_3$), $\gamma_{3565.75}$**801.11**$_{10}$(100$_8$) (E2), $\gamma_{3525.75}$**841.3**$_3$(32$_4$)
4387.09$_{14}$, (9^-), $\gamma_{3511.15}$**876.0**$_1$(100$_{18}$) (E2), $\gamma_{3242.82}$**1144.20**$_{10}$(88$_7$)
B **4423.85**$_{14}$, (10^+), *0.9$_2$ ps*, μ=+11$_5$, $\gamma_{3622.78}$**801.11**$_{10}$(100$_{12}$) (E2), $\gamma_{3242.82}$**1180.98**$_{10}$(16$_2$)
F **4472.85**$_{14}$, 9^-, $\gamma_{3565.75}$**907.0**$_1$(62$_8$), $\gamma_{3525.75}$**947.2**$_2$(44$_4$), $\gamma_{3242.82}$**1230.3**$_2$(100$_8$)
A **4492.5**$_4$, 9^+, $\gamma_{3476.96}$**1015.5**$_3$(100)
D **4637.34**$_{18}$, (10^+), $\gamma_{4423.85}$**213.5**$_3$(10$_3$), $\gamma_{4350.30}$**287.0**$_2$(38$_7$), $\gamma_{3686.07}$**951.2**$_2$(100$_{10}$), $\gamma_{3242.82}$**1394.7**$_3$(72$_{10}$)
H **4909.39**$_{18}$, 10^-, *0.36$^{11}_{8}$ ps*, $\gamma_{4387.09}$**521.7**(?), $\gamma_{4033.49}$**875.9**$_1$(100) E2
I **5237.4**$_4$, 10^-, $\gamma_{4142.60}$**1094.8**$_3$(100)
E **5308.15**$_{17}$, 11^-, $\gamma_{4366.82}$**941.32**$_{10}$(100) E2
5333.8$_{15}$, $\gamma_{4248.4}$**1085.4**(100)
5392.31$_{18}$(?), $\gamma_{4387.09}$**1005.43**$_{10}$(100)(?)
B **5427.12**$_{17}$, 12^+, *0.33$^{11}_{8}$ ps*, $\gamma_{4423.85}$**1003.26**$_{10}$(100) E2
5468.9$_{10}$, $\gamma_{4423.85}$**1045**$_1$(100)
F **5479.09**$_{25}$, (11^-), $\gamma_{4472.85}$**1006.2**$_3$(100$_7$), $\gamma_{4350.30}$**1128.8**$_3$(62$_4$)
C **5569.0**$_4$, 12^+, *0.06$_6$ ps*, $\gamma_{4350.30}$**1218.7**$_3$(100)
D **5738.2**$_5$, (12^+), $\gamma_{4637.34}$**1100.9**$_4$(100)
H **5913.9**$_4$, 12^-, *0.27$^{11}_{8}$ ps*, $\gamma_{4909.39}$**1004.5**$_3$(100) E2
E **6367.2**$_3$, 13^-, $\gamma_{5308.15}$**1059.0**$_2$(100) E2
6450.1$_{11}$, $\gamma_{5427.12}$**1023**$_1$(100)
B **6543.6**$_4$, 14^+, *0.25$^{11}_{9}$ ps*, $\gamma_{5427.12}$**1116.5**$_3$(100) E2
6556.4$_{18}$, $\gamma_{5333.8}$**1222.6**(100)
F **6564.8**$_4$, (13^-), $\gamma_{5479.09}$**1085.7**$_3$(100)
C **6937.0**$_5$, (14^+), *0.04$^{6}_{3}$ ps*, $\gamma_{5569.0}$**1368.0**$_3$(100)
H **7066.5**$_5$, 14^-, *0.08$^{5}_{4}$ ps*, $\gamma_{5913.9}$**1152.6**$_3$(100) E2
7534.6$_{11}$, $\gamma_{6543.6}$**991**$_1$(100)
E **7545.5**$_4$, 15^-, *0.12$_5$ ps*, $\gamma_{6367.2}$**1178.3**$_3$(100) E2
F **7788.2**$_5$, (15^-), $\gamma_{6564.8}$**1223.4**$_3$(100)
B **7812.0**$_6$, 16^+, *0.09$^{5}_{4}$ ps*, $\gamma_{6543.6}$**1268.4**$_4$(100) E2
7936.1$_{20}$, $\gamma_{6556.4}$**1379.6**(100)
H **8377.6**$_6$, 16^-, *0.14$_6$ ps*, $\gamma_{7066.5}$**1311.1**$_4$(100) E2
C **8434.6**$_6$, (16^+), *<0.18 ps*, $\gamma_{6937.0}$**1497.6**$_3$(100) E2
E **8842.0**$_7$, 17^-, *0.08$_6$ ps*, $\gamma_{7545.5}$**1296.5**$_5$(100) E2
F **9167.4**$_7$, (17^-), $\gamma_{7788.2}$**1379.2**$_4$(100)
B **9237.8**$_7$, 18^+, *0.05$^{7}_{4}$ ps*, $\gamma_{7812.0}$**1425.7**$_4$(100)
9478.1$_{23}$, $\gamma_{7936.1}$**1542**(100)
H **9842.6**$_{12}$, (18^-), *<0.19 ps*, $\gamma_{8377.6}$**1465**$_1$(100)
10061.6$_{12}$, (18^+), $\gamma_{8434.6}$**1626.9**(100)
E **10258.8**$_9$, (19^-), *0.08$^{6}_{4}$ ps*, $\gamma_{8842.0}$**1416.8**$_5$(100)
F **10709.4**$_{12}$, (19^-), $\gamma_{9167.4}$**1542**$_1$(100)
B **10872.4**$_9$, (20^+), *<0.21 ps*, $\gamma_{9237.8}$**1634.6**$_5$(100)
H **11379.6**$_{16}$, (20^-), $\gamma_{9842.6}$**1537**$_1$(100)
E **11798.4**$_{10}$, (21^-), *<0.06 ps*, $\gamma_{10258.8}$**1539.6**$_5$(100)
11837.6$_{16}$(?), (20^+), $\gamma_{10061.6}$**1776**(100)
12758.8$_{13}$, (22^+), $\gamma_{10872.4}$**1886.4**(100)
H **13005.7**$_{19}$, (22^-), $\gamma_{11379.6}$**1626**$_1$(100)
E **13489.4**$_{14}$, (23^-), $\gamma_{11798.4}$**1691**$_1$(100)
14832.7$_{21}$(?), (24), $\gamma_{13005.7}$**1827**(100)
14910.8$_{17}$, (24^+), $\gamma_{12758.8}$**2152**(100)
15409.4$_{17}$, (25), $\gamma_{13489.4}$**1920**(100)
17246.9$_{20}$(?), (26^-), $\gamma_{14910.8}$**2336**(100)
17616.5$_{20}$, (27), $\gamma_{15409.4}$**2207**(100)
J **x**, $J\approx(19)$
J **1429.8+x**, $J+2$, γ_x**1429.8**(0.60$_7$)
J **3026.4+x**, $J+4$, $\gamma_{1429.8+x}$**1596.6**(0.65$_7$)
J **4784.1+x**, $J+6$, $\gamma_{3026.4+x}$**1757.7**(0.83$_7$)
J **6702.7+x**, $J+8$, $\gamma_{4784.1+x}$**1918.6**(1.00$_7$)
J **8779.3+x**, $J+10$, $\gamma_{6702.7+x}$**2076.6**(1.00$_7$)
J **11007.9+x**, $J+12$, $\gamma_{8779.3+x}$**2228.6**(1.00$_7$)
J **13388.6+x**, $J+14$, $\gamma_{11007.9+x}$**2380.7**(0.80$_7$)
J **15933.2+x**, $J+16$, $\gamma_{13388.6+x}$**2544.6**(0.50$_7$)
J **18669.2+x**(?), $J+18$, $\gamma_{15933.2+x}$**2736**(0.25$_5$)(?)



SD band
(1995Sm08,1998Yu01)
$^{82}_{38}Sr_{44}$

$^{83}_{38}\mathrm{Sr}_{45}$

S_n: 8860 $_{10}$, S_p: 7897 $_{11}$

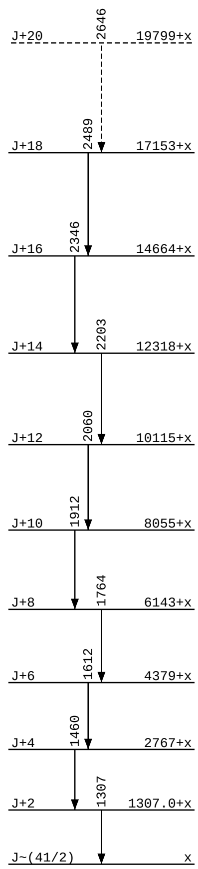
Nuclear Bands

A Band based on $(35/2^-)$
B Band based on $(17/2^-)$
C Band based on $(9/2^+)$
D Band based on $(23/2^+)$
E SD band (1995Ba26,1995La21,1999Le56)
$Q_0=3.60^{20}_{18}$

Levels and γ-ray branchings:

0, $7/2^+$, *32.41$_3$ h*, %ε+%β$^+$=100, μ=-0.829$_2$, Q=+0.78$_7$
C **35.47**$_6$, $9/2^+$, *<15 ns*, γ_0**35.50**$_{10}$(100) M1
259.15$_9$, $1/2^-$, *4.95$_{12}$ s*, %IT=100, μ=+0.581$_4$, γ_0**259.10**$_{10}$(100) E3
489.92$_8$, $\gamma_{35.47}$**454.40**$_{20}$(43.3$_{11}$), γ_0**489.90**$_{20}$(100.0$_{22}$)
545.4$_3$, γ_0**545.4**$_3$(100)
650.81$_{15}$, $(3/2,5/2^-)$, $\gamma_{259.15}$**391.60**$_{20}$(100)
681.11$_{23}$, $(3/2^-,5/2^-)$, $\gamma_{259.15}$**421.8**$_3$(100)
717.53$_9$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**227.50**$_{20}$(9.1$_{10}$), $\gamma_{35.47}$**682.10**$_{10}$(100$_5$), γ_0**717.60**$_{20}$(36.5$_{15}$)
753.72$_{16}$, $(3/2^-)$, $\gamma_{259.15}$**494.50**$_{20}$(100)
790.83$_{17}$, γ_0**790.80**$_{20}$(100)
800.41$_{10}$, $(11/2)^+$, *3.7$_{25}$ ps*, $\gamma_{35.47}$**764.9**$_6$(80$_{10}$), γ_0**800.40**$_{10}$(100$_6$) E2
835.2$_7$, $(9/2^-)$, $\gamma_{35.47}$**800**, γ_0**835**
846.3$_3$, $(5/2^-,7/2,9/2^-)$, $\gamma_{650.81}$**195.4**$_4$(100)
894.15$_{11}$, $11/2^+$, *1.6$_6$ ps*, $\gamma_{35.47}$**858.70**$_{10}$(100$_4$) M1+E2 $\delta=0.83_{13}$, γ_0**893.9**$_4$(3.5$_8$) (E2)
C **910.4**$_6$, $13/2^+$, *3.5$_2$ ps*, $\gamma_{35.47}$**875.0**(100) E2
951.77$_9$, $(5/2^+,7/2^-)$, $\gamma_{717.53}$**234.4**$_3$(3.2$_6$), $\gamma_{681.11}$**270.5**$_3$(3.9$_5$), $\gamma_{35.47}$**916.5**$_5$(4.2$_{10}$), γ_0**951.80**$_{10}$(100$_5$)
962.79$_8$, $(7/2,9/2,11/2^+)$, $\gamma_{717.53}$**245.3**$_4$(7.2$_{22}$), $\gamma_{35.47}$**927.30**$_{10}$(100$_5$), γ_0**962.80**$_{10}$(61$_4$)
1092.8$_3$, $\gamma_{489.92}$**603.0**$_3$(100$_{20}$), γ_0**1092.4**$_6$(100$_{30}$)
1098.06$_{12}$, $(7/2,9/2,11/2^+)$, $\gamma_{35.47}$**1062.60**$_{10}$(100$_{33}$), γ_0**1097.2**$_8$(80$_{40}$)
1140.71$_{25}$, $(7/2,9/2^-)$, $\gamma_{650.81}$**489.90**$_{20}$(100)
1233.40$_{11}$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**743.50**$_{10}$(100$_5$), $\gamma_{35.47}$**1197.90**$_{20}$(29.7$_{26}$), γ_0**1233.3**$_6$(5.1$_{10}$)
1239.19$_{19}$, $(7/2,9/2,11/2^+)$, $\gamma_{35.47}$**1203.6**$_5$(12.1$_{22}$), γ_0**1239.20**$_{20}$(100$_4$)
1365.9$_3$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**875.8**$_3$(100$_{17}$), γ_0**1366.4**$_6$(34$_{10}$)
1371.98$_7$, $(7/2^+)$, $\gamma_{1233.40}$**138.8**$_4$(1.6$_2$), $\gamma_{962.79}$**409.3**$_4$(1.1$_2$), $\gamma_{951.77}$**420.3**$_3$(29.2$_{20}$), $\gamma_{846.3}$**525.6**$_4$(1.2$_3$), $\gamma_{790.83}$**581.1**$_3$(2.3$_3$), $\gamma_{753.72}$**618.2**$_2$(9.7$_7$), $\gamma_{717.53}$**654.5**$_2$(3.1$_3$), $\gamma_{650.81}$**721.2**$_2$(16.8$_7$), $\gamma_{545.4}$**827**, $\gamma_{489.92}$**882.1**$_1$(100.0$_{25}$), $\gamma_{35.47}$**1336.5**$_1$(49.0$_{20}$), γ_0**1371.9**$_1$(16.0$_8$)
1434.12$_{19}$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**943.6**$_5$(26$_8$), γ_0**1434.20**$_{20}$(100$_9$)
1447.9$_8$, $(9/2^-)$, $\gamma_{753.72}$**694**
1498.83$_{15}$, $(7/2,9/2)$, $\gamma_{951.77}$**547.1**$_3$(62$_{12}$), $\gamma_{35.47}$**1463.4**$_3$(100$_{12}$), γ_0**1498.80**$_{20}$(93$_8$)
1574.7$_8$, $(9/2)^+$, $\gamma_{894.15}$**679.9**(100) M1+E2 $\delta=+1.1_8$
1590.1$_9$, $(11/2^-)$, $\gamma_{835.2}$**755**
1604.8$_5$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**1115.0**$_5$(100$_{30}$), γ_0**1604.6**$_8$(72$_{20}$)
1745.4$_8$, $(7/2,9/2,11/2^+)$, $\gamma_{35.47}$**1710.0**$_{15}$(56$_{28}$), γ_0**1745.3**$_9$(100$_{29}$)
1752.6$_4$, $(7/2,9/2,11/2^+)$, $\gamma_{35.47}$**1717.0**$_8$(22$_7$), γ_0**1752.6**$_4$(100$_{16}$)
1856.6$_6$, $15/2^+$, $\gamma_{910.4}$**945.7**$_7$(100) M1+E2 $\delta=+0.9_6$, $\gamma_{894.15}$**963**, $\gamma_{800.41}$**1056**
1882.50$_{23}$, $(7/2,9/2)$, $\gamma_{951.77}$**931.5**$_5$(68$_{18}$), $\gamma_{489.92}$**1392.4**$_3$(100$_9$), $\gamma_{35.47}$**1846.8**$_5$(55$_{14}$), γ_0**1882.2**$_8$(32$_{14}$)
1915.4$_3$, $(7/2,9/2^-)$, $\gamma_{650.81}$**1264.3**$_4$(36$_6$), $\gamma_{35.47}$**1879.8**$_7$(48$_{10}$), γ_0**1915.7**$_4$(100$_{12}$)
1964.1$_5$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**1473.8**$_6$(87$_{16}$), $\gamma_{35.47}$**1928**$_2$(32$_{16}$), γ_0**1964.5**$_6$(100$_{16}$)
C **1987.1**$_8$, $17/2^+$, *0.7$_2$ ps*, $\gamma_{910.4}$**1077.0**(100) E2
2017.0$_6$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**1527.2**$_{10}$(34$_{10}$), γ_0**2016.9**$_6$(100$_{16}$)
2045.8$_6$, $(13/2^-)$, $\gamma_{910.4}$**1136**, $\gamma_{894.15}$**1152**, $\gamma_{800.41}$**1245**
2074.0$_8$, $(7/2,9/2,11/2^+)$, $\gamma_{489.92}$**1584.3**$_{10}$(70$_{33}$), γ_0**2073.6**$_{12}$(100$_{40}$)
2089.7$_8$, $(7/2,9/2,11/2^+)$, $\gamma_{35.47}$**2054.1**$_{12}$(100$_{32}$), γ_0**2089.8**$_{10}$(63$_{32}$)
2107.0$_6$, $(13/2^+)$, $\gamma_{1590.1}$**517**, $\gamma_{1447.9}$**659**, $\gamma_{910.4}$**1196**, $\gamma_{894.15}$**1213.1**(100) M1
2373.2$_6$, $(7/2,9/2,11/2^+)$, $\gamma_{1371.98}$**1001.2**$_6$(100)
2539.4$_7$, $(15/2^-)$, $\gamma_{2107.0}$**432**, $\gamma_{1574.7}$**964**, $\gamma_{910.4}$**1630**
2643.1$_6$, $17/2^-$, $\gamma_{2539.4}$**104**, $\gamma_{2107.0}$**536**, $\gamma_{2045.8}$**598**, $\gamma_{1987.1}$**656**, $\gamma_{1856.6}$**786**
2847.7$_9$, $(17/2^-)$, $\gamma_{2643.1}$**205**, $\gamma_{2539.4}$**308**
2905.2$_3$, $(7/2^+,9/2^+,11/2^+)$, $\gamma_{1498.83}$**1407.1**$_{10}$(15$_4$), $\gamma_{1371.98}$**1532.2**$_{10}$(9$_4$), $\gamma_{962.79}$**1942.3**$_{10}$(13$_4$), $\gamma_{894.15}$**2011.1**$_5$(56$_9$), $\gamma_{800.41}$**2104.9**$_8$(29$_5$), $\gamma_{717.53}$**2187.0**$_{10}$(15$_6$), $\gamma_{35.47}$**2869.6**$_{15}$(20$_6$), γ_0**2905.3**$_9$(100$_{12}$)
2943.9$_8$, $(7/2^+,9/2^+,11/2^+)$, $\gamma_{894.15}$**2049.0**$_{15}$(17$_8$), $\gamma_{35.47}$**2909**$_2$(16$_8$), γ_0**2944.0**$_{10}$(100$_{12}$)
3008.9$_9$, $(19/2^+)$, $\gamma_{1987.1}$**1022**, $\gamma_{1856.6}$**1152**
3046.7$_9$, $(19/2^-)$, $\gamma_{2847.7}$**199**, $\gamma_{2643.1}$**404**
C **3116.0**$_{11}$, $(21/2)^+$, *<0.7 ps*, $\gamma_{1987.1}$**1129.1**(100) E2
3349.3$_{11}$, $(21/2^+)$, $\gamma_{3116.0}$**233**, $\gamma_{1987.1}$**1362**
3469.5$_{11}$, $21/2^-$, $\gamma_{3046.7}$**423**
3525.6$_{10}$, $(21/2^-)$, $\gamma_{3046.7}$**480**, $\gamma_{2643.1}$**882**
D **3643.8**$_{12}$, $23/2^+$, *8.7$_4$ ps*, $\gamma_{3349.3}$**294**, $\gamma_{3116.0}$**528.0**(100) M1+E2 $\delta=0.14_4$
B **4043.5**$_{12}$, $23/2^-$, $\gamma_{3469.5}$**574**
C **4168.0**$_{13}$, $25/2^+$, $\gamma_{3643.8}$**524**, $\gamma_{3116.0}$**1052**
4195.3$_{11}$, $(23/2^-)$, $\gamma_{3525.6}$**670**, $\gamma_{3469.5}$**726**, $\gamma_{3046.7}$**1148**
4395.8$_{13}$, $(25/2^+)$, $\gamma_{3643.8}$**752**, $\gamma_{3116.0}$**1280**
4633.5$_{12}$, $(25/2^-)$, $\gamma_{4043.5}$**590**, $\gamma_{3525.6}$**1108**, $\gamma_{3469.5}$**1165**(?)
D **4752.0**$_{13}$, $27/2^+$, $\gamma_{4168.0}$**584**, $\gamma_{3643.8}$**1108**
4947.6$_{14}$, $^{(-)}$, $\gamma_{4043.5}$**904**
5090.8$_{15}$, $(27/2^+)$, $\gamma_{4395.8}$**695**
B **5207.7**$_{13}$, $27/2^-$, $\gamma_{4947.6}$**260**, $\gamma_{4633.5}$**574**, $\gamma_{4043.5}$**1164**
C **5378.0**$_{14}$, $29/2^+$, $\gamma_{4752.0}$**626**, $\gamma_{4168.0}$**1210**
5394.4$_{13}$, $^{(-)}$, $\gamma_{4195.3}$**1199**, $\gamma_{4043.5}$**1351**
5611.7$_{14}$, $(29/2^+)$, $\gamma_{5090.8}$**521**, $\gamma_{4752.0}$**860**, $\gamma_{4395.8}$**1216**
5855.1$_{14}$, $(29/2^-)$, $\gamma_{5207.7}$**647**, $\gamma_{4633.5}$**1222**
D **6204.3**$_{14}$, $31/2^+$, $\gamma_{5611.7}$**593**, $\gamma_{5378.0}$**826**, $\gamma_{5090.8}$**1114**(?), $\gamma_{4752.0}$**1452**
B **6427.7**$_{16}$, $31/2^-$, $\gamma_{5207.7}$**1220**
C **6752.0**$_{15}$, $33/2^+$, $\gamma_{6204.3}$**548**, $\gamma_{5378.0}$**1374**
7101.7$_{17}$, $^{(+)}$, $\gamma_{5611.7}$**1490**
7234.1$_{17}$, $^{(-)}$, $\gamma_{5855.1}$**1379**
B **7739.1**$_{19}$, $35/2^-$, $\gamma_{6427.7}$**1312**
7770.7$_{19}$, $\gamma_{6427.7}$**1343**
7797.1$_{19}$, $\gamma_{6427.7}$**1369**
A **7805.9**$_{18}$, $35/2^-$, $\gamma_{6427.7}$**1378**
D **7853.5**$_{16}$, $35/2^+$, $\gamma_{6204.3}$**1649**
C **8119.8**$_{17}$, $37/2^+$, $\gamma_{7853.5}$**266**, $\gamma_{6752.0}$**1368**
9189.1$_{21}$, $\gamma_{7797.1}$**1392**
B **9276.5**$_{19}$, $39/2^-$, $\gamma_{7805.9}$**1470**, $\gamma_{7739.1}$**1538**
A **9289.5**$_{19}$, $39/2^-$, $\gamma_{7805.9}$**1484**, $\gamma_{7797.1}$**1492**
9351.7$_{22}$, $\gamma_{7770.7}$**1581**
9467.7$_{22}$, $\gamma_{7770.7}$**1697**
C **9649.8**$_{20}$, $41/2^+$, $\gamma_{8119.8}$**1530**
D **9781.6**$_{19}$, $39/2^+$, $\gamma_{7853.5}$**1928**
A **10859.5**$_{20}$, $43/2^-$, $\gamma_{9289.5}$**1570**
B **10951.5**$_{20}$, $43/2^-$, $\gamma_{9276.5}$**1675**
11103.7$_{24}$, $\gamma_{9351.7}$**1752**
C **11461.8**$_{22}$, $45/2^+$, $\gamma_{9649.8}$**1812**
C **11856.8**$_{22}$, $\gamma_{9649.8}$**2207**
A **12566.5**$_{21}$, $47/2^-$, $\gamma_{10951.5}$**1615**, $\gamma_{10859.5}$**1707**
B **12846.6**$_{23}$, $47/2^-$, $\gamma_{10951.5}$**1895**
C **13425.9**$_{24}$, $49/2^+$, $\gamma_{11461.8}$**1964**
C **14130.9**$_{24}$, $\gamma_{11856.8}$**2274**
C **14295.9**$_{24}$, $\gamma_{11461.8}$**2834**

A **14343.6**$_{23}$, $51/2^-$, $\gamma_{12566.5}$**1777**
B **14898.6**$_{25}$, $51/2^-$, $\gamma_{12846.6}$**2052**
C **15539**$_{3}$, $\gamma_{13425.9}$**2113**
C **15755**$_{3}$, $53/2^+$, $\gamma_{13425.9}$**2329**
C **16223**$_{3}$, $\gamma_{13425.9}$**2797**
A **16611.6**$_{25}$, $55/2^-$, $\gamma_{14343.6}$**2268**
C **18115**$_{3}$, γ_{15539}**2576**
A **19436**$_{3}$, $59/2^-$, $\gamma_{16611.6}$**2824**
E **x**, $J \approx (41/2)$
E **1307.0+x**, $J+2$, γ_{x}**1307**$_{2}$
E **2767+x**, $J+4$, $\gamma_{1307.0+x}$**1460**$_{2}$
E **4379+x**, $J+6$, γ_{2767+x}**1612**$_{2}$
E **6143+x**, $J+8$, γ_{4379+x}**1764**$_{2}$
E **8055+x**, $J+10$, γ_{6143+x}**1912**$_{2}$
E **10115+x**, $J+12$, γ_{8055+x}**2060**$_{2}$
E **12318+x**, $J+14$, $\gamma_{10115+x}$**2203**$_{2}$
E **14664+x**, $J+16$, $\gamma_{12318+x}$**2346**$_{2}$
E **17153+x**, $J+18$, $\gamma_{14664+x}$**2489**$_{2}$
E **19799+x**(?), $J+20$, $\gamma_{17153+x}$**2646**$_{2}$(?)



SD band
(1995Ba26,1995La21)
$^{83}_{38}Sr_{45}$

$^{82}_{39}$Y$_{43}$

S$_n$: 1.025x10^4$_{12}$, S$_p$: 3.96x10^3$_{10}$

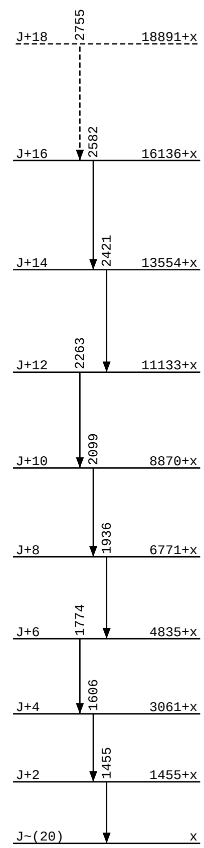
Nuclear Bands

- A Band structure, (π,α)=(+,1)
- B Band structure, (π,α)=(+,0)
- C Band structure, (π,α)=(-,1)
- D Band structure, (π,α)=(-,0)
- E Band structure
- F Band structure
- G SD band (π=-,α=0) (1995Da30) $\beta_2\approx$0.55

Levels and γ-ray branchings:

0, 1^+, *9.5$_3$ s*, %ε+%β^+=100
142.34$_7$, 2^+, $\gamma_{\mathbf{0}}$**142.3**$_1$(100) D
250.19$_9$, 2^+, $\gamma_{\mathbf{142.34}}$**107.9**$_2$(29$_4$), $\gamma_{\mathbf{0}}$**250.2**$_1$(100$_7$) D
313.69$_8$, 3^+, $\gamma_{\mathbf{250.19}}$**63.7**$_3$(46$_{18}$), $\gamma_{\mathbf{142.34}}$**171.4**$_1$(100$_4$) D, $\gamma_{\mathbf{0}}$**313.7**$_1$(86$_6$) Q
337.00$_{10}$, 3^+, $\gamma_{\mathbf{142.34}}$**194.6**$_1$(100$_4$) D, $\gamma_{\mathbf{0}}$**337.1**$_2$(49$_6$) Q
401.10$_9$, 4^+, *11.1$_{28}$ ns*, $\gamma_{\mathbf{337.00}}$**64.3**$_3$(31$_{17}$), $\gamma_{\mathbf{313.69}}$**87.5**$_1$(100$_4$), $\gamma_{\mathbf{142.34}}$**258.7**$_1$($\approx$ 7)
D **402.64**$_{13}$, 4^-, *268$_{25}$ ns*, $\gamma_{\mathbf{337.00}}$**65.7**$_2$(100$_9$), $\gamma_{\mathbf{313.69}}$**88.9**$_2$(75$_6$)
405.79$_{24}$, 4^-, *35.4$_{21}$ ns*, $\gamma_{\mathbf{337.00}}$**68.2**$_3$(100)
E **473.89**$_{16}$, (5^-), $\gamma_{\mathbf{405.79}}$**67.5**$_3$(100)
B **507.52**$_{12}$, 6^+, *147$_7$ ns*, $\gamma_{\mathbf{401.10}}$**106.4**$_1$(100) E2
C **511.90**$_{14}$, 5^-, $\gamma_{\mathbf{402.64}}$**109.2**$_1$(100)
E **586.65**$_{15}$, (6^-), $\gamma_{\mathbf{511.90}}$**74.2**$_2$(100$_7$), $\gamma_{\mathbf{473.89}}$**112.4**$_2$(43$_7$)
594.71$_{14}$, (6^+), $\gamma_{\mathbf{401.10}}$**193.7**$_1$(100)
D **677.98**$_{14}$, 6^-, $\gamma_{\mathbf{586.65}}$**91.1**$_1$(8$_1$), $\gamma_{\mathbf{511.90}}$**166.2**$_2$(81$_9$), $\gamma_{\mathbf{507.52}}$**170.7**$_2$(100$_{13}$), $\gamma_{\mathbf{473.89}}$**204.1**$_1$(63$_9$), $\gamma_{\mathbf{402.64}}$**275.4**$_1$(56$_9$) (Q)
A **718.87**$_{14}$, 7^+, $\gamma_{\mathbf{507.52}}$**211.3**$_1$(100) D
B **751.50**$_{14}$, 8^+, $\gamma_{\mathbf{718.87}}$**32.6**$_3$(18$_5$), $\gamma_{\mathbf{507.52}}$**243.9**$_1$(100) Q
F **818.26**$_{19}$, (6^-), $\gamma_{\mathbf{677.98}}$**140.0**$_2$(57$_{12}$), $\gamma_{\mathbf{511.90}}$**306.6**$_2$(45$_{14}$), $\gamma_{\mathbf{473.89}}$**344.5**$_3$(100$_{18}$)
C **957.00**$_{14}$, 7^-, $\gamma_{\mathbf{718.87}}$**238.1**$_2$(16$_2$), $\gamma_{\mathbf{677.98}}$**279.0**$_2$(28$_4$) (D), $\gamma_{\mathbf{586.65}}$**370.3**$_2$(33$_3$), $\gamma_{\mathbf{511.90}}$**445.1**$_1$(100$_6$) Q, $\gamma_{\mathbf{507.52}}$**449.6**$_2$(34$_3$)
A **1146.95**$_{16}$, 9^+, $\gamma_{\mathbf{751.50}}$**395.5**$_1$(100$_1$) D, $\gamma_{\mathbf{718.87}}$**428.0**$_2$(3.1$_5$)
E **1163.43**$_{20}$, (7^-), $\gamma_{\mathbf{586.65}}$**576.8**$_2$(100$_{20}$), $\gamma_{\mathbf{511.90}}$**651.5**$_2$(100$_{20}$)
D **1272.27**$_{16}$, 8^-, $\gamma_{\mathbf{957.00}}$**315.3**$_2$(9.0$_5$), $\gamma_{\mathbf{677.98}}$**594.3**$_1$(100$_2$) Q
1284.12$_{17}$, (8^+), $\gamma_{\mathbf{751.50}}$**532.3**$_2$(35$_3$), $\gamma_{\mathbf{718.87}}$**565.2**$_2$(100$_2$), $\gamma_{\mathbf{594.71}}$**690.8**$_4$(9$_3$), $\gamma_{\mathbf{507.52}}$**776.7**$_3$(98$_5$)
F **1506.8**$_4$, (8^-), $\gamma_{\mathbf{818.26}}$**688.5**$_3$(100)
1557.20$_{25}$, (9^+), $\gamma_{\mathbf{1284.12}}$**273.1**$_2$(13$_8$), $\gamma_{\mathbf{718.87}}$**838.2**$_5$(100$_8$)
B **1589.74**$_{16}$, 10^+, $\gamma_{\mathbf{1146.95}}$**442.6**$_2$(11$_2$) D, $\gamma_{\mathbf{751.50}}$**838.2**$_1$(100$_1$) Q
C **1687.79**$_{17}$, 9^-, $\gamma_{\mathbf{957.00}}$**730.8**$_1$(100$_2$) Q, $\gamma_{\mathbf{751.50}}$**936.2**$_3$(17.6$_3$)
A **1960.07**$_{17}$, 11^+, *0.42$_{10}$ ps*, $\gamma_{\mathbf{1589.74}}$**370.2**$_1$(97$_1$) D, $\gamma_{\mathbf{1146.95}}$**813.2**$_1$(100$_2$) (E2)
E **1963.7**$_4$, (9^-), $\gamma_{\mathbf{1163.43}}$**800.3**$_3$
D **2061.57**$_{18}$, 10^-, $\gamma_{\mathbf{1272.27}}$**789.3**$_1$(100$_2$) Q, $\gamma_{\mathbf{1146.95}}$**914.5**$_3$(17$_2$)
F **2379.1**$_6$, (10^-), $\gamma_{\mathbf{1506.8}}$**872.3**$_4$(100)
C **2602.20**$_{20}$, 11^-, *0.31$_5$ ps*, $\gamma_{\mathbf{1687.79}}$**914.4**$_1$(100) E2
B **2651.21**$_{19}$, 12^+, *0.284$_{35}$ ps*, $\gamma_{\mathbf{1960.07}}$**691.1**$_9$(21$_1$) D, $\gamma_{\mathbf{1589.74}}$**1061.5**$_1$(100$_2$) E2
A **2970.9**$_3$, 13^+, *0.236$_{28}$ ps*, $\gamma_{\mathbf{2651.21}}$**320.3**$_4$(53$_{10}$) M1, $\gamma_{\mathbf{1960.07}}$**1010.5**$_3$(100$_{13}$) E2
D **3026.2**$_4$, 12^-, $\gamma_{\mathbf{2061.57}}$**964.6**$_3$(100) Q
C **3675.00**$_{22}$, 13^-, *0.166$_{21}$ ps*, $\gamma_{\mathbf{2602.20}}$**1072.8**$_1$(100) (E2)
B **3904.02**$_{22}$, 14^+, $\gamma_{\mathbf{2651.21}}$**1252.8**$_1$(100) Q
A **4142.7**$_3$, 15^+, *0.132$_{14}$ ps*, $\gamma_{\mathbf{2970.9}}$**1171.8**$_1$(100) E2
D **4150.2**$_4$, 14^-, $\gamma_{\mathbf{3026.2}}$**1124.0**$_1$(100) Q
C **4886.0**$_4$, 15^-, *<0.26 ps*, $\gamma_{\mathbf{3675.00}}$**1211.0**$_3$(100) (E2)
B **5250.0**$_3$, 16^+, $\gamma_{\mathbf{3904.02}}$**1346.0**$_2$(100) Q
D **5414.6**$_5$, 16^-, $\gamma_{\mathbf{4150.2}}$**1264.4**$_2$(100) Q
A **5456.3**$_5$, 17^+, *0.083$_{14}$ ps*, $\gamma_{\mathbf{4142.7}}$**1313.6**$_3$(100) E2
C **6222.7**$_5$(?), (17^-), $\gamma_{\mathbf{4886.0}}$**1336.7**$_3$(100) (Q)(?)
B **6672.1**$_5$, 18^+, $\gamma_{\mathbf{5250.0}}$**1422.1**$_4$(100) (Q)
D **6777.4**$_5$, (18^-), $\gamma_{\mathbf{5414.6}}$**1362.8**$_2$(100)
A **6914.5**$_6$, 19^+, *<0.21 ps*, $\gamma_{\mathbf{5456.3}}$**1458.2**$_3$(100) (E2)
C **7591.2**$_{10}$(?), (19^-), $\gamma_{\mathbf{6222.7}}$**1368.5**$_8$(100)(?)
D **8187.7**$_6$, (20^-), $\gamma_{\mathbf{6777.4}}$**1410.3**$_4$(100)
B **8194.2**$_6$, 20^+, $\gamma_{\mathbf{6672.1}}$**1522.0**$_3$(100) (Q)
A **8515.9**$_6$, 21^+, $\gamma_{\mathbf{6914.5}}$**1601.3**$_2$(100) (Q)
D **9680.0**$_{10}$, (22^-), $\gamma_{\mathbf{8187.7}}$**1492.3**$_8$(100)
B **9861.0**$_7$, 22^+, $\gamma_{\mathbf{8194.2}}$**1666.8**$_4$(100) (Q)
A **10267.3**$_7$, (23^+), $\gamma_{\mathbf{8515.9}}$**1751.4**$_4$(100)
B **11712.8**$_{11}$, (24^+), $\gamma_{\mathbf{9861.0}}$**1851.8**$_8$(100)
A **12219.4**$_8$, (25^+), $\gamma_{\mathbf{10267.3}}$**1952.1**$_4$(100)
B **13785.5**$_{12}$, (26^+), $\gamma_{\mathbf{11712.8}}$**2072.7**$_4$(100)
A **14416.2**$_{12}$, (27^+), $\gamma_{\mathbf{12219.4}}$**2196.8**$_8$(100)
G **x**, $J\approx(20)$
G **1455+x**, $J+2$, $\gamma_{\mathbf{x}}$**1455**$_2$(0.40$_7$)
G **3061+x**, $J+4$, $\gamma_{\mathbf{1455+x}}$**1606**$_2$(0.65$_8$)
G **4835+x**, $J+6$, $\gamma_{\mathbf{3061+x}}$**1774**$_2$(1.0$_1$)
G **6771+x**, $J+8$, $\gamma_{\mathbf{4835+x}}$**1936**$_2$(1.0$_1$)
G **8870+x**, $J+10$, $\gamma_{\mathbf{6771+x}}$**2099**$_2$(1.0$_1$)
G **11133+x**, $J+12$, $\gamma_{\mathbf{8870+x}}$**2263**$_2$(1.0$_1$)
G **13554+x**, $J+14$, $\gamma_{\mathbf{11133+x}}$**2421**$_2$(0.65$_8$)
G **16136+x**, $J+16$, $\gamma_{\mathbf{13554+x}}$**2582**$_2$(0.35$_5$)
G **18891+x**(?), $J+18$, $\gamma_{\mathbf{16136+x}}$**2755**$_2$(0.13$_5$)(?)

See Phys. Rev. **C51***, 1181 (1995); Phys. Rev.* **C51***, 2959 (1995); Phys. Rev.* **C53***, 1541 (1996) for additional data.*



SD band
(1995Da30)
$^{82}_{39}$Y$_{43}$

$^{83}_{39}Y_{44}$

S_n: 12.21x10^3 $_{11}$, S_p: 3608 $_{44}$

Nuclear Bands

- A band based on $7/2^+$
- B band based on $47/2^+$
- C GS band
- D band based on $3/2^-$
- E band based on $5/2^-$
- F band based on $33/2^-$
- G band based on $21/2^-$
- H band based on $19/2^-$
- I SD band (1999Le56) Q_0=4.4$_7$

Levels and γ-ray branchings:

C **0**, $9/2^+$, *7.08$_6$ min*, %ε+%β$^+$=100

D **61.98**$_{11}$, $3/2^-$, *2.85$_2$ min*, %ε+%β$^+$=60$_5$, %IT=40$_5$, γ_{0}**(62.1)**(100) E3

97.1$_5$, $(5/2^+)$, *9.8$_{10}$ ns*, γ_{0}**97.1**(100) E2

117.54$_{12}$, $(1/2^-)$, $\gamma_{61.98}$**55.55**$_4$(100) M1+E2

A **145.00**$_4$, $7/2^+$, *119$_{28}$ ps*, μ=+2.1$_6$, γ_{0}**145.00**$_4$(100) (M1+E2) $\delta=+0.13_4$

E **166.98**$_{11}$, $5/2^-$, *0.69$_7$ ns*, $\gamma_{97.1}$**70.0**(1.4), $\gamma_{61.98}$**105.00**$_3$(100$_4$) M1

331.7$_4$, $(5/2^+)$, $\gamma_{166.98}$**164.5**(< 8), $\gamma_{145.00}$**186.7**(< 8), $\gamma_{97.1}$**234.5**(100) M1

421.76$_{12}$, $(3/2^-)$, $\gamma_{166.98}$**254.76**$_4$(100$_5$) M1, $\gamma_{117.54}$**304.21**$_4$(86$_5$) (M1,E2), $\gamma_{97.1}$**324.6**(14), $\gamma_{61.98}$**359.80**$_5$(57$_3$)

436.53$_{14}$, $(3/2,5/2^-)$, $\gamma_{166.98}$**270.5**$_3$(38$_6$), $\gamma_{61.98}$**375.2**$_4$(100$_6$)

D **537.15**$_{11}$, $7/2^-$, *8.3$_{21}$ ps*, $\gamma_{436.53}$**100.8**$_1$(3.8$_4$), $\gamma_{421.76}$**114.5**, $\gamma_{166.98}$**370.3**$_1$(100) (M1+E2) $\delta=+0.46_7$, $\gamma_{145.00}$**392.2**$_2$(10.3$_{13}$), $\gamma_{61.98}$**474.7**$_3$(56$_5$) E2, γ_{0}**538**

564.55$_{22}$, $(3/2,5/2^-)$, $\gamma_{166.98}$**397.6**(50), $\gamma_{117.54}$**447.0**$_2$(24), $\gamma_{61.98}$**502.5**(100)

565.5$_6$, $(3/2^-)$, $\gamma_{166.98}$**398.5**(32), $\gamma_{117.54}$**448.0**(72), $\gamma_{61.98}$**503.5**(100)

570.6$_8$, $(5/2^+)$, $\gamma_{331.7}$**238.9**, $\gamma_{145.00}$**425.5**

C **594.98**$_7$, $13/2^+$, *5.4$_5$ ps*, μ=+8.45$_{26}$, γ_{0}**595.0**$_1$(100) E2

642.6$_3$, $(3/2^-)$, $\gamma_{421.76}$**220.6**(46), $\gamma_{331.7}$**310.5**(20), $\gamma_{166.98}$**475.4**(100), $\gamma_{117.54}$**524.8**(66), $\gamma_{61.98}$**580.3**(39)

722.28$_{18}$, $^{(-)}$, $\gamma_{537.15}$**185.9**$_3$(< 15), $\gamma_{436.53}$**285.3**(< 15), $\gamma_{421.76}$**300.3**$_2$(< 15), $\gamma_{61.98}$**660.2**(100)

A **736.64**$_7$, $11/2^+$, *4.8$_{10}$ ps*, $\gamma_{594.98}$**141.67**$_5$(9$_1$) (M1+E2), $\gamma_{145.00}$**591.7**$_2$(100$_9$) E2, γ_{0}**736.6**$_1$(57$_5$)

E **813.99**$_9$, $9/2^-$, *3.3$_4$ ps*, $\gamma_{537.15}$**276.9**$_1$(37$_3$) (M1+E2) $\delta=+0.17_4$, $\gamma_{166.98}$**647.0**$_1$(100$_8$) E2, $\gamma_{145.00}$**669.0**$_1$(29$_3$), γ_{0}**813.9**$_2$(44$_6$)

855.6$_4$, $(3/2,5/2^-)$, $\gamma_{722.28}$**133.0**(< 3), $\gamma_{642.6}$**213.2**(13), $\gamma_{565.5}$**290.0**(4), $\gamma_{564.55}$**291.0**(3), $\gamma_{537.15}$**319.2**(17), $\gamma_{436.53}$**418.7**(6), $\gamma_{421.76}$**433.7**(6), $\gamma_{331.7}$**524.1**(< 3), $\gamma_{166.98}$**688.4**(11), $\gamma_{97.1}$**758.5**(7), $\gamma_{61.98}$**793.5**(100)

882.5$_{11}$, $\gamma_{331.7}$**550.8**(100)

1137.4$_6$, $\gamma_{537.15}$**600**$_1$, $\gamma_{436.53}$**700**$_1$

D **1223.69**$_{11}$, $11/2^-$, *0.94$_{28}$ ps*, $\gamma_{813.99}$**409.7**$_1$(27$_2$) (M1+E2) $\delta=+0.25_7$, $\gamma_{537.15}$**686.5**$_2$(100$_7$) E2, γ_{0}**1224.0**$_{12}$(54$_5$)

1249.62$_{18}$, $(3/2^-)$, $\gamma_{537.15}$**713.4**(39), $\gamma_{421.76}$**827.8**$_2$(29$_5$), $\gamma_{117.54}$**1132.1**$_2$(100$_{11}$)

C **1406.50**$_{12}$, $17/2^+$, *0.96$_{10}$ ps*, $\gamma_{594.98}$**811.5**$_1$(100) E2

A **1532.03**$_{20}$, $15/2^+$, *1.3$_3$ ps*, $\gamma_{736.64}$**795.4**$_2$(100) E2, $\gamma_{594.98}$**937.4**

E **1566.18**$_{11}$, $13/2^-$, *0.80$_{21}$ ps*, $\gamma_{1223.69}$**342.5**$_1$(17$_2$) (M1+E2) $\delta=+0.06_6$, $\gamma_{813.99}$**752.2**$_1$(100$_7$) E2, $\gamma_{736.64}$**830.1**$_8$(18$_2$)

1708.5$_4$, $\gamma_{1406.50}$**302.0**$_3$, $\gamma_{594.98}$**1113.0**$_{11}$

1848.9$_6$, $\gamma_{1223.69}$**625.6**$_6$, $\gamma_{1137.4}$**710.9**$_7$

1955.6$_4$, $^{(-)}$, $\gamma_{436.53}$**1519.1**$_3$(100)

D **2010.61**$_{12}$, $15/2^-$, *0.97$_{35}$ ps*, $\gamma_{1566.18}$**444.4**$_1$(18$_2$) (M1+E2) $\delta=+0.06_8$, $\gamma_{1223.69}$**786.9**$_1$(100$_8$) E2, $\gamma_{594.98}$**1415.0**$_{14}$(80$_{12}$)

2083.12$_{18}$, $(3/2^-)$, $\gamma_{722.28}$**1361.1**$_3$(29$_6$), $\gamma_{537.15}$**1546.8**$_4$(43$_9$), $\gamma_{421.76}$**1661.3**$_3$(100$_{11}$), $\gamma_{331.7}$**1751.3**$_4$(< 29), $\gamma_{166.98}$**1915.8**$_3$(37$_{11}$), $\gamma_{117.54}$**1964.9**$_5$(94$_{11}$), $\gamma_{61.98}$**2020.8**$_5$(86$_{11}$)

2136.99$_{21}$, $^{(-)}$, $\gamma_{642.6}$**1494.3**$_2$(54$_8$), $\gamma_{537.15}$**1600.5**$_3$(54$_6$), $\gamma_{436.53}$**1699.9**$_5$(28$_4$), $\gamma_{421.76}$**1714.8**$_4$(< 20), $\gamma_{61.98}$**2074.8**$_4$(100$_{10}$)

2145.1$_7$, $\gamma_{1532.03}$**613.1**$_6$(100)

2259.9$_4$, $^{(-)}$, $\gamma_{421.76}$**1838.1**$_7$(100$_{25}$), $\gamma_{117.54}$**2142.4**$_4$(100$_{25}$)

C **2371.05**$_{23}$, $21/2^+$, *0.59$_{10}$ ps*, $\gamma_{1406.50}$**964.5**$_2$(100) E2

E **2405.85**$_{13}$, $17/2^-$, *1.0$_2$ ps*, $\gamma_{2010.61}$**395.2**$_1$(15$_2$) (M1+E2), $\gamma_{1566.18}$**839.7**$_1$(100$_8$) E2

A **2429.5**$_4$, $19/2^+$, *0.76$_{14}$ ps*, $\gamma_{1532.03}$**897.5**$_3$(100$_8$) E2, $\gamma_{1406.50}$**1024.0**(9$_4$)

2551.9$_{12}$, $\gamma_{1848.9}$**703**(100)

F **2559.55**$_{16}$, $17/2^-$, *46$_4$ ps*, $\gamma_{2405.85}$**153.7**$_2$(9$_1$), $\gamma_{2010.61}$**548.9**$_2$(36$_3$) (M1+E2) $\delta=-5.0_{15}$, $\gamma_{1566.18}$**993.4**$_2$(100$_8$) E2

2738.1$_6$, $^{(-)}$, $\gamma_{421.76}$**2316.3**$_5$

D **2822.74**$_{21}$, $(19/2^-)$, *3.1$_3$ ps*, $\gamma_{2405.85}$**417.0**$_4$(13$_1$), $\gamma_{2010.61}$**812.2**$_3$(100$_{11}$), $\gamma_{1406.50}$**1416.1**$_3$(83$_{15}$)

H **2887.84**$_{19}$, $19/2^-$, *3.9$_8$ ps*, $\gamma_{2559.55}$**328.3**$_1$(100) (M1+E2) $\delta=-0.24_6$

2937.6$_6$, $\gamma_{2371.05}$**566.6**$_6$(13$_1$), $\gamma_{1406.50}$**1531.0**$_{15}$(100)

G **3308.14**$_{21}$, $21/2^-$, $\gamma_{2887.84}$**420.3**$_1$(100) (M1+E2) $\delta=-1.8_4$

E **3314.57**$_{17}$, $(21/2^-)$, $\gamma_{2822.74}$**492.4**(13), $\gamma_{2405.85}$**908.7**$_1$(100$_{10}$) (E2)

A **3397.1**$_4$, $23/2^+$, *0.43$^{11}_{9}$ ps*, $\gamma_{2429.5}$**967.7**$_2$(100$_{12}$), $\gamma_{2371.05}$**1025.2**(8.7)

3420.1$_{15}$, $\gamma_{2551.9}$**868.2**$_9$(100)

C **3450.6**$_3$, $25/2^+$, $\gamma_{2371.05}$**1079.5**$_2$(100$_5$) E2

D **3731.3**$_7$, $(23/2^-)$, $\gamma_{2822.74}$**908.1**$_9$(100$_{17}$), $\gamma_{2371.05}$**1361**(23$_3$)

H **3830.34**$_{23}$, $(23/2^-)$, *0.91$^{23}_{25}$ ps*, $\gamma_{3308.14}$**522.2**$_1$(100$_9$) (M1+E2) $\delta=-0.8_2$, $\gamma_{2887.84}$**942.5**$_2$(81$_7$) E2

3916.9$_6$, $\gamma_{3450.6}$**466.3**$_5$(100$_{25}$)

4177.2$_8$, $\gamma_{3450.6}$**726.6**$_7$(100$_7$)

E **4340.6**$_4$, $(25/2^-)$, *0.34$^{8}_{4}$ ps*, $\gamma_{3314.57}$**1026.0**$_3$(100$_9$) E2

G **4385.8**$_6$, $(25/2^-)$, *0.48$^{12}_{18}$ ps*, $\gamma_{3830.34}$**555.7**$_6$(61$_7$), $\gamma_{3308.14}$**1077.6**$_{11}$(100$_{14}$) E2

A **4421.9**$_5$, $(27/2^+)$, $\gamma_{3397.1}$**1024.8**$_3$(100)

4472.8$_{19}$, $\gamma_{3420.1}$**1052.7**$_{11}$(100$_{10}$)

A **4488.1**$_7$, $27/2^+$, *0.20$^{6}_{8}$ ps*, $\gamma_{3450.6}$**1037.0**(18$_6$), $\gamma_{3397.1}$**1092.1**(100$_{12}$) E2

C **4643.6**$_5$, $29/2^+$, *0.19$^{4}_{3}$ ps*, $\gamma_{3450.6}$**1192.9**$_3$(100$_6$) E2

D **4796.3**$_{10}$, $(27/2^-)$, $\gamma_{3731.3}$**1065.3**$_{17}$(100$_8$), $\gamma_{3450.6}$**1345.6**

H **4992.3**$_7$, $(27/2^-)$, $\gamma_{4385.8}$**606.6**$_6$(32$_3$), $\gamma_{3830.34}$**1161.7**$_{12}$(100$_{13}$)

5176.6$_7$, $\gamma_{4643.6}$**533.0**$_5$(100$_{11}$)

5244.0$_{19}$, $\gamma_{3450.6}$**1793.4**$_{18}$(100$_{10}$)

5346.6$_9$, $\gamma_{4643.6}$**703.0**$_7$(100)

E **5502.3**$_{10}$, $(29/2^-)$, *0.19$^{3}_{6}$ ps*, $\gamma_{4340.6}$**1161.3**(100) E2

G **5562.3**$_{11}$, $(29/2^-)$, $\gamma_{4385.8}$**1177.0**$_{12}$(100)

5565$_{12}$, $\gamma_{4472.8}$**1092**$_{11}$(100)

5669$_5$, $\gamma_{5176.6}$**492**$_5$(100)

A **5747.5**$_8$, $(31/2^+)$, *0.20$^{8}_{7}$ ps*, $\gamma_{4643.6}$**1103.1**(8$_2$), $\gamma_{4488.1}$**1259.9**(100$_{14}$) E2

D **5950.3**$_{15}$, $(31/2^-)$, $\gamma_{4796.3}$**1154.0**$_{12}$(100)

C **5983.5**$_7$, $33/2^+$, *0.22$^{9}_{7}$ ps*, $\gamma_{4643.6}$**1340.0**$_5$(100) E2

H **6334.4**$_{13}$, $(31/2^-)$, *0.26 ps*, $\gamma_{4992.3}$**1342**(100) E2

E **6676.5**$_{14}$, $(33/2^-)$, *0.46 ps*, $\gamma_{5502.3}$**1174.2**(100) E2

F **6780.9**$_{11}$, $(33/2^-)$, *0.13$^{6}_{3}$ ps*, $\gamma_{5562.3}$**1219** E2, $\gamma_{5502.3}$**1278.2**(100$_{21}$)

G **6782.3**$_{15}$, $(33/2^-)$, $\gamma_{5562.3}$**1220**$_1$

A **7179.0**$_{10}$, $(35/2^+)$, *<0.24 ps*, $\gamma_{5983.5}$**1195.7**, $\gamma_{5747.5}$**1431.2**(100$_{20}$) E2

D **7238.5**$_{20}$, $(35/2^-)$, $\gamma_{5950.3}$**1288.2**$_{13}$(100)

7450.8$_{16}$, $\gamma_{6676.5}$**774.3**$_8$(100)

C **7468.3**$_{10}$, $37/2^+$, *0.05$^{3}_{2}$ ps*, $\gamma_{5983.5}$**1484.8**$_7$(100) E2

H **7819.4**$_{16}$, $(35/2^-)$, $\gamma_{6334.4}$**1485**

E **7921.2**$_{17}$, $(37/2^-)$, $\gamma_{6676.5}$**1244.7**(100)

G **8070.3**$_{18}$, $(37/2^-)$, *0.28 ps*, $\gamma_{6782.3}$**1288** E2

F **8108.9**$_{15}$, $(37/2^-)$, $\gamma_{6780.9}$**1328.0**(100)

8442.1$_{12}$, $\gamma_{5983.5}$**2458.6**(100)

D **8709.2**$_{25}$, $(39/2^-)$, $\gamma_{7238.5}$**1470.6**$_{15}$(100)

A **8712.9**$_{14}$, $(39/2^+)$, $\gamma_{7179.0}$**1533.9**(100)

C **9072.3**$_{22}$, $41/2^+$, *0.014$^{55}_{7}$ ps*, $\gamma_{7468.3}$**1604**$_2$(100) E2

E **9334.4**$_{20}$, $(41/2^-)$, $\gamma_{7921.2}$**1413.2**(100)

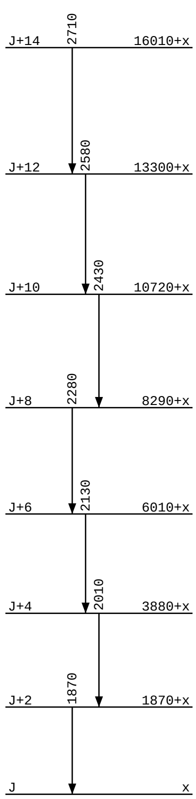
9597.9$_{14}$, $\gamma_{7468.3}$**2129.6**(100)

F **9639.9**$_{18}$, $(41/2^-)$, $\gamma_{8108.9}$**1531**(100)

10001.4$_{14}$, $\gamma_{7468.3}$**2533**

10360.4$_{17}$, $(43/2^+)$, $\gamma_{8712.9}$**1647.5**(100)

10396$_3$, $(43/2^-)$, $\gamma_{\mathbf{8709.2}}$**1687**
10452$_3$, $(43/2^-)$, $\gamma_{\mathbf{8709.2}}$**1743**
C **10826.2**$_{25}$, $45/2^+$, *0.014$^{55}_{7}$ ps*, $\gamma_{\mathbf{9072.3}}$**1753.9**(100) E2
E **10929.0**$_{22}$, $(45/2^-)$, $\gamma_{\mathbf{9334.4}}$**1594.6**(100)
F **11267**(?), $(45/2^-)$, $\gamma_{\mathbf{9639.9}}$**1627**(?)
A **12245.3**$_{20}$, $(47/2^+)$, $\gamma_{\mathbf{10360.4}}$**1884.9**(100)
E **12728.3**$_{25}$, $(49/2^-)$, $\gamma_{\mathbf{10929.0}}$**1799.2**(100)
C **12792**$_3$, $(49/2^+)$, *0.007$^{35}_{7}$ ps*, $\gamma_{\mathbf{10826.2}}$**1965.7**(100) E2
13024$_3$, $47/2^+$, $\gamma_{\mathbf{10826.2}}$**2198**(100)
B **13038**$_3$, $(47/2^+)$, $\gamma_{\mathbf{10826.2}}$**2212**(100)
A **14029.7**$_{22}$, $(51/2^+)$, $\gamma_{\mathbf{12245.3}}$**1784.4**(100)
E **14769**$_3$, $(53/2^-)$, $\gamma_{\mathbf{12728.3}}$**2041**(100)
C **14886**$_3$, $(53/2^+)$, $\gamma_{\mathbf{12792}}$**2093.9**(100)
B **14951**$_3$, $(51/2^+)$, $\gamma_{\mathbf{13038}}$**1913**(50), $\gamma_{\mathbf{12792}}$**2159**(100)
B **17105**$_3$, $(55/2^+)$, $\gamma_{\mathbf{14951}}$**2154**(100)
B **19470**$_3$, $(59/2^+)$, $\gamma_{\mathbf{17105}}$**2365**(100)
I **x**, J
I **1870+x**, $J+2$, $\gamma_{\mathbf{x}}$**1870**
I **3880+x**, $J+4$, $\gamma_{\mathbf{1870+x}}$**2010**
I **6010+x**, $J+6$, $\gamma_{\mathbf{3880+x}}$**2130**
I **8290+x**, $J+8$, $\gamma_{\mathbf{6010+x}}$**2280**
I **10720+x**, $J+10$, $\gamma_{\mathbf{8290+x}}$**2430**
I **13300+x**, $J+12$, $\gamma_{\mathbf{10720+x}}$**2580**
I **16010+x**, $J+14$, $\gamma_{\mathbf{13300+x}}$**2710**



SD band
(1999Le56)
$^{83}_{39}Y_{44}$

$^{83}_{40}Zr_{43}$

S_n: 1.034x10^4$_{52}$, S_p: 5.56x10^3$_{14}$

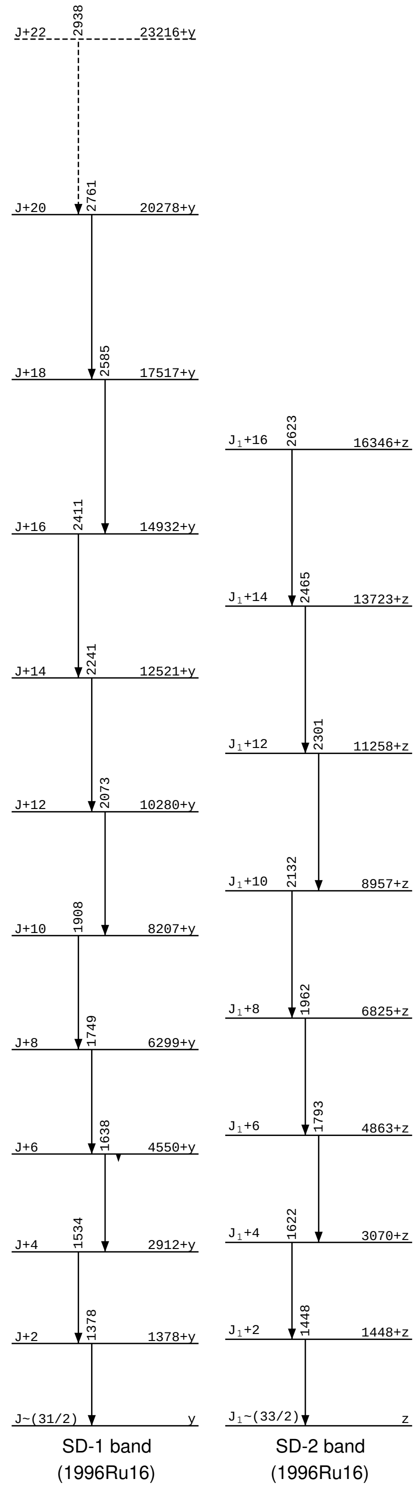
Nuclear Bands

A 1/2[301]
B 5/2[422], α=+1/2
C 5/2[422], α=-1/2
D 5/2[303], α=+1/2
E 5/2[303], α=-1/2
F 3/2[301]
G Band structure, α=-1/2
H Band structure, α=+1/2
I SD-1 band (1996Ru16)
Q_0=5.0$_{2.0}$
J SD-2 band (1996Ru16)

Levels and γ-ray branchings:

A **0**, $(1/2^-)$, *41.6$_{24}$ s*, %ε+%β$^+$=100, %εp=?
D **52.72**$_5$, $(5/2^-)$, *0.53$_{12}$ μs*, $\gamma_{\mathbf{0}}$**52.70**$_5$(100) E2
C **77.04**$_7$, $(7/2^+)$, *132$_{55}$ ns*, $\gamma_{\mathbf{52.72}}$**24.30**$_5$(100) E1
A **129.1**$_1$, $(3/2^-)$, $\gamma_{\mathbf{0}}$**129.5**$_1$(100) M1+E2 $\delta=0.17_7$
B **138.8**$_1$, $(9/2^+)$, $\gamma_{\mathbf{77.04}}$**61.7**$_1$(100) M1+E2 $\delta=0.05_0$
F **328.5**$_2$, $(3/2^-)$, $\gamma_{\mathbf{129.1}}$**199.4**$_3$(<100), $\gamma_{\mathbf{0}}$**328.4**$_2$(100_{10})
E **338.5**$_1$, $(7/2^-)$, *50$_4$ ps*, $\gamma_{\mathbf{129.1}}$**209.4**$_2$(<6), $\gamma_{\mathbf{77.04}}$**261.3**$_1$(15.8_{11}) E1, $\gamma_{\mathbf{52.72}}$**285.8**$_1$(100_8) M1+E2 $\delta=-0.51_0$
A **372.6**$_1$, $(5/2^-)$, $\gamma_{\mathbf{129.1}}$**243.1**$_1$(100_8), $\gamma_{\mathbf{0}}$**372.8**$_2$(74_5)
580.0$_3$, $\gamma_{\mathbf{0}}$**580.0**$_3$(100)
A **582.7**$_1$, $(7/2^-)$, $\gamma_{\mathbf{372.6}}$**210.1**$_1$(26_3), $\gamma_{\mathbf{129.1}}$**453.3**$_2$(100_7) E2
F **623.9**$_3$, $(5/2^-)$, $\gamma_{\mathbf{328.5}}$**295.4**$_3$, $\gamma_{\mathbf{129.1}}$**492.5**$_5$
D **680.3**$_2$, $(9/2^-)$, *4.2$_8$ ps*, $\gamma_{\mathbf{338.5}}$**341.7**$_2$(13.9_{11}) M1+E2 $\delta\le0.3$, $\gamma_{\mathbf{52.72}}$**627.6**$_3$(100_7) E2
C **769.0**$_3$, $(11/2^+)$, *2.0$_3$ ps*, $\gamma_{\mathbf{138.8}}$**630.0**$_4$(100_7) M1+E2 $\delta=0.11_0$, $\gamma_{\mathbf{77.04}}$**692.3**$_5$(29.3_{21})
B **880.3**$_3$, $(13/2^+)$, *2.3$_3$ ps*, $\gamma_{\mathbf{769.0}}$**111.3**$_2$(<2) M1+E2 $\delta=0.04_0$, $\gamma_{\mathbf{138.8}}$**741.6**$_4$(100_5) E2
A **983.2**$_2$, $(9/2^-)$, $\gamma_{\mathbf{582.7}}$**400.6**$_3$(32.1_{25}), $\gamma_{\mathbf{372.6}}$**610.5**$_3$(100_7) E2
E **1013.4**$_2$, $(11/2^-)$, *1.9$_3$ ps*, $\gamma_{\mathbf{680.3}}$**333.2**$_2$(<6), $\gamma_{\mathbf{582.7}}$**430.9**$_2$(8.0_6), $\gamma_{\mathbf{338.5}}$**674.7**$_3$(100_9) E2
A **1262.2**$_3$, $(11/2^-)$, *1.7$_4$ ps*, $\gamma_{\mathbf{983.2}}$**279.0**$_3$(<16), $\gamma_{\mathbf{582.7}}$**679.4**$_4$(100_8)
1345.8$_4$, $(11/2^+)$, $\gamma_{\mathbf{880.3}}$**465.5**$_3$(100) (M1+E2) $\delta\le0.3$
1384.2$_6$, $\gamma_{\mathbf{580.0}}$**804.2**$_5$(100)
D **1475.8**$_3$, $(13/2^-)$, *0.76$_{21}$ ps*, $\gamma_{\mathbf{1013.4}}$**462.6**$_4$(<8), $\gamma_{\mathbf{680.3}}$**795.3**$_4$(100_{11}) E2
1591.3$_4$, $\gamma_{\mathbf{580.0}}$**1011.3**$_3$(100)
C **1662.9**$_4$, $(15/2^+)$, $\gamma_{\mathbf{880.3}}$**782.4**$_4$(99_8) M1+E2 $\delta\le0.3$, $\gamma_{\mathbf{769.0}}$**893.9**$_5$(100_{12})
1733.7$_6$, $\gamma_{\mathbf{1384.2}}$**349.5**$_2$(100)
A **1771.4**$_4$, $(13/2^-)$, $\gamma_{\mathbf{1262.2}}$**509.1**$_4$(<44), $\gamma_{\mathbf{983.2}}$**788.4**$_5$(100_9)
B **1817.4**$_4$, $(17/2^+)$, *0.42$_{14}$ ps*, $\gamma_{\mathbf{1662.9}}$**154.5**$_3$(<2.8), $\gamma_{\mathbf{880.3}}$**937.2**$_5$(100_7) E2
E **1830.0**$_4$, $(15/2^-)$, *0.62$_{21}$ ps*, $\gamma_{\mathbf{1013.4}}$**816.6**$_4$(100) E2
2021.3$_8$, $\gamma_{\mathbf{1384.2}}$**637.1**$_5$(100)
A **2126.2**$_6$, $(15/2^-)$, $\gamma_{\mathbf{1262.2}}$**864.0**$_5$(100) E2
2159.7$_7$, $\gamma_{\mathbf{1733.7}}$**426.0**$_3$(100)
2258.3$_8$, $\gamma_{\mathbf{1013.4}}$**1244.9**$_8$(100)
2359.6$_8$, $\gamma_{\mathbf{1591.3}}$**768.3**$_6$(100)
D **2398.3**$_5$, $(17/2^-)$, *0.83$_{21}$ ps*, $\gamma_{\mathbf{1475.8}}$**922.3**$_5$(100) E2
2494.6$_7$, $(19/2^-)$, $\gamma_{\mathbf{1830.0}}$**664.6**$_5$(100)
A **2674.9**$_7$, $(17/2^-)$, $\gamma_{\mathbf{1771.4}}$**903.5**$_6$(100)
C **2708.4**$_5$, $(19/2^+)$, $\gamma_{\mathbf{1817.4}}$**890.5**$_6$(79_{13}), $\gamma_{\mathbf{1662.9}}$**1045.2**$_6$(100_{15})
E **2743.1**$_6$, $(19/2^-)$, *0.83$_{21}$ ps*, $\gamma_{\mathbf{1830.0}}$**913.2**$_5$(100) E2
B **2913.0**$_6$, $(21/2^+)$, *0.37$_6$ ps*, $\gamma_{\mathbf{2708.4}}$**204.5**$_2$(<3.4), $\gamma_{\mathbf{1817.4}}$**1096.4**$_6$(100_{10}) E2
2926$_1$, $\gamma_{\mathbf{1733.7}}$**1192.4**$_{10}$(100)
A **3095.5**$_9$, $(19/2^-)$, $\gamma_{\mathbf{2126.2}}$**969.3**$_6$(100)
G **3138**$_1$, $(19/2^-)$, $\gamma_{\mathbf{2743.1}}$**395**, $\gamma_{\mathbf{1830.0}}$**1307**
3304.9$_6$, $(21/2^+)$, $\gamma_{\mathbf{2913.0}}$**391.8**$_2$, $\gamma_{\mathbf{2708.4}}$**597**
D **3374.2**$_6$, $(21/2^-)$, $\gamma_{\mathbf{2398.3}}$**975.7**$_6$(100) (E2)
3587.0$_6$, $\gamma_{\mathbf{2743.1}}$**844.1**$_7$(100)
H **3625.3**$_6$, $(21/2^-)$, $\gamma_{\mathbf{2398.3}}$**1227.2**$_7$(100)
A **3689**$_1$, $(21/2^-)$, $\gamma_{\mathbf{2674.9}}$**1014.0**$_7$(100)
C **3726.1**$_6$, $(23/2^+)$, $\gamma_{\mathbf{3304.9}}$**421.0**$_3$(77_7) (M1+E2) $\delta\le0.3$, $\gamma_{\mathbf{2913.0}}$**813.5**$_5$(83_7), $\gamma_{\mathbf{2708.4}}$**1018.8**$_7$(100_{13})
E **3730.9**$_7$, $(23/2^-)$, $\gamma_{\mathbf{2743.1}}$**987.9**$_5$(100)
B **3955.3**$_7$, $(25/2^+)$, *0.40$_6$ ps*, $\gamma_{\mathbf{3726.1}}$**230.4**$_2$(6.0_5) M1+E2 $\delta\le0.3$, $\gamma_{\mathbf{2913.0}}$**1042.1**$_5$(100_{10}) E2
G **3981.7**$_6$, $(23/2^-)$, $\gamma_{\mathbf{3625.3}}$**356.4**$_3$(<86), $\gamma_{\mathbf{3587.0}}$**394.7**$_3$(<86), $\gamma_{\mathbf{3374.2}}$**607.5**$_5$(100_{13}), $\gamma_{\mathbf{3138}}$**844**, $\gamma_{\mathbf{2743.1}}$**1239**
4092.0$_8$, $(23/2^+)$, $\gamma_{\mathbf{3955.3}}$**136.9**$_2$, $\gamma_{\mathbf{3726.1}}$**365.2**$_3$ M1+E2 $\delta\le0.3$
A **4188**$_1$, $(23/2^-)$, $\gamma_{\mathbf{3095.5}}$**1092.3**$_7$(100)
4283.0$_9$, $(25/2^+)$, $\gamma_{\mathbf{3955.3}}$**331**(?), $\gamma_{\mathbf{2913.0}}$**1370.0**$_7$(100) (E2)
D **4431.4**$_8$, $(25/2^-)$, $\gamma_{\mathbf{3374.2}}$**1056.9**$_6$(100)
H **4469.7**$_7$, $(25/2^-)$, $\gamma_{\mathbf{3981.7}}$**488.2**$_5$(<80), $\gamma_{\mathbf{3730.9}}$**738.6**$_5$(100_8)
C **4767**$_1$, $(27/2^+)$, $\gamma_{\mathbf{3726.1}}$**1041**
E **4839.1**$_8$, $(27/2^-)$, $\gamma_{\mathbf{3730.9}}$**1108.4**$_6$(100)
B **4904.3**$_9$, $(29/2^+)$, *0.35$_7$ ps*, $\gamma_{\mathbf{3955.3}}$**949.0**$_5$(100) E2
G **4943.7**$_8$, $(27/2^-)$, $\gamma_{\mathbf{4431.4}}$**512.2**$_5$(100_9), $\gamma_{\mathbf{3981.7}}$**961.5**$_9$(71_9)
A **5348**$_2$, $(27/2^-)$, $\gamma_{\mathbf{4188}}$**1160.2**$_8$(100)
H **5460.4**$_8$, $(29/2^-)$, $\gamma_{\mathbf{4943.7}}$**516.2**$_6$(<100), $\gamma_{\mathbf{4839.1}}$**621.5**$_5$(100_{10}), $\gamma_{\mathbf{4469.7}}$**991.4**$_{11}$(<100)
5626$_2$(?), $\gamma_{\mathbf{4283.0}}$**1343**(?)
D **5645**$_1$, $(29/2^-)$, $\gamma_{\mathbf{4431.4}}$**1213.9**$_7$(100) E2
C **5934**$_1$, $(31/2^+)$, $\gamma_{\mathbf{4767}}$**1167**
G **6022**$_1$, $(31/2^-)$, $\gamma_{\mathbf{5645}}$**376**, $\gamma_{\mathbf{4943.7}}$**1079**
B **6028**$_1$, $(33/2^+)$, $\gamma_{\mathbf{4904.3}}$**1123.8**$_6$(100) E2
E **6074**$_1$, $(31/2^-)$, $\gamma_{\mathbf{4839.1}}$**1234.6**$_7$(100) E2
H **6570**$_2$, $(33/2^-)$, $\gamma_{\mathbf{6022}}$**548**(?), $\gamma_{\mathbf{5460.4}}$**1111**
D **6949**$_1$, $(33/2^-)$, $\gamma_{\mathbf{5645}}$**1304**
C **7195**$_2$, $(35/2^+)$, $\gamma_{\mathbf{5934}}$**1261**
G **7235**$_2$, $(35/2^-)$, $\gamma_{\mathbf{6022}}$**1213**
B **7325**$_1$, $(37/2^+)$, $\gamma_{\mathbf{6028}}$**1297.2**$_7$(100) E2
E **7380**$_1$, $(35/2^-)$, $\gamma_{\mathbf{6074}}$**1306.7**$_7$(100) E2
7628$_2$, $(37/2^+)$, $\gamma_{\mathbf{6028}}$**1600**
H **7817**$_2$, $(37/2^-)$, $\gamma_{\mathbf{6570}}$**1247**
D **8275**$_2$, $(37/2^-)$, $\gamma_{\mathbf{6949}}$**1326**
C **8586**$_2$, $(39/2^+)$, $\gamma_{\mathbf{7195}}$**1391**
G **8611**$_2$, $(39/2^-)$, $\gamma_{\mathbf{7235}}$**1376**
E **8758**$_2$, $(39/2^-)$, $\gamma_{\mathbf{7380}}$**1377.5**$_8$(100)
B **8812**$_2$, $(41/2^+)$, $\gamma_{\mathbf{7325}}$**1486.8**$_8$(100) E2
H **9229**$_2$, $(41/2^-)$, $\gamma_{\mathbf{7817}}$**1412**
D **9689**$_2$, $(41/2^-)$, $\gamma_{\mathbf{8275}}$**1414**
G **10137**$_2$, $(43/2^-)$, $\gamma_{\mathbf{8611}}$**1526**
C **10224**$_2$, $(43/2^+)$, $\gamma_{\mathbf{8586}}$**1638**
E **10310**$_2$, $(43/2^-)$, $\gamma_{\mathbf{8758}}$**1552**
B **10516**$_2$, $(45/2^+)$, $\gamma_{\mathbf{8812}}$**1704**
H **10810**$_2$, $(45/2^-)$, $\gamma_{\mathbf{9229}}$**1581**
G **11786**$_2$, $(47/2^-)$, $\gamma_{\mathbf{10137}}$**1649**
E **12080**$_2$(?), $(47/2^-)$, $\gamma_{\mathbf{10310}}$**1770**(?)
C **12087**$_2$, $(47/2^+)$, $\gamma_{\mathbf{10224}}$**1863**
B **12433**$_3$, $(49/2^+)$, $\gamma_{\mathbf{10516}}$**1917**
H **12582**$_3$(?), $(49/2^-)$, $\gamma_{\mathbf{10810}}$**1772**(?)
B **14510**$_3$, $(53/2^+)$, $\gamma_{\mathbf{12433}}$**2077**
B **16736**$_3$, $(57/2^+)$, $\gamma_{\mathbf{14510}}$**2226**
B **19217**$_3$(?), $(61/2^+)$, $\gamma_{\mathbf{16736}}$**2481**(?)
0+x
581+x, $\gamma_{\mathbf{0+x}}$**581**
1385+x, $\gamma_{\mathbf{581+x}}$**804**
2397+x(?), $\gamma_{\mathbf{1385+x}}$**1012**
3589+x(?), $\gamma_{\mathbf{2397+x}}$**1192**
3939+x, $\gamma_{\mathbf{3589+x}}$**350**
4365+x, $\gamma_{\mathbf{3939+x}}$**426**
I **y**, $J\approx(31/2)$
I **1378+y**, $J+2$, $\gamma_{\mathbf{y}}$**1378**(0.35_5)
1563+y, $J+2$
I **2912+y**, $J+4$, $\gamma_{\mathbf{1378+y}}$**1534**(0.80_{10})
2996+y, $J+4$, $\gamma_{\mathbf{1563+y}}$**1433**
I **4550+y**, $J+6$, $\gamma_{\mathbf{2996+y}}$**1554**, $\gamma_{\mathbf{2912+y}}$**1638**(1.05_{10})
I **6299+y**, $J+8$, $\gamma_{\mathbf{4550+y}}$**1749**(1.00_{10}) (Q)

I **8207+y**, $J+10$, γ_{6299+y}**1908**(1.00_{10}) (Q)
I **10280+y**, $J+12$, γ_{8207+y}**2073**(1.00_{10}) (Q)
I **12521+y**, $J+14$, $\gamma_{10280+y}$**2241**(0.85_{10}) (Q)
I **14932+y**, $J+16$, $\gamma_{12521+y}$**2411**(0.45_{10})
I **17517+y**, $J+18$, $\gamma_{14932+y}$**2585**(0.30_{5})
I **20278+y**, $J+20$, $\gamma_{17517+y}$**2761**(0.18_{5})
I **23216+y**(?), $J+22$, $\gamma_{20278+y}$**2938**(0.09_{3})(?)
J **z**, $J_1 \approx (33/2)$
J **1448+z**, J_1+2, γ_{z}**1448**(0.20_{5})
J **3070+z**, J_1+4, γ_{1448+z}**1622**(0.25_{5})
J **4863+z**, J_1+6, γ_{3070+z}**1793**(0.30_{5})
J **6825+z**, J_1+8, γ_{4863+z}**1962**(0.18_{5})
J **8957+z**, J_1+10, γ_{6825+z}**2132**(0.20_{5})
J **11258+z**, J_1+12, γ_{8957+z}**2301**(0.18_{5})
J **13723+z**, J_1+14, $\gamma_{11258+z}$**2465**(0.13_{5})
J **16346+z**, J_1+16, $\gamma_{13723+z}$**2623**(0.08_{3})



$^{83}_{40}Zr_{43}$

$^{84}_{40}Zr_{44}$

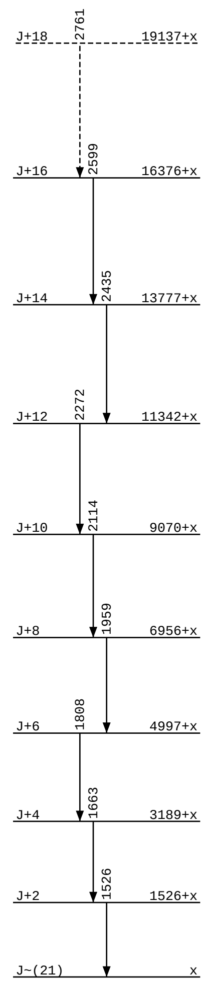
S_n: 13.1x10^{3}$_{SY}$, S_p: 6.4x10^{3}$_{SY}$

Nuclear Bands

A GS band
B Band structure
C Band structure
D Band structure
E Band structure
F SD band (1995Ji08,1999Le56)
Q_0=5.6$^{6}_{5}$

Levels and γ-ray branchings:

A **0**, 0^+, *25.9*$_7$ *min*, %ε+%β$^+$=100
A **540.0**$_3$, 2^+, *14.1*$_8$ *ps*, μ=+0.96$_{20}$, $\gamma_{\mathbf{0}}$**540.0**$_3$(100) E2
B **1119.1**$_4$, 2^+, $\gamma_{\mathbf{540.0}}$**579.1**$_5$ (M1+E2) $\delta=-0.03_1$, $\gamma_{\mathbf{0}}$**1119.1**$_5$
A **1263.0**$_4$, 4^+, *2.8*$_4$ *ps*, μ=+2.0$_{10}$, $\gamma_{\mathbf{540.0}}$**723.0**$_3$(100) E2
B **1575.2**$_5$, 4^+, $\gamma_{\mathbf{1119.1}}$**456.1**$_5$(17$_9$) (E2+M3) $\delta=+0.06_4$, $\gamma_{\mathbf{540.0}}$**1035.2**$_5$(100$_9$) (E2+M3) $\delta=+0.01_4$
A **2136.2**$_5$, 6^+, *1.83 ps*, μ=+3.3$_{41}$, $\gamma_{\mathbf{1263.0}}$**873.2**$_3$(100) E2
B **2335.6**$_7$, 6^+, $\gamma_{\mathbf{1575.2}}$**760.4**$_5$(100) (E2+M3) $\delta=-0.04_2$
2810.2$_{11}$, $\gamma_{\mathbf{1575.2}}$**1235**$_1$(100)
C **2825.1**$_5$, (5^-), *11*$_4$ *ps*, μ=+6.0$_{19}$, $\gamma_{\mathbf{1263.0}}$**1562.1**$_3$(100) (E1+M2) $\delta=+0.05_4$
3081.2$_{15}$, $\gamma_{\mathbf{2810.2}}$**271**$_1$(100)
A **3088.1**$_6$, 8^+, *1.25*$_7$ *ps*, μ=12$_5$, $\gamma_{\mathbf{2136.2}}$**952.0**$_3$(100)
B **3203.8**$_9$, 8^+, $\gamma_{\mathbf{2335.6}}$**868.2**$_5$(100) (E2+M3) $\delta=-0.02_4$
D **3313.3**$_8$, (6^-), $\gamma_{\mathbf{3088.1}}$**226**$_1$, $\gamma_{\mathbf{2825.1}}$**488**$_1$ (M1+E2) $\delta=+0.06_2$
C **3493.3**$_5$, (7^-), *5.4*$_{21}$ *ps*, $\gamma_{\mathbf{3088.1}}$**406**$_1$, $\gamma_{\mathbf{2825.1}}$**668.2**$_3$ E2, $\gamma_{\mathbf{2136.2}}$**1357.0**$_3$ (E1+M2) $\delta=+0.06_1$
D **4036.1**$_7$, (8^-), $\gamma_{\mathbf{3493.3}}$**542**$_1$, $\gamma_{\mathbf{3313.3}}$**723.0**$_5$ E2
A **4067.3**$_7$, 10^+, *0.53*$_3$ *ps*, μ=5$_8$, $\gamma_{\mathbf{3088.1}}$**979.2**$_3$(100) E2
B **4138.9**$_{10}$, 10^+, $\gamma_{\mathbf{3203.8}}$**935.1**$_5$(100) (E2+M3) $\delta=-0.03_1$
C **4378.4**$_6$, (9^-), $\gamma_{\mathbf{3493.3}}$**885.1**$_3$ E2, $\gamma_{\mathbf{3088.1}}$**1290**$_1$
E **4585.6**$_{11}$, (10^+), $\gamma_{\mathbf{4067.3}}$**519**$_1$(100)
D **4868.3**$_8$, (10^-), $\gamma_{\mathbf{4378.4}}$**490**$_1$, $\gamma_{\mathbf{4036.1}}$**832.1**$_3$ E2
A **5134.5**$_7$, 12^+, *0.60*$_3$ *ps*, μ=11$_8$, $\gamma_{\mathbf{4067.3}}$**1067.1**$_3$(100) E2
B **5152.9**$_{11}$, 12^+, $\gamma_{\mathbf{4138.9}}$**1014.0**$_5$(100)
C **5315.9**$_7$, (11^-), $\gamma_{\mathbf{4378.4}}$**937.5**$_3$(100) E2
E **5613.9**$_{11}$, (12^+), $\gamma_{\mathbf{4585.6}}$**1029**$_1$(100)
D **5783.9**$_8$, (12^-), $\gamma_{\mathbf{5315.9}}$**468**$_1$, $\gamma_{\mathbf{4868.3}}$**915.6**$_3$ E2
B **6251.0**$_{12}$, 14^+, $\gamma_{\mathbf{5152.9}}$**1098.1**$_5$(100)
A **6300.3**$_8$, 14^+, *0.340*$_{21}$ *ps*, μ=18$_7$, $\gamma_{\mathbf{5134.5}}$**1165.8**$_3$(100) E2
C **6324.1**$_7$, (13^-), $\gamma_{\mathbf{5315.9}}$**1008.2**$_3$(100) E2
E **6642.2**$_9$, (14^+), $\gamma_{\mathbf{5613.9}}$**1029**$_1$, $\gamma_{\mathbf{5134.5}}$**1507.5**$_5$
D **6794.9**$_8$, (14^-), $\gamma_{\mathbf{5783.9}}$**1011.0**$_3$(100) E2
E **7299.5**$_{10}$, (15^+), $\gamma_{\mathbf{6642.2}}$**657.3**$_5$(100)
C **7411.4**$_8$, (15^-), $\gamma_{\mathbf{6324.1}}$**1087.3**$_3$(100) E2
A **7496.5**$_8$, 16^+, *0.125*$_{14}$ *ps*, μ=+9.6$_{16}$, $\gamma_{\mathbf{6300.3}}$**1196.2**$_3$(100) E2
D **7928.0**$_9$, (16^-), $\gamma_{\mathbf{6794.9}}$**1133.1**$_3$(100)
E **8498.5**$_{14}$, (17^+), $\gamma_{\mathbf{7299.5}}$**1199**$_1$(100)
C **8608.3**$_9$, (17^-), $\gamma_{\mathbf{7411.4}}$**1196.9**$_3$(100)
A **8742.7**$_9$, 18^+, *0.111*$_7$ *ps*, $\gamma_{\mathbf{7496.5}}$**1246.2**$_3$(100) E2
D **9194.0**$_{10}$, (18^-), $\gamma_{\mathbf{7928.0}}$**1266.0**$_3$(100)
E **9920.5**$_{18}$, (19^+), $\gamma_{\mathbf{8498.5}}$**1422**$_1$(100)
C **9936.4**$_9$, (19^-), $\gamma_{\mathbf{8608.3}}$**1328.1**$_3$(100)
A **10174.7**$_{10}$, 20^+, *0.021*$_7$ *ps*, $\gamma_{\mathbf{8742.7}}$**1432.0**$_3$(100) E2
D **10594.9**$_{10}$, (20^-), $\gamma_{\mathbf{9194.0}}$**1400.9**$_3$(100)
C **11413.4**$_{14}$, (21^-), $\gamma_{\mathbf{9936.4}}$**1477**$_1$(100)
E **11555.5**$_{20}$, (21^+), $\gamma_{\mathbf{9920.5}}$**1635**$_1$(100)
A **11820.0**$_{11}$, 22^+, *0.014*$_7$ *ps*, $\gamma_{\mathbf{10174.7}}$**1645.3**$_5$(100) E2
D **12161.9**$_{14}$, (22^-), $\gamma_{\mathbf{10594.9}}$**1567**$_1$(100)
C **13078.5**$_{17}$, (23^-), $\gamma_{\mathbf{11413.4}}$**1665**$_1$(100)
A **13665.0**$_{15}$, 24^+, $<$*0.007 ps*, $\gamma_{\mathbf{11820.0}}$**1845**$_1$(100) E2
D **13969.9**$_{17}$, (24^-), $\gamma_{\mathbf{12161.9}}$**1808**$_1$(100)
C **14938.5**$_{20}$, (25^-), $\gamma_{\mathbf{13078.5}}$**1860**$_1$(100)
A **15660.1**$_{17}$, 26^+, $\gamma_{\mathbf{13665.0}}$**1995**$_1$(100)
E **15947.1**$_{17}$, (26^+), $\gamma_{\mathbf{13665.0}}$**2282**$_1$
D **16056.0**$_{20}$, (26^-), $\gamma_{\mathbf{13969.9}}$**2086**$_1$(100)
A **17806.1**$_{20}$, (28^+), $\gamma_{\mathbf{15660.1}}$**2146**$_1$
E **18032.1**$_{18}$, (28^+), $\gamma_{\mathbf{15947.1}}$**2085**$_1$(100), $\gamma_{\mathbf{15660.1}}$**2372**$_1$(100)
D **18461.0**$_{23}$, (28^-), $\gamma_{\mathbf{16056.0}}$**2405**$_1$(100)
A **20283.1**$_{22}$, (30^+), $\gamma_{\mathbf{17806.1}}$**2477**$_1$(100)
E **20618.1**$_{21}$, (30^+), $\gamma_{\mathbf{18032.1}}$**2586**$_1$
E **23235.2**$_{23}$, (32^+), $\gamma_{\mathbf{20618.1}}$**2617**$_1$
F **x**, $J\approx(21)$
F **1526+x**, $J+2$, $\gamma_{\mathbf{x}}$**1526**$_1$(0.55$_5$)
F **3189+x**, $J+4$, $\gamma_{\mathbf{1526+x}}$**1663**$_1$(1.00$_5$)
F **4997+x**, $J+6$, $\gamma_{\mathbf{3189+x}}$**1808**$_1$(1.00$_5$)
F **6956+x**, $J+8$, $\gamma_{\mathbf{4997+x}}$**1959**$_1$(1.00$_5$)
F **9070+x**, $J+10$, $\gamma_{\mathbf{6956+x}}$**2114**$_1$(1.00$_5$)
F **11342+x**, $J+12$, $\gamma_{\mathbf{9070+x}}$**2272**$_1$(0.90$_5$)
F **13777+x**, $J+14$, $\gamma_{\mathbf{11342+x}}$**2435**$_1$(0.5$_1$)
F **16376+x**, $J+16$, $\gamma_{\mathbf{13777+x}}$**2599**$_1$(0.3$_1$)
F **19137+x**(?), $J+18$, $\gamma_{\mathbf{16376+x}}$**2761**$_1$(0.06$_5$)(?)



SD band
(1995Ji08,1999Le56)
$^{84}_{40}Zr_{44}$

$^{86}_{40}$Zr$_{46}$

S_n: 1.272x10^4$_{11}$, S_p: 7.25x10^3$_4$

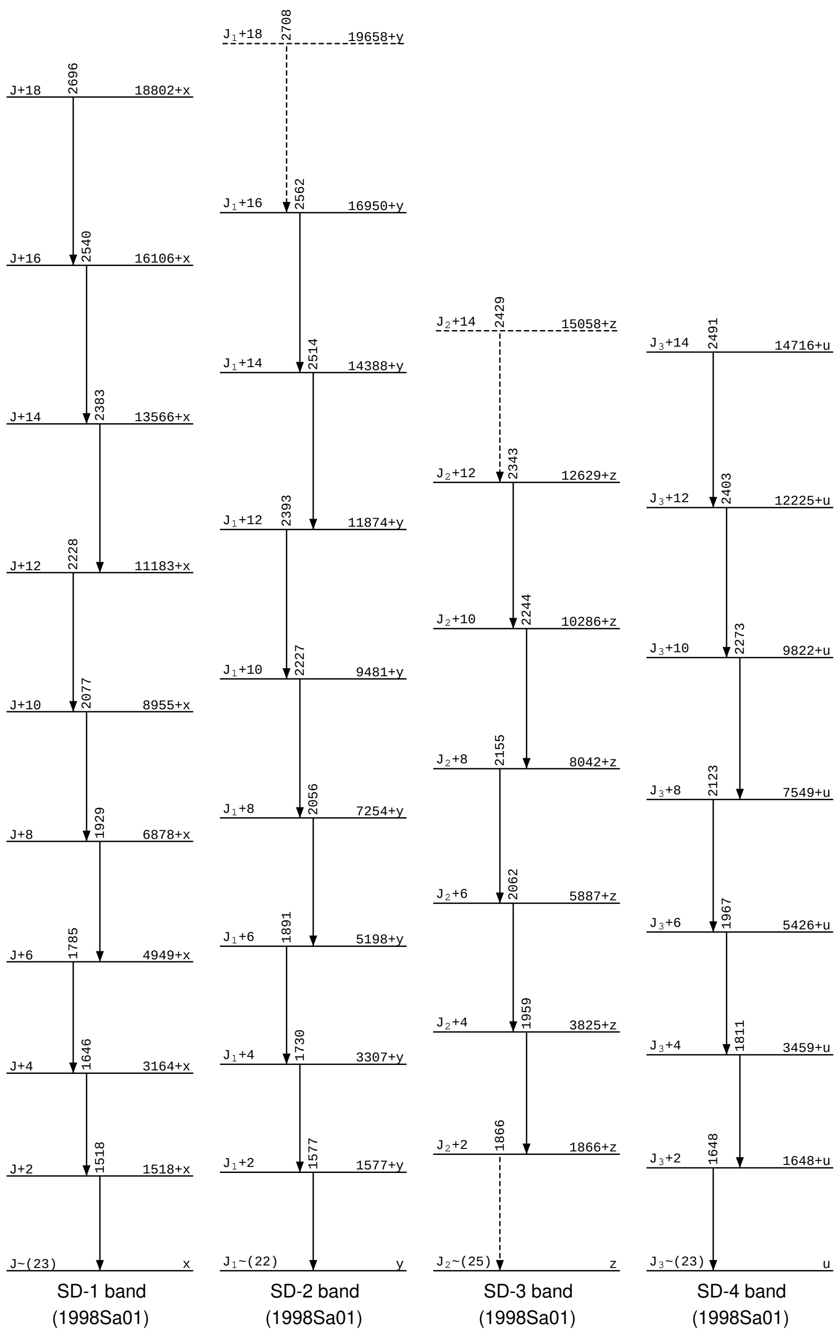
Nuclear Bands

A γ sequence based on GS
B Band based on 8^+
C γ sequence
D γ sequence
E γ sequence
F SD-1 band (1998Sa01)
Q_0=4.6$^{7}_{6}$
G SD-2 band (1998Sa01)
Q_0=4.0$_3$
H SD-3 band (1998Sa01)
Q_0=5.4$^{22}_{11}$
I SD-4 band (1998Sa01)
Q_0=3.8$^{6}_{5}$

Levels and γ-ray branchings:

A **0**, 0^+, *16.5$_1$ h*, %ε+%β^+=100
A **751.75**$_3$, 2^+, *7.3$_{14}$ ps*, $\gamma_{\mathbf{0}}$**751.74**$_3$(100) E2
1421.77$_5$, (2^+), $\gamma_{\mathbf{751.75}}$**670.01**$_4$(100$_5$), $\gamma_{\mathbf{0}}$**1421.66**$_{20}$(15.1$_{20}$)
A **1666.57**$_6$, 4^+, *6.0$_{27}$ ps*, $\gamma_{\mathbf{751.75}}$**914.81**$_5$(100) E2
2041.90$_9$, $(3^-,4^+)$, $\gamma_{\mathbf{1421.77}}$**620.11**$_9$(100$_5$), $\gamma_{\mathbf{751.75}}$**1290.3**$_3$(27$_4$)
2343.74$_7$, (4^+), $\gamma_{\mathbf{1666.57}}$**677.20**$_{10}$(40$_6$), $\gamma_{\mathbf{1421.77}}$**921.96**$_6$(100$_8$)
2566.1$_3$(?), $\gamma_{\mathbf{1421.77}}$**1144.3**$_3$(100)(?)
A **2669.88**$_7$, 6^+, *8$_4$ ps*, $\gamma_{\mathbf{1666.57}}$**1003.24**$_5$(100) E2
2704.9$_{10}$(?), $\gamma_{\mathbf{2041.90}}$**663**$_1$(100)(?)
D **2705.62**$_7$, 5^-, *6.7$_{12}$ ps*, $\gamma_{\mathbf{2343.74}}$**362**$_1$(?), $\gamma_{\mathbf{1666.57}}$**1039.04**$_3$(100)
3016.87$_7$ *<15 ps*, $\gamma_{\mathbf{2705.62}}$**311.25**$_3$(100)
3029.49$_{11}$, $\gamma_{\mathbf{2041.90}}$**987.57**$_9$(100)
3029.64$_7$, $(5,6^+)$, $\gamma_{\mathbf{2669.88}}$**359.72**$_4$(18.5$_{19}$), $\gamma_{\mathbf{1666.57}}$**1363.13**$_6$(100$_5$)
3254.38$_8$, $(5^+,6^+)$, $\gamma_{\mathbf{2669.88}}$**584.52**$_6$(100$_3$), $\gamma_{\mathbf{1666.57}}$**1587.75**$_{10}$(90$_6$)
E **3271.97**$_8$, 6^-, $\gamma_{\mathbf{2705.62}}$**566.35**$_4$(100)
A **3298.44**$_8$, 8^+, *62$_5$ ps*, μ=-0.32$_{64}$, $\gamma_{\mathbf{2669.88}}$**628.55**$_4$(100) E2
3417.65$_{10}$, $(5^+,6^+)$, $\gamma_{\mathbf{3029.49}}$**388.13**$_{15}$(83$_8$), $\gamma_{\mathbf{2669.88}}$**747.76**$_9$(100$_9$), $\gamma_{\mathbf{1666.57}}$**1751.14**$_{20}$(64$_5$)
D **3423.32**$_8$, 7^-, *8$_1$ ps*, $\gamma_{\mathbf{2705.62}}$**717.70**$_4$(100) E2, $\gamma_{\mathbf{2669.88}}$**754**
B **3532.64**$_8$, 8^+, *<3 ps*, μ=+8.6$_{18}$, $\gamma_{\mathbf{3298.44}}$**234.205**$_{15}$(100.0$_{19}$) $\delta<0.17$, $\gamma_{\mathbf{2669.88}}$**862.4**$_3$(16$_4$)
3646.36$_8$ *<7 ps*, $\gamma_{\mathbf{3423.32}}$**223.04**$_3$(100)
3792.59$_9$, $\gamma_{\mathbf{3532.64}}$**259.943**$_{25}$(100)
E **4133.68**$_{12}$, (8^-), $\gamma_{\mathbf{3423.32}}$**710.35**$_9$(100), $\gamma_{\mathbf{3271.97}}$**861**$_3$
A **4326.12**$_9$, 10^+, *2.1$_4$ ps*, μ=-5.8$_{72}$, $\gamma_{\mathbf{3298.44}}$**1027.63**$_3$(100) E2
B **4418.56**$_9$, 10^+, *9$_3$ ps*, $\gamma_{\mathbf{3532.64}}$**885.90**$_4$(100.0$_{20}$), $\gamma_{\mathbf{3298.44}}$**1120.46**$_8$(12.7$_4$)
D **4429.35**$_{10}$, 9^-, *8$_1$ ps*, $\gamma_{\mathbf{3423.32}}$**1006.02**$_6$(100)
E **5041.6**$_6$, (10^-), $\gamma_{\mathbf{4429.35}}$**612**, $\gamma_{\mathbf{4133.68}}$**908**
5233.55$_{13}$ *12$_6$ ps*, $\gamma_{\mathbf{4418.56}}$**815.00**$_{10}$(100)
D **5388.70**$_{11}$, 11^-, *3$_1$ ps*, $\gamma_{\mathbf{4429.35}}$**959.34**$_4$(100) E2
A **5396.40**$_9$, 12^+, *2.6$_6$ ps*, μ=-13$_8$, $\gamma_{\mathbf{4418.56}}$**977.96**$_5$(38.2$_{14}$) E2, $\gamma_{\mathbf{4326.12}}$**1070.19**$_4$(100.0$_{14}$) E2
B **5524.3**$_8$, 12^+, μ=+6.6$_{16}$, $\gamma_{\mathbf{4418.56}}$**1106**, $\gamma_{\mathbf{4326.12}}$**1198**
5646.5$_4$, $\gamma_{\mathbf{4418.56}}$**1227.9**$_3$(100)
E **5974.74**$_{15}$, (12^-), *<1.5 ps*, $\gamma_{\mathbf{5233.55}}$**741.18**$_6$(100), $\gamma_{\mathbf{5041.6}}$**933**
6232.28$_{16}$ *4.2$_7$ ps*, $\gamma_{\mathbf{5233.55}}$**998.72**$_9$(100) E2
6321.08$_{10}$, 14^+, *5.2$_6$ ps*, μ=+28$_6$, $\gamma_{\mathbf{5396.40}}$**924.68**$_4$(100) E2
D **6339.9**$_4$, 13^-, $\gamma_{\mathbf{5388.70}}$**951.15**$_{30}$(100)
B **6752.4**$_{13}$, 14^+, $\gamma_{\mathbf{5524.3}}$**1228**(100)
C **7015.33**$_{14}$, 15^+, *0.55$^{14}_{2}$ ps*, $\gamma_{\mathbf{6321.08}}$**694.25**$_{10}$(100) (M1)
A **7396.46**$_{24}$, 16^+, *0.59$^{14}_{2}$ ps*, $\gamma_{\mathbf{7015.33}}$**381.15**$_{20}$ (M1), $\gamma_{\mathbf{6321.08}}$**1075** (E2)
C **8248.7**$_7$, 17^+, *0.15$^{10}_{2}$ ps*, $\gamma_{\mathbf{7396.46}}$**852** (M1), $\gamma_{\mathbf{7015.33}}$**1233** (E2)
A **8650.0**$_8$, 18^+, *0.23$^{5}_{2}$ ps*, $\gamma_{\mathbf{8248.7}}$**401** (M1), $\gamma_{\mathbf{7396.46}}$**1254** (E2)
C **9891.9**$_9$, 19^+, *0.07$^{8}_{2}$ ps*, $\gamma_{\mathbf{8650.0}}$**1242** (M1), $\gamma_{\mathbf{8248.7}}$**1643** (E2)
A **10142.9**$_{11}$, 20^+, *0.28$^{8}_{3}$ ps*, $\gamma_{\mathbf{9891.9}}$**251** (M1), $\gamma_{\mathbf{8650.0}}$**1493** (E2)
A **12060.9**$_{15}$, 22^+, *0.06$^{7}_{3}$ ps*, $\gamma_{\mathbf{10142.9}}$**1918**(100) (E2)
A **14149.0**$_{18}$, 24^+, *0.06$^{8}_{4}$ ps*, $\gamma_{\mathbf{12060.9}}$**2088**(100) (E2)
F **x**, $J\approx(23)$
F **1518+x**, $J+2$, $\gamma_{\mathbf{x}}$**1518**
F **3164+x**, $J+4$, $\gamma_{\mathbf{1518+x}}$**1646**
F **4949+x**, $J+6$, $\gamma_{\mathbf{3164+x}}$**1785**
F **6878+x**, $J+8$, $\gamma_{\mathbf{4949+x}}$**1929**
F **8955+x**, $J+10$, $\gamma_{\mathbf{6878+x}}$**2077**
F **11183+x**, $J+12$, $\gamma_{\mathbf{8955+x}}$**2228**
F **13566+x**, $J+14$, $\gamma_{\mathbf{11183+x}}$**2383**
F **16106+x**, $J+16$, $\gamma_{\mathbf{13566+x}}$**2540**
F **18802+x**, $J+18$, $\gamma_{\mathbf{16106+x}}$**2696**
G **y**, $J_1\approx(22)$
G **1577+y**, J_1+2, $\gamma_{\mathbf{y}}$**1577**
G **3307+y**, J_1+4, $\gamma_{\mathbf{1577+y}}$**1730**
G **5198+y**, J_1+6, $\gamma_{\mathbf{3307+y}}$**1891**
G **7254+y**, J_1+8, $\gamma_{\mathbf{5198+y}}$**2056**
G **9481+y**, J_1+10, $\gamma_{\mathbf{7254+y}}$**2227**
G **11874+y**, J_1+12, $\gamma_{\mathbf{9481+y}}$**2393**
G **14388+y**, J_1+14, $\gamma_{\mathbf{11874+y}}$**2514**
G **16950+y**, J_1+16, $\gamma_{\mathbf{14388+y}}$**2562**
G **19658+y**(?), J_1+18, $\gamma_{\mathbf{16950+y}}$**2708**(?)
H **z**, $J_2\approx(25)$
H **1866+z**, J_2+2, $\gamma_{\mathbf{z}}$**1866**(?)
H **3825+z**, J_2+4, $\gamma_{\mathbf{1866+z}}$**1959**
H **5887+z**, J_2+6, $\gamma_{\mathbf{3825+z}}$**2062**
H **8042+z**, J_2+8, $\gamma_{\mathbf{5887+z}}$**2155**
H **10286+z**, J_2+10, $\gamma_{\mathbf{8042+z}}$**2244**
H **12629+z**, J_2+12, $\gamma_{\mathbf{10286+z}}$**2343**
H **15058+z**(?), J_2+14, $\gamma_{\mathbf{12629+z}}$**2429**(?)
I **u**, $J_3\approx(23)$
I **1648+u**, J_3+2, $\gamma_{\mathbf{u}}$**1648**
I **3459+u**, J_3+4, $\gamma_{\mathbf{1648+u}}$**1811**
I **5426+u**, J_3+6, $\gamma_{\mathbf{3459+u}}$**1967**
I **7549+u**, J_3+8, $\gamma_{\mathbf{5426+u}}$**2123**
I **9822+u**, J_3+10, $\gamma_{\mathbf{7549+u}}$**2273**
I **12225+u**, J_3+12, $\gamma_{\mathbf{9822+u}}$**2403**
I **14716+u**, J_3+14, $\gamma_{\mathbf{12225+u}}$**2491**

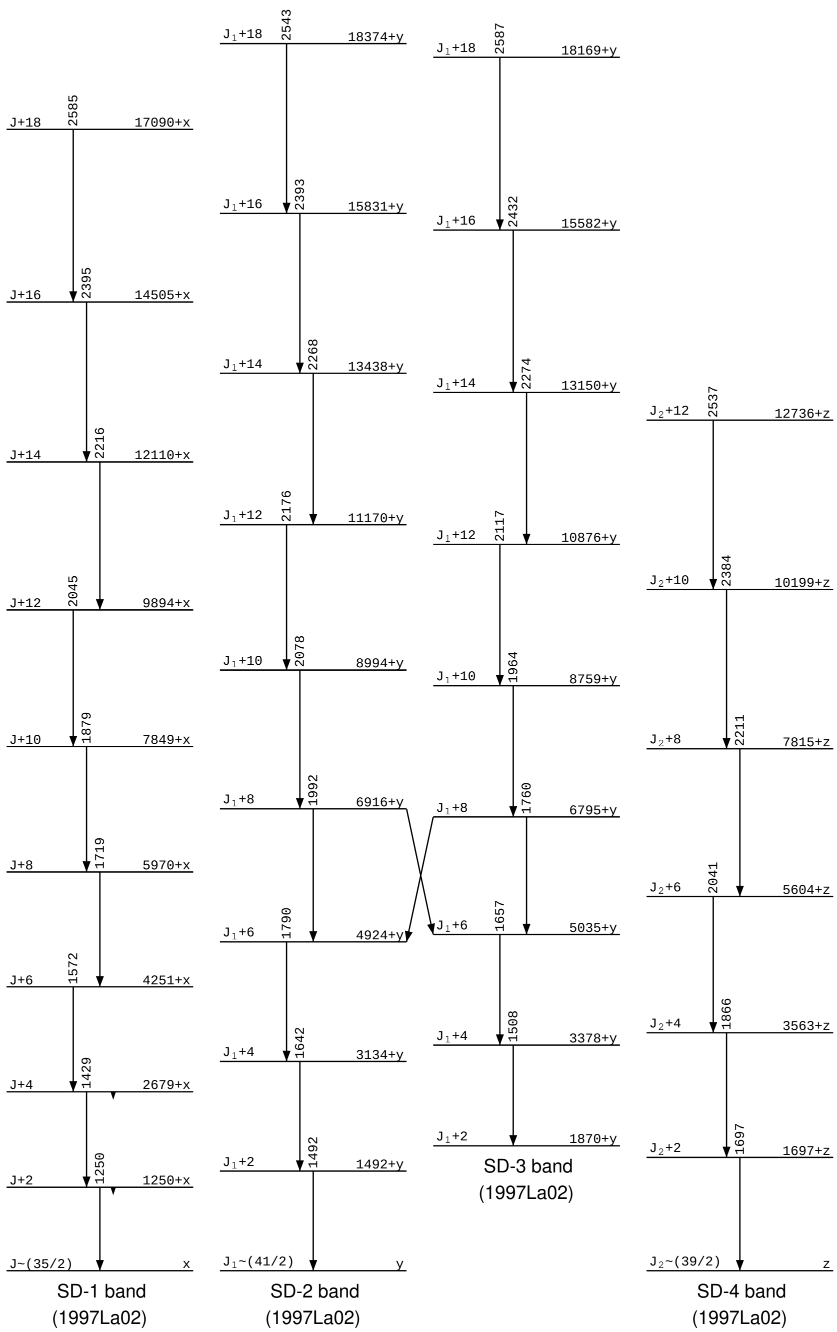
See Phys. Rev. **C57***, 2189 (1998) and Phys. Rev.* **C61***, 034310 (2000) for additional data.*


J+18 18802+x
2696
J+16 16106+x
2540
J+14 13566+x
2383
J+12 11183+x
2228
J+10 8955+x
2077
J+8 6878+x
1929
J+6 4949+x
1785
J+4 3164+x
1646
J+2 1518+x
1518
J~(23) x
J_1+18 19658+y
2708
J_1+16 16950+y
2562
J_1+14 14388+y
2514
J_1+12 11874+y
2393
J_1+10 9481+y
2227
J_1+8 7254+y
2056
J_1+6 5198+y
1891
J_1+4 3307+y
1730
J_1+2 1577+y
1577
J_1~(22) y
J_2+14 15058+z
2429
J_2+12 12629+z
2343
J_2+10 10286+z
2244
J_2+8 8042+z
2155
J_2+6 5887+z
2062
J_2+4 3825+z
1959
J_2+2 1866+z
1866
J_2~(25) z
J_3+14 14716+u
2491
J_3+12 12225+u
2403
J_3+10 9822+u
2273
J_3+8 7549+u
2123
J_3+6 5426+u
1967
J_3+4 3459+u
1811
J_3+2 1648+u
1648
J_3~(23) u
SD-1 band (1998Sa01)
SD-2 band (1998Sa01)
SD-3 band (1998Sa01)
SD-4 band (1998Sa01)

$^{86}_{40}Zr_{46}$

$^{87}_{41}\mathrm{Nb}_{46}$

S_n: 1243x10^1 $_{11}$, S_p: 3667 $_{68}$
Nuclear Bands
A Band based on $(9/2^+)$
B Band based on $(21/2^+)$
C Band based on $(37/2^+)$
D Band based on $(3/2^-)$
E Band based on $(17/2^-)$
F Band based on $(29/2^-)$
G SD-1 band (1997La02)
$Q_0=5.2^{11}_{8}$
H SD-2 band (1997La02)
$Q_0=5.0^{7}_{10}$
I SD-3 band (1997La02)
$Q_0=5.3^{12}_{10}$
J SD-4 band (1997La02)
Levels and γ-ray branchings:
0, $(1/2^-)$, *3.7$_1$ min*, %ε+%β$^+$=100
A **3.84**$_{14}$, $(9/2^+)$, *2.6$_1$ min*, %ε+%β$^+$=100
D **200.2**$_4$, $(3/2^-)$, γ_0**200.1**$_5$(100)
A **266.81**$_{15}$, $(7/2^+)$, $\gamma_{3.84}$**263.0**$_1$(100) M1
D **334.00**$_{10}$, $(5/2^-)$, *28$_2$ ns*, $\gamma_{266.81}$**67.2**(7.5$_{10}$), γ_0**334.0**$_1$(100$_3$) (E2)
400.8, $(9/2,7/2,5/2)^+$, $\gamma_{266.81}$**133.9**$_1$(16$_8$), $\gamma_{3.84}$**396.8**$_1$(100$_{14}$)
A **784.48**$_{15}$, $(13/2^+)$, *1.8$_3$ ps*, $\gamma_{3.84}$**780.7**$_1$(100) (E2)
D **839.81**$_{13}$, $(7/2^-)$, $\gamma_{334.00}$**505.8**$_1$(100$_5$), $\gamma_{266.81}$**573.1**$_1$($<$ 31), $\gamma_{200.2}$**639.5**$_7$ (E2), $\gamma_{3.84}$**835.8**$_1$
962.87$_{16}$, $(13/2^+)$, $\gamma_{3.84}$**959.0**$_1$(100)
A **1051.39**$_{15}$, $(11/2^+)$, $\gamma_{784.48}$**267.0**$_1$(25$_4$), $\gamma_{266.81}$**784.5**$_1$(100$_4$) (E2), $\gamma_{3.84}$**1047.6**$_1$
D **1168.69**$_{13}$, $(9/2^-)$, $\gamma_{334.00}$**834.7**$_1$ (E2), $\gamma_{3.84}$**1164.8**$_3$
1349.29$_{16}$, $\gamma_{1051.39}$**297.9**$_1$(100)
D **1603.58**$_{14}$, $(11/2^-)$, $\gamma_{1168.69}$**434.9**$_1$($<$ 20), $\gamma_{839.81}$**763.7**$_1$(100$_4$) (E2)
A **1737.04**$_{16}$, $(17/2^+)$, *0.7$_2$ ps*, $\gamma_{784.48}$**952.5**$_1$(100$_7$) (E2)
A **1954.5**$_1$, $(15/2^+)$, $\gamma_{1051.39}$**903.1**$_1$(100$_{46}$) (E2), $\gamma_{962.87}$**991.5**$_1$(35$_3$), $\gamma_{784.48}$**1169.9**$_1$(38$_3$)
D **1976.7**$_{15}$, $(13/2^-)$, $\gamma_{1168.69}$**808.0**$_1$(100)
2114.3$_8$, $(15/2^+)$, $\gamma_{1051.39}$**1062.6**(100)
D **2277.23**$_{15}$, $(15/2^-)$, $\gamma_{1976.7}$**300.6**$_1$($<$ 12), $\gamma_{1603.58}$**673.6**$_1$(100$_4$) (E2), $\gamma_{784.48}$**1492.9**$_2$(14.6$_{12}$)
E **2412.30**$_{15}$, $(17/2^-)$, *58$_5$ ps*, μ=+7.0$_9$, $\gamma_{2277.23}$**135.2**$_1$(100$_{10}$), $\gamma_{2114.3}$**297.7**, $\gamma_{1976.7}$**435.6**$_1$(19), $\gamma_{1954.5}$**458.0**$_1$(86$_4$), $\gamma_{1737.04}$**675.2**$_1$(19), $\gamma_{1349.29}$**1063.0**$_1$(19)
B **2490.73**$_{18}$, $(21/2^+)$, *14$_1$ ps*, μ=+4.0$_9$, $\gamma_{1737.04}$**753.7**$_1$(100) (E2)
2694.27$_{16}$, $(17/2^-)$, $\gamma_{2412.30}$**282.1**$_1$(57$_{11}$), $\gamma_{2277.23}$**417.4**, $\gamma_{1976.7}$**717.5**$_1$(100$_5$)
2736.71$_{16}$, $\gamma_{2412.30}$**324.5**$_1$(100)
A **2860.96**$_{18}$, $(21/2^+)$, *0.8$_5$ ps*, μ=-6$_{11}$, $\gamma_{2490.73}$**370.0**$_2$, $\gamma_{1737.04}$**1123.9**$_1$ (E2)
2905.53$_{15}$, $(19/2^-)$, $\gamma_{2736.71}$**168.9**$_1$(32$_6$), $\gamma_{2490.73}$**415.0**, $\gamma_{2412.30}$**493.3**$_1$(39$_3$), $\gamma_{2277.23}$**628.2**$_1$(100$_6$) (E2)
2988.11$_{16}$, $(19/2^-)$, $\gamma_{2694.27}$**293.9**$_1$, $\gamma_{2412.30}$**575.8**$_1$
E **3218.84**$_{16}$, $(21/2^-)$, *1.6$_3$ ps*, $\gamma_{2988.11}$**230.8**$_1$(9.2$_8$), $\gamma_{2905.53}$**313.4**$_1$(16.0$_8$), $\gamma_{2412.30}$**806.4**$_1$(100$_4$) (E2)
B **3219.71**$_{19}$, $(23/2^+)$, *0.6$_1$ ps*, μ=+16$_9$, $\gamma_{2860.96}$**358.9**$_2$($<$ 11), $\gamma_{2490.73}$**729.0**$_1$(100$_8$)
B **3445.97**$_{19}$, $(25/2^+)$, *1.7$_1$ ps*, μ=+2.8$_{19}$, $\gamma_{3219.71}$**226.3**$_1$(83$_7$), $\gamma_{2490.73}$**955.2**$_1$(100$_7$) (E2)
3741.78$_{19}$, $(25/2^+)$, μ=+0.5$_{28}$, $\gamma_{3219.71}$**522.1**$_1$(78$_6$), $\gamma_{2860.96}$**880.7**$_1$(100$_{10}$), $\gamma_{2490.73}$**1251.4**$_2$(40$_5$)
3868.95$_{21}$, $(25/2^+)$, $\gamma_{2490.73}$**1378.2**$_1$(100)
E **4130.66**$_{19}$, $(25/2^-)$, *2.1$_3$ ps*, μ=+6.4$_{49}$, $\gamma_{3218.84}$**911.8**$_1$(100) (E2)
F **4285.1**$_5$, $(23/2^-)$, $\gamma_{4130.66}$**154.1**$_5$($<$ 37), $\gamma_{3218.84}$**1067.**$_1$(100$_6$)
B **4300.90**$_{19}$, $(27/2^+)$, $\gamma_{3741.78}$**559.1**$_1$(100$_8$), $\gamma_{3445.97}$**855.0**$_1$(49$_4$)
B **4591.69**$_{20}$, $(29/2^+)$, $\gamma_{4300.90}$**290.9**$_1$(23.1$_{20}$), $\gamma_{3445.97}$**1145.6**$_1$(100$_8$) (E2)
4939.56$_{21}$, $(29/2^+)$, $\gamma_{3741.78}$**1197.8**$_1$(100) (E2)
E **5009.66**$_{21}$, $(29/2^-)$, *3.5$_3$ ps*, μ=+7.7$_{16}$, $\gamma_{4130.66}$**879.0**$_1$(100) (E2)
F **5301.9**$_8$, $(27/2^-)$, $\gamma_{4285.1}$**1016**$_1$ (E2), $\gamma_{4130.66}$**1172**$_1$
5555.0, $(31/2^+)$, $\gamma_{4591.69}$**963.7**, $\gamma_{4300.90}$**1253.7**
E **5592.37**$_{23}$, $(31/2^-)$, $\gamma_{5009.66}$**582.8**$_1$(100)
B **5620.15**$_{21}$, $(31/2^+)$, $\gamma_{4939.56}$**680.7**$_2$(100$_{10}$), $\gamma_{4591.69}$**1028**$_1$($<$ 95), $\gamma_{4300.90}$**1319.2**$_1$($<$ 95)
F **5777.0**$_9$, $(29/2^-)$, $\gamma_{5301.9}$**475.0**$_4$(100)
B **5841.09**$_{22}$, $(33/2^+)$, $\gamma_{5620.15}$**220.9**$_2$($<$ 8), $\gamma_{4591.69}$**1249.4**$_1$(100$_8$) (E2)
E **6039.15**$_{23}$, $(33/2^-)$, $\gamma_{5592.37}$**447.0**$_4$(100$_4$), $\gamma_{5009.66}$**1029.4**$_1$($<$ 41)
F **6298.4**$_{10}$, $(31/2^-)$, $\gamma_{5777.0}$**521.2**$_8$($<$ 67), $\gamma_{5301.9}$**997**$_1$(100$_{20}$)
6393.1$_3$, $(33/2^-)$, $\gamma_{5592.37}$**801.0**(100)
E **6744.71**$_{23}$, $(35/2^-)$, $\gamma_{6393.1}$**351.6**$_1$($<$ 23), $\gamma_{6039.15}$**705.5**$_1$(100$_5$), $\gamma_{5592.37}$**1152.4**$_1$(39$_3$)
C **6810.39**$_{23}$, $(35/2^+)$, $\gamma_{5841.09}$**969.2**$_1$(100)
F **6973.3**$_{13}$, $(33/2^-)$, $\gamma_{6298.4}$**675**$_1$, $\gamma_{5777.0}$**1196**$_2$ (E2)
C **7139.74**$_{23}$, $(37/2^+)$, $\gamma_{6810.39}$**329.2**$_1$(36), $\gamma_{5841.09}$**1298.8**$_1$(100)
7153.4, $(37/2^-)$, $\gamma_{6744.71}$**408.7**(100)
E **7225.59**$_{24}$, $(37/2^-)$, $\gamma_{6744.71}$**480.9**$_1$(100$_8$), $\gamma_{6039.15}$**1186.4**$_1$($<$ 77)
B **7619.3**$_3$, $(37/2^+)$, $\gamma_{6810.39}$**809.5**$_3$(72$_7$), $\gamma_{5841.09}$**1777.6**$_3$(100$_9$) (E2)
C **8062.2**$_4$, $(39/2^+)$, $\gamma_{7619.3}$**442.9**$_1$(100)
E **8254.1**$_7$, $(39/2^-)$, $\gamma_{7225.59}$**1028**$_1$, $\gamma_{6744.71}$**1510**$_1$
F **8365.4**$_{17}$, $(37/2^-)$, $\gamma_{6973.3}$**1392**$_1$(100)
C **8432.5**$_4$, $(41/2^+)$, $\gamma_{8062.2}$**370**$_1$, $\gamma_{7139.74}$**1292.8**$_3$
E **8535.8**$_8$, $(41/2^-)$, $\gamma_{8254.1}$**282**$_1$, $\gamma_{7225.59}$**1310**$_1$
E **9814.1**$_{22}$, $(43/2^-)$, $\gamma_{8254.1}$**1560**$_2$
F **9887**$_3$, $(41/2^-)$, $\gamma_{8365.4}$**1522**$_2$
C **9997.5**$_{11}$, $(45/2^+)$, $\gamma_{8432.5}$**1565**$_1$
E **10236.8**$_{22}$, $(45/2^-)$, $\gamma_{8535.8}$**1701**$_2$
C **11948.6**$_{15}$, $(49/2^+)$, $\gamma_{9997.5}$**1951**$_1$
E **12015**$_3$, $(49/2^-)$, $\gamma_{10236.8}$**1778**$_2$
E **13877**$_4$, $(53/2^-)$, γ_{12015}**1862**$_2$
G **x**, $J\approx(35/2)$
G **1250+x**, $J+2$, $\gamma_?$**997**, γ_x**1250**, $\gamma_?$**1362**, $\gamma_?$**1382**
G **2679+x**, $J+4$, $\gamma_?$**1421**, γ_{1250+x}**1429**
G **4251+x**, $J+6$, γ_{2679+x}**1572**
G **5970+x**, $J+8$, γ_{4251+x}**1719**
G **7849+x**, $J+10$, γ_{5970+x}**1879**
G **9894+x**, $J+12$, γ_{7849+x}**2045**
G **12110+x**, $J+14$, γ_{9894+x}**2216**
G **14505+x**, $J+16$, $\gamma_{12110+x}$**2395**
G **17090+x**, $J+18$, $\gamma_{14505+x}$**2585**
H **y**, $J_1\approx(41/2)$
H **1492+y**, J_1+2, γ_y**1492**
I **1870+y**, J_1+2
H **3134+y**, J_1+4, γ_{1492+y}**1642**
I **3378+y**, J_1+4, γ_{1870+y}**1508**
H **4924+y**, J_1+6, γ_{3134+y}**1790**
I **5035+y**, J_1+6, γ_{3378+y}**1657**
I **6795+y**, J_1+8, γ_{5035+y}**1760** (E2), γ_{4924+y}**1871** (E2)
H **6916+y**, J_1+8, γ_{5035+y}**1881** (E2), γ_{4924+y}**1992** (E2)
I **8759+y**, J_1+10, γ_{6795+y}**1964**
H **8994+y**, J_1+10, γ_{6916+y}**2078**
I **10876+y**, J_1+12, γ_{8759+y}**2117**
H **11170+y**, J_1+12, γ_{8994+y}**2176**
I **13150+y**, J_1+14, $\gamma_{10876+y}$**2274**
H **13438+y**, J_1+14, $\gamma_{11170+y}$**2268**
I **15582+y**, J_1+16, $\gamma_{13150+y}$**2432**
H **15831+y**, J_1+16, $\gamma_{13438+y}$**2393**
I **18169+y**, J_1+18, $\gamma_{15582+y}$**2587**
H **18374+y**, J_1+18, $\gamma_{15831+y}$**2543**
J **z**, $J_2\approx(39/2)$
J **1697+z**, J_2+2, γ_z**1697**
J **3563+z**, J_2+4, γ_{1697+z}**1866**
J **5604+z**, J_2+6, γ_{3563+z}**2041**
J **7815+z**, J_2+8, γ_{5604+z}**2211**
J **10199+z**, J_2+10, γ_{7815+z}**2384**
J **12736+z**, J_2+12, $\gamma_{10199+z}$**2537**


J+18 2585 17090+x
J+16 2395 14505+x
J+14 2216 12110+x
J+12 2045 9894+x
J+10 1879 7849+x
J+8 1719 5970+x
J+6 1572 4251+x
J+4 1429 2679+x
J+2 1250 1250+x
J~(35/2) x
SD-1 band (1997La02)
J1+18 2543 18374+y
J1+16 2393 15831+y
J1+14 2268 13438+y
J1+12 2176 11170+y
J1+10 2078 8994+y
J1+8 1992 6916+y
J1+6 1790 4924+y
J1+4 1642 3134+y
J1+2 1492 1492+y
J1~(41/2) y
SD-2 band (1997La02)
J1+18 2587 18169+y
J1+16 2432 15582+y
J1+14 2274 13150+y
J1+12 2117 10876+y
J1+10 1964 8759+y
J1+8 1760 6795+y
J1+6 1657 5035+y
J1+4 1508 3378+y
J1+2 1870+y
SD-3 band (1997La02)
J2+12 2537 12736+z
J2+10 2384 10199+z
J2+8 2211 7815+z
J2+6 2041 5604+z
J2+4 1866 3563+z
J2+2 1697 1697+z
J2~(39/2) z
SD-4 band (1997La02)

$^{87}_{41}Nb_{46}$

$^{88}_{42}\mathbf{Mo}_{46}$

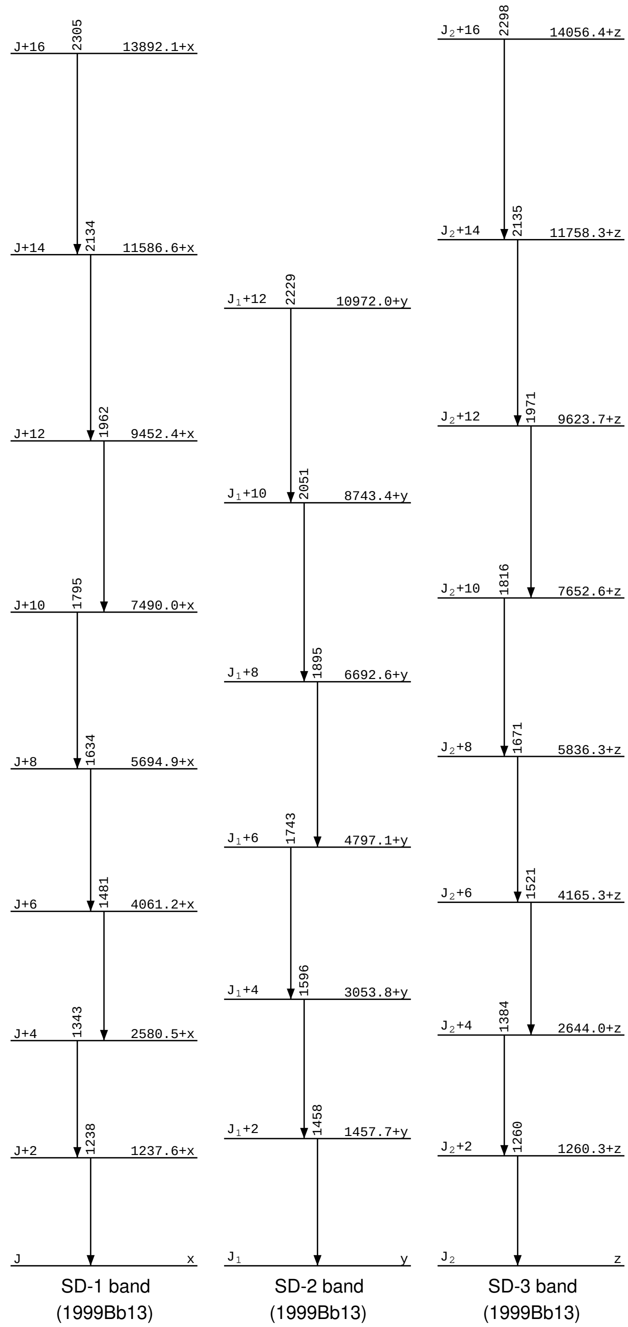
S_n: 13100 *SY*, S_p: 4400 *SY*

Nuclear Bands

A SD-1 band (1999Bb13)
  $Q_0=6.0^{20}_{14}$
B SD-2 band (1999Bb13)
C SD-3 band (1999Bb13)

Levels and γ-ray branchings:

0, 0^+, *8.0_2 min*, %ε+%β^+=100
740.53$_5$, 2^+, *7.1_2 ps*, $\gamma_{\mathbf{0}}$**740.53**$_5$(100) E2
1654.76$_{19}$, 4^+, *1.0_2 ps*, $\gamma_{\mathbf{740.53}}$**914.23**(100) E2
2100.7$_5$, $\gamma_{\mathbf{1654.76}}$**445.9**$_4$(100)
2626.8$_3$, 6^+, *8.0_3 ps*, $\gamma_{\mathbf{1654.76}}$**972.07**$_{23}$(100) E2
2646.4, 5^-, *13.7_3 ps*, $\gamma_{\mathbf{1654.76}}$**991.6**(100) E1
3213.0, 8^+, *22.2_3 ps*, $\gamma_{\mathbf{2626.8}}$**586.1**(100) E2
3349.8, 7^-, *4.6_6 ps*, $\gamma_{\mathbf{2646.4}}$**703.4** E1, $\gamma_{\mathbf{2626.8}}$**723.0** M1+E2 $\delta=+0.06_9$
3484.7, 8^+, *<4 ps*, $\gamma_{\mathbf{3213.0}}$**271.7**(100) M1(+E2) $\delta<0.6$
4195.2, 10^+, *4.4_1 ps*, $\gamma_{\mathbf{3484.7}}$**710.5** E2, $\gamma_{\mathbf{3213.0}}$**982.3** E2
4313.8, 9^-, *2.6_3 ps*, $\gamma_{\mathbf{3349.8}}$**964.0** E2, $\gamma_{\mathbf{3213.0}}$**1100.8** E1
4358.2, 10^+, $\gamma_{\mathbf{4195.2}}$**163.0**(100) M1(+E2) $\delta<1.1$
4448.2, 10^+, $\gamma_{\mathbf{4195.2}}$**253.0**(100) M1(+E2) $\delta<0.5$
5052.5, 12^+, *18_1 ps*, $\gamma_{\mathbf{4448.2}}$**604.6** E2, $\gamma_{\mathbf{4358.2}}$**694.6** E2, $\gamma_{\mathbf{4195.2}}$**857.3** E2
5153.4, 11^-, *1.2_3 ps*, $\gamma_{\mathbf{4313.8}}$**839.6**(100) E2
5272.4, 12^+, *0.6_1 ps*, $\gamma_{\mathbf{4358.2}}$**914.2** E2, $\gamma_{\mathbf{4195.2}}$**1077.2** E2
5959.3, 14^+, *5.67_6 ps*, $\gamma_{\mathbf{5052.5}}$**906.8**(100) E2
5969.7, 13^-, *0.9_1 ps*, $\gamma_{\mathbf{5153.4}}$**816.3**(100) E2
6207.0, 14^+, *1.8_1 ps*, $\gamma_{\mathbf{5959.3}}$**247.7** M1(+E2) $\delta<0.7$, $\gamma_{\mathbf{5272.4}}$**934.6** E2, $\gamma_{\mathbf{5052.5}}$**1154.5** E2
6549.5, 15^+, *0.5_1 ps*, $\gamma_{\mathbf{6207.0}}$**342.5** M1, $\gamma_{\mathbf{5959.3}}$**590.2** M1+E2
6868.2, 15^-, *3.5_2 ps*, $\gamma_{\mathbf{5969.7}}$**898.5**(100) E2
6944.8, 16^+, *<0.6 ps*, $\gamma_{\mathbf{6549.5}}$**395.2** M1(+E2), $\gamma_{\mathbf{5959.3}}$**985**
6948.8, 16^+, $\gamma_{\mathbf{6549.5}}$**398.5**(100) M1+E2
7322.9, 16^+, *<0.4 ps*, $\gamma_{\mathbf{6207.0}}$**1115.8**(100) E2
7765.7, 17^+, $\gamma_{\mathbf{6944.8}}$**820.4**(100) M1(+E2)
7848.4, 17^-, *1.2_1 ps*, $\gamma_{\mathbf{6868.2}}$**980.1**(100) E2
8127.4, 18^+, *<0.4 ps*, $\gamma_{\mathbf{7765.7}}$**361.7** M1(+E2), $\gamma_{\mathbf{6944.8}}$**1182.6** E2
8267.4, 17^-, $\gamma_{\mathbf{7848.4}}$**419.0**(100) M1+E2
8609.4, 18^-, *<0.5 ps*, $\gamma_{\mathbf{7848.4}}$**761.0**(100) M1(+E2)
8968.0, 19^-, $\gamma_{\mathbf{8609.4}}$**358.6**(100) M1+E2
9336.5, 19^-, $\gamma_{\mathbf{8609.4}}$**727.1**(100) M1+E2
9460.8, 20^-, $\gamma_{\mathbf{8968.0}}$**492.8**(100) M1(+E2)
9835.4, 21^-, $\gamma_{\mathbf{9460.8}}$**374.6**(100) M1(+E2)
A **x**, J
A **1237.6+x**, $J+2$, $\gamma_{\mathbf{x}}$**1237.6**$_3$
A **2580.5+x**, $J+4$, $\gamma_{\mathbf{1237.6+x}}$**1342.9**$_2$
A **4061.2+x**, $J+6$, $\gamma_{\mathbf{2580.5+x}}$**1480.7**$_2$
A **5694.9+x**, $J+8$, $\gamma_{\mathbf{4061.2+x}}$**1633.7**$_2$
A **7490.0+x**, $J+10$, $\gamma_{\mathbf{5694.9+x}}$**1795.0**$_2$
A **9452.4+x**, $J+12$, $\gamma_{\mathbf{7490.0+x}}$**1962.4**$_3$
A **11586.6+x**, $J+14$, $\gamma_{\mathbf{9452.4+x}}$**2134.2**$_4$
A **13892.1+x**, $J+16$, $\gamma_{\mathbf{11586.6+x}}$**2305.4**$_{13}$
B **y**, J_1
B **1457.7+y**, J_1+2, $\gamma_{\mathbf{y}}$**1457.7**$_8$
B **3053.8+y**, J_1+4, $\gamma_{\mathbf{1457.7+y}}$**1596.1**$_8$
B **4797.1+y**, J_1+6, $\gamma_{\mathbf{3053.8+y}}$**1743.3**$_7$
B **6692.6+y**, J_1+8, $\gamma_{\mathbf{4797.1+y}}$**1895.4**$_7$
B **8743.4+y**, J_1+10, $\gamma_{\mathbf{6692.6+y}}$**2050.8**$_{13}$
B **10972.0+y**, J_1+12, $\gamma_{\mathbf{8743.4+y}}$**2228.6**$_{12}$
C **z**, J_2
C **1260.3+z**, J_2+2, $\gamma_{\mathbf{z}}$**1260.3**$_5$
C **2644.0+z**, J_2+4, $\gamma_{\mathbf{1260.3+z}}$**1383.7**$_5$
C **4165.3+z**, J_2+6, $\gamma_{\mathbf{2644.0+z}}$**1521.3**$_6$
C **5836.3+z**, J_2+8, $\gamma_{\mathbf{4165.3+z}}$**1670.9**$_6$
C **7652.6+z**, J_2+10, $\gamma_{\mathbf{5836.3+z}}$**1816.3**$_6$
C **9623.7+z**, J_2+12, $\gamma_{\mathbf{7652.6+z}}$**1971.1**$_7$
C **11758.3+z**, J_2+14, $\gamma_{\mathbf{9623.7+z}}$**2134.6**$_7$
C **14056.4+z**, J_2+16, $\gamma_{\mathbf{11758.3+z}}$**2298.0**$_{14}$



$^{88}_{42}Mo_{46}$

$^{89}_{43}$Tc$_{46}$

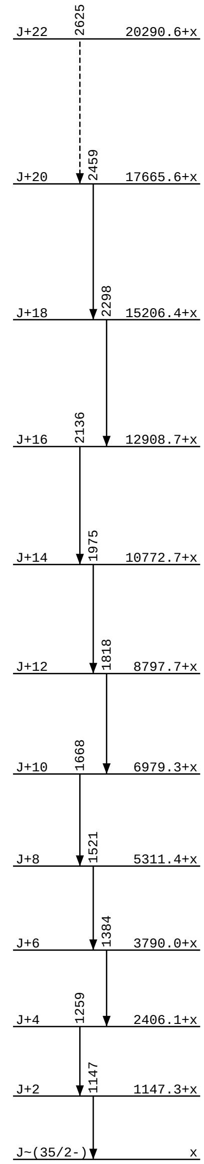
S_n: 13000 $_{SY}$, S_p: 2.08x10^3 $_{21}$

Nuclear Bands

A Yrast sequence
B SD band (1999Ce09)
Q_0=6.7$^{30}_{23}$

Levels and γ-ray branchings:

A **0**, $(9/2^+)$, 12.8_9 *s*, $\%\varepsilon+\%\beta^+$=100,
62.6$_5$, $(1/2^-)$, 12.9_8 *s*, $\%\varepsilon+\%\beta^+$=100
179.2$_1$, $(7/2^+)$, $\gamma_{\mathbf{0}}$**179.2**$_1$(100)
790.0$_4$(?), $(5/2^-)$, $\gamma_{\mathbf{62.6}}$**727.4**$_3$(100)
A **795.9**$_1$, $(13/2^+)$, <8.3 *ps*, $\gamma_{\mathbf{0}}$**795.9**$_1$(100) (E2)
998.3$_2$, $(7/2^-)$, $\gamma_{\mathbf{179.2}}$**819.1**$_1$(100)
1101.3$_2$, $(11/2^+)$, $\gamma_{\mathbf{179.2}}$**922.0**$_4$(79_{11}), $\gamma_{\mathbf{0}}$**1101.3**$_3$(100_{11})
1331.9$_3$(?), $(9/2^-)$, $\gamma_{\mathbf{790.0}}$**541.9**$_2$(100)
1682.1$_2$, $(11/2^-)$, $\gamma_{\mathbf{998.3}}$**683.7**$_1$(100)
A **1731.8**$_2$, $(17/2^+)$, <9.0 *ps*, $\gamma_{\mathbf{795.9}}$**935.9**$_1$(100) (E2)
1896.9$_2$, $(13/2^-)$, $\gamma_{\mathbf{1682.1}}$**214.8**$_1$(100_5), $\gamma_{\mathbf{1331.9}}$**565.0**$_2$(23_5)
2031.9$_2$, $(17/2^+)$, $\gamma_{\mathbf{1731.8}}$**299.9**$_2$(33_{21}), $\gamma_{\mathbf{795.9}}$**1236.3**$_3$(100_{21})
2043.6$_3$, $(15/2^+)$, $\gamma_{\mathbf{1101.3}}$**942.3**$_4$(100_{27}), $\gamma_{\mathbf{795.9}}$**1248.5**$_6$(52_{27})
2320.5$_2$, $(17/2^-)$, $\gamma_{\mathbf{2043.6}}$**276.9**$_2$(21_2), $\gamma_{\mathbf{1896.9}}$**423.5**$_2$(100_4)
A **2427.1**$_2$, $(21/2^+)$, <26 *ps*, $\gamma_{\mathbf{2031.9}}$**395.3**$_2$(12_1) (E2),
$\gamma_{\mathbf{1731.8}}$**695.3**$_1$(100_1)
2530.5$_3$, $(17/2^-)$, $\gamma_{\mathbf{2320.5}}$**210.1**$_2$(100)
2923.8$_3$, $(19/2^-)$, $\gamma_{\mathbf{2320.5}}$**603.3**$_3$(100)
3103.5$_2$, $(23/2^+)$, $\gamma_{\mathbf{2427.1}}$**676.4**$_1$(100)
3112.8$_2$, $(21/2^-)$, $\gamma_{\mathbf{2923.8}}$**189.1**$_3$(5_2), $\gamma_{\mathbf{2320.5}}$**792.4**$_1$(100_2)
A **3217.7**$_2$, $(25/2^+)$, $\gamma_{\mathbf{3103.5}}$**114.2**$_1$(33_7), $\gamma_{\mathbf{2427.1}}$**790.5**$_1$(100_7)
3311.4$_4$, $(21/2^-)$, $\gamma_{\mathbf{3112.8}}$**198.6**$_4$(100_{32}), $\gamma_{\mathbf{2530.5}}$**781.0**$_4$(89_{32})
4065.2$_2$, $(25/2^-)$, $\gamma_{\mathbf{3112.8}}$**952.3**$_1$(100)
4224.0$_3$(?), $(25/2^-)$, $\gamma_{\mathbf{3311.4}}$**912.8**$_4$(100)
A **4243.2**$_2$, $(29/2^+)$, $\gamma_{\mathbf{3217.7}}$**1025.5**$_1$(100)
4713.6$_3$, $(27/2^-)$, $\gamma_{\mathbf{4224.0}}$**489.6**$_2$(47_{13}), $\gamma_{\mathbf{4065.2}}$**648.6**$_2$(100_{13})
4942.3$_3$, $(29/2^-)$, $\gamma_{\mathbf{4713.6}}$**228.8**$_2$(11_3), $\gamma_{\mathbf{4065.2}}$**877.1**$_1$(100_3)
5113.8$_3$, $(29/2^-)$, $\gamma_{\mathbf{4713.6}}$**400.1**$_2$(100_{17}), $\gamma_{\mathbf{4065.2}}$**1048.4**$_5$(41_{17})
A **5329.2**$_2$, $(33/2^+)$, $\gamma_{\mathbf{4243.2}}$**1086.0**$_1$(100)
5332.1$_3$, $(31/2^-)$, $\gamma_{\mathbf{5113.8}}$**218.3**$_2$(23_7), $\gamma_{\mathbf{4942.3}}$**389.8**$_1$(100_{10}),
$\gamma_{\mathbf{4713.6}}$**618.7**$_2$(22_7), $\gamma_{\mathbf{4243.2}}$**1088.9**$_4$(11_4)
5650.9$_3$, $(33/2^-)$, $\gamma_{\mathbf{5332.1}}$**318.8**$_1$(100)
6190.5$_3$, $(35/2^+)$, $\gamma_{\mathbf{5329.2}}$**861.3**$_1$(100)
6413.7$_3$, $(35/2^-)$, $\gamma_{\mathbf{5332.1}}$**1081.6**$_2$(100)
A **6545.9**$_3$, $(37/2^+)$, $\gamma_{\mathbf{6190.5}}$**355.5**$_2$(100_{10}), $\gamma_{\mathbf{5329.2}}$**1216.5**$_5$(49_{10})
6612.0$_4$, $(37/2^-)$, $\gamma_{\mathbf{6413.7}}$**198.3**$_4$(28_8), $\gamma_{\mathbf{5650.9}}$**961.1**$_2$(100_8)
7011.3$_3$(?), $(37/2^+)$, $\gamma_{\mathbf{6190.5}}$**820.6**$_2$(100)
7402.1$_3$, $(39/2^+)$, $\gamma_{\mathbf{7011.3}}$**390.6**$_2$(92_{19}), $\gamma_{\mathbf{6190.5}}$**1211.9**$_3$(100_{19})
7765.7$_4$, $(41/2^-)$, $\gamma_{\mathbf{6612.0}}$**1153.7**$_2$(100)
A **7772.0**$_4$, $(41/2^+)$, $\gamma_{\mathbf{7402.1}}$**369.8**$_2$(100_{10}), $\gamma_{\mathbf{6545.9}}$**1227.0**$_6$(41_{10})
A **9109.8**$_7$, $(45/2^+)$, $\gamma_{\mathbf{7772.0}}$**1337.8**$_5$(100)
9163.2$_6$, $(45/2^-)$, $\gamma_{\mathbf{7765.7}}$**1397.4**$_4$(100)
B **x**, $J\approx(35/2^-)$
B **1147.3+x**, $J+2$, $\gamma_{\mathbf{x}}$**1147.3**$_{10}$
B **2406.1+x**, $J+4$, $\gamma_{\mathbf{1147.3+x}}$**1258.8**$_5$
B **3790.0+x**, $J+6$, $\gamma_{\mathbf{2406.1+x}}$**1383.9**$_5$
B **5311.4+x**, $J+8$, $\gamma_{\mathbf{3790.0+x}}$**1521.4**$_5$
B **6979.3+x**, $J+10$, $\gamma_{\mathbf{5311.4+x}}$**1667.9**$_5$
B **8797.7+x**, $J+12$, $\gamma_{\mathbf{6979.3+x}}$**1818.3**$_5$
B **10772.7+x**, $J+14$, $\gamma_{\mathbf{8797.7+x}}$**1975.0**$_5$
B **12908.7+x**, $J+16$, $\gamma_{\mathbf{10772.7+x}}$**2136.0**$_5$
B **15206.4+x**, $J+18$, $\gamma_{\mathbf{12908.7+x}}$**2297.6**$_{10}$
B **17665.6+x**, $J+20$, $\gamma_{\mathbf{15206.4+x}}$**2459.2**$_{10}$
B **20290.6+x**, $J+22$, $\gamma_{\mathbf{17665.6+x}}$**2625**$_1$(?)



SD band
(1999Ce09)
$^{89}_{43}$Tc$_{46}$

$^{91}_{43}Tc_{48}$

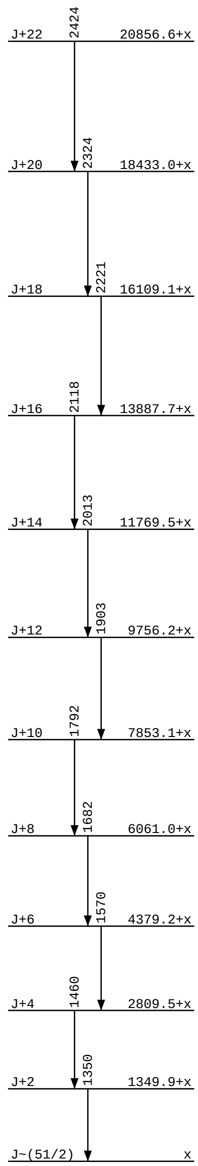
S_n: 12.85x10^3$_{31}$, S_p: 3.11x10^3$_{20}$

Nuclear Bands

A Seniority=3 states
B Seniority=3 states
C Seniority=3 states
D Seniority=3 states
E Seniority=3 states
F Seniority=3 states
G Seniority=3 states
H SD band (2000Id01)
$Q_0=8.1^{19}_{14}$

Levels and γ-ray branchings:

0, $(9/2)^+$, *3.14$_2$ min*, %ε+%β$^+$=100
139.3$_3$, $(1/2)^-$, *3.3$_1$ min*, %ε+%β$^+$=100, %IT<1
394.51$_9$, $(7/2)^+$, γ_{0}**394.5**$_1$(100) M1+E2 $\delta=-0.7^{4}_{13}$
E **884.90**$_{17}$, $(5/2^-)$, $\gamma_{139.3}$**745.6**$_2$(100) (E2)
892.90$_8$, $(13/2^+)$, γ_{0}**892.9**$_1$(100) (E2)
1097.10$_7$, $(11/2^+)$, $\gamma_{892.90}$**204.3**$_1$(22.6$_7$), $\gamma_{394.51}$**702.1**$_3$(5.3$_{21}$), γ_{0}**1097.1**$_1$(100.0$_{19}$) (M1(+E2)) $\delta=+0.04_7$
1532.62$_{10}$, $(11/2^+)$, $\gamma_{1097.10}$**435.4**$_2$(12$_4$), $\gamma_{394.51}$**1138.3**$_2$(47.8$_{22}$), γ_{0}**1532.6**$_2$(100$_4$) (M1+E2) $\delta=-1.1_9$
1555.80$_{13}$, $(9/2^-)$, $\gamma_{884.90}$**670.9**$_1$(100$_{33}$) (E2), γ_{0}**1555.9**$_4$(100$_{13}$)
1821.33$_{10}$, $(17/2^+)$, $\gamma_{892.90}$**928.4**$_1$(100) (E2)
1943.10$_9$, $(13/2^-)$, $\gamma_{1555.80}$**387.3**$_1$(30$_3$) (E2), $\gamma_{1532.62}$**410.5**$_1$(97.6$_{24}$) (E1(+M2)) $\delta=-0.01_8$, $\gamma_{1097.10}$**846.1**$_1$(100.0$_{24}$) (E1(+M2)) $\delta=+0.06_7$, $\gamma_{892.90}$**1050.0**$_2$(30.6$_{20}$)
2044.84$_9$, $(15/2^+)$, $\gamma_{1821.33}$**223.6**$_1$(82.6$_{22}$) (M1+E2), $\gamma_{1097.10}$**947.7**$_1$(68.5$_{22}$) (E2), $\gamma_{892.90}$**1151.9**$_1$(100.0$_{22}$) (M1+E2) $\delta=-0.25_6$
A **2137.17**$_{13}$, $(21/2^+)$, *1.85$_3$ ns*, $\gamma_{1821.33}$**315.8**$_1$(100)
E **2153.01**$_{10}$, $(17/2^-)$, *1.07$_6$ ns*, $\gamma_{2044.84}$**108.2**$_1$(100.0$_9$) (E1+M2), $\gamma_{1943.10}$**210.0**$_1$(< 85), $\gamma_{1821.33}$**331.6**$_1$(28.5$_6$) (E1(+M2)) $\delta=+0.2_6$
A **2767.58**$_{14}$, $(23/2^+)$, *<0.7 ps*, $\gamma_{2137.17}$**630.3**$_1$(100) (M1+E2) $\delta=-0.05_2$
F **2980.57**$_{13}$, $(21/2^-)$, *3.3$_7$ ps*, $\gamma_{2153.01}$**827.6**$_1$(100$_3$) E2, $\gamma_{2137.17}$**843.3**$_4$(0.80$_{20}$)
A **3135.90**$_{15}$, $(25/2^+)$, *<0.7 ps*, $\gamma_{2767.58}$**368.3**$_1$(100$_3$) (M1+E2) $\delta=-0.03_1$, $\gamma_{2137.17}$**998.5**$_2$(4.7$_7$)
A **3345.43**$_{15}$, $(25/2^+)$, *1.2$_9$ ps*, $\gamma_{3135.90}$**210.1**$_2$(9.7$_{10}$), $\gamma_{2767.58}$**577.7**$_1$(100.0$_{17}$) (M1(+E2)) $\delta=-0.04_4$, $\gamma_{2137.17}$**1208.4**$_1$(36.6$_{12}$) E2
F **3804.37**$_{15}$, $(25/2^-)$, *4.6$_5$ ps*, $\gamma_{2980.57}$**823.8**$_1$(100.0$_8$) E2, $\gamma_{2767.58}$**1036.9**$_2$(2.94$_{20}$)
4080.36$_{16}$, $(25/2^-)$, *3.5$_{10}$ ps*, $\gamma_{3804.37}$**276.0**$_1$(100$_8$) (M1), $\gamma_{3135.90}$**944.2**$_2$(25$_6$), $\gamma_{2980.57}$**1100.0**$_3$(25$_{11}$)
B **4119.30**$_{16}$, $(27/2^+)$, *<1.4 ps*, $\gamma_{3345.43}$**774.0**$_1$(100.0$_{11}$) (M1+E2) $\delta=-0.07_4$, $\gamma_{2767.58}$**1351.9**$_3$(5.0$_6$)
B **4354.52**$_{15}$, $(29/2^+)$, *1.5$_4$ ps*, $\gamma_{4119.30}$**235.3**$_1$(43.5$_6$) (M1+E2), $\gamma_{3345.43}$**1009.1**$_1$(9.2$_3$) E2, $\gamma_{3135.90}$**1218.5**$_1$(100.0$_{11}$) E2
4594.89$_{16}$, $(27/2^-)$, *<0.7 ps*, $\gamma_{4080.36}$**514.5**$_1$(50.7$_{11}$) (M1(+E2)) $\delta=-0.04_8$, $\gamma_{3804.37}$**790.6**$_1$(100.0$_{14}$) (M1(+E2)) $\delta=-0.04_7$, $\gamma_{3135.90}$**1459.2**$_7$(2.4$_{10}$)
F **4703.13**$_{17}$, $(29/2^-)$, $\gamma_{3804.37}$**898.7**$_1$(100) (E2)
B **4750.22**$_{18}$, $(29/2^+)$, $\gamma_{4354.52}$**395.7**$_2$(58$_{17}$), $\gamma_{4119.30}$**630**$_1$($\approx$ 125), $\gamma_{3135.90}$**1613.8**$_3$(100$_{33}$)
F **4935.73**$_{17}$, $(29/2^-)$, *<0.7 ps*, $\gamma_{4703.13}$**232.4**$_2$(1.5$_4$), $\gamma_{4594.89}$**340.9**$_1$(100$_5$) (M1(+E2)) $\delta=-0.05_7$
F **5077.93**$_{18}$, $(31/2^-)$, *3.3$_3$ ps*, $\gamma_{4935.73}$**142.2**$_1$(100.0$_9$) (M1+E2), $\gamma_{4703.13}$**374.8**$_1$(59.2$_6$) (M1(+E2)) $\delta=-0.01_6$
B **5090.56**$_{17}$, $(31/2^+)$, *<1.4 ps*, $\gamma_{4750.22}$**340.3**$_1$(10.0$_{10}$) (M1+E2), $\gamma_{4354.52}$**736.0**$_1$(100$_4$) (M1(+E2)) $\delta=-0.02_3$, $\gamma_{4119.30}$**972.0**$_3$(5.5$_{10}$)
B **5268.10**$_{17}$, $(33/2^+)$, *6.4$_4$ ps*, $\gamma_{5090.56}$**177.6**$_1$(73.8$_7$) (M1+E2), $\gamma_{4354.52}$**913.6**$_1$(100.0$_{11}$) E2
5382.90$_{19}$, $(31/2^+)$, $\gamma_{4354.52}$**1028.4**$_2$(100) (M1(+E2))
F **5567.13**$_{19}$, $(33/2^-)$, *<0.7 ps*, $\gamma_{5077.93}$**489.2**$_1$(100$_4$) (M1(+E2)) $\delta=-0.02_6$, $\gamma_{4703.13}$**864.0**$_3$(3.2$_{11}$)
5776.12$_{19}$, $(33/2^+)$, $\gamma_{5382.90}$**393.1**$_2$(80$_{20}$), $\gamma_{5090.56}$**685.9**$_2$(100$_{20}$) (M1(+E2))
B **5933.67**$_{18}$, $(35/2^+)$, *0.49$^{35}_{21}$ ps*, $\gamma_{5776.12}$**157.6**$_1$(2.9$_6$), $\gamma_{5268.10}$**665.5**$_1$(100$_4$) (M1(+E2)) $\delta=-0.01_6$
G **6158.73**$_{20}$, $(35/2^-)$, *1.46$_{21}$ ps*, $\gamma_{5567.13}$**591.6**$_1$(84.8$_{10}$) (M1(+E2)) $\delta=-0.01_6$, $\gamma_{5077.93}$**1080.8**$_1$(100.0$_{14}$) E2
6192.16$_{18}$, $(33/2^+)$, $\gamma_{5933.67}$**257.8**$_3$(20$_7$), $\gamma_{5382.90}$**809.3**$_1$(93$_7$) (M1(+E2)), $\gamma_{5268.10}$**924.2**$_1$(100$_{10}$) (M1(+E2)), $\gamma_{5090.56}$**1101.1**$_2$(57$_{13}$), $\gamma_{4750.22}$**1441.6**$_4$(43$_7$), $\gamma_{4354.52}$**1837.4**$_3$(93$_{10}$) (E2)
B **6452.35**$_{21}$, $(37/2^+)$, *0.8$_6$ ps*, $\gamma_{5933.67}$**518.7**$_1$(100) (M1(+E2)) $\delta=0.00_7$
G **6615.81**$_{22}$, $(37/2^-)$, *0.83$_{14}$ ps*, $\gamma_{6158.73}$**457.1**$_1$(100$_3$) (M1+E2) $\delta=-0.08_4$, $\gamma_{5567.13}$**1048.7**$_3$(5.0$_{12}$)
6690.8$_7$, $\gamma_{5077.93}$**1613.0**$_8$(100)
6843.07$_{19}$, $(35/2^+)$, $\gamma_{6192.16}$**650.9**$_1$(100$_6$) (M1(+E2)), $\gamma_{5268.10}$**1575.1**$_6$(8$_3$)
B **7292.85**$_{20}$, $(37/2^+)$, $\gamma_{6843.07}$**449.8**$_1$(100.0$_{23}$) (M1(+E2)), $\gamma_{6192.16}$**1100.4**$_3$(36$_{10}$), $\gamma_{5933.67}$**1359.2**$_2$(47.7$_{23}$)
G **7505.03**$_{23}$, $(39/2^-)$, $\gamma_{6615.81}$**889.2**$_1$(100$_4$) (M1+E2) $\delta=-0.07_5$, $\gamma_{6158.73}$**1345.6**$_5$(1.5$_5$)
C **7667.99**$_{22}$, $(37/2^+)$, $\gamma_{6192.16}$**1475.6**$_3$(100$_4$), $\gamma_{5268.10}$**2399.8**$_5$(67$_4$)
G **7716.17**$_{23}$, $(41/2^-)$, *0.83$_{21}$ ps*, $\gamma_{7505.03}$**211.1**$_1$(100$_4$) (M1+E2), $\gamma_{6615.81}$**1100.4**$_1$(28.9$_{21}$) E2
7992.7$_4$, $\gamma_{6690.8}$**1302.2**$_{10}$(53$_{26}$), $\gamma_{6158.73}$**1833.9**$_4$(100$_{16}$)
C **8141.22**$_{21}$, $(39/2^+)$, $\gamma_{7667.99}$**473.2**$_1$(100$_5$) (M1(+E2)), $\gamma_{7292.85}$**848.5**$_2$(100$_5$) (M1(+E2)), $\gamma_{6843.07}$**1297.9**$_3$(66$_5$) (E2), $\gamma_{6452.35}$**1689.0**$_3$(43$_5$) (M1(+E2)), $\gamma_{5933.67}$**2207.7**$_3$(89$_5$) (E2)
C **8276.58**$_{23}$, $(39/2^+)$, $\gamma_{7292.85}$**983.5**$_3$(100$_{10}$), $\gamma_{6452.35}$**1824.4**$_4$(48$_{10}$), $\gamma_{5933.67}$**2343.2**$_{10}$(19$_5$)
C **8392.3**$_{11}$, $(41/2^+)$, *0.37$_4$ ps*, $\gamma_{6452.35}$**1939.9**$_{10}$(100) E2
8559.0$_5$, $\gamma_{7992.7}$**566.3**$_2$(100$_{15}$), $\gamma_{6615.81}$**1943.0**$_7$(20$_5$)
C **8835.89**$_{22}$, $(41/2^+)$, *4.0$_4$ ps*, $\gamma_{8276.58}$**559.3**$_1$(16.7$_7$) (M1(+E2)), $\gamma_{8141.22}$**694.7**$_1$(100.0$_{14}$) (M1(+E2)) $\delta=-0.01_7$, $\gamma_{7292.85}$**1542.6**$_5$(4.3$_7$), $\gamma_{6452.35}$**2383.6**$_5$(8.0$_7$)
9008.7$_{11}$, $(41/2^+)$, $\gamma_{6452.35}$**2556.3**(100)
C **9299.78**$_{24}$, $(43/2^+)$, *0.9$_4$ ps*, $\gamma_{9008.7}$**289.9**(10.0$_5$), $\gamma_{8835.89}$**463.9**$_1$(100.0$_{15}$) (M1+E2) $\delta=+0.08_5$, $\gamma_{8141.22}$**1158.5**$_3$(4.5$_5$)
G **9717.0**$_{21}$, $(45/2^-)$, $\gamma_{7716.17}$**2000.8**$_{20}$(100) (E2)
D **10166.7**$_{17}$, $(45/2^+)$, *0.44$_3$ ps*, $\gamma_{8392.3}$**1774.4**$_{13}$(100) E2
10388.0$_{11}$, $(43/2^-,45/2^-)$, $\gamma_{7716.17}$**2671.8**(100)
D **10505.4**$_3$, $(47/2^+)$, *1.8$_4$ ps*, $\gamma_{9299.78}$**1205.6**$_1$(100) E2
10843.5$_{11}$, $(43/2^-,45/2^-)$, $\gamma_{7716.17}$**3127.3**(100)
12172.5$_{23}$, $(47/2^-,49/2^-)$, $\gamma_{9717.0}$**2455.5**
D **12225.1**$_{24}$, $\gamma_{10166.7}$**2058.4**$_{17}$(100)
H **x**, $J\approx(51/2)$
H **1349.9+x**, $J+2$, γ_{x}**1349.9**$_5$(0.25$_3$)
H **2809.5+x**, $J+4$, $\gamma_{1349.9+x}$**1459.6**$_4$(0.99$_5$)
H **4379.2+x**, $J+6$, $\gamma_{2809.5+x}$**1569.7**$_4$(1.00$_5$)
H **6061.0+x**, $J+8$, $\gamma_{4379.2+x}$**1681.7**$_4$(1.05$_5$)
H **7853.1+x**, $J+10$, $\gamma_{6061.0+x}$**1792.1**$_4$(0.93$_5$)
H **9756.2+x**, $J+12$, $\gamma_{7853.1+x}$**1903.1**$_4$(1.00$_5$)
H **11769.5+x**, $J+14$, $\gamma_{9756.2+x}$**2013.3**$_4$(0.95$_5$)
H **13887.7+x**, $J+16$, $\gamma_{11769.5+x}$**2118.2**$_4$(0.89$_5$)
H **16109.1+x**, $J+18$, $\gamma_{13887.7+x}$**2221.3**$_5$(0.61$_4$)
H **18433.0+x**, $J+20$, $\gamma_{16109.1+x}$**2323.9**$_5$(0.37$_3$)
H **20856.6+x**, $J+22$, $\gamma_{18433.0+x}$**2423.6**$_6$(0.21$_3$)



SD band
(2000Id01)

$^{91}_{43}Tc_{48}$

$^{104}_{46}$Pd$_{58}$

S$_n$: 9983 $_6$, S$_p$: 8658 $_6$

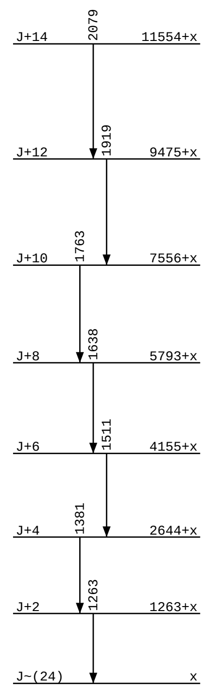
Nuclear Bands

A GS band
B Band based on 9^-
C Band based on 8^-
D Band based on 10^+
E SD band (?) (1988Ma38)

Levels and γ-ray branchings:

A **0**, 0^+, *stable*
A **555.810**$_{21}$, 2^+, *9.9$_5$ ps*, μ=+0.92$_8$, Q=-0.47$_{10}$, γ_0**555.796**$_{23}$(100) E2
A **1323.58**$_4$, 4^+, *1.5$_2$ ps*, $\gamma_{555.810}$**767.73**$_5$(100) E2
1333.62$_8$, 0^+, *5.2$_5$ ps*, $\gamma_{555.810}$**777.6**$_2$(100) E2, γ_0**1333.6**$_1$ E0
1341.70$_3$, 2^+, *1.60$_4$ ps*, $\gamma_{555.810}$**785.84**$_3$(100) E2(+M1) $\delta<-16$, γ_0**1341.72**$_4$(78$_3$) E2
1792.99$_9$, 0^+, *<0.25 ps*, $\gamma_{1341.70}$**451.15**$_{22}$(9.4$_9$), $\gamma_{555.810}$**1237.2**$_1$(100$_6$) (E2)
1794.42$_6$, 2^+, *<1.4 ps*, $\gamma_{1333.62}$**460.5**$_4$(2.5$_6$), $\gamma_{555.810}$**1238.60**$_6$(100) M1+E2 $\delta=+0.14_9$, γ_0**1794.0**$_4$(10$_1$) (E2)
1820.86$_6$, 3^+, $\gamma_{1341.70}$**479.1**$_1$(24$_1$) M1(+E2) $\delta<1.2$, $\gamma_{1323.58}$**497.8**$_6$(5.7$_7$) M1,E2, $\gamma_{555.810}$**1265.03**$_7$(100$_{10}$) M1+E2 $\delta=-15^{6}_{23}$
2082.34$_4$, 4^+, *1.2$_{12}$ ps*, $\gamma_{1341.70}$**740.62**$_4$(100) E2, $\gamma_{1323.58}$**758.72**$_5$(97$_5$) M1+E2 $\delta=-0.90_{14}$, $\gamma_{555.810}$**1526.58**$_5$(99$_4$) E2
2103$_5$, 0^+
2125.59$_{22}$, $\gamma_{1792.99}$**332.6**$_2$(100)
2139.62$_{21}$, 0^+, $\gamma_{555.810}$**1583.8**$_2$(100)
2181.61$_6$, 4^+, $\gamma_{1794.42}$**387.3**$_2$(2.3$_3$), $\gamma_{1341.70}$**839.7**$_2$(11$_1$), $\gamma_{1323.58}$**857.94**$_{10}$(100) M1(+E2) $\delta=+0.05_{10}$, $\gamma_{555.810}$**1625.83**$_7$(50$_3$) E2
2193.3$_5$, (3^-), $\gamma_{555.810}$**1637.5**$_5$(100) E1
2228$_5$, (2^+)
2244.82$_{21}$, 2^+, $\gamma_{555.810}$**1689.0**$_2$(100) M1+E2 $\delta=-0.13_7$
A **2249.78**$_7$, 6^+, $\gamma_{1323.58}$**926.2**$_1$(100) E2
2265.29$_8$, 4^+, $\gamma_{2082.34}$**183.2**$_3$(1.0$_4$) M1(+E2) $\delta<0.4$, $\gamma_{1820.86}$**444.5**$_2$(6.6$_6$) M1+E2 $\delta>1.2$, $\gamma_{1341.70}$**923.3**$_5$(27$_2$), $\gamma_{1323.58}$**941.8**$_1$(100) M1+E2 $\delta=-3.5_8$, $\gamma_{555.810}$**1708.0**$_5$(0.70$_8$)
2276.36$_{14}$, $(1)^+$, $\gamma_{1792.99}$**483.5**$_4$(8$_1$), $\gamma_{1341.70}$**934.6**$_2$(22$_3$) M1+E2 $\delta=-0.14_7$, $\gamma_{1333.62}$**942.0**$_5$(24$_{11}$), $\gamma_{555.810}$**1720.8**$_4$(75$_3$) M1+E2 $\delta=-0.16_3$, γ_0**2276.7**$_4$(100)
2297.98$_{10}$, 4^-, $\gamma_{2181.61}$**116.3**$_2$(70$_{10}$), $\gamma_{2082.34}$**215.6**$_3$(95$_3$), $\gamma_{1323.58}$**974.2**$_2$(100$_{20}$) E1(+M2) $\delta=0.5_6$
2337.92$_{22}$, $(2)^+$, $\gamma_{1341.70}$**996.1**$_3$(20$_2$) M1+E2 $\delta=-3.1_9$, $\gamma_{555.810}$**1781.8**$_5$(100), γ_0**2338.3**$_4$(39$_4$)
2351.7$_9$, $\gamma_{1323.58}$**1028.1**$_9$(100)
2444.49$_{11}$, $(5)^+$, $\gamma_{2265.29}$**179.3**$_3$(36$_6$) M1(+E2) $\delta<0.25$, $\gamma_{2181.61}$**263.2**$_2$(26$_3$) (M1+E2) $\delta=0.8_4$, $\gamma_{2082.34}$**362.3**$_2$(50$_7$) M1, $\gamma_{1820.86}$**623.2**$_2$(100), $\gamma_{1323.58}$**1120.5**$_4$(39$_6$) M1+E2
2456.7$_4$, (3), $\gamma_{1323.58}$**1133.1**$_4$(83$_{13}$), $\gamma_{555.810}$**1900.9**$_5$(100)
2465.7$_3$, $\gamma_{1333.62}$**1132.1**$_3$(100$_{10}$), $\gamma_{555.810}$**1909.8**$_{10}$(21$_8$)
2491.37$_8$, 5^-, $\gamma_{2297.98}$**193.4**$_2$(13$_2$) M1, $\gamma_{2181.61}$**309.7**$_3$(8$_3$), $\gamma_{2082.34}$**409.0**$_2$(3.5$_3$), $\gamma_{1323.58}$**1167.8**$_1$(100$_5$) E1, $\gamma_{555.810}$**1936.1**$_5$(100)
2521.06$_{19}$, 2^+, $\gamma_{1341.70}$**1179.3**$_2$(100), $\gamma_{555.810}$**1965.6**$_5$(67$_{14}$)
2533.3$_3$, $(2)^+$, $\gamma_{1341.70}$**1191.5**$_4$(17$_3$), $\gamma_{555.810}$**1977.5**$_4$(100$_{10}$) M1+E2 $\delta=-5_2$
2570.71$_{13}$, 4^+, $\gamma_{1323.58}$**1247.12**$_{12}$(100) M1+E2 $\delta=-0.80_7$
2572.62$_{15}$, $1^+,2^+,3^+$, $\gamma_{1341.70}$**1230.9**$_2$(100) M1,E2, $\gamma_{555.810}$**2016.8**$_2$(64$_{14}$)
2613.4$_5$, $(2)^+$, $\gamma_{1341.70}$**1271.7**(100), γ_0**2613.4**$_5$(19$_4$)
2621.4$_3$, $2^+,3^+$, $\gamma_{1323.58}$**1297.8**$_3$(100) M1,E2
2625.8$_3$, (1^-), $\gamma_{555.810}$**2070.0**$_3$
2641.8$_3$, 4^+, $\gamma_{1341.70}$**1300.0**$_8$(15$_3$), $\gamma_{1323.58}$**1318.2**$_3$(100) M1,E2
2667.67$_{16}$, 5^-, $\gamma_{1323.58}$**1344.1**$_2$(100) E1+M2 $\delta=-0.06_5$
2677.9$_3$, 4^+, $\gamma_{1323.58}$**1354.3**$_3$(100)
2695.0$_5$, 2^+, $\gamma_{555.810}$**2139.2**$_5$(100) (M1+E2) $\delta=-0.11_6$
2714.6$_5$, $(3^-,4^+)$, $\gamma_{1341.70}$**1372.6**$_9$(100), $\gamma_{555.810}$**2158.9**$_5$(25$_{10}$)
2734$_5$, (4^-)
2760
2766.4$_3$, $(4^+,5^-)$, $\gamma_{555.810}$**2210.6**$_3$(100)
2771.4$_5$, $\gamma_{555.810}$**2215.6**$_5$(100)
2774.5$_4$, 4^+, $\gamma_{1323.58}$**1451.2**$_5$(100) M1+E2 $\delta=-0.9^{10}_{3}$, $\gamma_{555.810}$**2218.3**$_5$(8$_2$) (E2)
2784$_6$, $^+$
2800.4$_5$, 4^+, $\gamma_{555.810}$**2244.6**$_5$(100)
2803.69$_{21}$, $(4,5,6)^+$, $\gamma_{1323.58}$**1480.1**$_2$(100) M1,E2
2810$_6$, $2^+,3^+$
2815$_5$, (5^-)
2868.53$_{17}$, $(4)^+$, $\gamma_{2249.78}$**618.6**$_2$(100) (E2), $\gamma_{1323.58}$**1545.2**$_3$(80$_5$) M1+E2 $\delta=-0.90_{13}$
2875.2$_7$, $(4^+,5^+,6^+)$, $\gamma_{1323.58}$**1551.6**$_7$(100) (M1,E2)
2900.84$_{10}$, 6^-, $\gamma_{2667.67}$**233.2**$_3$(16$_4$) M1+E2 $\delta=-0.02_3$, $\gamma_{2491.37}$**409.5**$_1$(100$_7$) M1, $\gamma_{2297.98}$**602.8**$_2$(47$_3$) E2, $\gamma_{2249.78}$**651.0**$_2$(42$_3$) E1+M2 $\delta=0.18_8$
2918.26$_{16}$, $(1,2)^+$, $\gamma_{1341.70}$**1576.7**$_2$(7$_1$), $\gamma_{1333.62}$**1584.3**$_3$(10$_5$), $\gamma_{555.810}$**2362.4**$_4$(100)
2924.15$_{20}$, $(4,5,6)^+$, $\gamma_{2265.29}$**659.3**$_3$(39$_4$) M1,E2, $\gamma_{2181.61}$**742.3**$_3$(20$_4$), $\gamma_{1323.58}$**1600.2**$_4$(100) M1,E2
2933$_6$
2958.9$_5$, $4^-,5^-,6^-$, $\gamma_{2491.37}$**467.5**$_5$(100) M1+E2 $\delta=0.28_5$
2975.32$_{17}$, (2,3), $\gamma_{2276.36}$**699.0**$_4$(6$_1$), $\gamma_{1820.86}$**1154.4**$_2$(10$_2$), $\gamma_{555.810}$**2419.6**$_4$(100)
2988.38$_9$, 7^-, $\gamma_{2667.67}$**320.7**$_3$(4$_1$) E2, $\gamma_{2491.37}$**497.0**$_1$(11$_2$) E2, $\gamma_{2249.78}$**738.6**$_1$(100$_5$) E1(+M2) $\delta=-0.04_2$
2993.5$_4$, $(2,3)^+$, $\gamma_{2082.34}$**910.2**$_4$(?), $\gamma_{1341.70}$**1652.1**$_5$(100), $\gamma_{555.810}$**2437.3**$_5$(33$_3$)
3000.4$_5$, $\gamma_{1323.58}$**1676.6**$_5$(100$_{20}$), γ_0**3001.6**$_{12}$(53$_{20}$)
3008.0$_7$, $(1,2^+)$, $\gamma_{555.810}$**2452.2**$_7$(100)
3013.5$_9$, γ_0**3013.5**$_9$(100)
3020.4$_6$, $\gamma_{1323.58}$**1696.8**$_6$(100)
3034.13$_{19}$, $(1,2^+)$, $\gamma_{555.810}$**2478.3**$_2$(36$_1$), γ_0**3034.0**$_5$(100)
3078.21$_{19}$, $2^+,3^+$, $\gamma_{1794.42}$**1283.7**$_2$(5$_4$), $\gamma_{555.810}$**2522.7**$_4$(100)
3084$_6$, (2^+)
3092$_6$, $(2^+,3^+)$
3096.2$_6$, (3^-), $\gamma_{555.810}$**2540.4**$_6$(100)
3104.51$_{15}$, 4^+, $\gamma_{2297.98}$**806.3**$_2$(9.9$_9$) E1, $\gamma_{2082.34}$**1022.3**$_5$(20$_2$) M1,E2, $\gamma_{1820.86}$**1283.9**$_4$(19$_4$) M1,E2, $\gamma_{1341.70}$**1763.1**$_5$(18.9$_5$), $\gamma_{1323.58}$**1781.0**$_3$(100) (M1+E2), $\gamma_{555.810}$**2549.0**$_5$(2.2$_4$)
3112.91$_{11}$, $5^+,6^+$, $\gamma_{2265.29}$**847.5**$_5$(4$_1$), $\gamma_{2249.78}$**863.01**$_{11}$(100) M1,E2, $\gamma_{2082.34}$**1031.0**$_2$(5.0$_7$), $\gamma_{1323.58}$**1789.2**$_3$(3.2$_4$)
3137.21$_{16}$, 4^+, $\gamma_{2265.29}$**872.0**$_2$(26$_6$) M1,E2, $\gamma_{2181.61}$**955.3**$_3$(52$_8$) M1,E2, $\gamma_{1323.58}$**1813.7**$_4$(100) M1(+E2) $\delta=-0.5_4$, $\gamma_{555.810}$**2582.3**$_{10}$(8$_1$)
C **3151.80**$_{12}$, 8^-, $\gamma_{2988.38}$**163.4**$_2$(31$_7$) M1, $\gamma_{2900.84}$**250.97**$_{10}$(100$_5$) E2
3153$_5$, (4^+)
3157.83$_6$, $(5,6)^+$, $\gamma_{2868.53}$**289.0**$_6$(20$_5$) M1(+E2) $\delta<1.5$, $\gamma_{2265.29}$**892.6**$_3$(13$_2$) E2(+M1) $\delta>4$, $\gamma_{2249.78}$**908.12**$_7$(100) M1+E2 $\delta=0.9^{5}_{3}$, $\gamma_{2082.34}$**1075.43**$_6$(55$_8$) M1+E2 $\delta=2.2^{16}_{6}$, $\gamma_{1323.58}$**1835.0**$_5$(3.3$_6$)
3167$_5$, (2^+)
3179.4$_4$, $\gamma_{555.810}$**2623.6**$_4$(100)
3182.81$_{19}$, (2^+), $\gamma_{1794.42}$**1388.3**$_3$(17$_1$), $\gamma_{1341.70}$**1841.0**$_4$(7.3$_5$), $\gamma_{555.810}$**2627.1**$_3$(100)
3195$_5$, (8^+)
3213.52$_9$, $(2)^+$, $\gamma_{1792.99}$**1420.5**$_2$(7$_1$), $\gamma_{1333.62}$**1880.1**$_3$(2.5$_2$), $\gamma_{1323.58}$**1889.9**$_1$(28$_2$) (E2), $\gamma_{555.810}$**2657.5**$_5$(23$_3$), γ_0**3213.6**$_5$(100)
A **3220.51**$_{12}$, 8^+, $\gamma_{2249.78}$**970.7**$_1$(100) E2
3224$_5$, (2^+)
3230$_5$, (6^+)
3253$_5$, (2^+)
3271$_5$, (6^+)
3281.7$_8$, $(1,2^+)$, $\gamma_{555.810}$**2726.1**$_{11}$(100$_{33}$), γ_0**3281.3**$_{11}$(78$_{22}$)
3285$_5$, (4^+)
3285.36$_{17}$, $(1,2^+)$, $\gamma_{1794.42}$**1490.8**$_2$(11.5$_9$), $\gamma_{555.810}$**2729.5**$_5$(100), γ_0**3285.6**$_3$(3.5$_5$)
3309.6$_4$, $(4^+,5^+)$, $\gamma_{1323.58}$**1986.0**$_4$(100) (M1+E2) $\delta=-1.4_6$
3321$_5$, (2^+)
3333.8$_5$, $(3^-,4^-)$, $\gamma_{555.810}$**2777.9**$_5$(100)
3349$_5$, (2^+)

3362$_5$, 4^+
B **3368.09**$_{12}$, 9^-, $\gamma_{3151.80}$**216.3**$_3$$(15_2)$ M1+E2, $\gamma_{2988.38}$**379.7**$_1$$(100)$ E2
3376$_5$, (6^+)
3381$_5$, (2^+)
3407.9$_3$, $1^+,2^+$, $\gamma_{1341.70}$**2065.9**$_5$$(15_1)$, $\gamma_{555.810}$**2852.5**$_5$$(19_1)$, γ_0**3407.8**$_5$$(100)$
3417$_5$, (2^+)
3421.70$_{15}$, (8^+), $\gamma_{3220.51}$**201.1**$_2$$(33_3)$ M1+E2 $\delta=-0.15_{15}$, $\gamma_{2249.78}$**1172.0**$_2$$(100_5)$ E2
3432$_5$, (3^-)
3461$_5$, (2^+)
3474.3$_4$, $(1,2^+)$, $\gamma_{555.810}$**2918.8**$_5$$(100)$, γ_0**3473.9**$_5$$(52_5)$
3477$_5$, (4^+)
3501.80$_{23}$, (9^-), $\gamma_{3151.80}$**350.0**$_2$$(100)$ M1+E2 $\delta=0.22_3$
3522$_5$, (2^+)
3556$_5$, (5^-)
3602$_5$, (2^+)
3608.54$_{25}$, (4^+), $\gamma_{2265.29}$**1343.0**$_8$$(100_{24})$, $\gamma_{1820.86}$**1787.6**$_3$$(38_5)$, $\gamma_{1341.70}$**2267.3**$_5$$(43_4)$, $\gamma_{1323.58}$**2284.1**(17_4)
3622$_5$, (2^+)
3647$_5$, (2^+)
3666$_5$, 4^+
3726$_5$, (4^+)
3738$_5$, 4^+
3744$_5$, (5^-)
3758$_5$, (2^+)
C **3769.50**$_{14}$, 10^-, $\gamma_{3368.09}$**401.4**$_2$$(12_2)$ M1+E2 $\delta=-1.0_5$, $\gamma_{3151.80}$**617.7**$_1$$(100_5)$ E2
3787$_5$, 4^+
3833$_5$, (2^+)
3849$_5$, (2^+)
3873$_5$, (2^+)
3903$_5$, (3^-)
3934$_5$, 4^+
3959$_5$, (3^-)
D **4023.01**$_{15}$, 10^+, $\gamma_{3421.70}$**601.3**$_2$$(17_2)$ E2, $\gamma_{3220.51}$**802.5**$_1$$(100_5)$ E2
B **4047.89**$_{16}$, 11^-, $\gamma_{3368.09}$**679.8**$_1$$(100)$ E2
4202.4$_3$, (11^-), $\gamma_{3501.80}$**700.6**$_2$$(100)$
D **4634.91**$_{18}$, 12^+, $\gamma_{4023.01}$**611.9**$_1$$(100)$ E2
C **4648.50**$_{18}$, 12^-, $\gamma_{3769.50}$**879.0**$_1$$(100)$ E2
B **4963.19**$_{19}$, 13^-, $\gamma_{4047.89}$**915.3**$_1$$(100)$ E2
D **5431.91**$_{20}$, 14^+, $\gamma_{4634.91}$**797.0**$_1$$(100)$ E2
C **5681.2**$_3$, 14^-, $\gamma_{4648.50}$**1032.7**$_2$$(100)$ E2
B **6021.9**$_3$, 15^-, $\gamma_{4963.19}$**1058.7**$_2$$(100)$ E2
D **6358.1**$_5$, 16^+, $\gamma_{5431.91}$**926.2**$_4$$(100)$
D **7422.3**$_5$, 18^+, $\gamma_{6358.1}$**1064.2**$_2$$(100)$ E2
8616.3$_{12}$, (20^+), $\gamma_{7422.3}$**1194**(100)
9873.3$_{15}$, (22^+), $\gamma_{8616.3}$**1257**(100)
11237.3$_{18}$, (24^+), $\gamma_{9873.3}$**1364**(100)
12707.4$_{21}$, (26^+), $\gamma_{11237.3}$**1470**(100)
E **x**, $J\approx(24)$
E **1263+x**, $J+2$, γ_x**1263**
E **2644+x**, $J+4$, γ_{1263+x}**1381**(0.78_8)
E **4155+x**, $J+6$, γ_{2644+x}**1511**(0.93_9)
E **5793+x**, $J+8$, γ_{4155+x}**1638**(0.79_8)
E **7556+x**, $J+10$, γ_{5793+x}**1763**(0.92_9)
E **9475+x**, $J+12$, γ_{7556+x}**1919**(0.78_8)
E **11554+x**, $J+14$, γ_{9475+x}**2079**(0.64_6)



SD band
(1988Ma38)
$^{104}_{46}Pd_{58}$

$^{105}_{46}\mathbf{Pd}_{59}$

S_n: 7094.1 $_7$, S_p: 8753 $_5$

Nuclear Bands

- A GS band
- B Band based on $7/2^+$
- C Band based on $11/2^-$
- D Band based on $21/2^+$
- E SD band (?) (1988Ma38)

Levels and γ-ray branchings:

A **0**, $5/2^+$, *stable*, μ=-0.642$_3$, Q=+0.660$_{11}$

280.51$_{22}$, $3/2^+$, *67$_{14}$ ps*, μ=-0.074$_{13}$, $\gamma_{\mathbf{0}}$**280.41**$_6$(100$_4$) M1+E2 $\delta=+0.078_{25}$

B **306.25**$_3$, $7/2^+$, *>69 ps*, $\gamma_{\mathbf{0}}$**306.25**$_3$(100) M1+E2 $\delta=+0.055_2$

319.216$_{24}$, $5/2^+$, *39$_2$ ps*, μ=+0.95$_{20}$, $\gamma_{\mathbf{280.51}}$**38.720**$_{17}$(0.121$_{14}$) M1(+E2) $\delta<0.22$, $\gamma_{\mathbf{0}}$**319.14**$_6$(100.0$_{18}$) M1+E2 $\delta=+0.103_8$

344.512$_{18}$, $1/2^+$, *0.88$_5$ ns*, $\gamma_{\mathbf{280.51}}$**63.98**$_3$(25.3$_{25}$) M1(+E2) $\delta=-0.025_{30}$, $\gamma_{\mathbf{0}}$**344.520**$_{21}$(100.0$_{15}$) E2

442.38$_4$, $(7/2)^+$, *3.71$_9$ ps*, $\gamma_{\mathbf{0}}$**442.37**$_5$(100) M1+E2 $\delta=-0.23_6$

447, $(3/2^+,5/2^+)$

C **489.14**$_4$, $11/2^-$, *36.1$_4$ μs*, $\gamma_{\mathbf{306.25}}$**182.89**$_4$(100) M2

≈**535**

560.75$_3$, $3/2^+$, *1.9$_5$ ps*, $\gamma_{\mathbf{344.512}}$**216.17**$_{15}$(3.9$_6$), $\gamma_{\mathbf{0}}$**560.71**$_5$(100$_6$) M1,E2

644.53$_4$, $7/2^-$, *126$_2$ ps*, μ=-1.49$_9$, $\gamma_{\mathbf{489.14}}$**155.39**$_6$(4.0$_3$) E2, $\gamma_{\mathbf{442.38}}$**202.13**$_{16}$(0.12$_5$), $\gamma_{\mathbf{319.216}}$**325.26**$_7$(1.5$_4$) E1, $\gamma_{\mathbf{0}}$**644.55**$_7$(100$_5$) E1+M2 $\delta=-0.012_4$

650.70$_3$, $(3/2)^+$, $\gamma_{\mathbf{560.75}}$**89.91**$_5$(0.35$_8$) M1(+E2), $\gamma_{\mathbf{319.216}}$**331.51**$_7$(100$_5$) M1+E2 $\delta=-0.084_7$, $\gamma_{\mathbf{306.25}}$**344.5**(?), $\gamma_{\mathbf{280.51}}$**370.17**$_6$(17.9$_{11}$) M1+E2 $\delta=-0.06_4$, $\gamma_{\mathbf{0}}$**650.72**$_6$(61.9$_4$) M1,E2

673.17$_3$, $1/2^+$, *>2 ps*, $\gamma_{\mathbf{560.75}}$**112.43**$_5$(1.15$_{17}$), $\gamma_{\mathbf{344.512}}$**328.61**$_6$(8$_4$) (M1), $\gamma_{\mathbf{319.216}}$**353.8**(0.4), $\gamma_{\mathbf{280.51}}$**392.64**$_6$(100$_5$) M1+E2 $\delta=+0.08_5$, $\gamma_{\mathbf{0}}$**673.21**$_6$(53$_3$) (E2)

696.66$_{15}$, $(7/2^+)$, $\gamma_{\mathbf{560.75}}$**135.80**$_{30}$(22$_8$), $\gamma_{\mathbf{442.38}}$**254.30**$_{30}$(92$_{27}$), $\gamma_{\mathbf{280.51}}$**415.80**$_{30}$(38$_{14}$), $\gamma_{\mathbf{0}}$**697.10**$_{30}$(100$_{35}$)

727.22$_4$, $(5/2)^+$, $\gamma_{\mathbf{442.38}}$**284.83**$_{10}$(77$_{40}$) M1, $\gamma_{\mathbf{344.512}}$**382.60**$_{20}$(3.7$_{17}$)(?), $\gamma_{\mathbf{319.216}}$**408.00**$_8$(32$_5$) M1,(E2), $\gamma_{\mathbf{306.25}}$**420.94**$_9$(84$_8$) M1,(E2), $\gamma_{\mathbf{280.51}}$**446.74**$_{19}$(100$_{47}$), $\gamma_{\mathbf{0}}$**727.22**$_7$(100$_8$) M1,(E2)

A **781.94**$_4$, $9/2^+$, *1.53 ps*, $\gamma_{\mathbf{442.38}}$**339.54**$_5$(76$_4$) M1(+E2) $\delta=-0.04_4$, $\gamma_{\mathbf{306.25}}$**475.1**(18$_5$), $\gamma_{\mathbf{0}}$**781.93**$_5$(100$_3$) E2

787$_8$, $(1/2^+)$

≈**808**

901.98$_{12}$, $5/2^+,7/2^+,9/2^+$, $\gamma_{\mathbf{442.38}}$**459.6**$_3$(1.2$_2$) E2+M1 $\delta=+0.24_9$, $\gamma_{\mathbf{319.216}}$**582.74**$_{25}$(66$_7$) E2, $\gamma_{\mathbf{306.25}}$**595.73**$_{15}$(100$_7$) E2+M1 $\delta=+0.16_3$

921.00$_9$, $\gamma_{\mathbf{650.70}}$**270.5**(43), $\gamma_{\mathbf{344.512}}$**576.62**$_{10}$(86), $\gamma_{\mathbf{280.51}}$**640.5**(100), $\gamma_{\mathbf{0}}$**921.04**$_{22}$(57)

929.13$_8$, $5/2^+$, $\gamma_{\mathbf{560.75}}$**370**(21), $\gamma_{\mathbf{442.38}}$**487.05**$_{19}$(42$_{11}$), $\gamma_{\mathbf{319.216}}$**609.5**$_7$(25.4$_{28}$), $\gamma_{\mathbf{280.51}}$**649.20**$_{29}$(26$_{18}$), $\gamma_{\mathbf{0}}$**929.12**$_{21}$(100$_{23}$)

939$_8$, $(1/2^+)$

961.4$_4$, $\gamma_{\mathbf{560.75}}$**400.4**$_4$(100$_7$), $\gamma_{\mathbf{280.51}}$**680.0**$_6$(17$_4$), $\gamma_{\mathbf{0}}$**961.6**$_8$(20$_4$)

962.38$_4$, $(1/2,3/2)^+$, $\gamma_{\mathbf{673.17}}$**289.18**$_7$(11$_4$) (M1), $\gamma_{\mathbf{650.70}}$**311.64**$_7$(5.2$_6$) (M1), $\gamma_{\mathbf{560.75}}$**401.65**$_7$(15.1$_{11}$) (M1), $\gamma_{\mathbf{344.512}}$**617.85**$_7$(100$_5$) M1,E2, $\gamma_{\mathbf{280.51}}$**681.90**$_7$(3.9$_6$) (M1,E2), $\gamma_{\mathbf{0}}$**962.43**$_7$(10.8$_9$) M1,E2

C **970.15**$_7$, $(15/2)^-$, $\gamma_{\mathbf{489.14}}$**481.00**$_5$(100) E2

≈**972**

1011.55$_{21}$, $(7/2^-,9/2,11/2^+)$, $\gamma_{\mathbf{489.14}}$**523.6**$_7$(32$_6$), $\gamma_{\mathbf{306.25}}$**705.2**$_2$(100$_7$)

B **1011.71**$_6$, $(11/2)^+$, $\gamma_{\mathbf{781.94}}$**229.82**$_{20}$(4.1$_7$) M1(+E2) $\delta=-0.05_9$, $\gamma_{\mathbf{306.25}}$**705.50**$_5$(100$_3$) E2

1072.2$_5$, $(5/2,7/2,9/2^+)$, $\gamma_{\mathbf{442.38}}$**629.7**$_8$(51$_{23}$), $\gamma_{\mathbf{0}}$**1072.2**$_5$(100$_{30}$)

1074.4$_4$(?), $\gamma_{\mathbf{306.25}}$**768.4**$_5$(40$_{20}$), $\gamma_{\mathbf{280.51}}$**793.8**$_5$(100$_{20}$)

1075$_8$, $(1/2^+)$

1087.96$_4$, $3/2^-$, $\gamma_{\mathbf{929.13}}$**158.92**$_8$(0.22$_5$), $\gamma_{\mathbf{921.00}}$**167.50**$_{20}$(0.15$_8$)(?), $\gamma_{\mathbf{727.22}}$**360.66**$_{14}$(4.7$_3$) E1, $\gamma_{\mathbf{673.17}}$**414.66**$_{19}$(2.73$_{24}$) (E1), $\gamma_{\mathbf{650.70}}$**437.12**$_{19}$(2.4$_3$) E1, $\gamma_{\mathbf{644.53}}$**443.37**$_7$(100$_5$) E2, $\gamma_{\mathbf{560.75}}$**527.20**$_7$(0.96$_{10}$) E1, $\gamma_{\mathbf{442.38}}$**646.0**(0.62), $\gamma_{\mathbf{344.512}}$**743.31**$_{21}$(5.5$_4$) E1, $\gamma_{\mathbf{319.216}}$**768.9**(0.09), $\gamma_{\mathbf{280.51}}$**807.46**$_7$(11.0$_7$) E1, $\gamma_{\mathbf{0}}$**1087.94**$_6$(36.8$_{16}$)

1098.42$_{20}$, $(5/2,7/2)^+$, $\gamma_{\mathbf{442.38}}$**656.5**$_4$(11$_4$), $\gamma_{\mathbf{280.51}}$**818**(6.1), $\gamma_{\mathbf{0}}$**1098.26**$_{23}$(100$_{22}$)

1102.1$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{280.51}}$**821.7**$_4$(100)

1125.33$_{11}$, $(1/2^+,3/2)$, $\gamma_{\mathbf{560.75}}$**564.39**$_{20}$(15$_{13}$), $\gamma_{\mathbf{280.51}}$**844.89**$_{13}$(100$_{11}$), $\gamma_{\mathbf{0}}$**1125.7**$_6$(31$_8$)

1140.81$_{14}$, $(1/2^+)$, $\gamma_{\mathbf{560.75}}$**580.1**$_4$(100$_{40}$), $\gamma_{\mathbf{344.512}}$**796.25**$_{24}$(35$_{15}$), $\gamma_{\mathbf{280.51}}$**860.33**$_{18}$(35$_{15}$)

1142.35$_{14}$, $\gamma_{\mathbf{650.70}}$**491.2**$_{55}$(8$_4$), $\gamma_{\mathbf{560.75}}$**582.10**$_{20}$(100$_5$), $\gamma_{\mathbf{0}}$**1142.20**$_{20}$(62$_5$)

1177.7$_3$, $\gamma_{\mathbf{0}}$**1177.7**$_3$(100)

1201.6$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{560.75}}$**640.8**$_5$(100$_6$), $\gamma_{\mathbf{280.51}}$**921.3**$_4$(46$_6$)

1259.11$_{20}$, $\gamma_{\mathbf{306.25}}$**952.6**$_3$(100$_8$), $\gamma_{\mathbf{280.51}}$**979**$_4$(49$_8$), $\gamma_{\mathbf{0}}$**1259.2**$_3$(85$_8$)

1263$_8$, $(1/2^+)$

1271.44$_7$, $(11/2)^+$, $\gamma_{\mathbf{1011.71}}$**260.00**$_{30}$(27$_9$), $\gamma_{\mathbf{781.94}}$**489.49**$_9$(71$_5$) E2+M1 $\delta=-0.13_6$, $\gamma_{\mathbf{442.38}}$**829.03**$_9$(100$_5$) E2

1324.30$_{17}$, $(11/2^+)$, $\gamma_{\mathbf{1011.71}}$**312.60**$_{30}$(100$_{30}$), $\gamma_{\mathbf{489.14}}$**834.90**$_{30}$(83$_{43}$)

1405.1$_3$, $\gamma_{\mathbf{1142.35}}$**263.3**$_5$(25$_5$), $\gamma_{\mathbf{306.25}}$**1098.5**$_3$(100$_5$), $\gamma_{\mathbf{0}}$**1405.5**$_7$(13$_3$)

1411.03$_{16}$, $(13/2^+)$, $\gamma_{\mathbf{1271.44}}$**140.00**$_{30}$(40$_{15}$), $\gamma_{\mathbf{1011.55}}$**399.90**$_{30}$(100$_{30}$), $\gamma_{\mathbf{781.94}}$**628.10**$_{30}$(50$_{15}$)

1520.5$_8$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{442.38}}$**1078.0**$_5$(100$_{21}$), $\gamma_{\mathbf{280.51}}$**1240.8**$_7$(62$_{15}$)

1601.3$_5$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{1142.35}}$**459.0**$_5$(100$_{10}$), $\gamma_{\mathbf{0}}$**1600.4**$_{16}$(13$_7$)

1650.4$_{16}$, $\gamma_{\mathbf{489.14}}$**1162.1**$_8$(91$_{23}$), $\gamma_{\mathbf{442.38}}$**1208.7**$_8$(100$_{26}$)

A **1671.19**$_{10}$, $(13/2)^+$, $\gamma_{\mathbf{1271.44}}$**399.76**$_{10}$(35.1$_{21}$) E2+M1 $\delta=-0.08_4$, $\gamma_{\mathbf{781.94}}$**889.24**$_{25}$(100$_7$) E2

1700.6$_8$, $\gamma_{\mathbf{727.22}}$**973.3**$_8$(100$_{25}$), $\gamma_{\mathbf{319.216}}$**1382.4**$_{16}$(54$_{29}$)

C **1741.98**$_9$, $(19/2)^-$, $\gamma_{\mathbf{970.15}}$**771.82**$_7$(100) E2

1749.68$_{19}$, $(13/2)^+$, $\gamma_{\mathbf{901.98}}$**847.6**$_3$(100) E2

1763.30$_{13}$, $(15/2)^-$, $\gamma_{\mathbf{970.15}}$**793.17**$_{25}$(100$_{11}$) E2+M1 $\delta=+1.0_5$, $\gamma_{\mathbf{489.14}}$**1274.15**$_{15}$(41$_5$)

1774.6$_5$(?), $\gamma_{\mathbf{319.216}}$**1455.3**$_5$(100)

1854.21$_{19}$, $(13/2^+)$, $\gamma_{\mathbf{1324.30}}$**530.30**$_{30}$(52$_{18}$), $\gamma_{\mathbf{1271.44}}$**582.00**$_{30}$(100$_{30}$), $\gamma_{\mathbf{1011.71}}$**843.00**$_{30}$(70$_{23}$)

1865.5$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{280.51}}$**1583.9**$_6$(100)

1874.02$_{17}$, $(15/2^+)$, $\gamma_{\mathbf{1411.03}}$**463.10**$_{30}$(13$_5$), $\gamma_{\mathbf{1324.30}}$**549.10**$_{30}$(7$_4$), $\gamma_{\mathbf{1271.44}}$**602.70**$_{30}$(100$_{11}$), $\gamma_{\mathbf{1011.71}}$**862.70**$_{30}$(24$_7$)

B **1902.02**$_{15}$, $(15/2)^+$, $\gamma_{\mathbf{1011.71}}$**890.2**$_4$(100) E2

1923$_8$, $(1/2^+)$

1961.53$_8$, $(17/2)^-$, $\gamma_{\mathbf{970.15}}$**991.38**$_5$(100) E2+M1 $\delta=+0.46_{10}$

1988.4$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{1098.42}}$**890.7**$_4$(100$_{11}$), $\gamma_{\mathbf{961.4}}$**1026.7**$_4$(62$_{10}$)

2064.5$_7$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{319.216}}$**1745.2**$_7$(100$_{20}$), $\gamma_{\mathbf{280.51}}$**1784.3**$_{16}$(27$_{13}$)

2102$_8$

2197.19$_{19}$, $(15/2)^+$, $\gamma_{\mathbf{1271.44}}$**925.80**$_{30}$(100) E2

2280.76$_{21}$, $(17/2)^-$, $\gamma_{\mathbf{970.15}}$**1310.60**$_{20}$(100) E2+M1 $\delta=+1.3_7$

2344.73$_{15}$, $(19/2)^-$, $\gamma_{\mathbf{1763.30}}$**581.45**$_{25}$(39$_8$) E2, $\gamma_{\mathbf{1741.98}}$**602.78**$_{15}$(100$_8$) E2+M1 $\delta=-0.01_{60}$

≈**2420**

2491.1$_3$, $(19/2^-)$, $\gamma_{\mathbf{1741.98}}$**749.1**$_4$(73$_{12}$), $\gamma_{\mathbf{970.15}}$**1520.90**$_{30}$(100$_{19}$) (E2)

A **2552.15**$_{14}$, $(17/2)^+$, $\gamma_{\mathbf{1902.02}}$**649.90**$_{30}$(26$_7$), $\gamma_{\mathbf{1671.19}}$**881.00**$_{20}$(100$_{12}$) E2, $\gamma_{\mathbf{970.15}}$**1582.00**$_{30}$(23$_7$)

2565.07$_{12}$, $(17/2)^+$, $\gamma_{\mathbf{2197.19}}$**367.90**$_{20}$(12.5$_{25}$), $\gamma_{\mathbf{1749.68}}$**815.40**$_{20}$(40$_5$) E2, $\gamma_{\mathbf{1671.19}}$**893.88**$_{10}$(100$_5$) (E2)

2613$_8$

C **2700.40**$_{13}$, $(23/2)^-$, $\gamma_{\mathbf{1741.98}}$**958.40**$_{12}$(100) E2

2704.08$_{18}$, $(19/2^-)$, $\gamma_{\mathbf{1741.98}}$**962.10**$_{15}$(100) E2+M1 $\delta=+0.2_4$

B **2756.04**$_{16}$, $(19/2)^+$, $\gamma_{\mathbf{1902.02}}$**854.01**$_5$(100$_3$) E2, $\gamma_{\mathbf{1741.98}}$**1014.3**$_3$(18$_3$) M2+E1 $\delta=+0.2_8$

2775.75$_{12}$, $(21/2^-)$, $\gamma_{\mathbf{1961.53}}$**814.22**$_{20}$(50$_{10}$) (E2), $\gamma_{\mathbf{1741.98}}$**1033.77**$_{10}$(100$_7$) E2+M1 $\delta=+0.62_{18}$

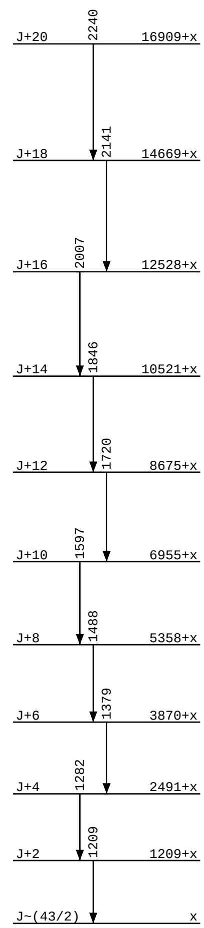
2806.70$_{14}$, $(19/2)^+$, $\gamma_{\mathbf{2565.07}}$**241.6**$_2$(6.5$_{22}$), $\gamma_{\mathbf{2552.15}}$**254.53**$_{10}$(100.0$_{22}$) E2+M1 $\delta=+0.09_1$, $\gamma_{\mathbf{1902.02}}$**904.70**$_{10}$(26$_4$) E2

2900.92$_{13}$, $(21/2^-)$, $\gamma_{\mathbf{1961.53}}$**939.40**$_{30}$(46$_{13}$), $\gamma_{\mathbf{1741.98}}$**1158.94**$_{10}$(100$_8$) E2+M1 $\delta=+1.3_9$

D **3072.99**$_{15}$, $(21/2)^+$, $\gamma_{\mathbf{2700.40}}$**372.60**$_{20}$(8.0$_{20}$) M2+E1 $\delta=-0.20_{13}$, $\gamma_{\mathbf{2565.07}}$**508.00**$_{30}$(100$_8$) E2, $\gamma_{\mathbf{1741.98}}$**1331.00**$_{20}$(48$_6$) M2+E1 $\delta=+0.8_8$

A **3119.36**$_{16}$, $(21/2)^+$, $\gamma_{\mathbf{2806.70}}$**312.67**$_{10}$(100$_6$) E2+M1 $\delta=+0.12_3$, $\gamma_{\mathbf{1741.98}}$**1377.30**$_{30}$(38$_9$)

3153.46$_{18}$, $(23/2)^-$, $\gamma_{\mathbf{2700.40}}$**452.98**$_{20}(58_6)$ E2+M1 $\delta=0.0_6$, $\gamma_{\mathbf{2344.73}}$**808.80**$_{20}(100_{12})$ E2
B **3294.89**$_{14}$, $(23/2)^+$, $\gamma_{\mathbf{2756.04}}$**538.82**$_{13}(100)$ E2
$\approx$**3320**
3468.74$_{22}$, $(23/2)^+$, $\gamma_{\mathbf{3119.36}}$**349.38**$_{15}(100)$ E2+M1 $\delta=+0.14_2$
D **3527.80**$_{17}$, $(25/2)^+$, $\gamma_{\mathbf{3294.89}}$**232.80**$_{30}(5.3_{13})$ E2+M1 $\delta=-0.27_7$, $\gamma_{\mathbf{3072.99}}$**454.82**$_{10}(100_4)$ E2
$\approx$**3570**
$\approx$**3690**
3694.54$_{20}$, $(25/2^-)$, $\gamma_{\mathbf{2775.75}}$**918.80**$_{30}(100_{17})$ E2, $\gamma_{\mathbf{2700.40}}$**994.12**$_{20}(89_{17})$ E2+M1 $\delta=+1.5_{10}$
C **3800.65**$_{16}$, $(27/2^-)$, $\gamma_{\mathbf{2700.40}}$**1100.24**$_{10}(100)$ (E2)
B **3873.16**$_{20}$, $(27/2)^+$, $\gamma_{\mathbf{3294.89}}$**578.27**$_5(100)$ E2
$\approx$**4000**
$\approx$**4110**
D **4254.6**$_3$, $(29/2)^+$, $\gamma_{\mathbf{3527.80}}$**726.80**$_{20}(100)$ E2
$\approx$**4510**
B **4668.4**$_4$, $(31/2^+)$, $\gamma_{\mathbf{3873.16}}$**795.23**$_{25}(100)$ (E2)
$\approx$**4690**
$\approx$**4840**
C **4953.3**$_3$, $(31/2^-)$, $\gamma_{\mathbf{3800.65}}$**1152.64**$_{20}(100)$ (E2)
D **5255.5**$_4$, $33/2^+$, $\gamma_{\mathbf{4254.6}}$**1000.90**$_{30}(100)$ (E2)
5683, $(35/2^+)$, $\gamma_{\mathbf{4668.4}}$**1014**(100)
E **x**, $J\approx(43/2)$
E **1209+x**, $J+2$, $\gamma_{\mathbf{x}}$**1209**(0.51_5)
E **2491+x**, $J+4$, $\gamma_{\mathbf{1209+x}}$**1282**(0.47_5)
E **3870+x**, $J+6$, $\gamma_{\mathbf{2491+x}}$**1379**(0.96_{10})
E **5358+x**, $J+8$, $\gamma_{\mathbf{3870+x}}$**1488**(1.05_{10})
E **6955+x**, $J+10$, $\gamma_{\mathbf{5358+x}}$**1597**(1.10_{11})
E **8675+x**, $J+12$, $\gamma_{\mathbf{6955+x}}$**1720**(1.00_{10})
E **10521+x**, $J+14$, $\gamma_{\mathbf{8675+x}}$**1846**(0.60_6)
E **12528+x**, $J+16$, $\gamma_{\mathbf{10521+x}}$**2007**$(0.55_6)$
E **14669+x**, $J+18$, $\gamma_{\mathbf{12528+x}}$**2141**$(0.30_3)$
E **16909+x**, $J+20$, $\gamma_{\mathbf{14669+x}}$**2240**$(0.12_2)$



SD band
(1988Ma38)
$^{105}_{46}Pd_{59}$

$^{105}_{47}$Ag$_{58}$

S$_n$: 10027 $_{12}$, S$_p$: 4966 $_{11}$

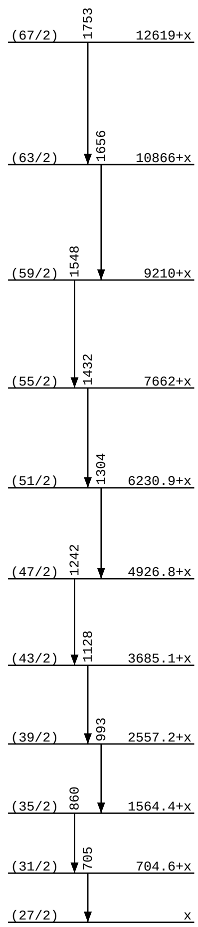
Nuclear Bands

A Band based on $21/2^+$, α==1/2
B Band based on $21/2^+$, α=-1/2
C Band based on $17/2^-$, α=+1/2
D Band based on $17/2^-$, α=-1/2
E SD band (?) (1995Je05,1994Je12)
Q$_0$=4.5^3_2

Levels and γ-ray branchings:

0, $1/2^-$, *41.29$_7$ d*, %ε+%β^+=100 , μ=0.1014$_{10}$
25.465$_{12}$, $7/2^+$, *7.23$_{16}$ min*, %IT=99.66$_7$, %ε+%β^+=0.34$_7$, μ=+4.414$_{13}$, γ_{0}**25.48**$_2$(100) E3
53.137$_{17}$, $9/2^+$, *2.33$_8$ ns*, $\gamma_{25.465}$**27.67**$_1$(100) (M1+E2) $\delta=0.044_8$
346.872$_{16}$, $3/2^-$, $\gamma_{53.137}$**292.5**$_8$(2.0_4) E3, γ_{0}**346.870**$_{20}$(100.0_{10}) M1+E2 $\delta=+0.10^5_7$
433.237$_{23}$, $5/2^-$, $\gamma_{346.872}$**86.33**$_7$(3.5_3), γ_{0}**433.240**$_{30}$(100.0_6) E2
614.6$_4$, $\gamma_{53.137}$**562.0**$_8$(4.1_{12}), $\gamma_{25.465}$**589.5**$_5$(100_{21})
668.60$_{10}$, $(11/2)^+$, $\gamma_{433.237}$**235.4**, $\gamma_{53.137}$**615.49**$_{21}$(100) E2+M1 $\delta=+0.40_4$
802$_5$
877.82$_5$, $3/2^-$, $\gamma_{346.872}$**530.94**$_8$(35.1_{21}), γ_{0}**877.80**$_9$(100_4)
917.28$_9$, $(13/2)^+$, $\gamma_{668.60}$**248.65**$_7$(30.2_{18}) E2+M1 $\delta=0.06_4$, $\gamma_{53.137}$**864.14**$_9$(100_2) E2
987.282$_{21}$, $(5/2)^+$, $\gamma_{346.872}$**640.46**$_8$(1.30_{20}), $\gamma_{53.137}$**934.14**$_4$(27.0_6), $\gamma_{25.465}$**961.84**$_3$(100_1)
1023.69$_5$, $7/2^-$, *54$_{13}$ ps*, $\gamma_{433.237}$**590.44**$_5$(100_4) M1+E2 $\delta=+0.02^{9}_{44}$, $\gamma_{346.872}$**676.88**$_{12}$(40_4)
1042.68$_5$, $3/2^-,5/2^-$, *67$_{18}$ ps*, $\gamma_{433.237}$**609.45**$_5$(51_4), $\gamma_{346.872}$**695.76**$_{10}$(36_4), γ_{0}**1042.7**$_{10}$(100_{38})
1097.11$_4$, $(9/2^+)$, *29$_6$ ps*, $\gamma_{53.137}$**1042.0**$_{10}$(26_5), $\gamma_{25.465}$**1071.65**$_5$(100.0_{15})
1166.26$_7$, $7/2^-,9/2^-$, *35$_9$ ps*, $\gamma_{433.237}$**733.02**$_6$(100) E2
1243.41$_7$ *135$_{49}$ ps*, $\gamma_{433.237}$**810.1**$_8$(100_4), $\gamma_{346.872}$**896.61**$_9$(69_8)
1294.91$_3$, $1/2^+$, *24$_5$ ps*, $\gamma_{987.282}$**307.8**$_{10}$(6.6_{27}), $\gamma_{877.82}$**417.10**$_{20}$(1.6_{11}), $\gamma_{346.872}$**948.04**$_4$(100.0_{16}), γ_{0}**1294.89**$_4$(36.3_{11})
1294.970$_{25}$, $(7/2^-)$, $\gamma_{346.872}$**947.76**$_{22}$(100)
1327.923$_{20}$, $5/2^+$, *83$_{24}$ ps*, $\gamma_{987.282}$**340.66**$_4$(9.9_{11}), $\gamma_{53.137}$**1274.78**$_4$(20.94_{23}), $\gamma_{25.465}$**1302.459**$_{20}$(100_5)
1345.4$_4$, $\gamma_{668.60}$**676.0**$_6$(27_6), $\gamma_{614.6}$**731.8**$_6$(100_{23})
1386.28$_3$, $3/2^+,5/2^+$, *52$_{12}$ ps*, $\gamma_{987.282}$**398.99**$_8$(10.1_8), $\gamma_{25.465}$**1360.79**$_4$(100_{13})
1416.09$_{10}$, $(1/2,3/2,5/2^-)$, γ_{0}**1415.4**$_4$(100)
1441.59$_5$, $3/2^+,5/2^+$, *26$_8$ ps*, $\gamma_{987.282}$**454.38**$_7$(4.0_4), $\gamma_{53.137}$**1388.48**$_6$(100.0_9), $\gamma_{25.465}$**1415.4**$_4$(56_{13})
1543.2$_3$, $3/2^-,5/2^-$, *33$_{12}$ ps*, $\gamma_{1345.4}$**198.0**$_8$(100), $\gamma_{346.872}$**1196.30**$_{30}$
1557.900$_{23}$, $3/2^+$, *15$_7$ ps*, $\gamma_{1386.28}$**171.34**$_{16}$(2.7_9), $\gamma_{1327.923}$**229.81**$_9$(3.6_{13}), $\gamma_{1294.91}$**262.990**$_{30}$(8.9_5), $\gamma_{987.282}$**570.56**$_6$(5.3_5), $\gamma_{433.237}$**1124.73**$_8$(4.6_5), $\gamma_{346.872}$**1211.09**$_7$(10_3), $\gamma_{25.465}$**1532.32**$_{12}$(3.2_5), γ_{0}**1557.84**$_4$(100.0_{12})
1572.7$_4$, $(11/2^+)$, $\gamma_{53.137}$**1520.2**$_5$(58_9), $\gamma_{25.465}$**1546.6**$_5$(100_9)
1586.88$_3$, $1/2^+$, *33$_9$ ps*, $\gamma_{1294.91}$**291.96**$_4$(77_3), $\gamma_{1243.41}$**343.40**$_{20}$(9.8_{16}), $\gamma_{346.872}$**1239.98**$_5$(100_3), γ_{0}**1586.84**$_8$(72_3)
1635.78$_3$, $(1/2^+,3/2,5/2^-)$, $\gamma_{1386.28}$**249.41**$_6$(<4.5), $\gamma_{1327.923}$**307.830**$_{30}$(<84), $\gamma_{1294.970}$**340.66**$_4$(<6), $\gamma_{1097.11}$**538.67**$_6$(69_6), $\gamma_{877.82}$**758.07**$_{15}$(<8.0), $\gamma_{25.465}$**1610.3**$_6$(<25), γ_{0}**1635.80**$_8$(100_{21})
1635.79$_3$, $(5/2^+,7/2^+,9/2^+)$, $\gamma_{1386.28}$**249.41**$_6$(<3.0), $\gamma_{1327.923}$**307.830**$_{30}$(<57), $\gamma_{1294.970}$**340.66**$_4$(<4.2), $\gamma_{987.282}$**648.49**$_4$(100.0_{15}), $\gamma_{877.82}$**758.07**$_{15}$(<5.4), $\gamma_{53.137}$**1582.56**$_7$(40.2_{12}), $\gamma_{25.465}$**1610.3**$_6$(<17)
1643$_5$, $7/2^-,9/2^-$
1656.2$_4$, $3/2,5/2,7/2$, $\gamma_{1042.68}$**613.5**$_4$(100)
1665.82$_{13}$, $(13/2)^+$, $\gamma_{917.28}$**748.0**$_3$(36_6), $\gamma_{668.60}$**997.3**$_1$(100_4) M1+E2 $\delta=+1.3^3_6$, $\gamma_{53.137}$**1612.0**$_5$(38_6)
1669.55$_3$, $(3/2^+,5/2)$, $\gamma_{1386.28}$**283.29**$_4$(17.7_{11}), $\gamma_{987.282}$**681.97**$_{16}$(3.8_{11}), $\gamma_{346.872}$**1322.2**$_{10}$(13_4), $\gamma_{25.465}$**1644.03**$_7$(100.0_{16})
1681.05$_{11}$, $(15/2)^+$, $\gamma_{917.28}$**763.78**$_8$(100_4) M1+E2 $\delta=+0.28_2$, $\gamma_{668.60}$**1012.43**$_{25}$(43_3) E2
1690.80$_5$, $(3/2^+,5/2)$, $\gamma_{1557.900}$**132.90**$_{20}$(2.0_{10}), $\gamma_{1441.59}$**249.4**$_{10}$(2.5_{15}), $\gamma_{1327.923}$**362.90**$_{30}$(2.0_{10}), $\gamma_{987.282}$**703.46**$_8$(31.5_{10}), $\gamma_{346.872}$**1343.82**$_{10}$(9.4_{10}), $\gamma_{25.465}$**1665.65**$_{10}$(100_9)
1706$_5$, $3/2^-,5/2^-$
1718.79$_5$ *11$_5$ ps*, $\gamma_{53.137}$**1665.60**$_6$(10_{10}), $\gamma_{25.465}$**1693.34**$_5$(100.0_7)
1733.90$_{18}$, $(15/2)^+$, *5.14 ns*, μ=+3.73$_{14}$, $\gamma_{917.28}$**816.63**$_{25}$(44_{11}) M1+E2 $\delta=-1.01_{17}$, $\gamma_{668.60}$**1065.28**$_{20}$(100_7) E2
1750.16$_4$, $3/2^+,5/2^+$, $\gamma_{1557.900}$**192.27**$_9$(13.5_{24}), $\gamma_{1327.923}$**422.27**$_6$(12.8_7), $\gamma_{987.282}$**762.80**$_{30}$(2.7_{14}), $\gamma_{346.872}$**1403.09**$_{10}$(55.9_{19}), $\gamma_{53.137}$**1697.15**$_{23}$(17.5_{18}), $\gamma_{25.465}$**1724.68**$_9$(100.0_{20})
1757$_5$, $7/2^-,9/2^-$
1794.63$_6$, $7/2^+$, $\gamma_{1327.923}$**466.73**$_7$(42_8), $\gamma_{433.237}$**1361.50**$_{20}$(100_{42}), $\gamma_{53.137}$**1741.8**$_4$(27_8)
1828$_5$, $7/2^-,9/2^-$
1843$_5$, $3/2^-,5/2^-$
1858.9$_6$, $\gamma_{614.6}$**1244.0**$_{10}$(14_4), $\gamma_{53.137}$**1805.8**$_6$(100_{19})
1875$_5$, $7/2^-,9/2^-$
1883.4$_4$, $(9/2^+)$, $\gamma_{1669.55}$**215.1**, $\gamma_{987.282}$**895.5**$_6$(100_{14}), $\gamma_{917.28}$**966.4**$_6$(99_{11}), $\gamma_{53.137}$**1830.5**$_6$(94_{16}), $\gamma_{25.465}$**1858.0**$_{10}$(38_{10})
1885.70$_{15}$, $(5/2^+,7/2^+,9/2^+)$, $\gamma_{1386.28}$**499.5**$_{10}$(100_{50}), $\gamma_{1097.11}$**788.70**$_{20}$(75_{25}), $\gamma_{25.465}$**1860.10**$_{20}$(100_{25})
1921$_5$, $(11/2^-,13/2^-)$
1922.98$_3$, $(7/2)^+$, *19$_4$ ps*, $\gamma_{1794.63}$**128.60**$_{20}$(0.52_{19}), $\gamma_{1750.16}$**172.82**$_{13}$(5.2_{10}), $\gamma_{1690.80}$**232.37**$_8$(5.8_6), $\gamma_{1669.55}$**253.420**$_{30}$(10.1_6), $\gamma_{1097.11}$**825.72**$_{15}$(8.4_{10}), $\gamma_{433.237}$**1489.72**$_5$(30.8_6), $\gamma_{53.137}$**1869.74**$_9$(44.2_{10}), $\gamma_{25.465}$**1897.52**$_7$(100.0_{10})
1959$_5$, $1/2^-$
1978.03$_{12}$, $(17/2)^+$, $\gamma_{1681.05}$**296.6**$_1$(13_3) E2+M1 $\delta=+0.09_4$, $\gamma_{917.28}$**1060.74**$_9$(100_3) E2
1986.34$_4$, $5/2^+$, $\gamma_{1690.80}$**295.70**$_{30}$(0.9_6), $\gamma_{1669.55}$**316.82**$_5$(15.6_6), $\gamma_{1441.59}$**545.00**$_{20}$(0.9_3), $\gamma_{1327.923}$**658.3**$_{10}$(2.1_{18}), $\gamma_{1097.11}$**889.13**$_8$(15.9_6), $\gamma_{987.282}$**998.4**$_{10}$(5.9_{18}), $\gamma_{433.237}$**1552.80**$_{30}$(2.1_6), $\gamma_{53.137}$**1933.10**$_9$(100.0_9), $\gamma_{25.465}$**1960.89**$_9$(56_3)
2022.53$_{12}$, $(17/2)^+$, $\gamma_{1681.05}$**341.50**$_{30}$($32._7$) E2+M1 $\delta=+0.10_4$, $\gamma_{917.28}$**1105.25**$_8$(100_6) E2
2029$_5$, $7/2^-,9/2^-$
2061$_5$, $3/2^-,5/2^-$
2081.61$_7$, $5/2^+,7/2^+$, *15$_4$ ps*, $\gamma_{1097.11}$**984.58**$_{17}$(11_3), $\gamma_{53.137}$**2028.47**$_8$(100_3), $\gamma_{25.465}$**2056.05**$_{13}$(39_5)
2086$_5$, $3/2^-,5/2^-$
2093$_5$
2111$_5$, $7/2^-,9/2^-$
2113.46$_{21}$, $\gamma_{1166.26}$**947.2**$_2$(100)
2127$_5$, $1/2^-$
2144.4$_4$, $3/2^-,5/2^-$, $\gamma_{346.872}$**1797.5**$_4$(100)
2156.42$_5$, $3/2^+$, $\gamma_{1557.900}$**598.54**$_5$(31.3_{25}), $\gamma_{1386.28}$**770.18**$_{12}$(15.0_{25}), $\gamma_{987.282}$**1169.09**$_8$(30.0_{25}), $\gamma_{346.872}$**1809.0**$_4$(6.3_{13}), γ_{0}**2156.2**$_{11}$(100_4)
2166$_8$
2197$_5$, $3/2^-,5/2^-$
2220$_5$, $7/2^-,9/2^-$
2249.58$_4$, $3/2^+$, $\gamma_{1750.16}$**499.5**$_{10}$($6._6$), $\gamma_{1669.55}$**579.97**$_9$(11.4_{10}), $\gamma_{1635.78}$**613.5**$_{10}$(20_{12}), $\gamma_{1586.88}$**662.79**$_7$(16.2_{19}), $\gamma_{1327.923}$**921.62**$_5$(97.1_{19}), $\gamma_{1294.91}$**954.53**$_{12}$(5.7_{19}), $\gamma_{1243.41}$**1006.25**$_9$(15.2_{29}), $\gamma_{987.282}$**1262.24**$_{14}$(7.6_{19}), $\gamma_{346.872}$**1902.79**$_{13}$(26.7_{19}), γ_{0}**2249.48**$_{10}$(100_4)
2252$_5$
2256.54$_5$, $5/2^+$, $\gamma_{1794.63}$**461.96**$_{11}$(7.7_{15}), $\gamma_{1327.923}$**928.80**$_{20}$($5._3$), $\gamma_{1023.69}$**1232.84**$_{13}$(10.8_{15}), $\gamma_{433.237}$**1823.10**$_{20}$($25._5$), $\gamma_{346.872}$**1909.69**$_8$(100.0_{23}), $\gamma_{25.465}$**2230.88**$_{12}$(32.3_{15})
2275.99$_{20}$, $5/2^+$, $\gamma_{346.872}$**1929.10**$_{20}$(100)
2277.2$_3$, $(17/2^+)$, $\gamma_{917.28}$**1360.0**$_3$(100)

2298.69$_{21}$, $(17/2^+)$, $\gamma_{1733.90}$**564.79**$_{10}$(100)
2300.38$_{7}$, $3/2^+,5/2^+$, $\gamma_{1669.55}$**630.80**$_{30}$(37_{15}), $\gamma_{1441.59}$**858.95**$_{12}$(100_{4}), $\gamma_{1327.923}$**972.48**$_{10}$(56_{10}), $\gamma_{877.82}$**1422.19**$_{15}$(28_{10}), $\gamma_{433.237}$**1867.30**$_{30}$(47_{10}), $\gamma_{346.872}$**1953.51**$_{16}$(60_{5})
2308.33$_{5}$, $3/2^+$, $\gamma_{2256.54}$**51.70**$_{20}$($11._{5}$), $\gamma_{1750.16}$**558.14**$_{10}$(21.1_{26}), $\gamma_{1690.80}$**617.41**$_{9}$($42._{16}$), $\gamma_{1586.88}$**721.6**$_{4}$($11._{5}$), $\gamma_{1441.59}$**866.90**$_{20}$(26.3_{26}), $\gamma_{1416.09}$**892.21**$_{8}$(100_{21}), $\gamma_{1294.91}$**1013.51**$_{8}$($58._{5}$), $\gamma_{433.237}$**1874.99**$_{14}$(50_{5}), $\gamma_{346.872}$**1960.9**$_{10}$($29._{18}$), γ_{0}**2308.3**$_{12}$(57.9_{26})
2313.17$_{14}$, $(19/2)^+$, $\gamma_{2022.53}$**290.40**$_{15}$(40_{8}) M1+E2 $\delta=-2.05^{36}_{28}$, $\gamma_{1733.90}$**579.19**$_{9}$(100_{7}) E2
2314.80$_{5}$, $5/2^+$, $\gamma_{1794.63}$**520.54**$_{5}$(68.6_{29}), $\gamma_{1690.80}$**623.70**$_{20}$(40.0_{29}), $\gamma_{1586.88}$**727.54**$_{13}$($34._{6}$), $\gamma_{1327.923}$**986.91**$_{10}$(100_{9}), $\gamma_{1166.26}$**1147.9**$_{4}$(5.7_{29}), $\gamma_{987.282}$**1327.20**$_{17}$($29._{6}$), $\gamma_{433.237}$**1881.36**$_{12}$(80_{6}), $\gamma_{25.465}$**2288.90**$_{20}$(18.3_{20})
2326.03$_{3}$, $5/2^+$, $\gamma_{1922.98}$**403.3**$_{4}$(0.38_{25}), $\gamma_{1750.16}$**576.1**$_{5}$(0.38_{25}), $\gamma_{1718.79}$**607.220**$_{20}$(100.0_{9}), $\gamma_{1690.80}$**635.40**$_{30}$(12.78_{25}), $\gamma_{1669.55}$**656.53**$_{7}$(1.88_{13}), $\gamma_{1586.88}$**738.80**$_{30}$(0.50_{25}), $\gamma_{1441.59}$**884.57**$_{8}$(15.79_{25}), $\gamma_{1327.923}$**998.4**$_{10}$(3.9_{10}), $\gamma_{1294.91}$**1031.9**$_{10}$(1.3_{9}), $\gamma_{1243.41}$**1082.56**$_{16}$(1.6_{4}), $\gamma_{1097.11}$**1228.74**$_{6}$(6.5_{5}), $\gamma_{1042.68}$**1283.60**$_{30}$(0.63_{25}), $\gamma_{1023.69}$**1302.5**$_{10}$(2.5_{13}), $\gamma_{987.282}$**1338.69**$_{4}$(17.4_{5}), $\gamma_{433.237}$**1892.89**$_{8}$(18.92_{25}), $\gamma_{53.137}$**2272.85**$_{15}$(27.6_{15})
2327.81$_{6}$, $3/2^+,5/2^+,7/2^+$, $\gamma_{1386.28}$**941.6**$_{11}$(20_{3}), $\gamma_{987.282}$**1340.50**$_{6}$(100_{6}), $\gamma_{433.237}$**1894.80**$_{30}$(16_{11})
2333.36$_{3}$, $3/2^+$, $\gamma_{1750.16}$**583.17**$_{6}$(4.27_{24}), $\gamma_{1690.80}$**642.8**$_{6}$(4.7_{5}), $\gamma_{1635.78}$**697.70**$_{20}$(4.50_{24}), $\gamma_{1586.88}$**746.44**$_{7}$(27.0_{5}), $\gamma_{1557.900}$**775.41**$_{7}$(9.7_{5}), $\gamma_{1294.91}$**1038.44**$_{6}$(29.6_{5}), $\gamma_{433.237}$**1900.21**$_{13}$(5.9_{5}), $\gamma_{346.872}$**1986.57**$_{7}$(38.2_{5}), γ_{0}**2333.26**$_{5}$(100_{3})
2334$_{5}$, $(11/2^-,13/2^-)$
2359$_{5}$, $3/2^-,5/2^-$
2371.77$_{13}$, $5/2^+,7/2^+$, $\gamma_{1794.63}$**577.40**$_{20}$(14_{3}), $\gamma_{1166.26}$**1205.40**$_{30}$(6_{3}), $\gamma_{433.237}$**1938.5**$_{9}$(100_{3}), $\gamma_{53.137}$**2318.5**$_{14}$(16.5_{14})
2400.64$_{6}$, $3/2^+$, $\gamma_{1690.80}$**709.87**$_{8}$(79_{6}), $\gamma_{1557.900}$**842.4**$_{10}$(41_{12}), $\gamma_{1294.91}$**1105.80**$_{20}$(17.6_{29}), $\gamma_{987.282}$**1413.24**$_{18}$($88._{21}$), $\gamma_{877.82}$**1522.90**$_{30}$(12_{6}), $\gamma_{346.872}$**2053.6**$_{14}$(100_{6}), $\gamma_{25.465}$**2375.20**$_{30}$(4.7_{15}), γ_{0}**2400.37**$_{15}$(27.6_{21})
2409$_{5}$
2419.23$_{6}$, $5/2^+,7/2^+$, $\gamma_{1718.79}$**700.07**$_{16}$(61_{7}), $\gamma_{1669.55}$**749.70**$_{30}$(54_{13}), $\gamma_{1441.59}$**978.22**$_{15}$(82_{13}), $\gamma_{1386.28}$**1033.10**$_{20}$(100_{29}), $\gamma_{1327.923}$**1091.00**$_{30}$(41_{13}), $\gamma_{1097.11}$**1322.2**$_{10}$(87_{54}), $\gamma_{987.282}$**1431.85**$_{16}$(62_{13})
2423.10$_{8}$, $3/2^+$, $\gamma_{1586.88}$**836.30**$_{30}$(6.7_{27}), $\gamma_{1441.59}$**981.5**$_{9}$(39_{4}), $\gamma_{1327.923}$**1095.7**$_{4}$(4.0_{27}), $\gamma_{346.872}$**2076.5**$_{4}$(10.7_{13}), γ_{0}**2423.00**$_{10}$(100_{4})
2429$_{5}$
2429.11$_{8}$, $3/2^+$, $\gamma_{1586.88}$**842.4**$_{10}$(24_{17}), $\gamma_{1557.900}$**870.88**$_{14}$(34_{10}), $\gamma_{433.237}$**1995.97**$_{10}$(100_{10}), γ_{0}**2429.19**$_{14}$(45_{21})
2445$_{5}$, $7/2^-,9/2^-$
2447.03$_{7}$, $5/2^+,7/2^+$, $\gamma_{1386.28}$**1061.40**$_{30}$(23_{11}), $\gamma_{1327.923}$**1119.70**$_{20}$(34_{11}), $\gamma_{1097.11}$**1350.00**$_{30}$(23_{11}), $\gamma_{987.282}$**1459.62**$_{13}$(100_{17}), $\gamma_{433.237}$**2014.00**$_{30}$(38_{11})
2461.5$_{4}$, $(17/2^+)$, $\gamma_{917.28}$**1544.3**$_{5}$(100)
2469.69$_{13}$, $(15/2^-)$, $\gamma_{917.28}$**1552.39**$_{12}$(100)
2473.02$_{5}$, $3/2^+,5/2^+,7/2^+$, $\gamma_{1690.80}$**782.40**$_{30}$(11_{6}), $\gamma_{1441.59}$**1031.9**$_{10}$(42_{28}), $\gamma_{1327.923}$**1144.70**$_{30}$(8.3_{28}), $\gamma_{1097.11}$**1375.77**$_{8}$(67_{6}), $\gamma_{987.282}$**1485.71**$_{8}$(100_{6})
2486$_{5}$, $7/2^-,9/2^-$
2494.95$_{19}$, $\gamma_{433.237}$**2061.50**$_{30}$(100_{20}), $\gamma_{25.465}$**2469.5**$_{5}$(27_{6})
2496.89$_{15}$, $(15/2^-)$, $\gamma_{917.28}$**1579.5**$_{3}$(100)
2502$_{5}$
2521$_{5}$, $1/2^-$
2534$_{14}$
2550.68$_{9}$, $3/2^+,5/2^+,7/2^+$, $\gamma_{1794.63}$**755.90**$_{30}$(30_{10}), $\gamma_{1750.16}$**800.23**$_{16}$(50_{10}), $\gamma_{1557.900}$**992.93**$_{14}$(45_{10}), $\gamma_{1441.59}$**1109.2**$_{10}$(40_{20}), $\gamma_{433.237}$**2117.3**$_{15}$(95_{10}), $\gamma_{346.872}$**2203.6**$_{10}$(100_{40}), $\gamma_{25.465}$**2525.45**$_{18}$(84_{4})
2551$_{5}$, $3/2^-,5/2^-$
2583$_{5}$, $7/2^-,9/2^-$
2584.26$_{16}$, $3/2^+,5/2^+$, $\gamma_{1294.91}$**1289.6**$_{4}$(100_{33}), $\gamma_{53.137}$**2530.80**$_{30}$(22_{5}), $\gamma_{25.465}$**2558.80**$_{20}$(53_{5})
C **2595.86**$_{12}$, $(17/2)^-$, $\gamma_{2496.89}$**98.91**$_{11}$(100_{15}) M1+E2, $\gamma_{2469.69}$**126.05**$_{15}$(63_{10}) M1+E2, $\gamma_{2298.69}$**296.50**$_{15}$(33_{10}) M1+E2 $\delta=0.22_{38}$, $\gamma_{1681.05}$**914.88**$_{11}$(49_{6}) E1
2602$_{5}$
2613$_{5}$, $3/2^-,5/2^-$
2617$_{12}$
2636$_{5}$, $3/2^-,5/2^-$
2654$_{5}$, $7/2^-,9/2^-$
2675$_{5}$, $7/2^-,9/2^-$
2719$_{10}$
2728$_{5}$
2745$_{14}$
D **2751.16**$_{13}$, $(19/2)^-$, $\gamma_{2595.86}$**155.42**$_{6}$(100) M1+E2 $\delta=+0.04_{1}$
2761.72$_{19}$, $(21/2)^+$, $\gamma_{2313.17}$**448.55**$_{12}$(100) M1+E2 $\delta=+0.29_{4}$
2769$_{13}$
2774.47$_{16}$, $(17/2^-)$, $\gamma_{2469.69}$**304.5**$_{1}$(100_{12}) M1+E2 $\delta=+0.03^{7}_{9}$, $\gamma_{1681.05}$**1093.6**$_{2}$(57_{3})
2865.45$_{23}$, $(19/2^+)$, $\gamma_{2461.5}$**404.0**$_{5}$(50_{10}), $\gamma_{2277.2}$**588.3**$_{5}$(100_{50})
2876.1$_{5}$, $(19/2^+)$
C **2935.70**$_{14}$, $(21/2)^-$, $\gamma_{2751.16}$**184.54**$_{7}$(100.0_{13}) M1+E2 $\delta=+0.06_{1}$, $\gamma_{2595.86}$**339.96**$_{13}$(9_{4})
3007.57$_{19}$, $(19/2^-)$, $\gamma_{2774.47}$**233.1**$_{1}$(100) M1+E2 $\delta=+0.01^{3}_{2}$
3101.2$_{3}$, $\gamma_{2751.16}$**350.2**$_{2}$(100)
A **3125.14**$_{17}$, $(21/2)^+$, $\gamma_{2876.1}$**248.8**$_{4}$(41_{12}), $\gamma_{2865.45}$**259.5**$_{1}$(57_{6}), $\gamma_{1978.03}$**1147.09**$_{12}$(100_{18}) E2
D **3175.99**$_{15}$, $(23/2)^-$, $\gamma_{2935.70}$**240.29**$_{8}$(100.0_{16}) E2+M1 $\delta=+0.044_{12}$, $\gamma_{2751.16}$**424.83**$_{15}$(10.2_{22})
3176.47$_{22}$, $(21/2^-)$, $\gamma_{3007.57}$**168.9**$_{1}$(100) (M1)
B **3427.93**$_{23}$, $(23/2^+)$, $\gamma_{3125.14}$**303.0**$_{1}$(100)
C **3510.49**$_{17}$, $(25/2)^-$, $\gamma_{3175.99}$**334.51**$_{10}$(100.0_{17}) E2+M1, $\gamma_{2935.70}$**574.80**$_{18}$(5.5_{30})
A **3805.87**$_{25}$, $(25/2^+)$, $\gamma_{3427.93}$**378.0**$_{1}$(100_{9}), $\gamma_{3125.14}$**680.5**$_{5}$(11_{3})
D **3927.76**$_{10}$, $(27/2)^-$, $\gamma_{3510.49}$**417.27**$_{8}$(100_{4}) E2+M1, $\gamma_{3175.99}$**751.5**$_{3}$(17_{3})
B **4192.1**$_{3}$, $(27/2^+)$, $\gamma_{3805.87}$**386.3**$_{1}$(100_{6}), $\gamma_{3427.93}$**763.8**$_{3}$(34.9_{20})
C **4361.67**$_{23}$, $(29/2)^-$, $\gamma_{3927.76}$**433.91**$_{18}$(100_{10}) E2+M1 $\delta=+0.08_{4}$, $\gamma_{3510.49}$**851.18**$_{26}$(30_{9})
A **4665.3**$_{3}$, $(29/2^+)$, $\gamma_{4192.1}$**473.2**$_{1}$(100_{10}), $\gamma_{3805.87}$**859.5**$_{2}$(12.3_{13})
D **4931.7**$_{3}$, $(31/2^-)$, $\gamma_{4361.67}$**570.00**$_{10}$(100_{29}), $\gamma_{3927.76}$**1003.9**$_{4}$(55_{8})
B **5127.3**$_{3}$, $(31/2^+)$, $\gamma_{4665.3}$**461.9**$_{1}$(100_{10}), $\gamma_{4192.1}$**935.1**$_{2}$(37_{4})
C **5445.2**$_{4}$, $(33/2^-)$, $\gamma_{4931.7}$**513.3**$_{2}$(100_{19}), $\gamma_{4361.67}$**1083.8**$_{4}$(44_{9})
A **5656.5**$_{4}$, $(33/2^+)$, $\gamma_{5127.3}$**529.0**$_{4}$(100_{15}), $\gamma_{4665.3}$**991.5**$_{3}$(11.5_{18})
5969$_{2}$, $5/2^+$
D **6113.2**$_{4}$, $(35/2^-)$, $\gamma_{5445.2}$**668.0**$_{3}$(100_{22}), $\gamma_{4931.7}$**1181.4**$_{3}$(52_{9})
B **6185.3**$_{4}$, $(35/2^+)$, $\gamma_{5656.5}$**529.0**$_{4}$(100_{15}), $\gamma_{5127.3}$**1058.0**$_{2}$(28_{4})
6286$_{1}$, $1/2^+$
6629$_{2}$, $3/2^+$
C **6715.2**$_{5}$, $(37/2^-)$, $\gamma_{6113.2}$**602.0**$_{5}$(100_{25}), $\gamma_{5445.2}$**1270.0**$_{5}$(47_{16})
A **6771.4**$_{4}$, $(37/2^+)$, $\gamma_{6185.3}$**586.0**$_{2}$(100_{17}), $\gamma_{5656.5}$**1115.0**$_{5}$(34_{8})
6966$_{2}$, $1/2^+$
7071$_{3}$, $3/2^-$
B **7386.6**$_{5}$, $(39/2^+)$, $\gamma_{6771.4}$**615.0**$_{3}$(100_{30}), $\gamma_{6185.3}$**1201.9**$_{6}$(32_{15})
D **7438.2**$_{7}$, $(39/2^-)$, $\gamma_{6715.2}$**723.0**$_{5}$(100)
A **8067.5**$_{6}$, $(41/2^+)$, $\gamma_{7386.6}$**681.0**$_{8}$(100_{29}), $\gamma_{6771.4}$**1296.0**$_{6}$(32_{18})
E **x**, $(27/2)$
E **704.6+x**, $(31/2)$, γ_{x}**704.6**(0.40_{15})
E **1564.4+x**, $(35/2)$, $\gamma_{704.6+x}$**859.8**(1.00_{30})
E **2557.2+x**, $(39/2)$, $\gamma_{1564.4+x}$**992.8**(1.05_{25})
E **3685.1+x**, $(43/2)$, $\gamma_{2557.2+x}$**1127.9**(1.00_{20})
E **4926.8+x**, $(47/2)$, $\gamma_{3685.1+x}$**1241.7**(1.10_{25})
E **6230.9+x**, $(51/2)$, $\gamma_{4926.8+x}$**1304.1**(0.85_{20})
E **7662+x**, $(55/2)$, $\gamma_{6230.9+x}$**1431.5**(0.70_{20})
E **9210+x**, $(59/2)$, γ_{7662+x}**1547.5**(0.65_{20})
E **10866+x**, $(63/2)$, γ_{9210+x}**1656.0**(0.50_{20})
E **12619+x**, $(67/2)$, $\gamma_{10866+x}$**1752.7**(0.23_{10})



SD band
(1995Je05,1994Je12)

$^{105}_{47}Ag_{58}$

$^{108}_{48}$Cd$_{60}$

S_n: 10336 $_9$, S_p: 8136 $_8$

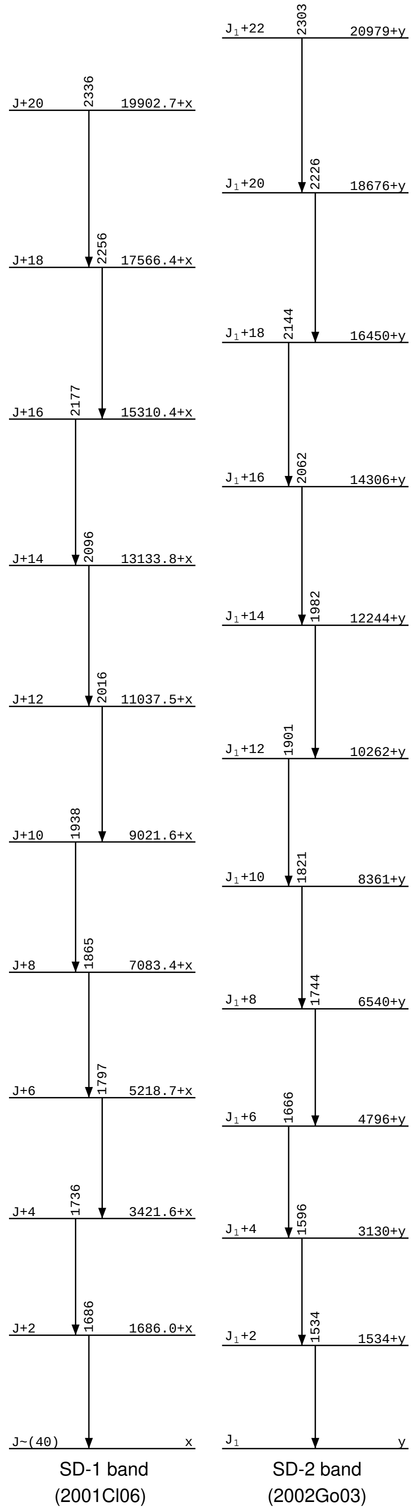
Nuclear Bands

- A GS band
- B Band based on 8^-
- C Band based on 9^-
- D Band based on 6^-
- E Band based on 10^+
- F 0^+ intruder band
- G Band structure
- H Band structure
- I Band structure
- J Magnetic-dipole rotational band based on (11^-)
- K Magnetic-dipole rotational band based on (15^-)
- L SD-1 band (2001Cl06) Q>9.5
- M SD-2 band (2002Go03) $Q_0\approx8.5$

Levels and γ-ray branchings:

A **0**, 0^+, *stable*
A $\mathbf{632.986}_{16}$, 2^+, *6.86_7 ps*, μ=+0.68$_{18}$, Q=-0.45$_8$, $\gamma_0\mathbf{632.97}_2(100)$ E2
A $\mathbf{1508.465}_{23}$, 4^+, *0.88_{11} ps*, $\gamma_{632.986}\mathbf{875.47}_2(100)$ E2
$\mathbf{1601.836}_{16}$, 2^+, *0.46_7 ps*, $\gamma_{632.986}\mathbf{968.81}_2(100)$ M1+E2 $\delta=-1.5^{6}_{15}$, $\gamma_0\mathbf{1601.84}_2(92_3)$ E2
F $\mathbf{1720.65}_3$, 0^+, $\gamma_{632.986}\mathbf{1087.66}_2(100)$ E2
$\mathbf{1913.43}_3$, 0^+, $\gamma_{1601.836}\mathbf{311.58}_3(96_7)$ E2, $\gamma_{632.986}\mathbf{1280.45}_3(100)$ E2, $\gamma_0\mathbf{1913.3}_2$ E0
$\mathbf{2145.854}_{22}$, 3^+, $\gamma_{1601.836}\mathbf{544.00}_3(13.8_6)$ M1+E2 $\delta=-1.22_{12}$, $\gamma_{1508.465}\mathbf{637.3}_3(8.4_{25})$, $\gamma_{632.986}\mathbf{1512.86}_2(100_3)$ M1+E2 $\delta=-1.84_3$
F $\mathbf{2162.717}_{25}$, 2^+, *≤0.47 ps*, $\gamma_{1720.65}\mathbf{442.0}(0.3_1)$, $\gamma_{632.986}\mathbf{1529.72}_2(100_8)$ M1+E2 $\delta=0.20_7$, $\gamma_0\mathbf{2162.7}_2(6.2_6)$ E2
$\mathbf{2202.22}_3$, 3^-, $\gamma_{1601.836}\mathbf{600.2}_3(3.8_6)$, $\gamma_{632.986}\mathbf{1569.22}_2(100)$ E1
I $\mathbf{2239.347}_{24}$, 4^+, $\gamma_{1601.836}\mathbf{637.5}_3(11_4)$, $\gamma_{1508.465}\mathbf{730.87}_2(100_2)$ M1+E2 $\delta=-0.43_2$, $\gamma_{632.986}\mathbf{1606.37}_3(92_3)$ E2
$\mathbf{2365.770}_{24}$, 2^+, $\gamma_{632.986}\mathbf{1732.77}_2(100)$ M1+E2 $\delta=-0.151_{14}$, $\gamma_0\mathbf{2365.72}_8(18.3_8)$ E2
$\mathbf{2374.56}_5$, (0^+), $\gamma_{1601.836}\mathbf{772.69}_5(<18)(?)$, $\gamma_{632.986}\mathbf{1741.56}_4(100)$ (E2)
$\mathbf{2486.30}_4$, 2^+, $\gamma_{1601.836}\mathbf{884.3}_2(10.6_{24})$ E2,M1, $\gamma_{632.986}\mathbf{1853.30}_3(100_3)$ E2,M1, $\gamma_0\mathbf{2486.3}_2(1.6_4)$
A $\mathbf{2541.38}_4$, 6^+, $\gamma_{1508.465}\mathbf{1032.92}_3(100)$ E2
$\mathbf{2555.23}_4$, $3,2^+$, $\gamma_{632.986}\mathbf{1922.23}_3(100)$
$\mathbf{2565.22}_4$, 5^+, *0.2_1 ps*, $\gamma_{2239.347}\mathbf{325.87}_4(46.4_{23})$ M1,E2, $\gamma_{1508.465}\mathbf{1056.79}(100_3)$ M1(+E2) $\delta=+0.08_8$
$\mathbf{2601.65}_5$, 5^-, $\gamma_{1508.465}\mathbf{1093.10}_2(100)$ E1
$\mathbf{2619.97}_4$, $2^+,3^+$, $\gamma_{1601.836}\mathbf{1017.7}_4(1.2_4)$, $\gamma_{632.986}\mathbf{1986.96}_3(100)$ M1+E2 $\delta=+0.41_2$
$\mathbf{2645.62}_4$, 4^+, $\gamma_{1601.836}\mathbf{1043.9}_3(3.3_9)$, $\gamma_{1508.465}\mathbf{1137.14}_3(100_3)$ D+Q $\delta=-0.48_3$, $\gamma_{632.986}\mathbf{2012.6}_2(12.0_{11})$ E2
$\mathbf{2677.99}_4$, 1^-, $\gamma_0\mathbf{2677.95}_4(100)$
$\mathbf{2682.61}_5$, $1,2^+$, $\gamma_{632.986}\mathbf{2049.62}_4(100_{10})$
$\mathbf{2707.06}_4$, 5^-, $\gamma_{1508.465}\mathbf{1198.60}_3(100)$ E1+M2 $\delta=-0.050_{16}$
F $\mathbf{2738.89}_6$, 4^+, *≤0.46 ps*, $\gamma_{2162.717}\mathbf{575.9}(0.9_1)$, $\gamma_{1508.465}\mathbf{1230.42}_5(100_9)$ M1+E2 $\delta=0.16_8$, $\gamma_{632.986}\mathbf{2105.6}(14_2)$
$\mathbf{2740}_{14}$, $(0^+,1^+,2^+)$
$\mathbf{2762.76}_6$, 3^+, $\gamma_{1601.836}\mathbf{1160.91}_6(100_5)$ D+Q, $\gamma_{632.986}\mathbf{2129.79}_{11}(35.5_{22})$
$\mathbf{2805.04}_5$, 3, $\gamma_{1508.465}\mathbf{1296.57}_4(100_3)$ D+Q, $\gamma_{632.986}\mathbf{2172.08}_{15}(15.5_{13})$ D+Q
$\mathbf{2807.91}_5$, 6^+, $\gamma_{2601.65}\mathbf{206.1}_2(1.23_{23})$, $\gamma_{2565.22}\mathbf{242.75}_4(100_5)$ M1, $\gamma_{2541.38}\mathbf{266.4}_2(7.7_6)$, $\gamma_{1508.465}\mathbf{1299.4}_2(38_4)$ E2
$\mathbf{2810.10}_4$, $3^+,4^-$, $\gamma_{1508.465}\mathbf{1301.63}_3(100)$
$\mathbf{2816.61}_{10}$, 2^+, $\gamma_{632.986}\mathbf{2183.49}_{11}(100)$ D+Q, $\gamma_0\mathbf{2816.80}_{16}(50_3)$
$\mathbf{2819.97}_7$, $2,(3^+)$, $\gamma_{632.986}\mathbf{2186.96}_6(100)$
$\mathbf{2876.02}_6$, $3^+,4^+,(5^+)$, $\gamma_{1508.465}\mathbf{1367.56}_6(80_5)$, $\gamma_{632.986}\mathbf{2242.97}_{11}(100)$
$\mathbf{2912.32}_6$, $2,3^+$, $\gamma_{632.986}\mathbf{2279.31}_5(100)$
$\mathbf{2936.113}_{25}$, $0^+,1^+,2^+$, $\gamma_{2162.717}\mathbf{773.40}_{12}(100)$, $\gamma_{632.986}\mathbf{2303.1}_2(83_9)$
D $\mathbf{2975.39}_7$, 6^-, *0.15_{10} ns*, $\gamma_{2707.06}\mathbf{268.39}_{20}(34_2)$ D+Q, $\gamma_{2601.65}\mathbf{373.77}_5(100_5)$ M1+E2 $\delta=+0.56_6$, $\gamma_{2541.38}\mathbf{433.7}_4(9.7_{14})$
$\mathbf{2993.10}_7$, $1^+,2^+$, $\gamma_{632.986}\mathbf{2360.08}_7(100_4)$, $\gamma_0\mathbf{2993.4}_5(17.3_{25})$
I $\mathbf{2994.1}_2$, 6^+, $\gamma_{2239.347}\mathbf{754.7}_2(60_{14})$, $\gamma_{1508.465}\mathbf{1485.8}_2(100)$ (E2)
$\mathbf{3005.63}_{13}$, 1, $\gamma_0\mathbf{3005.58}_{13}(100)$
$\mathbf{3031.43}_8$, $2^+,3$, $\gamma_{1508.465}\mathbf{1522.9}_2(25_3)$, $\gamma_{632.986}\mathbf{2398.42}_8(100_4)$
$\mathbf{3046.70}_{20}$, $1^+,2^+$, $\gamma_{1601.836}\mathbf{1445.6}_4(10.0_{25})$, $\gamma_{632.986}\mathbf{2415.30}_{14}(59_3)$, $\gamma_{0.0}\mathbf{3048.43}_{14}(100_9)$
C $\mathbf{3057.57}_5$, 7^-, *31_{24} ps*, $\gamma_{2707.06}\mathbf{350.52}_5(62.3_{17})$ E2, $\gamma_{2601.65}\mathbf{455.87}_8(100.0_{24})$ E2, $\gamma_{2541.38}\mathbf{516.15}_7(60_{10})$ E1
$\mathbf{3076}_{15}$, $0^+,1^+,2^+$
$\mathbf{3081.78}_9$, 3^+, $\gamma_{632.986}\mathbf{2448.76}_8(100)$ D+Q
$\mathbf{3110.49}_{10}$, (8^+), *0.3_1 ns*, $\gamma_{2994.1}\mathbf{116.4}_{10}$, $\gamma_{2807.91}\mathbf{302.79}_{25}(7.6_{12})$, $\gamma_{2541.38}\mathbf{569.31}_{10}(100_6)$ E2
$\mathbf{3138}_{16}$, $(0^-,1^-)$
$\mathbf{3171.04}_{12}$, $2,3^+$, $\gamma_{632.986}\mathbf{2538.02}_{11}(100)$
$\mathbf{3181.69}_{10}$, $\gamma_{632.986}\mathbf{2548.67}_9(100)$
$\mathbf{3189.68}_{11}$, $(6^+,7^+,8^+)$, $\gamma_{2541.38}\mathbf{648.5}_2(100)$
$\mathbf{3194.81}_{12}$, 2^+, $\gamma_{632.986}\mathbf{2561.74}_{12}(100_7)$, $\gamma_0\mathbf{3195.3}_4(44_6)$
$\mathbf{3220}_{16}$
D $\mathbf{3223.83}_6$, 8^-, *0.49_{14} ns*, $\gamma_{3057.57}\mathbf{166.25}_5(100.0_{10})$ M1+E2 $\delta=+0.185_{15}$, $\gamma_{2975.39}\mathbf{248.49}_8(35.6_{19})$
$\mathbf{3248.83}_{18}$, 7^-, $\gamma_{3057.57}\mathbf{191.5}_4(24_8)$, $\gamma_{2541.38}\mathbf{707.9}_6(100_5)$
$\mathbf{3264.92}_{12}$, $1,2^+,3$, $\gamma_{632.986}\mathbf{2631.90}_{11}(100)$
$\mathbf{3267.68}_{11}$, $\gamma_{1720.65}\mathbf{1547.0}_2(40_5)$, $\gamma_{1601.836}\mathbf{1665.84}_{11}(100_6)$
$\mathbf{3284}_{16}$, $3^-,4^-,5^-$
$\mathbf{3292.55}_{20}$, 1, $\gamma_0\mathbf{3292.5}_2(100)$
$\mathbf{3294.32}_{17}$, $2,3^+$, $\gamma_{632.986}\mathbf{2661.30}_{17}(100)$
$\mathbf{3316.34}_{23}$, (3^+), $\gamma_{632.986}\mathbf{2683.32}_{23}(100)$ D+Q
$\mathbf{3326.02}_{20}$, $3,(2^+)$, $\gamma_{632.986}\mathbf{2693.0}_2(100)$
$\mathbf{3367.54}_{13}$, (6^+), $\gamma_{2541.38}\mathbf{826.2}_2(100_{10})$, $\gamma_{1508.465}\mathbf{1858.9}_2(55_6)$
$\mathbf{3390}_{17}$
$\mathbf{3430}_{17}$
$\mathbf{3453.36}_{19}$, $1^+,2^+$, $\gamma_{2682.61}\mathbf{770.7}_2(3.5_6)$, $\gamma_0\mathbf{3453.7}_6(100_6)$
B $\mathbf{3474.69}_{18}$, 8^-, $\gamma_{3248.83}\mathbf{225.87}_7(37_4)$ D+Q $\delta=-0.14_{11}$, $\gamma_{3057.57}\mathbf{416.96}_{10}(100_5)$ D+Q $\delta=-0.31_{16}$, $\gamma_{2975.39}\mathbf{498.5}_3(25_{11})$
$\mathbf{3482.21}_{11}$, 2, $\gamma_{1601.836}\mathbf{1880.24}_{14}(65_4)$, $\gamma_{632.986}\mathbf{2849.36}_{17}(100_6)$
C $\mathbf{3485.21}_6$, 9^-, *47.1_{21} ps*, $\gamma_{3223.83}\mathbf{261.49}_{15}(100)$ D+Q $\delta=0.06_3$, $\gamma_{3057.57}\mathbf{427.64}_5(77_3)$ E2
$\mathbf{3530}_{18}$
$\mathbf{3535.83}_{20}(?)$, $(3,4)^+$, $\gamma_{632.986}\mathbf{2902.8}_2(100)$
$\mathbf{3540.26}_{13}(?)$, $\gamma_{1601.836}\mathbf{1938.2}_3(18_4)$, $\gamma_{1508.465}\mathbf{2031.82}_{14}(100_6)$
$\mathbf{3554.87}_{15}(?)$, (3^+), $\gamma_{632.986}\mathbf{2921.84}_{15}(100)$
$\mathbf{3559.61}_{18}(?)$, $(0^+,1^+)$, $\gamma_{632.986}\mathbf{2926.58}_{18}(100)$
$\mathbf{3560}_{18}$
$\mathbf{3630}_{18}$
$\mathbf{3670}_{18}$
A $\mathbf{3683.27}_8$, 8^+, $\gamma_{3110.49}\mathbf{573.1}_{10}(9.0_6)$ E2, $\gamma_{2541.38}\mathbf{1141.85}_{10}(100_5)$ E2
G $\mathbf{3737.51}_7$, 9^-, *6.2_7 ps*, $\gamma_{3223.83}\mathbf{514.0}_2(100)$, $\gamma_{3057.57}\mathbf{679.91}_5(80_{13})$ E2
$\mathbf{3750}_{19}$
$\mathbf{3800}_{AP}$, (0^+)
$\mathbf{3812.0}_3$, $1^+,2^+$, $\gamma_{1601.836}\mathbf{2211.1}_5(12.7_{18})$, $\gamma_{632.986}\mathbf{3178.4}_4(39_6)$, $\gamma_0\mathbf{3811.8}_5(100_7)$
$\mathbf{3816.36}_{10}$, 6^+, $\gamma_{3367.54}\mathbf{448.7}_2(57_6)$, $\gamma_{2807.91}\mathbf{1008.5}_2(78_8)$, $\gamma_{2565.22}\mathbf{1251.4}_2(60_6)$, $\gamma_{2541.38}\mathbf{1275.1}_2(93_9)$, $\gamma_{1508.465}\mathbf{2307.5}_2(100_{10})$
$\mathbf{3826.0}_5$, $1^+,2^+$, $\gamma_{1601.836}\mathbf{2225.3}_5(58_7)$, $\gamma_0\mathbf{3825.5}_{20}(100_{10})$
I $\mathbf{3860.97}_{11}$, 8^+, $\gamma_{3683.27}\mathbf{177.6}_{10}(13.8_{23})$ D, $\gamma_{3110.49}\mathbf{750.6}_{10}(100_{23})$ D, $\gamma_{2994.1}\mathbf{866.7}_{10}(92_8)$ Q, $\gamma_{2541.38}\mathbf{1319.7}_{10}(<69)$
$\mathbf{3870}_{19}$
D $\mathbf{3872.26}_{10}$, 10^-, *5.75_{21} ps*, $\gamma_{3223.83}\mathbf{648.6}_3(100)$
$\mathbf{4043.20}_9$, $\gamma_{2645.62}\mathbf{1397.51}_8(100_{10})$, $\gamma_{2541.38}\mathbf{1502.7}_2(69_7)$
A $\mathbf{4152.68}_8$, 10^+, *35.4_{21} ps*, $\gamma_{3872.26}\mathbf{280.3}_{10}(9.3_6)$ E1, $\gamma_{3860.97}\mathbf{291.60}_{20}(34_3)$ E2, $\gamma_{3737.51}\mathbf{414.97}_{20}(100_6)$ D, $\gamma_{3683.27}\mathbf{469.42}_5(99_4)$ E2, $\gamma_{3485.21}\mathbf{667.49}_{10}(78_5)$ D, $\gamma_{3110.49}\mathbf{1043.2}_{10}(1.2_6)$ E2
$\mathbf{4179.36}_{18}$, $\gamma_{2565.22}\mathbf{1614.2}_2(51_5)$, $\gamma_{2541.38}\mathbf{1638.1}_2(100_{10})$, $\gamma_{2239.347}\mathbf{1939.8}_2(23.4_{23})$
C $\mathbf{4188.21}_8$, 11^-, *3.60_{14} ps*, $\gamma_{3485.21}\mathbf{703.00}_5(100)$ E2
B $\mathbf{4196.5}_7$, 10^-, *5.5_{14} ps*, $\gamma_{3474.69}\mathbf{721.7}_{10}(100)$ E2
$\mathbf{4240.03}_{22}$, $\gamma_{2807.91}\mathbf{1432.0}_2(100_{10})$, $\gamma_{2565.22}\mathbf{1674.9}_2(46_5)$
$\mathbf{4251.45}_{22}$, $\gamma_{2994.1}\mathbf{1257.3}_2(100_{10})$, $\gamma_{2807.91}\mathbf{1443.5}_2(82_8)$

4512.5$_{2}$, 6^{+}
4525.44$_{22}$, $\gamma_{2601.65}$**1923.5**$_{2}(76_{8})$, $\gamma_{2541.38}$**1984.3**$_{2}(100_{10})$
G **4568.66**$_{14}$, 11^{-}, 1.66_{21} ps, $\gamma_{3872.26}$**696.5**$_{10}(25_{3})$ M1,E2, $\gamma_{3737.51}$**831.0**$_{10}(100_{7})$ E2
4618.3$_{10}$, (10), $\gamma_{3110.49}$**1507.8**$_{10}(100)$
A **4708.79**$_{10}$, 12^{+}, 10.1_{3} ps, $\gamma_{4152.68}$**556.08**$_{7}(100)$ E2
E **4755.74**$_{21}$, 10^{+}, $\gamma_{3683.27}$**1072.6**$_{10}(100)$ Q
D **4826.15**$_{18}$, 12^{-}, 1.11_{7} ps, $\gamma_{3872.26}$**953.64**$_{25}(100)$ E2
B **5125.12**$_{23}$, 12^{-}, 2.1_{3} ps, $\gamma_{4196.5}$**928.5**$_{10}(100)$ E2
C **5179.98**$_{15}$, 13^{-}, 0.69_{7} ps, $\gamma_{4188.21}$**991.66**$_{15}(100)$ E2
A **5502.62**$_{12}$, 14^{+}, 1.52_{7} ps, $\gamma_{4708.79}$**793.80**$_{7}(100)$ E2
G **5574.29**$_{20}$, 13^{-}, $\gamma_{4826.15}$**748.1**$_{10}(18_{4})$ D,Q, $\gamma_{4568.66}$**1005.8**$_{10}(100_{7})$ Q
J **5589.0**$_{11}$, 11^{-}, $\gamma_{4618.3}$**970.7**$_{10}(100)$ D
E **5591.82**$_{16}$, 12^{+}, $\gamma_{4755.74}$**836.0**$_{10}(100_{13})$ Q, $\gamma_{4708.79}$**883.0**$_{10}(75_{6})$ D, $\gamma_{4152.68}$**1439.7**$_{10}(44_{6})$ Q
J **5639.56**$_{15}$, 12^{-}, $\gamma_{5179.98}$**459.4**$_{10}$ D,Q, $\gamma_{5125.12}$**514.4**$_{10}$, $\gamma_{4568.66}$**1070.7**$_{10}(100_{10})$ D,Q, $\gamma_{4188.21}$**1451.9**$_{10}(50_{7})$ D,Q, $\gamma_{3872.26}$**1767.6**$_{10}(21_{7})$ Q
J **5760.67**$_{18}$, 13^{-}, $\gamma_{5639.56}$**121.2**$_{10}(100_{5})$ M1, $\gamma_{5574.29}$**186.4**$_{10}(33_{4})$ D, $\gamma_{4826.15}$**934.4**$_{10}(100_{11})$ D,Q, $\gamma_{4568.66}$**1191.9**$_{10}(33_{11})$ Q
H **5837.54**$_{24}$, (12), $\gamma_{4708.79}$**1129.0**$_{10}(100)$ D,Q
D **5982.5**$_{3}$, 14^{-}, $\gamma_{4826.15}$**1156.3**$_{10}(100)$ Q
J **6076.71**$_{23}$, 14^{-}, <2 ps, $\gamma_{5760.67}$**316.0**$_{10}(100_{7})$ M1, $\gamma_{4826.15}$**1250.6**$_{10}(13.5_{14})$ Q
E **6124.36**$_{17}$, 14^{+}, $\gamma_{5591.82}$**532.7**$_{10}(100_{6})$ Q, $\gamma_{5502.62}$**621.6**$_{10}(38_{3})$ D,Q, $\gamma_{4708.79}$**1415.5**$_{10}(41_{3})$ Q
B **6251.65**$_{25}$, 14^{-}, $\gamma_{5125.12}$**1126.6**$_{10}(100_{12})$ Q, $\gamma_{4826.15}$**1425.5**$_{10}(59_{6})$ Q
C **6404.2**$_{4}$, 15^{-}, $\gamma_{5179.98}$**1224.2**$_{10}(100)$ Q
A **6458.92**$_{24}$, 16^{+}, <1.4 ps, $\gamma_{5502.62}$**956.3**$_{2}(100)$ E2
H **6488.03**$_{21}$, (14), $\gamma_{5837.54}$**650.6**$_{10}(100_{7})$ Q, $\gamma_{5502.62}$**985.3**$_{10}(37_{4})$ D
J **6598.6**$_{3}$, 15^{-}, 0.48^{3}_{4} ps, $\gamma_{6076.71}$**521.9**$_{10}(100)$ M1
E **6891.08**$_{22}$, 16^{+}, $\gamma_{6124.36}$**766.7**$_{10}(100_{7})$ Q, $\gamma_{5502.62}$**1388.5**$_{10}(15.8_{22})$ Q
D **7212.8**$_{5}$, (16^{-}), $\gamma_{5982.5}$**1230.3**$_{10}(100)$
K **7214.0**$_{4}$, (15^{-}), $\gamma_{6598.6}$**615.4**$_{10}(100)$ M1,E2
J **7275.4**$_{4}$, 16^{-}, 0.19^{4}_{6} ps, $\gamma_{6598.6}$**676.9**$_{10}(100)$ M1
H **7383.4**$_{3}$, (16), $\gamma_{6488.03}$**895.4**$_{10}(100)$ Q
B **7386.1**$_{3}$, 16^{-}, $\gamma_{6251.65}$**1134.5**$_{10}(100_{11})$ Q, $\gamma_{6076.71}$**1309.3**$_{10}(61_{11})$ Q, $\gamma_{5982.5}$**1403.6**$_{10}(<44)$
K **7529.0**$_{4}$, 16^{-}, $\gamma_{7214.0}$**314.0**$_{5}(100_{10})$ M1(?), $\gamma_{6598.6}$**931.0**$_{5}(93_{8})$ M1,E2
A **7564.2**$_{10}$, 18^{+}, $\gamma_{6458.92}$**1105.3**$_{10}(100)$ E2
C **7725.4**$_{5}$, 17^{-}, $\gamma_{6404.2}$**1321.2**$_{10}(100)$ Q
J **7740.8**$_{4}$, 17^{-}, 0.28_{4} ps, $\gamma_{7529.0}$**212.0**$_{5}(61_{6})$ M1,E2, $\gamma_{7275.4}$**465.5**$_{3}(100_{6})$ M1, $\gamma_{7214.0}$**526.9**$_{5}(61_{6})$ M1,E2
7796.7$_{5}$, 17^{-}, $\gamma_{6458.92}$**1337.1**$_{5}(100)$ E1
K **7862.2**$_{11}$, 17^{-}, $\gamma_{7529.0}$**333.0**$_{5}(100_{10})$ M1, $\gamma_{6458.92}$**1403.3**$_{10}(61_{6})$ E1
E **7913.3**$_{4}$, (18^{+}), $\gamma_{6891.08}$**1022.2**$_{10}(100)$
J **8102.3**$_{4}$, 18^{-}, 0.52^{3}_{4} ps, $\gamma_{7740.8}$**361.7**$_{2}(100)$ M1
8185.5$_{11}$, (17), $\gamma_{7862.2}$**323.3**$_{10}(100)$ D
B **8284.0**$_{4}$, 18^{-}, $\gamma_{7386.1}$**897.9**$_{10}(100)$ Q
K **8317.3**$_{5}$, 18^{-}, $\gamma_{7862.2}$**455.4**$_{2}(100_{6})$ (M1), $\gamma_{7796.7}$**520.0**$_{5}(41_{2})$ M1,E2
8355.0$_{5}$, 18^{-}, $\gamma_{7862.2}$**492.0**$_{5}(100_{6})$ M1,E2
H **8534.9**$_{5}$, (18), $\gamma_{7383.4}$**1151.5**$_{10}(100)$ Q
8544.2$_{11}$, (18), $\gamma_{8185.5}$**358.7**$_{10}(100)$ D
J **8584.8**$_{5}$, 19^{-}, 0.201_{14} ps, $\gamma_{8102.3}$**482.3**$_{2}(100_{10})$ M1, $\gamma_{7740.8}$**845.0**$_{5}(10_{1})$ E2
K **8640.5**$_{5}$, 19^{-}, $\gamma_{8355.0}$**284.4**$_{5}(40_{4})$ M1, $\gamma_{8317.3}$**323.4**$_{2}(100_{6})$ M1
C **8671.1**$_{5}$, 19^{-}, $\gamma_{7725.4}$**945.7**$_{10}(100)$ Q
A **8824.5**$_{5}$, (20^{+}), $\gamma_{7564.2}$**1260.3**$_{10}(100)$
8965.0$_{11}$, (19), $\gamma_{8544.2}$**420.8**$_{10}(100)$
K **8999.4**$_{6}$, (20^{-}), $\gamma_{8640.5}$**358.8**$_{2}(100_{8})$ M1, $\gamma_{8317.3}$**682.0**$_{5}(17_{4})$ E2
J **9175.0**$_{5}$, (20^{-}), 0.14^{2}_{3} ps, $\gamma_{8584.8}$**589.5**$_{5}(100_{9})$ M1, $\gamma_{8102.3}$**1073.9**$_{5}(29_{3})$ (E2)
B **9326.1**$_{5}$, (20^{-}), $\gamma_{8284.0}$**1042.1**$_{10}(100)$ Q
K **9420.2**$_{6}$, (21^{-}), $\gamma_{8999.4}$**420.8**$_{2}(100_{8})$ M1, $\gamma_{8640.5}$**780.4**$_{5}(23_{2})$ (E2)
C **9757.4**$_{6}$, (21^{-}), $\gamma_{8671.1}$**1086.3**$_{10}(100)$ Q
J **9879.5**$_{6}$, (21^{-}), 0.208_{7} ps, $\gamma_{9175.0}$**705.6**$_{5}(100_{7})$ M1, $\gamma_{8584.8}$**1293.6**$_{5}(36_{4})$ (E2)
H **9894.4**$_{6}$, (20), $\gamma_{8534.9}$**1359.4**$_{10}(100)$
K **9897.3**$_{7}$, (22^{-}), $\gamma_{9420.2}$**476.6**$_{5}(100_{5})$ M1, $\gamma_{8999.4}$**897.8**$_{5}(30_{4})$ (E2)
A **10293.6**$_{6}$, (22^{+}), $\gamma_{8824.5}$**1469.1**$_{10}(100)$
K **10413.2**$_{7}$, (23^{-}), $\gamma_{9897.3}$**515.6**$_{5}$ (M1), $\gamma_{9420.2}$**993.6**$_{5}(100)$ (E2)
B **10532.8**$_{6}$, (22^{-}), $\gamma_{9326.1}$**1206.7**$_{10}(100)$
J **10677.9**$_{9}$, (22^{-}), $\gamma_{9879.5}$**797.9**$_{2}(100_{8})$ (M1), $\gamma_{9175.0}$**1502.2**$_{5}(31_{5})$ (E2)
K **10976.6**$_{8}$, (24^{-}), $\gamma_{10413.2}$**563.6**$_{5}(100_{10})$ M1, $\gamma_{9897.3}$**1079.0**$_{5}(43_{4})$ (E2)
C **11018.6**$_{7}$, (23^{-}), $\gamma_{9757.4}$**1261.2**$_{10}(100)$
B **11906.8**$_{7}$, (24^{-}), $\gamma_{10532.8}$**1374.0**$_{10}(100)$
A **11914.9**$_{7}$, (24^{+}), $\gamma_{10293.6}$**1621.2**$_{10}(100)$
C **12489.3**$_{8}$, (25^{-}), $\gamma_{11018.6}$**1470.7**$_{10}(100)$
14270
14533
14565
14645
14717
14737
14797
14877
14897
14962
15103
L **x**, $J\approx(40)$
L **1686.0+x**, $J+2$, γ_{x}**1686.0**$_{2}(1.19_{8})$ Q
L **3421.6+x**, $J+4$, $\gamma_{1686.0+x}$**1735.6**$_{2}(1.27_{8})$ Q
L **5218.7+x**, $J+6$, $\gamma_{3421.6+x}$**1797.1**$_{2}(1.30_{8})$ Q
L **7083.4+x**, $J+8$, $\gamma_{5218.7+x}$**1864.6**$_{3}(1.40_{8})$ Q
L **9021.6+x**, $J+10$, $\gamma_{7083.4+x}$**1938.2**$_{3}(1.30_{6})$ Q
L **11037.5+x**, $J+12$, $\gamma_{9021.6+x}$**2015.9**$_{4}(1.16_{6})$ Q
L **13133.8+x**, $J+14$, $\gamma_{11037.5+x}$**2096.3**$_{3}(1.13_{6})$ Q
L **15310.4+x**, $J+16$, $\gamma_{13133.8+x}$**2176.6**$_{4}(0.95_{6})$ Q
L **17566.4+x**, $J+18$, $\gamma_{15310.4+x}$**2255.9**$_{3}(0.46_{5})$ Q
L **19902.7+x**, $J+20$, $\gamma_{17566.4+x}$**2336.3**$_{3}(0.28_{5})$ Q
M **y**, J
M **1534+y**, $J+2$, γ_{y}**1534**(0.41_{6})
M **3130+y**, $J+4$, γ_{1534+y}**1596**(0.53_{6})
M **4796+y**, $J+6$, γ_{3130+y}**1666**(0.64_{6})
M **6540+y**, $J+8$, γ_{4796+y}**1744**(0.64_{6})
M **8361+y**, $J+10$, γ_{6540+y}**1821**(0.54_{7})
M **10262+y**, $J+12$, γ_{8361+y}**1901**(0.58_{8})
M **12244+y**, $J+14$, $\gamma_{10262+y}$**1982**(0.48_{8})
M **14306+y**, $J+16$, $\gamma_{12244+y}$**2062**(0.52_{5})
M **16450+y**, $J+18$, $\gamma_{14306+y}$**2144**(0.42_{5})
M **18676+y**, $J+20$, $\gamma_{16450+y}$**2226**(0.31_{5})
M **20979+y**, $J+22$, $\gamma_{18676+y}$**2303**(0.14_{4})


J+20 2336 19902.7+x
J+18 2256 17566.4+x
J+16 2177 15310.4+x
J+14 2096 13133.8+x
J+12 2016 11037.5+x
J+10 1938 9021.6+x
J+8 1865 7083.4+x
J+6 1797 5218.7+x
J+4 1736 3421.6+x
J+2 1686 1686.0+x
J~(40) x
J1+22 2303 20979+y
J1+20 2226 18676+y
J1+18 2144 16450+y
J1+16 2062 14306+y
J1+14 1982 12244+y
J1+12 1901 10262+y
J1+10 1821 8361+y
J1+8 1744 6540+y
J1+6 1666 4796+y
J1+4 1596 3130+y
J1+2 1534 1534+y
J1 y
SD-1 band
(2001Cl06)
SD-2 band
(2002Go03)

$^{108}_{48}Cd_{60}$

$^{130}_{57}\mathrm{La}_{73}$

S_n: 8395 $_{SY}$, S_p: 3893 $_{SY}$

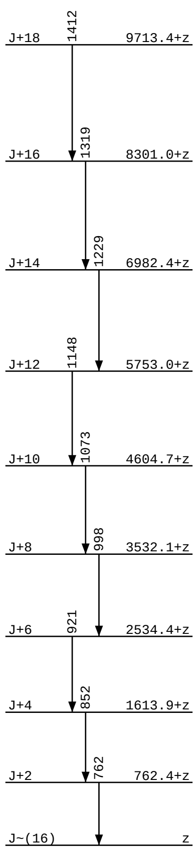
Nuclear Bands

A $\pi h_{11/2}\ \nu g_{7/2}$, α=1
B $\pi h_{11/2}\ \nu g_{7/2}$, α=0
C $\pi h_{11/2}\ \nu h_{11/2}$, α=1
D $\pi h_{11/2}\ \nu h_{11/2}$, α=0
E Chiral partner of $\pi h_{11/2}\nu h_{11/2}$, α=1
F Chiral partner of $\pi h_{11/2}\nu h_{11/2}$, α=0
G Oblate band, α=1
H Oblate band, α=0
I SD band (1989Go13)

Levels and γ-ray branchings:

$\mathbf{0}$, $3^{(+)}$, 8.7_1 *min*, %ε+%β$^+$=100,
$\mathbf{110.44}_9$, $(1^+,2,3^+)$, 17_5 *ns*, $\gamma_0\mathbf{110.4}_2(100)$
$\mathbf{131.01}_8$, 1^+, 77_{10} *ns*, $\gamma_0\mathbf{131.1}_2(100)$
$\mathbf{219.73}_9$, (1^+), $\gamma_{131.01}\mathbf{88.9}_2(15.2_8)$, $\gamma_{110.44}\mathbf{109.3}_3(37_4)$, $\gamma_0\mathbf{219.8}_2(100_{10})$
$\mathbf{267.31}_9$, (1^+), $\gamma_{219.73}\mathbf{47.5}_3(0.7_4)$, $\gamma_{131.01}\mathbf{136.4}_2(100.0_{22})$, $\gamma_0\mathbf{267.3}_2(94.2_{22})$
$\mathbf{304.10}_{12}$, (1), $\gamma_{110.44}\mathbf{193.6}_2(15_4)$, $\gamma_0\mathbf{304.1}_2(100_5)$
$\mathbf{307.48}_9$, (1), $\gamma_{219.73}\mathbf{87.9}_3(2.4_7)$, $\gamma_{110.44}\mathbf{196.9}_2(17.1_{11})$, $\gamma_0\mathbf{307.5}_2(100.0_7)$
$\mathbf{340.61}_9$, (1^+), $\gamma_{267.31}\mathbf{73.5}_3(1.1_5)$, $\gamma_{131.01}\mathbf{209.6}_2(100.0_{17})$, $\gamma_{110.44}\mathbf{230.5}_2(6.9_{17})$, $\gamma_0\mathbf{340.6}_2(36.1_8)$
$\mathbf{350.71}_{10}$, (1), $\gamma_{304.10}\mathbf{46.7}_3(4.1_{18})$, $\gamma_{267.31}\mathbf{83.4}_2(16_4)$, $\gamma_{219.73}\mathbf{131.0}_3(51_3)$, $\gamma_{110.44}\mathbf{240.1}_2(42_6)$, $\gamma_0\mathbf{350.8}_2(100_9)$
$\mathbf{384.78}_9$, (1), $\gamma_{307.48}\mathbf{77.6}_2(1.2_8)$, $\gamma_{304.10}\mathbf{80.5}_3(1.5_{10})$, $\gamma_{131.01}\mathbf{253.7}_2(100_8)$, $\gamma_{110.44}\mathbf{274.2}_2(62_3)$, $\gamma_0\mathbf{384.8}_2(48_{10})$
$\mathbf{430.18}_{17}$, (1), $\gamma_{267.31}\mathbf{163.0}_3(100_{24})$, $\gamma_0\mathbf{430.2}_3(90_{29})$
$\mathbf{431.51}_{15}$, (1), $\gamma_{304.10}\mathbf{127.5}_3(2.8_{18})$, $\gamma_{131.01}\mathbf{300.5}_2(100_6)$, $\gamma_0\mathbf{431.5}_3(32_{18})$
$\mathbf{443.22}_{13}$, (1), $\gamma_{304.10}\mathbf{139.0}_3(3.5_{24})$, $\gamma_{267.31}\mathbf{175.8}_3(31_{15})$, $\gamma_0\mathbf{443.2}_3(100_{29})$
$\mathbf{444.39}_9$, (1^+), $\gamma_{384.78}\mathbf{59.6}_2(11.7_{20})$, $\gamma_{340.61}\mathbf{103.9}_2(18_4)$, $\gamma_{307.48}\mathbf{136.6}_3(27_9)$, $\gamma_{267.31}\mathbf{176.9}_2(100_4)$, $\gamma_{131.01}\mathbf{313.3}_2(19_4)$, $\gamma_{110.44}\mathbf{333.9}_2(18_4)$, $\gamma_0\mathbf{444.2}_3(37_{11})$
$\mathbf{477.15}_{18}$, (1), $\gamma_{267.31}\mathbf{209.9}_2(85_8)$, $\gamma_0\mathbf{477.0}_3(100_{30})$
$\mathbf{477.96}_{13}$, (1^+), $\gamma_{384.78}\mathbf{93.3}_2(30_6)$, $\gamma_{307.48}\mathbf{170.5}_3(23_3)$, $\gamma_{131.01}\mathbf{346.8}_2(100_{10})$, $\gamma_0\mathbf{478.0}_3(33_{10})$
$\mathbf{481.89}_{16}$, (1), $\gamma_{340.61}\mathbf{141.3}_2(91_{60})$, $\gamma_{267.31}\mathbf{214.7}_3(55_{11})$, $\gamma_0\mathbf{481.7}_3(100_{15})$
$\mathbf{523.88}_{11}$, (1^+), $\gamma_{350.71}\mathbf{173.1}_2(13_3)$, $\gamma_{340.61}\mathbf{183.2}_2(53_3)$, $\gamma_{267.31}\mathbf{256.5}_2(100_3)$, $\gamma_{131.01}\mathbf{393.0}_2(21_4)$, $\gamma_0\mathbf{524.0}_3(24_5)$
$\mathbf{589.06}_{16}$, (1), $\gamma_{340.61}\mathbf{248.4}_2(52_{18})$, $\gamma_{267.31}\mathbf{321.7}_3(36_{10})$, $\gamma_0\mathbf{589.2}_3(100_{14})$
$\mathbf{594.28}_{18}$, (1), $\gamma_{131.01}\mathbf{463.3}_2(100_{10})$, $\gamma_0\mathbf{594.2}_3(11_5)$
$\mathbf{606.75}_{18}$, (1), $\gamma_{219.73}\mathbf{387.0}_2(41_3)$, $\gamma_0\mathbf{606.8}_3(100_{33})$
$\mathbf{645.49}_{14}$, (1), $\gamma_{350.71}\mathbf{294.8}_2(84_{25})$, $\gamma_{110.44}\mathbf{535.1}_2(100_{50})$, $\gamma_0\mathbf{645.3}_3(76_{19})$
$\mathbf{672.93}_{23}$, $(0,1)$, $\gamma_{131.01}\mathbf{541.7}_3(100_5)$, $\gamma_{110.44}\mathbf{562.7}_3(10_6)$
$\mathbf{697.01}_{14}$, (1), $\gamma_{430.18}\mathbf{266.9}_2(63_8)$, $\gamma_{307.48}\mathbf{389.2}_3(25_{13})$, $\gamma_{131.01}\mathbf{566.2}_2(100_{23})$, $\gamma_0\mathbf{696.7}_3(13_8)$
$\mathbf{810.47}_{22}$, (1), $\gamma_{219.73}\mathbf{590.7}_3(84_{16})$, $\gamma_0\mathbf{810.5}_3(100_{50})$
$\mathbf{827.5}_4$, $(0,1)$, $\gamma_{307.48}\mathbf{520.0}_3(100)$
$\mathbf{913.62}_{13}$, (1^+), $\gamma_{443.22}\mathbf{470.5}_2(37_9)$, $\gamma_{384.78}\mathbf{528.8}_2(82_{16})$, $\gamma_{307.48}\mathbf{605.8}_3(100_{33})$, $\gamma_{219.73}\mathbf{694.2}_3(25_{13})$, $\gamma_{131.01}\mathbf{782.5}_3(30_4)$
$\mathbf{985.91}_{22}$, $(0,1)$, $\gamma_{267.31}\mathbf{718.6}_2(100)$
$\mathbf{1032.45}_{12}$, (1^+), $\gamma_{307.48}\mathbf{724.9}_2(66_{11})$, $\gamma_{267.31}\mathbf{765.2}_3(45_9)$, $\gamma_{131.01}\mathbf{901.3}_2(100_{11})$, $\gamma_{110.44}\mathbf{922.0}_3(28_9)$, $\gamma_0\mathbf{1032.8}_3(39_{12})$
$\mathbf{1168.72}_{13}$, (1^+), $\gamma_{431.51}\mathbf{737.3}_3(36_7)$, $\gamma_{350.71}\mathbf{818.0}_2(43_5)$, $\gamma_{340.61}\mathbf{828.3}_3(24_5)$, $\gamma_{307.48}\mathbf{861.2}_2(100_6)$, $\gamma_{131.01}\mathbf{1037.5}_3(66_7)$
$\mathbf{1196.79}_{10}$, 1^+, $\gamma_{444.39}\mathbf{752.2}_2(30.1_{24})$, $\gamma_{384.78}\mathbf{812.0}_3(16_4)$, $\gamma_{340.61}\mathbf{856.3}_2(36.5_{19})$, $\gamma_{307.48}\mathbf{889.4}_2(31.2_{19})$, $\gamma_{219.73}\mathbf{977.2}_2(100_8)$, $\gamma_{131.01}\mathbf{1065.8}_3(19.1_{19})$, $\gamma_0\mathbf{1196.6}_2(49.2_{25})$
$\mathbf{1289.04}_{12}$, 1^+, $\gamma_{443.22}\mathbf{845.6}_2(19_3)$, $\gamma_{340.61}\mathbf{948.8}_3(29_5)$, $\gamma_{219.73}\mathbf{1069.3}_3(14_3)$, $\gamma_{131.01}\mathbf{1158.0}_3(49_4)$, $\gamma_0\mathbf{1289.1}_2(100_5)$
$\mathbf{1431.19}_{13}$, (1^+), $\gamma_{444.39}\mathbf{986.6}_2(100_{57})$, $\gamma_{307.48}\mathbf{1123.8}_3(53_7)$, $\gamma_{267.31}\mathbf{1164.0}_3(80_{24})$, $\gamma_{131.01}\mathbf{1300.3}_3(81_{23})$, $\gamma_0\mathbf{1431.3}_3(81_{23})$
$\mathbf{x}$
$\mathbf{5.1+x}$
$\mathbf{45.1+x}$
B $\mathbf{88.4+x}$, (6^-)
$\mathbf{113.9+x}$, $\gamma_x\mathbf{113.9}_5(100)$
$\mathbf{150.3+x}$, $\gamma_{45.1+x}\mathbf{105.2}_5(100)$
$\mathbf{160.3+x}$
A $\mathbf{160.4+x}$, (7^-), $\gamma_{113.9+x}\mathbf{46.4}_5(<16)$, $\gamma_{88.4+x}\mathbf{72.0}_5(100_3)$
B $\mathbf{279.0+x}$, (8^-), $\gamma_{160.4+X}\mathbf{118.7}_3(100.0_6)$ M1+E2, $\gamma_{88.4+x}\mathbf{190.7}_7(2.6_9)$
C $\mathbf{385.4+x}$, (9^+), $\gamma_{279.0+x}\mathbf{106.4}_5(7.2_6)$, $\gamma_{160.3+X}\mathbf{225.1}_3(27.3_{13})$ Q, $\gamma_{150.3+x}\mathbf{235.1}_7(>55)$, $\gamma_{113.9+x}\mathbf{271.5}_3(100_4)$, $\gamma_{5.1+x}\mathbf{380.3}_3(40.1_{18})$ Q, $\gamma_x\mathbf{385.4}_5(13.1_9)$
A $\mathbf{456.3+x}$, (9^-), $\gamma_{279.0+x}\mathbf{177.2}_3(100.0_{16})$ D+Q, $\gamma_{160.4+X}\mathbf{295.9}_3(13.8_{16})$
D $\mathbf{522.9+x}$, (10^+), $\gamma_{385.4+x}\mathbf{137.5}_3(100)$ D+Q
B $\mathbf{677.5+x}$, (10^-), $\gamma_{456.3+x}\mathbf{221.2}_3(100.0_{23})$ M1+E2, $\gamma_{279.0+x}\mathbf{398.4}_3(46.6_{23})$
C $\mathbf{802.2+x}$, (11^+), $\gamma_{522.9+x}\mathbf{279.4}_3(100.0_{21})$ M1+E2, $\gamma_{385.4+x}\mathbf{416.9}_5(3.6_{21})$
A $\mathbf{947.0+x}$, (11^-), $\gamma_{677.5+x}\mathbf{269.5}_7(87.6_{21})$ D+Q, $\gamma_{456.3+x}\mathbf{490.7}_3(100.0_{21})$ (Q)
D $\mathbf{1048.5+x}$, (12^+), $\gamma_{802.2+x}\mathbf{246.3}_3(100.0_{20})$ M1+E2, $\gamma_{522.9+x}\mathbf{525.7}_3(44.5_{20})$
E $\mathbf{1077.9+x}$, (11^+), $\gamma_{522.9+x}\mathbf{555}$
B $\mathbf{1250.2+x}$, (12^-), $\gamma_{947.0+x}\mathbf{303.2}_3(54.3_{20})$ D+Q, $\gamma_{677.5+x}\mathbf{572.7}_3(100.0_{20})$ (Q)
C $\mathbf{1422.8+x}$, (13^+), $\gamma_{1048.5+x}\mathbf{374.3}_7(100.0_{26})$, $\gamma_{802.2+x}\mathbf{620.6}_3(39.4_{26})$
F $\mathbf{1434.5+x}$, (12^+), $\gamma_{1077.9+x}\mathbf{357}$, $\gamma_{802.2+x}\mathbf{632}$
A $\mathbf{1597.3+x}$, (13^-), $\gamma_{1250.2+x}\mathbf{347.1}_7(39.3_{21})$, $\gamma_{947.0+x}\mathbf{650.3}_3(100.0_{21})$ (Q)
D $\mathbf{1748.5+x}$, (14^+), $\gamma_{1422.8+x}\mathbf{325.7}_3(68.1_{19})$, $\gamma_{1048.5+x}\mathbf{700.0}_3(100.0_{19})$
E $\mathbf{1778.2+x}$, (13^+), $\gamma_{1077.9+x}\mathbf{700}$, $\gamma_{1048.5+x}\mathbf{730}$
B $\mathbf{1970.1+x}$, (14^-), $\gamma_{1597.3+x}\mathbf{372.8}_7(39.5_{22})$, $\gamma_{1250.2+x}\mathbf{719.9}_3(100.0_{22})$ Q
F $\mathbf{2163.0+x}$, (14^+), $\gamma_{1778.2+x}\mathbf{385}$, $\gamma_{1434.5+x}\mathbf{728}(?)$, $\gamma_{1422.8+x}\mathbf{740}$
C $\mathbf{2194.1+x}$, (15^+), $\gamma_{1748.5+x}\mathbf{445.6}_7(100_5)$, $\gamma_{1422.8+x}\mathbf{771.3}_3(72_5)$
A $\mathbf{2384.4+x}$, (15^-), $\gamma_{1970.1+x}\mathbf{414.3}_5(16.8_{21})$, $\gamma_{1597.3+x}\mathbf{787.1}_3(100.0_{21})$ (Q)
D $\mathbf{2586.7+x}$, (16^+), $\gamma_{2194.1+x}\mathbf{392.6}_3(31_5)$, $\gamma_{1748.5+x}\mathbf{838.2}_3(100_5)$
E $\mathbf{2590.3+x}$, (15^+), $\gamma_{2163.0+x}\mathbf{426}(?)$, $\gamma_{1778.2+x}\mathbf{812}$, $\gamma_{1748.5+x}\mathbf{842}$
B $\mathbf{2818.2+x}$, (16^-), $\gamma_{2384.4+x}\mathbf{433.8}_5(22.1_{26})$, $\gamma_{1970.1+x}\mathbf{848.1}_3(100.0_{26})$
F $\mathbf{2961.0+x}$, (16^+), $\gamma_{2590.3+X}\mathbf{372}(?)$, $\gamma_{2194.1+x}\mathbf{767}(?)$, $\gamma_{2163.0+x}\mathbf{798}$
C $\mathbf{3096.1+x}$, (17^+), $\gamma_{2586.7+x}\mathbf{509.5}_7(82_6)$, $\gamma_{2194.1+x}\mathbf{902.1}_7(100_6)$
A $\mathbf{3289.5+x}$, (17^-), $\gamma_{2818.2+x}\mathbf{471.3}_5(17_3)$, $\gamma_{2384.4+x}\mathbf{905.1}_7(100_3)$
D $\mathbf{3541.5+x}$, (18^+), $\gamma_{3096.1+x}\mathbf{445.4}_7(24_4)$, $\gamma_{2586.7+x}\mathbf{954.9}_7(100_4)$
B $\mathbf{3771.4+x}$, (18^-), $\gamma_{3289.5+x}\mathbf{481.8}_5$, $\gamma_{2818.2+x}\mathbf{953.1}_7$
C $\mathbf{4105.0+x}$, (19^+), $\gamma_{3541.5+x}\mathbf{563.5}_5(33_5)$, $\gamma_{3096.1+x}\mathbf{1008.9}_3(100_5)$
A $\mathbf{4271.6+x}$, (19^-), $\gamma_{3771.4+x}\mathbf{500.2}_7(28_7)$, $\gamma_{3289.5+x}\mathbf{982.0}_3(100_7)$
D $\mathbf{4589.6+x}$, (20^+), $\gamma_{4105.0+x}\mathbf{484.6}_7(19_5)$, $\gamma_{3541.5+x}\mathbf{1048.1}_3(100_5)$
B $\mathbf{4720.2+x}$, (20^-), $\gamma_{4271.6+x}\mathbf{448.6}_5(69_9)$, $\gamma_{3771.4+x}\mathbf{948.8}_7(100_9)$
A $\mathbf{5185.0+x}$, (21^-), $\gamma_{4720.2+x}\mathbf{464.8}_5(100_6)$, $\gamma_{4271.6+x}\mathbf{913.4}_5(92_6)$
C $\mathbf{5185.2+x}$, (21^+), $\gamma_{4589.6+x}\mathbf{595.6}_5(32_7)$, $\gamma_{4105.0+x}\mathbf{1080.2}_5(100_7)$
B $\mathbf{5644.5+x}$, (22^-), $\gamma_{5185.0+X}\mathbf{459.4}_5(69_4)$, $\gamma_{4720.2+x}\mathbf{924.2}_5(100_4)$
D $\mathbf{5696.8+x}$, (22^+), $\gamma_{5185.2+X}\mathbf{511.7}_7(30_9)$, $\gamma_{4589.6+x}\mathbf{1107}_1(100_9)$
A $\mathbf{6156.8+x}$, (23^-), $\gamma_{5644.5+x}\mathbf{512.4}_5(55_6)$, $\gamma_{5185.0+X}\mathbf{971.8}_5(100_6)$
B $\mathbf{6658.1+x}$, (24^-), $\gamma_{6156.8+x}\mathbf{501.5}_7(30_5)$, $\gamma_{5644.5+x}\mathbf{1013.4}_5(100_5)$
D $\mathbf{6818.8+x}$, (24^+), $\gamma_{5696.8+x}\mathbf{1122.0}_{14}(100)$
A $\mathbf{7203.2+x}$, (25^-), $\gamma_{6658.1+x}\mathbf{545.0}_7$, $\gamma_{6156.8+x}\mathbf{1046.5}_5$
B $\mathbf{7759.0+x}$, (26^-), $\gamma_{7203.2+x}\mathbf{555.8}_7(11_6)$, $\gamma_{6658.1+x}\mathbf{1100.8}_{14}(100_6)$
D $\mathbf{7949.8+x}$, (26^+), $\gamma_{6818.8+x}\mathbf{1131.0}_{14}(100)$
A $\mathbf{8282.7+x}$, (27^-), $\gamma_{7759.0+x}\mathbf{523.7}_5(11_6)$, $\gamma_{7203.2+x}\mathbf{1079.5}_{14}(100_6)$
$\mathbf{y}$, (7)
$\mathbf{86.9+y}$, (9)
G $\mathbf{358.8+y}$, (9), $\gamma_y\mathbf{358.8}_5(100)$ Q
H $\mathbf{489.7+y}$, (10), $\gamma_{358.8+y}\mathbf{130.9}_5(100_7)$ D, $\gamma_{86.9+y}\mathbf{402.8}_5(57_5)$
G $\mathbf{732.6+y}$, (11), $\gamma_{489.7+y}\mathbf{242.9}_3(100)$
H $\mathbf{1046.6+y}$, (12), $\gamma_{732.6+y}\mathbf{314.0}_3(100)$
G $\mathbf{1418.2+y}$, (13), $\gamma_{1046.6+y}\mathbf{371.6}_3(100)$

H **1841.2+y**, (14), $\gamma_{1418.2+y}$**423.0**$_3$(100)
G **2305.6+y**, (15), $\gamma_{1841.2+y}$**464.4**$_3$(100)
H **2807.9+y**, (16), $\gamma_{2305.6+y}$**502.3**$_5$(100$_9$), $\gamma_{1841.2+y}$**966.7**$_5$(18$_2$)
G **3340.0+y**, (17), $\gamma_{2807.9+y}$**532.1**$_5$(100$_{10}$), $\gamma_{2305.6+y}$**1034.4**$_{14}$(31$_5$)
H **3889.5+y**, (18), $\gamma_{3340.0+y}$**549.5**$_5$(100$_{11}$), $\gamma_{2807.9+y}$**1081.6**$_{14}$(44$_{11}$)
G **4462.0+y**, (19), $\gamma_{3889.5+y}$**572.5**$_5$(100$_{13}$), $\gamma_{3340.0+y}$**1122.0**$_{14}$(33$_5$)
H **5054.8+y**, (20), $\gamma_{4462.0+y}$**592.8**$_5$(100$_{15}$), $\gamma_{3889.5+y}$**1165.3**$_{14}$(92$_{15}$)
G **5638.0+y**, (21), $\gamma_{5054.8+y}$**583.2**$_5$(100)
I **z**, J $\approx$ (16)
I **762.4+z**, J + 2, γ_z**762.4**(0.35)
I **1613.9+z**, J + 4, $\gamma_{762.4+z}$**851.5**(0.80)
I **2534.4+z**, J + 6, $\gamma_{1613.9+z}$**920.5**(1.00)
I **3532.1+z**, J + 8, $\gamma_{2534.4+z}$**997.7**(1.00)
I **4604.7+z**, J + 10, $\gamma_{3532.1+z}$**1072.6**(1.00)
I **5753.0+z**, J + 12, $\gamma_{4604.7+z}$**1148.3**(0.75)
I **6982.4+z**, J + 14, $\gamma_{5753.0+z}$**1229.4**(0.65)
I **8301.0+z**, J + 16, $\gamma_{6982.4+z}$**1318.6**(0.50)
I **9713.4+z**, J + 18, $\gamma_{8301.0+z}$**1412.4**(0.40)



SD band
(1989Go13)
$^{130}_{57}La_{73}$

$^{129}_{58}Ce_{71}$

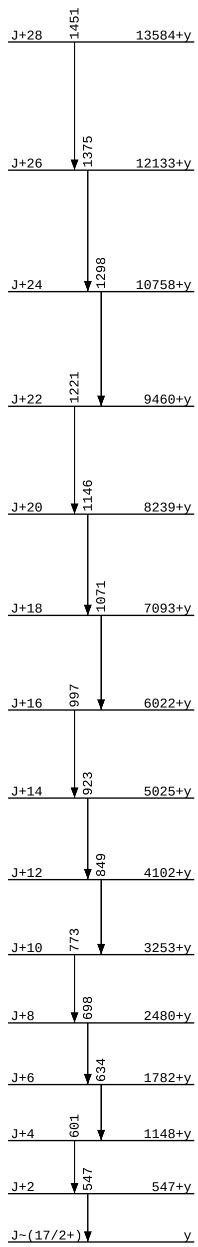
S_n: 8800 $_{SY}$, S_p: 4830 $_{SY}$

Nuclear Bands

A 5/2[402], α=-1/2
B 5/2[402], α=+1/2
C 7/2[523], α=-1/2
D 7/2[523], α=+1/2
E SD band (1996Ga13)
Q_0=6.3_4

Levels and γ-ray branchings:

A **0**, $7/2^+$, 3.5_5 *min*, %ε+%β^+=100
0+x, $/2^+)$
39.5+x, $(3/2^+)$, γ_{0+x}**39.5**$_1$(100)
D **107.6**, $(9/2^-)$, 60_2 *ns*, *μ*=-0.83_5, Q=1.32_{13}, γ_0**107.6**$_1$(100)
C **119.4**, $(11/2^-)$
B **144.4**, $(9/2^+)$, γ_0**144.4**$_2$(100) M1+E2
D **201.3**, $(13/2^-)$, $\gamma_{119.4}$**81.9**$_1$(100)
243.3+x, $(5/2^+)$, $\gamma_{39.5+x}$**203.8**$_2$(100_5), γ_{0+x}**243.3**$_1$(79_4)
279.0, $(9/2^+,7/2^+)$, $\gamma_{144.4}$**134.6**$_2$(16.4_{23}), γ_0**279.0**$_1$(100_5)
331+x, $(7/2^+)$, $\gamma_{243.3+x}$**88.0**$_5$(8.8_{12}), $\gamma_{39.5+x}$**291.8**$_2$(100_5)
C **346.7**, $(15/2^-)$, $\gamma_{201.3}$**145.4**$_2$(100_5) M1+E2, $\gamma_{119.4}$**227.3**$_1$(10.9_{10}) E2
A **347.7**, $(11/2^+)$, $\gamma_{144.4}$**203.3**$_2$(100_{10}) M1+E2 $\delta=-0.40_8$, γ_0**348**$_1$(76_{10})
B **589.1**, $(13/2^+)$, $\gamma_{347.7}$**241**$_1$(41_5) M1+E2, $\gamma_{144.4}$**444.7**$_2$(100_5) E2
D **607**, $(17/2^-)$, $\gamma_{346.7}$**260**$_1$(83_4) M1+E2 $\delta=-0.7_2$, $\gamma_{201.3}$**405**$_1$(100_4) E2
613.5, $\gamma_{279.0}$**334.5**$_2$(17_2), $\gamma_{107.6}$**506.1**$_2$(100_8)
617+x, $\gamma_{243.3+x}$**373**$_1$(4_1), $\gamma_{39.5+x}$**577.5**$_5$(100_8)
671.4+x, $(9/2^+)$, γ_{331+x}**340**$_1$(9.3_{19}), $\gamma_{243.3+x}$**428.1**$_2$(100_4)
748.0, $\gamma_{107.6}$**640.5**$_3$(100)
782.0, $\gamma_{107.6}$≈**675**(100)
790.8+x, $\gamma_{243.3+x}$**546.5**$_5$(100)
806+x, γ_{331+x}≈**475**(100)
C **817**, $(19/2^-)$, γ_{607}**210**$_1$(25_2) M1+E2 $\delta=-1.1_1$, $\gamma_{346.7}$**470**$_1$(100_6) E2
820.5, $\gamma_{201.3}$**619**$_1$(100_6), $\gamma_{119.4}$**701.0**$_3$(69_5), $\gamma_{107.6}$**712.8**$_3$(51_4)
830.0, $\gamma_{107.6}$**722.4**$_3$(100)
831.4+x, γ_{331+x}≈**501**(4.5_{15}), $\gamma_{243.3+x}$**588.1**$_2$(100_3)
835.0+x, $\gamma_{243.3+x}$**591.7**$_3$(100)
A **866**, $(15/2^+)$, $\gamma_{589.1}$**278**$_1$(65_5), $\gamma_{347.7}$**519**$_1$(100_{10}) E2
918.8+x, $\gamma_{613.5}$**305.3**$_2$(43_3), $\gamma_{243.3+x}$**675.5**$_3$(100_7)
980.6, $\gamma_{107.6}$**873.0**$_3$(100)
1134.0+x, $(3/2,5/2)$, $\gamma_{39.5+x}$**1094.5**$_5$(100)
1135.5, $\gamma_{107.6}$**1027.9**(100)
1147.6, $\gamma_{119.4}$**1027.9**$_3$(100_7), $\gamma_{107.6}$**1040.0**$_5$(38_4)
B **1176**, $(17/2^+)$, γ_{866}**309**$_1$(29_4) M1+E2 $\delta=-0.8_4$, $\gamma_{589.1}$**587**$_1$(100_6) E2
D **1198**, $(21/2^-)$, γ_{817}**381**$_1$(47_4) M1+E2, γ_{607}**591**$_1$(100_{11}) E2
1229, $\gamma_{107.6}$**1122**$_1$(100)
1337.6, $\gamma_{347.7}$≈**990**(< 14), $\gamma_{144.4}$**1193.2**$_3$(100_5), $\gamma_{119.4}$**1217**$_1$(45_4), $\gamma_{107.6}$**1230**$_1$(21.9_{15})
1339+x, $(3/2,5/2)$, $\gamma_{39.5+x}$**1300**$_3$(100)
1347+x, $\gamma_{243.3+x}$**1104**$_3$(20_3), $\gamma_{39.5+x}$**1308**$_1$(100_{10})
C **1433**, $(23/2^-)$, γ_{1198}**235**$_1$(12_2) M1+E2, γ_{817}**616**$_1$(100_4) E2
1445, $\gamma_{144.4}$**1301**$_1$(100)
A **1513**, $(19/2^+)$, γ_{1176}**337**$_1$(30_3) M1+E2, γ_{866}**646**$_1$(100_6) E2
1549.9, $\gamma_{589.1}$**960.8**$_4$(100)
1678.5+x, $(3/2,5/2)$, $\gamma_{39.5+x}$**1639.0**$_3$(100)
1825.9+x, $\gamma_{671.4+x}$**1154.5**$_3$(100)
B **1868**, $(21/2^+)$, γ_{1513}**355**$_2$(11_4), γ_{1176}**692**$_1$(100_{10})
D **1918**, $(25/2^-)$, γ_{1433}**485**$_2$(15_3), γ_{1198}**720**$_1$(100_{12})
2008.9, $\gamma_{144.4}$**1864.5**$_3$(100)
C **2160**, $(27/2^-)$, γ_{1918}**242**$_2$(13_1), γ_{1433}**727**$_1$(100_7) E2
A **2231**, $(23/2^+)$, γ_{1868}**363**$_2$(31_6) M1+E2 $\delta=-0.95_{75}$, γ_{1513}**718**$_1$(100_{13}) E2
B **2534**, $(25/2^+)$, γ_{2231}**303**$_1$(33_4) M1+E2 $\delta=-0.95_{75}$, γ_{1868}**666**$_1$(100_{13})
D **2675**, $(29/2^-)$, γ_{2160}**515**$_1$(33_7), γ_{1918}**757**$_1$(100_{13})
A **2773**, $(27/2^+)$, γ_{2534}**239**$_1$(62_8) M1+E2 $\delta=-0.25_8$, γ_{2231}**542**$_1$(100_8)
C **2899**, $(31/2^-)$, γ_{2675}**224**$_2$(11_8), γ_{2160}**739**$_1$(100_8) E2
B **3008**, $(29/2^+)$, γ_{2773}**235**$_1$(100_8) M1+E2, γ_{2534}**474**$_1$(100_8)
D **3217**, $(33/2^-)$, γ_{2899}**318**$_1$(100_6) M1+E2 $\delta=-0.09_6$, γ_{2675}**542**$_1$(81_6)
A **3286**, $(31/2^+)$, γ_{3008}**278**$_1$(100_7), γ_{2773}**513**$_1$(57_7)
C **3470**, $(35/2^-)$, γ_{3217}**253**$_1$(64_{14}), γ_{2899}**571**$_1$(100_{14})
B **3582**, $(33/2^+)$, γ_{3286}**296**$_2$(50_6), γ_{3008}**574**$_1$(100_{13})
D **3796**, $(37/2^-)$, γ_{3470}**326**$_1$(64_9), γ_{3217}**579**$_1$(100_9)
A **3929**, $(35/2^+)$, γ_{3582}**349**, γ_{3286}**643**
C **4126**, $(39/2^-)$, γ_{3796}**330**$_1$(75_{13}), γ_{3470}**656**$_1$(100_{13})
B **4290**, $(37/2^+)$, γ_{3929}**359**, γ_{3582}**708**
D **4514**, $(41/2^-)$, γ_{4126}**390**, γ_{3796}**718**
A **4706**, $(39/2^+)$, γ_{4290}**418**, γ_{3929}**777**
C **4919**, $(43/2^-)$, γ_{4514}**403**, γ_{4126}**793**
B **5131**, $(41/2^+)$, γ_{4706}**424**, γ_{4290}**841**
D **5373**, $(45/2^-)$, γ_{4919}**456**, γ_{4514}**859**
A **5613**, $(43/2^+)$, γ_{4706}**907**
C **5845**, $(47/2^-)$, γ_{5373}**470**, γ_{4919}**926**
B **6099**, $(45/2^+)$, γ_{5131}**968**
D **6367**, $(49/2^-)$, γ_{5845}**524**, γ_{5373}**994**
A **6642**, $(47/2^+)$, γ_{5613}**1029**
C **6892**, $(51/2^-)$, γ_{6367}**523**, γ_{5845}**1047**
B **7185**, $(49/2^+)$, γ_{6099}**1086**
D **7485**, $(53/2^-)$, γ_{6367}**1118**
A **7782**, $(51/2^+)$, γ_{6642}**1140**
C **8045**, $(55/2^-)$, γ_{6892}**1153**
B **8377**, $(53/2^+)$, γ_{7185}**1192**
D **8718**, $(57/2^-)$, γ_{7485}**1233**
C **9288**, $(59/2^-)$, γ_{8045}**1243**
E **y**, $J\approx(17/2^+)$
E **547+y**, $J+2$, γ_y**547**
E **1148+y**, $J+4$, γ_{547+y}**601**
E **1782+y**, $J+6$, γ_{1148+y}**634**
E **2480+y**, $J+8$, γ_{1782+y}**698**
E **3253+y**, $J+10$, γ_{2480+y}**773**
E **4102+y**, $J+12$, γ_{3253+y}**849**
E **5025+y**, $J+14$, γ_{4102+y}**923**
E **6022+y**, $J+16$, γ_{5025+y}**997**
E **7093+y**, $J+18$, γ_{6022+y}**1071**
E **8239+y**, $J+20$, γ_{7093+y}**1146**
E **9460+y**, $J+22$, γ_{8239+y}**1221**
E **10758+y**, $J+24$, γ_{9460+y}**1298**
E **12133+y**, $J+26$, $\gamma_{10758+y}$**1375**
E **13584+y**, $J+28$, $\gamma_{12133+y}$**1451**



SD band
(1996Ga13)
$^{129}_{58}Ce_{71}$

$^{130}_{58}Ce_{72}$

S_n: 11234 *SY*, S_p: 5401 *SY*

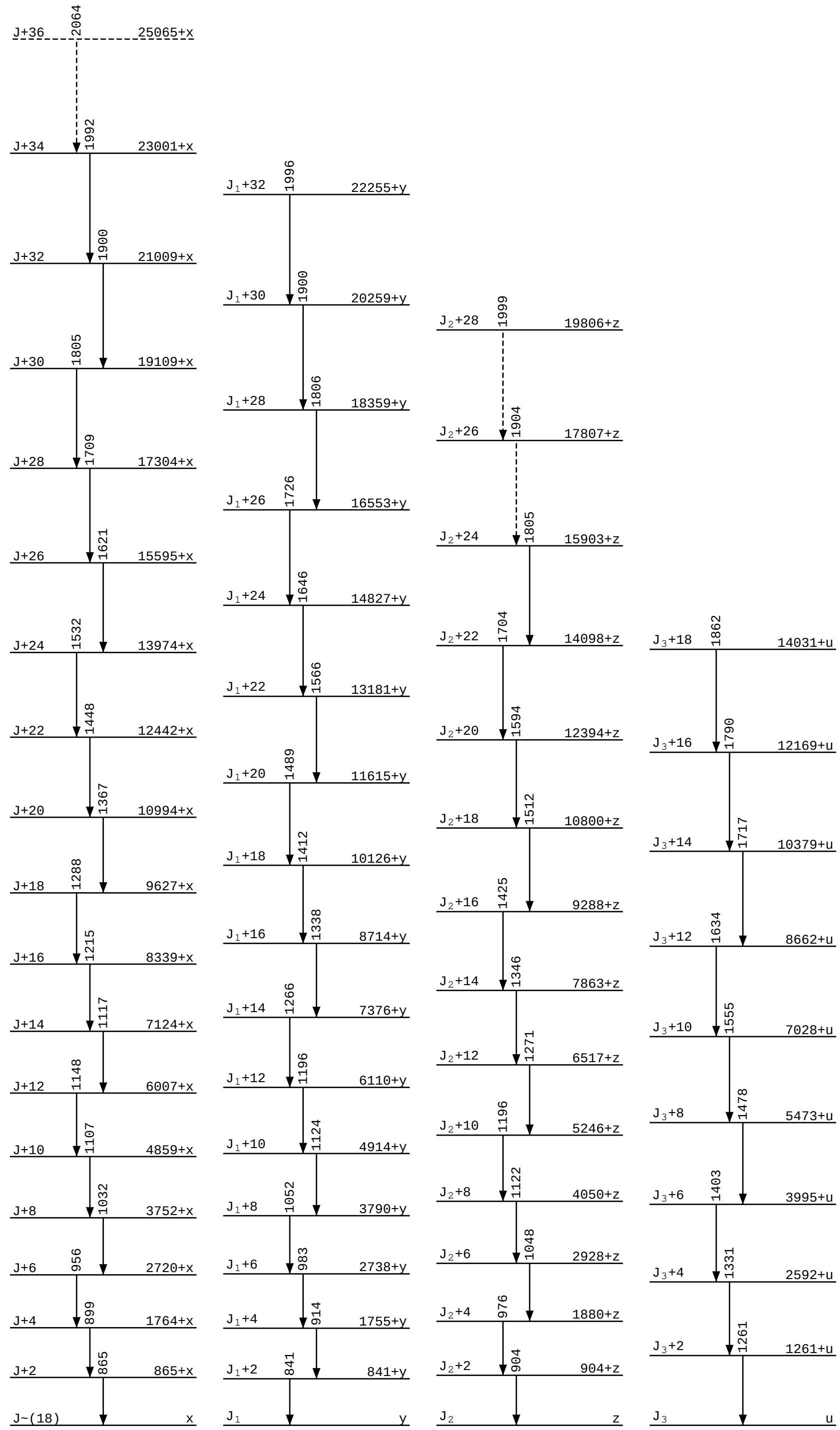
Nuclear Bands

- A GS (yrast) band, AB after 10^+
- B γ band, γab after 10^+
- C Ae band
- D Af band
- E K^π=(7^-) af band, afAB after 15^-
- F K^π=(7^-) ae band, aeAB after 14^-
- G SD-1 band (1998Se10)
- H SD-2 band (1998Se10,1997Wi02)
- I SD-3 band (1998Se10)
- J SD-4 band (1998Se10)

Levels and γ-ray branchings:

A **0**, 0^+, *22.9$_5$ min*, %ε+%β$^+$=100,
A **253.74**$_{10}$, 2^+, *143$_6$ ps*, γ_{0}**253.7**$_1$(100) E2
A **710.29**$_{17}$, 4^+, *4.3$^5_3$ ps*, $\gamma_{253.74}$**456.5**$_2$(100) E2
B **834.55**$_{15}$, 2^+, $\gamma_{253.74}$**580.9**$_3$(88$_4$) M1, γ_{0}**834.7**$_2$(100$_6$) E2
1025.1$_8$, 0^+, $\gamma_{253.74}$**771**$_1$(100), γ_{0}**1025.5** (E0)(?)
1177.23$_{17}$, $(3)^+$, $\gamma_{834.55}$**343.0**$_4$(5.1$_{22}$), $\gamma_{710.29}$**466.9**$_3$(12.5$_7$) M1,E2, $\gamma_{253.74}$**923.4**$_2$(100$_5$) M1,E2
1305.4$_7$, (2^+), $\gamma_{1025.1}$**280**$_1$(≈ 33), $\gamma_{710.29}$**596**$_1$(100$_{33}$), $\gamma_{253.74}$**1051**$_1$(≈ 33)
B **1322.83**$_{18}$, $(4)^+$, $\gamma_{834.55}$**488.2**$_2$(100$_9$), $\gamma_{710.29}$**612.5**$_3$(14$_7$), $\gamma_{253.74}$**1069.1**$_5$(39$_7$) M1,E2
A **1324.15**$_{23}$, 6^+, *0.87$_7$ ps*, $\gamma_{710.29}$**613.8**$_2$(100) E2
1671.65$_{18}$, $(2,3,4)^+$, $\gamma_{1322.83}$**348.6**$_3$(11$_5$), $\gamma_{1177.23}$**494.4**$_2$(100$_5$) M1, $\gamma_{834.55}$**837.2**$_2$(80$_7$) M1,E2, $\gamma_{710.29}$**961.4**$_3$(36$_7$)
1755.7$_4$, $(2^+,3,4,5^+)$, $\gamma_{1177.23}$**578.5**$_4$(100$_{33}$), $\gamma_{710.29}$**1045**$_1$(60$_{20}$)
B **1897.9**$_3$, (6^+), $\gamma_{1324.15}$**573.8**$_4$(100$_{20}$), $\gamma_{1322.83}$**574.9**$_4$(83$_{17}$), $\gamma_{710.29}$**1187**
D **1954.87**$_{25}$, $(5)^-$, $\gamma_{1671.65}$**283**$_2$(≈ 5), $\gamma_{1324.15}$**631.0**$_3$(100$_{10}$) E1, $\gamma_{1322.83}$**632.5**$_5$(2.0$_7$) E1, $\gamma_{710.29}$**1244.3**$_5$(2.0$_7$)
2032.4$_6$, (4^+), $\gamma_{1324.15}$**708**$_1$(≈ 3), $\gamma_{710.29}$**1322**$_1$(43$_{14}$), $\gamma_{253.74}$**1779**$_1$(100$_{14}$)
A **2052.9**$_3$, 8^+, *0.24$_7$ ps*, $\gamma_{1324.15}$**728.7**$_2$(100) E2
2057.3$_6$, $(2,3,4)^+$, $\gamma_{710.29}$**1348.0**$_8$(100) M1,E2
2115.65$_{24}$, $(2,3,4)^+$, $\gamma_{1322.83}$**792**$_1$(≈ 2.5), $\gamma_{1177.23}$**938.4**$_2$(100$_5$) M1,E2, $\gamma_{834.55}$**1282.0**$_6$(42$_{10}$) M1,E2, $\gamma_{710.29}$**1405**$_1$(12$_7$), $\gamma_{253.74}$**1861**$_1$(98$_{13}$)
2299.2$_8$, (4^+), $\gamma_{1324.15}$**975**$_1$(≈ 2), $\gamma_{710.29}$**1589**$_1$(100$_{16}$)
D **2313.3**$_3$, $(7)^-$, *23$_3$ ps*, $\gamma_{2052.9}$**260.4**$_4$(20$_4$), $\gamma_{1954.87}$**358.4**$_2$(100$_{10}$) E2, $\gamma_{1897.9}$**415.5**$_4$(12$_3$), $\gamma_{1324.15}$**989.0**$_5$(5.9$_{13}$)
2333.4$_5$, $\gamma_{1324.15}$**1009.2**$_4$(100)
C **2381.1**$_4$, (6^-), $\gamma_{1954.87}$**426.2**$_5$(15$_3$), $\gamma_{1897.9}$**483.2**$_5$(13$_3$), $\gamma_{1324.15}$**1056.9**$_4$(100$_{20}$) (E1)
E **2454.0**$_3$, (7^-), *100$_8$ ns*, Q=1.77$_{21}$, $\gamma_{2381.1}$**72.8**(≈ 35), $\gamma_{2333.4}$**120.5**(≈ 85), $\gamma_{2052.9}$**401.0**$_5$(11$_3$), $\gamma_{1954.87}$**499.3**$_2$(37$_8$), $\gamma_{1897.9}$**556.1**$_3$(100$_{20}$), $\gamma_{1324.15}$**1129.7**$_3$(100$_{20}$)
B **2561.4**$_5$, (8^+), $\gamma_{2057.3}$**505**, $\gamma_{1897.9}$**663.4**$_4$(100)
2623.8$_4$, $^+$, $\gamma_{1671.65}$**952.1**$_3$(100) M1,E2
F **2643.1**$_4$, (8^-), $\gamma_{2454.0}$**189.3**$_3$(100) (M1+E2) $\delta = -1.3_4$, $\gamma_{2052.9}$**587**
C **2644.5**$_4$, (8^-), $\gamma_{2381.1}$**263.4**$_4$(100$_{20}$), $\gamma_{2313.3}$**331.2**$_4$(69$_{14}$), $\gamma_{2052.9}$**591.6**$_5$(28$_6$)
2655.2$_8$, (4^+), $\gamma_{1324.15}$**1331**$_1$(≈ 5), $\gamma_{710.29}$**1945**$_1$(100$_{23}$)
2703.7$_{11}$, $\gamma_{2115.65}$**588**$_1$(100)
D **2760.9**$_3$, $(9)^-$, *2.8$_{14}$ ps*, $\gamma_{2644.5}$**116.4**$_5$(3.7$_7$), $\gamma_{2313.3}$**447.6**$_2$(100$_{10}$) E2, $\gamma_{2052.9}$**708.0**$_4$(29$_6$)
A **2808.9**$_4$, 10^+, *0.42$_{10}$ ps*, $\gamma_{2052.9}$**756.0**$_2$(100) E2
E **2959.5**$_5$, (9^-), $\gamma_{2643.1}$**316.3**$_4$(100), $\gamma_{2057.3}$**903**
C **3071.6**$_4$, (10^-), *5.2$_{10}$ ps*, $\gamma_{2760.9}$**310.7**$_4$(21$_4$), $\gamma_{2644.5}$**427.1**$_3$(100$_{20}$) E2
B **3297.3**$_6$, (10^+), $\gamma_{2561.4}$**735.9**$_4$(100)
A **3311.8**$_4$, 12^+, *2.84$_{17}$ ps*, $\gamma_{2808.9}$**502.9**$_2$(100) E2
F **3317.8**$_5$, (10^-), $\gamma_{2959.5}$**358.4**$_5$(28$_6$), $\gamma_{2643.1}$**674.7**$_4$(100$_{20}$)
D **3319.8**$_4$, $(11)^-$, *<1.4 ps*, $\gamma_{3071.6}$**248.2**$_5$(5.5$_{11}$), $\gamma_{2760.9}$**558.9**$_3$(100$_{20}$) E2
C **3681.3**$_5$, (12^-), *<1.0 ps*, $\gamma_{3319.8}$**361.5**$_4$(26$_6$), $\gamma_{3071.6}$**609.7**$_4$(100$_{20}$) E2
E **3700.8**$_6$, (11^-), $\gamma_{3317.8}$**383.0**$_5$(36$_9$), $\gamma_{2959.5}$**741.3**$_4$(100$_{20}$)
A **3860.4**$_5$, 14^+, *1.24$_7$ ps*, $\gamma_{3311.8}$**548.6**$_2$(100) E2
B **3986.1**$_8$, (12^+), $\gamma_{3297.3}$**688.8**$_4$(100)
D **4026.7**$_5$, (13^-), $\gamma_{3681.3}$**345.4**$_5$(7.7$_{15}$), $\gamma_{3319.8}$**706.9**$_3$(100$_{20}$)
F **4121.0**$_6$, (12^-), $\gamma_{3700.8}$**420.3**$_5$(11$_4$), $\gamma_{3317.8}$**803.3**$_4$(100$_{20}$)
C **4448.8**$_6$, (14^-), $\gamma_{3681.3}$**767.5**$_4$(100) E2
E **4536.8**$_6$, (13^-), $\gamma_{4121.0}$**415.5**$_5$(32$_7$), $\gamma_{3700.8}$**835.8**$_4$(100$_{20}$)
A **4553.2**$_5$, 16^+, *0.28$_7$ ps*, $\gamma_{3860.4}$**692.7**$_2$(100) E2
B **4756.2**$_9$, (14^+), $\gamma_{3986.1}$**770.1**$_5$(100)
D **4862.4**$_6$, (15^-), $\gamma_{4026.7}$**835.7**$_3$(100) E2
F **4974.2**$_7$, (14^-), $\gamma_{4536.8}$**437.1**$_5$(24$_5$), $\gamma_{4121.0}$**853.6**$_4$(100$_{20}$)
E **5306.1**$_7$, (15^-), $\gamma_{4974.2}$**332.0**$_4$(100$_{20}$), $\gamma_{4536.8}$**769.1**$_4$(93$_{20}$)
C **5343.5**$_8$, (16^-), $\gamma_{4448.8}$**894.7**$_4$(100)
A **5384.2**$_6$, 18^+, *0.21$_5$ ps*, $\gamma_{4553.2}$**831.0**$_2$(100)
F **5586.7**$_7$, (16^-), $\gamma_{5306.1}$**280.5**$_4$(100$_{20}$), $\gamma_{4974.2}$**612.5**$_4$(87$_{20}$)
B **5609.2**$_{14}$, (16^+), $\gamma_{4756.2}$**853**
D **5757.9**$_7$, (17^-), $\gamma_{4862.4}$**895.5**$_4$(100) E2
E **5882.1**$_7$, (17^-), $\gamma_{5586.7}$**295.5**$_4$(100$_{20}$), $\gamma_{5306.1}$**576.0**$_5$(13$_7$)
5884.5$_8$, $\gamma_{4862.4}$**1022.1**$_5$(100)
F **6212.8**$_8$, (18^-), $\gamma_{5882.1}$**330.6**$_5$(100$_{20}$), $\gamma_{5586.7}$**626.1**$_5$(40$_{10}$)
C **6320.0**$_9$, (18^-), $\gamma_{5343.5}$**976.5**$_4$(100)
A **6341.6**$_6$, 20^+, *173$_{35}$ fs*, $\gamma_{5384.2}$**957.4**$_3$(100)
6396.2$_{12}$, (20^+), $\gamma_{5384.2}$**1012**
B **6534.2**$_{17}$, (18^+), $\gamma_{5609.2}$**925**
E **6577.1**$_8$, (19^-), $\gamma_{6212.8}$**364.4**$_5$(100$_{20}$), $\gamma_{5882.1}$**695.0**$_5$(44$_9$)
D **6642.3**$_8$, (19^-), $\gamma_{5757.9}$**884.4**$_4$(100)
F **6979.2**$_9$, (20^-), $\gamma_{6577.1}$**402.0**$_5$(100$_{20}$), $\gamma_{6212.8}$**766.4**$_5$(57$_{12}$)
C **7388.0**$_{13}$, (20^-), $\gamma_{6320.0}$**1068**
A **7408.6**$_8$, 22^+, *75$_{14}$ fs*, $\gamma_{6341.6}$**1067.0**$_4$(100)
E **7413.2**$_{10}$, (21^-), $\gamma_{6979.2}$**434**, $\gamma_{6577.1}$**836**
B **7514.2**$_{20}$, (20^+), $\gamma_{6534.2}$**980**
D **7583.3**$_{13}$, (21^-), $\gamma_{6642.3}$**941**
F **7886.2**$_{11}$, (22^-), $\gamma_{7413.2}$**473**, $\gamma_{6979.2}$**907**
E **8381.2**$_{12}$, (23^-), $\gamma_{7886.2}$**495**, $\gamma_{7413.2}$**968**
C **8511.0**$_{17}$, (22^-), $\gamma_{7388.0}$**1123**
B **8555.2**$_{22}$, (22^+), $\gamma_{7514.2}$**1041**
A **8570.0**$_9$, 24^+, *52$_{10}$ fs*, $\gamma_{7408.6}$**1161.4**$_5$(100)
D **8605.3**$_{17}$, (23^-), $\gamma_{7583.3}$**1022**
8605.6$_{13}$, (24^+), $\gamma_{7408.6}$**1197**
F **8913.2**$_{13}$, (24^-), $\gamma_{8381.2}$**532**, $\gamma_{7886.2}$**1027**
E **9466.2**$_{14}$, (25^-), $\gamma_{8913.2}$**553**, $\gamma_{8381.2}$**1085**
B **9665.2**$_{24}$, (24^+), $\gamma_{8555.2}$**1110**
9702.5$_{11}$(?), (26^+), $\gamma_{8570.0}$**1132.5**$_5$(100)
D **9703.3**$_{19}$, (25^-), $\gamma_{8605.3}$**1098**
9747.6$_{16}$, (26^+), $\gamma_{8605.6}$**1142**
A **9816.0**$_{14}$, (26^+), *31$_9$ fs*, $\gamma_{8570.0}$**1246**
F **10051.2**$_{16}$, (26^-), $\gamma_{8913.2}$**1138**
E **10651.2**$_{17}$, (27^-), $\gamma_{9466.2}$**1185**
B **10850**$_3$, (26^+), $\gamma_{9665.2}$**1185**
D **10876.3**$_{22}$, (27^-), $\gamma_{9703.3}$**1173**
10996.6$_{19}$, (28^+), $\gamma_{9747.6}$**1249**
A **11132.0**$_{17}$, (28^+), $\gamma_{9816.0}$**1316**
11137.6$_{19}$, (28^+), $\gamma_{9747.6}$**1390**
F **11284.2**$_{19}$, (28^-), $\gamma_{10051.2}$**1233**
E **11924.2**$_{20}$, (29^-), $\gamma_{10651.2}$**1273**
D **12097.3**$_{24}$, (29^-), $\gamma_{10876.3}$**1221**
A **12486.0**$_{20}$, (30^+), $\gamma_{11132.0}$**1354**
F **12608.2**$_{22}$, (30^-), $\gamma_{11284.2}$**1324**
A **13817.0**$_{22}$, (32^+), $\gamma_{12486.0}$**1331**
A **15178.0**$_{24}$, (34^+), $\gamma_{13817.0}$**1361**
G **x**, J ≈ (18)
G **865.0+x**, J + 2, γ_{x}**865**
G **1764.0+x**, J + 4, $\gamma_{865.0+x}$**899**
G **2720.0+x**, J + 6, $\gamma_{1764.0+x}$**956**
G **3752.0+x**, J + 8, $\gamma_{2720.0+x}$**1032**
G **4859.0+x**, J + 10, $\gamma_{3752.0+x}$**1107**
G **6007.0+x**, J + 12, $\gamma_{4859.0+x}$**1148**

G **7124+x**, J + 14, $\gamma_{6007.0+x}$ **1117**
G **8339+x**, J + 16, γ_{7124+x} **1215**
G **9627+x**, J + 18, γ_{8339+x} **1288**
G **10994+x**, J + 20, γ_{9627+x} **1367**
G **12442+x**, J + 22, $\gamma_{10994+x}$ **1448**
G **13974+x**, J + 24, $\gamma_{12442+x}$ **1532**
G **15595+x**, J + 26, $\gamma_{13974+x}$ **1621**
G **17304+x**, J + 28, $\gamma_{15595+x}$ **1709**
G **19109+x**, J + 30, $\gamma_{17304+x}$ **1805**
G **21009+x**, J + 32, $\gamma_{19109+x}$ **1900**
G **23001+x**, J + 34, $\gamma_{21009+x}$ **1992**
G **25065+x**(?), J + 36, $\gamma_{23001+x}$ **2064**(?)
H **y**, J
H **841.0+y**, J + 2, γ_{y} **841**
H **1755.0+y**, J + 4, $\gamma_{841.0+y}$ **914**
H **2738.0+y**, J + 6, $\gamma_{1755.0+y}$ **983**
H **3790.0+y**, J + 8, $\gamma_{2738.0+y}$ **1052**
H **4914.0+y**, J + 10, $\gamma_{3790.0+y}$ **1124**
H **6110.0+y**, J + 12, $\gamma_{4914.0+y}$ **1196**
H **7376+y**, J + 14, $\gamma_{6110.0+y}$ **1266**
H **8714+y**, J + 16, γ_{7376+y} **1338**
H **10126+y**, J + 18, γ_{8714+y} **1412**
H **11615+y**, J + 20, $\gamma_{10126+y}$ **1489**
H **13181+y**, J + 22, $\gamma_{11615+y}$ **1566**
H **14827+y**, J + 24, $\gamma_{13181+y}$ **1646**
H **16553+y**, J + 26, $\gamma_{14827+y}$ **1726**
H **18359+y**, J + 28, $\gamma_{16553+y}$ **1806**
H **20259+y**, J + 30, $\gamma_{18359+y}$ **1900**
H **22255+y**, J + 32, $\gamma_{20259+y}$ **1996**
I **z**, J
I **904.0+z**, J + 2, γ_{z} **904**
I **1880.0+z**, J + 4, $\gamma_{904.0+z}$ **976**
I **2928.0+z**, J + 6, $\gamma_{1880.0+z}$ **1048**
I **4050.0+z**, J + 8, $\gamma_{2928.0+z}$ **1122**
I **5246.0+z**, J + 10, $\gamma_{4050.0+z}$ **1196**
I **6517.0+z**, J + 12, $\gamma_{5246.0+z}$ **1271**
I **7863+z**, J + 14, $\gamma_{6517.0+z}$ **1346**
I **9288+z**, J + 16, γ_{7863+z} **1425**
I **10800+z**, J + 18, γ_{9288+z} **1512**
I **12394+z**, J + 20, $\gamma_{10800+z}$ **1594**
I **14098+z**, J + 22, $\gamma_{12394+z}$ **1704**
I **15903+z**, J + 24, $\gamma_{14098+z}$ **1805**
I **17807+z**, J + 26, $\gamma_{15903+z}$ **1904**(?)
I **19806+z**, J + 28, $\gamma_{17807+z}$ **1999**(?)
J **u**, J
J **1261.0+u**, J + 2, γ_{u} **1261**
J **2592.0+u**, J + 4, $\gamma_{1261.0+u}$ **1331**
J **3995.1+u**, J + 6, $\gamma_{2592.0+u}$ **1403**
J **5473.0+u**, J + 8, $\gamma_{3995.1+u}$ **1478**
J **7028.0+u**, J + 10, $\gamma_{5473.0+u}$ **1555**
J **8662.0+u**, J + 12, $\gamma_{7028.0+u}$ **1634**
J **10379+u**, J + 14, $\gamma_{8662.0+u}$ **1717**
J **12169+u**, J + 16, $\gamma_{10379+u}$ **1790**
J **14031+u**, J + 18, $\gamma_{12169+u}$ **1862**



SD-1 band (1998Se10) SD-2 band (1998Se10,1997Wi02) SD-3 band (1998Se10) SD-4 band (1998Se10)

$^{130}_{58}Ce_{72}$

$^{131}_{58}$Ce$_{73}$

S_n: 8322 $_{SY}$, S_p: 5330 $_{SY}$

Nuclear Bands

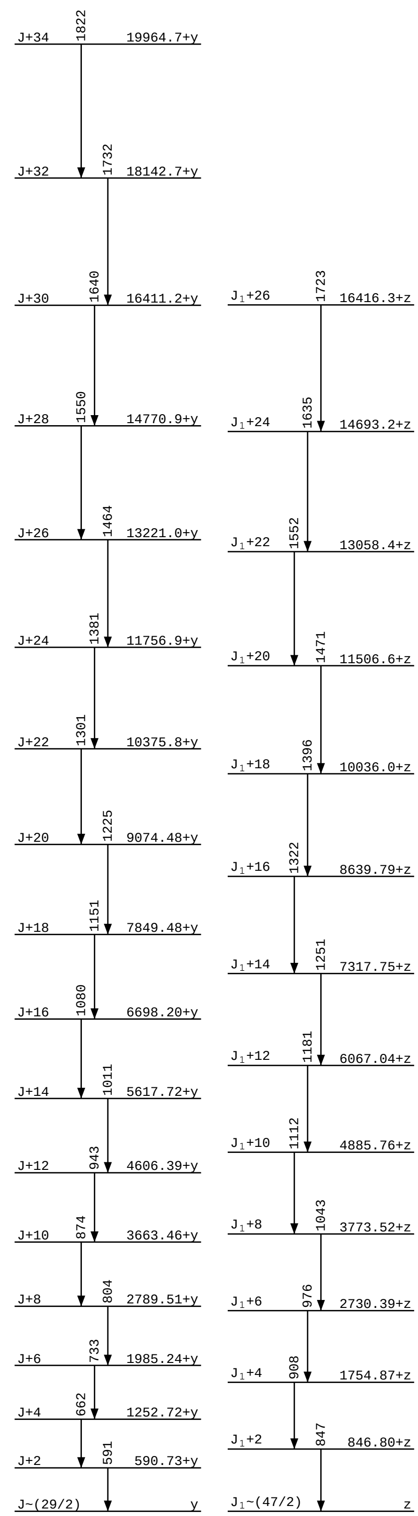
- A $\nu h_{11/2}$
- B $\nu g_{7/2}$
- C $\nu g_{7/2}$ $\pi h^2_{11/2}$
- D $\nu h_{11/2}$ $\pi h_{11/2}$ $\pi g_{7/2}$
- E $\nu h_{11/2}$ $\pi h^2_{11/2}$
- F SD-1 band (1993Pa02,1996Se04,1998Pe01,1987Be32) Q_0=7.3$_4$
- G SD-2 band (1996Se03,1996Cl03,1998Wi13) Q_0=8.5$_4$

Levels and γ-ray branchings:

B **0**, $(7/2^+)$, *10.2$_3$ min*, %ε+%β$^+$=100
0.0+x, $(1/2^+)$, *5.0$_{10}$ min*, %ε+%β$^+$=100
72.82+x, $(3/2^+)$, $\gamma_{0.0+x}$**72.82**$_6$(100)
A **162.00**$_9$, $(9/2^-)$, *88$_2$ ns*, μ=-0.851$_{32}$, Q=0.92$_{10}$, $\gamma_{0.0}$**161.9**$_1$(100) (E1)
B **257.31**$_{19}$, $(9/2^+)$, $\gamma_{0.0}$**257.2**$_2$(100) (M1,E2)
266.16+x, $\gamma_{72.82+x}$**193.36**$_6$(5.6$_5$), $\gamma_{0.0+x}$**266.13**$_7$(100)
279.54+x, $\gamma_{72.82+x}$**206.72**$_6$(56$_4$), $\gamma_{0.0+x}$**279.55**$_7$(100$_{10}$)
285.40+x, $\gamma_{72.82+x}$**212.55**$_7$(56$_4$), $\gamma_{0.0+x}$**285.39**$_7$(100$_{10}$)
A **300.24**$_{13}$, $(11/2^-)$, *120$_8$ ps*, $\gamma_{162.00}$**138.2**$_1$(100) (M1,E2)
324.33+x, $\gamma_{72.82+x}$**251.47**$_7$(40.3$_{26}$), $\gamma_{0.0+x}$**324.35**$_8$(100$_9$)
364.81+x, $\gamma_{285.40+x}$**79.36**$_{10}$(14$_4$), $\gamma_{72.82+x}$**292.04**$_7$(100$_{10}$), $\gamma_{0.0+x}$**364.7**$_2$(74$_{20}$)
384.70$_{11}$, $\gamma_{162.00}$**222.63**$_{10}$(100$_9$), $\gamma_{0.0}$**385.0**$_2$(45$_{14}$)
407.82+x, $\gamma_{279.54+x}$**128.2**$_2$(5.3$_{21}$), $\gamma_{72.82+x}$**334.95**$_{10}$(100$_{11}$)
440.57$_{10}$, $\gamma_{162.00}$**278.53**$_{16}$(18$_7$), $\gamma_{0.0}$**440.60**$_{12}$(100$_{10}$)
B **542.70**$_{24}$, $(11/2^+)$, $\gamma_{257.31}$**285.2**$_2$(10020$_{20}$), $\gamma_{0.0}$**543.5**$_5$(91$_9$) (E2)
581.73+x, $\gamma_{266.16+x}$**315.5**$_2$(100$_{11}$), $\gamma_{0.0+x}$**581.8**$_2$(80$_{18}$)
585.02+x, $\gamma_{279.54+x}$**305.42**$_{10}$(100)
588.94$_{15}$, $\gamma_{162.00}$**426.94**$_{12}$(100)
599.93$_{22}$, $\gamma_{300.24}$**299.6**$_3$(95$_{40}$), $\gamma_{162.00}$**438.0**$_5$(≈ 100)
A **636.85**$_{25}$, $(13/2^-)$, $\gamma_{300.24}$**336.4**$_3$(100$_7$) (M1,E2), $\gamma_{162.00}$**475.3**$_4$(27$_4$) (E2)
785.26+x, $\gamma_{407.82+x}$**377.25**$_{17}$(21$_6$), $\gamma_{364.81+x}$**420.45**$_{15}$(100$_{15}$), $\gamma_{72.82+x}$**712.46**$_{12}$(51$_5$), $\gamma_{0.0+x}$**785.4**$_2$(37$_5$)
A **809.8**$_3$, $(15/2^-)$, *5.22$_{26}$ ps*, $\gamma_{636.85}$**173.0**$_2$(14$_3$) (M1,E2), $\gamma_{300.24}$**509.4**$_5$(10017$_{17}$)
865.59+x, $\gamma_{585.02+x}$**280.42**$_{16}$(100$_{40}$), $\gamma_{279.54+x}$**586.15**$_{13}$(72$_{14}$)
B **866.2**$_4$, $(13/2^+)$, $\gamma_{542.70}$**323.4**$_3$(18$_4$) (M1,E2), $\gamma_{257.31}$**609.4**$_6$(10018$_{18}$) (E2)
884.17$_{20}$, $\gamma_{599.93}$**284.2**$_2$(100$_{40}$), $\gamma_{384.70}$**499.5**$_2$(95$_{20}$)
947.42$_{22}$, $\gamma_{257.31}$**690.6**(100), $\gamma_{162.00}$**785.4**$_2$(550$_{67}$)
1054.63+x, $\gamma_{407.82+x}$**646.5**(≈ 17), $\gamma_{285.40+x}$**769.21**$_{10}$(92$_8$), $\gamma_{279.54+x}$**775.12**$_{10}$(100$_8$)
1176.4$_5$, $(15/2^-)$, $\gamma_{809.8}$**367**, $\gamma_{636.85}$**539.5**$_5$(100) (M1,E2)
B **1212.0**$_5$, $(15/2^+)$, $\gamma_{866.2}$**345.9**$_4$(8$_3$), $\gamma_{542.70}$**669.1**$_7$(100$_8$) (E2)
1213.43+x, $\gamma_{785.26+x}$**428.15**$_8$(100$_{14}$), $\gamma_{364.81+x}$**848.7**$_2$(17$_4$)
A **1295.1**$_4$, $(17/2^-)$, $\gamma_{809.8}$**485.5**$_4$(8411$_{11}$) (M1,E2), $\gamma_{636.85}$**657.8**$_6$(10017$_{17}$) (E2)
1408.9$_{11}$
A **1451.7**$_6$, $(19/2^-)$, $\gamma_{1295.1}$**156**, $\gamma_{809.8}$**641.7**$_6$(100) (E2)
B **1590.9**$_6$, $(17/2^+)$, $\gamma_{1212.0}$**379**, $\gamma_{866.2}$**724.8**$_7$(100) (E2)
1695.7$_7$, $(17/2^-)$, $\gamma_{1176.4}$**519.3**$_5$(100) (M1,E2)
1805.3$_7$, $(19/2^-)$, $\gamma_{1295.1}$**510**(?), $\gamma_{1176.4}$**629**, $\gamma_{809.8}$**996**
B **1976.3**$_7$, $(19/2^+)$, $\gamma_{1590.9}$**385**(?), $\gamma_{1212.0}$**764.3**$_7$(100) (E2)
1994.26+x, $\gamma_{1054.63+x}$**940.2**(≈ 23), $\gamma_{324.33+x}$**1669.7**$_2$(71$_{10}$), $\gamma_{72.82+x}$**1921.8**$_3$(100$_{16}$), $\gamma_{0.0+x}$**1994.3**$_3$(71$_{16}$)
A **2067.3**$_7$, $(21/2^-)$, $\gamma_{1451.7}$**615**, $\gamma_{1295.1}$**773**
A **2202.0**$_8$, $(23/2^-)$, $\gamma_{2067.3}$**135**, $\gamma_{1451.7}$**749.9**$_7$(100) (E2)
2286.7$_{11}$, $\gamma_{1408.9}$**878**
2313.3$_{10}$(?), $(19/2^-)$, $\gamma_{1695.7}$**617.5**$_6$(100) (M1,E2)(?)
D **2352.1**$_8$, $(19/2^+)$, $\gamma_{1408.9}$**943**, $\gamma_{1212.0}$**1140**
B **2386.8**$_8$, $(21/2^+)$, $\gamma_{1976.3}$**411**, $\gamma_{1590.9}$**795.6**$_8$(100) (E2)
D **2505.4**$_8$, $(21/2^+)$, $\gamma_{2352.1}$**153**, $\gamma_{2286.7}$**219**, $\gamma_{1976.3}$**529**, $\gamma_{1590.9}$**915**
2563.7$_8$, $(23/2^-)$, $\gamma_{2067.3}$**496**, $\gamma_{1805.3}$**759**, $\gamma_{1451.7}$**1112**
D **2685.2**$_8$, $(23/2^+)$, $\gamma_{2505.4}$**180**, $\gamma_{2386.8}$**298**, $\gamma_{2352.1}$**333**, $\gamma_{1976.3}$**709**
C **2761.3**$_9$, $(23/2^+)$, $\gamma_{2386.8}$**375**, $\gamma_{1976.3}$**784.6**$_7$(100) (E2)
D **2909.3**$_{10}$, $(25/2^+)$, $\gamma_{2685.2}$**224**, $\gamma_{2505.4}$**404**
A **2912.3**$_9$, $(25/2^-)$, $\gamma_{2202.0}$**710**, $\gamma_{2067.3}$**845**
A **3028.7**$_{10}$, $(27/2^-)$, $\gamma_{2202.0}$**826.6**$_8$(100) (E2)
C **3035.6**$_{10}$, $(25/2^+)$, $\gamma_{2761.3}$**274**, $\gamma_{2386.8}$**649**
E **3069.3**$_{11}$, $(25/2^-)$, $\gamma_{2912.3}$**157**
D **3198.3**$_{11}$, $(27/2^+)$, $\gamma_{2909.3}$**289**, $\gamma_{2685.2}$**513**
C **3272.1**$_{11}$, $(27/2^+)$, $\gamma_{3035.6}$**236**, $\gamma_{2761.3}$**511**
E **3287.4**$_9$, $(27/2^-)$, $\gamma_{3069.3}$**218**, $\gamma_{3028.7}$**258**(?), $\gamma_{2912.3}$**375**, $\gamma_{2563.7}$**724**, $\gamma_{2202.0}$**1086**(?)
D **3522.3**$_{12}$, $(29/2^+)$, $\gamma_{3198.3}$**324**, $\gamma_{2909.3}$**613**
C **3539.3**$_{12}$, $(29/2^+)$, $\gamma_{3272.1}$**267**, $\gamma_{3035.6}$**504**
E **3543.9**$_{11}$, $(29/2^-)$, $\gamma_{3287.4}$**257**, $\gamma_{3069.3}$**475**(?), $\gamma_{3028.7}$**515**
E **3817.7**$_{11}$, $(31/2^-)$, $\gamma_{3543.9}$**274**, $\gamma_{3287.4}$**530**, $\gamma_{3028.7}$**789**
3840.2$_{13}$, $(31/2^+)$, $\gamma_{3539.3}$**301**, $\gamma_{3272.1}$**568**
D **3893.3**$_{13}$, $(31/2^+)$, $\gamma_{3522.3}$**371**, $\gamma_{3198.3}$**695**
A **3920.7**$_{14}$, $(31/2^-)$, $\gamma_{3028.7}$**892**
E **4152.8**$_{12}$, $(33/2^-)$, $\gamma_{3817.7}$**335**, $\gamma_{3543.9}$**609**
C **4177.4**$_{14}$, $(33/2^+)$, $\gamma_{3840.2}$**337**, $\gamma_{3539.3}$**638**
D **4313.3**$_{13}$, $(33/2^+)$, $\gamma_{3893.3}$**420**, $\gamma_{3522.3}$**791**
E **4510.7**$_{13}$, $(35/2^-)$, $\gamma_{4152.8}$**358**, $\gamma_{3817.7}$**693**
C **4549.0**$_{14}$, $(35/2^+)$, $\gamma_{4177.4}$**371**, $\gamma_{3840.2}$**709**
D **4745.3**$_{14}$, $(35/2^+)$, $\gamma_{4313.3}$**432**, $\gamma_{3893.3}$**852**
A **4842.7**$_{17}$, $(35/2^-)$, $\gamma_{3920.7}$**922**
E **4908.9**$_{13}$, $(37/2^-)$, $\gamma_{4510.7}$**398**, $\gamma_{4152.8}$**756**
C **4954.9**$_{15}$, $(37/2^+)$, $\gamma_{4549.0}$**405**, $\gamma_{4177.4}$**778**
D **5244.3**$_{17}$, $(37/2^+)$, $\gamma_{4313.3}$**931**
E **5341.4**$_{14}$, $(39/2^-)$, $\gamma_{4908.9}$**432**, $\gamma_{4510.7}$**831**
C **5389.5**$_{16}$, $(39/2^+)$, $\gamma_{4954.9}$**434**, $\gamma_{4549.0}$**841**
D **5714.3**$_{18}$, $(39/2^+)$, $\gamma_{4745.3}$**969**
E **5796.6**$_{15}$, $(41/2^-)$, $\gamma_{5341.4}$**455**, $\gamma_{4908.9}$**888**
A **5804.7**$_{20}$, $(39/2^-)$, $\gamma_{4842.7}$**962**
C **5859.7**$_{17}$, $(41/2^+)$, $\gamma_{5389.5}$**470**, $\gamma_{4954.9}$**905**
E **6292.5**$_{16}$, $(43/2^-)$, $\gamma_{5796.6}$**496**, $\gamma_{5341.4}$**951**
C **6351.6**$_{19}$, $(43/2^+)$, $\gamma_{5859.7}$**491**(?), $\gamma_{5389.5}$**962**
D **6742.3**$_{20}$, $(43/2^+)$, $\gamma_{5714.3}$**1028**
E **6808.6**$_{18}$, $(45/2^-)$, $\gamma_{6292.5}$**515**(?), $\gamma_{5796.6}$**1012**
C **6879.7**$_{19}$, $(45/2^+)$, $\gamma_{6351.6}$**529**(?), $\gamma_{5859.7}$**1020**
E **7354.5**$_{19}$, $(47/2^-)$, $\gamma_{6808.6}$**547**(?), $\gamma_{6292.5}$**1062**
C **7421.6**$_{21}$, $(47/2^+)$, $\gamma_{6351.6}$**1070**
D **7801.3**$_{23}$, $(47/2^+)$, $\gamma_{6742.3}$**1059**
E **7931.6**$_{21}$, $(49/2^-)$, $\gamma_{6808.6}$**1123**
C **8008.7**$_{22}$, $(49/2^+)$, $\gamma_{6879.7}$**1129**
C **8576.4**$_{23}$(?), $(51/2^+)$, $\gamma_{7421.6}$**1155**(?)
F **y**, J ≈ (29/2)
F **590.73+y**, $J+2$, γ_{y}**590.73**$_5$(0.5$_1$)
F **1252.72+y**, $J+4$, $\gamma_{590.73+y}$**661.99**$_5$(1.0$_1$)
F **1985.24+y**, $J+6$, $\gamma_{1252.72+y}$**732.52**$_5$(1.1$_1$)
F **2789.51+y**, $J+8$, $\gamma_{1985.24+y}$**804.27**$_5$(0.9$_1$)
F **3663.46+y**, $J+10$, $\gamma_{2789.51+y}$**873.95**$_5$(1.0$_1$)
F **4606.39+y**, $J+12$, $\gamma_{3663.46+y}$**942.93**$_5$(1.1$_1$)
F **5617.72+y**, $J+14$, $\gamma_{4606.39+y}$**1011.33**$_5$(1.0$_1$)
F **6698.20+y**, $J+16$, $\gamma_{5617.72+y}$**1080.48**$_6$(0.8$_1$)
F **7849.48+y**, $J+18$, $\gamma_{6698.20+y}$**1151.28**$_6$(0.6$_1$)
F **9074.48+y**, $J+20$, $\gamma_{7849.48+y}$**1225.00**$_6$(0.5$_1$)
F **10375.86+y**, $J+22$, $\gamma_{9074.48+y}$**1301.38**$_6$(0.5$_1$)
F **11756.97+y**, $J+24$, $\gamma_{10375.86+y}$**1381.11**$_8$(0.3$_1$)
F **13221.03+y**, $J+26$, $\gamma_{11756.97+y}$**1464.06**$_8$(0.4$_1$)
F **14770.92+y**, $J+28$, $\gamma_{13221.03+y}$**1549.89**$_{10}$
F **16411.2+y**, $J+30$, $\gamma_{14770.92+y}$**1640.26**$_{12}$
F **18142.7+y**, $J+32$, $\gamma_{16411.2+y}$**1731.50**$_{15}$
F **19964.7+y**, $J+34$, $\gamma_{18142.7+y}$**1822.0**$_3$
G **z**, J_1 ≈ (47/2)
G **846.80+z**, J_1+2, γ_{z}**846.80**$_{10}$(1.00$_{10}$)
G **1754.87+z**, J_1+4, $\gamma_{846.80+z}$**908.07**$_{10}$(1.00$_{10}$)
G **2730.39+z**, J_1+6, $\gamma_{1754.87+z}$**975.52**$_{10}$(1.02$_{10}$)
G **3773.52+z**, J_1+8, $\gamma_{2730.39+z}$**1043.13**$_{10}$(1.15$_{10}$)

G **4885.76+z**, J_1+10, $\gamma_{\mathbf{3773.52+z}}$**1112.24**$_{11}(1.20_{10})$
G **6067.04+z**, J_1+12, $\gamma_{\mathbf{4885.76+z}}$**1181.28**$_{12}(1.10_{10})$
G **7317.75+z**, J_1+14, $\gamma_{\mathbf{6067.04+z}}$**1250.71**$_{12}(1.15_{10})$
G **8639.79+z**, J_1+16, $\gamma_{\mathbf{7317.75+z}}$**1322.04**$_{12}(0.97_{15})$
G **10036.01+z**, J_1+18, $\gamma_{\mathbf{8639.79+z}}$**1396.22**$_{15}(0.95_{15})$
G **11506.67+z**, J_1+20, $\gamma_{\mathbf{10036.01+z}}$**1470.66**$_{15}(0.70_{15})$
G **13058.48+z**, J_1+22, $\gamma_{\mathbf{11506.67+z}}$**1551.81**$_{19}(0.55_{15})$
G **14693.28+z**, J_1+24, $\gamma_{\mathbf{13058.48+z}}$**1634.80**$_{20}(0.50_{15})$
G **16416.30+z**, J_1+26, $\gamma_{\mathbf{14693.2+z}}$**1723.02**$_{25}$

See Nucl. Phys. **A605***, 301 (1996) for additional data.*



SD-1 band (1993Pa02,1996Se04) SD-2 band (1996Se03,1996Cl03)

$^{131}_{58}Ce_{73}$

$^{132}_{58}Ce_{74}$

S_n: 10804 *SY*, S_p: 6002 *SY*

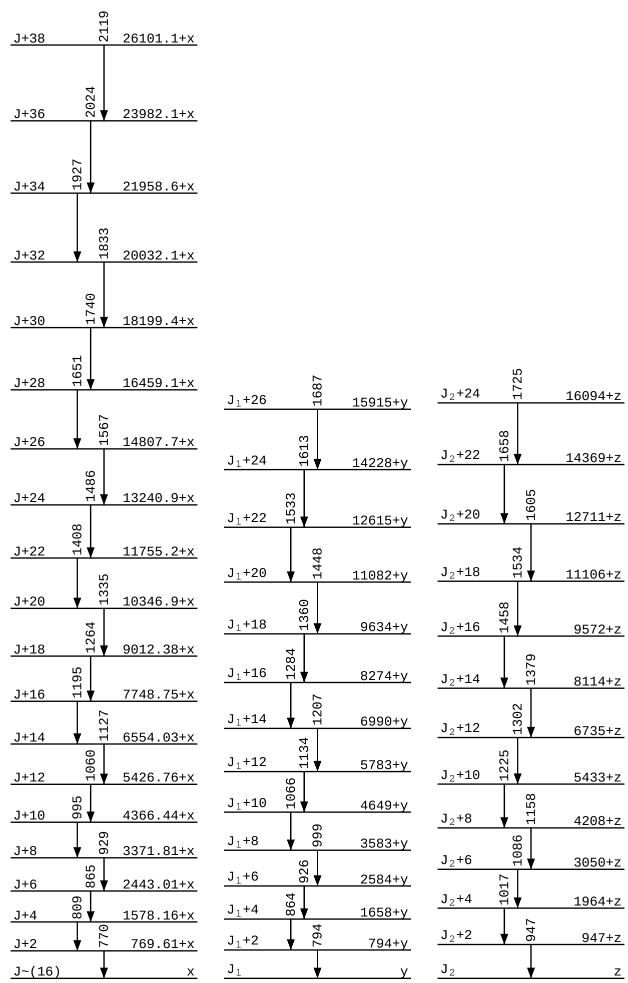
Nuclear Bands

A GS band
B S-band
C SD-1 band (1996Se04,1996Cl03,1995Sa21,1995Ha28,1987Ki02)
Q_0=7.4$_3$
D SD-2 band (1995Sa21,1996Cl03)
Q_0=7.3$_4$
E SD-3 band (1995Sa21,1996Cl03)
Q_0=7.6$_6$

Levels and γ-ray branchings:

A **0**, 0^+, *3.51$_{11}$ h*, %ε+%β$^+$=100
A **325.54**$_{16}$, 2^+, *41$_3$ ps*, γ_{0}**325.5**$_2$(100) E2
822.36$_{16}$, (2^+), $\gamma_{325.54}$**496.9**$_2$(100$_{12}$), γ_{0}**822.4**$_2$(69$_7$)
A **859.13**$_{24}$, 4^+, *3.8$_4$ ps*, $\gamma_{325.54}$**533.1**$_3$(100) E2
1199.66$_{20}$, (3^+), $\gamma_{859.13}$**340.5**$_5$($<$ 3.5), $\gamma_{822.36}$**377.2**$_2$(25$_6$), $\gamma_{325.54}$**874.2**$_2$(100$_{10}$)
1383.94$_{23}$, (4^+), $\gamma_{859.13}$**524.6**$_2$(74$_{22}$), $\gamma_{822.36}$**561.8**$_2$(100$_{22}$)
1497.56$_{24}$, $\gamma_{822.36}$**675.2**$_2$(100$_{13}$), $\gamma_{325.54}$**1172.0**$_6$(16$_8$)
A **1542.8**$_6$, 6^+, *0.74 ps*, $\gamma_{859.13}$**683.7**$_5$(100) E2
1656.2$_5$, (5^+), $\gamma_{1199.66}$**456.5**$_4$(100)
1734.56$_{25}$, $\gamma_{822.36}$**912.2**$_2$(100$_{30}$), $\gamma_{325.54}$**1409.0**$_8$(44$_{15}$)
1814.3$_3$, (5^+), $\gamma_{1383.94}$**431.0**(9), $\gamma_{1199.66}$**614.5**(100), $\gamma_{859.13}$**955.0**(23)
1893.0(?), $\gamma_{1199.66}$**692.7**, $\gamma_{859.13}\approx$**1034**, $\gamma_{822.36}\approx$**1071**
A **2330.7**$_8$, 8^+, *0.7$_2$ ps*, $\gamma_{1542.8}$**787.9**$_5$(100) E2
2340.8, (8^-), *9.4$_3$ ms*, %IT=100 , $\gamma_{2330.7}$**10.0**$_5$, $\gamma_{1814.3}$**526.3**(44), $\gamma_{1542.8}$**798.0**(100)
2507.6$_6$, $\gamma_{1497.56}$**1010.0**$_9$(100$_{19}$), $\gamma_{1199.66}$**1308.0**$_6$(58$_{12}$)
A **3158.5**$_{11}$, 10^+, *0.83$_{21}$ ps*, $\gamma_{2330.7}$**827.7**$_9$(100) E2
B **3309.6**, 10^+, $\gamma_{3158.5}$**151**(17), $\gamma_{2330.7}$**979**(100)
B **3670.7**$_{12}$, 12^+, *7.7$_4$ ps*, $\gamma_{3309.6}$**361**(32) E2, $\gamma_{3158.5}$**512.2**$_6$(100) E2
B **4240.4**$_{13}$, 14^+, *1.73$_7$ ps*, $\gamma_{3670.7}$**569.7**$_6$(100) E2
B **4939.0**$_{15}$, 16^+, *0.43$_4$ ps*, $\gamma_{4240.4}$**698.6**$_7$(100) E2
B **5762.4**$_{18}$, 18^+, *0.32$_2$ ps*, $\gamma_{4939.0}$**823.4**$_9$(100) E2
B **6701**, 20^+, $\gamma_{5762.4}$**939**(100) (E2)
B **7732**, 22^+, γ_{6701}**1031**(100) (E2)
B **8845**, 24^+, γ_{7732}**1113**(100) (E2)
B **10032**, 26^+, γ_{8845}**1187**(100) (E2)
B **11272**, 28^+, γ_{10032}**1240**(100) (E2)
C **x**, J $\approx$ (16)
C **769.61+x**, J + 2, γ_{x}**769.61**$_{10}$
C **1578.16+x**, J + 4, *59$_{20}$ fs*, $\gamma_{769.61+x}$**808.55**$_5$(0.85$_{10}$)
C **2443.01+x**, J + 6, *62$_{14}$ fs*, $\gamma_{1578.16+x}$**864.85**$_5$(1.00$_6$)
C **3371.81+x**, J + 8, *28$_{12}$ fs*, $\gamma_{2443.01+x}$**928.80**$_5$(1.10$_{12}$)
C **4366.44+x**, J + 10, *<17 fs*, $\gamma_{3371.81+x}$**994.63**$_5$(1.03$_{13}$)
C **5426.76+x**, J + 12, *<21 fs*, $\gamma_{4366.44+x}$**1060.32**$_5$(1.05$_{10}$)
C **6554.03+x**, J + 14, *14$_7$ fs*, $\gamma_{5426.76+x}$**1127.27**$_6$(0.91$_4$)
C **7748.75+x**, J + 16, *10$_8$ fs*, $\gamma_{6554.03+x}$**1194.72**$_6$(0.94$_7$)
C **9012.38+x**, J + 18, *<14 fs*, $\gamma_{7748.75+x}$**1263.63**$_6$(0.84$_4$)
C **10346.94+x**, J + 20, *<7 fs*, $\gamma_{9012.38+x}$**1334.56**$_7$(0.63$_{11}$)
C **11755.28+x**, J + 22, *<10 fs*, $\gamma_{10346.94+x}$**1408.34**$_9$(0.52$_9$)
C **13240.95+x**, J + 24, *<10 fs*, $\gamma_{11755.28+x}$**1485.67**$_{10}$(0.28$_6$)
C **14807.7+x**, J + 26, *<24 fs*, $\gamma_{13240.95+x}$**1566.70**$_{10}$(0.39$_4$)
C **16459.1+x**, J + 28, *<7 fs*, $\gamma_{14807.7+x}$**1651.49**$_{12}$(0.26$_4$)
C **18199.4+x**, J + 30, $\gamma_{16459.1+x}$**1740.29**$_{14}$(0.21$_6$)
C **20032.1+x**, J + 32, $\gamma_{18199.4+x}$**1832.64**$_{17}$(0.24$_{10}$)
C **21958.6+x**, J + 34, $\gamma_{20032.1+x}$**1926.50**$_{17}$(0.15$_5$)
C **23982.1+x**, J + 36, $\gamma_{21958.6+x}$**2023.50**$_{20}$(0.11$_5$)
C **26101.1+x**, J + 38, $\gamma_{23982.1+x}$**2119.00**$_{25}$
D **y**, J_1
D **794+y**, J_1+2, γ_{y}**794**(0.15$_3$)
D **1658+y**, J_1+4, γ_{794+y}**864**(0.18$_3$)
D **2584+y**, J_1+6, γ_{1658+y}**926**(0.22$_3$)
D **3583+y**, J_1+8, γ_{2584+y}**999**(0.20$_3$)
D **4649+y**, J_1+10, γ_{3583+y}**1066**(0.18$_3$)
D **5783+y**, J_1+12, γ_{4649+y}**1134**(0.20$_3$)
D **6990+y**, J_1+14, γ_{5783+y}**1207**(0.18$_3$)
D **8274+y**, J_1+16, γ_{6990+y}**1284**(0.19$_3$)
D **9634+y**, J_1+18, γ_{8274+y}**1360**(0.16$_3$)
D **11082+y**, J_1+20, γ_{9634+y}**1448**(0.17$_3$)
D **12615+y**, J_1+22, $\gamma_{11082+y}$**1533**(0.17$_3$)
D **14228+y**, J_1+24, $\gamma_{12615+y}$**1613**(0.14$_3$)
D **15915+y**, J_1+26, $\gamma_{14228+y}$**1687**(0.05$_3$)
E **z**, J_2
E **947+z**, J_2+2, γ_{z}**947**(0.20$_3$)
E **1964+z**, J_2+4, γ_{947+z}**1017**(0.25$_3$)
E **3050+z**, J_2+6, γ_{1964+z}**1086**(0.21$_3$)
E **4208+z**, J_2+8, γ_{3050+z}**1158**(0.23$_3$)
E **5433+z**, J_2+10, γ_{4208+z}**1225**(0.17$_3$)
E **6735+z**, J_2+12, γ_{5433+z}**1302**(0.20$_3$)
E **8114+z**, J_2+14, γ_{6735+z}**1379**(0.19$_3$)
E **9572+z**, J_2+16, γ_{8114+z}**1458**(0.14$_3$)
E **11106+z**, J_2+18, γ_{9572+z}**1534**(0.16$_3$)
E **12711+z**, J_2+20, $\gamma_{11106+z}$**1605**(0.10$_3$)
E **14369+z**, J_2+22, $\gamma_{12711+z}$**1658**(0.10$_3$)
E **16094+z**, J_2+24, $\gamma_{14369+z}$**1725**(0.06$_3$)

See Nucl. Phys. **A619***, 177 (1997) for additional data.*



SD-1 band (1996Se04,1996Cl03) SD-2 band (1995Sa21,1996Cl03) SD-3 band (1995Sa21,1996Cl03)

$^{132}_{58}Ce_{74}$

$^{133}_{58}\mathrm{Ce}_{75}$

S_n: 8015 *SY*, S_p: 5948 *SY*

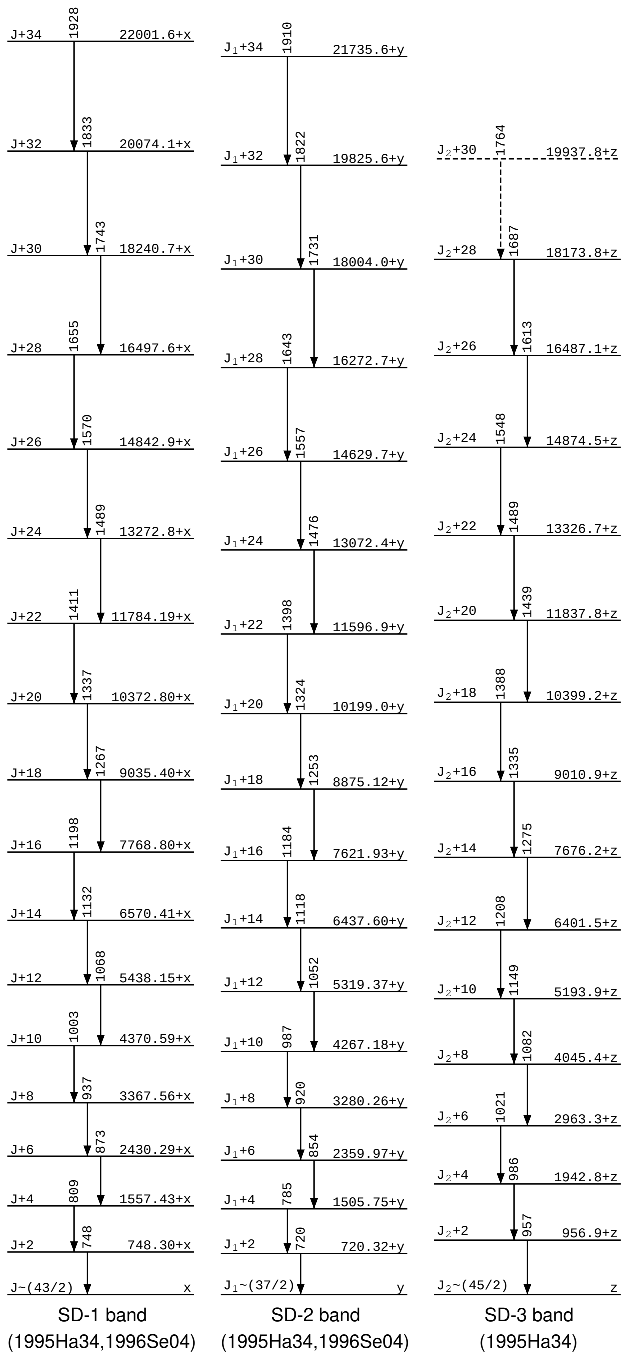
Nuclear Bands

A GS band, ν1/2[400]
B $\nu h_{11/2}\pi h_{11/2}\pi g_{7/2}$
C Band based on (19/2)
D Band based on (21/2)
E $\nu i_{13/2}\pi h^2_{11/2}$
F ν9/2[514]
G $\nu h_{11/2}\pi h^2_{11/2}$
H Triaxial band
I Triaxial band
J Triaxial band
K Triaxial band
L Triaxial band
M Triaxial band
N Triaxial band
O Band structure
P SD-1 band (1995Ha34,1996Se04,1995Ha28) $Q_0=7.4_7$
Q SD-2 band (1995Ha34,1996Se04,1995Ha28) $Q_0=7.5_8$
R SD-3 band (1995Ha34)

Levels and γ-ray branchings:

A $\mathbf{0}$, $1/2^+$, 97_4 *min*, %ε+%β^+=100
F $\mathbf{37.1}_8$, $9/2^-$, 4.9_4 *h*, %ε+%β^+=100
A $\mathbf{134.20}_9$, $3/2^+$, $\gamma_{\mathbf{0}}\mathbf{134.3}_2(100)$ M1
F $\mathbf{207.1}_7$, $11/2^-$, 52.7_{21} *ps*, $\gamma_{\mathbf{37.1}}\mathbf{170.0}_2(100)$
$\mathbf{241.99}_9$, $(5/2)^+$, $\gamma_{\mathbf{134.20}}\mathbf{107.7}_2(0.95_9)$, $\gamma_{\mathbf{0}}\mathbf{241.9}_2(100_{10})$ E2
$\mathbf{315.69}_{10}$, $(3/2)^+$, $\gamma_{\mathbf{241.99}}\mathbf{73.6}_2(2.0_2)$ M1, $\gamma_{\mathbf{134.20}}\mathbf{181.3}_2(4.2_4)$ M1, $\gamma_{\mathbf{0}}\mathbf{315.6}_2(100_{10})$ M1
A $\mathbf{317.99}_9$, $5/2^+$, $\gamma_{\mathbf{241.99}}\mathbf{76.0}_2(11.4_{10})$, $\gamma_{\mathbf{134.20}}\mathbf{183.8}_2(100_9)$ M1, $\gamma_{\mathbf{0}}\mathbf{318.0}_2(77_7)$
$\mathbf{465.18}_{10}$, $(1/2)^+$, $\gamma_{\mathbf{317.99}}\mathbf{147.2}_2(3.2_3)$, $\gamma_{\mathbf{315.69}}\mathbf{149.6}_2(10.3_9)$, $\gamma_{\mathbf{241.99}}\mathbf{223.2}_2(8.7_8)$ E2, $\gamma_{\mathbf{134.20}}\mathbf{330.9}_2(82_8)$ M1, $\gamma_{\mathbf{0}}\mathbf{465.2}_2(100_{10})$ M1(+E2)
$\mathbf{496.75}_{11}$, $1/2^+,3/2^+,5/2^+$, $\gamma_{\mathbf{317.99}}\mathbf{178.8}_2(5.1_7)$, $\gamma_{\mathbf{241.99}}\mathbf{254.8}_2(5.9_7)$, $\gamma_{\mathbf{134.20}}\mathbf{362.5}_2(100_{10})$ M1, $\gamma_{\mathbf{0}}\mathbf{496.4}_2(54_5)$
A $\mathbf{570.5}_4$, $7/2^+$, $\gamma_{\mathbf{317.99}}\mathbf{253.0}_5(90_8)$, $\gamma_{\mathbf{134.20}}\mathbf{436.1}_5(100_{10})$
F $\mathbf{591.8}_7$, $13/2^-$, 5.48_{35} *ps*, $\gamma_{\mathbf{207.1}}\mathbf{384.7}_2(100_1)$ (M1+E2), $\gamma_{\mathbf{37.1}}\mathbf{554.9}_6(37_4)$ E2
$\mathbf{621.18}_{10}$, $(3/2,5/2)^-$, $\gamma_{\mathbf{496.75}}\mathbf{124.4}_2(2.5_{13})$, $\gamma_{\mathbf{317.99}}\mathbf{303.0}_2(100_{10})$ E1, $\gamma_{\mathbf{241.99}}\mathbf{379.3}_2(29_3)$, $\gamma_{\mathbf{134.20}}\mathbf{487.1}_2(26_3)$, $\gamma_{\mathbf{0}}\mathbf{621.4}_2(16.3_{13})$
$\mathbf{656.64}_{12}$, $(1/2^+,3/2,5/2^+)$, $\gamma_{\mathbf{315.69}}\mathbf{340.9}_2(44_6)$, $\gamma_{\mathbf{241.99}}\mathbf{414.5}_2(56_6)$, $\gamma_{\mathbf{134.20}}\mathbf{522.6}_2(100_{11})$, $\gamma_{\mathbf{0}}\mathbf{656.7}_2(72_6)$
$\mathbf{779.33}_{10}$, $(1/2^+,3/2,5/2^+)$, $\gamma_{\mathbf{621.18}}\mathbf{158.4}_2(5.1_9)$, $\gamma_{\mathbf{465.18}}\mathbf{314.2}_2(38_3)$, $\gamma_{\mathbf{317.99}}\mathbf{461.2}_2(21_2)$, $\gamma_{\mathbf{315.69}}\mathbf{463.4}_2(8.5_8)$, $\gamma_{\mathbf{241.99}}\mathbf{537.3}_2(52_5)$ M1(+E2), $\gamma_{\mathbf{134.20}}\mathbf{645.2}_2(100_{10})$ (E2), $\gamma_{\mathbf{0}}\mathbf{779.4}_2(22_2)$
$\mathbf{787.62}_{17}$, $\gamma_{\mathbf{496.75}}\mathbf{290.6}_2(<71)$, $\gamma_{\mathbf{134.20}}\mathbf{653.7}_2(100_{14})$
A $\mathbf{815.6}_5$, $(9/2^+)$, $\gamma_{\mathbf{570.5}}\mathbf{246}$, $\gamma_{\mathbf{317.99}}\mathbf{497.4}_5(100)$
F $\mathbf{826.8}_7$, $15/2^-$, 2.6_6 *ps*, $\gamma_{\mathbf{591.8}}\mathbf{234.9}_5(24.9_3)$ (M1+E2), $\gamma_{\mathbf{207.1}}\mathbf{619.7}_2(100_{10})$ E2
$\mathbf{834.80}_{15}$, $(1/2,3/2,5/2^+)$, $\gamma_{\mathbf{134.20}}\mathbf{700.5}_2(96_8)$, $\gamma_{\mathbf{0}}\mathbf{834.9}_2(100_8)$
$\mathbf{902.68}_{23}$(?), $\gamma_{\mathbf{621.18}}\mathbf{281.5}_2(100)$
$\mathbf{1005.56}_{13}$, $(1/2^+,3/2,5/2^+)$, $\gamma_{\mathbf{317.99}}\mathbf{687.8}_2(<38)$, $\gamma_{\mathbf{315.69}}\mathbf{689.7}_2(100_{10})$, $\gamma_{\mathbf{0}}\mathbf{1005.5}_2(33_2)$
$\mathbf{1116.18}_{23}$(?), $\gamma_{\mathbf{621.18}}\mathbf{495.0}_2(100)$
$\mathbf{1200.0}_7$, $15/2^-$, $\gamma_{\mathbf{591.8}}\mathbf{608.5}_5(100)$ (M1+E2)
A $\mathbf{1201.0}_5$, $(11/2^+)$, $\gamma_{\mathbf{815.6}}\mathbf{385}$, $\gamma_{\mathbf{570.5}}\mathbf{630.5}_5(100)$
$\mathbf{1335.18}_{23}$, $\gamma_{\mathbf{621.18}}\mathbf{714.0}_2(100)$
F $\mathbf{1343.2}_7$, $17/2^-$, ≤ 0.7 *ps*, $\gamma_{\mathbf{826.8}}\mathbf{516.7}_5(98_9)$ (M1+E2), $\gamma_{\mathbf{591.8}}\mathbf{751.3}_7(100_{10})$ E2
A $\mathbf{1445.0}_6$, $13/2^+$, $\gamma_{\mathbf{1201.0}}\mathbf{246}$, $\gamma_{\mathbf{815.6}}\mathbf{629.4}_5(100_9)$
$\mathbf{1521.01}_{22}$(?), $\gamma_{\mathbf{134.20}}\mathbf{1386.8}_2(100)$
$\mathbf{1573.35}_{23}$, $\gamma_{\mathbf{496.75}}\mathbf{1076.6}_2(100)$
F $\mathbf{1589.6}_7$, $19/2^-$, ≤ 0.7 *ps*, $\gamma_{\mathbf{1343.2}}\mathbf{246.5}_5(100_{10})$ (M1+E2), $\gamma_{\mathbf{826.8}}\mathbf{762.7}_2(41_4)$ E2
$\mathbf{1881.30}_{16}$, $\gamma_{\mathbf{241.99}}\mathbf{1639.3}_2(100_{20})$, $\gamma_{\mathbf{134.20}}\mathbf{1747.1}_2(80_{20})$
B $\mathbf{1897.2}_7$, $15/2^+$, $\gamma_{\mathbf{1201.0}}\mathbf{697.0}_5(<36)$, $\gamma_{\mathbf{591.8}}\mathbf{1305.4}_5(100_9)$
A $\mathbf{1932.1}_6$, $(15/2^+)$, $\gamma_{\mathbf{1201.0}}\mathbf{731.0}_5(100)$
B $\mathbf{2096.2}_7$, $17/2^+$, 3.7_4 *ps*, $\gamma_{\mathbf{1932.1}}\mathbf{164.0}_5(<7)$, $\gamma_{\mathbf{1897.2}}\mathbf{198.8}_5(39_4)$, $\gamma_{\mathbf{1445.0}}\mathbf{651.5}_5$, $\gamma_{\mathbf{1200.0}}\mathbf{896.4}_5(17_2)$, $\gamma_{\mathbf{826.8}}\mathbf{1269.3}_5(100_{10})$ E1
F $\mathbf{2199.0}_8$, $21/2^-$, $\gamma_{\mathbf{1589.6}}\mathbf{609.5}_5(100_{10})$, $\gamma_{\mathbf{1343.2}}\mathbf{856.0}_5(99_{10})$
B $\mathbf{2296.8}_7$, $19/2^+$, 3.12_{35} *ps*, $\gamma_{\mathbf{2096.2}}\mathbf{200.7}_3(100_9)$ (M1+E2), $\gamma_{\mathbf{1897.2}}\mathbf{399.4}_5(<3.6)$, $\gamma_{\mathbf{1343.2}}\mathbf{954.0}_5(41_4)$ E1
C $\mathbf{2415.5}_7$, $(19/2)$, $\gamma_{\mathbf{2096.2}}\mathbf{319.6}_5(<34)$, $\gamma_{\mathbf{1897.2}}\mathbf{518.6}_5(<34)$, $\gamma_{\mathbf{1343.2}}\mathbf{1071.6}_5(100_2)$
B $\mathbf{2456.3}_7$, $21/2^+$, 3.7_4 *ps*, $\gamma_{\mathbf{2296.8}}\mathbf{159.5}_2(100_{10})$ D+Q, $\gamma_{\mathbf{2096.2}}\mathbf{360.0}_5(<3)$
F $\mathbf{2485.5}_8$, $23/2^-$, $\gamma_{\mathbf{2199.0}}\mathbf{287.0}_5(<6)$, $\gamma_{\mathbf{1589.6}}\mathbf{896.0}_5(100_9)$
$\mathbf{2501.5}_{11}$(?), $\gamma_{\mathbf{2096.2}}\mathbf{405}$(?)
C $\mathbf{2621.0}_8$, $(21/2)$, $\gamma_{\mathbf{2415.5}}\mathbf{205.5}_5(100_{10})$, $\gamma_{\mathbf{1589.6}}\mathbf{1031.5}_5(<20)$
B $\mathbf{2645.8}_7$, $23/2^+$, $\gamma_{\mathbf{2456.3}}\mathbf{189.5}_2(100_{10})$ D+Q, $\gamma_{\mathbf{2296.8}}\mathbf{349.0}_5(<3)$
G $\mathbf{2679.0}_8$, $23/2^-$, $\gamma_{\mathbf{1589.6}}\mathbf{1089.0}_5(100)$ E2
D $\mathbf{2743.6}_8$, $(21/2)$, $\gamma_{\mathbf{2296.8}}\mathbf{446}$(?), $\gamma_{\mathbf{1589.6}}\mathbf{1154.0}_5(100)$
C $\mathbf{2844.6}_9$, $(23/2)$, $\gamma_{\mathbf{2621.0}}\mathbf{223.6}_5(100)$
B $\mathbf{2880.8}_7$, $(25/2)^+$, $\gamma_{\mathbf{2645.8}}\mathbf{235.0}_2(100_{10})$ (M1+E2), $\gamma_{\mathbf{2456.3}}\mathbf{424.5}_5(4.2_7)$
D $\mathbf{2959.2}_8$, $(23/2)$, $\gamma_{\mathbf{2743.6}}\mathbf{215.5}_5(100)$, $\gamma_{\mathbf{2456.3}}\mathbf{503.0}_5(52_5)$
C $\mathbf{3128.1}_{11}$, $(25/2)$, $\gamma_{\mathbf{2844.6}}\mathbf{283.5}_5(100)$
F $\mathbf{3128.9}_8$, $(25/2^-)$, $\gamma_{\mathbf{2485.5}}\mathbf{643}$, $\gamma_{\mathbf{2199.0}}\mathbf{930.0}_5(100)$
B $\mathbf{3175.4}_8$, $27/2^+$, $\gamma_{\mathbf{2880.8}}\mathbf{294.6}_3(100_{10})$ (M1+E2), $\gamma_{\mathbf{2645.8}}\mathbf{529.5}_5(12_1)$
G $\mathbf{3235.5}_{13}$, $(23/2^-)$, $\gamma_{\mathbf{2485.5}}\mathbf{750}$
D $\mathbf{3235.6}_8$, $(25/2)$, $\gamma_{\mathbf{2959.2}}\mathbf{276.5}_5(100)$
E $\mathbf{3332.6}_9$, $(25/2)^+$, $\gamma_{\mathbf{2501.5}}\mathbf{831.1}_5(53_5)$, $\gamma_{\mathbf{2485.5}}\mathbf{847.1}_5(100_{10})$ E1
G $\mathbf{3375.6}_8$, $25/2^-$, $\gamma_{\mathbf{3235.6}}\mathbf{140.0}_2(55_5)$, $\gamma_{\mathbf{3128.9}}\mathbf{246}$, $\gamma_{\mathbf{2485.5}}\mathbf{890.5}_5(<36)$, $\gamma_{\mathbf{2199.0}}\mathbf{1176.5}_2(100_{10})$ E2
F $\mathbf{3432.7}_8$, $(27/2^-)$, $\gamma_{\mathbf{3128.9}}\mathbf{304.0}_5(<8)$, $\gamma_{\mathbf{2485.5}}\mathbf{946.9}_5(100_{10})$
C $\mathbf{3433.8}_{12}$, $(27/2)$, $\gamma_{\mathbf{3128.1}}\mathbf{305.7}_5(100)$
G $\mathbf{3530.4}_8$, $27/2^-$, $\gamma_{\mathbf{3375.6}}\mathbf{154.7}_5(100_{10})$, $\gamma_{\mathbf{2679.0}}\mathbf{851.0}_5(<9.6)$, $\gamma_{\mathbf{2485.5}}\mathbf{1045.4}_5(40_4)$ E2
B $\mathbf{3532.8}_8$, $29/2^+$, $\gamma_{\mathbf{3175.4}}\mathbf{357.5}_5(100_{10})$, $\gamma_{\mathbf{2880.8}}\mathbf{652.0}_5(<17)$
D $\mathbf{3571.1}_9$, $(27/2)$, $\gamma_{\mathbf{3235.6}}\mathbf{335.5}_5(100)$
E $\mathbf{3755.7}_{11}$, $(29/2^+)$, $\gamma_{\mathbf{3332.6}}\mathbf{423.1}_5(100_{12})$
G $\mathbf{3770.9}_9$, $29/2^-$, $\gamma_{\mathbf{3530.4}}\mathbf{240.6}_5(100_{11})$, $\gamma_{\mathbf{3432.7}}\mathbf{338.0}_5(<6)$
C $\mathbf{3779.2}_{10}$, $(29/2)$, $\gamma_{\mathbf{3433.8}}\mathbf{346.5}_5(100)$
B $\mathbf{3917.4}_9$, $31/2^+$, $\gamma_{\mathbf{3532.8}}\mathbf{384.5}_5(100_{10})$, $\gamma_{\mathbf{3175.4}}\mathbf{742.0}_5(21_2)$
D $\mathbf{3971.2}_{14}$, $(29/2)$, $\gamma_{\mathbf{3571.1}}\mathbf{400.1}$
G $\mathbf{4065.8}_9$, $31/2^-$, $\gamma_{\mathbf{3770.9}}\mathbf{294.9}_5(100_{10})$, $\gamma_{\mathbf{3530.4}}\mathbf{535.5}_5(10.7_{14})$
C $\mathbf{4211.2}_{11}$, $(31/2)$, $\gamma_{\mathbf{3779.2}}\mathbf{432.0}_5(100)$
E $\mathbf{4245.1}_{12}$, $(33/2^+)$, $\gamma_{\mathbf{3755.7}}\mathbf{489.4}_5(100)$
B $\mathbf{4375.0}_9$, $33/2^+$, $\gamma_{\mathbf{3917.4}}\mathbf{457.9}_5$, $\gamma_{\mathbf{3532.8}}\mathbf{842.4}_5(100)$
F $\mathbf{4403.7}_{10}$, $(31/2^-)$, $\gamma_{\mathbf{3432.7}}\mathbf{971.0}_5(100)$
G $\mathbf{4407.9}_9$, $33/2^-$, $\gamma_{\mathbf{4065.8}}\mathbf{342.0}_5(100_{10})$, $\gamma_{\mathbf{3770.9}}\mathbf{636.9}_5(19.7_{17})$
G $\mathbf{4799.1}_9$, $35/2^-$, $\gamma_{\mathbf{4407.9}}\mathbf{391.1}_5(100_{10})$, $\gamma_{\mathbf{4065.8}}\mathbf{733.5}_5(44_{40})$
B $\mathbf{4831.1}_9$, $35/2^+$, $\gamma_{\mathbf{4375.0}}\mathbf{456.5}_5(100_{10})$, $\gamma_{\mathbf{3917.4}}\mathbf{913.3}_5(13.5_{13})$
E $\mathbf{4888.1}_{13}$, $(37/2^+)$, $\gamma_{\mathbf{4245.1}}\mathbf{643.0}_5(100)$
G $\mathbf{5214.8}_{10}$, $37/2^-$, $\gamma_{\mathbf{4799.1}}\mathbf{415.6}_5(100_{10})$, $\gamma_{\mathbf{4407.9}}\mathbf{806.8}_5(43_4)$
B $\mathbf{5365.0}_{13}$, $(37/2^+)$, $\gamma_{\mathbf{4831.1}}\mathbf{535}$, $\gamma_{\mathbf{4375.0}}\mathbf{990}$
E $\mathbf{5655.6}_{14}$, $(41/2^+)$, $\gamma_{\mathbf{4888.1}}\mathbf{767.5}_5(100)$
G $\mathbf{5669.4}_{10}$, $39/2^-$, $\gamma_{\mathbf{5214.8}}\mathbf{454.4}_5(100_{10})$, $\gamma_{\mathbf{4799.1}}\mathbf{870.5}_5(47_5)$
B $\mathbf{5875}$, $(39/2^+)$, $\gamma_{\mathbf{5365.0}}\mathbf{510}$, $\gamma_{\mathbf{4831.1}}\mathbf{1045}$
G $\mathbf{6149}$, $(41/2^-)$, $\gamma_{\mathbf{5669.4}}\mathbf{480}$, $\gamma_{\mathbf{5214.8}}\mathbf{934}$
E $\mathbf{6543.6}_{15}$, $(45/2^+)$, $\gamma_{\mathbf{5655.6}}\mathbf{888.0}_5(100)$
G $\mathbf{6665}$, $(43/2^-)$, $\gamma_{\mathbf{6149}}\mathbf{516}$
G $\mathbf{7212}$, $(45/2^-)$, $\gamma_{\mathbf{6665}}\mathbf{544}$, $\gamma_{\mathbf{6149}}\mathbf{1066}$
E $\mathbf{7536.6}_{16}$, $(49/2^+)$, $\gamma_{\mathbf{6543.6}}\mathbf{993.0}_5(100)$
J $\mathbf{1590+u}$, $(23/2^-)$
J $\mathbf{2014+u}$, $(27/2^-)$, $\gamma_{\mathbf{1590+u}}\mathbf{424}$
J $\mathbf{2503+u}$, $(31/2^-)$, $\gamma_{\mathbf{2014+u}}\mathbf{489}$
J $\mathbf{3147+u}$, $(35/2^-)$, $\gamma_{\mathbf{2503+u}}\mathbf{644}$
J $\mathbf{3916+u}$, $(39/2^-)$, $\gamma_{\mathbf{3147+u}}\mathbf{769}$
I $\mathbf{4798+u}$, $\gamma_{\mathbf{3916+u}}\mathbf{882}$
J $\mathbf{4803+u}$, $(43/2^-)$, 0.77_9 *ps*, $\gamma_{\mathbf{3916+u}}\mathbf{887.4}$
I $\mathbf{5680+u}$, $\gamma_{\mathbf{4798+u}}\mathbf{882}$
J $\mathbf{5803+u}$, $(47/2^-)$, 0.229_{28} *ps*, $\gamma_{\mathbf{4803+u}}\mathbf{999.3}$
I $\mathbf{6572+u}$, $\gamma_{\mathbf{5680+u}}\mathbf{892}$
J $\mathbf{6900+u}$, $(51/2^-)$, 0.139_{14} *ps*, $\gamma_{\mathbf{5803+u}}\mathbf{1097.6}$

I **7569+u**, γ_{6572+u}**997**
J **8088+u**, $(55/2^-)$, *0.146$_{14}$ ps*, γ_{6900+u}**1188.1**
I **8668+u**, γ_{7569+u}**1099**
J **9363+u**, $(59/2^-)$, γ_{8088+u}**1275**
I **9857+u**, γ_{8668+u}**1189**
J **10719+u**, $(63/2^-)$, γ_{9363+u}**1356**
H **11093+u**, γ_{9857+u}**1236**
I **11176+u**, γ_{9857+u}**1319**
J **12144+u**, $(67/2^-)$, $\gamma_{10719+u}$**1425**
H **12287+u**, $\gamma_{11093+u}$**1194**
I **12556+u**, $\gamma_{11176+u}$**1380**
H **13577+u**, $\gamma_{12287+u}$**1290**
J **13646+u**, $(71/2^-)$, $\gamma_{12144+u}$**1502**
I **14057+u**, $\gamma_{12556+u}$**1501**
H **14972+u**, $\gamma_{13577+u}$**1395**
H **16472+u**, $\gamma_{14972+u}$**1500**
H **18079+u**, $\gamma_{16472+u}$**1607**
H **19790+u**, $\gamma_{18079+u}$**1711**
H **21614+u**, $\gamma_{19790+u}$**1824**
O **5215+v**
O **6181+v**, γ_{5215+v}**966**
O **7243+v**, γ_{6181+v}**1062**
O **8399+v**, γ_{7243+v}**1156**
O **9640+v**, γ_{8399+v}**1241**
M **10841+v**, γ_{9640+v}**1201**
O **10947+v**, γ_{9640+v}**1307**(?)
M **12115+v**, $\gamma_{10841+v}$**1274**
M **13492+v**, $\gamma_{12115+v}$**1377**
M **14975+v**, $\gamma_{13492+v}$**1483**
M **16567+v**, $\gamma_{14975+v}$**1592**
M **18267+v**, $\gamma_{16567+v}$**1700**
M **20046+v**, $\gamma_{18267+v}$**1779**
M **21902+v**, $\gamma_{20046+v}$**1856**
K **0+w**
K **704+w**, γ_{0+w}**704**
K **1476+w**, γ_{704+w}**772**
K **2357+w**, γ_{1476+w}**881**
K **3343+w**, γ_{2357+w}**986**
K **4422+w**, γ_{3343+w}**1079**
K **5590+w**, γ_{4422+w}**1168**
K **6832+w**, γ_{5590+w}**1242**
L **8003+w**, γ_{6832+w}**1171**
K **8152+w**, γ_{6832+w}**1320**
L **9226+w**, γ_{8003+w}**1223**
K **9537+w**, γ_{8152+w}**1385**
L **10563+w**, γ_{9226+w}**1337**
L **11999+w**, $\gamma_{10563+w}$**1436**
N **4375+s**
N **5149+s**, γ_{4375+s}**774**
N **6009+s**, γ_{5149+s}**860**
N **6975+s**, γ_{6009+s}**966**
N **8038+s**, γ_{6975+s}**1063**
N **9191+s**, γ_{8038+s}**1153**
N **10435+s**, γ_{9191+s}**1244**
N **11775+s**, $\gamma_{10435+s}$**1341**
N **13215+s**, $\gamma_{11775+s}$**1439**
P **x**, $J \approx (43/2)$
P **748.30+x**, $J+2$, γ_x**748.30**$_{11}$$(0.68_{10})$
P **1557.43+x**, $J+4$, $\gamma_{748.30+x}$**809.13**$_3$$(0.95_{15})$
P **2430.29+x**, $J+6$, $\gamma_{1557.43+x}$**872.86**$_5$$(1.00_{15})$
P **3367.56+x**, $J+8$, $\gamma_{2430.29+x}$**937.27**$_9$$(0.85_{15})$
P **4370.59+x**, $J+10$, $\gamma_{3367.56+x}$**1003.03**$_7$$(0.90_{15})$
P **5438.15+x**, $J+12$, $\gamma_{4370.59+x}$**1067.56**$_6$$(0.80_{10})$
P **6570.41+x**, $J+14$, $\gamma_{5438.15+x}$**1132.26**$_6$$(0.75_{10})$
P **7768.80+x**, $J+16$, $\gamma_{6570.41+x}$**1198.39**$_{10}$$(0.60_{10})$
P **9035.40+x**, $J+18$, $\gamma_{7768.80+x}$**1266.60**$_6$$(0.47_8)$
P **10372.80+x**, $J+20$, $\gamma_{9035.40+x}$**1337.40**$_8$$(0.33_6)$
P **11784.19+x**, $J+22$, $\gamma_{10372.80+x}$**1411.39**$_8$$(0.28_5)$
P **13272.8+x**, $J+24$, $\gamma_{11784.19+x}$**1488.63**$_9$$(0.25_4)$
P **14842.9+x**, $J+26$, $\gamma_{13272.8+x}$**1570.09**$_8$$(0.18_3)$
P **16497.6+x**, $J+28$, $\gamma_{14842.9+x}$**1654.70**$_{12}$$(0.10_2)$
P **18240.7+x**, $J+30$, $\gamma_{16497.6+x}$**1743.04**$_{14}$
P **20074.1+x**, $J+32$, $\gamma_{18240.7+x}$**1833.4**$_6$
P **22001.6+x**, $J+34$, $\gamma_{20074.1+x}$**1927.5**$_{12}$
Q **y**, $J_1 \approx (37/2)$
Q **720.32+y**, J_1+2, γ_y**720.32**$_9$$(0.05_1)$
Q **1505.75+y**, J_1+4, $\gamma_{720.32+y}$**785.43**$_{10}$$(0.15_3)$
Q **2359.97+y**, J_1+6, $\gamma_{1505.75+y}$**854.22**$_7$$(0.52_8)$
Q **3280.26+y**, J_1+8, $\gamma_{2359.97+y}$**920.29**$_7$$(0.52_8)$
Q **4267.18+y**, J_1+10, $\gamma_{3280.26+y}$**986.92**$_8$$(0.52_8)$
Q **5319.37+y**, J_1+12, $\gamma_{4267.18+y}$**1052.19**$_7$$(0.52_8)$
Q **6437.60+y**, J_1+14, $\gamma_{5319.37+y}$**1118.23**$_8$$(0.52_8)$
Q **7621.93+y**, J_1+16, $\gamma_{6437.60+y}$**1184.33**$_9$$(0.38_7)$
Q **8875.12+y**, J_1+18, $\gamma_{7621.93+y}$**1253.19**$_8$$(0.31_5)$
Q **10199.0+y**, J_1+20, $\gamma_{8875.12+y}$**1323.86**$_{10}$$(0.24_4)$
Q **11596.9+y**, J_1+22, $\gamma_{10199.0+y}$**1397.89**$_{11}$$(0.20_3)$
Q **13072.4+y**, J_1+24, $\gamma_{11596.9+y}$**1475.51**$_9$$(0.15_3)$
Q **14629.7+y**, J_1+26, $\gamma_{13072.4+y}$**1557.29**$_{11}$$(0.14_2)$
Q **16272.7+y**, J_1+28, $\gamma_{14629.7+y}$**1642.98**$_{21}$$(0.07_1)$
Q **18004.0+y**, J_1+30, $\gamma_{16272.7+y}$**1731.35**$_{21}$
Q **19825.6+y**, J_1+32, $\gamma_{18004.0+y}$**1821.62**$_{22}$
Q **21735.6+y**, J_1+34, $\gamma_{19825.6+y}$**1910.00**$_{20}$
R **z**, $J_2 \approx (45/2)$
R **956.9+z**, J_2+2, γ_z**956.9**(0.09_2)
R **1942.8+z**, J_2+4, $\gamma_{956.9+z}$**985.9**(0.22_4)
R **2963.3+z**, J_2+6, $\gamma_{1942.8+z}$**1020.5**(0.21_4)
R **4045.4+z**, J_2+8, $\gamma_{2963.3+z}$**1082.1**(0.23_4)
R **5193.9+z**, J_2+10, $\gamma_{4045.4+z}$**1148.5**(0.21_4)
R **6401.5+z**, J_2+12, $\gamma_{5193.9+z}$**1207.6**(0.21_4)
R **7676.2+z**, J_2+14, $\gamma_{6401.5+z}$**1274.7**(0.21_4)
R **9010.9+z**, J_2+16, $\gamma_{7676.2+z}$**1334.7**(0.21_4)
R **10399.2+z**, J_2+18, $\gamma_{9010.9+z}$**1388.3**(0.15_2)
R **11837.8+z**, J_2+20, $\gamma_{10399.2+z}$**1438.6**(0.14_2)
R **13326.7+z**, J_2+22, $\gamma_{11837.8+z}$**1488.9**(0.14_2)
R **14874.5+z**, J_2+24, $\gamma_{13326.7+z}$**1547.8**(0.11_2)
R **16487.1+z**, J_2+26, $\gamma_{14874.5+z}$**1612.6**(0.07_1)
R **18173.8+z**, J_2+28, $\gamma_{16487.1+z}$**1686.7**
R **19937.8+z**(?), J_2+30, $\gamma_{18173.8+z}$**1764**(?)


J+34 1928 22001.6+x
J+32 1833 20074.1+x
J+30 1743 18240.7+x
J+28 1655 16497.6+x
J+26 1570 14842.9+x
J+24 1489 13272.8+x
J+22 1411 11784.19+x
J+20 1337 10372.80+x
J+18 1267 9035.40+x
J+16 1198 7768.80+x
J+14 1132 6570.41+x
J+12 1068 5438.15+x
J+10 1003 4370.59+x
J+8 937 3367.56+x
J+6 873 2430.29+x
J+4 809 1557.43+x
J+2 748 748.30+x
J~(43/2) x
J_1+34 1910 21735.6+y
J_1+32 1822 19825.6+y
J_1+30 1731 18004.0+y
J_1+28 1643 16272.7+y
J_1+26 1557 14629.7+y
J_1+24 1476 13072.4+y
J_1+22 1398 11596.9+y
J_1+20 1324 10199.0+y
J_1+18 1253 8875.12+y
J_1+16 1184 7621.93+y
J_1+14 1118 6437.60+y
J_1+12 1052 5319.37+y
J_1+10 987 4267.18+y
J_1+8 920 3280.26+y
J_1+6 854 2359.97+y
J_1+4 785 1505.75+y
J_1+2 720 720.32+y
J_1~(37/2) y
J_2+30 1764 19937.8+z
J_2+28 1687 18173.8+z
J_2+26 1613 16487.1+z
J_2+24 1548 14874.5+z
J_2+22 1489 13326.7+z
J_2+20 1439 11837.8+z
J_2+18 1388 10399.2+z
J_2+16 1335 9010.9+z
J_2+14 1275 7676.2+z
J_2+12 1208 6401.5+z
J_2+10 1149 5193.9+z
J_2+8 1082 4045.4+z
J_2+6 1021 2963.3+z
J_2+4 986 1942.8+z
J_2+2 957 956.9+z
J_2~(45/2) z
SD-1 band
(1995Ha34,1996Se04)
SD-2 band
(1995Ha34,1996Se04)
SD-3 band
(1995Ha34)

$^{133}_{58}Ce_{75}$

$^{130}_{59}\mathbf{Pr}_{71}$

S_n: 9450 *SY*, S_p: 2360 *SY*

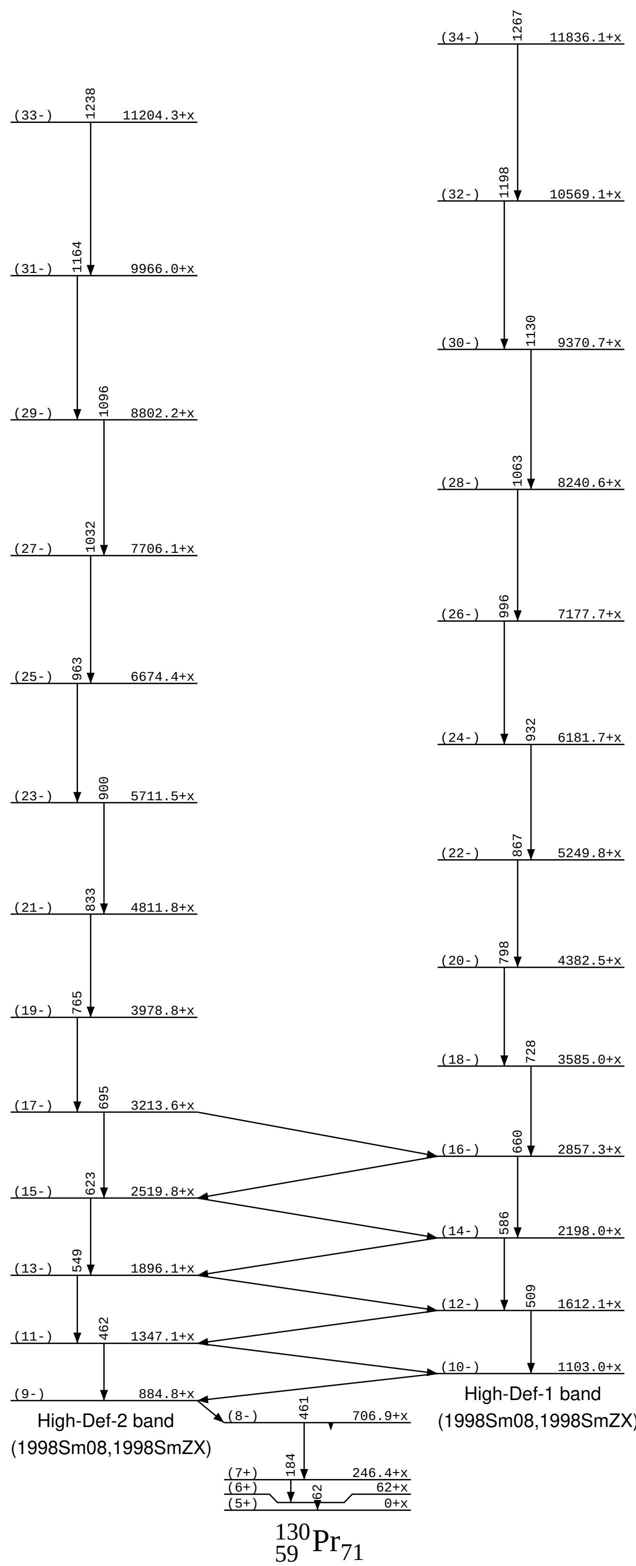
Nuclear Bands

- A π3/2[541]ν5/2[402], α=0
- B π3/2[541]ν5/2[402], α=1
- C π3/2[541]ν7/2[523], α=0
- D π3/2[541]ν7/2[523], α=1
- E π3/2[541]ν1/2[541], α=1
- F π3/2[541]ν1/2[541], α=0
- G π3/2[541]ν1/2[541], α=1
- H π11/2[505]ν7/2[523], α=1
- I π11/2[505]ν7/2[523], α=0
- J Highly-deformed-1 band (1998Sm08,1998SmZX, 1998Ko34,1997Br17) Q_0=6.1$_5$
- K Highly-deformed-2 band (1998Sm08,1998SmZX, 1998Ko34,1997Br17)

Levels and γ-ray branchings:

0+x, (5^+), *40$_4$ s*, %ε+%β$^+$=?
0+y, (2^+), %ε+%β$^+$=?
0+z(?), $(7,8)$, %ε+%β$^+$=?
A **58+x**, (6^-), $\gamma_{0+x}\mathbf{58}$
62+x, (6^+), $\gamma_{0+x}\mathbf{62}$
92.3+y, $(1,2^-)$, $\gamma_{0+y}\mathbf{92.3}_2(100)$
B **138.9+x**, (7^-), $\gamma_{58+x}\mathbf{80.8}_3(100)$
140.6+y, (2^+), $\gamma_{92.3+y}\mathbf{48.5}_3(10_2)$, $\gamma_{0+y}\mathbf{140.6}_2(100_9)$ M1
142.9+x, (7^+)
188.8+y, (1^+), $\gamma_{92.3+y}\mathbf{96.7}_2(100_{29})$, $\gamma_{0+y}\mathbf{188.7}_3(86_{29})$
194.0+x, (7^+)
196.7+y, (1^+), $\gamma_{140.6+y}\mathbf{56.1}_1(78_{22})$, $\gamma_{92.3+y}\mathbf{104.7}_3(89_{33})$, $\gamma_{0+y}\mathbf{196.7}_3(100_{22})$
239.8+x, $\gamma_{62+x}\mathbf{178.1}_3(100)$(?)
D **246.4+x**, (7^+), $\gamma_{62+x}\mathbf{184.4}_3(100)$
261.1+y, (1^+), $\gamma_{140.6+y}\mathbf{120.5}_2(100_{15})$, $\gamma_{0+y}\mathbf{261.2}_3(18_6)$
262.3+y, (1^+), $\gamma_{140.6+y}\mathbf{121.7}_2(100_{14})$, $\gamma_{92.3+y}\mathbf{170.0}_3(50_{11})$
A **262.5+x**, (8^-), $\gamma_{138.9+x}\mathbf{123.5}_3(100_{15})$, $\gamma_{58+x}\mathbf{204.5}_3(12.2_{17})$
301.4+y, (1^+), $\gamma_{196.7+y}\mathbf{104.7}_3(52_{13})$, $\gamma_{92.3+y}\mathbf{209.2}_3(100_{13})$
C **336.1+x**, (8^+), $\gamma_{246.4+x}\mathbf{89.7}_3(100_4)$, $\gamma_{194.0+x}\mathbf{142.1}_3(19.6_{10})$, $\gamma_{142.9+x}\mathbf{193.2}_3(23.9_{11})$, $\gamma_{62+x}\mathbf{274.1}_3(24.8_{12})$
G **365.6+x**, (7^-), $\gamma_{262.5+x}\mathbf{103.1}_3(40_{10})$, $\gamma_{138.9+x}\mathbf{226.6}_3(100_{23})$, $\gamma_{58+x}\mathbf{307.6}_3(47_{13})$
382.6+x, (7^-), $\gamma_{138.9+x}\mathbf{243.7}_3(100)$
384.9+x, (6^+), $\gamma_{239.8+x}\mathbf{145}$
397.9+y, (1^+), $\gamma_{92.3+y}\mathbf{305.5}_3(100_{30})$, $\gamma_{0+y}\mathbf{398.0}_3(100_{30})$
422.3+y, (1^+), $\gamma_{261.1+y}\mathbf{161.4}_3(78_{13})$, $\gamma_{92.3+y}\mathbf{329.9}_3(100_{22})$, $\gamma_{0+y}\mathbf{422.3}_3(65_{22})$
433.1+y, (1^+), $\gamma_{92.3+y}\mathbf{340.8}_3(100)$
B **434.4+x**, (9^-), $\gamma_{262.5+x}\mathbf{172.0}_3(100_3)$, $\gamma_{138.9+x}\mathbf{295.5}_3(23.1_{10})$
D **446.2+x**, (9^+), $\gamma_{336.1+x}\mathbf{110.1}_3(100)$
E **517.6+x**, (7^+), $\gamma_{336.1+x}\mathbf{181.3}_3(100_8)$, $\gamma_{239.8+x}\mathbf{277.8}_3(34_5)$, $\gamma_{62+x}\mathbf{455.6}_3(<6)$(?)
532.2+x, (7^+), $\gamma_{336.1+x}\mathbf{196.3}_3(100_9)$, $\gamma_{239.8+x}\mathbf{292.5}_3(21_3)$
C **577.5+x**, (10^+), $\gamma_{446.2+x}\mathbf{131.2}_3(100_4)$, $\gamma_{336.1+x}\mathbf{241.3}_3(12.4_6)$
F **600.9+x**, (6^+), $\gamma_{532.2+x}\mathbf{69}$, $\gamma_{517.6+x}\mathbf{83}$, $\gamma_{384.9+x}\mathbf{215.9}_3(100_{28})$
A **641.9+x**, (10^-), $\gamma_{434.4+x}\mathbf{207.5}_3(100_3)$, $\gamma_{262.5+x}\mathbf{379.4}_3(45.0_{16})$
G **694.3+x**, (9^-), $\gamma_{382.6+x}\mathbf{311.7}_3(32.0_{20})$, $\gamma_{365.6+x}\mathbf{328.7}_3(100_6)$, $\gamma_{262.5+x}\mathbf{431.8}_3(25_3)$
706.9+x, (8^-), $\gamma_{336.1+x}\mathbf{370.8}_3(0.35_{10})$(?), $\gamma_{246.4+x}\mathbf{460.5}_3(0.38_{11})$
E **770.1+x**, (9^+), $\gamma_{577.5+x}\mathbf{192.3}_3(40_2)$, $\gamma_{532.2+x}\mathbf{237.9}_3(40_2)$, $\gamma_{517.6+x}\mathbf{252.4}_3(42_3)$, $\gamma_{336.1+x}\mathbf{434.2}_3(100_5)$
D **803.5+x**, (11^+), $\gamma_{577.5+x}\mathbf{226.0}_3(100_3)$, $\gamma_{446.2+x}\mathbf{357.3}_3(24.2_9)$
F **865.5+x**, (8^+), $\gamma_{600.9+x}\mathbf{264.5}_3(100_9)$, $\gamma_{532.2+x}\mathbf{333.3}_3(68_7)$, $\gamma_{517.6+x}\mathbf{347.9}_3(39_4)$
K **884.8+x**, (9^-), $\gamma_{706.9+x}\mathbf{177.9}_3(0.85_7)$
B **893.2+x**, (11^-), $\gamma_{641.9+x}\mathbf{251.3}_3(100_3)$, $\gamma_{434.4+x}\mathbf{458.8}_3(73_3)$
C **1016.9+x**, (12^+), $\gamma_{803.5+x}\mathbf{213.4}_3(100_3)$, $\gamma_{577.5+x}\mathbf{439.4}_3(65.0_{24})$
J **1103.0+x**, (10^-), $\gamma_{884.8+x}\mathbf{218.2}_3(0.94_6)$
E **1143.9+x**, (11^+), $\gamma_{770.1+x}\mathbf{373.8}_3(100_4)$, $\gamma_{577.5+x}\mathbf{566.4}_3(23.9_{12})$
A **1171.6+x**, (12^-), $\gamma_{893.2+x}\mathbf{278.4}_3(80_3)$, $\gamma_{641.9+x}\mathbf{529.7}_3(100_3)$
G **1186.9+x**, (11^-), $\gamma_{694.3+x}\mathbf{492.6}_3(100)$
F **1229.8+x**, (10^+), $\gamma_{865.5+x}\mathbf{364.3}_3(100)$
D **1338.0+x**, (13^+), $\gamma_{1016.9+x}\mathbf{321.1}_3(100_3)$, $\gamma_{803.5+x}\mathbf{534.5}_3(59.2_{20})$
K **1347.1+x**, (11^-), $\gamma_{1103.0+x}\mathbf{244.1}_3(0.74_4)$, $\gamma_{884.8+x}\mathbf{462.3}_3(0.40_3)$
B **1489.5+x**, (13^-), $\gamma_{1171.6+x}\mathbf{317.9}_3(60.0_{20})$, $\gamma_{893.2+x}\mathbf{596.3}_3(100_3)$
J **1612.1+x**, (12^-), $\gamma_{1347.1+x}\mathbf{265.0}_3(0.41_2)$, $\gamma_{1103.0+x}\mathbf{509.1}_3(0.73_4)$
C **1628.6+x**, (14^+), $\gamma_{1338.0+x}\mathbf{290.6}_3(47.4_{16})$, $\gamma_{1016.9+x}\mathbf{611.7}_3(100_3)$
E **1644.6+x**, (13^+), $\gamma_{1143.9+x}\mathbf{500.7}_3(100)$
F **1685.7+x**, (12^+), $\gamma_{1229.8+x}\mathbf{455.9}_3(100)$
G **1819.1+x**, (13^-), $\gamma_{1186.9+x}\mathbf{632.2}_3(100)$
A **1824.4+x**, (14^-), $\gamma_{1489.5+x}\mathbf{335.0}_3(47.0_{15})$, $\gamma_{1171.6+x}\mathbf{652.8}_3(100_3)$
K **1896.1+x**, (13^-), $\gamma_{1612.1+x}\mathbf{283.9}_3(0.40_3)$, $\gamma_{1347.1+x}\mathbf{548.9}_3(1.09_6)$
D **2015.3+x**, (15^+), $\gamma_{1628.6+x}\mathbf{386.7}_3(80_3)$, $\gamma_{1338.0+x}\mathbf{677.3}_3(100_3)$
B **2192.9+x**, (15^-), $\gamma_{1824.4+x}\mathbf{368.4}_3(41.6_{15})$, $\gamma_{1489.5+x}\mathbf{703.4}_3(100_3)$
J **2198.0+x**, (14^-), $\gamma_{1896.1+x}\mathbf{302.1}_3(0.30_3)$, $\gamma_{1612.1+x}\mathbf{586.1}_3(0.86_5)$
H **2217.1+x**, (13^-), $\gamma_{1338.0+x}\mathbf{879.1}_3(100)$
F **2242.9+x**, (14^+), $\gamma_{1685.7+x}\mathbf{557.2}_3(100)$
E **2258.0+x**, (15^+), $\gamma_{1644.6+x}\mathbf{613.3}_3(100)$
C **2376.8+x**, (16^+), $\gamma_{2015.3+x}\mathbf{361.5}_3(40.5_{15})$, $\gamma_{1628.6+x}\mathbf{748.2}_3(100_3)$
I **2471.4+x**, (14^-), $\gamma_{2217.1+x}\mathbf{254.3}_3(100_5)$, $\gamma_{1338.0+x}\mathbf{1133.4}_3(59_4)$
K **2519.8+x**, (15^-), $\gamma_{2198.0+x}\mathbf{321.3}_3(0.47_4)$, $\gamma_{1896.1+x}\mathbf{623.4}_3(1.11_6)$
G **2552.7+x**, (15^-), $\gamma_{1819.1+x}\mathbf{733.6}_3(100)$
A **2566.1+x**, (16^-), $\gamma_{2192.9+x}\mathbf{373.2}_3(34.7_{14})$, $\gamma_{1824.4+x}\mathbf{741.7}_3(100_3)$
H **2772.8+x**, (15^-), $\gamma_{2471.4+x}\mathbf{301.4}_3(100)$
D **2798.9+x**, (17^+), $\gamma_{2376.8+x}\mathbf{422.1}_3(51.9_{20})$, $\gamma_{2015.3+x}\mathbf{783.6}_3(100_3)$
J **2857.3+x**, (16^-), $\gamma_{2519.8+x}\mathbf{336.0}_3(0.38_3)$, $\gamma_{2198.0+x}\mathbf{660.2}_3(0.85_5)$
F **2900.6+x**, (16^+), $\gamma_{2242.9+x}\mathbf{657.7}_3(100)$
B **2962.1+x**, (17^-), $\gamma_{2566.1+x}\mathbf{396.0}_3(43.3_{16})$, $\gamma_{2192.9+x}\mathbf{769.2}_3(100_3)$
E **2962.5+x**, (17^+), $\gamma_{2258.0+x}\mathbf{704.5}_3(100)$
I **3117.3+x**, (16^-), $\gamma_{2772.8+x}\mathbf{344.5}_3(100)$
K **3213.6+x**, (17^-), $\gamma_{2857.3+x}\mathbf{355.6}_3(0.34_3)$, $\gamma_{2519.8+x}\mathbf{694.5}_3(1.18_6)$
C **3219.2+x**, (18^+), $\gamma_{2798.9+x}\mathbf{420.3}_3(38.2_{16})$, $\gamma_{2376.8+x}\mathbf{842.4}_3(100_3)$
A **3350.3+x**, (18^-), $\gamma_{2962.1+x}\mathbf{388.2}_3(37.8_{15})$, $\gamma_{2566.1+x}\mathbf{784.2}_3(100_4)$
G **3350.9+x**, (17^-), $\gamma_{2552.7+x}\mathbf{798.2}_3(100)$
H **3503.2+x**, (17^-), $\gamma_{3117.3+x}\mathbf{385.9}_3(73_4)$, $\gamma_{2772.8+x}\mathbf{730.4}_3(100_6)$
J **3585.0+x**, (18^-), $\gamma_{2857.3+x}\mathbf{727.7}_3(0.76_5)$
D **3648.1+x**, (19^+), $\gamma_{3219.2+x}\mathbf{428.9}_3(59.2_{25})$, $\gamma_{2798.9+x}\mathbf{849.2}_3(100_3)$
F **3650.4+x**, (18^+), $\gamma_{2900.6+x}\mathbf{749.8}_3(100)$
E **3739.5+x**, (19^+), $\gamma_{2962.5+x}\mathbf{777.0}_3(100)$
B **3759.9+x**, (19^-), $\gamma_{3350.3+x}\mathbf{409.6}_3(37.9_{17})$, $\gamma_{2962.1+x}\mathbf{797.8}_3(100_4)$
I **3915.5+x**, (18^-), $\gamma_{3503.2+x}\mathbf{412.3}_3(100_6)$, $\gamma_{3117.3+x}\mathbf{798.1}_3(58_5)$
K **3978.8+x**, (19^-), $\gamma_{3213.6+x}\mathbf{765.2}_3(0.74_5)$
C **4109.6+x**, (20^+), $\gamma_{3648.1+x}\mathbf{461.5}_3(61_3)$, $\gamma_{3219.2+x}\mathbf{890.4}_3(100_6)$
A **4168.7+x**, (20^-), $\gamma_{3759.9+x}\mathbf{408.8}_3(32.4_{19})$, $\gamma_{3350.3+x}\mathbf{818.4}_3(100_4)$
G **4186.4+x**, (19^-), $\gamma_{3350.9+x}\mathbf{835.5}_3(100)$
H **4349.4+x**, (19^-), $\gamma_{3915.5+x}\mathbf{433.9}_3(97_6)$, $\gamma_{3503.2+x}\mathbf{846.2}_3(100_7)$
J **4382.5+x**, (20^-), $\gamma_{3585.0+x}\mathbf{797.5}_3(0.52_4)$
F **4479.8+x**, (20^+), $\gamma_{3650.4+x}\mathbf{829.4}_3(100)$
D **4539.3+x**, (21^+), $\gamma_{4109.6+x}\mathbf{429.7}_3(5.1_{15})$, $\gamma_{3648.1+x}\mathbf{891.3}_3(100_4)$
E **4584.3+x**, (21^+), $\gamma_{3739.5+x}\mathbf{844.8}_3(100)$
B **4620.5+x**, (21^-), $\gamma_{4168.7+x}\mathbf{451.8}_3(34.9_{18})$, $\gamma_{3759.9+x}\mathbf{860.6}_3(100_4)$
I **4802.5+x**, (20^-), $\gamma_{4349.4+x}\mathbf{453.1}_3(100_5)$, $\gamma_{3915.5+x}\mathbf{887.0}_3(97_5)$
K **4811.8+x**, (21^-), $\gamma_{3978.8+x}\mathbf{833.0}_3(0.95_5)$
C **5045.0+x**, (22^+), $\gamma_{4539.3+x}\mathbf{505.6}_3(51.7_{21})$, $\gamma_{4109.6+x}\mathbf{935.4}_3(100_4)$
G **5074.6+x**, (21^-), $\gamma_{4186.4+x}\mathbf{888.2}_3(100)$
A **5082.0+x**, (22^-), $\gamma_{4620.5+x}\mathbf{461.5}_3(44.6_{23})$, $\gamma_{4168.7+x}\mathbf{913.3}_3(100_4)$
J **5249.8+x**, (22^-), $\gamma_{4382.5+x}\mathbf{867.2}_3(0.70_4)$
H **5260.4+x**, (21^-), $\gamma_{4802.5+x}\mathbf{458.0}_3(100_5)$, $\gamma_{4349.4+x}\mathbf{911.0}_3(62_4)$
F **5377.4+x**, (22^+), $\gamma_{4479.8+x}\mathbf{897.6}_3(100)$

D **5487.9+x**, (23^+), $\gamma_{5045.0+x}$**443.0**$_3(60_3)$, $\gamma_{4584.3+x}$**903.6**$_3(36.9_{17})$, $\gamma_{4539.3+x}$**948.6**$_3(100_4)$
E **5511.0+x**, (23^+), $\gamma_{4584.3+x}$**926.7**$_3(100)$
B **5591.0+x**, (23^-), $\gamma_{5082.0+x}$**509.0**$_3(53_3)$, $\gamma_{4620.5+x}$**970.5**$_3(100_4)$
K **5711.5+x**, (23^-), $\gamma_{4811.8+x}$**899.7**$_3(0.77_4)$
I **5728.1+x**, (22^-), $\gamma_{5260.4+x}$**467.7**$_3(100_4)$, $\gamma_{4802.5+x}$**925.7**$_3(40_3)$
G **6041.2+x**, (23^-), $\gamma_{5074.6+x}$**966.6**$_3(100)$
C **6055.5+x**, (24^+), $\gamma_{5487.9+x}$**567.5**$_3(65_3)$, $\gamma_{5045.0+x}$**1010.5**$_3(100_4)$
A **6113.0+x**, (24^-), $\gamma_{5591.0+x}$**521.9**$_3(56_3)$, $\gamma_{5082.0+x}$**1031.0**$_3(100_4)$
J **6181.7+x**, (24^-), $\gamma_{5249.8+x}$**931.9**$_3(0.55_4)$
H **6217.3+x**, (23^-), $\gamma_{5728.1+x}$**489.2**$_3(79_4)$, $\gamma_{5260.4+x}$**956.9**$_3(100_5)$
F **6341.1+x**, (24^+), $\gamma_{5377.4+x}$**963.7**$_3(100)$
D **6511.4+x**, (25^+), $\gamma_{6055.5+x}$**455.9**$_3(67_3)$, $\gamma_{5511.0+x}$**1000.3**$_3(31.7_{16})$, $\gamma_{5487.9+x}$**1023.4**$_3(100_4)$
E **6540.4+x**, (25^+), $\gamma_{5511.0+x}$**1029.4**$_3(100)$
K **6674.4+x**, (25^-), $\gamma_{5711.5+x}$**962.9**$_3(0.52_4)$
B **6676.3+x**, (25^-), $\gamma_{5591.0+x}$**1085.3**$_3(100)$
I **6724.4+x**, (24^-), $\gamma_{6217.3+x}$**507.1**$_3(82_5)$, $\gamma_{5728.1+x}$**996.2**$_3(100_6)$
G **7077.1+x**, (25^-), $\gamma_{6041.2+x}$**1035.9**$_3(100)$
C **7163.1+x**, (26^+), $\gamma_{6055.5+x}$**1107.6**$_3(100)$
J **7177.7+x**, (26^-), $\gamma_{6181.7+x}$**996.0**$_3(0.43_3)$
A **7251.2+x**, (26^-), $\gamma_{6113.0+x}$**1138.2**$_3(100)$
F **7381.5+x**, (26^+), $\gamma_{6341.1+x}$**1040.4**$_3(100)$
D **7628.1+x**, (27^+), $\gamma_{6511.4+x}$**1116.7**$_3(100)$
E **7670.5+x**, (27^+), $\gamma_{6540.4+x}$**1130.0**$_3(100)$
K **7706.1+x**, (27^-), $\gamma_{6674.4+x}$**1031.7**$_3(0.41_4)$
B **7867.8+x**, (27^-), $\gamma_{6676.3+x}$**1191.5**$_3(100)$
G **8145.3+x**, (27^-), $\gamma_{7077.1+x}$**1068.2**$_3(100)$
J **8240.6+x**, (28^-), $\gamma_{7177.7+x}$**1062.9**$_3(0.51_3)$
C **8372.1+x**, (28^+), $\gamma_{7163.1+x}$**1209.0**$_3(100)$
A **8509.2+x**, (28^-), $\gamma_{7251.2+x}$**1258.0**$_3(100)$
F **8509.4+x**, (28^+), $\gamma_{7381.5+x}$**1127.9**$_3(100)$
K **8802.2+x**, (29^-), $\gamma_{7706.1+x}$**1096.1**$_3(0.54_3)$
D **8846.7+x**, (29^+), $\gamma_{7628.1+x}$**1218.6**$_3(100)$
E **8890.6+x**, (29^+), $\gamma_{7670.5+x}$**1220.1**$_3(100)$
B **9160.1+x**, (29^-), $\gamma_{7867.8+x}$**1292.3**$_3(100)$
G **9275.0+x**, (29^-), $\gamma_{8145.3+x}$**1129.7**$_3(100)$
J **9370.7+x**, (30^-), $\gamma_{8240.6+x}$**1130.1**$_3(0.41_3)$
C **9656.6+x**, (30^+), $\gamma_{8372.1+x}$**1284.5**$_3(100)$
F **9730.3+x**, (30^+), $\gamma_{8509.4+x}$**1220.9**$_3(100)$
A **9846.2+x**, (30^-), $\gamma_{8509.2+x}$**1337.0**$_3(100)$
K **9966.0+x**, (31^-), $\gamma_{8802.2+x}$**1163.7**$_3(0.38_3)$
D **10156.6+x**, (31^+), $\gamma_{8846.7+x}$**1309.9**$_3(100)$
E **10188.7+x**, (31^+), $\gamma_{8890.6+x}$**1298.1**$_3(100)$
B **10526.3+x**, (31^-), $\gamma_{9160.1+x}$**1366.1**$_3(100)$
J **10569.1+x**, (32^-), $\gamma_{9370.7+x}$**1198.4**$_3(0.34_2)$
F **11048.6+x**, (32^+), $\gamma_{9730.3+x}$**1318.3**$_3(100)$
K **11204.3+x**, (33^-), $\gamma_{9966.0+x}$**1238.3**$_3(0.33_2)$
E **11562.9+x**, (33^+), $\gamma_{10188.7+x}$**1374.2**$_3(100)$
J **11836.1+x**, (34^-), $\gamma_{10569.1+x}$**1267.0**$_3(0.31_2)$
F **12411.4+x**, (34^+), $\gamma_{11048.6+x}$**1362.8**$_3(100)$



$^{131}_{59}\mathbf{Pr}_{72}$

S_n: 11164 *SY*, S_p: 2290 *SY*

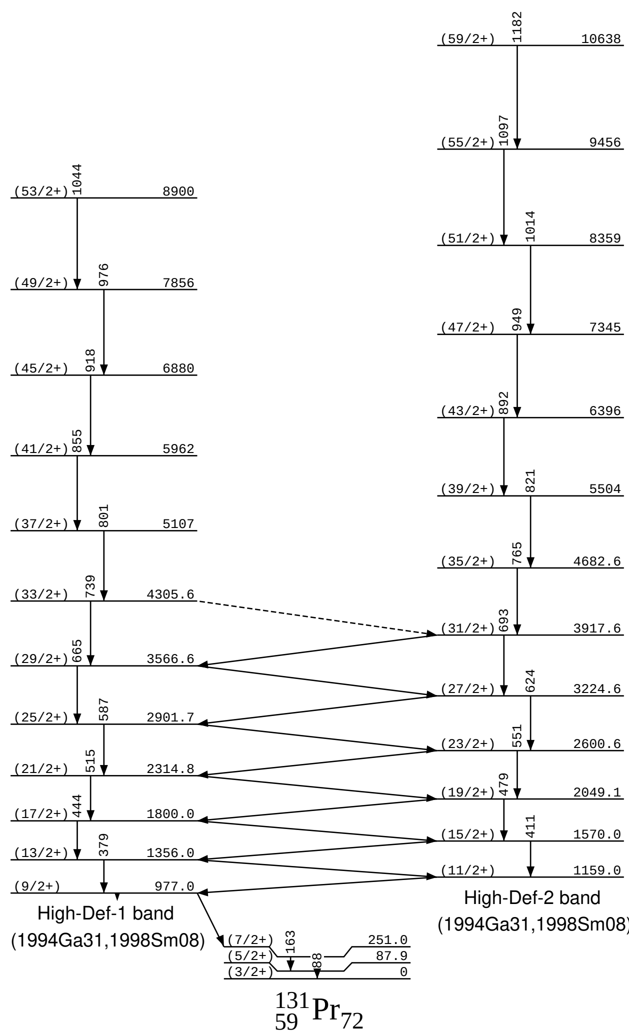
Nuclear Bands

- A $\pi h_{11/2}$, α=-1/2
- B 3/2+ band, α=-1/2
- C 3/2+ band, α=+1/2
- D Band based on (19/2$^+$), α=-1/2
- E Band based on (19/2$^+$), α=+1/2
- F Highly-deformed-1 band (1994Ga31,1998Sm08,1998Ko34) Q_0=5.3$_4$
- G Highly-deformed-2 band (1994Ga31,1998Sm08,1998Ko34) Q_0=5.3$_4$

Levels and γ-ray branchings:

- B **0**, $(3/2^+)$, *1.53$_5$ min*, %ε+%β^+=100
- C **87.9**, $(5/2^+)$, γ_0**87.8**(100) (M1)
- A **152.3**, $(11/2^-)$, *5.7$_2$ s*, %IT=95 , %ε+%β^+=5, $\gamma_{87.9}$**64.8**(100) (E3)
- B **251.0**, $(7/2^+)$, $\gamma_{87.9}$**163**(100) (M1)
- A **408.7**, $(15/2^-)$, $\gamma_{152.3}$**256.4**$_1$(100) (E2)
- C **448.0**, $(9/2^+)$, $\gamma_{251.0}$**197**, $\gamma_{87.9}$**360**
- **450.0**, $(7/2^+)$, $\gamma_{87.9}$**362**, γ_0**450**
- B **679.1**, $(11/2^+)$, $\gamma_{448.0}$**231**, $\gamma_{251.0}$**428**
- A **875.7**, $(19/2^-)$, $\gamma_{408.7}$**467.0**$_2$ (E2)
- F **977.0**, $(9/2^+)$, $\gamma_{450.0}$**527**, $\gamma_{448.0}$**529**, $\gamma_{251.0}$**726**
- C **979.2**, $(13/2^+)$, $\gamma_{679.1}$**300**, $\gamma_{448.0}$**531**
- G **1159.0**, $(11/2^+)$, $\gamma_{977.0}$**182**
- B **1240.4**, $(15/2^+)$, $\gamma_{979.2}$**261**, $\gamma_{679.1}$**561**, $\gamma_{408.7}$**832**
- F **1356.0**, $(13/2^+)$, $\gamma_{1159.0}$**197**, $\gamma_{977.0}$**379**
- A **1501.9**, $(23/2^-)$, $\gamma_{875.7}$**626.2**$_1$ (E2)
- G **1570.0**, $(15/2^+)$, $\gamma_{1356.0}$**214**, $\gamma_{1159.0}$**411**
- C **1617.3**, $(17/2^+)$, $\gamma_{1240.4}$**377**, $\gamma_{979.2}$**638**
- F **1800.0**, $(17/2^+)$, $\gamma_{1570.0}$**230**, $\gamma_{1356.0}$**444**
- **1870.4**(?), $\gamma_{1240.4}$**630**
- B **1950.4**, $(19/2^+)$, $\gamma_{1240.4}$**710**, $\gamma_{875.7}$**1074.5**$_4$ (E1)
- G **2049.1**, $(19/2^+)$, $\gamma_{1800.0}$**249**, $\gamma_{1570.0}$**479**
- C **2118.2**, $(21/2^+)$, $\gamma_{1617.3}$**501**, $\gamma_{1501.9}$**616**, $\gamma_{875.7}$**1243**
- A **2243.4**, $(27/2^-)$, $\gamma_{1501.9}$**741.5**$_2$ (E2)
- F **2314.8**, $(21/2^+)$, $\gamma_{2049.1}$**266**, $\gamma_{1800.0}$**515**
- B **2328.2**, $(23/2^+)$, $\gamma_{1950.4}$**377.7**$_2$(100$_8$), $\gamma_{1501.9}$**826.4**$_2$(92$_{14}$) (E1)
- D **2360.9**, $(19/2^+)$
- E **2456.9**, $(21/2^+)$, $\gamma_{2360.9}$**96**
- C **2541.0**, $(25/2^+)$, $\gamma_{2118.2}$**423**(100$_{16}$), $\gamma_{1501.9}$**1039**(60$_9$)
- G **2600.6**, $(23/2^+)$, $\gamma_{2314.8}$**286**, $\gamma_{2049.1}$**551**
- D **2609.0**, $(23/2^+)$, $\gamma_{2456.9}$**152**, $\gamma_{2314.8}$**294**, $\gamma_{2049.1}$**560**
- B **2797.1**, $(27/2^+)$, $\gamma_{2328.2}$**468.9**$_3$ (E2)
- E **2820.9**, $(25/2^+)$, $\gamma_{2609.0}$**212**, $\gamma_{2456.9}$**364**
- F **2901.7**, $(25/2^+)$, $\gamma_{2600.6}$**301**, $\gamma_{2314.8}$**587**
- A **3050.5**, $(31/2^-)$, $\gamma_{2243.4}$**807.1**$_2$
- C **3081.0**, $(29/2^+)$, $\gamma_{2541.0}$**540**
- D **3095.1**, $(27/2^+)$, $\gamma_{2820.9}$**274**, $\gamma_{2609.0}$**486**
- G **3224.6**, $(27/2^+)$, $\gamma_{2901.7}$**323**, $\gamma_{2600.6}$**624**
- B **3415.6**, $(31/2^+)$, $\gamma_{2797.1}$**618.5**$_2$
- E **3417.4**, $(29/2^+)$, $\gamma_{3095.1}$**322**, $\gamma_{2820.9}$**597**
- F **3566.6**, $(29/2^+)$, $\gamma_{3224.6}$**342**, $\gamma_{2901.7}$**665**
- C **3768.0**, $(33/2^+)$, $\gamma_{3081.0}$**687**
- D **3782.3**, $(31/2^+)$, $\gamma_{3417.4}$**365**, $\gamma_{3095.1}$**687**
- A **3882.6**, $(35/2^-)$, $\gamma_{3050.5}$**832.1**$_2$
- G **3917.6**, $(31/2^+)$, $\gamma_{3566.6}$**351**, $\gamma_{3224.6}$**693**
- E **4179.4**, $(33/2^+)$, $\gamma_{3782.3}$**397**, $\gamma_{3417.4}$**762**
- B **4186.5**, $(35/2^+)$, $\gamma_{3415.6}$**770.9**$_2$
- F **4305.6**, $(33/2^+)$, $\gamma_{3917.6}$**386**(?), $\gamma_{3566.6}$**739**
- C **4597.0**, $(37/2^+)$, $\gamma_{3768.0}$**829**
- D **4606.2**, $(35/2^+)$, $\gamma_{4179.4}$**427**, $\gamma_{3782.3}$**824**
- G **4682.6**, $(35/2^+)$, $\gamma_{3917.6}$**765**
- A **4754.3**, $(39/2^-)$, $\gamma_{3882.6}$**871.7**$_2$
- E **5053.8**, $(37/2^+)$, $\gamma_{4606.2}$**448**, $\gamma_{4179.4}$**874**
- B **5090.9**, $(39/2^+)$, $\gamma_{4186.5}$**904.4**$_3$
- F **5107**, $(37/2^+)$, $\gamma_{4305.6}$**801**
- G **5504**, $(39/2^+)$, $\gamma_{4682.6}$**821**
- C **5549**, $(41/2^+)$, $\gamma_{4597.0}$**952**
- A **5705**, $(43/2^-)$, $\gamma_{4754.3}$**951**
- F **5962**, $(41/2^+)$, γ_{5107}**855**
- B **6108**, $(43/2^+)$, $\gamma_{5090.9}$**1017**
- G **6396**, $(43/2^+)$, γ_{5504}**892**
- C **6603**, $(45/2^+)$, γ_{5549}**1054**
- A **6749**, $(47/2^-)$, γ_{5705}**1044**
- F **6880**, $(45/2^+)$, γ_{5962}**918**
- B **7215**, $(47/2^+)$, γ_{6108}**1107**
- G **7345**, $(47/2^+)$, γ_{6396}**949**
- C **7742**, $(49/2^+)$, γ_{6603}**1139**
- F **7856**, $(49/2^+)$, γ_{6880}**976**
- A **7871**, $(51/2^-)$, γ_{6749}**1122**
- G **8359**, $(51/2^+)$, γ_{7345}**1014**
- F **8900**, $(53/2^+)$, γ_{7856}**1044**
- A **9019**, $(55/2^-)$, γ_{7871}**1148**
- G **9456**, $(55/2^+)$, γ_{8359}**1097**
- A **10192**, $(59/2^-)$, γ_{9019}**1173**
- G **10638**, $(59/2^+)$, γ_{9456}**1182**
- A **11432**, $(61/2^-)$, γ_{10192}**1240**
- A **12759**, $(65/2^-)$, γ_{11432}**1327**

See Nucl. Phys. **A611***, 247 (1996) for additional data.*



$^{132}_{59}\mathrm{Pr}_{73}$

S_n: 8947 *SY*, S_p: 2915 *SY*

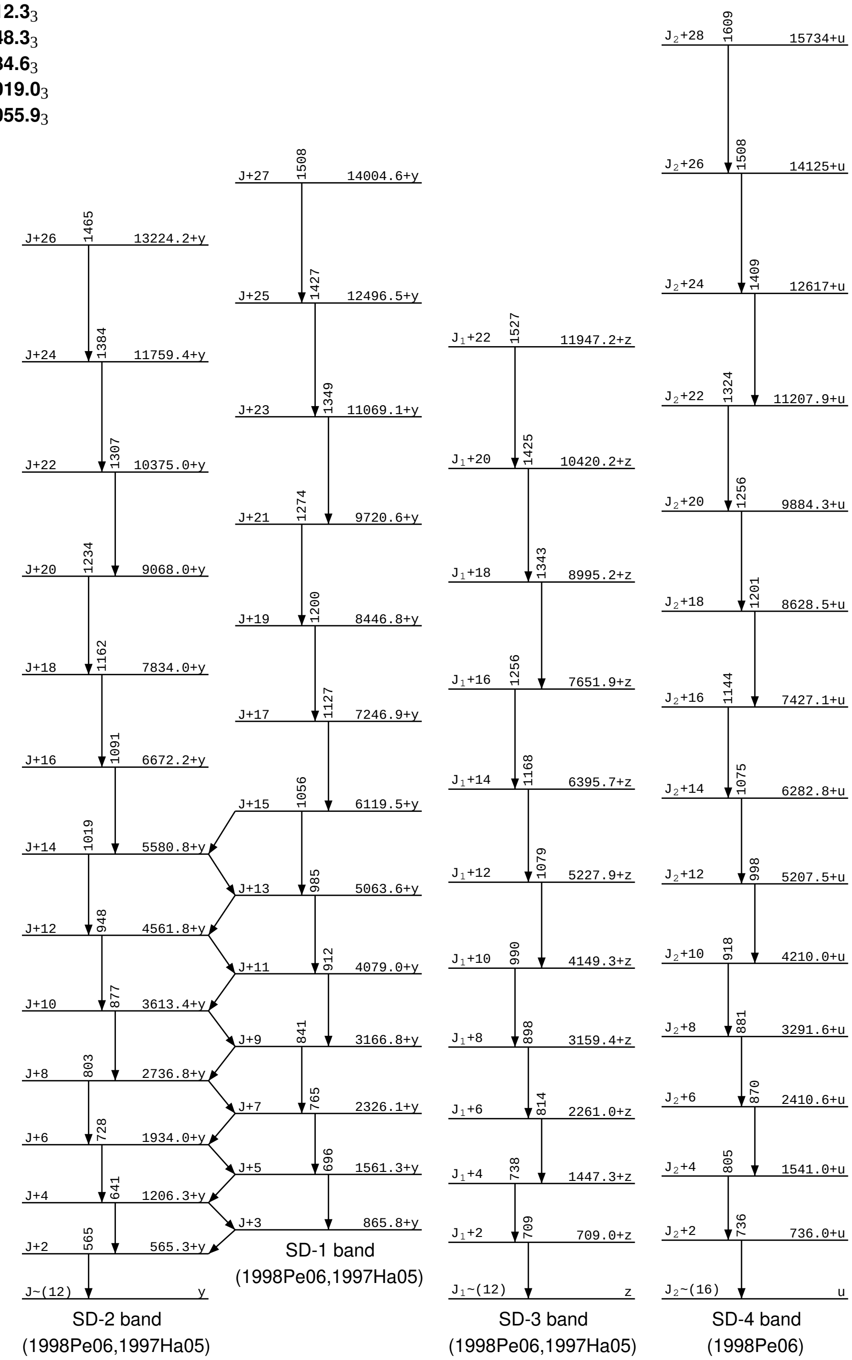
Nuclear Bands

A $\pi h_{11/2}$ $\nu g_{7/2}$, α=0
B $\pi h_{11/2}$ $\nu g_{7/2}$, α=1
C $\pi h_{11/2}$ $\nu h_{11/2}$, α=0
D $\pi h_{11/2}$ $\nu h_{11/2}$, α=1
E Band based on 20^+
F Chiral partner of $\pi h_{11/2}$ $\nu h_{11/2}$, α=0
G Chiral partner of $\pi h_{11/2}$ $\nu h_{11/2}$, α=1
H Highly-deformed (decoupled) band, α=1
I SD-1 band (1998Pe06,1997Ha05) Q_0=7.0$_7$
J SD-2 band (1998Pe06,1997Ha05) Q_0=7.0$_7$
K SD-3 band (1998Pe06,1997Ha05)
L SD-4 band (1998Pe06)

Levels and γ-ray branchings:

0, $(2)^+$, *1.6$_3$ min*, %ε+%β$^+$=100
0+x, (5^+)
58.0+x, (6^+)
87.5+x, (6^+)
A **98.0+x**, (6^-), $\gamma_{58.0+x}$**40**, γ_{0+x}**98**
B **145.3+x**, (7^-), $\gamma_{98.0+x}$**47**, $\gamma_{87.5+x}$**58**
147.72$_{11}$, 1^+, $\gamma_{0.0}$**147.7**$_2$(100) M1
A **261.2+x**, (8^-), $\gamma_{145.3+x}$**116.1**$_2$(100) D, $\gamma_{98.0+x}$**163**
284.53$_{13}$, $(1,2)^-$, $\gamma_{147.72}$**136.9**$_2$(100$_4$) E1, $\gamma_{0.0}$**284.5**$_2$(65$_4$) E1
288.16$_{12}$, $(0\to3)^+$, $\gamma_{147.72}$**140.6**$_2$(100$_8$) M1, $\gamma_{0.0}$**288.2**$_2$(55$_7$) M1,E2
342.90$_{13}$, $(0\to3)^+$, $\gamma_{147.72}$**195.2**$_1$(100$_{13}$) M1,E2, $\gamma_{0.0}$**342.8**$_3$(14$_7$)
381.7+x, (7^+), $\gamma_{145.3+x}$**236**, $\gamma_{98.0+x}$**283.7**$_2$(100) D, $\gamma_{87.5+x}$**294**
387.20$_{18}$, $(0\to3)^+$, $\gamma_{288.16}$**99.1**$_2$(62$_8$) M1, $\gamma_{284.53}$**102.4**$_3$(31$_8$), $\gamma_{147.72}$**239.6**$_3$(100$_{15}$) (M1,E2)
C **405.3+x**, (8^+), $\gamma_{381.7+x}$**24**(?), $\gamma_{98.0+x}$**307**
405.82$_{16}$, $(0\to3^+)$, $\gamma_{288.16}$**117.9**$_2$(100), $\gamma_{284.53}$**122.0**$_4$
B **439.8+x**, (9^-), $\gamma_{261.2+x}$**178.5**$_2$(100$_{10}$) D, $\gamma_{145.3+x}$**294.2**$_2$(22$_2$) Q
D **468.6+x**, (9^+), $\gamma_{405.3+x}$**63**
501.34$_{16}$, $(0\to3)^+$, $\gamma_{405.82}$**96.0**$_3$, $\gamma_{288.16}$**213.3**$_2$(100.0$_{24}$) M1,E2, $\gamma_{147.72}$**352.8**$_3$(100$_7$), $\gamma_{0.0}$**501.4**$_3$(33$_9$)
526.15$_{17}$, $(0\to3)^+$, $\gamma_{405.82}$**121.0**$_5$, $\gamma_{342.90}$**183.2**$_4$, $\gamma_{288.16}$**237.8**$_3$(26.0$_{20}$) (M1,E2), $\gamma_{147.72}$**378.6**$_2$(100$_4$) M1,E2
552.1+x, (7^+), $\gamma_{405.3+x}$**146.8**$_6$(100)
A **567.49**$_{20}$, $(0\to3^+)$, $\gamma_{147.72}$**419.7**$_2$(100)
587.44$_{24}$, $(0\to3)^+$, $\gamma_{288.16}$**299.0**$_3$(100) M1
C **598.3+x**, (10^+), $\gamma_{468.6+x}$**130.0**$_2$(100) D, $\gamma_{405.3+x}$**192.8**
630.42$_{24}$, $(0\to3^+)$, $\gamma_{405.82}$**224.6**$_3$(100$_{15}$), $\gamma_{147.72}$**482.7**$_3$(<215)
A **668.5+x**, (10^-), $\gamma_{439.8+x}$**228.6**$_2$(100$_{10}$) D, $\gamma_{261.2+x}$**407.6**$_2$(93$_9$) Q
714.94$_{15}$, 1^+, $\gamma_{405.82}$**310.0**$_4$, $\gamma_{342.90}$**372.0**$_4$(3.2$_9$), $\gamma_{288.16}$**426.8**$_2$(12.0$_9$), $\gamma_{284.53}$**430.4**$_2$(61$_4$) E1, $\gamma_{147.72}$**567.0**$_2$(100.0$_{18}$) M1
724.83$_{16}$, (≤3), $\gamma_{587.44}$**137.1**$_3$, $\gamma_{526.15}$**199.1**$_3$(35$_8$), $\gamma_{405.82}$**319.0**$_4$, $\gamma_{342.90}$**382.2**$_4$(73$_{12}$), $\gamma_{284.53}$**440.0**$_3$(88$_{23}$), $\gamma_{0.0}$**725.2**$_3$(100$_{42}$)
806.7+x, (9^+), $\gamma_{598.3+x}$**208.7**$_6$(<50), $\gamma_{552.1+x}$**254.7**$_6$(<50), $\gamma_{405.3+x}$**401.5**$_6$(100$_{50}$) D+Q
854.9$_3$, $(0\to3^+)$, $\gamma_{405.82}$**449.0**$_4$, $\gamma_{147.72}$**707.2**$_3$(100)
861.23$_{22}$, $(0\to4^-)$, $\gamma_{405.82}$**455.0**$_4$, $\gamma_{284.53}$**576.8**$_2$(100)
D **864.8+x**, (11^+), $\gamma_{598.3+x}$**266.7**$_2$(100$_{10}$) D, $\gamma_{468.6+x}$**396.0**$_2$(11.3$_{11}$)
B **946.0+x**, (11^-), $\gamma_{668.5+x}$**277.3**$_2$(68$_7$) D, $\gamma_{439.8+x}$**506.1**$_2$(100$_{10}$) Q
981.85$_{17}$, $(0^+\to3^+)$, $\gamma_{724.83}$**257.4**$_3$(10$_3$), $\gamma_{567.49}$**414.2**$_3$(28$_3$), $\gamma_{288.16}$**693.7**$_3$(31$_{13}$), $\gamma_{147.72}$**834.2**$_3$(44$_3$), $\gamma_{0.0}$**981.3**$_4$(100$_7$)
C **1105.4+x**, (12^+), $\gamma_{864.8+x}$**240.5**$_2$(100$_{10}$) D, $\gamma_{598.3+x}$**507.1**$_2$(54$_5$) Q
H **1175.1+x**, (11^+), $\gamma_{806.7+x}$**368.7**$_6$(27$_7$) Q, $\gamma_{598.3+x}$**576.6**$_2$(100$_7$) D+Q, $\gamma_{468.6+x}$**706.5**$_6$(33$_7$) Q
G **1194.2+x**, (11^+), $\gamma_{806.7+x}$**387.6**, $\gamma_{598.3+x}$**595.8**$_2$(100) D, $\gamma_{468.6+x}$**726.1**
A **1258.0+x**, (12^-), $\gamma_{946.0+x}$**311.3**$_2$(37$_4$) D, $\gamma_{668.5+x}$**589.8**$_2$(100$_{10}$) Q
1330.1$_3$, $(0\to3^+)$, $\gamma_{288.16}$**1041.7**$_4$(71$_{12}$), $\gamma_{284.53}$**1045.7**$_4$(100$_{12}$), $\gamma_{147.72}$**1182.5**$_4$(59$_9$)
1440.7$_6$, $(0\to3^+)$, $\gamma_{147.72}$**1293.0**$_5$(100)
D **1489.2+x**, (13^+), $\gamma_{1105.4+x}$**383.7**$_2$(100$_{10}$) D, $\gamma_{864.8+x}$**624.3**$_2$(40$_3$) Q
F **1500.7+x**, (12^+), $\gamma_{1194.2+x}$**305.9**, $\gamma_{864.8+x}$**635.9**$_2$(100)
B **1610.7+x**, (13^-), $\gamma_{1258.0+x}$**352.3**$_2$(27$_3$) D, $\gamma_{946.0+x}$**665.1**$_2$(100$_{10}$) Q
H **1715.7+x**, (13^+), $\gamma_{1194.2+x}$**521.6**$_2$(35$_4$) Q, $\gamma_{1175.1+x}$**540.6**$_2$(100$_8$) Q
C **1810.5+x**, (14^+), $\gamma_{1489.2+x}$**321.2**$_2$(85$_8$) D, $\gamma_{1105.4+x}$**705.2**$_2$(100$_{10}$) Q
G **1925.4+x**, (13^+), $\gamma_{1500.7+x}$**424.7**$_2$(100) Q
A **1986.4+x**, (14^-), $\gamma_{1610.7+x}$**376**, $\gamma_{1258.0+x}$**728**
D **2263.8+x**, (15^+), $\gamma_{1810.5+x}$**453**, $\gamma_{1489.2+x}$**775**
F **2293.4+x**, (14^+), $\gamma_{1925.4+x}$**368**
H **2376.3+x**, (15^+), $\gamma_{1715.7+x}$**660.6**$_2$(100) Q
B **2393.5+x**, (15^-), $\gamma_{1986.4+x}$**407**, $\gamma_{1610.7+x}$**783**
C **2658.5+x**, (16^+), $\gamma_{2263.8+x}$**395**, $\gamma_{1810.5+x}$**848**
A **2811.5+x**, (16^-), $\gamma_{2393.5+x}$**418**, $\gamma_{1986.4+x}$**825**
G **3101.4+x**, (16^+), $\gamma_{2293.4+x}$**808**
H **3121.1+x**, (17^+), $\gamma_{2376.3+x}$**744.8**$_2$(100) Q
D **3143.2+x**, (17^+), $\gamma_{2658.5+x}$**485**, $\gamma_{2263.8+x}$**879**
B **3246.5+x**, (17^-), $\gamma_{2811.5+x}$**435**, $\gamma_{2393.5+x}$**853**
C **3600.3+x**, (18^+), $\gamma_{3143.2+x}$**457**, $\gamma_{2658.5+x}$**942**
A **3688.5+x**, (18^-), $\gamma_{3246.5+x}$**442**, $\gamma_{2811.5+x}$**877**
H **3913.5+x**, (19^+), $\gamma_{3121.1+x}$**792.4**$_2$(100) Q
D **4074.3+x**, (19^+), $\gamma_{3600.3+x}$**474**, $\gamma_{3143.2+x}$**931**
B **4116.5+x**, (19^-), $\gamma_{3246.5+x}$**870**
C **4563.3+x**, (20^+), $\gamma_{4074.3+x}$**489**, $\gamma_{3600.3+x}$**963**
A **4564.5+x**, (20^-), $\gamma_{3688.5+x}$**876**
E **4566.3+x**, (20^+), $\gamma_{4074.3+x}$**492**, $\gamma_{3600.3+x}$**966**
H **4750.8+x**, (21^+), $\gamma_{3913.5+x}$**837.3**$_2$(100) Q
B **4998.5+x**, (21^-), $\gamma_{4116.5+x}$**882**
D **5003.3+x**, (21^+), $\gamma_{4566.3+x}$**437**, $\gamma_{4563.3+x}$**440**, $\gamma_{4074.3+x}$**929**
A **5482.5+x**, (22^-), $\gamma_{4564.5+x}$**918**
E **5525.3+x**, (22^+), $\gamma_{4566.3+x}$**959**
C **5563.3+x**, (22^+), $\gamma_{4563.3+x}$**1000**
H **5662.9+x**, (23^+), $\gamma_{4750.8+x}$**912.1**$_2$(100) Q
B **5954.5+x**, (23^-), $\gamma_{4998.5+x}$**956**
D **5958.3+x**, (23^+), $\gamma_{5003.3+x}$**955**
A **6480.5+x**, (24^-), $\gamma_{5482.5+x}$**998**
E **6588.3+x**, (24^+), $\gamma_{5525.3+x}$**1063**
C **6625.3+x**, (24^+), $\gamma_{5563.3+x}$**1062**
H **6672.0+x**, (25^+), $\gamma_{5662.9+x}$**1009.1**$_5$(100)
D **6985.3+x**, (25^+), $\gamma_{5958.3+x}$**1027**
B **7006+x**, (25^-), $\gamma_{5954.5+x}$**1051**
A **7583+x**, (26^-), $\gamma_{6480.5+x}$**1102**
E **7746.3+x**, (26^+), $\gamma_{6588.3+x}$**1158**
H **7784.2+x**, (27^+), $\gamma_{6672.0+x}$**1112.2**$_5$(100)
D **8086.3+x**, (27^+), $\gamma_{6985.3+x}$**1101**
E **8994+x**, (28^+), $\gamma_{7746.3+x}$**1248**
H **8997.8+x**, (29^+), $\gamma_{7784.2+x}$**1213.6**$_5$(100)
D **9231+x**, (29^+), $\gamma_{8086.3+x}$**1145**
H **10304.3+x**, (31^+), $\gamma_{8997.8+x}$**1306.5**$_6$(100)
E **10319+x**, (30^+), γ_{8994+x}**1325**
D **10404+x**, (31^+), γ_{9231+x}**1173**
D **11589+x**, (33^+), $\gamma_{10404+x}$**1185**
H **11708.3+x**, (33^+), $\gamma_{10304.3+x}$**1404.0**$_6$(100)
J **y**, $J\approx(12)$
J **565.3+y**, $J+2$, γ_y**565.3**$_3$
I **865.8+y**, $J+3$, $\gamma_{565.3+y}$**301**
J **1206.3+y**, $J+4$, $\gamma_{865.8+y}$**341**, $\gamma_{565.3+y}$**641.0**$_3$
I **1561.3+y**, $J+5$, $\gamma_{1206.3+y}$**355**, $\gamma_{865.8+y}$**695.5**$_3$
J **1934.0+y**, $J+6$, $\gamma_{1561.3+y}$**373**, $\gamma_{1206.3+y}$**727.6**$_3$
I **2326.1+y**, $J+7$, $\gamma_{1934.0+y}$**392**, $\gamma_{1561.3+y}$**764.8**$_3$
J **2736.8+y**, $J+8$, $\gamma_{2326.1+y}$**410**, $\gamma_{1934.0+y}$**802.9**$_3$
I **3166.8+y**, $J+9$, $\gamma_{2736.8+y}$**431**, $\gamma_{2326.1+y}$**840.7**$_3$
J **3613.4+y**, $J+10$, $\gamma_{3166.8+y}$**447**, $\gamma_{2736.8+y}$**876.5**$_3$

I **4079.0+y**, $J+11$, $\gamma_{3613.4+y}$**465**, $\gamma_{3166.8+y}$**912.3**$_3$
J **4561.8+y**, $J+12$, $\gamma_{4079.0+y}$**483**, $\gamma_{3613.4+y}$**948.3**$_3$
I **5063.6+y**, $J+13$, $\gamma_{4561.8+y}$**501**, $\gamma_{4079.0+y}$**984.6**$_3$
J **5580.8+y**, $J+14$, $\gamma_{5063.6+y}$**517**, $\gamma_{4561.8+y}$**1019.0**$_3$
I **6119.5+y**, $J+15$, $\gamma_{5580.8+y}$**539**, $\gamma_{5063.6+y}$**1055.9**$_3$
J **6672.2+y**, $J+16$, $\gamma_{5580.8+y}$**1091.4**$_3$
I **7246.9+y**, $J+17$, $\gamma_{6119.5+y}$**1127.4**$_3$
J **7834.0+y**, $J+18$, $\gamma_{6672.2+y}$**1161.8**$_3$
I **8446.8+y**, $J+19$, $\gamma_{7246.9+y}$**1199.9**$_3$
J **9068.0+y**, $J+20$, $\gamma_{7834.0+y}$**1234.0**$_3$
I **9720.6+y**, $J+21$, $\gamma_{8446.8+y}$**1273.8**$_3$
J **10375.0+y**, $J+22$, $\gamma_{9068.0+y}$**1307.0**$_3$
I **11069.1+y**, $J+23$, $\gamma_{9720.6+y}$**1348.5**$_3$
J **11759.4+y**, $J+24$, $\gamma_{10375.0+y}$**1384.4**$_3$
I **12496.5+y**, $J+25$, $\gamma_{11069.1+y}$**1427.3**$_3$
J **13224.2+y**, $J+26$, $\gamma_{11759.4+y}$**1464.8**$_3$
I **14004.6+y**, $J+27$, $\gamma_{12496.5+y}$**1508.1**$_3$
K **z**, $J_1\approx(12)$
K **709.0+z**, J_1+2, γ_{z}**709**$_1$
K **1447.3+z**, J_1+4, $\gamma_{709.0+z}$**738.3**$_3$
K **2261.0+z**, J_1+6, $\gamma_{1447.3+z}$**813.7**$_3$
K **3159.4+z**, J_1+8, $\gamma_{2261.0+z}$**898.4**$_3$
K **4149.3+z**, J_1+10, $\gamma_{3159.4+z}$**989.9**$_3$
K **5227.9+z**, J_1+12, $\gamma_{4149.3+z}$**1078.6**$_3$
K **6395.7+z**, J_1+14, $\gamma_{5227.9+z}$**1167.8**$_3$
K **7651.9+z**, J_1+16, $\gamma_{6395.7+z}$**1256.2**$_3$
K **8995.2+z**, J_1+18, $\gamma_{7651.9+z}$**1343.3**$_3$
K **10420.2+z**, J_1+20, $\gamma_{8995.2+z}$**1425.0**$_{10}$
K **11947.2+z**, J_1+22, $\gamma_{10420.2+z}$**1527**$_1$
L **u**, $J_2\approx(16)$
L **736.0+u**, J_2+2, γ_{u}**736**$_1$
L **1541.0+u**, J_2+4, $\gamma_{736.0+u}$**805.0**$_2$
L **2410.6+u**, J_2+6, $\gamma_{1541.0+u}$**869.6**$_2$
L **3291.6+u**, J_2+8, $\gamma_{2410.6+u}$**881.0**$_5$
L **4210.0+u**, J_2+10, $\gamma_{3291.6+u}$**918.4**$_5$
L **5207.5+u**, J_2+12, $\gamma_{4210.0+u}$**997.5**$_5$
L **6282.8+u**, J_2+14, $\gamma_{5207.5+u}$**1075.3**$_5$
L **7427.1+u**, J_2+16, $\gamma_{6282.8+u}$**1144.3**$_5$
L **8628.5+u**, J_2+18, $\gamma_{7427.1+u}$**1201.4**$_{10}$
L **9884.3+u**, J_2+20, $\gamma_{8628.5+u}$**1255.8**$_{10}$
L **11207.9+u**, J_2+22, $\gamma_{9884.3+u}$**1323.6**$_{10}$
L **12617+u**, J_2+24, $\gamma_{11207.9+u}$**1408.9**$_{10}$
L **14125+u**, J_2+26, $\gamma_{12617+u}$**1508.0**$_{10}$
L **15734+u**, J_2+28, $\gamma_{14125+u}$**1609**$_1$



$^{132}_{59}Pr_{73}$

$^{133}_{59}\mathrm{Pr}_{74}$

S_n: 10790 $_{SY}$, S_p: 2900 $_{SY}$

Nuclear Bands

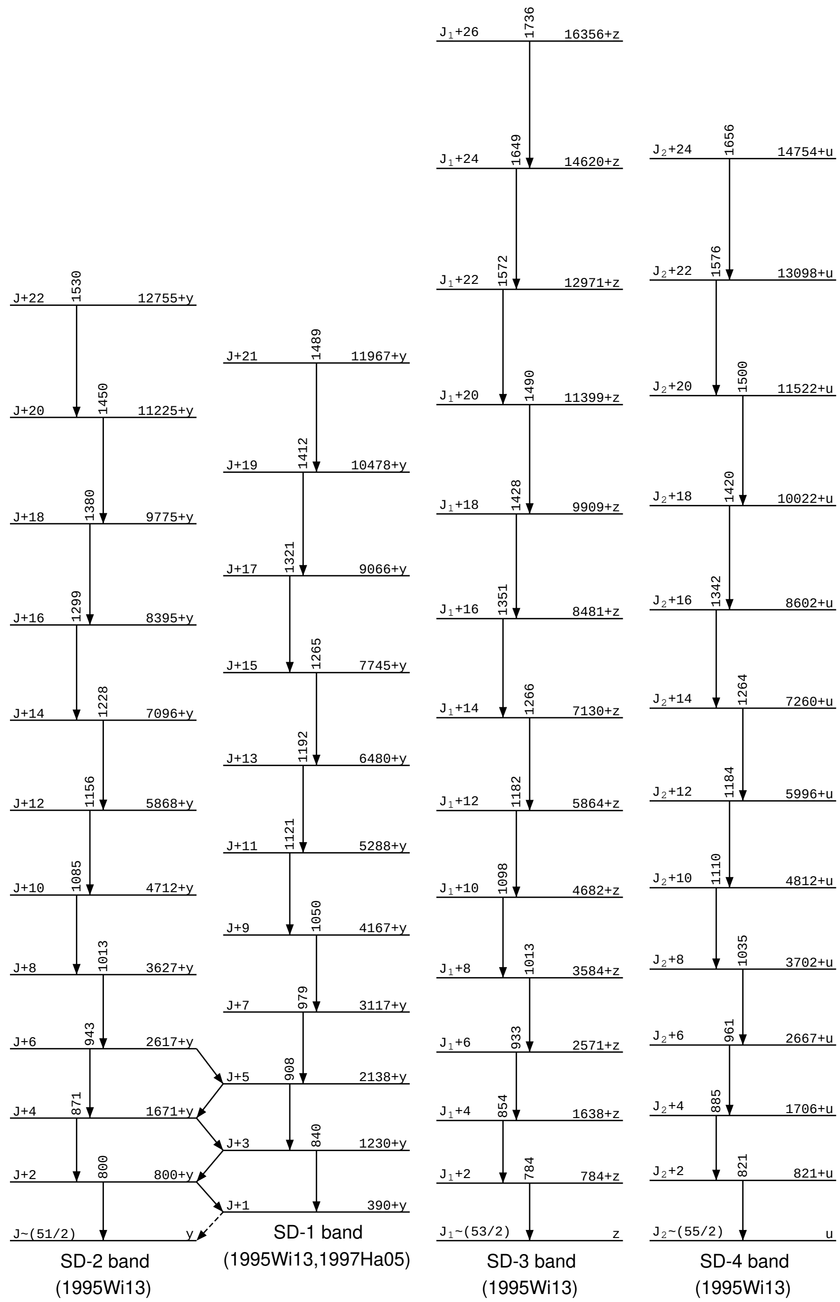
- A π7/2[413], α=+1/2
- B π7/2[413], α=-1/2
- C $\pi h_{11/2}$ yrast band
- D Band based on (23/2-)
- E Band structure
- F Band structure
- G SD-1 band (1995Wi13,1997Ha05)
- H SD-2 band (1995Wi13)
- I SD-3 band (1995Wi13)
- J SD-4 band (1995Wi13)

Levels and γ-ray branchings:

0, $(3/2^+)$, *6.5$_3$ min*, %ε+%β^+=100
A **61.69**$_7$, $(5/2^+)$, $\gamma_{\mathbf{0}}$**61.7**$_1$(100) M1
166.71$_6$, $(3/2^+,5/2^+,7/2^+)$, $\gamma_{\mathbf{61.69}}$**105.1**$_2$(100$_{16}$) M1+E2 $\delta=0.6_2$, $\gamma_{\mathbf{0}}$**166.7**$_1$(11$_2$)
C **192.05**$_{14}$, $(11/2^-)$, *1.1$_2$ s*, %IT=100 , $\gamma_{\mathbf{61.69}}$**130.4**$_2$(100) E3
B **225.87**$_8$, $(7/2^+)$, $\gamma_{\mathbf{166.71}}$**59.1**$_3$(1.7$_4$)(?), $\gamma_{\mathbf{61.69}}$**164.2**$_1$(100) M1(+E2) $\delta<0.35$, $\gamma_{\mathbf{0}}$**225.9**$_3$(19$_4$)
295.63$_{10}$, $(7/2^-)$, $\gamma_{\mathbf{192.05}}$**103.6**$_2$(100$_{20}$) E2, $\gamma_{\mathbf{61.69}}$**233.9**$_1$(100$_{20}$) E1
402.79$_{10}$, $(1/2^+,3/2^+,5/2^+)$, $\gamma_{\mathbf{61.69}}$**341.0**$_3$(3$_1$), $\gamma_{\mathbf{0}}$**402.8**$_1$(100) M1
428.61$_8$, $(3/2^+,5/2^+,7/2^+)$, $\gamma_{\mathbf{225.87}}$**202.7**$_1$(7$_1$), $\gamma_{\mathbf{166.71}}$**261.9**$_2$(16$_3$), $\gamma_{\mathbf{61.69}}$**367.0**$_2$(100$_{14}$) M1(+E2), $\gamma_{\mathbf{0}}$**428.6**$_4$(45$_6$)
A **475.81**$_{10}$, $(9/2^+)$, $\gamma_{\mathbf{225.87}}$**250.0**$_2$(45$_7$) M1+(E2), $\gamma_{\mathbf{61.69}}$**414.3**$_2$(100$_{10}$)
488.29$_{10}$, $(3/2^+,5/2^+,7/2^+)$, $\gamma_{\mathbf{225.87}}$**262.5**$_2$(39$_8$), $\gamma_{\mathbf{166.71}}$**321.2**$_3$(10$_2$), $\gamma_{\mathbf{61.69}}$**426.6**$_4$(100$_{15}$), $\gamma_{\mathbf{0}}$**488.3**$_2$(47$_9$)
C **502.35**$_{21}$, $(15/2^-)$, *44.5$_{27}$ ps*, $\gamma_{\mathbf{192.05}}$**310.3**$_2$(100) E2
551.39$_{14}$, $\gamma_{\mathbf{295.63}}$**255.7**$_2$(29$_4$), $\gamma_{\mathbf{192.05}}$**359.1**$_4$(100$_{14}$)
586.32$_{11}$, $^+$, $\gamma_{\mathbf{166.71}}$**419.6**$_1$(100$_{10}$) M1+E2, $\gamma_{\mathbf{61.69}}$**524.7**$_3$(62$_{12}$), $\gamma_{\mathbf{0}}$**586.4**$_4$(34$_{17}$)
619.09$_9$, $(5/2^+,7/2^+,9/2^+)$, $\gamma_{\mathbf{475.81}}$**143.2**$_4$(8$_2$), $\gamma_{\mathbf{428.61}}$**190.5**$_2$(15$_3$), $\gamma_{\mathbf{225.87}}$**393.3**$_2$(63$_{13}$) M1(+E2), $\gamma_{\mathbf{166.71}}$**452.4**$_1$(100$_{13}$) E2(+M1), $\gamma_{\mathbf{61.69}}$**557.4**$_3$(35$_{53}$)
639.06$_{11}$, $\gamma_{\mathbf{166.71}}$**472.1**$_3$(38$_{14}$), $\gamma_{\mathbf{61.69}}$**577.4**$_1$(100$_{19}$), $\gamma_{\mathbf{0}}$**639.1**$_4$(52$_{14}$)
656.4$_4$, $\gamma_{\mathbf{295.63}}$**360.8**$_3$(100)
679.20$_{19}$, $\gamma_{\mathbf{295.63}}$**383.5**$_2$(100)
B **702.47**$_{10}$, $(11/2^+)$, $\gamma_{\mathbf{475.81}}$**226.6**$_3$(26$_5$), $\gamma_{\mathbf{225.87}}$**476.6**$_1$(100$_{13}$) E2(+M1)
744.01$_8$, $\gamma_{\mathbf{166.71}}$**577.4**$_1$(38$_{12}$), $\gamma_{\mathbf{61.69}}$**682.3**$_2$(36$_6$), $\gamma_{\mathbf{0}}$**743.9**$_1$(100$_{10}$)
753.08$_{10}$, $\gamma_{\mathbf{488.29}}$**264.8**$_2$(18$_3$), $\gamma_{\mathbf{225.87}}$**527.2**$_2$(65$_{13}$), $\gamma_{\mathbf{166.71}}$**586.3**$_3$(16$_3$), $\gamma_{\mathbf{61.69}}$**691.4**$_2$(37$_7$), $\gamma_{\mathbf{0}}$**753.1**$_2$(100$_{17}$)
791.0$_3$, $(13/2^-)$, $\gamma_{\mathbf{502.35}}$**289.3**$_{10}$(37$_{12}$), $\gamma_{\mathbf{192.05}}$**598.9**$_3$(100$_{12}$)
859.7$_4$, $\gamma_{\mathbf{295.63}}$**564.1**$_3$(100)
862.96$_{11}$, $\gamma_{\mathbf{488.29}}$**374.4**$_3$(20$_5$), $\gamma_{\mathbf{475.81}}$**387.4**$_2$(24$_5$), $\gamma_{\mathbf{225.87}}$**637.1**$_1$(100$_{20}$), $\gamma_{\mathbf{166.71}}$**696.1**$_3$(56$_{11}$), $\gamma_{\mathbf{61.69}}$**801.0**$_3$(76$_{14}$)
872.17$_{12}$, $\gamma_{\mathbf{488.29}}$**383.9**$_4$(39$_7$), $\gamma_{\mathbf{475.81}}$**396.3**$_2$(72$_{14}$), $\gamma_{\mathbf{428.61}}$**443.9**$_4$(18$_4$), $\gamma_{\mathbf{225.87}}$**646.3**$_3$(72$_{14}$), $\gamma_{\mathbf{61.69}}$**810.5**$_5$(61$_{10}$), $\gamma_{\mathbf{0}}$**872.2**$_2$(100$_{20}$)
898.82$_{17}$, $\gamma_{\mathbf{744.01}}$**154.6**$_4$(26$_8$), $\gamma_{\mathbf{402.79}}$**496.1**$_4$(8$_8$), $\gamma_{\mathbf{166.71}}$**732.1**$_3$(18$_8$), $\gamma_{\mathbf{61.69}}$**836.9**$_4$(26$_{11}$), $\gamma_{\mathbf{0}}$**899.2**$_4$(100$_{11}$)
903.61$_{14}$, $\gamma_{\mathbf{475.81}}$**428.1**$_5$(97$_{22}$), $\gamma_{\mathbf{428.61}}$**475.0**$_2$(63$_{16}$), $\gamma_{\mathbf{225.87}}$**677.8**$_4$(100$_{16}$), $\gamma_{\mathbf{166.71}}$**736.7**$_3$(78$_{19}$), $\gamma_{\mathbf{61.69}}$**841.9**$_4$(53$_{16}$), $\gamma_{\mathbf{0}}$**903.7**$_4$(44$_{16}$)
910.97$_{18}$, $\gamma_{\mathbf{679.20}}$**231.7**$_2$(27$_8$), $\gamma_{\mathbf{551.39}}$**359.4**$_4$(100$_{20}$), $\gamma_{\mathbf{295.63}}$**615.2**$_6$(86$_{18}$)
916.53$_{22}$, $\gamma_{\mathbf{551.39}}$**365.1**$_2$(100$_{25}$), $\gamma_{\mathbf{192.05}}$**724.6**$_4$(70$_{35}$)
938.3$_8$, $\gamma_{\mathbf{502.35}}$**436**
939.2$_4$, $\gamma_{\mathbf{166.71}}$**772.5**$_4$(65$_{18}$), $\gamma_{\mathbf{61.69}}$**877.6**$_5$(100$_{21}$)
977.3$_3$, $\gamma_{\mathbf{166.71}}$**810.5**$_5$(43$_{11}$), $\gamma_{\mathbf{0}}$**977.3**$_3$(100$_{20}$)
984.44$_{11}$, $\gamma_{\mathbf{488.29}}$**496.3**$_4$(35$_7$), $\gamma_{\mathbf{475.81}}$**508.6**$_4$(100$_{36}$), $\gamma_{\mathbf{428.61}}$**555.7**$_2$(27$_5$), $\gamma_{\mathbf{225.87}}$**758.3**$_4$(18$_5$), $\gamma_{\mathbf{166.71}}$**818.1**$_3$(38$_7$), $\gamma_{\mathbf{61.69}}$**922.8**$_2$(66$_{13}$)
1001.58$_{21}$, $\gamma_{\mathbf{551.39}}$**450.3**$_2$(100$_{20}$)(?), $\gamma_{\mathbf{475.81}}$**525.7**$_3$(51$_{11}$), $\gamma_{\mathbf{428.61}}$**572.9**$_4$(48$_{10}$), $\gamma_{\mathbf{61.69}}$**939.9**$_4$(52$_0$)
1027.29$_{12}$, $\gamma_{\mathbf{475.81}}$**551.5**$_2$(63$_{13}$), $\gamma_{\mathbf{428.61}}$**598.7**$_1$(100$_{15}$)
1041.99$_{22}$, $\gamma_{\mathbf{402.79}}$**639.2**$_2$(100)
C **1053.9**$_3$, $(19/2^-)$, *2.37$_7$ ps*, $\gamma_{\mathbf{502.35}}$**551.6**$_3$(100) E2
1055.67$_{10}$, $\gamma_{\mathbf{702.47}}$**353.3**$_2$(14$_3$), $\gamma_{\mathbf{619.09}}$**436.4**$_2$(36$_6$), $\gamma_{\mathbf{475.81}}$**580.0**$_4$(36$_6$), $\gamma_{\mathbf{428.61}}$**627.1**$_1$(100$_{10}$), $\gamma_{\mathbf{225.87}}$**829.7**$_3$(15$_5$), $\gamma_{\mathbf{166.71}}$**888.9**$_2$(49$_{10}$), $\gamma_{\mathbf{61.69}}$**993.5**$_6$(27$_6$)
1058.42$_{15}$, $\gamma_{\mathbf{619.09}}$**439.0**$_2$(43$_7$)(?), $\gamma_{\mathbf{488.29}}$**569.9**$_4$(90$_{18}$)(?), $\gamma_{\mathbf{428.61}}$**629.6**$_4$(57$_{12}$)(?), $\gamma_{\mathbf{225.87}}$**832.5**$_5$(45$_{10}$), $\gamma_{\mathbf{166.71}}$**891.8**$_2$(100$_{18}$)
A **1081.43**$_{22}$, $(13/2^+)$, $\gamma_{\mathbf{475.81}}$**605.6**$_2$(100)
1129.9, $\gamma_{\mathbf{551.39}}$**578.4**(71$_{36}$), $\gamma_{\mathbf{166.71}}$**963.4**(100$_{36}$)
1167.12$_{14}$, $\gamma_{\mathbf{166.71}}$**1000.3**$_2$(86$_{16}$), $\gamma_{\mathbf{61.69}}$**1105.4**$_2$(100$_{19}$)
1171.92$_{24}$, $(15/2)$, $\gamma_{\mathbf{791.0}}$**381.0**$_2$(100$_{14}$), $\gamma_{\mathbf{502.35}}$**669.5**$_2$(43$_{14}$), $\gamma_{\mathbf{192.05}}$**980**
1188.4$_4$, $\gamma_{\mathbf{619.09}}$**569.3**$_4$(64$_{21}$), $\gamma_{\mathbf{475.81}}$**712.5**$_8$(100$_{43}$)
1220.4$_5$, $\gamma_{\mathbf{488.29}}$**732.1**$_4$(100)
1231.52$_{25}$, $\gamma_{\mathbf{428.61}}$**802.8**$_4$(74$_{18}$), $\gamma_{\mathbf{61.69}}$**1169.9**$_3$(100$_{21}$)
1255.88$_{10}$, $\gamma_{\mathbf{753.08}}$**502.81**$_3$(100$_{20}$), $\gamma_{\mathbf{428.61}}$**826.8**$_3$(95$_{25}$)
1265.0$_3$, $\gamma_{\mathbf{502.35}}$**762.7**$_2$(100)
1284.1$_4$, $\gamma_{\mathbf{475.81}}$**808.3**$_5$(100$_{24}$), $\gamma_{\mathbf{428.61}}$**855.5**$_4$(59$_{17}$)
1295.7$_5$, $\gamma_{\mathbf{475.81}}$**819.9**$_4$(100)
1297.3$_3$, $\gamma_{\mathbf{753.08}}$**544.2**$_3$(100$_{19}$), $\gamma_{\mathbf{702.47}}$**594.8**$_5$(71$_{16}$)
1308.5$_3$, $\gamma_{\mathbf{225.87}}$**1082.6**$_3$(100)
1312.7$_4$, $\gamma_{\mathbf{475.81}}$**836.9**$_3$(100)
1325.49$_{15}$, $\gamma_{\mathbf{753.08}}$**572.3**$_2$(53$_{13}$), $\gamma_{\mathbf{488.29}}$**837.2**$_3$(91$_{22}$), $\gamma_{\mathbf{475.81}}$**850.1**$_6$(100$_{19}$), $\gamma_{\mathbf{0}}$**1325.7**$_3$(91$_{19}$)
B **1325.60**$_{21}$, $(15/2^+)$, $\gamma_{\mathbf{702.47}}$**623.1**$_2$(100) E2
1366.5$_4$, $\gamma_{\mathbf{428.61}}$**937.9**$_4$(100)
1428.2$_3$, $\gamma_{\mathbf{225.87}}$**1202.3**$_3$(100)
1431.3$_4$, $\gamma_{\mathbf{428.61}}$**1002.7**$_4$(100)
1648.3$_4$, $\gamma_{\mathbf{1171.92}}$**476.3**$_3$(100$_{10}$), γ**584**(?), $\gamma_{\mathbf{938.3}}$**710**
1656.76$_{20}$, $\gamma_{\mathbf{862.96}}$**793.7**$_6$(77$_{23}$), $\gamma_{\mathbf{702.47}}$**954.5**$_9$(23$_{13}$), $\gamma_{\mathbf{551.39}}$**1105.4**$_2$(77$_{23}$), $\gamma_{\mathbf{428.61}}$**1228.0**$_4$(100$_{23}$)
1671.1$_5$, $\gamma_{\mathbf{1265.0}}$**406**, $\gamma_{\mathbf{1171.92}}$**499**, $\gamma_{\mathbf{1053.9}}$**617**, $\gamma_{\mathbf{502.35}}$**1169**
1706.05$_{16}$, $\gamma_{\mathbf{1058.42}}$**647.7**$_3$(41$_{10}$), $\gamma_{\mathbf{984.44}}$**721.3**$_4$(35$_7$), $\gamma_{\mathbf{872.17}}$**833.8**$_5$(100$_{21}$), $\gamma_{\mathbf{702.47}}$**1004.1**$_7$(15$_5$), $\gamma_{\mathbf{428.61}}$**1277.4**$_9$(24$_6$), $\gamma_{\mathbf{295.63}}$**1410.4**$_2$(51$_{10}$), $\gamma_{\mathbf{192.05}}$**1514.1**$_4$(41$_{10}$)
1723.07$_{11}$, $\gamma_{\mathbf{1058.42}}$**664.7**$_2$(36$_2$), $\gamma_{\mathbf{1055.67}}$**667.4**$_2$(100$_{20}$), $\gamma_{\mathbf{984.44}}$**738.7**$_2$(63$_{95}$), $\gamma_{\mathbf{753.08}}$**969.8**$_3$(19$_5$), $\gamma_{\mathbf{551.39}}$**1171.6**$_2$(20$_5$), $\gamma_{\mathbf{428.61}}$**1294.5**$_2$(89$_{19}$), $\gamma_{\mathbf{225.87}}$**1497.2**$_4$(39$_8$)
C **1762.9**$_3$, $(3/2^-)$, $\gamma_{\mathbf{1053.9}}$**709.0**$_2$(100) E2
1785.27$_{12}$, $\gamma_{\mathbf{1167.12}}$**617.8**$_4$(37$_8$), $\gamma_{\mathbf{1027.29}}$**758.3**$_4$(31$_9$), $\gamma_{\mathbf{1001.58}}$**783.4**$_5$(68$_{12}$), $\gamma_{\mathbf{984.44}}$**801.0**$_3$(100$_{18}$), $\gamma_{\mathbf{702.47}}$**1082.6**$_2$(45$_9$), $\gamma_{\mathbf{619.09}}$**1166.5**$_2$(75$_{15}$), $\gamma_{\mathbf{551.39}}$**1233.8**$_9$(14$_6$), $\gamma_{\mathbf{428.61}}$**1356.4**$_3$(31$_8$), $\gamma_{\mathbf{225.87}}$**1559.4**$_2$(89$_{18}$), $\gamma_{\mathbf{61.69}}$**1723.2**$_5$(66$_{15}$)
A **1788.7**$_5$, $(17/2^+)$, $\gamma_{\mathbf{1081.43}}$**707.2**$_4$(100)
1796.58$_{18}$, $\gamma_{\mathbf{1167.12}}$**629.4**$_2$(61$_{13}$), $\gamma_{\mathbf{1055.67}}$**740.8**$_2$(61$_{14}$)(?), $\gamma_{\mathbf{872.17}}$**924.6**$_3$(75$_{14}$), $\gamma_{\mathbf{428.61}}$**1368.1**$_4$(34$_9$)(?), $\gamma_{\mathbf{225.87}}$**1570.6**$_4$(100$_{21}$)
1828.4$_4$(?), $\gamma_{\mathbf{1001.58}}$**826.8**$_4$(100)
1950.1$_{11}$, $\gamma_{\mathbf{1053.9}}$**896**(?)
B **1992.7**$_3$, $(19/2^+)$, $\gamma_{\mathbf{1325.60}}$**667.3**$_3$(100$_{14}$), $\gamma_{\mathbf{1053.9}}$**938.5**$_4$
2033.2$_4$, $\gamma_{\mathbf{1265.0}}$**768.2**$_2$(100)
B **2045.6**$_3$, $(19/2^+)$, $\gamma_{\mathbf{1325.60}}$**719.9**$_3$(100$_{17}$), $\gamma_{\mathbf{1053.9}}$**992**
2118.32$_{14}$, $\gamma_{\mathbf{1055.67}}$**1062.6**$_4$(59$_{11}$), $\gamma_{\mathbf{910.97}}$**1207.2**$_2$(12$_5$), $\gamma_{\mathbf{702.47}}$**1416.0**$_5$(16$_7$), $\gamma_{\mathbf{475.81}}$**1642.5**$_2$(100$_{19}$), $\gamma_{\mathbf{428.61}}$**1689.8**$_2$(63$_{12}$), $\gamma_{\mathbf{225.87}}$**1892.5**$_7$(23$_8$)
2179.9$_5$, $\gamma_{\mathbf{1058.42}}$**1121.5**$_4$(100)
D **2203.4**$_4$, $(23/2^-)$, $\gamma_{\mathbf{2033.2}}$**170.2**$_3$, $\gamma_{\mathbf{1648.3}}$**555.0**$_3$(100$_9$), $\gamma_{\mathbf{1053.9}}$**1149.6**$_7$(36$_9$)
2331.2$_6$, γ**400**(?), $\gamma_{\mathbf{1762.9}}$**568**, $\gamma_{\mathbf{1671.1}}$**660**, $\gamma_{\mathbf{1053.9}}$**1277**
D **2352.6**$_4$, $\gamma_{\mathbf{2203.4}}$**149.2**$_2$(100)
A **2356.5**$_5$, $(21/2^+)$, $\gamma_{\mathbf{1788.7}}$**567.3**(50$_{12}$), $\gamma_{\mathbf{1053.9}}$**1303.0**$_5$(100$_{12}$)
B **2445.3**$_3$, $(23/2^+)$, $\gamma_{\mathbf{2045.6}}$**399.7**$_2$(40$_{10}$), $\gamma_{\mathbf{1992.7}}$**452.4**$_4$(70$_{10}$), $\gamma_{\mathbf{1762.9}}$**682.5**$_3$(100$_{10}$)
2473.4$_{11}$(?), $\gamma_{\mathbf{2033.2}}$**440**(?)
2554.7$_8$, $\gamma_{\mathbf{166.71}}$**2388.0**$_8$(100)
C **2575.5**$_4$, $(27/2^-)$, $\gamma_{\mathbf{1762.9}}$**812.6**$_2$(100) E2
D **2598.5**$_5$, $\gamma_{\mathbf{2352.6}}$**245.9**$_3$(100)
2674$_8$, $\gamma_{\mathbf{1788.7}}$**885**$_8$
B **2692.3**$_8$, $\gamma_{\mathbf{2203.4}}$**489**(?), $\gamma_{\mathbf{1762.9}}$**929**(?)
A **2744.9**$_5$, $(25/2^+)$, $\gamma_{\mathbf{2356.5}}$**388.4**$_2$(100$_{10}$), $\gamma_{\mathbf{1762.9}}$**981.8**$_5$(25$_6$)
D **2925.5**$_6$, $\gamma_{\mathbf{2598.5}}$**327.0**$_3$(100)
B **2933.4**$_4$, $(27/2^+)$, $\gamma_{\mathbf{2445.3}}$**488.1**$_3$(100) E2
3078.8$_8$, $\gamma_{\mathbf{2575.5}}$**504**, $\gamma_{\mathbf{2331.2}}$**747**
A **3274.7**$_6$, $(29/2^+)$, $\gamma_{\mathbf{2744.9}}$**529.8**$_3$(100) E2
D **3320.2**$_6$, $\gamma_{\mathbf{2925.5}}$**394.7**$_2$(100)
E **3371.1**$_7$, $\gamma_{\mathbf{2352.6}}$**1019**$_1$(100)
C **3439.6**$_9$, $(31/2^-)$, $\gamma_{\mathbf{2575.5}}$**864**(100)
E **3536.4**$_7$, $\gamma_{\mathbf{3371.1}}$**165.4**$_3$(100$_{14}$), $\gamma_{\mathbf{2598.5}}$**937.8**$_5$
B **3565.0**$_5$, $(31/2^+)$, $\gamma_{\mathbf{2933.4}}$**631.6**$_3$(100) E2
D **3768.0**$_{12}$, $\gamma_{\mathbf{3320.2}}$**447.8**(100)
E **3787.6**$_7$, $\gamma_{\mathbf{3536.4}}$**251.2**$_2$(100)

3820.7$_{10}$, $\gamma_{\mathbf{3439.6}}$**381**, $\gamma_{\mathbf{3078.8}}$**742**
A **3973.0**$_{6}$, $(33/2^{+})$, $\gamma_{\mathbf{3274.7}}$**698.3**$_{2}$(100)
E **4124.4**$_{7}$, $\gamma_{\mathbf{3787.6}}$**336.8**$_{2}$(100)
4264.6$_{16}$(?), $\gamma_{\mathbf{3768.0}}$**496.4**$_{10}$(?)
C **4305.6**$_{14}$, $(35/2^{-})$, $\gamma_{\mathbf{3439.6}}$**866**(100)
B **4352.1**$_{7}$, $(35/2)^{+}$, $\gamma_{\mathbf{3565.0}}$**787.1**$_{4}$(100)
E **4533.7**$_{8}$, $\gamma_{\mathbf{4124.4}}$**409.3**$_{2}$
A **4805.6**$_{6}$, $(37/2^{+})$, $\gamma_{\mathbf{3973.0}}$**832.6**$_{2}$
E **5005.4**$_{8}$, $\gamma_{\mathbf{4533.7}}$**471.7**$_{3}$(100)
C **5173.6**$_{17}$, $(39/2^{-})$, $\gamma_{\mathbf{4305.6}}$**868**(100)
B **5260.7**$_{9}$, $(39/2^{+})$, $\gamma_{\mathbf{4352.1}}$**908.6**$_{5}$
A **5744.8**$_{7}$, $(41/2^{+})$, $\gamma_{\mathbf{4805.6}}$**939.2**$_{3}$
C **6095.4**$_{17}$, $(43/2^{-})$, $\gamma_{\mathbf{5173.6}}$**921.8**$_{2}$(100)
B **6264.7**$_{13}$, $(43/2^{+})$, $\gamma_{\mathbf{5260.7}}$**1004**$_{1}$(100)
A **6765.0**$_{9}$, $(45/2^{+})$, $\gamma_{\mathbf{5744.8}}$**1020.2**$_{5}$
C **7086.1**$_{18}$(?), $\gamma_{\mathbf{6095.4}}$**990.5**$_{4}$(?)
B **7280.9**$_{17}$(?), $\gamma_{\mathbf{6264.7}}$**1016**$_{1}$(?)
F **x**
F **x+196.1**$_{8}$, γ**196.1**$_{8}$
F **x+440.1**$_{9}$, γ**244.0**$_{3}$(100)
F **x+736.7**$_{10}$, γ**296.6**$_{4}$(100)
F **x+1087.6**$_{10}$, γ**350.9**$_{3}$(100)
F **x+1491.3**$_{11}$, γ**403.7**$_{3}$(100)
F **x+1945.7**$_{12}$, γ**454.4**$_{5}$(100)
F **x+2444.1**$_{15}$(?), γ**498.4**$_{10}$(?)
H **y**, $J\approx(51/2)$
G **390+y**, $J+1$, $\gamma_{\mathbf{y}}$**390**(?)
H **800+y**, $J+2$, $\gamma_{\mathbf{390+y}}$**410**, $\gamma_{\mathbf{y}}$**800**(0.15_{10})
G **1230+y**, $J+3$, $\gamma_{\mathbf{800+y}}$**430**(0.15_{3}), $\gamma_{\mathbf{390+y}}$**840**(0.75_{5})
H **1671+y**, $J+4$, $\gamma_{\mathbf{1230+y}}$**441**(0.16_{5}), $\gamma_{\mathbf{800+y}}$**871**(0.95_{5})
G **2138+y**, $J+5$, $\gamma_{\mathbf{1671+y}}$**467**, $\gamma_{\mathbf{1230+y}}$**908**(0.88_{5})
H **2617+y**, $J+6$, $\gamma_{\mathbf{2138+y}}$**476**(0.19_{4}), $\gamma_{\mathbf{1671+y}}$**943**(1.00_{5})
G **3117+y**, $J+7$, $\gamma_{\mathbf{2138+y}}$**979**(0.95_{5})
H **3627+y**, $J+8$, $\gamma_{\mathbf{2617+y}}$**1013**(0.95_{5})
G **4167+y**, $J+9$, $\gamma_{\mathbf{3117+y}}$**1050**(0.90_{5})
H **4712+y**, $J+10$, $\gamma_{\mathbf{3627+y}}$**1085**(0.85_{5})
G **5288+y**, $J+11$, $\gamma_{\mathbf{4167+y}}$**1121**(0.80_{5})
H **5868+y**, $J+12$, $\gamma_{\mathbf{4712+y}}$**1156**(0.80_{5})
G **6480+y**, $J+13$, $\gamma_{\mathbf{5288+y}}$**1192**(0.75_{5})
H **7096+y**, $J+14$, $\gamma_{\mathbf{5868+y}}$**1228**(0.65_{5})
G **7745+y**, $J+15$, $\gamma_{\mathbf{6480+y}}$**1265**(0.55_{5})
H **8395+y**, $J+16$, $\gamma_{\mathbf{7096+y}}$**1299**
G **9066+y**, $J+17$, $\gamma_{\mathbf{7745+y}}$**1321**(0.40_{5})
H **9775+y**, $J+18$, $\gamma_{\mathbf{8395+y}}$**1380**(0.34_{5})
G **10478+y**, $J+19$, $\gamma_{\mathbf{9066+y}}$**1412**(0.25_{5})
H **11225+y**, $J+20$, $\gamma_{\mathbf{9775+y}}$**1450**(0.18_{5})
G **11967+y**, $J+21$, $\gamma_{\mathbf{10478+y}}$**1489**$(0.20_{5})$
H **12755+y**, $J+22$, $\gamma_{\mathbf{11225+y}}$**1530**$(0.23_{5})$
I **z**, $J_1\approx(53/2)$
I **784+z**, J_1+2, $\gamma_{\mathbf{z}}$**784**(0.35_{5})
I **1638+z**, J_1+4, $\gamma_{\mathbf{784+z}}$**854**(0.50_{5})
I **2571+z**, J_1+6, $\gamma_{\mathbf{1638+z}}$**933**(0.50_{5})
I **3584+z**, J_1+8, $\gamma_{\mathbf{2571+z}}$**1013**(0.55_{5})
I **4682+z**, J_1+10, $\gamma_{\mathbf{3584+z}}$**1098**(0.50_{5})
I **5864+z**, J_1+12, $\gamma_{\mathbf{4682+z}}$**1182**(0.45_{5})
I **7130+z**, J_1+14, $\gamma_{\mathbf{5864+z}}$**1266**(0.52_{5})
I **8481+z**, J_1+16, $\gamma_{\mathbf{7130+z}}$**1351**(0.40_{5})
I **9909+z**, J_1+18, $\gamma_{\mathbf{8481+z}}$**1428**(0.37_{5})
I **11399+z**, J_1+20, $\gamma_{\mathbf{9909+z}}$**1490**(0.30_{5})
I **12971+z**, J_1+22, $\gamma_{\mathbf{11399+z}}$**1572**$(0.28_{5})$
I **14620+z**, J_1+24, $\gamma_{\mathbf{12971+z}}$**1649**$(0.23_{5})$
I **16356+z**, J_1+26, $\gamma_{\mathbf{14620+z}}$**1736**$(0.13_{5})$
J **u**, $J_2\approx(55/2)$
J **821+u**, J_2+2, $\gamma_{\mathbf{u}}$**821**(0.17_{5})
J **1706+u**, J_2+4, $\gamma_{\mathbf{821+u}}$**885**(0.20_{5})
J **2667+u**, J_2+6, $\gamma_{\mathbf{1706+u}}$**961**(0.20_{5})
J **3702+u**, J_2+8, $\gamma_{\mathbf{2667+u}}$**1035**(0.22_{5})
J **4812+u**, J_2+10, $\gamma_{\mathbf{3702+u}}$**1110**(0.22_{5})
J **5996+u**, J_2+12, $\gamma_{\mathbf{4812+u}}$**1184**(0.20_{5})
J **7260+u**, J_2+14, $\gamma_{\mathbf{5996+u}}$**1264**(0.20_{5})
J **8602+u**, J_2+16, $\gamma_{\mathbf{7260+u}}$**1342**(0.20_{5})
J **10022+u**, J_2+18, $\gamma_{\mathbf{8602+u}}$**1420**(0.13_{5})
J **11522+u**, J_2+20, $\gamma_{\mathbf{10022+u}}$**1500**$(0.13_{5})$
J **13098+u**, J_2+22, $\gamma_{\mathbf{11522+u}}$**1576**$(0.11_{5})$
J **14754+u**, J_2+24, $\gamma_{\mathbf{13098+u}}$**1656**$(0.08_{5})$

See Nucl. Phys. **A690***, 341 (2001) for additional data.*



$^{133}_{59}\mathrm{Pr}_{74}$

$^{132}_{60}Nd_{72}$

S_n: 11780 *SY*, S_p: 4440 *SY*

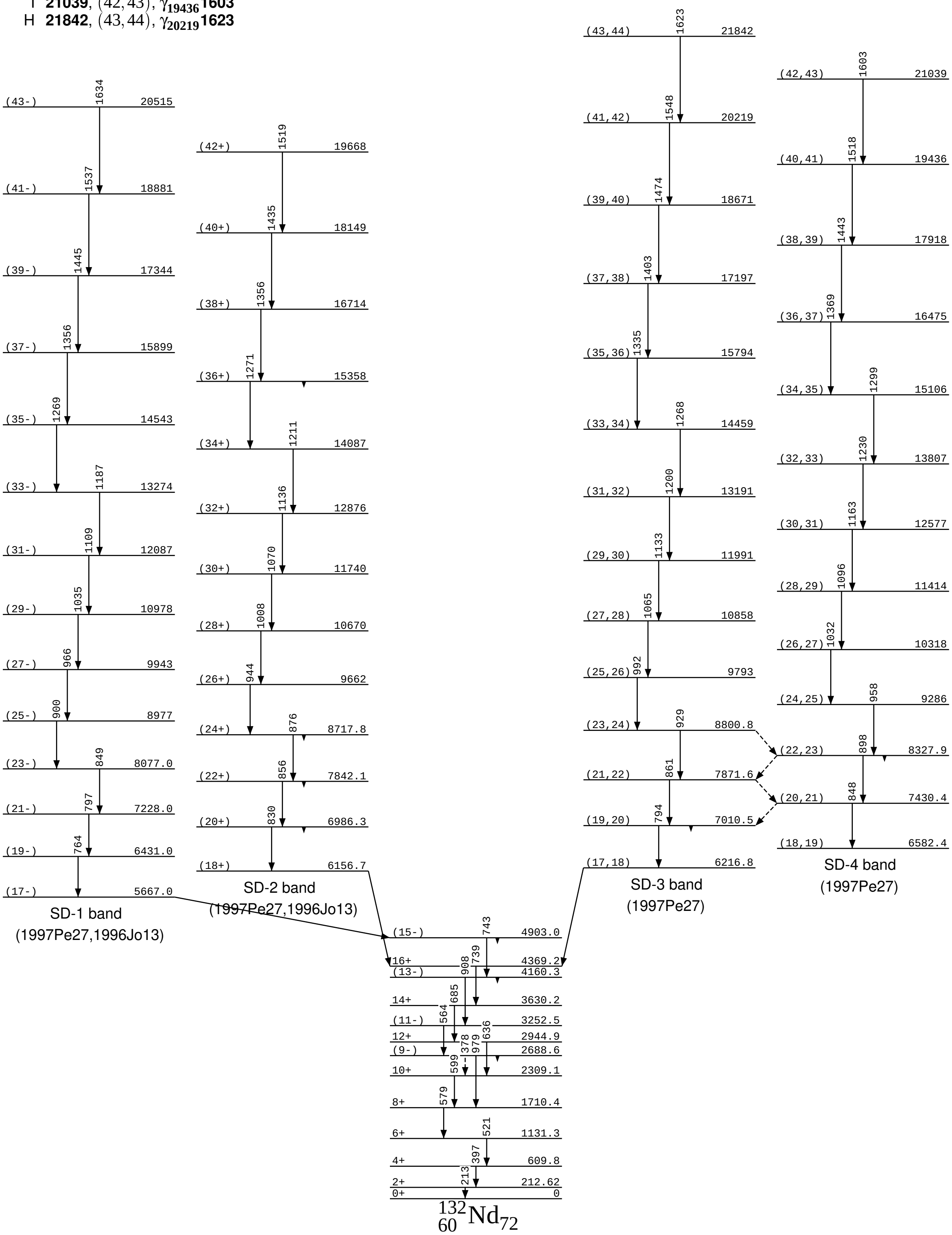
Nuclear Bands

A GS band
B γ band
C Band based on (6^-)
D Band based on (5^-)
E Band based on (10^+)
F SD-1 band (1997Pe27,1996Jo13)
G SD-2 band (1997Pe27,1996Jo13)
H SD-3 band (1997Pe27)
I SD-4 band (1997Pe27)

Levels and γ-ray branchings:

A **0**, 0^+, *1.75*$_{17}$ *min*, %ε+%β^+=100
A **212.62**$_{18}$, 2^+, *230*$_{17}$ *ps*, γ_0**212.5**$_2$(100) E2
A **609.8**$_3$, 4^+, *7.6*$_3$ *ps*, $\gamma_{212.62}$**397.2**$_2$(100) E2
B **823.22**$_{22}$, (2^+), $\gamma_{212.62}$**610.4**$_3$(100_{14}), γ_0**823.5**$_3$(93_{14})
1020.4$_8$, (4^+), $\gamma_{609.8}$**411**
B **1117.17**$_{25}$, (3^+), $\gamma_{823.22}$**294.1**$_4$(100_{50}), $\gamma_{212.62}$**904.5**$_2$(70_{10})
A **1131.3**$_4$, 6^+, *1.59*$_{14}$ *ps*, $\gamma_{609.8}$**521.4**$_2$(100) E2
B **1387.7**$_4$, (4^+), $\gamma_{823.22}$**564.5**$_3$(100)
1632.1, (6^+), $\gamma_{1131.3}$**501**, $\gamma_{1020.4}$**612**, $\gamma_{609.8}$**1023**
A **1710.4**$_4$, 8^+, *1.04*$_{14}$ *ps*, $\gamma_{1131.3}$**579.0**$_2$(100) E2
D **1882.5**, (5^-), $\gamma_{1131.3}$**751**, $\gamma_{609.8}$**1273**
2178.2, (8^+), $\gamma_{1632.1}$**547**, $\gamma_{1131.3}$**1045**(?)
D **2223.6**, (7^-), $\gamma_{1882.5}$**340.9**$_6$(4.2_5) (E2), $\gamma_{1710.4}$**512.9**$_4$(89_3) (E1), $\gamma_{1632.1}$**592**, $\gamma_{1131.3}$**1092.6**$_4$(100_9) (E1)
A **2309.1**$_5$, 10^+, *<2 ps*, $\gamma_{1710.4}$**598.7**$_2$(100) E2
C **2344.2**, (6^-), $\gamma_{1882.5}$**462**, $\gamma_{1131.3}$**1213**(100)
D **2688.6**, (9^-), $\gamma_{2309.1}$**378**(?), $\gamma_{2223.6}$**465.0**$_4$(100) (E2), $\gamma_{1710.4}$**979**
C **2695.5**, (8^-), $\gamma_{2344.2}$**351.5**$_6$(38_8), $\gamma_{2223.6}$**472**, $\gamma_{1710.4}$**984.0**$_6$(100_{15}) (E1)
2770.2(?), $\gamma_{2178.2}$**592**
E **2848.4**, (10^+), $\gamma_{2178.2}$**671**
A **2944.9**, 12^+, $\gamma_{2309.1}$**635.7**$_2$(100) E2
2959.1, (9^-), $\gamma_{2688.6}$**270**, $\gamma_{2223.6}$**736**, $\gamma_{1710.4}$**1249**
C **3106.2**, (10^-), $\gamma_{2695.5}$**410.2**$_4$(100) (E2), $\gamma_{2688.6}$**418**, $\gamma_{2309.1}$**798**
D **3252.5**, (11^-), $\gamma_{2688.6}$**564.0**$_4$(100) (E2)
E **3285.5**, (12^+), $\gamma_{2944.9}$**340**, $\gamma_{2848.4}$**438**, $\gamma_{2309.1}$**977**
3494.9, (11^-), $\gamma_{3252.5}$**242**, $\gamma_{2959.1}$**536**, $\gamma_{2688.6}$**807**
A **3630.2**, 14^+, $\gamma_{2944.9}$**685.3**$_2$(100) E2
C **3654.8**, (12^-), $\gamma_{3252.5}$**403**, $\gamma_{3106.2}$**548.4**$_4$ (E2)
E **3844.8**, (14^+), $\gamma_{3630.2}$**214**, $\gamma_{3285.5}$**560**, $\gamma_{2944.9}$**900**
D **3902.9**, (13^-), $\gamma_{3252.5}$**650.3**$_4$(100) (E2)
4160.3, (13^-), $\gamma_{3902.9}$**257**, $\gamma_{3494.9}$**666**, $\gamma_{3252.5}$**908**
C **4299.3**, (14^-), $\gamma_{3902.9}$**397**, $\gamma_{3654.8}$**644.5**$_4$ (E2)
A **4369.2**, 16^+, $\gamma_{3630.2}$**738.9**$_2$(100) E2
4376.6, (16^+), $\gamma_{3630.2}$**747**
E **4573.6**, (16^+), $\gamma_{4369.2}$**204**, $\gamma_{3844.8}$**729**, $\gamma_{3630.2}$**944**
D **4615.7**, (15^-), $\gamma_{3902.9}$**712.7**$_6$(100) (E2)
4903.0, (15^-), $\gamma_{4615.7}$**287**, $\gamma_{4160.3}$**743**
C **4990.0**, (16^-), $\gamma_{4299.3}$**690.7**$_6$(100)
A **5180.1**, 18^+, $\gamma_{4369.2}$**810.9**$_2$(100) E2
D **5363.2**, (17^-), $\gamma_{4615.7}$**747.5**$_6$(100)
E **5426.2**, (18^+), $\gamma_{5180.1}$**246**, $\gamma_{4573.6}$**853**
F **5667.0**, (17^-), $\gamma_{4903.0}$**764**
C **5723.9**, (18^-), $\gamma_{4990.0}$**733.8**$_6$(100)
A **6062.7**, 20^+, $\gamma_{5180.1}$**882.5**$_2$(100) E2
G **6156.7**, (18^+), $\gamma_{4369.2}$**1788**
D **6159.3**, (19^-), $\gamma_{5363.2}$**796.1**$_6$(100)
H **6216.8**, $(17,18)$, $\gamma_{4369.2}$**1848**
6332.0, (18^+), $\gamma_{4376.6}$**1956**
E **6374.0**, (20^+), $\gamma_{6062.7}$**311**, $\gamma_{5426.2}$**948**
F **6431.0**, (19^-), $\gamma_{5667.0}$**764**(0.89_{18})
C **6545.4**, (20^-), $\gamma_{5723.9}$**821.5**$_4$(100) (E2)
I **6582.4**, $(18,19)$
G **6986.3**, (20^+), $\gamma_{6156.7}$**830**(0.36_{15}), $\gamma_{5180.1}$**1806**
A **7006.5**, 22^+, $\gamma_{6062.7}$**943.8**$_2$(100) E2
H **7010.5**, $(19,20)$, $\gamma_{6216.8}$**794**, $\gamma_{5180.1}$**1830**
D **7047.3**, (21^-), $\gamma_{6159.3}$**888**
7064.4, (20^+), $\gamma_{6332.0}$**733**, $\gamma_{5180.1}$**1884**
F **7228.0**, (21^-), $\gamma_{6431.0}$**797**(1.00_{14})
E **7407.0**, (22^+), $\gamma_{6374.0}$**1033**(100)
I **7430.4**, $(20,21)$, $\gamma_{7010.5}$**420**(?), $\gamma_{6582.4}$**848**
C **7476.4**, (22^-), $\gamma_{6545.4}$**931.0**$_6$(100)
G **7842.1**, (22^+), $\gamma_{7064.4}$**778**, $\gamma_{6986.3}$**856**, $\gamma_{6062.7}$**1779**
H **7871.6**, $(21,22)$, $\gamma_{7430.4}$**441**(?), $\gamma_{7010.5}$**861**
A **8008.0**, 24^+, $\gamma_{7006.5}$**1001.5**$_4$(100) E2
D **8040.3**, (23^-), $\gamma_{7047.3}$**993**
F **8077.0**, (23^-), $\gamma_{7228.0}$**849**(0.96_{14})
I **8327.9**, $(22,23)$, $\gamma_{7871.6}$**456**(?), $\gamma_{7430.4}$**898**, $\gamma_{7006.5}$**1320**(?)
C **8515**, (24^-), $\gamma_{7476.4}$**1039**(100)
E **8521**, (24^+), $\gamma_{7407.0}$**1114**(100)
G **8717.8**, (24^+), $\gamma_{7842.1}$**876**(0.79_{16}), $\gamma_{7006.5}$**1711**
H **8800.8**, $(23,24)$, $\gamma_{8327.9}$**473**(?), $\gamma_{7871.6}$**929**
F **8977**, (25^-), $\gamma_{8077.0}$**900**(1.05_{14})
A **9069.5**, 26^+, $\gamma_{8008.0}$**1061.5**$_4$(100) E2
D **9140**, (25^-), $\gamma_{8040.3}$**1100**
I **9286**, $(24,25)$, $\gamma_{8327.9}$**958**
C **9652**, (26^-), γ_{8515}**1137**(100)
G **9662**, (26^+), $\gamma_{8717.8}$**944**(0.86_{15})
H **9793**, $(25,26)$, $\gamma_{8800.8}$**992**
F **9943**, (27^-), γ_{8977}**966**(0.81_{12})
A **10198**, (28^+), $\gamma_{9069.5}$**1128.3**$_6$(100)
I **10318**, $(26,27)$, γ_{9286}**1032**
D **10335.3**, (27^-), γ_{9140}**1195**
G **10670**, (28^+), γ_{9662}**1008**(0.86_{13})
H **10858**, $(27,28)$, γ_{9793}**1065**
C **10881**, (28^-), γ_{9652}**1229**
F **10978**, (29^-), γ_{9943}**1035**(0.84_{11})
A **11399.8**, (30^+), γ_{10198}**1202.0**$_6$(100)
I **11414**, $(28,29)$, γ_{10318}**1096**
D **11593**, (29^-), $\gamma_{10335.3}$**1258**
G **11740**, (30^+), γ_{10670}**1070**(0.34_{12})
H **11991**, $(29,30)$, γ_{10858}**1133**
F **12087**, (31^-), γ_{10978}**1109**(0.86_9)
C **12200**, (30^-), γ_{10881}**1319**
I **12577**, $(30,31)$, γ_{11414}**1163**
A **12681**, (32^+), $\gamma_{11399.8}$**1281**
G **12876**, (32^+), γ_{11740}**1136**(0.30_{10})
H **13191**, $(31,32)$, γ_{11991}**1200**
F **13274**, (33^-), γ_{12087}**1187**(0.56_9)
I **13807**, $(32,33)$, γ_{12577}**1230**
A **14039**, (34^+), γ_{12681}**1358**
G **14087**, (34^+), γ_{12876}**1211**(0.22_{11})
H **14459**, $(33,34)$, γ_{13191}**1268**
F **14543**, (35^-), γ_{13274}**1269**(0.38_{10})
I **15106**, $(34,35)$, γ_{13807}**1299**
G **15358**, (36^+), γ_{14087}**1271**(0.08_8), γ**1313**(?)
A **15495**, (36^+), γ_{14039}**1456**
H **15794**, $(35,36)$, γ_{14459}**1335**
F **15899**, (37^-), γ_{14543}**1356**(0.33_{10})
I **16475**, $(36,37)$, γ_{15106}**1369**
G **16714**, (38^+), γ_{15358}**1356**
A **17029**, (38^+), γ_{15495}**1534**
H **17197**, $(37,38)$, γ_{15794}**1403**
F **17344**, (39^-), γ_{15899}**1445**(0.16_{11})
I **17918**, $(38,39)$, γ_{16475}**1443**
G **18149**, (40^+), γ_{16714}**1435**
A **18642**, (40^+), γ_{17029}**1613**
H **18671**, $(39,40)$, γ_{17197}**1474**
F **18881**, (41^-), γ_{17344}**1537**(0.21_{11})
I **19436**, $(40,41)$, γ_{17918}**1518**
G **19668**, (42^+), γ_{18149}**1519**
H **20219**, $(41,42)$, γ_{18671}**1548**
A **20342**, (42^+), γ_{18642}**1700**

F **20515**, (43^-), $\gamma_{\mathbf{18881}}$**1634**(0.14_{11})
I **21039**, $(42,43)$, $\gamma_{\mathbf{19436}}$**1603**
H **21842**, $(43,44)$, $\gamma_{\mathbf{20219}}$**1623**



$^{133}_{60}$Nd$_{73}$

S$_n$: 8920 $_{SY}$, S$_p$: 4410 $_{SY}$

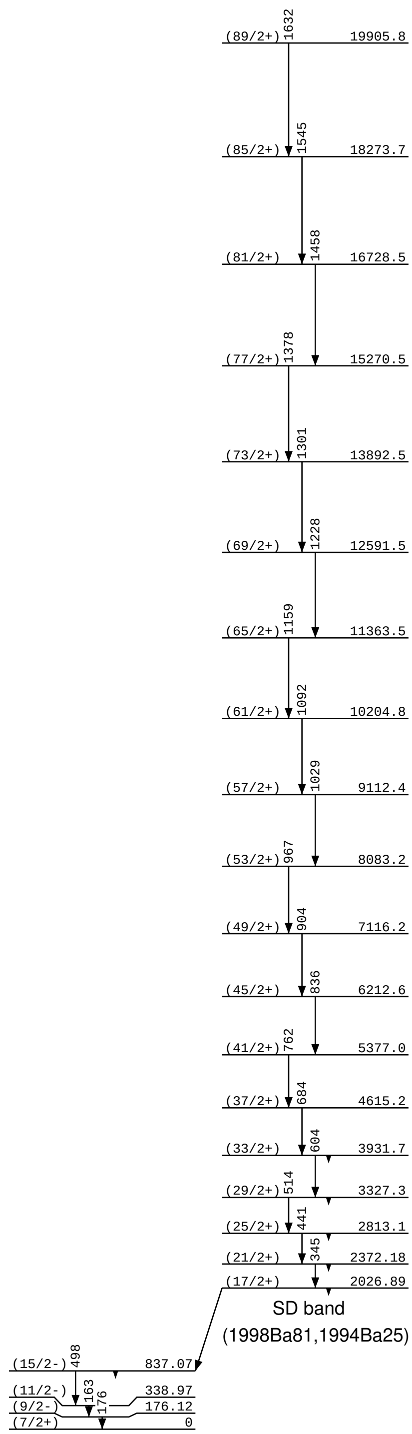
Nuclear Bands

A ν7/2[404], α=-1/2
B ν7/2[404], α=+1/2
C ν9/2[514], α=-1/2
D ν9/2[514], α=+1/2
E ν1/2[541], α=-1/2
F ν1/2[541], α=+1/2
G ν(1/2[400]/1/2[411]), α=-1/2
H ν(1/2[400]/1/2[411]), α=+1/2
I ν5/2[402], α=-1/2
J ν5/2[402], α=+1/2
K Band based on (23/2$^+$), α=-1/2
L Band based on (23/2$^+$), α=+1/2
M Band based on (23/2$^-$), α=+1/2
N Band based on (23/2$^-$), α=-1/2
O Band based on (15/2$^-$)
P SD band, ν1/2[660] (1998Ba81,1994Ba25,1993Ba20,1993Pa02, 1999Ko28,1999Br29,2002La09)
Q$_0$=7.4$_4$

Levels and γ-ray branchings:

A **0**, $(7/2^+)$, *70$_{10}$ s*, %ε+%β$^+$=100
G **127.98**$_{11}$, $(1/2^+)$, ≈*70 s*, %ε+%β$^+$=100 , γ_{0}**127.9**$_6$(100) M3
H **173.07**$_9$, $(3/2^+)$, $\gamma_{127.98}$**45.1**$_1$(100) M1(+E2) $\delta<0.41$
C **176.12**$_{10}$, $(9/2^-)$, ≈*300 ns*, γ_{0}**176.1**$_1$(100) E1
B **245.49**$_9$, $(9/2^+)$, γ_{0}**245.5**$_1$(100) E2
J **291.38**$_7$, $(5/2^+)$, $\gamma_{173.07}$**118.3**$_1$(36$_5$) M1(+E2) $\delta<0.36$, γ_{0}**291.4**$_1$(100$_9$) M1
D **338.97**$_{19}$, $(11/2^-)$, $\gamma_{176.12}$**162.8**$_2$(100) M1+E2
345.23$_9$, $^{(+)}$, $\gamma_{291.38}$**54.0**$_2$(2.3$_6$), γ_{0}**345.2**$_1$(100$_{11}$) E2
E **353.62**$_{11}$, $(3/2^-)$, ≈*50 ns*, $\gamma_{291.38}$**62.3**$_3$(2.4$_8$), $\gamma_{173.07}$**180.6**$_1$(100) E1
F **386.64**$_{24}$, $(1/2^-)$, $\gamma_{127.98}$**258.5**
G **397.94**$_{11}$, $(5/2^+)$, $\gamma_{173.07}$**224.9**$_1$(100$_{15}$) M1, $\gamma_{127.98}$**270.0**$_4$(92$_{17}$) E2
399.82$_{19}$, $(1/2,3/2)^+$, $\gamma_{127.98}$**271.9**$_4$(100) M1
442.52$_{14}$, $(7/2,9/2,11/2)^-$, $\gamma_{176.12}$**266.4**$_1$(100) M1+E2
444.68$_{14}$, $\gamma_{173.07}$**271.4**$_4$(84$_{20}$), $\gamma_{127.98}$**316.7**$_1$(100$_{24}$)
472.16$_{11}$, $(3/2,5/2,7/2)^+$, $\gamma_{291.38}$**180.8**$_5$(19$_4$) E2, $\gamma_{173.07}$**299.1**$_1$(100$_{13}$) E2, γ_{0}**472.2**$_2$(42$_8$)
I **483.50**$_{10}$, $(7/2^+)$, $\gamma_{291.38}$**192.1**$_1$(100$_{14}$) E2, $\gamma_{173.07}$**310.2**(67$_{11}$), γ_{0}**483.5**$_2$(55$_6$)
H **491.87**$_{15}$, $(7/2^+)$, $\gamma_{291.38}$**200.5**$_4$(100$_{27}$) E2, $\gamma_{173.07}$**318.8**$_4$(55$_{27}$), γ_{0}**491.9**$_3$(40$_5$)
E **492.29**$_{16}$, $(7/2^-)$, $\gamma_{353.62}$**138.7**$_2$(100$_{10}$) E2, $\gamma_{176.12}$**316.1**
A **519.49**$_{19}$, $(11/2^+)$, *6.7$_4$ ps*, $\gamma_{245.49}$**274.0**(33$_3$), γ_{0}**519.5**(100$_7$)
F **523.79**$_{14}$, $(5/2^-)$, $\gamma_{386.64}$**137.0**(27$_9$), $\gamma_{353.62}$**170.2**$_1$(100$_9$) E2
555.00$_{12}$, $(1/2^+,3/2,5/2^+)$, $\gamma_{397.94}$**157.2**$_2$(6.6$_{11}$), $\gamma_{173.07}$**381.9**$_1$(100$_{22}$) M1+E2, $\gamma_{127.98}$**427.0**$_4$(78$_{17}$)
585.4$_4$, $\gamma_{176.12}$**409.4**$_4$(100)
587.1$_4$, $\gamma_{173.07}$**414.0**$_4$(100)
628.4$_4$, $\gamma_{338.97}$**289.6**$_5$(30$_4$), $\gamma_{176.12}$**452.1**$_4$(100$_{20}$)
C **646.78**$_{21}$, $(13/2^-)$, $\gamma_{338.97}$**307.7**(91$_{18}$) M1+E2, $\gamma_{176.12}$**470.8**(100$_{11}$) E2
660.31$_{20}$, $\gamma_{444.68}$**215.6**$_6$(68$_9$), $\gamma_{173.07}$**487.2**$_2$(100$_{30}$), $\gamma_{127.98}$**532.7**$_6$(8$_2$)
674.61$_{16}$, $\gamma_{399.82}$**274.7**$_6$(21$_3$), $\gamma_{345.23}$**329.4**$_2$(100$_{10}$), $\gamma_{245.49}$**429.1**$_4$(100$_{20}$), $\gamma_{127.98}$**546.6**$_4$(50$_{20}$), γ_{0}**674.6**$_4$(83$_8$)
J **687.85**$_{15}$, $(9/2^+)$, $\gamma_{491.87}$**196.1**(75$_{13}$), $\gamma_{483.50}$**204.3**(75$_{25}$), $\gamma_{291.38}$**396.4**(100$_{25}$), $\gamma_{245.49}$**442.5**
738.84$_{22}$, $\gamma_{397.94}$**340.9**$_2$(100$_{33}$), $\gamma_{173.07}$**565.8**$_7$(83$_{33}$)
F **758.69**$_{23}$, $(9/2^-)$, $\gamma_{523.79}$**235.0**(100$_{12}$), $\gamma_{492.29}$**266.3**(44$_{12}$)
787.83$_{14}$, $\gamma_{397.94}$**389.9**$_2$(100$_9$), $\gamma_{345.23}$**442.5**$_2$(80$_9$), $\gamma_{173.07}$**614.8**$_4$(91$_{23}$), γ_{0}**788.0**$_3$(73$_9$)
806.45$_{20}$, $\gamma_{472.16}$**334.5**$_3$(64$_6$), $\gamma_{444.68}$**361.7**$_4$(50$_{13}$), $\gamma_{399.82}$**406.5**$_4$(50$_{13}$), $\gamma_{397.94}$**408.4**$_4$(75$_{25}$), $\gamma_{291.38}$**514.9**$_8$(100$_{25}$)
E **808.27**$_{25}$, $(11/2^-)$, *17.5$_{16}$ ps*, $\gamma_{492.29}$**316.0**(100)
G **825.50**$_{18}$, $(9/2^+)$, $\gamma_{491.87}$**333.6**(13$_4$), $\gamma_{483.50}$**342.0**(33$_7$), $\gamma_{397.94}$**427.6**(100$_{20}$)
B **826.90**$_{21}$, $(13/2^+)$, *2.40$_{24}$ ps*, $\gamma_{519.49}$**307.4**(10.0$_6$), $\gamma_{245.49}$**581.4**(100$_5$)
D **837.07**$_{23}$, $(15/2^-)$, *4.3$_4$ ps*, $\gamma_{646.78}$**190.3**(29$_1$) M1+E2, $\gamma_{338.97}$**498.0**(100$_4$) E2
837.5$_5$, $\gamma_{444.68}$**392.8**$_4$(100)
879.37$_{17}$, $\gamma_{491.87}$**387.5**$_4$(30$_{15}$), $\gamma_{291.38}$**588.0**$_6$(30$_{15}$), $\gamma_{245.49}$**633.9**$_2$(56$_6$), $\gamma_{173.07}$**706.3**$_4$(30$_{15}$), γ_{0}**879.2**$_5$(100$_{11}$)
I **913.36**$_{20}$, $(11/2^+)$, $\gamma_{687.85}$**225.6**(100$_{20}$), $\gamma_{483.50}$**429.8**(100$_{20}$)
932.2$_6$, $\gamma_{345.23}$**587.0**$_6$(100)
937.09$_{17}$, $\gamma_{399.82}$**537.3**$_3$(11$_5$), $\gamma_{397.94}$**539.1**$_4$(14$_6$), $\gamma_{345.23}$**591.9**$_8$(25$_4$), $\gamma_{291.38}$**645.7**$_2$(100$_{27}$)
H **962.92**$_{20}$, $(11/2^+)$, $\gamma_{491.87}$**471.0**(100$_{10}$), $\gamma_{483.50}$**479.5**(10$_2$)
979.8$_6$, $\gamma_{353.62}$**626.2**$_6$(100)
985.91$_{15}$, $\gamma_{399.82}$**586.1**$_6$(9$_4$), $\gamma_{397.94}$**588.1**$_6$(35$_4$), $\gamma_{353.62}$**632.4**$_3$(22$_9$), $\gamma_{173.07}$**812.9**$_2$(100$_{17}$), $\gamma_{127.98}$**857.8**$_2$(37$_4$)
999.2$_5$, $\gamma_{585.4}$**413.9**$_4$(42$_{12}$), $\gamma_{442.52}$**556.4**$_6$(100$_{50}$)
1007.0$_5$, $\gamma_{585.4}$**421.6**$_2$(100)
1013.66$_{14}$, $\gamma_{492.29}$**521.5**$_4$(16$_2$), $\gamma_{483.50}$**529.9**$_3$(15$_2$), $\gamma_{353.62}$**660.1**$_2$(31$_3$), $\gamma_{291.38}$**722.2**$_4$(75$_{17}$), $\gamma_{127.98}$**885.7**$_2$(100$_8$), γ_{0}**1013.7**$_4$(19$_4$)
F **1116.8**$_3$, $(13/2^-)$, *8.1$_8$ ps*, $\gamma_{808.27}$**308.5**(21$_8$), $\gamma_{758.69}$**358.1**(100$_8$)
1120.21$_{23}$, $\gamma_{483.50}$**636.5**$_5$(22$_{11}$), $\gamma_{399.82}$**720.5**$_4$(29$_{16}$), $\gamma_{397.94}$**722.3**$_4$(44$_{22}$), $\gamma_{291.38}$**828.8**$_7$(100$_{11}$), $\gamma_{245.49}$**874.7**$_5$(67$_{22}$)
J **1130.83**$_{23}$, $(13/2^+)$, $\gamma_{913.36}$**217.5**(69$_{15}$), $\gamma_{687.85}$**443.0**(100$_{15}$)
A **1150.47**$_{23}$, $(15/2^+)$, *1.07$_{17}$ ps*, $\gamma_{826.90}$**323.6**(8.3$_8$), $\gamma_{519.49}$**631.0**(100$_5$)
1154.5$_3$, $\gamma_{291.38}$**863.1**$_4$(56$_{15}$), γ_{0}**1154.5**$_4$(100$_{19}$)
1183.1$_6$, $\gamma_{353.62}$**829.5**$_5$(100)
O **1185.7**$_4$, $(15/2^-)$, $\gamma_{646.78}$**539**(100)
1195.6$_5$, $\gamma_{353.62}$**842.0**$_4$(100)
1206.0$_7$, $\gamma_{492.29}$**713.7**$_6$(100)
1209.1$_4$, $\gamma_{353.62}$**855.5**$_3$(100)
1230.1$_5$, $\gamma_{353.62}$**876.5**$_5$(100$_{24}$), $\gamma_{245.49}$**984.5**$_8$(26$_{26}$)
C **1271.8**$_3$, $(17/2^-)$, $\gamma_{837.07}$**434.5**(61$_3$), $\gamma_{646.78}$**625.0**(100$_5$)
1280.4$_6$, $\gamma_{353.62}$**926.8**$_6$(100)
E **1280.6**$_3$, $(15/2^-)$, *2.18$_{24}$ ps*, $\gamma_{808.27}$**472.4**(100)
G **1359.81**$_{22}$, $(13/2^+)$, $\gamma_{962.92}$**396.9**(12$_4$), $\gamma_{825.50}$**534.3**(100$_6$)
I **1365.87**$_{23}$, $(15/2^+)$, $\gamma_{1130.83}$**235.1**(70$_{20}$), $\gamma_{913.36}$**452.5**(100$_{20}$)
D **1460.8**$_3$, $(19/2^-)$, $\gamma_{1271.8}$**188.9**(5.8$_4$), $\gamma_{837.07}$**624.0**(100$_4$) (E2)
B **1491.96**$_{24}$, $(17/2^+)$, *0.69$_{24}$ ps*, $\gamma_{1150.47}$**341.5**(8.2$_6$), $\gamma_{826.90}$**665.0**(100$_5$)
H **1540.71**$_{25}$, $(15/2^+)$, $\gamma_{962.92}$**577.8**(100)
1595.8$_4$, $\gamma_{555.00}$**1041.1**$_9$(24$_{24}$), $\gamma_{345.23}$**1251.0**$_5$(82$_{11}$), γ_{0}**1595.2**$_5$(100$_{16}$)
F **1599.1**$_5$, $(17/2^-)$, *1.9$_4$ ps*, $\gamma_{1116.8}$**482.3**(100)
J **1623.84**$_{25}$, $(17/2^+)$, $\gamma_{1365.87}$**258.0**(43$_{14}$), $\gamma_{1130.83}$**493.0**(100$_{14}$)
1770.5$_5$, $\gamma_{345.23}$**1425.3**$_5$(100)
A **1799.04**$_{23}$, $(19/2^+)$, *0.70$_{15}$ ps*, $\gamma_{1491.96}$**307.0**(23.9$_{16}$), $\gamma_{1365.87}$**433.3**(12.5$_7$), $\gamma_{1150.47}$**648.6**(100$_5$)
O **1815.7**$_4$, $(19/2^-)$, $\gamma_{1185.7}$**630**(100)
1834.3$_8$, $\gamma_{345.23}$**1489.1**$_8$(100)
E **1872.1**$_3$, $(19/2^-)$, $\gamma_{1280.6}$**591.4**(100)
1886.5$_4$, $\gamma_{353.62}$**1532.7**$_4$(100$_{28}$), $\gamma_{345.23}$**1541.6**$_6$(52$_{31}$)
1936.7$_4$, $\gamma_{1150.47}$**786.2**(100)
I **1936.8**$_3$, $(19/2^+)$, $\gamma_{1623.84}$**313**(20$_{10}$), $\gamma_{1365.87}$**570.8**(100$_{20}$)
G **1963.02**$_{25}$, $(17/2^+)$, $\gamma_{1540.71}$**422.3**(10$_6$), $\gamma_{1359.81}$**603.2**(100$_{10}$)
2005.0$_4$, $\gamma_{353.62}$**1651.4**$_3$(100)
C **2010.8**$_4$, $(21/2^-)$, $\gamma_{1460.8}$**550.0**(46$_3$), $\gamma_{1271.8}$**738.9**(100$_7$)
P **2026.89**$_{21}$, $(17/2^+)$, $\gamma_{1540.71}$**486.2**(0.024$_6$), $\gamma_{1359.81}$**667.1**(0.20$_3$) (E2), $\gamma_{1280.6}$**746.3**(0.06$_1$), $\gamma_{837.07}$**1189.7**(0.043$_{12}$)
2043.4$_4$, $\gamma_{353.62}$**1689.8**$_3$(100)
2076.7$_4$, $\gamma_{353.62}$**1723.1**$_3$
B **2089.42**$_{24}$, $(21/2^+)$, $\gamma_{1799.04}$**290.5**(28.1$_{16}$), $\gamma_{1623.84}$**465.5**(11.2$_7$), $\gamma_{1491.96}$**597.5**(100$_4$)
H **2160.2**$_4$, $(19/2^+)$, $\gamma_{1540.71}$**619.5**(100)
F **2186.3**$_6$, $(21/2^-)$, $\gamma_{1599.1}$**587.2**(100)
D **2199.7**$_4$, $(23/2^-)$, $\gamma_{2010.8}$**189.0**(3.0$_7$), $\gamma_{1460.8}$**738.9**(100$_4$)
J **2312.6**$_4$, $(21/2^+)$, $\gamma_{1936.8}$**377**(?), $\gamma_{1623.84}$**688.8**(100$_{20}$)
2312.8$_4$(?), $\gamma_{1491.96}$**820.8**(100)
P **2372.18**$_{24}$, $(21/2^+)$, *4.9$_{15}$ ps*, $\gamma_{2026.89}$**345.3**(0.33$_4$) (E2), $\gamma_{1963.02}$**409.1**(0.25$_3$) (E2), $\gamma_{1872.1}$**500.1**(0.045$_{10}$) D
A **2384.6**$_3$, $(23/2^+)$, $\gamma_{2089.42}$**295.3**(35$_2$), $\gamma_{1799.04}$**585.5**(100$_6$)
2451.2$_3$, $\gamma_{399.82}$**2051.5**$_5$(75$_{25}$), $\gamma_{397.94}$**2053.0**$_5$(100$_{25}$), $\gamma_{291.38}$**2160.0**$_5$(50$_{25}$)
O **2527.7**$_4$, $(23/2^-)$, $\gamma_{1872.1}$**655.6**(38$_5$), $\gamma_{1815.7}$**712**(100$_{12}$)

E **2538.9**$_4$, $(23/2^-)$, $\gamma_{1872.1}$**666.8**(100)
G **2553.9**$_3$, $(21/2^+)$, $\gamma_{2026.89}$**527.0**(33_{20}), $\gamma_{1963.02}$**590.9**(100_{20})
I **2676.8**$_5$, $(23/2^+)$, $\gamma_{2312.6}$**363**(?), $\gamma_{1936.8}$**740.0**
2677.7$_5$(?), $\gamma_{1936.7}$**741.0**
B **2694.1**$_3$, $(25/2^+)$, $\gamma_{2384.6}$**309.6**(33_2), $\gamma_{2089.42}$**604.7**(100_{10})
H **2765.5**$_5$, $(23/2^+)$, $\gamma_{2160.2}$**605.2**(100)
K **2775.7**$_5$, $(23/2^+)$, $\gamma_{2160.2}$**615.5**(100)
P **2813.1**$_3$, $(25/2^+)$, *2.1$_7$ ps*, $\gamma_{2372.18}$**440.9**(0.61_5) (E2), $\gamma_{2089.42}$**723.7**(0.029_7)
C **2813.7**$_4$, $(25/2^-)$, $\gamma_{2199.7}$**614.0**(50_4), $\gamma_{2010.8}$**802.8**(100_5)
F **2849.4**$_6$, $(25/2^-)$, $\gamma_{2186.3}$**663.1**(100)
2946.9$_6$(?), $\gamma_{2677.7}$**269.2**(100)
L **2992.2**$_5$, $(25/2^+)$, $\gamma_{2775.7}$**216.6**(75_{13}), $\gamma_{2765.5}$**226.7**(100_{13})
N **3019.7**$_4$, $(23/2^-)$, $\gamma_{2010.8}$**1009.0**(100)
A **3020.7**$_3$, $(27/2^+)$, $\gamma_{2694.1}$**326.6**(21.3_{13}), $\gamma_{2384.6}$**636.1**(100_5)
D **3027.6**$_4$, $(27/2^-)$, $\gamma_{2813.7}$**214.0**(6.5_{16}), $\gamma_{2199.7}$**827.8**(100_4)
M **3031.0**$_4$, $(25/2^-)$, $\gamma_{2010.8}$**1020.3**(100)
J **3090.4**$_5$, $(25/2^+)$, $\gamma_{2312.6}$**777.8**(100)
G **3129.0**$_5$, $(25/2^+)$, $\gamma_{2553.9}$**575.1**(100)
N **3168.8**$_4$, $(27/2^-)$, $\gamma_{3031.0}$**137.6**(10_5), $\gamma_{3027.6}$**141.3**(7_1), $\gamma_{3019.7}$**149.2**(5_2), $\gamma_{2199.7}$**969.0**(100_4)
E **3207.1**$_4$, $(27/2^-)$, $\gamma_{2538.9}$**668.2**(100_8), $\gamma_{2527.7}$**679.4**(49_5)
K **3271.1**$_5$, $(27/2^+)$, $\gamma_{2992.2}$**278.9**(100_{20}), $\gamma_{2775.7}$**495.4**(100_{20})
P **3327.3**$_3$, $(29/2^+)$, *<1.25 ps*, $\gamma_{3020.7}$**306.6**(0.05_1), $\gamma_{2813.1}$**514.1**(0.65_5) (E2), $\gamma_{2694.1}$**633.2**(0.24_3) (E2)
B **3366.2**$_3$, $(29/2^+)$, $\gamma_{3020.7}$**345.5**(33_2), $\gamma_{2813.1}$**553.1**(2.1_{13}), $\gamma_{2694.1}$**672.0**(100_6)
M **3401.8**$_4$, $(29/2^-)$, $\gamma_{3168.8}$**233.0**(100_3), $\gamma_{3031.0}$**370.9**, $\gamma_{3027.6}$**374.2**(35_2), $\gamma_{2813.7}$**588.1**(50_2)
3419.5$_6$, $(27/2^+)$, $\gamma_{2775.7}$**643.8**(100)
H **3419.7**$_6$, $(27/2^+)$, $\gamma_{2765.5}$**654.2**(100)
F **3551.7**$_7$, $(29/2^-)$, $\gamma_{2849.4}$**702.3**(100)
3568.6$_7$, $(29/2^-)$, $\gamma_{2849.4}$**719.2**(100)
C **3568.6**$_5$, $(29/2^-)$, $\gamma_{3027.6}$**541.1**(27_5), $\gamma_{2813.7}$**754.9**(100_9)
L **3596.4**$_6$, $(29/2^+)$, $\gamma_{3271.1}$**325.5**(100)
N **3659.0**$_4$, $(31/2^-)$, $\gamma_{3401.8}$**257.4**(100_4), $\gamma_{3168.8}$**490.2**(38_4), $\gamma_{3027.6}$**631.2**(19_1)
A **3715.4**$_4$, $(31/2^+)$, $\gamma_{3366.2}$**349.3**(28_2), $\gamma_{3020.7}$**694.7**(100_6)
G **3764.7**$_6$, $(29/2^+)$, $\gamma_{3129.0}$**635.7**(100)
E **3772.1**$_5$, $(31/2^-)$, $\gamma_{3207.1}$**565.0**(100)
3909.5$_5$, $(31/2^-)$, $\gamma_{3207.1}$**702.4**(100)
D **3909.6**$_5$, $(31/2^-)$, $\gamma_{3027.6}$**881.9**(100)
P **3931.7**$_4$, $(33/2^+)$, $\gamma_{3366.2}$**565.6**(0.07_2), $\gamma_{3327.3}$**604.3**(0.93_6) Q
K **3941.4**$_6$, $(31/2^+)$, $\gamma_{3596.4}$**345.0**(100_{16}), $\gamma_{3271.1}$**670.2**(100_{16})
M **4000.4**$_5$, $(33/2^-)$, $\gamma_{3659.0}$**341.4**(100_4), $\gamma_{3401.8}$**598.6**(48_4)
B **4078.4**$_4$, $(33/2^+)$, $\gamma_{3715.4}$**363.0**(31_3), $\gamma_{3366.2}$**712.2**(100_5)
4103.4$_5$, $\gamma_{3401.8}$**701.6**(100)
4121.8$_5$, $\gamma_{3366.2}$**755.6**(100)
H **4124.8**$_7$, $(31/2^+)$, $\gamma_{3419.7}$**705.1**(100)
4149.7$_7$, $\gamma_{3419.5}$**730.2**(100)
F **4281.9**$_8$, $(33/2^-)$, $\gamma_{3551.7}$**730.2**(100)
4309.0$_8$, $(33/2^-)$, $\gamma_{3568.6}$**740.4**(100)
L **4346.9**$_6$, $(33/2^+)$, $\gamma_{3941.4}$**405.0**(100_{33}), $\gamma_{3596.4}$**750.6**(100_{33})
N **4367.4**$_5$, $(35/2^-)$, $\gamma_{4000.4}$**367.0**(100_7), $\gamma_{3659.0}$**708.5**(48_3)
4406.0$_6$, $\gamma_{4103.4}$**302.6**(100)
E **4409.4**$_6$, $(35/2^-)$, $\gamma_{3772.1}$**637.3**(100)
A **4458.8**$_4$, $(35/2^+)$, $\gamma_{4078.4}$**380.5**(21_2), $\gamma_{3715.4}$**743.4**(100_6)
G **4468.9**$_6$, $(33/2^+)$, $\gamma_{3764.7}$**704.2**(100)
4511.6$_5$, $\gamma_{3715.4}$**796.2**(100)
P **4615.2**$_5$, $(37/2^+)$, $\gamma_{3931.7}$**683.5**(1.00) Q
4650.3$_6$, $(35/2^-)$, $\gamma_{3909.5}$**740.8**(100)
D **4685.5**$_6$, $(35/2^-)$, $\gamma_{3909.6}$**776.0**(100)
4715.2$_6$, $\gamma_{3909.5}$**805.7**
K **4726.3**$_6$, $(35/2^+)$, $\gamma_{4346.9}$**379.1**(50_{17}), $\gamma_{3941.4}$**785.3**(100_{20})
M **4787.3**$_5$, $(37/2^-)$, $\gamma_{4367.4}$**419.8**(100_7), $\gamma_{4000.4}$**786.9**(71_7)
B **4861.3**$_4$, $(37/2^+)$, $\gamma_{4458.8}$**402.6**(31_5), $\gamma_{4078.4}$**782.8**(100_8)
H **4878.3**$_7$, $(35/2^+)$, $\gamma_{4124.8}$**753.5**(100)
4927.8$_6$, $\gamma_{4121.8}$**806**(100)
F **5057.2**$_8$, $(37/2^-)$, $\gamma_{4281.9}$**775.3**(100)
5104.4$_8$, $(37/2^-)$, $\gamma_{4309.0}$**795.4**(100)
L **5157.1**$_6$, $(37/2^+)$, $\gamma_{4726.3}$**431**(50_{17}), $\gamma_{4346.9}$**810**(100_{33})
E **5169.9**$_7$, $(39/2^-)$, $\gamma_{4409.4}$**760.5**(100)
G **5210.9**$_7$, $(37/2^+)$, $\gamma_{4468.9}$**742.0**(100)
N **5238.5**$_5$, $(39/2^-)$, $\gamma_{4787.3}$**451.1**(86_7), $\gamma_{4367.4}$**871.1**(100_7)
A **5279.8**$_5$, $(39/2^+)$, $\gamma_{4861.3}$**418.5**, $\gamma_{4458.8}$**821.0**(100_6)
5368.3$_6$, $\gamma_{4511.6}$**856.7**(100)
P **5377.0**$_6$, $(41/2^+)$, μ=6.3_{16}, $\gamma_{4615.2}$**761.8**(0.75) Q
5428.3$_7$, $(39/2^-)$, $\gamma_{4650.3}$**778.0**(100)
K **5560.2**$_7$, $(39/2^+)$, $\gamma_{5157.1}$**403**(50_{17}), $\gamma_{4726.3}$**834.0**(100_{33})
H **5668.6**$_8$, $(39/2^+)$, $\gamma_{4878.3}$**790.3**(100)
B **5713.2**$_5$, $(41/2^+)$, $\gamma_{4861.3}$**851.9**(100)
M **5721.5**$_5$, $(41/2^-)$, $\gamma_{5238.5}$**482.9**(100_{12}), $\gamma_{4787.3}$**934.3**(62_{12})
5841.8$_6$, $\gamma_{4927.8}$**914**(100)
B **5899.0**$_9$, $(41/2^-)$, $\gamma_{5057.2}$**841.8**(100)
G **5968.9**$_8$, $(41/2^+)$, $\gamma_{5210.9}$**758.0**(100)
E **6054.5**$_8$, $(43/2^-)$, $\gamma_{5169.9}$**884.6**(100)
A **6158.9**$_6$, $(43/2^+)$, $\gamma_{5279.8}$**879.1**(100)
P **6212.6**$_7$, $(45/2^+)$, $\gamma_{5377.0}$**835.6**(0.65) Q
6258.6$_8$, $\gamma_{5428.3}$**830.3**(100)
B **6619.8**$_6$, $(45/2^+)$, $\gamma_{5713.2}$**906.6**(100)
M **6744.4**$_6$, $(45/2^-)$, $\gamma_{5721.5}$**1022.9**(100)
F **6819.3**$_9$, $(45/2^-)$, $\gamma_{5899.0}$**920.3**(100)
E **7041.5**$_8$, $(47/2^-)$, $\gamma_{6054.5}$**987.0**(100)
A **7096.0**$_6$, $(47/2^+)$, $\gamma_{6158.9}$**937.1**(100)
P **7116.2**$_7$, $(49/2^+)$, $\gamma_{6212.6}$**903.6**(0.55) Q
B **7587.3**$_7$, $(49/2^+)$, $\gamma_{6619.8}$**967.5**(100)
F **7825.5**$_{10}$, $(49/2^-)$, $\gamma_{6819.3}$**1006.2**(100)
P **8083.2**$_8$, $(53/2^+)$, $\gamma_{7116.2}$**967.0**(0.40) Q
A **8097.7**$_7$, $(51/2^+)$, $\gamma_{7096.0}$**1001.7**(100)
E **8118.4**$_9$, $(51/2^-)$, $\gamma_{7041.5}$**1076.9**(100)
B **8622.9**$_8$, $(53/2^+)$, $\gamma_{7587.3}$**1035.6**(100)
F **8913.3**$_{10}$, $(53/2^-)$, $\gamma_{7825.5}$**1087.8**(100)
P **9112.4**$_9$, $(57/2^+)$, *<0.03 ps*, $\gamma_{8083.2}$**1029.2**(0.32) (E2)
A **9169.7**$_8$, $(55/2^+)$, $\gamma_{8097.7}$**1072.0**(100)
E **9278.0**$_9$, $(55/2^-)$, $\gamma_{8118.4}$**1159.6**(100)
B **9729.8**$_8$, $(57/2^+)$, $\gamma_{8622.9}$**1106.9**(100)
F **10095.0**$_{11}$, $(57/2^-)$, $\gamma_{8913.3}$**1181.7**(100)
P **10204.8**$_9$, $(61/2^+)$, *<0.03 ps*, $\gamma_{9112.4}$**1092.4**(0.20) (E2)
A **10316.3**$_8$, $(59/2^+)$, $\gamma_{9169.7}$**1146.6**(100)
E **10516.0**$_{10}$, $(59/2^-)$, $\gamma_{9278.0}$**1238.0**(100)
B **10913.3**$_9$, $(61/2^+)$, $\gamma_{9729.8}$**1183.5**(100)
P **11363.5**$_{10}$, $(65/2^+)$, *<0.03 ps*, $\gamma_{10204.8}$**1158.7**(0.15) (E2)
A **11540.8**$_9$, $(63/2^+)$, $\gamma_{10316.3}$**1224.5**(100)
B **12179.3**$_9$, $(65/2^+)$, $\gamma_{10913.3}$**1266**(100)
P **12591.5**$_{10}$, $(69/2^+)$, *<0.03 ps*, $\gamma_{11363.5}$**1228.0**(0.10) (E2)
A **12840.8**$_9$, $(67/2^+)$, $\gamma_{11540.8}$**1300**(100)
P **13892.5**$_{11}$, $(73/2^+)$, *<0.03 ps*, $\gamma_{12591.5}$**1300.9**(0.04) (E2)
P **15270.5**$_{11}$, $(77/2^+)$, *<0.03 ps*, $\gamma_{13892.5}$**1378.0**(0.04)
P **16728.5**$_{11}$, $(81/2^+)$, *<0.03 ps*, $\gamma_{15270.5}$**1458.0**(0.02)
P **18273.7**$_{12}$, $(85/2^+)$, *<0.03 ps*, $\gamma_{16728.5}$**1545.2**(0.01)
P **19905.8**$_{12}$, $(89/2^+)$, *<0.03 ps*, $\gamma_{18273.7}$**1632.1**(0.01)



(89/2+) 19905.8
1632
(85/2+) 18273.7
1545
(81/2+) 16728.5
1458
(77/2+) 15270.5
1378
(73/2+) 13892.5
1301
(69/2+) 12591.5
1228
(65/2+) 11363.5
1159
(61/2+) 10204.8
1092
(57/2+) 9112.4
1029
(53/2+) 8083.2
967
(49/2+) 7116.2
904
(45/2+) 6212.6
836
(41/2+) 5377.0
762
(37/2+) 4615.2
684
(33/2+) 3931.7
604
(29/2+) 3327.3
514
(25/2+) 2813.1
441
(21/2+) 2372.18
345
(17/2+) 2026.89
SD band
(1998Ba81,1994Ba25)
(15/2-) 837.07
498
(11/2-) 338.97
163
(9/2-) 176.12
176
(7/2+) 0

$^{133}_{60}Nd_{73}$

$^{134}_{60}\mathrm{Nd}_{74}$

S_n: 11392 $_{SY}$, S_p: 5011 $_{SY}$

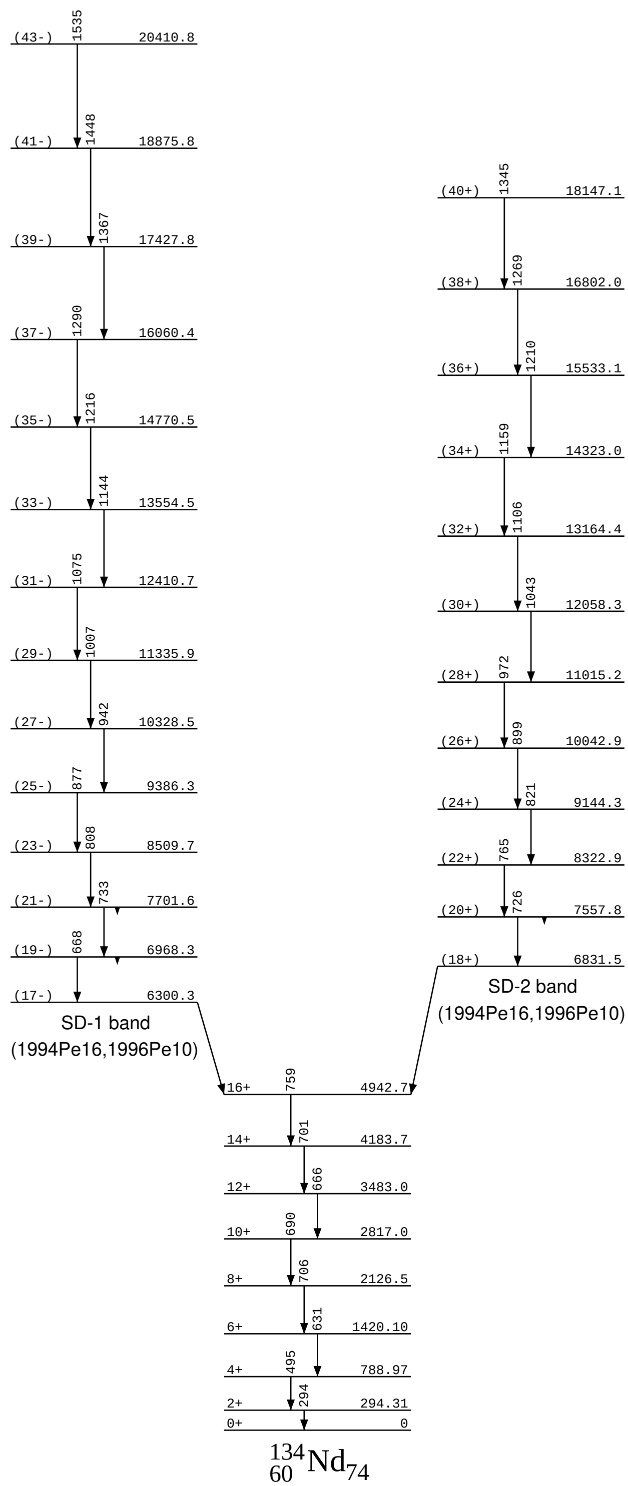
Nuclear Bands

A GS band
B γ band
C Band based on (6^-)
D Band based on (5^-)
E Band based on (10^+)
F Band based on (8^-) isomer
G Band based on (12^-)
H Band based on (14^-), α=1
I Band based on (14^-), α=0
J SD-1 band (1994Pe16,1996Pe10,1998Pe01)
Q_0=6.8$_3$
K SD-2 band (1994Pe16,1996Pe10,1998Pe01)
Q_0=6.4$_4$

Levels and γ-ray branchings:

A **0**, 0^+, *8.5$_{15}$ min*, %ε+%β$^+$=100
A **294.31**$_{16}$, 2^+, *65.4$_{21}$ ps*, μ=+1.23$_{36}$, γ_{0}**294.2**$_2$(100) E2
B **753.73**$_{16}$, (2^+), $\gamma_{294.31}$**459.3**$_2$(90$_{10}$), γ_{0}**753.8**$_2$(100$_{10}$)
A **788.97**$_{21}$, 4^+, *3.42$_7$ ps*, $\gamma_{294.31}$**494.7**$_2$(100) E2
B **1089.02**$_{21}$, (3^+), $\gamma_{753.73}$**335.3**$_3$(24$_5$), $\gamma_{294.31}$**794.7**$_2$(100$_8$)
B **1313.00**$_{21}$, (4^+), $\gamma_{788.97}$**523.8**$_2$(52$_{10}$), $\gamma_{753.73}$**559.2**$_2$(100$_{15}$)
1383.8$_4$, $\gamma_{788.97}$**594.7**$_4$(60$_{26}$), γ_{0}**1384.0**$_5$(100$_{30}$)
A **1420.10**$_{25}$, 6^+, *1.13$^4_8$ ps*, $\gamma_{788.97}$**631.3**$_2$(100) E2
1605.0$_3$, $\gamma_{1089.02}$**516.0**$_3$(100$_{14}$), $\gamma_{753.73}$**851.3**$_3$(34$_7$)
1669.3$_6$, $\gamma_{294.31}$**1375.0**$_5$(100)
1670.9$_5$, $\gamma_{788.97}$**881.9**$_4$(100)
B **1697.6**$_4$, (5^+), $\gamma_{1089.02}$**608.6**$_3$(100)
B **1910.6**$_3$, (6^+), $\gamma_{1420.10}$**491**$_1$($<$ 20), $\gamma_{1313.00}$**597.3**$_2$(100$_{10}$)
D **1956.2**$_3$, (5^-), $\gamma_{788.97}$**1167.3**$_2$(100) (E1)
2036.4$_5$, $\gamma_{788.97}$**1247.4**$_4$(100)
A **2126.5**$_3$, 8^+, *0.71$_7$ ps*, $\gamma_{1420.10}$**706.4**$_2$(100) E2
2231.6$_6$, $\gamma_{788.97}$**1442.6**$_5$(100)
F **2293.0**$_4$, $(8)^-$, *410$_{30}$ μs*, %IT=100 , $\gamma_{2126.5}$**166.5**$_3$(100$_7$) E1, $\gamma_{1420.10}$**874**(7$_2$)
D **2340.6**$_3$, (7^-), $\gamma_{1956.2}$**384.6**$_2$(18$_1$) (E2), $\gamma_{1420.10}$**920.4**$_2$(100$_4$) (E1)
C **2412.5**$_3$, (6^-), $\gamma_{1956.2}$**457**, $\gamma_{1420.10}$**992.4**$_2$(100)
B **2467.2**$_3$, (8^+), *0.860$_{21}$ ps*, $\gamma_{1910.6}$**556.3**$_2$(100$_7$), $\gamma_{1420.10}$**1047.3**$_2$(78$_{17}$)
F **2719.8**$_5$, (9^-), $\gamma_{2293.0}$**426.9**$_5$(100)
C **2728.5**$_3$, (8^-), *17.3$_{12}$ ps*, $\gamma_{2412.5}$**316.0**$_2$(33$_5$) (E2), $\gamma_{2340.6}$**387.9**$_2$(100$_{11}$) D
A **2817.0**$_4$, 10^+, *0.49$_4$ ps*, $\mu \approx 0$, $\gamma_{2126.5}$**690.4**$_2$(100) E2
D **2840.7**$_4$, (9^-), $\gamma_{2340.6}$**500.1**$_2$(100$_3$) (E2), $\gamma_{2126.5}$**714.1**$_5$(23.6$_9$)
E **3052.0**$_3$, (10^+), *3.39$_{16}$ ps*, $\gamma_{2467.2}$**584.7**$_2$(100$_8$), $\gamma_{2126.5}$**925.6**$_2$(54$_8$) (E2)
3164.4$_5$, (10^+), $\gamma_{2126.5}$**1038.1**$_5$(100)
F **3181.9**$_5$, (10^-), $\gamma_{2719.8}$**462.3**$_5$(100$_{21}$), $\gamma_{2293.0}$**888.9**$_5$(100$_{21}$)
C **3200.2**$_4$, (10^-), *4.71$_{14}$ ps*, $\gamma_{2728.5}$**471.7**$_2$(100) (E2)
E **3436.5**$_4$, (12^+), *7.49$_{21}$ ps*, $\gamma_{3052.0}$**384.6**$_2$(100$_6$) (E2), $\gamma_{2817.0}$**619.5**$_2$(81$_3$)
D **3453.1**$_4$, (11^-), $\gamma_{2840.7}$**612.3**$_2$(100) (E2)
A **3483.0**$_4$, 12^+, *0.41$_4$ ps*, $\gamma_{2817.0}$**666.0**$_2$(100) E2
F **3653.1**$_6$, (11^-), $\gamma_{3181.9}$**471.3**$_5$(100$_6$), $\gamma_{2719.8}$**933.2**$_5$(82$_6$)
C **3863.0**$_5$, (12^-), $\gamma_{3200.2}$**662.8**$_2$(100) (E2)
E **4028.2**$_4$, (14^+), $\gamma_{3483.0}$**545**, $\gamma_{3436.5}$**591.7**$_2$(100) (E2)
F **4129.6**$_6$, (12^-), $\gamma_{3653.1}$**476.5**$_5$(77$_7$), $\gamma_{3181.9}$**947.9**$_5$(100$_7$)
D **4175.5**$_4$, (13^-), $\gamma_{3453.1}$**722.4**$_2$(100) (E2)
A **4183.7**$_5$, 14^+, $\gamma_{3483.0}$**700.7**$_2$(100) E2
4238.9$_6$, (12^-), $\gamma_{3453.1}$**785.7**$_5$(100)
4371.5$_5$, (11^-), $\gamma_{3164.4}$**1207.2**$_5$(100$_{11}$), $\gamma_{2817.0}$**1554.3**$_5$(50$_{17}$)
4376.8$_5$, (11^-), $\gamma_{3164.4}$**1212.3**$_5$(100$_5$), $\gamma_{2817.0}$**1559.9**$_5$(49$_8$)
4513.1$_6$, (12^-), $\gamma_{4376.8}$**136.4**$_5$(100$_{16}$), $\gamma_{4371.5}$**141.5**$_5$(58$_{11}$)
F **4592.0**$_6$, (13^-), $\gamma_{4129.6}$**462**$_1$(81$_{10}$), $\gamma_{3653.1}$**938.8**$_5$(100$_{10}$)
C **4607.5**$_5$, (14^-), $\gamma_{3863.0}$**744.5**$_2$(100) (E2)
G **4712.6**$_8$, (13^-), $\gamma_{4513.1}$**199.5**$_5$(100)
E **4776.7**$_5$, (16^+), *0.47$_9$ ps*, $\gamma_{4183.7}$**593**, $\gamma_{4028.2}$**748.5**$_2$(100) (E2)
A **4942.7**$_5$, 16^+, $\gamma_{4183.7}$**759.0**$_2$(100) E2
D **4948.0**$_5$, (15^-), $\gamma_{4175.5}$**772.5**$_2$(100) (E2)
I **4984.4**$_5$, (14^-), $\gamma_{4592.0}$**392.2**$_5$(53$_3$), $\gamma_{4238.9}$**745.5**$_5$(70$_7$), $\gamma_{4175.5}$**808.9**$_5$(100$_7$), $\gamma_{4129.6}$**855.1**$_5$(47$_7$)
4992.8$_7$, (14^-), $\gamma_{4238.9}$**753.9**$_5$
G **4999.1**$_9$, (14^-), $\gamma_{4712.6}$**286.7**$_5$(100)
H **5200.3**$_7$, (15^-), $\gamma_{4992.8}$**207.4**$_5$(41$_4$), $\gamma_{4984.4}$**215.9**$_5$(100$_4$)
C **5345.9**$_5$, (16^-), $\gamma_{4607.5}$**738.4**$_2$(100) (E2)
G **5361.4**$_9$, (15^-), $\gamma_{4999.1}$**362.4**$_5$(100$_8$), $\gamma_{4712.6}$**648.6**$_5$(12$_2$)
I **5456.0**$_8$, (16^-), $\gamma_{5200.3}$**255.7**$_5$(100)
E **5629.7**$_8$, (18^+), $\gamma_{4776.7}$**853**$_1$(100) (E2)
D **5711.1**$_5$, (17^-), $\gamma_{4948.0}$**763.1**$_2$(100)
H **5769.5**$_8$, (17^-), $\gamma_{5456.0}$**313.3**$_5$(100$_3$), $\gamma_{5200.3}$**569.3**$_5$(15$_2$)
A **5777.7**$_{10}$, 18^+, $\gamma_{4942.7}$**835**$_1$(100) E2
G **5788.9**$_{10}$, (16^-), $\gamma_{5361.4}$**427.3**$_5$(100$_6$), $\gamma_{4999.1}$**790**$_1$(24$_6$)
C **6082.5**$_6$, (18^-), $\gamma_{5345.9}$**736.6**$_2$(100)
I **6137.6**$_8$, (18^-), $\gamma_{5769.5}$**368.0**$_5$(100$_3$), $\gamma_{5456.0}$**681.6**$_5$(17$_3$)
G **6269.9**$_{10}$, (17^-), $\gamma_{5788.9}$**480.9**$_5$(100$_7$), $\gamma_{5361.4}$**908.7**$_5$(30$_8$)
J **6300.3**$_9$, (17^-), $\gamma_{4942.7}$**1357.5**$_{10}$(0.04$_3$)
D **6488.1**$_{12}$, (19^-), $\gamma_{5711.1}$**777**(100)
E **6531.7**$_{13}$, (20^+), $\gamma_{5629.7}$**902**(100)
H **6543.9**$_8$, (19^-), $\gamma_{6137.6}$**406.3**$_5$(100$_4$), $\gamma_{5769.5}$**774.4**$_5$(17$_4$)
A **6710.7**$_{14}$, 20^+, $\gamma_{5777.7}$**933**(100) E2
G **6786.1**$_{10}$, (18^-), $\gamma_{6269.9}$**516.2**$_5$(100$_8$), $\gamma_{5788.9}$**997.1**$_5$(42$_8$)
K **6831.5**$_{10}$, (18^+), $\gamma_{4942.7}$**1889**(0.17$_5$)
C **6891.5**$_{12}$, (20^-), $\gamma_{6082.5}$**809**(100)
I **6935.8**$_9$, (20^-), $\gamma_{6543.9}$**391.9**$_5$(100$_9$), $\gamma_{6137.6}$**798**$_1$(26$_6$)
6961.6$_{11}$(?), (19^-), $\gamma_{5629.7}$**1331.9**$_{10}$(0.13$_3$)
6965.8$_{11}$(?), (19^-), $\gamma_{5629.7}$**1336.3**$_{10}$(0.07$_3$)
J **6968.3**$_9$, (19^-), $\gamma_{6300.3}$**667.9**$_5$(0.10$_5$) E2, $\gamma_{5629.7}$**1338.6**$_{10}$(0.27$_3$)
G **7291.8**$_{11}$, (19^-), $\gamma_{6786.1}$**505.7**$_5$(100$_8$), $\gamma_{6269.9}$**1022**$_1$(50$_8$)
H **7349.5**$_{10}$, (21^-), $\gamma_{6935.8}$**413.6**$_5$(100$_{10}$), $\gamma_{6543.9}$**806**$_1$(23$_7$)
D **7358.1**$_{15}$, (21^-), $\gamma_{6488.1}$**870**(100)
E **7467.7**$_{17}$, (22^+), $\gamma_{6531.7}$**936**(100)
K **7557.8**$_9$, (20^+), $\gamma_{6831.5}$**726.4**$_{10}$(0.32$_5$), $\gamma_{5777.7}$**1780**(0.12$_4$), $\gamma_{5629.7}$**1928**(0.10$_3$)
J **7701.6**$_9$, (21^-), $\gamma_{6968.3}$**733.3**$_3$(0.37$_5$) E2, $\gamma_{6965.8}$**736**, $\gamma_{6961.6}$**740**
A **7744.7**$_{17}$, (22^+), $\gamma_{6710.7}$**1034**(100)
C **7804.5**$_{16}$, (22^-), $\gamma_{6891.5}$**913**(100)
I **7813.7**$_{10}$, (22^-), $\gamma_{7349.5}$**463.9**$_5$(100$_4$), $\gamma_{6935.8}$**878.0**$_5$(20$_4$)
K **8322.9**$_{11}$, (22^+), $\gamma_{7557.8}$**765.1**$_5$(0.60$_5$)
D **8328.1**$_{18}$, (23^-), $\gamma_{7358.1}$**970**(100)
H **8330.9**$_{10}$, (23^-), $\gamma_{7813.7}$**517.1**$_5$(100$_9$), $\gamma_{7349.5}$**981.6**$_5$(36$_9$)
E **8453.7**$_{19}$, (24^+), $\gamma_{7467.7}$**986**(100)
J **8509.7**$_{10}$, (23^-), $\gamma_{7701.6}$**808.1**$_2$(1.00$_5$) E2
C **8814**$_2$, (24^-), $\gamma_{7804.5}$**1010**(100)
A **8869.7**$_{20}$, (24^+), $\gamma_{7744.7}$**1125**(100)
I **8896.6**$_{11}$, (24^-), $\gamma_{8330.9}$**565.7**$_5$(100$_{18}$), $\gamma_{7813.7}$**1082.6**$_5$(45$_9$)
K **9144.3**$_{11}$, (24^+), $\gamma_{8322.9}$**821.4**$_3$(0.78$_3$) E2
D **9371.1**$_{21}$, (25^-), $\gamma_{8328.1}$**1043**(100)
J **9386.3**$_{10}$, (25^-), $\gamma_{8509.7}$**876.6**$_2$(1.00$_5$) E2
E **9501.7**$_{22}$, (26^+), $\gamma_{8453.7}$**1048**(100)
H **9510.7**$_{11}$, (25^-), $\gamma_{8896.6}$**614**$_1$(100$_{25}$), $\gamma_{8330.9}$**1180.0**$_5$(38$_{13}$)
C **9902**$_2$, (26^-), γ_{8814}**1088**
K **10042.9**$_{11}$, (26^+), $\gamma_{9144.3}$**898.6**$_2$(1.00$_2$) E2
A **10063**$_2$, (26^+), $\gamma_{8869.7}$**1193**
A **10079.8**$_{22}$, (26^+), $\gamma_{8869.7}$**1210**(100)
I **10167.6**$_{11}$, (26^-), $\gamma_{9510.7}$**657**$_1$(100$_{20}$), $\gamma_{8896.6}$**1270.9**$_5$(40$_{20}$)
J **10328.5**$_{10}$, (27^-), $\gamma_{9386.3}$**942.2**$_2$(1.00)
D **10339**$_2$, (29^-), $\gamma_{9371.1}$**968**
E **10616.7**$_{24}$, (28^+), $\gamma_{9501.7}$**1115**(100)
H **10861.9**$_{12}$, (27^-), $\gamma_{10167.6}$**694**$_1$(100$_{17}$), $\gamma_{9510.7}$**1351.3**$_5$(33$_{17}$)
K **11015.2**$_{11}$, (28^+), $\gamma_{10042.9}$**972.3**$_2$(0.93$_5$)
C **11051**$_2$, (28^-), γ_{9902}**1149**
A **11297**$_2$, (28^+), γ_{10063}**1234**
J **11335.9**$_{10}$, (29^-), $\gamma_{10328.5}$**1007.4**$_2$(1.02$_4$)

D **11366**$_2$, (31^-), $\gamma_{\mathbf{10339}}$**1027**
E **11790**$_3$, (30^+), $\gamma_{\mathbf{10616.7}}$**1173**(100)
K **12058.3**$_{12}$, (30^+), $\gamma_{\mathbf{11015.2}}$**1043.1**$_2$($0.85_5$)
C **12248**$_3$, (30^-), $\gamma_{\mathbf{11051}}$**1197**
J **12410.7**$_{11}$, (31^-), $\gamma_{\mathbf{11335.9}}$**1074.8**$_3$($0.71_5$)
D **12469**$_2$, (33^-), $\gamma_{\mathbf{11366}}$**1103**
A **12567**$_2$, (30^+), $\gamma_{\mathbf{11297}}$**1270**
E **12941**$_3$, (32^+), $\gamma_{\mathbf{11790}}$**1151**
K **13164.4**$_{12}$, (32^+), $\gamma_{\mathbf{12058.3}}$**1106.1**$_3$($0.80_6$)
J **13554.5**$_{11}$, (33^-), $\gamma_{\mathbf{12410.7}}$**1143.8**$_3$($0.49_5$)
D **13650**$_2$, (35^-), $\gamma_{\mathbf{12469}}$**1181**
E **14125**$_3$, (34^+), $\gamma_{\mathbf{12941}}$**1184**
K **14323.0**$_{12}$, (34^+), $\gamma_{\mathbf{13164.4}}$**1158.6**$_3$($0.67_6$)
J **14770.5**$_{12}$, (35^-), $\gamma_{\mathbf{13554.5}}$**1216.0**$_4$($0.47_6$)
D **14994**$_2$, (37^-), $\gamma_{\mathbf{13650}}$**1344**
E **15378**$_3$, (36^+), $\gamma_{\mathbf{14125}}$**1253**
K **15533.1**$_{13}$, (36^+), $\gamma_{\mathbf{14323.0}}$**1210.1**$_5$($0.47_8$)
J **16060.4**$_{13}$, (37^-), $\gamma_{\mathbf{14770.5}}$**1289.9**$_6$($0.37_5$)
D **16424**$_3$, (39^-), $\gamma_{\mathbf{14994}}$**1430**
E **16703**$_3$, (38^+), $\gamma_{\mathbf{15378}}$**1325**
K **16802.0**$_{14}$, (38^+), $\gamma_{\mathbf{15533.1}}$**1268.9**$_5$($0.41_8$)
J **17427.8**$_{16}$, (39^-), $\gamma_{\mathbf{16060.4}}$**1367.3**$_8$($0.26_7$)
D **17942**$_3$, (41^-), $\gamma_{\mathbf{16424}}$**1518**
E **18098**$_3$, (40^+), $\gamma_{\mathbf{16703}}$**1395**
K **18147.1**$_{17}$, (40^+), $\gamma_{\mathbf{16802.0}}$**1345.1**$_9$($0.26_7$)
J **18875.8**$_{19}$, (41^-), $\gamma_{\mathbf{17427.8}}$**1448**$_1$($< 0.16$)
E **19524**$_3$, (42^+), $\gamma_{\mathbf{18098}}$**1426**
D **19546**$_3$, (43^-), $\gamma_{\mathbf{17942}}$**1604**
J **20410.8**$_{21}$, (43^-), $\gamma_{\mathbf{18875.8}}$**1535**
E **21010**$_3$, (44^+), $\gamma_{\mathbf{19524}}$**1486**



$^{135}_{60}\mathbf{Nd}_{75}$

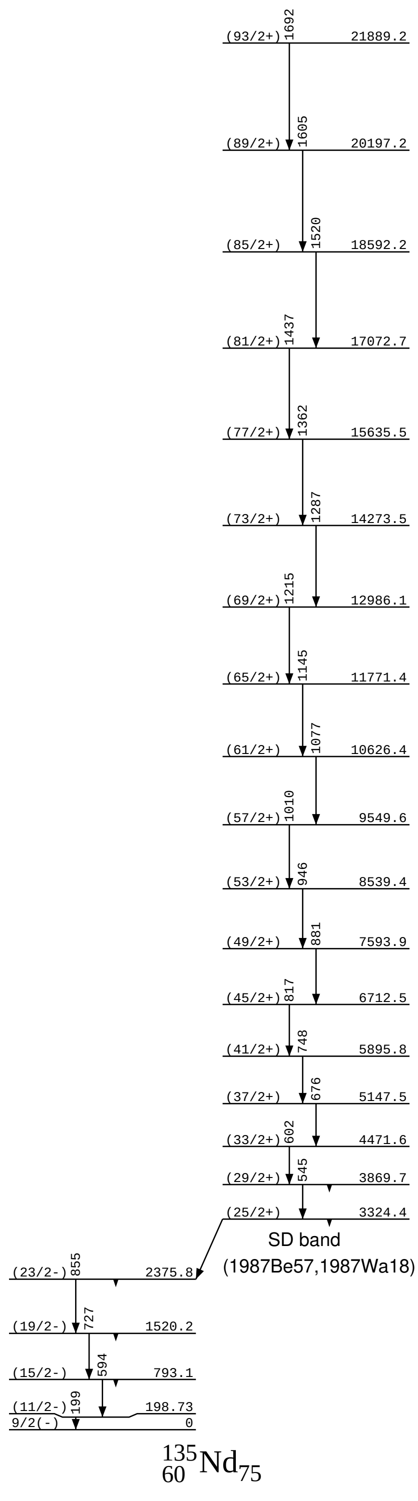
S_n: 8450 $_{SY}$, S_p: 4900 $_{SY}$

Nuclear Bands

A ν9/2[514], α=+1/2
B ν9/2[514], α=-1/2
C $\nu h_{11/2}\pi h_{11/2}\pi g_{7/2}$
D SD band (1987Be57,1987Wa18,1995De40,1997Ko37,1998Pe01, 1990Di01,1993Wi09,1997Ni04,1998Ae01,1999Ko28)
Q_0=5.7$_2$

Levels and γ-ray branchings:

A **0**, $9/2^{(-)}$, *12.4$_6$ min*, %ε+%β$^+$=100 , *μ*=-0.78$_3$, Q=+1.9$_5$
65.0$_2$, $(1/2^+)$, %ε+%β$^+$>99.97, %IT<0.03
193.7$_3$, $(3/2^+)$, $\gamma_{\mathbf{65.0}}$**128.8**$_2$(100)
B **198.73**$_{12}$, $(11/2^-)$, *38$_5$ ps*, *μ*=-0.50$_{31}$, $\gamma_{\mathbf{0}}$**198.82**$_{15}$(100) (M1+E2) $\delta=-0.22_7$
273.0$_2$, $(3/2,5/2)$, $\gamma_{\mathbf{65.0}}$**208.1**$_2$(100)
328.0$_3$, $(1/2^+)$, $\gamma_{\mathbf{193.7}}$**135.5**$_5$($\approx$ 4), $\gamma_{\mathbf{65.0}}$**262.9**$_2$(100$_{30}$)
347.1$_3$, $(1/2,3/2,5/2)$, $\gamma_{\mathbf{65.0}}$**282.1**$_2$(100)
371.1$_2$, $(5/2^+)$, $\gamma_{\mathbf{273.0}}$**98.1**$_2$(23$_6$), $\gamma_{\mathbf{193.7}}$**177.4**$_3$(17$_3$), $\gamma_{\mathbf{65.0}}$**306.2**$_2$(100$_{14}$)
463.7$_3$(?), $(5/2^+)$, $\gamma_{\mathbf{328.0}}$**135.5**$_5$($\approx$ 4), $\gamma_{\mathbf{273.0}}$**190.6**$_5$($\approx$ 5), $\gamma_{\mathbf{193.7}}$**270.0**$_2$(100$_{35}$), $\gamma_{\mathbf{65.0}}$**398.7**$_2$(88$_{22}$)
493.2$_2$, $(7/2,9/2,11/2)$, $\gamma_{\mathbf{0}}$**493.2**$_2$(100)
A **560.51**$_{14}$, $(13/2^-)$, *5.4$_4$ ps*, $\gamma_{\mathbf{198.73}}$**361.88**$_{15}$(100$_1$) D+Q $\delta=-0.9_6$, $\gamma_{\mathbf{0}}$**560.35**$_{20}$(61$_1$) (Q)
564.9$_3$, $\gamma_{\mathbf{198.73}}$**366.22**$_{25}$, $\gamma_{\mathbf{0}}$**564.2**$_3$(?)
588.1$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{193.7}}$**394.2**$_3$(100$_{50}$), $\gamma_{\mathbf{65.0}}$**523.3**$_3$(90$_{30}$)
602.9$_4$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{193.7}}$**409.2**$_2$(100)
663.7$_7$(?), $\gamma_{\mathbf{198.73}}$**465.0**$_6$(100)(?)
671.7$_3$, $\gamma_{\mathbf{347.1}}$**324.6**$_2$(100$_{30}$), $\gamma_{\mathbf{273.0}}$**398.7**$_2$($\approx$ 20)
713.0$_2$, $(7/2^+)$, $\gamma_{\mathbf{493.2}}$**219.9**$_3$(20$_{10}$), $\gamma_{\mathbf{463.7}}$**249.3**$_3$(37$_{10}$), $\gamma_{\mathbf{371.1}}$**341.9**$_2$(67$_{17}$), $\gamma_{\mathbf{273.0}}$**439.9**$_4$(23$_{10}$), $\gamma_{\mathbf{198.73}}$**514.0**, $\gamma_{\mathbf{0}}$**713.0**$_2$(100$_{17}$)
717.0$_5$, $\gamma_{\mathbf{198.73}}$**518.3**$_4$(100)
744.2$_4$, $\gamma_{\mathbf{273.0}}$**471.2**$_3$(100)
B **793.1**$_2$, $(15/2^-)$, *3.20$_{17}$ ps*, $\gamma_{\mathbf{560.51}}$**232.61**$_{20}$(25$_2$) D+Q $\delta=-0.13_7$, $\gamma_{\mathbf{198.73}}$**594.31**$_{20}$(100$_2$) (E2)
826.2$_{10}$(?), $\gamma_{\mathbf{198.73}}$**627.5**
1109.7$_5$(?), $\gamma_{\mathbf{198.73}}$**911.0**$_4$(100)(?)
1176.8$_2$, $\gamma_{\mathbf{713.0}}$**463.8**$_2$(100$_8$), $\gamma_{\mathbf{198.73}}$**978.0**$_2$(63$_8$), $\gamma_{\mathbf{0}}$**1176.7**$_3$(52$_8$)
1181.8$_7$(?), $\gamma_{\mathbf{663.7}}$**518.04**$_{20}$(100)(?)
1214.9$_2$, $\gamma_{\mathbf{198.73}}$**1016.2**$_2$(100)
A **1269.7**$_2$, $(17/2^-)$, $\gamma_{\mathbf{793.1}}$**476.70**$_{25}$(75$_8$) D(+Q) $\delta=-0.09_{11}$, $\gamma_{\mathbf{560.51}}$**709.10**$_{20}$(100$_8$) Q
1357.7$_5$, $\gamma_{\mathbf{713.0}}$**644.8**, $\gamma_{\mathbf{198.73}}$**1159.0**$_5$
1463.8$_5$(?), $\gamma_{\mathbf{793.1}}$**670.7**$_4$(100)(?)
1469.5$_5$(?), $\gamma_{\mathbf{793.1}}$**676.4**$_4$(100)(?)
B **1520.2**$_3$, $(19/2^-)$, $\gamma_{\mathbf{1269.7}}$**250.5**$_5$(11$_1$) D+Q $\delta=-0.19_8$, $\gamma_{\mathbf{793.1}}$**727.0**$_4$(100$_1$) Q
1776.9$_6$, $(15/2^+)$, $\gamma_{\mathbf{560.51}}$**1217**
C **1954.2**$_4$, $(17/2^+)$, $\gamma_{\mathbf{1776.9}}$**178**$_1$, $\gamma_{\mathbf{793.1}}$**1161.1**$_{25}$(100$_2$)
A **2105.5**$_4$, $(21/2^-)$, $\gamma_{\mathbf{1520.2}}$**585.38**$_{25}$(38$_9$) D(+Q) $\delta=0.00_6$, $\gamma_{\mathbf{1269.7}}$**836.0**$_4$(100$_{24}$) (Q)
2122.8$_6$(?), $\gamma_{\mathbf{1520.2}}$**602.6**$_5$(100)(?)
C **2158.1**$_4$, $(19/2^+)$, $\gamma_{\mathbf{1954.2}}$**203.85**$_{25}$(95$_{11}$), $\gamma_{\mathbf{1776.9}}$**381**$_1$, $\gamma_{\mathbf{1269.7}}$**888.4**$_3$(100$_{13}$)
2210.0$_8$(?), $(17/2)$, $\gamma_{\mathbf{1269.7}}$**940**$_1$(?)
2259.6$_6$, $(17/2)$, $\gamma_{\mathbf{1776.9}}$**483**$_1$(?), $\gamma_{\mathbf{1520.2}}$**739**$_1$(?), $\gamma_{\mathbf{793.1}}$**1466**$_1$(?)
C **2350.3**$_4$, $(21/2^+)$, $\gamma_{\mathbf{2158.1}}$**192.24**$_{20}$ D(+Q) $\delta=-0.03_3$, $\gamma_{\mathbf{1954.2}}$**396**$_1$, $\gamma_{\mathbf{1520.2}}$**830**
B **2375.8**$_4$, $(23/2^-)$, $\gamma_{\mathbf{2105.5}}$**270.5**$_5$($\approx$ 5), $\gamma_{\mathbf{1520.2}}$**855.2**$_4$(100$_1$) (Q)
2533.4$_8$, $(23/2)$, $\gamma_{\mathbf{1520.2}}$**1013**$_1$(?)
C **2557.8**$_4$, $(23/2^+)$, $\gamma_{\mathbf{2350.3}}$**207.45**$_{25}$(100$_{14}$), $\gamma_{\mathbf{2158.1}}$**400**$_1$
2703.6$_5$, $(21/2^+)$, $\gamma_{\mathbf{1520.2}}$**1183.7**$_4$(100) (D)
2775.4$_5$, $(21/2^+)$, $\gamma_{\mathbf{2259.6}}$**515**$_1$(?), $\gamma_{\mathbf{2210.0}}$**565**$_1$(?), $\gamma_{\mathbf{2158.1}}$**618**$_1$(100$_{20}$) (D)
2795.3$_5$, $(21/2^+)$, $\gamma_{\mathbf{1520.2}}$**1275**$_1$(?)
C **2800.9**$_4$, $(25/2^+)$, $\gamma_{\mathbf{2557.8}}$**243.20**$_{20}$(100$_{17}$) D+Q $\delta=-0.06_4$, $\gamma_{\mathbf{2350.3}}$**450**$_1$
2819.9$_4$, $\gamma_{\mathbf{2375.8}}$**444.2**$_4$(?), $\gamma_{\mathbf{2105.5}}$**715**(?)
A **2940.6**$_4$, $(25/2^-)$, $\gamma_{\mathbf{2819.9}}$**120.76**$_{20}$(22.0$_5$)(?), $\gamma_{\mathbf{2375.8}}$**564.79**$_{20}$(77$_{12}$) D(+Q) $\delta=-0.02_7$, $\gamma_{\mathbf{2105.5}}$**835.2**$_4$(100$_{13}$) (Q)
C **3102.0**$_5$, $(27/2^+)$, $\gamma_{\mathbf{2800.9}}$**301.13**$_{20}$ (D), $\gamma_{\mathbf{2557.8}}$**544**
B **3110.6**$_4$, $(27/2^-)$, $\gamma_{\mathbf{2940.6}}$**170.05**$_{20}$(100$_6$) D(+Q) $\delta=+0.01_4$, $\gamma_{\mathbf{2375.8}}$**734.6**$_4$(17$_{11}$) (Q)
D **3324.4**$_4$, $(25/2^+)$, *1.7$_6$ ps*, $\gamma_{\mathbf{2800.9}}$**523.5**$_4$(0.06$_2$) (M1,E2), $\gamma_{\mathbf{2795.3}}$**529.0**$_4$(0.10$_2$) (E2), $\gamma_{\mathbf{2775.4}}$**548.9**$_4$(0.14$_3$) (E2), $\gamma_{\mathbf{2703.6}}$**621.0**$_4$(0.13$_3$) (E2), $\gamma_{\mathbf{2557.8}}$**766.5**$_4$(0.10$_2$) M1, $\gamma_{\mathbf{2375.8}}$**949**$_1$(0.12$_2$) (D)
3340.5$_5$, $(25/2^+)$, $\gamma_{\mathbf{2533.4}}$**807**$_1$(?), $\gamma_{\mathbf{2375.8}}$**964.6**$_4$(100$_{29}$) (D)
3346.2$_5$(?), $\gamma_{\mathbf{3110.6}}$**235.6**$_3$(100)(?)
A **3358.5**$_4$, $(29/2^-)$, $\gamma_{\mathbf{3110.6}}$**247.74**$_{25}$(100$_{14}$) D+Q $\delta=-0.08_4$, $\gamma_{\mathbf{2940.6}}$**418.0**$_5$(21$_4$)
C **3471.0**$_5$, $(29/2^+)$, $\gamma_{\mathbf{3102.0}}$**369.12**$_{25}$ D+Q $\delta=-0.16_6$, $\gamma_{\mathbf{2800.9}}$**669**
B **3649.9**$_5$, $(31/2^-)$, $\gamma_{\mathbf{3358.5}}$**291.34**$_{20}$(100$_1$) D+Q $\delta=-0.12_4$, $\gamma_{\mathbf{3110.6}}$**539.5**$_3$(13$_3$)
C **3861.0**$_5$, $(31/2^+)$, $\gamma_{\mathbf{3471.0}}$**389.93**$_{25}$(67$_{15}$) D+Q $\delta=+0.11_3$, $\gamma_{\mathbf{3102.0}}$**759.0**$_3$(100$_4$) (Q)
D **3869.7**$_4$, $(29/2^+)$, *1.0$_4$ ps*, $\gamma_{\mathbf{3340.5}}$**529.0**$_4$(0.10$_2$) (E2), $\gamma_{\mathbf{3324.4}}$**545.40**$_{25}$(0.77$_8$) E2
A **4008.1**$_5$, $(33/2^-)$, $\gamma_{\mathbf{3649.9}}$**358.22**$_{25}$(100$_{14}$) D(+Q) $\delta=-0.02_{13}$, $\gamma_{\mathbf{3358.5}}$**649.2**$_3$(23$_8$)
C **4347**$_1$, $(33/2^+)$, $\gamma_{\mathbf{3861.0}}$**486**, $\gamma_{\mathbf{3471.0}}$**876**
B **4414.4**$_6$, $(35/2^-)$, $\gamma_{\mathbf{4008.1}}$**406.5**$_5$(100$_{19}$) D+Q $\delta=-0.25_{15}$, $\gamma_{\mathbf{3649.9}}$**764.9**$_5$(46$_{24}$)
4417.1$_6$, $\gamma_{\mathbf{4008.1}}$**408.5**$_5$(100$_{31}$), $\gamma_{\mathbf{3649.9}}$**767.4**$_3$(76$_4$)
D **4471.6**$_5$, $(33/2^+)$, *0.44^{26}_{8} ps*, $\gamma_{\mathbf{3869.7}}$**601.90**$_{25}$(1.05$_{10}$) E2
C **4772**$_1$, $(35/2^+)$, $\gamma_{\mathbf{4347}}$**425**, $\gamma_{\mathbf{3861.0}}$**911**
A **4852.6**$_6$, $(37/2^-)$, $\gamma_{\mathbf{4414.4}}$**438.6**$_5$(100$_{33}$) D+Q $\delta=-0.26_{15}$, $\gamma_{\mathbf{4008.1}}$**844.2**$_4$(81$_{40}$)
D **5147.5**$_6$, $(37/2^+)$, *0.21^{14}_{6} ps*, $\gamma_{\mathbf{4471.6}}$**675.90**$_{25}$(0.80$_8$) E2
C **5286**$_1$(?), $(37/2^+)$, $\gamma_{\mathbf{4772}}$**514**(?), $\gamma_{\mathbf{4347}}$**939**(?)
B **5315**$_1$, $(39/2^-)$, $\gamma_{\mathbf{4852.6}}$**463**, $\gamma_{\mathbf{4414.4}}$**901**
C **5734**$_2$, $(39/2^+)$, $\gamma_{\mathbf{4772}}$**962**
A **5787**$_1$, $(41/2^-)$, $\gamma_{\mathbf{5315}}$**472**, $\gamma_{\mathbf{4852.6}}$**935**
D **5895.8**$_6$, $(41/2^+)$, *<0.15 ps*, $\gamma_{\mathbf{5147.5}}$**748.30**$_{25}$(0.75$_8$) E2
B **6281**$_1$, $(43/2^-)$, $\gamma_{\mathbf{5787}}$**494**, $\gamma_{\mathbf{5315}}$**966**
D **6712.5**$_7$, $(45/2^+)$, $\gamma_{\mathbf{5895.8}}$**816.70**$_{25}$(0.65$_7$) E2
A **6813**$_1$(?), $(45/2^-)$, $\gamma_{\mathbf{6281}}$**532**(?), $\gamma_{\mathbf{5787}}$**1026**(?)
B **7328**$_2$(?), $(47/2^-)$, $\gamma_{\mathbf{6281}}$**1047**(?)
D **7593.9**$_7$, $(49/2^+)$, $\gamma_{\mathbf{6712.5}}$**881.40**$_{25}$(0.66$_7$) E2
D **8539.4**$_8$, $(53/2^+)$, $\gamma_{\mathbf{7593.9}}$**945.50**$_{25}$(0.55$_7$)
D **9549.6**$_8$, $(57/2^+)$, $\gamma_{\mathbf{8539.4}}$**1010.20**$_{25}$(0.42$_6$)
D **10626.4**$_9$, $(61/2^+)$, $\gamma_{\mathbf{9549.6}}$**1076.80**$_{25}$(0.33$_6$)
D **11771.4**$_9$, $(65/2^+)$, $\gamma_{\mathbf{10626.4}}$**1145.00**$_{25}$(0.25$_6$)
D **12986.1**$_9$, $(69/2^+)$, $\gamma_{\mathbf{11771.4}}$**1214.70**$_{25}$(0.16$_5$)
D **14273.5**$_{10}$, $(73/2^+)$, $\gamma_{\mathbf{12986.1}}$**1287.40**$_{25}$(0.09$_4$)
D **15635.5**$_{15}$, $(77/2^+)$, $\gamma_{\mathbf{14273.5}}$**1362**$_1$(< 0.1)
D **17072.7**$_{15}$, $(81/2^+)$, $\gamma_{\mathbf{15635.5}}$**1437.2**$_4$
D **18592.2**$_{15}$, $(85/2^+)$, $\gamma_{\mathbf{17072.7}}$**1519.5**$_5$
D **20197.2**$_{17}$, $(89/2^+)$, $\gamma_{\mathbf{18592.2}}$**1605.0**$_7$
D **21889.2**$_{20}$, $(93/2^+)$, $\gamma_{\mathbf{20197.2}}$**1692.0**$_{10}$



(93/2+) 1692 21889.2
(89/2+) 1605 20197.2
(85/2+) 1520 18592.2
(81/2+) 1437 17072.7
(77/2+) 1362 15635.5
(73/2+) 1287 14273.5
(69/2+) 1215 12986.1
(65/2+) 1145 11771.4
(61/2+) 1077 10626.4
(57/2+) 1010 9549.6
(53/2+) 946 8539.4
(49/2+) 881 7593.9
(45/2+) 817 6712.5
(41/2+) 748 5895.8
(37/2+) 676 5147.5
(33/2+) 602 4471.6
(29/2+) 545 3869.7
(25/2+) 3324.4
SD band
(1987Be57,1987Wa18)
(23/2-) 855 2375.8
(19/2-) 727 1520.2
(15/2-) 594 793.1
(11/2-) 199 198.73
9/2(-) 0
$^{135}_{60}Nd_{75}$

$^{136}_{60}$Nd$_{76}$

S_n: 11070 $_{SY}$, S_p: 5.54x10^3 $_{16}$

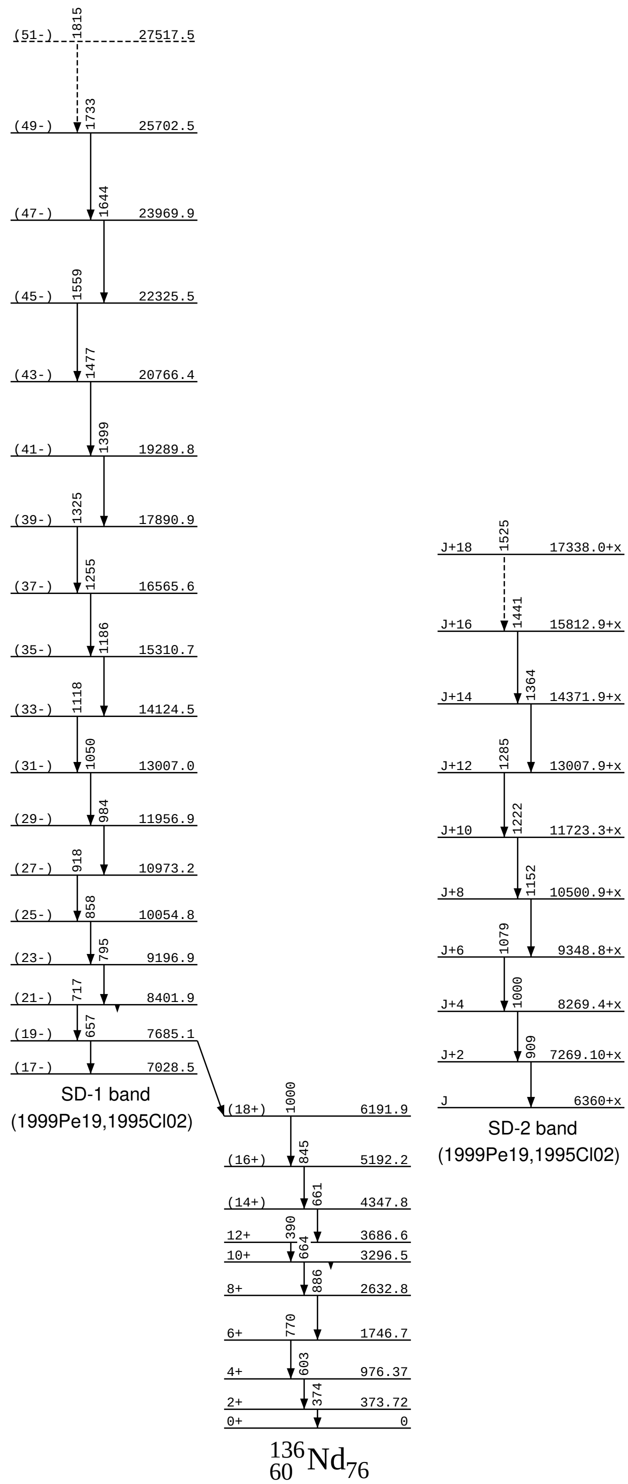
Nuclear Bands

A GS band
B $\pi h_{11/2}$ $\pi g_{7/2}$, α=0
C $\pi h_{11/2}$ $\pi g_{7/2}$, α=1
D $\pi h^2_{11/2}$ $\nu h^2_{11/2}$
E Aligned $\pi h^2_{11/2}$or $\nu h^2_{11/2}$
F Aligned $\pi h^2_{11/2}$or $\nu h^2_{11/2}$
G Band based on 10^+
H Aligned $\nu h^2_{11/2}$
I 4qp, dipole band based on 9^-
J Magnetic-rotational (?) band based on 15^+
K 4qp, dipole band based on 16^+
L 4qp, dipole band based on 11^-
M 4qp, dipole band based on 22^+
N Band based on 14^+
O γ band (?)
P SD-1 band (1999Pe19,1995Cl02,1987Be32,1997Ni04)
Q SD-2 band (1999Pe19,1995Cl02,1997Ni04)

Levels and γ-ray branchings:

A **0**, 0^+, *50.65*$_{33}$ *min*, %ε+%β^+=100
A **373.72**$_{16}$, 2^+, γ_{0}**373.7**$_{2}$(100) E2
O **862.37**$_{16}$, 2^+, $\gamma_{373.72}$**488.6**$_{2}$(100_8) E2+M1, γ_{0}**862.4**$_{2}$(99_{10}) E2
A **976.37**$_{20}$, 4^+, <*8 ps*, $\gamma_{373.72}$**602.7**$_{2}$(100) E2
O **1230.94**$_{19}$, $(3)^+$, $\gamma_{976.37}$**254.7**$_{4}$(2.1_4), $\gamma_{862.37}$**368.7**$_{2}$(28_2), $\gamma_{373.72}$**857.2**$_{2}$(100_2) E2+M1
O **1541.67**$_{21}$, (4^+), $\gamma_{976.37}$**565.2**$_{2}$(34_{10}), $\gamma_{862.37}$**679.2**$_{2}$(100_{10})
A **1746.7**$_{3}$, 6^+, <*14 ps*, $\gamma_{976.37}$**770.4**$_{2}$(100) E2
1775.6$_{4}$, $\gamma_{373.72}$**1401.9**$_{3}$(100)
1817.7$_{3}$, $\gamma_{1230.94}$**586.9**$_{3}$(100_{14}), $\gamma_{862.37}$**955.2**$_{3}$(100_{32})
1925.94$_{25}$, $\gamma_{1230.94}$**695.0**$_{2}$(100)
C **2035.6**$_{3}$, (5^-), $\gamma_{976.37}$**1059.4**$_{3}$(100) D
O **2045.55**$_{21}$, (5^+), $\gamma_{1541.67}$**503.7**$_{2}$(4.6_{12}), $\gamma_{1230.94}$**814.7**$_{2}$(100_5), $\gamma_{976.37}$**1069.3**$_{3}$(17_5)
2181.1$_{4}$, $\gamma_{976.37}$**1204.7**$_{3}$(100)
2227.9$_{3}$, $(3^-,4,5,6^+)$, $\gamma_{2035.6}$**192.4**$_{2}$(75_{17}), $\gamma_{976.37}$**1251.3**$_{3}$(100_{25})
2346.1$_{3}$, $\gamma_{2045.55}$**300.6**$_{2}$(100_4), $\gamma_{1925.94}$**420.2**$_{2}$(32_4)
2416.6$_{3}$, $\gamma_{2045.55}$**371.1**$_{2}$(100)
C **2439.9**$_{3}$, (7^-), *21*$_{7}$ *ps*, $\gamma_{2035.6}$**404.4**$_{2}$(29.5_{10}) (E2), $\gamma_{1746.7}$**693.3**$_{3}$(100.0_{14}) (E1)
B **2483.8**$_{3}$, (6^-), $\gamma_{2045.55}$**438.1**$_{4}$(59_9), $\gamma_{2035.6}$**448.0**$_{5}$(77_9), $\gamma_{1746.7}$**737.1**$_{5}$(100_{18}) D
2522.8$_{4}$, $\gamma_{862.37}$**1660.4**$_{3}$(100)
A **2632.8**$_{3}$, 8^+, <*7 ps*, $\gamma_{1746.7}$**886.0**$_{2}$(100) E2
B **2757.8**$_{4}$, (8^-), $\gamma_{2483.8}$**273.9**$_{3}$(66_4), $\gamma_{2439.9}$**317.9**$_{3}$(100_4)
C **2941.1**$_{4}$, (9^-), *6*$_{2}$ *ps*, $\gamma_{2439.9}$**501.2**$_{2}$(100) E2
B **3244.3**$_{4}$, (10^-), $\gamma_{2941.1}$**303.3**$_{3}$(31_3), $\gamma_{2757.8}$**486.5**$_{3}$(100_4)
H **3278.6**$_{5}$, (10^+), $\gamma_{2632.8}$**645.8**$_{3}$(100) (Q)
F **3296.5**$_{4}$, 10^+, *51*$_{6}$ *ps*, μ=+11.7$_{39}$, $\gamma_{2941.1}$**355.4**$_{2}$(35.9_9) (E1), $\gamma_{2632.8}$**663.6**$_{3}$(100.0_{21}) E2
3330.8$_{10}$, $\gamma_{2632.8}$**698**
A **3552.6**$_{4}$, (10^+), $\gamma_{2632.8}$**919.7**$_{3}$(100)
C **3602.2**$_{4}$, (11^-), $\gamma_{3244.3}$**358**, $\gamma_{2941.1}$**661.2**$_{3}$(100) (Q)
F **3686.6**$_{4}$, 12^+, *19*$_{3}$ *ps*, μ=+14.0$_{46}$, $\gamma_{3296.5}$**390.1**$_{2}$(100) E2
3765.1$_{9}$, (11^-), $\gamma_{2941.1}$**824**
G **3768.2**$_{4}$, (10^+), $\gamma_{2632.8}$**1135.6**$_{3}$(100) Q
I **3781.8**$_{10}$, (9^-), $\gamma_{2632.8}$**1149**
3828.1$_{9}$, $\gamma_{2941.1}$**887**
L **3874.1**$_{9}$, (11^-), $\gamma_{2941.1}$**933**
H **3997.2**$_{6}$, (12^+), $\gamma_{3278.6}$**718.6**$_{3}$(100)
I **4001.8**$_{11}$, (10^-), $\gamma_{3781.8}$**220**, $\gamma_{3330.8}$**671**
B **4016.7**$_{6}$, (12^-), $\gamma_{3244.3}$**772.4**$_{5}$(100)
L **4104.1**$_{9}$, (12^-), $\gamma_{3874.1}$**230**, $\gamma_{3828.1}$**276**, $\gamma_{3765.1}$**339**
I **4255.8**$_{15}$, (11^-), $\gamma_{4001.8}$**254**
G **4320.2**$_{4}$, (12^+), $\gamma_{3768.2}$**552.0**$_{2}$(29_3) Q, $\gamma_{3552.6}$**767.5**$_{3}$(100_3)
F **4347.8**$_{5}$, (14^+), <*4 ps*, $\gamma_{3686.6}$**661.1**$_{3}$(100) (E2)
L **4413.1**$_{10}$, (13^-), $\gamma_{4104.1}$**309**, $\gamma_{3874.1}$**539**
C **4426.5**$_{5}$, (13^-), $\gamma_{4016.7}$**410**, $\gamma_{3602.2}$**824.3**$_{3}$(100)
E **4455.3**$_{6}$, (13^+), $\gamma_{3686.6}$**769.0**$_{5}$(100)
I **4549.8**$_{18}$, (12^-), $\gamma_{4255.8}$**294**
L **4770.1**$_{11}$, (14^-), $\gamma_{4413.1}$**357**, $\gamma_{4104.1}$**666**
H **4849.0**$_{6}$, (14^+), $\gamma_{3997.2}$**851.8**$_{3}$(100)
D **4855.9**$_{5}$, (14^+), $\gamma_{3686.6}$**1169.2**$_{3}$(100) Q
I **4894.8**$_{21}$, (13^-), $\gamma_{4549.8}$**345**
N **5022.5**$_{5}$, (14^+), $\gamma_{4320.2}$**702.5**$_{3}$(100)
B **5022.6**$_{7}$, (14^-), $\gamma_{4016.7}$**1005.9**$_{3}$(100)
G **5032.1**$_{5}$, (14^+), $\gamma_{4320.2}$**711.8**$_{3}$(100)
E **5132.8**$_{5}$, (15^+), $\gamma_{4455.3}$**677.7**$_{5}$(74_{12}), $\gamma_{4347.8}$**784.9**$_{2}$(100_6) D
L **5172.1**$_{12}$, (15^-), $\gamma_{4770.1}$**402**, $\gamma_{4413.1}$**759**
F **5192.2**$_{5}$, (16^+), $\gamma_{4347.8}$**844.5**$_{3}$(100)
I **5305.8**$_{23}$, (14^-), $\gamma_{4894.8}$**411**
C **5415.6**$_{5}$, (15^-), $\gamma_{5022.5}$**393**, $\gamma_{4426.5}$**989.1**$_{3}$(1.9_3), $\gamma_{4347.8}$**1066**
D **5570.3**$_{5}$, (16^+), $\gamma_{4855.9}$**714.4**$_{2}$(93_{22}) Q, $\gamma_{4347.8}$**1222.7**$_{4}$(100_{36}) Q
L **5609.1**$_{13}$, (16^-), $\gamma_{5172.1}$**437**, $\gamma_{4770.1}$**839**
N **5695.6**$_{5}$, (16^+), $\gamma_{5032.1}$**663.3**$_{5}$(72_{21}), $\gamma_{5022.5}$**673.1**$_{3}$(100_7)
I **5759.8**$_{25}$, (15^-), $\gamma_{5305.8}$**454**
H **5843.9**$_{7}$, (16^+), $\gamma_{4849.0}$**994.9**$_{3}$(100)
G **5876.8**$_{6}$, (16^+), $\gamma_{5032.1}$**844.7**$_{2}$(100) Q
E **5942.6**$_{5}$, (17^+), $\gamma_{5192.2}$**750.4**$_{2}$(86_{29}) D, $\gamma_{5132.8}$**809.8**$_{3}$(100_{43})
K **6007.9**$_{9}$, (16^+), $\gamma_{5132.8}$**875**
L **6036.1**$_{14}$, (17^-), $\gamma_{5609.1}$**427**, $\gamma_{5172.1}$**864**
B **6040.3**$_{7}$, (16^-), $\gamma_{5022.6}$**1017.7**$_{3}$(100)
F **6191.9**$_{5}$, (18^+), $\gamma_{5192.2}$**999.7**$_{2}$(100) Q
J **6231.2**$_{11}$, (15^+), $\gamma_{4849.0}$**1382**
K **6239.0**$_{7}$, (17^+), $\gamma_{6007.9}$**231**, $\gamma_{5695.6}$**544**, $\gamma_{5132.8}$**1106**
I **6261**$_{3}$, (16^-), $\gamma_{5759.8}$**501**
J **6348.5**$_{12}$, (16^+), $\gamma_{6231.2}$**117**
C **6360.5**$_{5}$, (17^-), $\gamma_{5415.6}$**944.8**$_{3}$(84_8), $\gamma_{5192.2}$**1168.4**$_{3}$(100_8)
D **6471.9**$_{5}$, (18^+), $\gamma_{5570.3}$**901.6**$_{2}$(100_{33}) Q, $\gamma_{5192.2}$**1279.7**$_{9}$(56_{33}) Q
L **6481.1**$_{14}$, (18^-), $\gamma_{6036.1}$**445**, $\gamma_{5609.1}$**872**
K **6522.7**$_{6}$, (18^+), $\gamma_{6239.0}$**284**, $\gamma_{5695.6}$**827.1**$_{3}$(100)
N **6546.3**$_{9}$, (18^+), $\gamma_{5695.6}$**851**
J **6579.7**$_{10}$, (17^+), $\gamma_{6348.5}$**231**, $\gamma_{5843.9}$**736**
6587.8$_{11}$, (17), $\gamma_{5843.9}$**744**
B **6675.8**$_{8}$, (18^-), $\gamma_{6040.3}$**635.5**$_{3}$(100)
H **6756.1**$_{8}$, (18^+), $\gamma_{5843.9}$**912.2**$_{3}$(100)
G **6771.4**$_{7}$, (18^+), $\gamma_{5876.8}$**894.6**$_{4}$(100)
K **6868.0**$_{8}$, (19^+), $\gamma_{6546.3}$**322**, $\gamma_{6522.7}$**345**, $\gamma_{6239.0}$**629**
J **6884.7**$_{12}$, (18^+), $\gamma_{6587.8}$**297**, $\gamma_{6579.7}$**305**
6929.7$_{13}$, (18), $\gamma_{6579.7}$**350**
E **6931.2**$_{7}$, (19^+), $\gamma_{5942.6}$**988.6**$_{5}$(100)
L **6969.1**$_{15}$, (19^-), $\gamma_{6481.1}$**488**, $\gamma_{6036.1}$**933**
P **7028.5**$_{10}$, (17^-)
C **7142.0**$_{6}$, (19^-), $\gamma_{6360.5}$**781.5**$_{4}$(100), $\gamma_{6191.9}$**950**
K **7255.9**$_{9}$, (20^+), $\gamma_{6868.0}$**388**, $\gamma_{6522.7}$**733**
J **7293.7**$_{14}$, (19^+), $\gamma_{6929.7}$**364**, $\gamma_{6884.7}$**409**
D **7330.5**$_{6}$, (20^+), $\gamma_{6471.9}$**858.7**$_{2}$, $\gamma_{6191.9}$**1138**
F **7355.0**$_{6}$, (20^+), $\gamma_{6191.9}$**1163.1**$_{2}$
L **7480.1**$_{16}$, (20^-), $\gamma_{6969.1}$**511**, $\gamma_{6481.1}$**999**
B **7533.3**$_{9}$, (20^-), $\gamma_{6675.8}$**857.5**$_{4}$(100)
7647.7$_{10}$, (19^-), $\gamma_{6191.9}$**1456**$_{1}$(100) D
J **7669.7**$_{17}$, (20^+), $\gamma_{7293.7}$**376**
P **7685.1**$_{10}$, (19^-), $\gamma_{7028.5}$**656.6**$_{3}$(0.14_4) Q, $\gamma_{6191.9}$**1493**$_{1}$(0.06_3)
K **7685.9**$_{10}$, (21^+), $\gamma_{7255.9}$**430**, $\gamma_{6868.0}$**818**
H **7732.1**$_{13}$, (20^+), $\gamma_{6756.1}$**976**
L **8029.1**$_{16}$, (21^-), $\gamma_{7480.1}$**549**, $\gamma_{6969.1}$**1060**
C **8050.0**$_{8}$, (21^-), $\gamma_{7142.0}$**908.0**$_{5}$(100) Q
J **8050.7**$_{20}$, (21^+), $\gamma_{7669.7}$**381**
8064.0$_{10}$, (21^-), $\gamma_{7142.0}$**922**
E **8100.0**$_{7}$, (21^+), $\gamma_{6931.2}$**1168.8**$_{2}$
K **8148.9**$_{11}$, (22^+), $\gamma_{7685.9}$**463**, $\gamma_{7255.9}$**893**
D **8223.2**$_{6}$, (22^+), $\gamma_{7330.5}$**892.7**$_{2}$

M **8380.0**$_{11}$, (22^+), $\gamma_{8064.0}$**316**, $\gamma_{8050.0}$**330**
P **8401.9**$_{10}$, (21^-), $\gamma_{7685.1}$**716.7**$_7(0.52_{15})$, $\gamma_{7647.7}$**754.2**$_3(0.15_4)$ Q
J **8466.7**$_{22}$, (22^+), $\gamma_{8050.7}$**416**
B **8555.3**$_{14}$, (22^-), $\gamma_{7533.3}$**1022**
F **8622.2**$_8$, (22^+), $\gamma_{7355.0}$**1267.2**$_5$
K **8652.9**$_{12}$, (23^+), $\gamma_{8148.9}$**504**, $\gamma_{7685.9}$**967**
L **8653.1**$_{17}$, (22^-), $\gamma_{8029.1}$**624**, $\gamma_{7480.1}$**1173**
M **8755.0**$_{14}$, (23^+), $\gamma_{8380.0}$**375**
H **8795.1**$_{16}$, (22^+), $\gamma_{7732.1}$**1063**
J **8947.7**$_{24}$, (23^+), *0.062*$_{28}$ *ps*, $\gamma_{8466.7}$**481**
C **9048.0**$_{11}$, (23^-), $\gamma_{8064.0}$**984**, $\gamma_{8050.0}$**998**
M **9165.0**$_{14}$, (24^+), $\gamma_{8755.0}$**410**, $\gamma_{8380.0}$**785**
D **9172.1**$_6$, (24^+), $\gamma_{8223.2}$**948.9**$_2$
K **9178.9**$_{13}$, (24^+), $\gamma_{8652.9}$**526**, $\gamma_{8148.9}$**1030**
P **9196.9**$_{11}$, (23^-), $\gamma_{8401.9}$**795.0**$_5(0.95_{14})$ Q
J **9492**$_3$, (24^+), *0.042*$_{21}$ *ps*, $\gamma_{8947.7}$**544**
B **9557.3**$_{17}$, (24^-), $\gamma_{8555.3}$**1002**
M **9618.0**$_{15}$, (25^+), $\gamma_{9165.0}$**453**, $\gamma_{8755.0}$**863**
K **9745.9**$_{14}$, (25^+), $\gamma_{9178.9}$**567**, $\gamma_{8652.9}$**1093**
C **9893.6**$_{11}$, (25^-), $\gamma_{9048.0}$**845.6**$_2$
P **10054.8**$_{12}$, (25^-), $\gamma_{9196.9}$**857.9**$_5(1.00_{13})$
J **10092**$_3$, (25^+), γ_{9492}**600**
M **10109.0**$_{17}$, (26^+), $\gamma_{9618.0}$**491**
D **10190.6**$_7$, (26^+), $\gamma_{9172.1}$**1018.4**$_2$
K **10343.9**$_{15}$, (26^+), $\gamma_{9745.9}$**598**, $\gamma_{9178.9}$**1165**
B **10499.0**$_{17}$, (26^-), $\gamma_{9557.3}$**941.7**$_2$
M **10638.0**$_{17}$, (27^+), $\gamma_{10109.0}$**529**, $\gamma_{9618.0}$**1020**
J **10763**$_3$, (26^+), γ_{10092}**671**
C **10785.0**$_{11}$, (27^-), $\gamma_{9893.6}$**891.4**$_2$
K **10968.9**$_{15}$, (27^+), $\gamma_{10343.9}$**625**, $\gamma_{9745.9}$**1223**
P **10973.2**$_{14}$, (27^-), $\gamma_{10054.8}$**918.4**$_6(0.99_{14})$
D **11277.5**$_7$, (28^+), $\gamma_{10190.6}$**1086.9**$_2$
B **11490.8**$_{17}$, (28^-), $\gamma_{10499.0}$**991.8**$_2$
K **11647.9**$_{18}$, (28^+), $\gamma_{10343.9}$**1304**
C **11784.1**$_{11}$, (29^-), $\gamma_{10785.0}$**999.1**$_2$
P **11956.9**$_{14}$, (29^-), $\gamma_{10973.2}$**983.7**$_3(1.01_{13})$
K **12335.9**$_{18}$, (29^+), $\gamma_{10968.9}$**1367**
D **12418.5**$_{12}$, (30^+), $\gamma_{11277.5}$**1141**
B **12555.8**$_{17}$, (30^-), $\gamma_{11490.8}$**1065.0**$_2$
C **12882.5**$_{12}$, (31^-), $\gamma_{11784.1}$**1098.4**$_2$
P **13007.0**$_{14}$, (31^-), $\gamma_{11956.9}$**1050.1**$_4(1.03_{13})$ Q
B **13700.4**$_{17}$, (32^-), $\gamma_{12555.8}$**1144.6**$_2$
C **14069.6**$_{12}$, (33^-), $\gamma_{12882.5}$**1187.1**$_2$
P **14124.5**$_{15}$, (33^-), $\gamma_{13007.0}$**1117.5**$_4(0.95_{12})$ Q
B **14926.0**$_{18}$, (34^-), $\gamma_{13700.4}$**1225.6**$_5$
P **15310.7**$_{16}$, (35^-), $\gamma_{14124.5}$**1186.2**$_4(0.54_9)$
C **15355.3**$_{13}$, (35^-), $\gamma_{14069.6}$**1285.7**$_5$
B **16226.4**$_{19}$, (36^-), $\gamma_{14926.0}$**1300.4**$_5$
P **16565.6**$_{16}$, (37^-), $\gamma_{15310.7}$**1254.9**$_4(0.39_7)$ Q
C **16743.6**$_{14}$, (37^-), $\gamma_{15355.3}$**1388.3**$_5$
B **17593.4**$_{21}$, (38^-), $\gamma_{16226.4}$**1367**(?)
P **17890.9**$_{17}$, (39^-), $\gamma_{16565.6}$**1325.3**$_5(0.23_4)$ Q
P **19289.8**$_{17}$, (41^-), $\gamma_{17890.9}$**1398.9**$_4(0.20_4)$ Q
P **20766.4**$_{18}$, (43^-), $\gamma_{19289.8}$**1476.6**$_5(0.12_3)$
P **22325.5**$_{19}$, (45^-), $\gamma_{20766.4}$**1559.1**$_5(0.06_2)$
P **23969.9**$_{20}$, (47^-), $\gamma_{22325.5}$**1644.4**$_7(0.03_2)$
P **25702.5**$_{21}$, (49^-), $\gamma_{23969.9}$**1732.6**$_7$
P **27517.5**$_{24}$(?), (51^-), $\gamma_{25702.5}$**1815**$_1$(?)
Q **6360+x**, J
Q **7269.10+x**, $J+2$, γ_{6360+x}**909.1**$_2$
Q **8269.4+x**, $J+4$, $\gamma_{7269.10+x}$**1000.3**$_2$
Q **9348.8+x**, $J+6$, $\gamma_{8269.4+x}$**1079.4**$_2$
Q **10500.9+x**, $J+8$, $\gamma_{9348.8+x}$**1152.1**$_2$
Q **11723.3+x**, $J+10$, $\gamma_{10500.9+x}$**1222.4**$_5$
Q **13007.9+x**, $J+12$, $\gamma_{11723.3+x}$**1284.6**$_5$
Q **14371.9+x**, $J+14$, $\gamma_{13007.9+x}$**1364**$_1$
Q **15812.9+x**, $J+16$, $\gamma_{14371.9+x}$**1441**$_1$
Q **17338.0+x**, $J+18$, $\gamma_{15812.9+x}$**1525**$_1$(?)



$^{137}_{60}\mathrm{Nd}_{77}$

S_n: 8426 $_{63}$, S_p: 5433 $_{58}$

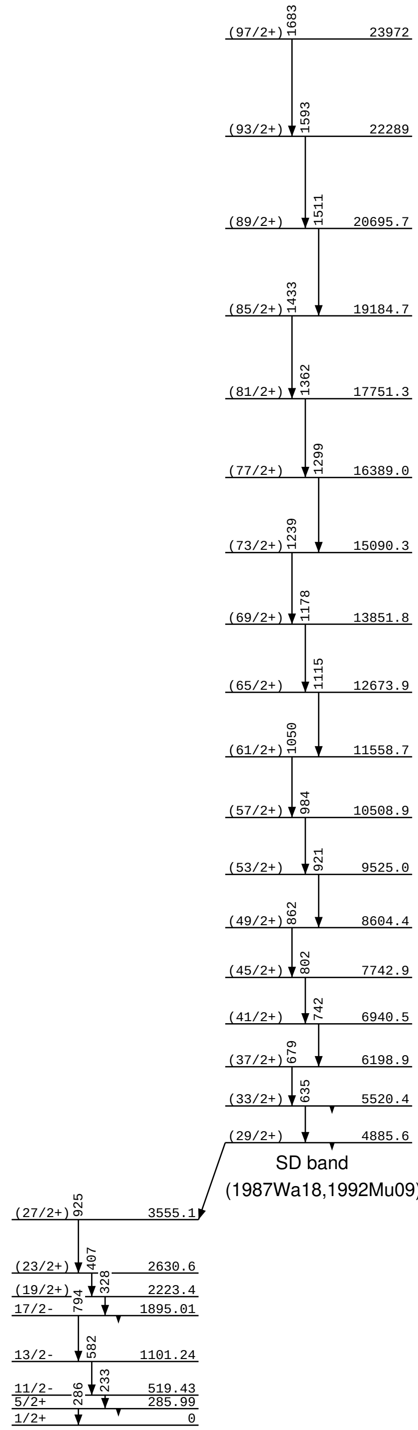
Nuclear Bands

A $\nu h_{11/2}$
B $\nu h_{11/2}(5^-(\mathrm{in}^{138}\mathrm{Nd}))$
C $\nu h_{11/2}(\nu h^2_{11/2}$ or $\pi h^2_{11/2})$ (?)
D $\nu 1/2$-[530]$\nu h^2_{11/2}$(?)
E $\nu h_{11/2}\ \pi(d_{5/2}h_{11/2})$ or $\nu h_{11/2}\ \pi(g_{7/2}h_{11/2})$
F Magnetic dipole rotational band
G Magnetic dipole rotational band
H Magnetic dipole rotational band
I SD band (1987Wa18,1992Mu09,1995Lu09,1996Pe18) Q_0=4.0$_5$

Levels and γ-ray branchings:

0, $1/2^+$, *38.5$_{15}$ min*, %ε+%β^+=100 , μ=-0.633$_5$
108.60$_{11}$, $3/2^+$, γ_{0}**108.63**$_{14}$(100) M1
268.92$_{21}$, $(3/2)^+$, $\gamma_{108.60}$**160.5**$_4$(19.4$_4$) M1,E2, γ_{0}**268.7**$_3$(100.0$_8$) M1,E2
285.99$_{11}$, $5/2^+$, $\gamma_{108.60}$**177.41**$_{14}$(100.0) M1+(E2), γ_{0}**286.01**$_{14}$(38.1$_{15}$) E2
519.43$_{17}$, $11/2^-$, *1.60$_{15}$ s*, %IT=100 , $\gamma_{285.99}$**233.47**$_{14}$(100) E3
615.22$_{16}$, $7/2^+$, $\gamma_{285.99}$**329.4**$_2$(25$_8$) M1,E2, $\gamma_{108.60}$**506.6**$_2$(100)
798.0$_4$, $\gamma_{285.99}$**512.0**$_{10}$(?), $\gamma_{268.92}$**529.2**$_4$(100)
834.73$_{23}$, $(7/2^+)$, $\gamma_{285.99}$**548.8**$_3$(100$_2$), $\gamma_{268.92}$**565.6**$_3$($<$ 66)
851.92$_{22}$, $(7/2^+)$, $\gamma_{285.99}$**565.6**$_3$($<$ 100), $\gamma_{108.60}$**743.3**$_4$(25.7$_{14}$)
976.87$_{23}$, $9/2^-$, $\gamma_{519.43}$**457.3**$_5$(100), $\gamma_{285.99}$**690.8**$_3$(69$_2$) M2
1101.24$_{21}$, $13/2^-$, $\gamma_{519.43}$**581.9**$_2$(100) M1+E2
1188.83$_{22}$, $15/2^-$, $\gamma_{519.43}$**669.4**$_2$(100) E2
1374.7$_3$, $(7/2,5/2^-)$, $\gamma_{976.87}$**397.7**$_3$(100$_3$), $\gamma_{615.22}$**759.5**$_5$(91$_3$)
1376.33$_{23}$, $(11/2^+)$, $\gamma_{615.22}$**761.2**$_2$(100) (E2)
1510.76$_{24}$, $(11/2)^-$, $\gamma_{1101.24}$**410.6**$_5$(100$_2$) M1,E2, $\gamma_{976.87}$**533.8**$_4$($\leq$ 75), $\gamma_{851.92}$**658.6**$_3$(7.5$_5$)
1683.72$_{23}$, $(15/2^-)$, $\gamma_{1188.83}$**493.5**(10$_1$)(?), $\gamma_{1101.24}$**582.5**$_2$(100) M1+E2
1707.1$_4$, $(9/2,11/2)$, $\gamma_{615.22}$**1092.2**$_5$(100)
1715.80$_{25}$, $(15/2)$, $\gamma_{1101.24}$**614.5**$_2$(100)
1788.7$_5$(?), $\gamma_{1374.7}$**414.0**$_5$(100) M1,E2
1895.01$_{23}$, $17/2^-$, $\gamma_{1188.83}$**706.2**$_2$(100) M1+E2, $\gamma_{1101.24}$**793.7**$_2$(48) E2
1899.85$_{22}$, $9/2^-,11/2^+$, $\gamma_{1707.1}$**192.9**$_4$(8.3$_5$), $\gamma_{1510.76}$**389.2**$_3$(43.5$_5$) M1,E2, $\gamma_{1374.7}$**525.1**$_4$(20.7$_{52}$), $\gamma_{1101.24}$**798.6**$_5$(7.3$_5$), $\gamma_{976.87}$**923.0**$_5$(35.2$_{10}$), $\gamma_{851.92}$**1047.6**$_5$(10.4$_5$), $\gamma_{834.73}$**1064.7**$_5$(14.5$_5$), $\gamma_{615.22}$**1284.7**$_5$(100)
1987.6$_4$, $(9/2,11/2)$, $\gamma_{1788.7}$**199.0**$_5$, $\gamma_{798.0}$**1189.9**$_5$(100)
2065.95$_{25}$, $(13/2^-)$, $\gamma_{1376.33}$**689.7**$_2$(100) (E1)
A **2071.8**$_3$, $(19/2^-)$, $\gamma_{1188.83}$**882.9**$_2$(100) (E2)
2223.4$_3$, $(19/2^+)$, *2.5$_{15}$ ns*, $\gamma_{1895.01}$**328.4**$_2$(100) (E1)
2370.3$_4$, $(9/2,11/2,13/2)^-$, $\gamma_{1899.85}$**470.7**$_3$(100) M1,E2, $\gamma_{1374.7}$**995**$_1$(11.5$_{10}$)
2415.2$_3$, $(19/2^-)$, $\gamma_{1683.72}$**731.4**$_2$(100) (E2)
2433.7$_4$, $\gamma_{1899.85}$**533.8**$_4$(100)
2442.3$_3$, $(17/2^+)$, $\gamma_{1683.72}$**758.9**$_2$(59$_6$) (E1), $\gamma_{1188.83}$**1253.7**$_5$(100) (E1)
2473.66$_{23}$, $(17/2^-)$, $\gamma_{2065.95}$**407.8**$_2$(69$_7$) (E2), $\gamma_{1715.80}$**757.8**$_2$(53$_6$) D, $\gamma_{1683.72}$**789.8**$_2$(100) (M1)
2630.6$_3$, $(23/2^+)$, $\gamma_{2223.4}$**407.2**$_2$(100) E2
2722.4$_4$, $\gamma_{2370.3}$**352.3**$_3$(100$_3$) M1,E2, $\gamma_{1987.6}$**735.0**$_5$($<$ 27), $\gamma_{1899.85}$**821.7**$_5$(59$_3$)
2750.9$_3$, $(19/2^+)$, $\gamma_{2442.3}$**308.7**$_2$(53$_6$) (M1), $\gamma_{1895.01}$**856.0**$_5$(100) (E1)
2776.9$_3$, $(19/2^-)$, $\gamma_{1683.72}$**1092.9**$_5$(100) (E2)
2804.3$_4$, $\gamma_{2433.7}$**370.6**$_3$(100$_1$) M1,E2, $\gamma_{2370.3}$**434.0**$_3$(23$_1$)(?), $\gamma_{1510.76}$**1293.5**$_5$($\approx$ 36)
2850.9$_4$, $(21/2^+)$, $\gamma_{2223.4}$**627.5**$_2$(100) (M1)
A **2879.61**$_{25}$, $(21/2^-)$, $\gamma_{2071.8}$**807.8**$_2$(78) (M1), $\gamma_{1895.01}$**984.5**$_2$(100) (E2)
E **2947.1**$_3$, $(21/2^+)$, $\gamma_{2750.9}$**196.2**$_2$(100) (M1), $\gamma_{2442.3}$**504.9**$_2$(36$_{11}$), $\gamma_{2223.4}$**723.8**$_2$(71) (M1)
3049.3$_3$, $(21/2^-)$, $\gamma_{2473.66}$**575.5**$_2$(100) (E2)
A **3081.5**$_3$, $(23/2^-)$, $\gamma_{2071.8}$**1009.5**$_5$(100) (E2)
E **3161.3**$_3$, $(23/2^+)$, $\gamma_{2947.1}$**214.4**$_2$(100$_{20}$) (M1), $\gamma_{2750.9}$**410.6**$_2$(22$_7$)
3221.0$_3$, $(23/2^-)$, $\gamma_{2415.2}$**805.7**$_2$(100) (E2)
3326.9$_3$, $(25/2)$, $\gamma_{2630.6}$**697.0**$_5$(100) (E1,M1)
3365.4$_3$, $(23/2^-)$, $\gamma_{2776.9}$**588.5**$_2$(100)
3372.8$_3$, $(23/2^-)$, $\gamma_{2776.9}$**595.9**$_2$(100)
E **3379.8**$_3$, $(25/2^+)$, $\gamma_{3161.3}$**218.5**$_2$(11) (M1), $\gamma_{2947.1}$**432.9**$_2$(2$_1$), $\gamma_{2630.6}$**749.1**$_2$(100) (M1)
3409.9$_3$, $(25/2^+)$, $\gamma_{2630.6}$**779.2**$_2$(100) (M1)
3496.8$_4$, $(23/2^+)$, $\gamma_{2850.9}$**645.9**$_2$(100) (M1)
B **3555.1**$_4$, $(27/2^+)$, $\gamma_{2630.6}$**924.5**$_2$(100) (E2)
E **3674.6**$_3$, $(27/2^+)$, $\gamma_{3409.9}$**264.7**$_2$(36$_9$) (M1), $\gamma_{3379.8}$**294.8**$_2$(100) (M1), $\gamma_{3161.3}$**513.3**$_2$(9$_4$)
3692.3$_3$, $(27/2^-)$, $\gamma_{3081.5}$**610.8**$_2$(100) (E2)
3717.3$_7$, $\gamma_{2630.6}$**1086**$_1$(100)
3757.54$_{25}$, $(25/2^-)$, $\gamma_{3692.3}$**65.3**$_2$, $\gamma_{3372.8}$**384.7**$_2$(43$_{11}$) (M1), $\gamma_{3365.4}$**392.1**$_2$(15) (M1), $\gamma_{3326.9}$**430.7**$_2$(9$_4$), $\gamma_{3221.0}$**536.4**$_2$(9$_4$), $\gamma_{3161.3}$**596.6**$_2$(87), $\gamma_{3081.5}$**676.1**$_2$(100) (M1), $\gamma_{3049.3}$**708.2**$_2$(96) (E2), $\gamma_{2879.61}$**877.8**$_2$(67) (E2)
3786.4$_4$, $(25/2^-)$, $\gamma_{3757.54}$**29**(?), $\gamma_{3049.3}$**737.0**$_5$(100) (E2)
3836.7$_3$, $(27/2^-)$, $\gamma_{3757.54}$**79.2**$_2$(100)
3896.1$_3$, $(27/2^-)$, $\gamma_{3786.4}$**109.7**$_2$, $\gamma_{3757.54}$**138.7**$_2$(100) (M1), $\gamma_{3081.5}$**814.5**$_2$(17) (E2)
4043.4$_6$, $\gamma_{2630.6}$**1412**$_1$(100)
E **4111.6**$_3$, $(29/2^+)$, $\gamma_{3674.6}$**437.0**$_5$(100) (M1), $\gamma_{3379.8}$**731.8**$_2$(15$_5$)
F **4160.1**$_3$, $(29/2^-)$, $\gamma_{3896.1}$**264.0**$_5$(100) (M1), $\gamma_{3836.7}$**323.5**$_2$(24) (M1)
C **4246.9**$_4$, $(29/2^-)$, $\gamma_{3786.4}$**460.5**$_2$(100) (E2)
4465.5$_6$, $\gamma_{3717.3}$**748.0**$_5$(100)
E **4476.1**$_3$, $(31/2^+)$, $\gamma_{4111.6}$**364.5**$_2$(76) (M1), $\gamma_{3674.6}$**801.5**$_2$(100) (E2)
F **4514.0**$_3$, $(31/2^-)$, $\gamma_{4160.1}$**353.9**$_2$(100) (M1), $\gamma_{3896.1}$**617.9**$_2$(9) (E2)
B **4534.3**$_4$, $(31/2^+)$, $\gamma_{3555.1}$**979.2**$_2$(100) (E2)
4587.1$_4$, $(29/2^-)$, $\gamma_{3896.1}$**691.0**$_5$(100)
4727.9$_4$, $(31/2^+)$, $\gamma_{4111.6}$**616.3**$_2$(100) (M1)
4822.4$_3$, $(31/2^-)$, $\gamma_{4587.1}$**235.3**$_2$(60) (M1), $\gamma_{4160.1}$**662.3**$_2$(80$_{20}$) (M1), $\gamma_{3896.1}$**926.3**$_2$(100), $\gamma_{3836.7}$**985.8**$_2$(50$_{20}$)
4843.9$_3$, $(31/2^-)$, $\gamma_{4160.1}$**683.8**$_2$(100) (M1)
4870.3$_4$, $(31/2^-)$, $\gamma_{4160.1}$**710.2**$_2$(100) (M1)
I **4885.6**$_3$, $(29/2^+)$, $\gamma_{4465.5}$**420.0**$_5$(0.02$_2$), $\gamma_{4043.4}$**842.0**$_5$(0.02$_2$), $\gamma_{3896.1}$**989.5**$_2$(0.04$_2$), $\gamma_{3555.1}$**1330.4**$_{10}$(0.090$_2$)
F **4909.8**$_4$, $(33/2^-)$, $\gamma_{4514.0}$**395.8**$_2$(100) (M1), $\gamma_{4160.1}$**749.7**$_2$(19$_7$) (E2)
4925.3$_4$, $(29/2^+)$, $\gamma_{3555.1}$**1370.0**$_{10}$(100)
4939.2$_4$, $(29/2^+)$, $\gamma_{3555.1}$**1384**$_1$(100)
C **4947.8**$_5$, $(33/2^-)$, $\gamma_{4246.9}$**700.9**$_2$(100) (E2)
E **5025.2**$_4$, $(33/2^+)$, $\gamma_{4476.1}$**549.1**$_2$(100$_{25}$), $\gamma_{4111.6}$**913.6**$_2$(63$_{25}$)
5108.2$_3$, $(33/2^-)$, $\gamma_{4870.3}$**237.8**$_2$(34) (M1), $\gamma_{4843.9}$**264.2**$_2$(38$_8$), $\gamma_{4822.4}$**285.8**$_2$(100) (M1), $\gamma_{4160.1}$**948.0**$_5$(23$_8$)
5180.2$_5$, $(35/2^+)$, $\gamma_{4534.3}$**645.9**$_2$(100)
5195.3$_6$, $(31/2)$, $\gamma_{4534.3}$**661.0**$_5$(100)
F **5372.6**$_4$, $(35/2^-)$, $\gamma_{4909.8}$**462.8**$_2$(100) (M1), $\gamma_{4514.0}$**858.6**$_2$(15$_5$)
E **5415.2**$_4$, $(35/2^+)$, $\gamma_{5025.2}$**390.0**$_5$(36$_{18}$), $\gamma_{4476.1}$**939.1**$_2$(100)
G **5416.4**$_4$, $(35/2^-)$, $\gamma_{5108.2}$**308.2**$_2$(100) (M1)
I **5520.4**$_4$, $(33/2^+)$, $\gamma_{4939.2}$**581.2**$_2$(0.04$_2$), $\gamma_{4925.3}$**595.1**$_2$(0.04$_2$), $\gamma_{4885.6}$**634.7**$_2$(1.0$_1$), $\gamma_{4843.9}$**676.6**$_2$(0.08$_4$)
B **5559.4**$_{11}$, $(35/2^+)$, $\gamma_{4534.3}$**1025.1**$_{10}$(100) (E2)
H **5596.8**$_6$, $(33/2^+)$, $\gamma_{5195.3}$**401.5**$_2$(100$_{50}$), $\gamma_{4534.3}$**1062.5**$_{10}$(83$_{33}$) (M1)
5701.8$_6$, $(35/2^-)$, $\gamma_{4947.8}$**754.0**$_5$(100) (M1)
G **5788.5**$_5$, $(37/2^-)$, $\gamma_{5416.4}$**372.1**$_2$(100) (M1)
F **5813.0**$_4$, $(37/2^-)$, $\gamma_{5372.6}$**440.4**$_2$(100) (M1), $\gamma_{4909.8}$**903.2**$_2$(13$_5$)
C **5823.5**$_5$, $(37/2^-)$, $\gamma_{4947.8}$**875.7**$_2$(100) (E2)
H **5853.7**$_7$, $(35/2^+)$, $\gamma_{5596.8}$**257.0**$_5$(100) (M1), $\gamma_{4727.9}$**1125.4**$_{10}$(8$_8$)
5952.1$_{11}$, $(35/2^+)$, $\gamma_{4534.3}$**1417.8**$_{10}$(100) (E2)
E **6020.6**$_4$, $(37/2^+)$, $\gamma_{5415.2}$**605.4**$_2$(100$_{33}$), $\gamma_{5025.2}$**995.4**$_2$(67$_{33}$)
6079.5$_5$, $(39/2^+)$, $\gamma_{5180.2}$**899.3**$_2$(100)
H **6161.0**$_7$, $(37/2^+)$, $\gamma_{5853.7}$**307.3**$_2$(100) (M1)
F **6194.4**$_4$, $(39/2^-)$, $\gamma_{5813.0}$**381.4**$_2$(100$_{16}$) (M1), $\gamma_{5372.6}$**821.8**$_2$(23$_6$)
I **6198.9**$_4$, $(37/2^+)$, $\gamma_{5520.4}$**678.5**$_2$(1.0$_1$)
G **6263.8**$_5$, $(39/2^-)$, $\gamma_{5788.5}$**475.3**$_2$(100) (M1)
D **6359.6**$_5$, $(39/2^-)$, $\gamma_{5823.5}$**536.1**$_2$(52) (M1), $\gamma_{5701.8}$**657.8**$_2$(100) (E2)

B **6471.8**$_{11}$, $(39/2^{+})$, $\gamma_{\mathbf{5559.4}}$**912.4**$_{2}$(100)
E **6479.0**$_{6}$, $(39/2^{+})$, $\gamma_{\mathbf{5415.2}}$**1063.8**$_{5}$(100) (E2)
H **6515.8**$_{7}$, $(39/2^{+})$, $\gamma_{\mathbf{6161.0}}$**354.7**$_{2}$(100) (M1)
H **6531.7**$_{7}$, $(39/2^{+})$, $\gamma_{\mathbf{6161.0}}$**370.9**$_{2}$(100) (M1)
6644.4$_{11}$, $(39/2^{+})$, $\gamma_{\mathbf{5952.1}}$**692.3**$_{2}$(100) (E2)
F **6669.5**$_{4}$, $(41/2^{-})$, $\gamma_{\mathbf{6194.4}}$**475.1**$_{2}$(100$_{33}$) (M1), $\gamma_{\mathbf{5813.0}}$**856.5**$_{2}$(33$_{13}$)
G **6795.3**$_{5}$, $(41/2^{-})$, $\gamma_{\mathbf{6263.8}}$**531.5**$_{2}$(100) (M1)
C **6851.3**$_{7}$, $(41/2^{-})$, $\gamma_{\mathbf{5823.5}}$**1027.8**$_{5}$(100) (E2)
H **6916.4**$_{8}$, $(41/2^{+})$, $\gamma_{\mathbf{6531.7}}$**384.8**$_{2}$(67$_{22}$) (M1), $\gamma_{\mathbf{6515.8}}$**400.4**$_{2}$(100$_{33}$) (M1)
I **6940.5**$_{5}$, $(41/2^{+})$, $\gamma_{\mathbf{6198.9}}$**741.6**$_{2}$(1.0$_{1}$)
E **7081.1**$_{11}$, $(41/2^{+})$, $\gamma_{\mathbf{6020.6}}$**1060.5**$_{10}$(100)
F **7100.8**$_{4}$, $(43/2^{-})$, $\gamma_{\mathbf{6669.5}}$**431.3**$_{2}$(100$_{18}$) (M1), $\gamma_{\mathbf{6194.4}}$**906.4**$_{2}$(91$_{27}$)
D **7187.3**$_{6}$, $(43/2^{-})$, $\gamma_{\mathbf{6359.6}}$**827.7**$_{2}$(100) (E2)
7196.6$_{11}$, $(43/2^{+})$, $\gamma_{\mathbf{6644.4}}$**552.2**$_{2}$(100)
G **7314.6**$_{6}$, $(43/2^{-})$, $\gamma_{\mathbf{6795.3}}$**519.3**$_{2}$(100) (M1)
H **7339.6**$_{8}$, $(43/2^{+})$, $\gamma_{\mathbf{6916.4}}$**423.2**$_{2}$(100) (M1)
E **7586.4**$_{15}$, $(43/2^{+})$, $\gamma_{\mathbf{6471.8}}$**1114.6**$_{10}$(100)
F **7652.2**$_{4}$, $(45/2^{-})$, $\gamma_{\mathbf{7100.8}}$**551.4**$_{2}$(100$_{33}$), $\gamma_{\mathbf{6669.5}}$**982.7**$_{2}$(67$_{33}$)
G **7702.7**$_{6}$, $(45/2^{-})$, $\gamma_{\mathbf{7314.6}}$**388.1**$_{2}$(100) (M1)
I **7742.9**$_{5}$, $(45/2^{+})$, *0.180$_{14}$ ps*, $\gamma_{\mathbf{6940.5}}$**802.4**$_{2}$(1.0$_{1}$)
H **7797.2**$_{8}$, $(45/2^{+})$, *0.15$_{10}$ ps*, $\gamma_{\mathbf{7339.6}}$**457.6**$_{2}$(100) (M1)
C **8040.8**$_{13}$, $(45/2^{-})$, $\gamma_{\mathbf{6851.3}}$**1189.5**$_{10}$(100)
D **8187.7**$_{12}$, $(47/2^{-})$, $\gamma_{\mathbf{7187.3}}$**1000.4**$_{10}$(100) (E2)
G **8197.5**$_{7}$, $(47/2^{-})$, $\gamma_{\mathbf{7702.7}}$**494.8**$_{2}$(100) (M1)
H **8325.4**$_{8}$, $(47/2^{+})$, *0.10$_{3}$ ps*, $\gamma_{\mathbf{7797.2}}$**528.2**$_{2}$(100)
F **8349.2**$_{6}$, $(47/2^{-})$, $\gamma_{\mathbf{7652.2}}$**697.0**$_{5}$(100$_{33}$), $\gamma_{\mathbf{7100.8}}$**1248.4**$_{10}$(67$_{33}$)
I **8604.4**$_{6}$, $(49/2^{+})$, *0.118$_{14}$ ps*, $\gamma_{\mathbf{7742.9}}$**861.5**$_{2}$(1.0$_{1}$)
G **8745.6**$_{7}$, $(49/2^{-})$, $\gamma_{\mathbf{8197.5}}$**548.1**$_{2}$(100)
H **8922.3**$_{9}$, $(49/2^{+})$, *0.17$_{7}$ ps*, $\gamma_{\mathbf{8325.4}}$**596.9**$_{2}$(100)
G **9337.8**$_{7}$, $(51/2^{-})$, $\gamma_{\mathbf{8745.6}}$**592.2**$_{2}$(100)
C **9365.1**$_{16}$, $(49/2^{-})$, $\gamma_{\mathbf{8040.8}}$**1324.3**$_{10}$(100)
D **9372.6**$_{16}$, $(51/2^{-})$, $\gamma_{\mathbf{8187.7}}$**1184.9**$_{10}$(100)
C **9411.8**$_{16}$, $(49/2^{-})$, $\gamma_{\mathbf{8040.8}}$**1371**$_{1}$(100)
I **9525.0**$_{6}$, $(53/2^{+})$, *0.104$_{14}$ ps*, $\gamma_{\mathbf{8604.4}}$**920.6**$_{2}$(0.80$_{8}$)
H **9568.8**$_{9}$, $(51/2^{+})$, $\gamma_{\mathbf{8922.3}}$**646.5**$_{2}$(100)
H **10272.4**$_{9}$, $(53/2^{+})$, $\gamma_{\mathbf{9568.8}}$**703.6**$_{2}$(100)
I **10508.9**$_{6}$, $(57/2^{+})$, *0.104$_{21}$ ps*, $\gamma_{\mathbf{9525.0}}$**983.9**$_{2}$(0.78$_{8}$)
D **10729.4**$_{19}$, $(55/2^{-})$, $\gamma_{\mathbf{9372.6}}$**1356.8**$_{10}$(100)
I **11558.7**$_{8}$, $(61/2^{+})$, *0.083$_{14}$ ps*, $\gamma_{\mathbf{10508.9}}$**1049.8**$_{5}$(0.60$_{6}$)
I **12673.9**$_{10}$, $(65/2^{+})$, *0.069$_{14}$ ps*, $\gamma_{\mathbf{11558.7}}$**1115.2**$_{5}$(0.38$_{4}$)
I **13851.8**$_{11}$, $(69/2^{+})$, *0.076$_{35}$ ps*, $\gamma_{\mathbf{12673.9}}$**1177.9**$_{5}$(0.26$_{3}$)
I **15090.3**$_{15}$, $(73/2^{+})$, $\gamma_{\mathbf{13851.8}}$**1238.5**$_{10}$(0.14$_{2}$)
I **16389.0**$_{18}$, $(77/2^{+})$, $\gamma_{\mathbf{15090.3}}$**1298.7**$_{10}$(0.12$_{1}$)
I **17751.3**$_{21}$, $(81/2^{+})$, $\gamma_{\mathbf{16389.0}}$**1362.3**$_{10}$(0.08$_{1}$)
I **19184.7**$_{23}$, $(85/2^{+})$, $\gamma_{\mathbf{17751.3}}$**1433.4**$_{10}$(0.04$_{2}$)
I **20695.7**$_{25}$, $(89/2^{+})$, $\gamma_{\mathbf{19184.7}}$**1511**$_{1}$(0.02$_{2}$)
I **22289**$_{3}$, $(93/2^{+})$, $\gamma_{\mathbf{20695.7}}$**1593**$_{1}$(0.02$_{2}$)
I **23972**$_{3}$, $(97/2^{+})$, $\gamma_{\mathbf{22289}}$**1683**$_{1}$(0.02$_{2}$)



$^{137}_{60}$Nd$_{77}$

$^{133}_{61}\mathbf{Pm}_{72}$

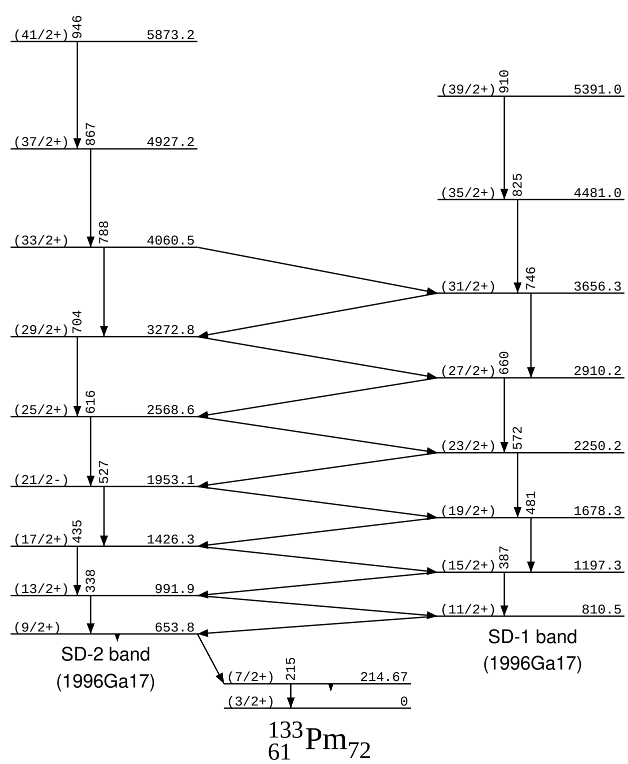
S_n: 11825 *SY*, S_p: 1141 *SY*

Nuclear Bands

- A $\pi d_{5/2}$, α=-1/2
- B $\pi d_{5/2}$, α=+1/2
- C $\pi h_{11/2}$, α=-1/2
- D Band based on $9/2^-$
- E Band based on $15/2^-$
- F SD-1 band (1996Ga17) $Q_0=5.0_4$
- G SD-2 band (1996Ga17) $Q_0=5.0_4$

Levels and γ-ray branchings:

- A **0**, $(3/2^+)$, 15_3 *s*, %ε+%β^+=100
- B **84.70_{22}**, $(5/2^+)$, γ_{0}**84.6_3**(100)
- C **130.1_8**, $(11/2^-)$, %IT=?
- D **148.4_8**, $(9/2^-)$
- A **214.67_{23}**, $(7/2^+)$, $\gamma_{84.70}$**129.8_3**(100_{10}) D+Q $\delta=+0.17_2$, γ_{0}**214.7_3**(40_4)
- **372.2_3**, $(7/2^+)$, $\gamma_{84.70}$**287.4_2**(100_5), γ_{0}**372.6_7**(57_{28})
- B **382.4_3**, $(9/2^+)$, $\gamma_{214.67}$**167.5_3**(76_4) D+Q $\delta=+0.19_2$, $\gamma_{84.70}$**297.9_3**(100_{47})
- C **382.9_7**, $(15/2^-)$, *50_4 ps*, $\gamma_{130.1}$**252.8_3**(100)
- D **411.3_8**, $(13/2^-)$, $\gamma_{148.4}$**262.9_3**(100_4), $\gamma_{130.1}$**281.1_3**(92_4)
- A **572.3_3**, $(11/2^+)$, $\gamma_{382.4}$**189.7_3**(53_3) D+Q $\delta=+0.19_2$, $\gamma_{214.67}$**357.7_3**(100_4)
- G **653.8_3**, $(9/2^+)$, $\gamma_{382.4}$**271.6_{10}**(0.22_2), $\gamma_{372.2}$**281.6_2**(0.83_8), $\gamma_{214.67}$**439.1_2**(0.93_8)
- B **803.1_4**, $(13/2^+)$, $\gamma_{572.3}$**230.7_3**(33_2) D+Q $\delta=+0.18_3$, $\gamma_{382.4}$**420.8_3**(100_4)
- F **810.5_4**, $(11/2^+)$, $\gamma_{653.8}$**156.5_3**(1.35_8) D+Q $\delta=+0.23_3$
- C **812.9_7**, $(19/2^-)$, $\gamma_{382.9}$**430.0_3**(100)
- E **816.7_8**, $(15/2^-)$, $\gamma_{411.3}$**405.1_4**(56_6), $\gamma_{382.9}$**433.9_3**(100_{13})
- D **821.2_8**, $(17/2^-)$, $\gamma_{411.3}$**410.1_3**(100_6), $\gamma_{382.9}$**438.3_3**(36_3)
- G **991.9_4**, $(13/2^+)$, $\gamma_{810.5}$**181.2_3**(1.25_6) D+Q $\delta=+0.25_3$, $\gamma_{653.8}$**338.4_3**(0.38_4)
- A **1026.0_4**, $(15/2^+)$, $\gamma_{803.1}$**222.8_3**(24_1) D+Q $\delta=+0.14_3$, $\gamma_{572.3}$**453.8_3**(100_3), $\gamma_{382.9}$**643_1**(15_1)
- F **1197.3_4**, $(15/2^+)$, $\gamma_{991.9}$**205.3_3**(1.70_8) D+Q $\delta=+0.23_3$, $\gamma_{810.5}$**386.8_2**(0.57_5)
- E **1227.8_8**, $(19/2^-)$, $\gamma_{821.2}$**406.6_3**(92_7), $\gamma_{816.7}$**411.0_3**(95_8), $\gamma_{812.9}$**415.0_3**(100_{10})
- B **1295.6_4**, $(17/2^+)$, $\gamma_{1026.0}$**269.4_3**(23_1) D+Q $\delta=+0.13_4$, $\gamma_{803.1}$**492.5_3**(100_5)
- D **1335.1_8**, $(21/2^-)$, $\gamma_{821.2}$**513.9_3**(100_7), $\gamma_{812.9}$**522.2_3**(23_2)
- C **1384.3_7**, $(23/2^-)$, $\gamma_{812.9}$**571.4_3**(100)
- G **1426.3_4**, $(17/2^+)$, $\gamma_{1197.3}$**228.8_3**(1.32_7) D+Q $\delta=+0.24_3$, $\gamma_{991.9}$**434.5_2**(0.86_6)
- A **1535.7_4**, $(19/2^+)$, $\gamma_{1295.6}$**240.0_3**(13_1) D+Q $\delta=+0.13_4$, $\gamma_{1026.0}$**509.7_3**(100_4), $\gamma_{812.9}$**723_1**(14_1)
- F **1678.3_4**, $(19/2^+)$, $\gamma_{1426.3}$**251.8_3**(1.13_8), $\gamma_{1197.3}$**481.0_2**(0.96_6)
- E **1759.2_8**, $(23/2^-)$, $\gamma_{1384.3}$**374.9_3**(26_2), $\gamma_{1335.1}$**424.1_3**(29_2), $\gamma_{1227.8}$**531.4_3**(100_5)
- B **1831.4_5**, $(21/2^+)$, $\gamma_{1535.7}$**295.6_3**(19_1) D+Q $\delta=+0.13_6$, $\gamma_{1295.6}$**535.9_3**(100_5)
- D **1928.8_8**, $(25/2^-)$, $\gamma_{1384.3}$**544.6_3**(23_2), $\gamma_{1335.1}$**593.8_3**(100_9)
- G **1953.1_4**, $(21/2^-)$, $\gamma_{1678.3}$**274.6_3**(1.00_8) D+Q $\delta=+0.23_5$, $\gamma_{1426.3}$**526.8_2**(1.11_8)
- C **2059.7_8**, $(27/2^-)$, $\gamma_{1384.3}$**675.4_3**(100)
- A **2082.3_5**, $(23/2^+)$, $\gamma_{1831.4}$**250.8_3**(9.6_5), $\gamma_{1535.7}$**546.7_3**(100_4), $\gamma_{1384.3}$**698_1**(10_1)
- F **2250.2_5**, $(23/2^+)$, $\gamma_{1953.1}$**297.1_3**(0.75_{10}), $\gamma_{1678.3}$**572.0_3**(1.00_8)
- E **2389.8_8**, $(27/2^-)$, $\gamma_{2059.7}$**329.9_3**(11_2), $\gamma_{1928.8}$**461.1_2**(20_2), $\gamma_{1759.2}$**630.3_3**(100_5)
- B **2398.1_5**, $(25/2^+)$, $\gamma_{2082.3}$**315.8_3**(18_2), $\gamma_{1831.4}$**566.8_3**(100_6)
- G **2568.6_5**, $(25/2^+)$, $\gamma_{2250.2}$**318.4_3**(0.55_{13}), $\gamma_{1953.1}$**615.5_2**(1.00_8)
- D **2599.3_8**, $(29/2^-)$, $\gamma_{2059.7}$**539.7_3**(20_4), $\gamma_{1928.8}$**670.5_3**(100_{12})
- A **2675.4_5**, $(27/2^+)$, $\gamma_{2398.1}$**277.4_3**(7.3_6), $\gamma_{2082.3}$**592.9_3**(100_6)
- C **2806.2_8**, $(31/2^-)$, $\gamma_{2059.7}$**746.5_3**(100)
- F **2910.2_5**, $(27/2^+)$, $\gamma_{2568.6}$**341.4_3**(0.48_{10}), $\gamma_{2250.2}$**660.0_3**(0.88_{10})
- B **2992.6_6**, $(29/2^+)$, $\gamma_{2675.4}$**317.3_5**(11_1), $\gamma_{2398.1}$**594.5_3**(100_9)
- E **3115.8_8**, $(31/2^-)$, $\gamma_{2806.2}$**309.5_3**(14_2), $\gamma_{2599.3}$**516.6_3**(10_2), $\gamma_{2389.8}$**725.9_3**(100_{10})
- G **3272.8_5**, $(29/2^+)$, $\gamma_{2910.2}$**362.6_2**(0.35_7), $\gamma_{2568.6}$**704.3_4**(1.1110_{10})
- A **3339.2_6**, $(31/2^+)$, $\gamma_{2675.4}$**663.8_2**(100)
- D **3349.1_8**, $(33/2^-)$, $\gamma_{2599.3}$**749.8_2**(100)
- C **3610.0_9**, $(35/2^-)$, $\gamma_{2806.2}$**803.8_3**(100)
- F **3656.3_5**, $(31/2^+)$, $\gamma_{3272.8}$**383.7_4**(0.40_{10}), $\gamma_{2910.2}$**746.1_2**(0.93_{16})
- B **3672.8_6**, $(33/2^+)$, $\gamma_{2992.6}$**680.2_2**(100)
- E **3911.8_{13}**, $(35/2^-)$, $\gamma_{3115.8}$**796_1**(100)
- G **4060.5_6**, $(33/2^+)$, $\gamma_{3656.3}$**404_1**(0.25_{10}), $\gamma_{3272.8}$**787.7_2**(0.75_{15})
- A **4090.2_6**, $(35/2^+)$, $\gamma_{3339.2}$**751.0_3**(100)
- D **4181.4_9**, $(37/2^-)$, $\gamma_{3349.1}$**832.3_3**(100)
- B **4458.9_7**, $(37/2^+)$, $\gamma_{3672.8}$**786.1_3**(100)
- C **4475.7_9**, $(39/2^-)$, $\gamma_{3610.0}$**865.7_3**(100)
- F **4481.0_6**, $(35/2^+)$, $\gamma_{3656.3}$**824.7_3**(0.75_{15})
- E **4773.8_{16}**, $(39/2^-)$, $\gamma_{3911.8}$**862_1**(100)
- G **4927.2_6**, $(37/2^+)$, $\gamma_{4060.5}$**866.7_3**(0.88_{17})
- A **4928.2_{12}**, $(39/2^+)$, $\gamma_{4090.2}$**838_1**(100)
- D **5096.4_{13}**, $(41/2^-)$, $\gamma_{4181.4}$**915_1**(100)
- B **5337.9_{12}**, $(41/2^+)$, $\gamma_{4458.9}$**879_1**(100)
- F **5391.0_{12}**, $(39/2^+)$, $\gamma_{4481.0}$**910_1**(0.50_{13})
- C **5410.0_{10}**, $(43/2^-)$, $\gamma_{4475.7}$**934.3_5**(100)
- A **5838.2_{16}**, $(43/2^+)$, $\gamma_{4928.2}$**910_1**(100)
- G **5873.2_{12}**, $(41/2^+)$, $\gamma_{4927.2}$**946_1**(0.55_{12})
- D **6099.4_{17}**, $(45/2^-)$, $\gamma_{5096.4}$**1003_1**(100)
- B **6291.9_{16}**, $(45/2^+)$, $\gamma_{5337.9}$**954_1**(100)
- C **6415.0_{15}**, $(47/2^-)$, $\gamma_{5410.0}$**1005_1**(100)
- A **6796.2_{19}**, $(47/2^+)$, $\gamma_{5838.2}$**958_1**(100)
- C **7493.1_{18}**, $(51/2^-)$, $\gamma_{6415.0}$**1078_1**(100)
- C **8647_3**, $(55/2^-)$, $\gamma_{7493.1}$**1154_2**(100)



$^{136}_{61}Pm_{75}$

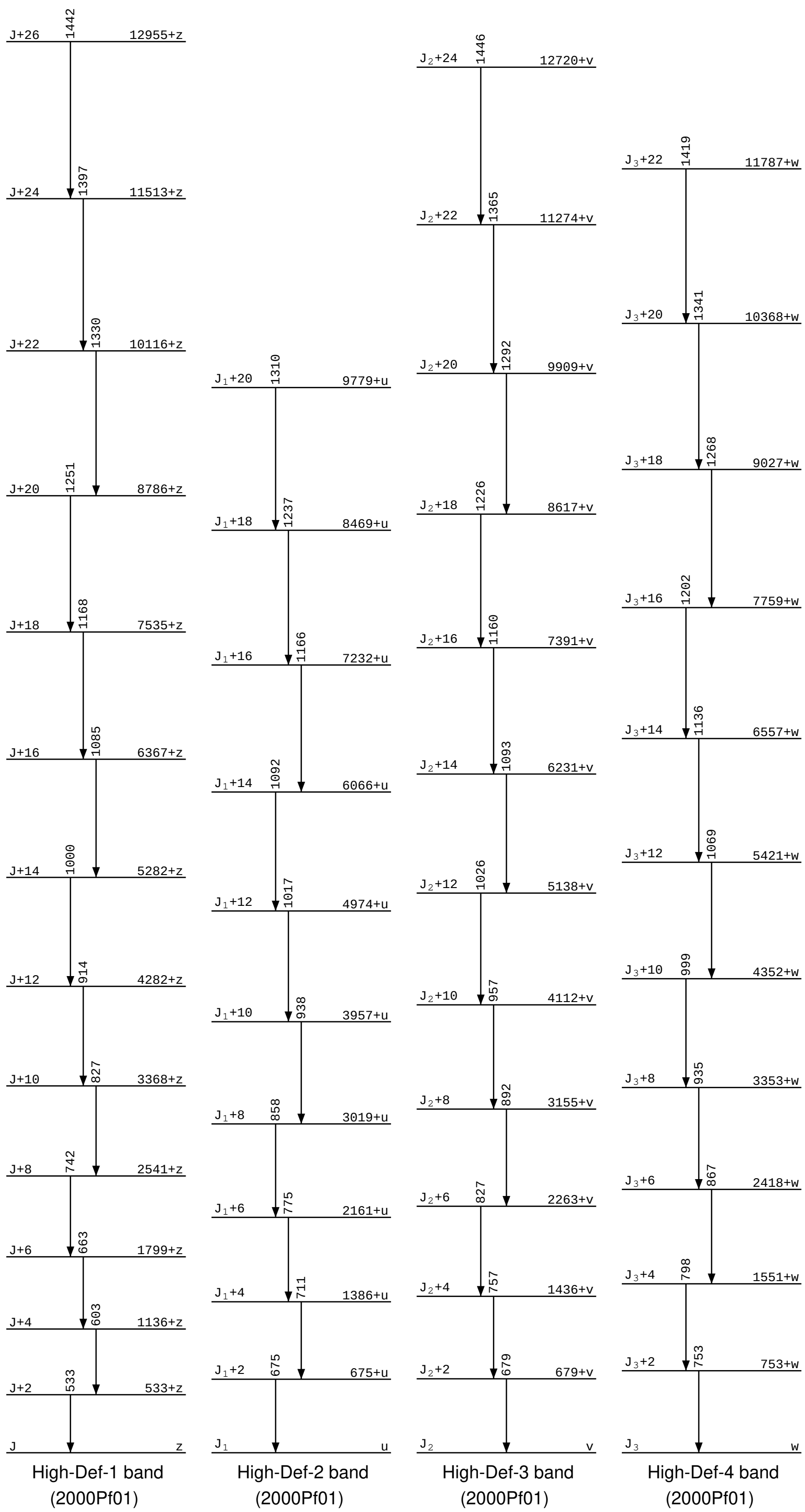
S_n: 9160 *SY*, S_p: 2438 *SY*

Nuclear Bands

A $\pi h_{11/2}\nu h_{11/2}$, α=0
B $\pi h_{11/2}\nu h_{11/2}$, α=1
C Chiral partner of $\pi h_{11/2}\nu h_{11/2}$, α=0
D Chiral partner of $\pi h_{11/2}\nu h_{11/2}$, α=0
E π5/2[413] $\nu h_{11/2}$
F Highly-deformed-1 band (2000Pf01) Q_0=5.2$_3$
G Highly-deformed-2 band (2000Pf01) Q_0=5.2$_4$
H Highly-deformed-3 band (2000Pf01) Q_0=5.7$_6$
I Highly-deformed-4 band (2000Pf01)

Levels and γ-ray branchings:

0+y, $5^{(+)}$,6^-, *107$_6$ s*, %ε+%β^+=100
0+x, (2^+), *47$_2$ s*, %ε+%β^+=100
A **70.2+y**, (8^+)
114.4+x, 1^+, γ_{0+x}**114.4**$_2$(100.0)
123.4+x, (3^+), γ_{0+x}**123.4**$_3$(100)
B **169.4+y**, (9^+), $\gamma_{70.2+y}$**99.2**$_2$(100) D
199.1+y, (6^-), γ_{0+y}**199.1**$_2$
221.2+x, γ_{0+x}**221.2**$_5$(100)
286.8+x, (1^+), $\gamma_{123.4+x}$**163.3**$_4$(12.5$_{25}$) (E2), $\gamma_{114.4+x}$**172.4**$_3$(19$_5$), γ_{0+x}**286.8**$_2$(100$_{25}$)
299.3+x, $\gamma_{114.4+x}$**185.0**$_3$(95$_{25}$), γ_{0+x}**299.3**$_4$($\approx$ 100)
306.6+x, $^{(+)}$, $\gamma_{123.4+x}$**183.2**$_3$(100$_{24}$), $\gamma_{114.4+x}$**192.0**$_4$(100$_{50}$), γ_{0+x}**306.6**$_4$(76$_{15}$) (E2)
315.2+x, $\gamma_{123.4+x}$**192.0**$_4$($\approx$ 100), $\gamma_{114.4+x}$**200.7**$_5$(70$_{10}$)
A **337.1+y**, (10^+), $\gamma_{169.4+y}$**167.8**$_2$(100) D, $\gamma_{70.2+y}$**267**
422.6+x, $\gamma_{306.6+x}$**116.1**$_4$(28$_{13}$), $\gamma_{123.4+x}$**299.3**$_4$($\approx$ 50), γ_{0+x}**422.6**$_3$(100$_{25}$)
428.1+x, $\gamma_{299.3+x}$**128.8**$_5$(4.6$_{16}$), $\gamma_{286.8+x}$**140.6**$_3$($\approx$ 7.7), $\gamma_{221.2+x}$**206.9**$_5$(12$_4$) (E1), $\gamma_{114.4+x}$**313.6**$_2$(100$_{23}$)
E **446+y**, (7^-), $\gamma_{199.1+y}$**247**$_1$, γ_{0+y}**446**$_1$
485.3+x, $\gamma_{315.2+x}$**170.0**$_5$(4.3$_8$), $\gamma_{299.3+x}$**186.1**$_4$(4.3$_8$), $\gamma_{114.4+x}$**371.0**$_5$(13$_4$), γ_{0+x}**485.3**$_2$(100$_{22}$)
563.1+x, $\gamma_{428.1+x}$**134.9**$_4$(52$_8$), $\gamma_{422.6+x}$**141.4**$_4$(44$_{19}$), $\gamma_{286.8+x}$**276.3**$_5$(30$_8$), $\gamma_{114.4+x}$**448.7**$_3$(100$_{12}$)
B **622.4+y**, (11^+), $\gamma_{337.1+y}$**285.4**$_2$(100$_8$) D, $\gamma_{169.4+y}$**452.9**$_7$(6.5$_{19}$)
E **732.2+y**, (8^-), γ_{446+y}**286.3**$_2$, $\gamma_{199.1+y}$**533.0**$_2$
802.4+x, $^{(+)}$, $\gamma_{422.6+x}$**380.0**$_3$(29$_5$), $\gamma_{286.8+x}$**515.6**$_5$(5.7$_{15}$) (E2), γ_{0+x}**802.4**$_4$(100$_{30}$)
862.2+x, $\gamma_{485.3+x}$**377.0**$_4$(17$_4$), $\gamma_{306.6+x}$**555.5**$_4$(12$_3$) (E2), $\gamma_{114.4+x}$**747.7**$_2$(100$_{14}$)
A **914.3+y**, (12^+), $\gamma_{622.4+y}$**291.8**$_2$(100$_6$) D, $\gamma_{337.1+y}$**577.2**$_3$(41$_3$)
D **927.7+y**, (11^+), $\gamma_{337.1+y}$**591**, $\gamma_{169.4+y}$**759**
E **1057.7+y**, (9^-), $\gamma_{732.2+y}$**325**(?), γ_{446+y}**611.7**$_3$(100$_{20}$)
C **1215.6+y**, (12^+), $\gamma_{927.7+y}$**288**, $\gamma_{622.4+y}$**594**, $\gamma_{337.1+y}$**878**
B **1322.8+y**, (13^+), $\gamma_{914.3+y}$**408.5**$_2$(100$_{10}$), $\gamma_{622.4+y}$**700.3**$_2$(40$_5$) Q
E **1352.7+y**, (10^-), $\gamma_{1057.7+y}$**295**$_1$(?), $\gamma_{732.2+y}$**620.5**$_2$(100)
D **1579.9+y**, (13^+), $\gamma_{1215.6+y}$**364**, $\gamma_{927.7+y}$**653**, $\gamma_{914.3+y}$**665**
A **1679.2+y**, (14^+), $\gamma_{1322.8+y}$**356.4**$_2$(96$_8$) D, $\gamma_{914.3+y}$**764.9**$_2$(100$_{12}$)
E **1782+y**(?), (11^-), $\gamma_{1352.7+y}$**430**$_1$(?), $\gamma_{1057.7+y}$**725**$_1$(?)
C **2005.7+y**, (14^+), $\gamma_{1579.9+y}$**426**, $\gamma_{1322.8+y}$**683**, $\gamma_{1215.6+y}$**790**, $\gamma_{914.3+y}$**1092**(?)
E **2050.0+y**, (12^-), γ_{1782+y}**268**$_1$(?), $\gamma_{1352.7+y}$**697.3**$_2$(89$_{12}$) Q, $\gamma_{914.3+y}$**1135.7**$_2$(100$_{23}$) D
B **2157.6+y**, (15^+), $\gamma_{1679.2+y}$**478.2**$_3$(63$_{13}$), $\gamma_{1322.8+y}$**834.8**$_3$(100$_{19}$)
E **2239.3+y**, (13^-), $\gamma_{2050.0+y}$**189.3**$_2$(100$_{12}$), γ_{1782+y}**456**$_1$, $\gamma_{1322.8+y}$**916.6**$_2$(53$_{12}$) D
D **2429.7+y**, (15^+), $\gamma_{2005.7+y}$**424**, $\gamma_{1679.2+y}$**751**, $\gamma_{1579.9+y}$**850**, $\gamma_{1322.8+y}$**1108**
E **2450.6+y**, (14^-), $\gamma_{2239.3+y}$**211.3**$_2$(100) D
A **2575.5+y**, (16^+), $\gamma_{2157.6+y}$**417.7**$_4$, $\gamma_{1679.2+y}$**896.5**$_3$(100$_{14}$)
E **2696.2+y**, (15^-), $\gamma_{2450.6+y}$**245.6**$_2$(100)
C **2888.8+y**, (16^+), $\gamma_{2429.7+y}$**459**, $\gamma_{2005.7+y}$**883**
E **2997+y**, (16^-), $\gamma_{2696.2+y}$**300.8**$_2$(100)
B **3082.6+y**, (17^+), $\gamma_{2575.5+y}$**507**$_1$, $\gamma_{2157.6+y}$**925.0**$_5$(100)
D **3323.7+y**, (17^+), $\gamma_{2888.8+y}$**435**, $\gamma_{2429.7+y}$**894**
E **3350+y**, (17^-), γ_{2997+y}**353.4**$_2$(100)
A **3548+y**, (18^+), $\gamma_{3082.6+y}$**468**$_1$, $\gamma_{2575.5+y}$**974.5**$_5$
C **3723.9+y**, (18^+), $\gamma_{3323.7+y}$**400**, $\gamma_{2888.8+y}$**835**
E **3749+y**, (18^-), γ_{3350+y}**398.4**$_2$(100)
B **4005.3+y**, (19^+), γ_{3548+y}**456**, $\gamma_{3082.6+y}$**925**
D **4158.2+y**, (19^+), $\gamma_{3723.9+y}$**434**, $\gamma_{3323.7+y}$**835**
E **4215+y**(?), (19^-), γ_{3749+y}**468**$_1$(?)
A **4447.2+y**, (20^+), $\gamma_{4005.3+y}$**442**, γ_{3548+y}**897**
C **4539.1+y**, (20^+), $\gamma_{4158.2+y}$**381**, $\gamma_{3723.9+y}$**815**
B **4884.8+y**, (21^+), $\gamma_{4447.2+y}$**437**, $\gamma_{4005.3+y}$**880**
D **4942.2+y**, (21^+), $\gamma_{4539.1+y}$**403**, $\gamma_{4158.2+y}$**784**
F **z**, J
F **533+z**, $J+2$, γ_{z}**533**
F **1136+z**, $J+4$, γ_{533+z}**603**
F **1799+z**, $J+6$, γ_{1136+z}**663**
F **2541+z**, $J+8$, γ_{1799+z}**742**
F **3368+z**, $J+10$, γ_{2541+z}**827**
F **4282+z**, $J+12$, γ_{3368+z}**914**
F **5282+z**, $J+14$, γ_{4282+z}**1000**
F **6367+z**, $J+16$, γ_{5282+z}**1085**
F **7535+z**, $J+18$, γ_{6367+z}**1168**
F **8786+z**, $J+20$, γ_{7535+z}**1251**
F **10116+z**, $J+22$, γ_{8786+z}**1330**
F **11513+z**, $J+24$, $\gamma_{10116+z}$**1397**
F **12955+z**, $J+26$, $\gamma_{11513+z}$**1442**
G **u**, J_1
G **675+u**, J_1+2, γ_{u}**675**
G **1386+u**, J_1+4, γ_{675+u}**711**
G **2161+u**, J_1+6, γ_{1386+u}**775**
G **3019+u**, J_1+8, γ_{2161+u}**858**
G **3957+u**, J_1+10, γ_{3019+u}**938**
G **4974+u**, J_1+12, γ_{3957+u}**1017**
G **6066+u**, J_1+14, γ_{4974+u}**1092**
G **7232+u**, J_1+16, γ_{6066+u}**1166**
G **8469+u**, J_1+18, γ_{7232+u}**1237**
G **9779+u**, J_1+20, γ_{8469+u}**1310**
H **v**, J_2
H **679+v**, J_2+2, γ_{v}**679**
H **1436+v**, J_2+4, γ_{679+v}**757**
H **2263+v**, J_2+6, γ_{1436+v}**827**
H **3155+v**, J_2+8, γ_{2263+v}**892**
H **4112+v**, J_2+10, γ_{3155+v}**957**
H **5138+v**, J_2+12, γ_{4112+v}**1026**
H **6231+v**, J_2+14, γ_{5138+v}**1093**
H **7391+v**, J_2+16, γ_{6231+v}**1160**
H **8617+v**, J_2+18, γ_{7391+v}**1226**
H **9909+v**, J_2+20, γ_{8617+v}**1292**
H **11274+v**, J_2+22, γ_{9909+v}**1365**
H **12720+v**, J_2+24, $\gamma_{11274+v}$**1446**
I **w**, J_3
I **753+w**, J_3+2, γ_{w}**753**
I **1551+w**, J_3+4, γ_{753+w}**798**
I **2418+w**, J_3+6, γ_{1551+w}**867**
I **3353+w**, J_3+8, γ_{2418+w}**935**
I **4352+w**, J_3+10, γ_{3353+w}**999**
I **5421+w**, J_3+12, γ_{4352+w}**1069**
I **6557+w**, J_3+14, γ_{5421+w}**1136**
I **7759+w**, J_3+16, γ_{6557+w}**1202**
I **9027+w**, J_3+18, γ_{7759+w}**1268**
I **10368+w**, J_3+20, γ_{9027+w}**1341**
I **11787+w**, J_3+22, $\gamma_{10368+w}$**1419**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J+24 1397 11513+z
J+22 1330 10116+z
J+20 1251 8786+z
J+18 1168 7535+z
J+16 1085 6367+z
J+14 1000 5282+z
J+12 914 4282+z
J+10 827 3368+z
J+8 742 2541+z
J+6 663 1799+z
J+4 603 1136+z
J+2 533 533+z
J z
High-Def-1 band (2000Pf01)
J1+20 1310 9779+u
J1+18 1237 8469+u
J1+16 1166 7232+u
J1+14 1092 6066+u
J1+12 1017 4974+u
J1+10 938 3957+u
J1+8 858 3019+u
J1+6 775 2161+u
J1+4 711 1386+u
J1+2 675 675+u
J1 u
High-Def-2 band (2000Pf01)
J2+24 1446 12720+v
J2+22 1365 11274+v
J2+20 1292 9909+v
J2+18 1226 8617+v
J2+16 1160 7391+v
J2+14 1093 6231+v
J2+12 1026 5138+v
J2+10 957 4112+v
J2+8 892 3155+v
J2+6 827 2263+v
J2+4 757 1436+v
J2+2 679 679+v
J2 v
High-Def-3 band (2000Pf01)
J3+22 1419 11787+w
J3+20 1341 10368+w
J3+18 1268 9027+w
J3+16 1202 7759+w
J3+14 1136 6557+w
J3+12 1069 5421+w
J3+10 999 4352+w
J3+8 935 3353+w
J3+6 867 2418+w
J3+4 798 1551+w
J3+2 753 753+w
J3 w
High-Def-4 band (2000Pf01)

$^{136}_{61}Pm_{75}$

$^{135}_{62}\mathbf{Sm}_{73}$

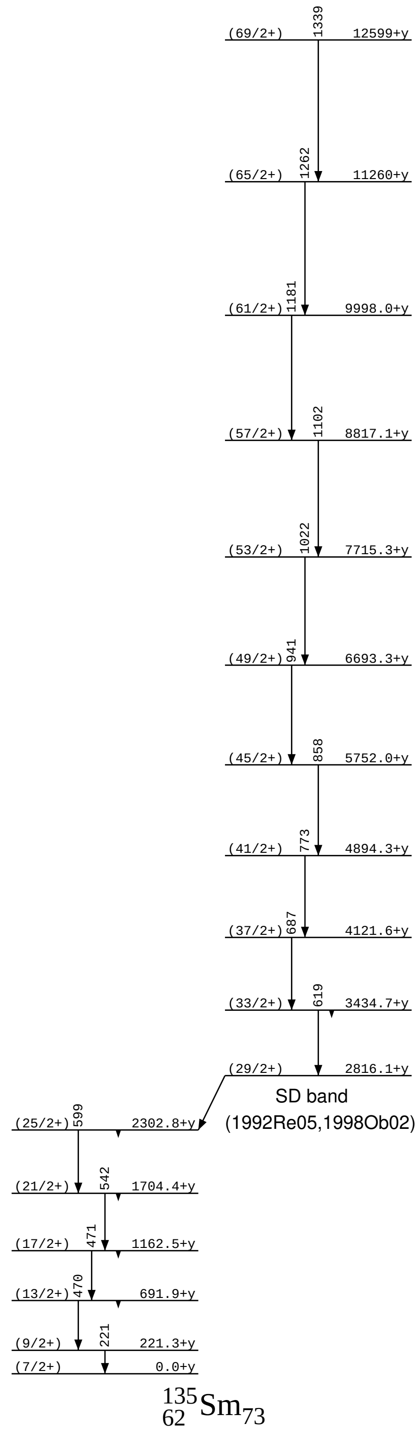
S_n: 9630 *SY*, S_p: 3690 *SY*

Nuclear Bands

A ν7/2[404], α=-1/2
B ν7/2[404], α=+1/2
C ν9/2[514], α=-1/2
D ν9/2[514], α=+1/2
E ν$s_{1/2}$or ν$d_{3/2}$(?)
F ν$f_{7/2}$(?)
G SD band (1992Re05,1998Ob02)
$Q_0=6.4_4$

Levels and γ-ray branchings:

0, $(3/2^+,5/2^+)$, 10.3_5 *s*, %ε+%β^+=100, %εp=0.02_1
E **0.0+x**, $(3/2^+)$
A **0.0+y**, $(7/2^+)$
D **100+y**, $(9/2^-)$, 21_{14} *ns*, $\gamma_{0.0+y}$≈**100**(100)
E **207.2+x**, $(7/2^+)$, $\gamma_{0.0+x}$**207.2**$_2$(100)
B **221.3+y**, $(9/2^+)$, $\gamma_{0.0+y}$**221.0**$_2$(100)
C **277+y**, $(11/2^-)$, γ_{100+y}**176.8**$_2$(100)
A **458.9+y**, $(11/2^+)$, $\gamma_{221.3+y}$**237.6**$_2$(50_8), $\gamma_{0.0+Y}$**459.2**$_2$(≈ 100)
E **539.8+x**, $(11/2^+)$, $\gamma_{207.2+x}$**332.6**$_2$(100)
D **552+y**, $(13/2^-)$, γ_{277+y}**274.9**$_2$(100_{13}), γ_{100+y}**451.6**$_5$(34_{14})
B **691.9+y**, $(13/2^+)$, $\gamma_{458.9+y}$**233.4**$_2$(35_5), $\gamma_{221.3+y}$**469.6**$_3$(≈ 100)
C **765+y**, $(15/2^-)$, γ_{552+y}**213.5**$_2$(54_6), γ_{277+y}**488.7**$_2$(100_8)
A **920.4+y**, $(15/2^+)$, $\gamma_{691.9+y}$**228.1**$_2$(42_6), $\gamma_{458.9+y}$**461.8**$_3$(≈ 100)
E **1000.8+x**, $(15/2^+)$, $\gamma_{539.8+x}$**461.0**$_2$(100)
D **1133+y**, $(17/2^-)$, γ_{765+y}**367.8**$_3$(35_5), γ_{552+y}**581.4**$_2$(100_{10})
B **1162.5+y**, $(17/2^+)$, $\gamma_{920.4+y}$**241.8**$_2$(36_5), $\gamma_{691.9+y}$**471.2**$_3$(≈ 100)
C **1366+y**, $(19/2^-)$, γ_{1133+y}**232.8**$_3$(20_5), γ_{765+y}**600.6**$_2$(100_9)
A **1423.2+y**, $(19/2^+)$, $\gamma_{1162.5+y}$**260.7**$_2$(28_7), $\gamma_{920.4+y}$**502.8**$_2$(100_9)
E **1578.4+x**, $(19/2^+)$, $\gamma_{1000.8+x}$**577.6**$_2$(100)
B **1704.4+y**, $(21/2^+)$, $\gamma_{1423.2+y}$**281.2**$_2$(20_3), $\gamma_{1162.5+y}$**541.9**$_2$(100_7)
D **1789+y**, $(21/2^-)$, γ_{1366+y}**422.6**$_3$(67_{11}), γ_{1133+y}**656.0**$_2$(100_{17})
A **2007.4+y**, $(23/2^+)$, $\gamma_{1704.4+y}$**303.1**$_2$(20_6), $\gamma_{1423.2+y}$**584.1**$_2$(100_{10})
C **2059+y**, $(23/2^-)$, γ_{1789+y}**271.7**$_3$(25_4), γ_{1366+y}**692.6**$_3$(100_7)
E **2253.6+x**, $(23/2^+)$, $\gamma_{1578.4+x}$**675.2**$_2$(100)
B **2302.8+y**, $(25/2^+)$, $\gamma_{2007.4+y}$**295.0**$_5$(7_4), $\gamma_{1704.4+y}$**598.5**$_2$(100_8)
D **2468+y**, $(25/2^-)$, γ_{2059+y}**408.7**$_4$(75_{14}), γ_{1789+y}**679.3**$_4$(100_{14})
A **2677.6+y**, $(27/2^+)$, $\gamma_{2007.4+y}$**670.2**$_2$(100)
C **2789+y**, $(27/2^-)$, γ_{2468+y}**320.7**$_5$(22_4)(?), γ_{2059+y}**729.8**$_4$(100_9)
G **2816.1+y**, $(29/2^+)$, $\gamma_{2302.8+y}$**513.3**$_2$(100)
B **2935.1+y**, $(29/2^+)$, $\gamma_{2302.8+y}$**632.2**$_2$(100)
E **3007.7+x**(?), $(27/2^+)$, $\gamma_{2253.6+x}$**754.1**$_3$(?)
F **3131+z**, $(31/2^-)$
D **3203+y**(?), $(29/2^-)$, γ_{2468+y}**735**$_1$(100)(?)
A **3431.7+y**, $(31/2^+)$, $\gamma_{2677.6+y}$**754.1**$_3$(100)
F **3434.3+z**, $(35/2^-)$, γ_{3131+z}**303.3**$_2$(100)
G **3434.7+y**, $(33/2^+)$, $\gamma_{2935.1+y}$**499.6**$_2$(79_7), $\gamma_{2816.1+y}$**618.7**$_2$(100_9)
C **3606+y**(?), $(31/2^-)$, γ_{2789+y}**817**$_1$(100)(?)
F **3883.2+z**, $(39/2^-)$, $\gamma_{3434.3+z}$**448.9**$_2$(100)
G **4121.6+y**, $(37/2^+)$, *0.96 ps*, $\gamma_{3434.7+y}$**686.9**$_2$(100) E2
A **4267.5+y**(?), $(35/2^+)$, $\gamma_{3431.7+y}$**835.8**$_3$(100)(?)
F **4453.7+z**, $(43/2^-)$, $\gamma_{3883.2+z}$**570.5**$_2$(100)
G **4894.3+y**, $(41/2^+)$, *0.44 ps*, $\gamma_{4121.6+y}$**772.7**$_2$(100) E2
F **5115.3+z**, $(47/2^-)$, $\gamma_{4453.7+z}$**661.6**$_2$(100)
A **5181.5+y**(?), $(39/2^+)$, $\gamma_{4267.5+y}$**914.0**$_{10}$(100)(?)
G **5752.0+y**, $(45/2^+)$, *0.207 ps*, $\gamma_{4894.3+Y}$**857.7**$_2$(100) E2
F **5820.7+z**, $(51/2^-)$, $\gamma_{5115.3+z}$**705.4**$_2$(100)
F **6487.6+z**(?), $(55/2^-)$, $\gamma_{5820.7+z}$**666.9**$_3$(100)(?)
G **6693.3+y**, $(49/2^+)$, *0.152 ps*, $\gamma_{5752.0+y}$**941.3**$_2$(100) E2
G **7715.3+y**, $(53/2^+)$, *0.083 ps*, $\gamma_{6693.3+y}$**1022.0**$_3$(100) E2
G **8817.1+y**, $(57/2^+)$, *0.064 ps*, $\gamma_{7715.3+y}$**1101.8**$_3$(100)
G **9998.0+y**, $(61/2^+)$, *0.037 ps*, $\gamma_{8817.1+y}$**1180.9**$_4$(100)
G **11260+y**, $(65/2^+)$, $\gamma_{9998.0+y}$**1262**$_1$
G **12599+y**, $(69/2^+)$, $\gamma_{11260+y}$**1339**$_1$



$^{136}_{62}\mathbf{Sm}_{74}$

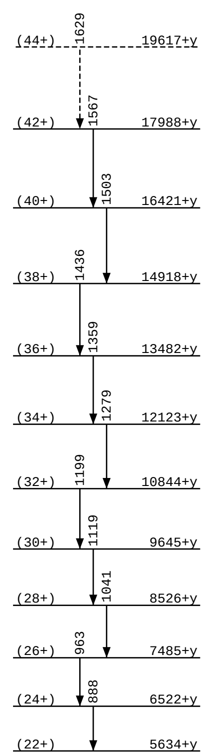
S$_n$: 11.8x10^3$_{SY}$, S$_p$: 3.9x10^3$_{SY}$

Nuclear Bands

- A GS band
- B γ band
- C Band based on 8^-
- D Band based on 7^-
- E Oblate band based on (14)
- F Band based on (14^+)
- G ν7/2[404] ν9/2[514], 8^- isomer
- H Band based on (12^+)
- I Highly-deformed band (1998Ob02)

Levels and γ-ray branchings:

- A **0**, 0^+, *47*$_2$ *s*, %ε+%β$^+$=100
- A **254.91**$_{16}$, 2^+, *88*$_9$ *ps*, γ_{0}**254.9**$_2$(100) E2
- A **686.36**$_{21}$, 4^+, *5.0*$_5$ *ps*, $\gamma_{254.91}$**431.4**$_2$(100) E2
- B **712.88**$_{16}$, 2^+, $\gamma_{254.91}$**458.0**$_2$(100$_{19}$), γ_{0}**712.9**$_2$(41$_{19}$)
- B **1170.98**$_{20}$, 4^+, $\gamma_{712.88}$**458.2**$_2$(100$_6$) E2, $\gamma_{686.36}$**484.6**$_2$(33.0$_{22}$)
- A **1221.4**$_3$, 6^+, *1.5*$_5$ *ps*, $\gamma_{686.36}$**535.0**$_2$(100) E2
- **1490.94**$_{20}$, (2^+), $\gamma_{1170.98}$**320.1**$_3$(12$_3$), $\gamma_{712.88}$**778.0**$_2$(100$_{30}$), $\gamma_{254.91}$**1236.0**$_4$(18$_3$), γ_{0}**1490.9**$_5$(18$_3$) (E2)
- B **1640.95**$_{23}$, 6^+, $\gamma_{1170.98}$**470.0**$_2$(100$_7$) E2, $\gamma_{686.36}$**954.6**$_2$(55$_9$) E2
- A **1798.8**$_3$, 8^+, *1.0*$_3$ *ps*, $\gamma_{1221.4}$**577.3**$_2$(100) E2
- B **2250.2**$_3$, 8^+, $\gamma_{1640.95}$**609.3**$_2$(100$_5$) E2, $\gamma_{1221.4}$**1028.8**$_2$(50$_7$)
- G **2264.7**$_3$, (8^-), *15*$_1$ *μs*, $\gamma_{1798.8}$**465.9**(100)
- D **2275.3**$_3$, 7^-, $\gamma_{1221.4}$**1054.1**$_2$(100) E1
- A **2414.6**$_4$, 10^+, *0.9*$_3$ *ps*, $\gamma_{1798.8}$**615.4**$_2$(100) E2
- G **2678.5**$_3$, (9^-), $\gamma_{2264.7}$**413.8**(100) D+Q
- D **2738.2**$_4$, 9^-, $\gamma_{2275.3}$**462.9**$_2$(45.1$_{20}$) E2, $\gamma_{1798.8}$**939.4**$_2$(100$_4$) E1
- C **2768.2**$_4$, 8^-, $\gamma_{2275.3}$**492.9**$_2$(10$_6$) D, $\gamma_{1798.8}$**969.5**$_2$(100$_{13}$) (E1)
- B **2953.7**$_4$, 10^+, $\gamma_{2250.2}$**703.5**$_2$(100) E2
- A **3091.7**$_4$, 12^+, $\gamma_{2414.6}$**677.5**$_2$(100) E2
- G **3111.7**$_3$, (10^-), $\gamma_{2678.5}$**433.2**(100$_{21}$), $\gamma_{2264.7}$**847.1**(42$_{12}$)
- C **3218.0**$_4$, 10^-, $\gamma_{2768.2}$**450.1**$_2$(100$_5$) E2, $\gamma_{2738.2}$**479.6**$_2$(28$_5$) D
- D **3290.6**$_4$, 11^-, $\gamma_{2738.2}$**552.8**$_2$(100$_3$) E2, $\gamma_{2414.6}$**875.7**$_2$(40$_3$) E1
- **3337.4**$_4$, 12^+, $\gamma_{3091.7}$**246.0**$_2$(30.0$_{17}$), $\gamma_{2414.6}$**922.5**$_2$(100$_7$)
- G **3556.2**$_3$, (11^-), $\gamma_{3111.7}$**444.5**(100$_{26}$), $\gamma_{2678.5}$**877.5**(74$_{21}$)
- B **3682.6**$_4$, 12^+, $\gamma_{2953.7}$**728.9**$_2$(100) E2
- A **3828.1**$_5$, 14^+, $\gamma_{3091.7}$**736.3**$_2$(100) E2
- F **3888.7**$_{10}$, (14^+), $\gamma_{3091.7}$**797**
- C **3892.5**$_4$, 12^-, $\gamma_{3218.0}$**674.5**$_2$(100) E2
- D **3921.3**$_4$, 13^-, $\gamma_{3290.6}$**630.7**$_2$(100) E2
- G **4015.1**$_5$, (12^-), $\gamma_{3556.2}$**458.9**(100$_{29}$), $\gamma_{3111.7}$**903.2**(86$_{29}$)
- **4168.6**$_5$(?), (11), $\gamma_{3111.7}$**1057.7**(100)
- **4321.5**$_5$, (11)
- H **4423.0**$_5$(?), (12^+), $\gamma_{4321.5}$**101.5**(20$_7$), $\gamma_{4168.6}$**254.4**(100$_{40}$), $\gamma_{3556.2}$**866.8**(100$_{40}$)
- B **4436.6**$_5$, (14^+), $\gamma_{3682.6}$**754.0**$_2$(100)
- G **4464.4**$_5$, (13^-), $\gamma_{4015.1}$**449.3**(64$_{29}$), $\gamma_{3556.2}$**908.4**(100$_{29}$)
- H **4587.4**$_5$, (13^+), $\gamma_{4423.0}$**164.4**(100) D
- C **4598.2**$_5$, 14^-, $\gamma_{3892.5}$**705.7**$_2$(100) E2
- A **4603.1**$_5$, 16^+, $\gamma_{3828.1}$**775.0**$_2$(100) E2
- D **4619.3**$_5$, 15^-, $\gamma_{3921.3}$**698.0**$_2$(100) E2
- F **4734.7**$_{10}$, (16^+), $\gamma_{3888.7}$**846.0**$_2$ E2, $\gamma_{3828.1}$**907**
- H **4861.4**$_5$, (14^+), $\gamma_{4587.4}$**274.4**(100$_{44}$) D+Q, $\gamma_{4423.0}$**438.8**($<$ 6)(?)
- G **4927.8**$_5$, (14^-), $\gamma_{4464.4}$**463.4**(78$_{45}$), $\gamma_{4015.1}$**913.1**(100$_{62}$)
- H **5204.2**$_5$, (15^+), $\gamma_{4861.4}$**342.8**(100$_{42}$) D, $\gamma_{4587.4}$**617.0**($<$ 17)(?)
- D **5378.9**$_5$, (17^-), $\gamma_{4619.3}$**759.6**$_2$(100)
- A **5445.8**$_6$, (18^+), $\gamma_{4603.1}$**842.7**$_2$(100)
- H **5591.2**$_5$, (16^+), $\gamma_{5204.2}$**387.0**(100$_{38}$), $\gamma_{4861.4}$**729.8**($<$ 25)(?)
- F **5634.2**$_{10}$, (18^+), $\gamma_{4734.7}$**899.5**$_2$, $\gamma_{4603.1}$**1033**
- H **6001.2**$_5$, (17^+), $\gamma_{5591.2}$**410.0**(100$_{57}$), $\gamma_{5204.2}$**797.0**($<$ 29)(?)
- D **6206.2**$_6$, (19^-), $\gamma_{5378.9}$**827.3**$_2$(100)
- A **6355.7**$_6$, (20^+), $\gamma_{5445.8}$**909.9**$_2$(100)
- F **6592.8**$_{10}$, (20^+), $\gamma_{5634.2}$**958.6**$_2$, $\gamma_{5445.8}$**1149**(?)
- D **7110.0**$_6$, (21^-), $\gamma_{6206.2}$**903.8**$_2$(100)
- A **7328.4**$_6$, (22^+), $\gamma_{6355.7}$**972.7**$_2$(100)
- F **7564.8**$_{10}$, (22^+), $\gamma_{6592.8}$**972**
- A **8349.7**$_7$, (24^+), $\gamma_{7328.4}$**1021.3**$_2$(100)
- F **8607.8**$_{10}$, (24^+), $\gamma_{7564.8}$**1043**
- **3161.3+x**
- **3627.0+x**
- **3786.0+x**, $\gamma_{3161.3+x}$**624.9**(100)
- **3788.4+x**, $\gamma_{3161.3+x}$**627.0**(100)
- E **3921.3+x**, (14), $\gamma_{3788.4+x}$**132.9**(70$_{30}$) D, $\gamma_{3786.0+x}$**135.3**(100$_{25}$) M1+E2, $\gamma_{3627.0+x}$**294.3**(45$_{20}$) D
- E **4108.7+x**, (15), $\gamma_{3921.3+x}$**187.4**$_2$(100) M1+E2
- E **4359.3+x**, (16), $\gamma_{4108.7+x}$**251.2**$_2$(100) M1+E2
- E **4674.4+x**, (17), $\gamma_{4359.3+x}$**315.1**$_2$(100) M1+E2
- E **5050.9+x**, (18), $\gamma_{4674.4+x}$**377.3**$_2$(100) M1+E2
- E **5479.9+x**, (19), $\gamma_{5050.9+x}$**429.0**$_2$(100)
- I **5634+y**, (22^+)
- I **6522+y**, (24^+), γ_{5634+y}**888**(0.95$_{10}$)
- I **7485+y**, (26^+), γ_{6522+y}**963**(1.0)
- I **8526+y**, (28^+), γ_{7485+y}**1041**(0.9$_1$)
- I **9645+y**, (30^+), γ_{8526+y}**1119**(0.7$_1$)
- I **10844+y**, (32^+), γ_{9645+y}**1199**(0.8$_1$)
- I **12123+y**, (34^+), $\gamma_{10844+y}$**1279**(0.35$_5$)
- I **13482+y**, (36^+), $\gamma_{12123+y}$**1359**(0.50$_5$)
- I **14918+y**, (38^+), $\gamma_{13482+y}$**1436**(0.30$_5$)
- I **16421+y**, (40^+), $\gamma_{14918+y}$**1503**(0.40$_5$)
- I **17988+y**, (42^+), $\gamma_{16421+y}$**1567**(0.07$_5$)
- I **19617+y**(?), (44^+), $\gamma_{17988+y}$**1629**(0.15$_5$)(?)



High-Def band
(1998Ob02)
$^{136}_{62}$Sm$_{74}$

$^{137}_{62}\mathbf{Sm}_{75}$

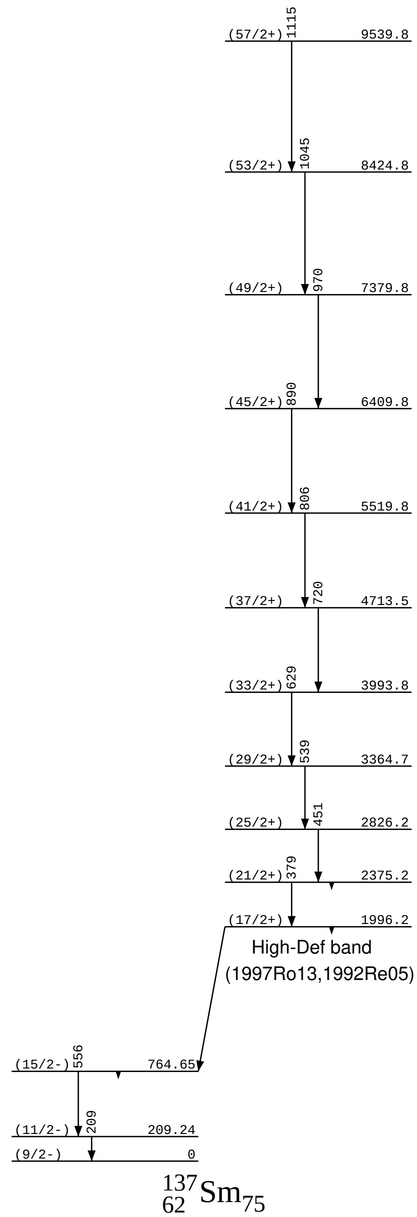
S_n: 9239 *SY*, S_p: 3.94×10^3 $_{23}$

Nuclear Bands

- A ν9/2[514], α=+1/2
- B ν9/2[514], α=-1/2
- C $\nu h_{11/2}\ \pi h_{11/2}\ \pi g_{7/2}$
- D $\nu h_{11/2}\ \pi h^2_{11/2}$
- E ν1/2[530]
- F ν1/2[400]
- G Highly-deformed band (1997Ro13,1992Re05,1989Ma32,1988Pa09) Q_0=4.8$_4$

Levels and γ-ray branchings:

A **0**, $(9/2^-)$, *45$_1$ s*, %ε+%β$^+$=100
B **209.24**$_{16}$, $(11/2^-)$, γ_{0}**209.3**$_2$(100) D
290, $(7/2^+)$, γ_{0}**290**(100) D
A **541.36**$_{16}$, $(13/2^-)$, $\gamma_{209.24}$**332.1**$_2$(94$_{15}$) D, γ_{0}**541.3**$_2$(100$_{10}$) Q
F **583**, $(9/2^+)$, γ_{290}**293**(100$_{38}$) D, $\gamma_{209.24}$**374**(46$_{15}$)
B **764.65**$_{19}$, $(15/2^-)$, $\gamma_{541.36}$**223.4**$_2$(32$_3$) D, $\gamma_{209.24}$**555.5**$_2$(100) Q
E **891**, $(11/2^-)$, γ_{0}**891**(100) D
F **1161**, $(13/2^+)$, γ_{583}**578**(100) Q
A **1202.76**$_{21}$, $(17/2^-)$, $\gamma_{764.65}$**438.0**$_2$(56$_6$) D, $\gamma_{541.36}$**661.2**$_2$(100$_{10}$) Q
1412, $(15/2)$, $\gamma_{541.36}$**872**(100) D
E **1428**, $(15/2^-)$, γ_{891}**537**(100) Q, $\gamma_{541.36}$**886**
B **1449.04**$_{23}$, $(19/2^-)$, $\gamma_{1202.76}$**246.0**$_2$(28$_4$) D, $\gamma_{764.65}$**684.7**$_2$(100$_1$) Q
F **1790**, $(17/2^+)$, γ_{1161}**629**(100) Q
A **1987.06**$_{24}$, $(21/2^-)$, $\gamma_{1449.04}$**537.9**$_2$(93$_{12}$), $\gamma_{1202.76}$**784.4**$_2$(100$_{12}$) Q
G **1996.2**$_6$, $(17/2^+)$, γ_{1428}**569**(100$_4$) D, γ_{1412}**584**(30$_4$) D, $\gamma_{764.65}$**1231.5**$_5$(81$_7$) D
E **2077**, $(19/2^-)$, γ_{1428}**649**(100) Q
C **2228.4**$_3$, $(19/2^+)$, $\gamma_{1202.76}$**1025.6**$_2$(100) (D)
B **2254.1**$_3$, $(23/2^-)$, $\gamma_{1987.06}$**267.0**$_5$(<19) D, $\gamma_{1449.04}$**805.1**$_2$(100$_{16}$) Q
F **2366**, $(21/2^+)$, γ_{1790}**576**(100) Q
G **2375.2**$_6$, $(21/2^+)$, $\gamma_{1996.2}$**379.0**$_2$(100$_3$) Q, γ_{1790}**586**(47$_2$)
D **2407.1**$_3$, $(19/2^-)$, $\gamma_{1449.04}$**958.1**$_2$(100)
C **2439.5**$_3$, $(21/2^+)$, $\gamma_{2228.4}$**211.0**$_2$(<100) D, $\gamma_{1449.04}$**990.5**$_2$(14$_5$) D
D **2510.86**$_{25}$, $(21/2^-)$, $\gamma_{2407.1}$**104.2**$_5$ D, $\gamma_{1987.06}$**523.8**$_2$(100$_7$) D, $\gamma_{1449.04}$**1062.0**$_5$(<35), $\gamma_{1202.76}$**1308.0**$_2$(96$_{16}$) Q
D **2587.9**$_{11}$, $(23/2^-)$, $\gamma_{2510.86}$**77**, $\gamma_{1449.04}$**1139**$_5$(100) Q
C **2647.3**$_4$, $(23/2^+)$, $\gamma_{2439.5}$**208.0**$_5$(<100) D, $\gamma_{2228.4}$**419.0**$_5$(<2.4)
D **2713.2**$_{11}$, $(25/2^-)$, $\gamma_{2587.9}$**125.4**$_2$(100) D
E **2790**, $(23/2^-)$, γ_{2077}**713**(100) Q
G **2826.2**$_6$, $(25/2^+)$, $\gamma_{2375.2}$**451.0**$_2$(100) Q
D **2872.2**$_{11}$, $(27/2^-)$, $\gamma_{2713.2}$**159.0**$_2$(100$_{10}$) D, $\gamma_{2587.9}$**284.1**$_5$(<10)
C **2880.5**$_4$, $(25/2^+)$, $\gamma_{2647.3}$**233.2**$_2$(100$_{13}$) D, $\gamma_{2439.5}$**440.7**$_5$(16$_4$)
F **3010**, $(25/2^+)$, γ_{2366}**644**(100) Q
D **3126.7**$_{11}$, $(29/2^-)$, $\gamma_{2872.2}$**254.4**$_2$(100$_{11}$) D, $\gamma_{2713.2}$**413.8**$_5$(8.9$_{14}$)
C **3156.9**$_5$, $(27/2^+)$, $\gamma_{2880.5}$**276.4**$_2$(100$_{15}$) D, $\gamma_{2647.3}$**509.5**$_5$(<19)
G **3364.7**$_7$, $(29/2^+)$, $\gamma_{2826.2}$**538.5**$_2$(100) Q
E **3382**, $(27/2^-)$, γ_{2790}**592**(100) Q
D **3408.1**$_{11}$, $(31/2^-)$, $\gamma_{3126.7}$**281.4**$_2$(100$_{10}$) D, $\gamma_{2872.2}$**536.0**$_5$(<16)
C **3492.4**$_5$, $(29/2^+)$, $\gamma_{3156.9}$**335.7**$_2$(100$_{16}$) D, $\gamma_{2880.5}$**612.0**$_5$(24$_3$)
F **3743**, $(29/2^+)$, γ_{3010}**733**(100) Q
D **3783.9**$_{11}$, $(33/2^-)$, $\gamma_{3408.1}$**375.8**$_2$(100$_{13}$) D, $\gamma_{3126.7}$**657.0**$_5$(26$_5$)
C **3817.1**$_5$, $(31/2^+)$, $\gamma_{3492.4}$**324.9**$_2$(100$_{11}$) D, $\gamma_{3156.9}$**659.0**$_5$(<39)
E **3849**, $(31/2^-)$, γ_{3382}**467**(100) Q
G **3993.8**$_8$, $(33/2^+)$, $\gamma_{3364.7}$**629.1**$_5$(100) Q
D **4183.9**$_{13}$, $(35/2^-)$, $\gamma_{3783.9}$**400**$_1$(100$_{10}$) D, $\gamma_{3408.1}$**776**$_1$(<53)
C **4214.7**$_8$, $(33/2^+)$, $\gamma_{3817.1}$**398**$_1$(100) D, $\gamma_{3492.4}$**722**$_1$(100)
E **4516**, $(35/2^-)$, γ_{3849}**667**(100) Q
F **4538**, $(33/2^+)$, γ_{3743}**795**(100) Q
C **4569.1**$_9$, $(35/2^+)$, $\gamma_{4214.7}$**354**$_1$(100), $\gamma_{3817.1}$**752**$_1$(100)
D **4645.1**$_{13}$, $(37/2^-)$, $\gamma_{4183.9}$**461**$_1$(100$_{10}$), $\gamma_{3783.9}$**861**$_1$(<68)
G **4713.5**$_{10}$, $(37/2^+)$, *2.8 ps*, $\gamma_{3993.8}$**719.7**$_5$(100)
C **4974.3**$_{10}$, $(37/2^+)$, $\gamma_{4569.1}$**405**$_1$(100), $\gamma_{4214.7}$**760**$_1$(100)
D **5133.4**$_{14}$, $(39/2^-)$, $\gamma_{4645.1}$**488**$_1$(100), $\gamma_{4183.9}$**950**$_1$(100)
C **5324.2**$_{12}$, $(39/2^+)$, $\gamma_{4974.3}$**350**$_1$(100), $\gamma_{4569.1}$**755**$_1$(100)
E **5338**, $(39/2^-)$, γ_{4516}**822**(100)
F **5360**, $(37/2^+)$, γ_{4538}**822**(100)
G **5519.8**$_{11}$, $(41/2^+)$, *1.5 ps*, $\gamma_{4713.5}$**806.3**$_5$(100) (Q)
D **5655.3**$_{15}$, $(41/2^-)$, $\gamma_{5133.4}$**522**$_1$(100), $\gamma_{4645.1}$**1010**$_1$(100)
E **6262**, $(43/2^-)$, γ_{5338}**924**(100)
G **6409.8**$_{12}$, $(45/2^+)$, *0.55 ps*, $\gamma_{5519.8}$**890.0**$_5$(100)
G **7379.8**$_{13}$, $(49/2^+)$, *0.40 ps*, $\gamma_{6409.8}$**970.0**$_5$(100)
G **8424.8**$_{17}$, $(53/2^+)$, *0.27 ps*, $\gamma_{7379.8}$**1045**$_1$(100)
G **9539.8**$_{20}$, $(57/2^+)$, *0.15 ps*, $\gamma_{8424.8}$**1115**$_1$(100)



$^{142}_{62}\mathrm{Sm}_{80}$

S_n: 11122 $_{16}$, S_p: 5811 $_{29}$

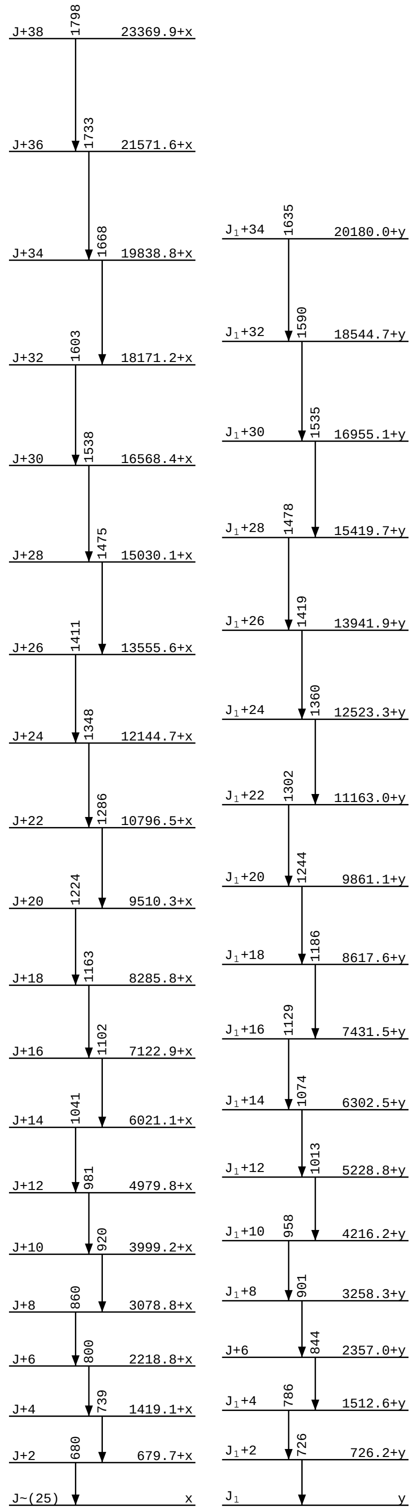
Nuclear Bands

A SD-1 band (1998Ha06,1995Ha29,1993Ha03)
Q_0=11.7$_{14}$

B SD-2 band (1998Ha06,1993Ha03)
Q_0=13.2$_{18}$

Levels and γ-ray branchings:

0, 0^+, *72.49$_5$ min*, %ε+%β^+=100
768.0$_2$, 2^+, γ_{0}**768.0**$_2$(100) E2
1450.2$_8$, (0^+), $\gamma_{768.0}$**682.2**$_7$(100), γ_{0}**(1451.1)** (E0)
1572$_6$
1657.7$_3$, $(2)^+$, $\gamma_{768.0}$**889.6**$_3$(100$_9$), γ_{0}**1658.1**$_5$(98$_{23}$)
1784.1$_3$, 3^-, $\gamma_{768.0}$**1016.1**$_2$(100) (E1)
1791.2$_3$, 4^+, $\gamma_{768.0}$**1023.3**$_2$(100) E2
2055.4$_4$, 2^+, $\gamma_{768.0}$**1287.4**$_3$(100$_9$), γ_{0}**2055.5**$_{10}$(37$_5$)
2173.2$_5$, 0^+, $\gamma_{768.0}$**1405.2**$_4$(100)
2280$_3$, 0^+
2347.7$_3$, 5^-, $\gamma_{1791.2}$**556.6**$_2$(100$_3$) E1, $\gamma_{1784.1}$**563.7**$_2$(9.6$_5$) E2,(M1)
2353.7$_3$(?), (2^+), γ_{0}**2353.7**$_3$(100)
2371.8$_4$, 7^-, *170$_2$ ns*, μ=+0.42 , Q=+1.12$_{27}$, $\gamma_{2347.7}$**24.1**$_3$ E2, $\gamma_{1791.2}$**580.7**$_4$(?)
2373.9$_3$(?), (2^+), γ_{0}**2373.9**$_3$(7.5$_9$)
2415.9$_1$, (4), $\gamma_{1784.1}$**631.8**
2420.0$_3$, 6^+, *<2 ns*, $\gamma_{1791.2}$**628.7**$_2$(100)
2439.4$_{10}$(?), (0^+), $\gamma_{768.0}$**1671.3**(12.6)
2497$_2$
2522.24$_{12}$, (0^+), $\gamma_{1657.7}$**864.4**$_2$(5.8$_{12}$), $\gamma_{768.0}$**1754.1**$_1$(100$_8$)
2582$_2$, 4^+
2656$_2$
2747$_6$, (2^+)
2867$_1$, 4^+
2911.8$_4$, 7^-, $\gamma_{2420.0}$**491.8**, $\gamma_{2371.8}$**540.0**$_2$(100) M1
2955$_2$, 4^+
3002.9$_1$, (6^+), $\gamma_{1791.2}$**1211.7**(100)
3007$_5$
3031.8$_4$(?), (0^+), $\gamma_{768.0}$**2263.7**$_4$(100)
3052$_3$
3112.9$_4$, 8^-, $\gamma_{2911.8}$**200.9**$_5$(65$_{12}$) E2,M1, $\gamma_{2371.8}$**741.2**$_2$(100$_{12}$)
3118$_4$
3182$_1$
3187.83$_{22}$(?), (0^+), $\gamma_{768.0}$**2419.7**$_2$(100)
3219.8$_5$(?), $\gamma_{2371.8}$**848.0**$_3$(100)
3245$_4$
3326.1$_4$, 8^+, $\gamma_{2420.0}$**906.4**$_3$(86$_{21}$), $\gamma_{2371.8}$**954.3**$_2$(100$_{14}$)
3386.6$_5$, 9^-, $\gamma_{3112.9}$**273.8**$_5$(100$_{17}$) E2,M1, $\gamma_{2911.8}$**474.4**$_5$(63$_8$)
3570.8$_4$, $\gamma_{2420.0}$**1151.0**$_3$(90$_{18}$), $\gamma_{2371.8}$**1198.8**$_3$(100$_{26}$)
3639.7$_1$, 11^-, $\gamma_{3386.6}$**253.1**(100)
3661.9$_7$, 10^+, *480$_{60}$ ns*, $\gamma_{3386.6}$**275.1**, $\gamma_{3326.1}$**336.0**, $\gamma_{2371.8}$**1290.3**
3713.7$_4$, $\gamma_{2371.8}$**1341.9**$_2$(100)
3798.6$_4$, $\gamma_{2911.8}$**886.7**$_2$(88$_9$), $\gamma_{2371.8}$**1426.8**$_3$(100$_{19}$)
3825.7$_8$, 10^+, $\gamma_{3661.9}$**163.9**, $\gamma_{3386.6}$**438.9**(100)
3974.4$_8$, 10^-, $\gamma_{3386.6}$**587.7**, $\gamma_{3112.9}$**861.6**
4072.1$_4$, (7^-), $\gamma_{2420.0}$**1652.1**$_3$(35$_7$), $\gamma_{2371.8}$**1700.1**$_3$(100$_8$), $\gamma_{2347.7}$**1724.5**$_4$(14$_5$)
4210.4$_5$, $\gamma_{2371.8}$**1838.6**$_3$(100$_{11}$)
4293.8$_9$, 11^-, $\gamma_{3974.4}$**319.4**, $\gamma_{3386.6}$**907.2**
4309.1$_4$, (7^-), $\gamma_{3326.1}$**982.0**$_5$(47$_{10}$), $\gamma_{2420.0}$**1889.0**$_4$(29$_6$), $\gamma_{2371.8}$**1937.6**$_3$(100$_{12}$)
4371.6$_1$, 11^-, $\gamma_{3974.4}$**397.1**, $\gamma_{3386.6}$**985**
4541.3$_1$, 11^+, $\gamma_{3825.7}$**715.6**
4546.7$_1$, 13^-, *2.6$_6$ ns*, $\gamma_{4371.6}$**175.1**, $\gamma_{4293.8}$**252.9**
4630.3$_4$, $\gamma_{2371.8}$**2258.4**$_2$(100$_9$)
4745.7$_1$, 12^+, $\gamma_{3825.7}$**920.0**(100)
4970.1, (11^+), $\gamma_{3661.9}$**1308.4**
5048.1, 12, $\gamma_{4970.1}$**78.1**, $\gamma_{4745.7}$**302.5**, $\gamma_{4541.3}$**506.7**
5133.5, 13, $\gamma_{5048.1}$**85.5**, $\gamma_{4745.7}$**387.7**
5223.9, 14, $\gamma_{5133.5}$**90.5**, $\gamma_{4546.7}$**677.1**
5417.7, 15, $\gamma_{5223.9}$**193.8**(100)
5763.6, 16, $\gamma_{5417.7}$**345.7**(100)
5802.9, 16, $\gamma_{5417.7}$**385.2**
6089.8, $\gamma_{5802.9}$**286.9**
A **x**, $J\approx(25)$
A **679.7+x**, $J+2$, γ_{x}**679.7**$_2$(0.30$_{17}$)
A **1419.1+x**, $J+4$, $\gamma_{679.7+x}$**739.4**$_1$(0.84$_{19}$)
A **2218.8+x**, $J+6$, $\gamma_{1419.1+x}$**799.7**$_1$(0.85$_5$)
A **3078.8+x**, $J+8$, $\gamma_{2218.8+x}$**860.0**$_1$(1.09$_6$)
A **3999.2+x**, $J+10$, $\gamma_{3078.8+x}$**920.4**$_1$(1.02$_9$)
A **4979.8+x**, $J+12$, $\gamma_{3999.2+x}$**980.6**$_1$(0.95$_5$)
A **6021.1+x**, $J+14$, $\gamma_{4979.8+x}$**1041.3**$_1$(1.11$_6$)
A **7122.9+x**, $J+16$, $\gamma_{6021.1+x}$**1101.8**$_1$(0.93$_5$)
A **8285.8+x**, $J+18$, $\gamma_{7122.9+x}$**1162.9**$_1$(0.94$_5$)
A **9510.3+x**, $J+20$, $\gamma_{8285.8+x}$**1224.4**$_1$(1.06$_6$)
A **10796.5+x**, $J+22$, $\gamma_{9510.3+x}$**1286.2**$_1$(0.82$_5$)
A **12144.7+x**, $J+24$, $\gamma_{10796.5+x}$**1348.2**$_1$(0.66$_4$)
A **13555.6+x**, $J+26$, $\gamma_{12144.7+x}$**1410.9**$_1$(0.58$_4$)
A **15030.1+x**, $J+28$, $\gamma_{13555.6+x}$**1474.5**$_1$(0.52$_4$)
A **16568.4+x**, $J+30$, $\gamma_{15030.1+x}$**1538.3**$_1$(0.31$_3$)
A **18171.2+x**, $J+32$, $\gamma_{16568.4+x}$**1602.8**$_1$(0.21$_3$)
A **19838.8+x**, $J+34$, $\gamma_{18171.2+x}$**1667.6**$_1$(0.12$_2$)
A **21571.6+x**, $J+36$, $\gamma_{19838.8+x}$**1732.8**$_2$(0.06$_2$)
A **23369.9+x**, $J+38$, $\gamma_{21571.6+x}$**1798.3**$_4$
B **y**, J_1
B **726.2+y**, J_1+2, γ_{y}**726.2**$_3$(0.08$_3$)
B **1512.6+y**, J_1+4, $\gamma_{726.2+y}$**786.4**$_2$(0.18$_3$)
B **2357.0+y**, J_1+6, $\gamma_{1512.6+y}$**844.4**$_2$(0.19$_3$)
B **3258.3+y**, J_1+8, $\gamma_{2357.0+y}$**901.3**$_2$(0.16$_3$)
B **4216.2+y**, J_1+10, $\gamma_{3258.3+y}$**957.9**$_2$(0.17$_3$)
B **5228.8+y**, J_1+12, $\gamma_{4216.2+y}$**1012.6**$_2$(0.16$_3$)
B **6302.5+y**, J_1+14, $\gamma_{5228.8+y}$**1073.7**$_2$(0.18$_3$)
B **7431.5+y**, J_1+16, $\gamma_{6302.5+y}$**1129.0**$_2$(0.25$_6$)
B **8617.6+y**, J_1+18, $\gamma_{7431.5+y}$**1186.1**$_2$(0.16$_3$)
B **9861.1+y**, J_1+20, $\gamma_{8617.6+y}$**1243.5**$_2$(0.13$_3$)
B **11163.0+y**, J_1+22, $\gamma_{9861.1+y}$**1301.9**$_3$(0.12$_3$)
B **12523.3+y**, J_1+24, $\gamma_{11163.0+y}$**1360.3**$_3$(0.08$_3$)
B **13941.9+y**, J_1+26, $\gamma_{12523.3+y}$**1418.6**$_3$(0.07$_5$)
B **15419.7+y**, J_1+28, $\gamma_{13941.9+y}$**1477.8**$_4$(0.08$_2$)
B **16955.1+y**, J_1+30, $\gamma_{15419.7+y}$**1535.4**$_4$(0.06$_2$)
B **18544.7+y**, J_1+32, $\gamma_{16955.1+y}$**1589.6**$_6$(0.04$_2$)
B **20180.0+y**, J_1+34, $\gamma_{18544.7+y}$**1635.3**$_5$(0.04$_2$)



SD-1 band (1998Ha06,1995Ha29)

SD-2 band (1998Ha06,1993Ha03)

$^{142}_{62}Sm_{80}$

$^{145}_{62}\mathbf{Sm}_{83}$

S_n: 6757.1 $_3$, S_p: 6525.3 $_{25}$

Nuclear Bands

A SD-1 band (1998Ha02)

B SD-2 band (1998Ha02)

Levels and γ-ray branchings:

0, $7/2^-$, *340$_3$ d*, %ε+%β^+=100 , μ=-1.11$_6$, Q=-0.60$_{17}$

893.792$_{18}$, $3/2^-$, *36$_{12}$ ps*, $\gamma_{\mathbf{0}}$**893.73**$_3$(100) E2

1105.02$_{18}$, $13/2^+$, *13.6$_7$ ns*, $\gamma_{\mathbf{0}}$**1105.0**$_2$(100) E3

1423.23$_3$, $9/2^-$, $\gamma_{\mathbf{0}}$**1423.19**$_5$(100) M1(+E2) $\delta=+0.48^{6}_{3}$

1436.372$_{25}$, $1/2^+$, $\gamma_{\mathbf{893.792}}$**542.57**$_3$(100) E1

1538.04$_{16}$, $11/2^-$, $\gamma_{\mathbf{1105.02}}$**433.0**$_3$(22$_9$), $\gamma_{\mathbf{0}}$**1538.0**$_2$(100$_{13}$) Q

1547.310$_{23}$, $3/2^+$, $\gamma_{\mathbf{1436.372}}$**110.943**$_{24}$(12.8$_7$) M1+E2 $\delta=-1.98_6$, $\gamma_{\mathbf{893.792}}$**653.512**$_{25}$(100$_5$) E1, $\gamma_{\mathbf{0}}$**1547.30**$_8$(0.36$_3$) M2+E3 $\delta=+0.62^{12}_{10}$

1607.28$_3$, $1/2^-$, $\gamma_{\mathbf{893.792}}$**713.48**$_5$(100) M1

1627.75$_4$, $3/2^+$, $\gamma_{\mathbf{1547.310}}$**80.46**$_{10}$(2.4$_2$), $\gamma_{\mathbf{1436.372}}$**191.38**$_3$(100$_5$) M1+E2 $\delta=+0.084_{16}$

1658.568$_{21}$, $5/2^-$, $\gamma_{\mathbf{893.792}}$**764.74**$_4$(11.3$_6$) M1+E2 $\delta=+0.16_7$, $\gamma_{\mathbf{0}}$**1658.53**$_5$(100$_5$) M1+E2 $\delta=-2.07_6$

1706.13$_{19}$, $9/2^-$, $\gamma_{\mathbf{1538.04}}$**168.0**$_3$(54$_{12}$) M1+E2, $\gamma_{\mathbf{1423.23}}$**283.1**$_3$(27$_4$), $\gamma_{\mathbf{0}}$**1706.0**$_3$(100$_{23}$) M1+E2

1729.2$_{10}$, $1/2^+$, $\gamma_{\mathbf{893.792}}$**835.4**(100)

1774.0$_4$, $(9/2,11/2)$, $\gamma_{\mathbf{1105.02}}$**669.0**$_3$(100$_{17}$) D+Q, $\gamma_{\mathbf{0}}$**1774.1**$_3$(56$_{28}$)

1780.32$_9$, $9/2^-$, $\gamma_{\mathbf{0}}$**1780.27**$_{10}$(100)

1804.25$_4$, $5/2^+$, $\gamma_{\mathbf{1627.75}}$**176.62**$_9$(0.74$_6$), $\gamma_{\mathbf{1547.310}}$**256.89**$_7$(2.03$_{19}$) M1, $\gamma_{\mathbf{893.792}}$**910.47**$_{11}$(6.4$_4$) E1, $\gamma_{\mathbf{0}}$**1804.26**$_5$(100$_5$) E1

1848.1$_3$, $9/2^+$, $\gamma_{\mathbf{0}}$**1848.1**$_3$(100)

1857.66$_4$, $7/2^+$, $\gamma_{\mathbf{1658.568}}$**199.14**$_3$(7.6$_8$), $\gamma_{\mathbf{1423.23}}$**434.43**$_4$(43.4$_{24}$) E1, $\gamma_{\mathbf{0}}$**1857.66**$_5$(100$_5$) E1

1876.64$_4$, $7/2^-$, $\gamma_{\mathbf{1658.568}}$**218.11**$_9$(0.69$_{10}$), $\gamma_{\mathbf{1423.23}}$**453.42**$_6$(2.66$_{20}$) M1+(E2) $\delta=+0.03_{12}$, $\gamma_{\mathbf{893.792}}$**982.62**$_{16}$(0.15$_5$), $\gamma_{\mathbf{0}}$**1876.67**$_6$(100$_5$) M1+E2 $\delta=-1.29^{6}_{7}$

1966, $(11/2^+)$

1972.725$_{21}$, $3/2^-$, $\gamma_{\mathbf{1658.568}}$**314.13**$_3$(10.4$_6$) M1+(E2) $\delta=+0.04^{27}_{29}$, $\gamma_{\mathbf{1627.75}}$**344.92**$_{10}$(2.1$_3$), $\gamma_{\mathbf{1607.28}}$**365.51**$_5$(11.5$_8$) M1+E2 $\delta=-2.2^{7}_{13}$, $\gamma_{\mathbf{1547.310}}$**425.48**$_7$(4.2$_3$) E1, $\gamma_{\mathbf{1436.372}}$**536.15**$_{10}$(6.0$_{14}$), $\gamma_{\mathbf{893.792}}$**1078.91**$_3$(100$_5$) M1+E2 $\delta=+0.04_1$, $\gamma_{\mathbf{0}}$**1972.77**$_4$(22.2$_{14}$) E2

1996.96$_3$, $5/2^-$, $\gamma_{\mathbf{1876.64}}$**120.44**$_8$(0.24$_9$), $\gamma_{\mathbf{1658.568}}$**338.37**$_3$(0.75$_5$) M1+E2 $\delta=+1.9^{14}_{8}$, $\gamma_{\mathbf{1423.23}}$**573.55**$_{12}$(0.09$_2$), $\gamma_{\mathbf{893.792}}$**1103.12**$_{25}$(0.08$_1$), $\gamma_{\mathbf{0}}$**1997.00**$_4$(100$_6$) M1+E2 $\delta=+0.241_{11}$

2049.96$_{25}$, $15/2^-$, *≈3 ns*, $\gamma_{\mathbf{1538.04}}$**512**, $\gamma_{\mathbf{1105.02}}$**944.9**$_2$(100) E1

2110.60$_5$, $5/2^-,7/2^-,9/2^-$, $\gamma_{\mathbf{0}}$**2110.58**$_5$(100) M1

2113.1$_8$, $(11/2^+)$, $\gamma_{\mathbf{1538.04}}$**575**, $\gamma_{\mathbf{1423.23}}$**690**

2133.43$_3$, $3/2^-$, $\gamma_{\mathbf{1972.725}}$**160.70**$_6$(7.2$_6$), $\gamma_{\mathbf{1658.568}}$**474.89**$_{10}$(11.3$_{15}$), $\gamma_{\mathbf{1607.28}}$**526.10**$_4$(43.9$_{27}$) M1+E2 $\delta=+0.31^{10}_{9}$, $\gamma_{\mathbf{1547.310}}$**586.06**$_9$(9.3$_{15}$), $\gamma_{\mathbf{893.792}}$**1239.60**$_6$(54.9$_{30}$) M1+E2 $\delta=-0.61^{7}_{9}$, $\gamma_{\mathbf{0}}$**2133.42**$_5$(100$_{12}$) E2

2155.50$_5$, $(5/2^-,7/2^-)$, $\gamma_{\mathbf{1658.568}}$**497.3**$_4$(3.3$_6$), $\gamma_{\mathbf{893.792}}$**1261.9**$_2$(3.3$_6$), $\gamma_{\mathbf{0}}$**2155.46**$_5$(100$_5$) M1

2160.3$_5$, $1/2^-$

2192.98$_5$, $5/2^-,7/2^-,9/2^-$, $\gamma_{\mathbf{0}}$**2192.96**$_5$(100) M1

2230.0$_3$, $17/2^-$, $\gamma_{\mathbf{2049.96}}$**180.0**$_2$(100) M1

2276.55$_4$, $5/2^+$, $\gamma_{\mathbf{1547.310}}$**729.09**$_{14}$(26$_3$), $\gamma_{\mathbf{0}}$**2276.54**$_4$(100$_6$) E1+(M2) $\delta=+0.067_{30}$

2292.82$_{13}$, $9/2^+$, $\gamma_{\mathbf{0}}$**2292.80**$_{13}$(100)

2329.30$_9$, $5/2^-,7/2^-,3/2^-$, $\gamma_{\mathbf{0}}$**2329.28**$_9$(100) E2,(M1)

2340.63$_8$, $\gamma_{\mathbf{2110.60}}$**230.01**$_{20}$(16$_3$), $\gamma_{\mathbf{1780.32}}$**560.24**$_{13}$(19$_3$), $\gamma_{\mathbf{0}}$**2340.64**$_9$(100$_9$)

2346.39$_4$, $5/2^-$, $\gamma_{\mathbf{2133.43}}$**212.94**$_6$(10.7$_7$) E2, $\gamma_{\mathbf{1996.96}}$**349.43**$_5$(14.1$_{10}$) M1, $\gamma_{\mathbf{1972.725}}$**373.68**$_4$(31.8$_{17}$) M1+(E2) $\delta=-0.19^{21}_{41}$, $\gamma_{\mathbf{1876.64}}$**469.66**$_{10}$(13$_5$) M1,(E2), $\gamma_{\mathbf{1658.568}}$**687.83**$_6$(15.1$_{13}$), $\gamma_{\mathbf{1423.23}}$**923.15**$_{19}$(3.0$_7$), $\gamma_{\mathbf{893.792}}$**1452.60**$_5$(35.8$_{23}$) (M1), $\gamma_{\mathbf{0}}$**2346.42**$_{10}$(100$_5$) M1+(E2) $\delta=+0.81^{18}_{10}$

2385.90$_4$, $3/2^+$, $\gamma_{\mathbf{1804.25}}$**581.60**$_{12}$(18.5$_{19}$), $\gamma_{\mathbf{1658.568}}$**727.34**$_{10}$(46$_{10}$), $\gamma_{\mathbf{1627.75}}$**758.13**$_6$(44$_4$) E2,M1, $\gamma_{\mathbf{1607.28}}$**778.60**$_7$(34$_3$), $\gamma_{\mathbf{1547.310}}$**838.61**$_4$(100$_6$) M1, $\gamma_{\mathbf{1436.372}}$**949.53**$_5$(72$_4$) M1

2387.61$_7$, $^{(-)}$, $\gamma_{\mathbf{1423.23}}$**965.1**$_3$(14.6$_{24}$), $\gamma_{\mathbf{0}}$**2387.55**$_7$(100$_7$) (M1)

2425.96$_3$, $5/2^-$, $\gamma_{\mathbf{2155.50}}$**270.48**$_{30}$(0.8$_2$) (E2), $\gamma_{\mathbf{2133.43}}$**292.47**$_4$(7.3$_6$) (M1), $\gamma_{\mathbf{1996.96}}$**429.25**$_{15}$(1.9$_4$), $\gamma_{\mathbf{1876.64}}$**549.34**$_{12}$(4.8$_{10}$), $\gamma_{\mathbf{1804.25}}$**621.79**$_8$(1.5$_2$), $\gamma_{\mathbf{1423.23}}$**1002.77**$_{10}$(3.1$_6$), $\gamma_{\mathbf{893.792}}$**1532.14**$_7$(100$_5$) M1, $\gamma_{\mathbf{0}}$**2425.96**$_6$(39.6$_{21}$) M1

2438.0$_3$, $17/2^+$, $\gamma_{\mathbf{1105.02}}$**1333.0**$_2$(100) E2

2455, $(11/2^-)$

2482.15$_6$, $\gamma_{\mathbf{1423.23}}$**1058.75**$_{12}$(33$_4$), $\gamma_{\mathbf{893.792}}$**1588.42**$_{20}$(31$_6$), $\gamma_{\mathbf{0}}$**2482.17**$_6$(100$_5$)

2508.31$_7$, $5/2^-,7/2^-$, $\gamma_{\mathbf{893.792}}$**1614.67**$_{15}$(30$_9$) (D,E2), $\gamma_{\mathbf{0}}$**2508.24**$_8$(100$_7$) M1+E2

2512.97$_9$, $^-$, $\gamma_{\mathbf{0}}$**2512.95**$_9$(100) E2,M1

2559.4$_4$, $\gamma_{\mathbf{0}}$**2559.4**$_4$(100)

2629$_{15}$

2670.0$_{11}$, $(13/2^+)$, $\gamma_{\mathbf{1105.02}}$**1565**(100)

2678.3$_5$, $1/2^-,3/2^-$

2710.4$_3$, $19/2^-$, $\gamma_{\mathbf{2230.0}}$**480.4**$_2$(100) M1

2724$_{16}$

2750$_{18}$, $\gamma_{\mathbf{2387.61}}$**346.9**$_3$(100$_{40}$)(?), $\gamma_{\mathbf{2192.98}}$**555.0**$_3$(100$_{40}$)(?)

2797$_{12}$

2810.6$_5$, $(15/2)$, $\gamma_{\mathbf{1105.02}}$**1705.5**$_3$(100)

2824$_{14}$

2842$_{19}$

2899.2$_7$, $\gamma_{\mathbf{2230.0}}$**669.2**$_5$(100)

2926$_{13}$

2931.2$_3$, $21/2^+$, $\gamma_{\mathbf{2710.4}}$**221.0**$_2$(30$_{10}$) E1, $\gamma_{\mathbf{2438.0}}$**493.6**$_2$(100$_7$) E2

2960$_{16}$

2964.3$_5$, $19/2^{(+)}$, $\gamma_{\mathbf{2230.0}}$**734.3**$_4$(100) D

2978.7$_3$, $21/2^+$, *0.12$_2$ ns*, $\gamma_{\mathbf{2710.4}}$**268.0**$_2$(100$_8$) E1, $\gamma_{\mathbf{2438.0}}$**540.0**$_3$(7$_3$)

3018$_{13}$

3029.9$_6$, $\gamma_{\mathbf{2810.6}}$**219.3**$_3$(100)

3096$_{10}$

3119.6$_4$, $23/2^+$, $\gamma_{\mathbf{2978.7}}$**140.2**$_2$(75$_6$) D, $\gamma_{\mathbf{2931.2}}$**189.0**$_2$(100$_8$) M1

3131$_{10}$, $(3/2)^-$

3139.8$_6$, $\gamma_{\mathbf{2931.2}}$**209.8**$_4$(100)

3140.1$_5$, $3/2^-$

3183$_{15}$

3246$_{20}$

3275$_{20}$

3302$_{13}$

3323.2$_5$, $(21/2)$, $\gamma_{\mathbf{2931.2}}$**392.0**$_4$(100) (D)

3335$_{17}$

3366$_{14}$

3375.4$_8$, $\gamma_{\mathbf{3139.8}}$**235.5**$_8$(35$_4$), $\gamma_{\mathbf{2978.7}}$**396.7**$_8$(100$_{12}$)

3397$_{14}$

3433$_{17}$

3446$_{20}$

3480$_{20}$

3483.8$_4$, $25/2^+$, $\gamma_{\mathbf{3323.2}}$**160.9**$_{11}$(<19), $\gamma_{\mathbf{3119.6}}$**364.2**$_2$(100$_1$) M1

3506$_{20}$

3534$_{20}$

3558$_{14}$

3596$_{14}$

3633$_{21}$

3655$_{21}$

3679$_{14}$

3726$_{14}$

3783$_{15}$

3833$_{15}$

3856$_{21}$

3882$_{15}$

3916$_{20}$

3921.4$_6$, $27/2^+$, *1.1$_2$ ns*, $\gamma_{\mathbf{3483.8}}$**438.4**$_4$(100)

4010$_{20}$

4027$_{15}$

4227.9$_6$, $(27/2)$, $\gamma_{\mathbf{3921.4}}$**306.0**$_4$(100$_7$), $\gamma_{\mathbf{3483.8}}$**745.3**$_4$(91$_7$)

4315.1$_7$, $\gamma_{\mathbf{3921.4}}$**393.8**$_4$

4389.0$_7$, $(27/2)$, $\gamma_{\mathbf{3323.2}}$**1067.3**$_{10}$(38$_5$), $\gamma_{\mathbf{3119.6}}$**1270.4**$_8$(100$_{13}$)

4420.4$_6$, $29/2^+$, $\gamma_{\mathbf{4227.9}}$**192.4**$_3$(43$_6$), $\gamma_{\mathbf{3921.4}}$**499.0**$_2$(100$_3$)

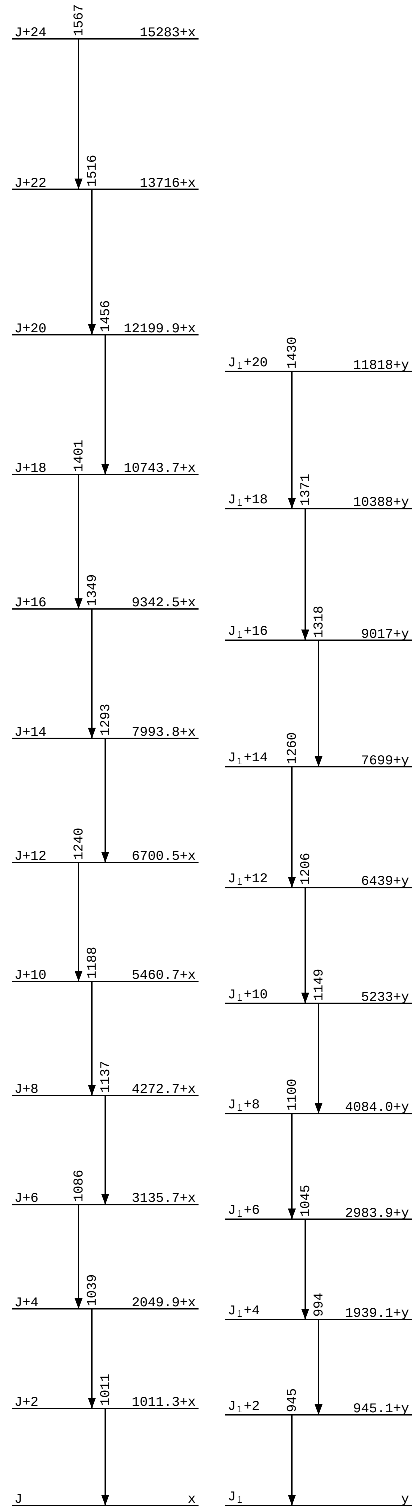
4586.6$_9$, $\gamma_{\mathbf{3119.6}}$**1467.6**$_{10}$(100)

4646.7$_7$, $(29/2)$, $\gamma_{\mathbf{3921.4}}$**725.2**$_3$(100)

4739.9$_7$, $(29/2)$, $\gamma_{\mathbf{3483.8}}$**1257.0**$_5$(100)

4867.9$_8$, $(29/2)$, $\gamma_{\mathbf{4586.6}}$**281.3**$_7$(21$_{10}$), $\gamma_{\mathbf{3483.8}}$**1385.1**$_8$(100$_9$)

5028.9$_6$, (31/2), $\gamma_{4867.9}$**160.9**$_{11}$(< 270), $\gamma_{4739.9}$**288.8**$_4$(41$_8$), $\gamma_{4420.4}$**608.4**$_4$(30$_9$), $\gamma_{4389.0}$**640.0**$_8$(65$_6$), $\gamma_{4315.1}$**715.2**$_{19}$(100$_{30}$)
5030.9$_6$, (31/2), $\gamma_{4420.4}$**610.6**$_2$(100)
5247.5$_7$, (31/2), $\gamma_{3921.4}$**1326.2**$_5$(100)
5506.2$_7$, (33/2), $\gamma_{5028.9}$**477.2**$_2$(100$_4$), $\gamma_{4739.9}$**766.3**$_5$(30$_4$)
5524.6$_7$, $\gamma_{4646.7}$**877.9**$_4$(18$_4$), $\gamma_{4420.4}$**1104.2**$_8$(100$_{13}$)
5679.8$_7$, (33/2), $\gamma_{5247.5}$**432.5**$_5$(40$_{40}$), $\gamma_{4420.4}$**1259.3**$_5$(100$_{19}$)
5718.8$_7$, $\gamma_{5028.9}$**690.0**$_4$(100)
5903.2$_7$, (35/2), $\gamma_{5506.2}$**397.2**$_5$(100$_{30}$), $\gamma_{5030.9}$**872.5**$_4$(49$_4$)
5955.5$_7$, $\gamma_{5679.8}$**275.7**$_8$(100$_{11}$), $\gamma_{5524.6}$**430.2**$_{11}$(81$_8$)
6121.7$_8$, $\gamma_{5718.8}$**403.0**$_4$(100)
6216.0$_7$, (37/2), $\gamma_{5955.5}$**260.4**$_5$(50$_8$), $\gamma_{5903.2}$**313.0**$_4$(100$_6$), $\gamma_{5718.8}$**497.2**$_6$(19$_4$), $\gamma_{5506.2}$**709.3**$_5$(11$_4$)
6361.2$_7$, (37/2), $\gamma_{6121.7}$**239.7**$_5$(24$_4$), $\gamma_{5955.5}$**405.6**$_4$(100$_7$), $\gamma_{5903.2}$**458.1**$_4$(67$_6$)
6719.5$_7$, (39/2), $\gamma_{6361.2}$**358.2**$_5$(100$_{10}$), $\gamma_{6216.0}$**503.6**$_4$(90$_8$), $\gamma_{5903.2}$**816.2**$_9$(79$_7$)
6756.7$_8$, (39/2), $\gamma_{6361.2}$**396.1**$_{10}$(50$_{40}$), $\gamma_{6216.0}$**540.5**$_6$(100$_5$)
7327.1$_8$, (43/2), $\gamma_{6756.7}$**570.4**$_2$(100)
7403.9$_8$, (41/2), $\gamma_{6719.5}$**684.3**$_5$(100)
7448.8$_9$, (41/2), $\gamma_{6719.5}$**729.6**$_8$(100)
7742.7$_8$, (45/2), $\gamma_{7327.1}$**415.6**$_2$(100)
7803.4$_9$, (45/2), $\gamma_{6756.7}$**1046.8**$_4$(100)
7926.2$_8$, (41/2), $\gamma_{6719.5}$**1206.7**$_5$(100)
8072.6$_{10}$, (47/2), $\gamma_{7742.7}$**329.9**$_5$(100)
8189.7$_9$, (45/2), $\gamma_{7327.1}$**862.5**$_3$(100)
8333.0$_8$, (45/2), $\gamma_{7926.2}$**406.8**$_5$(29$_8$), $\gamma_{7448.8}$**884.3**$_5$(73$_{11}$), $\gamma_{7403.9}$**929.0**$_4$(100$_{12}$)
8376.8$_9$, (47/2), $\gamma_{8189.7}$**186.9**$_{12}$(100)
8579.5$_{10}$, (47/2), $\gamma_{7803.4}$**776.5**$_{10}$(72$_{16}$), $\gamma_{7742.7}$**836.8**$_{10}$(100$_{16}$)
8785.3$_8$, (49/2$^+$), *0.96$^{19}_{15}$ μs*, %IT=100 , $\gamma_{8579.5}$**205.9**$_7$(29$_4$), $\gamma_{8376.8}$**408.4**$_5$(36$_{11}$), $\gamma_{8333.0}$**452.3**$_5$(84$_5$), $\gamma_{8189.7}$**595.6**$_5$(80$_6$), $\gamma_{8072.6}$**713.3**$_{19}$(100$_{22}$), $\gamma_{7803.4}$**981.9**$_4$(61$_5$), $\gamma_{7742.7}$**1042.7**$_7$(10$_3$), $\gamma_{7327.1}$**1457.8**$_6$(22.9$_{25}$)
9979.8$_{10}$, (53/2$^+$), $\gamma_{8785.3}$**1194.5**$_5$(100)
10250.1$_{11}$, $\gamma_{9979.8}$**270.3**$_5$(100)
11146.5$_{12}$ *7.4$_{10}$ ns*, $\gamma_{10250.1}$**896.3**$_5$
11454.7$_{12}$, $\gamma_{10250.1}$**1204.7**$_5$
12077.1$_{13}$, $\gamma_{11146.5}$**930.6**$_5$(100)
12334.3$_{12}$, $\gamma_{11454.7}$**879.8**$_5$(?), $\gamma_{11146.5}$**1187.7**$_5$(100)
12717.6$_{14}$, $\gamma_{12077.1}$**640.5**$_5$
12819.6$_{13}$, $\gamma_{12334.3}$**485.3**$_5$(100)
14043.5$_{14}$, $\gamma_{12819.6}$**1223.9**$_5$
14427.4$_{14}$, $\gamma_{12819.6}$**1607.8**$_5$
14559.4$_{15}$
A **x**, J
A **1011.3+x**, J+2, γ_{x}**1011.3**$_4$
A **2049.9+x**, J+4, $\gamma_{1011.3+x}$**1038.6**$_4$
A **3135.7+x**, J+6, $\gamma_{2049.9+x}$**1085.8**$_5$
A **4272.7+x**, J+8, $\gamma_{3135.7+x}$**1137.0**$_6$
A **5460.7+x**, J+10, $\gamma_{4272.7+x}$**1188**$_1$
A **6700.5+x**, J+12, $\gamma_{5460.7+x}$**1239.8**$_4$
A **7993.8+x**, J+14, $\gamma_{6700.5+x}$**1293.3**$_5$
A **9342.5+x**, J+16, $\gamma_{7993.8+x}$**1348.7**$_5$
A **10743.7+x**, J+18, $\gamma_{9342.5+x}$**1401.2**$_6$
A **12199.9+x**, J+20, $\gamma_{10743.7+x}$**1456.2**$_7$
A **13716+x**, J+22, $\gamma_{12199.9+x}$**1516**$_2$
A **15283+x**, J+24, $\gamma_{13716+x}$**1567**$_1$
B **y**, J_1
B **945.1+y**, J_1+2, γ_{y}**945.1**$_8$
B **1939.1+y**, J_1+4, $\gamma_{945.1+y}$**994**$_2$
B **2983.9+y**, J_1+6, $\gamma_{1939.1+y}$**1044.8**$_8$
B **4084.0+y**, J_1+8, $\gamma_{2983.9+y}$**1100.1**$_8$
B **5233+y**, J_1+10, $\gamma_{4084.0+y}$**1149**$_2$
B **6439+y**, J_1+12, γ_{5233+y}**1205.9**$_8$
B **7699+y**, J_1+14, γ_{6439+y}**1260**$_1$
B **9017+y**, J_1+16, γ_{7699+y}**1318**$_1$
B **10388+y**, J_1+18, γ_{9017+y}**1371**$_2$
B **11818+y**, J_1+20, $\gamma_{10388+y}$**1430**$_2$



SD-1 band (1998Ha02) SD-2 band (1998Ha02)

$^{145}_{62}Sm_{83}$

$^{142}_{63}$Eu$_{79}$

S$_n$: 9.46x10^3$_4$, S$_p$: 2.70x10^3$_3$

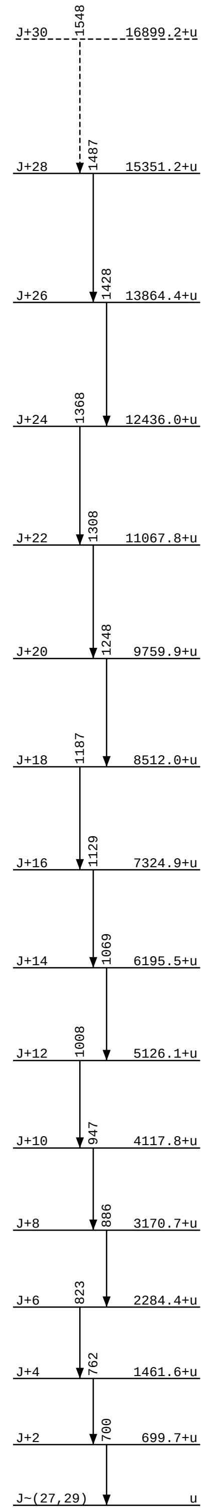
Nuclear Bands

- A Band based on 11$^+$
- B Band based on 14$^+$
- C Band structure
- D Band based on 13$^-$
- E Band structure
- F SD band (1995Mu11)

Levels and γ-ray branchings:

0, 1$^+$, *2.34$_{12}$ s*, %ε+%β$^+$=100 , μ=+1.536$_{19}$, Q=+0.12$_5$
178.75$_6$(?), (2)$^-$, γ_0**178.9**$_1$(100) E1
280.29$_5$, 1$^+$,2$^+$, $\gamma_{178.75}$**101.4**$_1$(2.6$_7$), γ_0**280.3**$_1$(100.0$_{23}$) E2+M1
284.44$_4$, 0$^+$,1$^+$,2$^+$, γ_0**284.4**$_1$(100) M1
496.71$_7$, $\gamma_{284.44}$**212.2**$_1$(100$_{10}$), $\gamma_{280.29}$**216**$_1$(≈ 32.68)
503.06$_5$, $^+$, $\gamma_{280.29}$**222.8**$_1$(100$_5$) M1+E2, γ_0**503.0**$_1$(44$_{11}$)
526.27$_4$, $^+$, $\gamma_{284.44}$**241.7**$_2$(2.8$_8$) M1, $\gamma_{178.75}$**347.6**$_1$(7.6$_{12}$), γ_0**526.2**$_1$(100$_3$) E2
544.4, $\gamma_{280.29}$**264.2**$_1$(100)
550.6$_2$, $^+$, γ_0**550.6**$_1$(100) E2
585.74$_7$, $\gamma_{178.75}$**407.0**$_1$(100$_9$), γ_0**585.7**$_2$(98$_{13}$)
591.37$_5$, $\gamma_{284.44}$**306.9**$_1$(73$_6$), γ_0**591.3**$_1$(100$_8$)
614.49$_5$, $^+$, $\gamma_{284.44}$**330.4**$_1$(22$_4$), $\gamma_{280.29}$**335**$_1$(≈ 15), γ_0**614.5**$_1$(100$_7$) E2
619.75$_5$, $\gamma_{284.44}$**336**$_1$(≈ 2.7), γ_0**619.7**$_1$(100$_5$)
631.71$_8$, $\gamma_{526.27}$**105**$_1$(≈ 11), $\gamma_{496.71}$**136**$_1$(≈ 11), γ_0**631.7**$_1$(100$_9$)
660.84$_8$, $\gamma_{178.75}$**482.0**$_1$(60$_{12}$), γ_0**660.9**$_1$(100$_{12}$)
705.0$_2$, γ_0**704.9**$_1$(100)
731.9$_2$, $\gamma_{503.06}$**228.1**$_1$(≈ 18), $\gamma_{284.44}$**448.2**$_1$(35$_8$), $\gamma_{178.75}$**553**$_1$(≈ 98), γ_0**732.4**$_1$(100$_8$)
751.0$_2$, $\gamma_{503.06}$**247.2**$_1$(22$_4$), $\gamma_{284.44}$**466**$_1$, $\gamma_{280.29}$**472**$_1$(≈ 14), $\gamma_{178.75}$**572**$_1$(≈ 69), $\gamma_{0.0}$**750.2**$_1$(100$_{10}$)
935.7$_1$, $\gamma_{731.9}$**203**$_1$(≈ 18), $\gamma_{284.44}$**651.3**$_1$(66$_9$), γ_0**935.6**$_1$(100$_{12}$)
1000.2, $\gamma_{178.75}$**821**$_1$(≈ 14), γ_0**1000.2**$_1$(100$_{15}$)
1210.3$_3$(?), $\gamma_{935.7}$**274.3**$_4$, $\gamma_{614.49}$**595.9**$_3$(100)
1383.3, $\gamma_{178.75}$**1204.4**$_1$(100)
1412.8$_1$, $\gamma_{550.6}$**862**$_1$(≈ 20), $\gamma_{503.06}$**910.0**$_1$(16$_4$), $\gamma_{280.29}$**1133**$_1$(≈ 9), $\gamma_{178.75}$**1233.9**$_1$(100$_6$), γ_0**1412.4**$_2$(45$_{10}$)
1438.2$_1$, $\gamma_{614.49}$**823.9**$_1$(28$_7$), $\gamma_{585.74}$**853**$_1$(≈ 2.9), $\gamma_{526.27}$**912.0**$_2$(7.6$_{16}$), $\gamma_{284.44}$**1153.8**$_1$(5.5$_{13}$), $\gamma_{178.75}$**1259.6**$_1$(100$_4$), γ_0**1438.4**$_2$(29$_{11}$)
1481$_1$, $\gamma_{178.75}$**1302**$_1$(100)
1486$_1$, $\gamma_{178.75}$**1307**$_1$(100)
1779.0$_1$, $\gamma_{705.0}$**1073.6**$_4$, $\gamma_{619.75}$**1158**$_1$(≈ 9.0), $\gamma_{591.37}$**1187**$_1$(≈ 27), $\gamma_{503.06}$**1275**$_1$(≈ 9.0), $\gamma_{284.44}$**1495.0**$_2$(27$_7$), $\gamma_{178.75}$**1599.7**$_2$(81$_{14}$), γ_0**1779.1**$_1$(100$_{11}$)
1948.6, γ_0**1948.6**$_3$(100)
1956.6, γ_0**1956.6**$_3$(100)
2025.6, $\gamma_{178.75}$**1846.7**$_2$(100)
2160.0$_4$, $\gamma_{178.75}$**1982**$_1$(100)
0.0+x, 8$^-$, *1.223$_8$ min*, %ε+%β$^+$=100 , μ=+2.978$_{11}$, Q=+1.41$_6$
282.60+x, 8$^+$, *6.2$_4$ ns*, μ=(+)4.08$_{24}$, $\gamma_{0.0+x}$**282.6**$_1$(100.0) E1
292.69+x, 9$^+$, $\gamma_{282.60+x}$**(10)**, $\gamma_{0.0+x}$**292.7**$_2$(100) E1
353.20+x, 9$^-$, $\gamma_{0.0+x}$**353.2**$_2$(100)
376.28+x, 10$^+$, $\gamma_{292.69+x}$**83.6**$_1$(100) M1
679.4+x, (8,10), $\gamma_{292.69+x}$**386.7**$_3$(100), $\gamma_{282.60+x}$**396.8**$_4$(36)
796.01+x, 11$^+$, $\gamma_{376.28+x}$**419.7**$_2$(100)
1000.9+x, 11$^-$, $\gamma_{353.20+x}$**647.7**$_3$(100)
1066.49+x, 11$^+$, $\gamma_{376.28+x}$**690.2**$_2$(100)
1099.23+x, 12$^+$, $\gamma_{796.01+x}$**303.2**$_1$(100), $\gamma_{376.28+x}$**723.0**$_2$(94)
1281.2+x, (10), $\gamma_{679.4+x}$**601.8**$_4$(100)
A **1397.3+x**, 11$^+$, $\gamma_{1281.2+x}$**116.2**$_3$(3.3), $\gamma_{796.01+x}$**601.5**$_4$(100), $\gamma_{376.28+x}$**1021.0**$_4$(13), $\gamma_{292.69+x}$**1104.5**$_4$(10)
1630.63+x, 12$^+$, $\gamma_{796.01+x}$**834.5**$_2$(100), $\gamma_{376.28+x}$**1254.5**$_4$(14)
1669.10+x, 13$^+$, $\gamma_{1099.23+x}$**569.8**$_2$(100), $\gamma_{796.01+x}$**873.1**$_4$(18)
2001.76+x, 13$^+$, $\gamma_{1630.63+x}$**371.0**$_3$(53), $\gamma_{1099.23+x}$**902.6**$_4$(56), $\gamma_{1066.49+x}$**935.2**$_3$(66), $\gamma_{796.01+x}$**1205.9**$_3$(100)
2034.3+x, 12, $\gamma_{796.01+x}$**1238.3**$_3$(100)
2046.0+x, 12$^-$, $\gamma_{796.01+x}$**1250.0**$_3$(100)
2085.2+x, 13$^-$, $\gamma_{1000.9+x}$**1084.2**$_3$(100)
B **2130.94+x**, 14$^+$, $\gamma_{2001.76+x}$**129.2**$_2$(11) M1, $\gamma_{1669.10+x}$**461.8**$_2$(16), $\gamma_{1099.23+x}$**1031.7**$_2$(100)
A **2209.2+x**, 13$^+$, $\gamma_{1397.3+x}$**811.9**$_2$(100)
2231.3+x, 14$^+$, $\gamma_{1099.23+x}$**1132.0**$_2$(100)
2283.2+x, 12$^{(-)}$, $\gamma_{1066.49+x}$**1216.8**$_4$(89), $\gamma_{796.01+x}$**1487.3**$_4$(100)
B **2288.9+x**, 15$^+$, *4.6$_4$ ps*, $\gamma_{2130.94+x}$**158.0**$_1$(100) M1
2359.1+x, 12$^-$, $\gamma_{1000.9+x}$**1358.3**$_3$(100)
2442.8+x, 13$^{(-)}$, $\gamma_{2046.0+x}$**396.7**$_2$(65), $\gamma_{2034.3+x}$**408.5**$_4$(35), $\gamma_{1099.23+x}$**1343.7**$_3$(100)
D **2483.97+x**, 13$^-$, $\gamma_{2359.1+x}$**125.0**$_3$(9.8), $\gamma_{2283.2+x}$**200.8**$_2$(26.2), $\gamma_{2085.2+x}$**398.5**$_4$(6.6), $\gamma_{2046.0+x}$**438.0**$_2$(41), $\gamma_{2034.3+x}$**449.6**$_3$(33), $\gamma_{1630.63+x}$**853.3**$_3$(61), $\gamma_{1099.23+x}$**1384.8**$_3$(100)
B **2543.6+x**, 16$^+$, *1.8$_6$ ps*, $\gamma_{2288.9+x}$**254.7**$_1$(100) M1(+E2)
D **2610.74+x**, 14$^-$, *3.9$_7$ ps*, $\gamma_{2483.97+x}$**126.8**$_1$(100) M1, $\gamma_{2442.8+x}$**167.9**$_2$(30) (M1+E2), $\gamma_{2130.94+x}$**479.8**$_4$(11) E1, $\gamma_{2085.2+x}$**525.5**$_4$(13) M1(+E2), $\gamma_{1669.10+x}$**941.6**$_3$(30) E1
D **2751.33+x**, 15$^-$, *3.1$_6$ ps*, $\gamma_{2610.74+x}$**140.6**$_1$(100) M1, $\gamma_{2130.94+x}$**620.3**$_3$(16) E1
D **2935.9+x**, 16$^-$, *1.8$_3$ ps*, $\gamma_{2751.33+x}$**184.6**$_1$(100) M1, $\gamma_{2288.9+x}$**646.9**$_3$(14) E1
B **3057.6+x**, 17$^+$, $\gamma_{2543.6+x}$**513.9**$_2$(100), $\gamma_{2288.9+x}$**768.6**$_4$(21)
A **3116.8+x**, 15$^+$, $\gamma_{2209.2+x}$**907.6**$_2$(100)
D **3154.5+x**, 17$^-$, *1.73$_{21}$ ps*, $\gamma_{2935.9+x}$**218.6**$_1$(100) M1
B **3435.0+x**, 18$^+$, $\gamma_{3057.6+x}$**377.4**$_2$(100), $\gamma_{2543.6+x}$**891.4**$_3$(73)
3441.5+x, 17$^-$, $\gamma_{2935.9+x}$**505.6**$_3$(100)
D **3548.9+x**, 18$^-$, *1.32$_{14}$ ps*, $\gamma_{3154.5+x}$**394.4**$_2$(100) M1(+E2)
3574.8+x, 16$^+$, $\gamma_{2231.3+x}$**1343.5**$_3$(100), $\gamma_{2130.94+x}$**1444.0**$_4$(26)
A **3577.5+x**, 17$^+$, *37$_3$ ps*, $\gamma_{3116.8+x}$**460.7**$_2$(100) E2
3819.2+x, 17, $\gamma_{3574.8+x}$**244.4**$_2$(100)
3974.5+x, 19$^-$, $\gamma_{3548.9+x}$**425.6**$_2$(100), $\gamma_{3154.5+x}$**820.0**$_4$(9.2)
A **4109.7+x**, 19$^+$, *5.7$_8$ ps*, $\gamma_{3577.5+x}$**532.1**$_2$(100) E2
4114.5+x, 18, $\gamma_{3441.5+x}$**673.0**$_4$(100)
4114.7+x, 19$^-$, $\gamma_{3548.9+x}$**565.7**$_3$(100), $\gamma_{3154.5+x}$**960.2**$_4$(17.5)
4186.5+x, 18, $\gamma_{3819.2+x}$**367.3**$_2$(100)
B **4218.5+x**, 19$^+$, $\gamma_{3435.0+x}$**783.5**$_3$(100), $\gamma_{3057.6+x}$**1160.8**$_4$(22)
4380.3+x, 19$^-$, $\gamma_{3548.9+x}$**831.4**$_4$(100)
D **4515.7+x**, 20$^-$, $\gamma_{3974.5+x}$**541.2**$_3$(100), $\gamma_{3548.9+x}$**966.7**$_5$(10.9)
4650.4+x, 19, $\gamma_{4186.5+x}$**463.9**$_3$(100)
4651.4+x, 20$^-$, $\gamma_{4380.3+x}$**271.1**$_2$(43), $\gamma_{4114.7+x}$**536.6**$_3$(100), $\gamma_{3548.9+x}$**1102.5**$_4$(16.7)
B **4803.7+x**, 20$^+$, $\gamma_{4218.5+x}$**585.2**$_5$(25), $\gamma_{3435.0+x}$**1368.7**$_3$(100)
4909.2+x, 21, $\gamma_{4651.4+x}$**257.8**$_2$(100)
4928.3+x, $\gamma_{4114.5+x}$**813.8**$_4$(100)
A **4930.0+x**, 21$^+$, *<1.4 ps*, $\gamma_{4109.7+x}$**820.3**$_2$(100) E2
D **5078.0+x**, 21$^-$, $\gamma_{4515.7+x}$**562.3**$_3$(100)
5165.6+x, 20, $\gamma_{4650.4+x}$**515.2**$_4$(100)
5300.4+x, 21$^-$, $\gamma_{3974.5+x}$**1325.9**$_4$(100)
5467.1+x, 22, $\gamma_{4909.2+x}$**557.9**$_4$(100)
5511.6+x, 22, $\gamma_{4909.2+x}$**602.4**$_4$(100)
B **5533.5+x**, 21$^+$, $\gamma_{4803.7+x}$**729.8**$_3$(100), $\gamma_{4218.5+x}$**1315.0**$_5$(24)
5729.6+x, 22, $\gamma_{4930.0+x}$**799.6**$_3$(100)
5819.4+x, 22, $\gamma_{5533.5+x}$**285.9**$_3$(100)
A **6006.0+x**, 23$^+$, $\gamma_{4930.0+x}$**1076.0**$_3$(100)
6163.7+x, 23, $\gamma_{5819.4+x}$**344.3**$_3$(100)
6525.4+x, 24, $\gamma_{6163.7+x}$**361.7**$_3$(100)
6539.1+x, 24, $\gamma_{5729.6+x}$**809.5**$_3$(100)
A **7073.8+x**, (25$^+$), $\gamma_{6006.0+x}$**1067.8**$_4$(100)
C **y**, J
C **602.8+y**, J + 2, γ_y**602.8**$_3$(100)
C **1211.2+y**, J + 4, $\gamma_{602.8+y}$**608.4**$_3$(100)
C **1956.8+y**, J + 6, *0.49$_3$ ps*, $\gamma_{1211.2+y}$**745.6**$_3$(100) E2
C **2875.9+y**, J + 8, *0.21$_3$ ps*, $\gamma_{1956.8+y}$**919.1**$_5$(100) E2
C **3996.6+y**, J + 10, *<0.21 ps*, $\gamma_{2875.9+y}$**1120.7**$_5$(100) E2
C **5170.4+y**, J + 12, $\gamma_{3996.6+y}$**1173.8**$_6$(100)
E **z**, J
E **753.6+z**, J + 2, γ_z**753.6**$_3$(100)
E **1374.3+z**, J + 4, $\gamma_{753.6+z}$**620.7**$_2$(100)

E **2154.9+z**, $J+6$, 0.26_3 *ps*, $\gamma_{\mathbf{1374.3+z}}$**780.6**$_3$(100) E2
E **3093.2+z**, $J+8$, 0.12_2 *ps*, $\gamma_{\mathbf{2154.9+z}}$**938.3**$_3$(100) E2
E **4011.6+z**, $J+10$, 0.08_6 *ps*, $\gamma_{\mathbf{3093.2+z}}$**918.4**$_5$(100) E2
E **5015.8+z**, $J+12$, <0.21 *ps*, $\gamma_{\mathbf{4011.6+z}}$**1004.2**$_6$(100) E2
E **6157.0+z**, $J+14$, $\gamma_{\mathbf{5015.8+z}}$**1141.2**$_7$(100)
F **u**, $J\approx(27,29)$
F **699.7+u**, $J+2$, $\gamma_{\mathbf{u}}$**699.7**$_3$
F **1461.6+u**, $J+4$, $\gamma_{\mathbf{699.7+u}}$**761.9**$_3$
F **2284.4+u**, $J+6$, $\gamma_{\mathbf{1461.6+u}}$**822.8**$_3$
F **3170.7+u**, $J+8$, $\gamma_{\mathbf{2284.4+u}}$**886.3**$_3$
F **4117.8+u**, $J+10$, $\gamma_{\mathbf{3170.7+u}}$**947.1**$_3$
F **5126.1+u**, $J+12$, $\gamma_{\mathbf{4117.8+u}}$**1008.3**$_3$
F **6195.5+u**, $J+14$, $\gamma_{\mathbf{5126.1+u}}$**1069.4**$_3$
F **7324.9+u**, $J+16$, $\gamma_{\mathbf{6195.5+u}}$**1129.4**$_4$
F **8512.0+u**, $J+18$, $\gamma_{\mathbf{7324.9+u}}$**1187.1**$_6$
F **9759.9+u**, $J+20$, $\gamma_{\mathbf{8512.0+u}}$**1247.9**$_6$
F **11067.8+u**, $J+22$, $\gamma_{\mathbf{9759.9+u}}$**1307.9**$_{10}$
F **12436.0+u**, $J+24$, $\gamma_{\mathbf{11067.8+u}}$**1368.2**$_{12}$
F **13864.4+u**, $J+26$, $\gamma_{\mathbf{12436.0+u}}$**1428.4**$_{18}$
F **15351.2+u**, $J+28$, $\gamma_{\mathbf{13864.4+u}}$**1486.8**$_{20}$
F **16899.2+u**(?), $J+30$, $\gamma_{\mathbf{15351.2+u}}$**1548**(?)



SD band
(1995Mu11)
$^{142}_{63}Eu_{79}$

$^{143}_{63}Eu_{80}$

S_n: 10971 $_{33}$, S_p: 2545 $_{17}$

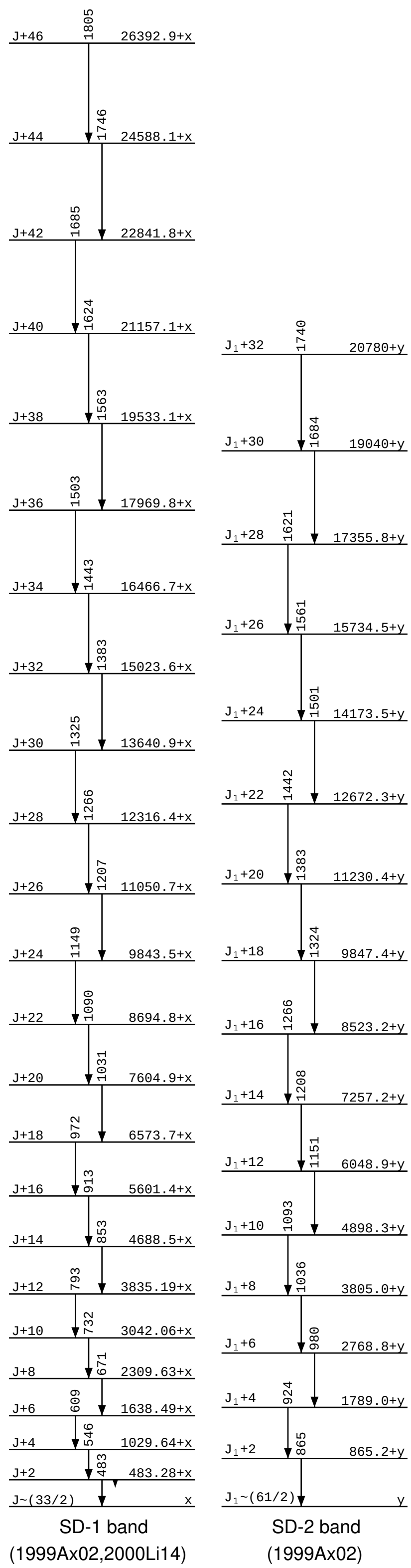
Nuclear Bands

- A γ sequence
- B γ sequence
- C γ sequence
- D SD-1 band (1999Ax02,2000Li14,1993At01,1991Mu08,1993At03, 1995Fo02,1996At03,1997Le17,2001Le04) Q_0=13.0_{15}
- E SD-2 band (1999Ax02)

Levels and γ-ray branchings:

0, $5/2^+$, *2.59_2 min*, %ε+%$β^+$=100 , μ=+3.673_8, Q=+0.51_3
258.82$_3$, $(3/2)^+$, γ_0**258.81**$_3$(100) (M1)
271.93$_3$, $7/2^+$, γ_0**271.94**$_3$(100) M1
389.51$_4$, $11/2^-$, *50.0_5 μs*, $\gamma_{271.93}$**117.57**$_5$(100_8) M2, γ_0**389.47**$_5$(53_4) E3
463.61$_5$, $(1/2)^+$, $\gamma_{258.82}$**204.77**$_5$(100_7) M1,E2, γ_0**463.7**$_1$(51_4)
804.1$_3$, $\gamma_{463.61}$**340.5**$_3$(100)
812.90$_{10}$, $(1/2,3/2)^+$, $\gamma_{258.82}$**554.1**$_3$(14_7), γ_0**812.9**$_1$(100_{10})
906.94$_6$, $9/2^+$, γ_0**906.96**$_6$(100) E2
977.49$_4$, $(9/2)^-$, $\gamma_{389.51}$**588.00**$_3$(100) M1+E2
1057.41$_6$, $11/2^+$, $\gamma_{271.93}$**785.56**$_6$(100) E2
1057.64$_5$, $13/2^-$, $\gamma_{389.51}$**668.10**$_3$(100) M1+E2 $\delta=-0.75^{23}_{73}$
1088.31$_{11}$, $\gamma_{389.51}$**698.8**$_1$(100)
1188.42$_5$, $11/2^-$, $\gamma_{1057.41}$**131.1**$_1$(3.5_6), $\gamma_{977.49}$**210.9**$_1$(10_1) M1, $\gamma_{389.51}$**798.89**$_6$(100_7) E2+M1
1213.94$_{10}$, $11/2^-$, $\gamma_{389.51}$**824.43**$_9$(100) E2(+M1)
1256.88$_6$, $11/2^+$, $\gamma_{271.93}$**984.93**$_5$(100) E2
1306.05$_6$, $15/2^-$, $\gamma_{1057.64}$**248.4**$_1$(67_9) D, $\gamma_{389.51}$**916.53**$_5$(100_{17}) E2
1331.24$_{11}$, $11/2^+$, $\gamma_{271.93}$**1059.3**$_1$(100) Q
1405.58$_{21}$, $\gamma_{977.49}$**428.1**$_2$(100)
1497.74$_{20}$, $\gamma_{906.94}$**590.8**$_2$(100_{50}), $\gamma_{271.93}$**1225.8**$_5$(75_{25})
1543.0$_4$(?), $(1/2,3/2)^+$, $\gamma_{258.82}$**1284.2**$_4$(100)
1565.24$_{21}$, $\gamma_{271.93}$**1293.3**$_2$(100)
1602.63$_7$, $\gamma_{1057.41}$**545.3**$_1$(50_7), $\gamma_{977.49}$**625.23**$_8$(100_7), $\gamma_{389.51}$**1213.1**$_3$(47_7)
1676.50$_8$, $\gamma_{271.93}$**1404.56**$_7$(100)
1723.6$_4$(?), $(1/2,3/2)^+$, $\gamma_{258.82}$**1464.8**$_4$(100)
1754.23$_8$, $\gamma_{1256.88}$**497.3**$_1$(70_{10}), $\gamma_{977.49}$**776.8**$_1$(100_{10}) M1
1761.74$_{21}$, $\gamma_{271.93}$**1489.8**$_2$(100)
1893.31$_{15}$, $15/2^-$, $\gamma_{1057.41}$**836.6**$_3$(100), $\gamma_{389.51}$**1504.9**$_4$(60)
1903.61$_{15}$, $\gamma_{1057.64}$**845.5**$_2$(46_{15}), $\gamma_{977.49}$**926.6**$_2$(100_{14})
1908.2$_5$, $15/2^+$, $\gamma_{1306.05}$**602.1**$_6$(100)
1970.6$_3$, $\gamma_{977.49}$**993.1**$_3$(100)
2018.72$_5$, $(9/2^-)$, $\gamma_{1188.42}$**830.1**$_1$(18_2), $\gamma_{977.49}$**1041.35**$_5$(100_8), $\gamma_{389.51}$**1629.3**$_1$(64_6), $\gamma_{271.93}$**1746.4**$_1$(25_3)
2065.07$_6$, $(9/2^-)$, $\gamma_{977.49}$**1087.3**$_1$(29_6), $\gamma_{906.94}$**1158.2**$_1$(21_3), $\gamma_{389.51}$**1675.9**$_3$(18_3), $\gamma_{271.93}$**1793.21**$_7$(100_6)
2092.15$_7$, $\gamma_{389.51}$**1702.5**$_1$(36_3), $\gamma_{271.93}$**1820.27**$_7$(100_8)
2116.25$_{14}$, $17/2^-$, $\gamma_{1306.05}$**810.2**$_3$(32), $\gamma_{1057.64}$**1058.7**$_2$(100)
2121.24$_{11}$, $(15/2^+)$, $\gamma_{1057.41}$**1063.6**$_1$(100) Q
2196.71$_5$, $(11/2^-)$, $\gamma_{1893.31}$**304.2**$_2$(13_1) (E2), $\gamma_{1602.63}$**594.3**$_1$(7.6_7), $\gamma_{1306.05}$**890.52**$_9$(43_4), $\gamma_{1188.42}$**1008.28**$_5$(18_2) M1, $\gamma_{1057.64}$**1138.9**$_1$(11_1), $\gamma_{977.49}$**1219.21**$_7$(54_4), $\gamma_{389.51}$**1807.14**$_7$(100_3) Q+D
2209.3$_3$, $\gamma_{977.49}$**1231.8**$_3$(100)
2254.32$_{11}$, $\gamma_{1057.41}$**1196.9**$_1$(100_8), $\gamma_{977.49}$**1276.9**$_5$(28_9)
2275.59$_{10}$, $\gamma_{1188.42}$**1087.3**$_1$(100_{20}), $\gamma_{977.49}$**1297.6**$_2$(42_7), $\gamma_{389.51}$**1886.0**$_2$(90_{10})
2318.17$_{24}$, $19/2^-$, $\gamma_{1306.05}$**1012.2**$_3$(100.0)
2329.01$_{18}$, $17/2^-$, $\gamma_{1306.05}$**1023.0**$_4$(52), $\gamma_{1057.64}$**1271.6**$_3$(100)
2331.89$_{21}$, $\gamma_{977.49}$**1354.4**$_2$(100)
2351.12$_{10}$, $\gamma_{1188.42}$**1162.8**$_2$(100_8), $\gamma_{977.49}$**1373.6**$_1$(69_8)
2357.84$_{14}$, $\gamma_{1213.94}$**1143.9**$_1$(100)
2378.22$_{11}$, $19/2^-$, $\gamma_{1306.05}$**1072.2**$_1$(100) E2
2417.6$_6$, $\gamma_{1088.31}$**1329.3**$_5$(100)
2457.49$_{17}$, $17/2^+$, $\gamma_{1908.2}$**549.3**$_6$(14), $\gamma_{1893.31}$**563.3**$_4$(29), $\gamma_{1306.05}$**1151.6**$_2$(100) D+Q $\delta=-4.2^4_5$
2473.88$_{22}$, $21/2^{(-)}$, *5.8_{15} ns*, $\gamma_{2318.17}$**155.8**$_3$(100) D
2559.20$_{13}$, $19/2^+$, *7.4_4 ps*, $\gamma_{2457.49}$**101.6**$_3$(26) M1+(E2) $\delta=+0.09_{14}$, $\gamma_{2329.01}$**230.2**$_2$(10) E1, $\gamma_{2116.25}$**442.9**$_2$(100) E1
2600.64$_{12}$, $\gamma_{1213.94}$**1386.69**$_7$(100)
2610.8$_5$, $\gamma_{977.49}$**1633.3**$_6$(33_{17}), $\gamma_{271.93}$**2338.9**$_8$(100_{33})
2612.04$_{16}$, $21/2^-$, $\gamma_{2473.88}$**138.2**$_2$(17), $\gamma_{2378.22}$**233.9**$_2$(100), $\gamma_{2116.25}$**495.6**$_3$(33)
2629.71$_{12}$, $21/2^+$, *9.7_{21} ps*, $\gamma_{2559.20}$**70.5**$_1$(59) M1, $\gamma_{2473.88}$**156**$_1$(4.0) D, $\gamma_{2378.22}$**251.5**$_1$(100) E1
2811.51$_{15}$, $23/2^+$, *2.6_{10} ps*, $\gamma_{2629.71}$**181.8**$_1$(100) M1, $\gamma_{2612.04}$**199.5**$_2$(6.2) E1
3011.5$_3$, $23/2^-$, $\gamma_{2629.71}$**381.8**$_5$(62), $\gamma_{2612.04}$**399.5**$_4$(100)
3343.44$_{21}$, $25/2^+$, *<3.5 ps*, $\gamma_{2811.51}$**531.9**$_2$(100) M1
3364.10$_{21}$, $25/2^+$, *<2.8 ps*, $\gamma_{2811.51}$**552.6**$_2$(100) M1
3414.2$_6$, $(25/2)$, $\gamma_{2811.51}$**603**$_1$
3603.8$_4$, $23/2^-$, $\gamma_{2318.17}$**1285.6**$_4$(100)
3688.87$_{25}$, $25/2^-$, $\gamma_{2811.51}$**877.4**$_3$(98), $\gamma_{2612.04}$**1076.8**$_3$(100)
3748.97$_{23}$, $27/2^+$, *4.2_{14} ps*, $\gamma_{3364.10}$**384.9**$_2$(100) M1, $\gamma_{3343.44}$**405.5**$_2$(41) M1
3761.5$_3$, $27/2^+$, $\gamma_{3364.10}$**397.4**$_3$(100)
3788.0$_3$, $(27/2)$, $\gamma_{3688.87}$**99.1**$_2$(100)
3963.1$_5$, $27/2^+$, $\gamma_{3414.2}$**549.0**$_5$(42), $\gamma_{3364.10}$**599.0**$_5$(100)
4091.4$_5$, $(29/2)$, $\gamma_{3788.0}$**303.4**$_4$(100)
A **4168.0**$_3$, $27/2^-$, $\gamma_{3364.10}$**803.9**$_3$(100), $\gamma_{3343.44}$**824.4**$_5$(3.8), $\gamma_{3011.5}$**1156.5**$_4$(8.2)
4215.7$_5$, $(29/2)$, $\gamma_{3788.0}$**427.8**$_3$(100)
4318.53$_{23}$, $29/2^+$, *2.0_2 ps*, $\gamma_{3761.5}$**557.2**$_4$(14) M1, $\gamma_{3748.97}$**569.6**$_2$(100) M1, $\gamma_{3364.10}$**954.4**$_2$(54) E2, $\gamma_{3343.44}$**975.0**$_3$(28) E2
4397.2$_3$, $29/2^+$, $\gamma_{3748.97}$**648.2**$_4$(45), $\gamma_{3364.10}$**1033.0**$_3$(100), $\gamma_{3343.44}$**1054.0**$_4$(39)
4472.9$_4$, $27/2^-$, $\gamma_{3603.8}$**869.1**$_5$(100)
4477.83$_{24}$, $31/2^+$, *7.9_3 ps*, $\gamma_{4397.2}$**80.7**$_2$(6.1) M1, $\gamma_{4318.53}$**159.3**$_1$(100) M1, $\gamma_{3748.97}$**728.8**$_2$(21) E2
4563.0$_5$, $(31/2)$, $\gamma_{4091.4}$**471.6**$_4$(100)
4565.7$_5$, $31/2^+$, $\gamma_{3963.1}$**602.6**$_4$(100), $\gamma_{3761.5}$**804.2**$_5$(90)
4653.6$_3$, $33/2^+$, *6_2 ps*, $\gamma_{4477.83}$**175.8**$_2$(100) M1
4786.6$_4$, $31/2^+$, $\gamma_{3748.97}$**1037.6**$_4$(100)
4946.9$_4$, $35/2^{(+)}$, *<2.1 ps*, $\gamma_{4653.6}$**293.3**$_2$(100) (M1)
A **5051.8**$_4$, $31/2^-$, *<7 ps*, $\gamma_{4472.9}$**578.8**$_4$(21) E2, $\gamma_{4168.0}$**883.8**$_2$(100) E2
5074.8$_6$, $(31/2)$, $\gamma_{4215.7}$**859.1**$_4$(100)
5107.0$_4$, $33/2^{(+)}$, $\gamma_{4477.83}$**629.1**$_3$(100)
5130.7$_6$, $35/2^+$, $\gamma_{4565.7}$**565.0**$_4$(100)
A **5190.8**$_5$, $31/2^-$, $\gamma_{4472.9}$**717.9**$_4$(100)
5243.5$_5$, $33/2^{(-)}$, $\gamma_{5074.8}$**169**$_1$, $\gamma_{4786.6}$**456.9**$_4$(100), $\gamma_{4563.0}$**680.5**$_5$(23)
5245.8$_5$, $37/2^{(-)}$, $\gamma_{4946.9}$**298.9**$_4$(100)
5328.7$_4$, $33/2^{(+)}$, $\gamma_{4653.6}$**675.0**$_3$(100)
5382.0$_5$, $37/2^{(-)}$, $\gamma_{4946.9}$**435.3**$_4$(100)
5411.4$_4$, $35/2^{(-)}$, $\gamma_{5243.5}$**168**$_1$, $\gamma_{4653.6}$**757.8**$_3$(100)
5419.4$_4$, $35/2^{(-)}$, $\gamma_{4653.6}$**765.8**$_2$(100)
5587.1$_4$, $37/2^{(-)}$, $\gamma_{5419.4}$**167.8**$_3$(100), $\gamma_{5411.4}$**175.7**$_5$(≈ 62) D(+Q) $\delta=-0.02_{10}$
5722.6$_5$, $35/2^{(-)}$, $\gamma_{4653.6}$**1069.0**$_4$(100)
5792.4$_4$, $35/2^{(+)}$, $\gamma_{5328.7}$**463.6**$_3$(70) E2+M1, $\gamma_{5107.0}$**685.3**$_3$(33), $\gamma_{4946.9}$**845.6**$_3$(100), $\gamma_{4653.6}$**1139.0**$_3$(39)
5799.5$_7$, $37/2^{(-)}$, $\gamma_{5722.6}$**76.9**$_4$(100)
5848.1$_5$, $39/2^{(-)}$, $\gamma_{5587.1}$**261.0**$_2$(100)
5869.3$_4$, $35/2^{(+)}$, $\gamma_{5792.4}$**77.0**$_4$(33), $\gamma_{5107.0}$**762.2**$_4$(92), $\gamma_{4946.9}$**922.3**$_4$(100), $\gamma_{4653.6}$**1215.7**$_4$(100)
A **5904.7**$_4$, $35/2^-$, *<0.7 ps*, $\gamma_{5190.8}$**713.9**$_3$(9.4) E2, $\gamma_{5051.8}$**852.9**$_2$(100) E2
5939.3$_7$, $39/2^+$, $\gamma_{5130.7}$**808.6**$_3$(100)
6001.0$_5$, $39/2^{(-)}$, $\gamma_{5587.1}$**413.9**$_3$(100)
6055.9$_5$, $39/2^{(-)}$, $\gamma_{5587.1}$**468.8**$_3$(100)
6057.7$_4$, $37/2^{(+)}$, $\gamma_{5869.3}$**188.4**$_2$(76), $\gamma_{5792.4}$**265.3**$_2$(100) E2+M1

6316.3$_6$, $41/2$, $\gamma_{6001.0}$**315.3**$_3$(100)
6333.3$_4$, $39/2^{(+)}$, $\gamma_{6057.7}$**275.5**$_2$(100) E2+M1
6363.0$_5$, $39/2^{(-)}$, $\gamma_{5587.1}$**775.9**$_3$(100)
6365.0$_5$, $41/2^{(-)}$, $\gamma_{5848.1}$**516.9**$_4$(100)
6556.3$_6$, $41/2^{(-)}$, $\gamma_{6055.9}$**500.5**$_4$(100)
6694.8$_5$, $41/2^{(+)}$, $\gamma_{6333.3}$**361.5**$_2$(100) E2+M1
6709.5$_6$, $39/2$, $\gamma_{5245.8}$**1463.6**$_5$(100)
6747.9$_7$, $\gamma_{4946.9}$**1801.0**$_6$(100)
6815.3$_7$, $43/2$, $\gamma_{6316.3}$**499.0**$_3$(100)
A **6840.6**$_5$, $39/2^-$, *<0.7 ps*, $\gamma_{5904.7}$**935.9**$_2$(100) E2
6871.4$_8$, $43/2^+$, $\gamma_{5939.3}$**932.1**$_4$(100)
6881.9$_8$, $43/2^+$, $\gamma_{5939.3}$**942.6**$_4$(100)
6975.6$_5$, $41/2^{(-)}$, $\gamma_{6709.5}$**266.0**$_4$(83), $\gamma_{5382.0}$**1593.8**$_4$(100), $\gamma_{5245.8}$**1729.7**$_6$(58)
7024.3$_6$, $41/2^{(-)}$, $\gamma_{6363.0}$**661.3**$_4$(100)
7152.3$_8$, $45/2$, $\gamma_{6815.3}$**337.0**$_4$(100)
7154.4$_5$, $43/2^{(+)}$, $\gamma_{6694.8}$**459.5**$_2$(100) E2+M1
7214.8$_5$, $43/2^{(+)}$, $\gamma_{6975.6}$**239.1**$_4$(48), $\gamma_{6365.0}$**849.8**$_4$(100)
7248.8$_8$, $45/2$, $\gamma_{6815.3}$**433.5**$_4$(100)
7273.8$_5$, $41/2^{(-)}$, $\gamma_{6333.3}$**940.4**$_4$(100)
7288.9$_6$, $43/2^{(-)}$, $\gamma_{6975.6}$**313.4**$_4$(100)
7342.1$_6$, $43/2$, $\gamma_{7024.3}$**317.9**$_4$(100), $\gamma_{6556.3}$**785.9**$_5$(50), $\gamma_{6365.0}$**977.0**$_5$(60)
A **7388.6**$_5$, $43/2^-$, *6.4$_3$ ps*, $\gamma_{6840.6}$**548.0**$_2$(100) E2
7389.6$_9$, $45/2$, $\gamma_{6815.3}$**574.3**$_5$(100)
7448.8$_5$, $45/2^{(+)}$, $\gamma_{7214.8}$**234.0**$_5$(100), $\gamma_{7154.4}$**294.4**$_4$(83)
7501.5$_5$, $43/2^{(-)}$, $\gamma_{7273.8}$**227.6**$_4$(26), $\gamma_{6694.8}$**806.8**$_3$(100)
7577.2$_9$, $47/2$, $\gamma_{7389.6}$**187.6**$_2$(100)
7659.7$_6$, $45/2^{(+)}$, $\gamma_{7288.9}$**371.0**$_4$(100)
7693.7$_7$, $45/2$, $\gamma_{7342.1}$**351.6**$_4$(100)
7701.8$_9$, $47/2^+$, $\gamma_{6871.4}$**830.4**$_4$(100)
7726.7$_6$, $45/2^{(+)}$, $\gamma_{7154.4}$**572.2**$_4$(100) E2+M1
7768.9$_8$, $47/2^+$, $\gamma_{6881.9}$**887.1**$_5$(53), $\gamma_{6871.4}$**897.4**$_4$(100)
7804.7$_5$, $45/2^{(-)}$, $\gamma_{7501.5}$**303.3**$_3$(100), $\gamma_{7154.4}$**650.3**$_3$(89)
7925.7$_7$, $47/2$, $\gamma_{7448.8}$**476.9**$_4$(100)
7942.6$_9$, $47/2$, $\gamma_{7248.8}$**693.8**$_4$(100)
A **8003.6**$_5$, $47/2^-$, *2.1$_2$ ps*, $\gamma_{7388.6}$**615.0**$_2$(100) E2
8014.0$_8$, $47/2$, $\gamma_{7693.7}$**320.3**$_3$(100)
8213.7$_6$, $47/2^{(-)}$, $\gamma_{7804.7}$**409.0**$_3$(100)
8264.1$_6$, $47/2^{(+)}$, $\gamma_{7726.7}$**537.2**$_4$(100) E2+M1, $\gamma_{7659.7}$**604.5**$_4$(62), $\gamma_{7448.8}$**815.3**$_5$(81)
8485.7$_6$, $49/2$, $\gamma_{8264.1}$**221.6**$_3$(100)
8655.9$_{13}$, $\gamma_{7768.9}$**887**$_1$
8730.8$_7$, $49/2^{(-)}$, $\gamma_{8213.7}$**517.1**$_4$(100)
C **8794.2**$_8$, $(51/2^-)$, $\gamma_{8003.6}$**790.7**$_5$
A **8870.1**$_6$, $51/2^-$, *0.4$_1$ ps*, $\gamma_{8003.6}$**866.6**$_2$(100) E2
8944.3$_7$, $51/2$, $\gamma_{8485.7}$**458.6**$_3$(100)
8972.3$_6$, $49/2$, $\gamma_{8003.6}$**968.7**$_3$(100)
9295.5$_9$, $51/2^{(-)}$, $\gamma_{8730.8}$**564.7**$_5$(100)
9364.7$_8$, $53/2$, $\gamma_{8944.3}$**420.4**$_4$(100)
C **9444.0**$_9$, $(55/2^-)$, $\gamma_{8794.2}$**649.8**$_4$
B **9568.0**$_6$, $53/2$, $\gamma_{8972.3}$**595.6**$_4$(26), $\gamma_{8870.1}$**697.9**$_2$(100)
A **9977.7**$_6$, $55/2^-$, *<0.4 ps*, $\gamma_{8870.1}$**1107.6**$_2$(100) E2
B **10415.6**$_7$, $57/2$, $\gamma_{9568.0}$**847.6**$_3$(100)
C **10439.3**$_{10}$, $(59/2^-)$, $\gamma_{9444.0}$**995.2**$_5$(100)
A **10624.1**$_7$, $59/2^-$, $\gamma_{9977.7}$**646.2**$_4$(100)
A **11227.4**$_7$, $59/2^-$, *<0.4 ps*, $\gamma_{10624.1}$**602.8**$_5$(20), $\gamma_{9977.7}$**1249.8**$_3$(100) E2
B **11512.9**$_7$, $61/2$, $\gamma_{10415.6}$**1097.3**$_3$(100)
C **11852.4**$_{11}$, $(63/2^-)$, $\gamma_{10439.3}$**1413.1**$_5$(100)
A **12018.6**$_7$, $63/2^-$, *<0.4 ps*, $\gamma_{11227.4}$**791.1**$_4$(100) E2, $\gamma_{10624.1}$**1394.7**$_5$(55) E2
B **12824.6**$_9$, $65/2$, $\gamma_{11512.9}$**1311.7**$_5$(100)
A **12974.4**$_8$, $67/2^-$, *0.15$_4$ ps*, $\gamma_{12018.6}$**955.8**$_4$(100) E2
C **13036.4**$_{15}$, $\gamma_{11852.4}$**1184**$_1$(100)
A **14160.0**$_9$, $71/2^-$, *<0.2 ps*, $\gamma_{12974.4}$**1185.5**$_4$(100) E2
B **14293.6**$_{14}$, $\gamma_{12824.6}$**1469**$_1$(100)
A **15551.1**$_{11}$, $75/2^-$, $\gamma_{14160.0}$**1391.1**$_5$(100)
A **15590.5**$_{11}$, $75/2^-$, $\gamma_{14160.0}$**1430.5**$_5$(100)
D **x**, $J\approx(33/2)$
D **483.28+x**, $J+2$, γ_{x}**483.28**$_{10}$(0.32$_2$), $\gamma_{?}$**3360.6**
D **1029.64+x**, $J+4$, $\gamma_{483.28+x}$**546.36**$_{10}$(0.69$_3$)
D **1638.49+x**, $J+6$, $\gamma_{1029.64+x}$**608.85**$_{10}$(1.05$_3$)
D **2309.63+x**, $J+8$, $\gamma_{1638.49+x}$**671.14**$_{10}$(0.96$_4$)
D **3042.06+x**, $J+10$, $\gamma_{2309.63+x}$**732.42**$_{10}$(0.99$_3$)
D **3835.19+x**, $J+12$, $\gamma_{3042.06+x}$**793.13**$_{10}$(0.98$_3$)
D **4688.5+x**, $J+14$, $\gamma_{3835.19+x}$**853.30**$_{10}$(1.01$_4$)
D **5601.4+x**, $J+16$, $\gamma_{4688.5+x}$**912.9**$_2$(0.98$_8$)
D **6573.7+x**, $J+18$, $\gamma_{5601.4+x}$**972.26**$_{10}$(1.04$_8$)
D **7604.9+x**, $J+20$, $\gamma_{6573.7+x}$**1031.25**$_{20}$(1.03$_7$)
D **8694.8+x**, $J+22$, $\gamma_{7604.9+x}$**1089.93**$_{20}$(0.95$_6$)
D **9843.5+x**, $J+24$, $\gamma_{8694.8+x}$**1148.67**$_{20}$(0.75$_{11}$)
D **11050.7+x**, $J+26$, $\gamma_{9843.5+x}$**1207.13**$_{20}$(0.81$_4$)
D **12316.4+x**, $J+28$, $\gamma_{11050.7+x}$**1265.69**$_{20}$(0.66$_3$)
D **13640.9+x**, $J+30$, $\gamma_{12316.4+x}$**1324.52**$_{21}$(0.56$_3$)
D **15023.6+x**, $J+32$, $\gamma_{13640.9+x}$**1382.70**$_{21}$(0.43$_3$)
D **16466.7+x**, $J+34$, $\gamma_{15023.6+x}$**1443.12**$_{21}$(0.33$_3$)
D **17969.8+x**, $J+36$, $\gamma_{16466.7+x}$**1503.03**$_{21}$(0.32$_3$)
D **19533.1+x**, $J+38$, $\gamma_{17969.8+x}$**1563.3**$_2$(0.17$_2$)
D **21157.1+x**, $J+40$, $\gamma_{19533.1+x}$**1624.0**$_{10}$(0.09$_2$)
D **22841.8+x**, $J+42$, $\gamma_{21157.1+x}$**1684.7**$_{10}$
D **24588.1+x**, $J+44$, $\gamma_{22841.8+x}$**1746.3**$_{12}$
D **26392.9+x**, $J+46$, $\gamma_{24588.1+x}$**1804.8**$_{12}$
E **y**, $J_1\approx(61/2)$
E **865.2+y**, J_1+2, γ_{y}**865.2**$_3$(0.29$_4$)
E **1789.0+y**, J_1+4, $\gamma_{865.2+y}$**923.76**$_{13}$(0.32$_3$)
E **2768.8+y**, J_1+6, $\gamma_{1789.0+y}$**979.8**$_2$
E **3805.0+y**, J_1+8, $\gamma_{2768.8+y}$**1036.27**$_{22}$
E **4898.3+y**, J_1+10, $\gamma_{3805.0+y}$**1093.3**$_2$
E **6048.9+y**, J_1+12, $\gamma_{4898.3+y}$**1150.6**$_2$
E **7257.2+y**, J_1+14, $\gamma_{6048.9+y}$**1208.3**$_3$(0.32$_3$)
E **8523.2+y**, J_1+16, $\gamma_{7257.2+y}$**1266.0**$_2$(0.29$_3$)
E **9847.4+y**, J_1+18, $\gamma_{8523.2+y}$**1324.2**$_3$(0.21$_3$)
E **11230.4+y**, J_1+20, $\gamma_{9847.4+y}$**1383.0**$_3$(0.16$_3$)
E **12672.3+y**, J_1+22, $\gamma_{11230.4+y}$**1441.9**$_3$(0.14$_3$)
E **14173.5+y**, J_1+24, $\gamma_{12672.3+y}$**1501.2**$_4$(0.07$_2$)
E **15734.5+y**, J_1+26, $\gamma_{14173.5+y}$**1561.0**$_4$(0.06$_2$)
E **17355.8+y**, J_1+28, $\gamma_{15734.5+y}$**1621.3**$_{12}$
E **19040+y**, J_1+30, $\gamma_{17355.8+y}$**1684**$_2$
E **20780+y**, J_1+32, $\gamma_{19040+y}$**1740**$_2$



$^{143}_{63}\mathrm{Eu}_{80}$

$^{144}_{63}\mathrm{Eu}_{81}$

S_n: 9480 $_{22}$, S_p: 3423 $_{17}$

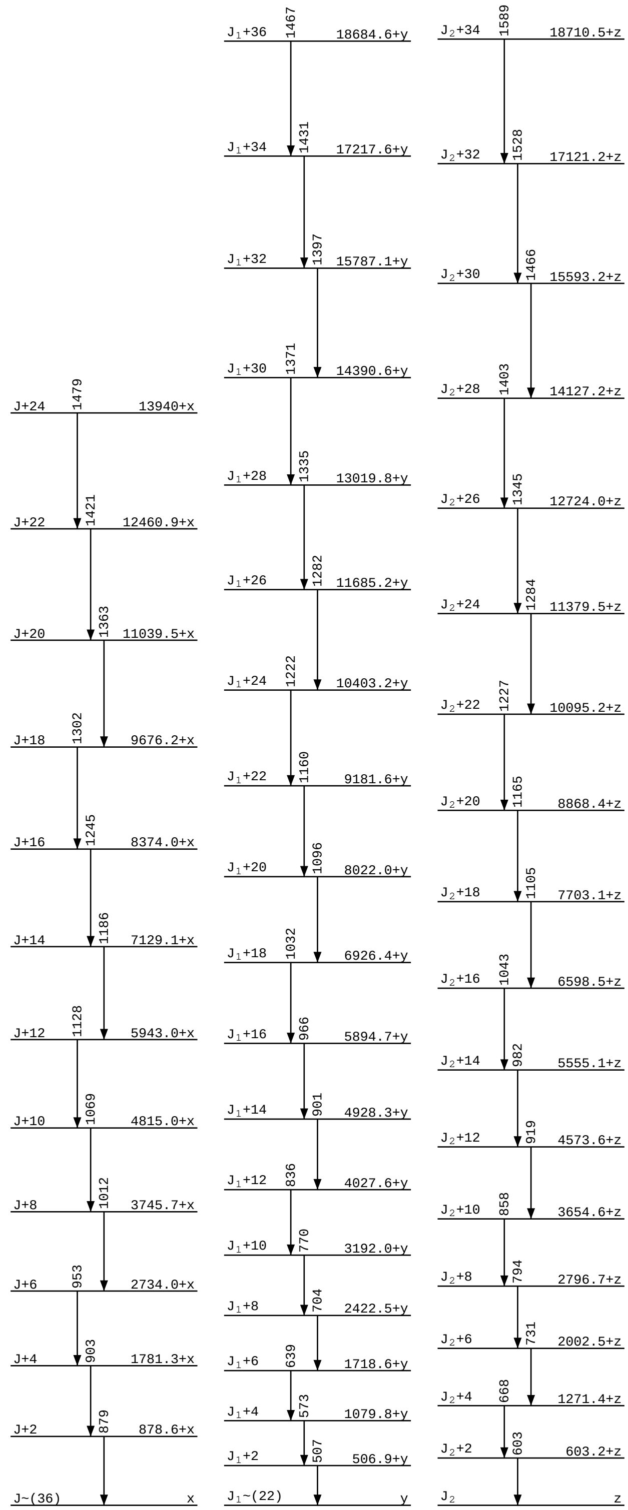
Nuclear Bands

A Band structure
B SD-1 band (1997Ha06,1993Mu16)
C SD-2 band (1997Ha06)
D SD-3 band (1997Ha06)

Levels and γ-ray branchings:

0, 1^+, *10.2$_1$ s*, %ε+%β$^+$=100 , μ=+1.893$_{13}$, Q=+0.10$_3$
333.29$_7$, 2^+, γ_{0}**333.3**$_1$(100) M1
347.12$_7$, 3^+, $\gamma_{333.29}$**14.0**$_1$(< 0.4)(?), γ_{0}**347.12**$_9$(100) E2
580.40$_{16}$, 4^+, $\gamma_{347.12}$**233.3**$_2$(100$_5$) M1, $\gamma_{333.29}$**247.3**$_3$(8$_4$) (E2)
604.41$_{21}$, $(3)^+$, $\gamma_{347.12}$**257.3**$_3$(37$_{19}$), $\gamma_{333.29}$**271.1**$_5$(100$_{30}$) M1+(E2)
621.50$_8$, $(1)^+$, $\gamma_{347.12}$**274.4**$_2$(51.2$_{25}$), $\gamma_{333.29}$**288.2**$_2$(13.0$_{25}$), γ_{0}**621.5**$_1$(100$_3$) E2,(M1)
629.51$_8$, $(2)^-$, $\gamma_{347.12}$**282.4**$_2$(4.3$_{10}$), γ_{0}**629.5**$_1$(100.0$_{25}$) E1
762.67$_{19}$, 5^+, $\gamma_{580.40}$**182.4**$_2$(100$_{18}$) M1,E2, $\gamma_{347.12}$**415.3**$_3$(68$_{27}$) E2
784.00$_{12}$, $(1,2)^+$, $\gamma_{580.40}$**203.6**$_5$(< 32), $\gamma_{333.29}$**450.7**$_1$(100$_{13}$) M1,E2
887.42$_{21}$, 5^-, $\gamma_{762.67}$**124.8**$_2$(2.9$_6$), $\gamma_{580.40}$**307.0**$_2$(100$_5$) E1
894.6$_8$, (4^+), $\gamma_{604.41}$**290.2**(100) M1,E2, $\gamma_{580.40}$**314.1**(46)
907.92$_{11}$, $\gamma_{347.12}$**560.8**$_1$(48$_6$), γ_{0}**907.9**$_4$(100$_{12}$)
926.0$_4$, (6^-), *27.8$_{16}$ ns*, $\gamma_{887.42}$**38.7**$_3$(100$_{63}$) (M1+E2), $\gamma_{762.67}$**163.1**$_5$(38$_{25}$)
974.80$_{10}$, $\gamma_{621.50}$**353.3**$_3$, $\gamma_{333.29}$**641.5**$_1$(100$_5$), γ_{0}**974.8**$_2$(42$_4$)
1048.5$_{11}$, (4), $\gamma_{926.0}$**122.5**(100)
1074.20$_{20}$, $\gamma_{333.29}$**740.9**$_2$(100)
1120.1$_5$, (7^-), $\gamma_{926.0}$**194.1**$_4$(100) M1
1127.6$_6$, (8^-), *1.0$_1$ μs*, $\gamma_{1120.1}$**7.5**, $\gamma_{926.0}$**201.6**$_5$(100) E2
1145.60$_{14}$, $\gamma_{784.00}$**361.6**$_5$(< 34.5), $\gamma_{604.41}$**541.2**$_3$(55$_{14}$), $\gamma_{333.29}$**812.3**$_2$(100$_{14}$), γ_{0}**1145.6**$_4$(90$_{21}$)
1194.1$_5$, $(6,7)^-$, $\gamma_{926.0}$**268.1**$_3$(100) M1,E2
1201.40$_{10}$, $\gamma_{621.50}$**579.9**$_3$(21.2$_{24}$), $\gamma_{333.29}$**868.1**$_1$(100$_4$), γ_{0}**1201.4**$_2$(20$_4$)
1293.51$_{10}$, $\gamma_{907.92}$**385.6**$_4$, $\gamma_{629.51}$**664.0**$_1$(78$_5$), $\gamma_{333.29}$**960.2**, γ_{0}**1293.5**$_2$(100$_9$)
1304.02$_{11}$, $\gamma_{347.12}$**956.9**$_1$(100)
1338.0$_6$, (9^-), *5.0$_5$ ns*, $\gamma_{1127.6}$**210.39**$_9$(100) M1
1402.22$_{22}$, $\gamma_{347.12}$**1055.1**$_3$(100)
1559.91$_{15}$, $\gamma_{333.29}$**1226.6**$_5$(39$_{23}$), γ_{0}**1559.9**$_2$(100$_{20}$)
1669.3$_6$, (9^+), *76$_7$ ps*, $\gamma_{1338.0}$**331.35**$_{14}$(82$_4$) E1, $\gamma_{1127.6}$**541.70**$_{18}$(100$_5$) E1
1804.70$_{22}$, $\gamma_{1201.40}$**603.3**$_2$(100)
1930.2$_3$, $\gamma_{629.51}$**1300.7**$_4$(71$_{25}$), $\gamma_{347.12}$**1583.1**$_4$(100$_{21}$)
2362.12$_{19}$, 1^+, $\gamma_{347.12}$**2015.0**$_3$(19$_6$), $\gamma_{333.29}$**2028.8**$_4$(9$_4$), γ_{0}**2362.1**$_3$(100$_6$)
2432.62$_9$, 1^+, $\gamma_{1559.91}$**872.7**$_2$(3.3$_6$), $\gamma_{1402.22}$**1030.4**$_6$(0.8$_5$), $\gamma_{1304.02}$**1128.6**$_2$(6.6$_5$), $\gamma_{1293.51}$**1139.1**$_3$(4.3$_5$), $\gamma_{1201.40}$**1231.2**$_2$(14.8$_{13}$), $\gamma_{1145.60}$**1287.0**$_2$(5.4$_8$), $\gamma_{1074.20}$**1358.4**$_5$(1.7$_7$), $\gamma_{974.80}$**1457.8**$_4$(10.5$_{15}$), $\gamma_{907.92}$**1524.7**$_2$(3.6$_{11}$), $\gamma_{629.51}$**1803.1**$_2$(12.4$_{13}$), γ_{0}**2432.6**$_2$(100.0$_{15}$)
2692.72$_{17}$, (1^+), $\gamma_{974.80}$**1717.9**$_6$(20$_7$), $\gamma_{621.50}$**2071.2**$_2$(35$_6$), γ_{0}**2692.7**$_3$(100$_9$)
2709.6$_4$, (1^+), $\gamma_{621.50}$**2088.1**$_5$(47$_{12}$), γ_{0}**2709.6**$_6$(100$_{15}$)
2804.62$_{15}$, 1^+, $\gamma_{1402.22}$**1402.4**$_3$(15$_3$), $\gamma_{1293.51}$**1511.1**$_3$(14$_4$), $\gamma_{974.80}$**1829.8**$_4$(28$_5$), $\gamma_{621.50}$**2183.1**$_3$(26$_3$), $\gamma_{347.12}$**2457.5**$_5$(11$_3$), $\gamma_{333.29}$**2471.3**$_3$(100$_4$), γ_{0}**2804.6**$_9$(8$_4$)
2827.92$_{24}$, (1^+), $\gamma_{629.51}$**2198.4**$_3$(100$_{17}$), $\gamma_{333.29}$**2494.6**$_4$(85$_{17}$), γ_{0}**2827.9**$_8$(62$_{13}$)
1669.7+u, (10^+)
2162.0+u, (11^+), $\gamma_{1669.7+u}$**492.2**$_2$(100) M1
2801.8+u, (11^+), $\gamma_{1669.7+u}$**1132.1**$_3$(100)
2903.8+u, (12^+), $\gamma_{2801.8+u}$**102.1**$_2$(6.0) M1, $\gamma_{2162.0+u}$**741.7**$_2$(100), $\gamma_{1669.7+u}$**1233.9**$_4$(15.5)
3369.4+u, (12^+), $\gamma_{2162.0+u}$**1207.5**$_3$(100), $\gamma_{1669.7+u}$**1699.8**$_3$(89)
3454.5+u, (13^+), $\gamma_{3369.4+u}$**85.2**$_1$(15.4) M1, $\gamma_{2903.8+u}$**550.7**$_2$(100), $\gamma_{2162.0+u}$**1292.3**$_3$(19.1)
3454.5+v, (14)
3486.0+v, (15), $\gamma_{3454.5+v}$**32**(?)
3650.5+v, (16), *<7 ps*, $\gamma_{3486.0+v}$**164.5**$_1$(100) M1
4366.8+v, (17), $\gamma_{3650.5+v}$**716.3**$_2$(100)
4399.5+v, (15), $\gamma_{3454.5+v}$**944.9**$_5$
4508.4+v, (16), *<7 ps*, $\gamma_{4399.5+v}$**108.9**$_1$(14.5), $\gamma_{3650.5+v}$**858**$_1$(4.0), $\gamma_{3486.0+v}$**1022.4**$_3$(100)
4597.2+v, (17), $\gamma_{4508.4+v}$**88.8**$_1$(100) M1, $\gamma_{3650.5+v}$**946.6**$_5$(67)
4791.0+v, (17), $\gamma_{3650.5+v}$**1140.5**$_5$(100)
4851.2+v, (18), $\gamma_{4597.2+v}$**254.0**$_2$(100), $\gamma_{4366.8+v}$**484.5**$_2$(71)
5174.6+v, (18), $\gamma_{4597.2+v}$**577.4**$_2$(100)
5225.5+v, (19), $\gamma_{4851.2+v}$**374.3**$_2$(100)
5671.4+v, $\gamma_{3650.5+v}$**2020.9**$_8$(100)
5844.4+v, (19), $\gamma_{5174.6+v}$**669.8**$_5$(100)
6171.6+v, (20), $\gamma_{5844.4+v}$**327.1**$_4$(10.3), $\gamma_{5225.5+v}$**946.0**$_3$(100)
6374.5+v, (20), $\gamma_{5225.5+v}$**1149.0**$_4$(100)
6426.5+v, (20), $\gamma_{5225.5+v}$**1201.0**$_4$(100)
6454.9+v, (21), $\gamma_{6171.6+v}$**283.3**$_2$(100)
6715.4+v, (22), $\gamma_{6454.9+v}$**260.6**$_3$(100)
6747.9+v, (21)
6842.0+v, (21), $\gamma_{6426.5+v}$**415.6**$_5$(100)
7326.4+v, (23), $\gamma_{6715.4+v}$**611.0**$_3$(100)
7350.1+v, (21)
7847.2+v, (24), $\gamma_{7326.4+v}$**520.8**$_5$(100)
8136.0+v, (25), $\gamma_{7326.4+v}$**809.6**$_5$(100)
8214.2+v, (22), $\gamma_{6842.0+v}$**1372.1**$_5$(100), $\gamma_{6715.4+v}$**1499.2**$_8$(25), $\gamma_{6454.9+v}$**1759.3**$_5$(94)
8220.7+v, (22), $\gamma_{6747.9+v}$**1472.8**$_5$(100)
8223.8+v, $\gamma_{6842.0+v}$**1381.9**$_5$(100), $\gamma_{6715.4+v}$**1508.3**$_8$(27), $\gamma_{6454.9+v}$**1768.7**$_6$(73)
8436.5+v, (23), $\gamma_{8223.8+v}$**212.6**$_2$(91), $\gamma_{8220.7+v}$**215.8**$_2$(100), $\gamma_{8214.2+v}$**222.3**$_2$(94), $\gamma_{7350.1+v}$**1086.4**$_4$(73)
8715.5+v, (24), $\gamma_{8436.5+v}$**279.0**$_1$(100)
9079.1+v, (25), $\gamma_{8715.5+v}$**363.6**$_2$(100)
9083.1+v, (25), $\gamma_{8715.5+v}$**367.7**$_2$(100)
9533.2+v, (26), $\gamma_{9079.1+v}$**454.2**$_3$(100), $\gamma_{8715.5+v}$**817.7**$_4$(36.7)
9889.9+v, (27), $\gamma_{9083.1+v}$**806.8**$_3$(100), $\gamma_{9079.1+v}$**810.8**$_4$(34.1)
10060.4+v, (27), $\gamma_{9533.2+v}$**527.1**$_4$(100), $\gamma_{9079.1+v}$**981.3**$_5$(13.9)
10217.8+v, (27), $\gamma_{9533.2+v}$**684.6**$_4$(100)
10641.6+v, (28), $\gamma_{10060.4+v}$**581.2**$_4$(93.8), $\gamma_{9533.2+v}$**1108.5**$_5$(100)
10873.7+v, (29), $\gamma_{9889.9+v}$**983.8**$_3$(100)
12035.1+v, (31), $\gamma_{10873.7+v}$**1161.4**$_5$(100)
A **w**
A **831.7+w**
A **1921.6+w**, J, $\gamma_{831.7+w}$**1089.9**$_4$(100), γ_{w}**1921.6**$_7$(27.3)
A **2568.9+w**, J+2, $\gamma_{1921.6+w}$**647.3**$_3$(100)
A **3131.3+w**, J+3, $\gamma_{2568.9+w}$**562.4**$_4$(100)
A **3463.3+w**, J+4, $\gamma_{2568.9+w}$**894.4**$_2$(100)
A **3995.6+w**, J+5, $\gamma_{3463.3+w}$**532.2**$_3$(100), $\gamma_{3131.3+w}$**864.2**$_3$(73.9)
A **4056.2+w**, J+5, $\gamma_{3463.3+w}$**592.7**$_4$(100)
A **4556.5+w**, J+6, $\gamma_{3463.3+w}$**1093.6**$_4$(100)
A **4914.6+w**, J+7, $\gamma_{4556.5+w}$**358.3**$_3$(17.6), $\gamma_{4056.2+w}$**858.3**$_3$(35.8), $\gamma_{3995.6+w}$**919.0**$_3$(100)
A **5394.7+w**, J+9, *8.5$_3$ ps*, $\gamma_{4914.6+w}$**480.1**$_2$(100)
A **6053.2+w**, J+11, *<1.4 ps*, $\gamma_{5394.7+w}$**658.5**$_3$(100)
A **6962.7+w**, J+13, *<0.35 ps*, $\gamma_{6053.2+w}$**909.5**$_2$(100)
A **8121.4+w**, J+15, $\gamma_{6962.7+w}$**1158.7**$_5$(100)
A **9491.4+w**, J+17, $\gamma_{8121.4+w}$**1369.9**$_6$(100)
A **11033.7+w**, J+19, $\gamma_{9491.4+w}$**1542.3**$_6$(100)
B **x**, J ≈ (36)
B **878.6+x**, J+2, γ_{x}**878.6**$_6$(0.39$_8$)
B **1781.3+x**, J+4, $\gamma_{878.6+x}$**902.7**$_4$(0.63$_8$)
B **2734.0+x**, J+6, $\gamma_{1781.3+x}$**952.7**$_6$(0.57$_{12}$)
B **3745.7+x**, J+8, $\gamma_{2734.0+x}$**1011.7**$_5$(0.96$_{13}$)
B **4815.0+x**, J+10, $\gamma_{3745.7+x}$**1069.3**$_6$(0.88$_{14}$)
B **5943.0+x**, J+12, $\gamma_{4815.0+x}$**1128.0**$_6$(0.85$_{13}$)
B **7129.1+x**, J+14, $\gamma_{5943.0+x}$**1186.1**$_7$(0.64$_{14}$)
B **8374.0+x**, J+16, $\gamma_{7129.1+x}$**1244.9**$_6$(0.71$_{11}$)
B **9676.2+x**, J+18, $\gamma_{8374.0+x}$**1302.2**$_8$(0.59$_{11}$)
B **11039.5+x**, J+20, $\gamma_{9676.2+x}$**1363.3**$_9$(0.57$_{11}$)
B **12460.9+x**, J+22, $\gamma_{11039.5+x}$**1421.4**$_{12}$(0.46$_{13}$)
B **13940+x**, J+24, $\gamma_{12460.9+x}$**1478.6**$_{21}$(0.40$_{18}$)
C **y**, J_1 ≈ (22)
C **506.9+y**, J_1+2, γ_{y}**506.9**$_3$(0.36$_8$)

C **1079.8+y**, J_1+4, $\gamma_{\mathbf{506.9+y}}$**572.9**$_2$(0.65$_{12}$)
C **1718.6+y**, J_1+6, $\gamma_{\mathbf{1079.8+y}}$**638.8**$_2$(0.76$_{13}$)
C **2422.5+y**, J_1+8, $\gamma_{\mathbf{1718.6+y}}$**703.9**$_3$(0.61$_9$)
C **3192.0+y**, J_1+10, $\gamma_{\mathbf{2422.5+y}}$**769.5**$_2$(0.81$_9$)
C **4027.6+y**, J_1+12, $\gamma_{\mathbf{3192.0+y}}$**835.6**$_3$(0.93$_{10}$)
C **4928.3+y**, J_1+14, $\gamma_{\mathbf{4027.6+y}}$**900.7**$_3$(0.86$_{11}$)
C **5894.7+y**, J_1+16, $\gamma_{\mathbf{4928.3+y}}$**966.4**$_3$(0.82$_{10}$)
C **6926.4+y**, J_1+18, $\gamma_{\mathbf{5894.7+y}}$**1031.7**$_4$(0.85$_{11}$)
C **8022.0+y**, J_1+20, $\gamma_{\mathbf{6926.4+y}}$**1095.6**$_5$(0.63$_8$)
C **9181.6+y**, J_1+22, $\gamma_{\mathbf{8022.0+y}}$**1159.6**$_5$(0.63$_9$)
C **10403.2+y**, J_1+24, $\gamma_{\mathbf{9181.6+y}}$**1221.6**$_5$(0.52$_8$)
C **11685.2+y**, J_1+26, $\gamma_{\mathbf{10403.2+y}}$**1282.0**$_8$(0.50$_7$)
C **13019.8+y**, J_1+28, $\gamma_{\mathbf{11685.2+y}}$**1334.6**$_6$(0.45$_6$)
C **14390.6+y**, J_1+30, $\gamma_{\mathbf{13019.8+y}}$**1370.8**$_9$(0.28$_6$)
C **15787.1+y**, J_1+32, $\gamma_{\mathbf{14390.6+y}}$**1396.5**$_{11}$(0.23$_5$)
C **17217.6+y**, J_1+34, $\gamma_{\mathbf{15787.1+y}}$**1430.5**$_9$(0.19$_5$)
C **18684.6+y**, J_1+36, $\gamma_{\mathbf{17217.6+y}}$**1467**$_1$(0.10$_5$)
D **z**, J_2
D **603.2+z**, J_2+2, $\gamma_{\mathbf{z}}$**603.2**$_4$(0.61$_{14}$)
D **1271.4+z**, J_2+4, $\gamma_{\mathbf{603.2+z}}$**668.2**$_4$(0.61$_9$)
D **2002.5+z**, J_2+6, $\gamma_{\mathbf{1271.4+z}}$**731.1**$_3$(0.63$_9$)
D **2796.7+z**, J_2+8, $\gamma_{\mathbf{2002.5+z}}$**794.2**$_3$(0.57$_9$)
D **3654.6+z**, J_2+10, $\gamma_{\mathbf{2796.7+z}}$**857.9**$_3$(1.06$_{10}$)
D **4573.6+z**, J_2+12, $\gamma_{\mathbf{3654.6+z}}$**919.1**$_{12}$(0.96$_{10}$)
D **5555.1+z**, J_2+14, $\gamma_{\mathbf{4573.6+z}}$**981.5**$_4$(0.99$_{10}$)
D **6598.5+z**, J_2+16, $\gamma_{\mathbf{5555.1+z}}$**1043.4**$_6$(1.16$_{13}$)
D **7703.1+z**, J_2+18, $\gamma_{\mathbf{6598.5+z}}$**1104.5**$_6$(0.68$_{10}$)
D **8868.4+z**, J_2+20, $\gamma_{\mathbf{7703.1+z}}$**1165.3**$_6$(0.65$_9$)
D **10095.2+z**, J_2+22, $\gamma_{\mathbf{8868.4+z}}$**1226.8**$_7$(0.47$_8$)
D **11379.5+z**, J_2+24, $\gamma_{\mathbf{10095.2+z}}$**1284.3**$_6$(0.56$_9$)
D **12724.0+z**, J_2+26, $\gamma_{\mathbf{11379.5+z}}$**1344.5**$_{10}$(0.43$_8$)
D **14127.2+z**, J_2+28, $\gamma_{\mathbf{12724.0+z}}$**1403.2**$_{10}$(0.41$_7$)
D **15593.2+z**, J_2+30, $\gamma_{\mathbf{14127.2+z}}$**1466.0**$_7$(0.34$_6$)
D **17121.2+z**, J_2+32, $\gamma_{\mathbf{15593.2+z}}$**1528.0**$_{13}$(0.20$_4$)
D **18710.5+z**, J_2+34, $\gamma_{\mathbf{17121.2+z}}$**1589.3**$_{10}$(0.16$_5$)



SD-1 band (1997Ha06,1993Mu16) SD-2 band (1997Ha06) SD-3 band (1997Ha06)

$^{144}_{63}\mathrm{Eu}_{81}$

$^{147}_{63}$Eu$_{84}$

S$_n$: 8498 $_7$, S$_p$: 3838 $_4$

Nuclear Bands

- A $\pi h_{11/2}$ decoupled band
- B SD-1 band (1998Ha21)
- C SD-2 band (1998Ha21)
- D SD-3 band (1998Ha21)
- E SD-4 band (1998Ha21)
- F SD-5 band (1998Ha21)
- G SD-6 band (1998Ha21) (?)

Levels and γ-ray branchings:

0, $5/2^+$, *24.1$_6$ d*, %α=0.0022$_6$, %ε+%β$^+$=99.9978$_6$, μ=+3.736$_6$, Q=+0.49$_3$

229.32$_2$, $7/2^+$, *0.18$_2$ ns*, γ_0**229.32**$_2$(100$_{30}$) M1+E2 $\delta=+0.13_2$

A **625.27**$_5$, $11/2^-$, *0.765$_{15}$ μs*, μ=+7.05$_3$, $\gamma_{229.32}$**396.00**$_{10}$(100$_5$) M2, γ_0**625.18**$_{10}$(13.6$_9$) E3

755.11$_5$, $(3/2)^+$, γ_0**755.01**$_{10}$(100) (M1)

776.41$_8$, $9/2^+$, $\gamma_{229.32}$**547.3**$_3$(7.0$_{12}$) M1, γ_0**776.33**$_{10}$(100$_5$) E2

778.02$_5$, $7/2^+$, $\gamma_{229.32}$**549.2**$_5$(1.5$_{12}$), γ_0**778.04**$_5$(100$_4$) M1(+E2) $\delta=0.6_3$

827.8$_{10}$, $(3/2)^+$, γ_0**827.8**(100) M1

861.63$_5$, $(7/2)^+$, $\gamma_{755.11}$**106.52**$_2$(5.4$_{18}$) M1+E2, $\gamma_{229.32}$**632.35**$_{10}$(98$_4$) M1, γ_0**861.7**$_1$(100$_4$) M1+E2 $\delta=1.3_3$

995.15$_5$, $9/2^-$, $\gamma_{778.02}$**217.2**$_1$(3.0$_{10}$) E1, $\gamma_{625.27}$**370.0**$_1$(100$_4$) M1+E2 $\delta=+0.07_3$, $\gamma_{229.32}$**765.81**$_{10}$(66$_4$) E1

995.5$_{10}$, $(1/2)^+$, γ_0**995.5**(100) (E2)

1011.6$_8$, $9/2^+$, $\gamma_{229.32}$**782.4**(100) M1+E2

1033.8$_4$, $11/2^+$, $\gamma_{776.41}$**257.5**, $\gamma_{229.32}$**804.5**$_5$(100) E2

1069.41$_6$, $7/2^-$, $\gamma_{778.02}$**291.7**$_2$(2.8$_6$) (E1), γ_0**1069.35**$_{10}$(100$_7$) E1

1122.83$_6$, $(9/2)^+$, $\gamma_{861.63}$**261.1**$_1$(24.4$_{12}$) M1(+E2), $\gamma_{776.41}$**346.3**$_3$(26.3$_{10}$) M1, $\gamma_{229.32}$**893.5**$_1$(100$_5$) M1+E2, γ_0**1122.9**$_1$(11.2$_6$) E2

1212.91$_{10}$, $5/2^-$, $\gamma_{755.11}$**458.0**$_5$(30$_{30}$), $\gamma_{229.32}$**983.4**$_4$(100$_{12}$) E1, γ_0**1213.0**$_2$(70$_5$) E1

1235.76$_5$, $7/2^-$, $\gamma_{1069.41}$**166.34**$_{10}$(20$_5$) M1+E2 $\delta=0.58_5$, $\gamma_{995.15}$**240.64**$_5$(97$_5$) M1, $\gamma_{625.27}$**610.43**$_{10}$(100$_9$) E2, $\gamma_{229.32}$**1006.4**$_1$(86$_5$) E1, γ_0**1235.7**$_1$(73$_5$) E1

1244.30$_7$, $(11/2)^-$, $\gamma_{995.15}$**249.15**$_{10}$(11.0$_6$) M1(+E2), $\gamma_{625.27}$**619.00**$_{10}$(100$_4$) M1+E2 $\delta=0.79_{17}$

1289.4$_4$, $(11/2^-)$, $\gamma_{995.15}$**294.5** (M1), $\gamma_{776.41}$**513.0**$_5$

1339.4$_7$, $11/2^-$, $\gamma_{1011.6}$**327.9** E1, $\gamma_{995.15}$**344.2**(1.4) M1, $\gamma_{625.27}$**714**

A **1346.25**$_{21}$, $15/2^-$, $\gamma_{625.27}$**721.0**$_2$(100) E2

1360.39$_{10}$, $9/2^-$, $\gamma_{776.41}$**584.6**$_6$(0.5$_3$), $\gamma_{625.27}$**734.4**$_4$(2.6$_8$) (M1), $\gamma_{229.32}$**1130.9**$_1$(100$_7$) E1, γ_0**1360**(<0.13)

1378.28$_{14}$, $\gamma_{861.63}$**516.6**$_{10}$(8$_3$), $\gamma_{229.32}$**1149.10**$_{15}$(100$_8$) E2, γ_0**1377.7**$_3$(12.2$_{14}$)

1389.60$_8$, $7/2^-$, $\gamma_{1212.91}$**176.7**$_1$(5.2$_{13}$) (M1), $\gamma_{229.32}$**1160.15**$_{15}$(100$_6$) E1, γ_0**1389.5**$_2$(8.4$_8$)

1399.08$_{14}$, $(5/2,7/2)^+$, $\gamma_{1069.41}$**329.7**$_{10}$(18$_9$), $\gamma_{995.15}$**404.0**$_{10}$(19$_{19}$), $\gamma_{229.32}$**1170.1**$_4$(59$_5$), γ_0**1399.2**$_2$(100$_6$)

1414.6$_5$, $13/2^-$, $\gamma_{625.27}$**789.3**$_5$(100) M1+E2

1421.4$_4$, $13/2^+$, $\gamma_{1289.4}$**132.1**$_5$, $\gamma_{1244.30}$**177.1**, $\gamma_{1033.8}$**387.5**$_5$ M1+E2, $\gamma_{776.41}$**644.8**$_5$ E2, $\gamma_{625.27}$**796.1**

1465.4$_{10}$, $9/2^-$, $\gamma_{229.32}$**1236.1**(100) E1

1474.67$_{22}$(?), $\gamma_{229.32}$**1245.3**$_3$(84$_7$), γ_0**1474.7**$_3$(100$_{11}$)

1554.29$_5$, $9/2^-$, $\gamma_{1389.60}$**164.6**$_1$(<0.36) M1+E2, $\gamma_{1244.30}$**309.96**$_{10}$(20.9$_9$) M1, $\gamma_{1235.76}$**318.60**$_{10}$(10.8$_4$) M1(+E2), $\gamma_{1212.91}$**341.8**$_5$(0.85$_8$), $\gamma_{1122.83}$**431.5**$_5$(0.8$_4$), $\gamma_{1069.41}$**484.9**$_1$(15.0$_7$) M1, $\gamma_{995.15}$**559.07**$_{10}$(32.0$_{11}$) M1, $\gamma_{778.02}$**775.9**$_3$(5.5$_7$), $\gamma_{625.27}$**929.01**$_7$(100$_4$) M1+E2 $\delta=0.62_{18}$, $\gamma_{229.32}$**1325.1**$_1$(4.3$_3$) E1+M2 $\delta=0.20_5$, γ_0**1554**(<0.05)

1565.19$_{11}$, $(5/2,7/2)^+$, $\gamma_{1069.41}$**496.2**$_{10}$(6$_3$), $\gamma_{995.15}$**569.6**$_6$(<16.7), $\gamma_{827.8}$**737.7**$_{10}$(?), $\gamma_{776.41}$**788.65**$_{15}$(100$_8$) M1,E2, $\gamma_{755.11}$**810.27**$_{20}$(64$_6$) E2(+M1) $\delta\geq0.79$, $\gamma_{229.32}$**1336.2**$_5$(5.8$_6$), γ_0**1565.2**$_2$(<47)

1647.0$_8$, $(15/2^+)$, $\gamma_{1421.4}$**225.6**(100), $\gamma_{1033.8}$**613.2** E2

1696.16$_{12}$, $5/2^+$, $\gamma_{1399.08}$**297.4**$_2$(97$_{17}$) E2, $\gamma_{1235.76}$**460.6**$_5$(37$_{20}$), $\gamma_{1122.83}$**573.0**$_8$(43$_{14}$) M1,E2, $\gamma_{995.15}$**701.3**$_2$(100$_{11}$) M1,E2, $\gamma_{861.63}$**834.7**$_3$(35$_4$), $\gamma_{229.32}$**1466.0**$_4$(8.3$_{14}$)

1756.7$_{11}$, $(15/2)$, $\gamma_{1421.4}$**335.3**(100) (D)

1773.77$_{15}$, $\gamma_{1235.76}$**538.0**$_{10}$(8$_2$), $\gamma_{1069.41}$**704.5**$_2$(≤80), $\gamma_{778.02}$**995.58**$_{20}$(100$_6$), $\gamma_{229.32}$**1545.0**$_{10}$(1.4$_5$)

1795.40$_9$, $(5/2)^-$, $\gamma_{778.02}$**1017.9**$_4$(14$_3$), $\gamma_{755.11}$**1040.4**$_4$(49$_5$) (E1), $\gamma_{229.32}$**1565.9**$_1$(<48), γ_0**1795.94**$_{20}$(100$_5$) (E1)

1807.30$_{12}$, $\gamma_{1696.16}$**111.17**$_5$(100$_{28}$) M1+E2 $\delta\approx0.4$, $\gamma_{1399.08}$**407.0**$_{10}$(10$_{10}$), $\gamma_{1389.60}$**418.3**$_{10}$(10$_{10}$), $\gamma_{1069.41}$**737.0**$_4$(17$_7$), γ_0**1806.7**$_3$(14.1$_{14}$)

1816.23$_{12}$, $(7/2)^+$, $\gamma_{1399.08}$**416.0**$_{10}$(6$_6$), $\gamma_{1235.76}$**580.7**$_6$(9$_4$), $\gamma_{1122.83}$**693.2**$_3$(46$_4$) M1, $\gamma_{755.11}$**1061.2**$_4$(28$_6$), $\gamma_{229.32}$**1586.88**$_{15}$(100$_6$) M1+E2, γ_0**1816.5**$_3$(25.9$_{15}$) (E2)

1828.2$_{10}$(?), $\gamma_{995.15}$**833**(100)(?)

1832.8$_{11}$, $(17/2^+)$, $\gamma_{1421.4}$**411.4**(100) E2

1858.2$_4$(?), $\gamma_{229.32}$**1628.9**$_5$(100$_{19}$), γ_0**1858.1**$_4$(38$_{19}$)

1905.62$_{11}$, $(7/2^+)$, $\gamma_{1399.08}$**506.0**$_{10}$(4$_3$), $\gamma_{1122.83}$**782.6**$_2$(100$_3$) E2+M1 $\delta=2_0$, $\gamma_{995.15}$**910.4**$_2$(47$_3$) M1,E2, $\gamma_{861.63}$**1044.2**$_5$(11$_2$), $\gamma_{755.11}$**1151**$_1$(4.7$_3$), $\gamma_{229.32}$**1676.5**$_2$(21.7$_{11}$) M1+E2, γ_0**1905.6**$_4$(1.0$_4$)

1910.14$_{18}$, $5/2,7/2$, $\gamma_{1069.41}$**840.8**$_3$(100$_{50}$), $\gamma_{861.63}$**1048.6**$_6$(83$_{25}$), $\gamma_{755.11}$**1154.7**$_{10}$(38$_{38}$), $\gamma_{229.32}$**1680.9**$_4$(78$_5$), γ_0**1910.0**$_3$(46$_5$)

A **1926.4**$_3$, $(19/2^-)$, $\gamma_{1346.25}$**580.2**$_2$(100) E2

1950.59$_9$, $(5/2,7/2)^-$, $\gamma_{1235.76}$**714.57**$_{15}$(62$_4$) M1, $\gamma_{1212.91}$**737.0**$_4$(?), $\gamma_{1122.83}$**827.8**$_1$(100$_{16}$), $\gamma_{1069.41}$**882.3**$_5$(12$_4$), $\gamma_{229.32}$**1721.3**$_5$(2.00$_6$), γ_0**1950.7**$_2$(13.2$_{16}$)

1961.26$_{25}$(?), $\gamma_{776.41}$**1184.7**$_3$(78.5$_{63}$), $\gamma_{229.32}$≈**1731**(9$_9$)(?), γ_0**1961.5**$_4$(100$_9$)

1986.92$_{17}$, $\gamma_{1554.29}$**433.0**$_5$(73$_{55}$), $\gamma_{1069.41}$**917.0**$_5$(45$_{18}$), $\gamma_{861.63}$**1125.5**$_5$(100$_{55}$), $\gamma_?$**1209.4**$_5$(30$_4$), $\gamma_{229.32}$**1757.6**$_3$(25$_3$), γ_0**1986.7**$_3$(58$_5$)

1995.61$_{21}$, $(7/2,9/2)^-$, $\gamma_{1244.30}$**750.8**$_8$(100$_{33}$) (M1), $\gamma_{776.41}$**1219.4**$_4$(30$_3$), $\gamma_{625.27}$**1370.5**$_3$(50$_5$) E2, $\gamma_{229.32}$**1765.9**$_4$(27$_3$)

2001.8$_{13}$(?), $\gamma_{1647.0}$**354.8**(100)(?)

2013.8$_{11}$, $(17/2^-)$, $\gamma_{1346.25}$**667.5**(100) (M1)

2165.74$_{14}$, $\gamma_{1360.39}$**804.54**$_{20}$(100$_8$) E2(+M1) $\delta\geq0.64$, $\gamma_{1069.41}$**1096.4**$_4$(13$_{13}$), $\gamma_{776.41}$**1389.5**$_2$(23$_3$)(?), $\gamma_{229.32}$**1937.2**$_2$(1.5$_5$)

A **2292.8**$_4$, $(23/2^-)$, $\gamma_{1926.4}$**366.4**$_2$(100) E2

2347.4$_4$, $(21/2^-)$, $\gamma_{2292.8}$**(55)**(41), $\gamma_{1926.4}$**420.9**$_3$(100$_3$) M1+E2 $\delta=+0.22^{6}_{11}$

2504.4$_4$, $(19/2^+)$, $\gamma_{1926.4}$**578.0**$_3$(100)

2844.9$_5$, $(23/2^-)$, $\gamma_{2347.4}$**497.5**$_3$(100) M1+E2

A **2900.3**$_4$, $(27/2^-)$, $\gamma_{2292.8}$**607.5**$_2$(100) E2

2996.1$_4$, $(23/2^+)$, $\gamma_{2504.4}$**491.8**$_3$(15$_5$), $\gamma_{2347.4}$**648.7**$_2$(100$_9$) D+Q $\delta=+2.5^{10}_{6}$, $\gamma_{2292.8}$**703.3**$_2$(94$_7$) D+Q $\delta=+0.38_4$

3190.6$_5$, $(25/2^-)$, $\gamma_{2900.3}$**290.3**$_3$(100$_{28}$) D, $\gamma_{2844.9}$**345.6**$_3$(56$_{28}$)

3229.7$_4$, $(27/2^+)$, $\gamma_{2996.1}$**233.7**$_2$(90$_9$) Q, $\gamma_{2900.3}$**329.6**$_2$(100$_{12}$) D+Q $\delta=-0.52_{13}$

3523.2$_4$, $(29/2^+)$, $\gamma_{3229.7}$**293.7**$_2$(100$_1$) D, $\gamma_{2900.3}$**622.8**$_2$(83$_7$) D

3794.8$_4$, $(31/2^+)$, $\gamma_{3523.2}$**271.7**$_2$(100$_7$) D, $\gamma_{3229.7}$**565.1**$_2$(26$_3$) Q

4177.7$_4$, $(33/2^+)$, $\gamma_{3794.8}$**382.9**$_2$(100$_9$) D, $\gamma_{3523.2}$**654.4**$_3$(13.6$_{18}$) Q

4242.2$_4$, $(31/2^-)$, $\gamma_{3794.8}$**447.7**$_3$(19$_5$) D, $\gamma_{2900.3}$**1341.8**$_2$(100$_8$) Q

4283.8$_4$, $(31/2^-)$, $\gamma_{2900.3}$**1383.5**$_2$(100) Q

4611.9$_4$, $(33/2^+)$, $\gamma_{4283.8}$**328.1**$_2$(100$_{17}$) D, $\gamma_{4242.2}$**369.7**$_2$(54$_8$) D

4639.2$_5$, $(33/2^-)$, $\gamma_{3794.8}$**844.6**$_3$(100)

4677.4$_5$, $(35/2)$, $\gamma_{4177.7}$**499.4**$_3$(100) (D)

4801.1$_5$, $(33/2^+)$, $\gamma_{3523.2}$**1277.9**$_3$(100) Q

4862.2$_5$, $(35/2)$, $\gamma_{4611.9}$**250.3**$_2$(100) D

4881.0$_5$, $(35/2)$, $\gamma_{4639.2}$**241.9**$_3$(100) D

4907.3$_4$, $(35/2)$, $\gamma_{4611.9}$**295.4**$_2$(100$_9$) D, $\gamma_{4177.7}$**730.2**$_3$(15$_7$) D

5056.4$_5$, $(35/2^+)$, $\gamma_{3794.8}$**1261.4**$_3$(100) Q

5082.5$_4$, $(37/2^+)$, $\gamma_{4881.0}$**201.7**$_3$(77$_{40}$) D, $\gamma_{4801.1}$**281.4**$_3$(47$_{14}$), $\gamma_{4611.9}$**470.5**$_3$(100$_{12}$) Q

5176.1$_5$, $(35/2,39/2)$, $\gamma_{4907.3}$**268.8**$_3$(100) D+Q

5333.4$_4$, $(37/2^+)$, $\gamma_{4907.3}$**426.6**$_3$(18$_3$) D, $\gamma_{4677.4}$**657**(9$_4$), $\gamma_{4177.7}$**1155.6**$_2$(100$_8$) Q

5372.9$_5$, $(35/2,39/2)$, $\gamma_{4907.3}$**465.5**$_3$(100$_4$) D+Q

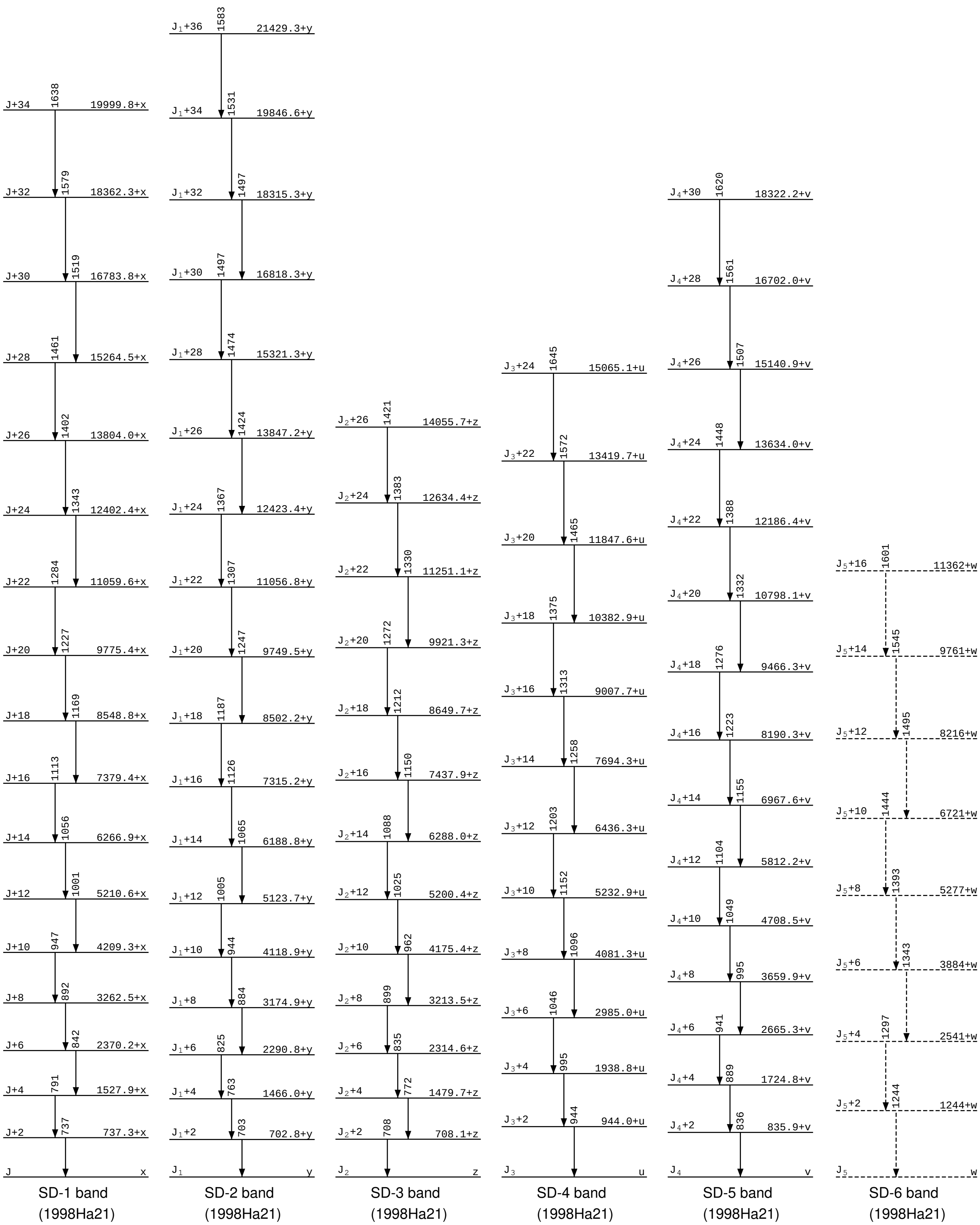
5380.9$_4$, $(37/2^+)$, $\gamma_{5056.4}$**324.3**$_3$(32$_{13}$) D, $\gamma_{4177.7}$**1203.2**$_2$(100$_8$) Q

5431.9$_5$, $\gamma_{4677.4}$**754.0**$_3$(100)

5455.6$_5$, $(37/2)$, $\gamma_{4907.3}$**548.4**$_3$(100$_{15}$) D, $\gamma_{4862.2}$**593.5**$_3$(65$_{38}$) D

5594.8$_4$, $(39/2^+)$, $\gamma_{5455.6}$**139.3**$_3$(27$_{15}$) (D), $\gamma_{5431.9}$**162.4**$_3$(12$_6$), $\gamma_{5380.9}$**213.7**$_2$(66$_6$) D, $\gamma_{5372.9}$**221.7**$_3$(12$_7$), $\gamma_{5333.4}$**261.7**$_2$(100$_7$) D,

$\gamma_{5082.5}$ **512.3**$_2$(79$_{24}$) D+Q
5685.3$_6$, $\gamma_{5372.9}$ **312.4**$_3$(100)
5771.5$_5$, $(41/2^+)$, $\gamma_{5594.8}$ **176.8**$_2$(100$_{14}$) D, $\gamma_{5333.4}$ **438.1**$_2$(42$_4$) Q
6024.3$_7$, $\gamma_{5685.3}$ **339.0**$_3$(100)
6333.3$_5$, $(43/2^+)$, $\gamma_{5771.5}$ **561.8**$_2$(100) D+Q
6509.8$_5$, $(43/2)$, $\gamma_{5771.5}$ **738.3**$_2$(100) D
6663.8$_5$, $(43/2)$, $\gamma_{5771.5}$ **892.3**$_3$(100) D
6713.0$_5$, $(43/2)$, $\gamma_{5771.5}$ **941.5**$_3$(100) D
6847.2$_5$, $(45/2)$, $\gamma_{6713.0}$ **134.3**$_3$(55$_{31}$) D, $\gamma_{6663.8}$ **183.4**$_3$(100$_{38}$) D, $\gamma_{6509.8}$ **337.4**$_3$(97$_{28}$) D
6962.7$_6$, $(45/2^+)$, $\gamma_{5771.5}$ **1191.2**$_3$(100) (Q)
6966.0$_5$, $(45/2^-)$, $\gamma_{6847.2}$ **119**($\approx$ 30), $\gamma_{6509.8}$ **456.1**$_3$(67$_{27}$) D, $\gamma_{6333.3}$ **632.8**$_3$(100$_{18}$) D
7168.3$_6$, $(47/2^-)$, $\gamma_{6966.0}$ **202.3**$_2$(100) D
7419.5$_6$, $\gamma_{6333.3}$ **1086.2**$_3$(100)
7681.6$_6$, $(49/2^-)$, $\gamma_{7168.3}$ **513.3**$_2$(100) D
8511.9$_7$, $\gamma_{7681.6}$ **830.3**$_3$(100)
8612.8$_7$, $(51/2^-)$, $\gamma_{7681.6}$ **931.4**$_3$(100) D
8727.1$_7$, $\gamma_{7681.6}$ **1045.5**$_3$(100)
8776.6$_7$, $(53/2^-)$, $\gamma_{8612.8}$ **164.0**$_3$(26$_{20}$), $\gamma_{7681.6}$ **1094.7**$_3$(100$_{46}$) Q
9268.8$_7$, $\gamma_{8776.6}$ **492.2**$_3$(100$_{45}$), $\gamma_{8511.9}$ **757**(35$_{25}$)
9643.1$_7$, $\gamma_{8776.6}$ **866.5**$_3$(100)
B **x**, J
B **737.3+x**, $J+2$, γ_{x} **737.3**$_3$(0.18$_2$)
B **1527.9+x**, $J+4$, $\gamma_{737.3+x}$ **790.6**$_1$(0.61$_6$)
B **2370.2+x**, $J+6$, $\gamma_{1527.9+x}$ **842.3**$_1$(1.16$_{12}$)
B **3262.5+x**, $J+8$, $\gamma_{2370.2+x}$ **892.3**$_1$(1.05$_{10}$)
B **4209.3+x**, $J+10$, $\gamma_{3262.5+x}$ **946.8**$_1$(1.12$_{11}$)
B **5210.6+x**, $J+12$, $\gamma_{4209.3+x}$ **1001.3**$_1$(0.87$_9$)
B **6266.9+x**, $J+14$, $\gamma_{5210.6+x}$ **1056.3**$_1$(0.86$_9$)
B **7379.4+x**, $J+16$, $\gamma_{6266.9+x}$ **1112.5**$_1$(1.09$_{11}$)
B **8548.8+x**, $J+18$, $\gamma_{7379.4+x}$ **1169.4**$_4$(0.76$_8$)
B **9775.4+x**, $J+20$, $\gamma_{8548.8+x}$ **1226.6**$_1$(0.84$_8$)
B **11059.6+x**, $J+22$, $\gamma_{9775.4+x}$ **1284.2**$_1$(0.82$_8$)
B **12402.4+x**, $J+24$, $\gamma_{11059.6+x}$ **1342.7**$_1$(0.67$_7$)
B **13804.0+x**, $J+26$, $\gamma_{12402.4+x}$ **1401.6**$_2$(0.43$_4$)
B **15264.5+x**, $J+28$, $\gamma_{13804.0+x}$ **1460.5**$_2$(0.36$_4$)
B **16783.8+x**, $J+30$, $\gamma_{15264.5+x}$ **1519.3**$_3$(0.22$_2$)
B **18362.3+x**, $J+32$, $\gamma_{16783.8+x}$ **1578.5**$_4$(0.09$_1$)
B **19999.8+x**, $J+34$, $\gamma_{18362.3+x}$ **1637.5**$_8$(0.05$_1$)
C **y**, J_1
C **702.8+y**, J_1+2, γ_{y} **703.2**$_7$(0.07$_1$)
C **1466.0+y**, J_1+4, $\gamma_{702.8+y}$ **763.2**$_2$(0.22$_2$)
C **2290.8+y**, J_1+6, $\gamma_{1466.0+y}$ **824.8**$_1$(1.02$_{10}$)
C **3174.9+y**, J_1+8, $\gamma_{2290.8+y}$ **884.1**$_1$(0.91$_9$)
C **4118.9+y**, J_1+10, $\gamma_{3174.9+y}$ **944.0**$_1$(1.03$_{10}$)
C **5123.7+y**, J_1+12, $\gamma_{4118.9+y}$ **1004.8**$_1$(1.09$_{11}$)
C **6188.8+y**, J_1+14, $\gamma_{5123.7+y}$ **1065.1**$_1$(1.06$_{11}$)
C **7315.2+y**, J_1+16, $\gamma_{6188.8+y}$ **1126.4**$_1$(0.93$_9$)
C **8502.2+y**, J_1+18, $\gamma_{7315.2+y}$ **1187.0**$_2$(0.96$_{10}$)
C **9749.5+y**, J_1+20, $\gamma_{8502.2+y}$ **1247.3**$_1$(0.71$_7$)
C **11056.8+y**, J_1+22, $\gamma_{9749.5+y}$ **1307.3**$_1$(0.74$_7$)
C **12423.4+y**, J_1+24, $\gamma_{11056.8+y}$ **1366.6**$_2$(0.62$_6$)
C **13847.2+y**, J_1+26, $\gamma_{12423.4+y}$ **1423.8**$_2$(0.57$_6$)
C **15321.3+y**, J_1+28, $\gamma_{13847.2+y}$ **1474.1**$_2$(0.48$_5$)
C **16818.3+y**, J_1+30, $\gamma_{15321.3+y}$ **1497**$_1$(0.41$_4$)
C **18315.3+y**, J_1+32, $\gamma_{16818.3+y}$ **1497**$_1$(0.41$_4$)
C **19846.6+y**, J_1+34, $\gamma_{18315.3+y}$ **1531.3**$_4$(0.12$_1$)
C **21429.3+y**, J_1+36, $\gamma_{19846.6+y}$ **1582.7**$_{14}$(0.03$_1$)
D **z**, J_2
D **708.1+z**, J_2+2, γ_{z} **708.1**$_3$
D **1479.7+z**, J_2+4, $\gamma_{708.1+z}$ **771.7**$_3$
D **2314.6+z**, J_2+6, $\gamma_{1479.7+z}$ **834.9**$_2$
D **3213.5+z**, J_2+8, $\gamma_{2314.6+z}$ **898.9**$_2$
D **4175.4+z**, J_2+10, $\gamma_{3213.5+z}$ **961.9**$_2$
D **5200.4+z**, J_2+12, $\gamma_{4175.4+z}$ **1025.0**$_2$
D **6288.0+z**, J_2+14, $\gamma_{5200.4+z}$ **1087.6**$_2$
D **7437.9+z**, J_2+16, $\gamma_{6288.0+z}$ **1149.9**$_2$
D **8649.7+z**, J_2+18, $\gamma_{7437.9+z}$ **1211.8**$_3$
D **9921.3+z**, J_2+20, $\gamma_{8649.7+z}$ **1271.6**$_2$
D **11251.1+z**, J_2+22, $\gamma_{9921.3+z}$ **1329.8**$_3$
D **12634.4+z**, J_2+24, $\gamma_{11251.1+z}$ **1383.3**$_3$
D **14055.7+z**, J_2+26, $\gamma_{12634.4+z}$ **1421.3**$_5$
E **u**, J_3
E **944.0+u**, J_3+2, γ_{u} **944.0**$_3$
E **1938.8+u**, J_3+4, $\gamma_{944.0+u}$ **994.8**$_2$
E **2985.0+u**, J_3+6, $\gamma_{1938.8+u}$ **1046.2**$_2$
E **4081.3+u**, J_3+8, $\gamma_{2985.0+u}$ **1096.3**$_2$
E **5232.9+u**, J_3+10, $\gamma_{4081.3+u}$ **1151.6**$_2$
E **6436.3+u**, J_3+12, $\gamma_{5232.9+u}$ **1203.4**$_2$
E **7694.3+u**, J_3+14, $\gamma_{6436.3+u}$ **1258.0**$_3$
E **9007.7+u**, J_3+16, $\gamma_{7694.3+u}$ **1313.4**$_3$
E **10382.9+u**, J_3+18, $\gamma_{9007.7+u}$ **1375.2**$_3$
E **11847.6+u**, J_3+20, $\gamma_{10382.9+u}$ **1464.7**$_4$
E **13419.7+u**, J_3+22, $\gamma_{11847.6+u}$ **1572.1**$_7$
E **15065.1+u**, J_3+24, $\gamma_{13419.7+u}$ **1645.4**$_8$
F **v**, J_4
F **835.9+v**, J_4+2, γ_{v} **835.9**$_4$
F **1724.8+v**, J_4+4, $\gamma_{835.9+v}$ **889.0**$_3$
F **2665.3+v**, J_4+6, $\gamma_{1724.8+v}$ **940.5**$_4$
F **3659.9+v**, J_4+8, $\gamma_{2665.3+v}$ **994.7**$_4$
F **4708.5+v**, J_4+10, $\gamma_{3659.9+v}$ **1048.6**$_4$
F **5812.2+v**, J_4+12, $\gamma_{4708.5+v}$ **1103.7**$_5$
F **6967.6+v**, J_4+14, $\gamma_{5812.2+v}$ **1155.4**$_4$
F **8190.3+v**, J_4+16, $\gamma_{6967.6+v}$ **1222.8**$_4$
F **9466.3+v**, J_4+18, $\gamma_{8190.3+v}$ **1276.0**$_5$
F **10798.1+v**, J_4+20, $\gamma_{9466.3+v}$ **1331.8**$_4$
F **12186.4+v**, J_4+22, $\gamma_{10798.1+v}$ **1388.3**$_6$
F **13634.0+v**, J_4+24, $\gamma_{12186.4+v}$ **1447.6**$_4$
F **15140.9+v**, J_4+26, $\gamma_{13634.0+v}$ **1506.9**$_6$
F **16702.0+v**, J_4+28, $\gamma_{15140.9+v}$ **1561.1**$_9$
F **18322.2+v**, J_4+30, $\gamma_{16702.0+v}$ **1620.2**$_{15}$
G **w**(?), J_5
G **1244+w**(?), J_5+2, γ_{w} **1244**
G **2541+w**(?), J_5+4, γ_{1244+w} **1297**
G **3884+w**(?), J_5+6, γ_{2541+w} **1343**
G **5277+w**(?), J_5+8, γ_{3884+w} **1393**
G **6721+w**(?), J_5+10, γ_{5277+w} **1444**
G **8216+w**(?), J_5+12, γ_{6721+w} **1495**
G **9761+w**(?), J_5+14, γ_{8216+w} **1545**
G **11362+w**(?), J_5+16, γ_{9761+w} **1601**


J+34 1638 19999.8+x
J+32 1579 18362.3+x
J+30 1519 16783.8+x
J+28 1461 15264.5+x
J+26 1402 13804.0+x
J+24 1343 12402.4+x
J+22 1284 11059.6+x
J+20 1227 9775.4+x
J+18 1169 8548.8+x
J+16 1113 7379.4+x
J+14 1056 6266.9+x
J+12 1001 5210.6+x
J+10 947 4209.3+x
J+8 892 3262.5+x
J+6 842 2370.2+x
J+4 791 1527.9+x
J+2 737 737.3+x
J x
SD-1 band
(1998Ha21)
J1+36 1583 21429.3+y
J1+34 1531 19846.6+y
J1+32 1497 18315.3+y
J1+30 1497 16818.3+y
J1+28 1474 15321.3+y
J1+26 1424 13847.2+y
J1+24 1367 12423.4+y
J1+22 1307 11056.8+y
J1+20 1247 9749.5+y
J1+18 1187 8502.2+y
J1+16 1126 7315.2+y
J1+14 1065 6188.8+y
J1+12 1005 5123.7+y
J1+10 944 4118.9+y
J1+8 884 3174.9+y
J1+6 825 2290.8+y
J1+4 763 1466.0+y
J1+2 703 702.8+y
J1 y
SD-2 band
(1998Ha21)
J2+26 1421 14055.7+z
J2+24 1383 12634.4+z
J2+22 1330 11251.1+z
J2+20 1272 9921.3+z
J2+18 1212 8649.7+z
J2+16 1150 7437.9+z
J2+14 1088 6288.0+z
J2+12 1025 5200.4+z
J2+10 962 4175.4+z
J2+8 899 3213.5+z
J2+6 835 2314.6+z
J2+4 772 1479.7+z
J2+2 708 708.1+z
J2 z
SD-3 band
(1998Ha21)
J3+24 1645 15065.1+u
J3+22 1572 13419.7+u
J3+20 1465 11847.6+u
J3+18 1375 10382.9+u
J3+16 1313 9007.7+u
J3+14 1258 7694.3+u
J3+12 1203 6436.3+u
J3+10 1152 5232.9+u
J3+8 1096 4081.3+u
J3+6 1046 2985.0+u
J3+4 995 1938.8+u
J3+2 944 944.0+u
J3 u
SD-4 band
(1998Ha21)
J4+30 1620 18322.2+v
J4+28 1561 16702.0+v
J4+26 1507 15140.9+v
J4+24 1448 13634.0+v
J4+22 1388 12186.4+v
J4+20 1332 10798.1+v
J4+18 1276 9466.3+v
J4+16 1223 8190.3+v
J4+14 1155 6967.6+v
J4+12 1104 5812.2+v
J4+10 1049 4708.5+v
J4+8 995 3659.9+v
J4+6 941 2665.3+v
J4+4 889 1724.8+v
J4+2 836 835.9+v
J4 v
SD-5 band
(1998Ha21)
J5+16 1601 11362+w
J5+14 1545 9761+w
J5+12 1495 8216+w
J5+10 1444 6721+w
J5+8 1393 5277+w
J5+6 1343 3884+w
J5+4 1297 2541+w
J5+2 1244 1244+w
J5 w
SD-6 band
(1998Ha21)

$^{147}_{63}Eu_{84}$

$^{148}_{63}$Eu$_{85}$

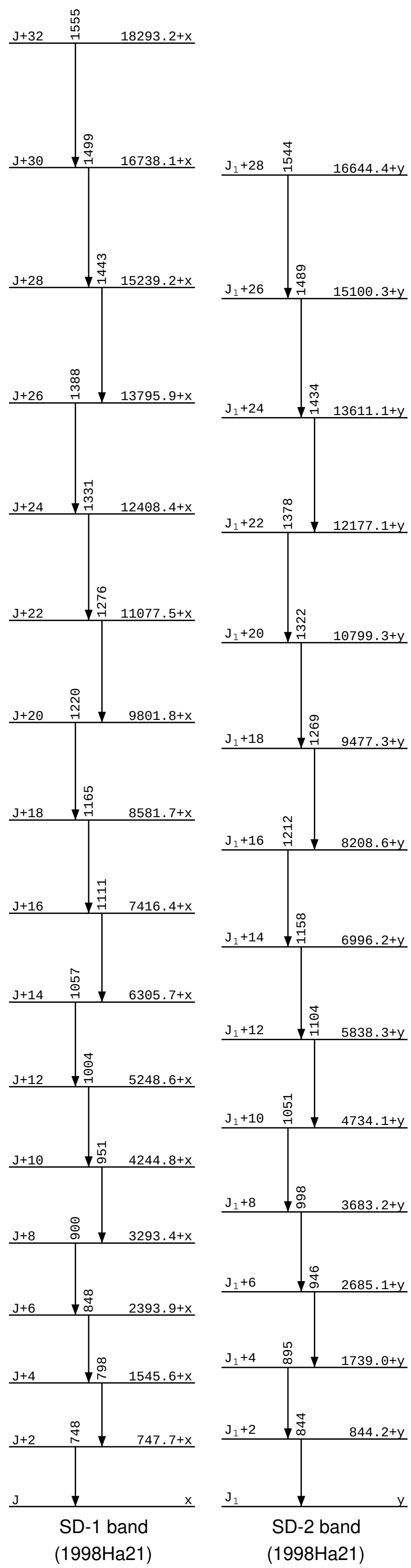
S$_n$: 6756 $_{17}$, S$_p$: 4252 $_{17}$

Nuclear Bands

A SD-1 band (1998Ha21)
B SD-2 band (1998Ha21)

Levels and γ-ray branchings:

0, 5^-, *54.5$_5$ d*, %α=9.4x10^{-7}$_{28}$, %ε+%β$^+$=100 , μ=+2.340$_{10}$, Q=+0.35$_6$
232.80$_9$, 6^-, γ_{0}**232.8**$_1$(100) M1
312.20$_9$, 6^-, γ_{0}**312.2**$_1$(100) M1
518.49$_{12}$, 7^-, $\gamma_{312.20}$**206.3**$_2$(24$_{10}$) M1, $\gamma_{232.80}$**285.7**$_1$(100$_{21}$) M1
708.41$_{10}$, 7^+, $\gamma_{518.49}$**190.0**$_3$(1.0$_3$), $\gamma_{312.20}$**396.2**$_1$(43$_3$) E1, $\gamma_{232.80}$**475.6**$_1$(100) E1
720.4$_3$, 9^+, *162$_8$ ns*, μ=+6.120$_{45}$, $\gamma_{708.41}$**(12.0)**$_4$, $\gamma_{518.49}$**201.9**$_3$(100$_{30}$) M2
728.7, 8^+
811.4, 8^+, $\gamma_{720.4}$**90.7**(69) M1, $\gamma_{518.49}$**292.5**(100)
1172.9, 9^+, $\gamma_{811.4}$**361.7**(100) M1+E2 $\delta\approx0.7$, $\gamma_{720.4}$**452.2**(24) M1+E2
1265.8, 10^+, $\gamma_{728.7}$**537.1**(33) E2, $\gamma_{720.4}$**545.1**(100) M1+E2
1413.1, 11^+, $\gamma_{1265.8}$**147.3**(5.1) M1, $\gamma_{720.4}$**692.4**(100) E2
1478.3, 10^+, $\gamma_{1172.9}$**305.4**(47) M1, $\gamma_{811.4}$**666.9**(24) E2, $\gamma_{728.7}$**749.7**(100) E2, $\gamma_{720.4}$**757.5**(56) E2
1609.4, 10^-, $\gamma_{1265.8}$**343.5**(39) E1, $\gamma_{1172.9}$**436.4**(9) E1, $\gamma_{720.4}$**888.7**(100) E1
1669.9, 11^-, $\gamma_{1609.4}$**60.5**(1.3) M1, $\gamma_{1478.3}$**191.6**(18.7) E1, $\gamma_{1413.1}$**256.8**(100) E1, $\gamma_{1265.8}$**404.1**(12.6) E1
1841.1, 12^-, $\gamma_{1669.9}$**171.2**(76) M1, $\gamma_{1413.1}$**428.0**(100) E1
1955(?), (10), $\gamma_{1172.9}$**783.0**(100)
1991.8, 12^+, $\gamma_{1413.1}$**578.4**(56) M1+E2, $\gamma_{1265.8}$**726.0**(100) E2
2140.6, 13^+, $\gamma_{1991.8}$**148.7**(0.6), $\gamma_{1841.1}$**299.5**(7.5) E1, $\gamma_{1413.1}$**727.5**(100) E2
2203(?), (11), γ_{1955}**248.0**(100)
2351.1, 13^-, $\gamma_{2140.6}$**210.5**(3.6) E1, $\gamma_{1669.9}$**681.2**(100) E2
2539.9, 14^+, $\gamma_{2140.6}$**399.7**(100) M1, $\gamma_{1991.8}$**548.7**(58) E2
2545.8, 14^-, $\gamma_{2351.1}$**194.8**(37) M1, $\gamma_{2140.6}$**405.1**(34) E1, $\gamma_{1841.1}$**704.7**(100) E2
2599.0, 13^+, $\gamma_{2140.6}$**458.6**(100) E2, $\gamma_{1413.1}$**1185.9**(26)
2877.7, 14^+, $\gamma_{2599.0}$**278.7**(100) M1+E2 $\delta=1.3_{10}$
2898.0, 16^+, $\gamma_{2539.9}$**358.1**(100) E2
2974.9, 15^+, $\gamma_{2545.8}$**429.1**(78), $\gamma_{2140.6}$**834.3**(100) E2
3047.3, 15^-, $\gamma_{2351.1}$**696.2**(100) E2
3205.5, 16^-, $\gamma_{3047.3}$**158.2**(26) M1+E2, $\gamma_{2974.9}$**230.5**(15) E1, $\gamma_{2545.8}$**659.6**(100) E2
3306(?), (15), $\gamma_{2877.7}$**429.0**(100)
3653.2, 18^-, $\gamma_{3205.5}$**447.7**(100) E2
3712(?), (16), γ_{3306}**405.9**(100)
3819.5, (17), $\gamma_{2898.0}$**921.5**(100)
3845.8, 17^+, $\gamma_{2898.0}$**947.8**(100) M1+E2
4008.3, 19^-, $\gamma_{3653.2}$**355.1**(100) M1
4066.5, (18), $\gamma_{3845.8}$**220.7**(100)
4086.5, 20^-, $\gamma_{4008.3}$**79.0**(2.2) M1+E2 $\delta=1.1^{6}_{4}$, $\gamma_{3653.2}$**433.7**(100) E2
4200.7, 18^+, $\gamma_{2898.0}$**1302.7**(100) E2
4283.9, (18), $\gamma_{3819.5}$**464.4**(100)
4335.6, 21^-, $\gamma_{4086.5}$**248.7**(100) M1
4393.7, (18), $\gamma_{3819.5}$**574.3**(80), $\gamma_{2898.0}$**1495.7**(100)
4424.8, 18^+, $\gamma_{2898.0}$**1526.8**(100)
4651.0, 19^+, $\gamma_{4424.8}$**226.6**(100) M1, $\gamma_{4393.7}$**257.3**(100)
4750.3, 20^+, $\gamma_{4335.6}$**414.7**(100) E1, $\gamma_{4200.7}$**549.0**(14), $\gamma_{4008.3}$**742.0**(21)
5017.1, 20^+, $\gamma_{4651.0}$**366.1**(100) M1+E2 $\delta=0.8^{10}_{6}$
5125.1, (21), $\gamma_{4008.3}$**1117.0**(100)
5179.6(?), 21^+, $\gamma_{4086.5}$**1092.7**(100) E1
5207.2, 21^-, $\gamma_{4008.3}$**1198.9**(100)
5215.6, 22^+, $\gamma_{4750.3}$**465.3**(100) E2
5301.9, 21^-, $\gamma_{4008.3}$**1293.6**(100) E2
5366.2, 21^-, $\gamma_{4086.5}$**1279.3**(100)
5389.6, 22^-, $\gamma_{4086.5}$**1302.7**(100) E2
5519.0, 22^-, $\gamma_{5366.2}$**152.8**(12.5) M1+E2, $\gamma_{5301.9}$**217.1**(100) M1, $\gamma_{4086.5}$**1432.1**(75) (E2)
5794.0, 23^-, $\gamma_{5519.0}$**275.0**(100) M1, $\gamma_{5207.2}$**586.7**(21)
5943.3, 23^-, $\gamma_{5389.6}$**553.7**(100)
6073.1, 23^-, $\gamma_{5389.6}$**683.5**(100)
6100.4, 24^-, $\gamma_{5943.3}$**157.1**(43), $\gamma_{5794.0}$**306.4**(100) M1+E2 $\delta\approx1.7$, $\gamma_{5389.6}$**710.0**(93)
6306.1, 24^+, $\gamma_{5215.6}$**1090.5**(100)
6330.7(?), $\gamma_{5794.0}$**536.8**(100)
6384.8, 24^+, $\gamma_{5215.6}$**1169.2**(100) E2
6435.6, 25^-, $\gamma_{6306.1}$**129.2**(50), $\gamma_{6100.4}$**335.2**(100) M1+E2 $\delta=1.5_9$, $\gamma_{6073.1}$**362.2**(93)
6703.4, 26^-, $\gamma_{6435.6}$**267.8**(100) M1
7028.3$_9$, $27^{(-)}$, $\gamma_{6703.4}$**325.5**
7497.4$_9$, (27), $\gamma_{6703.4}$**794.5**
7526.8$_{10}$, $28^{(-)}$, $\gamma_{7028.3}$**498.5**
7590.8$_{10}$, $28^{(-)}$, $\gamma_{7028.3}$**562.5**
7852.9$_{10}$, (29), $\gamma_{7028.3}$**824.6**
8170.9$_{10}$, $\gamma_{7590.8}$**580.2**
8517.9$_{10}$, $\gamma_{7526.8}$**991.1**
8632.5$_{10}$, (29), $\gamma_{7497.4}$**1135.1**
9245.6$_{10}$, (31), $\gamma_{8632.5}$**613.0**, $\gamma_{8170.9}$**1074.7**
9623.6$_{11}$, $\gamma_{8517.9}$**1105.7**
10480.0$_{11}$, $\gamma_{9623.6}$**856.4**
11088.1$_{12}$, $\gamma_{10480.0}$**608.1**
A **x**, J
A **747.7+x**, J+2, γ_{x}**747.7**$_1$(0.93$_9$)
A **1545.6+x**, J+4, $\gamma_{747.7+x}$**797.9**$_2$(0.93$_9$)
A **2393.9+x**, J+6, $\gamma_{1545.6+x}$**848.3**$_1$(1.09$_{11}$)
A **3293.4+x**, J+8, $\gamma_{2393.9+x}$**899.5**$_2$(0.98$_{10}$)
A **4244.8+x**, J+10, $\gamma_{3293.4+x}$**951.4**$_2$(1.14$_{11}$)
A **5248.6+x**, J+12, $\gamma_{4244.8+x}$**1003.8**$_2$(1.10$_{11}$)
A **6305.7+x**, J+14, $\gamma_{5248.6+x}$**1057.1**$_2$(0.80$_8$)
A **7416.4+x**, J+16, $\gamma_{6305.7+x}$**1110.7**$_2$(1.05$_{10}$)
A **8581.7+x**, J+18, $\gamma_{7416.4+x}$**1165.3**$_2$(0.89$_9$)
A **9801.8+x**, J+20, $\gamma_{8581.7+x}$**1220.1**$_2$(0.78$_8$)
A **11077.5+x**, J+22, $\gamma_{9801.8+x}$**1275.7**$_2$(0.59$_6$)
A **12408.4+x**, J+24, $\gamma_{11077.5+x}$**1330.9**$_2$(0.74$_7$)
A **13795.9+x**, J+26, $\gamma_{12408.4+x}$**1387.5**$_2$(0.60$_6$)
A **15239.2+x**, J+28, $\gamma_{13795.9+x}$**1443.3**$_2$(0.39$_4$)
A **16738.1+x**, J+30, $\gamma_{15239.2+x}$**1498.9**$_3$(0.48$_5$)
A **18293.2+x**, J+32, $\gamma_{16738.1+x}$**1555.1**$_4$(0.31$_3$)
B **y**, J$_1$
B **844.2+y**, J$_1$+2, γ_{y}**844.2**$_6$
B **1739.0+y**, J$_1$+4, $\gamma_{844.2+y}$**894.8**$_5$
B **2685.1+y**, J$_1$+6, $\gamma_{1739.0+y}$**946.1**$_6$
B **3683.2+y**, J$_1$+8, $\gamma_{2685.1+y}$**998.1**$_5$
B **4734.1+y**, J$_1$+10, $\gamma_{3683.2+y}$**1050.9**$_5$
B **5838.3+y**, J$_1$+12, $\gamma_{4734.1+y}$**1104.2**$_6$
B **6996.2+y**, J$_1$+14, $\gamma_{5838.3+y}$**1157.9**$_9$
B **8208.6+y**, J$_1$+16, $\gamma_{6996.2+y}$**1212.4**$_8$
B **9477.3+y**, J$_1$+18, $\gamma_{8208.6+y}$**1268.7**$_7$
B **10799.3+y**, J$_1$+20, $\gamma_{9477.3+y}$**1322.0**$_5$
B **12177.1+y**, J$_1$+22, $\gamma_{10799.3+y}$**1377.8**$_7$
B **13611.1+y**, J$_1$+24, $\gamma_{12177.1+y}$**1434.0**$_6$
B **15100.3+y**, J$_1$+26, $\gamma_{13611.1+y}$**1489.2**$_{10}$
B **16644.4+y**, J$_1$+28, $\gamma_{15100.3+y}$**1544.1**$_{14}$


J+32 1555 18293.2+x
J+30 1499 16738.1+x
J+28 1443 15239.2+x
J+26 1388 13795.9+x
J+24 1331 12408.4+x
J+22 1276 11077.5+x
J+20 1220 9801.8+x
J+18 1165 8581.7+x
J+16 1111 7416.4+x
J+14 1057 6305.7+x
J+12 1004 5248.6+x
J+10 951 4244.8+x
J+8 900 3293.4+x
J+6 848 2393.9+x
J+4 798 1545.6+x
J+2 748 747.7+x
J x
J1+28 1544 16644.4+y
J1+26 1489 15100.3+y
J1+24 1434 13611.1+y
J1+22 1378 12177.1+y
J1+20 1322 10799.3+y
J1+18 1269 9477.3+y
J1+16 1212 8208.6+y
J1+14 1158 6996.2+y
J1+12 1104 5838.3+y
J1+10 1051 4734.1+y
J1+8 998 3683.2+y
J1+6 946 2685.1+y
J1+4 895 1739.0+y
J1+2 844 844.2+y
J1 y
SD-1 band
(1998Ha21)
SD-2 band
(1998Ha21)

$^{148}_{63}Eu_{85}$

$^{139}_{64}Gd_{75}$

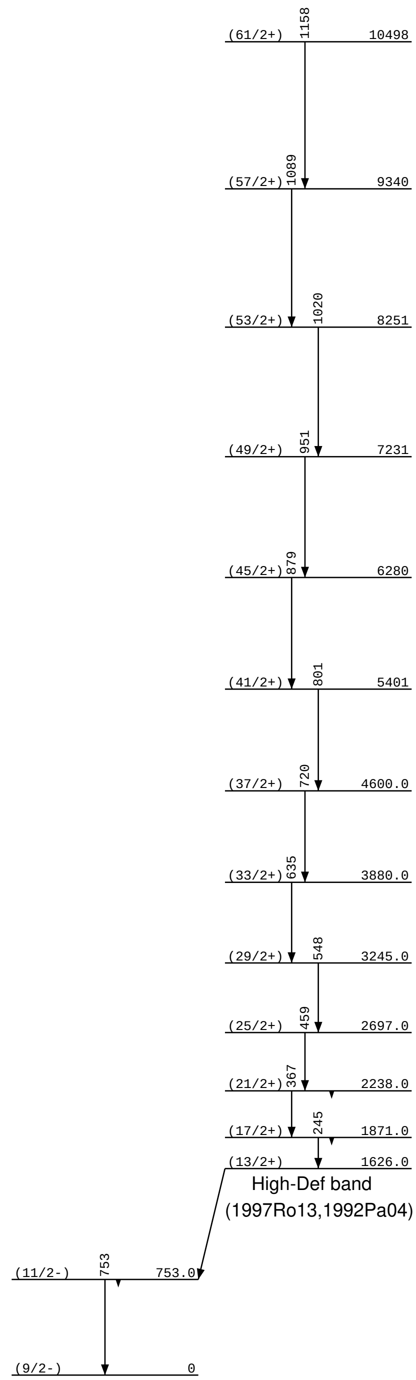
S_n: 9.8x10^3_{SY}, S_p: 2.98x10^3_{SY}

Nuclear Bands

- A 9/2[514], α=-1/2
- B 9/2[514], α=+1/2
- C 1/2[530]
- D Band structure
- E Band structure
- F Band structure
- G Highly-deformed band (1997Ro13,1992Pa04,1990Ma53)
  Q_0=7.0$_{15}$

Levels and γ-ray branchings:

A **0**, $(9/2^-)$, 5.8_9 s, $\%\varepsilon+\%\beta^+>0$, $\%\varepsilon p>0$
0+x 4.8_9 s, $\%\varepsilon+\%\beta^+>0$, $\%\varepsilon p>0$
B **211.95**$_{24}$, $(11/2^-)$, γ_{0}**212.0**$_3$(100) D
C **427.0**$_7$, $(7/2^-)$, $\gamma_{211.95}$**215**(10.8_8), γ_{0}**427**(100_{17}) D
A **530.05**$_{24}$, $(13/2^-)$, $\gamma_{211.95}$**318.2**$_3(100_{10})$ D, γ_{0}**530.0**$_3(46_5)$ Q
C **753.0**$_8$, $(11/2^-)$, $\gamma_{427.0}$**326**(100_8) (Q), γ_{0}**753**(20_8) D
B **755.2**$_3$, $(15/2^-)$, $\gamma_{530.05}$**225.3**$_3(86_9)$ D, $\gamma_{211.95}$**543.2**$_3$(100) Q
A **1171.2**$_3$, $(17/2^-)$, $\gamma_{755.2}$**416.2**$_3(100_{11})$ D, $\gamma_{530.05}$**641.0**$_3(83_9)$ Q
C **1255.0**$_{12}$, $(15/2^-)$, $\gamma_{753.0}$**502**(100) (Q)
B **1415.7**$_4$, $(19/2^-)$, $\gamma_{1171.2}$**244.3**$_3(38_5)$ D, $\gamma_{755.2}$**660.4**$_3(100_{11})$ Q
G **1626.0**$_{12}$, $(13/2^+)$, $\gamma_{753.0}$**873**(100)
G **1871.0**$_{13}$, $(17/2^+)$, $\gamma_{1626.0}$**245**(6.1_{12}) (Q), $\gamma_{1255.0}$**616**(100_4) D
C **1882.0**$_{14}$, $(19/2^-)$, $\gamma_{1255.0}$**627**(100) (Q)
A **1910.9**$_4$, $(21/2^-)$, $\gamma_{1415.7}$**495.1**$_3(71_9)$ D, $\gamma_{1171.2}$**740.0**$_3(100_{12})$ Q
B **2174.7**$_4$, $(23/2^-)$, $\gamma_{1910.9}$**264.0**$_3(27_3)$ D, $\gamma_{1415.7}$**758.9**$_3(100_{10})$ Q
G **2238.0**$_{15}$, $(21/2^+)$, $\gamma_{1882.0}$**356**(12.2_{24}), $\gamma_{1871.0}$**367**(100_4) Q
D **2490.3**$_8$, $\gamma_{1910.9}$**579**, $\gamma_{1415.7}$**1075**
2576.7$_4$, $(25/2^-)$, $\gamma_{2174.7}$**402.1**$_3(100_{10})$ D, $\gamma_{1910.9}$**665.6**$_3(51_5)$ Q
C **2590.0**$_{18}$, $(23/2^-)$, $\gamma_{1882.0}$**708**(100) Q
D **2691.3**$_{13}$, $\gamma_{2490.3}$**201**
G **2697.0**$_{18}$, $(25/2^+)$, $\gamma_{2238.0}$**459**(100) Q
B **2766.8**$_5$, $(27/2^-)$, $\gamma_{2576.7}$**190.0**$_3(100_{10})$ (D), $\gamma_{2174.7}$**592.2**$_3(34_4)$ Q
D **2919.3**$_{17}$, $\gamma_{2691.3}$**228**
A **3031.4**$_5$, $(29/2^-)$, $\gamma_{2766.8}$**264.8**$_3(100_{11})$, $\gamma_{2576.7}$**455**(<17) Q
E **3094**, $\gamma_{2174.7}$**919**(?)
D **3235.3**$_{19}$, $\gamma_{2919.3}$**316**
G **3245.0**$_{20}$, $(29/2^+)$, $\gamma_{2697.0}$**548**(100) (Q)
C **3257.0**$_{20}$, $(27/2^-)$, $\gamma_{2590.0}$**667**(100) (Q)
B **3288.2**$_5$, $(31/2^-)$, $\gamma_{3031.4}$**256.9**$_3(100_{11})$ D, $\gamma_{2766.8}$**521.2**$_3(38_5)$ Q
E **3391.0**$_{10}$, γ_{3094}**297**
D **3558.3**$_{22}$, $\gamma_{3235.3}$**323**
A **3627.7**$_6$, $(33/2^-)$, $\gamma_{3288.2}$**339.3**$_3(100_{12})$ D, $\gamma_{3031.4}$**596.4**$_3(<40)$
E **3684.1**$_{13}$, $\gamma_{3391.0}$**293**, γ_{3094}**590**(?)
C **3777.0**$_{23}$, $(31/2^-)$, $\gamma_{3257.0}$**520**(100) (Q)
G **3880.0**$_{23}$, $(33/2^+)$, $\gamma_{3245.0}$**635**(100) (Q)
B **3960.3**$_8$, $\gamma_{3627.7}$**333**(100), $\gamma_{3288.2}$**672**
E **4011.9**$_{13}$, $\gamma_{3684.1}$**328**, $\gamma_{3391.0}$**621**
A **4370.9**$_9$, $(37/2^-)$, $\gamma_{3960.3}$**411**, $\gamma_{3627.7}$**743**
E **4374.5**$_{15}$, $\gamma_{4011.9}$**363**, $\gamma_{3684.1}$**690**
C **4417.0**$_{25}$, $(35/2^-)$, $\gamma_{3777.0}$**640**(100)
G **4600.0**$_{25}$, $(37/2^+)$, $\gamma_{3880.0}$**720**
B **4768.6**$_{11}$, $(39/2^-)$, $\gamma_{4370.9}$**398**, $\gamma_{3960.3}$**808**
E **4788.5**$_{18}$, $\gamma_{4374.5}$**414**
A **5247.6**$_{14}$, $(41/2^-)$, $\gamma_{4768.6}$**479**, $\gamma_{4370.9}$**877**(?)
G **5401**$_3$, $(41/2^+)$, $\gamma_{4600.0}$**801**
B **5700.6**$_{14}$(?), $(43/2^-)$, $\gamma_{5247.6}$**453**(?), $\gamma_{4768.6}$**932**(?)
G **6280**$_3$, $(45/2^+)$, γ_{5401}**879**
G **7231**$_3$, $(49/2^+)$, γ_{6280}**951**
G **8251**$_4$, $(53/2^+)$, γ_{7231}**1020**
G **9340**$_4$, $(57/2^+)$, γ_{8251}**1089**
G **10498**$_4$, $(61/2^+)$, γ_{9340}**1158**
F **2175+y**
F **2319.0+y**, γ_{2175+y}**144**
F **2608.0+y**, $\gamma_{2319.0+y}$**289**
F **2945.0+y**, $\gamma_{2608.0+y}$**337**
F **3313.0+y**, $\gamma_{2945.0+y}$**368**
F **3706.0+y**, $\gamma_{3313.0+y}$**393**
F **4109.0+y**, $\gamma_{3706.0+y}$**403**



$^{139}_{64}Gd_{75}$

$^{143}_{64}Gd_{79}$

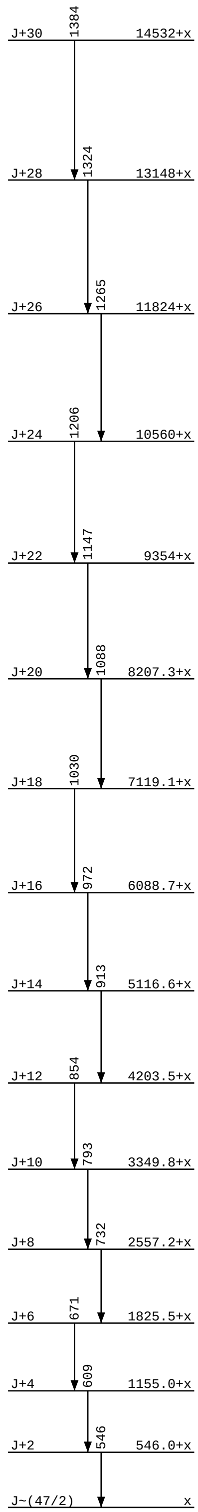
S_n: 9461 $_{SY}$, S_p: 4.18x10^3 $_{20}$

Nuclear Bands

A Band based on $33/2^+$
B Band based on $11/2^-$
C Highly-deformed band based on $13/2^+$
D SD band (2000Li14)

Levels and γ-ray branchings:

0, $(1/2)^+$, *39*$_2$ *s*, %ε+%β^+=100
45.1$_3$, $(3/2^+)$, γ_0**45.1**$_3$(100)
B **152.6**$_5$, $(11/2^-)$, *112*$_2$ *s*, %ε+%β^+=100,
354.3$_3$, $(5/2^+)$, $\gamma_{45.1}$**309.2**$_3$(100)
407.5$_3$, $(5/2^+)$, $\gamma_{45.1}$**362.4**$_3$(100$_{10}$), γ_0**407.5**$_3$(43$_5$)
493.1$_3$, $(9/2^-)$, $\gamma_{152.6}$**340.5**$_3$(100)
B **752.0**$_3$, $15/2^-$, $\gamma_{152.6}$**599.5**
787.9$_2$, $(7/2)$, $\gamma_{493.1}$**294.8**$_3$(27$_3$), $\gamma_{407.5}$**380.3**$_3$(100$_{10}$), $\gamma_{354.3}$**433.7**$_3$(96$_{10}$)
1076.3$_3$, $(13/2^-)$, $\gamma_{152.6}$**923.6**
1250.7$_3$, $(9/2,11/2^-)$, $\gamma_{787.9}$**462.8**$_3$(100)
1474.0$_3$, $(9/2,11/2^-)$, $\gamma_{1250.7}$**223.3**$_3$(48$_5$), $\gamma_{787.9}$**686.1**$_3$(100$_{10}$)
B **1775.8**$_3$, $(19/2^-)$, $\gamma_{752.0}$**1023.7**
C **1793.66**$_{24}$, $(13/2^+)$, $\gamma_{752.0}$**1040**(?), $\gamma_{152.6}$**1641.1**(100) D
1847.5$_3$, $(15/2^-)$, $\gamma_{152.6}$**1694.8**(100) D
1863.5$_3$, $(15/2^+)$, $\gamma_{1076.3}$**787.2**
1911.8$_3$, $(17/2^-)$, $\gamma_{1076.3}$**835**(?), $\gamma_{752.0}$**1159.8**
2053.5$_4$, $(17/2^+)$, $\gamma_{752.0}$**1301.6**
2180.4$_3$, $(13/2^+)$, $\gamma_{752.0}$**1428**, $\gamma_{152.6}$**2027.8**
2236.3$_3$, $(15/2)$, $\gamma_{1076.3}$**1160.0**
2327.6$_4$, $(17/2^+)$, $\gamma_{752.0}$**1575.8**
2419.5$_3$, $(19/2^+)$, $\gamma_{1911.8}$**507.8**, $\gamma_{1863.5}$**555**(?), $\gamma_{1775.8}$**643.6**
2430.2$_3$, $(19/2^+)$, $\gamma_{2327.6}$**102.8**, $\gamma_{2053.5}$**376.7**, $\gamma_{1911.8}$**518.4**, $\gamma_{1863.5}$**565**(?), $\gamma_{1775.8}$**654.5**
2504.8$_3$, $(19/2^-)$, $\gamma_{1775.8}$**729.1**, $\gamma_{752.0}$**1752.8**
C **2536.8**$_2$, $(17/2^+)$, $\gamma_{2236.3}$**300.5**, $\gamma_{2180.4}$**356.3**, $\gamma_{1863.5}$**673.2**, $\gamma_{1847.5}$**689.3**(35$_5$), $\gamma_{1793.66}$**743.2**(100$_7$) Q
2651.4$_3$, $(21/2^+)$, $\gamma_{2430.2}$**221.5**, $\gamma_{1775.8}$**875.4**
2668.1$_3$, $(23/2^+)$, $\gamma_{2651.4}$**17.0**, $\gamma_{2419.5}$**248.6**
2671.2$_4$, $(23/2^-)$, $\gamma_{1775.8}$**895.1**
2766.9$_4$, $(21/2)$, $\gamma_{2651.4}$**115**
2767.8$_4$, $(23/2^+)$, $\gamma_{2668.1}$**99.5**, $\gamma_{2651.4}$**116.5**
2882.5$_4$, $(25/2^+)$, $\gamma_{2767.8}$**115.3**, $\gamma_{2668.1}$**214.8**
2984.8$_{11}$(?), $(23/2^-)$, $\gamma_{1775.8}$**1209**
2993.8$_{11}$(?), $(23/2^-)$, $\gamma_{1775.8}$**1218**
3006.8$_{11}$(?), $(23/2^-)$, $\gamma_{1775.8}$**1231**
B **3087.1**$_4$, $(23/2^-)$, $\gamma_{2984.8}$**101**(?), $\gamma_{2504.8}$**582.2**, $\gamma_{1775.8}$**1311.7**
3090.3$_5$, $(27/2^+)$, $\gamma_{2882.5}$**207.8**
3149.1$_4$, $(23/2^-)$, $\gamma_{3087.1}$**61.7**, $\gamma_{2504.8}$**644.3**, $\gamma_{1775.8}$**1373.4**
3158.6$_5$, $(25/2^-)$, $\gamma_{3087.1}$**71.7**
3223.7$_4$, $(23/2)$, $\gamma_{2766.9}$**457.1**, $\gamma_{2651.4}$**572.1**
3248.7$_5$, $(27/2^-)$, $\gamma_{3158.6}$**90.3**
C **3272.8**$_3$, $(21/2^+)$, $\gamma_{2668.1}$**604.5**, $\gamma_{2651.4}$**621.3**, $\gamma_{2536.8}$**735.8**(100) Q, $\gamma_{2430.2}$**842.8**
3283.0$_4$, $(21/2^+)$, $\gamma_{2668.1}$**614.9**, $\gamma_{2419.5}$**863.5**
3332.0$_5$, $(27/2^-)$, $\gamma_{2671.2}$**660.5**
3534.4$_5$, $(29/2^+)$, $\gamma_{3090.3}$**444.3**
3582.9$_5$, $(29/2^-)$, $\gamma_{3248.7}$**334.3**
3808.7$_5$, $(29/2^-)$, $\gamma_{3158.6}$**650.2**
3820.6$_5$, $(31/2^+)$, $\gamma_{3534.4}$**286.4**, $\gamma_{3090.3}$**730.1**
C **3835.3**$_4$, $(25/2^+)$, $\gamma_{3283.0}$**552.2**, $\gamma_{3272.8}$**562.4**(100) Q, $\gamma_{3223.7}$**611.8**
3898.6$_6$, $\gamma_{3808.7}$**90**
4015.0$_5$, $(31/2^-)$, $\gamma_{3582.9}$**432.2**, $\gamma_{3248.7}$**766.5**
4125.7$_5$, $(31/2^-)$, $\gamma_{3582.9}$**542.8**, $\gamma_{3248.7}$**876**
4216.1$_5$, $(31/2^-)$, $\gamma_{3332.0}$**883.9**
4250.5$_5$, $(31/2^-)$, $\gamma_{3898.6}$**351.9**, $\gamma_{3808.7}$**441.9**, $\gamma_{3582.9}$**667.5**
C **4394.4**$_5$, $(29/2^+)$, $\gamma_{3835.3}$**559.1**(100) Q
4452.6$_{11}$, $(33/2^+)$, $\gamma_{3820.6}$**632**
4488.5$_5$, $(33/2^-)$, $\gamma_{4015.0}$**473.6**
4645.5$_5$, $(33/2^-)$, $\gamma_{4125.7}$**519.7**, $\gamma_{3582.9}$**1062.5**
4798.2$_5$, $(35/2^-)$, $\gamma_{4645.5}$**152.5**, $\gamma_{4488.5}$**309.8**, $\gamma_{4216.1}$**582.1**, $\gamma_{4015.0}$**783.4**
4849.1$_5$, $(33/2^-)$, $\gamma_{4216.1}$**632.7**
4923.6$_6$, $(33/2^-)$, $\gamma_{4250.5}$**673.1**
4930.9$_5$, $(35/2^+)$, $\gamma_{3820.6}$**1110.3**
4954.9$_5$, $(35/2^+)$, $\gamma_{3820.6}$**1134.4**
C **5022.8**$_6$, $(33/2^+)$, $\gamma_{4394.4}$**628.4**(100)
5026.7$_5$, $(37/2^-)$, $\gamma_{4849.1}$**177.3**, $\gamma_{4798.2}$**228.8**
5122.4$_6$, $(35/2^-)$, $\gamma_{4250.5}$**871.9**
A **5226.0**$_5$, $(33/2^+)$, $\gamma_{4125.7}$**1100.5**, $\gamma_{3820.6}$**1405**
5309.7$_6$, $(39/2^-)$, $\gamma_{5026.7}$**283.0**
A **5399.5**$_5$, $(35/2^+)$, $\gamma_{5226.0}$**173.5**, $\gamma_{4645.5}$**754**
A **5587.1**$_5$, $(37/2^+)$, $\gamma_{5399.5}$**187.7**, $\gamma_{4954.9}$**632.2**, $\gamma_{4798.2}$**788.7**
5625.0$_6$, $(37/2^-)$, $\gamma_{5122.4}$**502.6**, $\gamma_{4923.6}$**701.4**
C **5756.5**$_7$, $(37/2^+)$, $\gamma_{5022.8}$**733.7**(100) Q
A **5763.7**$_5$, $(39/2^+)$, $\gamma_{5587.1}$**176.6**, $\gamma_{4930.9}$**832.8**
5828.7$_{12}$, $(41/2^-)$, $\gamma_{5309.7}$**519**
6064.0$_6$, $(39/2^-)$, $\gamma_{5625.0}$**439.0**, $\gamma_{5122.4}$**941.6**
A **6159.1**$_6$, $(41/2^+)$, $\gamma_{5763.7}$**395.4**
6557.7$_6$, $(41/2^-)$, $\gamma_{6064.0}$**493.7**, $\gamma_{5625.0}$**932.7**
C **6574.8**$_7$, $(41/2^+)$, $\gamma_{5756.5}$**818.3**(100) Q
6580.0$_{12}$, $(43/2^-)$, $\gamma_{5828.7}$**751.3**
A **6590.2**$_7$, $(43/2^+)$, $\gamma_{6159.1}$**431.1**
6650.1$_{10}$, $\gamma_{6159.1}$**491**
6900.1$_7$, $(43/2^-)$, $\gamma_{6064.0}$**836.1**
7097.1$_{12}$, $\gamma_{6650.1}$**447**
A **7108.2**$_{10}$, $(45/2^+)$, $\gamma_{6590.2}$**518**
7186.8$_{13}$, $\gamma_{6574.8}$**612**
C **7280.3**$_8$, $(45/2^+)$, $\gamma_{6574.8}$**705.5**(100) Q
7452.8$_{13}$, $\gamma_{6574.8}$**878**
A **7538.1**$_{10}$, $(47/2^+)$, $\gamma_{7108.2}$**430**, $\gamma_{7097.1}$**441**, $\gamma_{6650.1}$**888**, $\gamma_{6590.2}$**948**
7803.6$_8$, $(47/2^-)$, $\gamma_{6900.1}$**903.5**
C **7909.5**$_8$, $(49/2^+)$, $\gamma_{7280.3}$**629.2**(100)
A **8038.2**$_{14}$, $(49/2^+)$, $\gamma_{7538.1}$**500**
8424.8$_{16}$, $\gamma_{7452.8}$**972**
A **8538.2**$_{17}$, $(51/2^+)$, $\gamma_{8038.2}$**500**
C **8721.1**$_9$, $(53/2^+)$, $\gamma_{7909.5}$**811.6**(100)
8749.7$_{12}$, $\gamma_{7909.5}$**840**
9593.9$_{12}$, $\gamma_{8749.7}$**844**, $\gamma_{8721.1}$**873**
C **9746.1**$_{14}$, $(57/2^+)$, $\gamma_{8721.1}$**1025**
10633.9$_{16}$, $\gamma_{9593.9}$**1040**
C **10935.1**$_{17}$, $(61/2^+)$, $\gamma_{9746.1}$**1189**
C **11942.1**$_{20}$, $(65/2^+)$, $\gamma_{10935.1}$**1007**
C **12924.1**$_{22}$, $(69/2^+)$, $\gamma_{11942.1}$**982**
C **14081.1**$_{24}$, $(73/2^+)$, $\gamma_{12924.1}$**1157**
D **x**, $J \approx (47/2)$
D **546.0+x**, $J+2$, γ_x**546.0**$_{10}$(0.33$_7$)
D **1155.0+x**, $J+4$, $\gamma_{546.0+x}$**609.0**$_{10}$(0.34$_7$)
D **1825.5+x**, $J+6$, $\gamma_{1155.0+x}$**670.5**$_{10}$(0.30$_7$)
D **2557.2+x**, $J+8$, $\gamma_{1825.5+x}$**731.7**$_7$(0.38$_8$)
D **3349.8+x**, $J+10$, $\gamma_{2557.2+x}$**792.6**$_7$(0.41$_9$)
D **4203.5+x**, $J+12$, $\gamma_{3349.8+x}$**853.7**$_7$(0.32$_6$)
D **5116.6+x**, $J+14$, $\gamma_{4203.5+x}$**913.1**$_5$(0.50$_{11}$)
D **6088.7+x**, $J+16$, $\gamma_{5116.6+x}$**972.1**$_6$(0.40$_8$)
D **7119.1+x**, $J+18$, $\gamma_{6088.7+x}$**1030.4**$_8$(0.46$_{10}$)
D **8207.3+x**, $J+20$, $\gamma_{7119.1+x}$**1088.2**$_5$(0.47$_{11}$)
D **9354+x**, $J+22$, $\gamma_{8207.3+x}$**1146.9**$_7$(0.52$_{11}$)
D **10560+x**, $J+24$, γ_{9354+x}**1205.6**$_5$(0.33$_8$)
D **11824+x**, $J+26$, $\gamma_{10560+x}$**1264.5**$_5$(0.40$_{11}$)
D **13148+x**, $J+28$, $\gamma_{11824+x}$**1323.8**$_5$(0.18$_5$)
D **14532+x**, $J+30$, $\gamma_{13148+x}$**1383.7**$_{10}$(0.18$_5$)



SD band
(2000Li14)

$^{143}_{64}Gd_{79}$

$^{144}_{64}\mathbf{Gd}_{80}$

S_n: 11750 *SY*, S_p: 4958 *SY*

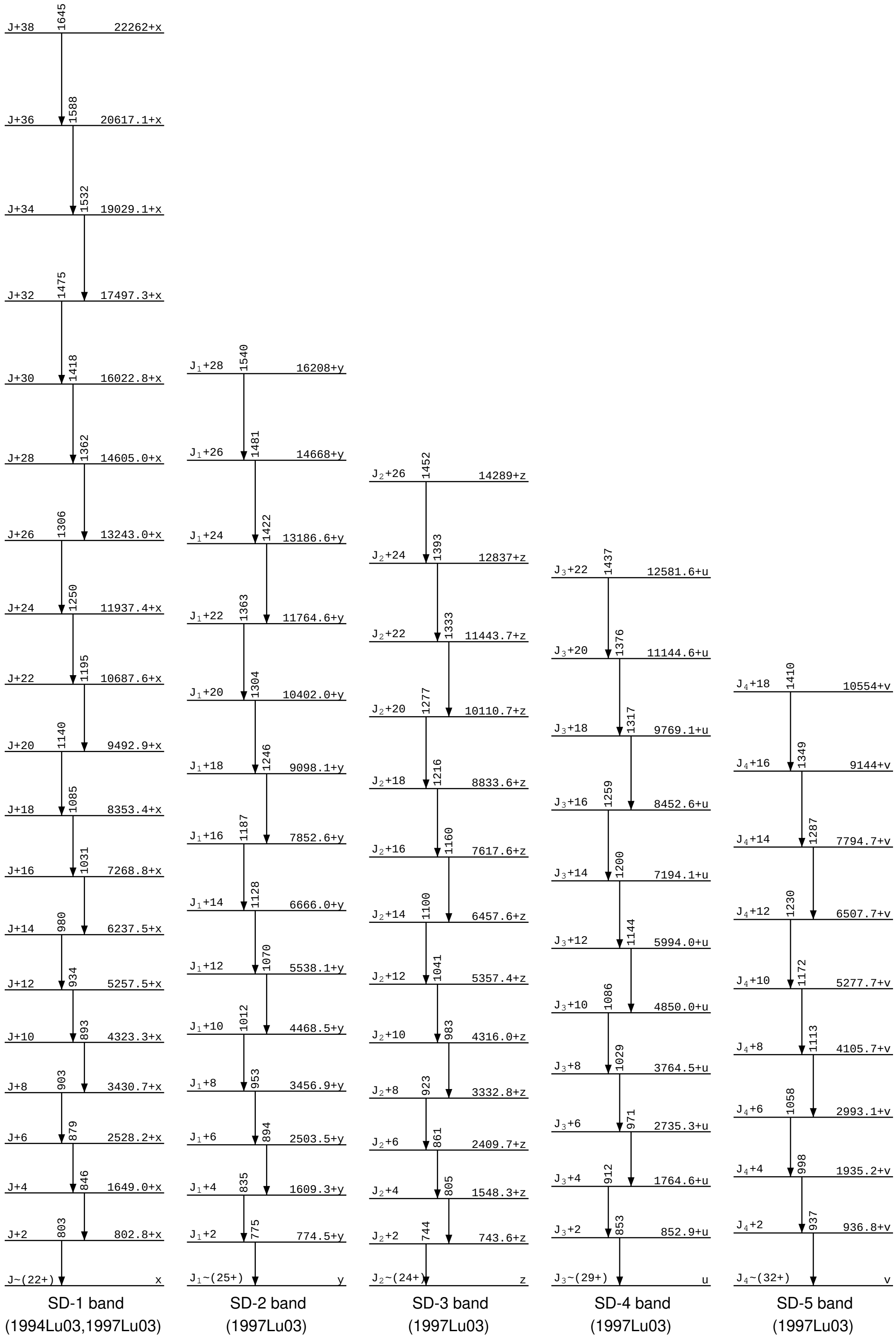
Nuclear Bands

A Band based on 18^+
B SD-1 band (1994Lu03,1997Lu03,1999Ur02,1998Zh20) Q_0=13.7^{11}_{9}
C SD-2 band (1997Lu03)
D SD-3 band (1997Lu03)
E SD-4 band (1997Lu03)
F SD-5 band (1997Lu03)

Levels and γ-ray branchings:

0, 0^+, *4.47$_6$ min*, %ε+%β^+=100
743.00$_{17}$, 2^+, γ_{0}**743.0**$_2$(100) E2
1702.29$_{24}$, (3^-), $\gamma_{743.00}$**959.3**$_2$(100) (E1+M2) $\delta=+0.12_5$
1744.52$_{24}$, (4^+), $\gamma_{743.00}$**1001.5**$_2$(100)
1876.41$_{23}$, (2^+), $\gamma_{743.00}$**1133.4**$_3$(75_{11}), γ_{0}**1876.4**$_3$(100)
1886.9$_4$, (0^+), $\gamma_{743.00}$**1143.9**$_3$(100)
2226.51$_{23}$, (2^+), $\gamma_{743.00}$**1483.5**$_3$(100), $\gamma_{0.0}$**2226.5**$_3$(80_{11})
2302.6$_3$, (5^-), $\gamma_{1744.52}$**558.0**$_2$(100) E1, $\gamma_{1702.29}$**600.3**$_2$(68_{12})
2330.5$_4$, $(4^-,5^-)$, $\gamma_{1702.29}$**628.2**$_3$(100)
2354.3, (6^+), $\gamma_{1744.52}$**609.7**$_3$(100)(?)
2442.3$_4$, (5^-), $\gamma_{2302.6}$**139.7**$_3$(43_6), $\gamma_{1744.52}$**697.9**$_3$(100)
2462.1$_4$, $(0^+,1^+,2^+)$, $\gamma_{743.00}$**1719.1**$_3$(100)
2471.6$_4$, (7^-), *13$_2$ ns*, $\gamma_{2302.6}$**169.0**$_2$(100) E2
2786.7$_4$, (7^-), $\gamma_{2471.6}$**315.1**$_2$(100) M1
2787.9$_4$, $\gamma_{2302.6}$**485.3**$_3$(100)
2861.9$_4$, (6^+), $\gamma_{1744.52}$**1117.4**$_3$(100)
2912.5$_5$, $\gamma_{2442.3}$**470.2**$_3$(100)
3015.4$_4$, $(5^-,6^-,7^-)$, $\gamma_{2442.3}$**573.5**$_3$(40_6)(?), $\gamma_{2302.6}$**712.8**$_3$(100)
3018.0$_4$, (8^-), $\gamma_{2786.7}$**231.3**$_2$(67) M1, $\gamma_{2471.6}$**546.4**$_2$(100) M1+E2
3244.2$_7$, (8^-), $\gamma_{3018.0}$**226.3**, $\gamma_{2786.7}$**457.6**
3345.7$_5$, (9^-), $\gamma_{3244.2}$**101.7**, $\gamma_{3018.0}$**327.7**$_3$(100) M1
3433.1$_5$, (10^+), *145$_{30}$ ns*, μ=+12.76$_{14}$, Q=-1.46$_6$, $\gamma_{3345.7}$**87.4**$_3$(100) E1, $\gamma_{3018.0}$**415.2**$_3$(19) M2
3697.0$_9$, (10^+), $\gamma_{3433.1}$**263.8**, $\gamma_{3345.7}$**351.3**
3910.0$_8$, (10^-), $\gamma_{3345.7}$**564.3**, $\gamma_{3018.0}$**892.0**
4144.5$_6$, (11^+), $\gamma_{3433.1}$**711.3**$_3$(100) M1+E2 $\delta=-0.9_2$
4267.0$_{11}$, (11^-), $\gamma_{3345.7}$**921.3**
4450.9$_6$, (12^+), $\gamma_{4144.5}$**306.3**(7) M1+E2, $\gamma_{3433.1}$**1017.8**$_3$(100) E2
4756.0$_{10}$, (12^+), $\gamma_{4144.5}$**611.5**(100) M1+E2
4954.0$_8$, (12^+), $\gamma_{4144.5}$**809.5**(100) M1+E2, $\gamma_{3433.1}$**1521.0**(90) E2
5086.4$_8$, (13^+), $\gamma_{4954.0}$**132.5**(100) M1+(E2), $\gamma_{4450.9}$**635.3**(82) M1+E2, $\gamma_{4144.5}$**941.8**(100) E2
5133.9$_8$, (13^+), $\gamma_{4756.0}$**377.9**(52) M1+E2, $\gamma_{4144.5}$**989.4**(100) E2
5179.5$_{10}$, (14^+), $\gamma_{4450.9}$**728.6**(100) E2
5227.9$_{10}$, (14^+), $\gamma_{5086.4}$**141.6**(100)
5369.9$_8$, (14^+), $\gamma_{5227.9}$**142.1**(11), $\gamma_{5133.9}$**236.0**(53) M1+(E2), $\gamma_{5086.4}$**283.4**(21) M1+E2, $\gamma_{4450.9}$**919.0**(100) E2
5455.0$_{11}$, (14^+), $\gamma_{5227.9}$**227.1**(100)
5486.8$_{10}$, (14^+), $\gamma_{4450.9}$**1036.0**(100)
5497.1$_9$, (13^+), $\gamma_{5179.5}$**317.7**(50), $\gamma_{4450.9}$**1046.2**(100) M1+E2
5613.1$_{10}$, (14^+), $\gamma_{4450.9}$**1162.2**(100) E2
5626.4$_{10}$, (14^+), $\gamma_{5497.1}$**129.3**(100) M1+(E2), $\gamma_{5133.9}$**492.4**(92) M1+E2
5722.9$_{10}$, (15^+), $\gamma_{5455.0}$**267.9**(22), $\gamma_{5369.9}$**352.9**(100) M1+E2
5835.2$_{11}$, (15^+), $\gamma_{5626.4}$**208.7**(100) M1+(E2), $\gamma_{5369.9}$**465.3**(50) M1+E2
6213.7$_{11}$, (16^+), $\gamma_{5722.9}$**490.6**(100) M1+E2
6233.0$_{15}$, (16^+), $\gamma_{5835.2}$**397.8**(100)
6264.2$_{13}$, (17^+), $\gamma_{5722.9}$**541.4**(100) E2
6325.0$_{14}$, $\gamma_{5613.1}$**711.9**
6380.6$_{15}$, $\gamma_{5835.2}$**545.4**(100)
6382.1$_{13}$, (17^+), $\gamma_{6264.2}$**118.0**(46), $\gamma_{6213.7}$**168.0**(100)
6432.4$_{18}$, (17^+), $\gamma_{6233.0}$**199.4**(100)
6443.1$_{15}$, $\gamma_{5835.2}$**607.9**(100)
6618.4$_{13}$, (17^+), $\gamma_{6382.1}$**236.0**(75), $\gamma_{6213.7}$**404.8**(100) M1+E2
6669.9$_{11}$, (16^+), $\gamma_{5613.1}$**1056.8**(100) E2, $\gamma_{5486.8}$**1183.2**(86) E2
6703.3$_{11}$, (16^+), $\gamma_{5613.1}$**1090.2**(100) E2, $\gamma_{5486.8}$**1216.6**(100) E2
6747.8$_{18}$, $\gamma_{6233.0}$**514.8**
6824.6$_{12}$, (16^+), $\gamma_{5486.8}$**1337.6**(100) (E2)
6927.7$_{20}$, (18^+), $\gamma_{6432.4}$**495.3**(100)
7014.1$_{15}$, (18^+), $\gamma_{6618.4}$**395.6**(100) M1+(E2)
7339.1$_{22}$, $\gamma_{6927.7}$**411.4**(100)
7349.1$_{16}$, (19^+), $\gamma_{7014.1}$**334.9**(100) M1+E2
A **7349.7**$_{10}$, (18^+), $\gamma_{6824.6}$**525.0**(8) E2, $\gamma_{6703.3}$**646.4**(100) E2, $\gamma_{6669.9}$**679.8**(64) E2, $\gamma_{6213.7}$**1136.0**(20)
7351.5$_{22}$, (19^+), $\gamma_{6927.7}$**423.8**(100)
7418.6$_{18}$, (19^+), $\gamma_{7014.1}$**404.5**(100) M1+E2
7569.4$_{14}$, (20^+), $\gamma_{7349.7}$**219.9**(100)
7606.6$_{23}$, (20^+), $\gamma_{7351.5}$**255.1**(100), $\gamma_{7339.1}$**267.5**(39)
7756.4$_{16}$, (20^+), $\gamma_{7349.1}$**407.2**(100) M1+(E2)
7760.8$_{24}$, $\gamma_{7339.1}$**421.7**
7885.9$_{25}$, $\gamma_{7606.6}$**279.3**(100)
7923.0$_{21}$, (20^+), $\gamma_{7418.6}$**504.4**(100) M1+E2
A **8104.4**$_{15}$, (20^+), $\gamma_{7349.7}$**754.7**(100) E2
8189.5$_{16}$, (21^+), $\gamma_{7756.4}$**432.9**(100) M1+(E2), $\gamma_{7569.4}$**620.2**(23)
8221.2$_{23}$, (21^+), $\gamma_{7923.0}$**298.2**(100) M1+(E2)
8476.1$_{19}$, (22^+), $\gamma_{8189.5}$**286.6**(100)
8539.9$_{25}$, (22^+), $\gamma_{8221.2}$**318.7**(100) M1+E2
8595.3$_{25}$, (22^+), $\gamma_{8221.2}$**374.1**(100)
8641.9$_{20}$, (24^+), $\gamma_{8476.1}$**165.8**(100)
8993$_3$, (23^+), $\gamma_{8539.9}$**453.4**(100) M1+(E2)
A **9069.8**$_{18}$, (22^+), $\gamma_{8104.4}$**965.4**(100)
9079$_3$, (23^+), $\gamma_{8595.3}$**483.8**(100)
9198.9$_{20}$, (24^+), $\gamma_{8476.1}$**722.8**(100)
9603.0$_{21}$, $\gamma_{9198.9}$**404.2**(100), $\gamma_{8641.9}$**961.1**(31)
9862.4$_{20}$, (24^+), $\gamma_{9069.8}$**792.6**(100) E2
A **9958.6**$_{20}$, (24^+), $\gamma_{9069.8}$**888.8**(100) E2
10066.1$_{23}$, $\gamma_{9603.0}$**463.1**(100)
10424.1$_{23}$, $\gamma_{9862.4}$**561.7**(100)
10441.4$_{23}$, (26^+), $\gamma_{9862.4}$**579.0**(100) E2
A **10795.2**$_{23}$, (26^+), $\gamma_{9958.6}$**836.6**(100) E2
11178.3$_{25}$, (28^+), $\gamma_{10441.4}$**736.9**(100)
A **11723.7**$_{25}$, (28^+), $\gamma_{10795.2}$**928.5**(100) (E2)
A **12843**$_3$, (30^+), $\gamma_{11723.7}$**1119.5** (E2)
A **13941**$_3$, (32^+), γ_{12843}**1098** (E2)
B **x**, $J\approx(22^+)$
B **802.8+x**, $J+2$, γ_{x}**802.8**$_3$(0.22_4)
B **1649.0+x**, $J+4$, $\gamma_{802.8+x}$**846.2**$_2$(0.43_5)
B **2528.2+x**, $J+6$, $\gamma_{1649.0+x}$**879.2**$_2$(0.55_5) (E2)
B **3430.7+x**, $J+8$, $\gamma_{2528.2+x}$**902.5**$_2$(0.87_4) (E2)
B **4323.3+x**, $J+10$, $\gamma_{3430.7+x}$**892.6**$_5$(1.00_3) (E2)
B **5257.5+x**, $J+12$, $\gamma_{4323.3+x}$**934.2**$_2$(1.00_3) (E2)
B **6237.5+x**, $J+14$, $\gamma_{5257.5+x}$**980.0**$_2$(0.99_3) (E2)
B **7268.8+x**, $J+16$, $\gamma_{6237.5+x}$**1031.3**$_5$(1.01_5) (E2)
B **8353.4+x**, $J+18$, $\gamma_{7268.8+x}$**1084.6**$_5$(0.92_4) (E2)
B **9492.9+x**, $J+20$, $\gamma_{8353.4+x}$**1139.5**$_2$(0.87_5) (E2)
B **10687.6+x**, $J+22$, $\gamma_{9492.9+x}$**1194.7**$_2$(0.83_7) (E2)
B **11937.4+x**, $J+24$, $\gamma_{10687.6+x}$**1249.8**$_2$(0.74_7)
B **13243.0+x**, $J+26$, $\gamma_{11937.4+x}$**1305.6**$_5$(0.65_7) (E2)
B **14605.0+x**, $J+28$, $\gamma_{13243.0+x}$**1362.0**$_5$(0.55_5)
B **16022.8+x**, $J+30$, $\gamma_{14605.0+x}$**1417.8**$_5$(0.43_4)
B **17497.3+x**, $J+32$, $\gamma_{16022.8+x}$**1474.5**$_6$(0.34_5)
B **19029.1+x**, $J+34$, $\gamma_{17497.3+x}$**1531.8**$_{10}$(0.24_4)
B **20617.1+x**, $J+36$, $\gamma_{19029.1+x}$**1588.0**$_{15}$(0.16_3)
B **22262+x**, $J+38$, $\gamma_{20617.1+x}$**1645**$_2$(0.09_2)
C **y**, $J_1\approx(25^+)$
C **774.5+y**, J_1+2, γ_{y}**774.5**$_5$(0.39_8)
C **1609.3+y**, J_1+4, $\gamma_{774.5+y}$**834.8**$_4$(0.48_8)
C **2503.5+y**, J_1+6, $\gamma_{1609.3+y}$**894.2**$_4$(0.56_7)
C **3456.9+y**, J_1+8, $\gamma_{2503.5+y}$**953.4**$_3$(0.77_9)
C **4468.5+y**, J_1+10, $\gamma_{3456.9+y}$**1011.6**$_4$(1.00_3)
C **5538.1+y**, J_1+12, $\gamma_{4468.5+y}$**1069.6**$_4$(0.84_6)
C **6666.0+y**, J_1+14, $\gamma_{5538.1+y}$**1127.9**$_5$(1.00_8)
C **7852.6+y**, J_1+16, $\gamma_{6666.0+y}$**1186.6**$_5$(1.03_9)
C **9098.1+y**, J_1+18, $\gamma_{7852.6+y}$**1245.5**$_6$(0.79_{14})
C **10402.0+y**, J_1+20, $\gamma_{9098.1+y}$**1303.9**$_7$(0.65_{11})

C **11764.6+y**, J_1+22, $\gamma_{\mathbf{10402.0+y}}$**1362.6**$_{10}(0.48_{10})$
C **13186.6+y**, J_1+24, $\gamma_{\mathbf{11764.6+y}}$**1422.0**$_{15}(0.36_{7})$
C **14668+y**, J_1+26, $\gamma_{\mathbf{13186.6+y}}$**1481.0**$_{15}(0.22_{6})$
C **16208+y**, J_1+28, $\gamma_{\mathbf{14668+y}}$**1540**$_{2}(0.16_{5})$
D **z**, $J_2\approx(24^+)$
D **743.6+z**, J_2+2, $\gamma_{\mathbf{z}}$**743.6**$_{8}(0.44_{8})$
D **1548.3+z**, J_2+4, $\gamma_{\mathbf{743.6+z}}$**804.7**$_{7}(0.52_{8})$
D **2409.7+z**, J_2+6, $\gamma_{\mathbf{1548.3+z}}$**861.4**$_{5}(0.59_{13})$
D **3332.8+z**, J_2+8, $\gamma_{\mathbf{2409.7+z}}$**923.1**$_{5}(1.11_{15})$
D **4316.0+z**, J_2+10, $\gamma_{\mathbf{3332.8+z}}$**983.2**$_{4}(1.03_{10})$
D **5357.4+z**, J_2+12, $\gamma_{\mathbf{4316.0+z}}$**1041.4**$_{5}(1.00_{7})$
D **6457.6+z**, J_2+14, $\gamma_{\mathbf{5357.4+z}}$**1100.2**$_{3}(0.96_{12})$
D **7617.6+z**, J_2+16, $\gamma_{\mathbf{6457.6+z}}$**1160.0**$_{5}(1.09_{10})$
D **8833.6+z**, J_2+18, $\gamma_{\mathbf{7617.6+z}}$**1216.0**$_{4}(0.85_{13})$
D **10110.7+z**, J_2+20, $\gamma_{\mathbf{8833.6+z}}$**1277.1**$_{9}(0.68_{10})$
D **11443.7+z**, J_2+22, $\gamma_{\mathbf{10110.7+z}}$**1333.0**$_{13}(0.43_{14})$
D **12837+z**, J_2+24, $\gamma_{\mathbf{11443.7+z}}$**1393.0**$_{15}(0.37_{18})$
D **14289+z**, J_2+26, $\gamma_{\mathbf{12837+z}}$**1452.0**$_{25}(0.26_{14})$
E **u**, $J_3\approx(29^+)$
E **852.9+u**, J_3+2, $\gamma_{\mathbf{u}}$**852.9**$_{4}(0.62_{9})$
E **1764.6+u**, J_3+4, $\gamma_{\mathbf{852.9+u}}$**911.7**$_{4}(0.83_{13})$
E **2735.3+u**, J_3+6, $\gamma_{\mathbf{1764.6+u}}$**970.7**$_{5}(0.95_{10})$
E **3764.5+u**, J_3+8, $\gamma_{\mathbf{2735.3+u}}$**1029.2**$_{6}(1.03_{14})$
E **4850.0+u**, J_3+10, $\gamma_{\mathbf{3764.5+u}}$**1085.5**$_{6}(1.00_{6})$
E **5994.0+u**, J_3+12, $\gamma_{\mathbf{4850.0+u}}$**1144.0**$_{7}(0.63_{15})$
E **7194.1+u**, J_3+14, $\gamma_{\mathbf{5994.0+u}}$**1200.1**$_{5}(0.52_{11})$
E **8452.6+u**, J_3+16, $\gamma_{\mathbf{7194.1+u}}$**1258.5**$_{6}(0.45_{11})$
E **9769.1+u**, J_3+18, $\gamma_{\mathbf{8452.6+u}}$**1316.5**$_{5}(0.38_{9})$
E **11144.6+u**, J_3+20, $\gamma_{\mathbf{9769.1+u}}$**1375.5**$_{8}(0.28_{10})$
E **12581.6+u**, J_3+22, $\gamma_{\mathbf{11144.6+u}}$**1437.0**$_{15}(0.19_{9})$
F **v**, $J_4\approx(32^+)$
F **936.8+v**, J_4+2, $\gamma_{\mathbf{v}}$**936.8**$_{5}(0.89_{11})$
F **1935.2+v**, J_4+4, $\gamma_{\mathbf{936.8+v}}$**998.4**$_{8}(0.80_{11})$
F **2993.1+v**, J_4+6, $\gamma_{\mathbf{1935.2+v}}$**1057.9**$_{5}(1.01_{8})$
F **4105.7+v**, J_4+8, $\gamma_{\mathbf{2993.1+v}}$**1112.6**$_{6}(0.97_{12})$
F **5277.7+v**, J_4+10, $\gamma_{\mathbf{4105.7+v}}$**1172**$_{1}(1.00_{8})$
F **6507.7+v**, J_4+12, $\gamma_{\mathbf{5277.7+v}}$**1230**$_{1}(0.90_{11})$
F **7794.7+v**, J_4+14, $\gamma_{\mathbf{6507.7+v}}$**1287.0**$_{15}(0.57_{11})$
F **9144+v**, J_4+16, $\gamma_{\mathbf{7794.7+v}}$**1349**$_{2}(0.50_{13})$
F **10554+v**, J_4+18, $\gamma_{\mathbf{9144+v}}$**1410**$_{2}(0.44_{8})$


J+38 1645 22262+x
J+36 1588 20617.1+x
J+34 1532 19029.1+x
J+32 1475 17497.3+x
J+30 1418 16022.8+x
J+28 1362 14605.0+x
J+26 1306 13243.0+x
J+24 1250 11937.4+x
J+22 1195 10687.6+x
J+20 1140 9492.9+x
J+18 1085 8353.4+x
J+16 1031 7268.8+x
J+14 980 6237.5+x
J+12 934 5257.5+x
J+10 893 4323.3+x
J+8 903 3430.7+x
J+6 879 2528.2+x
J+4 846 1649.0+x
J+2 803 802.8+x
J~(22+) x
SD-1 band
(1994Lu03,1997Lu03)
J1+28 1540 16208+y
J1+26 1481 14668+y
J1+24 1422 13186.6+y
J1+22 1363 11764.6+y
J1+20 1304 10402.0+y
J1+18 1246 9098.1+y
J1+16 1187 7852.6+y
J1+14 1128 6666.0+y
J1+12 1070 5538.1+y
J1+10 1012 4468.5+y
J1+8 953 3456.9+y
J1+6 894 2503.5+y
J1+4 835 1609.3+y
J1+2 775 774.5+y
J1~(25+) y
SD-2 band
(1997Lu03)
J2+26 1452 14289+z
J2+24 1393 12837+z
J2+22 1333 11443.7+z
J2+20 1277 10110.7+z
J2+18 1216 8833.6+z
J2+16 1160 7617.6+z
J2+14 1100 6457.6+z
J2+12 1041 5357.4+z
J2+10 983 4316.0+z
J2+8 923 3332.8+z
J2+6 861 2409.7+z
J2+4 805 1548.3+z
J2+2 744 743.6+z
J2~(24+) z
SD-3 band
(1997Lu03)
J3+22 1437 12581.6+u
J3+20 1376 11144.6+u
J3+18 1317 9769.1+u
J3+16 1259 8452.6+u
J3+14 1200 7194.1+u
J3+12 1144 5994.0+u
J3+10 1086 4850.0+u
J3+8 1029 3764.5+u
J3+6 971 2735.3+u
J3+4 912 1764.6+u
J3+2 853 852.9+u
J3~(29+) u
SD-4 band
(1997Lu03)
J4+18 1410 10554+v
J4+16 1349 9144+v
J4+14 1287 7794.7+v
J4+12 1230 6507.7+v
J4+10 1172 5277.7+v
J4+8 1113 4105.7+v
J4+6 1058 2993.1+v
J4+4 998 1935.2+v
J4+2 937 936.8+v
J4~(32+) v
SD-5 band
(1997Lu03)

$^{144}_{64}Gd_{80}$

$^{145}_{64}$Gd$_{81}$

S_n: 9098 $_{SY}$, S_p: 4575 $_{40}$

Nuclear Bands

A SD-1 band (1995Rz03,2000Rz01)
Q_0=11.8$_8$

B SD-2 band (1995Rz03,2000Rz01)
Q_0=13.2$_{10}$

C SD-3 band (1995Rz03)

Levels and γ-ray branchings:

0, $1/2^+$, *23.0$_4$ min*, %ε+%β$^+$=100

27.3$_{11}$, $3/2^+$, *11.5$_3$ ns*, γ_0**27.3**$_1$(100) M1+E2 $\delta=0.09_2$

749.1$_2$, $11/2^-$, *85$_3$ s*, %IT=94.3$_5$, %ε+%β$^+$=5.7$_5$, $\gamma_{27.3}$**721.8**$_1$(100) M4

1015.1$_2$, $5/2^+$, $\gamma_{27.3}$**987.8**(100$_6$) M1+E2 $\delta=+0.20_5$, γ_0**1015.1**(9.4$_{31}$) E2

1272.9$_2$, $7/2^-$, $\gamma_{1015.1}$**257.8**(100$_5$) E1, $\gamma_{749.1}$**524.1**(30$_2$) E2

1415.4$_2$, $7/2^+$, *<0.3 ns*, $\gamma_{27.3}$**1388.0**(100) E2

1498.2$_2$, $5/2^+$, $\gamma_{1272.9}$**225.1**(10$_4$) D, $\gamma_{27.3}$**1471.0**(100$_{10}$) M1+E2

1525.0$_2$, $5/2^-,7/2^-$, $\gamma_{1415.4}$**109.5**(8$_4$), $\gamma_{1015.1}$**509.8**(100$_{40}$) E1

1666.7$_2$, $7/2^{(-)}$, $\gamma_{1525.0}$**141.6**(23$_9$), $\gamma_{1498.2}$**168.3**(100$_{18}$) D, $\gamma_{1272.9}$**393.9**(45$_9$) D+Q, $\gamma_{1015.1}$**651.7**(45$_{23}$)

1684.2$_2$, $9/2^-$, $\gamma_{1415.4}$**268.6**(63$_{13}$) E1, $\gamma_{749.1}$**935.1**(100$_{10}$) M1+E2

1809.9$_2$, $9/2^-$, $\gamma_{1272.9}$**537.0**(100) M1+E2 $\delta=+0.8_2$

2181.7$_2$, $(9/2^-)$, *<0.3 ns*, $\gamma_{1809.9}$**371.9**(15$_3$), $\gamma_{1272.9}$**908.9**(76$_8$), $\gamma_{749.1}$**1432.5**(100$_9$)

2195.7$_3$, $11/2^-$, $\gamma_{749.1}$**1446.8**(100) M1+E2

2200.1$_2$, $13/2^+$, *20.4$_{16}$ ns*, $\gamma_{1272.9}$**927.2**(100$_8$) E3, $\gamma_{749.1}$**1451.3**(56$_4$) E1+M2+E3

2258.5$_3$, $11/2^-$, $\gamma_{1809.9}$**448.6**(40$_7$) M1+E2 $\delta=+0.3_1$, $\gamma_{1272.9}$**985.6**(100$_7$) E2

2301.7$_3$, $13/2^+$, $\gamma_{749.1}$**1552.8**(100) E1

2382.3$_2$, $(9/2^-)$, $\gamma_{2181.7}$**200.6**(51$_5$), $\gamma_{1809.9}$**572.4**(100$_{14}$) D+Q, $\gamma_{1684.2}$**698.0**(39$_4$), $\gamma_{1272.9}$**1109.4**(100$_{14}$)

2411.4$_2$, $15/2^+$, $\gamma_{2301.7}$**109.8**(100$_8$) M1+E2, $\gamma_{2200.1}$**211.7**(14$_5$) M1+(E2)

2432.2$_2$, $17/2^+$, *0.37$_{15}$ ns*, $\gamma_{2411.4}$**20.7**(62$_3$) $\delta<0.7$, $\gamma_{749.1}$**1683.6**(100$_8$) E3

2442.6$_3$, $13/2^-$, $\gamma_{2195.7}$**247.1**(100) M1(+E2) $\delta=+0.1_1$

2472.5$_4$(?), $\gamma_{2301.7}$**170.8**(100)

2640.8$_3$, $\gamma_{749.1}$**1891.3**

2657.8$_3$, $\gamma_{749.1}$**1909.0**

2784.0$_3$, $(11/2^+,13/2^+)$, $\gamma_{2442.6}$**341.4**(17$_6$), $\gamma_{749.1}$**2035.3**(100$_9$)

2823.2$_4$, $15/2^+$, $\gamma_{2200.1}$**623.1**(100) M1+E2 $\delta=+0.8_3$

2872.6$_4$, $\gamma_{1809.9}$**1062.7**(100)

2885.6$_3$, $(13/2,15/2,17/2)^-$, $\gamma_{2411.4}$**474.6**(100) E1

2935.0$_3$, $\gamma_{749.1}$**2185.4**

2974.4$_2$, $(13/2^+,15/2^+)$, $\gamma_{2784.0}$**190.7**(100$_{20}$) M1(+E2), $\gamma_{2657.8}$**315.0**, $\gamma_{2442.6}$**532.1**(32$_8$), $\gamma_{2411.4}$**563.4**(32$_8$) M1(+E2)

2987.2$_4$, $\gamma_{2442.6}$**544.6**(100)

3105.2$_3$, $\gamma_{2935.0}$**169.7**, $\gamma_{2442.6}$**662.7**, $\gamma_{2411.4}$**693.9**

3175.8$_3$, $\gamma_{2974.4}$**201.4**(100$_{30}$) D, $\gamma_{2885.6}$**290.2**(80$_{20}$) M1+(E2)

3194.4$_2$, $\gamma_{2974.4}$**220.3**(100$_{43}$) D, $\gamma_{2885.6}$**309.1**(57$_{29}$), $\gamma_{2657.8}$**535.5**, $\gamma_{2640.8}$**553.3**

3207.2$_3$, $17/2^+$, $\gamma_{3105.2}$**101.5**, $\gamma_{2432.2}$**775.5**(19$_{10}$), $\gamma_{2411.4}$**795.9**(100$_6$) M1+E2 $\delta=-0.13_4$

3285.0$_4$, $\gamma_{3207.2}$**77.8**(100)

3353.8$_4$, $\gamma_{2974.4}$**379.4**(100)

3356.8$_3$, $19/2^+$, $\gamma_{3207.2}$**149.8**(30$_3$) D, $\gamma_{2432.2}$**924.7**(100$_6$) M1, $\gamma_{2411.4}$**945.2**

3457.9$_3$, $21/2^+$, $\gamma_{3356.8}$**101.3**(100$_{20}$) D, $\gamma_{3194.4}$**263.5**, $\gamma_{2432.2}$**1025.3**(40$_{20}$) E2

3469.3$_3$, $\gamma_{3356.8}$**112.5**(100)

3506.3$_3$, $\gamma_{3469.3}$**37.0**, $\gamma_{3457.9}$**48.4**

3511.3$_5$, $\gamma_{3175.8}$**335.5**(100)

3558.9$_4$, $\gamma_{3506.3}$**52.5**

3573.1$_4$, $\gamma_{3457.9}$**115.2**(100)

3585.5$_4$(?), $\gamma_{3207.2}$**378.3**(100)

3602.9$_4$(?), $(19/2)$, $\gamma_{3207.2}$**395.7**(100) D

3652.8$_4$, $\gamma_{3558.9}$**93.7**

3674.0$_4$, $\gamma_{3558.9}$**115.1**

3694.4$_4$, $\gamma_{2301.7}$**1392.7**

4037.3$_3$, $\gamma_{3558.9}$**478.3**, $\gamma_{3506.3}$**530.9**, $\gamma_{3469.3}$**568.0**, $\gamma_{3457.9}$**579.3**, $\gamma_{3194.4}$**843.0**

4155.7$_4$, $\gamma_{4037.3}$**118.4**, $\gamma_{3652.8}$**502.8**, $\gamma_{3558.9}$**596.7**, $\gamma_{3506.3}$**649.5**

4160.4$_4$, $\gamma_{4155.7}$**4.7**, $\gamma_{3652.8}$**507.5**

4240.4$_4$, $\gamma_{4155.7}$**84.7**, $\gamma_{3652.8}$**587.7**, $\gamma_{3558.9}$**681.6**

4283.4$_5$, $\gamma_{3674.0}$**609.4**

4336.3$_5$, $\gamma_{4240.4}$**96.0**

4539.6$_4$, $\gamma_{4160.4}$**379.1**

4901.3$_5$, $\gamma_{3674.0}$**1227.4**

4936.4$_5$, $\gamma_{4539.6}$**396.8**, $\gamma_{4283.4}$**653.0**

5023.6$_5$, $\gamma_{4901.3}$**122.4**, $\gamma_{4539.6}$**483.8**, $\gamma_{4283.4}$**740.0**

5032.8$_5$, $\gamma_{4160.4}$**872.4**

5316.7$_5$, $\gamma_{4539.6}$**777.1**

5414.2$_5$, $\gamma_{4936.4}$**477.7**

5414.5$_5$, $\gamma_{5023.6}$**390.7**

5446.5$_5$, $\gamma_{3674.0}$**1772.3**

5464.6$_5$, $\gamma_{4901.3}$**563.3**

5487.5$_5$, $\gamma_{4336.3}$**1151.3**

5536.8$_4$, $\gamma_{5032.8}$**503.9**, $\gamma_{4539.6}$**997.2**, $\gamma_{4160.4}$**1376.5**

5684.6$_5$, $\gamma_{5446.5}$**238.0**, $\gamma_{4283.4}$**1401.3**

5729.8$_5$, $\gamma_{5536.8}$**193.1**, $\gamma_{5464.6}$**265.2**, $\gamma_{5414.2}$**315.5**, $\gamma_{4936.4}$**793.3**, $\gamma_{4539.6}$**1190.3**

5754.6$_5$, $\gamma_{5729.8}$**25.0**, $\gamma_{5414.5}$**339.9**

5906.0$_6$, $\gamma_{5414.5}$**491.5**

5931.1$_5$, $\gamma_{5754.6}$**176.4**

6069.8$_5$, $\gamma_{5931.1}$**138.7**

6159.7$_6$, $\gamma_{5684.6}$**475.1**

6264.9$_6$, $\gamma_{5487.5}$**777.4**

6547.2$_6$, $\gamma_{5487.5}$**1059.7**

6682.1$_6$, $\gamma_{6069.8}$**612.3**

6698.8$_6$, $\gamma_{5931.1}$**767.7**

6866.0$_6$, $\gamma_{6547.2}$**318.8**

6899.9$_6$, $\gamma_{5931.1}$**968.8**

6955.7$_6$, $\gamma_{5487.5}$**1468.2**

7033.6$_6$, $\gamma_{5931.1}$**1102.5**

7098.0$_6$, $\gamma_{7033.6}$**64.3**, $\gamma_{6899.9}$**198.1**, $\gamma_{6698.8}$**399.1**

7220.9$_7$, $\gamma_{6682.1}$**538.8**

7223.0$_7$, $\gamma_{6866.0}$**357.0**

7263.4$_6$, $\gamma_{6547.2}$**716.2**

7472.6$_6$, $\gamma_{7098.0}$**374.6**, $\gamma_{6682.1}$**790.6**

7502.9$_6$, $\gamma_{6547.2}$**955.7**

7716.0$_7$, $\gamma_{7472.6}$**244.0**

8120.6$_7$, $\gamma_{7502.9}$**617.7**

8183.2$_6$, $\gamma_{6955.7}$**1227.4**, $\gamma_{6547.2}$**1636.2**

8198.6$_6$, $\gamma_{6069.8}$**2128.8**

8211.9$_6$, $\gamma_{6955.7}$**1256.2**, $\gamma_{6547.2}$**1664.6**, $\gamma_{6069.8}$**2141.9**

8246.8$_6$, $\gamma_{6547.2}$**1699.7**

8386.0$_8$, $\gamma_{7223.0}$**1163.0**

8636.8$_7$, $\gamma_{7716.0}$**920.2**

8733.7$_6$, $\gamma_{8246.8}$**486.9**, $\gamma_{8211.9}$**521.7**, $\gamma_{8198.6}$**535.2**, $\gamma_{8183.2}$**550.6**

8804.0$_7$, $\gamma_{7716.0}$**1087.4**

9024.7$_8$, $\gamma_{8636.8}$**387.9**

9372.7$_8$, $\gamma_{8386.0}$**986.7**

9377.2$_6$, $\gamma_{8733.7}$**643.5**

9601.1$_9$, $\gamma_{9024.7}$**576.4**

10203.4$_7$, $\gamma_{9377.2}$**826.2**

10255.7$_7$, $\gamma_{9377.2}$**878.5**

10417.4$_7$, $\gamma_{9377.2}$**1040.2**

11333.0$_8$, $\gamma_{10255.7}$**1077.3**

12175.5$_8$, $\gamma_{11333.0}$**842.5**

A **x**, J

A **723.2+x**, $J+2$, γ_x**723.2**$_7$(0.41$_5$)

A **1492.8+x**, $J+4$, $\gamma_{723.2+x}$**769.6**$_3$(1.00$_{12}$)

A **2310.9+x**, $J+6$, $\gamma_{1492.8+x}$**818.1**$_3$(0.85$_{10}$)

A **3178.9+x**, $J+8$, $\gamma_{2310.9+x}$**868.0**$_3$(0.85$_{10}$)

A **4097.7+x**, $J+10$, $\gamma_{3178.9+x}$**918.8**$_5$(1.02$_{12}$)

A **5068.5+x**, $J+12$, $\gamma_{4097.7+x}$**970.8**$_3$(0.94$_{11}$)

A **6092.3+x**, $J+14$, $\gamma_{5068.5+x}$**1023.8**$_3$(1.12$_{14}$)

A **7169.4+x**, $J+16$, $\gamma_{6092.3+x}$**1077.1**$_3$(1.02$_{11}$)

A **8300.4+x**, $J+18$, $\gamma_{7169.4+x}$**1131.0**$_3$(0.84$_{10}$)

A **9486.3+x**, $J+20$, $\gamma_{8300.4+x}$**1185.9**$_4$(0.94$_{11}$)

A **10726.5+x**, $J+22$, $\gamma_{9486.3+x}$**1240.2**$_6$(0.75$_8$)

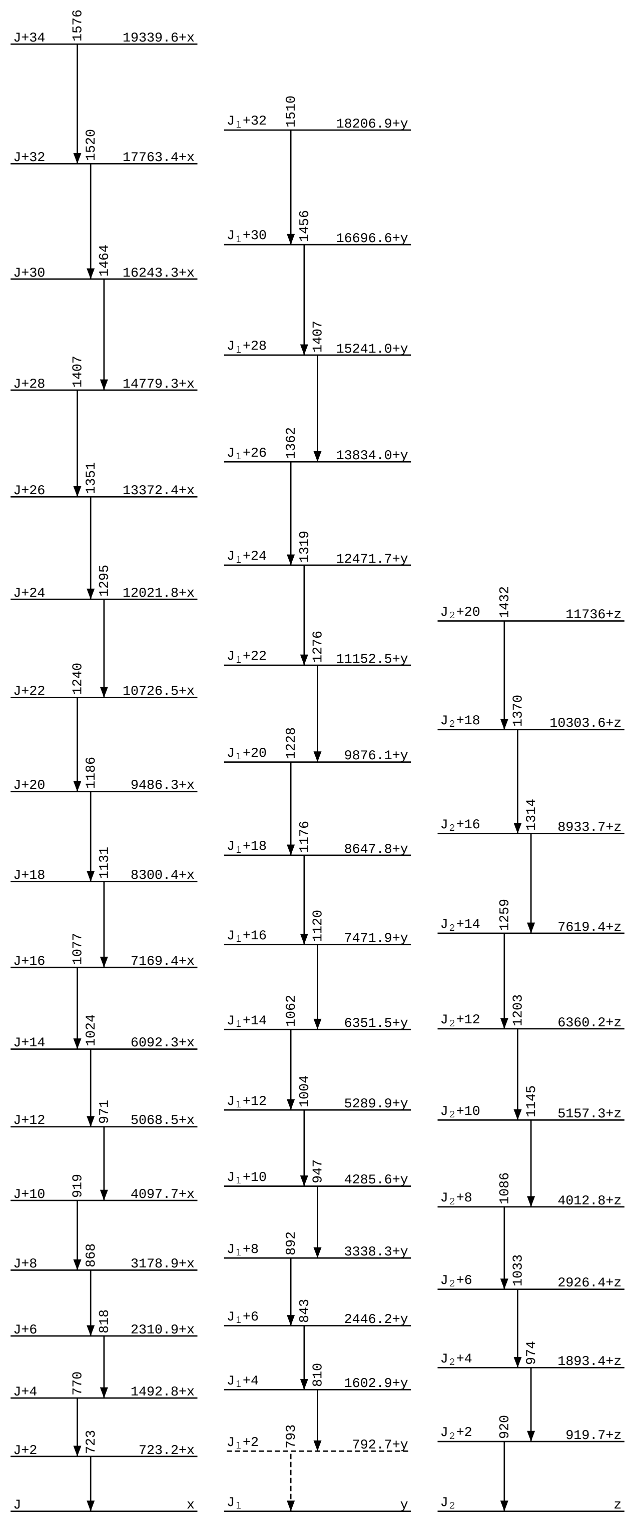
A **12021.8+x**, $J+24$, $\gamma_{10726.5+x}$**1295.3**$_4$(0.63$_8$)

A **13372.4+x**, $J+26$, $\gamma_{12021.8+x}$**1350.6**$_4$(0.58$_8$)

A **14779.3+x**, $J+28$, $\gamma_{13372.4+x}$**1406.8**$_4$(0.38$_6$)

A **16243.3+x**, $J+30$, $\gamma_{14779.3+x}$**1464.0**$_{10}$(0.30$_{10}$)

A **17763.4+x**, $J+32$, $\gamma_{\mathbf{16243.3+x}}$**1520.1**$_{7}$$(0.28_{5})$
A **19339.6+x**, $J+34$, $\gamma_{\mathbf{17763.4+x}}$**1576.2**$_{7}$$(0.25_{5})$
B **y**, J_1
B **792.7+y**(?), J_1+2, $\gamma_{\mathbf{y}}$**792.7**$_{11}$$(0.21_{7})$(?)
B **1602.9+y**, J_1+4, $\gamma_{\mathbf{792.7+y}}$**810.2**$_{3}$$(0.44_{6})$
B **2446.2+y**, J_1+6, $\gamma_{\mathbf{1602.9+y}}$**843.3**$_{3}$$(0.48_{7})$
B **3338.3+y**, J_1+8, $\gamma_{\mathbf{2446.2+y}}$**892.1**$_{3}$$(0.46_{6})$
B **4285.6+y**, J_1+10, $\gamma_{\mathbf{3338.3+y}}$**947.3**$_{3}$$(0.47_{6})$
B **5289.9+y**, J_1+12, $\gamma_{\mathbf{4285.6+y}}$**1004.3**$_{3}$$(0.60_{8})$
B **6351.5+y**, J_1+14, $\gamma_{\mathbf{5289.9+y}}$**1061.6**$_{3}$$(0.50_{7})$
B **7471.9+y**, J_1+16, $\gamma_{\mathbf{6351.5+y}}$**1120.4**$_{3}$$(0.54_{7})$
B **8647.8+y**, J_1+18, $\gamma_{\mathbf{7471.9+y}}$**1175.9**$_{3}$$(0.48_{7})$
B **9876.1+y**, J_1+20, $\gamma_{\mathbf{8647.8+y}}$**1228.3**$_{3}$$(0.43_{6})$
B **11152.5+y**, J_1+22, $\gamma_{\mathbf{9876.1+y}}$**1276.4**$_{3}$$(0.33_{5})$
B **12471.7+y**, J_1+24, $\gamma_{\mathbf{11152.5+y}}$**1319.2**$_{4}$$(0.36_{6})$
B **13834.0+y**, J_1+26, $\gamma_{\mathbf{12471.7+y}}$**1362.3**$_{4}$$(0.37_{6})$
B **15241.0+y**, J_1+28, $\gamma_{\mathbf{13834.0+y}}$**1407.0**$_{5}$$(0.24_{5})$
B **16696.6+y**, J_1+30, $\gamma_{\mathbf{15241.0+y}}$**1455.6**$_{7}$$(0.26_{5})$
B **18206.9+y**, J_1+32, $\gamma_{\mathbf{16696.6+y}}$**1510.3**$_{10}$$(0.18_{4})$
C **z**, J_2
C **919.7+z**, J_2+2, $\gamma_{\mathbf{z}}$**919.7**$_{10}$$(0.06_{2})$
C **1893.4+z**, J_2+4, $\gamma_{\mathbf{919.7+z}}$**973.7**$_{5}$$(0.12_{3})$
C **2926.4+z**, J_2+6, $\gamma_{\mathbf{1893.4+z}}$**1033.0**$_{5}$$(0.15_{3})$
C **4012.8+z**, J_2+8, $\gamma_{\mathbf{2926.4+z}}$**1086.4**$_{5}$$(0.13_{3})$
C **5157.3+z**, J_2+10, $\gamma_{\mathbf{4012.8+z}}$**1144.5**$_{5}$$(0.14_{3})$
C **6360.2+z**, J_2+12, $\gamma_{\mathbf{5157.3+z}}$**1202.9**$_{8}$$(0.13_{5})$
C **7619.4+z**, J_2+14, $\gamma_{\mathbf{6360.2+z}}$**1259.2**$_{5}$$(0.13_{3})$
C **8933.7+z**, J_2+16, $\gamma_{\mathbf{7619.4+z}}$**1314.3**$_{7}$$(0.10_{3})$
C **10303.6+z**, J_2+18, $\gamma_{\mathbf{8933.7+z}}$**1369.9**$_{12}$$(0.09_{4})$
C **11736+z**, J_2+20, $\gamma_{\mathbf{10303.6+z}}$**1432.1**$_{18}$$(0.08_{3})$



SD-1 band (1995Rz03,2000Rz01) SD-2 band (1995Rz03,2000Rz01) SD-3 band (1995Rz03)

$^{145}_{64}Gd_{81}$

$^{146}_{64}$Gd$_{82}$

S$_n$: 11222 $_{37}$, S$_p$: 5385 $_5$

Nuclear Bands

A SD-1 band (1995Sc31,1990He14,1993Ha19,2001Cl05)
  Q$_0$=13.9$_4$

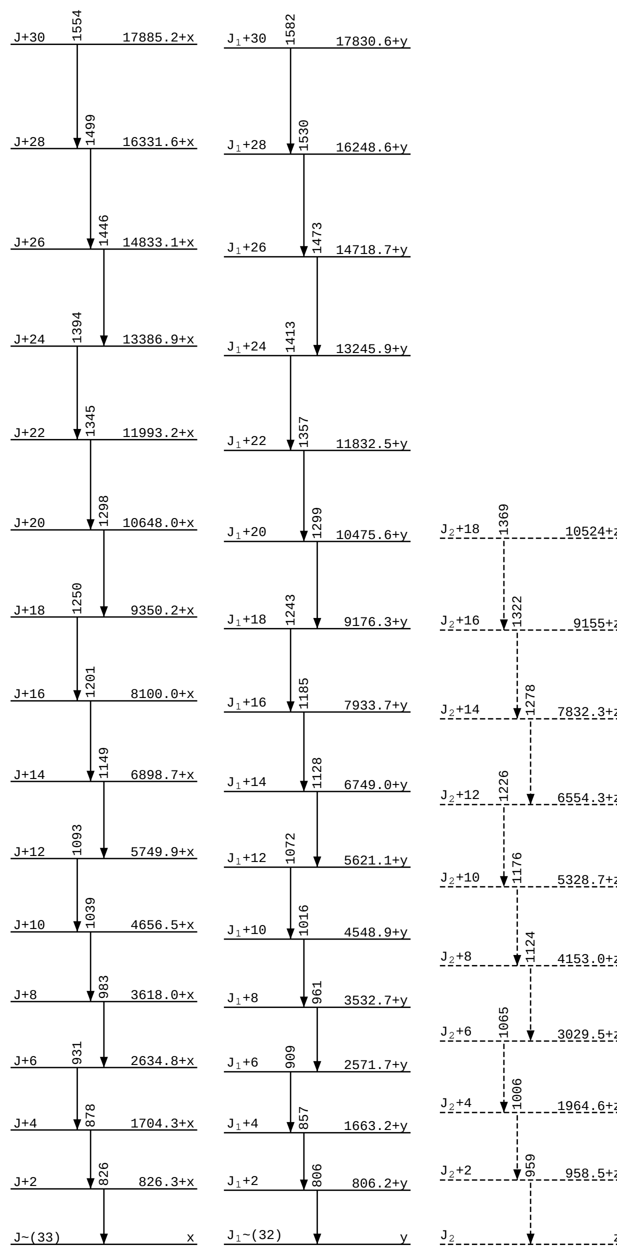
B SD-2 band (1995Sc31,1991Rz01,1993Ha19,2001Cl05)
  Q$_0$=13.9$_3$

C SD-3 band (?) (1995Sc31)

Levels and γ-ray branchings:

0, 0^+, *48.27$_{10}$ d*, %ε+%β$^+$=100
1579.31$_{10}$, 3^-, *1.06$_{12}$ ns*, μ=+2.1$_9$, γ_0 **1579.3**$_1$(100) E3
1971.97$_{22}$, 2^+, *<0.7 ps*, γ_0 **1972.0**$_3$(100) E2
2165.0$_3$, 0^+, *375$_{40}$ ps*, $\gamma_{1971.97}$ **193.0**$_5$(≈ 23), γ_0 **2165.0**$_3$ E0
2611.39$_{14}$, 4^+, $\gamma_{1971.97}$ **638**$_1$(≈ 1.7), $\gamma_{1579.31}$ **1032.1**$_1$(100$_{10}$) E1
2657.92$_{14}$, 5^-, $\gamma_{1579.31}$ **1078.6**$_1$(100) E2
2981.93$_{17}$, 7^-, *7.2$_4$ ns*, μ=+9.0$_2$, $\gamma_{2657.92}$ **324.0**$_1$(100) E2
2986.0$_{10}$, (2^+), γ_0 **2986**$_1$(100)
2996.6$_3$, $(4)^-$, $\gamma_{1579.31}$ **1417.2**$_3$(100) M1
3020.0$_{20}$, 0^+, γ_0 **3020**$_2$(100) E0
3031.20$_{23}$, 3^+, $\gamma_{1971.97}$ **1059.3**$_2$(100$_{30}$) M1, $\gamma_{1579.31}$ **1451.7**$_3$(50$_{20}$)
3098.82$_{17}$, 6^-, $\gamma_{2981.93}$ **116.7**, $\gamma_{2657.92}$ **440.9**$_1$ M1
3182.42$_{19}$, 8^-, $\gamma_{2981.93}$ **200.5**$_1$(100) M1+E2 $\delta = +0.151^4_3$
3190$_3$, 2^+
3238$_3$, 2^+
3287.09$_{25}$, $(3,5)^+$, $\gamma_{2611.39}$ **675.7**$_2$(100) M1
3290.1$_3$, 7^-, $\gamma_{2981.93}$ **308.2**$_2$(100) M1
3293.48$_{20}$, 8^-, *<300 ps*, $\gamma_{3182.42}$ **111.1**$_1$(32$_4$) M1, $\gamma_{2981.93}$ **311.4**$_2$(100$_9$) M1+E2 $\delta = -0.032^{12}_{13}$
3312.8$_4$, $5^{(-)}$, $\gamma_{2657.92}$ **654.8**$_4$(100$_{29}$) (M1), $\gamma_{2611.39}$ **701.6**$_5$(≈ 8.8)
3320$_3$
3359$_3$, 2^+
3383$_3$, 2^+
3383.99$_{19}$, 6^-, $\gamma_{3098.82}$ **285.2**$_2$(24$_6$) M1, $\gamma_{2981.93}$ **402.0**$_2$(29$_{12}$), $\gamma_{2657.92}$ **726.1**$_2$(100$_{12}$) M1
3389.0$_{11}$, $(3,4)$, $\gamma_{1971.97}$ **1417**$_1$(100)
3411.8$_4$, (4), $\gamma_{2996.6}$ **415.2**$_3$(100$_{33}$), $\gamma_{2611.39}$ **800.6**$_5$(≈ 67)
3416.3$_{10}$, (4), $\gamma_{1579.31}$ **1837**$_1$(100) D
3422.6$_5$, 3^-, $\gamma_{1579.31}$ **1843.3**$_5$(100) D
3428.06$_{21}$, 9^-, *<300 ps*, $\gamma_{3293.48}$ **134.6**$_1$(100$_6$) M1+E2 $\delta = -0.15^4_6$, $\gamma_{3182.42}$ **245.6**$_2$(7.5$_{25}$) M1+E2, $\gamma_{2981.93}$ **446.1**$_3$(7.5$_{25}$) E2
3436.3$_4$, (3), $\gamma_{1971.97}$ **1464.3**$_3$(100) D
3456.3$_{10}$, (5^-), $\gamma_{1579.31}$ **1877**$_1$(100) Q
3456.8$_4$, 6^+, $\gamma_{2657.92}$ **798.9**$_3$(100) E1
3460.3$_{10}$, (5^-), $\gamma_{1579.31}$ **1881**$_1$(100) Q
3463.3$_{10}$, (2^+), $\gamma_{1579.31}$ **1884**$_1$(100) D
3484.83$_{25}$, 6^+, $\gamma_{2657.92}$ **826.9**$_2$(100) E1
3485.0$_{20}$, 0^+, γ_0 **3485**$_2$(100) E0
3552$_3$, 2^+
3639.0$_{20}$, 0^+, γ_0 **3639**$_2$(100) E0
3660.1$_5$, 6^+, $\gamma_{2657.92}$ **1002.2**$_4$(100) E1
3687$_3$, (5^-)
3743$_3$, $(2^+,3^-)$
3765$_3$, (5^-)
3778.9$_4$, 8^+, $\gamma_{2981.93}$ **797.0**$_3$(100) E1
3783.6$_6$, $(5,6)^+$, $\gamma_{2611.39}$ **1172.2**$_5$(100) M1,E2
3854.1$_3$, 7^-, $\gamma_{3182.42}$ **671.7**$_3$(63$_{13}$) M1, $\gamma_{3098.82}$ **755.0**$_5$(≈ 63), $\gamma_{2981.93}$ **872.2**$_3$(100$_{38}$) M1
3855$_3$, (5^-)
3864.46$_{23}$, 10^+, *<300 ps*, $\gamma_{3428.06}$ **436.4**$_1$(100) E1
3908$_3$
3971$_3$, (3^-)
4005$_6$, $(4^+,5^-)$
4107.3$_3$, 8^+, $\gamma_{3182.42}$ **924.6**$_3$(100$_{33}$) E1, $\gamma_{2981.93}$ **1125.7**$_3$(100$_{33}$) D
4121$_6$, $(4^+,5^-)$
4215$_6$
4230$_6$, (5^-)
4248.2$_6$, $(9,10^-)$, $\gamma_{3182.42}$ **1065.8**$_5$(100)
4299$_6$, (2^+)
4336$_6$, (4^+)
4368$_6$, (4^+)
4394$_6$
4409$_6$
4483$_6$, (4^+)
4501.7$_4$, 10^+, $\gamma_{3428.06}$ **1073.6**$_3$(100) E1
4534$_6$, 0^+
4540.6$_4$, 10^+, $\gamma_{3428.06}$ **1112.6**$_3$(100) D
4596$_6$, $(2^+,3^-)$
4638$_6$, $(5^-,6^+)$
4645.4$_4$, $11^{(-)}$, $\gamma_{3864.46}$ **780.9**$_3$(100) (E1)
4656$_6$
4686$_6$, $(2^+,3^-)$
4719.0$_4$, 4^-, $\gamma_{3422.6}$ **1296.7**, $\gamma_{2657.92}$ **2060.9**, $\gamma_{1579.31}$ **3139.6**$_4$
4726$_6$, $(2^+,3^-)$
4747$_6$, $(2^+,3^-)$
4793$_6$, $(2^+,3^-)$
4825$_6$, $(2^+,3^-)$
4828.5$_{11}$, $(5)^-$, $\gamma_{2996.6}$ **1831.9**(100)
4880$_6$, $(2^+,3^-)$
4905$_6$
4941$_6$, (2^+)
4976$_6$, $(2^+,3^-)$
5044$_6$, (2^+)
5086$_6$, $(2^+,3)$
5094.2$_4$, 11^+, $\gamma_{4501.7}$ **592.7**(33.6) M1, $\gamma_{3864.46}$ **1229.7**$_3$(100) M1+E2 $\delta = -1.67_7$
5115$_6$
5151$_6$
5177$_6$
5217$_6$
5258$_6$, (2^+)
5277.0$_4$, 11^+, $\gamma_{4540.6}$ **736.8**, $\gamma_{4501.7}$ **775**, $\gamma_{3864.46}$ **1412.5**$_3$ M1+E2
5289$_6$
5342$_6$, $(4^+,5^-)$
5350.2$_4$, 12^+, $\gamma_{3864.46}$ **1485.7**$_3$(100) E2
5388$_6$
5443$_6$
5447.5$_6$, 12^+, $\gamma_{4645.4}$ **802.1**(100) (E1), $\gamma_{3864.46}$ **1583.1**(95) E2
5482$_6$
5528$_6$
5528.5$_{11}$, 12^+, $\gamma_{5094.2}$ **434.3**(100) M1+E2 $\delta = +0.07^3_4$
5549$_6$
5700.2$_{11}$, $(12)^+$, $\gamma_{3864.46}$ **1835.7**(100) (E2)
5729.7$_{11}$, $(12)^+$, $\gamma_{3864.46}$ **1865.2**(100) (E2)
5791.3$_6$, 13^+, $\gamma_{5447.5}$ **343.8**(10.4) M1+E2, $\gamma_{5350.2}$ **440.9**(21.3) M1+E2, $\gamma_{5277.0}$ **514.2**(41.5) E2, $\gamma_{5094.2}$ **697.1**(100) E2
5893.6$_7$, 14^+, $\gamma_{5791.3}$ **102.3**(83) D, $\gamma_{5447.5}$ **446.2**(100) E2, $\gamma_{5350.2}$ **543.5**(87) E2
5995.4$_8$, 14^+, $\gamma_{5350.2}$ **645.3**(100) E2
6119.4$_8$, 15^+, $\gamma_{5995.4}$ **124**, $\gamma_{5893.6}$ **225.8** M1, $\gamma_{5791.3}$ **328**
6398.3$_9$, 16^+, $\gamma_{6119.4}$ **278.8** D, $\gamma_{5995.4}$ **402.9** E2, $\gamma_{5893.6}$ **504.9** Q
6470$_{30}$
6819.6$_{12}$, $17^{(+)}$, $\gamma_{6398.3}$ **421.3**(100) (M1+E2) $\delta = -0.13^8_{15}$
7033.3$_{11}$, 16^-, $\gamma_{6119.4}$ **913.8**(100) E1
7164.2$_{11}$, 17^-, $\gamma_{7033.3}$ **130.8**(17.7) M1+E2 $\delta = +0.28^{21}_5$, $\gamma_{6398.3}$ **766.0**(100) E1
7201.3$_{13}$, $\gamma_{6398.3}$ **803**(100)
7512.4$_{11}$, 16^+, $\gamma_{6398.3}$ **1114.2**(100) M1+E2 $\delta = +0.2_2$
7565.5$_{12}$, 17^-, $\gamma_{6398.3}$ **1167.2**(100) E1
7658.4$_{11}$, $\gamma_{6819.6}$ **838.8**(100), $\gamma_{6398.3}$ **1260**
7738.2$_{12}$, 17^+, $\gamma_{7512.4}$ **226** M1
7999.1$_{15}$, 18^+, $\gamma_{7738.2}$ **260.9**(100) M1+E2 $\delta = -0.07^5_8$
8029.4$_{10}$, 18^+, *1.5$_6$ ns*, $\gamma_{7738.2}$ **291.3**(35.8) M1+E2 $\delta = -0.021^{20}_{24}$, $\gamma_{7565.5}$ **463.9**(3.9) E1, $\gamma_{7512.4}$ **516.8**(22.4) E2, $\gamma_{7164.2}$ **865.1**(100) E1, $\gamma_{6398.3}$ **1631.0**(14.7) E2
8076.3$_{17}$, $\gamma_{7201.3}$ **875**(100)
8367.6$_{13}$, 18^+, $\gamma_{7738.2}$ **629.4**(10.6) M1+E2 $\delta = +4.5^{31}_{42}$, $\gamma_{7658.4}$ **709.1**(100)
8649.0$_{16}$, $19^{(-)}$, $\gamma_{7999.1}$ **649.9**(100) (E1)
8665.1$_{15}$, 19^+, $\gamma_{8367.6}$ **297.6**(100) M1+E2 $\delta = -0.086^{23}_{28}$

8803.3$_{20}$, $\gamma_{\mathbf{8076.3}}$**727**(100)
8914.9$_{14}$, 20^-, *4.3$_3$ ns*, μ=12.6$_{18}$, $\gamma_{\mathbf{8029.4}}$**885.5**(100) M2+E3 $\delta=-0.13^{6}_{4}$
9082.9$_{16}$, 20^+, $\gamma_{\mathbf{8665.1}}$**417.8**(100) M1+E2 $\delta=-0.27^{4}_{6}$, $\gamma_{\mathbf{8649.0}}$**433.9**
9224.7$_{17}$, 21^-, $\gamma_{\mathbf{8914.9}}$**309.8**(100) M1+E2 $\delta=-0.058^{15}_{17}$
9253.4$_{19}$, 21, $\gamma_{\mathbf{9082.9}}$**170.5**(100)
9256.4$_{19}$, 21^-, $\gamma_{\mathbf{9082.9}}$**173.5**(100) E1
9481.6$_{18}$, 22^-, $\gamma_{\mathbf{9224.7}}$**257**(100)
9494.3$_{21}$, $\gamma_{\mathbf{8803.3}}$**691**(100)
9526.2$_{22}$, 22^-, $\gamma_{\mathbf{9256.4}}$**269.8**(100) M1+E2
9744.3$_{21}$, $\gamma_{\mathbf{8803.3}}$**941**(100)
9961.9$_{17}$, 22^-, $\gamma_{\mathbf{8914.9}}$**1047.1**(100) E2
10005.6$_{24}$, 23^-, $\gamma_{\mathbf{9526.2}}$**479.4**(100) M1+E2 $\delta=-0.47^{10}_{17}$
10086.3$_{19}$, 23^-, $\gamma_{\mathbf{9224.7}}$**861.5**(100) E2
10265.8$_{18}$, 23^-, $\gamma_{\mathbf{9224.7}}$**1041.0**(100) E2
10439.3$_{22}$, $\gamma_{\mathbf{9744.3}}$**695**, $\gamma_{\mathbf{9494.3}}$**945**
10769.6$_{18}$, 24^-, $\gamma_{\mathbf{9961.9}}$**807.7**(63) E2, $\gamma_{\mathbf{9481.6}}$**1288.1**(100) E2
11023.0$_{18}$, 24^+, $\gamma_{\mathbf{10265.8}}$**757.1**(24.6) E1, $\gamma_{\mathbf{10086.3}}$**936.7**(100) E1
11098.3$_{24}$, $\gamma_{\mathbf{10439.3}}$**659**(100)
11243.4$_{18}$, 25^-, $\gamma_{\mathbf{10769.6}}$**474**, $\gamma_{\mathbf{10265.8}}$**977.6**(100) E2
11439.5$_{18}$, 25^+, $\gamma_{\mathbf{11023.0}}$**416.6**(30.2) M1+E2 $\delta=-0.25^{6}_{8}$, $\gamma_{\mathbf{10769.6}}$**669.9**(100) E1
11449$_{3}$, $\gamma_{\mathbf{11098.3}}$**351**(100)
11496.8$_{19}$, (25), $\gamma_{\mathbf{10769.6}}$**727.1**(100)
11528.9$_{19}$, 25^-, $\gamma_{\mathbf{11023.0}}$**505.6**(100) E1
11637.0$_{19}$, 26^+, $\gamma_{\mathbf{11528.9}}$**107.8**(17.8) E1, $\gamma_{\mathbf{11496.8}}$**140.2**(35.6), $\gamma_{\mathbf{11439.5}}$**197.8**(35.6) M1+E2, $\gamma_{\mathbf{11243.4}}$**393.8**(100) E1
11932.0$_{21}$, 27^+, $\gamma_{\mathbf{11637.0}}$**295.0**(100) M1+E2 $\delta=+0.042^{12}_{13}$
12890.2$_{23}$, 29^+, $\gamma_{\mathbf{11932.0}}$**958.2**(100) E2
13695.4$_{25}$, (30), $\gamma_{\mathbf{12890.2}}$**805.0**(100)
14013.0$_{25}$, $\gamma_{\mathbf{12890.2}}$**1123**(100)
14175.7$_{25}$, $\gamma_{\mathbf{14013.0}}$**163**, $\gamma_{\mathbf{13695.4}}$**480**
14196$_{3}$, $\gamma_{\mathbf{12890.2}}$**1306**(100)
14443$_{3}$, $\gamma_{\mathbf{14196}}$**247**(100)
14594.3$_{25}$, $\gamma_{\mathbf{13695.4}}$**899**, $\gamma_{\mathbf{12890.2}}$**1704**
15068$_{3}$, $\gamma_{\mathbf{14594.3}}$**474**(100)
15442$_{3}$, $\gamma_{\mathbf{15068}}$**374**(100)
15757$_{3}$, $\gamma_{\mathbf{15442}}$**315**(100)
16312$_{4}$, $\gamma_{\mathbf{15757}}$**555**(100)
A **x**, $J\approx(33)$
A **826.3+x**, $J+2$, $\gamma_{\mathbf{x}}$**826.3**$_{3}$(0.61$_{5}$)
A **1704.3+x**, $J+4$, $\gamma_{\mathbf{826.3+x}}$**878.0**$_{3}$(0.71$_{8}$)
A **2634.8+x**, $J+6$, $\gamma_{\mathbf{1704.3+x}}$**930.5**$_{2}$(0.84$_{7}$)
A **3618.0+x**, $J+8$, $\gamma_{\mathbf{2634.8+x}}$**983.2**$_{2}$(0.91$_{5}$)
A **4656.5+x**, $J+10$, $\gamma_{\mathbf{3618.0+x}}$**1038.6**$_{3}$(1.00$_{6}$)
A **5749.9+x**, $J+12$, $\gamma_{\mathbf{4656.5+x}}$**1093.4**$_{3}$(0.92$_{5}$)
A **6898.7+x**, $J+14$, $\gamma_{\mathbf{5749.9+x}}$**1148.8**$_{2}$(0.81$_{5}$)
A **8100.0+x**, $J+16$, $\gamma_{\mathbf{6898.7+x}}$**1201.2**$_{3}$(0.60$_{4}$)
A **9350.2+x**, $J+18$, $\gamma_{\mathbf{8100.0+x}}$**1250.3**$_{4}$(0.52$_{4}$)
A **10648.0+x**, $J+20$, $\gamma_{\mathbf{9350.2+x}}$**1297.8**$_{3}$(0.51$_{5}$)
A **11993.2+x**, $J+22$, $\gamma_{\mathbf{10648.0+x}}$**1345.1**$_{3}$(0.47$_{5}$)
A **13386.9+x**, $J+24$, $\gamma_{\mathbf{11993.2+x}}$**1393.7**$_{4}$(0.37$_{6}$)
A **14833.1+x**, $J+26$, $\gamma_{\mathbf{13386.9+x}}$**1446.2**$_{5}$(0.23$_{4}$)
A **16331.6+x**, $J+28$, $\gamma_{\mathbf{14833.1+x}}$**1498.5**$_{7}$(0.24$_{5}$)
A **17885.2+x**, $J+30$, $\gamma_{\mathbf{16331.6+x}}$**1553.6**$_{9}$(0.16$_{5}$)
B **y**, $J_1\approx(32)$
B **806.2+y**, J_1+2, $\gamma_{\mathbf{y}}$**806.2**$_{3}$(0.51$_{5}$)
B **1663.2+y**, J_1+4, $\gamma_{\mathbf{806.2+y}}$**857.0**$_{3}$(0.68$_{6}$)
B **2571.7+y**, J_1+6, $\gamma_{\mathbf{1663.2+y}}$**908.5**$_{3}$(0.89$_{9}$)
B **3532.7+y**, J_1+8, $\gamma_{\mathbf{2571.7+y}}$**961.1**$_{2}$(1.00$_{7}$)
B **4548.9+y**, J_1+10, $\gamma_{\mathbf{3532.7+y}}$**1016.2**$_{2}$(0.91$_{7}$)
B **5621.1+y**, J_1+12, $\gamma_{\mathbf{4548.9+y}}$**1072.2**$_{2}$(0.78$_{8}$)
B **6749.0+y**, J_1+14, $\gamma_{\mathbf{5621.1+y}}$**1127.8**$_{3}$(0.77$_{7}$)
B **7933.7+y**, J_1+16, $\gamma_{\mathbf{6749.0+y}}$**1184.8**$_{3}$(0.73$_{8}$)
B **9176.3+y**, J_1+18, $\gamma_{\mathbf{7933.7+y}}$**1242.6**$_{3}$(0.73$_{7}$)
B **10475.6+y**, J_1+20, $\gamma_{\mathbf{9176.3+y}}$**1299.3**$_{4}$(0.60$_{7}$)
B **11832.5+y**, J_1+22, $\gamma_{\mathbf{10475.6+y}}$**1356.9**$_{4}$(0.55$_{6}$)
B **13245.9+y**, J_1+24, $\gamma_{\mathbf{11832.5+y}}$**1413.4**$_{4}$(0.37$_{5}$)
B **14718.7+y**, J_1+26, $\gamma_{\mathbf{13245.9+y}}$**1472.7**$_{6}$(0.20$_{4}$)
B **16248.6+y**, J_1+28, $\gamma_{\mathbf{14718.7+y}}$**1529.9**$_{8}$(0.13$_{3}$)
B **17830.6+y**, J_1+30, $\gamma_{\mathbf{16248.6+y}}$**1582.0**$_{11}$(0.12$_{4}$)
C **z**(?), J_2
C **958.5+z**(?), J_2+2, $\gamma_{\mathbf{z}}$**958.5**$_{5}$(1.00$_{16}$)
C **1964.6+z**(?), J_2+4, $\gamma_{\mathbf{958.5+z}}$**1006.1**$_{6}$(0.84$_{14}$)
C **3029.5+z**(?), J_2+6, $\gamma_{\mathbf{1964.6+z}}$**1064.9**$_{6}$(0.94$_{16}$)
C **4153.0+z**(?), J_2+8, $\gamma_{\mathbf{3029.5+z}}$**1123.5**$_{8}$(0.73$_{16}$)
C **5328.7+z**(?), J_2+10, $\gamma_{\mathbf{4153.0+z}}$**1175.7**$_{8}$(0.69$_{16}$)
C **6554.3+z**(?), J_2+12, $\gamma_{\mathbf{5328.7+z}}$**1225.6**$_{10}$(0.64$_{18}$)
C **7832.3+z**(?), J_2+14, $\gamma_{\mathbf{6554.3+z}}$**1278.0**$_{14}$(0.49$_{17}$)
C **9155+z**(?), J_2+16, $\gamma_{\mathbf{7832.3+z}}$**1322.4**$_{11}$(0.59$_{17}$)
C **10524+z**(?), J_2+18, $\gamma_{\mathbf{9155+z}}$**1368.9**$_{19}$(0.30$_{17}$)



SD-1 band (1995Sc31,1990He14) SD-2 band (1995Sc31,1991Rz01) SD-3 band (1995Sc31)

$^{146}_{64}$Gd$_{82}$

$^{147}_{64}\mathbf{Gd}_{83}$

S_n: 7341 $_4$, S_p: 5529 $_7$

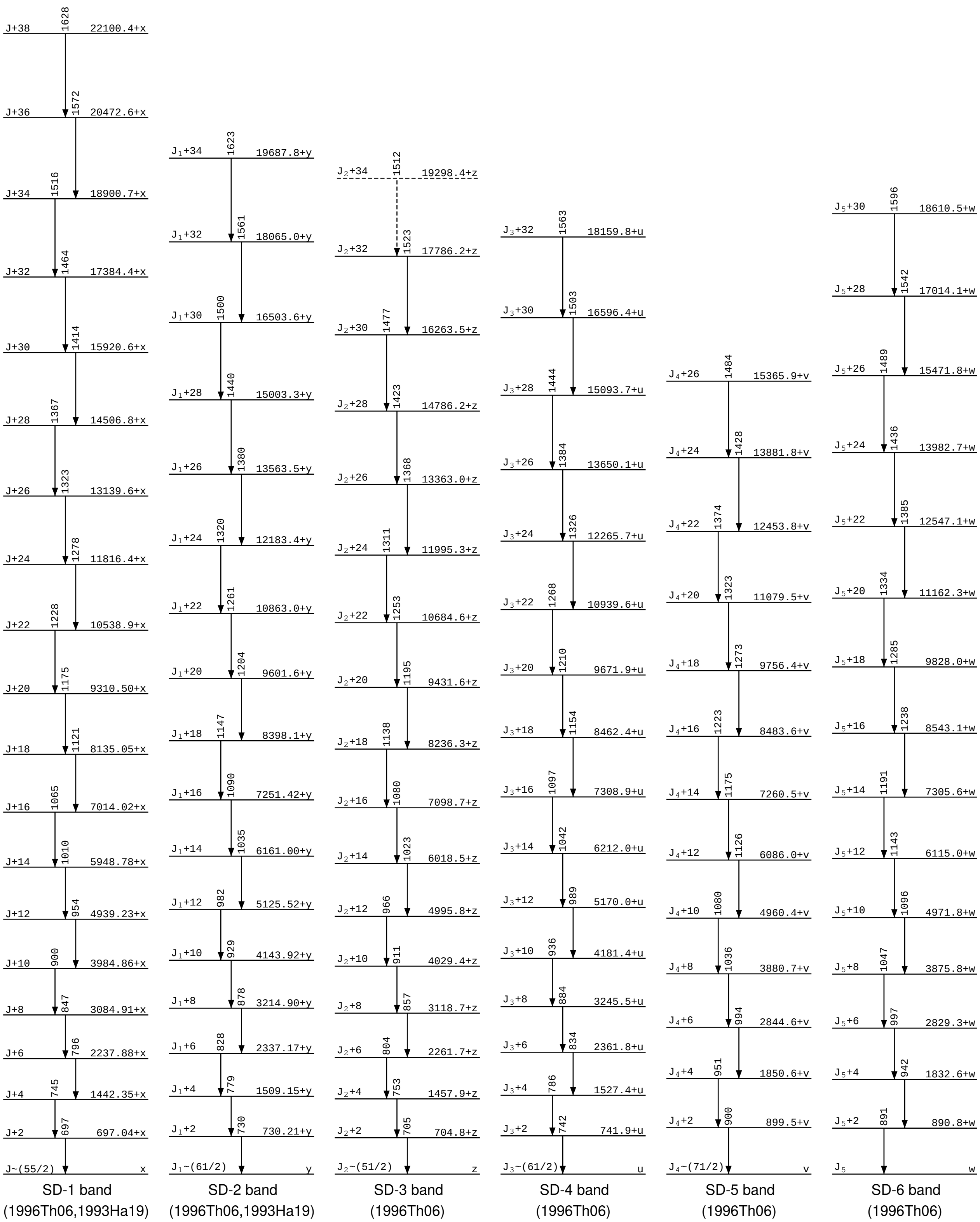
Nuclear Bands

A SD-1 band (1996Th06,1993Ha19,1991Zu01,1992Fl02,1997Zh03, 1998Ni06)
B SD-2 band (1996Th06,1993Ha19,1991Zu01,1997Zh03)
C SD-3 band (1996Th06)
D SD-4 band (1996Th06)
E SD-5 band (1996Th06)
F SD-6 band (1996Th06)

Levels and γ-ray branchings:

0, $7/2^-$, *38.06$_{12}$ h*, %ε+%β^+=100 , μ=1.02$_9$
997.1$_1$, $13/2^+$, *21.4$_{11}$ ns*, μ=+0.487$_{20}$, Q=-0.73$_7$, γ_0**997.1**$_1$(100) E3
1152.4$_1$, $3/2^-$, *≤0.2 ns*, γ_0**1152.4**$_1$(100) E2
1292.31$_{14}$, $(1/2)^+$, *≤0.2 ns*, $\gamma_{1152.4}$**139.9**$_1$(100$_8$) E1
1397.01$_{10}$, $9/2^-$, *0.35$_{21}$ ps*, γ_0**1397.0**$_1$(100$_8$) M1+E2
1412.01$_{18}$, $3/2^+$, *≤0.2 ns*, $\gamma_{1292.31}$**119.7**$_1$(100$_{11}$) M1
1628.3$_4$, $7/2^+$, *0.42$_{21}$ ps*, γ_0**1628.3**$_4$(100$_{37}$) E1
1643.0$_3$, $9/2^+$, γ_0**1643.0**$_3$(100$_{10}$) E1
1699.36$_{24}$, $3/2^+$, $\gamma_{1292.31}$**407.0**$_3$(50$_{14}$) M1+E2, $\gamma_{1152.4}$**547.0**$_3$(100$_{18}$) E1
1701.60$_{23}$, $11/2^+$, $\gamma_{997.1}$**704.5**$_2$(100$_9$) M1
1759.2$_{11}$, $(1/2)^+$, $\gamma_{1412.01}$**347.2**$_{10}$(100$_{37}$) M1
1797.1$_4$, $9/2^-$, *0.14$_7$ ps*, γ_0**1797.1**$_4$(100$_{11}$) M1+E2
1846.8$_{10}$, $(1/2)^-$, $\gamma_{1412.01}$**434.8**, $\gamma_{1292.31}$**554.7**, $\gamma_{1152.4}$**694.4**$_{10}$(100$_{60}$) M1
1944.1, $11/2^-$, $\gamma_{997.1}$**947**(20), γ_0**1944.1**(100) E2
2028.9$_{10}$, $15/2^{(+)}$, $\gamma_{997.1}$**1031.8**(100) (M1+E2)
2078.4, γ_0**2078.4**(100)
2385.9$_3$, $(13/2)^-$, $\gamma_{1797.1}$**609.6**(100$_{10}$), $\gamma_{997.1}$**1388.8**(59$_7$) E1
2438.91$_{23}$, $(15/2)^-$, $\gamma_{997.1}$**1441.8**$_2$(100$_{10}$) E1
2488.22$_{14}$, $17/2^+$, $\gamma_{997.1}$**1491.0**(100) E2
2489.8$_4$, $\gamma_{1701.60}$**788.2**$_3$(100$_{14}$)
2572.27$_{16}$, $19/2^-$, *0.37$_8$ ns*, $\gamma_{2488.22}$**84.0**$_1$(85$_{12}$), $\gamma_{997.1}$**1575.2**$_3$(100$_{19}$) E3
2625.9$_{10}$, $\gamma_{997.1}$**1628.8**$_{10}$(100$_{38}$)
2736.0$_5$, $\gamma_{2385.9}$**350.1**$_4$(100$_{40}$)
2760.47$_{17}$, $21/2^+$, *4.5$_2$ ns*, μ=+7.6$_{12}$, $\gamma_{2572.27}$**188.0**$_2$(25$_3$), $\gamma_{2488.22}$**272.3**$_1$(100$_8$) E2
2763.81$_{17}$, $(19/2)^+$, $\gamma_{2488.22}$**275.6**$_1$(100$_{11}$) M1
2941.6$_5$, $\gamma_{2488.22}$**453.4**$_4$(100$_{38}$)
2942.7$_3$, $\gamma_{2763.81}$**178.9**$_4$(48$_{14}$), $\gamma_{2760.47}$**182.2**$_3$(100$_{14}$)
2960.3$_{10}$, $\gamma_{2489.8}$**472.1**$_{10}$(100$_{67}$)
2971.5, $9/2^-,11/2^-$, $\gamma_{1944.1}$**1027.7**(50), $\gamma_{1397.01}$**1574.2**(17), γ_0**2971.5**(100)
3005.6, $9/2^-,11/2^-$, $\gamma_{1397.01}$**1608.0**(100), γ_0**3005.6**(100)
3038.32$_{20}$, $23/2^+$, $\gamma_{2760.47}$**277.9**$_2$(100$_{15}$) M1+E2
3082.5$_5$, $\gamma_{2763.81}$**318.7**$_4$(100$_{30}$)
3170.0$_5$, $\gamma_{2760.47}$**409.5**$_4$(100$_{38}$)
3185.8, $23/2^+$, $\gamma_{2760.47}$**425.6**$_3$(100$_{28}$) M1(+E2)
3204.8, $9/2^-,11/2^-$, $\gamma_{1944.1}$**1260.0**(50), $\gamma_{1797.1}$**1407.0**(25), $\gamma_{1397.01}$**1809.0**(38), γ_0**3204.8**(100)
3227.9$_5$, $\gamma_{2763.81}$**464.1**$_4$(100$_{43}$)
3322.7, $9/2^-,11/2^-$, γ_0**3322.7**(100)
3360.1$_5$, $\gamma_{3038.32}$**321.8**$_4$(100$_{38}$)
3399.08$_{19}$, $25/2^+$, $\gamma_{3038.32}$**360.8**$_1$(100) M1+E2, $\gamma_{2760.47}$**638.6**$_1$(10)
3581.97$_{21}$, $27/2^-$, *26.8$_7$ ns*, μ=+11.34$_{23}$, Q=-1.26$_8$, $\gamma_{3399.08}$**182.9**$_1$(100$_{20}$) E1, $\gamma_{3038.32}$**543.7**$_1$(16), $\gamma_{2760.47}$**821.3**$_2$(5.5)
3691.94$_{21}$, $25/2^-$, $\gamma_{3581.97}$**110.0**$_1$ M1, $\gamma_{3185.8}$**505.3**$_2$, $\gamma_{3038.32}$**653.6**$_1$(≈ 100)
3872.9, $13/2^-,11/2^-$, $\gamma_{997.1}$**2875.7**(100)
4006.94$_{23}$, $27/2^-$, $\gamma_{3581.97}$**424.8**$_2$(100)
4070.32$_{22}$, $27/2^-$, $\gamma_{3691.94}$**378.4**$_2$(100) M1, $\gamma_{3399.08}$**671.3**$_2$(20)
4230.00$_{22}$, $29/2^-$, $\gamma_{4070.32}$**159.7**$_1$(100) M1, $\gamma_{4006.94}$**223.0**$_1$(29)
4450.96$_{22}$, $29/2^-$, $\gamma_{4006.94}$**444.1**$_2$(68) E2, $\gamma_{3581.97}$**869.0**$_1$(100) M1
4617.92$_{22}$, $29/2^+$, $\gamma_{3581.97}$**1035.9**$_1$(100) E1
4844.08$_{22}$, $31/2^-$, $\gamma_{4450.96}$**393.1**$_2$(61), $\gamma_{4230.00}$**614.0**$_2$(100) E2, $\gamma_{3581.97}$**1262.0**$_2$(60)
4948.76$_{23}$, $31/2^+$, $\gamma_{4617.92}$**330.8**$_1$(100) M1, $\gamma_{4450.96}$**498.1**$_2$(14)
4971.93$_{22}$, $31/2^-$, $\gamma_{3581.97}$**1390.0**$_1$(100) E2
5265.10$_{22}$, $31/2^-$, $\gamma_{4844.08}$**421.0**$_1$(49) M1(+E2), $\gamma_{4450.96}$**814.1**$_1$(34) M1,(E2), $\gamma_{3581.97}$**1683.2**$_2$(100) E2
5382.32$_{22}$, $33/2^-$, $\gamma_{5265.10}$**117.2**$_1$(100) M1, $\gamma_{4971.93}$**410.6**$_2$(13), $\gamma_{4948.76}$**433.8**$_3$(≈ 9), $\gamma_{4844.08}$**538.1**$_2$(27), $\gamma_{4230.00}$**1152.3**$_1$(50) E2
5557.1$_4$, $35/2^+$, $\gamma_{4948.76}$**608.4**$_3$(100) E2
5583.05$_{25}$, $35/2^-$, $\gamma_{5382.32}$**200.7**$_2$(100) M1, $\gamma_{4971.93}$**611.1**$_2$(23) E2
5923.2$_3$, $37/2^-$, $\gamma_{5583.05}$**340.1**$_1$(100) M1
6236.1$_3$, $(35/2^+)$, $\gamma_{4948.76}$**1287.3**$_2$(100)
6471.4$_3$, $39/2^-$, $\gamma_{5923.2}$**548.2**$_1$(100) M1+E2
6541.4$_5$(?), $(37/2^+)$, $\gamma_{5557.1}$**984.3**$_3$(100) (M1+E2)
6621.4$_3$, $39/2^+$, $\gamma_{6541.4}$**80.3**$_3$ D(?), $\gamma_{5923.2}$**698.2**$_1$(100) E1, $\gamma_{5557.1}$**1064.4**$_3$(67) E2
6826.5(?), $\gamma_{6236.1}$**590.8**$_1$(100) (E2)(?)
6906.7$_3$, $41/2^+$, $\gamma_{6621.4}$**285.4**$_2$(95) M1+E2, $\gamma_{6471.4}$**435.3**$_2$(100) (E1), $\gamma_{5923.2}$**984**$_1$(19)
7035.4$_3$, $41/2^+$, $\gamma_{6826.5}$**208.3**$_4$(≈ 20), $\gamma_{6621.4}$**414.0**$_1$(100) M1+E2
7389.3$_4$, $45/2^+$, $\gamma_{7035.4}$**353.5**$_3$(45), $\gamma_{6906.7}$**482.5**$_3$(≈ 100) E2
7665.4(?), $(39/2,41/2)$, $\gamma_{5923.2}$**1743**$_1$(100)(?)
7825.4$_4$(?), $\gamma_{5923.2}$**1902**$_1$(100)(?)
7873.8$_4$, $41/2^-$, $\gamma_{7665.4}$**208.6**$_4$(63)(?), $\gamma_{7035.4}$**838.7**$_5$(59) E1, $\gamma_{6621.4}$**1253**$_1$(14)(?), $\gamma_{5923.2}$**1951**$_1$(100) Q
7963.9$_4$(?), $\gamma_{6906.7}$**1057.3**$_2$(100) E1
7993.9$_4$, $43/2^-$, $\gamma_{7873.8}$**120.1**$_1$(100) M1, $\gamma_{7825.4}$**168.5**$_2$(22), $\gamma_{7389.3}$**604.5**$_1$(13), $\gamma_{7035.4}$**959** (E1), $\gamma_{6906.7}$**1087.5**$_3$(11)
8153.6$_4$(?), $(47/2)^+$, $\gamma_{7389.3}$**764.4**$_2$(100) M1
8333.4$_4$, $45/2^+$, $\gamma_{7993.9}$**339.0**$_3$(100) E1, $\gamma_{7963.9}$**369.5**$_2$(12) E1
8587.8$_4$, $(49/2^+)$, *510$_{20}$ ns*, μ=+10.9$_2$, Q=-3.24$_{18}$, $\gamma_{8333.4}$**254.4**$_1$(100) E2, $\gamma_{8153.6}$**434.5**$_3$(6), $\gamma_{7993.9}$**594.3**(4) (E3)(?)
9241, $(51/2)$, $\gamma_{8587.8}$**653.0**(100) D+(Q) $\delta=+0.09_8$
9507.0, $(51/2^+)$, *<1 ps*, $\gamma_{8587.8}$**919.1**(100) M1+E2 $\delta=+0.65^{16}_{12}$
9691.2, $(53/2^+)$, *3.1$_7$ ps*, $\gamma_{8587.8}$**1103.4**(100) E2
9879.8, $(53/2^-)$, *≈76 ps*, $\gamma_{9691.2}$**188.5**(100) (E1), $\gamma_{9507.0}$**372.7**(60) E1+(M2) $\delta=-0.05_4$, γ_{9241}**638.8**, $\gamma_{8587.8}$**1291.9**(7) E3+M2
10271.6, $(55/2^-)$, $\gamma_{9691.2}$**580.4**
10487.6, $(55/2^+)$, $\gamma_{9691.2}$**796.3**(100) M1+E2 $\delta=+0.29_4$, γ_{9241}**1246.9**
10688.7, $(57/2^-)$, *10$_3$ ps*, $\gamma_{9879.8}$**808.9**(100) E2
10747.2, $(57/2^+)$, $\gamma_{10487.6}$**259.6**(33) M1, $\gamma_{9691.2}$**1056.1**(100) E2
10993.3, $(59/2^-)$, *0.80$_5$ ns*, μ=+11$_2$, $\gamma_{10747.2}$**246.2**(27) E1, $\gamma_{10688.7}$**304.5**(100) M1+E2 $\delta=+0.27_4$, $\gamma_{10271.6}$**721**
11232.2, $(61/2^-)$, *17$_3$ ps*, $\gamma_{10993.3}$**238.9**(100) M1, $\gamma_{10688.7}$**543.6**(14) E2
11850.7, $(65/2^-)$, $\gamma_{11232.2}$**618.6**(100) E2
11930.3, $(61/2)$, $\gamma_{10993.3}$**936.8**(100) D+(Q) $\delta=-0.07_6$
12208.6, $(65/2^-)$, *≈1.4 ps*, $\gamma_{11232.2}$**976.4**(100) E2
12548.7, $(65/2)$, $\gamma_{11930.3}$**618.3**(100) E2
13104.7, $(67/2,69/2)$, $\gamma_{12208.6}$**896.1**(100) E2
13265.1, $(67/2)$, $\gamma_{12548.7}$**716.3**(36), $\gamma_{11850.7}$**1414.5**(100) D
13416, $67/2$, $\gamma_{12208.6}$**1208.0**(100) D
13446, $(69/2,71/2)$, $\gamma_{13104.7}$**341.3**
13446.5, $(69/2)$, $\gamma_{13265.1}$**181.3**(100), $\gamma_{12548.7}$**897.9**(100) E2
14433.2, $(71/2)$, $\gamma_{13446.5}$**986.7**(100) M1+E2 $\delta=+0.55_6$
14793(?)
15174.8, $(73/2)$, $\gamma_{14433.2}$**741.6**(100) D
15390, $(73/2)$, $\gamma_{15174.8}$**215.5**(50) D+Q $\delta=+0.34^{14}_{26}$, γ_{14793}**597.4**(100)
15691, $(75/2)$, γ_{15390}**300.3**(100) D
16777, γ_{15691}**1086**(100)
16937, $(79/2)$, γ_{15691}**1246**(100)
A **x**, J ≈ $(55/2)$
A **697.04+x**, J + 2, γ_x**697.04**$_5$(0.23$_{10}$)
A **1442.35+x**, J + 4, $\gamma_{697.04+x}$**745.31**$_6$(0.77$_{10}$)
A **2237.88+x**, J + 6, $\gamma_{1442.35+x}$**795.53**$_6$(0.90$_{10}$)
A **3084.91+x**, J + 8, $\gamma_{2237.88+x}$**847.03**$_6$(0.93$_8$)
A **3984.86+x**, J + 10, $\gamma_{3084.91+x}$**899.95**$_7$(1.06$_8$)
A **4939.23+x**, J + 12, $\gamma_{3984.86+x}$**954.36**$_7$(1.05$_{10}$)
A **5948.78+x**, J + 14, $\gamma_{4939.23+x}$**1009.55**$_7$(1.05$_{10}$)
A **7014.02+x**, J + 16, $\gamma_{5948.78+x}$**1065.24**$_6$(0.89$_{10}$)
A **8135.05+x**, J + 18, $\gamma_{7014.02+x}$**1121.03**$_7$(1.01$_{10}$)

A **9310.50+x**, $J+20$, $\gamma_{8135.05+x}$**1175.45**$_8(1.03_{10})$
A **10538.95+x**, $J+22$, $\gamma_{9310.50+x}$**1228.44**$_7(0.73_7)$
A **11816.48+x**, $J+24$, $\gamma_{10538.95+x}$**1277.52**$_9(0.79_8)$
A **13139.6+x**, $J+26$, $\gamma_{11816.48+x}$**1323.14**$_9(0.70_7)$
A **14506.8+x**, $J+28$, $\gamma_{13139.6+x}$**1367.21**$_{11}(0.49_8)$
A **15920.6+x**, $J+30$, $\gamma_{14506.8+x}$**1413.74**$_{11}(0.41_8)$
A **17384.4+x**, $J+32$, $\gamma_{15920.6+x}$**1463.77**$_{16}(0.38_8)$
A **18900.7+x**, $J+34$, $\gamma_{17384.4+x}$**1516.33**$_{23}(0.20_{10})$
A **20472.6+x**, $J+36$, $\gamma_{18900.7+x}$**1571.9**$_3$
A **22100.4+x**, $J+38$, $\gamma_{20472.6+x}$**1627.8**$_7$
B **y**, $J_1\approx(61/2)$
B **730.21+y**, J_1+2, γ_y**730.21**$_{12}(0.40_{15})$
B **1509.15+y**, J_1+4, $\gamma_{730.21+y}$**778.94**$_8(0.52_{15})$
B **2337.17+y**, J_1+6, $\gamma_{1509.15+y}$**828.02**$_8(0.92_{15})$
B **3214.90+y**, J_1+8, $\gamma_{2337.17+y}$**877.74**$_7(1.21_{20})$
B **4143.92+y**, J_1+10, $\gamma_{3214.90+y}$**929.02**$_7(0.87_{15})$
B **5125.52+y**, J_1+12, $\gamma_{4143.92+y}$**981.60**$_8(0.79_{15})$
B **6161.00+y**, J_1+14, $\gamma_{5125.52+y}$**1035.49**$_8(1.18_{20})$
B **7251.42+y**, J_1+16, $\gamma_{6161.00+y}$**1090.42**$_8(1.01_{20})$
B **8398.1+y**, J_1+18, $\gamma_{7251.42+y}$**1146.67**$_8(1.02_{20})$
B **9601.6+y**, J_1+20, $\gamma_{8398.1+y}$**1203.52**$_9(0.80_{15})$
B **10863.0+y**, J_1+22, $\gamma_{9601.6+y}$**1261.38**$_9(0.84_{15})$
B **12183.4+y**, J_1+24, $\gamma_{10863.0+y}$**1320.44**$_{10}(0.79_{17})$
B **13563.5+y**, J_1+26, $\gamma_{12183.4+y}$**1380.04**$_{12}(0.54_{20})$
B **15003.3+y**, J_1+28, $\gamma_{13563.5+y}$**1439.81**$_{13}(0.31_{20})$
B **16503.6+y**, J_1+30, $\gamma_{15003.3+y}$**1500.33**$_{16}(0.38_{20})$
B **18065.0+y**, J_1+32, $\gamma_{16503.6+y}$**1561.34**$_{24}(0.17_{10})$
B **19687.8+y**, J_1+34, $\gamma_{18065.0+y}$**1622.8**$_4$
C **z**, $J_2\approx(51/2)$
C **704.8+z**, J_2+2, γ_z**704.8**$_5$
C **1457.9+z**, J_2+4, $\gamma_{704.8+z}$**753.1**$_2$
C **2261.7+z**, J_2+6, $\gamma_{1457.9+z}$**803.8**$_2$
C **3118.7+z**, J_2+8, $\gamma_{2261.7+z}$**857.0**$_1$
C **4029.4+z**, J_2+10, $\gamma_{3118.7+z}$**910.7**$_1$
C **4995.8+z**, J_2+12, $\gamma_{4029.4+z}$**966.4**$_1$
C **6018.5+z**, J_2+14, $\gamma_{4995.8+z}$**1022.7**$_1$
C **7098.7+z**, J_2+16, $\gamma_{6018.5+z}$**1080.2**$_1$
C **8236.3+z**, J_2+18, $\gamma_{7098.7+z}$**1137.6**$_1$
C **9431.6+z**, J_2+20, $\gamma_{8236.3+z}$**1195.3**$_1$
C **10684.6+z**, J_2+22, $\gamma_{9431.6+z}$**1253.0**$_2$
C **11995.3+z**, J_2+24, $\gamma_{10684.6+z}$**1310.7**$_2$
C **13363.0+z**, J_2+26, $\gamma_{11995.3+z}$**1367.7**$_2$
C **14786.2+z**, J_2+28, $\gamma_{13363.0+z}$**1423.2**$_2$
C **16263.5+z**, J_2+30, $\gamma_{14786.2+z}$**1477.3**$_3$
C **17786.2+z**, J_2+32, $\gamma_{16263.5+z}$**1522.7**$_3$
C **19298.4+z**(?), J_2+34, $\gamma_{17786.2+z}$**1512.2**$_7$(?)
D **u**, $J_3\approx(61/2)$
D **741.9+u**, J_3+2, γ_u**741.9**$_4$
D **1527.4+u**, J_3+4, $\gamma_{741.9+u}$**785.5**$_4$
D **2361.8+u**, J_3+6, $\gamma_{1527.4+u}$**834.4**$_3$
D **3245.5+u**, J_3+8, $\gamma_{2361.8+u}$**883.7**$_3$
D **4181.4+u**, J_3+10, $\gamma_{3245.5+u}$**935.9**$_2$
D **5170.0+u**, J_3+12, $\gamma_{4181.4+u}$**988.6**$_2$
D **6212.0+u**, J_3+14, $\gamma_{5170.0+u}$**1042.0**$_2$
D **7308.9+u**, J_3+16, $\gamma_{6212.0+u}$**1096.9**$_2$
D **8462.4+u**, J_3+18, $\gamma_{7308.9+u}$**1153.5**$_2$
D **9671.9+u**, J_3+20, $\gamma_{8462.4+u}$**1209.5**$_2$
D **10939.6+u**, J_3+22, $\gamma_{9671.9+u}$**1267.7**$_2$
D **12265.7+u**, J_3+24, $\gamma_{10939.6+u}$**1326.1**$_3$
D **13650.1+u**, J_3+26, $\gamma_{12265.7+u}$**1384.4**$_3$
D **15093.7+u**, J_3+28, $\gamma_{13650.1+u}$**1443.6**$_3$
D **16596.4+u**, J_3+30, $\gamma_{15093.7+u}$**1502.7**$_5$
D **18159.8+u**, J_3+32, $\gamma_{16596.4+u}$**1563.4**$_7$
E **v**, $J_4\approx(71/2)$
E **899.5+v**, J_4+2, γ_v**899.5**$_4$
E **1850.6+v**, J_4+4, $\gamma_{899.5+v}$**951.1**$_3$
E **2844.6+v**, J_4+6, $\gamma_{1850.6+v}$**994.0**$_2$
E **3880.7+v**, J_4+8, $\gamma_{2844.6+v}$**1036.1**$_2$
E **4960.4+v**, J_4+10, $\gamma_{3880.7+v}$**1079.7**$_3$
E **6086.0+v**, J_4+12, $\gamma_{4960.4+v}$**1125.6**$_2$
E **7260.5+v**, J_4+14, $\gamma_{6086.0+v}$**1174.5**$_2$
E **8483.6+v**, J_4+16, $\gamma_{7260.5+v}$**1223.1**$_3$
E **9756.4+v**, J_4+18, $\gamma_{8483.6+v}$**1272.8**$_3$
E **11079.5+v**, J_4+20, $\gamma_{9756.4+v}$**1323.1**$_3$
E **12453.8+v**, J_4+22, $\gamma_{11079.5+v}$**1374.3**$_3$
E **13881.8+v**, J_4+24, $\gamma_{12453.8+v}$**1428.0**$_4$
E **15365.9+v**, J_4+26, $\gamma_{13881.8+v}$**1484.1**$_6$
F **w**, J_5
F **890.8+w**, J_5+2, γ_w**890.8**$_9$
F **1832.6+w**, J_5+4, $\gamma_{890.8+w}$**941.8**$_3$
F **2829.3+w**, J_5+6, $\gamma_{1832.6+w}$**996.7**$_2$
F **3875.8+w**, J_5+8, $\gamma_{2829.3+w}$**1046.5**$_3$
F **4971.8+w**, J_5+10, $\gamma_{3875.8+w}$**1096.0**$_2$
F **6115.0+w**, J_5+12, $\gamma_{4971.8+w}$**1143.2**$_2$
F **7305.6+w**, J_5+14, $\gamma_{6115.0+w}$**1190.6**$_2$
F **8543.1+w**, J_5+16, $\gamma_{7305.6+w}$**1237.5**$_3$
F **9828.0+w**, J_5+18, $\gamma_{8543.1+w}$**1284.9**$_3$
F **11162.3+w**, J_5+20, $\gamma_{9828.0+w}$**1334.3**$_3$
F **12547.1+w**, J_5+22, $\gamma_{11162.3+w}$**1384.8**$_3$
F **13982.7+w**, J_5+24, $\gamma_{12547.1+w}$**1435.6**$_4$
F **15471.8+w**, J_5+26, $\gamma_{13982.7+w}$**1489.1**$_4$
F **17014.1+w**, J_5+28, $\gamma_{15471.8+w}$**1542.3**$_6$
F **18610.5+w**, J_5+30, $\gamma_{17014.1+w}$**1596.4**$_{10}$


J+38 1628 22100.4+x
J+36 1572 20472.6+x
J+34 1516 18900.7+x
J+32 1464 17384.4+x
J+30 1414 15920.6+x
J+28 1367 14506.8+x
J+26 1323 13139.6+x
J+24 1278 11816.4+x
J+22 1228 10538.9+x
J+20 1175 9310.50+x
J+18 1121 8135.05+x
J+16 1065 7014.02+x
J+14 1010 5948.78+x
J+12 954 4939.23+x
J+10 900 3984.86+x
J+8 847 3084.91+x
J+6 796 2237.88+x
J+4 745 1442.35+x
J+2 697 697.04+x
J~(55/2) x
SD-1 band
(1996Th06,1993Ha19)
J1+34 1623 19687.8+y
J1+32 1561 18065.0+y
J1+30 1500 16503.6+y
J1+28 1440 15003.3+y
J1+26 1380 13563.5+y
J1+24 1320 12183.4+y
J1+22 1261 10863.0+y
J1+20 1204 9601.6+y
J1+18 1147 8398.1+y
J1+16 1090 7251.42+y
J1+14 1035 6161.00+y
J1+12 982 5125.52+y
J1+10 929 4143.92+y
J1+8 878 3214.90+y
J1+6 828 2337.17+y
J1+4 779 1509.15+y
J1+2 730 730.21+y
J1~(61/2) y
SD-2 band
(1996Th06,1993Ha19)
J2+34 1512 19298.4+z
J2+32 1523 17786.2+z
J2+30 1477 16263.5+z
J2+28 1423 14786.2+z
J2+26 1368 13363.0+z
J2+24 1311 11995.3+z
J2+22 1253 10684.6+z
J2+20 1195 9431.6+z
J2+18 1138 8236.3+z
J2+16 1080 7098.7+z
J2+14 1023 6018.5+z
J2+12 966 4995.8+z
J2+10 911 4029.4+z
J2+8 857 3118.7+z
J2+6 804 2261.7+z
J2+4 753 1457.9+z
J2+2 705 704.8+z
J2~(51/2) z
SD-3 band
(1996Th06)
J3+32 1563 18159.8+u
J3+30 1503 16596.4+u
J3+28 1444 15093.7+u
J3+26 1384 13650.1+u
J3+24 1326 12265.7+u
J3+22 1268 10939.6+u
J3+20 1210 9671.9+u
J3+18 1154 8462.4+u
J3+16 1097 7308.9+u
J3+14 1042 6212.0+u
J3+12 989 5170.0+u
J3+10 936 4181.4+u
J3+8 884 3245.5+u
J3+6 834 2361.8+u
J3+4 786 1527.4+u
J3+2 742 741.9+u
J3~(61/2) u
SD-4 band
(1996Th06)
J4+26 1484 15365.9+v
J4+24 1428 13881.8+v
J4+22 1374 12453.8+v
J4+20 1323 11079.5+v
J4+18 1273 9756.4+v
J4+16 1223 8483.6+v
J4+14 1175 7260.5+v
J4+12 1126 6086.0+v
J4+10 1080 4960.4+v
J4+8 1036 3880.7+v
J4+6 994 2844.6+v
J4+4 951 1850.6+v
J4+2 900 899.5+v
J4~(71/2) v
SD-5 band
(1996Th06)
J5+30 1596 18610.5+w
J5+28 1542 17014.1+w
J5+26 1489 15471.8+w
J5+24 1436 13982.7+w
J5+22 1385 12547.1+w
J5+20 1334 11162.3+w
J5+18 1285 9828.0+w
J5+16 1238 8543.1+w
J5+14 1191 7305.6+w
J5+12 1143 6115.0+w
J5+10 1096 4971.8+w
J5+8 1047 3875.8+w
J5+6 997 2829.3+w
J5+4 942 1832.6+w
J5+2 891 890.8+w
J5 w
SD-6 band
(1996Th06)

$^{147}_{64}Gd_{83}$

$^{148}_{64}\mathrm{Gd}_{84}$

S_n: 8983.9 $_{14}$, S_p: 6014.2 $_{26}$

Nuclear Bands

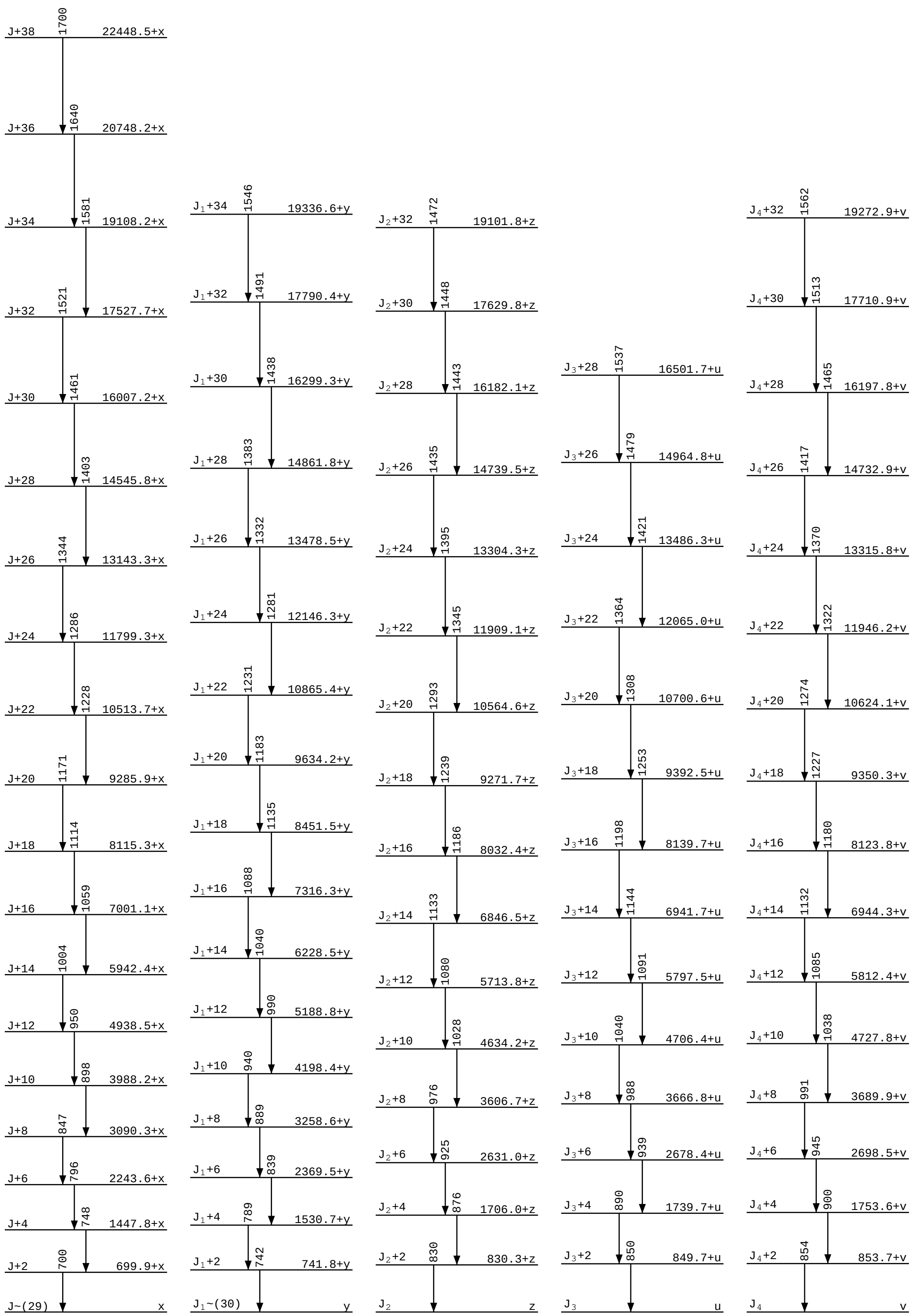
- A ν^2 states
- B ν^2 coupled to octupole vibration
- C $\nu^2\pi^{+1}\pi^{-1}$ states
- D $\nu^2\pi^2$ states
- E $\nu^2\pi^2$ coupled to octupole vibration
- F SD-1 band (1995DeZZ,1993Ha19,1988De10) Q_0=14.6$_2$
- G SD-2 band (1995DeZZ,1993Ha19,1996De04) Q_0=14.8$_3$
- H SD-3 band (1995DeZZ,1996De04) Q_0=17.8$_{13}$
- I SD-4 band (1995DeZZ,1996De04)
- J SD-5 band (1995DeZZ,1996De04)
- K SD-6 band (1995DeZZ,1996De04,1997Ha19)
- L SD-7 band (1998By02)
- M SD-8 band (1998By02)
- N SD-9 band (1998By02)

Levels and γ-ray branchings:

A **0**, 0^+, *74.6$_{30}$ y*, %α=100
A **784.432**$_{15}$, 2^+, γ_0**784.430**$_{16}$(100) E2
B **1273.489**$_{18}$, 3^-, *34.7$_{21}$ ps*, $\gamma_{784.432}$**489.049**$_{12}$(100.00$_{11}$) E1+M2 $\delta=+0.18_9$, γ_0**1274**(0.86$_{11}$)
A **1416.374**$_{20}$, 4^+, $\gamma_{1273.489}$**142.878**$_{14}$(2.90$_{13}$) E1, $\gamma_{784.432}$**631.947**$_{17}$(100$_2$) E2
A **1810.89**$_{12}$, 6^+, $\gamma_{1416.374}$**394.55**$_8$(100) E2
1834.59$_5$, $2^+,3^+$, $\gamma_{784.432}$**1050.15**$_4$(100) E2+M3
1863.445$_{24}$, 2^+, $\gamma_{1273.489}$**589.9**$_7$(5.2$_3$), $\gamma_{784.432}$**1079.025**$_{25}$(100.0$_{22}$) M1+E2 $\delta=+4.6^{35}_{14}$, γ_0**1863.39**$_4$(49.2$_{10}$)
B **1912.98**$_7$, 4^-, $\gamma_{1273.489}$**639.47**$_7$(100) M1
B **2082.00**$_7$, 5^-, $\gamma_{1912.98}$**169.2**$_1$(4.3), $\gamma_{1810.89}$**271.1**$_2$(8.8) E1+M2 $\delta\leq0.23$, $\gamma_{1416.374}$**666.0**$_4$(7.2) E1+M2 $\delta\leq0.34$, $\gamma_{1273.489}$**808.7**$_1$(100) E2
2188.67$_4$, 2^+, $\gamma_{1273.489}$**915.30**$_{12}$(14.2$_{16}$), $\gamma_{784.432}$**1404.22**$_4$(100.0$_{24}$) M1+E2, γ_0**2188.65**$_7$(80$_3$)
2233.60$_4$, 3^-, $\gamma_{1273.489}$**960.09**$_7$(100$_9$) M1+E2, $\gamma_{784.432}$**1449.16**$_4$(84$_3$) E1+M2 $\delta=+0.09_{10}$
2310.97$_5$, 2^+, $\gamma_{784.432}$**1526.45**$_7$(55.0$_{22}$) M1+E2, γ_0**2311.03**$_7$(100$_3$)
2424.10$_9$, $3^+,4^+$, $\gamma_{1416.374}$**1007.72**$_9$(100$_9$) M1+E2, $\gamma_{784.432}$**1639.66**$_{22}$(65$_9$)
2503.70$_6$, $(1,2,3)^-$, $\gamma_{1273.489}$**1230.18**$_5$(56.6$_{23}$) E2,M1, $\gamma_{784.432}$**1719.63**$_{20}$(100$_6$)
2505.80$_3$, 3^-, $\gamma_{1416.374}$**1089.41**$_3$(100.0$_{22}$) E1, $\gamma_{784.432}$**1722.5**$_3$(15$_4$)
2522.03$_{11}$, 4^+, $\gamma_{1416.374}$**1105.65**$_{11}$(100$_5$) M1+E2, $\gamma_{1273.489}$**1248.2**$_8$(33$_8$), $\gamma_{784.432}$**1737.9**$_6$(27$_5$)
B **2563.83**$_{13}$, 7^-, $\gamma_{2082.00}$**481.65**$_{10}$(100) E2, $\gamma_{1810.89}$**752.8**$_2$(68) E1
B **2567.05**$_{22}$, 6^-, $\gamma_{2082.00}$**484.8**$_2$ M1, $\gamma_{1912.98}$**653.6**$_5$ E2, $\gamma_{1810.89}$**755.6**$_4$
2614.59$_5$, 2^+, $\gamma_{1273.489}$**1342.2**$_6$(9$_4$), $\gamma_{784.432}$**1830.14**$_4$(100$_6$) M1+E2, γ_0**2614.3**$_6$(38$_3$)
C **2632.80**$_9$, 5^-, $\gamma_{1810.89}$**820.3**$_4$ E1+M2 $\delta\leq0.34$, $\gamma_{1416.374}$**1215.2**$_4$ E1+M2 $\delta\leq0.37$, $\gamma_{1273.489}$**1357.8**$_4$, $\gamma_{784.432}$**1848.36**$_8$
A **2693.28**$_{13}$, 8^+, $\gamma_{2563.83}$**129.5**$_2$(3.4) E1, $\gamma_{1810.89}$**882.41**$_8$(100) E2
B **2694.62**$_{16}$, 9^-, *16.6$_3$ ns*, *μ*=-0.162$_{18}$, Q=1.01$_5$, $\gamma_{2563.83}$**130.8**$_3$(72$_4$) E2, $\gamma_{1810.89}$**883.6**$_3$(100) E3
2700.06$_7$, $(1^-,2^+)$, $\gamma_{1273.489}$**1426.49**$_8$(43$_3$), $\gamma_{784.432}$**1915.54**$_{19}$(63$_4$) M1+E2 $\delta=+0.8_6$, γ_0**2700.57**$_{20}$(100$_4$)
2763$_3$, 4^+
A **2782.54**$_{19}$, $\gamma_{1810.89}$**971.7**$_3$(68), $\gamma_{1416.374}$**1366.4**$_3$(100)
A **2868.67**$_{22}$, $(5)^+$, $\gamma_{1810.89}$**1057.7**$_3$(100) M1,E2
2872.89$_7$, $(2^-,3,4^+)$, $\gamma_{1912.98}$**960.09**$_7$(100$_9$)(?), $\gamma_{1273.489}$**1599.39**$_6$(100$_3$), $\gamma_{784.432}$**2089**$_1$(41$_6$)
2886.31$_{10}$, $(2^+,3,4^+)$, $\gamma_{2503.70}$**382.0**$_8$(24$_{12}$), $\gamma_{1416.374}$**1470.1**$_8$(20$_8$), $\gamma_{784.432}$**2101.87**$_{10}$(100$_8$)
2915.51$_8$, 3^-, $\gamma_{1912.98}$**1002.48**$_9$(27.7$_{17}$) M1,E2, $\gamma_{1273.489}$**1641.98**$_{21}$(37$_5$), $\gamma_{784.432}$**2131.14**$_{11}$(100$_3$) E1+M2 $\delta=-0.19_7$
A **2935.1**$_6$, $(7)^+$, $\gamma_{2693.28}$**241.5**$_5$(100) M1
C **2937.0**$_3$, 7^-, $\gamma_{1810.89}$**1125.6**$_3$(100) E1+M2 $\delta\leq0.14$
B **3029.72**$_{23}$, 8^-, $\gamma_{2694.62}$**334.9**$_2$(63) M1, $\gamma_{2563.83}$**465.8**$_2$(100) M1
3045.6$_4$, $\gamma_{1810.89}$**1234.7**$_3$(100)
3065, $\gamma_{1834.59}$**1230**(100)(?)
3076.12$_{24}$, $\gamma_{1273.489}$**1802.62**$_{24}$(100)
3089.64$_8$, $(1^-,2^+)$, $\gamma_{2082.00}$**1007.72**$_9$(100$_9$), $\gamma_{1273.489}$**1816.06**$_9$(69$_4$), γ_0**3090.5**$_{15}$(25$_8$)
3128.7$_4$, $\gamma_{1810.89}$**1317.8**$_3$(100)
3130.87$_{16}$, $(1,2^+)$, $\gamma_{784.432}$**2345.1**$_8$(63$_9$), γ_0**3130.89**$_{16}$(100$_7$)
C **3152.84**$_{20}$, 8^-, $\gamma_{3029.72}$**122.9**$_1$(75), $\gamma_{2694.62}$**457.9**$_3$(100), $\gamma_{2563.83}$**588.6**$_3$(95) M1
3156.9$_4$, $\gamma_{1810.89}$**1346.0**$_3$(100)
C **3180.1**$_6$, 7^-, $\gamma_{2937.0}$**243.1**$_5$(100) M1
3295.03$_{15}$, $(1,2^+)$, $\gamma_{784.432}$**2510.56**$_{15}$(100$_8$), γ_0**3295.5**$_{10}$(33$_{11}$)
C **3310.7**$_4$, 8^-, $\gamma_{3029.72}$**280.6**$_5$, $\gamma_{2937.0}$**373.8**$_3$ M1
3357.7$_3$, $\gamma_{1810.89}$**1546.9**$_3$(100)
C **3367.62**$_{21}$, 9^-, $\gamma_{3152.84}$**214.8**$_1$(48) M1, $\gamma_{3029.72}$**337.7**$_3$(57) M1, $\gamma_{2937.0}$**430.5**$_4$(34), $\gamma_{2693.28}$**673.9**$_3$(100) E1+M2 $\delta\leq0.41$, $\gamma_{2563.83}$**803.4**(46)
3477.9$_4$, $(8,9)$, $\gamma_{1810.89}$**1667.0**$_3$(100)
3502.1$_4$, $\gamma_{2563.83}$**938.3**$_3$(100)
3574.94$_{21}$, $(1^-,2^+)$, $\gamma_{1273.489}$**2301.44**$_{21}$(100$_{10}$), γ_0**3574.6**$_{10}$(90$_{13}$)
3645.84$_{25}$, (8^+), $\gamma_{2693.28}$**952.7**$_3$(25), $\gamma_{1810.89}$**1834.8**$_3$(100)
A **3667.0**$_4$, 10^-, $\gamma_{2694.62}$**971.9**$_3$(100) M1
B **3701.85**$_{23}$, 11^-, $\gamma_{2694.62}$**1006.8**$_2$(100) E2
D **3758.61**$_{23}$, 10^+, $\gamma_{2694.62}$**1063.6**$_2$(100) E1+M2 $\delta\leq0.18$
3768.28$_{25}$, $\gamma_{1810.89}$**1957.2**$_3$(100)
3808.27$_{22}$, (8^+), $\gamma_{2694.62}$**1113.7**$_3$(39), $\gamma_{2693.28}$**1115.0**$_3$(50), $\gamma_{1810.89}$**1997.3**$_3$(100)
B **3822.8**$_4$, 10^+, $\gamma_{2694.62}$**1127.5**(100), $\gamma_{2693.28}$**1129.1**(29)
3868.60$_{21}$, $\gamma_{2694.62}$**1174.0**$_3$(100), $\gamma_{2693.28}$**1175.4**$_3$(28)
C **3918.58**$_{23}$, 10^-, $\gamma_{3367.62}$**551.0**$_2$(27), $\gamma_{3152.84}$**765.7**$_2$(100) E2, $\gamma_{3029.72}$**888.6**$_3$(73)
B **3980.80**$_{24}$, 12^+, *60$_6$ ps*, $\gamma_{3701.85}$**278.9**$_2$(100.0$_2$) E1+M2 $\delta\leq0.19$, $\gamma_{2694.62}$**1285.6**$_5$(2.7$_2$) E3
3990.45$_{22}$, $(8,9,10)^+$, $\gamma_{2782.54}$**1208.2**$_3$(87), $\gamma_{2694.62}$**1295.5**$_3$(17), $\gamma_{2693.28}$**1297.2**$_3$(100)
4051.0$_6$, $(2^+,3,4^+)$, $\gamma_{1416.374}$**2634.6**$_{10}$(39$_{10}$), $\gamma_{1273.489}$**2777.5**$_{10}$($\approx$ 20), $\gamma_{784.432}$**3266.4**$_{10}$(100$_{61}$)
4068.23$_{25}$, (1), $\gamma_{1912.98}$**2155.33**$_{25}$(100$_{16}$), $\gamma_{1273.489}$**2794.6**$_{10}$(51$_{11}$), γ_0**4066.8**$_{10}$(43$_{11}$)
4119.18$_{17}$, $(8,9)^+$, $\gamma_{3029.72}$**1089.7**$_3$(13.0), $\gamma_{2868.67}$**1250.5**$_3$(8.7), $\gamma_{2782.54}$**1336.6**$_3$(13.0), $\gamma_{2694.62}$**1424.6**$_3$(21.7), $\gamma_{2693.28}$**1425.9**$_3$(100), $\gamma_{2563.83}$**1555.4**$_3$(19.1), $\gamma_{1810.89}$**2308.2**$_3$(23.5)
C **4121.80**$_{25}$, 11^-, $\gamma_{3701.85}$**420.6**$_5$(5.4), $\gamma_{3367.62}$**754.2**$_2$(100) E2
4170.22$_{22}$, $(8,9^-)$, $\gamma_{2694.62}$**1475.6**$_3$(100), $\gamma_{2693.28}$**1476.9**$_3$(80), $\gamma_{2563.83}$**1606.4**$_3$(33)
4271.3$_4$, $\gamma_{2693.28}$**1578.0**$_3$(100)
4311.95$_{20}$, $(8,9,10)^+$, $\gamma_{3868.60}$**443.4**$_3$(4.4), $\gamma_{3357.7}$**954.3**$_3$(22.2), $\gamma_{3029.72}$**1282.3**$_3$(23.3), $\gamma_{2693.28}$**1618.7**$_3$(100), $\gamma_{2563.83}$**1748.1**$_3$(50)
4408.86$_{19}$, $(8)^+$, $\gamma_{3868.60}$**540.3**$_3$(8.9), $\gamma_{3768.28}$**640.4**$_3$(23.2), $\gamma_{2868.67}$**1540.1**$_3$(7.1), $\gamma_{2694.62}$**1714.3**$_3$(28.6), $\gamma_{2693.28}$**1715.7**$_3$(100), $\gamma_{2563.83}$**1845.0**$_3$(37.5)
C **4430.1**$_3$, 12^-, $\gamma_{4121.80}$**308.4**$_2$(100) M1, $\gamma_{3918.58}$**511.6**(88), $\gamma_{3701.85}$**727.9**$_5$(20)
D **4500.71**$_{23}$, 12^+, $\gamma_{3980.80}$**519.9**$_1$(100) E2, $\gamma_{3822.8}$**677.9**$_3$(17) E2, $\gamma_{3758.61}$**742.1**$_1$(76) E2, $\gamma_{3701.85}$**798.9**(9)
4542.27$_{22}$, $\gamma_{1416.374}$**3125.4**$_3$(47$_6$), $\gamma_{1273.489}$**3269.2**$_3$(100$_8$)
C **4551.4**$_3$, 13^-, $\gamma_{4430.1}$**121.3**$_1$(100), $\gamma_{4121.80}$**429.5**$_3$(73), $\gamma_{3980.80}$**571.0**(30)
C **4740.9**$_4$, $13^{(-)}$, $\gamma_{4430.1}$**311.0**$_4$(100) D
C **4906.3**$_3$, 14^-, $\gamma_{4551.4}$**355.0**$_2$(100)
D **5026.20**$_{24}$, 14^+, $\gamma_{4740.9}$**285.5**$_5$(5), $\gamma_{4551.4}$**475.3**$_5$(13) D, $\gamma_{4500.71}$**525.5**$_1$(100) E2, $\gamma_{3980.80}$**1045.3**$_3$(7)
C **5117.8**$_3$, 15^-, $\gamma_{4906.3}$**211.5**$_2$(78) D, $\gamma_{4551.4}$**566.4**$_2$(100) E2
B **5168.2**$_4$, 14^+, $\gamma_{3980.80}$**1187.4**$_3$(100)
D **5355.9**$_3$, 16^+, $\gamma_{5117.8}$**238.0**$_2$(13) D, $\gamma_{5026.20}$**329.8**$_2$(100)
5438.9$_4$, 16, $\gamma_{5117.8}$**321.1**$_3$(100), $\gamma_{4906.3}$**532.1**(16)
5579.0, $\gamma_{5168.2}$**410.8**(100)
5800.8, $\gamma_{5579.0}$**221.8**(100)
D **5833.0**$_3$, 18^+, $\gamma_{5355.9}$**477.1**$_1$(100) E2

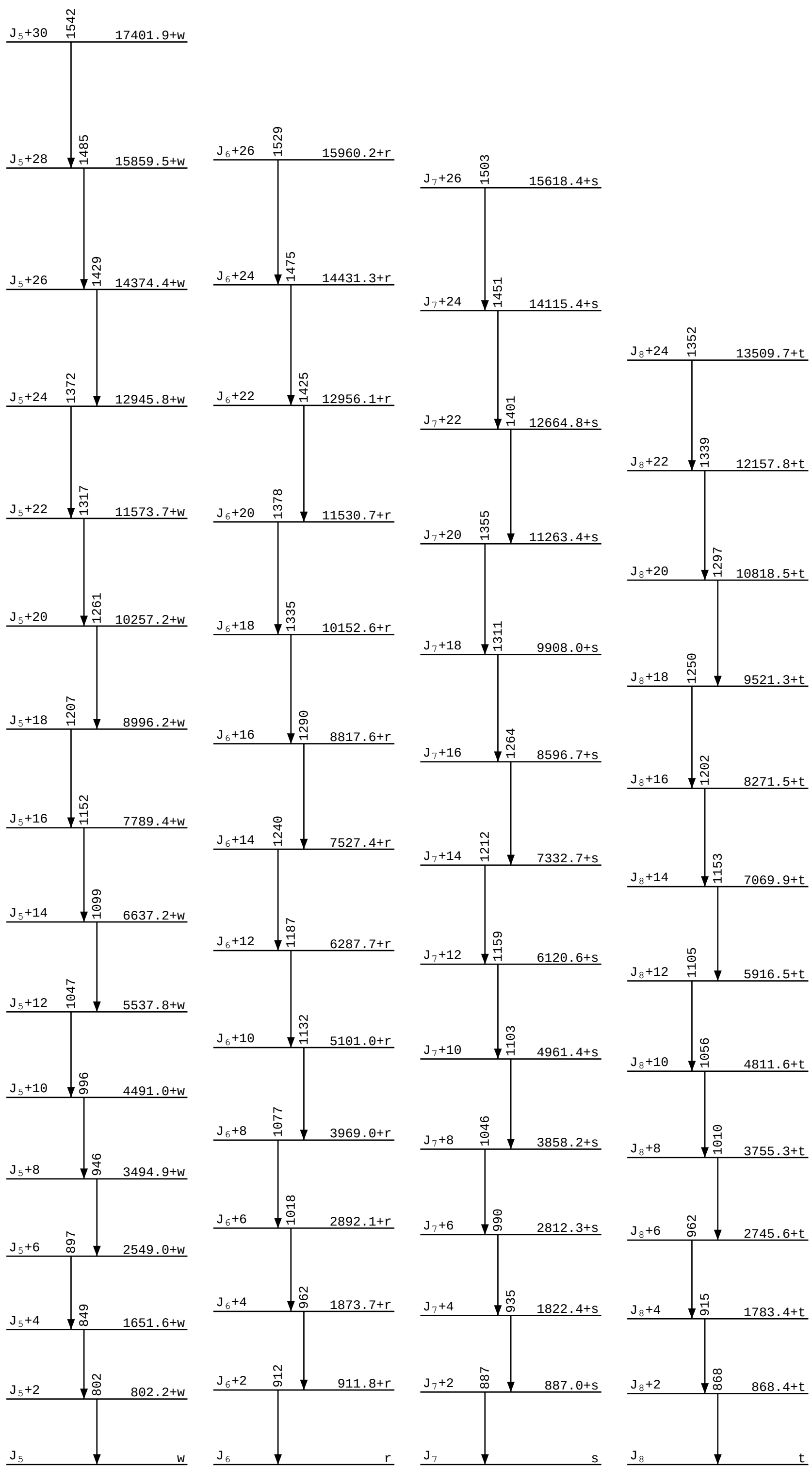
5883.3, 17, $\gamma_{5438.9}$**444.3**(100)
C **5934.0**$_8$, 17, $\gamma_{5800.8}$**133.4**($\approx$ 15), $\gamma_{5438.9}$**495.1**$_6$(100) D, $\gamma_{5355.9}$**578.3**(39), $\gamma_{5117.8}$**816.0**(36)
E **6211.2**$_4$, 17, $\gamma_{5833.0}$**378.4**(25) D, $\gamma_{5355.9}$**855.3**$_3$(100)
6268.9, 18, $\gamma_{5833.0}$**435.6**(100)
6381.9, 18, $\gamma_{5934.0}$**447.7**(100), $\gamma_{5883.3}$**498.7**(43), $\gamma_{5833.0}$**548.8**(36)
E **6546.0**$_4$, 18^-, $\gamma_{6211.2}$**334.7**$_3$(100) D, $\gamma_{5934.0}$**612.1**(9)
6575.3, 19^+, $\gamma_{6381.9}$**193.4**(62) D, $\gamma_{6268.9}$**306.3**(27), $\gamma_{5833.0}$**742.1**(100)
E **6641.1**$_4$, 19^-, $\gamma_{5833.0}$**808.1**$_2$(100) D
D **6834.9**$_4$, 20^-, *1.5$_3$ ns*, $\gamma_{6641.1}$**193.7**$_2$(63) D, $\gamma_{6575.3}$**259.4**(13) D, $\gamma_{6546.0}$**288.9**$_2$(41) E2, $\gamma_{5833.0}$**1001.9**$_3$(100)
7051.8, 19^+, $\gamma_{6381.9}$**670.0**(100) D, $\gamma_{5833.0}$**1218.6**(55)
7110.8, 20^+, $\gamma_{5833.0}$**1277.5**(100)
7156.0$_5$, 21^-, $\gamma_{6834.9}$**321.1**$_3$(100) D, $\gamma_{6641.1}$**515.7**(8) E2
7274.6, 20^+, $\gamma_{7051.8}$**223.0**(14), $\gamma_{6575.3}$**699.3**(100)
7334.1, $\gamma_{6575.3}$**758.7**(100)
7531.3, 21^+, $\gamma_{7334.1}$**197.2**(28), $\gamma_{7274.6}$**256.7**(100) D, $\gamma_{7110.8}$**420.4**(7), $\gamma_{7051.8}$**479.4**(9)
7791.3, 22^+, $\gamma_{7531.3}$**260.0**(100) D, $\gamma_{7110.8}$**680.5**(9) E2
8005.3, 22^-, $\gamma_{7156.0}$**849.2**(7), $\gamma_{6834.9}$**1170.5**(100) E2
8243.2, 22^-, $\gamma_{6834.9}$**1408.4**(100)
8304.9, 23^-, $\gamma_{7156.0}$**1148.8**(100)
8309.6, 23^+, $\gamma_{7791.3}$**518.2**(100) D
8364.5, 23^-, $\gamma_{7791.3}$**573.5**(5), $\gamma_{7156.0}$**1208.2**(100) E2
8455.9, 23^-, $\gamma_{8304.9}$**151.1**(21), $\gamma_{8243.2}$**212.7**(32), $\gamma_{8005.3}$**450.6**(73), $\gamma_{7791.3}$**664.6**(100) D
8609.6, 23, $\gamma_{7791.3}$**818.2**(100)
8639.5, 24^-, $\gamma_{8455.9}$**183.6**(100) D, $\gamma_{8309.6}$**330**(31), $\gamma_{8005.3}$**634.3**(76)
8832.5, 24, $\gamma_{8609.6}$**222.9**(45), $\gamma_{8455.9}$**376.7**(17) D, $\gamma_{8364.5}$**468.2**(12), $\gamma_{8309.6}$**522.8**(100) D
8987.5, 25^-, $\gamma_{8832.5}$**155.0**(65), $\gamma_{8639.5}$**348.0**(79), $\gamma_{8364.5}$**623.0**(100) E2
9244.0, 25^-, $\gamma_{8639.5}$**604.5**(100)
9259.0, $\gamma_{8639.5}$**619.6**(100), $\gamma_{8364.5}$**895**(84)
9653.1, 26^-, $\gamma_{8987.5}$**665.7**(100)
9758.1, 26, $\gamma_{9244.0}$**513.9**(54) D, $\gamma_{8987.5}$**770.7**(100) D
9934.7, $\gamma_{8832.5}$**1102.2**(100)
9957.8, 26^-, $\gamma_{9244.0}$**713.7**(100)
10046.9, 25^-, $\gamma_{9259.0}$**787.9**(24), $\gamma_{8364.5}$**1682.4**(100), $\gamma_{8304.9}$**1741.8**(8)
10063.5, 27, $\gamma_{9758.1}$**305.3**(100) D
10318.4, 27^-, $\gamma_{10046.9}$**271.5**(100) E2, $\gamma_{9957.8}$**360.6**(13) D, $\gamma_{9758.1}$**560.5**(10), $\gamma_{9653.1}$**665**(12), $\gamma_{8987.5}$**1330.6**(8)
10474.7, 27, $\gamma_{9758.1}$**716.6**(100)
10694.5, 27^-, $\gamma_{9653.1}$**1041.5**(100)
10760.7, 28, $\gamma_{10063.5}$**697**(100)
10870.1, 28, $\gamma_{10063.5}$**807**(100)
11158.8, 28, $\gamma_{10694.5}$**464.5**(12), $\gamma_{10474.7}$**684.1**(19), $\gamma_{10318.4}$**840.4**(100) D
11186.2, 29, $\gamma_{10063.5}$**1122.6**(100) E2
11457.3, 29, $\gamma_{11186.2}$**271.1**(22), $\gamma_{11158.8}$**298.5**(100) D
11478.4, 29^-, $\gamma_{10318.4}$**1160.0**(100) E2
11546.4, 29^-, $\gamma_{10694.5}$**851.9**(76), $\gamma_{10318.4}$**1227.9**(100) E2
11587.4, 30, $\gamma_{11457.3}$**130.1**(100)
11728.1, 30, $\gamma_{11186.2}$**541.9**(78), $\gamma_{10870.1}$**858.0**(74), $\gamma_{10760.7}$**967.4**(100)
12013.2, $\gamma_{11457.3}$**555.9**(100)
12064.4, 30, $\gamma_{11186.2}$**878.4**(100)
12139.1, 31^-, $\gamma_{12064.4}$**74.5**, $\gamma_{11728.1}$**411.0**(39) D, $\gamma_{11587.4}$**551.8**(14), $\gamma_{11546.4}$**592.7**(100) E2, $\gamma_{11478.4}$**660.7**(48) E2
12285.5, 30, $\gamma_{11457.3}$**828.0**(42) D, $\gamma_{11158.8}$**1126.5**(100)
12382.3, 31, $\gamma_{11457.3}$**925.0**(100)
12530.0, 32, $\gamma_{12285.5}$**244.5**(10), $\gamma_{12139.1}$**390.9**(100) D, $\gamma_{11587.4}$**942.6**(19)
12683.4, 33, $\gamma_{11587.4}$**1096.0**(100)
13039.5, 33, $\gamma_{12683.4}$**355.8**(6), $\gamma_{12530.0}$**509.7**(100) D, $\gamma_{12382.3}$**657.2**(27)
13126.4, 33^-, $\gamma_{12139.1}$**987.3**(100)
13148.0, 32, $\gamma_{12683.4}$**464.2**(40), $\gamma_{12382.3}$**765.8**(100), $\gamma_{12139.1}$**1009.3**(60)
13244.2, $\gamma_{12683.4}$**561.0**(100)
13354.8(?), $\gamma_{12530.0}$**824.8**(100)
13555.4, 33, $\gamma_{12530.0}$**1025.6**(100)
13736.3, 34, $\gamma_{13555.4}$**181.0**(8) D, $\gamma_{13244.2}$**492.1**(5), $\gamma_{13148.0}$**588.3**(20), $\gamma_{13039.5}$**696.7**(100) D
13870.3, 35, $\approx$*2 ns*, μ=+21$_6$, $\gamma_{13736.3}$**134.0**(100) D, $\gamma_{12530.0}$**1340.3**(19)
13888.7, 33, $\gamma_{13039.5}$**849.2**(100)
13911.9, $\gamma_{13870.3}$**41.6**(100)
14011.7, 34, $\gamma_{13039.5}$**972.2**(100)
14146.2, 35, $\gamma_{13039.5}$**1106.7**(100) E2
14207.0, 36, $\gamma_{13911.9}$**295.1**(14), $\gamma_{13870.3}$**336.7**(100) D
14924.8, 36, $\gamma_{14146.2}$**778.6**(100), $\gamma_{13888.7}$**1036.1**(27)
15166.1(?), 38, $\gamma_{14207.0}$**959.1**(100) E2
15728.2, 37, $\gamma_{14924.8}$**803.4**(100)
16078.0, $\gamma_{15728.2}$**349.8**(100)
16112.5, 38, $\gamma_{14924.8}$**1187.7**(100)
16204.6(?), 40, <*0.17 ps*, $\gamma_{15166.1}$**1038.5**(100)
16257.8(?), 40, $\gamma_{15166.1}$**1091.7**(100)
16407.2, 40, $\gamma_{16112.5}$**294.7**(100)
16474.1, 39, $\gamma_{15166.1}$**1308.0**(100)
17241.4(?), 40, $\gamma_{16407.2}$**834.2**(100)
17320.6(?), $\gamma_{16474.1}$**846.5**(100)
17371.2, 42, $\gamma_{16407.2}$**964.0**(100)
18482.1, 44, <*0.17 ps*, $\gamma_{17371.2}$**1110.9**(100)
19149(?), (46), $\gamma_{18482.1}$**667**(100)(?)
F **x**, J $\approx$ (29)
F **699.9+x**, J + 2, γ_{x}**699.9**$_1$(0.54$_{15}$)
F **1447.8+x**, J + 4, $\gamma_{699.9+x}$**747.9**$_1$(0.87$_9$)
F **2243.6+x**, J + 6, $\gamma_{1447.8+x}$**795.8**$_1$(0.99$_8$)
F **3090.3+x**, J + 8, $\gamma_{2243.6+x}$**846.7**$_1$(0.97$_8$)
F **3988.2+x**, J + 10, $\gamma_{3090.3+x}$**897.9**$_1$(1.00$_8$)
F **4938.5+x**, J + 12, $\gamma_{3988.2+x}$**950.3**$_1$(0.97$_8$)
F **5942.4+x**, J + 14, $\gamma_{4938.5+x}$**1003.9**$_1$(1.00$_{10}$)
F **7001.1+x**, J + 16, $\gamma_{5942.4+x}$**1058.7**$_1$(0.98$_9$)
F **8115.3+x**, J + 18, $\gamma_{7001.1+x}$**1114.2**$_1$(0.99$_{10}$)
F **9285.9+x**, J + 20, $\gamma_{8115.3+x}$**1170.6**$_1$(1.00$_{15}$)
F **10513.7+x**, J + 22, $\gamma_{9285.9+x}$**1227.8**$_1$(0.84$_7$)
F **11799.3+x**, J + 24, $\gamma_{10513.7+x}$**1285.6**$_1$(0.71$_8$)
F **13143.3+x**, J + 26, $\gamma_{11799.3+x}$**1344.0**$_2$(0.66$_7$)
F **14545.8+x**, J + 28, $\gamma_{13143.3+x}$**1402.5**$_2$(0.55$_6$)
F **16007.2+x**, J + 30, $\gamma_{14545.8+x}$**1461.4**$_2$(0.48$_7$)
F **17527.7+x**, J + 32, $\gamma_{16007.2+x}$**1520.5**$_3$(0.34$_5$)
F **19108.2+x**, J + 34, $\gamma_{17527.7+x}$**1580.5**$_6$(0.19$_3$)
F **20748.2+x**, J + 36, $\gamma_{19108.2+x}$**1640.0**$_{10}$(0.15$_5$)
F **22448.5+x**, J + 38, $\gamma_{20748.2+x}$**1700.3**$_6$(0.07$_3$)
G **y**, $J_1 \approx$ (30)
G **741.8+y**, J_1+2, γ_{y}**741.8**$_3$
G **1530.7+y**, J_1+4, $\gamma_{741.8+y}$**788.9**$_2$(0.46$_{10}$)
G **2369.5+y**, J_1+6, $\gamma_{1530.7+y}$**838.8**$_2$(0.88$_9$)
G **3258.6+y**, J_1+8, $\gamma_{2369.5+y}$**889.1**$_2$(0.89$_9$)
G **4198.4+y**, J_1+10, $\gamma_{3258.6+y}$**939.8**$_2$(0.93$_{15}$)
G **5188.8+y**, J_1+12, $\gamma_{4198.4+y}$**990.4**$_3$(1.00$_{11}$)
G **6228.5+y**, J_1+14, $\gamma_{5188.8+y}$**1039.7**$_2$(0.95$_{20}$)
G **7316.3+y**, J_1+16, $\gamma_{6228.5+y}$**1087.8**$_2$(1.03$_{15}$)
G **8451.5+y**, J_1+18, $\gamma_{7316.3+y}$**1135.2**$_2$(0.94$_{10}$)
G **9634.2+y**, J_1+20, $\gamma_{8451.5+y}$**1182.7**$_2$(0.82$_8$)
G **10865.4+y**, J_1+22, $\gamma_{9634.2+y}$**1231.2**$_2$(0.79$_8$)
G **12146.3+y**, J_1+24, $\gamma_{10865.4+y}$**1280.9**$_2$(0.77$_8$)
G **13478.5+y**, J_1+26, $\gamma_{12146.3+y}$**1332.2**$_2$(0.62$_7$)
G **14861.8+y**, J_1+28, $\gamma_{13478.5+y}$**1383.3**$_3$(0.56$_6$)
G **16299.3+y**, J_1+30, $\gamma_{14861.8+y}$**1437.5**$_5$(0.44$_5$)
G **17790.4+y**, J_1+32, $\gamma_{16299.3+y}$**1491.1**$_8$(0.27$_4$)
G **19336.6+y**, J_1+34, $\gamma_{17790.4+y}$**1546.2**$_{10}$(0.23$_4$)
H **z**, J_2
H **830.3+z**, J_2+2, γ_{z}**830.3**$_6$(0.23$_5$)
H **1706.0+z**, J_2+4, $\gamma_{830.3+z}$**875.7**$_3$(0.42$_6$)
H **2631.0+z**, J_2+6, $\gamma_{1706.0+z}$**925.0**$_2$(0.43$_7$)
H **3606.7+z**, J_2+8, $\gamma_{2631.0+z}$**975.7**$_3$(0.62$_7$)
H **4634.2+z**, J_2+10, $\gamma_{3606.7+z}$**1027.5**$_2$(0.63$_8$)
H **5713.8+z**, J_2+12, $\gamma_{4634.2+z}$**1079.6**$_3$(0.95$_{11}$)
H **6846.5+z**, J_2+14, $\gamma_{5713.8+z}$**1132.7**$_2$(1.00$_{12}$)
H **8032.4+z**, J_2+16, $\gamma_{6846.5+z}$**1185.9**$_3$(0.93$_{30}$)
H **9271.7+z**, J_2+18, $\gamma_{8032.4+z}$**1239.3**$_3$(0.72$_{15}$)

H **10564.6+z**, J_2+20, $\gamma_{9271.7+z}$**1292.9**$_3$(0.95$_{20}$)
H **11909.1+z**, J_2+22, $\gamma_{10564.6+z}$**1344.5**$_3$(0.71$_{18}$)
H **13304.3+z**, J_2+24, $\gamma_{11909.1+z}$**1395.2**$_4$(0.64$_{15}$)
H **14739.5+z**, J_2+26, $\gamma_{13304.3+z}$**1435.2**$_5$(0.46$_8$)
H **16182.1+z**, J_2+28, $\gamma_{14739.5+z}$**1442.6**$_{10}$(0.40$_{12}$)
H **17629.8+z**, J_2+30, $\gamma_{16182.1+z}$**1447.7**$_6$(0.18$_9$)
H **19101.8+z**, J_2+32, $\gamma_{17629.8+z}$**1472.0**$_{10}$(0.22$_8$)
I **u**, J_3
I **849.7+u**, J_3+2, γ_{u}**849.7**$_3$
I **1739.7+u**, J_3+4, $\gamma_{849.7+u}$**890.0**$_2$(0.62$_{15}$)
I **2678.4+u**, J_3+6, $\gamma_{1739.7+u}$**938.7**$_2$(0.60$_{12}$)
I **3666.8+u**, J_3+8, $\gamma_{2678.4+u}$**988.4**$_3$(0.64$_{10}$)
I **4706.4+u**, J_3+10, $\gamma_{3666.8+u}$**1039.6**$_3$(0.68$_{10}$)
I **5797.5+u**, J_3+12, $\gamma_{4706.4+u}$**1091.1**$_3$(0.92$_{15}$)
I **6941.7+u**, J_3+14, $\gamma_{5797.5+u}$**1144.2**$_3$(1.05$_{20}$)
I **8139.7+u**, J_3+16, $\gamma_{6941.7+u}$**1198.0**$_3$(1.00$_{15}$)
I **9392.5+u**, J_3+18, $\gamma_{8139.7+u}$**1252.8**$_3$(1.02$_{13}$)
I **10700.6+u**, J_3+20, $\gamma_{9392.5+u}$**1308.1**$_3$(0.88$_{15}$)
I **12065.0+u**, J_3+22, $\gamma_{10700.6+u}$**1364.4**$_3$(0.90$_{18}$)
I **13486.3+u**, J_3+24, $\gamma_{12065.0+u}$**1421.3**$_4$(0.82$_{10}$)
I **14964.8+u**, J_3+26, $\gamma_{13486.3+u}$**1478.5**$_4$(0.57$_9$)
I **16501.7+u**, J_3+28, $\gamma_{14964.8+u}$**1536.9**$_{10}$(0.30$_{10}$)
J **v**, J_4
J **853.7+v**, J_4+2, γ_{v}**853.7**$_3$(0.45$_6$)
J **1753.6+v**, J_4+4, $\gamma_{853.7+v}$**899.9**$_2$(0.83$_9$)
J **2698.5+v**, J_4+6, $\gamma_{1753.6+v}$**944.9**$_3$(0.85$_{10}$)
J **3689.9+v**, J_4+8, $\gamma_{2698.5+v}$**991.4**$_2$(0.86$_{10}$)
J **4727.8+v**, J_4+10, $\gamma_{3689.9+v}$**1037.9**$_2$(0.85$_{20}$)
J **5812.4+v**, J_4+12, $\gamma_{4727.8+v}$**1084.6**$_2$(1.00$_{15}$)
J **6944.3+v**, J_4+14, $\gamma_{5812.4+v}$**1131.9**$_2$(1.00$_{13}$)
J **8123.8+v**, J_4+16, $\gamma_{6944.3+v}$**1179.5**$_2$(0.90$_{10}$)
J **9350.3+v**, J_4+18, $\gamma_{8123.8+v}$**1226.5**$_2$(0.80$_{10}$)
J **10624.1+v**, J_4+20, $\gamma_{9350.3+v}$**1273.8**$_2$(0.80$_{10}$)
J **11946.2+v**, J_4+22, $\gamma_{10624.1+v}$**1322.1**$_2$(0.52$_8$)
J **13315.8+v**, J_4+24, $\gamma_{11946.2+v}$**1369.6**$_2$(0.50$_{10}$)
J **14732.9+v**, J_4+26, $\gamma_{13315.8+v}$**1417.1**$_3$(0.44$_7$)
J **16197.8+v**, J_4+28, $\gamma_{14732.9+v}$**1464.9**$_4$(0.31$_5$)
J **17710.9+v**, J_4+30, $\gamma_{16197.8+v}$**1513.1**$_{10}$(0.26$_4$)
J **19272.9+v**, J_4+32, $\gamma_{17710.9+v}$**1562**$_1$(0.20$_6$)
K **w**, J_5
K **802.2+w**, J_5+2, γ_{w}**802.2**$_3$
K **1651.6+w**, J_5+4, $\gamma_{802.2+w}$**849.44**$_{22}$
K **2549.0+w**, J_5+6, $\gamma_{1651.6+w}$**897.40**$_{16}$(0.91$_{12}$)
K **3494.9+w**, J_5+8, $\gamma_{2549.0+w}$**945.86**$_{15}$(1.00$_{12}$)
K **4491.0+w**, J_5+10, $\gamma_{3494.9+w}$**996.08**$_{19}$(1.00$_{22}$)
K **5537.8+w**, J_5+12, $\gamma_{4491.0+w}$**1046.83**$_{14}$(1.00$_{10}$)
K **6637.2+w**, J_5+14, $\gamma_{5537.8+w}$**1099.39**$_{16}$(0.95$_{18}$)
K **7789.4+w**, J_5+16, $\gamma_{6637.2+w}$**1152.20**$_{15}$(0.97$_{10}$)
K **8996.2+w**, J_5+18, $\gamma_{7789.4+w}$**1206.76**$_{24}$(1.00$_{15}$)
K **10257.2+w**, J_5+20, $\gamma_{8996.2+w}$**1261.00**$_{16}$(1.00$_{19}$)
K **11573.7+w**, J_5+22, $\gamma_{10257.2+w}$**1316.57**$_{14}$(0.96$_{10}$)
K **12945.8+w**, J_5+24, $\gamma_{11573.7+w}$**1372.10**$_{22}$(0.78$_9$)
K **14374.4+w**, J_5+26, $\gamma_{12945.8+w}$**1428.55**$_{24}$(0.77$_{10}$)
K **15859.5+w**, J_5+28, $\gamma_{14374.4+w}$**1485.15**$_{26}$(0.70$_{15}$)
K **17401.9+w**, J_5+30, $\gamma_{15859.5+w}$**1542.4**$_4$(0.63$_{15}$)
L **r**, J_6
L **911.8+r**, J_6+2, γ_{r}**911.8**$_4$
L **1873.7+r**, J_6+4, $\gamma_{911.8+r}$**961.9**$_3$
L **2892.1+r**, J_6+6, $\gamma_{1873.7+r}$**1018.4**$_3$
L **3969.0+r**, J_6+8, $\gamma_{2892.1+r}$**1076.9**$_3$
L **5101.0+r**, J_6+10, $\gamma_{3969.0+r}$**1132.0**$_4$
L **6287.7+r**, J_6+12, $\gamma_{5101.0+r}$**1186.7**$_3$
L **7527.4+r**, J_6+14, $\gamma_{6287.7+r}$**1239.7**$_4$
L **8817.6+r**, J_6+16, $\gamma_{7527.4+r}$**1290.2**$_3$
L **10152.6+r**, J_6+18, $\gamma_{8817.6+r}$**1335.0**$_3$
L **11530.7+r**, J_6+20, $\gamma_{10152.6+r}$**1378.1**$_4$
L **12956.1+r**, J_6+22, $\gamma_{11530.7+r}$**1425.4**$_4$
L **14431.3+r**, J_6+24, $\gamma_{12956.1+r}$**1475.2**$_4$
L **15960.2+r**, J_6+26, $\gamma_{14431.3+r}$**1528.9**$_5$
M **s**, J_7
M **887.0+s**, J_7+2, γ_{s}**887.0**$_3$
M **1822.4+s**, J_7+4, $\gamma_{887.0+s}$**935.4**$_4$
M **2812.3+s**, J_7+6, $\gamma_{1822.4+s}$**989.9**$_4$
M **3858.2+s**, J_7+8, $\gamma_{2812.3+s}$**1045.9**$_3$
M **4961.4+s**, J_7+10, $\gamma_{3858.2+s}$**1103.2**$_{10}$
M **6120.6+s**, J_7+12, $\gamma_{4961.4+s}$**1159.2**$_3$
M **7332.7+s**, J_7+14, $\gamma_{6120.6+s}$**1212.1**$_3$
M **8596.7+s**, J_7+16, $\gamma_{7332.7+s}$**1264.0**$_3$
M **9908.0+s**, J_7+18, $\gamma_{8596.7+s}$**1311.3**$_3$
M **11263.4+s**, J_7+20, $\gamma_{9908.0+s}$**1355.4**$_4$
M **12664.8+s**, J_7+22, $\gamma_{11263.4+s}$**1401.4**$_4$
M **14115.4+s**, J_7+24, $\gamma_{12664.8+s}$**1450.6**$_4$
M **15618.4+s**, J_7+26, $\gamma_{14115.4+s}$**1503.0**$_5$
N **t**, J_8
N **868.4+t**, J_8+2, γ_{t}**868.4**$_3$
N **1783.4+t**, J_8+4, $\gamma_{868.4+t}$**915.0**$_3$
N **2745.6+t**, J_8+6, $\gamma_{1783.4+t}$**962.2**$_3$
N **3755.3+t**, J_8+8, $\gamma_{2745.6+t}$**1009.7**$_2$
N **4811.6+t**, J_8+10, $\gamma_{3755.3+t}$**1056.3**$_2$
N **5916.5+t**, J_8+12, $\gamma_{4811.6+t}$**1104.9**$_2$
N **7069.9+t**, J_8+14, $\gamma_{5916.5+t}$**1153.4**$_2$
N **8271.5+t**, J_8+16, $\gamma_{7069.9+t}$**1201.6**$_3$
N **9521.3+t**, J_8+18, $\gamma_{8271.5+t}$**1249.8**$_2$
N **10818.5+t**, J_8+20, $\gamma_{9521.3+t}$**1297.2**$_3$
N **12157.8+t**, J_8+22, $\gamma_{10818.5+t}$**1339.3**$_6$
N **13509.7+t**, J_8+24, $\gamma_{12157.8+t}$**1351.9**$_7$



SD-1 band (1995DeZZ,1993Ha19) SD-2 band (1995DeZZ,1993Ha19) SD-3 band (1995DeZZ,1996De04) SD-4 band (1995DeZZ,1996De04) SD-5 band (1995DeZZ,1996De04)

$^{148}_{64}Gd_{84}$



SD-6 band (1995DeZZ,1996De04) SD-7 band (1998By02) SD-8 band (1998By02) SD-9 band (1998By02)

$^{148}_{64}Gd_{84}$

$^{149}_{64}\mathbf{Gd}_{85}$

S_n: 6929 $_3$, S_p: 6187 $_{18}$

Nuclear Bands

A $\nu 2f^3_{7/2}$
B $\nu h_{9/2}\nu 2f^2_{7/2}$
C $\nu f^3_{7/2}$or $\nu i_{13/2}$(3^- in ^{148}Gd)
D $\nu(2f^2_{7/2}h_{9/2})\pi(d^{-2}_{5/2}h^2_{11/2})$
E $\nu(2f^2_{7/2}i_{13/2})\pi(d^{-2}_{5/2}h^2_{11/2})$
F $\nu(2f_{7/2}h_{9/2}i_{13/2})\pi(d^{-2}_{5/2}h^2_{11/2})$
G $\nu(2f_{7/2}h_{9/2}i_{13/2})\pi(d^{-3}_{5/2}h^3_{11/2})$
H Multi-quasiparticle multiplet
I SD-1 band (1999Fi12,1995Fl01,1993Fl03,1990Ha31,1988Ha02, 2002By01)
Q_0=15.0$_2$
J SD-2 band (1995Fl01,1993Fl03,1990Ha31,1988Ha02,2002By01)
Q_0=15.6$_3$
K SD-3 band (1995Fl01,1993Fl03,1990Ha31,1988Ha02)
Q_0=15.2$_5$
L SD-4 band (1995Fl01,1993Fl03) (π,α)=(+,-1/2)
Q_0=17.5$_6$
M SD-5 band (1995Fl01,1994De33,1993Fl03) (π,α)=(-,-1/2)
N SD-6 band (1995Fl01,1994De33,1993Fl03) (π,α)=(-,+1/2)
O SD-7 band (1998By02)
P SD-8 band (1998By02)
Q SD-9 band (1998By02)
R SD-10 band (1998By02)
S SD-11 band (1998By02)
T SD-12 band (1998By02)
U SD-13 band (1998By02)

Levels and γ-ray branchings:

A **0**, $7/2^-$, *9.28$_{10}$ d*, %ε+%β^+=100 , %α=4.3x10^{-4}$_{10}$, μ=0.88$_4$

A **164.988**$_{15}$, $5/2^-$, *1.7$_1$ ns*, μ=-0.90$_{23}$, γ_0**164.98**$_2$(100) M1+E2 $\delta=-0.93_2$

A **352.235**$_{15}$, $3/2^-$, *0.43$_5$ ns*, $\gamma_{164.988}$**187.22**$_2$(14.6$_2$) M1+E2 $\delta=+0.5^2_1$, γ_0**352.24**$_2$(100$_3$) E2

A **775.20**$_8$, $11/2^-$, γ_0**775.2**$_1$(100) E2

B **795.82**$_8$, $9/2^-$, $\gamma_{164.988}$**630.5**$_3$($\approx$ 15)(?), γ_0**795.9**$_1$(100$_5$) M1+E2 $\delta=+0.19_1$

817.10$_2$, $3/2^-$, $\gamma_{352.235}$**464.85**$_2$(34.8$_5$) M1(+E2) $\delta=-0.10_{14}$, $\gamma_{164.988}$**652.12**$_2$(100$_1$) M1+E2 $\delta=-0.57_5$, γ_0**817.1**$_2$(71.4$_{11}$) E2

C **873.35**$_9$, $11/2^+$, *1.6$_6$ ns*, $\gamma_{795.82}$**77.6**$_1$(100$_1$) E1, $\gamma_{775.20}$**98.1**$_1$(45$_1$) E1, γ_0**873.1**$_2$(4.2$_2$)(?)

C **955.81**$_{11}$, $(13/2)^+$, $\gamma_{873.35}$**82.3**$_2$(43$_1$) M1, $\gamma_{775.20}$**180.5**$_1$(100$_1$) E1

1026.84$_2$, $3/2^+$, $\gamma_{352.235}$**674.61**$_6$(9.1$_2$) E1, $\gamma_{164.988}$**861.86**$_2$(100$_1$) E1(+M2) $\delta=-0.05_6$

1085.2$_3$, $(5/2^-,7/2,9/2^-)$, $\gamma_{795.82}$**289.3**$_3$(100$_{25}$), $\gamma_{164.988}$**920.5**(38$_{12}$), γ_0**1085.5**(75$_{38}$)

1124.89$_3$, $1/2^+,3/2^+,5/2^+$, $\gamma_{1026.84}$**98.1**$_2$(9.3$_{11}$) M1, $\gamma_{817.10}$**307.79**$_7$(16.5$_{11}$), $\gamma_{352.235}$**772.65**$_3$(100$_2$) E1

1144.09$_5$, $3/2^+,5/2^+$, $\gamma_{1026.84}$**117.2**(4$_2$), $\gamma_{352.235}$**791.8**(12$_5$), $\gamma_{164.988}$**979.09**$_6$(100$_5$) E1, γ_0**1144.09**(59$_5$)

1167.11$_6$, $(3/2^+)$, $\gamma_{164.988}$**1002.1**(58$_4$), γ_0**1167.10**$_7$(100$_5$) (M2)

1205.67$_2$, $(1/2)^-$, $\gamma_{817.10}$**388.57**$_2$(100.0$_7$) M1+E2 $\delta=-0.21_9$, $\gamma_{352.235}$**853.43**$_1$(84.1$_{12}$) E2+M1 $\delta=-8^6_{23}$, $\gamma_{164.988}$**1040.65**$_4$(7.9$_2$) (E2), γ_0**1205.6**($\leq$ 0.1)(?)

1348.73$_9$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1026.84}$**321.9**(14$_7$), $\gamma_{352.235}$**996.5**$_1$(100$_7$), $\gamma_{164.988}$**1183.7**$_2$(57$_{14}$)

1402.90$_7$, $(5/2^-)$, $\gamma_{1085.2}$**317.4**(14$_4$), $\gamma_{795.82}$**606.7**(4$_2$), γ_0**1402.91**$_9$(100$_6$)

A **1483.80**$_{11}$, $(15/2)^-$, $\gamma_{955.81}$**527.8**$_1$(44$_2$) E1, $\gamma_{775.20}$**708.7**$_1$(100$_1$) E2

1487.60$_7$, $1/2^-,3/2^-,5/2^-$, $\gamma_{817.10}$**670.4**(5.2$_{15}$), $\gamma_{352.235}$**1135.3**$_1$(100$_3$) M1(+E2) $\delta<0.7$, $\gamma_{164.988}$**1322.7**$_1$(7.5$_7$)

1544.13$_5$, $(3/2^-,5/2^-)$, $\gamma_{352.235}$**1191.89**$_8$(100$_7$), $\gamma_{164.988}$**1379.1**$_1$(100$_5$), γ_0**1544.1**$_2$(21$_5$)

1557.38$_6$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1167.11}$**390.3**(29$_7$), $\gamma_{1144.09}$**413.3**$_1$(31$_2$), $\gamma_{1124.89}$**432.5**$_2$(18$_4$), $\gamma_{817.10}$**740.2**$_1$(100$_4$), $\gamma_{352.235}$**1205.20**$_8$(95$_9$), $\gamma_{164.988}$**1392.3**$_3$(13$_4$)

1597.29$_{11}$, $1/2,3/2,5/2^-$, $\gamma_{1124.89}$**472.4**$_1$(100$_{15}$), $\gamma_{817.10}$**780.2**(9$_2$), $\gamma_{352.235}$**1245.1**(11$_4$)

B **1609.05**$_{13}$, $(13/2^-)$, $\gamma_{795.82}$**813.2**$_2$(100$_1$) (E2), $\gamma_{775.20}$**834.0**$_2$(99$_3$) D(+Q)

1614.05$_6$, $3/2^+$, $\gamma_{1167.11}$**446.7**$_6$(2.8$_{19}$), $\gamma_{1144.09}$**469.9**(0.9$_6$), $\gamma_{1026.84}$**587.2**(5.7$_{19}$), $\gamma_{817.10}$**796.9**(1.9$_9$), $\gamma_{352.235}$**1261.7**$_2$(12$_2$), $\gamma_{164.988}$**1449.10**$_8$(100$_4$) E1

1655.19$_6$, $(3/2)^+$, $\gamma_{1402.90}$**252.3**$_1$(11$_2$), $\gamma_{1205.67}$**449.6**(7.7$_{22}$), $\gamma_{1167.11}$**488.1**$_2$(11$_2$), $\gamma_{1026.84}$**628.4**$_2$(9.9$_{22}$), $\gamma_{817.10}$**838.1**$_2$(9$_1$), $\gamma_{352.235}$**1302.92**$_8$(100$_3$) E1, $\gamma_{164.988}$**1490.3**$_2$(22$_3$)

C **1739.7**$_2$, $(17/2)^+$, $\gamma_{955.81}$**784.1**$_2$(100) E2

1750.61$_9$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1402.90}$**347.7**(79$_{10}$), $\gamma_{1124.89}$**625.7**$_3$(10$_5$), $\gamma_{1026.84}$**723.8**(63$_{10}$), $\gamma_{352.235}$**1398.3**$_3$(32$_{10}$), $\gamma_{164.988}$**1585.6**$_1$(100$_5$), γ_0**1751.0**$_4$(21$_{11}$)(?)

1751.1$_2$(?), $\gamma_{873.35}$**877.8**$_2$(100)(?)

1772.83$_5$, $1/2^{(+)},3/2^{(+)}$, $\gamma_{1124.89}$**648.0**$_1$(100$_9$), $\gamma_{1026.84}$**746.0**$_1$(49$_3$), $\gamma_{817.10}$**955.71**$_5$(77$_4$) (E1), $\gamma_{352.235}$**1420.6**$_1$(14$_1$), γ_0**1772.8**(3$_3$)(?)

1844.31$_7$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1167.11}$**677.2**$_1$(100$_{10}$), $\gamma_{1026.84}$**817.5**(35$_{10}$), $\gamma_{817.10}$**1027.2**$_2$(10$_5$), $\gamma_{352.235}$**1492.2**$_3$(60$_{10}$), $\gamma_{164.988}$**1679.3**$_1$(90$_{10}$)

1992.49$_4$, $3/2^-$, $\gamma_{1772.83}$**219.7**(0.32$_{16}$), $\gamma_{1614.05}$**378.5**$_1$(3.8$_5$), $\gamma_{1544.13}$**448.5**(1.4$_3$), $\gamma_{1205.67}$**786.8**$_1$(4.1$_3$), $\gamma_{1167.11}$**825.4**(1.9$_5$), $\gamma_{1026.84}$**965.63**$_5$(16.2$_8$), $\gamma_{817.10}$**1175.4**(100$_4$) M1, $\gamma_{352.235}$**1640.26**$_6$(97.3$_3$) E2(+M1) $\delta>1$, $\gamma_{164.988}$**1827.5**(33.5$_2$) M1(+E2) $\delta<1$, γ_0**1992.5**(0.5$_5$)(?)

1999.5$_3$(?), $(15/2^+)$, $\gamma_{1609.05}$**390.5**$_2$(100) E1

2058.01$_{13}$, $(17/2)^-$, $\gamma_{1609.05}$**448.9**$_2$(19$_2$) (E2), $\gamma_{1483.80}$**574.2**$_1$(100$_1$) M1

2088.47$_9$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1402.90}$**685.6**(31$_{11}$), $\gamma_{1144.09}$**944.4**$_2$(71$_{28}$), $\gamma_{1124.89}$**963.6**(57$_{28}$), $\gamma_{1026.84}$**1061.6**$_1$(100$_{14}$), $\gamma_{352.235}$**1736.3**$_2$(93$_{13}$), $\gamma_{164.988}$**1923.4**(16$_9$)

2126.6$_6$, $1/2,3/2,5/2^-$, $\gamma_{1402.90}$**723.7**(100$_{25}$), $\gamma_{1124.89}$**1001.7**($\leq$ 37)(?), $\gamma_{352.235}$**1774.4**(75$_{25}$)

2158.36$_4$, $(3/2)^+$, $\gamma_{1614.05}$**544.3**(1.1$_4$), $\gamma_{1544.13}$**614.2**$_1$(7.3$_8$), $\gamma_{1487.60}$**670.8**(3.5$_8$), $\gamma_{1205.67}$**952.7**$_1$(6.9$_8$), $\gamma_{1124.89}$**1033.4**(10.8$_{19}$) (M1), $\gamma_{1026.84}$**1131.65**$_7$(34.2$_{11}$) (M1), $\gamma_{817.10}$**1341.19**$_6$(100$_4$) E1, $\gamma_{352.235}$**1806.0**$_1$(19.2$_{11}$), $\gamma_{164.988}$**1993.3**(2.3$_8$)

2199.90$_{11}$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1402.90}$**797.0**(11$_5$), $\gamma_{1205.67}$**994.3**(21$_5$), $\gamma_{1167.11}$**1032.8**(53$_{16}$), $\gamma_{1144.09}$**1055.8**(74$_{21}$), $\gamma_{1124.89}$**1075.0**$_1$(42$_5$), $\gamma_{352.235}$**1847.7**(47$_5$), $\gamma_{164.988}$**2034.8**(100$_{16}$)

B **2231.6**$_2$, $(17/2^-)$, $\gamma_{1609.05}$**622.7**$_2$(93$_4$) (E2), $\gamma_{1483.80}$**747.6**$_2$(100$_4$)

2261.54$_9$, $1/2^{(-)},3/2$, $\gamma_{1487.60}$**774.0**(7$_4$), $\gamma_{1402.90}$**858.6**(32$_8$), $\gamma_{1167.11}$**1094.3**$_3$(12$_4$), $\gamma_{1144.09}$**1117.5**(48$_8$), $\gamma_{1124.89}$**1136.6**(12$_8$), $\gamma_{1026.84}$**1234.7**$_2$(30$_5$), $\gamma_{817.10}$**1444.4**(36$_8$), $\gamma_{352.235}$**1909.3**$_1$(100$_8$), $\gamma_{164.988}$**2096.5**(16$_4$), γ_0**2261.5**(12$_{12}$)(?)

2300.72$_6$, $1/2^{(-)},3/2$, $\gamma_{1614.05}$**686.66**$_8$(48$_4$), $\gamma_{1124.89}$**1175.8**(46$_7$), $\gamma_{1026.84}$**1273.9**(3.5$_{17}$), $\gamma_{817.10}$**1483.6**$_1$(59$_7$), $\gamma_{352.235}$**1948.5**$_1$(100$_4$), $\gamma_{164.988}$**2135.7**$_2$(26$_4$)

2314.1$_7$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{817.10}$**1497.0**(100$_{25}$), $\gamma_{164.988}$**2149.1**(75$_{25}$)

2383.4$_2$, $(19/2)^-$, $\gamma_{2058.01}$**325.2**$_2$(67$_1$) (M1+E2) $\delta=-0.09_5$, $\gamma_{1739.7}$**643.7**$_2$(100$_2$) E1, $\gamma_{1483.80}$**899.5**$_2$(77$_2$) Q

C **2401.1**$_2$, $(21/2)^+$, $\gamma_{1739.7}$**661.4**$_1$(100) E2

2482.75$_{19}$, $1/2,3/2,5/2^-$, $\gamma_{1205.67}$**1277.0**(29$_{14}$), $\gamma_{1144.09}$**1338.6**(36$_{14}$), $\gamma_{1124.89}$**1357.8**(9$_6$), $\gamma_{352.235}$**2130.5**$_2$(100$_{14}$)

2503.7$_2$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{352.235}$**2151.5**(22$_{11}$), $\gamma_{164.988}$**2338.7**$_2$(100$_{22}$)

2514.6$_3$(?), $\gamma_{1751.1}$**763.4**$_2$(100)(?)

B **2523.9**$_2$, $(21/2)^-$, $\gamma_{2231.6}$**292.3**$_2$(19$_2$) (E2), $\gamma_{2058.01}$**465.9**$_2$(100$_1$) E2

2570.1$_3$, $1/2,3/2,5/2^-$, $\gamma_{1205.67}$**1363.8**(35$_9$), $\gamma_{1167.11}$**1402.4**(12$_6$), $\gamma_{1026.84}$**1543.4**$_3$(100$_{25}$)

2590.06$_{10}$, $1/2,3/2$, $\gamma_{1544.13}$**1045.9**(24$_{12}$), $\gamma_{1487.60}$**1102.5**(18$_6$), $\gamma_{1402.90}$**1187.1**(29$_{18}$), $\gamma_{1205.67}$**1384.4**(12$_6$), $\gamma_{1124.89}$**1465.1**(7$_4$), $\gamma_{1026.84}$**1563.2**(8$_5$), $\gamma_{817.10}$**1772.9**(35$_{12}$), $\gamma_{352.235}$**2237.8**$_1$(100$_{12}$)

2599.31$_9$, $1/2^{(-)},3/2$, $\gamma_{1544.13}$**1055.1**(12$_4$), $\gamma_{1487.60}$**1111.7**(6$_3$), $\gamma_{1124.89}$**1474.3**(8$_4$), $\gamma_{1026.84}$**1572.4**(6$_3$), $\gamma_{817.10}$**1782.2**$_1$(100$_8$), $\gamma_{352.235}$**2247.0**$_2$(68$_8$), $\gamma_{164.988}$**2434.5**$_4$(20$_4$)

2613.2$_5$, $1/2^{(-)},3/2$, $\gamma_{1992.49}$**620.7**(50$_{12}$), $\gamma_{1124.89}$**1488.3**(44$_{12}$), $\gamma_{1026.84}$**1586.4**(25$_6$), $\gamma_{352.235}$**2261.0**(100$_{12}$), $\gamma_{164.988}$**2448.2**(81$_{12}$)

2683.42$_9$, $1/2,3/2$, $\gamma_{1614.05}$**1069.6**(14$_5$), $\gamma_{1544.13}$**1139.5**(19$_5$), $\gamma_{1205.67}$**1477.7**$_2$(38$_{10}$), $\gamma_{1144.09}$**1539.6**$_4$(29$_{10}$),

$\gamma_{1124.89}$**1558.5**$_1(52_{10})$, $\gamma_{1026.84}$**1656.8**(100_{10})

2702.9$_4$, $1/2^{(-)},3/2,5/2^-$, $\gamma_{1205.67}$**1497.6**(36_{14}), $\gamma_{1144.09}$**1556.2**(60_{20}), $\gamma_{164.988}$**2538.3**$_4(100_{40})$

2757.21$_9$, $1/2,3/2$, $\gamma_{1487.60}$**1269.7**(5_3), $\gamma_{1124.89}$**1632.3**(9_3), $\gamma_{1026.84}$**1730.4**(7), $\gamma_{817.10}$**1940.1**$_1(100_9)$, $\gamma_{352.235}$**2404.9**$_2(31_6)$

2768.0$_4$, $1/2,3/2,5/2^-$, $\gamma_{1144.09}$**1623.8**(67_{30}), $\gamma_{352.235}$**2415.8**$_4(100_{33})$

2808.6$_5$, $1/2,3/2$, $\gamma_{1487.60}$**1320.9**(26_{12}), $\gamma_{1167.11}$**1641.3**(32_{16}), $\gamma_{817.10}$**1991.8**(80_{40}), $\gamma_{352.235}$**2456.2**(100_{20})

2824.97$_8$, $1/2^-,3/2^-$, $\gamma_{1544.13}$**1280.8**$_1(11_1)$, $\gamma_{1487.60}$**1337.5**(3_1), $\gamma_{1402.90}$**1422.1**(6_2), $\gamma_{1026.84}$**1798.2**(18_2), $\gamma_{817.10}$**2007.9**$_1(100_3)$ E2(+M1) $\delta>2$, $\gamma_{352.235}$**2472.7**$_2(13_2)$

2830.6$_{10}$, $1/2,3/2,5/2^-$, $\gamma_{352.235}$**2478.3**(100)

2856.4$_4$, $\gamma_{2401.1}$**455.3**$_3(100)$

2861.8$_5$, $1/2^{(-)},3/2$, $\gamma_{1205.67}$**1656.2**(40_{20}), $\gamma_{1167.11}$**1694.7**(60_{40}), $\gamma_{1026.84}$**1835.0**(50_{16}), $\gamma_{817.10}$**2044.7**(34_{16}), $\gamma_{164.988}$**2696.8**(100_{40})

2913.08$_{10}$, $1/2,3/2$, $\gamma_{1544.13}$**1368.9**(15_3), $\gamma_{1487.60}$**1425.6**$_3(21_6)$, $\gamma_{1205.67}$**1707.5**$_3(9_3)$, $\gamma_{1124.89}$**1788.1**(9_3), $\gamma_{352.235}$**2560.8**$_1(100_6)$

2918.2$_7$, $1/2^{(-)},3/2$, $\gamma_{1402.90}$**1515.3**(100_{50}), $\gamma_{164.988}$**2753.2**(60_{20})

2922.7$_3$, $1/2,3/2$, $\gamma_{1167.11}$**1755.6**(23_{20}), $\gamma_{1026.84}$**1895.9**(7_4), $\gamma_{817.10}$**2105.6**$_3(100_{20})$

2961.5$_6$, $1/2^{(-)},3/2$, $\gamma_{1205.67}$**1755.8**(77_{30}), $\gamma_{164.988}$**2796.5**(100_{33}), γ_0**2961.4**(<100)(?)

2977.7$_2$, $1/2^{(-)},3/2$, $\gamma_{1402.90}$**1574.8**(86_{28}), $\gamma_{1167.11}$**1810.6**$_2(100_{14})$, $\gamma_{1124.89}$**1852.8**(28_{14}), $\gamma_{1026.84}$**1950.9**(23_{11}), $\gamma_{817.10}$**2160.6**(33_{13}), $\gamma_{164.988}$**2812.7**(57_{14})

2999.64$_7$, $1/2^{(-)},3/2$, $\gamma_{1655.19}$**1344.5**(4.2_2), $\gamma_{1597.29}$**1402.4**(1.9_{10}), $\gamma_{1487.60}$**1512.1**$_2(19_4)$, $\gamma_{1348.73}$**1651.0**(1.6_{10}), $\gamma_{1205.67}$**1794.1**(3.5_{16}), $\gamma_{1144.09}$**1855.6**(6_4), $\gamma_{1124.89}$**1874.6**$_1(63_4)$, $\gamma_{1026.84}$**1972.9**$_2(38_4)$, $\gamma_{817.10}$**2182.6**$_1(100_6)$, $\gamma_{352.235}$**2647.6**(48_2), $\gamma_{164.988}$**2834.7**(6_2)

3003.4$_5$, $1/2^{(-)},3/2$, $\gamma_{1205.67}$**1797.8**(25_{13}), $\gamma_{1124.89}$**1878.5**(100_{25}), $\gamma_{1026.84}$**1976.6**(38_{25}), $\gamma_{817.10}$**2186.3**(38_{25}), $\gamma_{164.988}$**2838.4**(38_{25})

3021.05$_{18}$, $1/2^{(-)},3/2$, $\gamma_{1655.19}$**1366.0**(13_7), $\gamma_{1144.09}$**1877.1**(20_{13}), $\gamma_{1124.89}$**1896.3**(17_6), $\gamma_{1026.84}$**1994.4**(20_7), $\gamma_{817.10}$**2204.1**(20_7), $\gamma_{352.235}$**2669.1**(100_{13}), $\gamma_{164.988}$**2856.0**$_2(60_{13})$

3057.0$_4$, $1/2^{(-)},3/2$, $\gamma_{164.988}$**2892.0**$_4(100)$

3070.8$_7$, $1/2^{(-)},3/2$, $\gamma_{817.10}$**2253.7**(100_{27}), $\gamma_{164.988}$**2905.8**(66_{24})

3079.8$_3$, $1/2,3/2$, $\gamma_{1167.11}$**1912.7**$_3(100)$

3084.4$_3$, $(23/2^+)$, $\gamma_{2401.1}$**683.3**$_2(100)$

3099.76$_{10}$, $1/2^{(-)},3/2$, $\gamma_{1026.84}$**2073.0**(7_2), $\gamma_{817.10}$**2282.6**$_1(100_7)$, $\gamma_{164.988}$**2935.1**$_3(26_5)$

3124.07$_{10}$, $1/2,3/2$, $\gamma_{1205.67}$**1918.4**(8_4), $\gamma_{1026.84}$**2097.1**(27_7), $\gamma_{352.235}$**2771.8**$_1(100_{13})$, $\gamma_{164.988}$**2959.0**(≤ 20)(?)

3134.4$_2$, $(23/2^-)$, $\gamma_{2401.1}$**733.4**$_3(51_1)$ D, $\gamma_{2383.4}$**750.8**$_2(100_1)$ (E2)

3149.4$_6$, $1/2,3/2$, $\gamma_{1205.67}$**1943.7**(12_8), $\gamma_{1124.89}$**2024.4**(32_{18}), $\gamma_{352.235}$**2797.1**(100_{20})

3175.59$_{15}$, $1/2^{(-)},3/2$, $\gamma_{1402.90}$**1772.7**(20_{10}), $\gamma_{1348.73}$**1826.9**(10_4), $\gamma_{1205.67}$**1970.0**(40_{10}), $\gamma_{1167.11}$**2008.5**(30_{20}), $\gamma_{1124.89}$**2050.7**$_4(50_{20})$, $\gamma_{1026.84}$**2148.8**(40_{10}), $\gamma_{817.10}$**2358.5**(8_5), $\gamma_{352.235}$**2823.3**$_2(90_{20})$, $\gamma_{164.988}$**3010.6**$_3(100_{20})$

3201.4$_4$, $1/2^{(-)},3/2$, $\gamma_{1544.13}$**1657.3**(48_{18}), $\gamma_{1402.90}$**1798.5**(60_{40}), $\gamma_{1167.11}$**2034.3**(100_{60}), $\gamma_{1124.89}$**2076.4**(80_{20}), $\gamma_{817.10}$**2384.3**(32_{12}), $\gamma_{352.235}$**2849.2**(36_{14}), $\gamma_{164.988}$**3036.4**$_5(60_{20})$

3206.43$_{23}$, $1/2^{(-)},3/2$, $\gamma_{1614.05}$**1592.4**(100_{40}), $\gamma_{1544.13}$**1662.3**(40_{20}), $\gamma_{1487.60}$**1718.9**(20_{12}), $\gamma_{1402.90}$**1803.5**(34_{18}), $\gamma_{1205.67}$**2000.8**(40_{20}), $\gamma_{1144.09}$**2062.3**(22_{14}), $\gamma_{1026.84}$**2179.6**(100_{20}), $\gamma_{817.10}$**2389.3**$_3(100_{20})$, $\gamma_{352.235}$**2854.2**(60_{20}), $\gamma_{164.988}$**3041.4**(40_{20})

3227.5$_2$, $(23/2^+)$, $\gamma_{2523.9}$**703.6**$_2(100_2)$ E1, $\gamma_{2401.1}$**826.4**$_3(15_2)$

3231.2$_3$, $1/2^{(-)},3/2$, $\gamma_{817.10}$**2414.0**(11_7), $\gamma_{352.235}$**2878.9**$_3(100_{28})$, $\gamma_{164.988}$**3066.1**(13_7)

3258.4$_6$, $1/2,3/2$, $\gamma_{1026.84}$**2231.5**(100_{25}), $\gamma_{817.10}$**2441.3**(63_{29}), $\gamma_{352.235}$**2906.1**(58_{29})

3272.9$_6$, $1/2,3/2$, $\gamma_{1026.84}$**2246.1**(47_{23}), $\gamma_{817.10}$**2455.8**(100_{33}), $\gamma_{352.235}$**2920.7**(33_{20})

3294.2$_3$, $1/2,3/2$, $\gamma_{352.235}$**2942.6**(100)

3294.3$_2$, $(25/2^+)$, $\gamma_{2401.1}$**893.2**$_1(100_5)$ Q

3313.62$_{16}$, $1/2^{(-)},3/2^{(-)}$, $\gamma_{1614.05}$**1699.5**(3_1), $\gamma_{1544.13}$**1769.4**(2_1), $\gamma_{1487.60}$**1826.0**(10_2), $\gamma_{1205.67}$**2108.2**$_3(10_2)$, $\gamma_{1124.89}$**2188.6**(3_1), $\gamma_{817.10}$**2496.4**$_2(12_2)$, $\gamma_{352.235}$**2961.3**(100_4) (M1,E2), $\gamma_{164.988}$**3148.5**(1.7_6)

3319.0$_4$, $1/2^{(-)},3/2$, $\gamma_{1402.90}$**1916.1**(100_{50}), $\gamma_{352.235}$**2966.8**(55_{18}), $\gamma_{164.988}$**3154.0**$_5(68_{18})$

3340.6$_6$, $1/2,3/2$, $\gamma_{1205.67}$**2135.0**(67_{33}), $\gamma_{1144.09}$**2196.5**(100_{33}), $\gamma_{817.10}$**2523.5**(90_{33})

3365.2$_2$, $1/2^{(-)},3/2$, $\gamma_{1487.60}$**1877.7**(8_4), $\gamma_{1144.09}$**2221.1**(4.0_{24}), $\gamma_{817.10}$**2548.1**(12_4), $\gamma_{164.988}$**3200.2**$_2(100_8)$

3384.7$_{10}$, $1/2,3/2$, $\gamma_{352.235}$**3032.4**(100)

3387.0$_2$, $(27/2^+)$, *6.0$_5$ ns*, $\gamma_{3227.5}$**159.6**$_1(100_5)$ E2, $\gamma_{2523.9}$**863.0**$_4(16_1)$ (E3)

3403.4$_5$, $1/2^{(-)},3/2$, $\gamma_{1544.13}$**1859.3**(100_{33}), $\gamma_{1487.60}$**1915.8**(100_{33}), $\gamma_{817.10}$**2586.3**(100_{33}), $\gamma_{352.235}$**3051.2**(60_{25}), $\gamma_{164.988}$**3238.4**(50_{17})

3418.8$_5$, $1/2^{(-)},3/2$, $\gamma_{1487.60}$**1931.0**(55_{27}), $\gamma_{1205.67}$**2212.9**(100_{32}), $\gamma_{352.235}$**3066.3**(73_{32}), $\gamma_{164.988}$**3254.5**(68_{32})

3431.4$_4$, $1/2^{(-)},3/2$, $\gamma_{352.235}$**3078.9**(100_{33}), $\gamma_{164.988}$**3266.4**$_4(53_{13})$

3442.8$_6$, $1/2,3/2$, $\gamma_{1124.89}$**2317.9**(100_{37}), $\gamma_{817.10}$**2625.7**(53_{26}), $\gamma_{352.235}$**3090.6**(42_{21})

3466.8$_6$, $1/2^{(-)},3/2$, $\gamma_{1026.84}$**2440.0**(58_{33}), $\gamma_{817.10}$**2649.7**(83_{42}), $\gamma_{164.988}$**3301.8**(100_{50})

3473.2$_3$, $1/2^{(-)},3/2$, $\gamma_{1026.84}$**2446.4**(14_8), $\gamma_{817.10}$**2656.1**(20_3), $\gamma_{164.988}$**3308.2**$_3(100_{22})$

3486.2$_5$, $1/2,3/2$, $\gamma_{1167.11}$**2319.0**(59_1), $\gamma_{352.235}$**3133.9**$_5(100_1)$

3499.6$_7$, $1/2^{(-)},3/2$, $\gamma_{352.235}$**3147.0**(90_{40}), $\gamma_{164.988}$**3335.0**(100_{30})

3516.2$_4$, $1/2,3/2$, $\gamma_{352.235}$**3163.9**$_4(100)$

3535.1$_4$, $1/2^{(-)},3/2$, $\gamma_{1026.84}$**2508.3**(18_{10}), $\gamma_{817.10}$**2718.0**(18_{10}), $\gamma_{352.235}$**3182.8**$_4(100_{25})$, $\gamma_{164.988}$**3370.1**(20_{10})

3543.9$_4$, $1/2^{(-)},3/2$, $\gamma_{164.988}$**3378.9**$_4(100)$

3611.4$_2$, $(25/2)^-$, $\gamma_{3227.5}$**383.7**$_3(12_1)$ D, $\gamma_{2523.9}$**1087.6**$_1(100_1)$ E2

3631.9$_3$, $(27/2^-)$, *0.7 ns*, $\gamma_{3611.4}$**(21)**, $\gamma_{3387.0}$**245.0**$_2(42_1)$ D, $\gamma_{3294.3}$**337.7**$_2(55_1)$ D, $\gamma_{3134.4}$**497.3**$_3(100_2)$ (E2)

3765.2$_4$, $(29/2)$, $\gamma_{3387.0}$**378.2**$_3(100)$

D **4054.3**$_4$, $(29/2^-)$, $\gamma_{3631.9}$**422.5**$_3(100)$ D

4323.7$_3$, $(29/2^-)$, $\gamma_{3611.4}$**712.3**$_2(100)$ (E2)

4340.0$_4$, $(31/2^-)$, $\gamma_{4054.3}$**285.6**$_3(22_1)$ D, $\gamma_{3631.9}$**708.0**$_3(100_3)$ (E2)

4342.7$_4$, $(29/2^+)$, $\gamma_{3387.0}$**955.6**$_3(100)$

4571.8$_5$, $\gamma_{4323.7}$**248.1**$_3(100)$(?)

E **4719.3**$_4$, $(33/2^+)$, $\gamma_{4342.7}$**376.6**$_3(5.7_4)$ (E2), $\gamma_{4340.0}$**379.4**$_3(100_1)$ D

D **4801.4**$_4$, $(33/2^-)$, $\gamma_{4340.0}$**461.0**$_3(10_1)$, $\gamma_{4054.3}$**747.4**$_3(100_3)$ (E2)

5052.2$_4$, $(35/2^-)$, $\gamma_{4801.4}$**250.8**$_3(18_1)$, $\gamma_{4340.0}$**712.3**$_3(100_1)$ (E2)

D **5300.3**$_4$, $(37/2^-)$, $\gamma_{5052.2}$**248.0**$_3(69_1)$ D, $\gamma_{4801.4}$**498.8**$_3(100_3)$ (E2)

E **5462.5**$_4$, $(37/2^+)$, $\gamma_{5052.2}$**410.5**$_3(22_1)$ D, $\gamma_{4719.3}$**743.2**$_3(100_1)$ (E2)

D **5633.5**$_5$, $(41/2^-)$, $\gamma_{5300.3}$**333.2**$_3(100)$ (E2)

5738.5$_5$, $(39/2^-)$, $\gamma_{5633.5}$**105**(10), $\gamma_{5300.3}$**438.4**$_3(100)$ (M1+E2) $\delta=+0.16_2$, $\gamma_{5052.2}$**687**(52)

E **6098.8**$_5$, $(41/2^+)$, $\gamma_{5738.5}$**359.6**$_3(28.9_2)$ D, $\gamma_{5462.5}$**636.6**$_3(100_2)$ (E2)

6264.8$_5$, $(45/2^-)$, $\gamma_{5633.5}$**631.3**$_3(100)$

6299.8(?), $\gamma_{5633.5}$**667**(100)(?)

E **6470.2**$_5$, $(45/2^+)$, $\gamma_{6264.8}$**205.4**$_3(4.9_5)$, $\gamma_{6098.8}$**371.4**$_3(100_1)$ (E2)

6504(?), $\gamma_{6264.8}$**240**(100)(?)

F **6656.4**$_6$, $(49/2^+)$, *2.8 ns*, $\gamma_{6470.2}$**186.2**$_3(100)$ (E2)

6786.5(?), $\gamma_{6470.2}$**317**(100)(?)

7071.7(?), $\gamma_{6656.4}$**416**(100)(?)

7741.4$_{12}$, $(51/2)$, $\gamma_{6656.4}$**1085**$_1$

F **7821.5**$_6$, $(53/2^+)$, $\gamma_{6656.4}$**1165.3**$_3(100)$ (Q)

7824.4$_7$, $(51/2^-)$, $\gamma_{6656.4}$**1168.0**$_3(100)$ D

7996.6$_7$, $(53/2^-)$, $\gamma_{7824.4}$**172.2**$_3(100)$ (M1)

8217.6$_7$, $(53/2^+)$, $\gamma_{6656.4}$**1560.9**$_3(100)$ (Q)

8433.3$_7$, $(55/2)$, $\gamma_{8217.6}$**215.4**$_3(13_1)$, $\gamma_{7821.5}$**611.8**$_3(100_1)$

8458.3$_{11}$, $(51/2^-)$, $\gamma_{6656.4}$**1802**$_1$

8465.2$_{11}$, $(47/2^-)$, $\gamma_{6470.2}$**1995**$_1$

F **8557.0**$_7$, $(57/2^+)$, $\gamma_{8433.3}$**123.3**$_3(31_1)$, $\gamma_{7821.5}$**735.8**$_3(100_1)$ (E2)

8657.4$_{12}$, $(51/2^-)$, $\gamma_{6656.4}$**2001**$_1$

G **8940.3**$_7$, $(57/2^-)$, $\gamma_{8433.3}$**507.1**$_3(8.2_2)$, $\gamma_{7996.6}$**943.8**$_3(100_1)$ (Q)

9055.2$_{11}$, $(49/2^+)$, $\gamma_{6470.2}$**2585**$_1$

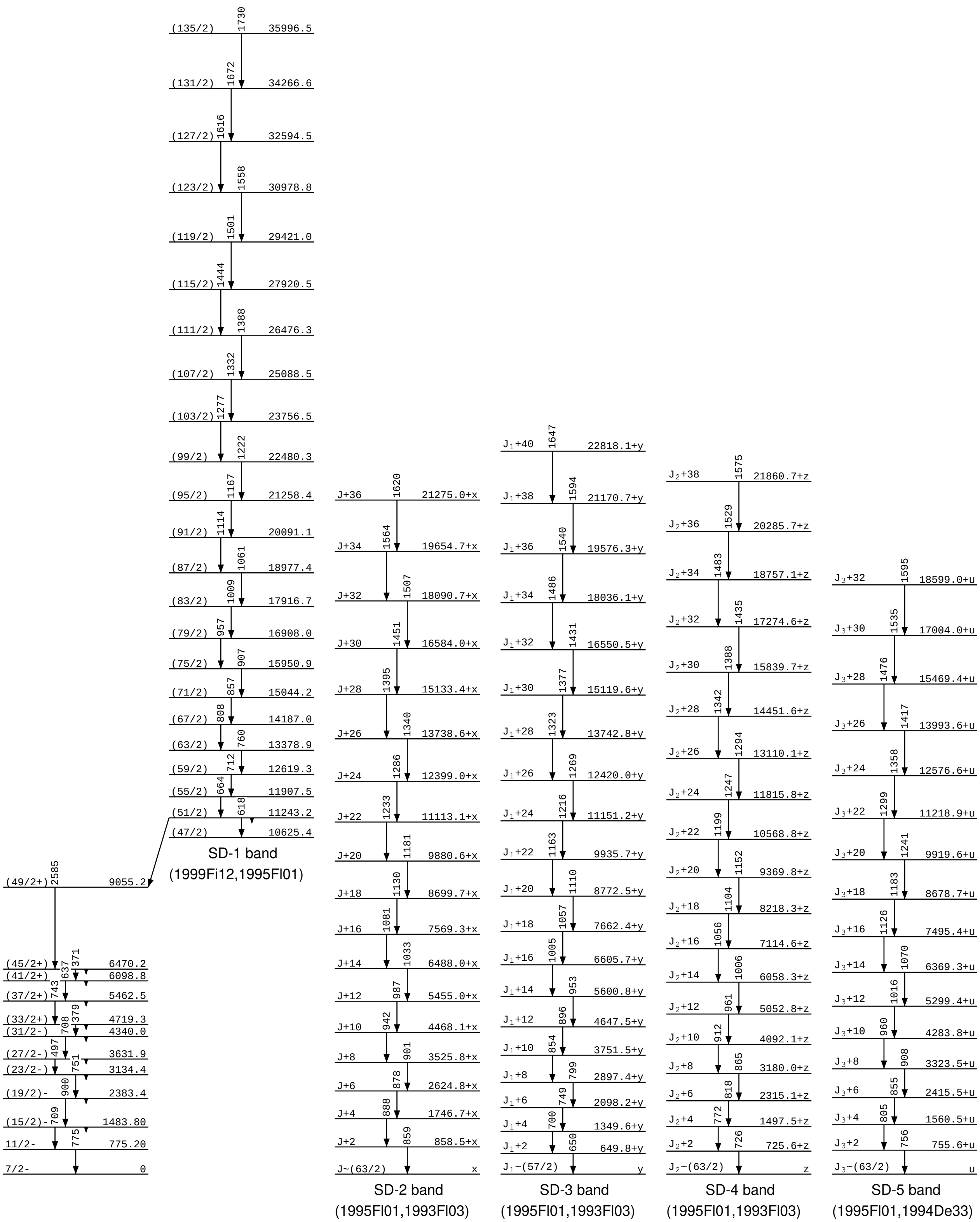
9273.0$_7$, $(57/2^-)$, $\gamma_{7996.6}$**1276.4**$_3(100)$ (Q)

9325.8$_7$, $(59/2)$, $\gamma_{8557.0}$**768.7**$_3(100)$

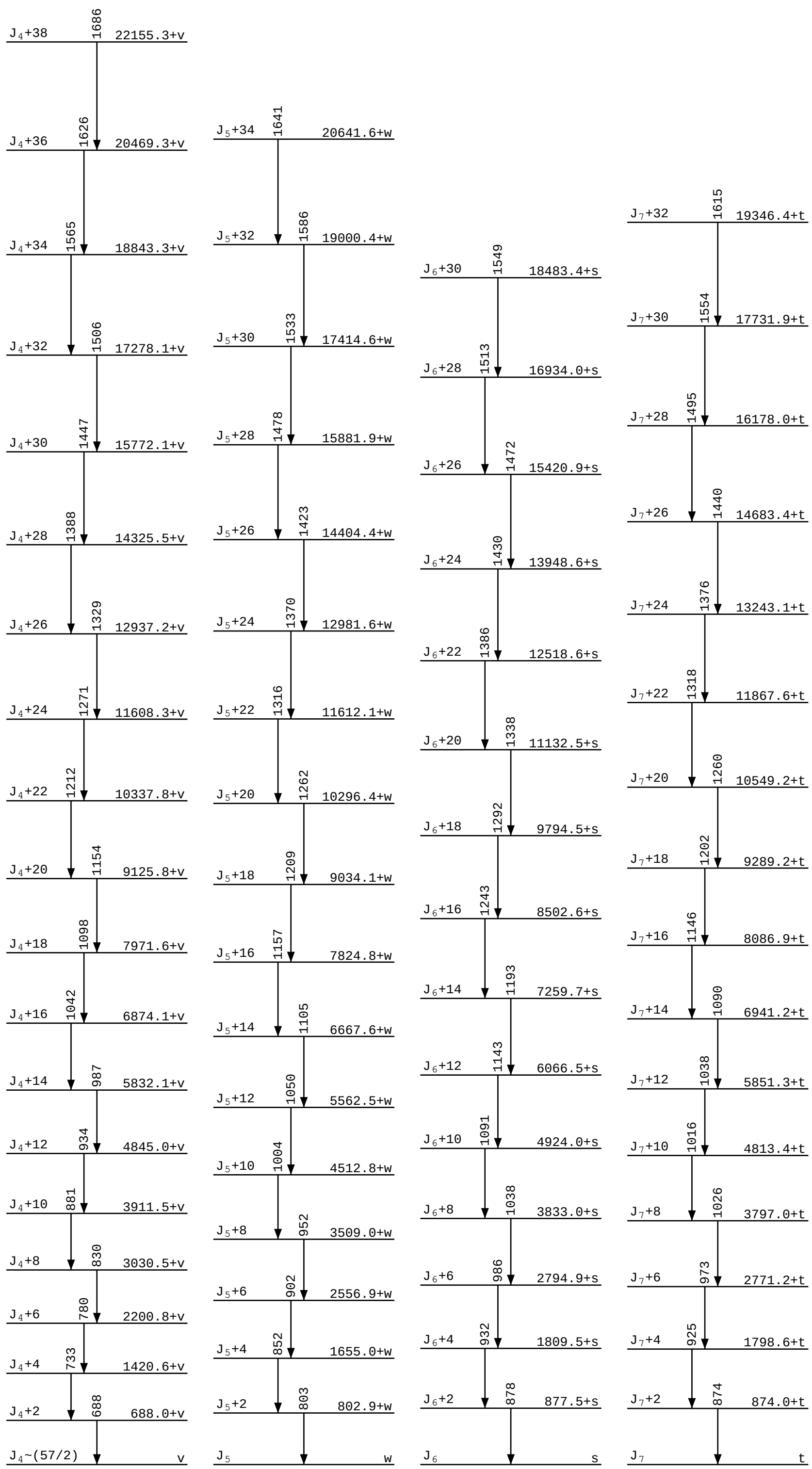
H **9437.9**$_7$, $(59/2)$, $\gamma_{9273.0}$**164.9**$_3(25_1)$, $\gamma_{8557.0}$**881.1**$_3(100_2)$

G **9501.6**$_7$, $(61/2^-)$, $\gamma_{\mathbf{9325.8}}\mathbf{175.6}_3(12.5_2)$, $\gamma_{\mathbf{8940.3}}\mathbf{561.4}_3(100_1)$ (E2)
H **10361.9**$_7$, $(63/2)$, $\gamma_{\mathbf{9501.6}}\mathbf{860.1}_3(45_1)$, $\gamma_{\mathbf{9437.9}}\mathbf{924.0}_3(100_4)$ (Q)
10510.0$_7$, $(63/2)$, $\gamma_{\mathbf{9501.6}}\mathbf{1008.3}_3(100)$
G **10601.8**$_7$, $(65/2^-)$, $\gamma_{\mathbf{9501.6}}\mathbf{1100.5}_3(100)$ (Q)
I **10625.4**$_{12}$, $(47/2)$
10850.5$_7$, $(63/2)$, $\gamma_{\mathbf{9501.6}}\mathbf{1348.7}_3(100)$
H **10930.3**$_7$, $(65/2^-)$, $\gamma_{\mathbf{10361.9}}\mathbf{568.3}_3(100_4)$, $\gamma_{\mathbf{9501.6}}\mathbf{1428.7}_3(81_4)$ (Q)
11011.5$_7$, $(65/2)$, $\gamma_{\mathbf{10850.5}}\mathbf{160.7}_3(48_2)$, $\gamma_{\mathbf{10510.0}}\mathbf{501.4}_3(100_4)$
H **11199.7**$_7$, $(67/2)$, $\gamma_{\mathbf{10930.3}}\mathbf{269.3}_3(18_1)$, $\gamma_{\mathbf{10601.8}}\mathbf{598.1}_3(100_1)$, $\gamma_{\mathbf{10361.9}}\mathbf{838.0}_3(50_2)$ (E2)
I **11243.2**$_{12}$, $(51/2)$, $\gamma_{\mathbf{10625.4}}\mathbf{617.8}_1(0.16_3)$, $\gamma_{\mathbf{9055.2}}\mathbf{2188}_1(0.024_6)$, $\gamma_{\mathbf{8465.2}}\mathbf{2778}_2(<0.005)$(?), $\gamma_{\mathbf{8458.3}}\mathbf{2785}_2(<0.005)$(?)
11711.7$_7$, $(67/2)$, $\gamma_{\mathbf{10601.8}}\mathbf{1109.9}_3(100)$
I **11907.5**$_{12}$, $(55/2)$, $\gamma_{\mathbf{11243.2}}\mathbf{664.2}_1(0.68_7)$
12268.3$_8$, $(67/2)$, $\gamma_{\mathbf{11199.7}}\mathbf{1068.6}_3(100)$
12383.7$_7$, $(69/2)$, $\gamma_{\mathbf{11711.7}}\mathbf{672.1}_3(100_5)$, $\gamma_{\mathbf{11199.7}}\mathbf{1183.9}_3(78_8)$, $\gamma_{\mathbf{11011.5}}\mathbf{1372.0}_3(55_8)$ (Q)
12469.0$_8$, $(69/2^-)$, $\gamma_{\mathbf{10601.8}}\mathbf{1867.1}_3(100)$ (Q)
12580.6$_8$, $(71/2)$, $\gamma_{\mathbf{11711.7}}\mathbf{868.9}_3(100)$ (Q)
I **12619.3**$_{12}$, $(59/2)$, $\gamma_{\mathbf{11907.5}}\mathbf{711.8}_1$
12751.9$_8$, $(71/2)$, $\gamma_{\mathbf{11199.7}}\mathbf{1552.4}_3(100)$ (Q)
12967.1$_7$, $(71/2)$, $\gamma_{\mathbf{12751.9}}\mathbf{215.4}_3(39_7)$, $\gamma_{\mathbf{12383.7}}\mathbf{583.1}_3(100_6)$, $\gamma_{\mathbf{12268.3}}\mathbf{698.9}_3(90_4)$ (E2), $\gamma_{\mathbf{11199.7}}\mathbf{1767.4}_3(59_4)$ (Q)
13189.1$_8$, $(75/2)$, $\gamma_{\mathbf{12580.6}}\mathbf{608.6}_3(100)$ (E2)
13278.6$_8$, $(73/2)$, $\gamma_{\mathbf{12967.1}}\mathbf{311.4}_3(100)$
I **13378.9**$_{12}$, $(63/2)$, $\gamma_{\mathbf{12619.3}}\mathbf{759.7}_1(0.88_9)$
13567.2$_8$, $(75/2)$, $\gamma_{\mathbf{13278.6}}\mathbf{288.6}_3(100)$
14108.6$_8$, $(77/2)$, $\gamma_{\mathbf{13567.2}}\mathbf{541.4}_3(100_4)$, $\gamma_{\mathbf{13189.1}}\mathbf{919.5}_3(74_4)$
I **14187.0**$_{13}$, $(67/2)$, $\gamma_{\mathbf{13378.9}}\mathbf{808.1}_1(0.96_{10})$
I **15044.2**$_{13}$, $(71/2)$, $\gamma_{\mathbf{14187.0}}\mathbf{857.1}_1(1.00)$
15163.3$_9$, $(81/2)$, $\gamma_{\mathbf{14108.6}}\mathbf{1054.7}_3(100)$ (Q)
I **15950.9**$_{13}$, $(75/2)$, $\gamma_{\mathbf{15044.2}}\mathbf{906.7}_1(1.05_{10})$
15997.4$_9$, $(85/2)$, $\gamma_{\mathbf{15163.3}}\mathbf{834.1}_3(100)$(?)
I **16908.0**$_{13}$, $(79/2)$, $\gamma_{\mathbf{15950.9}}\mathbf{957.1}_1(0.98_{10})$
I **17916.7**$_{13}$, $(83/2)$, $\gamma_{\mathbf{16908.0}}\mathbf{1008.7}_1(0.95_{10})$
I **18977.4**$_{13}$, $(87/2)$, $\gamma_{\mathbf{17916.7}}\mathbf{1060.7}_1(0.90_9)$
I **20091.1**$_{13}$, $(91/2)$, $\gamma_{\mathbf{18977.4}}\mathbf{1113.8}_1(0.83_8)$
I **21258.4**$_{13}$, $(95/2)$, $\gamma_{\mathbf{20091.1}}\mathbf{1167.2}_2$
I **22480.3**$_{13}$, $(99/2)$, $\gamma_{\mathbf{21258.4}}\mathbf{1221.8}_1(0.80_8)$
I **23756.5**$_{13}$, $(103/2)$, $\gamma_{\mathbf{22480.3}}\mathbf{1276.5}_1(0.72_7)$
I **25088.5**$_{13}$, $(107/2)$, $\gamma_{\mathbf{23756.5}}\mathbf{1332.0}_1(0.60_6)$
I **26476.3**$_{13}$, $(111/2)$, $\gamma_{\mathbf{25088.5}}\mathbf{1387.6}_1(0.51_5)$
I **27920.5**$_{13}$, $(115/2)$, $\gamma_{\mathbf{26476.3}}\mathbf{1444.2}_1(0.38_5)$
I **29421.0**$_{13}$, $(119/2)$, $\gamma_{\mathbf{27920.5}}\mathbf{1500.5}_2(0.28_4)$
I **30978.8**$_{13}$, $(123/2)$, $\gamma_{\mathbf{29421.0}}\mathbf{1557.8}_2(0.19_3)$
I **32594.5**$_{14}$, $(127/2)$, $\gamma_{\mathbf{30978.8}}\mathbf{1615.7}_3(0.10_2)$
I **34266.6**$_{14}$, $(131/2)$, $\gamma_{\mathbf{32594.5}}\mathbf{1672.1}_4(0.06_2)$
I **35996.5**$_{16}$, $(135/2)$, $\gamma_{\mathbf{34266.6}}\mathbf{1729.9}_8(0.03_1)$
J **x**, $\mathrm{J}\approx(63/2)$
J **858.5+x**, $\mathrm{J}+2$, $\gamma_{\mathbf{x}}\mathbf{858.5}_3$
J **1746.7+x**, $\mathrm{J}+4$, $\gamma_{\mathbf{858.5+x}}\mathbf{888.2}_2$
J **2624.8+x**, $\mathrm{J}+6$, $\gamma_{\mathbf{1746.7+x}}\mathbf{878.1}_2(0.40_6)$
J **3525.8+x**, $\mathrm{J}+8$, $\gamma_{\mathbf{2624.8+x}}\mathbf{901.0}_1(0.44_6)$
J **4468.1+x**, $\mathrm{J}+10$, $\gamma_{\mathbf{3525.8+x}}\mathbf{942.3}_1$
J **5455.0+x**, $\mathrm{J}+12$, $\gamma_{\mathbf{4468.1+x}}\mathbf{986.9}_1$
J **6488.0+x**, $\mathrm{J}+14$, $\gamma_{\mathbf{5455.0+x}}\mathbf{1033.0}_1(0.86_{12})$
J **7569.3+x**, $\mathrm{J}+16$, $\gamma_{\mathbf{6488.0+x}}\mathbf{1081.3}_1$
J **8699.7+x**, $\mathrm{J}+18$, $\gamma_{\mathbf{7569.3+x}}\mathbf{1130.4}_1(1.00_{14})$
J **9880.6+x**, $\mathrm{J}+20$, $\gamma_{\mathbf{8699.7+x}}\mathbf{1180.9}_1(1.02_{14})$
J **11113.1+x**, $\mathrm{J}+22$, $\gamma_{\mathbf{9880.6+x}}\mathbf{1232.5}_1(0.58_{10})$
J **12399.0+x**, $\mathrm{J}+24$, $\gamma_{\mathbf{11113.1+x}}\mathbf{1285.8}_1(0.66_{10})$
J **13738.6+x**, $\mathrm{J}+26$, $\gamma_{\mathbf{12399.0+x}}\mathbf{1339.6}_1(0.56_{10})$
J **15133.4+x**, $\mathrm{J}+28$, $\gamma_{\mathbf{13738.6+x}}\mathbf{1394.8}_2(0.52_{10})$
J **16584.0+x**, $\mathrm{J}+30$, $\gamma_{\mathbf{15133.4+x}}\mathbf{1450.6}_2(0.42_8)$
J **18090.7+x**, $\mathrm{J}+32$, $\gamma_{\mathbf{16584.0+x}}\mathbf{1506.7}_3(0.26_6)$
J **19654.7+x**, $\mathrm{J}+34$, $\gamma_{\mathbf{18090.7+x}}\mathbf{1564.0}_3$
J **21275.0+x**, $\mathrm{J}+36$, $\gamma_{\mathbf{19654.7+x}}\mathbf{1620.3}_7$
K **y**, $\mathrm{J}_1\approx(57/2)$
K **649.8+y**, J_1+2, $\gamma_{\mathbf{y}}\mathbf{649.8}_4$
K **1349.6+y**, J_1+4, $\gamma_{\mathbf{649.8+y}}\mathbf{699.8}_2$
K **2098.2+y**, J_1+6, $\gamma_{\mathbf{1349.6+y}}\mathbf{748.6}_2$
K **2897.4+y**, J_1+8, $\gamma_{\mathbf{2098.2+y}}\mathbf{799.2}_2$
K **3751.5+y**, J_1+10, $\gamma_{\mathbf{2897.4+y}}\mathbf{854.1}_2$
K **4647.5+y**, J_1+12, $\gamma_{\mathbf{3751.5+y}}\mathbf{896.0}_2(0.64_{16})$
K **5600.8+y**, J_1+14, $\gamma_{\mathbf{4647.5+y}}\mathbf{953.3}_2$
K **6605.7+y**, J_1+16, $\gamma_{\mathbf{5600.8+y}}\mathbf{1004.9}_2(0.64_{16})$
K **7662.4+y**, J_1+18, $\gamma_{\mathbf{6605.7+y}}\mathbf{1056.7}_2(0.64_{16})$
K **8772.5+y**, J_1+20, $\gamma_{\mathbf{7662.4+y}}\mathbf{1110.1}_2(0.80_{16})$
K **9935.7+y**, J_1+22, $\gamma_{\mathbf{8772.5+y}}\mathbf{1163.2}_2(0.96_{16})$
K **11151.2+y**, J_1+24, $\gamma_{\mathbf{9935.7+y}}\mathbf{1215.5}_2(0.96_{16})$
K **12420.0+y**, J_1+26, $\gamma_{\mathbf{11151.2+y}}\mathbf{1268.8}_2(0.96_{16})$
K **13742.8+y**, J_1+28, $\gamma_{\mathbf{12420.0+y}}\mathbf{1322.8}_2(1.20_{24})$
K **15119.6+y**, J_1+30, $\gamma_{\mathbf{13742.8+y}}\mathbf{1376.8}_2(1.12_{24})$
K **16550.5+y**, J_1+32, $\gamma_{\mathbf{15119.6+y}}\mathbf{1430.9}_3(0.56_{16})$
K **18036.1+y**, J_1+34, $\gamma_{\mathbf{16550.5+y}}\mathbf{1485.6}_4(0.56_{16})$
K **19576.3+y**, J_1+36, $\gamma_{\mathbf{18036.1+y}}\mathbf{1540.2}_5$
K **21170.7+y**, J_1+38, $\gamma_{\mathbf{19576.3+y}}\mathbf{1594.4}_7$
K **22818.1+y**, J_1+40, $\gamma_{\mathbf{21170.7+y}}\mathbf{1647.4}_9$
L **z**, $\mathrm{J}_2\approx(63/2)$
L **725.6+z**, J_2+2, $\gamma_{\mathbf{z}}\mathbf{725.6}_4$
L **1497.5+z**, J_2+4, $\gamma_{\mathbf{725.6+z}}\mathbf{771.9}_2$
L **2315.1+z**, J_2+6, $\gamma_{\mathbf{1497.5+z}}\mathbf{817.6}_2$
L **3180.0+z**, J_2+8, $\gamma_{\mathbf{2315.1+z}}\mathbf{864.9}_2$
L **4092.1+z**, J_2+10, $\gamma_{\mathbf{3180.0+z}}\mathbf{912.1}_2$
L **5052.8+z**, J_2+12, $\gamma_{\mathbf{4092.1+z}}\mathbf{960.7}_2$
L **6058.3+z**, J_2+14, $\gamma_{\mathbf{5052.8+z}}\mathbf{1005.5}_2$
L **7114.6+z**, J_2+16, $\gamma_{\mathbf{6058.3+z}}\mathbf{1056.2}_2$
L **8218.3+z**, J_2+18, $\gamma_{\mathbf{7114.6+z}}\mathbf{1103.7}_2$
L **9369.8+z**, J_2+20, $\gamma_{\mathbf{8218.3+z}}\mathbf{1151.5}_2$
L **10568.8+z**, J_2+22, $\gamma_{\mathbf{9369.8+z}}\mathbf{1199.0}_2$
L **11815.8+z**, J_2+24, $\gamma_{\mathbf{10568.8+z}}\mathbf{1247.0}_2(1.00_5)$
L **13110.1+z**, J_2+26, $\gamma_{\mathbf{11815.8+z}}\mathbf{1294.3}_2(0.87_5)$
L **14451.6+z**, J_2+28, $\gamma_{\mathbf{13110.1+z}}\mathbf{1341.5}_3(0.72_5)$
L **15839.7+z**, J_2+30, $\gamma_{\mathbf{14451.6+z}}\mathbf{1388.1}_3(0.62_5)$
L **17274.6+z**, J_2+32, $\gamma_{\mathbf{15839.7+z}}\mathbf{1434.9}_3(0.42_5)$
L **18757.1+z**, J_2+34, $\gamma_{\mathbf{17274.6+z}}\mathbf{1482.5}_4(0.22_5)$
L **20285.7+z**, J_2+36, $\gamma_{\mathbf{18757.1+z}}\mathbf{1528.6}_8(0.12_5)$
L **21860.7+z**, J_2+38, $\gamma_{\mathbf{20285.7+z}}\mathbf{1575.0}_{10}$
M **u**, $\mathrm{J}_3\approx(63/2)$
M **755.6+u**, J_3+2, $\gamma_{\mathbf{u}}\mathbf{755.7}_4$
M **1560.5+u**, J_3+4, $\gamma_{\mathbf{755.6+u}}\mathbf{804.9}_3$
M **2415.5+u**, J_3+6, $\gamma_{\mathbf{1560.5+u}}\mathbf{855.0}_3$
M **3323.5+u**, J_3+8, $\gamma_{\mathbf{2415.5+u}}\mathbf{908.0}_2$
M **4283.8+u**, J_3+10, $\gamma_{\mathbf{3323.5+u}}\mathbf{960.3}_2$
M **5299.4+u**, J_3+12, $\gamma_{\mathbf{4283.8+u}}\mathbf{1015.6}_3$
M **6369.3+u**, J_3+14, $\gamma_{\mathbf{5299.4+u}}\mathbf{1069.9}_3$
M **7495.4+u**, J_3+16, $\gamma_{\mathbf{6369.3+u}}\mathbf{1126.1}_3$
M **8678.7+u**, J_3+18, $\gamma_{\mathbf{7495.4+u}}\mathbf{1183.4}_3$
M **9919.6+u**, J_3+20, $\gamma_{\mathbf{8678.7+u}}\mathbf{1240.9}_3$
M **11218.9+u**, J_3+22, $\gamma_{\mathbf{9919.6+u}}\mathbf{1299.3}_3$
M **12576.6+u**, J_3+24, $\gamma_{\mathbf{11218.9+u}}\mathbf{1357.7}_3$
M **13993.6+u**, J_3+26, $\gamma_{\mathbf{12576.6+u}}\mathbf{1417.0}_4$
M **15469.4+u**, J_3+28, $\gamma_{\mathbf{13993.6+u}}\mathbf{1475.8}_4$
M **17004.0+u**, J_3+30, $\gamma_{\mathbf{15469.4+u}}\mathbf{1534.6}_5$
M **18599.0+u**, J_3+32, $\gamma_{\mathbf{17004.0+u}}\mathbf{1595.0}_{10}$
N **v**, $\mathrm{J}_4\approx(57/2)$
N **688.0+v**, J_4+2, $\gamma_{\mathbf{v}}\mathbf{688.1}_5$
N **1420.6+v**, J_4+4, $\gamma_{\mathbf{688.0+v}}\mathbf{732.6}_2$
N **2200.8+v**, J_4+6, $\gamma_{\mathbf{1420.6+v}}\mathbf{780.2}_2$
N **3030.5+v**, J_4+8, $\gamma_{\mathbf{2200.8+v}}\mathbf{829.8}_2$
N **3911.5+v**, J_4+10, $\gamma_{\mathbf{3030.5+v}}\mathbf{881.0}_2$
N **4845.0+v**, J_4+12, $\gamma_{\mathbf{3911.5+v}}\mathbf{933.5}_2$
N **5832.1+v**, J_4+14, $\gamma_{\mathbf{4845.0+v}}\mathbf{987.1}_2$
N **6874.1+v**, J_4+16, $\gamma_{\mathbf{5832.1+v}}\mathbf{1042.0}_2$
N **7971.6+v**, J_4+18, $\gamma_{\mathbf{6874.1+v}}\mathbf{1097.5}_2$
N **9125.8+v**, J_4+20, $\gamma_{\mathbf{7971.6+v}}\mathbf{1154.3}_2$
N **10337.8+v**, J_4+22, $\gamma_{\mathbf{9125.8+v}}\mathbf{1212.0}_3$
N **11608.3+v**, J_4+24, $\gamma_{\mathbf{10337.8+v}}\mathbf{1270.5}_3$
N **12937.2+v**, J_4+26, $\gamma_{\mathbf{11608.3+v}}\mathbf{1328.9}_5$
N **14325.5+v**, J_4+28, $\gamma_{\mathbf{12937.2+v}}\mathbf{1388.3}_5$
N **15772.1+v**, J_4+30, $\gamma_{\mathbf{14325.5+v}}\mathbf{1446.6}_4$
N **17278.1+v**, J_4+32, $\gamma_{\mathbf{15772.1+v}}\mathbf{1506.0}_6$
N **18843.3+v**, J_4+34, $\gamma_{\mathbf{17278.1+v}}\mathbf{1565.2}_6$
N **20469.3+v**, J_4+36, $\gamma_{\mathbf{18843.3+v}}\mathbf{1626.0}_{10}$
N **22155.3+v**, J_4+38, $\gamma_{\mathbf{20469.3+v}}\mathbf{1686.0}_{10}$
O **w**, J_5
O **802.9+w**, J_5+2, $\gamma_{\mathbf{w}}\mathbf{802.9}_3$

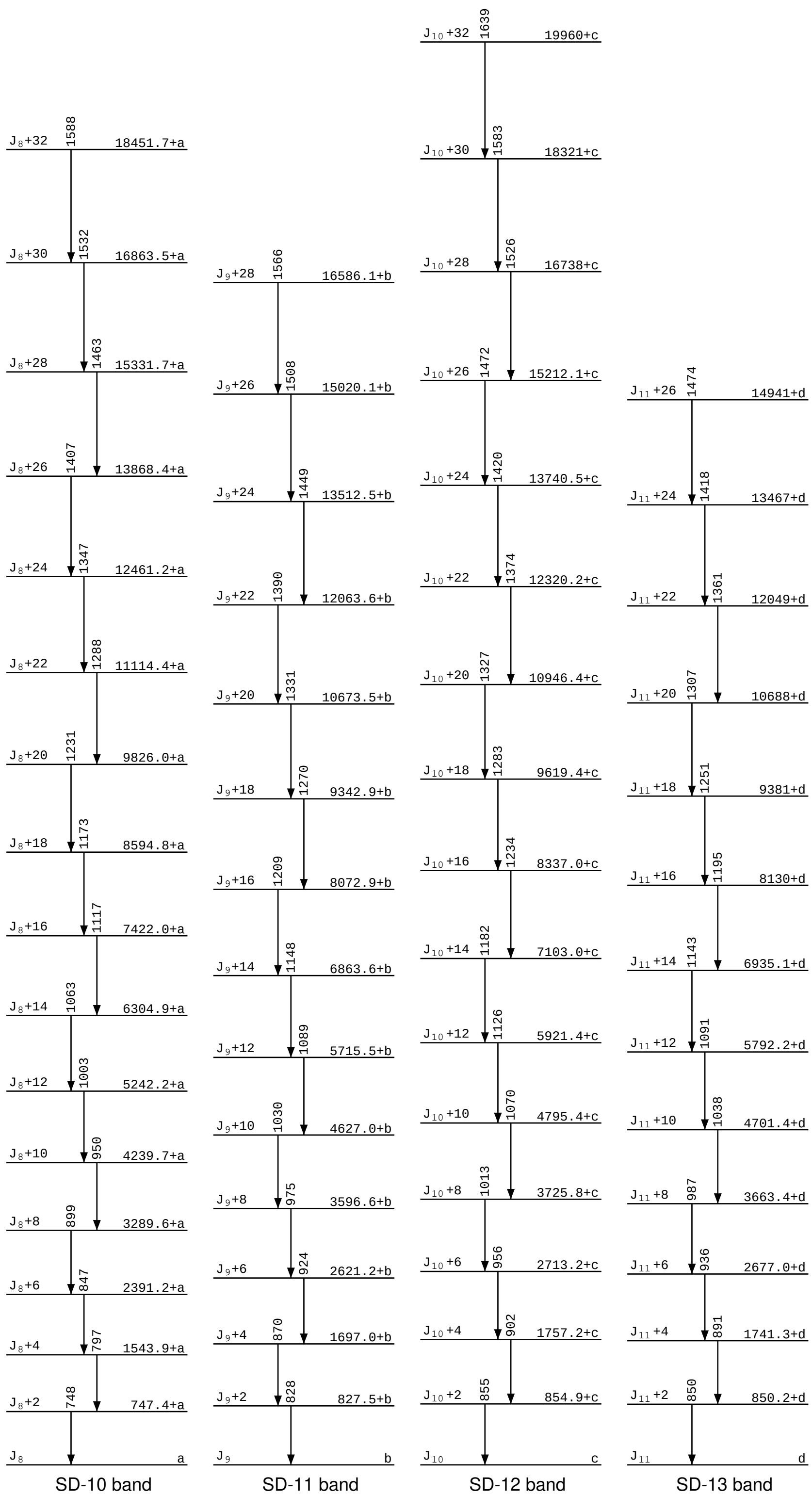
O **1655.0+w**, J_5+4, $\gamma_{802.9+w}$**852.2**$_4$
O **2556.9+w**, J_5+6, $\gamma_{1655.0+w}$**902.0**$_3$
O **3509.0+w**, J_5+8, $\gamma_{2556.9+w}$**952.1**$_2$
O **4512.8+w**, J_5+10, $\gamma_{3509.0+w}$**1003.8**$_4$
O **5562.5+w**, J_5+12, $\gamma_{4512.8+w}$**1049.7**$_4$
O **6667.6+w**, J_5+14, $\gamma_{5562.5+w}$**1105.2**$_4$
O **7824.8+w**, J_5+16, $\gamma_{6667.6+w}$**1157.2**$_3$
O **9034.1+w**, J_5+18, $\gamma_{7824.8+w}$**1209.3**$_3$
O **10296.4+w**, J_5+20, $\gamma_{9034.1+w}$**1262.3**$_3$
O **11612.1+w**, J_5+22, $\gamma_{10296.4+w}$**1315.7**$_3$
O **12981.6+w**, J_5+24, $\gamma_{11612.1+w}$**1369.5**$_3$
O **14404.4+w**, J_5+26, $\gamma_{12981.6+w}$**1422.8**$_4$
O **15881.9+w**, J_5+28, $\gamma_{14404.4+w}$**1477.5**$_5$
O **17414.6+w**, J_5+30, $\gamma_{15881.9+w}$**1532.7**$_5$
O **19000.4+w**, J_5+32, $\gamma_{17414.6+w}$**1585.8**$_6$
O **20641.6+w**, J_5+34, $\gamma_{19000.4+w}$**1641.2**$_{11}$
P **s**, J_6
P **877.5+s**, J_6+2, γ_{s}**877.8**$_4$
P **1809.5+s**, J_6+4, $\gamma_{877.5+s}$**932.0**$_3$
P **2794.9+s**, J_6+6, $\gamma_{1809.5+s}$**985.5**$_3$
P **3833.0+s**, J_6+8, $\gamma_{2794.9+s}$**1038.3**$_3$
P **4924.0+s**, J_6+10, $\gamma_{3833.0+s}$**1091.0**$_2$
P **6066.5+s**, J_6+12, $\gamma_{4924.0+s}$**1142.5**$_2$
P **7259.7+s**, J_6+14, $\gamma_{6066.5+s}$**1193.3**$_3$
P **8502.6+s**, J_6+16, $\gamma_{7259.7+s}$**1242.9**$_3$
P **9794.5+s**, J_6+18, $\gamma_{8502.6+s}$**1291.9**$_3$
P **11132.5+s**, J_6+20, $\gamma_{9794.5+s}$**1338.1**$_3$
P **12518.6+s**, J_6+22, $\gamma_{11132.5+s}$**1386.1**$_3$
P **13948.6+s**, J_6+24, $\gamma_{12518.6+s}$**1430.0**$_4$
P **15420.9+s**, J_6+26, $\gamma_{13948.6+s}$**1472.3**$_5$
P **16934.0+s**, J_6+28, $\gamma_{15420.9+s}$**1513.1**$_6$
P **18483.4+s**, J_6+30, $\gamma_{16934.0+s}$**1549.4**$_8$
Q **t**, J_7
Q **874.0+t**, J_7+2, γ_{t}**874.1**$_3$
Q **1798.6+t**, J_7+4, $\gamma_{874.0+t}$**924.6**$_2$
Q **2771.2+t**, J_7+6, $\gamma_{1798.6+t}$**972.6**$_4$
Q **3797.0+t**, J_7+8, $\gamma_{2771.2+t}$**1025.9**$_5$
Q **4813.4+t**, J_7+10, $\gamma_{3797.0+t}$**1016.4**$_3$
Q **5851.3+t**, J_7+12, $\gamma_{4813.4+t}$**1037.9**$_3$
Q **6941.2+t**, J_7+14, $\gamma_{5851.3+t}$**1089.9**$_3$
Q **8086.9+t**, J_7+16, $\gamma_{6941.2+t}$**1145.6**$_3$
Q **9289.2+t**, J_7+18, $\gamma_{8086.9+t}$**1202.4**$_3$
Q **10549.2+t**, J_7+20, $\gamma_{9289.2+t}$**1260.0**$_3$
Q **11867.6+t**, J_7+22, $\gamma_{10549.2+t}$**1318.4**$_3$
Q **13243.1+t**, J_7+24, $\gamma_{11867.6+t}$**1375.5**$_3$
Q **14683.4+t**, J_7+26, $\gamma_{13243.1+t}$**1440.3**$_4$
Q **16178.0+t**, J_7+28, $\gamma_{14683.4+t}$**1494.6**$_4$
Q **17731.9+t**, J_7+30, $\gamma_{16178.0+t}$**1553.9**$_4$
Q **19346.4+t**, J_7+32, $\gamma_{17731.9+t}$**1614.5**$_7$
R **a**, J_8
R **747.4+a**, J_8+2, γ_{a}**747.6**$_6$
R **1543.9+a**, J_8+4, $\gamma_{747.4+a}$**796.7**$_5$
R **2391.2+a**, J_8+6, $\gamma_{1543.9+a}$**847.3**$_4$
R **3289.6+a**, J_8+8, $\gamma_{2391.2+a}$**898.5**$_4$
R **4239.7+a**, J_8+10, $\gamma_{3289.6+a}$**950.2**$_4$
R **5242.2+a**, J_8+12, $\gamma_{4239.7+a}$**1002.5**$_4$
R **6304.9+a**, J_8+14, $\gamma_{5242.2+a}$**1062.8**$_4$
R **7422.0+a**, J_8+16, $\gamma_{6304.9+a}$**1117.1**$_4$
R **8594.8+a**, J_8+18, $\gamma_{7422.0+a}$**1172.8**$_4$
R **9826.0+a**, J_8+20, $\gamma_{8594.8+a}$**1231.3**$_5$
R **11114.4+a**, J_8+22, $\gamma_{9826.0+a}$**1288.4**$_4$
R **12461.2+a**, J_8+24, $\gamma_{11114.4+a}$**1346.8**$_4$
R **13868.4+a**, J_8+26, $\gamma_{12461.2+a}$**1407.2**$_5$
R **15331.7+a**, J_8+28, $\gamma_{13868.4+a}$**1463.3**$_6$
R **16863.5+a**, J_8+30, $\gamma_{15331.7+a}$**1531.8**$_{10}$
R **18451.7+a**, J_8+32, $\gamma_{16863.5+a}$**1588.2**$_{13}$
S **b**, J_9
S **827.5+b**, J_9+2, γ_{b}**827.6**$_5$
S **1697.0+b**, J_9+4, $\gamma_{827.5+b}$**869.7**$_4$
S **2621.2+b**, J_9+6, $\gamma_{1697.0+b}$**924.2**$_3$
S **3596.6+b**, J_9+8, $\gamma_{2621.2+b}$**975.4**$_3$
S **4627.0+b**, J_9+10, $\gamma_{3596.6+b}$**1030.4**$_3$
S **5715.5+b**, J_9+12, $\gamma_{4627.0+b}$**1088.5**$_3$
S **6863.6+b**, J_9+14, $\gamma_{5715.5+b}$**1148.2**$_4$
S **8072.9+b**, J_9+16, $\gamma_{6863.6+b}$**1209.3**$_4$
S **9342.9+b**, J_9+18, $\gamma_{8072.9+b}$**1270.0**$_4$
S **10673.5+b**, J_9+20, $\gamma_{9342.9+b}$**1330.6**$_4$
S **12063.6+b**, J_9+22, $\gamma_{10673.5+b}$**1390.1**$_3$
S **13512.5+b**, J_9+24, $\gamma_{12063.6+b}$**1448.9**$_4$
S **15020.1+b**, J_9+26, $\gamma_{13512.5+b}$**1507.6**$_5$
S **16586.1+b**, J_9+28, $\gamma_{15020.1+b}$**1566.0**$_{11}$
T **c**, J_{10}
T **854.9+c**, $J_{10}+2$, γ_{c}**855.1**$_{10}$
T **1757.2+c**, $J_{10}+4$, $\gamma_{854.9+c}$**902.4**$_6$
T **2713.2+c**, $J_{10}+6$, $\gamma_{1757.2+c}$**956.1**$_6$
T **3725.8+c**, $J_{10}+8$, $\gamma_{2713.2+c}$**1012.6**$_5$
T **4795.4+c**, $J_{10}+10$, $\gamma_{3725.8+c}$**1069.6**$_5$
T **5921.4+c**, $J_{10}+12$, $\gamma_{4795.4+c}$**1126.1**$_5$
T **7103.0+c**, $J_{10}+14$, $\gamma_{5921.4+c}$**1181.6**$_5$
T **8337.0+c**, $J_{10}+16$, $\gamma_{7103.0+c}$**1234.0**$_6$
T **9619.4+c**, $J_{10}+18$, $\gamma_{8337.0+c}$**1282.5**$_6$
T **10946.4+c**, $J_{10}+20$, $\gamma_{9619.4+c}$**1327.1**$_7$
T **12320.2+c**, $J_{10}+22$, $\gamma_{10946.4+c}$**1373.8**$_8$
T **13740.5+c**, $J_{10}+24$, $\gamma_{12320.2+c}$**1420.3**$_{10}$
T **15212.1+c**, $J_{10}+26$, $\gamma_{13740.5+c}$**1471.7**$_8$
T **16738+c**, $J_{10}+28$, $\gamma_{15212.1+c}$**1525.6**$_8$
T **18321+c**, $J_{10}+30$, $\gamma_{16738+c}$**1583.1**$_{12}$
T **19960+c**, $J_{10}+32$, $\gamma_{18321+c}$**1639.2**$_{13}$
U **d**, J_{11}
U **850.2+d**, $J_{11}+2$, γ_{d}**850.3**$_{10}$
U **1741.3+d**, $J_{11}+4$, $\gamma_{850.2+d}$**891.2**$_{10}$
U **2677.0+d**, $J_{11}+6$, $\gamma_{1741.3+d}$**935.7**$_9$
U **3663.4+d**, $J_{11}+8$, $\gamma_{2677.0+d}$**986.5**$_9$
U **4701.4+d**, $J_{11}+10$, $\gamma_{3663.4+d}$**1038.0**$_8$
U **5792.2+d**, $J_{11}+12$, $\gamma_{4701.4+d}$**1090.8**$_8$
U **6935.1+d**, $J_{11}+14$, $\gamma_{5792.2+d}$**1142.9**$_8$
U **8130+d**, $J_{11}+16$, $\gamma_{6935.1+d}$**1195.2**$_9$
U **9381+d**, $J_{11}+18$, γ_{8130+d}**1251.1**$_{10}$
U **10688+d**, $J_{11}+20$, γ_{9381+d}**1306.7**$_7$
U **12049+d**, $J_{11}+22$, $\gamma_{10688+d}$**1360.6**$_{15}$
U **13467+d**, $J_{11}+24$, $\gamma_{12049+d}$**1418.0**$_{13}$
U **14941+d**, $J_{11}+26$, $\gamma_{13467+d}$**1474.0**$_{15}$


SD-1 band
(1999Fi12,1995Fl01)
SD-2 band
(1995Fl01,1993Fl03)
SD-3 band
(1995Fl01,1993Fl03)
SD-4 band
(1995Fl01,1993Fl03)
SD-5 band
(1995Fl01,1994De33)

$^{149}_{64}Gd_{85}$


SD-6 band
(1995Fl01,1994De33)
SD-7 band
(1998By02)
SD-8 band
(1998By02)
SD-9 band
(1998By02)

$^{149}_{64}Gd_{85}$



SD-10 band
(1998By02)
SD-11 band
(1998By02)
SD-12 band
(1998By02)
SD-13 band
(1998By02)

$^{149}_{64}Gd_{85}$

$^{150}_{64}$Gd$_{86}$

S_n: 8706 $_7$, S_p: 6609 $_7$

Nuclear bands

A GS band
B band based on 12^+
C band based on 3^-
D band based on 21^-
E Yrast SD-1 band (1991Fa07,1999ErZZ,2002By01)
Q_0=17.0$^{5}_{4}$
F SD-2 band (1994Fa13,1999ErZZ)
Q_0=16.8$_{12}$
G SD-3 band (1990By01,1993Be37,1999ErZZ)
Q_0=17.4$^{5}_{4}$
H SD-4 band (1993Be37,1999ErZZ)
Q_0=15.0$^{6}_{4}$
I SD-5 band (1993Be37,1999ErZZ)
Q_0=16.2$_4$
J SD-6 band (1999ErZZ)
Q_0=15.4$^{8}_{5}$
K SD-7 band (1999ErZZ)
L SD-8 band (1999ErZZ)
M SD-9 band (1999ErZZ)
N SD-10 band (1999ErZZ)
O SD-11 band (1999ErZZ)
P SD-12 band (1999ErZZ)
Q SD-13 band (1999ErZZ)
R SD-14 band (1999ErZZ)

Levels and γ-ray branchings:

A **0**, 0^+, *1.79x10^6$_8$ y*, %α=100

A **638.045**$_{14}$, 2^+, $\gamma_{\mathbf{0}}$**638.050**$_{16}$(100) E2

C **1134.297**$_{17}$, 3^-, $\gamma_{\mathbf{638.045}}$**496.242**$_{15}$(100) E1

1207.135$_{20}$, 0^+, $\gamma_{\mathbf{638.045}}$**569.083**$_{15}$(100$_5$) E2+M1, $\gamma_{\mathbf{0}}$**1207.2**$_2$ E0

A **1288.42**$_3$, 4^+, $\gamma_{\mathbf{1134.297}}$**154.07**$_6$(1.8$_4$), $\gamma_{\mathbf{638.045}}$**650.36**(100) E2

1430.467$_{18}$, $(2)^+$, $\gamma_{\mathbf{638.045}}$**792.385**$_{20}$(100) E2, $\gamma_{\mathbf{0}}$**1430.46**$_4$(56$_4$) (E2)

1518.362$_{21}$, 2^+, $\gamma_{\mathbf{1134.297}}$**384.06**$_4$(13.2), $\gamma_{\mathbf{638.045}}$**880.27**$_3$(100$_5$) M1+(E2+E0), $\gamma_{\mathbf{0}}$**1518.34**(92.7) E2

1592.428$_{24}$, 1, $\gamma_{\mathbf{1207.135}}$**385.35**(2.2), $\gamma_{\mathbf{638.045}}$**954.46**$_4$(61$_3$) E1, $\gamma_{\mathbf{0}}$**1592.51**$_4$(100.0$_{19}$) M1

1699.912$_{25}$, 5^-, $\gamma_{\mathbf{1288.42}}$**411.490**$_{15}$(77$_4$) M1, $\gamma_{\mathbf{1134.297}}$**565.64**$_2$(100) E1, $\gamma_{\mathbf{638.045}}$**1061.52**$_{10}$(15$_3$)

1814.13$_6$, 3^-, $\gamma_{\mathbf{1288.42}}$**525.70**$_{20}$(35), $\gamma_{\mathbf{638.045}}$**1176.08**$_6$(100$_6$) E1

1936.31$_{16}$, 6^+, $\gamma_{\mathbf{1699.912}}$**235.9**$_3$($\approx$ 3), $\gamma_{\mathbf{1288.42}}$**648.4**$_3$(100$_{26}$) E2

1947.36$_3$, $2^-,3^-,4^-$, $\gamma_{\mathbf{1134.297}}$**813.06**$_2$(100) (E2)

1955.371$_{22}$, 2^+, $\gamma_{\mathbf{1518.362}}$**436.980**$_{25}$(66$_3$) M1+E2 $\delta = 1.2_4$, $\gamma_{\mathbf{1430.467}}$**524.90**$_{20}$(38) (M1), $\gamma_{\mathbf{1207.135}}$**748.23**(34), $\gamma_{\mathbf{1134.297}}$**821.067**$_{20}$(100$_6$) E1, $\gamma_{\mathbf{638.045}}$**1317.50**$_6$(29.7$_{16}$), $\gamma_{\mathbf{0}}$**1955.3**$_2$(7.2$_{16}$)

1969.99$_{11}$, $\gamma_{\mathbf{1592.428}}$**377.82**$_{15}$(83$_{25}$), $\gamma_{\mathbf{1518.362}}$**450**(5), $\gamma_{\mathbf{1430.467}}$**539.26**$_{15}$(50$_{25}$), $\gamma_{\mathbf{638.045}}$**1332.3**$_4$(100$_{40}$)

1987.93$_3$, $2^+,3^+,4^+$, $\gamma_{\mathbf{1430.467}}$**557.45**$_3$(36.5$_{16}$) E2, $\gamma_{\mathbf{1288.42}}$**699.47**(22), $\gamma_{\mathbf{638.045}}$**1349.83**(100) E2

2080.61$_9$, $(2,3,4)^+$, $\gamma_{\mathbf{1518.362}}$**560**(17.5), $\gamma_{\mathbf{1430.467}}$**650.33**$_0$(75) (E2), $\gamma_{\mathbf{1288.42}}$**792.38**(75) (E2), $\gamma_{\mathbf{1134.297}}$**945.7**$_2$(30$_8$), $\gamma_{\mathbf{638.045}}$**1442.7**$_1$($<$ 100)

2083.96$_3$, $2^-,3^-$, $\gamma_{\mathbf{1592.428}}$**491.57**$_5$(2.3$_{23}$), $\gamma_{\mathbf{1518.362}}$**565.71**(13), $\gamma_{\mathbf{1134.297}}$**949.90**$_5$(100$_5$) (M1), $\gamma_{\mathbf{638.045}}$**1446.1**$_1$(51$_5$)

2091.623$_{25}$, 2^+, $\gamma_{\mathbf{1518.362}}$**573.30**(9.4) M1, $\gamma_{\mathbf{1430.467}}$**661.18**$_4$(1.5), $\gamma_{\mathbf{1288.42}}$**803**(0.93), $\gamma_{\mathbf{1207.135}}$**884.45**$_5$(5.7$_4$), $\gamma_{\mathbf{1134.297}}$**957.33**$_4$(19.6$_{12}$) E1, $\gamma_{\mathbf{638.045}}$**1453.55**$_4$(100$_6$) (M1), $\gamma_{\mathbf{0}}$**2091.56**$_{10}$(48.0$_{24}$)

A **2115.75**$_9$, 6^+, $\gamma_{\mathbf{1936.31}}$**179.4**$_3$($\approx$ 1.3) E2(?), $\gamma_{\mathbf{1699.912}}$**415.3**$_2$(25$_{11}$) E1, $\gamma_{\mathbf{1288.42}}$**827.48**$_{10}$(100$_{14}$) E2

2157.5$_7$, $\gamma_{\mathbf{1134.297}}$**1023**(4), $\gamma_{\mathbf{638.045}}$**1519.6**(100)

2179.912$_{21}$, 2^+, $\gamma_{\mathbf{1955.371}}$**224.4**$_1$(3.9$_{12}$), $\gamma_{\mathbf{1592.428}}$**587**(2.8), $\gamma_{\mathbf{1518.362}}$**661.55**$_4$(4.5), $\gamma_{\mathbf{1430.467}}$**749.43**$_2$(3.9), $\gamma_{\mathbf{1134.297}}$**1045.60**$_3$(100$_5$) E1, $\gamma_{\mathbf{638.045}}$**1541.94**$_6$(39.7$_{23}$), $\gamma_{\mathbf{0}}$**2179.9**$_2$(33.1$_{17}$)

2209.54$_3$, $2^-,3^-$, $\gamma_{\mathbf{1430.467}}$**779.09**$_4$(47$_5$), $\gamma_{\mathbf{1134.297}}$**1075.25**$_3$(100$_5$) M1, $\gamma_{\mathbf{638.045}}$**1571.26**$_{12}$(21$_4$)

C **2211.11**$_{14}$, 7^-, $\gamma_{\mathbf{2115.75}}$**95.5**$_2$(2.0$_4$), $\gamma_{\mathbf{1936.31}}$**274.9**$_3$(8$_3$) E1, $\gamma_{\mathbf{1699.912}}$**511**(100$_{16}$) E2

2262.21$_4$, $\gamma_{\mathbf{1518.362}}$**743.86**$_6$(21), $\gamma_{\mathbf{1430.467}}$**831.73**$_7$(14.6), $\gamma_{\mathbf{1134.297}}$**1127.7**$_1$(65$_5$), $\gamma_{\mathbf{638.045}}$**1624.20**$_6$(100$_7$)

2306.2$_4$, $(5^-,6^+)$, $\gamma_{\mathbf{2211.11}}$$\approx$**95**, $\gamma_{\mathbf{1699.912}}$**606.8**$_5$(100$_{10}$), $\gamma_{\mathbf{1288.42}}$**1017.2**$_5$(14$_2$)

2326.283$_{17}$, $\gamma_{\mathbf{1987.93}}$**338.36**$_5$(36$_6$), $\gamma_{\mathbf{1699.912}}$**626.47**$_{10}$(24$_6$), $\gamma_{\mathbf{1518.362}}$**807.71**$_{15}$(20$_4$), $\gamma_{\mathbf{1430.467}}$**895.86**$_5$(48$_4$), $\gamma_{\mathbf{1288.42}}$**1037.9**$_3$(14$_6$), $\gamma_{\mathbf{638.045}}$**1688.23**$_1$(100$_{10}$)

2364.91$_5$, $1,2^+$, $\gamma_{\mathbf{1592.428}}$**772.52**$_8$(17.2$_{19}$), $\gamma_{\mathbf{1518.362}}$**846.5**$_2$(3.1$_{19}$), $\gamma_{\mathbf{1207.135}}$**1157.76**$_8$(16.0$_{13}$), $\gamma_{\mathbf{1134.297}}$**1231**(1.8), $\gamma_{\mathbf{638.045}}$**1726.85**$_{15}$(23.9$_{25}$), $\gamma_{\mathbf{0}}$**2364.93**$_{10}$(100$_5$)

2392.06$_{17}$, $(7)^+$, $\gamma_{\mathbf{2211.11}}$**180.9**$_3$, $\gamma_{\mathbf{2115.75}}$**276**, $\gamma_{\mathbf{1936.31}}$**455.7**$_2$ M1

2408.53$_5$, 2^+, $\gamma_{\mathbf{2080.61}}$**328**$_1$(6$_4$), $\gamma_{\mathbf{1430.467}}$**977.78**$_8$(20.5$_{24}$), $\gamma_{\mathbf{1288.42}}$**1120.1**$_5$(16$_8$), $\gamma_{\mathbf{1134.297}}$**1274.51**$_{10}$(45$_4$), $\gamma_{\mathbf{638.045}}$**1770.45**$_6$(100$_5$)

2416.7$_5$(?), $\gamma_{\mathbf{638.045}}$**1778.6**$_5$(100)

2426.20$_3$, $1^-,2^+$, $\gamma_{\mathbf{1518.362}}$**908.1**$_3$(1.9$_{12}$), $\gamma_{\mathbf{1430.467}}$**995.38**$_{10}$(10.4$_{19}$), $\gamma_{\mathbf{1134.297}}$**1291.66**$_3$(85$_5$), $\gamma_{\mathbf{638.045}}$**1788.91**$_5$(100$_5$), $\gamma_{\mathbf{0}}$**2425.98**$_{10}$(63$_3$)

2434.34$_9$, $\gamma_{\mathbf{1518.362}}$**916.1**$_3$(19$_7$), $\gamma_{\mathbf{1430.467}}$**1003.8**$_2$(9.4), $\gamma_{\mathbf{638.045}}$**1796.29**$_{10}$(100$_{10}$)

2521.56$_7$, $(2^+,3,4^+)$, $\gamma_{\mathbf{1947.36}}$**574.1**$_5$(16), $\gamma_{\mathbf{1518.362}}$**1003.2**$_2$(26), $\gamma_{\mathbf{1430.467}}$**1091.0**$_1$(47), $\gamma_{\mathbf{1288.42}}$**1233.2**$_2$(53$_8$), $\gamma_{\mathbf{1134.297}}$**1387.2**(21$_{14}$), $\gamma_{\mathbf{638.045}}$**1883.6**$_1$(100$_8$)

A **2554.14**$_{12}$, 8^+, $\gamma_{\mathbf{2392.06}}$**162.0**$_2$(14$_4$) M1, $\gamma_{\mathbf{2211.11}}$**343.07**$_{10}$(59$_{19}$) E1, $\gamma_{\mathbf{2115.75}}$**438.37**$_{10}$(100$_{45}$) E2

2558.51$_{20}$, $1,2^+$, $\gamma_{\mathbf{1207.135}}$**1351.2**(17), $\gamma_{\mathbf{0}}$**2558.49**$_{20}$(100$_{10}$)

2564.96$_{13}$, $(1^-,2^-,3^-)$, $\gamma_{\mathbf{1592.428}}$**972.7**$_2$(27$_{14}$), $\gamma_{\mathbf{1430.467}}$**1134**(91), $\gamma_{\mathbf{1134.297}}$**1430.5**$_{04}$(90$_{90}$) (E2), $\gamma_{\mathbf{638.045}}$**1926.6**$_2$(100$_{14}$), $\gamma_{\mathbf{0}}$**2565.4**$_3$(50$_{14}$)

2593.9$_7$, $\gamma_{\mathbf{1207.135}}$**1387.3**($<$ 120), $\gamma_{\mathbf{1134.297}}$**1459**(100)

2627.99$_8$(?), $\gamma_{\mathbf{1592.428}}$**1035.8**$_3$(30$_{13}$), $\gamma_{\mathbf{1134.297}}$**1493.67**$_8$(100$_{13}$), $\gamma_{\mathbf{638.045}}$**1989.6**$_8$(48$_{22}$)

2654.39$_7$, $\gamma_{\mathbf{1987.93}}$**666.49**$_8$(6.7$_{21}$), $\gamma_{\mathbf{1955.371}}$**699.03**(12.7), $\gamma_{\mathbf{1430.467}}$**1223.8**$_5$(5.4$_{21}$), $\gamma_{\mathbf{638.045}}$**2016.30**$_{10}$(100$_5$)

2678.45$_{13}$, $1,2^+$, $\gamma_{\mathbf{1814.13}}$**864.41**(7.3), $\gamma_{\mathbf{1430.467}}$**1247.9**$_2$(16$_4$), $\gamma_{\mathbf{1134.297}}$**1544.1**$_5$(31$_{15}$), $\gamma_{\mathbf{638.045}}$**2040.4**$_2$(100$_8$), $\gamma_{\mathbf{0}}$**2678.6**$_3$(40$_6$)

2686.84$_4$, $1^-,2,3^-$, $\gamma_{\mathbf{2364.91}}$**322.0**$_1$(16$_4$), $\gamma_{\mathbf{2083.96}}$**602.78**$_6$(39$_4$), $\gamma_{\mathbf{1947.36}}$**739.6**$_3$(7$_5$), $\gamma_{\mathbf{1699.912}}$**987.3**$_3$(7$_4$), $\gamma_{\mathbf{1592.428}}$**1094.41**$_5$(52), $\gamma_{\mathbf{1518.362}}$**1168.64**$_6$(100$_7$), $\gamma_{\mathbf{1430.467}}$**1256.4**(13$_5$), $\gamma_{\mathbf{1134.297}}$**1552.3**$_5$(21$_{10}$)

2754.58$_6$, $2^+,3,4^+$, $\gamma_{\mathbf{2262.21}}$**492.35**$_5$(16), $\gamma_{\mathbf{1288.42}}$**1466.1**$_3$(5$_8$), $\gamma_{\mathbf{1134.297}}$**1620.30**$_{10}$(33$_5$), $\gamma_{\mathbf{638.045}}$**2116.8**$_2$(100$_5$), $\gamma_{\mathbf{0}}$**2754.6**$_8$(25$_8$)

2767.3$_6$(?), (8^+), $\gamma_{\mathbf{1936.31}}$**831.0**$_5$(100)

2786.49$_5$, $1^-,2^+$, $\gamma_{\mathbf{1955.371}}$**831.18**$_7$(4.3), $\gamma_{\mathbf{1947.36}}$**839.2**$_2$(4.3$_{13}$), $\gamma_{\mathbf{1592.428}}$**1193.9**$_1$(8.0$_{19}$), $\gamma_{\mathbf{1518.362}}$**1267**(4.3), $\gamma_{\mathbf{1430.467}}$**1356.01**$_{10}$(15.3$_{19}$), $\gamma_{\mathbf{1134.297}}$**1652.26**(13.5$_{19}$), $\gamma_{\mathbf{638.045}}$**2148.44**$_{10}$(100$_5$)

C **2816.1**$_4$, 9^-, $\gamma_{\mathbf{2211.11}}$**605.0**$_3$(100) E2

2827.81$_7$, $\gamma_{\mathbf{2083.96}}$**743.84**$_6$(100), $\gamma_{\mathbf{1955.371}}$**874**

2845.41$_5$, $1,2^+$, $\gamma_{\mathbf{2091.623}}$**753.8**$_3$(1.6$_{11}$), $\gamma_{\mathbf{1518.362}}$**1326.7**$_2$(7.1$_{17}$), $\gamma_{\mathbf{1430.467}}$**1414.95**$_6$(27.5$_{17}$), $\gamma_{\mathbf{1207.135}}$**1638.06**$_{10}$(14.3$_{22}$), $\gamma_{\mathbf{638.045}}$**2207.58**$_{10}$(100$_5$), $\gamma_{\mathbf{0}}$**2845.65**$_{25}$(19$_3$)

2868.27$_{10}$, $\gamma_{\mathbf{1288.42}}$**1579.92**$_{10}$(100$_{20}$), $\gamma_{\mathbf{1134.297}}$**1733.7**$_2$(88$_{16}$)

2906.0$_5$(?), 8^+, $\gamma_{\mathbf{2115.75}}$**789.9**$_4$(100) E2(?)

2956.20$_5$, $\gamma_{\mathbf{2209.54}}$**746**(13), $\gamma_{\mathbf{2091.623}}$**864.55**(13), $\gamma_{\mathbf{2083.96}}$**871.9**$_2$(10$_4$), $\gamma_{\mathbf{1987.93}}$**968.3**$_5$(32$_8$), $\gamma_{\mathbf{1955.371}}$**1001.0**$_2$(27$_7$), $\gamma_{\mathbf{1947.36}}$**1008.1**$_3$(19$_7$), $\gamma_{\mathbf{1592.428}}$**1365.3**$_3$(16$_5$), $\gamma_{\mathbf{1430.467}}$**1525.70**$_5$(98$_5$), $\gamma_{\mathbf{1134.297}}$**1822.2**$_5$(16$_7$), $\gamma_{\mathbf{638.045}}$**2318.14**$_{10}$(100$_5$)

2984.95$_{11}$, $1,2^+$, $\gamma_{\mathbf{1987.93}}$**997.8**$_{24}$(19$_6$), $\gamma_{\mathbf{1592.428}}$**1392.4**$_4$(17$_6$), $\gamma_{\mathbf{1518.362}}$**1466.6**$_3$(10$_7$), $\gamma_{\mathbf{1430.467}}$**1554.4**$_4$(38$_9$), $\gamma_{\mathbf{1207.135}}$**1778.8**(28), $\gamma_{\mathbf{638.045}}$**2346.9**$_2$(38$_5$), $\gamma_{\mathbf{0}}$**2984.90**$_{15}$(100$_6$)

3024.7$_3$, $\gamma_{\mathbf{1430.467}}$**1596**(100), $\gamma_{\mathbf{0}}$**3024.5**$_3$(100$_{17}$)

3035.64$_5$, $1^-,2^+$, $\gamma_{\mathbf{2209.54}}$**826.34**$_{15}$(7.1$_{11}$), $\gamma_{\mathbf{2083.96}}$**952**(30), $\gamma_{\mathbf{1592.428}}$**1443.3**$_1$($>$ 40), $\gamma_{\mathbf{1518.362}}$**1517.4**(10), $\gamma_{\mathbf{1430.467}}$**1605.44**$_{11}$(22$_3$), $\gamma_{\mathbf{1288.42}}$**1747.3**(30), $\gamma_{\mathbf{1134.297}}$**1901.74**$_{10}$(97$_5$), $\gamma_{\mathbf{638.045}}$**2397.04**$_{10}$(100$_5$), $\gamma_{\mathbf{0.0}}$**3034.86**$_{15}$(53$_3$)

3042.61$_{24}$, $\gamma_{\mathbf{1134.297}}$**1908.6**$_4$(50$_{19}$), $\gamma_{\mathbf{0}}$**3042.4**$_3$(100$_9$)

3083.76$_{17}$(?), $\gamma_{\mathbf{1955.371}}$**1130.4**$_7$(20$_{14}$), $\gamma_{\mathbf{1430.467}}$**1652.6**(20$_{10}$), $\gamma_{\mathbf{1207.135}}$**1876.6**$_4$(20$_{10}$), $\gamma_{\mathbf{1134.297}}$**1949.3**$_2$(100$_{10}$), $\gamma_{\mathbf{638.045}}$**2446.1**$_{10}$(50$_{17}$)

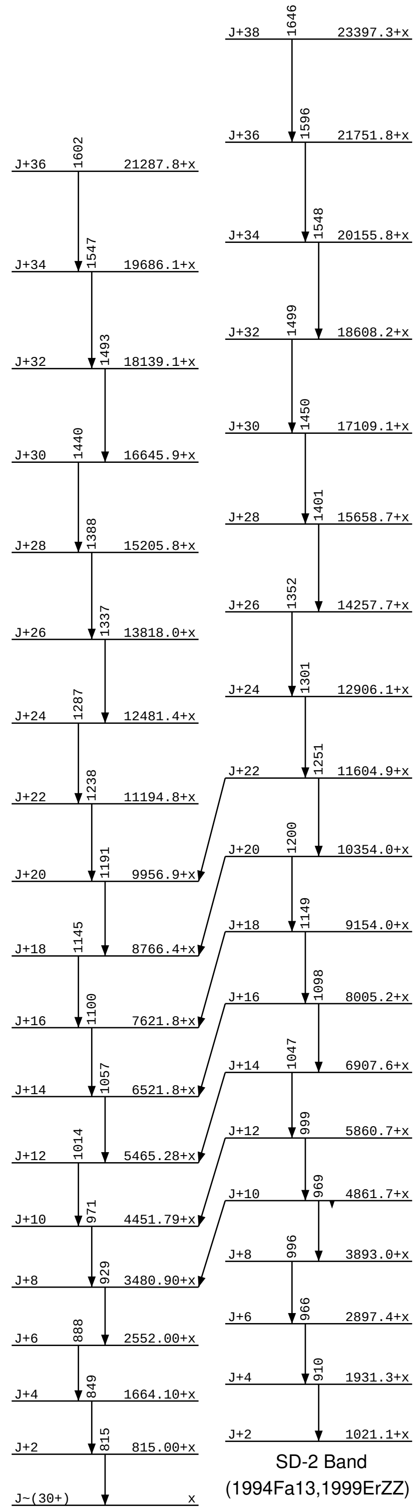
3118.75$_8$, $\gamma_{\mathbf{1518.362}}$**1600.10**$_{15}$(78$_{13}$), $\gamma_{\mathbf{1430.467}}$**1688.27**$_{10}$(70$_{22}$), $\gamma_{\mathbf{1288.42}}$**1830.7**$_5$(39$_{18}$), $\gamma_{\mathbf{1134.297}}$**1984.9**$_2$(100$_{18}$)

3134.13$_6$, $\gamma_{\mathbf{1592.428}}$**1541.94**$_6$(27$_{16}$), $\gamma_{\mathbf{1518.362}}$**1615.37**$_{10}$(58$_{12}$),

$\gamma_{1430.467}\mathbf{1702.5}_3(31_{12})$, $\gamma_{638.045}\mathbf{2494.7}_8(100_{20})$, $\gamma_0\mathbf{3133.6}_2(58_8)$
$\mathbf{3176.8}_5$, $\gamma_{2554.14}\mathbf{622.7}_5(100)$
$\mathbf{3177.732}_{17}$, $\gamma_{2083.96}\mathbf{1094.19}_5(10)$, $\gamma_{1592.428}\mathbf{1585.19}_{14}(9_4)$, $\gamma_{1518.362}\mathbf{1659.9}(14_4)$, $\gamma_{1430.467}\mathbf{1747.8}(13)$, $\gamma_{1134.297}\mathbf{2043.7}_{10}(14_9)$, $\gamma_{638.045}\mathbf{2539.645}_{10}(100_5)$
$\mathbf{3220.3}_4$, 10^-, $\gamma_{2816.1}\mathbf{404.3}_3(100)$ M1+E2
$\mathbf{3251.5}_5$, $\gamma_{1592.428}\mathbf{1660.0}(100_{19})$, $\gamma_{638.045}\mathbf{2614.3}_{10}(80_{40})$, $\gamma_0\mathbf{3250.8}_6(38_{13})$
$\mathbf{3269.32}_{11}(?)$, $\gamma_{2179.912}\mathbf{1089.4}_1(100)$
A $\mathbf{3288.2}_4$, 10^+, $\gamma_{2554.14}\mathbf{734.0}_3(100)$ E2
$\mathbf{3298.34}_{22}$, $\gamma_{1947.36}\mathbf{1351.7}(42)$, $\gamma_{1288.42}\mathbf{2006.0}_5(42_{17})$, $\gamma_{638.045}\mathbf{2661.20}_{25}(100_{13})$
$\mathbf{3329.33}_{16}$, $\gamma_{1592.428}\mathbf{1737.2}_6(17_{10})$, $\gamma_{1518.362}\mathbf{1811.9}_3(24_8)$, $\gamma_{1134.297}\mathbf{2194.6}_2(100_8)$, $\gamma_{638.045}\mathbf{2691.0}_5(44_8)$
$\mathbf{3344.68}_6$, (2^+), $\gamma_{2408.53}\mathbf{935.4}_2(7_4)$, $\gamma_{2091.623}\mathbf{1253.0}_1(22_4)$, $\gamma_{2083.96}\mathbf{1260.5}_2(10_5)$, $\gamma_{1955.371}\mathbf{1389.6}_4(29_7)$, $\gamma_{1814.13}\mathbf{1530.5}_3(12_5)$, $\gamma_{1699.912}\mathbf{1645.5}_2(22_5)$, $\gamma_{1592.428}\mathbf{1752.1}_2(32_5)$, $\gamma_{1518.362}\mathbf{1826.2}_5(24_9)$, $\gamma_{1430.467}\mathbf{1914.3}_2(100_{11})$, $\gamma_{1288.42}\mathbf{2056.3}_2(20_5)$, $\gamma_{1134.297}\mathbf{2210}(34)$, $\gamma_{638.045}\mathbf{2706.86}_{15}(88_5)$, $\gamma_0\mathbf{3344.3}_5(13.6_{17})$
C $\mathbf{3366.4}_4$, 11^-, $\gamma_{3288.2}\approx\mathbf{78}(?)$, $\gamma_{3220.3}\mathbf{146.2}_3$, $\gamma_{2816.1}\mathbf{550.3}_3$
$\mathbf{3375.72}_{14}$, $\gamma_{2326.283}\mathbf{1049.3}_4(16_{10})$, $\gamma_{1134.297}\mathbf{2241.42}_{15}(53_7)$, $\gamma_{638.045}\mathbf{2737.8}_5(100_{19})$, $\gamma_0\mathbf{3375.5}_7(14_5)$
$\mathbf{3378.11}_{11}$, $\gamma_{1814.13}\mathbf{1563.96}_{10}(50_7)$, $\gamma_{1430.467}\mathbf{1947}(17)$, $\gamma_{638.045}\mathbf{2740.3}_4(100_{17})$
$\mathbf{3389.2}_5$, $\gamma_{638.045}\mathbf{2751.0}_{10}(60_{50})$, $\gamma_0\mathbf{3389.2}_5(100_{13})$
$\mathbf{3461.7}_5$, 2^+, $\gamma_{1518.362}\mathbf{1943}(4)$, $\gamma_{1288.42}\mathbf{2173.4}_5(100_{30})$
$\mathbf{3510.72}_{17}$, $(1^-,2^+)$, $\gamma_{1592.428}\mathbf{1918}(18)$, $\gamma_{1134.297}\mathbf{2376.6}_2(85_8)$, $\gamma_{638.045}\mathbf{2872.2}_3(100_{13})$
$\mathbf{3522.4}_6$, $\gamma_0\mathbf{3522.4}_6(100)$
$\mathbf{3631.4}_3$, $\gamma_{1430.467}\mathbf{2201.4}_8(100_{40})$, $\gamma_{1134.297}\mathbf{2498}(29)$, $\gamma_{638.045}\mathbf{2993.2}_3(71_{15})$
$\mathbf{3657.35}_{19}(?)$, 2^+, $\gamma_{1987.93}\mathbf{1668.8}_3(56_{17})$, $\gamma_{1207.135}\mathbf{2450.2}_{10}(44_{23})$, $\gamma_0\mathbf{3657.74}_{25}(100_6)$
$\mathbf{3712.40}_{22}$, $\gamma_{2080.61}\mathbf{1631.7}_2(100_{40})$, $\gamma_{1134.297}\mathbf{2579.5}_8(90_{40})$
$\mathbf{3726.63}_{15}$, $\gamma_{2209.54}\mathbf{1518.24}(85)$, $\gamma_{1430.467}\mathbf{2296.9}_8(6_5)$, $\gamma_{1134.297}\mathbf{2592.25}_{15}(100_7)$
$\mathbf{3772.03}_{19}$, $\gamma_{1134.297}\mathbf{2636.8}_5(50_{30})$, $\gamma_{638.045}\mathbf{3134.1}_2(100)$
$\mathbf{3828.4}_4(?)$, $(1,2^+)$, $\gamma_{1207.135}\mathbf{2621.8}_5(100_{40})$, $\gamma_0\mathbf{3828.0}_4(33_7)$
$\mathbf{3840.04}_{17}$, $\gamma_{1987.93}\mathbf{1852}_2(16)$, $\gamma_{1430.467}\mathbf{2409.36}_{20}(100_5)$, $\gamma_{638.045}\mathbf{3202.4}_3(20_4)$
$\mathbf{3963.64}_{23}$, $\gamma_{1592.428}\mathbf{2372}(28)$, $\gamma_{1430.467}\mathbf{2532.5}_3(100_{30})$, $\gamma_{1134.297}\mathbf{2828.5}_6(33_{17})$, $\gamma_{638.045}\mathbf{3327.7}_5(67_6)$
$\mathbf{4021.2}_4(?)$, $(1,2^+)$, $\gamma_{638.045}\mathbf{3383.6}_5(100_{50})$, $\gamma_0\mathbf{4020.8}_4(0.71_7)$
B $\mathbf{4105.4}_{10}$, 12^+, $\gamma_{3288.2}\mathbf{817}(100)$ E2
$\mathbf{4111.07}_{25}(?)$, $1^-,2^+$, $\gamma_{1288.42}\mathbf{2822.7}_6(27_{14})$, $\gamma_{1134.297}\mathbf{2975.9}_6(40_{14})$, $\gamma_0\mathbf{4111.2}_3(100_{14})$
C $\mathbf{4131.1}_5$, 13^-, $\gamma_{3366.4}\mathbf{764.7}_2(100)$ E2
$\mathbf{4143.8}_3(?)$, $(1^-,2^+)$, $\gamma_{1134.297}\mathbf{3008.9}_3(100_{17})$, $\gamma_0\mathbf{4145.4}_5(67_9)$
$\mathbf{4151.0}_4$, $\gamma_{638.045}\mathbf{3512.1}_7(100_{40})$, $\gamma_0\mathbf{4151.3}_5(40_9)$
$\mathbf{4164.0}_4$, 2^+, $\gamma_{1288.42}\mathbf{2876.6}_6(100_{23})$, $\gamma_{638.045}\mathbf{3525.7}_8(23_9)$, $\gamma_0\mathbf{4163.3}_5(13.6_{23})$
$\mathbf{4178.6}_5$, $\gamma_{1207.135}\mathbf{2971.7}_{10}(100_{70})$, $\gamma_0\mathbf{4178.5}_5(80_{17})$
$\mathbf{4186.9}_5$, (12^-), $\gamma_{3220.3}\mathbf{966.6}_3(100)$ E2
$\mathbf{4206.9}_3$, $(1,2^+)$, $\gamma_{638.045}\mathbf{3570.6}_6(52_8)$, $\gamma_0\mathbf{4206.4}_3(100_6)$
$\mathbf{4235.2}_6(?)$, $(1^-,2^+)$, $\gamma_0\mathbf{4235.1}_6(100)$
$\mathbf{4246.2}_3(?)$, $(1,2^+)$, $\gamma_{638.045}\mathbf{3609.4}_8(43_{11})$, $\gamma_0\mathbf{4246.0}_3(100_6)$
$\mathbf{4258.0}_3$, $(1^-,2^+)$, $\gamma_{1134.297}\mathbf{3124.0}_3(100_{14})$, $\gamma_0\mathbf{4256.5}_6(14_4)$
$\mathbf{4264.6}_3$, 2^+, $\gamma_0\mathbf{4264.5}_3(100)$
$\mathbf{4283.1}_{10}(?)$, $(1,2^+)$, $\gamma_0\mathbf{4283.0}_{10}(100)$
$\mathbf{4289.4}_3(?)$, $(1,2^+)$, $\gamma_0\mathbf{4289.3}_3(100)$
$\mathbf{4296.7}_{10}$, $\gamma_0\mathbf{4296.6}_{10}(100)$
$\mathbf{4303.2}_3$, $\gamma_{1207.135}\mathbf{3096.1}_3(100_{11})$, $\gamma_0\mathbf{4302.4}_8(7_3)$
$\mathbf{4314.0}_3$, $1,2^+$, $\gamma_{638.045}\mathbf{3675.3}_5(100_{23})$, $\gamma_0\mathbf{4314.2}_3(70_6)$
$\mathbf{4322.0}_3$, 2^+, $\gamma_{638.045}\mathbf{3684.3}_4(65_{11})$, $\gamma_0\mathbf{4321.6}_4(100_6)$
$\mathbf{4343.9}_4$, $(1,2^+)$, $\gamma_{1430.467}\mathbf{2913.7}_4(100_{20})$, $\gamma_0\mathbf{4343.3}_6(10_3)$
$\mathbf{4378.6}_6(?)$, $(1^+,2^+)$, $\gamma_0\mathbf{4378.5}_6(100)$
$\mathbf{4405.3}_3$, $(1,2^+)$, $\gamma_{638.045}\mathbf{3768.4}_{10}(70_{40})$, $\gamma_0\mathbf{4405.1}_3(100_6)$
$\mathbf{4435.2}_6$, $\gamma_{638.045}\mathbf{3797.4}_7(100_{40})$, $\gamma_0\mathbf{4434.4}_{10}(19_{10})$
$\mathbf{4445.9}_3$, $1,2^+$, $\gamma_{1207.135}\mathbf{3239.2}_5(61_7)$, $\gamma_0\mathbf{4445.7}_3(100_5)$
$\mathbf{4462.3}_8$, $\gamma_0\mathbf{4462.2}_8(100)$
$\mathbf{4492.8}_7$, $\gamma_{638.045}\mathbf{3854.5}_8(100_{50})$, $\gamma_0\mathbf{4493.3}_{15}(12_9)$
$\mathbf{4499.8}_8$, $\gamma_0\mathbf{4499.7}_8(100)$
$\mathbf{4522.8}_6(?)$, $\gamma_{638.045}\mathbf{3884.7}_6(100)$
$\mathbf{4529.4}_4(?)$, $(1,2^+)$, $\gamma_{1592.428}\mathbf{2935.6}_4(100_{20})$, $\gamma_{0.0}\mathbf{4531.5}_5(9.0_{20})$
$\mathbf{4545.6}_6$, $\gamma_{638.045}\mathbf{3907.5}_6(100)$
$\mathbf{4557.2}_{10}$, $\gamma_0\mathbf{4557.1}_{10}(100)$
$\mathbf{4563.3}_{10}$, $\gamma_0\mathbf{4563.2}_{10}(100)$
B $\mathbf{4739.6}_{11}$, 14^+, $\gamma_{4105.4}\mathbf{634}(100)$
$\mathbf{4744.9}_3$, $\gamma_{1592.428}\mathbf{3152.4}_3(100_{15})$, $\gamma_{1430.467}\mathbf{3314.5}_6(29_8)$
C $\mathbf{4834.9}_{10}$, 15^-, $\gamma_{4131.1}\mathbf{704}(100)$
B $\mathbf{5428.8}_{11}$, 16^+, $\gamma_{4834.9}\mathbf{594}$, $\gamma_{4739.6}\mathbf{689}$
C $\mathbf{5450.9}_{13}$, 17^-, $\gamma_{4834.9}\mathbf{616}(100)$
$\mathbf{5632.8}_{14}$, 17^+, $\gamma_{5428.8}\mathbf{204}(100)$
B $\mathbf{5764.8}_{13}$, 18^+, $\gamma_{5632.8}\mathbf{132}$, $\gamma_{5450.9}\mathbf{314}$ D, $\gamma_{5428.8}\mathbf{336}$
$\mathbf{6311.8}_{16}$, (19^-), $\gamma_{5764.8}\mathbf{547}(100)$
B $\mathbf{6450.8}_{16}$, (20^+), $\gamma_{5764.8}\mathbf{686}(100)$
D $\mathbf{6495.8}_{19}$, (21^-), $\gamma_{6311.8}\mathbf{184}(100)$
D $\mathbf{7275.8}_{22}$, (23^-), $\gamma_{6495.8}\mathbf{780}(100)$
D $\mathbf{7929.8}_{24}$, (25^-), $\gamma_{7275.8}\mathbf{654}(100)$
D $\mathbf{8325}_3$, (27^-), $\gamma_{7929.8}\mathbf{395}(100)$
$\mathbf{9410}_3(?)$, (28^+), $\gamma_{8325}\mathbf{1085}(100)$
$\mathbf{9497}_3$, (29^-), $\gamma_{8325}\mathbf{1172}(100)$
$\mathbf{9582}_3$, (29^+), $\gamma_{9410}\mathbf{172}(100)$
$\mathbf{9851}_3$, (30^+), $\gamma_{9582}\mathbf{269}$, $\gamma_{9497}\mathbf{354}$
$\mathbf{10532}_3$, (31^+), $\gamma_{9582}\mathbf{950}(100)$
$\mathbf{11231}_4$, (33^+), $\gamma_{10532}\mathbf{699}(100)$
$\mathbf{12185}_4$, (34^-), $\gamma_{11231}\mathbf{954}(100)$
$\mathbf{12678}_4$, $(36^-,34^+)$, $\gamma_{12185}\mathbf{493}(100)$
E $\mathbf{x}$, $J\approx(30^+)$
E $\mathbf{815.00+x}$, $J+2$, $\gamma_{\mathbf{x}}\mathbf{815.0}_1(0.66_2)$
F $\mathbf{1021.1+x}$, $J+2$
E $\mathbf{1664.10+x}$, $J+4$, $\gamma_{815.00+x}\mathbf{849.1}_1(0.88_1)$
F $\mathbf{1931.3+x}$, $J+4$, $\gamma_{1021.1+x}\mathbf{910.2}_2(0.39_2)$
$\mathbf{2156.6+x}$, $J+4$
E $\mathbf{2552.00+x}$, $J+6$, $\gamma_{1664.10+x}\mathbf{887.9}_1(1.00_1)$
F $\mathbf{2897.4+x}$, $J+6$, $\gamma_{1931.3+x}\mathbf{966.1}_3(0.53_3)$
$\mathbf{3012.6+x}$, $J+6$, $\gamma_{2156.6+x}\mathbf{856}$
E $\mathbf{3480.90+x}$, $J+8$, $\gamma_{2552.00+x}\mathbf{928.9}_1(1.00_1)$
F $\mathbf{3893.0+x}$, $J+8$, $\gamma_{2897.4+x}\mathbf{995.6}_3(0.55_3)$
$\mathbf{3960.6+x}$, $J+8$, $\gamma_{3012.6+x}\mathbf{948}$
E $\mathbf{4451.79+x}$, $J+10$, $\gamma_{3480.90+x}\mathbf{970.9}_1(1.00_1)$
F $\mathbf{4861.7+x}$, $J+10$, $\gamma_{3960.6+x}\mathbf{901}$, $\gamma_{3893.0+x}\mathbf{968.6}_3(0.60_3)$, $\gamma_{3480.90+x}\mathbf{1380}(\approx0.05)$
E $\mathbf{5465.28+x}$, $J+12$, $\gamma_{4451.79+x}\mathbf{1013.5}_1(0.99_1)$
F $\mathbf{5860.7+x}$, $J+12$, $\gamma_{4861.7+x}\mathbf{999.0}_2(0.86_3)$, $\gamma_{4451.79+x}\mathbf{1408}(\approx0.05)$
E $\mathbf{6521.8+x}$, $J+14$, $\gamma_{5465.28+x}\mathbf{1056.5}_1(1.00_1)$
F $\mathbf{6907.6+x}$, $J+14$, $\gamma_{5860.7+x}\mathbf{1046.8}_2(0.89_3)$, $\gamma_{5465.28+x}\mathbf{1442}(\approx0.05)$
E $\mathbf{7621.8+x}$, $J+16$, $\gamma_{6521.8+x}\mathbf{1100.1}_1(0.97_1)$
F $\mathbf{8005.2+x}$, $J+16$, $\gamma_{6907.6+x}\mathbf{1097.6}_2(0.96_2)$, $\gamma_{6521.8+x}\mathbf{1484}(\approx0.05)$
E $\mathbf{8766.4+x}$, $J+18$, $\gamma_{7621.8+x}\mathbf{1144.6}_1(0.99_1)$
F $\mathbf{9154.0+x}$, $J+18$, $\gamma_{8005.2+x}\mathbf{1148.7}_2(0.98_2)$, $\gamma_{7621.8+x}\mathbf{1532}(\approx0.05)$
E $\mathbf{9956.9+x}$, $J+20$, $\gamma_{8766.4+x}\mathbf{1190.5}_1(0.95_1)$
F $\mathbf{10354.0+x}$, $J+20$, $\gamma_{9154.0+x}\mathbf{1199.9}_2(1.00_1)$, $\gamma_{8766.4+x}\mathbf{1588}(\approx0.05)$
E $\mathbf{11194.8+x}$, $J+22$, $\gamma_{9956.9+x}\mathbf{1237.9}_1(0.96_2)$
F $\mathbf{11604.9+x}$, $J+22$, $\gamma_{10354.0+x}\mathbf{1250.9}_2(1.02_3)$, $\gamma_{9956.9+x}\mathbf{1649}(\approx0.05)$
E $\mathbf{12481.4+x}$, $J+24$, $\gamma_{11194.8+x}\mathbf{1286.6}_1(0.89_2)$
F $\mathbf{12906.1+x}$, $J+24$, $\gamma_{11604.9+x}\mathbf{1301.2}_2(0.96_3)$
E $\mathbf{13818.0+x}$, $J+26$, $\gamma_{12481.4+x}\mathbf{1336.6}_1(0.81_2)$
F $\mathbf{14257.7+x}$, $J+26$, $\gamma_{12906.1+x}\mathbf{1351.6}_2(0.85_3)$
E $\mathbf{15205.8+x}$, $J+28$, $\gamma_{13818.0+x}\mathbf{1387.8}_1(0.65_2)$
F $\mathbf{15658.7+x}$, $J+28$, $\gamma_{14257.7+x}\mathbf{1401.0}_2(0.71_2)$
E $\mathbf{16645.9+x}$, $J+30$, $\gamma_{15205.8+x}\mathbf{1440.1}_1(0.48_2)$
F $\mathbf{17109.1+x}$, $J+30$, $\gamma_{15658.7+x}\mathbf{1450.4}_2(0.54_2)$
E $\mathbf{18139.1+x}$, $J+32$, $\gamma_{16645.9+x}\mathbf{1493.1}_2(0.28_2)$
F $\mathbf{18608.2+x}$, $J+32$, $\gamma_{17109.1+x}\mathbf{1499.1}_3(0.39_2)$
E $\mathbf{19686.1+x}$, $J+34$, $\gamma_{18139.1+x}\mathbf{1547.0}_3(0.13_2)$
F $\mathbf{20155.8+x}$, $J+34$, $\gamma_{18608.2+x}\mathbf{1547.6}_4(0.14_1)$
E $\mathbf{21287.8+x}$, $J+36$, $\gamma_{19686.1+x}\mathbf{1601.7}_4(0.05_2)$
F $\mathbf{21751.8+x}$, $J+36$, $\gamma_{20155.8+x}\mathbf{1595.9}_7(0.044_{10})$
F $\mathbf{23397.3+x}$, $J+38$, $\gamma_{21751.8+x}\mathbf{1645.5}_9$
H $\mathbf{y}$, $J_1\approx(27^-)$

H **688.1+y**, J_1+2, $\gamma_{\mathbf{y}}$**688.1**$_3(0.35_5)$
G **1287.6+y**, J_1+2
H **1423.8+y**, J_1+4, $\gamma_{\mathbf{688.1+y}}$**735.8**$_4(0.48_4)$
G **2015.5+y**, J_1+4, $\gamma_{\mathbf{1287.6+y}}$**727.9**$_2(0.41_2)$
H **2208.9+y**, J_1+6, $\gamma_{\mathbf{1423.8+y}}$**785.2**$_5(0.71_5)$
G **2787.0+y**, J_1+6, $\gamma_{\mathbf{2015.5+y}}$**771.5**$_2(0.81_2)$
H **3043.3+y**, J_1+8, $\gamma_{\mathbf{2208.9+y}}$**834.4**$_3(0.92_4)$
G **3601.3+y**, J_1+8, $\gamma_{\mathbf{2787.0+y}}$**814.3**$_2(0.94_2)$
H **3928.6+y**, J_1+10, $\gamma_{\mathbf{3043.3+y}}$**885.3**$_3(0.92_2)$
G **4458.6+y**, J_1+10, $\gamma_{\mathbf{3601.3+y}}$**857.3**$_5(0.97_2)$
H **4865.1+y**, J_1+12, $\gamma_{\mathbf{3928.6+y}}$**936.6**$_4(0.93_2)$
G **5359.3+y**, J_1+12, $\gamma_{\mathbf{4458.6+y}}$**900.7**$_2(1.00_2)$
H **5853.7+y**, J_1+14, $\gamma_{\mathbf{4865.1+y}}$**988.6**$_2(0.93_2)$
G **6304.6+y**, J_1+14, $\gamma_{\mathbf{5359.3+y}}$**945.3**$_2(0.99_2)$
H **6894.6+y**, J_1+16, $\gamma_{\mathbf{5853.7+y}}$**1040.9**$_2(0.95_2)$
G **7295.2+y**, J_1+16, $\gamma_{\mathbf{6304.6+y}}$**990.6**$_2(0.99_2)$
H **7989.9+y**, J_1+18, $\gamma_{\mathbf{6894.6+y}}$**1095.3**$_2(0.97_2)$
G **8331.9+y**, J_1+18, $\gamma_{\mathbf{7295.2+y}}$**1036.7**$_2(0.99_2)$
H **9139.2+y**, J_1+20, $\gamma_{\mathbf{7989.9+y}}$**1149.3**$_2(1.00_2)$
G **9415.2+y**, J_1+20, $\gamma_{\mathbf{8331.9+y}}$**1083.3**$_2(1.00_2)$
H **10343.1+y**, J_1+22, $\gamma_{\mathbf{9139.2+y}}$**1203.9**$_2(1.00_2)$
G **10546.6+y**, J_1+22, $\gamma_{\mathbf{9415.2+y}}$**1131.4**$_3(1.01_2)$
H **11602.4+y**, J_1+24, $\gamma_{\mathbf{10343.1+y}}$**1259.3**$_2(0.93_2)$
G **11725.9+y**, J_1+24, $\gamma_{\mathbf{10546.6+y}}$**1179.3**$_2(1.00_2)$
H **12916.1+y**, J_1+26, $\gamma_{\mathbf{11602.4+y}}$**1313.7**$_2(0.81_2)$
G **12955.8+y**, J_1+26, $\gamma_{\mathbf{11725.9+y}}$**1229.8**$_2(0.94_2)$, $\gamma_{\mathbf{11602.4+y}}$**1354**$(\approx 0.03)$
G **14229.1+y**, J_1+28, $\gamma_{\mathbf{12955.8+y}}$**1273.4**$_2(0.81_2)$, $\gamma_{\mathbf{12916.1+y}}$**1314**
H **14293.5+y**, J_1+28, $\gamma_{\mathbf{12955.8+y}}$**1338**, $\gamma_{\mathbf{12916.1+y}}$**1377.3**$_2(0.69_2)$
G **15557.7+y**, J_1+30, $\gamma_{\mathbf{14229.1+y}}$**1328.6**$_2(0.73_2)$
H **15721.8+y**, J_1+30, $\gamma_{\mathbf{14293.5+y}}$**1428.3**$_2(0.55_2)$, $\gamma_{\mathbf{14229.1+y}}$**1494**
G **16936.3+y**, J_1+32, $\gamma_{\mathbf{15557.7+y}}$**1378.6**$_2(0.58_2)$
H **17208.2+y**, J_1+32, $\gamma_{\mathbf{15721.8+y}}$**1486.4**$_3(0.40_2)$
G **18366.7+y**, J_1+34, $\gamma_{\mathbf{16936.3+y}}$**1430.3**$_2(0.46_2)$
H **18751.4+y**, J_1+34, $\gamma_{\mathbf{17208.2+y}}$**1543.2**$_4(0.19_1)$
G **19848.9+y**, J_1+36, $\gamma_{\mathbf{18366.7+y}}$**1482.2**$_3(0.26_2)$
H **20351.6+y**, J_1+36, $\gamma_{\mathbf{18751.4+y}}$**1600.1**$_6(0.08_1)$
G **21384.3+y**, J_1+38, $\gamma_{\mathbf{19848.9+y}}$**1535.4**$_4(0.097_{10})$
H **22010.0+y**, J_1+38, $\gamma_{\mathbf{20351.6+y}}$**1658.4**$_6(0.044_{10})$
G **22972.1+y**, J_1+40, $\gamma_{\mathbf{21384.3+y}}$**1587.8**$_7(0.035_{10})$
I **z**, $J_2\approx(28^-)$
I **712.5+z**, J_2+2, $\gamma_{\mathbf{z}}$**712.5**$_3(0.76_2)$
I **1473.7+z**, J_2+4, $\gamma_{\mathbf{712.5+z}}$**761.2**$_3(0.89_3)$
I **2284.2+z**, J_2+6, $\gamma_{\mathbf{1473.7+z}}$**810.5**$_3(0.94_3)$
I **3144.2+z**, J_2+8, $\gamma_{\mathbf{2284.2+z}}$**860.0**$_3(0.97_2)$
I **4054.7+z**, J_2+10, $\gamma_{\mathbf{3144.2+z}}$**910.6**$_4(1.03_2)$
I **5017.2+z**, J_2+12, $\gamma_{\mathbf{4054.7+z}}$**962.5**$_4(1.02_2)$
I **6032.1+z**, J_2+14, $\gamma_{\mathbf{5017.2+z}}$**1014.9**$_3(1.03_2)$
I **7100.3+z**, J_2+16, $\gamma_{\mathbf{6032.1+z}}$**1068.2**$_2(1.03_2)$
I **8222.7+z**, J_2+18, $\gamma_{\mathbf{7100.3+z}}$**1122.4**$_3(1.01_2)$
I **9399.8+z**, J_2+20, $\gamma_{\mathbf{8222.7+z}}$**1177.1**$_3(1.03_2)$
I **10632.1+z**, J_2+22, $\gamma_{\mathbf{9399.8+z}}$**1232.2**$_3(1.02_2)$
I **11919.8+z**, J_2+24, $\gamma_{\mathbf{10632.1+z}}$**1287.7**$_3(0.97_3)$
I **13263.6+z**, J_2+26, $\gamma_{\mathbf{11919.8+z}}$**1343.8**$_3(0.90_2)$
I **14664.1+z**, J_2+28, $\gamma_{\mathbf{13263.6+z}}$**1400.5**$_3(0.76_2)$
I **16121.2+z**, J_2+30, $\gamma_{\mathbf{14664.1+z}}$**1457.1**$_3(0.59_2)$
I **17635.1+z**, J_2+32, $\gamma_{\mathbf{16121.2+z}}$**1513.9**$_3(0.38_1)$
I **19204.2+z**, J_2+34, $\gamma_{\mathbf{17635.1+z}}$**1569.1**$_3(0.23_1)$
J **u**, $J_3\approx(27^+)$
J **771.5+u**, J_3+2, $\gamma_{\mathbf{u}}$**771.6**$_4$
J **1588.6+u**, J_3+4, $\gamma_{\mathbf{771.5+u}}$**817.1**$_3(0.78_3)$
J **2451.5+u**, J_3+6, $\gamma_{\mathbf{1588.6+u}}$**862.9**$_2(0.88_3)$
J **3359.9+u**, J_3+8, $\gamma_{\mathbf{2451.5+u}}$**908.4**$_2(0.89_3)$
J **4313.1+u**, J_3+10, $\gamma_{\mathbf{3359.9+u}}$**953.2**$_2(0.99_3)$
J **5311.3+u**, J_3+12, $\gamma_{\mathbf{4313.1+u}}$**998.3**$_2(0.93_3)$
J **6353.7+u**, J_3+14, $\gamma_{\mathbf{5311.3+u}}$**1042.4**$_3(0.93_3)$
J **7441.4+u**, J_3+16, $\gamma_{\mathbf{6353.7+u}}$**1087.7**$_4(1.06_3)$
J **8574.4+u**, J_3+18, $\gamma_{\mathbf{7441.4+u}}$**1133.1**$_2(1.04_3)$
J **9753.9+u**, J_3+20, $\gamma_{\mathbf{8574.4+u}}$**1179.4**$_2(1.04_3)$
J **10980.9+u**, J_3+22, $\gamma_{\mathbf{9753.9+u}}$**1227.1**$_4(1.03_3)$
J **12256.0+u**, J_3+24, $\gamma_{\mathbf{10980.9+u}}$**1275.1**$_2(1.00_4)$
J **13581.2+u**, J_3+26, $\gamma_{\mathbf{12256.0+u}}$**1325.2**$_3(0.91_4)$
J **14956.3+u**, J_3+28, $\gamma_{\mathbf{13581.2+u}}$**1375.1**$_3(0.71_4)$
J **16382.4+u**, J_3+30, $\gamma_{\mathbf{14956.3+u}}$**1426.1**$_3(0.53_3)$
J **17862.5+u**, J_3+32, $\gamma_{\mathbf{16382.4+u}}$**1480.1**$_3(0.32_3)$
J **19379.2+u**, J_3+34, $\gamma_{\mathbf{17862.5+u}}$**1516.7**$_4$
J **20915.2+u**, J_3+36, $\gamma_{\mathbf{19379.2+u}}$**1536.0**$_4$
J **22505.2+u**, J_3+38, $\gamma_{\mathbf{20915.2+u}}$**1589.9**$_8$
K **v**, $J_4\approx(29^+)$
K **733.20+v**, J_4+2, $\gamma_{\mathbf{v}}$**733.2**$_2$
K **1511.4+v**, J_4+4, $\gamma_{\mathbf{733.20+v}}$**778.2**$_2$
K **2341.2+v**, J_4+6, $\gamma_{\mathbf{1511.4+v}}$**829.9**$_2(0.93_2)$
K **3221.1+v**, J_4+8, $\gamma_{\mathbf{2341.2+v}}$**879.8**$_2(0.99_2)$
K **4151.2+v**, J_4+10, $\gamma_{\mathbf{3221.1+v}}$**930.2**$_2(1.01_2)$
K **5132.6+v**, J_4+12, $\gamma_{\mathbf{4151.2+v}}$**981.4**$_2(1.03_1)$
K **6166.5+v**, J_4+14, $\gamma_{\mathbf{5132.6+v}}$**1033.9**$_2(1.04_1)$
K **7253.5+v**, J_4+16, $\gamma_{\mathbf{6166.5+v}}$**1087.0**$_2(1.03_1)$
K **8394.9+v**, J_4+18, $\gamma_{\mathbf{7253.5+v}}$**1141.4**$_2(1.02_1)$
K **9590.4+v**, J_4+20, $\gamma_{\mathbf{8394.9+v}}$**1195.6**$_3(0.98_1)$
K **10841.4+v**, J_4+22, $\gamma_{\mathbf{9590.4+v}}$**1250.9**$_2(0.95_1)$
K **12147.9+v**, J_4+24, $\gamma_{\mathbf{10841.4+v}}$**1306.5**$_2(0.95_1)$
K **13510.5+v**, J_4+26, $\gamma_{\mathbf{12147.9+v}}$**1362.7**$_3(0.91_1)$
K **14929.5+v**, J_4+28, $\gamma_{\mathbf{13510.5+v}}$**1419.0**$_3(0.77_2)$
K **16404.8+v**, J_4+30, $\gamma_{\mathbf{14929.5+v}}$**1475.3**$_4(0.51_2)$
K **17937.1+v**, J_4+32, $\gamma_{\mathbf{16404.8+v}}$**1532.3**$_6(0.34_2)$
K **19527.0+v**, J_4+34, $\gamma_{\mathbf{17937.1+v}}$**1589.9**$_7(0.14_3)$
K **21171.8+v**, J_4+36, $\gamma_{\mathbf{19527.0+v}}$**1644.7**$_9$
L **w**, $J_5\approx(28^+)$
L **711.1+w**, J_5+2, $\gamma_{\mathbf{w}}$**711.2**$_5$
L **1469.4+w**, J_5+4, $\gamma_{\mathbf{711.1+w}}$**758.5**$_7$
L **2275.8+w**, J_5+6, $\gamma_{\mathbf{1469.4+w}}$**806.4**$_2(0.78_1)$
L **3131.3+w**, J_5+8, $\gamma_{\mathbf{2275.8+w}}$**855.6**$_2(0.86_1)$
L **4036.7+w**, J_5+10, $\gamma_{\mathbf{3131.3+w}}$**905.4**$_2(0.92_1)$
L **4993.1+w**, J_5+12, $\gamma_{\mathbf{4036.7+w}}$**956.4**$_2(1.00_1)$
L **6001.3+w**, J_5+14, $\gamma_{\mathbf{4993.1+w}}$**1008.2**$_2(1.04_1)$
L **7062.1+w**, J_5+16, $\gamma_{\mathbf{6001.3+w}}$**1060.8**$_2(1.01_1)$
L **8176.0+w**, J_5+18, $\gamma_{\mathbf{7062.1+w}}$**1113.9**$_2(1.01_1)$
L **9344.4+w**, J_5+20, $\gamma_{\mathbf{8176.0+w}}$**1168.4**$_2(1.03_1)$
L **10567.0+w**, J_5+22, $\gamma_{\mathbf{9344.4+w}}$**1222.6**$_2(1.00_1)$
L **11845.0+w**, J_5+24, $\gamma_{\mathbf{10567.0+w}}$**1278.0**$_2(0.94_1)$
L **13178.7+w**, J_5+26, $\gamma_{\mathbf{11845.0+w}}$**1333.7**$_2(0.75_1)$
L **14568.9+w**, J_5+28, $\gamma_{\mathbf{13178.7+w}}$**1390.2**$_3(0.58_1)$
L **16015.7+w**, J_5+30, $\gamma_{\mathbf{14568.9+w}}$**1446.8**$_3(0.41_2)$
L **17519.6+w**, J_5+32, $\gamma_{\mathbf{16015.7+w}}$**1503.9**$_4(0.24_2)$
L **19080.3+w**, J_5+34, $\gamma_{\mathbf{17519.6+w}}$**1560.7**$_6(0.15_2)$
L **20698.2+w**, J_5+36, $\gamma_{\mathbf{19080.3+w}}$**1617.9**$_8(0.08_3)$
M **s**, $J_6\approx(31^+)$
M **800.4+s**, J_6+2, $\gamma_{\mathbf{s}}$**800.6**$_4(0.38_2)$
M **1650.3+s**, J_6+4, $\gamma_{\mathbf{800.4+s}}$**850.0**$_3(0.83_2)$
M **2552.7+s**, J_6+6, $\gamma_{\mathbf{1650.3+s}}$**902.4**$_2(0.90_2)$
M **3507.9+s**, J_6+8, $\gamma_{\mathbf{2552.7+s}}$**955.3**$_3(0.97_2)$
M **4518.1+s**, J_6+10, $\gamma_{\mathbf{3507.9+s}}$**1010.2**$_2(1.03_1)$
M **5584.2+s**, J_6+12, $\gamma_{\mathbf{4518.1+s}}$**1066.2**$_2(1.00_1)$
M **6706.4+s**, J_6+14, $\gamma_{\mathbf{5584.2+s}}$**1122.2**$_2(0.99_1)$
M **7886.2+s**, J_6+16, $\gamma_{\mathbf{6706.4+s}}$**1179.8**$_2(0.99_1)$
M **9124.2+s**, J_6+18, $\gamma_{\mathbf{7886.2+s}}$**1238.0**$_3(0.99_1)$
M **10420.8+s**, J_6+20, $\gamma_{\mathbf{9124.2+s}}$**1296.6**$_3(0.99_2)$
M **11776.5+s**, J_6+22, $\gamma_{\mathbf{10420.8+s}}$**1355.7**$_3(0.84_1)$
M **13191.5+s**, J_6+24, $\gamma_{\mathbf{11776.5+s}}$**1415.0**$_3(0.68_2)$
M **14665.5+s**, J_6+26, $\gamma_{\mathbf{13191.5+s}}$**1474.0**$_4(0.53_2)$
M **16199.5+s**, J_6+28, $\gamma_{\mathbf{14665.5+s}}$**1534.0**$_5(0.37_3)$
M **17793.6+s**, J_6+30, $\gamma_{\mathbf{16199.5+s}}$**1594.1**$_7(0.17_3)$
M **19446.1+s**, J_6+32, $\gamma_{\mathbf{17793.6+s}}$**1652.5**$_9(0.05_3)$
N **t**, $J_7\approx(33^+)$
N **827.6+t**, J_7+2, $\gamma_{\mathbf{t}}$**827.8**$_5(0.59_2)$
N **1702.9+t**, J_7+4, $\gamma_{\mathbf{827.6+t}}$**875.4**$_4(0.70_2)$
N **2627.2+t**, J_7+6, $\gamma_{\mathbf{1702.9+t}}$**924.4**$_3(0.91_2)$
N **3601.5+t**, J_7+8, $\gamma_{\mathbf{2627.2+t}}$**974.4**$_4(0.96_2)$
N **4626.6+t**, J_7+10, $\gamma_{\mathbf{3601.5+t}}$**1025.1**$_3(1.00_2)$
N **5703.4+t**, J_7+12, $\gamma_{\mathbf{4626.6+t}}$**1076.9**$_4(0.99_2)$
N **6832.3+t**, J_7+14, $\gamma_{\mathbf{5703.4+t}}$**1128.9**$_4(1.02_2)$
N **8014.8+t**, J_7+16, $\gamma_{\mathbf{6832.3+t}}$**1182.5**$_5(1.04_2)$
N **9250.8+t**, J_7+18, $\gamma_{\mathbf{8014.8+t}}$**1236.1**$_4(0.98_2)$

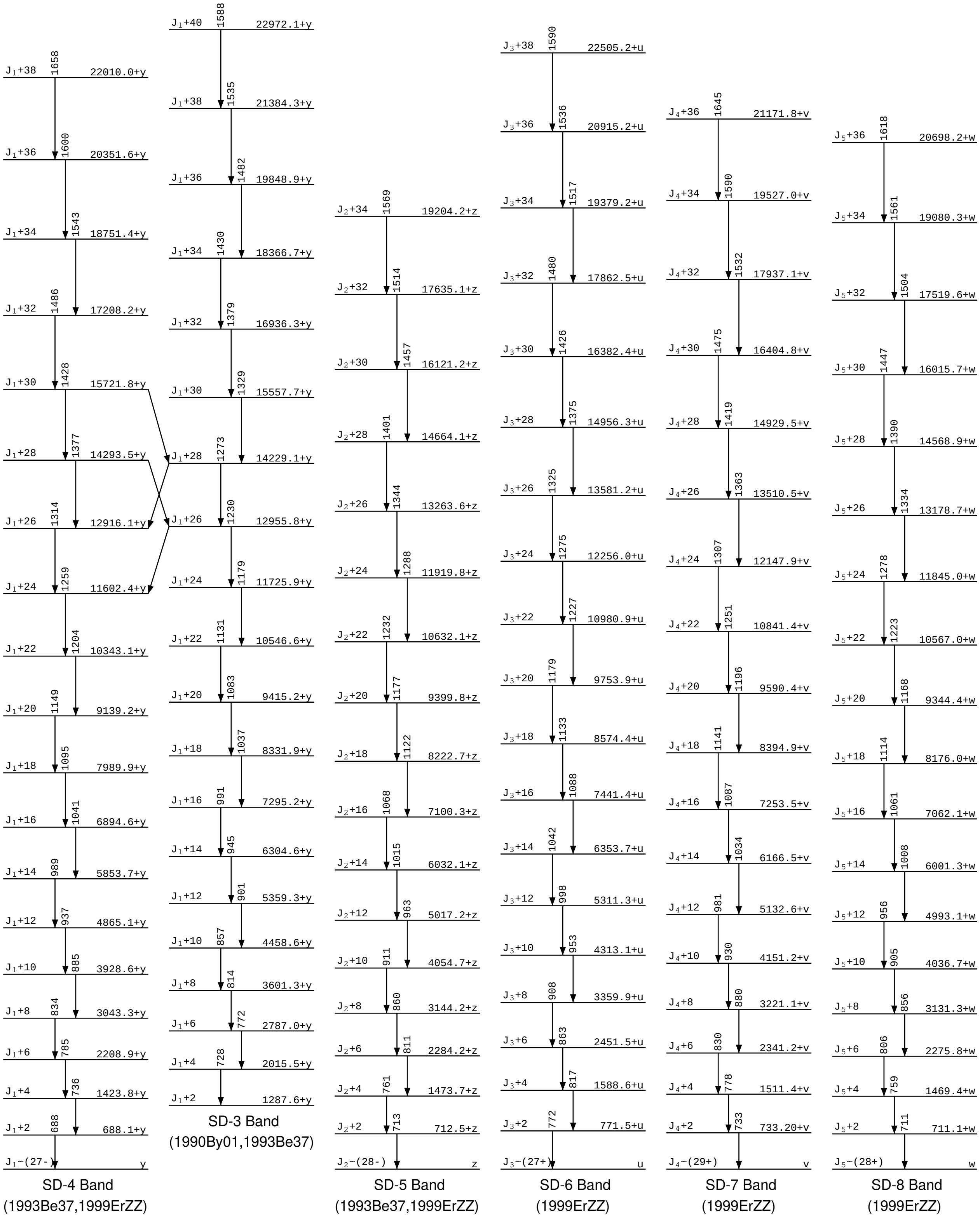
N **10540.9+t**, J_7+20, $\gamma_{\mathbf{9250.8+t}}$**1290.1**$_4(0.97_2)$
N **11885.9+t**, J_7+22, $\gamma_{\mathbf{10540.9+t}}$**1345.0**$_4(0.97_2)$
N **13286.0+t**, J_7+24, $\gamma_{\mathbf{11885.9+t}}$**1400.1**$_5(0.84_2)$
N **14741.9+t**, J_7+26, $\gamma_{\mathbf{13286.0+t}}$**1455.9**$_6(0.67_2)$
N **16253.7+t**, J_7+28, $\gamma_{\mathbf{14741.9+t}}$**1511.8**$_7(0.50_3)$
N **17821.0+t**, J_7+30, $\gamma_{\mathbf{16253.7+t}}$**1567.3**$_9(0.18_4)$
O **a**, $J_8 \approx (32^+)$
O **804.0+a**, J_8+2, $\gamma_{\mathbf{a}}$**804.1**$_4$
O **1655.6+a**, J_8+4, $\gamma_{\mathbf{804.0+a}}$**851.7**$_4(0.87_1)$
O **2555.8+a**, J_8+6, $\gamma_{\mathbf{1655.6+a}}$**900.2**$_3(0.91_1)$
O **3507.0+a**, J_8+8, $\gamma_{\mathbf{2555.8+a}}$**951.3**$_4(0.95_1)$
O **4508.5+a**, J_8+10, $\gamma_{\mathbf{3507.0+a}}$**1001.5**$_3(0.98_1)$
O **5562.2+a**, J_8+12, $\gamma_{\mathbf{4508.5+a}}$**1053.8**$_4(0.99_1)$
O **6660.4+a**, J_8+14, $\gamma_{\mathbf{5562.2+a}}$**1098.1**$_3(0.99_1)$
O **7822.2+a**, J_8+16, $\gamma_{\mathbf{6660.4+a}}$**1161.8**$_3(1.00_1)$
O **9034.6+a**, J_8+18, $\gamma_{\mathbf{7822.2+a}}$**1212.4**$_3(1.00_1)$
O **10300.5+a**, J_8+20, $\gamma_{\mathbf{9034.6+a}}$**1265.9**$_5(1.00_1)$
O **11621.0+a**, J_8+22, $\gamma_{\mathbf{10300.5+a}}$**1320.6**$_5(1.01_1)$
O **12996.6+a**, J_8+24, $\gamma_{\mathbf{11621.0+a}}$**1375.6**$_5(0.92_2)$
O **14427.3+a**, J_8+26, $\gamma_{\mathbf{12996.6+a}}$**1430.7**$_8(0.84_2)$
O **15912.7+a**, J_8+28, $\gamma_{\mathbf{14427.3+a}}$**1485.4**$_9(0.48_2)$
O **17451.6+a**, J_8+30, $\gamma_{\mathbf{15912.7+a}}$**1538.9**$_9(0.33_3)$
P **b**, $J_9 \approx (34^+)$
P **830.0+b**, J_9+2, $\gamma_{\mathbf{b}}$**830.1**$_5(0.86_1)$
P **1706.5+b**, J_9+4, $\gamma_{\mathbf{830.0+b}}$**876.6**$_4(0.91_1)$
P **2629.1+b**, J_9+6, $\gamma_{\mathbf{1706.5+b}}$**922.6**$_5(0.95_1)$
P **3599.1+b**, J_9+8, $\gamma_{\mathbf{2629.1+b}}$**970.0**$_3(0.97_1)$
P **4615.7+b**, J_9+10, $\gamma_{\mathbf{3599.1+b}}$**1016.6**$_4(0.97_1)$
P **5680.0+b**, J_9+12, $\gamma_{\mathbf{4615.7+b}}$**1064.3**$_4(0.99_1)$
P **6792.0+b**, J_9+14, $\gamma_{\mathbf{5680.0+b}}$**1112.0**$_5(1.00_1)$
P **7952.0+b**, J_9+16, $\gamma_{\mathbf{6792.0+b}}$**1160.0**$_7(0.97_1)$
P **9159.7+b**, J_9+18, $\gamma_{\mathbf{7952.0+b}}$**1207.7**$_6(1.01_1)$
P **10414.1+b**, J_9+20, $\gamma_{\mathbf{9159.7+b}}$**1254.4**$_5(1.01_1)$
P **11716.8+b**, J_9+22, $\gamma_{\mathbf{10414.1+b}}$**1302.7**$_5(1.01_1)$
P **13068.5+b**, J_9+24, $\gamma_{\mathbf{11716.8+b}}$**1351.7**$_5(1.01_1)$
P **14468.6+b**, J_9+26, $\gamma_{\mathbf{13068.5+b}}$**1400.1**$_5(0.99_2)$
P **15917.5+b**, J_9+28, $\gamma_{\mathbf{14468.6+b}}$**1448.9**$_5(0.82_2)$
P **17412.5+b**, J_9+30, $\gamma_{\mathbf{15917.5+b}}$**1495.0**$_9(0.50_2)$
Q **c**, $J_{10} \approx (29^+)$
Q **815.1+c**, $J_{10}+2$, $\gamma_{\mathbf{c}}$**815.1**$_7$
Q **1664.1+c**, $J_{10}+4$, $\gamma_{\mathbf{815.1+c}}$**849.1**$_4$
Q **2553.1+c**, $J_{10}+6$, $\gamma_{\mathbf{1664.1+c}}$**889.1**$_8$
Q **3430.8+c**, $J_{10}+8$, $\gamma_{\mathbf{2553.1+c}}$**877.7**$_6(0.79_2)$
Q **4353.5+c**, $J_{10}+10$, $\gamma_{\mathbf{3430.8+c}}$**922.7**$_5(0.97_2)$
Q **5322.9+c**, $J_{10}+12$, $\gamma_{\mathbf{4353.5+c}}$**969.4**$_5(0.99_1)$
Q **6338.5+c**, $J_{10}+14$, $\gamma_{\mathbf{5322.9+c}}$**1015.6**$_5(0.99_1)$
Q **7403.9+c**, $J_{10}+16$, $\gamma_{\mathbf{6338.5+c}}$**1065.4**$_6(0.99_1)$
Q **8516.3+c**, $J_{10}+18$, $\gamma_{\mathbf{7403.9+c}}$**1112.5**$_6(1.00_1)$
Q **9682.2+c**, $J_{10}+20$, $\gamma_{\mathbf{8516.3+c}}$**1165.9**$_7(1.02_1)$
Q **10901.0+c**, $J_{10}+22$, $\gamma_{\mathbf{9682.2+c}}$**1218.8**$_6(0.99_2)$
Q **12172.4+c**, $J_{10}+24$, $\gamma_{\mathbf{10901.0+c}}$**1271.4**$_6(0.94_2)$
Q **13499.3+c**, $J_{10}+26$, $\gamma_{\mathbf{12172.4+c}}$**1326.9**$_5(0.80_2)$
Q **14881.7+c**, $J_{10}+28$, $\gamma_{\mathbf{13499.3+c}}$**1382.4**$_7(0.73_2)$
Q **16320.1+c**, $J_{10}+30$, $\gamma_{\mathbf{14881.7+c}}$**1438.4**$_6(0.59_2)$
Q **17816.2+c**, $J_{10}+32$, $\gamma_{\mathbf{16320.1+c}}$**1496.1**$_8(0.42_2)$
Q **19373+c**, $J_{10}+34$, $\gamma_{\mathbf{17816.2+c}}$**1556.6**$_9(0.18_3)$
R **d**, $J_{11} \approx (28^+)$
R **808.9+d**, $J_{11}+2$, $\gamma_{\mathbf{d}}$**808.9**$_5(0.76_2)$
R **1667.4+d**, $J_{11}+4$, $\gamma_{\mathbf{808.9+d}}$**858.6**$_7$
R **2577.0+d**, $J_{11}+6$, $\gamma_{\mathbf{1667.4+d}}$**909.8**$_8$
R **3433.3+d**, $J_{11}+8$, $\gamma_{\mathbf{2577.0+d}}$**856.5**$_8(0.75_2)$
R **4334.0+d**, $J_{11}+10$, $\gamma_{\mathbf{3433.3+d}}$**900.7**$_5(0.89_2)$
R **5279.6+d**, $J_{11}+12$, $\gamma_{\mathbf{4334.0+d}}$**945.7**$_5(0.95_2)$
R **6271.1+d**, $J_{11}+14$, $\gamma_{\mathbf{5279.6+d}}$**991.6**$_5(1.02_2)$
R **7311.5+d**, $J_{11}+16$, $\gamma_{\mathbf{6271.1+d}}$**1040.3**$_8(1.00_1)$
R **8404.3+d**, $J_{11}+18$, $\gamma_{\mathbf{7311.5+d}}$**1093.0**$_9(1.00_1)$
R **9544.6+d**, $J_{11}+20$, $\gamma_{\mathbf{8404.3+d}}$**1140.3**$_5(0.99_1)$
R **10736.6+d**, $J_{11}+22$, $\gamma_{\mathbf{9544.6+d}}$**1192.0**$_5(0.98_1)$
R **11981.5+d**, $J_{11}+24$, $\gamma_{\mathbf{10736.6+d}}$**1244.9**$_6(0.97_1)$
R **13280.5+d**, $J_{11}+26$, $\gamma_{\mathbf{11981.5+d}}$**1299.1**$_6(0.80_1)$
R **14635.3+d**, $J_{11}+28$, $\gamma_{\mathbf{13280.5+d}}$**1354.8**$_8(0.63_1)$
R **16047+d**, $J_{11}+30$, $\gamma_{\mathbf{14635.3+d}}$**1411.4**$_6(0.51_2)$
R **17515+d**, $J_{11}+32$, $\gamma_{\mathbf{16047+d}}$**1468.6**$_8(0.43_3)$
R **19046+d**, $J_{11}+34$, $\gamma_{\mathbf{17515+d}}$**1530.8**$_8(0.35_4)$
R **20638+d**, $J_{11}+36$, $\gamma_{\mathbf{19046+d}}$**1592.1**$_9(0.24_4)$



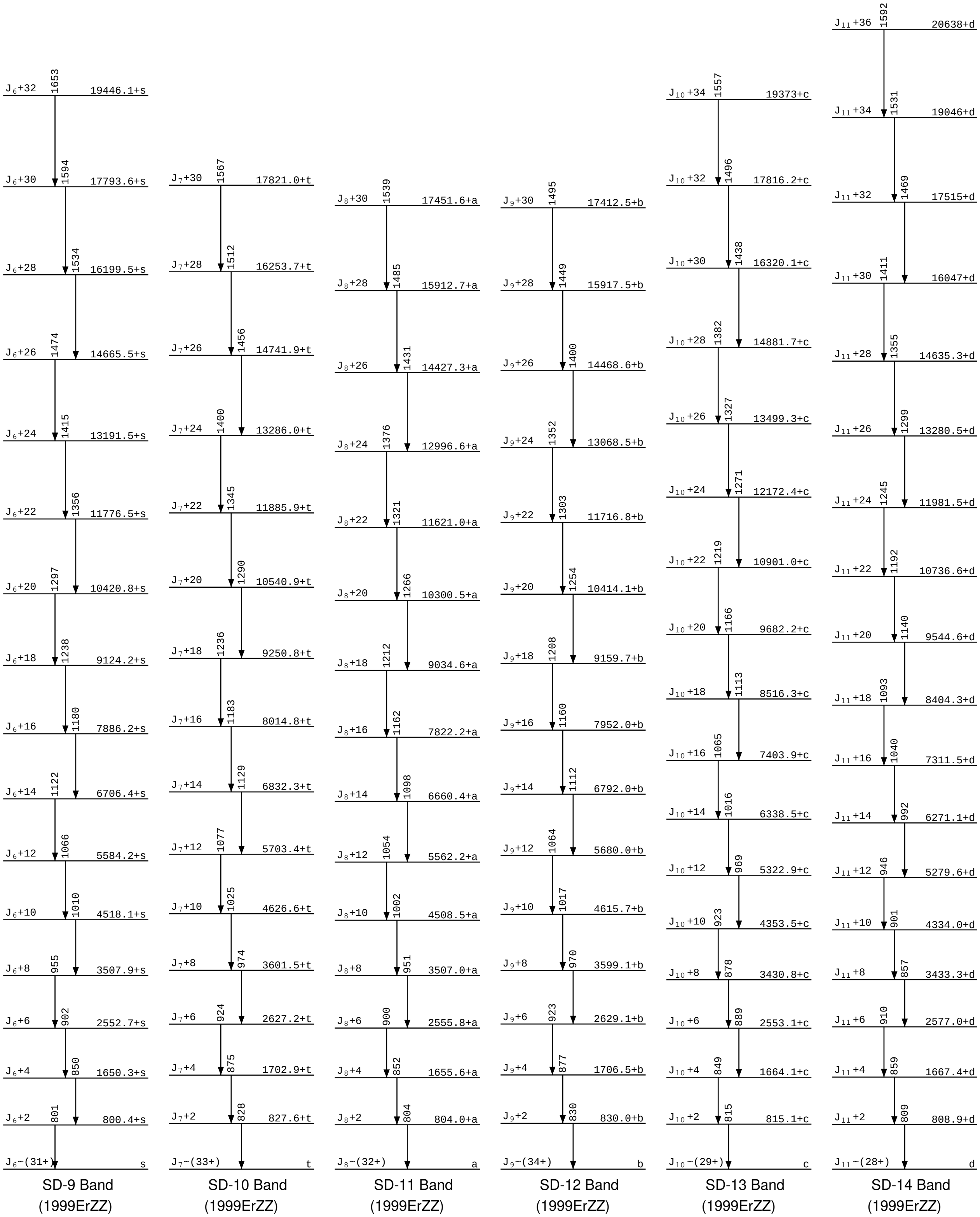
SD-2 Band
(1994Fa13,1999ErZZ)

SD-1 Band
(1991Fa07,1999ErZZ)

$^{150}_{64}$Gd$_{86}$


J_1+38 1658 22010.0+y
J_1+36 1600 20351.6+y
J_1+34 1543 18751.4+y
J_1+32 1486 17208.2+y
J_1+30 1428 15721.8+y
J_1+28 1377 14293.5+y
J_1+26 1314 12916.1+y
J_1+24 1259 11602.4+y
J_1+22 1204 10343.1+y
J_1+20 1149 9139.2+y
J_1+18 1095 7989.9+y
J_1+16 1041 6894.6+y
J_1+14 989 5853.7+y
J_1+12 937 4865.1+y
J_1+10 885 3928.6+y
J_1+8 834 3043.3+y
J_1+6 785 2208.9+y
J_1+4 736 1423.8+y
J_1+2 688 688.1+y
J_1~(27-) y
SD-4 Band
(1993Be37,1999ErZZ)
J_1+40 1588 22972.1+y
J_1+38 1535 21384.3+y
J_1+36 1482 19848.9+y
J_1+34 1430 18366.7+y
J_1+32 1379 16936.3+y
J_1+30 1329 15557.7+y
J_1+28 1273 14229.1+y
J_1+26 1230 12955.8+y
J_1+24 1179 11725.9+y
J_1+22 1131 10546.6+y
J_1+20 1083 9415.2+y
J_1+18 1037 8331.9+y
J_1+16 991 7295.2+y
J_1+14 945 6304.6+y
J_1+12 901 5359.3+y
J_1+10 857 4458.6+y
J_1+8 814 3601.3+y
J_1+6 772 2787.0+y
J_1+4 728 2015.5+y
J_1+2 1287.6+y
SD-3 Band
(1990By01,1993Be37)
J_2+34 1569 19204.2+z
J_2+32 1514 17635.1+z
J_2+30 1457 16121.2+z
J_2+28 1401 14664.1+z
J_2+26 1344 13263.6+z
J_2+24 1288 11919.8+z
J_2+22 1232 10632.1+z
J_2+20 1177 9399.8+z
J_2+18 1122 8222.7+z
J_2+16 1068 7100.3+z
J_2+14 1015 6032.1+z
J_2+12 963 5017.2+z
J_2+10 911 4054.7+z
J_2+8 860 3144.2+z
J_2+6 811 2284.2+z
J_2+4 761 1473.7+z
J_2+2 713 712.5+z
J_2~(28-) z
SD-5 Band
(1993Be37,1999ErZZ)
J_3+38 1590 22505.2+u
J_3+36 1536 20915.2+u
J_3+34 1517 19379.2+u
J_3+32 1480 17862.5+u
J_3+30 1426 16382.4+u
J_3+28 1375 14956.3+u
J_3+26 1325 13581.2+u
J_3+24 1275 12256.0+u
J_3+22 1227 10980.9+u
J_3+20 1179 9753.9+u
J_3+18 1133 8574.4+u
J_3+16 1088 7441.4+u
J_3+14 1042 6353.7+u
J_3+12 998 5311.3+u
J_3+10 953 4313.1+u
J_3+8 908 3359.9+u
J_3+6 863 2451.5+u
J_3+4 817 1588.6+u
J_3+2 772 771.5+u
J_3~(27+) u
SD-6 Band
(1999ErZZ)
J_4+36 1645 21171.8+v
J_4+34 1590 19527.0+v
J_4+32 1532 17937.1+v
J_4+30 1475 16404.8+v
J_4+28 1419 14929.5+v
J_4+26 1363 13510.5+v
J_4+24 1307 12147.9+v
J_4+22 1251 10841.4+v
J_4+20 1196 9590.4+v
J_4+18 1141 8394.9+v
J_4+16 1087 7253.5+v
J_4+14 1034 6166.5+v
J_4+12 981 5132.6+v
J_4+10 930 4151.2+v
J_4+8 880 3221.1+v
J_4+6 830 2341.2+v
J_4+4 778 1511.4+v
J_4+2 733 733.20+v
J_4~(29+) v
SD-7 Band
(1999ErZZ)
J_5+36 1618 20698.2+w
J_5+34 1561 19080.3+w
J_5+32 1504 17519.6+w
J_5+30 1447 16015.7+w
J_5+28 1390 14568.9+w
J_5+26 1334 13178.7+w
J_5+24 1278 11845.0+w
J_5+22 1223 10567.0+w
J_5+20 1168 9344.4+w
J_5+18 1114 8176.0+w
J_5+16 1061 7062.1+w
J_5+14 1008 6001.3+w
J_5+12 956 4993.1+w
J_5+10 905 4036.7+w
J_5+8 856 3131.3+w
J_5+6 806 2275.8+w
J_5+4 759 1469.4+w
J_5+2 711 711.1+w
J_5~(28+) w
SD-8 Band
(1999ErZZ)

$^{150}_{64}Gd_{86}$


J_6+32 1653 19446.1+s
J_6+30 1594 17793.6+s
J_6+28 1534 16199.5+s
J_6+26 1474 14665.5+s
J_6+24 1415 13191.5+s
J_6+22 1356 11776.5+s
J_6+20 1297 10420.8+s
J_6+18 1238 9124.2+s
J_6+16 1180 7886.2+s
J_6+14 1122 6706.4+s
J_6+12 1066 5584.2+s
J_6+10 1010 4518.1+s
J_6+8 955 3507.9+s
J_6+6 902 2552.7+s
J_6+4 850 1650.3+s
J_6+2 801 800.4+s
J_6~(31+) s
SD-9 Band
(1999ErZZ)
J_7+30 1567 17821.0+t
J_7+28 1512 16253.7+t
J_7+26 1456 14741.9+t
J_7+24 1400 13286.0+t
J_7+22 1345 11885.9+t
J_7+20 1290 10540.9+t
J_7+18 1236 9250.8+t
J_7+16 1183 8014.8+t
J_7+14 1129 6832.3+t
J_7+12 1077 5703.4+t
J_7+10 1025 4626.6+t
J_7+8 974 3601.5+t
J_7+6 924 2627.2+t
J_7+4 875 1702.9+t
J_7+2 828 827.6+t
J_7~(33+) t
SD-10 Band
(1999ErZZ)
J_8+30 1539 17451.6+a
J_8+28 1485 15912.7+a
J_8+26 1431 14427.3+a
J_8+24 1376 12996.6+a
J_8+22 1321 11621.0+a
J_8+20 1266 10300.5+a
J_8+18 1212 9034.6+a
J_8+16 1162 7822.2+a
J_8+14 1098 6660.4+a
J_8+12 1054 5562.2+a
J_8+10 1002 4508.5+a
J_8+8 951 3507.0+a
J_8+6 900 2555.8+a
J_8+4 852 1655.6+a
J_8+2 804 804.0+a
J_8~(32+) a
SD-11 Band
(1999ErZZ)
J_9+30 1495 17412.5+b
J_9+28 1449 15917.5+b
J_9+26 1400 14468.6+b
J_9+24 1352 13068.5+b
J_9+22 1303 11716.8+b
J_9+20 1254 10414.1+b
J_9+18 1208 9159.7+b
J_9+16 1160 7952.0+b
J_9+14 1112 6792.0+b
J_9+12 1064 5680.0+b
J_9+10 1017 4615.7+b
J_9+8 970 3599.1+b
J_9+6 923 2629.1+b
J_9+4 877 1706.5+b
J_9+2 830 830.0+b
J_9~(34+) b
SD-12 Band
(1999ErZZ)
J_{10}+34 1557 19373+c
J_{10}+32 1496 17816.2+c
J_{10}+30 1438 16320.1+c
J_{10}+28 1382 14881.7+c
J_{10}+26 1327 13499.3+c
J_{10}+24 1271 12172.4+c
J_{10}+22 1219 10901.0+c
J_{10}+20 1166 9682.2+c
J_{10}+18 1113 8516.3+c
J_{10}+16 1065 7403.9+c
J_{10}+14 1016 6338.5+c
J_{10}+12 969 5322.9+c
J_{10}+10 923 4353.5+c
J_{10}+8 878 3430.8+c
J_{10}+6 889 2553.1+c
J_{10}+4 849 1664.1+c
J_{10}+2 815 815.1+c
J_{10}~(29+) c
SD-13 Band
(1999ErZZ)
J_{11}+36 1592 20638+d
J_{11}+34 1531 19046+d
J_{11}+32 1469 17515+d
J_{11}+30 1411 16047+d
J_{11}+28 1355 14635.3+d
J_{11}+26 1299 13280.5+d
J_{11}+24 1245 11981.5+d
J_{11}+22 1192 10736.6+d
J_{11}+20 1140 9544.6+d
J_{11}+18 1093 8404.3+d
J_{11}+16 1040 7311.5+d
J_{11}+14 992 6271.1+d
J_{11}+12 946 5279.6+d
J_{11}+10 901 4334.0+d
J_{11}+8 857 3433.3+d
J_{11}+6 910 2577.0+d
J_{11}+4 859 1667.4+d
J_{11}+2 809 808.9+d
J_{11}~(28+) d
SD-14 Band
(1999ErZZ)

$^{150}_{64}$Gd$_{86}$

$^{151}_{64}Gd_{87}$

S_n: 6498 $_7$, S_p: 6687 $_7$

Nuclear Bands

- A ν11/2[505]
- B $\nu i_{13/2}$, α=+1/2
- C $\nu i_{13/2}$, α=-1/2
- D $\nu h_{9/2}$
- E $\nu f_{7/2}$
- F SD-1 band (1999ErBB,1998ErZY)
- G SD-2 band (1999ErBB,1998ErZY)
- H SD-3 band (1999ErBB,1998ErZY)
- I SD-4 band (1999ErBB,1998ErZY)
- J SD-5 band (1999ErBB,1998ErZY)
- K SD-6 band (1999ErBB,1998ErZY)

Levels and γ-ray branchings:

E **0**, $7/2^-$, *124$_1$ d*, %ε=100, %$\alpha \approx 0.8\times10^{-6}$, μ=0.77$_6$

108.094$_7$, $5/2^-$, *2.80$_{11}$ ns*, μ=-1.08$_{13}$, γ_0**108.088**$_{10}$(100) M1+E2 $\delta=-0.85_1$

D **379.30**$_3$, $9/2^-$, $\gamma_{108.094}$**271.2**$_3(0.7_1)$, γ_0**379.39**$_4(100.0_4)$ M1(+E2) $\delta<0.25$

395.445$_7$, $3/2^-$, *0.29$_3$ ns*, μ=-2.48$_{75}$, $\gamma_{108.094}$**287.357**$_{10}(100_3)$ M1+E2 $\delta=+0.21_2$, γ_0**395.444**$_{10}(38_1)$ E2

426.688$_7$, $5/2^-$, $\gamma_{108.094}$**318.60**$_3(8.8_3)$ M1(+E2) $\delta<2$, γ_0**426.692**$_{10}(100_3)$ M1

575.619$_8$, $1/2^-$, *0.23$_3$ ns*, $\gamma_{426.688}$**148.918**$_{11}(3.1_1)$, $\gamma_{395.445}$**180.186**$_{10}(100_4)$ M1+E2 $\delta=-0.08_3$, $\gamma_{108.094}$**467.506**$_{10}(7.7_3)$ (E2)

584.78$_{11}$, $5/2,9/2$, $\gamma_{108.094}$**476.5**$_2(12_4)$, γ_0**584.84**$_{12}(100_8)$

587.449$_7$, $3/2^-$, *0.30$_2$ ns*, $\gamma_{426.688}$**160.762**$_{10}(3.1_1)$ M1(+E2) $\delta<1$, $\gamma_{395.445}$**191.96**$_2(23_1)$ M1+E2 $\delta=-0.12_5$, $\gamma_{108.094}$**479.357**$_{10}(98_3)$ E2(+M1) $\delta>1$, γ_0**587.46**$_2(100_3)$ E2

589.10$_7$, $3/2^-,5/2,7/2^-$, $\gamma_{395.445}$**193.74**$_8(20_3)$, $\gamma_{108.094}$**480.4**$_2(39_{17})$, γ_0**589.2**$_2(100_{22})$

618.14$_{11}$, $5/2^-,7/2^-,9/2^-$, γ_0**617.89**$_{12}$(100) M1(+E2) $\delta<2$

620.602$_{13}$, $3/2^-,5/2^{(-)}$, $\gamma_{426.688}$**193.94**$_{12}(32_{13})$, $\gamma_{395.445}$**225.12**$_4(15_1)$, $\gamma_{108.094}$**512.5**$_5(95_{20})$ (M1,E2), γ_0**620.594**$_{16}(100_5)$ (E2)

670.86$_6$, $(5/2,7/2)^-$, $\gamma_{395.445}$**274.66**$_{13}(8_2)$, $\gamma_{108.094}$**562.93**$_7(100_6)$ M1,E2, γ_0**671.01**$_{11}(50_8)$

697(?)

E **705.98**$_3$, $11/2^-$, $\gamma_{379.30}$**326.7**$_2(1.9_4)$ M1,E2, γ_0**705.93**$_4(100_1)$ E2

719.46$_4$, $9/2^-$, γ_0**719.38**$_5$(100) E2(+M1) $\delta>1$

C **784.81**$_4$, $11/2^+$, $\gamma_{719.46}$**65.30**$_4(11.8_9)$ (E1), $\gamma_{705.98}$**78.71**$_4(25.6_3)$ (E1), $\gamma_{379.30}$**405.48**$_4(100_1)$ E1

811.835$_8$, $3/2^-$, $\gamma_{620.602}$**191.2**$_5(5.6_{11})$, $\gamma_{575.619}$**236.14**$_3(3.2_2)$, $\gamma_{426.688}$**385.156**$_{10}(27_2)$ M1(+E2) $\delta<1$, $\gamma_{395.445}$**416.390**$_{10}(51_2)$ M1+E2 $\delta=+0.39_{14}$, $\gamma_{108.094}$**703.75**$_{10}(100_3)$ M1+E2 $\delta=-0.25_2$, γ_0**811.81**$_4(5.2_2)$ E2

839.320$_8$, $1/2^-$, *0.28$_3$ ns*, $\gamma_{620.602}$**218.65**$_{13}(0.10_1)$, $\gamma_{587.449}$**251.863**$_{10}(100_3)$ M1(+E2) $\delta=-0.08_{12}$, $\gamma_{575.619}$**263.707**$_{17}(0.75_3)$ M1,E2, $\gamma_{426.688}$**412.6**$_5(0.06_2)$, $\gamma_{395.445}$**443.879**$_{10}(41_1)$ M1+E2 $\delta=-0.57_4$, $\gamma_{108.094}$**731.227**$_{11}(29_1)$ E2

B **851.90**$_4$, $13/2^+$, $\gamma_{784.81}$**67.08**$_4(36_1)$ (M1), $\gamma_{705.98}$**146.03**$_4(100_1)$

882(?)

D **901.97**$_4$, $13/2^-$, $\gamma_{705.98}$**196.00**$_9(1.3_3)$, $\gamma_{379.30}$**522.77**$_4(100_1)$ E2

905.58$_9$, $(3/2^-,5/2^-)$, γ_0**905.6**$_5$(100) (M1,E2)

913$_2$, $(9/2^-,11/2^-)$

913.56$_2$, $(3/2^-)$, $\gamma_{587.449}$**326.1**$_5(5_1)$, $\gamma_{395.445}$**518.18**$_5(7.9_4)$, $\gamma_{108.094}$**805.47**$_2(100_4)$ (M1), γ_0**913.6**$_5(18_4)$ (E2)

938.77$_7$, $(3/2^-,5/2^-,7/2^-)$, $\gamma_{108.094}$**830.65**$_{10}(39_3)$, γ_0**938.7**$_5(100_{21})$ (M1,E2)

982.27$_4$, $(3/2)^+$, $\gamma_{839.320}$**143.0**$_5(7_2)$, $\gamma_{620.602}$**361.61**$_6(38_6)$, $\gamma_{426.688}$**556.3**$_2(17_1)$, $\gamma_{395.445}$**586.8**$_5(100_{20})$, $\gamma_{108.094}$**874.11**$_{11}(11_1)$

1050$_2$, $1/2^+$

1052.20$_2$, $1/2^-,3/2^-$, $\gamma_{811.835}$**240.36**$_2(18_1)$ E2(+M1) $\delta>2$, $\gamma_{575.619}$**476.55**$_3(100_4)$ M1(+E2) $\delta<1$, $\gamma_{395.445}$**656.78**$_4(32_1)$ (M1,E2)

1076.95$_{12}$, $(9/2\rightarrow13/2)^-$, $\gamma_{379.30}$**697.64**$_{11}$(100) (E2)

1087.59$_2$, $3/2^-$, $\gamma_{839.320}$**248.30**$_3(19_1)$ M1(+E2) $\delta<1$, $\gamma_{811.835}$**275.61**$_6(2.9_4)$, $\gamma_{620.602}$**467.0**$_5(6.7_{14})$, $\gamma_{587.449}$**500.1**$_5(20_4)$ (M1,E2), $\gamma_{575.619}$**512.0**$_5(11_2)$ (M1,E2), $\gamma_{426.688}$**660.94**$_3(32_1)$, $\gamma_{395.445}$**692.06**$_4(100_6)$ M1+E2, $\gamma_{108.094}$**979.48**$_4(29_1)$ M1,E2, γ_0**1087.6**$_5(1.4_4)$

1115.77$_4$, $13/2^+$, $\gamma_{901.97}$**214.67**$_{15}(12_4)$, $\gamma_{851.90}$**263.76**$_4(100_2)$ M1(+E2) $\delta<0.4$, $\gamma_{784.81}$**330.93**$_4(84_4)$ M1(+E2) $\delta<0.6$, $\gamma_{705.98}$**409.8**$_5(28_{10})$

1157.90$_2$, $(3/2)^+$, $\gamma_{905.58}$**252.3**$_5(55_{14})$, $\gamma_{839.320}$**318.6**$_5(3_1)$, $\gamma_{620.602}$**537.293**$_{13}(67_2)$, $\gamma_{575.619}$**582.35**$_9(12_1)$, $\gamma_{426.688}$**731.2**$_5(100_{23})$, $\gamma_{395.445}$**762.45**$_3(52_2)$ E1(+M2) $\delta<0.1$, $\gamma_{108.094}$**1049.83**$_4(18_1)$

1159$_2$, $(5/2^-,7/2,9/2^+)$

1164.3$_2$(?), $(13/2^-,15/2^+)$, $\gamma_{784.81}$**379**$_1$(100)(?)

1192.19$_1$, $1/2^+$, $\gamma_{1052.20}$**139.95**$_5(0.46_3)$, $\gamma_{913.56}$**278.70**$_4(0.92_6)$, $\gamma_{811.835}$**380.356**$_{10}(46_2)$ E1(+M2) $\delta<0.1$, $\gamma_{587.449}$**604.761**$_{16}(32_1)$ E1(+M2) $\delta<0.2$, $\gamma_{575.619}$**616.561**$_{15}(100_3)$ E1, $\gamma_{395.445}$**796.8**$_5(0.52_{11})$

1199.15$_5$, $(1/2^-,3/2,5/2^-)$, $\gamma_{620.602}$**578.6**$_5(25_7)$ (M1,E2), $\gamma_{426.688}$**772.52**$_6(57_4)$, $\gamma_{395.445}$**803.7**$_5(25_7)$, $\gamma_{108.094}$**1091.04**$_9(100_4)$

A **1210.06**$_8$, $11/2^-$, $\gamma_{851.90}$**358.04**$_9(30_5)$ E1, $\gamma_{705.98}$**504.4**$_2(34_{14})$ M1,E2, $\gamma_{379.30}$**830.81**$_{14}(100_5)$, γ_0**1210.8**$_4(41_7)$

1261$_5$

1279.06$_3$, $3/2^-,5/2^-$, $\gamma_{913.56}$**365.5**$_5(3.8_{10})$, $\gamma_{905.58}$**373.5**$_5(2.4_5)$, $\gamma_{839.320}$**439.60**$_8(6.2_5)$, $\gamma_{620.602}$**658.58**$_{13}(21_2)$ (M1,E2), $\gamma_{587.449}$**691.6**$_5(27_5)$, $\gamma_{575.619}$**703.4**$_5(3.3_{10})$, $\gamma_{426.688}$**852.36**$_6(9.6_5)$ M1(+E2) $\delta<1$, $\gamma_{395.445}$**883.6**$_5(18_4)$ (M1,E2), $\gamma_{108.094}$**1170.98**$_3(100_3)$ M1, γ_0**1279.20**$_{13}(4.8_5)$

B **1345.44**$_6$, $17/2^+$, $\gamma_{1115.77}$**229.59**$_7(1.6_4)$, $\gamma_{851.90}$**493.57**$_6(100_1)$ E2

1351$_5$

C **1363.84**$_5$, $15/2^+$, $\gamma_{1115.77}$**247.98**$_5(16_2)$ M1(+E2) $\delta<1$, $\gamma_{901.97}$**461.92**$_4(100_3)$ E1, $\gamma_{851.90}$**512.2**$_2(39_{15})$ M1,E2, $\gamma_{784.81}$**579.08**$_{10}(57_5)$

1364$_2$

1373.95$_2$, $1/2^-,3/2^-,5/2^-$, $\gamma_{1157.90}$**216.04**$_3(70_3)$, $\gamma_{1052.20}$**322.21**$_{22}(28_2)$, $\gamma_{982.27}$**391.67**$_8(100_{13})$, $\gamma_{913.56}$**460.40**$_5(36_2)$, $\gamma_{905.58}$**468.4**$_5(11_3)$, $\gamma_{839.320}$**534.67**$_4(46_2)$ (E2), $\gamma_{811.835}$**562.5**$_1(43_2)$ M1(+E2) $\delta<1$, $\gamma_{587.449}$**786.5**$_5(13_2)$, $\gamma_{575.619}$**798.23**$_6(62_3)$, $\gamma_{426.688}$**947.3**$_5(36_8)$ (M1,E2)

1405.14$_3$, $3/2^-,5/2^-$, $\gamma_{811.835}$**593.3**$_5(16_4)$, $\gamma_{620.602}$**784.3**$_2(24_2)$ (M1,E2), $\gamma_{587.449}$**817.96**$_{24}(6.9_9)$, $\gamma_{395.445}$**1009.69**$_3(100_4)$ M1(+E2) $\delta<2$, $\gamma_{108.094}$**1297.10**$_9(17_2)$, γ_0**1405.1**$_4(6.9_7)$

1425$_1$, $(11/2\rightarrow15/2)$, $\gamma_{705.98}$**719**$_1$(100)(?)

E **1435.08**$_6$, $(15/2)^-$, $\gamma_{851.90}$**583.52**$_{11}(51_6)$, $\gamma_{705.98}$**729.00**$_6(100_5)$ E2

1456.58$_5$, $1/2^-,3/2^-,5/2^-$, γ_{913}**543.8**$_1(9_1)$, $\gamma_{811.835}$**644.78**$_{10}(17_1)$, $\gamma_{587.449}$**870.0**$_2(13_2)$ (M1,E2), $\gamma_{575.619}$**880.79**$_{15}(35_2)$, $\gamma_{426.688}$**1029.55**$_5(43_1)$, $\gamma_{395.445}$**1061.59**$_5(100_5)$ M1,E2, $\gamma_{108.094}$**1348.19**$_6(83_2)$

A **1463.27**$_9$, $(13/2)^-$, $\gamma_{1210.06}$**253.21**$_4$(100) M1+E2 $\delta=-0.22_5$

1477.66$_9$, $(1/2^-,3/2,5/2^-)$, $\gamma_{108.094}$**1369.56**$_9$(100)

1493.38$_5$, $(1/2\rightarrow5/2^-)$, $\gamma_{1087.59}$**405.67**$_9(5.8_5)$ (M1), $\gamma_{913.56}$**579.8**$_5(7.9_{16})$ (M1,E2), $\gamma_{587.449}$**905.9**$_5(100_{21})$ (M1,E2), $\gamma_{575.619}$**917.8**$_5(6.3_{16})$ (M1,E2), $\gamma_{395.445}$**1097.92**$_7(20.5_5)$, $\gamma_{108.094}$**1385.42**$_9(14.7_5)$

1505.41$_2$, $1/2^{(-)},3/2^{(-)}$, $\gamma_{913.56}$**591.8**$_5(2.3_7)$, $\gamma_{839.320}$**666.1**$_5(1.3_7)$, $\gamma_{620.602}$**884.8**$_5(15_3)$ (M1,E2), $\gamma_{587.449}$**918.0**$_5(3.9_7)$ (M1,E2), $\gamma_{575.619}$**929.83**$_{11}(3.6_3)$, $\gamma_{426.688}$**1078.80**$_7(8.4_3)$, $\gamma_{395.445}$**1109.96**$_2(100_3)$, $\gamma_{108.094}$**1397.0**$_1(6.8_3)$

1505.73$_{14}$, $(11/2\rightarrow15/2)$, $\gamma_{901.97}$**603.75**$_{14}(100_{16})$, $\gamma_{784.81}$**721.0**$_5(88_{36})$

D **1510.92**$_6$, $17/2^-$, $\gamma_{1363.84}$**147.1**$_2(9_2)$, $\gamma_{1164.3}$**346.58**$_{14}(5.8_{13})$(?), $\gamma_{901.97}$**608.94**$_4(100_2)$ E2

1552.70$_{14}$, $(3/2^-,5/2^-)$, $\gamma_{839.320}$**713.25**$_{15}(<500)$, γ_0**1553.2**$_3(100_{15})$

1577.56$_4$, $(1/2\rightarrow5/2^-)$, $\gamma_{1157.90}$**419.6**$_5(15_3)$, $\gamma_{913.56}$**664.0**$_5(9_2)$, $\gamma_{905.58}$**671.96**$_9(15_2)$ M1(+E2) $\delta<1$, $\gamma_{811.835}$**765.7**$_5(10_1)$, $\gamma_{620.602}$**956.93**$_{12}(14_1)$ M1,E2, $\gamma_{587.449}$**990.13**$_{18}(12_1)$, $\gamma_{575.619}$**1001.87**$_{11}(11_1)$, $\gamma_{426.688}$**1150.79**$_{10}(13_1)$, $\gamma_{395.445}$**1182.13**$_4(100_3)$

1676.61$_7$, $(17/2)^+$, $\gamma_{1345.44}$**331.1**$_1(14_6)$, $\gamma_{1115.77}$**560.89**$_7(100_9)$ E2, $\gamma_{851.90}$**824.2**$_4(43_9)$

1701.40$_7$, $1/2,3/2,5/2^{(-)}$, $\gamma_{905.58}$**795.8**$_5(70_{20})$, $\gamma_{811.835}$**889.9**$_2(70_6)$, $\gamma_{620.602}$**1080.96**$_{19}(90_{10})$,

$\gamma_{587.449}$**1114.1**$_2(100_{10})$, $\gamma_{395.445}$**1305.81**$_9(80_{10})$

1707.68$_3$, $1/2^{(-)},3/2^{(-)}$, $\gamma_{1279.06}$**428.6**$_5(7.0_{13})$, $\gamma_{1087.59}$**620.1**$_5(4.8_9)$, $\gamma_{982.27}$**725.30**$_9(4.8_5)$, $\gamma_{913.56}$**794.28**$_9(13_1)$ (M1,E2), $\gamma_{839.320}$**868.16**$_{26}(3.5_4)$, $\gamma_{811.835}$**894.7**$_2(3.5_4)$ (M1,E2), $\gamma_{620.602}$**1087.1**$_5(1.3_4)$, $\gamma_{587.449}$**1120.2**$_5(8.7_{17})$, $\gamma_{575.619}$**1132.0**$_5(12_1)$, $\gamma_{426.688}$**1281.00**$_6(20_1)$ (M1,E2), $\gamma_{395.445}$**1312.18**$_5(100_3)$ (M1,E2), $\gamma_{108.094}$**1599.60**$_4(40_1)$ (M1,E2)

A **1725.74**$_{10}$, $(15/2)^-$, $\gamma_{1463.27}$**262.42**$_4(100_3)$ M1+E2 $\delta=-0.18_5$, $\gamma_{1210.06}$**515.1**$_4(31_{14})$

1745.76$_{11}$, $1/2,3/2,5/2^{(-)}$, $\gamma_{1493.38}$**252.4**$_5(100_{23})$, $\gamma_{938.77}$**807.0**$_5(45_9)$, $\gamma_{620.602}$**1125.28**$_{14}(64_5)$ (M1), $\gamma_{587.449}$**1158.3**$_5(14_5)$, $\gamma_{426.688}$**1318.86**$_{18}(18_9)$, $\gamma_{395.445}$**1350.3**$_5(45_9)$

1778.56$_2$, $1/2^-,3/2^-$, $\gamma_{1279.06}$**499.5**$_5(22_4)$ (M1,E2), $\gamma_{1087.59}$**691.0**$_5(11_2)$, $\gamma_{938.77}$**839.8**$_5(5.3_9)$ (M1,E2), $\gamma_{913.56}$**864.98**$_3(25_1)$ M1(+E2) $\delta<1$, $\gamma_{839.320}$**939.2**$_5(5_1)$ (M1,E2), $\gamma_{811.835}$**966.25**$_{11}(5.3_5)$ M1,E2, $\gamma_{620.602}$**1158.0**$_5(5.3_{13})$, $\gamma_{587.449}$**1191.13**$_5(24_1)$ (M1,E2), $\gamma_{575.619}$**1202.96**$_5(11.5_5)$ (M1,E2), $\gamma_{426.688}$**1351.9**$_5(39_9)$, $\gamma_{395.445}$**1383.12**$_5(49_1)$ (M1,E2), $\gamma_{108.094}$**1670.50**$_4(100_4)$ (M1,E2)

1788.96$_5$, $(1/2\rightarrow 5/2^-)$, $\gamma_{839.320}$**949.7**$_3(11_1)$, $\gamma_{811.835}$**977.1**$_5(30_7)$, $\gamma_{575.619}$**1213.37**$_9(36_2)$, $\gamma_{426.688}$**1362.21**$_5(100_2)$ (M1,E2), $\gamma_{395.445}$**1394.1**$_2(27_2)$

1836.90$_3$, $(3/2)^-$, $\gamma_{1199.15}$**637.90**$_{13}(11_1)$, $\gamma_{1157.90}$**679.1**$_5(14_3)$, $\gamma_{1087.59}$**749.24**$_9(8.5_6)$, $\gamma_{938.77}$**897.83**$_{18}(15_1)$, $\gamma_{913.56}$**923.37**$_{13}(10_1)$, $\gamma_{839.320}$**997.29**$_{23}(5.6_6)$, $\gamma_{811.835}$**1025.12**$_4(100_3)$ M1,E2, $\gamma_{620.602}$**1217.4**$_2(8_1)$, $\gamma_{587.449}$**1249.43**$_8(27_1)$, $\gamma_{575.619}$**1260.7**$_3(11_3)$, $\gamma_{426.688}$**1410.4**$_2(11_1)$ (M1,E2), $\gamma_{395.445}$**1441.15**$_{17}(10_1)$, $\gamma_{108.094}$**1728.70**$_{13}(13_1)$, γ_0**1837.5**$_4(1.4_2)$

C **1851.58**$_6$, $19/2^+$, $\gamma_{1510.92}$**340.65**$_4(100_3)$ E1, $\gamma_{1363.84}$**487.77**$_6(82_5)$ E2, $\gamma_{1345.44}$**506.08**$_{15}(48_{16})$

1852.72$_{12}$, $(1/2^-,3/2^-,5/2^-)$, $\gamma_{938.77}$**914.0**$_5(19_5)$, $\gamma_{913.56}$**939.1**$_5(76_{14})$ (M1,E2), $\gamma_{620.602}$**1232.1**$_5(100_{20})$, $\gamma_{395.445}$**1457.3**$_5(24_5)$, $\gamma_{108.094}$**1744.61**$_{13}(33_3)$

B **1852.97**$_7$, $(21/2)^+$, $\gamma_{1345.44}$**507.53**$_4(100)$ E2

1890.80$_{13}$, $(1/2^-,3/2,5/2^-)$, $\gamma_{839.320}$**1051.5**$_5(21_5)$, $\gamma_{620.602}$**1269.1**$_6(16_5)$, $\gamma_{575.619}$**1315.10**$_{20}(37_5)$, $\gamma_{426.688}$**1464.3**$_2(42_5)$, $\gamma_{395.445}$**1495.3**$_5(100_{26})$

1941.11$_{14}$, $(1/2^-,3/2,5/2^-)$, $\gamma_{811.835}$**1129.3**$_5(100_{20})$, $\gamma_{620.602}$**1320.5**$_5(40_{20})$, $\gamma_{575.619}$**1364.8**$_7(20_{10})$, $\gamma_{426.688}$**1514.37**$_{18}(100_8)$, $\gamma_{395.445}$**1545.9**$_3(80_{10})$

1970.91$_{13}$, $1/2,3/2,5/2^{(-)}$, $\gamma_{913.56}$**1057.3**$_5(100_{22})$, $\gamma_{620.602}$**1350.3**$_5(22_{11})$, $\gamma_{575.619}$**1395.3**$_5(56_{11})$, $\gamma_{395.445}$**1575.46**$_{14}(67_3)$

1978.05$_8$, $(3/2^-)$, $\gamma_{938.77}$**1040.5**$_8(10_2)$, $\gamma_{575.619}$**1402.5**$_2(10_1)$, $\gamma_{108.094}$**1869.87**$_9(100_6)$, γ_0**1978.15**$_{15}(6.5_{16})$

A **2003.73**$_{10}$, $(17/2)^-$, $\gamma_{1725.74}$**277.96**$_5(100_5)$ M1(+E2) $\delta<0.5$, $\gamma_{1463.27}$**540.82**$_{10}(95_{15})$

2012.15$_{24}$, $(1/2^-,3/2,5/2^-)$, $\gamma_{620.602}$**1392.7**$_2(100_{20})$, $\gamma_{426.688}$**1584.8**$_2(80_8)$

2034.36$_2$, $1/2^-,3/2^-$, $\gamma_{1577.56}$**456.74**$_{14}(3.8_5)$, $\gamma_{1477.66}$**556.7**$_5(3.3_5)$, $\gamma_{1456.58}$**576.9**$_6(4.3_5)$, $\gamma_{1405.14}$**629.23**$_3(16.9_5)$, $\gamma_{1373.95}$**660.3**$_5(5.3_{14})$, $\gamma_{1279.06}$**755.78**$_{16}(1.0_3)$, $\gamma_{1199.15}$**835.2**$_5(2.9_{10})$, $\gamma_{1192.19}$**842.15**$_5(13.4_5)$, $\gamma_{1157.90}$**876.68**$_{24}(2.4_5)$, $\gamma_{1087.59}$**946.8**$_5(7.7_{14})$ (M1,E2), $\gamma_{1052.20}$**982.1**$_5(11_2)$ (M1,E2), $\gamma_{982.27}$**1052.0**$_5(10_2)$, $\gamma_{938.77}$**1095.6**$_5(1.9_5)$, $\gamma_{913.56}$**1120.8**$_5(4.3_{10})$, $\gamma_{905.58}$**1128.8**$_5(1.9_5)$, $\gamma_{839.320}$**1195.00**$_5(27_1)$, $\gamma_{811.835}$**1222.53**$_3(100_3)$ M1,E2, $\gamma_{620.602}$**1413.7**$_5(1.9_5)$, $\gamma_{587.449}$**1446.86**$_6(15.3_5)$, $\gamma_{575.619}$**1458.7**$_5(2.4_5)$, $\gamma_{426.688}$**1607.6**$_5(1.0_5)$, $\gamma_{395.445}$**1638.2**$_1(10.5_5)$

2043.89$_{23}$, $(1/2,3/2,5/2^-)$, $\gamma_{811.835}$**1232.0**$_5(70_{20})$, $\gamma_{587.449}$**1456.4**$_5(100_{20})$, $\gamma_{575.619}$**1468.3**$_3(30_3)$

2070.97$_4$, $1/2^-,3/2^-$, $\gamma_{1279.06}$**791.7**$_5(3.7_5)$, $\gamma_{1199.15}$**871.76**$_{21}(3.2_{11})$, $\gamma_{1192.19}$**878.89**$_{21}(9.0_{11})$, $\gamma_{1157.90}$**913.1**$_5(4.3_{11})$, $\gamma_{1087.59}$**983.4**$_5(16_3)$ (M1,E2), $\gamma_{1052.20}$**1018.99**$_{17}(4.3_4)$, $\gamma_{938.77}$**1132.2**$_5(2.7_5)$, $\gamma_{913.56}$**1157.4**$_5(31_6)$ (M1,E2), $\gamma_{905.58}$**1165.4**$_5(3.2_{11})$, $\gamma_{811.835}$**1259.1**$_5(10_2)$ (M1,E2), $\gamma_{620.602}$**1450.34**$_7(12.2_5)$, $\gamma_{587.449}$**1483.52**$_5(100_3)$ M1,E2, $\gamma_{575.619}$**1495.4**$_5(34_7)$, $\gamma_{426.688}$**1644.39**$_{13}(4.8_2)$, $\gamma_{395.445}$**1675.57**$_8(9.0_5)$, $\gamma_{108.094}$**1962.37**$_{16}(5.3_{11})$

2076.02$_8$, $1/2^{(-)},3/2$, $\gamma_{1192.19}$**884.0**$_5(54_{15})$, $\gamma_{938.77}$**1137.28**$_{11}(46_4)$, γ_{913}**1163.0**$_1(100_8)$, $\gamma_{905.58}$**1170.7**$_5(100_{15})$, $\gamma_{811.835}$**1264.0**$_3(62_4)$, $\gamma_{620.602}$**1455.6**$_5(31_8)$, $\gamma_{575.619}$**1500.4**$_2(31_6)$, $\gamma_{426.688}$**1649.33**$_{12}(62_3)$, $\gamma_{395.445}$**1680.8**$_5(54_{15})$, $\gamma_{108.094}$**1967.1**$_3(31_3)$

E **2077.86**$_{12}$, $(19/2^-)$, $\gamma_{1435.08}$**642.78**$_{10}(100)$

2099.01$_{16}$, $(1/2,3/2,5/2^-)$, $\gamma_{587.449}$**1511.55**$_{16}(100)$

2107.0$_3$, $(1/2,3/2,5/2^-)$, $\gamma_{587.449}$**1519.5**$_3(100)$

2116.09$_5$, $1/2^{(-)},3/2^{(-)}$, $\gamma_{1279.06}$**837.0**$_5(8_3)$, $\gamma_{938.77}$**1177.4**$_5(6_3)$, $\gamma_{905.58}$**1210.5**$_5(6_3)$, $\gamma_{811.835}$**1303.3**$_3(14_3)$, $\gamma_{620.602}$**1495.5**$_5(14_3)$, $\gamma_{426.688}$**1689.53**$_6(100_3)$ (M1,E2), $\gamma_{395.445}$**1720.46**$_7(72_{11})$, $\gamma_{108.094}$**2007.9**$_4(6_2)$

2128.72$_{11}$, $1/2^{(-)},3/2$, $\gamma_{620.602}$**1508.1**$_5(40_{10})$, $\gamma_{587.449}$**1541.8**$_3(20_4)$, $\gamma_{426.688}$**1702.8**$_4(30_3)$, $\gamma_{395.445}$**1733.3**$_5(10_5)$, $\gamma_{108.094}$**2020.45**$_{12}(100_5)$

2132.53$_{13}$, $1/2^{(-)},3/2$, $\gamma_{811.835}$**1320.7**$_5(57_{14})$, $\gamma_{575.619}$**1556.8**$_2(71_{13})$, $\gamma_{426.688}$**1705.90**$_{18}(100_6)$, $\gamma_{395.445}$**1737.1**$_5(29_{14})$

2154.9$_2$, $(1/2,3/2,5/2^-)$, $\gamma_{575.619}$**1579.3**$_5(100_{50})$, $\gamma_{395.445}$**1759.43**$_{21}(100_{15})$

2173.19$_8$, $1/2^{(-)},3/2$, $\gamma_{1279.06}$**894.0**$_5(4_2)$, $\gamma_{1199.15}$**974.14**$_9(100_4)$, $\gamma_{1087.59}$**1084.7**$_2(25_2)$, $\gamma_{938.77}$**1235.2**$_8(17_4)$, $\gamma_{913.56}$**1259.4**$_5(8_4)$, $\gamma_{905.58}$**1267.9**$_5(13_4)$, $\gamma_{811.835}$**1361.2**$_5(25_4)$, $\gamma_{587.449}$**1585.6**$_5(8_4)$, $\gamma_{426.688}$**1746.7**$_5(17_3)$, $\gamma_{395.445}$**1777.6**$_5(50_{13})$, $\gamma_{108.094}$**2064.98**$_{19}(8_1)$

2196.6$_7$, $(17/2\rightarrow 21/2)$, $\gamma_{1851.58}$**345**$_1(100_{25})$, $\gamma_{1676.61}$**520**$_1(50_{25})$

2205.94$_{11}$, $1/2^{(-)},3/2$, $\gamma_{587.449}$**1618.3**$_3(17_2)$, $\gamma_{575.619}$**1630.3**$_2(30_2)$, $\gamma_{426.688}$**1779.2**$_5(100_{22})$, $\gamma_{395.445}$**1811.0**$_2(13_2)$, $\gamma_{108.094}$**2097.4**$_2(30_2)$

2220.9$_3$, $1/2,3/2$, $\gamma_{913.56}$**1307.3**$_5(60_{20})$, $\gamma_{587.449}$**1633.4**$_5(100_{20})$, $\gamma_{395.445}$**1825.4**$_3(40_4)$

2243.8$_3$, $1/2^{(-)},3/2$, $\gamma_{1199.15}$**1044.2**$_4(100_{17})$, $\gamma_{426.688}$**1817.1**$_5(100_{33})$, $\gamma_{395.445}$**1848.3**$_5(67_{34})$, $\gamma_{108.094}$**2136.2**$_4(57_7)$

2246.95$_9$, $1/2^{(-)},3/2$, $\gamma_{811.835}$**1435.7**$_2(75_{10})$, $\gamma_{620.602}$**1626.3**$_5(50_{25})$, $\gamma_{575.619}$**1671.3**$_5(100_{25})$, $\gamma_{426.688}$**1820.10**$_{10}(100_8)$

2256.7$_2$, $1/2,3/2$, $\gamma_{587.449}$**1669.2**$_5(75_{25})$, $\gamma_{575.619}$**1681.1**$_5(100_{25})$, $\gamma_{395.445}$**1861.23**$_{23}(50_{10})$

A **2295.02**$_{12}$, $(19/2)^-$, $\gamma_{2003.73}$**291.38**$_8(81_6)$ M1(+E2) $\delta=+0.13_{13}$, $\gamma_{1725.74}$**568.74**$_{15}(100_{31})$

D **2297.3**$_6$, $(21/2^-)$, $\gamma_{1510.92}$**786.4**$_6(100)$

2317.7$_3$, $1/2^{(-)},3/2$, $\gamma_{839.320}$**1479.1**$_5(100_{15})$, $\gamma_{426.688}$**1890.6**$_4(100_{10})$, $\gamma_{108.094}$**2209.6**$_5(50_{25})$

2324.32$_{14}$, $1/2^{(-)},3/2$, $\gamma_{575.619}$**1748.7**$_4(67_{10})$, $\gamma_{426.688}$**1897.61**$_{14}(100_5)$

C **2325.11**$_9$, $23/2^+$, $\gamma_{1851.58}$**473.53**$_6(100)$ E2

2391.50$_5$, $1/2,3/2$, $\gamma_{1505.41}$**886.1**$_5(1.7_9)$, $\gamma_{1477.66}$**913.8**$_5(1.7_9)$, $\gamma_{1405.14}$**986.3**$_4(10_3)$, $\gamma_{1279.06}$**1112.4**$_5(1.7_9)$, $\gamma_{1192.19}$**1199.3**$_5(5_2)$, $\gamma_{1052.20}$**1339.01**$_{17}(13_2)$, $\gamma_{811.835}$**1579.75**$_6(38_2)$, $\gamma_{587.449}$**1803.85**$_{19}(8.3_5)$, $\gamma_{575.619}$**1815.8**$_5(100_{20})$, $\gamma_{395.445}$**1995.76**$_{17}(15_1)$

2400.5$_2$, $1/2^{(-)},3/2$, $\gamma_{426.688}$**1974.3**$_3(100_{15})$, $\gamma_{395.445}$**2005.0**$_4(50_{10})$, $\gamma_{108.094}$**2291.6**$_4(100_{15})$

B **2405.4**$_5$, $(25/2^+)$, $\gamma_{1852.97}$**552.4**$_5(100)$

2421.74$_{12}$, $1/2,3/2$, $\gamma_{982.27}$**1439.4**$_5(50_{13})$, $\gamma_{913.56}$**1508.2**$_5(25_{13})$, $\gamma_{587.449}$**1834.3**$_5(12_6)$, $\gamma_{575.619}$**1846.1**$_5(25_{13})$, $\gamma_{395.445}$**2026.28**$_{13}(100_4)$

2443.0$_3$, $(1/2,3/2)$, $\gamma_{395.445}$**2047.5**$_3(100)$

2444.86$_8$, $1/2,3/2$, $\gamma_{913.56}$**1531.3**$_5(10_5)$, $\gamma_{839.320}$**1605.5**$_5(37_{11})$, $\gamma_{811.835}$**1633.02**$_8(100_5)$, $\gamma_{575.619}$**1869.2**$_5(47_{10})$

A **2600.05**$_{14}$, $(21/2^-)$, $\gamma_{2295.02}$**304.92**$_8(57_7)$, $\gamma_{2003.73}$**596.7**$_2(100_{14})$

C **2866.2**$_5$, $(27/2^+)$, $\gamma_{2325.11}$**541.1**$_5(100)$ (E2)

A **2915.24**$_{17}$, $(23/2)^-$, $\gamma_{2600.05}$**315.09**$_{12}(22_6)$, $\gamma_{2295.02}$**620.5**$_2(100_{22})$ E2

B **3007.7**$_8$, $(29/2^+)$, $\gamma_{2405.4}$**602.3**$_5(100)$

A **3238.17**$_{18}$, $(25/2^-)$, $\gamma_{2915.24}$**324**$_1$(?), $\gamma_{2600.05}$**638.09**$_{12}(100_{33})$

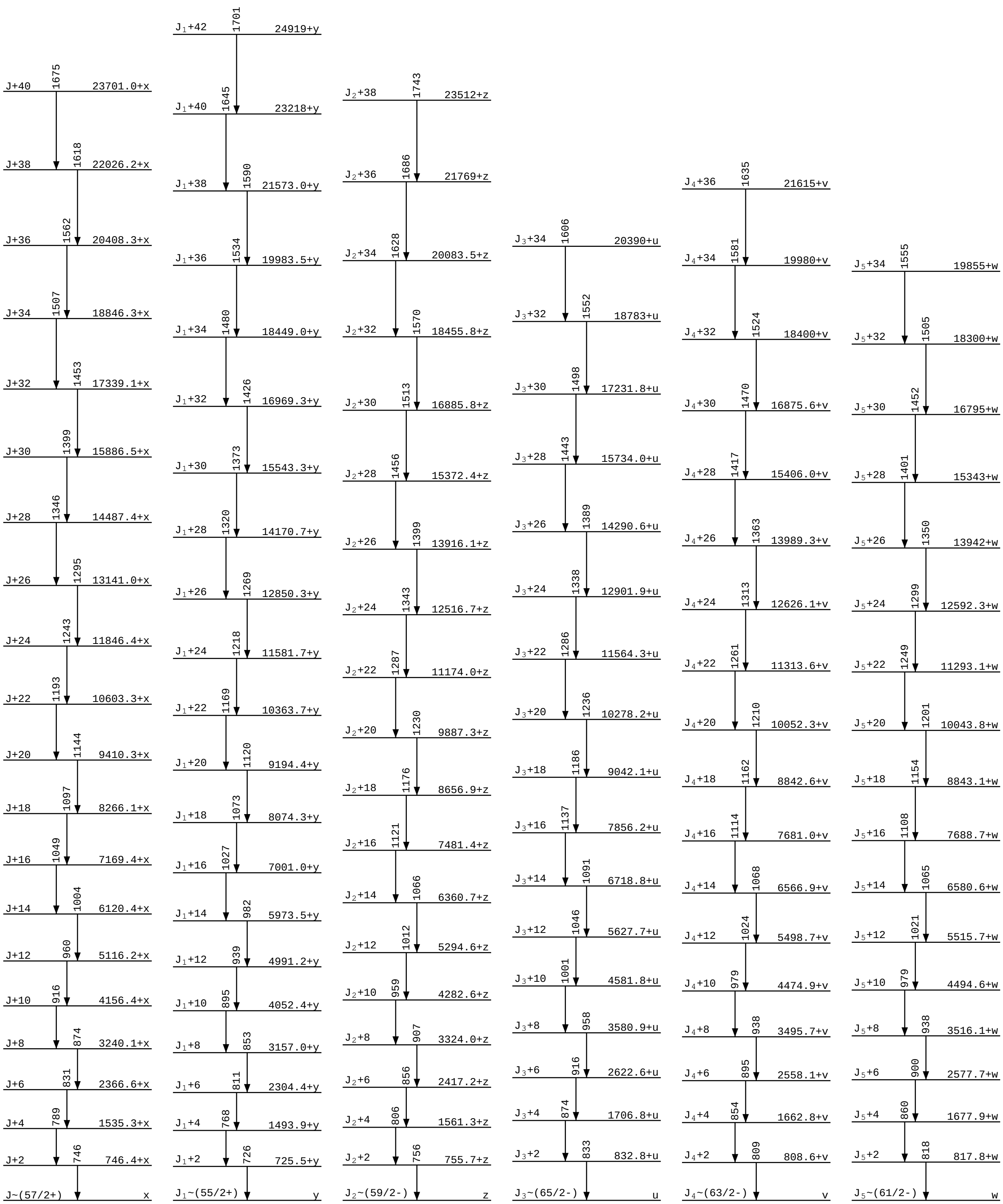
3728.2$_7$(?), $(27/2\rightarrow 31/2)$, $\gamma_{2866.2}$**862.0**$_5(100)$(?)

F **x**, $J\approx(57/2^+)$

F **746.4+x**, $J+2$, γ_x**746.4**$_8(0.226_{15})$

F **1535.3+x**, $J+4$, $\gamma_{746.4+x}$**788.9**$_4(0.543_{22})$

F **2366.6+x**, $J+6$, $\gamma_{1535.3+x}$**831.3**$_4(0.654_{18})$
F **3240.1+x**, $J+8$, $\gamma_{2366.6+x}$**873.5**$_3(0.886_{19})$
F **4156.4+x**, $J+10$, $\gamma_{3240.1+x}$**916.3**$_3(0.902_{19})$
F **5116.2+x**, $J+12$, $\gamma_{4156.4+x}$**959.8**$_3(1.013_{19})$
F **6120.4+x**, $J+14$, $\gamma_{5116.2+x}$**1004.2**$_6(0.993_{22})$
F **7169.4+x**, $J+16$, $\gamma_{6120.4+x}$**1049.0**$_3(1.002_{19})$
F **8266.1+x**, $J+18$, $\gamma_{7169.4+x}$**1096.7**$_3(0.996_{19})$
F **9410.3+x**, $J+20$, $\gamma_{8266.1+x}$**1144.2**$_3(0.999_{19})$
F **10603.3+x**, $J+22$, $\gamma_{9410.3+x}$**1193.0**$_3(1.026_{19})$
F **11846.4+x**, $J+24$, $\gamma_{10603.3+x}$**1243.1**$_4(0.98_2)$
F **13141.0+x**, $J+26$, $\gamma_{11846.4+x}$**1294.6**$_6(0.993_{22})$
F **14487.4+x**, $J+28$, $\gamma_{13141.0+x}$**1346.4**$_4(0.987_{19})$
F **15886.5+x**, $J+30$, $\gamma_{14487.4+x}$**1399.1**$_4(0.828_{19})$
F **17339.1+x**, $J+32$, $\gamma_{15886.5+x}$**1452.6**$_5(0.750_{19})$
F **18846.3+x**, $J+34$, $\gamma_{17339.1+x}$**1507.2**$_4(0.440_{17})$
F **20408.3+x**, $J+36$, $\gamma_{18846.3+x}$**1562.0**$_5(0.290_{16})$
F **22026.2+x**, $J+38$, $\gamma_{20408.3+x}$**1617.8**$_7(0.240_{15})$
F **23701.0+x**, $J+40$, $\gamma_{22026.2+x}$**1674.8**$_9(0.100_{13})$
G **y**, $J\approx(55/2^+)$
G **725.5+y**, $J+2$, γ_{y}**725.5**$_8(22.1_{16})$
G **1493.9+y**, $J+4$, $\gamma_{725.5+y}$**768.4**$_5(0.48_3)$
G **2304.4+y**, $J+6$, $\gamma_{1493.9+y}$**810.5**$_9(0.696_{24})$
G **3157.0+y**, $J+8$, $\gamma_{2304.4+y}$**852.6**$_4(0.915_{20})$
G **4052.4+y**, $J+10$, $\gamma_{3157.0+y}$**895.4**$_3(0.930_{19})$
G **4991.2+y**, $J+12$, $\gamma_{4052.4+y}$**938.7**$_3(1.005_{20})$
G **5973.5+y**, $J+14$, $\gamma_{4991.2+y}$**982.4**$_3(0.980_{19})$
G **7001.0+y**, $J+16$, $\gamma_{5973.5+y}$**1027.4**$_3(1.004_{20})$
G **8074.3+y**, $J+18$, $\gamma_{7001.0+y}$**1073.3**$_4(0.988_{19})$
G **9194.4+y**, $J+20$, $\gamma_{8074.3+y}$**1120.1**$_4(0.969_{20})$
G **10363.7+y**, $J+22$, $\gamma_{9194.4+y}$**1169.3**$_4(1.018_{21})$
G **11581.7+y**, $J+24$, $\gamma_{10363.7+y}$**1218.0**$_4(0.991_{21})$
G **12850.3+y**, $J+26$, $\gamma_{11581.7+y}$**1268.6**$_4(1.004_{20})$
G **14170.7+y**, $J+28$, $\gamma_{12850.3+y}$**1320.4**$_4(1.035_{20})$
G **15543.3+y**, $J+30$, $\gamma_{14170.7+y}$**1372.6**$_4(0.918_{20})$
G **16969.3+y**, $J+32$, $\gamma_{15543.3+y}$**1426.0**$_5(0.810_{20})$
G **18449.0+y**, $J+34$, $\gamma_{16969.3+y}$**1479.7**$_5(0.552_{18})$
G **19983.5+y**, $J+36$, $\gamma_{18449.0+y}$**1534.4**$_7(0.421_{18})$
G **21573.0+y**, $J+38$, $\gamma_{19983.5+y}$**1589.5**$_{10}(0.326_{20})$
G **23218+y**, $J+40$, $\gamma_{21573.0+y}$**1645.3**$_{11}(0.117_{15})$
G **24919+y**, $J+42$, $\gamma_{23218+y}$**1700.8**$_{13}(0.063_{14})$
H **z**, $J\approx(59/2^-)$
H **755.7+z**, $J+2$, γ_{z}**755.7**$_4(0.594_{16})$
H **1561.3+z**, $J+4$, $\gamma_{755.7+z}$**805.6**$_4(0.705_{17})$
H **2417.2+z**, $J+6$, $\gamma_{1561.3+z}$**855.9**$_9(1.021_{21})$
H **3324.0+z**, $J+8$, $\gamma_{2417.2+z}$**906.8**$_8(0.915_{18})$
H **4282.6+z**, $J+10$, $\gamma_{3324.0+z}$**958.7**$_7(1.012_{18})$
H **5294.6+z**, $J+12$, $\gamma_{4282.6+z}$**1012.0**$_5(0.973_{25})$
H **6360.7+z**, $J+14$, $\gamma_{5294.6+z}$**1066.1**$_8(1.018_{24})$
H **7481.4+z**, $J+16$, $\gamma_{6360.7+z}$**1120.7**$_6(0.993_{22})$
H **8656.9+z**, $J+18$, $\gamma_{7481.4+z}$**1175.5**$_9(1.042_{22})$
H **9887.3+z**, $J+20$, $\gamma_{8656.9+z}$**1230.4**$_4(1.056_{15})$
H **11174.0+z**, $J+22$, $\gamma_{9887.3+z}$**1286.7**$_4(0.968_{14})$
H **12516.7+z**, $J+24$, $\gamma_{11174.0+z}$**1342.7**$_4(0.845_{14})$
H **13916.1+z**, $J+26$, $\gamma_{12516.7+z}$**1399.4**$_4(0.792_{14})$
H **15372.4+z**, $J+28$, $\gamma_{13916.1+z}$**1456.3**$_5(0.718_{14})$
H **16885.8+z**, $J+30$, $\gamma_{15372.4+z}$**1513.4**$_5(0.563_{13})$
H **18455.8+z**, $J+32$, $\gamma_{16885.8+z}$**1570.0**$_5(0.428_{13})$
H **20083.5+z**, $J+34$, $\gamma_{18455.8+z}$**1627.7**$_6(0.225_{12})$
H **21769+z**, $J+36$, $\gamma_{20083.5+z}$**1685.6**$_9(0.135_{12})$
H **23512+z**, $J+38$, $\gamma_{21769+z}$**1742.9**$_{11}(0.052_{11})$
I **u**, $J\approx(65/2^-)$
I **832.8+u**, $J+2$, γ_{u}**832.8**$_6(0.424_{17})$
I **1706.8+u**, $J+4$, $\gamma_{832.8+u}$**874.0**$_4(0.713_{17})$
I **2622.6+u**, $J+6$, $\gamma_{1706.8+u}$**915.8**$_5(0.925_{19})$
I **3580.9+u**, $J+8$, $\gamma_{2622.6+u}$**958.3**$_3(0.971_{18})$
I **4581.8+u**, $J+10$, $\gamma_{3580.9+u}$**1000.9**$_4(1.013_{18})$
I **5627.7+u**, $J+12$, $\gamma_{4581.8+u}$**1045.9**$_3(1.028_{18})$
I **6718.8+u**, $J+14$, $\gamma_{5627.7+u}$**1091.1**$_4(1.035_{18})$
I **7856.2+u**, $J+16$, $\gamma_{6718.8+u}$**1137.4**$_5(1.004_{19})$
I **9042.1+u**, $J+18$, $\gamma_{7856.2+u}$**1185.9**$_9(0.99_3)$
I **10278.2+u**, $J+20$, $\gamma_{9042.1+u}$**1236.1**$_5(0.983_{21})$
I **11564.3+u**, $J+22$, $\gamma_{10278.2+u}$**1286.1**$_4(0.983_{19})$
I **12901.9+u**, $J+24$, $\gamma_{11564.3+u}$**1337.5**$_4(0.987_{18})$
I **14290.6+u**, $J+26$, $\gamma_{12901.9+u}$**1388.7**$_4(0.848_{19})$
I **15734.0+u**, $J+28$, $\gamma_{14290.6+u}$**1443.4**$_6(0.662_{17})$
I **17231.8+u**, $J+30$, $\gamma_{15734.0+u}$**1497.8**$_{12}(0.544_{21})$
I **18783+u**, $J+32$, $\gamma_{17231.8+u}$**1551.5**$_{15}(0.398_{21})$
I **20390+u**, $J+34$, $\gamma_{18783+u}$**1606.2**$_{17}(0.329_{18})$
J **v**, $J\approx(63/2^-)$
J **808.6+v**, $J+2$, γ_{v}**808.6**$_4(0.391_{15})$
J **1662.8+v**, $J+4$, $\gamma_{808.6+v}$**854.2**$_4(0.571_{15})$
J **2558.1+v**, $J+6$, $\gamma_{1662.8+v}$**895.3**$_6(0.914_{19})$
J **3495.7+v**, $J+8$, $\gamma_{2558.1+v}$**937.5**$_3(0.987_{18})$
J **4474.9+v**, $J+10$, $\gamma_{3495.7+v}$**979.2**$_7(0.93_3)$
J **5498.7+v**, $J+12$, $\gamma_{4474.9+v}$**1023.9**$_4(1.048_{20})$
J **6566.9+v**, $J+14$, $\gamma_{5498.7+v}$**1068.2**$_4(1.033_{18})$
J **7681.0+v**, $J+16$, $\gamma_{6566.9+v}$**1114.1**$_5(1.023_{18})$
J **8842.6+v**, $J+18$, $\gamma_{7681.0+v}$**1161.5**$_4(1.040_{18})$
J **10052.3+v**, $J+20$, $\gamma_{8842.6+v}$**1209.8**$_8(0.968_{23})$
J **11313.6+v**, $J+22$, $\gamma_{10052.3+v}$**1261.3**$_5(1.011_{19})$
J **12626.1+v**, $J+24$, $\gamma_{11313.6+v}$**1312.5**$_5(0.968_{19})$
J **13989.3+v**, $J+26$, $\gamma_{12626.1+v}$**1363.2**$_6(0.989_{19})$
J **15406.0+v**, $J+28$, $\gamma_{13989.3+v}$**1416.7**$_6(0.818_{18})$
J **16875.6+v**, $J+30$, $\gamma_{15406.0+v}$**1469.6**$_{15}(0.543_{21})$
J **18400+v**, $J+32$, $\gamma_{16875.6+v}$**1524.0**$_{15}(0.444_{17})$
J **19980+v**, $J+34$, $\gamma_{18400+v}$**1580.5**$_{17}(0.236_{16})$
J **21615+v**, $J+36$, $\gamma_{19980+v}$**1635.2**$_{18}(0.149_{14})$
K **w**, $J\approx(61/2^-)$
K **817.8+w**, $J+2$, γ_{w}**817.8**$_7(0.220_{19})$
K **1677.9+w**, $J+4$, $\gamma_{817.8+w}$**860.0**$_{13}(0.365_{18})$
K **2577.7+w**, $J+6$, $\gamma_{1677.9+w}$**899.8**$_5(0.501_{16})$
K **3516.1+w**, $J+8$, $\gamma_{2577.7+w}$**938.4**$_7(0.596_{19})$
K **4494.6+w**, $J+10$, $\gamma_{3516.1+w}$**978.5**$_4(0.876_{19})$
K **5515.7+w**, $J+12$, $\gamma_{4494.6+w}$**1021.2**$_6(0.888_{17})$
K **6580.6+w**, $J+14$, $\gamma_{5515.7+w}$**1064.9**$_5(0.989_{19})$
K **7688.7+w**, $J+16$, $\gamma_{6580.6+w}$**1108.0**$_4(1.015_{17})$
K **8843.1+w**, $J+18$, $\gamma_{7688.7+w}$**1154.4**$_7(0.971_{18})$
K **10043.8+w**, $J+20$, $\gamma_{8843.1+w}$**1200.7**$_5(1.038_{20})$
K **11293.1+w**, $J+22$, $\gamma_{10043.8+w}$**1249.3**$_5(1.026_{20})$
K **12592.3+w**, $J+24$, $\gamma_{11293.1+w}$**1299.2**$_8(1.027_{15})$
K **13942+w**, $J+26$, $\gamma_{12592.3+w}$**1349.8**$_9(0.957_{24})$
K **15343+w**, $J+28$, $\gamma_{13942+w}$**1400.7**$_{12}(0.970_{23})$
K **16795+w**, $J+30$, $\gamma_{15343+w}$**1451.8**$_{16}(0.785_{19})$
K **18300+w**, $J+32$, $\gamma_{16795+w}$**1505.0**$_{15}(0.478_{18})$
K **19855+w**, $J+34$, $\gamma_{18300+w}$**1555.3**$_{18}(0.186_{17})$



SD-1 band (1999ErBB,1998ErZY) SD-2 band (1999ErBB,1998ErZY) SD-3 band (1999ErBB,1998ErZY) SD-4 band (1999ErBB,1998ErZY) SD-5 band (1999ErBB,1998ErZY) SD-6 band (1999ErBB,1998ErZY)

$^{151}_{64}Gd_{87}$

$^{145}_{65}Tb_{80}$

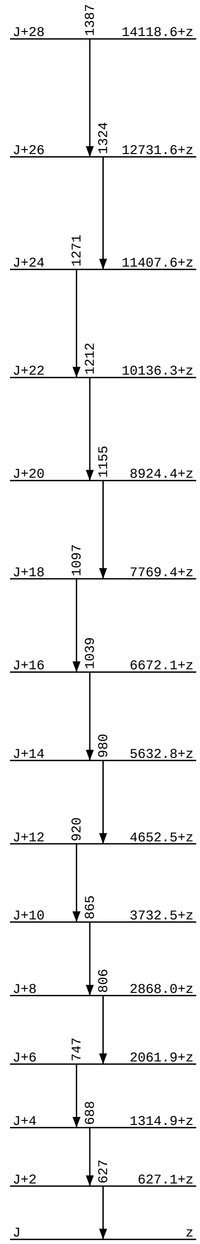
S$_n$: 11471 *SY*, S$_p$: 1615 *SY*

Nuclear Bands

A SD band (1994Mu16)

Levels and γ-ray branchings:

0, $(3/2^+)$, %ε+%β$^+$=? , t$_{1/2}$=unknown
0+y, $(11/2^-)$, *30.9$_7$ s*, %ε+%β$^+$=100
108.1+x, $(1/2^+)$, γ**108.1**$_1$(100)
253.1+x, $(5/2^+)$, $\gamma_{108.1+x}$**145.1**$_1$(100$_7$), γ**253.1**$_1$(62$_{12}$)
437.6+x, $(7/2^+)$, $\gamma_{253.1+x}$**184.5**$_1$(41$_8$), γ**437.7**$_2$(100$_{14}$)
578.2+y(?), $(9/2^-)$, γ_{0+y}**578.2**$_3$(100)
639.6+y, $(13/2^-)$, γ_{0+y}**639.6**$_3$(100)
804.3+y(?), $(9/2^-,11/2^-)$, γ_{0+y}**804.3**$_3$(100)
906.0+y, $(15/2^-)$, $\gamma_{639.6+y}$**266**, γ_{0+y}**906**
1420.0+y, $(15/2^+)$, $\gamma_{906.0+y}$**514**, $\gamma_{639.6+y}$**780**
1712.0+y, $(17/2^-)$, $\gamma_{906.0+y}$**806**, $\gamma_{639.6+y}$**1072**
1895.0+y, $(17/2^+)$, $\gamma_{1420.0+y}$**475**, $\gamma_{906.0+y}$**989**
1984.0+y, $(19/2^-)$, $\gamma_{906.0+y}$**1078**
2139.0+y, $(19/2)$, $\gamma_{1712.0+y}$**427**, $\gamma_{1420.0+y}$**719**
2226.0+y, $(19/2)$, $\gamma_{1895.0+y}$**331**, $\gamma_{1712.0+y}$**514**, $\gamma_{1420.0+y}$**806**
2291.0+y, $(21/2)$, $\gamma_{2226.0+y}$**65**, $\gamma_{2139.0+y}$**152**, $\gamma_{1984.0+y}$**307**, $\gamma_{1895.0+y}$**396**
2416.0+y, $(21/2)$, $\gamma_{2291.0+y}$**125**, $\gamma_{2226.0+y}$**190**
2490.0+y, $(23/2)$, $\gamma_{2291.0+y}$**199**
2579.0+y, $(23/2)$, $\gamma_{2490.0+y}$**89**, $\gamma_{2416.0+y}$**163**, $\gamma_{2291.0+y}$**288**
2878.0+y, $(25/2)$, $\gamma_{2579.0+y}$**299**, $\gamma_{2490.0+y}$**388**, $\gamma_{2291.0+y}$**587**
3318.0+y, $(27/2)$, $\gamma_{2878.0+y}$**440**
3377.0+y, $(27/2)$, $\gamma_{2878.0+y}$**499**
3939.0+y, $(29/2)$, $\gamma_{3318.0+y}$**621**, $\gamma_{2878.0+y}$**1061**
4104.0+y, $(29/2)$, $\gamma_{3377.0+y}$**727**
4332.0+y, $(31/2)$, $\gamma_{3377.0+y}$**955**
4372.0+y, $(31/2)$, $\gamma_{3939.0+y}$**433**, $\gamma_{3318.0+y}$**1054**
4642.0+y, $(31/2)$, $\gamma_{4104.0+y}$**538**, $\gamma_{3377.0+y}$**1265**
4814.0+y, $(33/2)$, $\gamma_{4642.0+y}$**172**, $\gamma_{4332.0+y}$**482**
5037.0+y, $(35/2)$, $\gamma_{4814.0+y}$**223**
5270.0+y, $(37/2)$, $\gamma_{5037.0+y}$**233**
A **z**, J
A **627.1+z**, $J+2$, γ_z**627.1**$_4$
A **1314.9+z**, $J+4$, $\gamma_{627.1+z}$**687.8**$_4$
A **2061.9+z**, $J+6$, $\gamma_{1314.9+z}$**747.0**$_3$
A **2868.0+z**, $J+8$, $\gamma_{2061.9+z}$**806.1**$_5$
A **3732.5+z**, $J+10$, $\gamma_{2868.0+z}$**864.5**$_6$
A **4652.5+z**, $J+12$, $\gamma_{3732.5+z}$**920**$_1$
A **5632.8+z**, $J+14$, $\gamma_{4652.5+z}$**980.3**$_{11}$
A **6672.1+z**, $J+16$, $\gamma_{5632.8+z}$**1039.3**$_6$
A **7769.4+z**, $J+18$, $\gamma_{6672.1+z}$**1097.3**$_5$
A **8924.4+z**, $J+20$, $\gamma_{7769.4+z}$**1155.0**$_9$
A **10136.3+z**, $J+22$, $\gamma_{8924.4+z}$**1211.9**$_9$
A **11407.6+z**, $J+24$, $\gamma_{10136.3+z}$**1271.3**$_9$
A **12731.6+z**, $J+26$, $\gamma_{11407.6+z}$**1324**$_2$
A **14118.6+z**, $J+28$, $\gamma_{12731.6+z}$**1387**$_1$



SD band
(1994Mu16)
$^{145}_{65}Tb_{80}$

$^{147}_{65}\mathbf{Tb}_{82}$

S_n: 10999 $_{47}$, S_p: 1950 $_{12}$

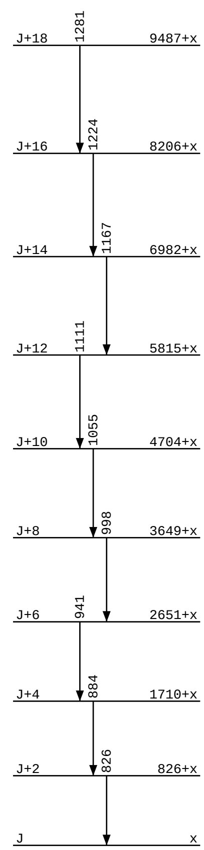
Nuclear Bands

A SD band (1996Ni10)

Levels and γ-ray branchings:

0, $(1/2^+)$, *1.7$_1$ h*, %ε+%β^+=100 , μ=+1.70$_5$
50.8$_3$, $(11/2^-)$, *1.87$_5$ min*, %ε+%β^+=100
253.32$_{11}$, $(3/2^+)$, *<1.3 ns*, γ_0**253.4**$_2$(100) M1
354.20$_{12}$, $(5/2^+)$, *<2 ns*, $\gamma_{253.32}$**100.7**$_3$(100) M1, γ_0**354.2**
719.34$_{18}$, $(7/2^+)$, *<1.3 ns*, $\gamma_{354.20}$**365.1**$_3$(100) M1, $\gamma_{253.32}$**466.0**
1313.1$_4$, $(7/2^-)$, $\gamma_{50.8}$**1262.4** (E2)
1316.7$_4$, $(15/2^+)$, *4.5$_3$ ns*, $\gamma_{50.8}$**1265.8**$_3$(100) M2+E3 $\delta=-2.2_{12}$
1329.66$_{20}$, $(7/2^+)$, $\gamma_{719.34}$**610.4**, $\gamma_{354.20}$**975.7**(100) (E2), $\gamma_{253.32}$**1076.2**
1404.52$_{24}$, $(5/2^+)$, $\gamma_{354.20}$**1050.4** (M1), $\gamma_{253.32}$**1151.1** (M1)
1413.19$_{24}$, $(5/2^-)$, $\gamma_{253.32}$**1159.9**(100) (E1)
1438.6$_4$, $(11/2^+)$, $\gamma_{50.8}$**1387.9**(100) (E1)
1479.33$_{19}$, $\gamma_{253.32}$**1225.9**, γ_0**1479.8**(100)
1487.55$_{22}$, $(9/2^+)$, $\gamma_{1329.66}$**157.9**, $\gamma_{1313.1}$**174.5**, $\gamma_{719.34}$**768.0**, $\gamma_{354.20}$**1133.4**, $\gamma_{50.8}$**1436.8**(100) (E1)
1601.5$_4$, $(13/2^+)$, $\gamma_{1438.6}$**163.0**, $\gamma_{1316.7}$**284.8**, $\gamma_{50.8}$**1550.7** (E1)
1618.77$_{24}$, $(5/2^-)$, $\gamma_{354.20}$**1264.5**, $\gamma_{253.32}$**1365.5** (E1), γ_0**1616.9**(?)
1642.25$_{19}$, $(3/2^+)$, $\gamma_{354.20}$**1287.3**, $\gamma_{253.32}$**1388.9**, γ_0**1643.0**
1659.8$_5$, $(9/2^-)$, $\gamma_{50.8}$**1609.0** (M1)
1715.9$_5$, $\gamma_{50.8}$**1665.1**(100)
1758.72$_{16}$, $(3/2^+)$, $\gamma_{354.20}$**1404.8** (M1,E2), $\gamma_{253.32}$**1505.6** (M1), γ_0**1759.0** (M1,E2)
1760.7$_5$, $(9/2^-)$, $\gamma_{50.8}$**1710.0** (M1)
1766.32$_{17}$, $\gamma_{354.20}$**1412.2**, $\gamma_{253.32}$**1512.8**, γ_0**1766.5**
1776.0$_4$, $(9/2^-)$, $\gamma_{50.8}$**1724.7**(100) (M1,E2)
1964.62$_{24}$, $(3/2,5/2)$, $\gamma_{354.20}$**1610.3**, $\gamma_{253.32}$**1711.4**
1971.6$_4$, $(7/2^+)$, $\gamma_{354.20}$**1617.4** (M1)
1983.26$_{22}$, $(3/2^+)$, $\gamma_{354.20}$**1628.9**, γ_0**1983.4**
1988.3$_4$, $(15/2^-)$, $\gamma_{1316.7}$**671.5**, $\gamma_{50.8}$**1937.5**
1996.83$_{21}$, $(5/2)$, $\gamma_{719.34}$**1277.4**, $\gamma_{354.20}$**1642.7**, $\gamma_{253.32}$**1743.5**
2020.4$_5$, $\gamma_{50.8}$**1969.7**(100)
2046.0$_3$, $(9/2)$, $\gamma_{1329.66}$**716.5**, $\gamma_{50.8}$**1995.0**(100)
2068.3$_4$, $(7/2^+)$, $\gamma_{354.20}$**1714.1**
2079.07$_{22}$, $(3/2^+)$, $\gamma_{354.20}$**1724.7**, γ_0**2079.2**
2088.5$_4$, $(17/2^+)$, $\gamma_{1988.3}$**100.0**, $\gamma_{1601.5}$**487.1**, $\gamma_{1316.7}$**771.8**$_2$(100) M1+E2 $\delta=+0.10_5$, $\gamma_{50.8}$**2038.0**
2157.6$_5$, $(13/2^-)$, $\gamma_{50.8}$**2106.8**(100)
2180.1$_4$, $(11/2^+)$, $\gamma_{719.34}$**1460.7**(100) (E2)
2218.9$_4$, $(7/2^+)$, $\gamma_{719.34}$**1499.6** (M1)
2221.1$_4$, $(9/2^+)$, $\gamma_{719.34}$**1501.7** (M1)
2230.64$_{25}$, $(5/2^+)$, $\gamma_{719.34}$**1511.4**, $\gamma_{253.32}$**1977.2**
2235.4$_5$, $\gamma_{50.8}$**2184.6**(100)
2243.8$_4$, $(5/2)$, $\gamma_{253.32}$**1990.5**
2320.5$_5$, $\gamma_{50.8}$**2269.7**(100)
2374.4$_4$, $(5/2)$, $\gamma_{719.34}$**1655.0**
2401.0$_5$, $\gamma_{50.8}$**2350.2**
2485.9$_5$, $\gamma_{50.8}$**2435.2**(100)
2507.4$_4$, $(9/2)$, $\gamma_{719.34}$**1788.0**
2567.9$_5$, $(17/2^-)$, $\gamma_{1316.7}$**1251.2** (E1)
2575.9$_4$, $(19/2^-)$, $\gamma_{2088.5}$**487.5**, $\gamma_{1988.3}$**587.6** (E2)
2635.3$_4$, $\gamma_{253.32}$**2382.0**(100)
2704.1$_5$, $\gamma_{50.8}$**2653.3**(100)
2714.9$_4$, $(19/2^+)$, $\gamma_{1316.7}$**1398.2**
2785.4$_4$, $(21/2^+)$, $\gamma_{2714.9}$**70.5**, $\gamma_{2575.9}$**209.8**, $\gamma_{2088.5}$**696.9**$_1$(100) E2
2814.8$_5$, $\gamma_{50.8}$**2764.0**(100)
3042.7$_4$, $(23/2^+)$, *3.8$_6$ ns*, $\gamma_{2785.4}$**257.4**$_1$(100) M1
3190.0$_4$, $(25/2^+)$, $\gamma_{3042.7}$**147.4**$_1$(29.4) M1(+E2) $\delta=+0.05_5$, $\gamma_{2785.4}$**404.5**$_1$(100.0$_7$) E2
3206.6$_5$, $(25/2^+)$, $\gamma_{2785.4}$**421.2**(100) M1+E2
3381.7$_4$, $(25/2^+)$, $\gamma_{3190.0}$**191.3** (M1+E2), $\gamma_{3042.7}$**339.2**$_2$(100) M1+E2
3471.5$_4$, $(27/2^+)$, $\gamma_{3381.7}$**90.0** (M1), $\gamma_{3190.0}$**281.4**$_1$(100) M1(+E2) $\delta=-0.05_5$, $\gamma_{3042.7}$**428.7**
3572.4$_5$, $\gamma_{3190.0}$**382.2**
3758.59$_{19}$, $\gamma_{354.20}$**3404.4**, $\gamma_{253.32}$**3505.3**, γ_0**3758.4**(100)
3889.4$_4$, $(27/2^-)$, $\gamma_{3190.0}$**699.3**$_1$(100)
3954.22$_{19}$, $\gamma_{1758.72}$**2196.1**, $\gamma_{253.32}$**3700.9**, γ_0**3953.5**(100)
3975.3$_3$, γ_0**3975.2**(100)
4020.16$_{16}$, $\gamma_{1766.32}$**2253.9**, $\gamma_{1758.72}$**2261.6**, $\gamma_{1479.33}$**2541.2**, $\gamma_{1413.19}$**2607.0**, $\gamma_{253.32}$**3767.1**, γ_0**4019.1**
4044.76$_{24}$, $\gamma_{354.20}$**3690.7**, $\gamma_{253.32}$**3791.2**
4084.92$_{22}$, $\gamma_{253.32}$**3831.8**, γ_0**4084.6**(100)
4508.6$_4$, $(29/2^-)$, $\gamma_{3471.5}$**1037.0**$_1$(100)
4669.6$_5$, $\gamma_{50.8}$**4618.8**(100)
4702.7$_5$, $\gamma_{50.8}$**4651.9**(100)
4723.4$_4$, $(29/2^+)$, $\gamma_{3889.4}$**833.9**, $\gamma_{3572.4}$**1150.8**, $\gamma_{3471.5}$**1251.9**$_1$(100) D(+Q) $\delta=0.00_5$
4741.3$_5$, $\gamma_{50.8}$**4690.5**(100)
4754.6$_5$, $\gamma_{50.8}$**4703.8**(100)
4769.9$_5$, $\gamma_{50.8}$**4719.1**(100)
4819.1$_5$, $\gamma_{2180.1}$**2639.0**(100)
4827.7$_4$, $\gamma_{1776.0}$**3051.1**, $\gamma_{50.8}$**4777.4**(100)
5004.1$_4$, $(31/2^-)$, $\gamma_{4508.6}$**495.4**$_1$(100) D(+Q) $\delta=+0.05_5$, $\gamma_{3889.4}$**1114.9**
5131.5$_5$, $(29/2^+)$, $\gamma_{3190.0}$**1941.4**
5200.1$_5$, $\gamma_{3190.0}$**2010.0**
5277.0$_4$, $(29/2^+)$, $\gamma_{3190.0}$**2087.1**
5297.1$_4$, $(31/2^-)$, $\gamma_{3889.4}$**1407.6**$_1$(100)
5321.5$_4$, $(29/2^+)$, $\gamma_{3471.5}$**1850.0**$_2$(100) D+Q $\delta=-0.90_{15}$, $\gamma_{3190.0}$**2131.6**
5394.2$_5$, $\gamma_{3471.5}$**1922.7**
5492.0$_5$, $\gamma_{3471.5}$**2020.6**
5502.5$_4$, $\gamma_{3471.5}$**2031.2**
5504.1$_5$, $\gamma_{3190.0}$**2314.1**
5581.9$_5$, $\gamma_{3471.5}$**2110.6**
5587.2$_5$, $\gamma_{3471.5}$**2115.9**
5631.4$_4$, $(31/2^+)$, $\gamma_{5502.5}$**129.1**, $\gamma_{5321.5}$**310.0**$_1$(100) D(+Q) $\delta=+0.05_5$, $\gamma_{5277.0}$**354.4**, $\gamma_{3471.5}$**2160.2**$_5$
5650.3$_4$, $(31/2^+)$, $\gamma_{5587.2}$**63.3**, $\gamma_{5504.1}$**146.4**, $\gamma_{5502.5}$**147.8**, $\gamma_{5492.0}$**158.5**, $\gamma_{5321.5}$**328.9**$_1$(100$_2$) D(+Q) $\delta=+0.10_{10}$, $\gamma_{5277.0}$**373.5**, $\gamma_{4723.4}$**926.7**$_2$(63$_3$) D+Q $\delta=+0.12_5$, $\gamma_{3471.5}$**2179.0**
5665.4$_5$, $\gamma_{5131.5}$**534.0**
5665.8$_5$, $\gamma_{5502.5}$**163.3**, $\gamma_{5394.2}$**271.6**, $\gamma_{5200.1}$**465.6**
5700.9$_4$, $\gamma_{5004.1}$**696.8**, $\gamma_{4723.4}$**977.6**
5767.4$_4$, $(33/2^+)$, $\gamma_{5004.1}$**763.2**, $\gamma_{4723.4}$**1044.0**
5880.4$_4$, $(33/2^+)$, $\gamma_{5631.4}$**249.0**$_1$(100) D(+Q) $\delta=+0.05_5$, $\gamma_{5004.1}$**876.1**
5925.0$_4$, $(35/2^-)$, $\gamma_{5767.4}$**157.7**, $\gamma_{5700.9}$**224.2**, $\gamma_{5665.4}$**259.6**, $\gamma_{5297.1}$**628.0** (E2), $\gamma_{5004.1}$**920.8**
5966.4$_4$, $(33/2^+)$, $\gamma_{5650.3}$**316.1**$_1$(100) D+Q $\delta=+0.20_5$
5980.9$_4$, $(35/2^-)$, $\gamma_{5297.1}$**683.8**$_1$(100) Q
6019.2$_6$, $\gamma_{5394.2}$**625.0**
6107.4$_5$, $\gamma_{5665.4}$**441.9**
6125.0$_4$, $(33/2^+)$, $\gamma_{5004.1}$**1120.8**
6202.1$_4$, $(37/2^-)$, $\gamma_{5925.0}$**277.1**$_1$(100) D+Q $\delta=-0.25_5$, $\gamma_{5700.9}$**501.2**
6250.4$_5$, $\gamma_{5581.9}$**668.6**
6388.9$_5$, $\gamma_{5650.3}$**738.5**
6423.1$_4$, $(39/2^-)$, $\gamma_{6202.1}$**221.1** (M1+E2), $\gamma_{5925.0}$**498.2**$_1$(100) Q
6448.6$_5$, $\gamma_{5980.9}$**467.7**
6550.2$_4$, $(35/2^-)$, $\gamma_{5880.4}$**669.8**$_3$(91$_5$) D(+Q) $\delta=0.00^{10}_{15}$, $\gamma_{5767.4}$**782.8**$_2$(100$_5$) D(+Q) $\delta=0.00^{20}_{2}$
6617.8$_4$, $(35/2^+)$, $\gamma_{6250.4}$**367.6**, $\gamma_{5880.4}$**737.5**$_1$(100) D+Q $\delta=-0.10_5$
6665.0$_4$, $(35/2^+)$, $\gamma_{6388.9}$**276.1**, $\gamma_{5966.4}$**698.6**$_1$(100) D+Q $\delta=+0.55_{13}$, $\gamma_{5650.3}$**1014.6**
6738.6$_4$, $(37/2^+)$, $\gamma_{6617.8}$**120.8**$_1$(100$_2$) D+Q $\delta=-0.25_{10}$, $\gamma_{6125.0}$**613.5**, $\gamma_{5980.9}$**757.3**$_2$(76$_5$) D(+Q) $\delta=0.00_{10}$
6756.0$_4$, $(39/2)$, $\gamma_{6423.1}$**332.8**$_1$(100) D(+Q) $\delta=0.00_{10}$
6798.0$_5$, $\gamma_{5966.4}$**831.7**
6821.7$_4$, $(35/2^+)$, $\gamma_{5880.4}$**941.5**$_2$(100) D(+Q) $\delta=+0.05_5$
6904.2$_4$, $(39/2^+)$, $\gamma_{6738.6}$**165.5**$_1$(100) D(+Q) $\delta=-0.05_5$
6905.2$_4$, $(37/2^+)$, $\gamma_{6665.0}$**240.1**$_1$(100) D(+Q) $\delta=+0.04_4$, $\gamma_{5980.9}$**924.2**, $\gamma_{5966.4}$**938.8**
6960.8$_4$, $(37/2^+)$, $\gamma_{6821.7}$**139.2**$_2$(100) D+Q $\delta=-0.20_{10}$,

$\gamma_{6125.0}$**835.8**
7022.5$_4$, $(37/2^-)$, $\gamma_{6798.0}$**224.6**, $\gamma_{6107.4}$**915.1**, $\gamma_{5980.9}$**1041.7**$_2(100)$ D(+Q) $\delta=-0.05_5$, $\gamma_{5925.0}$**1097.3** D+Q
7261.9$_4$, $(41/2^+)$, $\gamma_{6904.2}$**357.7**$_1(100)$ D(+Q) $\delta=-0.05_5$
7272.2$_4$, $(37/2^+)$, $\gamma_{6665.0}$**607.2**$_3(100)$ D+Q $\delta=+0.20_5$, $\gamma_{5966.4}$**1306.2**
7275.5$_5$, $\gamma_{5980.9}$**1294.6**
7307.3$_5$, $\gamma_{6960.8}$**346.5**
7311.5$_5$, $\gamma_{6905.2}$**406.5**
7336.7$_4$, $(39/2^-)$, $\gamma_{7275.5}$**61.2**, $\gamma_{7022.5}$**314.1**$_1(100.0_{14})$ D+Q $\delta=+0.27_3$, $\gamma_{6960.8}$**375.8**$_1(46.3_{10})$ D(+Q) $\delta=0.00_5$, $\gamma_{6905.2}$**431.5**, $\gamma_{6550.2}$**786.3**
7506.6$_4$, $(39/2^+)$, $\gamma_{7272.2}$**234.4**$_1(100)$ D+Q $\delta=+0.08_4$, $\gamma_{6905.2}$**601.4**, $\gamma_{6423.1}$**1083.6**
7540.7$_4$, $(39/2^-)$, $\gamma_{7272.2}$**269.0**, $\gamma_{6904.2}$**636.3**$_1(100)$ D(+Q) $\delta=0.00^{5}_{15}$, $\gamma_{6423.1}$**1118.0**
7650.4$_5$, $\gamma_{7311.5}$**339.1**
7714.8$_4$, $(41/2^-)$, $\gamma_{7506.6}$**208.2**$_1(47.8_4)$ D(+Q) $\delta=0.00^{5}_{2}$, $\gamma_{7336.7}$**378.1**$_1(100.0_{12})$ D(+Q) $\delta=+0.05_5$, $\gamma_{7311.5}$**403.2**, $\gamma_{7307.3}$**407.6**, $\gamma_{6905.2}$**809.4**, $\gamma_{6904.2}$**811.0**$_2(11.8_7)$ D(+Q) $\delta=0.00^{10}_{5}$
7762.2$_4$, $(43/2^-)$, *1.8 ns*, $\gamma_{7714.8}$**47.9**, $\gamma_{7650.4}$**112.1**, $\gamma_{7540.7}$**221.2**$_2(100)$ Q
7777.2$_5$, $\gamma_{7762.2}$**(14.8)**
7806.9$_5$, $\gamma_{7261.9}$**545.0**
7844.2$_5$, $(41/2)$, $\gamma_{6756.0}$**1088.2**
8119.3$_5$, $\gamma_{7650.4}$**468.9**
8222.3$_5$, $\gamma_{7261.9}$**960.6**
8237.3$_5$, $\gamma_{7714.8}$**522.6**
8240.8$_5$, $\gamma_{7714.8}$**526.0**
8277.2$_5$, $(43/2)$, $\gamma_{7844.2}$**433.0**$_3(100)$ D(+Q) $\delta=-0.07_7$
8434.1$_5$, $(45/2)$, $\gamma_{8277.2}$**156.9**, $\gamma_{8240.8}$**193.2**, $\gamma_{8237.3}$**196.7**, $\gamma_{8222.3}$**212.0**
8449.9$_5$, $(45/2^-)$, $\gamma_{8119.3}$**330.6**, $\gamma_{7762.2}$**687.6** Q
8506.8$_5$, $\gamma_{8277.2}$**229.6**
8538.5$_5$, $\gamma_{8237.3}$**301.2**, $\gamma_{7762.2}$**776.2**
8616.6$_5$, $\gamma_{7714.8}$**901.8**
8751.6$_5$, $(47/2^-)$, $\gamma_{8538.5}$**213.1**, $\gamma_{8449.9}$**301.6**$_2(14.4)$ D(+Q) $\delta=+0.05_5$, $\gamma_{7762.2}$**989.4**$_1(100.0_{18})$ E2
8773.6$_5$, $(47/2^+)$, $\gamma_{8449.9}$**323.7**, $\gamma_{7777.2}$**996.4**$_1(100)$ D(+Q) $\delta=-0.04_6$, $\gamma_{7762.2}$**1011.2**
8857.0$_5$, $(47/2^-)$, $\gamma_{8538.5}$**318.5**, $\gamma_{7762.2}$**1094.8**$_1(100)$ Q
8968.3$_5$, $\gamma_{8506.8}$**461.6**, $\gamma_{8434.1}$**534.1**
9036.8$_5$, $(49/2^+)$, $\gamma_{8857.0}$**180.0**$_2(23.3)$ D(+Q) $\delta=0.00_5$, $\gamma_{8773.6}$**263.1**$_1(20.7_4)$ D+Q $\delta=+0.17_2$, $\gamma_{8751.6}$**285.2**$_1(100.0_8)$ D
9508.2$_6$, $\gamma_{8616.6}$**891.6**
9731.4$_5$, $(49/2^+)$, $\gamma_{8773.6}$**957.8**$_1(100)$ D+Q $\delta=+0.29_9$
9920.9$_5$, $(51/2^+)$, $\gamma_{9036.8}$**884.1**$_1(100)$ D+Q $\delta=+1.00_{10}$
9955.6$_5$, $(53/2^+)$, $\gamma_{9731.4}$**224.4**, $\gamma_{9036.8}$**918.8**$_1(100)$ Q
9974.7$_5$, $\gamma_{8751.6}$**1223.1**
10346.5$_7$, $\gamma_{9508.2}$**838.3**
10380.9$_5$, $\gamma_{9955.6}$**425.3**
10429.3$_5$, $(53/2^+)$, $\gamma_{9920.9}$**508.3**$_2(100)$ D(+Q) $\delta=+0.02_{12}$, $\gamma_{9036.8}$**1392.5**
10552.6$_5$, $\gamma_{9920.9}$**631.6**
10732.2$_5$, $(55/2^+)$, $\gamma_{9955.6}$**776.4**$_2(100)$ D+Q $\delta=-0.15_{20}$
10822.6$_6$, $\gamma_{9955.6}$**867.0**
10897.6$_5$, $(51/2^+)$, $\gamma_{9731.4}$**1166.1**$_2(100)$ D+Q $\delta=+0.28_3$
11036.9$_5$, $(57/2^+)$, $\gamma_{10732.2}$**304.6**$_2(10.0_{11})$ D(+Q) $\delta=0.00_{10}$, $\gamma_{9955.6}$**1081.3**$_1(100.0_{18})$ Q
11316.4$_6$, $\gamma_{10552.6}$**763.7**
11450.2$_5$, $\gamma_{10897.6}$**552.6**, $\gamma_{10732.2}$**718.1**, $\gamma_{10380.9}$**1069.3**
11497.4$_6$, $\gamma_{11316.4}$**181.0**
11638.3$_5$, $(59/2^-)$, $\gamma_{11036.9}$**601.4**$_2(100)$ D(+Q) $\delta=-0.10_{10}$
11841.2$_6$, $\gamma_{11450.2}$**391.0**
11929.8$_5$, $\gamma_{11036.9}$**893.1**
12083.3$_5$, $(59/2^+)$, $\gamma_{11929.8}$**153.6**, $\gamma_{11497.4}$**585.8**, $\gamma_{11036.9}$**1046.4**$_2(100)$ D+Q $\delta=+1.1_4$
12372.9$_5$, $(61/2^+)$, $\gamma_{12083.3}$**289.6**$_1(100)$ D+Q $\delta=-0.17_7$
12662.5$_6$, $(61/2)$, $\gamma_{11638.3}$**1024.2** (E1)
12814.1$_5$, $(63/2^+)$, $\gamma_{12372.9}$**441.2**$_1(100)$ D+Q $\delta=-0.34_8$
13317.5$_5$, $(65/2^+)$, $\gamma_{12814.1}$**503.4**$_1(100)$ D+Q $\delta=-0.80_{55}$, $\gamma_{12372.9}$**944.5**
13824.1$_6$, $(67/2^+)$, $\gamma_{13317.5}$**506.6**$_2(100)$ D+Q $\delta=-0.85_{45}$
13908.6$_7$, $\gamma_{12662.5}$**1246.1**
14344.7$_7$, $\gamma_{13824.1}$**520.6**
A **x**, J
A **826+x**, $J+2$, γ_{x}**826**
A **1710+x**, $J+4$, γ_{826+x}**884**
A **2651+x**, $J+6$, γ_{1710+x}**941**
A **3649+x**, $J+8$, γ_{2651+x}**998**
A **4704+x**, $J+10$, γ_{3649+x}**1055**
A **5815+x**, $J+12$, γ_{4704+x}**1111**
A **6982+x**, $J+14$, γ_{5815+x}**1167**
A **8206+x**, $J+16$, γ_{6982+x}**1224**
A **9487+x**, $J+18$, γ_{8206+x}**1281**



SD band
(1996Ni10)
$^{147}_{65}\mathrm{Tb}_{82}$

$^{149}_{65}$Tb$_{84}$

S$_n$: 8980 $_{30}$, S$_p$: 2508 $_4$

Nuclear Bands

A $\pi h_{11/2}\nu f^2_{7/2}$ multiplet
B $\pi h_{11/2}\nu(f_{7/2}h_{9/2})$ multiplet
C $\pi h_{11/2}\nu f^2_{7/2}$($3^-$ in ^{146}Gd) multiplet
D $\pi(h^2_{11/2}d^{-1}_{5/2})\nu f^2_{7/2}$ multiplet
E $\pi(h^2_{11/2}d^{-1}_{5/2})\nu(f_{7/2}i_{13/2})$ multiplet
F $\pi(h^2_{11/2}g^{-1}_{7/2})\nu(f_{7/2}i_{13/2})$ multiplet
G $\pi(h^3_{11/2}d^{-2}_{5/2})\nu(f_{7/2}i_{13/2})$ multiplet
H Multi-quasiparticle multiplet
I SD-1 band (1998Kh09,2002By01) Q$_0$=15.3$_2$
J SD-2 band (1998Kh09) Q$_0$=15.8$^4_3$
K SD-3 band (1998Kh09) Q$_0$=16.4$^3_4$
L SD-4 band (1998Kh09) Q$_0$=16.0$^6_5$
M SD-5 band (1998Kh09)

Levels and γ-ray branchings:

0, $1/2^+$, *4.118$_{25}$ h*, %ε+%β$^+$=83.3$_{17}$, %α=16.7$_{17}$, μ=1.35$_2$
A **35.78**$_{13}$, $11/2^-$, *4.16$_4$ min*, %ε+%β$^+$=99.978$_3$, %α=0.022$_3$
100.76$_8$, $(3/2)^+$, *0.45$_5$ ns*, $\gamma_{\mathbf{0}}$**100.8**$_1$(100) (M1)
207.00$_{10}$, $(5/2)^+$, *≤0.2 ns*, $\gamma_{\mathbf{100.76}}$**106.3**$_1$(100) (M1)
460.44$_{12}$, $(7/2^+)$, $\gamma_{\mathbf{207.00}}$**253.4**$_1$(100$_4$), $\gamma_{\mathbf{100.76}}$**359.6**$_2$(5.4$_{12}$)
A **689.36**$_{13}$, $(7/2^-)$, $\gamma_{\mathbf{35.78}}$**653.6**$_1$(100)
741.70$_9$, $(5/2^+)$, $\gamma_{\mathbf{207.00}}$**534.7**$_2$(42$_3$), $\gamma_{\mathbf{100.76}}$**640.9**$_3$(27$_5$), $\gamma_{\mathbf{0}}$**741.7**$_1$(100$_4$)
754.93$_{17}$, $(3/2^+,5/2^+)$, $\gamma_{\mathbf{100.76}}$**654.1**$_3$(100$_{15}$), $\gamma_{\mathbf{0}}$**754.8**$_3$(69$_{10}$)
A **822.27**$_{16}$, $15/2^-$, $\gamma_{\mathbf{35.78}}$**786.5**$_1$(100) E2
A **825.16**$_{14}$, $(9/2^-)$, $\gamma_{\mathbf{689.36}}$**135.7**$_3$(1.3$_3$), $\gamma_{\mathbf{35.78}}$**789.4**$_1$(100$_6$)
837.25$_{12}$, $(5/2^+)$, $\gamma_{\mathbf{100.76}}$**736.5**$_1$(100$_6$), $\gamma_{\mathbf{0}}$**837.1**$_3$(12$_2$)
A **840.6**$_2$, $(13/2^-)$, $\gamma_{\mathbf{35.78}}$**804.8**$_2$(100)
844.26$_{15}$, $(7/2^+)$, $\gamma_{\mathbf{207.00}}$**637.3**$_2$(100)
869.8$_2$, $(5/2^+)$, $\gamma_{\mathbf{207.00}}$**662.8**$_3$(75$_9$), $\gamma_{\mathbf{100.76}}$**769.0**$_3$(100$_{15}$)
A **872.56**$_{18}$, $(11/2^-)$, $\gamma_{\mathbf{35.78}}$**836.7**$_3$(100)
952.9$_2$, $(3/2^-)$, $\gamma_{\mathbf{0}}$**952.9**$_3$(100)
970.40$_{14}$, $(7/2^+)$, $\gamma_{\mathbf{460.44}}$**509.9**$_3$(22$_3$), $\gamma_{\mathbf{207.00}}$**763.5**$_3$(13$_3$), $\gamma_{\mathbf{100.76}}$**869.6**$_2$(100$_{10}$)
982.21$_{12}$, $(9/2^+)$, $\gamma_{\mathbf{844.26}}$**137.9**$_3$(2.4$_6$), $\gamma_{\mathbf{460.44}}$**521.6**$_3$(4.4$_7$), $\gamma_{\mathbf{207.00}}$**775.3**$_1$(100$_6$)
1048$_4$
1088.5$_3$, $(5/2^-)$, $\gamma_{\mathbf{100.76}}$**987.8**$_3$(100)
C **1120.1**$_2$, $(7/2^+)$, $\gamma_{\mathbf{207.00}}$**913.2**$_3$(100)
C **1129.0**$_2$, $15/2^+$, $\gamma_{\mathbf{840.6}}$**288.4**$_2$(12$_1$), $\gamma_{\mathbf{822.27}}$**306.7**$_2$(100$_3$) E1
1184.0$_2$, $(9/2^-)$, $\gamma_{\mathbf{825.16}}$**358.9**$_5$(24$_6$), $\gamma_{\mathbf{689.36}}$**494.6**$_2$(100$_6$)
1189.0$_3$, $(7/2^-)$, $\gamma_{\mathbf{460.44}}$**728.6**$_5$(85$_{13}$), $\gamma_{\mathbf{35.78}}$**1153.3**$_3$(100$_{15}$)
C **1205.42**$_{17}$, $(9/2^+)$, $\gamma_{\mathbf{982.21}}$**223.4**$_3$(35$_5$), $\gamma_{\mathbf{460.44}}$**745.0**$_3$(46$_7$), $\gamma_{\mathbf{35.78}}$**1169.5**$_3$(100$_{16}$)
1206.0$_2$, $(9/2^-)$, $\gamma_{\mathbf{825.16}}$**380.9**$_3$(42$_7$), $\gamma_{\mathbf{35.78}}$**1170.1**$_3$(100$_{15}$)
1250.65$_{18}$, $(5/2^-)$, $\gamma_{\mathbf{952.9}}$**297.7**$_3$(63$_{11}$), $\gamma_{\mathbf{689.36}}$**561.4**$_3$(83$_{14}$), $\gamma_{\mathbf{207.00}}$**1043.7**$_3$(100$_{17}$)
1272.8$_2$, $(9/2^+)$, $\gamma_{\mathbf{460.44}}$**812.2**$_3$(81$_{13}$), $\gamma_{\mathbf{35.78}}$**1237.1**$_3$(100$_{23}$)
1381.94$_{16}$, $(7/2^-)$, $\gamma_{\mathbf{825.16}}$**556.8**$_2$(33$_5$), $\gamma_{\mathbf{689.36}}$**692.7**$_2$(72$_{15}$), $\gamma_{\mathbf{207.00}}$**1174.8**$_2$(100$_{11}$)
A **1382.1**$_2$, $(19/2)^-$, $\gamma_{\mathbf{822.27}}$**559.8**$_1$(100) E2
1420.6$_2$, $(9/2^-)$, $\gamma_{\mathbf{872.56}}$**548.1**$_3$(100$_{14}$), $\gamma_{\mathbf{844.26}}$**576.4**$_3$(45$_7$), $\gamma_{\mathbf{460.44}}$**960.2**$_5$(24$_9$), $\gamma_{\mathbf{35.78}}$**1384.8**$_2$(59$_{14}$)
1426.0$_3$, $(9/2^-)$, $\gamma_{\mathbf{689.36}}$**736.8**$_3$(23$_3$), $\gamma_{\mathbf{35.78}}$**1390.0**$_3$(100$_7$)
A **1454.5**$_3$, $(17/2^-)$, $\gamma_{\mathbf{1129.0}}$**325.7**$_3$(75$_{50}$), $\gamma_{\mathbf{840.6}}$**613.7**$_4$(100$_{50}$)
1461.4$_3$, $(5/2^-,7/2^-)$, $\gamma_{\mathbf{207.00}}$**1254.3**$_3$(100)
1473.8$_3$, $(11/2^-)$, $\gamma_{\mathbf{35.78}}$**1438.0**$_3$(100)
1508.5$_2$, $(7/2^-)$, $\gamma_{\mathbf{207.00}}$**1301.5**$_2$(100)
A **1568.8**$_3$, $(15/2^-)$, $\gamma_{\mathbf{1129.0}}$**439.3**$_4$(8$_8$), $\gamma_{\mathbf{840.6}}$**728.4**$_4$(21$_8$), $\gamma_{\mathbf{822.27}}$**746.9**$_5$(100$_{21}$)
C **1591.0**$_3$, $(17/2^+)$, $\gamma_{\mathbf{1129.0}}$**461.9**$_3$(100$_{10}$), $\gamma_{\mathbf{822.27}}$**768.7**$_4$(52$_{14}$)
A **1672.7**$_2$, $(23/2)^-$, $\gamma_{\mathbf{1382.1}}$**290.6**$_1$(100) E2
1697.6$_2$, $(9/2^-)$, $\gamma_{\mathbf{825.16}}$**872.4**$_3$(44$_6$), $\gamma_{\mathbf{689.36}}$**1008.3**$_3$(27$_4$), $\gamma_{\mathbf{35.78}}$**1661.7**$_3$(100$_9$)
1728.31$_{13}$, $(5/2^-)$, $\gamma_{\mathbf{1250.65}}$**477.8**$_3$(6.2$_{11}$), $\gamma_{\mathbf{754.93}}$**973.4**$_3$(10.5$_{16}$), $\gamma_{\mathbf{741.70}}$**986.6**$_3$(17$_3$), $\gamma_{\mathbf{689.36}}$**1039.1**$_3$(24$_4$), $\gamma_{\mathbf{207.00}}$**1521.2**$_2$(100$_8$), $\gamma_{\mathbf{100.76}}$**1627.4**$_2$(59$_4$)
1734.8$_2$, $(7/2^-)$, $\gamma_{\mathbf{460.44}}$**1274.4**$_2$(100)
1776.7$_2$, $(7/2^-)$, $\gamma_{\mathbf{689.36}}$**1087.3**$_3$(67$_9$), $\gamma_{\mathbf{460.44}}$**1316.1**$_3$(100$_{16}$), $\gamma_{\mathbf{207.00}}$**1569.8**$_3$(46$_8$)
A **1813.3**$_2$, $(21/2)^-$, $\gamma_{\mathbf{1672.7}}$**140.6**$_2$(50$_6$) E2(+M1) $\delta>1$, $\gamma_{\mathbf{1382.1}}$**431.2**$_1$(100$_6$) D
A **1841.73**$_{13}$, $(9/2^-)$, $\gamma_{\mathbf{1473.8}}$**367.8**$_3$(8.5$_{13}$), $\gamma_{\mathbf{1272.8}}$**568.9**$_3$(3.7$_7$), $\gamma_{\mathbf{1206.0}}$**635.6**$_3$(4.9$_8$), $\gamma_{\mathbf{1205.42}}$**636.3**$_3$(4.1$_7$), $\gamma_{\mathbf{1120.1}}$**721.5**$_3$(3.5$_5$), $\gamma_{\mathbf{1088.5}}$**753.2**$_3$(3.9$_7$), $\gamma_{\mathbf{982.21}}$**859.6**$_2$(13.6$_9$), $\gamma_{\mathbf{970.40}}$**871.3**$_2$(28$_2$), $\gamma_{\mathbf{844.26}}$**997.5**$_2$(14$_2$), $\gamma_{\mathbf{689.36}}$**1152.3**$_2$(4.9$_8$), $\gamma_{\mathbf{35.78}}$**1806.0**$_2$(100$_8$)
C **1867.8**$_2$, $(19/2)^+$, $\gamma_{\mathbf{1591.0}}$**276.7**$_3$(4$_2$), $\gamma_{\mathbf{1382.1}}$**485.5**$_5$(10$_3$), $\gamma_{\mathbf{1129.0}}$**738.8**$_1$(100$_4$) E2
1876.96$_{12}$, $(5/2^-)$, $\gamma_{\mathbf{1728.31}}$**148.4**$_3$(1.5$_4$), $\gamma_{\mathbf{1461.4}}$**415.5**$_3$(3.2$_5$), $\gamma_{\mathbf{970.40}}$**906.5**$_4$(3.0$_{11}$), $\gamma_{\mathbf{952.9}}$**924.0**$_3$(3.7$_5$), $\gamma_{\mathbf{837.25}}$**1039.8**$_3$(15$_1$), $\gamma_{\mathbf{754.93}}$**1121.8**$_3$(7.4$_{10}$), $\gamma_{\mathbf{741.70}}$**1135.2**$_3$(14$_1$), $\gamma_{\mathbf{689.36}}$**1187.5**$_3$(3.4$_7$), $\gamma_{\mathbf{460.44}}$**1416.4**$_3$(2.4$_4$), $\gamma_{\mathbf{207.00}}$**1670.3**$_3$(5.6$_6$), $\gamma_{\mathbf{100.76}}$**1776.3**$_2$(100$_5$)
C **1879.0**$_4$, $(17/2^+)$, $\gamma_{\mathbf{1129.0}}$**750.0**$_3$(100)
A **1883.09**$_{16}$, $(9/2^-)$, $\gamma_{\mathbf{982.21}}$**901.0**$_3$(12$_2$), $\gamma_{\mathbf{970.40}}$**912.8**$_3$(37$_6$), $\gamma_{\mathbf{872.56}}$**1010.5**$_2$(100$_5$), $\gamma_{\mathbf{825.16}}$**1057.9**$_2$(75$_3$), $\gamma_{\mathbf{689.36}}$**1193.7**$_3$(9.6$_{17}$), $\gamma_{\mathbf{460.44}}$**1422.6**$_3$(84$_6$)
1953.1$_2$, $(9/2^-)$, $\gamma_{\mathbf{872.56}}$**1080.5**$_3$(58$_5$), $\gamma_{\mathbf{689.36}}$**1263.7**$_2$(43$_8$), $\gamma_{\mathbf{35.78}}$**1917.4**$_2$(100$_7$)
2015.1$_4$(?), $\gamma_{\mathbf{872.56}}$**1142.6**$_5$(58$_{19}$), $\gamma_{\mathbf{844.26}}$**1170.9**$_5$(15$_{11}$)(?), $\gamma_{\mathbf{825.16}}$**1189.9**$_5$(100$_{42}$)
2065.43$_{13}$, $(7/2^-)$, $\gamma_{\mathbf{1876.96}}$**188.4**$_2$(5.9$_{16}$), $\gamma_{\mathbf{1841.73}}$**223.4**$_3$(7.9$_{12}$)(?), $\gamma_{\mathbf{1205.42}}$**860.1**$_3$(30$_4$), $\gamma_{\mathbf{1184.0}}$**881.4**$_3$(14$_2$), $\gamma_{\mathbf{1120.1}}$**945.4**$_3$(8.7$_{12}$), $\gamma_{\mathbf{982.21}}$**1083.3**$_3$(26$_3$), $\gamma_{\mathbf{970.40}}$**1095.0**$_3$(12$_2$), $\gamma_{\mathbf{869.8}}$**1195.6**$_3$(26$_3$), $\gamma_{\mathbf{844.26}}$**1221.2**$_3$(22$_3$), $\gamma_{\mathbf{837.25}}$**1228.2**$_3$(19$_2$), $\gamma_{\mathbf{741.70}}$**1323.7**$_4$(43$_2$), $\gamma_{\mathbf{689.36}}$**1376.0**$_3$(25$_3$), $\gamma_{\mathbf{207.00}}$**1858.4**$_3$(34$_4$), $\gamma_{\mathbf{35.78}}$**2029.6**$_3$(100$_6$)
2074.2$_2$, $(7/2^-)$, $\gamma_{\mathbf{837.25}}$**1236.9**$_3$(37$_7$), $\gamma_{\mathbf{689.36}}$**1384.8**$_2$(57$_{13}$)(?), $\gamma_{\mathbf{207.00}}$**1867.3**$_3$(100$_{15}$), $\gamma_{\mathbf{35.78}}$**2038.5**$_3$(42$_7$)
2161.2$_3$, $(9/2^-)$, $\gamma_{\mathbf{1189.0}}$**972.2**$_2$(65$_{12}$), $\gamma_{\mathbf{689.36}}$**1471.7**$_3$(100$_{15}$)
B **2302.9**$_3$, $(27/2)^-$, $\gamma_{\mathbf{1672.7}}$**630.2**$_1$(100) E2
C **2350.0**$_2$, $(23/2)^+$, $\gamma_{\mathbf{1867.8}}$**482.2**$_2$(100$_6$) E2, $\gamma_{\mathbf{1813.3}}$**536.7**$_3$(24$_3$) D, $\gamma_{\mathbf{1672.7}}$**677.2**$_2$(12$_4$)
C **2368.7**$_4$, $(21/2^+)$, $\gamma_{\mathbf{1867.8}}$**500.8**$_5$(22$_{11}$), $\gamma_{\mathbf{1382.1}}$**986.8**$_5$(100$_{33}$)
C **2492.2**$_3$, $(21/2^+)$, $\gamma_{\mathbf{1867.8}}$**624.4**$_5$(100$_{37}$), $\gamma_{\mathbf{1382.1}}$**1110.3**$_3$(100$_{37}$)
C **2518.4**$_2$, $(27/2)^+$, *2.4$_2$ ns*, μ=4.9$_{12}$, $\gamma_{\mathbf{2350.0}}$**168.5**$_2$(27$_5$) E2, $\gamma_{\mathbf{2302.9}}$**215.7**$_1$(100$_2$) E1, $\gamma_{\mathbf{1672.7}}$**845.6**$_3$(6.6$_{12}$)(?)
B **2664.3**$_3$, $(25/2)^-$, $\gamma_{\mathbf{2302.9}}$**361.4**$_2$(100) M1
C **2666.9**$_3$, $(25/2^+)$, $\gamma_{\mathbf{2518.4}}$**148.3**$_4$(33$_{12}$), $\gamma_{\mathbf{2350.0}}$**316.7**$_5$(21$_{12}$), $\gamma_{\mathbf{1672.7}}$**994.3**$_2$(100$_{17}$)
B **2762.7**$_3$, $(25/2^-)$, $\gamma_{\mathbf{2350.0}}$**412.5**$_5$(33$_{22}$), $\gamma_{\mathbf{2302.9}}$**460.3**$_5$(67$_{22}$), $\gamma_{\mathbf{1672.7}}$**1090.0**$_3$(100$_{33}$)
C **2812.5**$_2$, $(29/2)^+$, $\gamma_{\mathbf{2518.4}}$**294.2**$_1$(100$_4$) M1+E2 $\delta=0.9_2$, $\gamma_{\mathbf{2302.9}}$**509.5**$_1$(42$_7$) E1
3141.6$_3$, $(31/2)^+$, $\gamma_{\mathbf{2812.5}}$**329.1**$_1$(100$_2$) M1+E2 $\delta=1.4_5$, $\gamma_{\mathbf{2518.4}}$**623.4**$_3$(7$_2$) E2
3526.8$_3$, $(33/2)^+$, $\gamma_{\mathbf{3141.6}}$**385.1**$_1$(100$_4$) M1, $\gamma_{\mathbf{2812.5}}$**714**$_1$(9$_2$)
3603.3$_3$, $(31/2^-)$, $\gamma_{\mathbf{3141.6}}$**461.3**$_4$(18$_7$), $\gamma_{\mathbf{2302.9}}$**1300.5**$_2$(100$_{11}$) (Q)
3990.5$_4$, $\gamma_{\mathbf{3603.3}}$**387.2**$_3$(100)
4061.2$_4$, $(31/2^+)$, $\gamma_{\mathbf{3526.8}}$**534.5**$_3$(100)
D **4106.9**$_5$, $(31/2^+)$, $\gamma_{\mathbf{3141.6}}$**966**$_1$
D **4208.1**$_3$, $(33/2)^+$, $\gamma_{\mathbf{3526.8}}$**681.8**$_3$(25$_6$) M1, $\gamma_{\mathbf{3141.6}}$**1066.4**$_3$(20$_5$), $\gamma_{\mathbf{2812.5}}$**1395.5**$_2$(100$_6$) (E2)
D **4463.0**$_3$, $(35/2)^+$, $\gamma_{\mathbf{4208.1}}$**255.1**$_2$(100$_6$) M1, $\gamma_{\mathbf{4106.9}}$**356.2**$_3$(21$_5$) (Q), $\gamma_{\mathbf{3141.6}}$**1321.5**$_2$(93$_6$) (E2)
D **4673.5**$_3$, $(37/2)^+$, $\gamma_{\mathbf{4463.0}}$**210.9**$_2$(60$_3$) E2(+M1) $\delta>1.2$, $\gamma_{\mathbf{4208.1}}$**465.5**$_2$(21$_3$) E2, $\gamma_{\mathbf{3526.8}}$**1146.6**$_1$(100$_3$) E2
D **4923.0**$_3$, $(39/2)^+$, $\gamma_{\mathbf{4673.5}}$**249.6**$_1$(100$_4$) M1+E2 $\delta=1.6^{10}_5$, $\gamma_{\mathbf{4463.0}}$**460.0**$_2$(27$_2$) E2
D **5147.9**$_3$, $(41/2)^+$, $\gamma_{\mathbf{4923.0}}$**225.0**$_1$(100$_6$) M1+E2 $\delta=1.1_3$, $\gamma_{\mathbf{4673.5}}$**474.2**$_2$(34$_3$) Q
5257.5$_3$, $(39/2^-)$, $\gamma_{\mathbf{4673.5}}$**583.8**$_2$(100$_{17}$) D, $\gamma_{\mathbf{4061.2}}$**1197**$_1$(67$_{17}$)
E **5618.5**$_4$, $(41/2)^-$, $\gamma_{\mathbf{4923.0}}$**695.6**$_2$(100) E1

E **5712.0**$_3$, $(43/2)^-$, $\gamma_{5618.5}$**93.6**$_3$(9_2) M1, $\gamma_{5257.5}$**454.3**$_2$(39_5) Q, $\gamma_{5147.9}$**564.1**$_1$(100_9) E1

5734.8$_3$, $(45/2)^+$, $\gamma_{5147.9}$**586.9**$_1$(100) E2

5965.9$_4$, $(43/2^+)$, $\gamma_{5712.0}$**254**$_1$(100_{14}) (E1), $\gamma_{5147.9}$**818.1**$_3$(36_9) D

F **6025.1**$_4$, $(43/2)^-$, $\gamma_{5147.9}$**877.3**$_2$(100) D

E **6111.9**$_3$, $(45/2)^-$, $\gamma_{5965.9}$**146.2**$_3$(14_3) (E1), $\gamma_{5734.8}$**377.0**$_2$(75_{13}) E1, $\gamma_{5712.0}$**399.6**$_2$(100_6) M1

F **6220.6**$_4$, $(45/2)^-$, $\gamma_{6025.1}$**195.9**$_3$(26_4) M1+E2 $\delta=0.9^{11}_{6}$, $\gamma_{5734.8}$**486.0**$_2$(100_7) E1

F **6400.3**$_4$, $(47/2)^-$, $\gamma_{6220.6}$**180.0**$_2$(62_{15}) M1+E2 $\delta=1.3^{18}_{6}$, $\gamma_{6111.9}$**288.0**$_2$(100_{15}) M1+E2 $\delta=1.1^{10}_{5}$

6788.2$_3$, $(47/2)^+$, $\gamma_{6220.6}$**567.6**$_2$(45_5) E1, $\gamma_{6111.9}$**676.3**$_1$(100_5) E1

6873.9$_4$, $(47/2)^+$, $\gamma_{6111.9}$**762.2**$_3$(100)

7112.4$_4$, $(49/2)^+$, $\gamma_{6873.9}$**238.6**$_2$(24_5) M1, $\gamma_{6788.2}$**324.1**$_1$(100_7) M1, $\gamma_{6400.3}$**712.1**$_2$(38_5) E1

7193.8$_4$, $(49/2)$, $\gamma_{6400.3}$**793.5**$_2$(100) (D)

7740.5$_5$, $(51/2)$, $\gamma_{7193.8}$**546.7**$_2$(100) M1+E2 $\delta=1.4_1$

G **7976.2**$_4$, $(51/2^+)$, $\gamma_{6788.2}$**1188.2**$_2$(100) (Q)

8048.1$_8$, $(51/2)^+$, $\gamma_{7112.4}$**935**$_1$(100)

G **8246.9**$_4$, $(53/2)^+$, $\gamma_{7112.4}$**1134.5**$_1$(100) E2

8280.6$_5$, $(53/2)$, $\gamma_{7740.5}$**540.1**$_2$(100) D

G **8733.4**$_4$, $(55/2^+)$, $\gamma_{7976.2}$**757.2**$_2$(100) E2

8921.8$_4$, $(53/2)^+$, $\gamma_{8048.1}$**873**$_1$(93_{14}) M1(+E2), $\gamma_{7976.2}$**945.8**$_2$(100_{14}) D

9196.9$_5$, $(59/2^+)$, $\gamma_{8733.4}$**463.5**$_2$(100) E2

9227.2$_6$(?), $\gamma_{8280.6}$**946**$_1$(100)(?)

9482.2$_5$(?), $\gamma_{9227.2}$**255.0**$_3$(100)(?)

9771.2$_4$, $(57/2)^+$, $\gamma_{9482.2}$**289.0**$_3$(10_3)(?), $\gamma_{8921.8}$**849.7**$_2$(100_6) E2, $\gamma_{8246.9}$**1524.1**$_2$(84_6) E2

9955.3$_4$, $(61/2)^+$, *4.0$_2$ ns*, $\gamma_{9771.2}$**184.1**$_1$(100) E2

10183.9$_{11}$(?), $\gamma_{9196.9}$**987**$_1$(?)

11000.2$_4$, $(65/2)^+$, $\gamma_{9955.3}$**1044.9**$_1$(100) E2

11176.9$_{15}$(?), $\gamma_{10183.9}$**993**$_1$(?)

H **11204.2**$_4$, $(67/2)^-$, $\gamma_{11000.2}$**204.0**$_1$(100) E1

H **12151.9**$_5$, $(71/2^-)$, $\gamma_{11204.2}$**947.7**$_2$(100) (Q)

H **13117.8**$_5$, $(75/2^-)$, $\gamma_{12151.9}$**965.8**$_2$(100) Q

I **x**, J

I **740.10+x**, $J+2$, γ_{x}**740.1**$_2$(0.42_4)

I **1534.8+x**, $J+4$, $\gamma_{740.10+x}$**794.7**$_2$(0.65_4)

I **2381.9+x**, $J+6$, $\gamma_{1534.8+x}$**847.1**$_3$(1.00_9)

I **3281.3+x**, $J+8$, $\gamma_{2381.9+x}$**899.4**$_2$(1.02_9)

I **4234.8+x**, $J+10$, $\gamma_{3281.3+x}$**953.5**$_2$(1.01_8)

I **5242.0+x**, $J+12$, $\gamma_{4234.8+x}$**1007.2**$_2$(0.98_8)

I **6302.7+x**, $J+14$, $\gamma_{5242.0+x}$**1060.7**$_3$(1.00_8)

I **7416.9+x**, $J+16$, $\gamma_{6302.7+x}$**1114.2**$_2$(1.02_7)

I **8586.1+x**, $J+18$, $\gamma_{7416.9+x}$**1169.2**$_3$(0.95_7)

I **9810.7+x**, $J+20$, $\gamma_{8586.1+x}$**1224.6**$_2$(0.77_6)

I **11089.5+x**, $J+22$, $\gamma_{9810.7+x}$**1278.8**$_3$(0.68_5)

I **12423.9+x**, $J+24$, $\gamma_{11089.5+x}$**1334.4**$_3$(0.49_5)

I **13815.0+x**, $J+26$, $\gamma_{12423.9+x}$**1391.1**$_3$(0.41_3)

I **15259.2+x**, $J+28$, $\gamma_{13815.0+x}$**1444.2**$_4$(0.13_1)

J **y**, J_1

J **646.2+y**, J_1+2, γ_{y}**646.2**$_3$(0.31_5)

J **1343.6+y**, J_1+4, $\gamma_{646.2+y}$**697.4**$_2$(0.97_3)

J **2091.7+y**, J_1+6, $\gamma_{1343.6+y}$**748.2**$_2$(1.00_2)

J **2890.7+y**, J_1+8, $\gamma_{2091.7+y}$**799.0**$_2$(1.02_2)

J **3741.2+y**, J_1+10, $\gamma_{2890.7+y}$**850.5**$_3$(1.05_2)

J **4643.2+y**, J_1+12, $\gamma_{3741.2+y}$**902.0**$_2$(1.05_3)

J **5597.3+y**, J_1+14, $\gamma_{4643.2+y}$**954.1**$_3$(1.03_2)

J **6603.6+y**, J_1+16, $\gamma_{5597.3+y}$**1006.3**$_2$(0.98_2)

J **7662.4+y**, J_1+18, $\gamma_{6603.6+y}$**1058.8**$_2$(1.00_2)

J **8774.1+y**, J_1+20, $\gamma_{7662.4+y}$**1111.7**$_2$(1.02_2)

J **9938.6+y**, J_1+22, $\gamma_{8774.1+y}$**1164.5**$_3$(0.96_2)

J **11156.5+y**, J_1+24, $\gamma_{9938.6+y}$**1217.9**$_2$(0.94_2)

J **12427.9+y**, J_1+26, $\gamma_{11156.5+y}$**1271.4**$_2$(0.82_2)

J **13752.8+y**, J_1+28, $\gamma_{12427.9+y}$**1324.9**$_2$(0.60_2)

J **15131.5+y**, J_1+30, $\gamma_{13752.8+y}$**1378.7**$_2$(0.54_2)

J **16565.0+y**, J_1+32, $\gamma_{15131.5+y}$**1433.5**$_3$(0.29_2)

J **18052.7+y**, J_1+34, $\gamma_{16565.0+y}$**1487.7**$_3$(0.21_3)

J **19594.6+y**, J_1+36, $\gamma_{18052.7+y}$**1541.9**$_4$(0.10_2)

K **z**, J_2

K **786.0+z**, J_2+2, γ_{z}**786.0**$_3$(0.75_6)

K **1623.3+z**, J_2+4, $\gamma_{786.0+z}$**837.4**$_3$(0.93_5)

K **2513.9+z**, J_2+6, $\gamma_{1623.3+z}$**890.6**$_2$(1.02_4)

K **3454.9+z**, J_2+8, $\gamma_{2513.9+z}$**941.0**$_2$(1.00_4)

K **4447.5+z**, J_2+10, $\gamma_{3454.9+z}$**992.7**$_3$(1.01_4)

K **5491.4+z**, J_2+12, $\gamma_{4447.5+z}$**1043.9**$_2$(1.00_4)

K **6587.2+z**, J_2+14, $\gamma_{5491.4+z}$**1095.8**$_2$(1.00_4)

K **7735.6+z**, J_2+16, $\gamma_{6587.2+z}$**1148.4**$_2$(1.00_4)

K **8935.6+z**, J_2+18, $\gamma_{7735.6+z}$**1200.0**$_3$(0.98_6)

K **10187.6+z**, J_2+20, $\gamma_{8935.6+z}$**1252.0**$_2$(0.87_5)

K **11490.6+z**, J_2+22, $\gamma_{10187.6+z}$**1303.0**$_3$(0.65_5)

K **12847.3+z**, J_2+24, $\gamma_{11490.6+z}$**1356.7**$_4$(0.32_5)

L **u**, J_3

L **824.0+u**, J_3+2, γ_{u}**824.0**(0.57_4)(?)

L **1701.4+u**, J_3+4, $\gamma_{824.0+u}$**877.4**$_4$(0.93_7)

L **2633.3+u**, J_3+6, $\gamma_{1701.4+u}$**931.9**$_4$(1.00_4)

L **3619.0+u**, J_3+8, $\gamma_{2633.3+u}$**985.7**$_3$(1.00_4)

L **4656.6+u**, J_3+10, $\gamma_{3619.0+u}$**1037.6**$_2$(1.07_5)

L **5744.9+u**, J_3+12, $\gamma_{4656.6+u}$**1088.3**$_3$(1.04_4)

L **6884.9+u**, J_3+14, $\gamma_{5744.9+u}$**1140.0**$_2$(1.02_3)

L **8077.9+u**, J_3+16, $\gamma_{6884.9+u}$**1193.0**$_2$(1.00_3)

L **9322.9+u**, J_3+18, $\gamma_{8077.9+u}$**1245.0**$_3$(0.98_4)

L **10622.9+u**, J_3+20, $\gamma_{9322.9+u}$**1300.0**$_3$(0.79_6)

L **11976.9+u**, J_3+22, $\gamma_{10622.9+u}$**1354.0**$_3$(0.51_4)

L **13382.3+u**, J_3+24, $\gamma_{11976.9+u}$**1405.4**$_4$(0.43_5)

L **14832.8+u**, J_3+26, $\gamma_{13382.3+u}$**1450.5**$_4$(0.33_5)

M **v**, J_4

M **803.6+v**, J_4+2, γ_{v}**803.7**$_4$

M **1657.0+v**, J_4+4, $\gamma_{803.6+v}$**853.4**$_3$

M **2564.8+v**, J_4+6, $\gamma_{1657.0+v}$**907.8**$_3$

M **3523.1+v**, J_4+8, $\gamma_{2564.8+v}$**958.3**$_2$

M **4532.8+v**, J_4+10, $\gamma_{3523.1+v}$**1009.7**$_2$

M **5593.5+v**, J_4+12, $\gamma_{4532.8+v}$**1060.7**$_2$

M **6706.2+v**, J_4+14, $\gamma_{5593.5+v}$**1112.7**$_3$

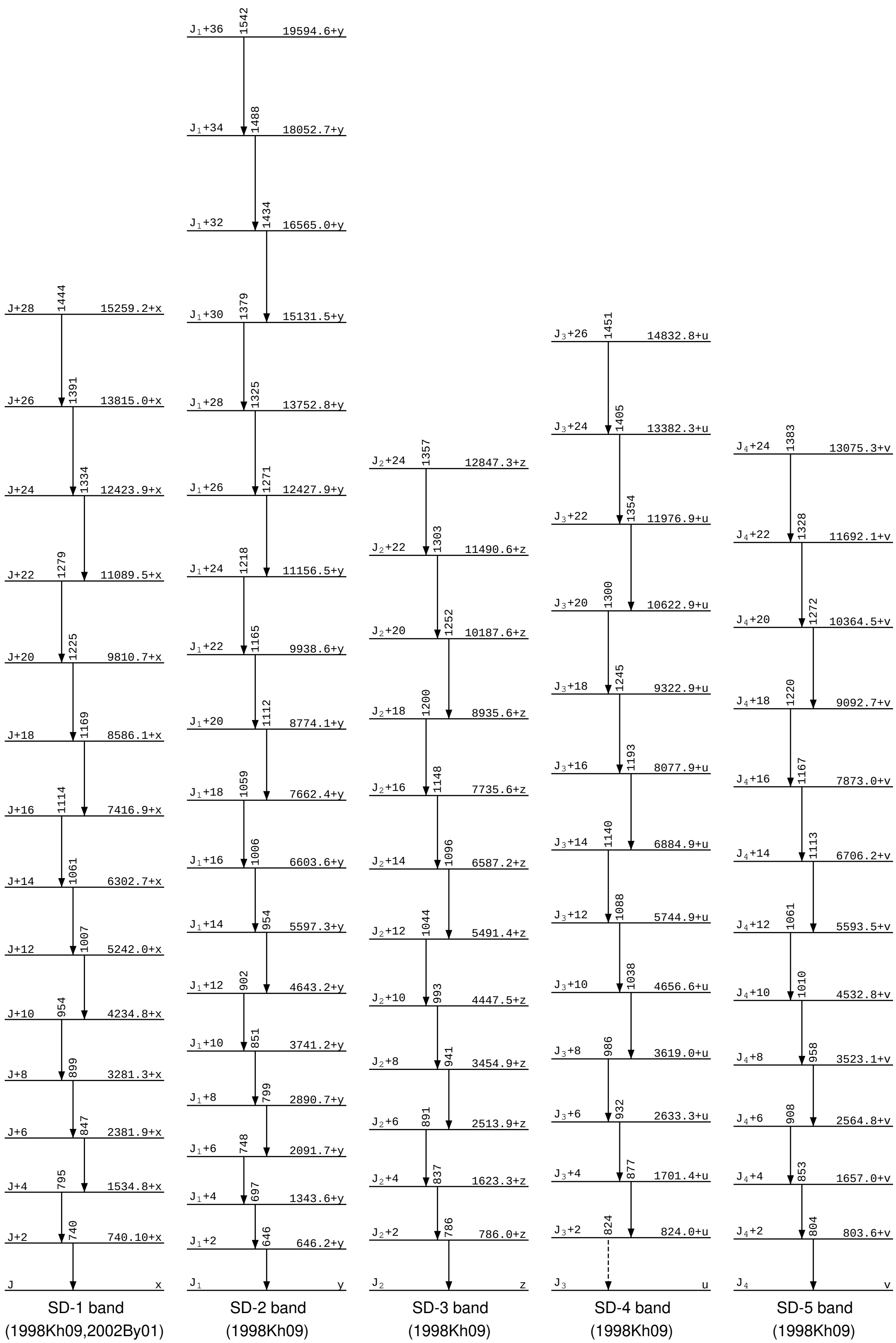
M **7873.0+v**, J_4+16, $\gamma_{6706.2+v}$**1166.8**$_3$

M **9092.7+v**, J_4+18, $\gamma_{7873.0+v}$**1219.7**$_4$

M **10364.5+v**, J_4+20, $\gamma_{9092.7+v}$**1271.8**$_4$

M **11692.1+v**, J_4+22, $\gamma_{10364.5+v}$**1327.6**$_5$

M **13075.3+v**, J_4+24, $\gamma_{11692.1+v}$**1383.2**$_5$


J+28 1444 15259.2+x
J+26 1391 13815.0+x
J+24 1334 12423.9+x
J+22 1279 11089.5+x
J+20 1225 9810.7+x
J+18 1169 8586.1+x
J+16 1114 7416.9+x
J+14 1061 6302.7+x
J+12 1007 5242.0+x
J+10 954 4234.8+x
J+8 899 3281.3+x
J+6 847 2381.9+x
J+4 795 1534.8+x
J+2 740 740.10+x
J x
J1+36 1542 19594.6+y
J1+34 1488 18052.7+y
J1+32 1434 16565.0+y
J1+30 1379 15131.5+y
J1+28 1325 13752.8+y
J1+26 1271 12427.9+y
J1+24 1218 11156.5+y
J1+22 1165 9938.6+y
J1+20 1112 8774.1+y
J1+18 1059 7662.4+y
J1+16 1006 6603.6+y
J1+14 954 5597.3+y
J1+12 902 4643.2+y
J1+10 851 3741.2+y
J1+8 799 2890.7+y
J1+6 748 2091.7+y
J1+4 697 1343.6+y
J1+2 646 646.2+y
J1 y
J2+24 1357 12847.3+z
J2+22 1303 11490.6+z
J2+20 1252 10187.6+z
J2+18 1200 8935.6+z
J2+16 1148 7735.6+z
J2+14 1096 6587.2+z
J2+12 1044 5491.4+z
J2+10 993 4447.5+z
J2+8 941 3454.9+z
J2+6 891 2513.9+z
J2+4 837 1623.3+z
J2+2 786 786.0+z
J2 z
J3+26 1451 14832.8+u
J3+24 1405 13382.3+u
J3+22 1354 11976.9+u
J3+20 1300 10622.9+u
J3+18 1245 9322.9+u
J3+16 1193 8077.9+u
J3+14 1140 6884.9+u
J3+12 1088 5744.9+u
J3+10 1038 4656.6+u
J3+8 986 3619.0+u
J3+6 932 2633.3+u
J3+4 877 1701.4+u
J3+2 824 824.0+u
J3 u
J4+24 1383 13075.3+v
J4+22 1328 11692.1+v
J4+20 1272 10364.5+v
J4+18 1220 9092.7+v
J4+16 1167 7873.0+v
J4+14 1113 6706.2+v
J4+12 1061 5593.5+v
J4+10 1010 4532.8+v
J4+8 958 3523.1+v
J4+6 908 2564.8+v
J4+4 853 1657.0+v
J4+2 804 803.6+v
J4 v
SD-1 band
(1998Kh09,2002By01)
SD-2 band
(1998Kh09)
SD-3 band
(1998Kh09)
SD-4 band
(1998Kh09)
SD-5 band
(1998Kh09)

$^{149}_{65}Tb_{84}$

$^{150}_{65}$Tb$_{85}$

S$_n$: 7687 $_9$, S$_p$: 3267 $_8$

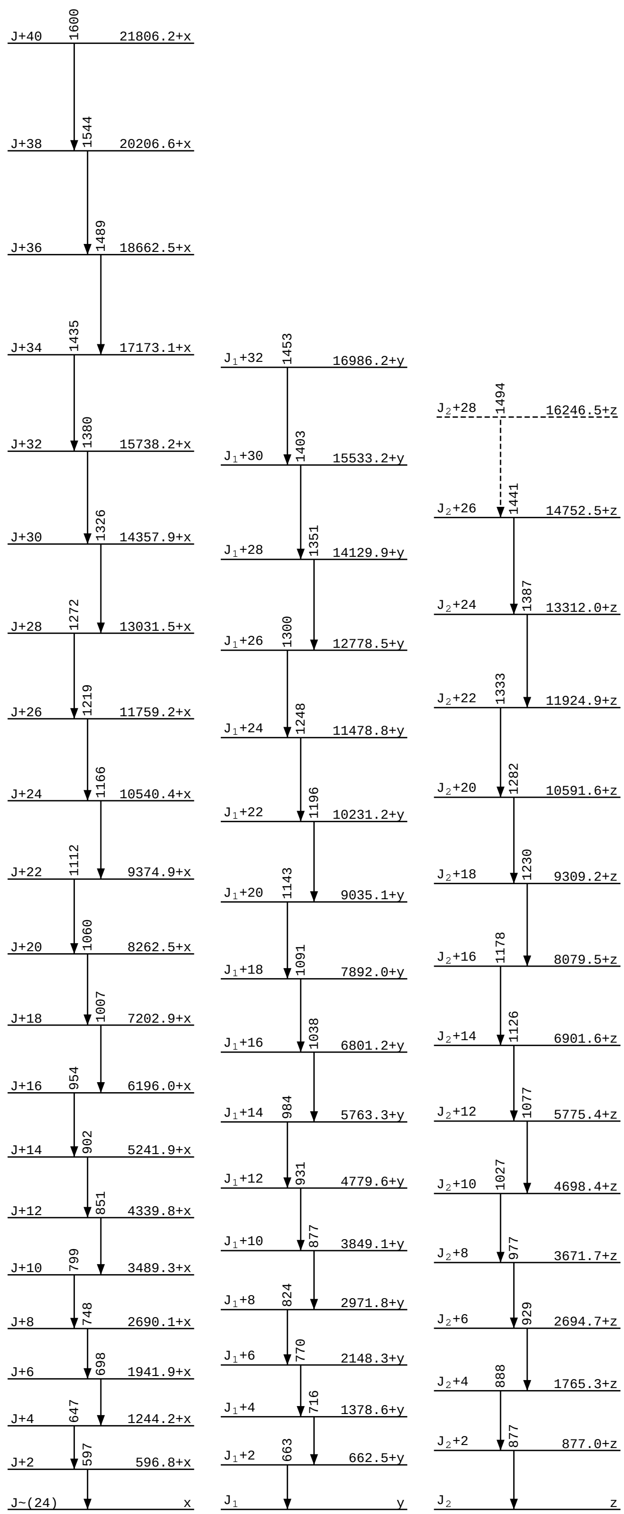
Nuclear Bands

A SD-1 band (1989De10,1995Fa09,2002By01)
B SD-2 band (1995Fa09)
C SD-3 band (1995Fa09)

Levels and γ-ray branchings:

0, (2^-), *3.48*$_{16}$ *h*, %ε+%β$^+$=100, %α <0.05 , μ=-0.90$_2$
397.2$_3$, (1^+), γ_0**397.2**$_3$(100) E1(?)
470$_{50}$, 9^+, *5.8*$_2$ *min*, %ε+%β$^+$ $\approx$ 100
1067.95$_{25}$, 10^+, γ_{470}**594.0**$_3$(100)
1232.79$_{24}$, 11^+, γ_{470}**758.8**$_3$(100)
1306.55$_{25}$, 10^-, γ_{470}**832.5**$_3$(100)
1348.40$_{24}$, 11^-, *0.39*$_6$ *ns*, $\gamma_{1306.55}$**41.8**$_3$, $\gamma_{1232.79}$**115.7**$_3$(29$_3$), $\gamma_{1067.95}$**280.5**$_3$(100$_{10}$)
1586.5$_4$, 12^-, $\gamma_{1348.40}$**238.1**$_3$(100)
1910.4$_4$, 13^+, $\gamma_{1232.79}$**677.5**$_3$(100)
2114.0$_4$, 13^-, $\gamma_{1348.40}$**765.7**$_3$(100)
2404.9$_4$, 14^-, $\gamma_{2114.0}$**290.9**$_3$(56$_7$), $\gamma_{1586.5}$**818.5**$_3$(100$_{13}$)
2413.0$_4$, 14^+, $\gamma_{1910.4}$**502.6**$_3$(100)
2641.7$_4$, 16^+, $\gamma_{2413.0}$**228.7**$_3$(100)
2741.4$_4$, 15^-, $\gamma_{2114.0}$**627.4**$_3$(100)
2757.6$_4$, (15^+), $\gamma_{1910.4}$**847.1**$_3$(100)
3017.9$_4$, 16^-, $\gamma_{2757.6}$**260.2**$_3$(2.1$_7$), $\gamma_{2741.4}$**276.5**$_3$(100$_{10}$), $\gamma_{2641.7}$**376.0**$_3$(3.4$_7$), $\gamma_{2404.9}$**613.0**$_3$(37$_5$)
3373.6$_5$, 18^-, $\gamma_{3017.9}$**355.6**$_3$(100$_{10}$), $\gamma_{2641.7}$**732.1**$_3$(1.4$_6$)
3684.5$_5$, 19^-, $\gamma_{3373.6}$**310.9**$_3$(100)
3898.2$_5$, 20^-, $\gamma_{3684.5}$**213.7**$_3$(96$_9$), $\gamma_{3373.6}$**524.6**$_3$(100$_9$)
3933.2$_5$, 19^+, $\gamma_{3373.6}$**559.6**$_3$(100)
4324.0$_5$, 20^+, $\gamma_{3933.2}$**390.7**$_3$(100$_{12}$), $\gamma_{3684.5}$**639.4**$_3$(62$_8$)
4818.2$_5$, 21^+, $\gamma_{4324.0}$**494.1**$_3$(100$_{10}$), $\gamma_{3898.2}$**920.1**$_3$(85$_8$)
4894.6$_6$, 22^+, $\gamma_{4818.2}$**76**$_1$(100)
4972.7$_5$, 21^-, $\gamma_{3898.2}$**1074.5**$_3$(30$_{10}$), $\gamma_{3684.5}$**1288.2**$_3$(100$_{10}$)
5238.9$_5$, 22^-, $\gamma_{4972.7}$**266.2**$_3$(100$_{10}$), $\gamma_{3898.2}$**1340.7**$_3$(100$_{20}$)
5448.8$_6$, 22^+, $\gamma_{4894.6}$**554.1**$_3$(90$_{10}$), $\gamma_{4818.2}$**630.7**$_3$(100$_{10}$)
5667.5$_6$, (22^-), $\gamma_{4818.2}$**849.3**$_3$(100)
5725.8$_6$, 23^+, $\gamma_{5667.5}$**58**$_1$, $\gamma_{5448.8}$**277.1**$_3$(79$_{15}$), $\gamma_{5238.9}$**486.9**$_3$(86$_8$), $\gamma_{4894.6}$**831.2**$_3$(93$_{22}$), $\gamma_{4818.2}$**907.5**$_3$(100$_8$)
5842.5$_6$, 23^-, $\gamma_{5725.8}$**116.6**$_3$(31$_8$), $\gamma_{4894.6}$**947.9**$_3$(100$_{10}$)
5975.7$_6$, (24^+), $\gamma_{4894.6}$**1081.0**$_3$(100)
6010.9$_6$, 24^+, $\gamma_{5842.5}$**168.4**$_3$(17.0$_{19}$), $\gamma_{5725.8}$**285.3**$_3$(100$_{12}$), $\gamma_{4894.6}$**1116.1**$_3$(44$_4$)
6044.1$_6$, 25^+, $\gamma_{6010.9}$**33**$_1$, $\gamma_{5975.7}$**68**$_1$, $\gamma_{5725.8}$**318.4**$_3$(100)
6382.5$_7$, 26^+, $\gamma_{6044.1}$**338.3**$_3$(100)
6509.0$_7$, (27^+), $\gamma_{6044.1}$**465.1**$_3$(100)
6571.4$_7$, 27^+, $\gamma_{6509.0}$**62.5**$_3$, $\gamma_{6382.5}$**188.8**$_3$(100$_9$), $\gamma_{6044.1}$**527.2**$_3$(56$_6$)
7067.9$_7$, 28^-, $\gamma_{6571.4}$**496.5**$_3$(100)
8168.2$_8$, 30^-, $\gamma_{7067.9}$**1100.5**$_3$(100)
8266.1$_8$, (29^+), $\gamma_{7067.9}$**1198.3**$_3$(100)
8335.0$_8$, (29^-), $\gamma_{7067.9}$**1266.9**$_3$(100)
8496.9$_8$, (30), $\gamma_{8266.1}$**230.8**$_3$(100)
8514.9$_8$, (30^-), $\gamma_{8335.0}$**180.1**$_3$(100)
8519.9$_{13}$, $\gamma_{7067.9}$**1452**$_1$(100)
8540.5$_8$, $\gamma_{7067.9}$**1472.6**$_3$(100)
8808.2$_8$, 31^-, $\gamma_{8496.9}$**311.4**$_3$(<33), $\gamma_{8168.2}$**640.0**$_3$(100$_{40}$)
8901.2$_{13}$, 32, $\gamma_{8168.2}$**733**$_1$(100)
8957.6$_8$, 32^-, $\gamma_{8808.2}$**149.5**$_3$(15$_4$), $\gamma_{8168.2}$**789.5**$_3$(100$_{12}$)
9013.4$_8$, (31), $\gamma_{8335.0}$**678.1**$_3$(100$_{50}$), $\gamma_{8168.2}$**846**$_1$(100$_{50}$)
9188.2$_{13}$, $\gamma_{8168.2}$**1020**$_1$(100)
9327.2$_{13}$, (33), $\gamma_{8901.2}$**426.0**$_3$(100)
9403.5$_8$, $\gamma_{8808.2}$**595.3**$_3$(100)
9556.6$_8$, (32^-), $\gamma_{8514.9}$**1041.9**$_3$(100)
9914.3$_8$, (33^-), $\gamma_{8957.6}$**956.7**$_3$(100)
9921.4$_8$, (33^+), $\gamma_{8957.6}$**963.8**$_3$(100)
10006.9$_{13}$, $\gamma_{8496.9}$**1510**$_1$(100)
10046.6$_8$, (33), $\gamma_{9013.4}$**1032.8**$_3$(100)
10170.2$_{17}$, $\gamma_{9327.2}$**843**$_1$(100)
10321.6$_{13}$, $\gamma_{8957.6}$**1364**$_1$(100)
10906.2$_9$, (35^-), $\gamma_{9914.3}$**991.9**$_3$(100)
11072.4$_{13}$, $\gamma_{9921.4}$**1151**$_1$(100)
11160.0$_8$, (34^-), $\gamma_{10046.6}$**1113.1**$_3$(100$_{50}$), $\gamma_{9921.4}$**1238.7**$_3$(<25), $\gamma_{9914.3}$**1245.8**$_3$(<50), $\gamma_{9556.6}$**1603.6**$_3$(45$_{13}$)
11567.7$_9$, (36^-), $\gamma_{11160.0}$**407.7**$_3$(100)
12596.5$_9$, (38^-), $\gamma_{11567.7}$**1028.8**$_3$(100)
13378.5$_{14}$, (39^+), $\gamma_{12596.5}$**782**$_1$(100)

A **x**, $J\approx(24)$
A **596.8+x**, $J+2$, γ_x**596.8**$_2$(0.26$_5$)
A **1244.2+x**, $J+4$, $\gamma_{596.8+x}$**647.4**$_1$(0.57$_3$)
A **1941.9+x**, $J+6$, $\gamma_{1244.2+x}$**697.7**$_1$(1.02$_2$)
A **2690.1+x**, $J+8$, $\gamma_{1941.9+x}$**748.2**$_1$(1.04$_2$)
A **3489.3+x**, $J+10$, $\gamma_{2690.1+x}$**799.2**$_1$(1.02$_2$)
A **4339.8+x**, $J+12$, $\gamma_{3489.3+x}$**850.5**$_1$(0.89$_3$)
A **5241.9+x**, $J+14$, $\gamma_{4339.8+x}$**902.1**$_1$(1.01$_2$)
A **6196.0+x**, $J+16$, $\gamma_{5241.9+x}$**954.1**$_1$(0.99$_2$)
A **7202.9+x**, $J+18$, $\gamma_{6196.0+x}$**1006.9**$_1$(0.98$_2$)
A **8262.5+x**, $J+20$, $\gamma_{7202.9+x}$**1059.6**$_1$(0.96$_2$)
A **9374.9+x**, $J+22$, $\gamma_{8262.5+x}$**1112.4**$_1$(0.90$_2$)
A **10540.4+x**, $J+24$, $\gamma_{9374.9+x}$**1165.5**$_1$(0.88$_2$)
A **11759.2+x**, $J+26$, $\gamma_{10540.4+x}$**1218.8**$_1$(0.90$_2$)
A **13031.5+x**, $J+28$, $\gamma_{11759.2+x}$**1272.3**$_1$(0.67$_2$)
A **14357.9+x**, $J+30$, $\gamma_{13031.5+x}$**1326.4**$_2$(0.48$_2$)
A **15738.2+x**, $J+32$, $\gamma_{14357.9+x}$**1380.3**$_2$(0.38$_2$)
A **17173.1+x**, $J+34$, $\gamma_{15738.2+x}$**1434.9**$_2$(0.24$_2$)
A **18662.5+x**, $J+36$, $\gamma_{17173.1+x}$**1489.4**$_3$(0.17$_3$)
A **20206.6+x**, $J+38$, $\gamma_{18662.5+x}$**1544.1**$_7$(0.10$_2$)
A **21806.2+x**, $J+40$, $\gamma_{20206.6+x}$**1599.6**$_{10}$(0.05$_3$)
B **y**, J_1
B **662.5+y**, J_1+2, γ_y**662.5**$_2$(0.64$_6$)
B **1378.6+y**, J_1+4, $\gamma_{662.5+y}$**716.1**$_2$(0.88$_5$)
B **2148.3+y**, J_1+6, $\gamma_{1378.6+y}$**769.7**$_3$(1.10$_6$)
B **2971.8+y**, J_1+8, $\gamma_{2148.3+y}$**823.5**$_3$(1.15$_5$)
B **3849.1+y**, J_1+10, $\gamma_{2971.8+y}$**877.3**$_3$(0.93$_5$)
B **4779.6+y**, J_1+12, $\gamma_{3849.1+y}$**930.5**$_2$(0.82$_5$)
B **5763.3+y**, J_1+14, $\gamma_{4779.6+y}$**983.7**$_2$(0.97$_5$)
B **6801.2+y**, J_1+16, $\gamma_{5763.3+y}$**1037.9**$_2$(0.91$_5$)
B **7892.0+y**, J_1+18, $\gamma_{6801.2+y}$**1090.8**$_3$(0.95$_5$)
B **9035.1+y**, J_1+20, $\gamma_{7892.0+y}$**1143.1**$_3$(0.64$_4$)
B **10231.2+y**, J_1+22, $\gamma_{9035.1+y}$**1196.1**$_3$(0.70$_5$)
B **11478.8+y**, J_1+24, $\gamma_{10231.2+y}$**1247.6**$_4$(0.47$_4$)
B **12778.5+y**, J_1+26, $\gamma_{11478.8+y}$**1299.7**$_4$(0.58$_4$)
B **14129.9+y**, J_1+28, $\gamma_{12778.5+y}$**1351.4**$_6$(0.52$_4$)
B **15533.2+y**, J_1+30, $\gamma_{14129.9+y}$**1403.3**$_8$(0.31$_3$)
B **16986.2+y**, J_1+32, $\gamma_{15533.2+y}$**1453.0**$_{11}$(0.17$_5$)
C **z**, J_2
C **877.0+z**, J_2+2, γ_z**877.0**$_4$(0.68$_6$)
C **1765.3+z**, J_2+4, $\gamma_{877.0+z}$**888.3**$_3$(0.78$_6$)
C **2694.7+z**, J_2+6, $\gamma_{1765.3+z}$**929.4**$_3$(1.08$_7$)
C **3671.7+z**, J_2+8, $\gamma_{2694.7+z}$**977.0**$_3$(0.88$_{10}$)
C **4698.4+z**, J_2+10, $\gamma_{3671.7+z}$**1026.7**$_5$(1.01$_{10}$)
C **5775.4+z**, J_2+12, $\gamma_{4698.4+z}$**1077.0**$_4$(1.08$_9$)
C **6901.6+z**, J_2+14, $\gamma_{5775.4+z}$**1126.2**$_3$(0.91$_8$)
C **8079.5+z**, J_2+16, $\gamma_{6901.6+z}$**1177.9**$_5$(0.82$_8$)
C **9309.2+z**, J_2+18, $\gamma_{8079.5+z}$**1229.7**$_6$(1.03$_{10}$)
C **10591.6+z**, J_2+20, $\gamma_{9309.2+z}$**1282.4**$_6$(0.80$_{10}$)
C **11924.9+z**, J_2+22, $\gamma_{10591.6+z}$**1333.3**$_7$(0.65$_6$)
C **13312.0+z**, J_2+24, $\gamma_{11924.9+z}$**1387.1**$_9$(0.32$_5$)
C **14752.5+z**, J_2+26, $\gamma_{13312.0+z}$**1440.5**$_{10}$(0.20$_8$)
C **16246.5+z**(?), J_2+28, $\gamma_{14752.5+z}$**1494.0**$_{12}$(0.10$_5$)(?)



SD-1 band (1989De10,1995Fa09) SD-2 band (1995Fa09) SD-3 band (1995Fa09)

$^{150}_{65}Tb_{85}$

$^{151}_{65}\mathrm{Tb}_{86}$

S$_n$: 8589 $_9$, S$_p$: 3151 $_7$

Nuclear Bands

A $\pi h_{11/2}$(g.s. in ^{150}Gd)
B $\pi h_{11/2}$(3^- in ^{150}Gd)
C SD-1 band (1989Fa02,1993Cu06,1995Kh06,1997Ni01,1998Fi01) Q_0=17.2$_7$
D SD-2 band (1990By01,1993Cu06,1995Kh06,1998Fi01,1992Mu10) Q_0=18.4$_8$
E SD-3 band (1995Kh06,1997Fi03)
F SD-4 band (1995Kh06)
G SD-5 band (1994De33,1995Kh06)
H SD-6 band (1994De33,1995Kh06)
I SD-7 band (1994De33,1995Kh06)
J SD-8 band (1994De33,1995Kh06)

Levels and γ-ray branchings:

$\mathbf{0}$, $1/2^{(+)}$, *17.609$_1$ h*, %ε+%β$^+$=99.9905$_{15}$, %α=9.5x10^{-3}$_{15}$, μ=0.919$_6$
$\mathbf{22.922}_{20}$, $3/2^{(+)}$, *4.05$_7$ ns*, $\gamma_{0}\mathbf{22.92}_2(100)$ M1+E2 $\delta=0.031_4$
$\mathbf{72.39}_3$, $(5/2^+)$, *0.92$_3$ ns*, $\gamma_{22.922}\mathbf{49.46}_2(100_1)$ M1+E2 $\delta=0.06_2$, $\gamma_{0}\mathbf{72.50}_{10}(0.5_1)$ (E2)
A $\mathbf{99.54}_6$, $(11/2^-)$, *25$_3$ s*, %IT=93.8$_4$, %ε+%β$^+$=6.2$_4$, $\gamma_{72.39}\mathbf{27.1}_1$ E3
$\mathbf{248.79}_3$, $(5/2^+,7/2^+)$, *<0.26 ns*, $\gamma_{72.39}\mathbf{176.40}_1(100_2)$ M1+E2 $\delta=0.51_{17}$, $\gamma_{22.922}\mathbf{226.3}_3(2.3_5)$ M1,E2
$\mathbf{276.42}_4$, $\gamma_{72.39}\mathbf{204.03}_2(100)$
$\mathbf{485.64}_5$, $(7/2^-)$, $\gamma_{99.54}\mathbf{386.10}_2(100_2)$ E2, $\gamma_{72.39}\mathbf{413.27}_{13}(2.1_2)$
$\mathbf{548.85}_5$, $(3/2^+,5/2^+,7/2^+)$, $\gamma_{276.42}\mathbf{272.43}_{23}(4.0_{10})$, $\gamma_{248.79}\mathbf{300.00}_{16}(2.9_4)$, $\gamma_{72.39}\mathbf{476.56}_{10}(100_2)$ M1
$\mathbf{583.98}_6$, $(5/2^+)$, $\gamma_{276.42}\mathbf{307.48}_8(36_3)$, $\gamma_{22.922}\mathbf{561.00}_{10}(78_6)$, $\gamma_{0}\mathbf{583.9}_1(100_5)$
$\mathbf{646.02}_5$, $(9/2^-)$, $\gamma_{485.64}\mathbf{160.40}_2(2.7_2)$, $\gamma_{99.54}\mathbf{546.31}_{10}(100_2)$ M1
$\mathbf{686.70}_7$, $(5/2,7/2^+)$, $\gamma_{72.39}\mathbf{614.30}_{10}(61_4)$, $\gamma_{22.922}\mathbf{663.67}_{10}(100_5)$
A $\mathbf{703.8}_1$, $(15/2^-)$, $\gamma_{99.54}\mathbf{604.3}_1(100)$ (E2)
$\mathbf{711.93}_5$, $(5/2^+)$, $\gamma_{548.85}\mathbf{163.04}_4(7.2_{17})$, $\gamma_{248.79}\mathbf{463.20}_{10}(94.8_{21})$ M1(+E2) $\delta<0.82$, $\gamma_{72.39}\mathbf{639.50}_{10}(54_4)$, $\gamma_{22.922}\mathbf{689.17}_{10}(100.0_{24})$, $\gamma_{0}\mathbf{712.00}_{20}(\leq 50)$
$\mathbf{841.11}_9$, $(5/2,7/2^+)$, $\gamma_{548.85}\mathbf{292.16}_{10}(42_4)$, $\gamma_{72.39}\mathbf{768.90}_{20}(100_5)$, $\gamma_{22.922}\mathbf{818.6}_3(40_8)$
$\mathbf{856.81}_7$, $(5/2,7/2^+)$, $\gamma_{485.64}\mathbf{371.07}_5(35.0_{20})$, $\gamma_{276.42}\mathbf{580.4}_3(9.4_{24})$, $\gamma_{72.39}\mathbf{784.5}_6(4.7_{16})$, $\gamma_{22.922}\mathbf{833.9}_2(100_5)$
$\mathbf{886.43}_7$, $(5/2,7/2,9/2^+)$, $\gamma_{548.85}\mathbf{337.80}_{10}(48_4)$, $\gamma_{72.39}\mathbf{814.10}_{10}(100_9)$
$\mathbf{887.5}_2$, $(13/2^-)$, $\gamma_{703.8}\mathbf{183.9}_2(7.0_7)$, $\gamma_{99.54}\mathbf{788.0}_2(100_5)$ D+Q
$\mathbf{917.78}_7$, $(5/2^-,7/2^-)$, $\gamma_{686.70}\mathbf{230.90}_{13}(12.9_{15})$, $\gamma_{583.98}\mathbf{333.17}_{26}(4.7_{11})$, $\gamma_{485.64}\mathbf{432.16}_{10}(100_3)$ M1, $\gamma_{276.42}\mathbf{642.2}_6(4.7_{15})$, $\gamma_{72.39}\mathbf{845.46}_{10}(49.8_{24})$
$\mathbf{949.07}_6$, $(5/2^-,7/2^+)$, $\gamma_{646.02}\mathbf{303.00}_5(75.4_{24})$, $\gamma_{548.85}\mathbf{400.67}_{16}(16.4_{24})$, $\gamma_{248.79}\mathbf{700.32}_{10}(100_4)$, $\gamma_{22.922}\mathbf{926.0}_5(26_3)$
$\mathbf{1082.61}_6$, $(7/2^-)$, $\gamma_{646.02}\mathbf{436.86}_{10}(25.0_{14})$ M1, $\gamma_{548.85}\mathbf{533.66}_{18}(9.4_{14})$, $\gamma_{485.64}\mathbf{596.77}_{10}(51.4_{20})$, $\gamma_{72.39}\mathbf{1010.4}_3(100_3)$
B $\mathbf{1096.6}_2$, $(15/2^+)$, $\gamma_{887.5}\mathbf{209.1}_1(58_3)$, $\gamma_{703.8}\mathbf{392.8}_1(100_5)$ E1
$\mathbf{1119.38}_8$, $(7/2^-,9/2)$, $\gamma_{548.85}\mathbf{570.70}_{10}(79.6_{25})$, $\gamma_{248.79}\mathbf{870.36}_{10}(100_6)$, $\gamma_{99.54}\mathbf{1020.4}_3(60_3)$
$\mathbf{1202.10}_{11}$, $(5/2^-,7/2,9/2^+)$, $\gamma_{856.81}\mathbf{345.13}_{16}(10.3_{19})$, $\gamma_{646.02}\mathbf{556.40}_{23}(13.3_{23})$, $\gamma_{548.85}\mathbf{653.20}_{20}(27.0_{23})$, $\gamma_{72.39}\mathbf{1129.8}_3(100_4)$
$\mathbf{1241.21}_{10}$, $(7/2^-,9/2^-)$, $\gamma_{485.64}\mathbf{755.57}_{10}(100_4)$, $\gamma_{248.79}\mathbf{992.37}_{22}(10.7_{17})$, $\gamma_{99.54}\mathbf{1141.8}_3(99_7)$
$\mathbf{1319.4}_3$, $(5/2,7/2,9/2)$, $\gamma_{248.79}\mathbf{1070.6}_3(100)$
A $\mathbf{1319.6}_2$, $(19/2^-)$, $\gamma_{703.8}\mathbf{615.8}_1(100)$ E2
$\mathbf{1433.86}_8$, $(7/2^-)$, $\gamma_{917.78}\mathbf{515.9}_5(13_8)$, $\gamma_{646.02}\mathbf{788.07}_{10}(95_6)$, $\gamma_{583.98}\mathbf{849.60}_{10}(100_7)$, $\gamma_{248.79}\mathbf{1185.6}_3(51_7)$, $\gamma_{99.54}\mathbf{1334.3}_3(49_4)$
$\mathbf{1582.29}_{12}$, $(5/2^-,7/2,9/2)$, $\gamma_{646.02}\mathbf{936.27}_{10}(100)$
$\mathbf{1611.09}_{12}$, $(5/2^-)$, $\gamma_{1082.61}\mathbf{528.40}_{16}(12.3_{26})$, $\gamma_{548.85}\mathbf{1062.5}_3(51_5)$, $\gamma_{248.79}\mathbf{1361.9}_3(12.3_{18})$, $\gamma_{72.39}\mathbf{1538.1}_3(100_3)$, $\gamma_{0}\mathbf{1611.0}_3(7.9_{26})$
$\mathbf{1629.66}_8$, $(7/2^-,9/2^-)$, $\gamma_{949.07}\mathbf{680.41}_{10}(46.8_{21})$, $\gamma_{917.78}\mathbf{712.00}_{20}(58_3)$, $\gamma_{646.02}\mathbf{983.73}_{10}(100)$, $\gamma_{485.64}\mathbf{1144.1}_3(20_5)$, $\gamma_{248.79}\mathbf{1381.2}_3(18.1_{21})$, $\gamma_{99.54}\mathbf{1530.2}_3(40.1_{17})$
$\mathbf{1663.18}_{11}$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{917.78}\mathbf{745.40}_{10}(45.6_{23})$, $\gamma_{548.85}\mathbf{1114.3}_3(100_4)$
B $\mathbf{1693.4}_2$, $(19/2^+)$, $\gamma_{1096.6}\mathbf{597.0}_2(100)$ (E2)
$\mathbf{1724.46}_{15}$, $(5/2^-)$, $\gamma_{886.43}\mathbf{837.9}_5(4.4_{15})$, $\gamma_{548.85}\mathbf{1175.5}_3(21.9_{15})$, $\gamma_{248.79}\mathbf{1475.7}_3(46.8_{19})$, $\gamma_{72.39}\mathbf{1652.1}_3(31.4_9)$, $\gamma_{22.922}\mathbf{1701.6}_3(100_3)$
$\mathbf{1741.78}_8$, $(5/2^-)$, $\gamma_{949.07}\mathbf{793.08}_{10}(29.1_{25})$, $\gamma_{856.81}\mathbf{884.62}_{10}(37_3)$, $\gamma_{711.93}\mathbf{1029.4}_3(21.2_{25})$, $\gamma_{646.02}\mathbf{1096.1}_3(100_3)$, $\gamma_{485.64}\mathbf{1256.1}_3(62_3)$, $\gamma_{248.79}\mathbf{1493.3}_3(15.8_{25})$, $\gamma_{22.922}\mathbf{1718.4}_5(7_3)$
$\mathbf{1773.74}_{10}$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{917.78}\mathbf{855.84}_{10}(87_5)$, $\gamma_{856.81}\mathbf{917.00}_{10}(58_6)$, $\gamma_{841.11}\mathbf{932.5}_{10}(19_4)$, $\gamma_{583.98}\mathbf{1190.6}_3(28_4)$, $\gamma_{485.64}\mathbf{1288.2}_3(53_3)$, $\gamma_{248.79}\mathbf{1525.1}_3(100_4)$
$\mathbf{1841.63}_{11}$, $(5/2^-,7/2^-)$, $\gamma_{949.07}\mathbf{891.92}_{20}(27.0_{23})$, $\gamma_{841.11}\mathbf{1000.4}_3(5.7_{17})$, $\gamma_{711.93}\mathbf{1129.8}_3(88_3)$, $\gamma_{646.02}\mathbf{1196.8}_3(36.3_{23})$, $\gamma_{485.64}\mathbf{1355.5}_3(12.6_{13})$, $\gamma_{248.79}\mathbf{1593.1}_3(100_3)$, $\gamma_{72.39}\mathbf{1769.7}_3(12.0_6)$
A $\mathbf{2002.2}_2$, $(23/2^-)$, $\gamma_{1319.6}\mathbf{682.5}_1(100)$ E2
$\mathbf{2045.7}_2$, $(21/2^+)$, $\gamma_{1693.4}\mathbf{352.6}_3(28_9)$, $\gamma_{1319.6}\mathbf{726.0}_2(100_{14})$
$\mathbf{2120.3}_4$, $(23/2^-)$, $\gamma_{1319.6}\mathbf{800.3}_4(100)$
$\mathbf{2180.6}_2$, $(25/2^-)$, $\gamma_{2120.3}\mathbf{59.7}$, $\gamma_{2002.2}\mathbf{178.5}_1(100_7)$ M1,E2
B $\mathbf{2219.9}_2$, $(23/2^+)$, $\gamma_{1693.4}\mathbf{526.5}_1(100)$ (E2)
$\mathbf{2375.3}_2$, $(27/2^-)$, $\gamma_{2180.6}\mathbf{194.8}_1(100)$ M1,E2
$\mathbf{2468.6}_2$, $(25/2^+)$, $\gamma_{2219.9}\mathbf{248.8}_1(100_5)$ (M1,E2), $\gamma_{2180.6}\mathbf{288.4}_4(9_4)$, $\gamma_{2120.3}\mathbf{348.1}_4(7.9_{18})$, $\gamma_{2045.7}\mathbf{423.5}_4(13_4)$, $\gamma_{2002.2}\mathbf{466.0}_2(3.9_7)$
B $\mathbf{2782.6}_2$, $(27/2^+)$, $\gamma_{2468.6}\mathbf{313.9}_3(7.5)$(?), $\gamma_{2219.9}\mathbf{562.7}_1(100_2)$ E2
$\mathbf{2847.3}_2$, $(29/2^+)$, $\gamma_{2782.6}\mathbf{64.8}_3(25)$ (M1), $\gamma_{2468.6}\mathbf{378.6}_1(100_5)$, $\gamma_{2375.3}\mathbf{472.2}_2(56_6)$
$\mathbf{3108.2}_4$(?), $\gamma_{2782.6}\mathbf{325.7}_3(100)$(?)
$\mathbf{3115.7}_2$, $(31/2^+)$, $\gamma_{2847.3}\mathbf{268.4}_1(100)$ M1,E2
$\mathbf{3128.6}_3$, $(31/2^-)$, $\gamma_{2375.3}\mathbf{753.4}_2(100)$
$\mathbf{3159.1}_4$(?), $(29/2^-)$, $\gamma_{2180.6}\mathbf{978.5}_3(100)$(?)
$\mathbf{3196.0}_5$, $(31/2^+)$, $\gamma_{2847.3}\mathbf{348.6}_4(100)$
$\mathbf{3274.0}_3$, $(33/2^+)$, $\gamma_{3196.0}\mathbf{77.5}$, $\gamma_{3128.6}\mathbf{146.0}_4(1.34_{14})$, $\gamma_{3115.7}\mathbf{158.3}_1(100_5)$
$\mathbf{3287.7}_4$(?), $\gamma_{2847.3}\mathbf{440.4}_3(100)$(?)
$\mathbf{3808.4}_3$, $(35/2^-)$, $\gamma_{3128.6}\mathbf{679.7}_1(100)$
$\mathbf{3900.6}_3$, $(35/2^+)$, $\gamma_{3115.7}\mathbf{784.9}_2(100)$
$\mathbf{4148.0}_3$, $(37/2^+)$, $\gamma_{3900.6}\mathbf{247.4}_1(16_2)$, $\gamma_{3808.4}\mathbf{339.8}_4(1.8_2)$, $\gamma_{3274.0}\mathbf{874.0}_1(100_5)$
$\mathbf{4564.8}_3$, $(39/2^+)$, $\gamma_{3900.6}\mathbf{664.1}_1(100)$
$\mathbf{4765.4}_5$, $(39/2^-)$, $\gamma_{3808.4}\mathbf{957.0}_4(100)$
$\mathbf{4773.9}_3$, $(41/2^+)$, $\gamma_{4564.8}\mathbf{209.0}_2(40_2)$, $\gamma_{4148.0}\mathbf{626.0}_1(100_5)$
$\mathbf{4840.2}_3$, $(39/2^-)$, $\gamma_{3808.4}\mathbf{1031.7}_2(100)$
$\mathbf{5034.2}_4$, $(41/2^-)$, $\gamma_{4148.0}\mathbf{886.0}_4(100)$
$\mathbf{5162.4}_3$, $(45/2^+)$, $\gamma_{4773.9}\mathbf{388.5}_1(100)$
$\mathbf{5363.6}_5$, $\gamma_{4765.4}\mathbf{598.2}_4(100)$
$\mathbf{5467.2}_4$, $(43/2^-)$, $\gamma_{4840.2}\mathbf{627.0}_2(100)$
$\mathbf{5474.8}_3$, $(43/2^-)$, $\gamma_{5034.2}\mathbf{440.5}_4(16_2)$, $\gamma_{4840.2}\mathbf{634.0}_4(16_8)$, $\gamma_{4773.9}\mathbf{701.1}_2(100_{10})$
$\mathbf{5656.4}_6$, $\gamma_{4765.4}\mathbf{891.0}_4(100)$
$\mathbf{5818.7}_4$, $(45/2^-)$, $\gamma_{5474.8}\mathbf{343.9}_4(100_{33})$, $\gamma_{5467.2}\mathbf{351.5}_4(33_8)$
$\mathbf{5924.6}_4$, $(45/2^-)$, $\gamma_{5467.2}\mathbf{457.5}_3(100_{10})$, $\gamma_{5363.6}\mathbf{561.0}_4(13_2)$
$\mathbf{5985.1}_3$, $(47/2^-)$, $\gamma_{5818.7}\mathbf{166.6}_4(11_6)$, $\gamma_{5474.8}\mathbf{510.5}_4(18_{10})$, $\gamma_{5162.4}\mathbf{822.7}_2(100_{10})$
$\mathbf{6165.3}_4$, $(49/2^-)$, $\gamma_{5924.6}\mathbf{240.7}_3(100_{24})$, $\gamma_{5818.7}\mathbf{346.4}_4(35_{23})$
$\mathbf{6169.9}_4$, $(49/2^-)$, $\gamma_{5924.6}\mathbf{245.3}_4(100_{10})$, $\gamma_{5818.7}\mathbf{351.1}_4(100_{50})$
$\mathbf{6485.1}_3$, $(49/2^+)$, $\gamma_{5162.4}\mathbf{1322.6}_1(100)$
$\mathbf{6594.0}_4$, $(51/2^-)$, $\gamma_{6169.9}\mathbf{423.9}_4(8_2)$, $\gamma_{6165.3}\mathbf{428.7}_2(100_{10})$
$\mathbf{6673.7}_5$(?), $(49/2^-)$, $\gamma_{5818.7}\mathbf{855.1}_4(100)$(?)
$\mathbf{6879.9}_3$, $(51/2^-)$, $\gamma_{6673.7}\mathbf{206.3}_4(4_1)$, $\gamma_{5985.1}\mathbf{894.8}_1(100_{10})$
$\mathbf{7248.1}_4$, $(53/2^-)$, $\gamma_{6879.9}\mathbf{368.2}_1(100_{10})$, $\gamma_{6594.0}\mathbf{654.6}_4(24_3)$
$\mathbf{7264.6}_3$, $(53/2^+)$, $\gamma_{6594.0}\mathbf{670.8}_4(0.9_1)$, $\gamma_{6485.1}\mathbf{779.6}_1(100_5)$
$\mathbf{7295.8}_4$, $(53/2^-)$, $\gamma_{6879.9}\mathbf{416.3}_4(100_{38})$, $\gamma_{6594.0}\mathbf{700.7}_4(100_{13})$
$\mathbf{7304.3}_3$, $(53/2^+)$, $\gamma_{6594.0}\mathbf{710.4}_4(3.8_4)$, $\gamma_{6485.1}\mathbf{819.1}_1(100_5)$
$\mathbf{7618.8}_4$, $(55/2^+)$, $\gamma_{7295.8}\mathbf{322.3}_4(100)$
$\mathbf{7676.3}_4$, $(55/2^-)$, $\gamma_{7248.1}\mathbf{428.2}_4(100)$
$\mathbf{7764.5}_5$, $(57/2^-)$, $\gamma_{7618.8}\mathbf{145.1}_4(100)$
$\mathbf{7882.4}_4$, $(57/2^-)$, $\gamma_{7764.5}\mathbf{117.2}_4(4.2_4)$, $\gamma_{7676.3}\mathbf{205.9}_2(100_{10})$,

$\gamma_{7248.1}\mathbf{634.6}_2(42_{14})$

7901.6$_3$, $(57/2^+)$, $\gamma_{7618.8}\mathbf{282.8}_4(1.2_6)$, $\gamma_{7304.3}\mathbf{597.2}_1(44_6)$, $\gamma_{7264.6}\mathbf{637.1}_1(100_2)$, $\gamma_{7248.1}\mathbf{653.2}_4(2.1_{12})$

8283.0$_4$, $(61/2^+)$, $\gamma_{7901.6}\mathbf{381.4}_1(100_2)$, $\gamma_{7882.4}\mathbf{400.5}_4(3.2_{11})$

8335.8$_4$, $(59/2^-)$, $\gamma_{7676.3}\mathbf{659.7}_2(100)$

8802.4$_4$, $(61/2^-)$, $\gamma_{8335.8}\mathbf{466.8}_2(100_{10})$, $\gamma_{7882.4}\mathbf{919.9}_4(28_3)$

9035.0$_5$, $(63/2)$, $\gamma_{8283.0}\mathbf{752.1}_4(100)$

9123.5$_4$, $(63/2^-)$, $\gamma_{8802.4}\mathbf{321.2}_2(100_{10})$, $\gamma_{8283.0}\mathbf{840.3}_4(53_{12})$

9379.5$_4$, $(65/2^+)$, $\gamma_{9123.5}\mathbf{256.2}_4(2.6_3)$, $\gamma_{8283.0}\mathbf{1096.5}_1(100_5)$

9406.2$_4$, $(65/2)$, $\gamma_{8283.0}\mathbf{1123.2}_2(100)$

9445.4$_5$, $(63/2)$, $\gamma_{8283.0}\mathbf{1162.4}_4(100)$

9490.2$_4$, $(65/2^+)$, $\gamma_{9123.5}\mathbf{366.9}_4(33_3)$, $\gamma_{9035.0}\mathbf{455.3}_4(43_4)$, $\gamma_{8283.0}\mathbf{1207.0}_2(100_5)$

9530.3$_5$, $(63/2^-)$, $\gamma_{8283.0}\mathbf{1247.3}_4(100)$

9708.7$_5$, $(67/2)$, $\gamma_{9406.2}\mathbf{302.5}_2(100)$

9733.6$_4$, $(65/2^+)$, $\gamma_{9445.4}\mathbf{288.2}_4(78_{33})$, $\gamma_{8283.0}\mathbf{1450.6}_4(100_{33})$

9750.5$_4$, $(67/2^-)$, $\gamma_{9530.3}\mathbf{220.2}_4(1.9_2)$, $\gamma_{9490.2}\mathbf{260.3}_2(11_7)$, $\gamma_{9379.5}\mathbf{371.0}_1(100_5)$

10032.2$_4$, $(67/2^+)$, $\gamma_{9733.6}\mathbf{298.6}_2(75_{39})$, $\gamma_{9379.5}\mathbf{652.7}_2(100_{10})$

10296.7$_6$, $(71/2)$, $\gamma_{9708.7}\mathbf{588.0}_4(100)$

10350.5$_4$, $(69/2^+)$, $\gamma_{10032.2}\mathbf{318.2}_2(100_{33})$, $\gamma_{9379.5}\mathbf{970.9}_2(100_{10})$

10620.3$_6$, $\gamma_{9379.5}\mathbf{1240.8}_4(100)$

10772.3$_6$, $(71/2)$, $\gamma_{9708.7}\mathbf{1063.6}_4(100)$

10792.0$_4$, $(71/2^-)$, $\gamma_{10350.5}\mathbf{441.3}_4(3.4_4)$, $\gamma_{9750.5}\mathbf{1041.5}_1(100_5)$

10997.7$_5$, $(69/2^-)$, $\gamma_{9750.5}\mathbf{1247.0}_4(100)$

11200.5$_6$, $(71/2)$, $\gamma_{9750.5}\mathbf{1450.0}_4(100)$

11201.9$_6$, $\gamma_{10350.5}\mathbf{851.4}_4(100)$

11274.8$_4$, $(71/2^-)$, $\gamma_{10997.7}\mathbf{276.9}_4(100_{10})$, $\gamma_{10350.5}\mathbf{924.3}_4(86_9)$, $\gamma_{9750.5}\mathbf{1523.9}_4(29_7)$

11425.9$_6$, $(73/2^+)$, $\gamma_{10350.5}\mathbf{1075.4}_4(100)$

11593.0$_4$, $(73/2^-)$, $\gamma_{11274.8}\mathbf{317.6}_4(30_{15})$, $\gamma_{10792.0}\mathbf{801.4}_2(100_{10})$

11726.4$_4$, $(75/2^-)$, $\gamma_{11593.0}\mathbf{134.3}_4(1.2_1)$, $\gamma_{10792.0}\mathbf{934.2}_2(100_{10})$

11756.6$_7$, $\gamma_{11425.9}\mathbf{330.7}_4(100)$

11760.6$_7$, $\gamma_{10772.3}\mathbf{988.3}_4(100)$

11830.0$_6$, $(73/2)$, $\gamma_{10792.0}\mathbf{1038.0}_4(100)$

11956.8$_4$, $(75/2^-)$, $\gamma_{10792.0}\mathbf{1164.8}_2(100)$

12704.0$_4$, $(75/2^-)$, $\gamma_{10792.0}\mathbf{1912.0}_2(100)$

12719.9$_5$, $(79/2^-)$, $\gamma_{11956.8}\mathbf{763.0}_4(21_2)$, $\gamma_{11726.4}\mathbf{993.6}_2(100_{10})$

12754.2$_5$, $(79/2^-)$, $\gamma_{11726.4}\mathbf{1027.8}_4(100)$

13019.5$_5$, $(79/2^-)$, $\gamma_{11726.4}\mathbf{1293.1}_4(100)$

13249.3$_7$, $\gamma_{11830.0}\mathbf{1419.3}_4(100)$

13460.7$_6$, $(81/2)$, $\gamma_{12754.2}\mathbf{706.6}_4(60_{20})$, $\gamma_{12719.9}\mathbf{740.8}_4(100_{20})$

13522.7$_6$, $\gamma_{12704.0}\mathbf{818.7}_4(100)$

13524.6$_6$, $\gamma_{11726.4}\mathbf{1798.2}_4(100)$

13791.2$_6$, $(83/2^-)$, $\gamma_{13019.5}\mathbf{771.8}_4(14_2)$, $\gamma_{12719.9}\mathbf{1071.3}_4(100_{14})$

13850.4$_6$, $(79/2^-)$, $\gamma_{12704.0}\mathbf{1146.4}_4(100)$

14538.9$_7$, $\gamma_{13791.2}\mathbf{747.7}_4(100)$

14900.4$_7$, $\gamma_{13850.4}\mathbf{1050.0}_4(100)$

15316.9$_7$, $\gamma_{13850.4}\mathbf{1466.5}_4(100)$

15343.4$_7$, $\gamma_{13850.4}\mathbf{1493.0}_4(100)$

15641.3$_7$, $(87/2^-)$, $\gamma_{13791.2}\mathbf{1850.0}_4(100)$

16589.1$_8$, $(91/2^-)$, $\gamma_{15641.3}\mathbf{947.8}_4(100)$

C **x**, $J\approx(57/2)$

C **726.5+x**, $J+2$, $\gamma_{\mathbf{x}}\mathbf{726.5}_5$

C **1495.8+x**, $J+4$, $\gamma_{726.5+x}\mathbf{769.3}_5(0.30_2)$

C **2307.0+x**, $J+6$, $\gamma_{1495.8+x}\mathbf{811.2}_3(0.61_3)$

C **3161.0+x**, $J+8$, $\gamma_{2307.0+x}\mathbf{854.0}_3(1.04_5)$

C **4058.5+x**, $J+10$, $\gamma_{3161.0+x}\mathbf{897.5}_3(0.97_5)$

C **5001.2+x**, $J+12$, $\gamma_{4058.5+x}\mathbf{942.7}_3(1.00_5)$

C **5989.4+x**, $J+14$, $\gamma_{5001.2+x}\mathbf{988.2}_3(0.97_5)$

C **7023.6+x**, $J+16$, $\gamma_{5989.4+x}\mathbf{1034.2}_3(1.02_6)$

C **8105.6+x**, $J+18$, $\gamma_{7023.6+x}\mathbf{1082.0}_3(1.03_5)$

C **9235.6+x**, $J+20$, $\gamma_{8105.6+x}\mathbf{1130.0}_4(1.07_6)$

C **10413.6+x**, $J+22$, $\gamma_{9235.6+x}\mathbf{1178.0}_3(0.96_5)$

C **11641.5+x**, $J+24$, $\gamma_{10413.6+x}\mathbf{1227.9}_3(0.94_5)$

C **12919.4+x**, $J+26$, $\gamma_{11641.5+x}\mathbf{1277.9}_3(0.78_4)$

C **14247.6+x**, $J+28$, $\gamma_{12919.4+x}\mathbf{1328.2}_8(0.63_4)$

C **15626.9+x**, $J+30$, $\gamma_{14247.6+x}\mathbf{1379.3}_5(0.48_4)$

C **17058.6+x**, $J+32$, $\gamma_{15626.9+x}\mathbf{1431.7}_7(0.25_2)$

C **18541.6+x**, $J+34$, $\gamma_{17058.6+x}\mathbf{1483.0}_7(0.16_2)$

C **20076.8+x**, $J+36$, $\gamma_{18541.6+x}\mathbf{1535.2}_{10}(0.050_{15})$

D **y**, $J_1\approx(49/2)$

D **602.1+y**, J_1+2, $\gamma_{\mathbf{y}}\mathbf{602.1}_8(0.22_7)$

D **1248.5+y**, J_1+4, $\gamma_{602.1+y}\mathbf{646.4}_5(0.39_8)$

D **1940.4+y**, J_1+6, $\gamma_{1248.5+y}\mathbf{691.9}_5(1.04_{15})$

D **2677.8+y**, J_1+8, $\gamma_{1940.4+y}\mathbf{737.4}_3(1.04_{15})$

D **3461.2+y**, J_1+10, $\gamma_{2677.8+y}\mathbf{783.4}_3(1.12_{15})$

D **4289.9+y**, J_1+12, $\gamma_{3461.2+y}\mathbf{828.7}_3(0.91_{13})$

D **5164.7+y**, J_1+14, $\gamma_{4289.9+y}\mathbf{874.8}_3(1.08_{13})$

D **6086.3+y**, J_1+16, $\gamma_{5164.7+y}\mathbf{921.6}_4(0.96_{12})$

D **7054.4+y**, J_1+18, $\gamma_{6086.3+y}\mathbf{968.1}_4(1.00_{13})$

D **8070.1+y**, J_1+20, $\gamma_{7054.4+y}\mathbf{1015.7}_4(0.98_{12})$

D **9133.1+y**, J_1+22, $\gamma_{8070.1+y}\mathbf{1063.0}_5(0.97_{13})$

D **10243.6+y**, J_1+24, $\gamma_{9133.1+y}\mathbf{1110.5}_6(1.00_{14})$

D **11402.2+y**, J_1+26, $\gamma_{10243.6+y}\mathbf{1158.6}_6(0.91_{13})$

D **12609.1+y**, J_1+28, $\gamma_{11402.2+y}\mathbf{1206.9}_8(1.02_{17})$

D **13863.9+y**, J_1+30, $\gamma_{12609.1+y}\mathbf{1254.8}_6(0.77_{10})$

D **15167.1+y**, J_1+32, $\gamma_{13863.9+y}\mathbf{1303.2}_8(0.62_{13})$

D **16519.1+y**, J_1+34, $\gamma_{15167.1+y}\mathbf{1352.0}_8(0.48_7)$

D **17918.6+y**, J_1+36, $\gamma_{16519.1+y}\mathbf{1399.5}_9(0.34_6)$

D **19366.9+y**, J_1+38, $\gamma_{17918.6+y}\mathbf{1448.3}_9(0.21_4)$

D **20861.9+y**, J_1+40, $\gamma_{19366.9+y}\mathbf{1495.0}_{11}(0.13_4)$

E **z**, $J_2\approx(55/2)$

E **681.5+z**, J_2+2, $\gamma_{\mathbf{z}}\mathbf{681.5}_{10}(0.31_{10})$

E **1409.2+z**, J_2+4, $\gamma_{681.5+z}\mathbf{727.7}_8(0.65_6)$

E **2183.1+z**, J_2+6, $\gamma_{1409.2+z}\mathbf{773.9}_5(0.99_8)$

E **3004.3+z**, J_2+8, $\gamma_{2183.1+z}\mathbf{821.2}_8(0.92_{18})$

E **3872.1+z**, J_2+10, $\gamma_{3004.3+z}\mathbf{867.8}_8(1.08_{14})$

E **4787.9+z**, J_2+12, $\gamma_{3872.1+z}\mathbf{915.8}_5(0.99_{11})$

E **5751.5+z**, J_2+14, $\gamma_{4787.9+z}\mathbf{963.6}_{10}(0.86_{10})$

E **6764.8+z**, J_2+16, $\gamma_{5751.5+z}\mathbf{1013.3}_5(1.08_{13})$

E **7826.6+z**, J_2+18, $\gamma_{6764.8+z}\mathbf{1061.8}_5(0.95_{12})$

E **8938.0+z**, J_2+20, $\gamma_{7826.6+z}\mathbf{1111.4}_5(1.04_{12})$

E **10098.8+z**, J_2+22, $\gamma_{8938.0+z}\mathbf{1160.8}_5(0.99_{12})$

E **11308.4+z**, J_2+24, $\gamma_{10098.8+z}\mathbf{1209.6}_5(1.06_{11})$

E **12567.2+z**, J_2+26, $\gamma_{11308.4+z}\mathbf{1258.8}_5(0.94_{11})$

E **13876.8+z**, J_2+28, $\gamma_{12567.2+z}\mathbf{1309.6}_7(0.65_8)$

E **15234.5+z**, J_2+30, $\gamma_{13876.8+z}\mathbf{1357.7}_7(0.52_7)$

E **16642.7+z**, J_2+32, $\gamma_{15234.5+z}\mathbf{1408.2}_8(0.48_6)$

E **18099.5+z**, J_2+34, $\gamma_{16642.7+z}\mathbf{1456.8}_9(0.32_5)$

E **19604.3+z**, J_2+36, $\gamma_{18099.5+z}\mathbf{1504.8}_{10}(0.15_7)$

F **u**, $J_3\approx(63/2)$

F **768.6+u**, J_3+2, $\gamma_{\mathbf{u}}\mathbf{768.6}_5$

F **1584.9+u**, J_3+4, $\gamma_{768.6+u}\mathbf{816.3}_{10}(0.41_8)$

F **2450.2+u**, J_3+6, $\gamma_{1584.9+u}\mathbf{865.3}_6(0.61_{12})$

F **3364.1+u**, J_3+8, $\gamma_{2450.2+u}\mathbf{913.9}_5(0.88_{10})$

F **4326.0+u**, J_3+10, $\gamma_{3364.1+u}\mathbf{961.9}_6(0.95_{12})$

F **5335.4+u**, J_3+12, $\gamma_{4326.0+u}\mathbf{1009.4}_6(1.04_{13})$

F **6392.0+u**, J_3+14, $\gamma_{5335.4+u}\mathbf{1056.6}_5(0.99_9)$

F **7495.8+u**, J_3+16, $\gamma_{6392.0+u}\mathbf{1103.8}_8(1.01_{11})$

F **8648.3+u**, J_3+18, $\gamma_{7495.8+u}\mathbf{1152.5}_6(0.83_{13})$

F **9849.4+u**, J_3+20, $\gamma_{8648.3+u}\mathbf{1201.1}_7(1.12_{12})$

F **11097.9+u**, J_3+22, $\gamma_{9849.4+u}\mathbf{1248.5}_6(1.10_{14})$

F **12394.4+u**, J_3+24, $\gamma_{11097.9+u}\mathbf{1296.5}_7(1.08_{12})$

F **13739.2+u**, J_3+26, $\gamma_{12394.4+u}\mathbf{1344.8}_7(0.77_{13})$

F **15132.1+u**, J_3+28, $\gamma_{13739.2+u}\mathbf{1392.9}_{10}(0.70_7)$

F **16571.4+u**, J_3+30, $\gamma_{15132.1+u}\mathbf{1439.3}_{10}(0.42_6)$

F **18056.9+u**, J_3+32, $\gamma_{16571.4+u}\mathbf{1485.5}_{10}$

G **v**, $J_4\approx(53/2)$

G **709.3+v**, J_4+2, $\gamma_{\mathbf{v}}\mathbf{709.3}_5$

G **1470.2+v**, J_4+4, $\gamma_{709.3+v}\mathbf{760.9}_5$

G **2282.1+v**, J_4+6, $\gamma_{1470.2+v}\mathbf{811.9}_3$

G **3145.6+v**, J_4+8, $\gamma_{2282.1+v}\mathbf{863.5}_7$

G **4059.8+v**, J_4+10, $\gamma_{3145.6+v}\mathbf{913.8}_4$

G **5025.0+v**, J_4+12, $\gamma_{4059.8+v}\mathbf{965.6}_4$

G **6043.2+v**, J_4+14, $\gamma_{5025.0+v}\mathbf{1018.2}_5$

G **7114.5+v**, J_4+16, $\gamma_{6043.2+v}\mathbf{1071.3}_5$

G **8239.2+v**, J_4+18, $\gamma_{7114.5+v}\mathbf{1124.7}_5$

G **9416.3+v**, J_4+20, $\gamma_{8239.2+v}\mathbf{1177.1}_5$

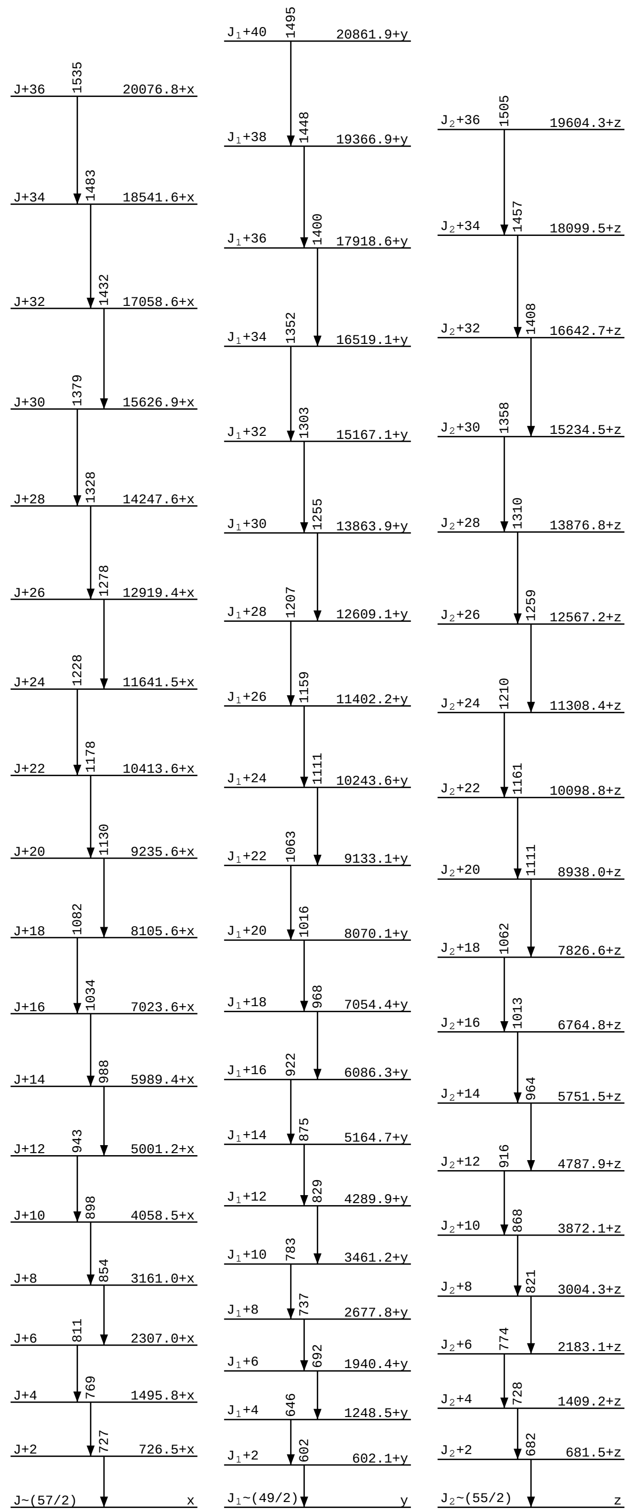
G **10645.6+v**, J_4+22, $\gamma_{9416.3+v}\mathbf{1229.3}_5$

G **11928.3+v**, J_4+24, $\gamma_{10645.6+v}\mathbf{1282.7}_5$

G **13263.7+v**, J_4+26, $\gamma_{11928.3+v}\mathbf{1335.4}_7$

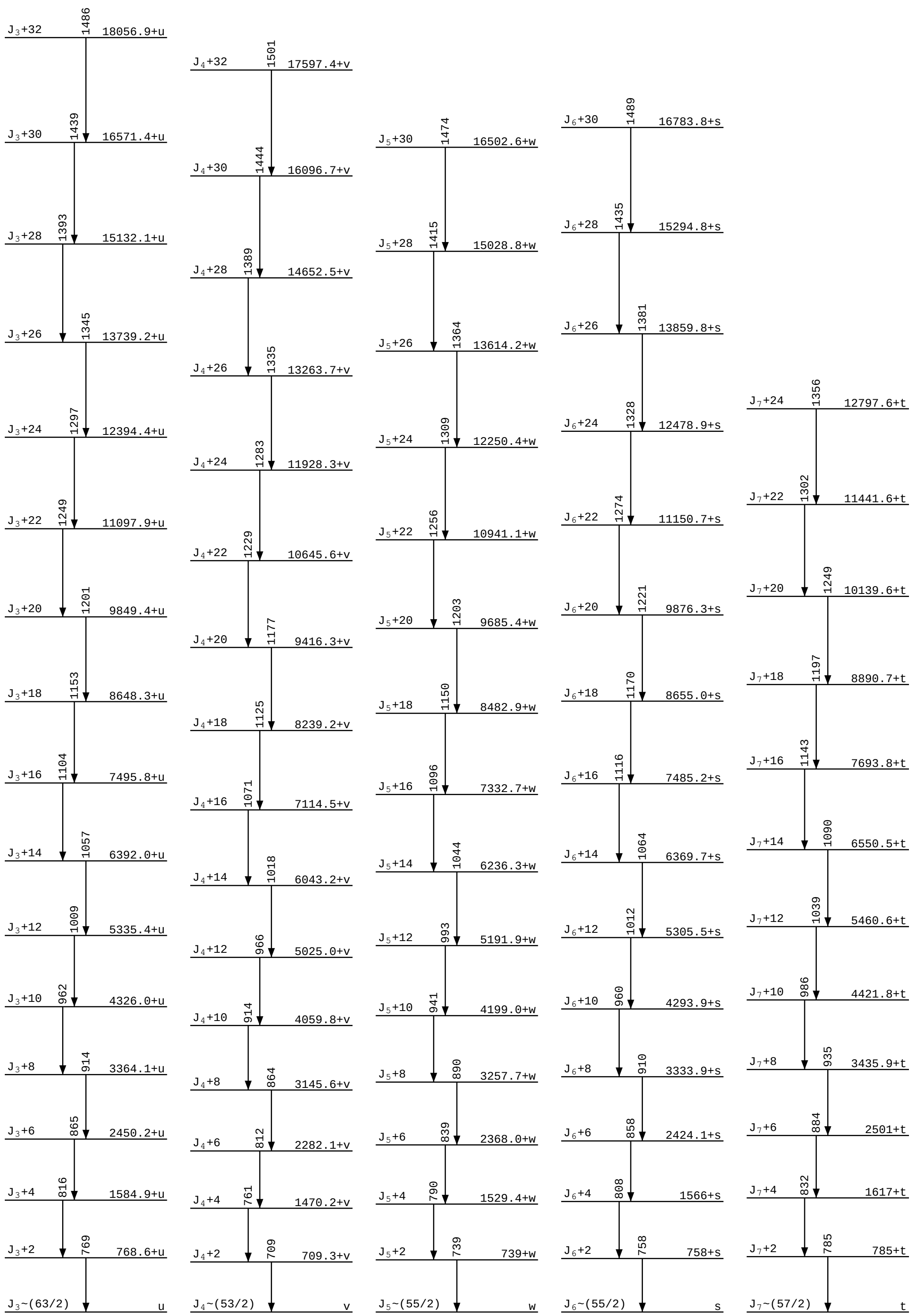
G **14652.5+v**, J_4+28, $\gamma_{13263.7+v}\mathbf{1388.8}_7$

G **16096.7+v**, J_4+30, $\gamma_{\mathbf{14652.5+v}}$**1444.2**$_6$
G **17597.4+v**, J_4+32, $\gamma_{\mathbf{16096.7+v}}$**1500.7**$_8$
H **w**, $J_5 \approx (55/2)$
H **739+w**, J_5+2, $\gamma_{\mathbf{w}}$**739**$_1$
H **1529.4+w**, J_5+4, $\gamma_{\mathbf{739+w}}$**790.4**$_8$
H **2368.0+w**, J_5+6, $\gamma_{\mathbf{1529.4+w}}$**838.6**$_6$
H **3257.7+w**, J_5+8, $\gamma_{\mathbf{2368.0+w}}$**889.7**$_5$
H **4199.0+w**, J_5+10, $\gamma_{\mathbf{3257.7+w}}$**941.3**$_5$
H **5191.9+w**, J_5+12, $\gamma_{\mathbf{4199.0+w}}$**992.9**$_7$
H **6236.3+w**, J_5+14, $\gamma_{\mathbf{5191.9+w}}$**1044.4**$_8$
H **7332.7+w**, J_5+16, $\gamma_{\mathbf{6236.3+w}}$**1096.4**$_8$
H **8482.9+w**, J_5+18, $\gamma_{\mathbf{7332.7+w}}$**1150.2**$_5$
H **9685.4+w**, J_5+20, $\gamma_{\mathbf{8482.9+w}}$**1202.5**$_5$
H **10941.1+w**, J_5+22, $\gamma_{\mathbf{9685.4+w}}$**1255.7**$_5$
H **12250.4+w**, J_5+24, $\gamma_{\mathbf{10941.1+w}}$**1309.3**$_7$
H **13614.2+w**, J_5+26, $\gamma_{\mathbf{12250.4+w}}$**1363.8**$_5$
H **15028.8+w**, J_5+28, $\gamma_{\mathbf{13614.2+w}}$**1414.6**$_5$
H **16502.6+w**, J_5+30, $\gamma_{\mathbf{15028.8+w}}$**1473.8**$_8$
I **s**, $J_6 \approx (55/2)$
I **758+s**, J_6+2, $\gamma_{\mathbf{s}}$**758**$_1$
I **1566+s**, J_6+4, $\gamma_{\mathbf{758+s}}$**808**$_1$
I **2424.1+s**, J_6+6, $\gamma_{\mathbf{1566+s}}$**858.1**$_5$
I **3333.9+s**, J_6+8, $\gamma_{\mathbf{2424.1+s}}$**909.8**$_5$
I **4293.9+s**, J_6+10, $\gamma_{\mathbf{3333.9+s}}$**960.0**$_5$
I **5305.5+s**, J_6+12, $\gamma_{\mathbf{4293.9+s}}$**1011.6**$_5$
I **6369.7+s**, J_6+14, $\gamma_{\mathbf{5305.5+s}}$**1064.2**$_5$
I **7485.2+s**, J_6+16, $\gamma_{\mathbf{6369.7+s}}$**1115.5**$_6$
I **8655.0+s**, J_6+18, $\gamma_{\mathbf{7485.2+s}}$**1169.8**$_6$
I **9876.3+s**, J_6+20, $\gamma_{\mathbf{8655.0+s}}$**1221.3**$_7$
I **11150.7+s**, J_6+22, $\gamma_{\mathbf{9876.3+s}}$**1274.4**$_5$
I **12478.9+s**, J_6+24, $\gamma_{\mathbf{11150.7+s}}$**1328.2**$_7$
I **13859.8+s**, J_6+26, $\gamma_{\mathbf{12478.9+s}}$**1380.9**$_8$
I **15294.8+s**, J_6+28, $\gamma_{\mathbf{13859.8+s}}$**1435**$_1$
I **16783.8+s**, J_6+30, $\gamma_{\mathbf{15294.8+s}}$**1489**$_1$
J **t**, $J_7 \approx (57/2)$
J **785+t**, J_7+2, $\gamma_{\mathbf{t}}$**785**$_1$
J **1617+t**, J_7+4, $\gamma_{\mathbf{785+t}}$**832**$_1$
J **2501+t**, J_7+6, $\gamma_{\mathbf{1617+t}}$**884**$_1$
J **3435.9+t**, J_7+8, $\gamma_{\mathbf{2501+t}}$**934.9**$_5$
J **4421.8+t**, J_7+10, $\gamma_{\mathbf{3435.9+t}}$**985.9**$_5$
J **5460.6+t**, J_7+12, $\gamma_{\mathbf{4421.8+t}}$**1038.8**$_5$
J **6550.5+t**, J_7+14, $\gamma_{\mathbf{5460.6+t}}$**1089.9**$_5$
J **7693.8+t**, J_7+16, $\gamma_{\mathbf{6550.5+t}}$**1143.3**$_7$
J **8890.7+t**, J_7+18, $\gamma_{\mathbf{7693.8+t}}$**1196.9**$_7$
J **10139.6+t**, J_7+20, $\gamma_{\mathbf{8890.7+t}}$**1248.9**$_7$
J **11441.6+t**, J_7+22, $\gamma_{\mathbf{10139.6+t}}$**1302**$_1$
J **12797.6+t**, J_7+24, $\gamma_{\mathbf{11441.6+t}}$**1356**$_1$



SD-1 band (1989Fa02,1993Cu06) SD-2 band (1990By01,1993Cu06) SD-3 band (1995Kh06,1997Fi03)

$^{151}_{65}$Tb$_{86}$



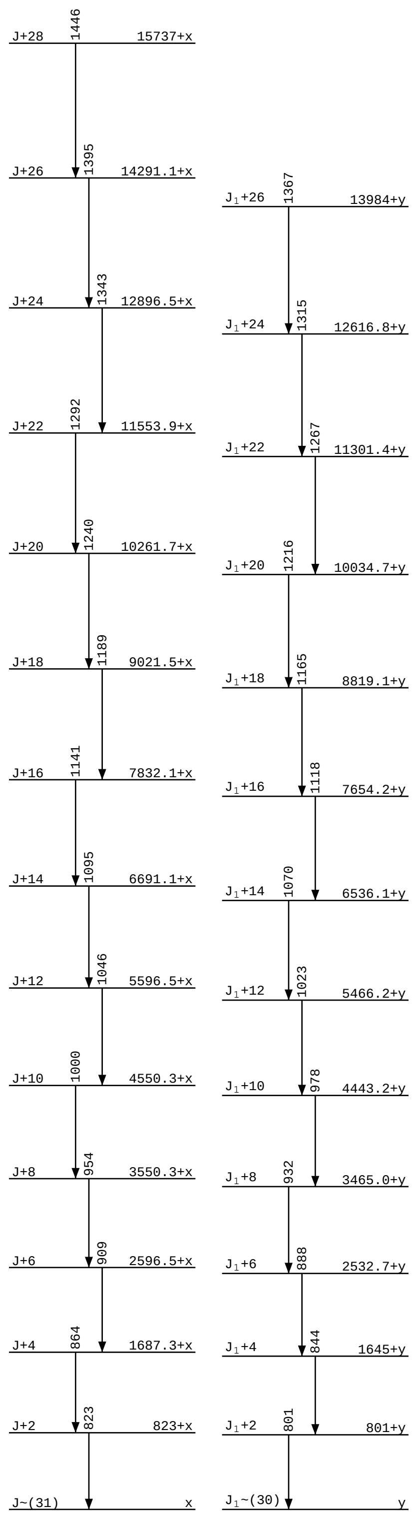
SD-4 band (1995Kh06) | SD-5 band (1994De33,1995Kh06) | SD-6 band (1994De33,1995Kh06) | SD-7 band (1994De33,1995Kh06) | SD-8 band (1994De33,1995Kh06)

$^{151}_{65}\mathrm{Tb}_{86}$

$^{152}_{65}Tb_{87}$

S_n: 7160 $_{40}$, S_p: 3820 $_{40}$
Nuclear Bands
A $\pi h_{11/2}\nu i_{13/2}$
B $\pi h_{11/2}\nu h_{9/2}$
C $\pi h_{11/2}\nu f_{7/2}$
D SD-1 band (1994De33)
E SD-2 band (1994De33)
Levels and γ-ray branchings:

0, 2^-, *17.5$_1$ h*, %ε+%β^+=100, %α <7x10^{-7}, μ=-0.58$_2$, Q=+0.34$_{13}$
235.39$_9$, 3^-, γ_0**235.4**$_1$ M1
256.93$_{13}$, 1^+, *0.39$_8$ ns*, γ_0**256.93**$_{13}$ E1
277.19$_{10}$, 3^-, γ_0**277.2**$_1$ M1
283.29$_5$, 4^-, $\gamma_{277.19}$**(6.10)**, $\gamma_{235.39}$**48.0**$_2$(1.97$_{15}$) (M1), γ_0**283.29**$_5$(100) E2
342.15$_{16}$, 5^-, *0.96 μs*, $\gamma_{283.29}$**58.9**$_2$(100$_6$) (M1), $\gamma_{277.19}$**65.0**$_3$(2.7$_2$), $\gamma_{235.39}$**106.6**$_3$(3.7$_2$)
C **501.74**$_{19}$, 8^+, *4.2$_1$ min*, %IT=78.8$_8$, %ε+%β^+=21.2$_8$, $\gamma_{342.15}$**159.59**$_{10}$ E3
C **600.3**, 9^+, *<2 ns*, $\gamma_{501.74}$**98.55** M1(+E2) $\delta=-0.05_{10}$
B **806.1**, 10^+, *<2 ns*, $\gamma_{600.3}$**205.74**(100) D(+Q) $\delta=+0.01_5$, $\gamma_{501.74}$**304.33**(13) E2
A **1212.4**, (9^-), *<2 ns*, $\gamma_{600.3}$**612.1**(41) D+Q, $\gamma_{501.74}$**710.7**(100) D
C **1230.1**, 11^+, *<2 ns*, $\gamma_{600.3}$**629.8** E2
A **1237.7**, $11^{(-)}$, *4.2$_2$ ns*, $\gamma_{1212.4}$**(25.3)**, $\gamma_{806.1}$**431.66**(100) (E1+M2) $\delta=+0.15_5$
B **1349.2**, 12^+, *<2 ns*, $\gamma_{806.1}$**543.1** E2
A **1370.2**, $12^{(-)}$, *<2 ns*, $\gamma_{1237.7}$**132.44** D(+Q) $\delta=+0.05_3$
A **1712.1**, $13^{(-)}$, *<2 ns*, $\gamma_{1237.7}$**474.37** E2
B **1887.7**, 14^+, *<2 ns*, $\gamma_{1349.2}$**538.5**(100) E2
C **1887.8**, (13^+), *<2 ns*, $\gamma_{1230.1}$**657.7**
A **1920.3**, $14^{(-)}$, *<2 ns*, $\gamma_{1712.1}$**208.11**(72) D(+Q) $\delta=+0.01_5$, $\gamma_{1370.2}$**550.1**(100) E2
A **2269.3**, $15^{(-)}$, *<2 ns*, $\gamma_{1712.1}$**557.3**(100) E2
A **2499.4**, $16^{(-)}$, *<2 ns*, $\gamma_{2269.3}$**229.93**(58) D(+Q) $\delta=+0.06_6$, $\gamma_{1920.3}$**579.3**(100) E2
2660.6, (16^-), $\gamma_{2269.3}$**391.5**(100), $\gamma_{1920.3}$**740.1**(85) E2
B **2688.6**, 16^+, $\gamma_{1887.7}$**800.9**(100) E2
2852, (17^-), $\gamma_{2660.6}$**191**
A **2889.4**, $17^{(-)}$, *<2 ns*, $\gamma_{2269.3}$**620.0**(100) E2
A **3126.7**, $18^{(-)}$, *<2 ns*, $\gamma_{2889.4}$**237.1**(43), $\gamma_{2499.4}$**627.4**(100) E2
3218.3, (18^+), *<2 ns*, $\gamma_{2889.4}$**328.8** D
3250.5, (19^-), $\gamma_{3218.3}$**32**, $\gamma_{3126.7}$**123.78** D, γ_{2852}**399**
A **3596.2**, $19^{(-)}$, *<2 ns*, $\gamma_{2889.4}$**706.7** E2
3720, (20^-), $\gamma_{3250.5}$**469**, $\gamma_{3126.7}$**593**
A **3845.3**, $20^{(-)}$, *<2 ns*, $\gamma_{3126.7}$**718.6** E2
4002, (21), γ_{3720}**282**
4234, (21^-), $\gamma_{3250.5}$**983**
A **4350.2**, $21^{(-)}$, *<2 ns*, $\gamma_{3596.2}$**754.0**(100) E2
4354, (22), γ_{4002}**352**
4361, (21^-), $\gamma_{3596.2}$**765**
4454, (24), γ_{4002}**452**
4502, (22^-), γ_{3720}**782**
4694, (23), γ_{4454}**240**
5103, (23^-), γ_{4361}**742**, γ_{4234}**869**
5182, (23^-), γ_{4361}**821**
5249, (24), γ_{4694}**555**, γ_{4354}**895**
5257, (24^-), γ_{4502}**755**, γ_{4454}**804**
5966, (25^-), γ_{5182}**785**, γ_{5103}**863**
5969, (26^-), γ_{5257}**712**
5985, (26)
6011, (25^-), γ_{5182}**829**, γ_{5103}**908**
6093, (26), γ_{5249}**844**
6371, (27^-), γ_{6011}**361**, γ_{5966}**405**
6696, (28), γ_{6093}**603**, γ_{5985}**711**
6873, (28^+), γ_{6371}**502**, γ_{5969}**904**
6916, (29^-), γ_{6696}**220**
7284, (29^-), γ_{6371}**913**
7617, (30^+), γ_{7284}**333**, γ_{6873}**744**
7728, (31^-), γ_{7284}**444**, γ_{6916}**813**
8290, (31), γ_{7284}**1006**
8371, (32^+), γ_{7617}**754**
8502, (31), γ_{7284}**1218**
8565, (33^-), γ_{7728}**837**
8961, (33), γ_{8290}**671**
9147, (34^+), γ_{8371}**776**
9389, (35^-), γ_{8565}**824**
9792, (36^+), γ_{9147}**645**
9804, (35), γ_{8961}**843**
9923, (37^-), γ_{9389}**534**
10283, (36^+), γ_{9147}**1136**
10614, (38^+), γ_{10283}**330**, γ_{9923}**691**, γ_{9792}**822**
10996, (39^-), γ_{9923}**1073**
11654, (40^+), γ_{10614}**1040**
12054, (41^-), γ_{10996}**1058**
12761, (42^+), γ_{11654}**1107**
13278, (43^-), γ_{12054}**1224**
13929, (44^+), γ_{12761}**1168**
D **x**, $J\approx(31)$
D **823+x**, $J+2$, γ_x**823**$_1$
D **1687.3+x**, $J+4$, γ_{823+x}**864.3**$_6$
D **2596.5+x**, $J+6$, $\gamma_{1687.3+x}$**909.2**$_5$
D **3550.3+x**, $J+8$, $\gamma_{2596.5+x}$**953.8**$_5$
D **4550.3+x**, $J+10$, $\gamma_{3550.3+x}$**1000.0**$_5$
D **5596.5+x**, $J+12$, $\gamma_{4550.3+x}$**1046.2**$_4$
D **6691.1+x**, $J+14$, $\gamma_{5596.5+x}$**1094.6**$_7$
D **7832.1+x**, $J+16$, $\gamma_{6691.1+x}$**1141.0**$_8$
D **9021.5+x**, $J+18$, $\gamma_{7832.1+x}$**1189.4**$_7$
D **10261.7+x**, $J+20$, $\gamma_{9021.5+x}$**1240.2**$_7$
D **11553.9+x**, $J+22$, $\gamma_{10261.7+x}$**1292.2**$_6$
D **12896.5+x**, $J+24$, $\gamma_{11553.9+x}$**1342.6**$_8$
D **14291.1+x**, $J+26$, $\gamma_{12896.5+x}$**1394.6**$_8$
D **15737+x**, $J+28$, $\gamma_{14291.1+x}$**1446**$_1$
E **y**, $J_1\approx(30)$
E **801+y**, J_1+2, γ_y**801**$_1$
E **1645+y**, J_1+4, γ_{801+y}**844**$_1$
E **2532.7+y**, J_1+6, γ_{1645+y}**887.7**$_5$
E **3465.0+y**, J_1+8, $\gamma_{2532.7+y}$**932.3**$_5$
E **4443.2+y**, J_1+10, $\gamma_{3465.0+y}$**978.2**$_6$
E **5466.2+y**, J_1+12, $\gamma_{4443.2+y}$**1023.0**$_6$
E **6536.1+y**, J_1+14, $\gamma_{5466.2+y}$**1069.9**$_5$
E **7654.2+y**, J_1+16, $\gamma_{6536.1+y}$**1118.1**$_6$
E **8819.1+y**, J_1+18, $\gamma_{7654.2+y}$**1164.9**$_7$
E **10034.7+y**, J_1+20, $\gamma_{8819.1+y}$**1215.6**$_6$
E **11301.4+y**, J_1+22, $\gamma_{10034.7+y}$**1266.7**$_7$
E **12616.8+y**, J_1+24, $\gamma_{11301.4+y}$**1315.4**$_7$
E **13984+y**, J_1+26, $\gamma_{12616.8+y}$**1367**$_1$



SD-1 band (1994De33) SD-2 band (1994De33)

$^{152}_{65}$Tb$_{87}$

$^{151}_{66}\mathbf{Dy}_{85}$

S_n: 7513 $_5$, S_p: 4937 $_8$

Nuclear Bands

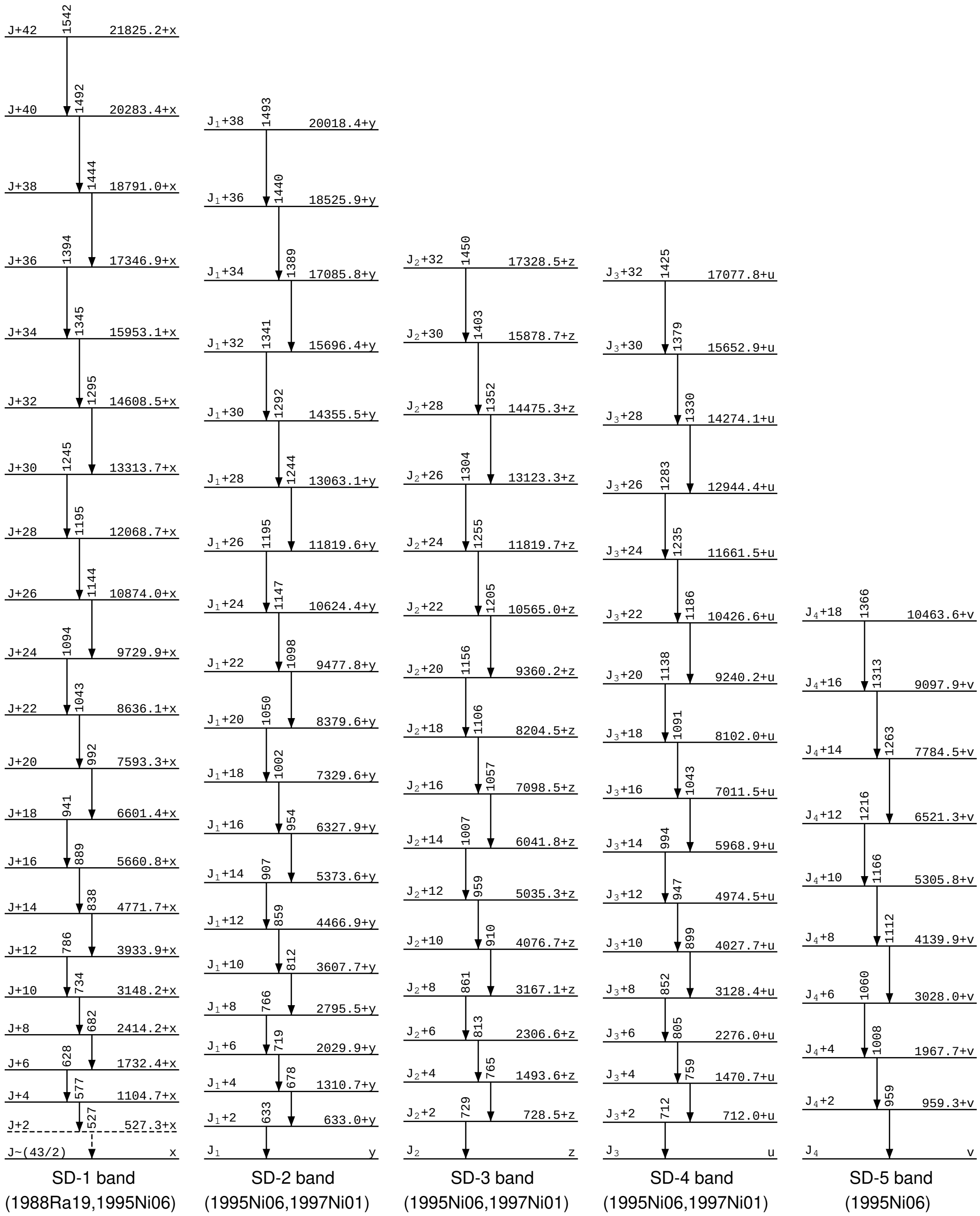
- A SD-1 band (1988Ra19,1995Ni06,1997Ni01,1992Mu10)
  $Q_0=16.9^{2}_{3}$
- B SD-2 band (1995Ni06,1997Ni01)
  $Q_0=18.2_4$
- C SD-3 band (1995Ni06,1997Ni01)
  $Q_0=17.9_6$
- D SD-4 band (1995Ni06,1997Ni01)
  $Q_0=17.5^{11}_{7}$
- E SD-5 band (1995Ni06)

Levels and γ-ray branchings:

0, $7/2^{(-)}$, *17.9$_3$ min*, %ε+%β^+=94.4$_4$, %α=5.6$_4$, μ=-0.945$_7$, Q=-0.30$_5$
527.38$_9$, $(9/2^-)$, γ_{0}**527.4**$_1$(100) D
775.57$_{11}$, $(11/2^-)$, γ_{0}**775.53**$_{15}$(100) E2
968.61$_{13}$, $(13/2^+)$, $\gamma_{775.57}$**193.0**$_1$(100) D
984.75$_{22}$, $\gamma_{775.57}$**209.5**$_2$(100)
1334.5$_3$, $\gamma_{984.75}$**350.8**$_8$(22$_{13}$), $\gamma_{968.61}$**366.0**$_3$(100$_{13}$), $\gamma_{775.57}$**559.4**$_5$(50$_{13}$)
1348.7$_1$, $(13/2^-)$, $\gamma_{775.57}$**573.2**$_5$(7.5$_{15}$) (D), $\gamma_{527.38}$**821.32**$_5$(100$_2$) E2
1511.16$_{12}$, $(15/2^-)$, $\gamma_{968.61}$**542.5**$_1$(10$_3$) (D), $\gamma_{775.57}$**735.59**$_5$(100$_3$) E2
1549.52$_{19}$, $(9/2,11/2^-)$, $\gamma_{968.61}$**580.5**$_{10}$(≈ 14), $\gamma_{527.38}$**1021.5**$_5$(36$_8$), γ_{0}**1549.7**$_2$(100$_7$)
1733.7(?), $(17/2^+)$, $\gamma_{968.61}$**765.3**$_3$(100) E2(?)
1856.6$_3$(?), $\gamma_{984.75}$**871.0**$_{10}$(≈ 71), $\gamma_{775.57}$**1081.4**$_3$(100$_{11}$)
1918.58$_{11}$, $(17/2^-)$, $\gamma_{1511.16}$**407.4**$_1$(43.2$_{13}$) (D), $\gamma_{1348.7}$**569.88**$_5$(100$_2$) E2
1961.3$_6$, $\gamma_{775.57}$**1185.7**$_{10}$(≈ 77), $\gamma_{527.38}$**1434.3**$_6$(100$_{31}$)
2263.02$_{11}$, $(21/2^-)$, $\gamma_{1918.58}$**344.44**$_4$(100) E2
2402.0(?), $(21/2^+)$, $\gamma_{1733.7}$**668.3**$_3$(100) E2(?)
2554.3$_3$(?), $\gamma_{775.57}$**1779.1**$_3$(100$_9$), $\gamma_{527.38}$**2026.9**$_5$(41$_3$)
2582.9$_5$(?), $\gamma_{775.57}$**1807.7**$_6$(55$_{18}$), $\gamma_{527.38}$**2055.7**$_8$(100$_{36}$)
2866.1$_4$(?), $\gamma_{984.75}$**1881.4**$_3$(100$_{11}$), $\gamma_{775.57}$**2090.4**$_{11}$(21$_{11}$)
2911.66$_{12}$, $(25/2^-)$, $\gamma_{2263.02}$**648.64**$_5$(100) E2
2958.6$_{10}$, $(27/2^-)$, *1.3$_6$ ns*, $\gamma_{2911.66}$**46.9**(100) M1
3078.2(?), $(25/2^+)$, $\gamma_{2402.0}$**675.7**$_3$(100) E2(?)
3428.5$_{11}$, $(29/2)$, $\gamma_{2958.6}$**469.91**$_{12}$(100) D
3733.9$_{11}$, $(31/2^-)$, $\gamma_{3428.5}$**305.3**, $\gamma_{2958.6}$**775.38**$_{15}$ E2
4306.3$_{11}$, $(33/2)$, $\gamma_{3733.9}$**572.5**$_5$(100$_{14}$) (D), $\gamma_{3428.5}$**877.79**$_{16}$(43$_{13}$) (E2)
4387.3$_{11}$, $(35/2^-)$, $\gamma_{3733.9}$**653.37**$_6$(100) E2
4741.5$_{11}$, $(37/2)$, $\gamma_{4387.3}$**354.28**$_7$(100$_2$) D, $\gamma_{4306.3}$**435.16**$_{13}$(22.9$_{21}$) E2
4903.8$_{11}$, $(41/2)$, *5.9$_7$ ns*, $\gamma_{4741.5}$**162.32**$_5$(100) E2
5742.9$_{11}$, $(43/2)$, $\gamma_{4903.8}$**839.02**$_{10}$(100) E1
6007.2$_{11}$, $(47/2)$, $\gamma_{5742.9}$**264.29**$_8$(100) E2
6032.2$_{15}$, $(49/2^+)$, *11.9$_8$ ns*, $\gamma_{6007.2}$**25.0**(100) D,E2
7037.5$_{15}$, $(51/2^-)$, *1.2$_6$ ps*, $\gamma_{6032.2}$**1005.3**$_3$(100) E1
7219.5$_{15}$, $(53/2^-)$, *13.7$_6$ ps*, $\gamma_{7037.5}$**182.07**$_9$(100) D
8177.8$_{15}$, $(55/2^-)$, *4.5$_{15}$ ps*, $\gamma_{7219.5}$**958.2**$_3$(100) M1
8302.7$_{15}$, $(57/2^-)$, *20.8$_{12}$ ps*, $\gamma_{8177.8}$**124.8**$_3$(14$_2$) D, $\gamma_{7219.5}$**1083.2**$_3$(100$_{10}$) E2
8680.3$_{15}$, $(59/2^-)$, *2.0$_3$ ps*, $\gamma_{8302.7}$**377.7**$_3$(100) M1
8891.7$_{15}$, $(61/2^-)$, *19.8$_{20}$ ps*, $\gamma_{8680.3}$**211.5**$_3$(99$_{10}$) D, $\gamma_{8302.7}$**589.0**$_3$(100$_{10}$) E2
9813.4$_{18}$(?), $\gamma_{8680.3}$**1133**$_1$(?)
10029.8$_{16}$, $(63/2)$, *<1.4 ps*, $\gamma_{8891.7}$**1138.1**$_3$(100) (D)
10131.3$_{18}$(?), $\gamma_{8680.3}$**1451**$_1$(100)
10279.1$_{21}$(?), $\gamma_{10131.3}$**148**$_1$(100)
10320.7$_{18}$(?) *<1.4 ps*, $\gamma_{10029.8}$**291.1**$_3$(100) (D)
10562.6$_{19}$(?) *<1.4 ps*, $\gamma_{10320.7}$**242**$_1$, $\gamma_{10029.8}$**533**$_1$(?), $\gamma_{9813.4}$**749.1**$_3$ (D)
10749.9$_{22}$(?), $\gamma_{10279.1}$**471**$_1$
11143.5$_{21}$(?), $\gamma_{10279.1}$**864**$_1$(?), $\gamma_{10131.3}$**1012**$_1$
11840.7$_{22}$(?), $\gamma_{11143.5}$**697**$_1$, $\gamma_{10749.9}$**1091**$_1$, $\gamma_{10562.6}$**1281**$_1$

A **x**, J ≈ (43/2)
A **527.3+x**(?), J+2, γ_{x}**527.3**$_1$(0.21$_{15}$)(?)
A **1104.7+x**, J+4, $\gamma_{527.3+x}$**577.4**$_1$(0.62$_5$)
A **1732.4+x**, J+6, $\gamma_{1104.7+x}$**627.7**$_1$(0.78$_{10}$)
A **2414.2+x**, J+8, $\gamma_{1732.4+x}$**681.8**$_1$(0.81$_7$)
A **3148.2+x**, J+10, $\gamma_{2414.2+x}$**734.0**$_1$(0.90$_{10}$)
A **3933.9+x**, J+12, $\gamma_{3148.2+x}$**785.7**$_1$(0.91$_{10}$)
A **4771.7+x**, J+14, $\gamma_{3933.9+x}$**837.8**$_1$(1.00$_{10}$)
A **5660.8+x**, J+16, $\gamma_{4771.7+x}$**889.1**$_1$(0.93$_{10}$)
A **6601.4+x**, J+18, $\gamma_{5660.8+x}$**940.6**$_1$(1.03$_{10}$)
A **7593.3+x**, J+20, $\gamma_{6601.4+x}$**991.9**$_1$(1.07$_{15}$)
A **8636.1+x**, J+22, $\gamma_{7593.3+x}$**1042.8**$_1$(1.02$_{10}$)
A **9729.9+x**, J+24, $\gamma_{8636.1+x}$**1093.8**$_1$(1.00$_{10}$)
A **10874.0+x**, J+26, $\gamma_{9729.9+x}$**1144.1**$_1$(0.69$_7$)
A **12068.7+x**, J+28, $\gamma_{10874.0+x}$**1194.7**$_1$(0.59$_7$)
A **13313.7+x**, J+30, $\gamma_{12068.7+x}$**1245.0**$_1$(0.57$_{10}$)
A **14608.5+x**, J+32, $\gamma_{13313.7+x}$**1294.8**$_2$(0.48$_7$)
A **15953.1+x**, J+34, $\gamma_{14608.5+x}$**1344.6**$_2$(0.34$_7$)
A **17346.9+x**, J+36, $\gamma_{15953.1+x}$**1393.8**$_3$(0.38$_7$)
A **18791.0+x**, J+38, $\gamma_{17346.9+x}$**1444.1**$_4$(0.22$_5$)
A **20283.4+x**, J+40, $\gamma_{18791.0+x}$**1492.4**$_6$(0.09$_5$)
A **21825.2+x**, J+42, $\gamma_{20283.4+x}$**1541.8**$_6$
B **y**, J_1
B **633.0+y**, J_1+2, γ_{y}**633.0**$_{10}$
B **1310.7+y**, J_1+4, $\gamma_{633.0+y}$**677.7**$_5$(0.35$_8$)
B **2029.9+y**, J_1+6, $\gamma_{1310.7+y}$**719.2**$_1$(0.67$_{10}$)
B **2795.5+y**, J_1+8, $\gamma_{2029.9+y}$**765.6**$_1$(0.95$_{13}$)
B **3607.7+y**, J_1+10, $\gamma_{2795.5+y}$**812.2**$_1$(0.92$_{13}$)
B **4466.9+y**, J_1+12, $\gamma_{3607.7+y}$**859.2**$_1$(0.94$_{14}$)
B **5373.6+y**, J_1+14, $\gamma_{4466.9+y}$**906.7**$_1$(1.10$_{10}$)
B **6327.9+y**, J_1+16, $\gamma_{5373.6+y}$**954.3**$_1$(1.00$_8$)
B **7329.6+y**, J_1+18, $\gamma_{6327.9+y}$**1001.7**$_2$(1.00$_{12}$)
B **8379.6+y**, J_1+20, $\gamma_{7329.6+y}$**1050.0**$_1$(1.02$_{19}$)
B **9477.8+y**, J_1+22, $\gamma_{8379.6+y}$**1098.2**$_1$(0.95$_8$)
B **10624.4+y**, J_1+24, $\gamma_{9477.8+y}$**1146.6**$_2$(0.74$_7$)
B **11819.6+y**, J_1+26, $\gamma_{10624.4+y}$**1195.2**$_2$(0.67$_7$)
B **13063.1+y**, J_1+28, $\gamma_{11819.6+y}$**1243.5**$_2$(0.54$_7$)
B **14355.5+y**, J_1+30, $\gamma_{13063.1+y}$**1292.4**$_2$(0.45$_8$)
B **15696.4+y**, J_1+32, $\gamma_{14355.5+y}$**1340.9**$_3$(0.35$_8$)
B **17085.8+y**, J_1+34, $\gamma_{15696.4+y}$**1389.4**$_3$(0.18$_6$)
B **18525.9+y**, J_1+36, $\gamma_{17085.8+y}$**1440.1**$_5$(0.18$_6$)
B **20018.4+y**, J_1+38, $\gamma_{18525.9+y}$**1492.5**$_{10}$
C **z**, J_2
C **728.5+z**, J_2+2, γ_{z}**728.5**$_1$
C **1493.6+z**, J_2+4, $\gamma_{728.5+z}$**765.1**$_2$
C **2306.6+z**, J_2+6, $\gamma_{1493.6+z}$**813.0**$_1$
C **3167.1+z**, J_2+8, $\gamma_{2306.6+z}$**860.5**$_2$
C **4076.7+z**, J_2+10, $\gamma_{3167.1+z}$**909.6**$_2$
C **5035.3+z**, J_2+12, $\gamma_{4076.7+z}$**958.6**$_2$
C **6041.8+z**, J_2+14, $\gamma_{5035.3+z}$**1006.5**$_1$
C **7098.5+z**, J_2+16, $\gamma_{6041.8+z}$**1056.7**$_2$
C **8204.5+z**, J_2+18, $\gamma_{7098.5+z}$**1106.0**$_2$
C **9360.2+z**, J_2+20, $\gamma_{8204.5+z}$**1155.7**$_2$
C **10565.0+z**, J_2+22, $\gamma_{9360.2+z}$**1204.8**$_2$
C **11819.7+z**, J_2+24, $\gamma_{10565.0+z}$**1254.7**$_2$
C **13123.3+z**, J_2+26, $\gamma_{11819.7+z}$**1303.6**$_2$
C **14475.3+z**, J_2+28, $\gamma_{13123.3+z}$**1352.0**$_4$
C **15878.7+z**, J_2+30, $\gamma_{14475.3+z}$**1403.4**$_5$
C **17328.5+z**, J_2+32, $\gamma_{15878.7+z}$**1449.8**$_6$
D **u**, J_3
D **712.0+u**, J_3+2, γ_{u}**712.0**$_4$(0.41$_{10}$)
D **1470.7+u**, J_3+4, $\gamma_{712.0+u}$**758.7**$_3$(0.92$_{15}$)
D **2276.0+u**, J_3+6, $\gamma_{1470.7+u}$**805.3**$_2$(0.96$_{15}$)
D **3128.4+u**, J_3+8, $\gamma_{2276.0+u}$**852.4**$_2$(1.00$_{20}$)
D **4027.7+u**, J_3+10, $\gamma_{3128.4+u}$**899.3**$_2$(0.84$_{20}$)
D **4974.5+u**, J_3+12, $\gamma_{4027.7+u}$**946.8**$_4$(1.00$_{19}$)
D **5968.9+u**, J_3+14, $\gamma_{4974.5+u}$**994.4**$_2$(1.08$_{22}$)
D **7011.5+u**, J_3+16, $\gamma_{5968.9+u}$**1042.6**$_4$(1.00$_{18}$)
D **8102.0+u**, J_3+18, $\gamma_{7011.5+u}$**1090.5**$_2$(0.98$_{18}$)
D **9240.2+u**, J_3+20, $\gamma_{8102.0+u}$**1138.2**$_2$(0.68$_{12}$)
D **10426.6+u**, J_3+22, $\gamma_{9240.2+u}$**1186.4**$_6$(0.48$_{10}$)
D **11661.5+u**, J_3+24, $\gamma_{10426.6+u}$**1234.9**$_3$(0.41$_{15}$)
D **12944.4+u**, J_3+26, $\gamma_{11661.5+u}$**1282.9**$_2$(0.35$_{12}$)
D **14274.1+u**, J_3+28, $\gamma_{12944.4+u}$**1329.7**$_6$(0.16$_8$)
D **15652.9+u**, J_3+30, $\gamma_{14274.1+u}$**1378.8**$_8$(0.17$_8$)

D **17077.8+u**, J_3+32, $\gamma_{\mathbf{15652.9+u}}$**1424.9**$_{10}$
E **v**, J_4
E **959.3+v**, J_4+2, $\gamma_{\mathbf{v}}$**959.3**$_5$
E **1967.7+v**, J_4+4, $\gamma_{\mathbf{959.3+v}}$**1008.4**$_5$
E **3028.0+v**, J_4+6, $\gamma_{\mathbf{1967.7+v}}$**1060.3**$_4$
E **4139.9+v**, J_4+8, $\gamma_{\mathbf{3028.0+v}}$**1111.9**$_5$
E **5305.8+v**, J_4+10, $\gamma_{\mathbf{4139.9+v}}$**1165.9**$_5$
E **6521.3+v**, J_4+12, $\gamma_{\mathbf{5305.8+v}}$**1215.5**$_5$
E **7784.5+v**, J_4+14, $\gamma_{\mathbf{6521.3+v}}$**1263.2**$_5$
E **9097.9+v**, J_4+16, $\gamma_{\mathbf{7784.5+v}}$**1313.4**$_8$
E **10463.6+v**, J_4+18, $\gamma_{\mathbf{9097.9+v}}$**1365.7**$_5$



$^{151}_{66}\mathrm{Dy}_{85}$

$^{152}_{66}\mathrm{Dy}_{86}$

S_n: 9437 $_5$, S_p: 5784 $_6$

Nuclear Bands

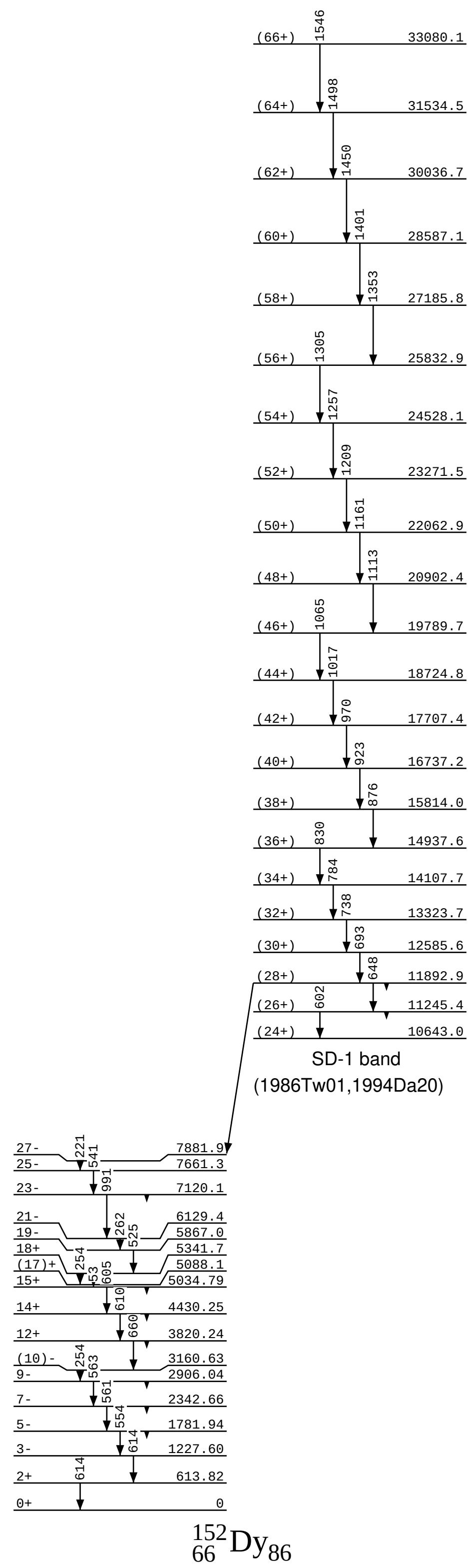
A ν1/2[660]$^2\nu$3/2[532]$^2\pi h^2_{11/2}$
B ν(1/2[660](α=+1/2)3/2[532](α=-1/2)) $\pi h^2_{11/2}$
C ν(1/2[660](α=+1/2)3/2[532](α=+1/2)) $\pi h^2_{11/2}$
D SD-1 band (1986Tw01,1994Da20,1991Be12,2002La02,1997Ni01, 1996Sa15,1995Ce08,1992Sm01,1992Mu10) Q_0=17.5$^4_2$
E SD-2 band (1994Da20)
F SD-3 band (1994Da20)
G SD-4 band (1994Da20)
H SD-5 band (1994Da20)
I SD-6 band (1994Da20)

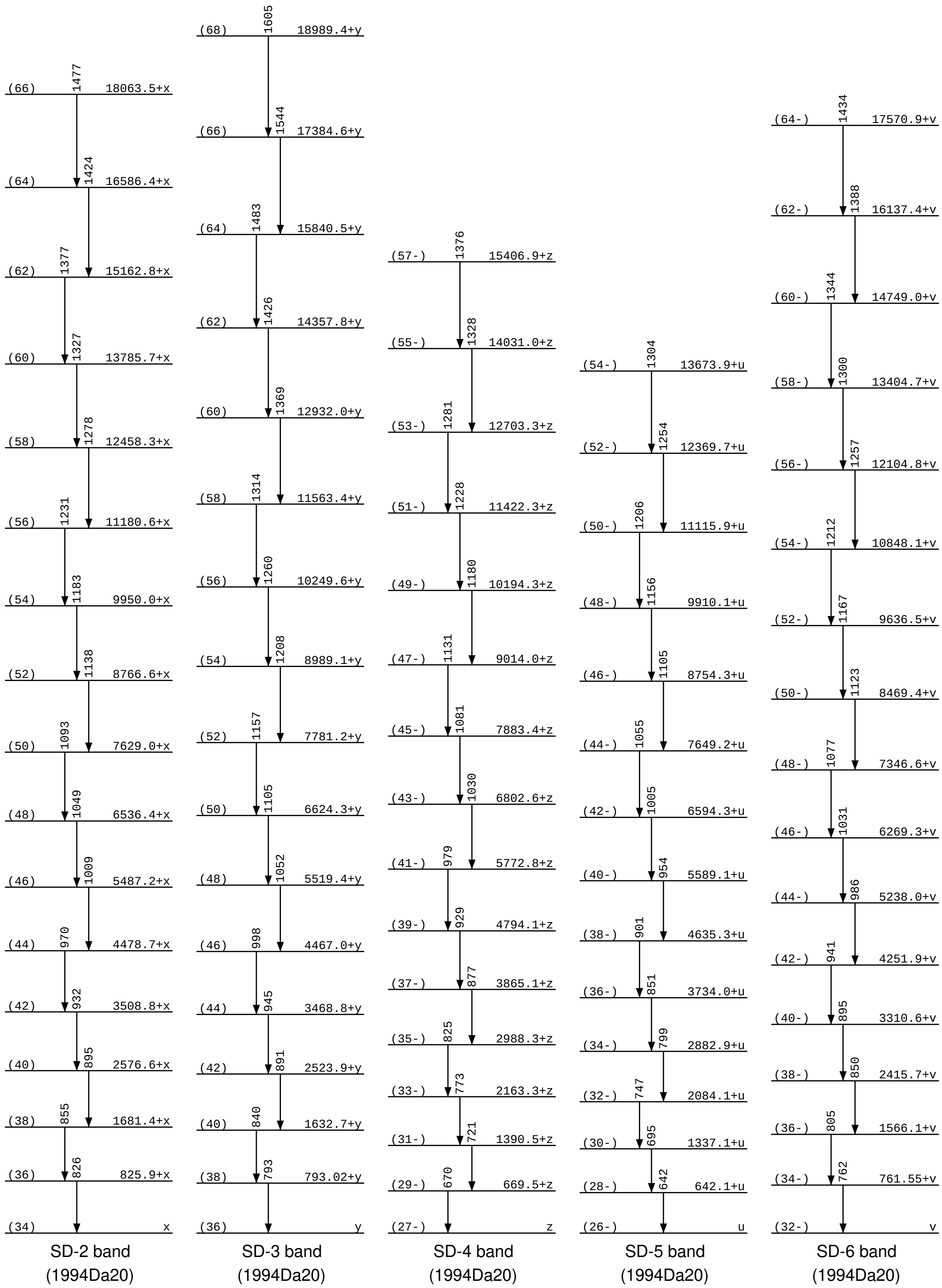
Levels and γ-ray branchings:

0, 0^+, *2.38$_2$ h*, %ε+%β^+=99.900$_7$, %α=0.100$_7$
613.82$_7$, 2^+, *10$_5$ ps*, $\gamma_{\mathbf{0}}$**613.82**$_7$(100) E2
1227.60$_{19}$, 3^-, $\gamma_{613.82}$**613.6**$_3$
1261.20$_{11}$, 4^+, *10.6$_{16}$ ps*, $\gamma_{613.82}$**647.39**$_8$ E2
1313.7$_3$, (2^+), $\gamma_{613.82}$**700.0**$_5$(100) (E2), $\gamma_{\mathbf{0}}$**1313.7**$_5$(43)
1448.2$_3$, (2^+), $\gamma_{\mathbf{0}}$**1448.2**$_3$ (E2)
1452.8$_2$, $1^+,2^+$, $\gamma_{613.82}$**839.1**$_3$(100) E2, $\gamma_{\mathbf{0}}$**1452.6**$_3$(32)
1697.9$_3$, 1^-, $\gamma_{\mathbf{0}}$**1697.9**$_3$ E1
1750.67$_{18}$, 4^+, $\gamma_{1313.7}$**437.0**$_5$(5), $\gamma_{1261.20}$**489.5**$_5$(100) M1, $\gamma_{613.82}$**1136.8**$_5$(41)
1781.94$_{13}$, 5^-, $\gamma_{1261.20}$**520.72**$_9$(100$_{16}$) E1, $\gamma_{1227.60}$**554.27**$_{19}$(54$_{14}$) E2
1840.6$_3$, $1^-,2^-,3^-$, $\gamma_{613.82}$**1226.8**$_3$ E1
A **1944.62**$_{13}$, 6^+, *5.1$_{21}$ ps*, $\gamma_{1781.94}$**162.62**$_{17}$(0.7$_3$), $\gamma_{1261.20}$**683.51**$_{11}$(100) E2
2071.01$_{15}$, 6^+, $\gamma_{1944.62}$**126.28**$_{19}$(11$_3$) M1, $\gamma_{1750.67}$**320.35**$_{14}$(58$_3$) E2, $\gamma_{1261.20}$**809.74**$_{17}$(100$_{16}$) E2
2296.56$_{15}$, $(7)^+$, $\gamma_{2071.01}$**225.52**$_{17}$(63$_4$) M1, $\gamma_{1944.62}$**352.23**$_{17}$(100$_6$) (M1)
2342.66$_{15}$, 7^-, $\gamma_{1944.62}$**398.10**$_{17}$(100$_9$) E1, $\gamma_{1781.94}$**560.66**$_{14}$(72$_9$) E2
2437.40$_{14}$, 8^+, *10$_3$ ps*, $\gamma_{2296.56}$**140.83**$_{10}$(2.5$_3$) M1, $\gamma_{2071.01}$**366.31**$_{14}$(3.4$_4$) E2, $\gamma_{1944.62}$**492.82**$_8$(100$_5$) E2
A **2703.04**$_{15}$, 8^+, $\gamma_{2437.40}$**265.6**$_3$(4.7$_{19}$) M1, $\gamma_{2342.66}$**360.5**$_3$(2.8$_9$), $\gamma_{2296.56}$**406.76**$_{17}$(5.7$_{19}$) (M1), $\gamma_{1944.62}$**758.3**$_1$(100$_6$) E2
2726.8$_6$, $(8)^-$, $\gamma_{2342.66}$**384.1**$_5$ M1
2906.04$_{16}$, 9^-, $\gamma_{2703.04}$**203.00**$_{15}$(13$_3$), $\gamma_{2437.40}$**468.5**$_3$(30$_{10}$), $\gamma_{2342.66}$**563.34**$_{14}$(100$_{10}$) E2
2930.1$_6$, $(7)^-$, $\gamma_{2071.01}$**859.1**$_5$ E1
3149.7$_6$, 8^-, $\gamma_{2296.56}$**853.1**$_5$ E1
3160.63$_{19}$, $(10)^-$, *3.9 ns*, $\gamma_{2906.04}$**254.44**$_{16}$ M1
3173.3$_4$, (10^-), $\gamma_{2906.04}$**267.3**$_3$ (M1)
3173.36$_{17}$, 10^+, $\gamma_{2437.40}$**735.95**$_{10}$ E2
3183.79$_{17}$, 10^+, $\gamma_{2906.04}$**278.0**$_3$(79$_{22}$), $\gamma_{2437.40}$**746.44**$_{12}$(100$_{14}$) E2
3226.9$_7$, 8^-, $\gamma_{2296.56}$**930.3**$_6$ E1
3243.9$_4$, $(9)^+$, $\gamma_{2296.56}$**947.3**$_3$ E2
A **3395.14**$_{18}$, 10^+, $\gamma_{2703.04}$**692.1**$_1$ E2
C **3487.0**$_{11}$, (11^-), $\gamma_{2906.04}$**581**$_1$
3535.0$_6$, $8^-,9^-$, $\gamma_{2437.40}$**1097.6**$_5$ E1
3820.24$_{19}$, 12^+, $\gamma_{3183.79}$**636.56**$_{13}$(94$_{12}$) E2, $\gamma_{3173.36}$**646.8**$_3$(100$_{18}$), $\gamma_{3160.63}$**659.55**$_{15}$(53$_{11}$)
3969.06$_{22}$, (12^-), $\gamma_{3160.63}$**808.37**$_{13}$ E2
3992.0$_3$, (12^-), $\gamma_{3160.63}$**831.3**$_3$
4015.8$_6$, 8^+, $\gamma_{2296.56}$**1719.2**$_5$ M1
A **4016.84**$_{21}$, 12^+, $\gamma_{3395.14}$**621.7**$_1$ E2
C **4125.5**$_{11}$, (13^-), $\gamma_{3487.0}$**638.5**$_1$(100) Q
4135.5$_{11}$(?), $\gamma_{3173.3}$**962.2**(?)
4430.25$_{20}$, 14^+, $\gamma_{3969.06}$**461.2**$_3$, $\gamma_{3820.24}$**610.02**$_9$ E2
B **4494.8**$_9$, (12^-), $\gamma_{3969.06}$**526**$_1$
A **4650.44**$_{23}$, 14^+, $\gamma_{4016.84}$**633.6**$_1$ E2
4658.8$_9$, (14^-), $\gamma_{3969.06}$**690**
4734.46$_{23}$, (14^-), $\gamma_{3992.0}$**742.4**$_3$, $\gamma_{3969.06}$**765.30**$_{17}$
4804.85$_{23}$, $13^{(+)},14^{(+)}$, $\gamma_{4430.25}$**374.4**$_3$, $\gamma_{3820.24}$**984.65**$_{15}$
C **4817.6**$_{11}$, (15^-), $\gamma_{4125.5}$**692.1**$_1$(100) Q
5034.79$_{21}$, 15^+, $\gamma_{4804.85}$**229.9**$_3$, $\gamma_{4734.46}$**300.20**$_{17}$, $\gamma_{4430.25}$**604.58**$_9$ M1
5088.1$_3$, $(17)^+$, *60$_4$ ns*, $\gamma_{5034.79}$**53.32**$_{15}$(100) E2
B **5177.6**$_8$, (14^-), $\gamma_{4658.8}$**519**$_1$, $\gamma_{4494.8}$**683**$_1$
A **5215.54**$_{25}$, 16^+, $\gamma_{4650.44}$**565.1**$_1$ E2
5341.7$_3$, 18^+, $\gamma_{5088.1}$**253.58**$_8$ M1
C **5531.6**$_{11}$, (17^-), $\gamma_{4817.6}$**714.0**$_1$(100) Q
A **5762.1**$_3$, 18^+, $\gamma_{5215.54}$**546.6**$_1$ E2
5867.0$_3$, 19^-, $\gamma_{5341.7}$**525.27**$_{11}$ E1
B **5884.2**$_8$, (16^-), $\gamma_{5177.6}$**706.6**$_1$(100) Q
6051.6$_6$, (20^+), $\gamma_{5341.7}$**709.9**$_5$ Q
6111.5$_4$, (20^+), $\gamma_{5341.7}$**769.65**$_{21}$ E2
6129.4$_3$, 21^-, *9.5$_7$ ns*, μ=+11.6$_{12}$, $\gamma_{5867.0}$**262.44**$_8$ E2
6171.8$_4$, $\gamma_{5867.0}$**304.80**$_{21}$
6225.4$_5$, (20), $\gamma_{5867.0}$**358.4**$_3$ (D)
C **6258.4**$_{11}$, (19^-), $\gamma_{5531.6}$**726.8**$_1$(100) Q
A **6370.2**$_3$, 20^+, $\gamma_{5762.1}$**608.1**$_1$(100) E2
6537.0$_{11}$, $\gamma_{5867.0}$**670**
B **6625.0**$_8$, (18^-), $\gamma_{5884.2}$**740.8**$_1$(100) Q
6737.1$_4$, (22^+), $\gamma_{6129.4}$**609.0**$_{10}$($\approx$ 36), $\gamma_{6111.5}$**625.46**$_{24}$(100) E2
C **7024.4**$_{11}$, (21^-), $\gamma_{6258.4}$**766.0**$_1$(100) Q
A **7050.5**$_3$, 22^+, *0.63$_6$ ps*, $\gamma_{6370.2}$**680.3**$_1$(100) E2
7120.1$_4$, 23^-, $\gamma_{6737.1}$**382**, $\gamma_{6129.4}$**990.76**$_{14}$(100) E2
7227.1$_9$, (24^+), $\gamma_{6737.1}$**490.0**$_{10}$ E2
B **7413.4**$_8$, (20^-), $\gamma_{6625.0}$**788.4**$_1$(100$_8$) Q, $\gamma_{5867.0}$**1546**$_1$(33$_8$)
7661.3$_4$, 25^-, $\gamma_{7120.1}$**541.16**$_{13}$ E2
7710.1$_9$, (24^+), $\gamma_{7227.1}$**483**(36$_{18}$), $\gamma_{6737.1}$**973**(100$_{36}$)
A **7803.8**$_4$, 24^+, *0.64$_5$ ps*, $\gamma_{7050.5}$**753.3**$_1$(100) E2
C **7848.5**$_{11}$, (23^-), $\gamma_{7024.4}$**824.1**$_1$(100) Q
7881.9$_4$, 27^-, *1.6$_2$ ns*, $\gamma_{7661.3}$**220.62**$_{12}$ E2
8185.9$_{11}$, $\gamma_{7881.9}$**304**
B **8238.6**$_8$, (22^-), $\gamma_{7413.4}$**825.2**$_2$(100) Q
8337.9$_{11}$, $\gamma_{7881.9}$**456**
A **8628.7**$_4$, 26^+, *0.172$_{14}$ ps*, $\gamma_{7803.8}$**824.9**$_1$(100) E2
C **8735.8**$_{11}$, (25^-), $\gamma_{7848.5}$**887.3**$_1$(100) Q
8848.8$_4$, 28^+, *24$_8$ ps*, $\gamma_{7881.9}$**966.93**$_{15}$ E1
8945.3$_9$, $\gamma_{7881.9}$**1063**
8996.3$_5$, 29^+, *35$_{10}$ ps*, $\gamma_{8848.8}$**147.42**$_9$ M1
B **9117.4**$_8$, (24^-), $\gamma_{8238.6}$**878.8**$_1$(100) Q
9180$_2$(?), $(26^+ \rightarrow 30^+)$
9398.6$_5$, 30^+, *7$_1$ ps*, $\gamma_{8996.3}$**402.30**$_{17}$ M1
A **9522.9**$_4$, 28^+, *0.168$_{14}$ ps*, $\gamma_{8628.7}$**894.2**$_1$(100) E2
C **9687.8**$_{11}$, (27^-), $\gamma_{8735.8}$**952.0**$_1$(100) Q
9835.8$_{10}$, $\gamma_{8945.3}$**890**
10012.4$_8$, $\gamma_{9398.6}$**613**, $\gamma_{8996.3}$**1016**
B **10048.4**$_8$, (26^-), $\gamma_{9117.4}$**931.0**$_1$(100) Q
10110.2$_5$, 31^+, $\gamma_{10012.4}$**97**, $\gamma_{9835.8}$**274**, $\gamma_{9398.6}$**711.50**$_{21}$(72$_{14}$) M1, $\gamma_{8996.3}$**1114.2**$_3$(100$_{15}$) E2
10257.2$_8$, $\gamma_{9398.6}$**858**
A **10484.2**$_4$, 30^+, *0.112$_7$ ps*, $\gamma_{9522.9}$**961.3**$_1$(100) E2
10541.0$_5$, (32^+), *6.2$_6$ ps*, $\gamma_{10110.2}$**431.0**$_3$ (M1), $\gamma_{9398.6}$**1142**
D **10643.0**$_{20}$, (24^+)
10674.0$_{12}$, $\gamma_{10541.0}$**133**
C **10705.2**$_{11}$, (29^-), $\gamma_{9687.8}$**1017.4**$_1$(100) Q
10795.1$_5$, (33^+), *15$_5$ ps*, $\gamma_{10541.0}$**254.2**$_3$(100$_{10}$) D, $\gamma_{10110.2}$**684.90**$_{21}$(34$_7$) Q
10961.0$_8$, $\gamma_{10257.2}$**703**, $\gamma_{10110.2}$**851**
B **11032.6**$_8$, (28^-), $\gamma_{10048.4}$**984.2**$_1$(100) Q
11209.0$_7$, $\gamma_{10961.0}$**248**, $\gamma_{10541.0}$**668.0**$_6$, $\gamma_{10257.2}$**952**
D **11245.4**$_{20}$, (26^+), $\gamma_{10643.0}$**602.4**$_1$(0.17$_3$) E2, $\gamma_{7881.9}$**3364**$_4$($\approx$ 0.002)(?), $\gamma_{7661.3}$**3585**$_4$($\approx$ 0.003)(?)
11395.4$_{10}$, $\gamma_{10795.1}$**600**
11443.0$_8$, $\gamma_{10541.0}$**901**
A **11511.8**$_4$, 32^+, *0.063$_7$ ps*, $\gamma_{10484.2}$**1027.6**$_1$(100) E2
11574.6$_6$, (34^-), $\gamma_{11443.0}$**131**, $\gamma_{10961.0}$**613**, $\gamma_{10795.1}$**779.60**$_{21}$ E1
11602.1$_8$, $\gamma_{10541.0}$**1061**, $\gamma_{10257.2}$**1345**
C **11788.6**$_{11}$, (31^-), $\gamma_{10705.2}$**1083.4**$_1$(100) Q
11793.0$_{10}$, $\gamma_{11602.1}$**191**

11859.0$_9$, $\gamma_{11602.1}$**257**, $\gamma_{10795.1}$**1064**
D **11892.9**$_{20}$, (28^+), $\gamma_{11245.4}$**647.5**$_1(0.51_7)$ E2, γ_{9180}**2713**(?), $\gamma_{8996.3}$**2895**$_4(\approx 0.003)$(?), $\gamma_{8848.8}$**3044**$_4(\approx 0.003)$(?), $\gamma_{7881.9}$**4011**$_2(0.011_2)$ D
11963.2$_6$, (35^-), *1.2$_4$ ps*, $\gamma_{11574.6}$**388.60**$_{21}$ M1, $\gamma_{11443.0}$**520**
B **12071.8**$_8$, (30^-), $\gamma_{11032.6}$**1039.2**$_1(100)$ Q
12178.9$_8$, $\gamma_{11859.0}$**320**, $\gamma_{11793.0}$**386**, $\gamma_{11209.0}$**970**
12325.2$_9$, (36^-), $\gamma_{11963.2}$**362** D, $\gamma_{11574.6}$**750**
12428.7$_8$, $\gamma_{11395.4}$**1033**, $\gamma_{11209.0}$**1220**
D **12585.6**$_{20}$, (30^+), *30 fs*, $\gamma_{11892.9}$**692.7**$_1(1.01_{10})$ E2
A **12604.2**$_4$, 34^+, *0.056$_7$ ps*, $\gamma_{11511.8}$**1092.4**$_1(100)$ E2
12716.9$_9$, $\gamma_{12428.7}$**288**, $\gamma_{12178.9}$**538**, $\gamma_{11963.2}$**754**
C **12938.1**$_{11}$, (33^-), $\gamma_{11788.6}$**1149.5**$_1(100)$ Q
12946.5$_{10}$, $\gamma_{12428.7}$**518**(?), $\gamma_{11963.2}$**983**
13048.9$_{10}$, $\gamma_{11963.2}$**1086**
13117.2$_{13}$, $\gamma_{12325.2}$**792**
B **13168.9**$_8$, (32^-), $\gamma_{12071.8}$**1097.1**$_1(100)$ Q
13253.4$_{14}$, $\gamma_{11395.4}$**1858**
D **13323.7**$_{20}$, (32^+), *22 fs*, $\gamma_{12585.6}$**738.1**$_1(0.93_{11})$ E2
13396.7$_9$, $\gamma_{13048.9}$**348**, $\gamma_{12325.2}$**1071**, $\gamma_{12178.9}$**1218**
13493.2$_{13}$, $\gamma_{12325.2}$**1168**
13517.2$_{13}$, $\gamma_{12325.2}$**1192**
13687.2$_{13}$, $\gamma_{12325.2}$**1362**
13721.9$_{13}$, $\gamma_{12716.9}$**1005**
A **13762.6**$_4$, 36^+, *0.035$_7$ ps*, $\gamma_{12604.2}$**1158.4**$_1(100)$ E2
D **14107.7**$_{20}$, (34^+), *16 fs*, $\gamma_{13323.7}$**784.0**$_1(0.96_{11})$ E2
C **14154.0**$_{11}$, (35^-), $\gamma_{12938.1}$**1215.9**$_1(100)$ Q
B **14325.2**$_9$, (34^-), $\gamma_{13168.9}$**1156.3**$_1(100)$ Q
14484.9$_{17}$, $\gamma_{13721.9}$**763**
14663.2$_{17}$, $\gamma_{13687.2}$**976**
14741.9$_{17}$, $\gamma_{13721.9}$**1020**
D **14937.6**$_{20}$, (36^+), *12 fs*, $\gamma_{14107.7}$**829.9**$_1(1.01_8)$ E2
A **14984.0**$_5$, 38^+, *0.077$_7$ ps*, $\gamma_{13762.6}$**1221.3**$_1(100)$ E2
C **15435.5**$_{11}$, (37^-), $\gamma_{14154.0}$**1281.5**$_1(100)$ Q
B **15542.9**$_9$, (36^-), $\gamma_{14325.2}$**1217.7**$_1(100)$ Q
D **15814.0**$_{20}$, (38^+), *9.3 fs*, $\gamma_{14937.6}$**876.4**$_1(1.08_{11})$ E2
A **16267.0**$_5$, 40^+, *0.063$_{14}$ ps*, $\gamma_{14984.0}$**1283.0**$_1(100)$ E2
16397.0$_{20}$, $\gamma_{14484.9}$**1912**
D **16737.2**$_{20}$, (40^+), *7.1 fs*, $\gamma_{15814.0}$**923.2**$_1(1.04_{10})$ E2
C **16778.8**$_{11}$, (39^-), $\gamma_{15435.5}$**1343.3**$_1(100)$
B **16824.4**$_9$, (38^-), $\gamma_{15542.9}$**1281.4**$_1(100)$ Q
17539.0$_{22}$, $\gamma_{16397.0}$**1142**
A **17608.6**$_5$, (42^+), *<0.021 ps*, $\gamma_{16267.0}$**1341.6**$_1(100)$
D **17707.4**$_{20}$, (42^+), *5.5 fs*, $\gamma_{16737.2}$**970.2**$_1(1.00_{11})$ E2
B **18172.0**$_9$, (40^-), $\gamma_{16824.4}$**1347.6**$_2(100)$
C **18179.1**$_{11}$, (41^-), $\gamma_{16778.8}$**1400.3**$_2(100)$
D **18724.8**$_{20}$, (44^+), *4.4 fs*, $\gamma_{17707.4}$**1017.4**$_1(0.98_{12})$ E2
A **19008.4**$_5$, (44^+), *<0.021 ps*, $\gamma_{17608.6}$**1399.8**$_1(100)$
B **19590.1**$_{11}$, (42^-), $\gamma_{18172.0}$**1418.1**$_7(100)$
D **19789.7**$_{20}$, (46^+), *3.5 fs*, $\gamma_{18724.8}$**1064.9**$_1(0.98_8)$ E2
A **20467.3**$_5$, (46^+), *<0.021 ps*, $\gamma_{19008.4}$**1458.9**$_1(100)$
D **20902.4**$_{20}$, (48^+), *2.8 fs*, $\gamma_{19789.7}$**1112.7**$_1(0.90_{10})$ E2
B **21077.7**$_{12}$, (44^-), $\gamma_{19590.1}$**1487.6**$_3(100)$
D **22062.9**$_{20}$, (50^+), *2.3 fs*, $\gamma_{20902.4}$**1160.5**$_1(0.87_6)$ E2
D **23271.5**$_{20}$, (52^+), *1.8 fs*, $\gamma_{22062.9}$**1208.6**$_1(0.89_{12})$ E2
D **24528.1**$_{20}$, (54^+), *1.5 fs*, $\gamma_{23271.5}$**1256.6**$_1(0.75_{10})$ E2
D **25832.9**$_{20}$, (56^+), *1.2 fs*, $\gamma_{24528.1}$**1304.8**$_1(0.62_7)$ E2
D **27185.8**$_{20}$, (58^+), *1.0 fs*, $\gamma_{25832.9}$**1352.9**$_1(0.49_8)$ E2
D **28587.1**$_{20}$, (60^+), *0.90 fs*, $\gamma_{27185.8}$**1401.3**$_1(0.30_7)$ E2
D **30036.7**$_{20}$, (62^+), *0.69 fs*, $\gamma_{28587.1}$**1449.6**$_2(0.16_6)$ E2
D **31534.5**$_{20}$, (64^+), $\gamma_{30036.7}$**1497.8**$_3$
D **33080.1**$_{20}$, (66^+), $\gamma_{31534.5}$**1545.6**$_5$
E **x**, (34)
E **825.9+x**, (36), γ_{x}**825.9**$_{10}$
E **1681.4+x**, (38), $\gamma_{825.9+x}$**855.4**$_2$
E **2576.6+x**, (40), $\gamma_{1681.4+x}$**895.2**$_2$
E **3508.8+x**, (42), $\gamma_{2576.6+x}$**932.2**$_2$
E **4478.7+x**, (44), $\gamma_{3508.8+x}$**969.9**$_5$
E **5487.2+x**, (46), $\gamma_{4478.7+x}$**1008.5**$_5$
E **6536.4+x**, (48), $\gamma_{5487.2+x}$**1049.2**$_2$
E **7629.0+x**, (50), $\gamma_{6536.4+x}$**1092.6**$_2$
E **8766.6+x**, (52), $\gamma_{7629.0+x}$**1137.6**$_2$
E **9950.0+x**, (54), $\gamma_{8766.6+x}$**1183.4**$_2$
E **11180.6+x**, (56), $\gamma_{9950.0+x}$**1230.6**$_2$
E **12458.3+x**, (58), $\gamma_{11180.6+x}$**1277.7**$_2$
E **13785.7+x**, (60), $\gamma_{12458.3+x}$**1327.4**$_5$
E **15162.8+x**, (62), $\gamma_{13785.7+x}$**1377.1**$_{10}$
E **16586.4+x**, (64), $\gamma_{15162.8+x}$**1423.6**$_{10}$
E **18063.5+x**, (66), $\gamma_{16586.4+x}$**1477.1**$_{10}$
F **y**, (36)
F **793.02+y**, (38), γ_{y}**793.0**$_2$
F **1632.7+y**, (40), $\gamma_{793.02+y}$**839.7**$_2$
F **2523.9+y**, (42), $\gamma_{1632.7+y}$**891.2**$_2$
F **3468.8+y**, (44), $\gamma_{2523.9+y}$**944.8**$_2$
F **4467.0+y**, (46), $\gamma_{3468.8+y}$**998.2**$_2$
F **5519.4+y**, (48), $\gamma_{4467.0+y}$**1052.4**$_2$
F **6624.3+y**, (50), $\gamma_{5519.4+y}$**1104.9**$_2$
F **7781.2+y**, (52), $\gamma_{6624.3+y}$**1156.9**$_2$
F **8989.1+y**, (54), $\gamma_{7781.2+y}$**1207.9**$_2$
F **10249.6+y**, (56), $\gamma_{8989.1+y}$**1260.4**$_2$
F **11563.4+y**, (58), $\gamma_{10249.6+y}$**1313.8**$_2$
F **12932.0+y**, (60), $\gamma_{11563.4+y}$**1368.6**$_2$
F **14357.8+y**, (62), $\gamma_{12932.0+y}$**1425.8**$_2$
F **15840.5+y**, (64), $\gamma_{14357.8+y}$**1482.7**$_2$
F **17384.6+y**, (66), $\gamma_{15840.5+y}$**1544.1**$_2$
F **18989.4+y**, (68), $\gamma_{17384.6+y}$**1604.7**$_2$
G **z**, (27^-)
G **669.5+z**, (29^-), γ_{z}**669.6**$_5$
G **1390.5+z**, (31^-), $\gamma_{669.5+z}$**721.0**$_2$
G **2163.3+z**, (33^-), $\gamma_{1390.5+z}$**772.8**$_2$
G **2988.3+z**, (35^-), $\gamma_{2163.3+z}$**825.0**$_2$
G **3865.1+z**, (37^-), $\gamma_{2988.3+z}$**876.8**$_2$
G **4794.1+z**, (39^-), $\gamma_{3865.1+z}$**929.0**$_2$
G **5772.8+z**, (41^-), $\gamma_{4794.1+z}$**978.7**$_2$
G **6802.6+z**, (43^-), $\gamma_{5772.8+z}$**1029.8**$_2$
G **7883.4+z**, (45^-), $\gamma_{6802.6+z}$**1080.8**$_2$
G **9014.0+z**, (47^-), $\gamma_{7883.4+z}$**1130.6**$_2$
G **10194.3+z**, (49^-), $\gamma_{9014.0+z}$**1180.3**$_2$
G **11422.3+z**, (51^-), $\gamma_{10194.3+z}$**1228.0**$_3$
G **12703.3+z**, (53^-), $\gamma_{11422.3+z}$**1281.0**$_5$
G **14031.0+z**, (55^-), $\gamma_{12703.3+z}$**1327.7**$_5$
G **15406.9+z**, (57^-), $\gamma_{14031.0+z}$**1375.9**$_{10}$
H **u**, (26^-)
H **642.1+u**, (28^-), γ_{u}**642.1**$_5$
H **1337.1+u**, (30^-), $\gamma_{642.1+u}$**694.9**$_4$
H **2084.1+u**, (32^-), $\gamma_{1337.1+u}$**747.0**$_2$
H **2882.9+u**, (34^-), $\gamma_{2084.1+u}$**798.8**$_2$
H **3734.0+u**, (36^-), $\gamma_{2882.9+u}$**851.1**$_2$
H **4635.3+u**, (38^-), $\gamma_{3734.0+u}$**901.3**$_2$
H **5589.1+u**, (40^-), $\gamma_{4635.3+u}$**953.8**$_2$
H **6594.3+u**, (42^-), $\gamma_{5589.1+u}$**1005.1**$_5$
H **7649.2+u**, (44^-), $\gamma_{6594.3+u}$**1055.0**$_2$
H **8754.3+u**, (46^-), $\gamma_{7649.2+u}$**1105.0**$_2$
H **9910.1+u**, (48^-), $\gamma_{8754.3+u}$**1155.8**$_5$
H **11115.9+u**, (50^-), $\gamma_{9910.1+u}$**1205.8**$_2$
H **12369.7+u**, (52^-), $\gamma_{11115.9+u}$**1253.8**$_3$
H **13673.9+u**, (54^-), $\gamma_{12369.7+u}$**1304.2**$_5$
I **v**, (32^-)
I **761.55+v**, (34^-), γ_{v}**761.5**$_2$
I **1566.1+v**, (36^-), $\gamma_{761.55+v}$**804.5**$_2$
I **2415.7+v**, (38^-), $\gamma_{1566.1+v}$**849.7**$_2$

- l **3310.6+v**, (40^-), $\gamma_{\mathbf{2415.7+v}}$**894.9**$_2$
- l **4251.9+v**, (42^-), $\gamma_{\mathbf{3310.6+v}}$**941.2**$_2$
- l **5238.0+v**, (44^-), $\gamma_{\mathbf{4251.9+v}}$**986.1**$_2$
- l **6269.3+v**, (46^-), $\gamma_{\mathbf{5238.0+v}}$**1031.3**$_2$
- l **7346.6+v**, (48^-), $\gamma_{\mathbf{6269.3+v}}$**1077.3**$_2$
- l **8469.4+v**, (50^-), $\gamma_{\mathbf{7346.6+v}}$**1122.7**$_2$
- l **9636.5+v**, (52^-), $\gamma_{\mathbf{8469.4+v}}$**1167.1**$_2$
- l **10848.1+v**, (54^-), $\gamma_{\mathbf{9636.5+v}}$**1211.6**$_2$
- l **12104.8+v**, (56^-), $\gamma_{\mathbf{10848.1+v}}$**1256.7**$_2$
- l **13404.7+v**, (58^-), $\gamma_{\mathbf{12104.8+v}}$**1299.9**$_2$
- l **14749.0+v**, (60^-), $\gamma_{\mathbf{13404.7+v}}$**1344.3**$_2$
- l **16137.4+v**, (62^-), $\gamma_{\mathbf{14749.0+v}}$**1388.4**$_5$
- l **17570.9+v**, (64^-), $\gamma_{\mathbf{16137.4+v}}$**1433.5**$_{10}$




SD-2 band
(1994Da20)
(66) 18063.5+x
(64) 16586.4+x
(62) 15162.8+x
(60) 13785.7+x
(58) 12458.3+x
(56) 11180.6+x
(54) 9950.0+x
(52) 8766.6+x
(50) 7629.0+x
(48) 6536.4+x
(46) 5487.2+x
(44) 4478.7+x
(42) 3508.8+x
(40) 2576.6+x
(38) 1681.4+x
(36) 825.9+x
(34) x
1477 1424 1377 1327 1278 1231 1183 1138 1093 1049 1009 970 932 895 855 826
SD-3 band
(1994Da20)
(68) 18989.4+y
(66) 17384.6+y
(64) 15840.5+y
(62) 14357.8+y
(60) 12932.0+y
(58) 11563.4+y
(56) 10249.6+y
(54) 8989.1+y
(52) 7781.2+y
(50) 6624.3+y
(48) 5519.4+y
(46) 4467.0+y
(44) 3468.8+y
(42) 2523.9+y
(40) 1632.7+y
(38) 793.02+y
(36) y
1605 1544 1483 1426 1369 1314 1260 1208 1157 1105 1052 998 945 891 840 793
SD-4 band
(1994Da20)
(57-) 15406.9+z
(55-) 14031.0+z
(53-) 12703.3+z
(51-) 11422.3+z
(49-) 10194.3+z
(47-) 9014.0+z
(45-) 7883.4+z
(43-) 6802.6+z
(41-) 5772.8+z
(39-) 4794.1+z
(37-) 3865.1+z
(35-) 2988.3+z
(33-) 2163.3+z
(31-) 1390.5+z
(29-) 669.5+z
(27-) z
1376 1328 1281 1228 1180 1131 1081 1030 979 929 877 825 773 721 670
SD-5 band
(1994Da20)
(54-) 13673.9+u
(52-) 12369.7+u
(50-) 11115.9+u
(48-) 9910.1+u
(46-) 8754.3+u
(44-) 7649.2+u
(42-) 6594.3+u
(40-) 5589.1+u
(38-) 4635.3+u
(36-) 3734.0+u
(34-) 2882.9+u
(32-) 2084.1+u
(30-) 1337.1+u
(28-) 642.1+u
(26-) u
1304 1254 1206 1156 1105 1055 1005 954 901 851 799 747 695 642
SD-6 band
(1994Da20)
(64-) 17570.9+v
(62-) 16137.4+v
(60-) 14749.0+v
(58-) 13404.7+v
(56-) 12104.8+v
(54-) 10848.1+v
(52-) 9636.5+v
(50-) 8469.4+v
(48-) 7346.6+v
(46-) 6269.3+v
(44-) 5238.0+v
(42-) 4251.9+v
(40-) 3310.6+v
(38-) 2415.7+v
(36-) 1566.1+v
(34-) 761.55+v
(32-) v
1434 1388 1344 1300 1257 1212 1167 1123 1077 1031 986 941 895 850 805 762

$^{152}_{66}Dy_{86}$

$^{153}_{66}$Dy$_{87}$

S$_n$: 7096 $_6$, S$_p$: 5715 $_{40}$

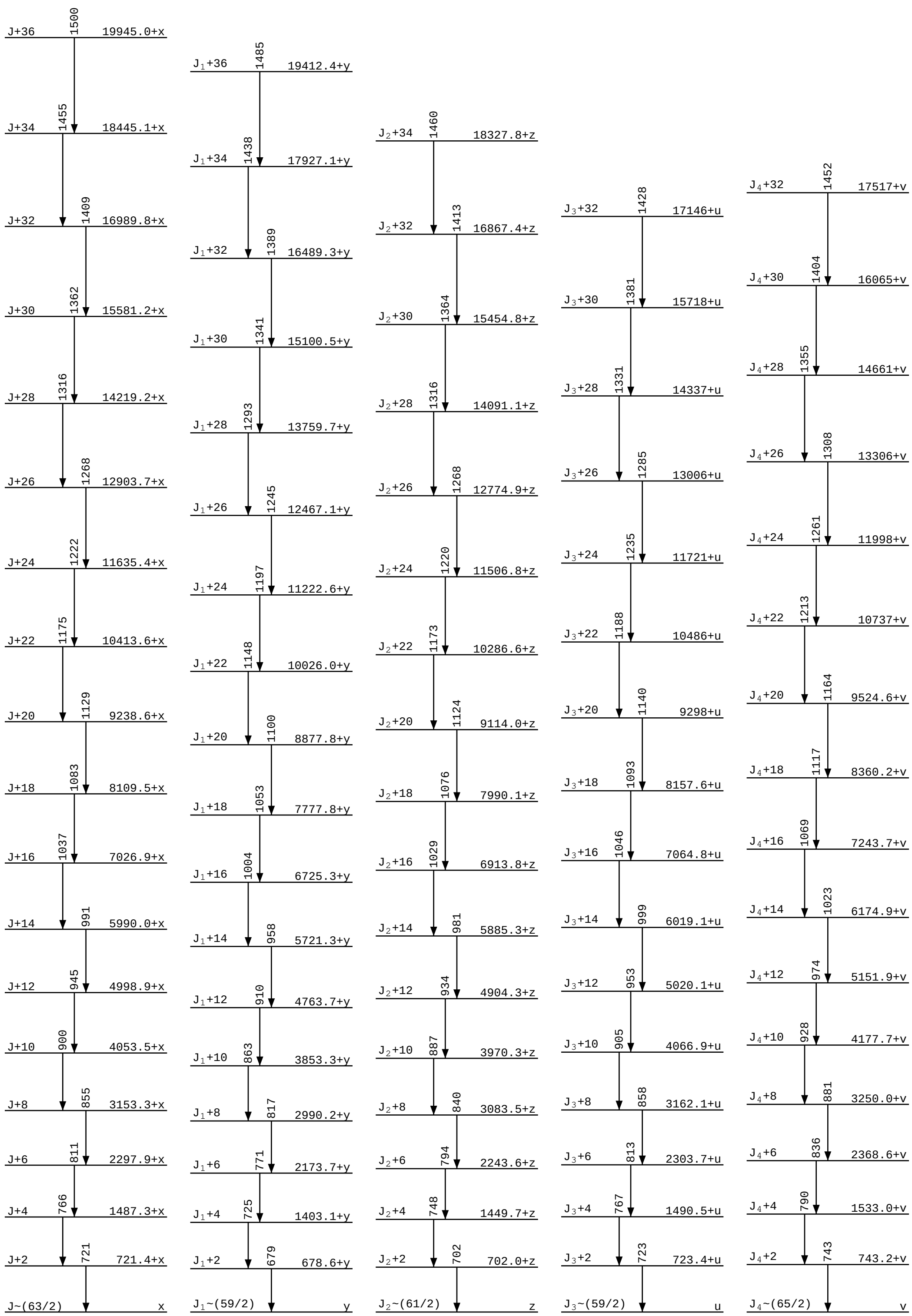
Nuclear Bands

A $\pi h_{11/2}$
B $\pi h_{9/2}$
C Band structure
D $\pi i_{13/2}$
E Band structure
F (Oblate) structure
G (Oblate) structure
H SD-1 band (1989Jo04,1995Ce08,1995Ce03)
I SD-2 band (1989Jo04,1995Ce03)
J SD-3 band (1989Jo04,1995Ce03)
K SD-4 band (1995Ce03)
L SD-5 band (1995Ce03)

Levels and γ-ray branchings:

0, $7/2^{(-)}$, *6.41 h*, %ε+%β$^+$=99.9906$_{14}$, %α=0.0094$_{14}$, μ=-0.782$_6$, Q=-0.02$_5$
108.7$_1$, $(3/2^-)$, *1.35$_{10}$ ns*, γ_{0}**108.7**$_2$(100) E2
270.6$_1$, $(3/2^-,5/2^-)$, *≤0.25 ns*, $\gamma_{108.7}$**161.5**$_2$(100$_5$) M1+E2, γ_{0}**270.6**$_2$(86$_4$) E2
B **295.8**$_1$, $(9/2^-)$, γ_{0}**295.8**$_1$(100) M1
365.9$_2$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{270.6}$**95.2**$_3$($\approx$ 3.3), γ_{0}**365.9**$_2$(100$_{27}$) M1
500.9, $^{(-)}$, *≤0.2 ns*, $\gamma_{270.6}$**230.2**$_1$(100$_7$) M1, $\gamma_{108.7}$**391.7**$_2$(22$_5$)
565.75$_{15}$, $(3/2^-,5/2^-)$, $\gamma_{270.6}$**295.6**$_5$, $\gamma_{108.7}$**456.8**$_2$(100$_4$) M1+E2, γ_{0}**565.5**$_2$(48$_{15}$) E2
576.74$_{14}$, $(3/2^-,5/2,7/2^-)$, $\gamma_{108.7}$**468.2**$_2$(88$_{13}$), γ_{0}**577.0**$_3$(100$_{19}$)
637.12$_{13}$, $11/2^{(-)}$, $\gamma_{295.8}$**341.0**(1.2), γ_{0}**636.7**$_2$(100$_4$) E2
688.34$_{14}$, $(5/2^-,7/2^-)$, $\gamma_{295.8}$**392.5**$_4$(9$_4$), $\gamma_{108.7}$**579.7**$_3$(22$_9$), γ_{0}**688.5**$_2$(100$_7$)
D **712.44**$_{17}$, $(13/2^+)$, $\gamma_{637.12}$**75.6**(100$_{23}$) E1, γ_{0}**712.0**$_5$(23$_8$)
830.12$_{15}$, $\gamma_{712.44}$**117.3**$_3$(40$_{20}$), $\gamma_{688.34}$**141.8**$_3$(100$_{30}$), $\gamma_{637.12}$**192.8**$_2$(60$_{20}$), $\gamma_{576.74}$**253.8**$_2$(50$_{10}$), $\gamma_{108.7}$**721.0**$_5$(20$_{10}$)
B **837.33**$_{18}$, $(13/2^-)$, $\gamma_{712.44}$**125.1**$_3$(14$_7$), $\gamma_{295.8}$**541.2**$_4$(100$_{14}$) (E2)
1040.9$_3$, $(11/2^+)$, $\gamma_{837.33}$**203.8**$_4$($\approx$ 45), $\gamma_{830.12}$**211.0**, $\gamma_{712.44}$**328.0**$_3$(100$_8$), $\gamma_{637.12}$**404.1**$_3$(92$_8$) E1, $\gamma_{295.8}$**745.2**$_3$(92$_{45}$)
A **1068.13**$_{22}$, $(11/2^-)$, $\gamma_{637.12}$**431.0**$_5$($\approx$ 17), $\gamma_{295.8}$**772.2**$_3$(100$_{33}$)
1092.3$_3$, $(9/2,11/2^-)$, $\gamma_{688.34}$**404.1**$_3$(50$_{25}$), γ_{0}**1091.8**$_5$(100$_{25}$)
D **1160.2**, $(17/2^+)$, *11.6$_{12}$ ps*, $\gamma_{712.44}$**447.8**$_1$(100) E2
1189.7$_6$, $(7/2^-,9/2,11/2^-)$, $\gamma_{637.12}$**552.0**$_5$(100$_{50}$), $\gamma_{295.8}$**893.9**$_5$(75$_{25}$), γ_{0}**1189.9**$_8$(100$_{50}$)
1272.8, $(13/2,15/2^-)$, $\gamma_{712.44}$**560.4**$_3$($<$ 48), $\gamma_{637.12}$**636.0**(100$_{24}$)
1276.4$_3$, $(9/2^-)$, $\gamma_{365.9}$**910.4**$_4$(28$_4$), $\gamma_{108.7}$**1167.6**$_5$(32$_4$), γ_{0}**1276.5**$_4$(100$_8$)
1304.1$_3$, $(15/2^+)$, $\gamma_{837.33}$**467.1**$_2$($\approx$ 36), $\gamma_{712.44}$**591.6**$_2$(100$_{27}$)
A **1321.97**$_{22}$, $(13/2^-)$, $\gamma_{1068.13}$**253.9**$_2$(100$_{20}$), $\gamma_{637.12}$**685.2**$_5$($\approx$ 60), $\gamma_{576.74}$**745.2**$_3$(80$_{40}$)
1381.3$_3$, $(5/2^-,7/2,9/2^-)$, $\gamma_{688.34}$**693.0**$_5$(8$_3$), $\gamma_{565.75}$**815.5**$_5$(16$_5$), $\gamma_{295.8}$**1085.8**$_4$(100$_8$), γ_{0}**1381.0**$_6$(50$_8$)
B **1455.2**$_5$, $(17/2^-)$, $\gamma_{837.33}$**617.5**$_5$(100) (E2)
1500.8$_3$, $(9/2,11/2^-)$, $\gamma_{688.34}$**812.1**$_5$(17$_6$), $\gamma_{637.12}$**864.0**$_5$(33$_{11}$), $\gamma_{576.74}$**924.0**$_4$(100$_{17}$)
1521.6$_6$, $(15/2^+)$, $\gamma_{1040.9}$**481.0**$_5$
1581.0$_7$, $(9/2^+,11/2^-)$, $\gamma_{712.44}$**868.6**$_5$(29$_7$), $\gamma_{688.34}$**893.9**$_5$(21$_7$), $\gamma_{576.74}$**1004.1**$_4$(29$_{14}$), $\gamma_{565.75}$**1015.4**$_4$(100$_{14}$), $\gamma_{295.8}$**1284.8**$_8$($\approx$ 7)
A **1584.1**$_{11}$, $(15/2^-)$, $\gamma_{1321.97}$**262.4**$_2$, $\gamma_{1068.13}$**515**
C **1602.8**, $(17/2^-)$, $\gamma_{1276.4}$**328.0**$_3$, $\gamma_{1272.8}$**336.2**, $\gamma_{1160.2}$**440.7**, $\gamma_{1040.9}$**560.4**$_3$
D **1648.4**$_3$, $(21/2^+)$, *7.1$_6$ ps*, $\gamma_{1160.2}$**488.2**$_2$(100) E2
1753.6$_4$, $(19/2^-,17/2^-)$, $\gamma_{1272.8}$**480.8**$_1$(100) E2
E **1822.2**$_4$, $(19/2^+)$, $\gamma_{1455.2}$**366.7**$_4$(64$_{14}$) (E1), $\gamma_{1304.1}$**518.5**(100$_{21}$), $\gamma_{1160.2}$**662.4**$_5$(36$_7$) (M1)
A **1861.7**$_{12}$, $(17/2^-)$, $\gamma_{1584.1}$**277.5**$_5$, $\gamma_{1321.97}$**540.1**
1891.6$_7$(?), $\gamma_{1160.2}$**731.8**$_{10}$(100)
1963.0$_8$, $(19/2^+)$, $\gamma_{1521.6}$**441.4**$_5$(100)
C **2040.6**, $(21/2^-)$, $\gamma_{1648.4}$**393.7**, $\gamma_{1602.8}$**441.1**$_2$(100) E2
A **2151.8**$_{12}$, $(19/2^-)$, $\gamma_{1861.7}$**290.1**$_4$, $\gamma_{1584.1}$**568.0**
2158(?), $\gamma_{1753.6}$**404**(?)
D **2180.7**$_4$, $(25/2^+)$, *2.1$_4$ ps*, $\gamma_{1648.4}$**532.3**$_1$(100) E2
2194.7$_5$, $(21/2^-,19/2^-)$, $\gamma_{1753.6}$**441.1**$_2$(100)
2231.(?), $\gamma_{1455.2}$**776**(100)
E **2284.7**$_6$, $(23/2^+)$, $\gamma_{1891.6}$**393.2**$_5$(33$_{11}$)(?), $\gamma_{1822.2}$**462.4**$_4$(100$_{11}$) E2
A **2453.6**$_{13}$, $(21/2^-)$, $\gamma_{2151.8}$**301.7**$_5$, $\gamma_{1861.7}$**592**
C **2521.8**, $(25/2^-)$, $\gamma_{2180.7}$**342.1**, $\gamma_{2040.6}$**480.8**$_1$(100) E2
2523.2$_{10}$, $(23/2^+)$, $\gamma_{1963.0}$**560.2**$_5$(100)
E **2685.9**$_6$, $(27/2^+)$, $\gamma_{2284.7}$**401.2**$_3$(100) (E2)
2746.3$_5$, $\gamma_{2194.7}$**551.6**$_3$(100)
D **2762.2**$_4$, $(29/2^+)$, $\gamma_{2180.7}$**581.5**$_2$(100) E2
A **2763.4**$_{13}$, $(23/2^-)$, $\gamma_{2453.6}$**309.7**$_5$, $\gamma_{2151.8}$**612**
C **3074.1**$_5$, $(29/2^-)$, $\gamma_{2762.2}$**314.1**, $\gamma_{2521.8}$**551.6**$_3$ E2
A **3079.8**$_{14}$, $(25/2^-)$, $\gamma_{2763.4}$**316.5**$_5$, $\gamma_{2453.6}$**626**
3168.4, $(29/2)$, $\gamma_{2521.8}$**646.6**(100)
D **3389.1**$_5$, $(33/2^+)$, $\gamma_{2762.2}$**626.9**$_3$(100) E2
3415.5$_9$, $\gamma_{2746.3}$**669.2**$_7$(100)
C **3742.9**, $(33/2^-)$, $\gamma_{3074.1}$**668.9**(100) E2
3827.9$_8$, $(33/2)$, $\gamma_{3389.1}$**439.5**, $\gamma_{3168.4}$**659.6** E2
D **4063.1**$_7$, $(37/2^+)$, $\gamma_{3389.1}$**674.0**$_4$(100) (E2)
4133.6$_{10}$(?), $\gamma_{3415.5}$**718.1**$_3$(100)(?)
C **4460.3**, $(37/2^-)$, $\gamma_{3742.9}$**718.1**$_3$(100)
4486.0, $(37/2)$, $\gamma_{4063.1}$**423.4**, $\gamma_{3827.9}$**657.9** E2
D **4781.7**, $(41/2^+)$, $\gamma_{4063.1}$**719.0**(100) E2
5140.1$_9$, $(41/2)$, $\gamma_{4781.7}$**358.4**, $\gamma_{4486.0}$**654.0** E2, $\gamma_{4460.3}$**679.8** (E2), $\gamma_{4063.1}$**1077.4**
5206.4, $\gamma_{4486.0}$**720.3**(100) (E2)
C **5243.6**, $(41/2^-)$, $\gamma_{4486.0}$**757.6** (E2), $\gamma_{4460.3}$**783.4**
5376.7, $(43/2^-)$, $\gamma_{5243.6}$**133.3** M1, $\gamma_{5206.4}$**170.3**, $\gamma_{5140.1}$**236.6**(100) (E1,M2)
5590.6$_{14}$, $(47/2^-)$, *2.3 ns*, $\gamma_{5376.7}$**213.9**(100)
F **5759.8**, $(49/2)$, $\gamma_{5590.6}$**169.3**(100)
6108.5, $\gamma_{5590.6}$**517.7**(100)
G **6226.8**$_{17}$, $(51/2)$, $\gamma_{5590.6}$**636.3**(100)
F **6717.3**$_{20}$, $(51/2)$, $\gamma_{6108.5}$**608.7** (E1), $\gamma_{5759.8}$**957.7**(100) E1
6740.8, $\gamma_{5590.6}$**1150.1**(100)
6945.7, $\gamma_{6740.8}$**204.9**, $\gamma_{6108.5}$**837.1**
F **6998.7**, $(53/2)$, $\gamma_{6717.3}$**281.5**(100) M1
G **7064.1**, $(55/2)$, $\gamma_{6226.8}$**837.4**
7533.5, $\gamma_{6740.8}$**792.6**(100)
7581.8, $\gamma_{6945.7}$**635.9**(100)
7763.6, $\gamma_{6717.3}$**1046.3**(100)
7883.0, $\gamma_{6717.3}$**1165.7**
G **7933.3**, $(59/2)$, $\gamma_{7064.1}$**869.3**(100)
F **8028.6**, $(57/2)$, $\gamma_{6998.7}$**1029.9**(100) E2
8130.7, $\gamma_{7883.0}$**247.7**, $\gamma_{7763.6}$**367.1**, $\gamma_{6998.7}$**1132.1**
G **8451.2**, $(61/2)$, $\gamma_{7933.3}$**518.0**, $\gamma_{7581.8}$**869.2**
8461.9, $\gamma_{7581.8}$**880.1**(100)
8604.4, $\gamma_{7581.8}$**1022.7**, $\gamma_{7533.5}$**1070.9**
8635.8, $\gamma_{8461.9}$**173.9**(100)
F **8636.7**, $(61/2)$, $\gamma_{8028.6}$**608.1**(100) (E2)
8664.8, $\gamma_{8028.6}$**636.2**(100)
8823.1, $\gamma_{8130.7}$**692.4**(100)
9018.9, $\gamma_{8664.8}$**354.1**(100)
9171, $\gamma_{8636.7}$**534** E2
9211.7, $\gamma_{8636.7}$**575.0**(100) (E2)
9272.9, $\gamma_{8664.8}$**608.1**(100)
9619.2, $\gamma_{8823.1}$**796.1**(100)
9805.9, $\gamma_{9272.9}$**533.0**, $\gamma_{9018.9}$**787.0**
9853.9, $\gamma_{8451.2}$**1402.7**(100)
9882.2, $\gamma_{9272.9}$**609.8**, $\gamma_{8451.2}$**1430.5**
9928, γ_{9171}**757**(100)
9965.5, $\gamma_{8451.2}$**1514.3**(100) E2
10115.4, $\gamma_{9211.7}$**903.7**(100) (E2)
10271.1, $\gamma_{9805.9}$**465.2**(100)
10381.2, $\gamma_{9805.9}$**575.3**(100)
10684, $\gamma_{9965.5}$**718**(100)
10801.2, $\gamma_{9965.5}$**835.7**(100)
10841.4, $\gamma_{9882.2}$**959.2**(100)
11115.6, $\gamma_{10271.1}$**844.5**(100)
11336.6, $\gamma_{10841.4}$**495.2**(100)
11432.7, $\gamma_{10381.2}$**1051.5**(100)
11534.6, $\gamma_{10801.2}$**733.4**(100)
11540.4, $\gamma_{11115.6}$**424.8**(100)
11615.0, $\gamma_{11336.6}$**278.4**(100)

11757.4, $\gamma_{11615.0}$**142.1**, $\gamma_{11336.6}$**421.2**
11852, $\gamma_{11432.7}$**421.2**, $\gamma_{10115.4}$**1735** (E2)
11898.5, $\gamma_{11115.6}$**782.9**(100)
12093.2, $\gamma_{10381.2}$**1712.0**(100)
12114, $\gamma_{11757.4}$**361.7**(100)
12336.0, $\gamma_{11432.7}$**903.3**(100)
14069.8, $\gamma_{12336.0}$**1733.8**(100)
H **x**, $J \approx (63/2)$
H **721.4+x**, $J+2$, γ_{x}**721.4**
H **1487.3+x**, $J+4$, $\gamma_{721.4+x}$**765.9**
H **2297.9+x**, $J+6$, $\gamma_{1487.3+x}$**810.6**$_1$(1.06_9)
H **3153.3+x**, $J+8$, $\gamma_{2297.9+x}$**855.4**$_1$(1.09_{12})
H **4053.5+x**, $J+10$, $\gamma_{3153.3+x}$**900.2**$_1$(0.79_8)
H **4998.9+x**, $J+12$, $\gamma_{4053.5+x}$**945.4**$_1$(1.00_6)
H **5990.0+x**, $J+14$, $\gamma_{4998.9+x}$**991.1**$_1$(0.88_{12})
H **7026.9+x**, $J+16$, $\gamma_{5990.0+x}$**1036.9**$_1$(1.09_6)
H **8109.5+x**, $J+18$, $\gamma_{7026.9+x}$**1082.6**$_1$(1.18_{12})
H **9238.6+x**, $J+20$, $\gamma_{8109.5+x}$**1129.1**$_1$(1.03_{12})
H **10413.6+x**, $J+22$, $\gamma_{9238.6+x}$**1175.0**$_1$(0.94_8)
H **11635.4+x**, $J+24$, $\gamma_{10413.6+x}$**1221.8**$_1$(0.88_6)
H **12903.7+x**, $J+26$, $\gamma_{11635.4+x}$**1268.3**$_1$(0.79_{21})
H **14219.2+x**, $J+28$, $\gamma_{12903.7+x}$**1315.5**$_1$(0.79_9)
H **15581.2+x**, $J+30$, $\gamma_{14219.2+x}$**1362.0**$_2$(0.39_{11})
H **16989.8+x**, $J+32$, $\gamma_{15581.2+x}$**1408.6**$_2$(0.58_{15})
H **18445.1+x**, $J+34$, $\gamma_{16989.8+x}$**1455.3**$_2$
H **19945.0+x**, $J+36$, $\gamma_{18445.1+x}$**1499.9**$_5$
I **y**, $J_1 \approx (59/2)$
I **678.6+y**, J_1+2, γ_{y}**678.6**$_5$
I **1403.1+y**, J_1+4, $\gamma_{678.6+y}$**724.5**$_3$
I **2173.7+y**, J_1+6, $\gamma_{1403.1+y}$**770.6**$_1$
I **2990.2+y**, J_1+8, $\gamma_{2173.7+y}$**816.5**$_1$
I **3853.3+y**, J_1+10, $\gamma_{2990.2+y}$**863.1**$_1$(0.76_{18})
I **4763.7+y**, J_1+12, $\gamma_{3853.3+y}$**910.4**$_1$(0.79_{21})
I **5721.3+y**, J_1+14, $\gamma_{4763.7+y}$**957.6**$_2$
I **6725.3+y**, J_1+16, $\gamma_{5721.3+y}$**1004.0**$_4$
I **7777.8+y**, J_1+18, $\gamma_{6725.3+y}$**1052.5**$_4$(0.61_{14})
I **8877.8+y**, J_1+20, $\gamma_{7777.8+y}$**1100.0**$_3$(0.61_{14})
I **10026.0+y**, J_1+22, $\gamma_{8877.8+y}$**1148.2**$_3$(0.85_{18})
I **11222.6+y**, J_1+24, $\gamma_{10026.0+y}$**1196.6**$_4$(0.82_6)
I **12467.1+y**, J_1+26, $\gamma_{11222.6+y}$**1244.5**$_4$(0.94_{12})
I **13759.7+y**, J_1+28, $\gamma_{12467.1+y}$**1292.6**$_4$(0.94_{12})
I **15100.5+y**, J_1+30, $\gamma_{13759.7+y}$**1340.8**$_5$(0.39_{12})
I **16489.3+y**, J_1+32, $\gamma_{15100.5+y}$**1388.8**$_6$(0.55_9)
I **17927.1+y**, J_1+34, $\gamma_{16489.3+y}$**1437.8**$_7$
I **19412.4+y**, J_1+36, $\gamma_{17927.1+y}$**1485.3**$_8$
J **z**, $J_2 \approx (61/2)$
J **702.0+z**, J_2+2, γ_{z}**702.0**$_5$
J **1449.7+z**, J_2+4, $\gamma_{702.0+z}$**747.7**$_3$
J **2243.6+z**, J_2+6, $\gamma_{1449.7+z}$**793.9**$_3$
J **3083.5+z**, J_2+8, $\gamma_{2243.6+z}$**839.9**$_2$
J **3970.3+z**, J_2+10, $\gamma_{3083.5+z}$**886.8**$_2$(0.36_9)
J **4904.3+z**, J_2+12, $\gamma_{3970.3+z}$**934.0**$_3$(0.45_{14})
J **5885.3+z**, J_2+14, $\gamma_{4904.3+z}$**981.0**$_4$(0.45_6)
J **6913.8+z**, J_2+16, $\gamma_{5885.3+z}$**1028.5**$_4$(0.45_9)
J **7990.1+z**, J_2+18, $\gamma_{6913.8+z}$**1076.3**$_3$(0.55_9)
J **9114.0+z**, J_2+20, $\gamma_{7990.1+z}$**1123.9**$_4$(0.55_9)
J **10286.6+z**, J_2+22, $\gamma_{9114.0+z}$**1172.6**$_4$(0.39_9)
J **11506.8+z**, J_2+24, $\gamma_{10286.6+z}$**1220.2**$_4$(0.24_{17})
J **12774.9+z**, J_2+26, $\gamma_{11506.8+z}$**1268.1**$_5$(0.21_9)
J **14091.1+z**, J_2+28, $\gamma_{12774.9+z}$**1316.2**$_5$(0.64_{17})
J **15454.8+z**, J_2+30, $\gamma_{14091.1+z}$**1363.7**$_6$(0.27_6)
J **16867.4+z**, J_2+32, $\gamma_{15454.8+z}$**1412.6**$_7$(0.36_9)
J **18327.8+z**, J_2+34, $\gamma_{16867.4+z}$**1460.4**$_9$
K **u**, $J_3 \approx (59/2)$
K **723.4+u**, J_3+2, γ_{u}**723.4**$_{15}$
K **1490.5+u**, J_3+4, $\gamma_{723.4+u}$**767.1**$_5$
K **2303.7+u**, J_3+6, $\gamma_{1490.5+u}$**813.2**$_8$
K **3162.1+u**, J_3+8, $\gamma_{2303.7+u}$**858.4**$_6$
K **4066.9+u**, J_3+10, $\gamma_{3162.1+u}$**904.8**$_7$
K **5020.1+u**, J_3+12, $\gamma_{4066.9+u}$**953.2**$_7$
K **6019.1+u**, J_3+14, $\gamma_{5020.1+u}$**999.0**$_7$
K **7064.8+u**, J_3+16, $\gamma_{6019.1+u}$**1045.7**$_6$
K **8157.6+u**, J_3+18, $\gamma_{7064.8+u}$**1092.8**$_8$
K **9298+u**, J_3+20, $\gamma_{8157.6+u}$**1140.3**$_{13}$
K **10486+u**, J_3+22, γ_{9298+u}**1188.3**$_{12}$
K **11721+u**, J_3+24, $\gamma_{10486+u}$**1234.9**$_{12}$
K **13006+u**, J_3+26, $\gamma_{11721+u}$**1284.8**$_{13}$
K **14337+u**, J_3+28, $\gamma_{13006+u}$**1331.4**$_{14}$
K **15718+u**, J_3+30, $\gamma_{14337+u}$**1380.8**$_{13}$
K **17146+u**, J_3+32, $\gamma_{15718+u}$**1428.3**$_{19}$
L **v**, $J_4 \approx (65/2)$
L **743.2+v**, J_4+2, γ_{v}**743.2**$_{15}$
L **1533.0+v**, J_4+4, $\gamma_{743.2+v}$**789.8**$_6$
L **2368.6+v**, J_4+6, $\gamma_{1533.0+v}$**835.6**$_7$
L **3250.0+v**, J_4+8, $\gamma_{2368.6+v}$**881.4**$_7$
L **4177.7+v**, J_4+10, $\gamma_{3250.0+v}$**927.7**$_8$
L **5151.9+v**, J_4+12, $\gamma_{4177.7+v}$**974.2**$_6$
L **6174.9+v**, J_4+14, $\gamma_{5151.9+v}$**1023.0**$_9$
L **7243.7+v**, J_4+16, $\gamma_{6174.9+v}$**1068.8**$_5$
L **8360.2+v**, J_4+18, $\gamma_{7243.7+v}$**1116.5**$_6$
L **9524.6+v**, J_4+20, $\gamma_{8360.2+v}$**1164.4**$_7$
L **10737+v**, J_4+22, $\gamma_{9524.6+v}$**1212.6**$_8$
L **11998+v**, J_4+24, $\gamma_{10737+v}$**1260.9**$_7$
L **13306+v**, J_4+26, $\gamma_{11998+v}$**1307.6**$_7$
L **14661+v**, J_4+28, $\gamma_{13306+v}$**1355.3**$_{10}$
L **16065+v**, J_4+30, $\gamma_{14661+v}$**1403.6**$_{13}$
L **17517+v**, J_4+32, $\gamma_{16065+v}$**1452.2**$_{14}$



SD-1 band | SD-2 band (1989Jo04,1995Ce03) | SD-3 band (1989Jo04,1995Ce03) | SD-4 band (1995Ce03) | SD-5 band (1995Ce03)

$^{153}_{66}Dy_{87}$

$^{154}_{66}\mathbf{Dy}_{88}$

S$_n$: 9318 $_9$, S$_p$: 6366 $_9$

Nuclear Bands

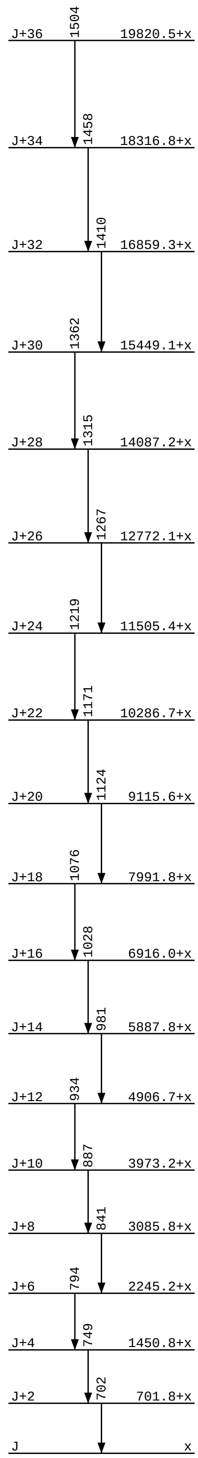
A Kπ=0^+, β band
B (π=+,α=0)$_1$ band
C (π=+,α=1)$_1$ band
D (π=+,α=0)$_2$ band
E (π=+,α=1)$_2$ band
F (π=+,α=0)$_3$ band
G (π=+,α=0)$_4$, GS band
H (π=-,α=0)$_1$, octupole band
I (π=-,α=1)$_1$, octupole band
J (π=-,α=1)$_3$ band
K (π=-,α=0)$_3$ band
L (π=-,α=1)$_2$ band
M (π=-,α=0)$_2$ band
N (π=-,α=1)$_5$ band
O (π=-,α=1)$_4$ band
P (π=-,α=0)$_4$ band
Q Band based on 2^-
R Kπ=2^+ γ band
S Kπ=0^+ band
T Kπ=2^+ band
U SD band (1995Ni03,1996Fi08)
Q$_0$=15.9$^{31}_{21}$

Levels and γ-ray branchings:

G **0**, 0^+, *3.0x10^6$_{15}$ y*, %α=100
G **334.31**$_3$, 2^+, *27.5$_{20}$ ps*, $\gamma_{\mathbf{0}}$**334.30**$_3$(100) E2
A **660.65**$_{12}$, 0^+, $\gamma_{\mathbf{334.31}}$**326.2**$_3$(100$_{16}$), $\gamma_{\mathbf{0}}$**660.8**$_2$(9.5$_5$) E0
G **746.52**$_5$, 4^+, *6.9$_5$ ps*, $\gamma_{\mathbf{334.31}}$**412.20**$_3$(100) E2
A **904.93**$_8$, 2^+, $\gamma_{\mathbf{660.65}}$**244.2**$_4$(3.8$_{11}$), $\gamma_{\mathbf{334.31}}$**570.6**$_1$(100$_5$) E0+E2,M1, $\gamma_{\mathbf{0}}$**905.2**$_2$(19.7$_{18}$)
R **1026.92**$_{11}$, 2^+, $\gamma_{\mathbf{660.65}}$**366.2**$_3$(18.7$_{24}$), $\gamma_{\mathbf{334.31}}$**692.5**$_2$(90$_6$) M1, $\gamma_{\mathbf{0}}$**1027.1**$_2$(100$_6$)
S **1057.90**$_{17}$, 0^+, $\gamma_{\mathbf{904.93}}$**152.7**$_3$(100$_{17}$), $\gamma_{\mathbf{660.65}}$**397.3**$_2$(244$_{15}$) E0, $\gamma_{\mathbf{334.31}}$**723.6**$_5$(34$_{17}$), $\gamma_{\mathbf{0}}$**1058.4**$_6$(5.8$_{17}$) E0
I **1207.71**$_{10}$, 3^-, $\gamma_{\mathbf{746.52}}$**460.9**$_3$(7.4$_7$), $\gamma_{\mathbf{334.31}}$**873.4**$_1$(100$_7$) E1
G **1223.43**$_6$, 6^+, *2.4$_4$ ps*, $\gamma_{\mathbf{746.52}}$**476.90**$_4$(100) E2
A **1251.25**$_{13}$, 4^+, $\gamma_{\mathbf{904.93}}$**346.6**$_3$(67$_7$) E2, $\gamma_{\mathbf{746.52}}$**504.9**$_3$(100$_{10}$) E0+E2,M1
R **1333.95**$_{15}$, 3^+, $\gamma_{\mathbf{904.93}}$**429.1**$_4$(14$_3$), $\gamma_{\mathbf{746.52}}$**587.4**$_3$(24.3$_{26}$), $\gamma_{\mathbf{334.31}}$**999.7**$_2$(100$_6$)
S **1390.07**$_{14}$, 2^+, $\gamma_{\mathbf{1207.71}}$**182.0**$_4$(52$_{10}$), $\gamma_{\mathbf{1026.92}}$**363.4**$_4$(29$_{14}$), $\gamma_{\mathbf{904.93}}$**485.3**$_3$(45$_7$) E0+E2,M1, $\gamma_{\mathbf{746.52}}$**642.8**$_4$(37$_{17}$), $\gamma_{\mathbf{660.65}}$**729.7**$_3$(100$_8$), $\gamma_{\mathbf{334.31}}$**1055.8**$_3$(78$_{10}$) E0+E2,M1, $\gamma_{\mathbf{0}}$**1390.0**$_4$(40$_9$)
I **1420.23**$_{19}$, 1^-, $\gamma_{\mathbf{904.93}}$**515.2**$_4$(20$_8$), $\gamma_{\mathbf{334.31}}$**1085.9**$_3$(80$_7$), $\gamma_{\mathbf{0}}$**1420.3**$_3$(100$_{10}$)
R **1442.29**$_{21}$, 4^+, $\gamma_{\mathbf{1026.92}}$**415.8**$_4$(37$_9$), $\gamma_{\mathbf{746.52}}$**695.5**$_3$(100$_9$) M1(+E2), $\gamma_{\mathbf{334.31}}$**1108.0**$_4$(62$_{16}$)
T **1507.44**$_{14}$, 2^+, $\gamma_{\mathbf{1026.92}}$**480.0**$_4$(12$_5$), $\gamma_{\mathbf{904.93}}$**602.9**$_4$(17$_5$), $\gamma_{\mathbf{660.65}}$**846.6**$_3$(53$_5$), $\gamma_{\mathbf{334.31}}$**1173.2**$_2$(100$_9$), $\gamma_{\mathbf{0}}$**1507.6**$_4$(42$_9$)
I **1545.5**$_3$, 5^-, $\gamma_{\mathbf{746.52}}$**799.0**$_3$(100)
Q **1634.91**$_{21}$, 2^-, $\gamma_{\mathbf{334.31}}$**1300.6**$_2$(100)
A **1658.10**$_{11}$, 6^+, $\gamma_{\mathbf{1251.25}}$**406.9**$_1$(100$_7$) E2, $\gamma_{\mathbf{1223.43}}$**434.7**$_2$(13.4$_{15}$) E2+E0+(M1)
R **1739.39**$_{14}$, 5^+, $\gamma_{\mathbf{1333.95}}$**405.8**$_4$(58$_9$), $\gamma_{\mathbf{1223.43}}$**515.6**$_3$(38$_6$), $\gamma_{\mathbf{746.52}}$**992.9**$_3$(100$_9$)
G **1746.93**$_7$, 8^+, *1.5$_3$ ps*, $\gamma_{\mathbf{1223.43}}$**523.50**$_4$(100) E2
T **1781.7**$_4$, (3^+), $\gamma_{\mathbf{1026.92}}$**755.1**$_5$(100$_{20}$), $\gamma_{\mathbf{334.31}}$**1447.1**$_4$(91$_{20}$)
Q **1818.6**$_3$, (4^-), $\gamma_{\mathbf{1207.71}}$**610.6**$_5$(30$_{14}$), $\gamma_{\mathbf{746.52}}$**1072.2**$_3$(100$_{13}$)
1832.6$_3$, $\gamma_{\mathbf{334.31}}$**1498.3**$_3$(100)
1844.6$_3$, $\gamma_{\mathbf{334.31}}$**1510.3**$_3$(100)
1877.1$_4$, $\gamma_{\mathbf{334.31}}$**1542.7**$_5$(100$_{13}$), $\gamma_{\mathbf{0}}$**1877.1**$_6$(52$_{13}$)
R **1884.94**$_{19}$, (6)$^+$, $\gamma_{\mathbf{1223.43}}$**661.5**$_3$(100$_{26}$) M1,E2, $\gamma_{\mathbf{746.52}}$**1138.5**$_3$(53$_{11}$)
Q **1903.42**$_{25}$, (3^-), $\gamma_{\mathbf{1333.95}}$**569**$_1$(100$_5$), $\gamma_{\mathbf{1026.92}}$**876.6**$_3$(5.4$_8$), $\gamma_{\mathbf{746.52}}$**1156.8**$_4$(4.3$_{21}$)
1958.0$_5$, $\gamma_{\mathbf{334.31}}$**1623.7**$_5$(100)
I **1964.04**$_8$, 7^-, $\gamma_{\mathbf{1223.43}}$**740.60**$_7$(100)
1990.8$_3$, $\gamma_{\mathbf{334.31}}$**1656.5**$_3$(100)
2038
2148.1$_5$, $\gamma_{\mathbf{334.31}}$**1813.8**$_5$(100)
A **2162.68**$_{20}$, 8^+, $\gamma_{\mathbf{1658.10}}$**504.7**$_4$(100)
2168.4$_4$, $\gamma_{\mathbf{334.31}}$**1834.1**$_4$(100)
2177.7$_3$, $\gamma_{\mathbf{746.52}}$**1431.0**$_3$(100$_{19}$), $\gamma_{\mathbf{334.31}}$**1843.8**$_5$(90$_{19}$)
R **2182.77**$_{15}$, 7^+, $\gamma_{\mathbf{1739.39}}$**443.3**$_2$(100$_7$) E2, $\gamma_{\mathbf{1223.43}}$**959.1**$_3$(47$_5$), $\gamma_{\mathbf{334.31}}$**1849.3**$_4$(100$_{13}$)
2191.74$_{23}$, (7,8), $\gamma_{\mathbf{1223.43}}$**968.3**$_3$(100)
2249.0$_4$, $\gamma_{\mathbf{746.52}}$**1502.5**$_4$(100)
2271.72$_{24}$, $\gamma_{\mathbf{1026.92}}$**1244.6**$_3$(55$_{14}$), $\gamma_{\mathbf{660.65}}$**1611.2**$_5$(51$_{21}$), $\gamma_{\mathbf{334.31}}$**1937.8**$_5$(100$_{21}$)
G **2303.81**$_8$, 10^+, *1.1$_3$ ps*, $\gamma_{\mathbf{1746.93}}$**556.90**$_4$(100) E2
2344.6$_6$, $\gamma_{\mathbf{334.31}}$**2010.3**$_6$(100)
I **2420.75**$_8$, 9^-, $\gamma_{\mathbf{1964.04}}$**456.70**$_4$(20$_4$), $\gamma_{\mathbf{1746.93}}$**673.80**$_5$(100) D
2472.15$_9$, 7^+, $\gamma_{\mathbf{2191.74}}$**280.4**$_3$(7.4$_{11}$), $\gamma_{\mathbf{2182.77}}$**289.4**$_2$(27.5$_{21}$) E0+M1,E2, $\gamma_{\mathbf{2162.68}}$**309.5**$_2$(21.7$_{16}$) M1, $\gamma_{\mathbf{1884.94}}$**587.3**$_3$(6.9$_{11}$), $\gamma_{\mathbf{1746.93}}$**725.1**$_1$(70$_4$) M1+E2, $\gamma_{\mathbf{1739.39}}$**732.8**$_2$(17.5$_{16}$), $\gamma_{\mathbf{1658.10}}$**814.1**$_1$(79$_5$) M1+E2, $\gamma_{\mathbf{1223.43}}$**1248.8**$_2$(100$_5$) M1
O **2566.7**$_4$, 7^-, $\gamma_{\mathbf{1746.93}}$**819.8**(100)
H **2664.2**$_4$, 8^-, $\gamma_{\mathbf{1746.93}}$**917.3**(100)
A **2757.4**$_5$, 10^+, $\gamma_{\mathbf{2162.68}}$**594.7**(100)
P **2866.0**$_3$, 8^-, $\gamma_{\mathbf{2566.7}}$**299.2**(67), $\gamma_{\mathbf{1964.04}}$**901.9**(100$_{17}$)
I **2881.77**$_8$, 11^-, *4.5$_3$ ps*, $\gamma_{\mathbf{2420.75}}$**461.00**$_6$(83) E2, $\gamma_{\mathbf{2303.81}}$**577.90**$_5$(100) D
G **2892.21**$_9$, 12^+, *0.94$_{19}$ ps*, $\gamma_{\mathbf{2303.81}}$**588.50**$_5$(100) E2
O **3011.66**$_{14}$, 9^-, $\gamma_{\mathbf{2866.0}}$**145.7**(100), $\gamma_{\mathbf{2566.7}}$**444.9**(4), $\gamma_{\mathbf{2420.75}}$**590.90**$_{13}$(50), $\gamma_{\mathbf{1746.93}}$**1264.7**(40$_{13}$)
H **3047.8**$_4$, 10^-, $\gamma_{\mathbf{2664.2}}$**383.6**(100$_{15}$), $\gamma_{\mathbf{2420.75}}$**627.1**(100$_{10}$), $\gamma_{\mathbf{2303.81}}$**744**$_1$(25)
P **3158.65**$_{15}$, 10^-, $\gamma_{\mathbf{3011.66}}$**147**$_1$(100), $\gamma_{\mathbf{2866.0}}$**292.7**(20$_2$)
A **3288.6**$_5$, 12^+, $\gamma_{\mathbf{2757.4}}$**531**$_1$(100)
O **3314.05**$_{15}$, 11^-, $\gamma_{\mathbf{3158.65}}$**155.40**$_5$(100), $\gamma_{\mathbf{3011.66}}$**302.40**$_7$(100), $\gamma_{\mathbf{2881.77}}$**432.3**(40$_{10}$), $\gamma_{\mathbf{2420.75}}$**893.3**(20), $\gamma_{\mathbf{2303.81}}$**1010.2**(60$_6$)
I **3389.93**$_9$, 13^-, *1.7 ps*, $\gamma_{\mathbf{2892.21}}$**497.50**$_6$(17.6$_{12}$) D, $\gamma_{\mathbf{2881.77}}$**508.10**$_4$(100$_4$) E2
H **3483.5**$_7$, 12^-, $\gamma_{\mathbf{3047.8}}$**435.7**(100)
P **3503.66**$_{15}$, 12^-, $\gamma_{\mathbf{3314.05}}$**189.60**$_4$(100), $\gamma_{\mathbf{3158.65}}$**345.00**$_6$(100)
G **3508.17**$_9$, 14^+, *0.55$_{10}$ ps*, $\gamma_{\mathbf{2892.21}}$**616.10**$_4$(100) E2
B **3678.96**$_{11}$, 14^+, $\gamma_{\mathbf{3288.6}}$**390.3**(85), $\gamma_{\mathbf{2892.21}}$**786.80**$_9$(100)
O **3719.66**$_{16}$, 13^-, $\gamma_{\mathbf{3503.66}}$**216.00**$_5$(100), $\gamma_{\mathbf{3314.05}}$**405.60**$_9$(100)
P **3963.76**$_{16}$, 14^-, $\gamma_{\mathbf{3719.66}}$**244.10**$_7$(100), $\gamma_{\mathbf{3503.66}}$**460.10**$_{12}$(100)
I **3982.18**$_9$, 15^-, *3.0 ps*, $\gamma_{\mathbf{3508.17}}$**474.50**$_7$(15.6$_{13}$) D, $\gamma_{\mathbf{3389.93}}$**592.10**$_4$(100$_4$) E2
H **4005.6**$_8$, 14^-, $\gamma_{\mathbf{3483.5}}$**522.1**(100)
B **4089.80**$_{10}$, 16^+, *1.3$_5$ ps*, $\gamma_{\mathbf{3678.96}}$**410.9**$_1$(14), $\gamma_{\mathbf{3508.17}}$**581.60**$_5$(100$_4$) E2
G **4172.21**$_{12}$, 16^+, $\gamma_{\mathbf{3508.17}}$**664.10**$_8$(100) E2
O **4230.16**$_{17}$, 15^-, $\gamma_{\mathbf{3963.76}}$**266.40**$_4$(100), $\gamma_{\mathbf{3719.66}}$**510.50**$_{13}$(100)
P **4518.67**$_{17}$, 16^-, $\gamma_{\mathbf{4230.16}}$**288.50**$_5$(100), $\gamma_{\mathbf{3963.76}}$**554.9**$_1$(100)
H **4587.3**$_{10}$, 16^-, $\gamma_{\mathbf{4005.6}}$**581.7**(100)
B **4636.33**$_{11}$, 18^+, *0.76$_{17}$ ps*, $\gamma_{\mathbf{4089.80}}$**546.50**$_5$(100) E2
I **4641.77**$_{10}$, 17^-, *1.3$^{10}_{6}$ ps*, $\gamma_{\mathbf{3982.18}}$**659.60**$_4$(100) E2
O **4826.07**$_{17}$, 17^-, $\gamma_{\mathbf{4518.67}}$**307.40**$_5$(100), $\gamma_{\mathbf{4230.16}}$**595.90**$_6$(100)
G **4868.00**$_{14}$, 18^+, $\gamma_{\mathbf{4172.21}}$**695.90**$_{12}$(100$_{10}$), $\gamma_{\mathbf{4089.80}}$**778.40**$_{22}$(54)
P **5151.07**$_{18}$, 18^-, $\gamma_{\mathbf{4826.07}}$**325.00**$_5$(100), $\gamma_{\mathbf{4518.67}}$**632.40**$_{12}$(100)
H **5205.6**$_{11}$, 18^-, $\gamma_{\mathbf{4587.3}}$**618.3**(100)
B **5248.75**$_{12}$, 20^+, *0.62$_9$ ps*, $\gamma_{\mathbf{4636.33}}$**612.40**$_4$(100) E2
I **5338.36**$_{11}$, 19^-, $\gamma_{\mathbf{4641.77}}$**696.60**$_4$(100) E2
O **5488.67**$_{18}$, 19^-, $\gamma_{\mathbf{5151.07}}$**337.60**$_5$(100), $\gamma_{\mathbf{4826.07}}$**662.60**$_7$(100)
G **5563.41**$_{16}$, 20^+, $\gamma_{\mathbf{4868.00}}$**695.60**$_{12}$(100)
P **5840.57**$_{18}$, 20^-, $\gamma_{\mathbf{5488.67}}$**351.90**$_7$(100), $\gamma_{\mathbf{5151.07}}$**689.50**$_8$(100)
H **5866.2**$_{12}$, 20^-, $\gamma_{\mathbf{5205.6}}$**660.6**(100)
B **5933.87**$_{13}$, 22^+, *0.38 ps*, $\gamma_{\mathbf{5248.75}}$**685.10**$_4$(100) E2
I **6035.32**$_{12}$, 21^-, $\gamma_{\mathbf{5338.36}}$**696.97**$_5$(100) E2
N **6181.2**$_3$, 21^-, $\gamma_{\mathbf{5338.36}}$**843**$_1$(100)
O **6200.77**$_{18}$, 21^-, $\gamma_{\mathbf{5840.57}}$**360.20**$_5$(100), $\gamma_{\mathbf{5488.67}}$**712.10**$_6$(100)
G **6284.70**$_{16}$, 22^+, $\gamma_{\mathbf{5563.41}}$**721.32**$_6$(100)
H **6559.2**$_{16}$, 22^-, $\gamma_{\mathbf{5866.2}}$**693**$_1$(100)
P **6573.07**$_{24}$, 22^-, $\gamma_{\mathbf{6200.77}}$**372.30**$_{17}$, $\gamma_{\mathbf{5840.57}}$**732.5**$_4$
B **6689.69**$_{13}$, 24^+, *0.2 ps*, $\gamma_{\mathbf{5933.87}}$**755.80**$_4$(100) E2

I **6753.81**$_{13}$, 23^-, $\gamma_{6035.32}$**718.50**$_4$(100) E2
N **6804.7**$_3$, 23^-, $\gamma_{6181.2}$**623.50**$_5$(100), $\gamma_{6035.32}$**769.5**(40)
O **6952.1**$_3$, 23^-, $\gamma_{6573.07}$**379.00**$_{19}$, $\gamma_{6200.77}$**751.3**$_{12}$
G **7044.60**$_{16}$, 24^+, $\gamma_{6284.70}$**760.00**$_8$(100)
H **7287.8**$_{17}$, 24^-, $\gamma_{6559.2}$**728.6**(100)
P **7342.6**$_3$, 24^-, $\gamma_{6952.1}$**390.50**$_{15}$, $\gamma_{6573.07}$**769.5**$_3$
F **7374.73**$_{16}$, 24^+, $\gamma_{6689.69}$**685.10**$_{12}$
B **7512.72**$_{13}$, 26^+, *0.2$^{4}_{2}$ ps*, $\gamma_{6689.69}$**823.00**$_4$(100) E2
I **7518.81**$_{13}$, 25^-, $\gamma_{6753.81}$**765.00**$_4$(100) E2
O **7740.8**$_4$, 25^-, $\gamma_{7342.6}$**398.2**, $\gamma_{6952.1}$**788.7**
N **7771.8**$_3$, 25^-, $\gamma_{6804.7}$**967.10**$_7$(100)
G **7855.59**$_{16}$, 26^+, $\gamma_{7044.60}$**811.00**$_5$(100)
H **8060.4**$_{17}$, 26^-, $\gamma_{7287.8}$**772.6**(100)
F **8138.52**$_{14}$, 26^+, $\gamma_{7512.72}$**626.01**$_6$(100), $\gamma_{7374.73}$**763.89**$_{16}$(33)
P **8151.1**$_4$, 26^-, $\gamma_{7740.8}$**410.30**$_{18}$, $\gamma_{7342.6}$**808.5**$_3$
N **8280.1**$_3$, 27^-, $\gamma_{7771.8}$**508.30**$_5$(100), $\gamma_{7518.81}$**761.4**(70)
I **8334.80**$_{14}$, 27^-, $\gamma_{7518.81}$**816.00**$_4$(100) E2
B **8399.84**$_{14}$, 28^+, *0.15 ps*, $\gamma_{7512.72}$**887.00**$_4$(100) E2
O **8569.8**$_5$, 27^-, $\gamma_{8151.1}$**418.70**$_{19}$, $\gamma_{7740.8}$**829.0**$_7$
G **8722.55**$_{16}$, 28^+, $\gamma_{7855.59}$**867.00**$_5$(100)
H **8884.2**$_{18}$, 28^-, $\gamma_{8060.4}$**823.8**(100)
F **8915.95**$_{14}$, 28^+, $\gamma_{8399.84}$**516.00**$_5$(100), $\gamma_{8138.52}$**778.20**$_{11}$(50)
P **9001.4**$_5$, 28^-, $\gamma_{8569.8}$**431.60**$_{21}$, $\gamma_{8151.1}$**850.3**$_4$
K **9118.5**$_6$, (28^-), $\gamma_{8280.1}$**838.4**
I **9187.6**$_4$, 29^-, $\gamma_{8334.80}$**853.3**(100) (E2), $\gamma_{8280.1}$**907.8**(1.9)
N **9217.00**$_{15}$, 29^-, $\gamma_{8334.80}$**882.20**$_4$(100$_6$) E2, $\gamma_{8280.1}$**936.8**(29)
B **9349.09**$_{14}$, 30^+, $\gamma_{8399.84}$**949.20**$_4$(100) E2
O **9444.6**$_5$, 29^-, $\gamma_{9001.4}$**443.20**$_{15}$, $\gamma_{8569.8}$**874.8**$_9$
D **9566.41**$_{16}$, 30^+, $\gamma_{8915.95}$**650.50**$_8$(100)
G **9645.60**$_{17}$, 30^+, $\gamma_{8722.55}$**923.04**$_7$(100)
F **9667.61**$_{15}$, 30^+, $\gamma_{8915.95}$**751.80**$_{12}$(100), $\gamma_{8722.55}$**945.09**$_5$(100)
H **9764.5**$_{19}$, 30^-, $\gamma_{8884.2}$**880.3**
K **9893.4**$_8$, (30^-), $\gamma_{9118.5}$**774.9**
P **9898.0**$_6$, 30^-, $\gamma_{9444.6}$**453.4**, $\gamma_{9001.4}$**896.6**
I **10106.5**$_4$, 31^-, $\gamma_{9217.00}$**890**$_1$(11), $\gamma_{9187.6}$**919.00**$_5$(100)
N **10155.70**$_{15}$, 31^-, $\gamma_{9217.00}$**938.70**$_5$(100) E2
B **10358.15**$_{16}$, 32^+, $\gamma_{9349.09}$**1008.82**$_9$(100) E2
O **10367.2**$_7$, 31^-, $\gamma_{9444.6}$**922.6**
D **10383.69**$_{15}$, 32^+, $\gamma_{9667.61}$**716.1**(5), $\gamma_{9566.41}$**817.40**$_{12}$(25), $\gamma_{9349.09}$**1034.60**$_4$(100$_5$) E2
K **10433.9**$_{10}$, (32^-), $\gamma_{9893.4}$**540.5**
F **10445.21**$_{16}$, 32^+, $\gamma_{9667.61}$**777.80**$_9$
G **10628.65**$_{19}$, 32^+, $\gamma_{9645.60}$**983.04**$_7$(100)
H **10704.4**$_{19}$, 32^-, $\gamma_{9764.5}$**939.9**
P **10846.5**$_8$, 32^-, $\gamma_{9898.0}$**948.5**
I **11072.6**$_4$, 33^-, $\gamma_{10106.5}$**966.00**$_7$(100)
L **11081.8**$_5$, 33^-, $\gamma_{10155.70}$**926.4**(5), $\gamma_{10106.5}$**975.1**(100) E2
D **11119.66**$_{15}$, 34^+, $\gamma_{10383.69}$**735.80**$_6$(100) E2, $\gamma_{10358.15}$**760.90**$_{16}$(33)
N **11147.20**$_{17}$, 33^-, $\gamma_{10155.70}$**991.50**$_8$(100) E2
F **11318.24**$_{15}$, 34^+, $\gamma_{10445.21}$**873.20**$_9$(33), $\gamma_{10383.69}$**934.90**$_9$(100), $\gamma_{10358.15}$**958.7**(100)
O **11340.2**$_{12}$, 33^-, $\gamma_{10367.2}$**973**$_1$
B **11431.15**$_{18}$, 34^+, $\gamma_{10358.15}$**1073.00**$_8$(100)
M **11605.1**$_5$, 34^-, $\gamma_{11081.8}$**523.30**$_{15}$(100)
G **11665.25**$_{20}$, 34^+, $\gamma_{10628.65}$**1036.60**$_6$(100)
H **11704.3**$_{20}$, 34^-, $\gamma_{10704.4}$**999.9**
K **11758.3**$_{11}$, (34^-), $\gamma_{10433.9}$**1324.4**
L **11829.1**$_5$, 35^-, $\gamma_{11605.1}$**224.00**$_4$(17$_2$) (D), $\gamma_{11081.8}$**747.30**$_8$(100$_8$) (E2)
P **11849.6**$_9$, 34^-, $\gamma_{10846.5}$**1003.1**
J **11915.7**$_7$, 35^-, $\gamma_{11081.8}$**833.9**
D **11924.69**$_{16}$, 36^+, $\gamma_{11318.24}$**605.90**$_{19}$(27), $\gamma_{11119.66}$**805.00**$_6$(100) E2
N **12062.90**$_{18}$, (35^-), $\gamma_{11147.20}$**915.70**$_6$(100)
I **12094.5**$_4$, 35^-, $\gamma_{11072.6}$**1022.00**$_5$
M **12306.4**$_5$, 36^-, $\gamma_{11829.1}$**477.30**$_9$(100), $\gamma_{11605.1}$**701.3**(33)
F **12408.90**$_{15}$, 36^+, $\gamma_{11924.69}$**484.10**$_7$(100), $\gamma_{11318.24}$**1090.96**$_6$(25), $\gamma_{11119.66}$**1289.10**$_5$(50)
L **12540.0**$_5$, 37^-, $\gamma_{12306.4}$**233.60**$_4$(100), $\gamma_{11829.1}$**710.90**$_7$(100) E2
B **12556.54**$_{19}$, 36^+, $\gamma_{11431.15}$**1125.40**$_6$
G **12761.76**$_{20}$, 36^+, $\gamma_{11665.25}$**1096.50**$_5$(100)
H **12765.2**$_{21}$, 36^-, $\gamma_{11704.3}$**1060.9**
M **13038.7**$_5$, 38^-, $\gamma_{12540.0}$**498.7**(100), $\gamma_{12306.4}$**732.3**(30)
C **13088.0**$_6$, 37^+, $\gamma_{11924.69}$**1163.3**
N **13088.1**$_6$, (37^-), $\gamma_{12062.90}$**1025.2**
I **13165.4**$_4$, 37^-, $\gamma_{12094.5}$**1070.88**$_5$
F **13256.8**$_4$, 38^+, *0.8$_4$ ps*, $\gamma_{12408.90}$**847.9**(27), $\gamma_{11924.69}$**1332.1**(100) E2
L **13310.8**$_5$, 39^-, $\gamma_{13038.7}$**272.1**(60), $\gamma_{12540.0}$**770.80**$_9$(100) E2
J **13402.0**$_{11}$, 39^-, $\gamma_{12540.0}$**862**$_1$
M **13557.8**$_6$, 40^-, $\gamma_{13310.8}$**247**$_1$, $\gamma_{13038.7}$**519.1**
B **13743.84**$_{20}$, 38^+, $\gamma_{12556.54}$**1187.30**$_6$
H **13888.8**$_{21}$, 38^-, $\gamma_{12765.2}$**1123.6**
G **13908.69**$_{21}$, 38^+, $\gamma_{12761.76}$**1146.93**$_5$(100)
L **14024.2**$_6$, 41^-, $\gamma_{13557.8}$**466.4**(100), $\gamma_{13310.8}$**713.4**(80)
F **14134.6**$_4$, 40^+, *0.8$_3$ ps*, $\gamma_{13256.8}$**877.84**$_{11}$(100) E2
I **14293.9**$_4$, 39^-, $\gamma_{13165.4}$**1128.50**$_5$
J **14374.8**$_{11}$, 41^-, $\gamma_{13310.8}$**1064**$_1$
C **14423.0**$_7$, 39^+, $\gamma_{13256.8}$**1166.2**
E **14468.1**$_7$, 39^+, $\gamma_{13256.8}$**1211.3**
M **14589.8**$_8$, 42^-, $\gamma_{14024.2}$**565.6**(100), $\gamma_{13557.8}$**1032**$_1$(20)
F **14884.9**$_5$, 42^+, *1.1$_4$ ps*, $\gamma_{14134.6}$**750.25**$_{17}$(100) E2
B **14980.24**$_{21}$, 40^+, $\gamma_{13743.84}$**1236.40**$_5$
H **15074.5**$_{22}$, 40^-, $\gamma_{13888.8}$**1185.7**
G **15117.90**$_{21}$, 40^+, $\gamma_{13908.69}$**1209.21**$_5$(100)
I **15483.4**$_4$, 41^-, $\gamma_{14293.9}$**1189.50**$_5$
C **15504.3**$_7$, (41^+), $\gamma_{14134.6}$**1369.7**
J **15661.1**$_8$, (43^-), $\gamma_{14024.2}$**1636.9**
F **16010.7**$_7$, 44^+, *0.16$_6$ ps*, $\gamma_{14884.9}$**1125.8**(100) E2
C **16088.1**$_7$, 43^+, $\gamma_{14884.9}$**1203.2**
B **16271.33**$_{21}$, 42^+, $\gamma_{14980.24}$**1291.07**$_5$
H **16322.4**$_{23}$, 42^-, $\gamma_{15074.5}$**1247.9**
E **16359.1**$_7$, (43^+), $\gamma_{14884.9}$**1474.2**
G **16372.91**$_{22}$, 42^+, $\gamma_{15117.90}$**1255.00**$_5$(100)
I **16734.6**$_4$, 43^-, $\gamma_{15483.4}$**1251.17**$_4$
J **16737.1**$_{13}$, (45^-), $\gamma_{15661.1}$**1076**$_1$
C **17186.2**$_9$, 45^+, $\gamma_{16010.7}$**1175.5**
E **17293.1**$_9$, (45^+), $\gamma_{16010.7}$**1282.4**
F **17321.8**$_9$, 46^+, *0.084 ps*, $\gamma_{16010.7}$**1311.1**(100)
B **17608.03**$_{22}$, 44^+, $\gamma_{16271.33}$**1336.70**$_4$
H **17628.9**$_{23}$, 44^-, $\gamma_{16322.4}$**1306.5**
I **18053.1**$_4$, 45^-, $\gamma_{16734.6}$**1318.50**$_5$
C **18484.7**$_{10}$, 47^+, *<0.11 ps*, $\gamma_{17186.2}$**1298.5**
F **18731.8**$_{13}$, 48^+, $\gamma_{17321.8}$**1410**$_1$
E **18914.1**$_{10}$, 47^+, $\gamma_{17321.8}$**1592.3**
B **18962.6**$_6$, 46^+, $\gamma_{17608.03}$**1354.6**
I **19444.5**$_7$, 47^-, $\gamma_{18053.1}$**1391.4**
I **20903.5**$_{12}$, 49^-, $\gamma_{19444.5}$**1459**$_1$
I **22434.9**$_{13}$, 51^-, $\gamma_{20903.5}$**1531.4**
U **x**, J
U **701.8+x**, J + 2, $\gamma_{\mathbf{x}}$**701.7**$_{10}$(0.20$_5$)
U **1450.8+x**, J + 4, $\gamma_{701.8+x}$**749.0**$_3$(0.30$_5$)
U **2245.2+x**, J + 6, $\gamma_{1450.8+x}$**794.4**$_2$(0.67$_8$)
U **3085.8+x**, J + 8, $\gamma_{2245.2+x}$**840.6**$_2$(0.95$_{15}$)
U **3973.2+x**, J + 10, $\gamma_{3085.8+x}$**887.4**$_2$(1.10$_{20}$)
U **4906.7+x**, J + 12, $\gamma_{3973.2+x}$**933.5**$_2$(1.02$_{15}$)
U **5887.8+x**, J + 14, $\gamma_{4906.7+x}$**981.1**$_1$(1.00$_{15}$)
U **6916.0+x**, J + 16, $\gamma_{5887.8+x}$**1028.2**$_2$(1.07$_{15}$)
U **7991.8+x**, J + 18, $\gamma_{6916.0+x}$**1075.8**$_2$(1.10$_{12}$)
U **9115.6+x**, J + 20, $\gamma_{7991.8+x}$**1123.8**$_2$(1.05$_{17}$)
U **10286.7+x**, J + 22, $\gamma_{9115.6+x}$**1171.1**$_2$(0.90$_{10}$)
U **11505.4+x**, J + 24, $\gamma_{10286.7+x}$**1218.7**$_2$(0.65$_8$)
U **12772.1+x**, J + 26, $\gamma_{11505.4+x}$**1266.7**$_2$(0.45$_7$)
U **14087.2+x**, J + 28, $\gamma_{12772.1+x}$**1315.1**$_2$(0.40$_{10}$)
U **15449.1+x**, J + 30, $\gamma_{14087.2+x}$**1361.9**$_3$(0.30$_7$)
U **16859.3+x**, J + 32, $\gamma_{15449.1+x}$**1410.2**$_5$(0.25$_5$)

U **18316.8+x**, $J+34$, $\gamma_{16859.3+x}$ **1457.5**$_6$ (0.17_7)
U **19820.5+x**, $J+36$, $\gamma_{18316.8+x}$ **1503.7**$_7$



SD band
(1995Ni03,1996Fi08)
$^{154}_{66}Dy_{88}$

$^{155}_{66}\mathbf{Dy}_{89}$

S$_n$: 6836 $_{14}$, S$_p$: 6299 $_{51}$

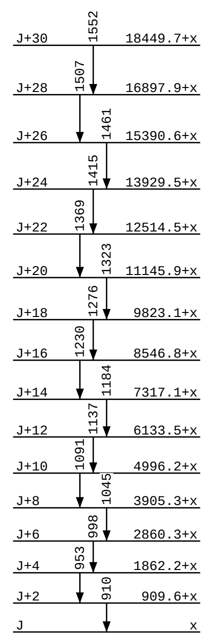
Nuclear Bands

A ν3/2[521], α=+1/2
B ν11/2[505], α=-1/2
C ν11/2[505], α=+1/2
D ν1/2[660], α=+1/2
E ν1/2[660], α=-1/2
F ν3/2[521] ν(1/2[660]^2), α=+1/2
G ν3/2[521] ν(1/2[660]^2), α=-1/2
H ν$i_{13/2}$ coupled to β vibration (?)
I SD band (1996Fi08)
Q$_0$=17.9$^{39}_{26}$

Levels and γ-ray branchings:

A **0**, $3/2^-$, *9.9$_2$ h*, %ε+%β$^+$=100 , μ=-0.385$_4$, Q=+1.04$_3$
A **39.384**$_9$, $5/2^-$, *3.34$_3$ ns*, γ_0**39.39**$_2$(100) M1+E2 $\delta = 0.222_4$
A **86.767**$_{12}$, $7/2^-$, *1.1$_2$ ns*, $\gamma_{39.384}$**47.37**$_2$(100$_{11}$) M1+E2 $\delta = 0.115_{10}$, γ_0**86.75**$_2$(34$_2$) E2
D **132.194**$_{22}$, $9/2^+$, *51$_3$ ns*, $\gamma_{86.767}$**45.38**$_5$(100) E1
136.320$_9$, $5/2^-$, *<0.4 ns*, $\gamma_{86.767}$**49.52**$_5$(1.5$_3$) M1+E2 $\delta = 0.11_3$, $\gamma_{39.384}$**96.91**$_2$(21$_1$) M1+E2 $\delta = 0.22_4$, γ_0**136.30**$_2$(100$_5$) M1+E2 $\delta = 0.195_{24}$
D **154.48**$_5$, $13/2^+$, $\gamma_{132.194}$**22.15**$_5$(100)
202.413$_{12}$, $3/2^-$, *<0.4 ns*, $\gamma_{136.320}$**66.12**$_3$(9.6$_4$) M1+E2 $\delta = 0.42_5$, $\gamma_{39.384}$**163.02**$_2$(58$_3$) M1(+E2) $\delta < 1.7$, γ_0**202.41**$_2$(199$_5$) M1
224.532$_{13}$, $7/2^-$, *≤5 ns*, $\gamma_{202.413}$**22.15**$_5$(0.48$_9$) M1+E2 $\delta = 0.07^3_2$, $\gamma_{136.320}$**88.26**$_5$(0.94$_{22}$) M1, $\gamma_{132.194}$**92.22**$_6$(1.7$_6$), $\gamma_{86.767}$**137.76**$_4$(14$_3$) M1, $\gamma_{39.384}$**185.13**$_2$(100$_5$) M1, γ_0**224.55**$_2$(6.7$_{22}$) E2
A **225.285**$_{16}$, $9/2^-$, $\gamma_{86.767}$**138.46**$_4$(100$_{10}$) E2(+M1) $\delta > 2.4$, $\gamma_{39.384}$**185.89**$_2$(39$_3$) E2
B **234.33**$_3$, $11/2^-$, *6$_1$ μs*, %IT=100 , $\gamma_{225.285}$**9.1**$_1$(0.52$_6$) M1+E2, $\gamma_{154.48}$**79.72**$_5$(47$_4$) E1+M2 $\delta = 0.23_3$, $\gamma_{132.194}$**102.16**$_3$(100$_{12}$) E1+M2 $\delta = 0.45_6$, $\gamma_{86.767}$**147.63**$_6$(82$_{12}$)
240.196$_{12}$, $3/2^+$, *≤0.7 ns*, $\gamma_{202.413}$**37.80**$_4$(10.7$_{20}$) (E1), $\gamma_{136.320}$**103.89**$_2$(17.4$_9$) E1, $\gamma_{39.384}$**200.86**$_7$(12.2$_5$) E1, γ_0**240.19**$_2$(100$_5$) E1
247.791$_{13}$, $5/2^+$, *≤1 ns*, $\gamma_{136.320}$**111.47**$_3$(7.1$_5$) E1, $\gamma_{132.194}$**115.5**$_1$(51$_2$) E2, $\gamma_{86.767}$**161.08**$_8$(16$_3$), $\gamma_{39.384}$**208.41**$_2$(100$_5$) E1, γ_0**247.77**$_2$(96$_5$) E1
321$_2$, $1/2^+$
325.406$_{13}$, $3/2^-,5/2^-$, $\gamma_{224.532}$**100.84**$_6$(1.7$_6$), $\gamma_{202.413}$**123.10**$_6$(0.9) (M1), $\gamma_{136.320}$**189.09**$_2$(9.1$_9$) M1, $\gamma_{86.767}$**238.54**$_9$(2.3$_9$) E2(+M1), $\gamma_{39.384}$**286.02**$_2$(23$_1$) M1, γ_0**325.40**$_2$(100$_5$) M1
345$_2$, $1/2^-,3/2^-$
349.002$_{12}$, $5/2^+$, $\gamma_{247.791}$**101.34**$_7$(5.8$_{20}$), $\gamma_{240.196}$**108.79**$_2$(41$_2$) M1, $\gamma_{224.532}$**124.54**$_5$(28$_1$) E1, $\gamma_{202.413}$**146.57**$_2$(61$_7$) E1, $\gamma_{136.320}$**212.70**$_2$(38$_2$) E1+M2 $\delta = 0.12^3_5$, $\gamma_{86.767}$**262.23**$_3$(100$_{11}$) E1, $\gamma_{39.384}$**309.65**$_4$(86$_8$) E1, γ_0**348.99**$_3$(62$_3$) E1
351.106$_{19}$, $5/2^+,7/2^+$, $\gamma_{132.194}$**218.93**$_2$(100$_5$) E2, $\gamma_{86.767}$**264.35**$_{14}$(11.4$_{18}$), $\gamma_{39.384}$**311.85**$_3$(38$_4$) E1
375.401$_{24}$, $5/2^-,7/2^-$, $\gamma_{225.285}$**150.09**$_6$(8$_2$), $\gamma_{86.767}$**288.64**$_4$(100$_9$) M1, $\gamma_{39.384}$**336.02**$_3$(79$_9$) M1+E2 $\delta = 1.0^{13}_6$
D **381.76**$_{11}$, $(17/2^+)$, $\gamma_{154.48}$**227.3**$_1$(100) Q
382.89$_8$, $1/2^-,3/2^-$, γ_0**382.88**$_{14}$(100) M1
408.532$_{14}$, $3/2^+,5/2^+$, $\gamma_{247.791}$**160.76**$_4$(76$_{15}$) M1(+E2), $\gamma_{202.413}$**206.08**$_8$(15) E1, $\gamma_{136.320}$**272.22**$_2$(58$_{10}$) E1, $\gamma_{39.384}$**369.10**$_{10}$(45$_9$), γ_0**408.58**$_2$(100$_5$) E1
423.33$_4$, $5/2^-,7/2^-$, $\gamma_{349.002}$**74.33**$_3$(4.2$_4$) M1+E2 $\delta = 0.9^9_5$(?), $\gamma_{39.384}$**383.95**$_{14}$(100$_{10}$) E1(?)
C **436.54**$_{10}$, $13/2^-$, $\gamma_{234.33}$**202.2**$_1$(100) D
440.340$_{14}$, $5/2^+,7/2^+$, $\gamma_{349.002}$**91.35**$_3$(18$_3$) M1, $\gamma_{240.196}$**200.17**$_2$(100$_9$) E2, $\gamma_{225.285}$**215.03**$_2$(62$_3$) E1, $\gamma_{136.320}$**304.02**$_2$(91$_6$) E1, $\gamma_{86.767}$**353.49**$_9$(44$_{26}$) E1
448.98$_3$, $1/2^-,3/2^-$, γ_0**448.98**$_3$(100) M1
456.218$_{24}$, $5/2^-$, $\gamma_{86.767}$**369.30**$_{10}$(36$_{18}$) (M1), $\gamma_{39.384}$**416.84**$_3$(48$_4$) M1, γ_0**456.23**$_4$(100$_5$) M1
483.73$_3$, $5/2^+$, $\gamma_{240.196}$**243.55**$_3$(100$_{13}$) M1, $\gamma_{224.532}$**259.09**$_7$(83$_4$) E1, $\gamma_{86.767}$**397.14**$_{15}$(61$_9$) E1
515$_2$, $(1/2^+)$
547$_2$
557.550$_{19}$, $3/2^-,5/2^-,7/2^-$, $\gamma_{408.532}$**149.24**$_4$(13$_1$), $\gamma_{351.106}$**206.52**$_2$(52$_{13}$) E1, $\gamma_{247.791}$**309.65**$_4$(100$_9$) E1, $\gamma_{136.320}$**420.97**$_3$(73$_4$) M1, $\gamma_{39.384}$**518.43**$_{15}$(16$_6$), γ_0**557.6**$_2$(≤ 36)
569.11$_6$, $3/2^-,5/2^-,7/2^-$, $\gamma_{408.532}$**160.55**(37$_7$), $\gamma_{247.791}$**321.31**$_6$(100$_6$) E1, γ_0**569.2**$_2$(43$_{15}$) E2
A **577.7**$_3$, $(13/2^-)$, $\gamma_{225.285}$**352.5**$_3$(100) Q
594$_2$
E **645.28**$_{20}$, $(15/2^+)$, $\gamma_{381.76}$**263.4**$_3$ D, $\gamma_{154.48}$**490.6**$_3$
656$_2$, $(3/2^+,5/2^+)$
B **657.74**$_{13}$, $15/2^-$, $\gamma_{436.54}$**221.2**$_1$(100$_{10}$) D, $\gamma_{234.33}$**423.5**$_3$(45$_5$)
702.73$_{20}$, $\gamma_{224.532}$**478.2**$_2$(100)
D **744.75**$_{14}$, $(21/2^+)$, $\gamma_{381.76}$**363.0**$_1$(100) Q
752.70$_8$, $3/2^+,5/2^+$, $\gamma_{408.532}$**344.18**$_8$(100$_{15}$) M1, $\gamma_{136.320}$**616.2**$_4$(14$_5$) E1, γ_0**752.5**$_4$
774$_2$, $(9/2^-,11/2^-)$
803$_2$
874$_2$, $(1/2^+)$
H **892.28**$_{20}$, $(17/2^+)$, $\gamma_{381.76}$**510.6**$_3$(96$_{14}$) D, $\gamma_{154.48}$**737.8**$_3$(100$_{18}$)
895$_2$, $(1/2^-,3/2^-)$
C **896.45**$_{22}$, $17/2^-$, $\gamma_{657.74}$**238.7**$_3$(100$_8$) D, $\gamma_{436.54}$**459.9**$_3$(77$_5$) Q
902.06$_5$, $3/2^+,5/2^+$, $\gamma_{408.532}$**493.3**$_3$(42$_4$) E2, $\gamma_{247.791}$**654.16**$_9$(69$_8$), $\gamma_{202.413}$**699.50**$_{15}$(46$_4$), $\gamma_{136.320}$**765.85**$_7$(70$_4$), γ_0**902.03**$_{11}$(100$_8$)
925$_2$
E **1004.90**$_{22}$, $(19/2^+)$, $\gamma_{744.75}$**260.4**$_3$ D, $\gamma_{645.28}$**359.3**$_3$ Q, $\gamma_{381.76}$**623**$_1$
A **1031.7**$_4$, $(17/2^-)$, $\gamma_{577.7}$**454.1**$_3$(100) Q
1033.47$_4$, $3/2^+,5/2^+$, $\gamma_{136.320}$**897.14**$_7$(94$_5$) E1, $\gamma_{39.384}$**994.10**$_7$(71$_6$) E1, γ_0**1033.47**$_4$(100$_5$) E1
1037$_2$, $5/2^-,7/2^-$
1061$_2$
1084$_2$, $5/2^-,7/2^-$
1119$_2$
1145$_2$
B **1150.81**$_{25}$, $19/2^-$, $\gamma_{896.45}$**254.4**$_3$(100$_6$) D, $\gamma_{657.74}$**493.1**$_3$(93$_6$) Q
1207$_2$
D **1209.13**$_{16}$, $(25/2^+)$, $\gamma_{744.75}$**464.3**$_1$(100) Q
1217.75$_3$, $3/2^+,5/2^+$, $\gamma_{557.550}$**659.6**$_2$(24$_4$), $\gamma_{382.89}$**834.85**$_9$(31$_7$) E1, $\gamma_{325.406}$**892.2**$_2$(78$_9$) E1, $\gamma_{202.413}$**1015.35**$_6$(87$_7$) E1, $\gamma_{136.320}$**1081.40**$_6$(100$_9$) E1, $\gamma_{39.384}$**1178.39**$_4$(82$_4$) E1, γ_0**1218.0**$_3$(21$_3$)
H **1225.09**$_{18}$, $(21/2^+)$, $\gamma_{892.28}$**332.9**$_3$(100$_{19}$) Q, $\gamma_{744.75}$**480.5**$_3$(45$_6$), $\gamma_{381.76}$**843.4**$_3$(74$_{11}$)
1295$_2$
1325$_2$
C **1419.1**$_3$, $(21/2^-)$, $\gamma_{1150.81}$**268.3**$_3$(62$_6$) D, $\gamma_{896.45}$**522.6**$_3$(100$_{10}$)
1424$_2$, $(9/2^-,11/2^-)$
1441$_2$, $5/2^-,7/2^-$
E **1462.09**$_{21}$, $(23/2^+)$, $\gamma_{1209.13}$**252.9**$_3$, $\gamma_{1004.90}$**457.1**$_3$(100$_{11}$) Q, $\gamma_{744.75}$**717.7**$_3$(45$_{12}$)
A **1533.4**$_3$, $(21/2^-)$, $\gamma_{1031.7}$**501.8**$_3$(100) Q
1547$_2$, $(9/2^-,11/2^-)$
1573$_2$
1625$_5$
H **1649.96**$_{19}$, $(25/2^+)$, $\gamma_{1225.09}$**424.9**$_1$(100$_{17}$) Q, $\gamma_{1209.13}$**440.4**$_3$(23$_3$), $\gamma_{744.75}$**905.3**$_3$(16$_3$)
1688.3$_{11}$, $(9/2^-,11/2^-)$
B **1699.8**$_4$, $(23/2^-)$, $\gamma_{1419.1}$**280.6**$_3$(60$_5$) D, $\gamma_{1150.81}$**549.0**$_3$(100$_9$) Q
1719.0$_8$, $(23/2^+)$, $\gamma_{744.75}$**974**$_1$
1731$_5$
D **1752.86**$_{18}$, $(29/2^+)$, $\gamma_{1209.13}$**543.7**$_1$(100) Q
C **1991.2**$_4$, $(25/2^-)$, $\gamma_{1699.8}$**291.5**$_3$(41$_3$) D, $\gamma_{1419.1}$**572.1**$_3$(100$_7$) Q
E **1999.4**$_3$, $(27/2^+)$, $\gamma_{1462.09}$**537.0**$_3$(100) Q
F **2012.28**$_{21}$, $(25/2^-)$, $\gamma_{1719.0}$**293**$_1$, $\gamma_{1688.3}$**324**$_1$, $\gamma_{1533.4}$**479.0**$_3$(69$_7$), $\gamma_{1462.09}$**550.7**$_3$(78$_{12}$), $\gamma_{1209.13}$**803.2**$_3$(100$_{18}$)
A **2082.5**$_5$, $(25/2^-)$, $\gamma_{1533.4}$**549.1**$_3$(100) Q
H **2169.5**$_4$, $(29/2^+)$, $\gamma_{1649.96}$**519.5**$_3$ Q
B **2291.9**$_4$, $(27/2^-)$, $\gamma_{1991.2}$**301**$_1$, $\gamma_{1699.8}$**592.1**$_3$(100) Q
D **2357.87**$_{20}$, $(33/2^+)$, $\gamma_{1752.86}$**605.0**$_1$(100) Q
F **2475.91**$_{22}$, $(29/2^-)$, $\gamma_{2012.28}$**463.7**$_1$ Q, $\gamma_{1999.4}$**476.2**$_3$, $\gamma_{1752.86}$**722.9**$_3$
C **2599.5**$_4$, $(29/2^-)$, $\gamma_{2291.9}$**307.7**$_3$(45$_4$), $\gamma_{1991.2}$**608.3**$_3$(100$_8$)

E **2602.3**$_{5}$, $(31/2^{+})$, $\gamma_{1999.4}$**602.9**$_{3}$(100)
A **2688.2**$_{6}$, $(29/2^{-})$, $\gamma_{2082.5}$**605.7**$_{3}$(100)
H **2784.6**$_{4}$, $(33/2^{+})$, $\gamma_{2169.5}$**615.1**$_{3}$(100) Q
B **2910.8**$_{5}$, $(31/2^{-})$, $\gamma_{2599.5}$**311.3**$_{3}$(29_{3}), $\gamma_{2291.9}$**619.0**$_{3}$(100_{11}) Q
F **2990.49**$_{23}$, $(33/2^{-})$, $\gamma_{2475.91}$**514.6**$_{1}$(100_{5}) Q, $\gamma_{2357.87}$**632.5**$_{3}$(16_{3})(?)
D **3012.16**$_{22}$, $37/2^{+}$, $\gamma_{2357.87}$**654.3**$_{1}$(100) E2
C **3210.8**$_{5}$, $(33/2^{-})$, $\gamma_{2910.8}$**300**$_{1}$, $\gamma_{2599.5}$**611.2**$_{3}$(100)
A **3241.1**$_{6}$, $(33/2^{-})$, $\gamma_{2688.2}$**552.9**$_{3}$(100)
E **3256.6**$_{5}$, $(35/2^{+})$, $\gamma_{2602.3}$**654.3**$_{3}$(100)
G **3304.4**$_{4}$, $(35/2^{-})$, $\gamma_{2784.6}$**520**$_{1}$(100_{9}), $\gamma_{2357.87}$**946.4**$_{3}$(53_{5})
B **3472.5**$_{5}$, $(35/2^{-})$, $\gamma_{3210.8}$**261.8**$_{3}$, $\gamma_{2910.8}$**561.7**$_{3}$(100)
H **3481.7**$_{4}$, $(37/2^{+})$, $\gamma_{2784.6}$**697.0**$_{3}$(100)
F **3556.59**$_{25}$, $(37/2^{-})$, $\gamma_{3012.16}$**544**$_{1}$(?), $\gamma_{2990.49}$**566.1**$_{1}$(100) Q
D **3710.96**$_{24}$, $(41/2^{+})$, 0.27^{76}_{24} *ps*, $\gamma_{3012.16}$**698.8**$_{1}$(100)
C **3735.1**$_{5}$, $(37/2^{-})$, $\gamma_{3472.5}$**262.5**$_{3}$, $\gamma_{3210.8}$**524.3**$_{3}$
A **3831.8**$_{7}$, $(37/2^{-})$, $\gamma_{3241.1}$**590.7**$_{3}$(100)
G **3912.3**$_{4}$, $(39/2^{-})$, $\gamma_{3481.7}$**430.6**$_{3}$(100_{11}), $\gamma_{3304.4}$**607**$_{1}$, $\gamma_{3012.16}$**900.3**$_{3}$(83_{11})
E **3951.6**$_{6}$, $(39/2^{+})$, $\gamma_{3256.6}$**695.0**$_{3}$(100)
B **4013.7**$_{5}$, $(39/2^{-})$, $\gamma_{3735.1}$**278.7**$_{3}$(22_{4}), $\gamma_{3472.5}$**541.2**$_{3}$(100_{8})
F **4180.5**$_{3}$, $(41/2^{-})$, $\gamma_{3556.59}$**623.9**$_{1}$(100) Q
H **4228.4**$_{5}$, $(41/2^{+})$, $\gamma_{3481.7}$**746.7**$_{3}$(100)
C **4314.5**$_{6}$, $(41/2^{-})$, $\gamma_{4013.7}$**301**$_{1}$, $\gamma_{3735.1}$**579.4**$_{3}$(100)
D **4453.8**$_{3}$, $(45/2^{+})$, 0.13_{4} *ps*, $\gamma_{3710.96}$**742.8**$_{1}$(100) E2
A **4471.3**$_{8}$, $(41/2^{-})$, $\gamma_{3831.8}$**639.5**$_{3}$(100)
G **4574.1**$_{4}$, $(43/2^{-})$, $\gamma_{3912.3}$**661.8**$_{1}$(100) Q
B **4633.9**$_{6}$, $(43/2^{-})$, $\gamma_{4314.5}$**319.5**$_{3}$, $\gamma_{4013.7}$**620.2**$_{3}$
E **4686.3**$_{7}$, $(43/2^{+})$, $\gamma_{3951.6}$**734.7**$_{3}$(100)
F **4866.1**$_{3}$, $(45/2^{-})$, 0.21_{11} *ps*, $\gamma_{4180.5}$**685.6**$_{1}$(100) E2
C **4973.8**$_{6}$, $(45/2^{-})$, $\gamma_{4633.9}$**340.0**$_{3}$(17_{4}), $\gamma_{4314.5}$**659.2**$_{3}$(100_{8})
H **5011.3**$_{6}$, $(45/2^{+})$, $\gamma_{4228.4}$**782.9**$_{3}$(100)
A **5157.3**$_{13}$, $(45/2^{-})$, $\gamma_{4471.3}$**686**$_{1}$
D **5238.3**$_{3}$, $(49/2^{+})$, 0.05^{3}_{2} *ps*, $\gamma_{4453.8}$**784.5**$_{1}$(100) E2
G **5289.9**$_{5}$, $(47/2^{-})$, $\gamma_{4574.1}$**715.8**$_{3}$(100)
B **5331.0**$_{6}$, $(47/2^{-})$, $\gamma_{4973.8}$**357.3**$_{3}$(24_{5}), $\gamma_{4633.9}$**697.0**$_{3}$(100_{7})
E **5459.8**$_{8}$, $(47/2^{+})$, $\gamma_{4686.3}$**773.5**$_{3}$(100)
F **5610.5**$_{3}$, $(49/2^{-})$, 0.17^{3}_{6} *ps*, $\gamma_{4866.1}$**744.4**$_{1}$(100) E2
C **5706.5**$_{6}$, $(49/2^{-})$, $\gamma_{5331.0}$**375.5**$_{3}$(18_{3}), $\gamma_{4973.8}$**732.7**$_{3}$(100_{5})
A **5896.5**$_{13}$, $(49/2^{-})$, $\gamma_{5157.3}$**739.2**$_{3}$(100)
G **6062.0**$_{6}$, $(51/2^{-})$, $\gamma_{5289.9}$**772.1**$_{3}$(100)
D **6067.6**$_{3}$, $(53/2^{+})$, 0.13_{5} *ps*, $\gamma_{5238.3}$**829.3**$_{1}$(100)
B **6097.7**$_{6}$, $(51/2^{-})$, $\gamma_{5706.5}$**391.1**$_{3}$(24_{3}), $\gamma_{5331.0}$**766.8**$_{3}$(100_{8})
E **6272.8**$_{13}$, $(51/2^{+})$, $\gamma_{5459.8}$**813.0**$_{10}$
F **6405.5**$_{4}$, $(53/2^{-})$, 0.18_{4} *ps*, $\gamma_{5610.5}$**795.0**$_{1}$(100) E2
C **6505.5**$_{7}$, $(53/2^{-})$, $\gamma_{6097.7}$**407.8**$_{3}$(12_{2}), $\gamma_{5706.5}$**799.0**$_{3}$(100_{8})
A **6684.2**$_{14}$, $(53/2^{-})$, $\gamma_{5896.5}$**787.7**$_{3}$(100)
G **6892.3**$_{7}$, $(55/2^{-})$, $\gamma_{6062.0}$**830.3**$_{3}$(100)
B **6927.6**$_{7}$, $(55/2^{-})$, $\gamma_{6097.7}$**829.9**$_{3}$(100)
D **6943.0**$_{4}$, $(57/2^{+})$, 0.15_{4} *ps*, $\gamma_{6067.6}$**875.4**$_{1}$(100) E2
F **7241.7**$_{4}$, $(57/2^{-})$, ≤ 0.07 *ps*, $\gamma_{6405.5}$**836.2**$_{1}$(100) E2
C **7364.4**$_{7}$, $(57/2^{-})$, $\gamma_{6505.5}$**858.9**$_{3}$(100)
A **7504.2**$_{17}$, $(57/2^{-})$, $\gamma_{6684.2}$**820**$_{1}$(100)
G **7778.1**$_{7}$, $(59/2^{-})$, $\gamma_{6892.3}$**885.8**$_{3}$(100)
B **7815.1**$_{8}$, $(59/2^{-})$, $\gamma_{6927.6}$**887.5**$_{3}$(100)
D **7870.0**$_{11}$, $(61/2^{+})$, 0.12^{76}_{7} *ps*, $\gamma_{6943.0}$**927**$_{1}$
F **8110.0**$_{4}$, $(61/2^{-})$, 0.16_{8} *ps*, $\gamma_{7241.7}$**868.3**$_{1}$(100) E2
C **8278.6**$_{8}$, $(61/2^{-})$, $\gamma_{7364.4}$**914.2**$_{3}$(100)
G **8696.5**$_{8}$, $(63/2^{-})$, $\gamma_{7778.1}$**918.4**$_{3}$(100)
B **8756.0**$_{8}$, $(63/2^{-})$, $\gamma_{7815.1}$**940.9**$_{3}$(100)
D **8849.2**$_{11}$, $(65/2^{+})$, 0.06^{28}_{3} *ps*, $\gamma_{7870.0}$**979.2**$_{3}$(100) E2
F **9008.3**$_{5}$, $(65/2^{-})$, 0.12^{7}_{10} *ps*, $\gamma_{8110.0}$**898.3**$_{3}$(100)
C **9249.0**$_{9}$, $(65/2^{-})$, $\gamma_{8278.6}$**970.4**$_{3}$(100)
G **9624.5**$_{13}$, $(67/2^{-})$, $\gamma_{8696.5}$**928**$_{1}$
B **9750.9**$_{9}$, $(67/2^{-})$, $\gamma_{8756.0}$**994.9**$_{3}$(100)
D **9882.2**$_{15}$, $(69/2^{+})$, ≤ 0.8 *ps*, $\gamma_{8849.2}$**1033**$_{1}$(100)
F **9965.6**$_{6}$, $(69/2^{-})$, ≤ 0.15 *ps*, $\gamma_{9008.3}$**957.3**$_{3}$(100)
C **10272.0**$_{13}$, $(69/2^{-})$, $\gamma_{9249.0}$**1023**$_{1}$(100)
G **10520.7**$_{13}$, $(71/2^{-})$, ≥ 1.0 *ps*, $\gamma_{9624.5}$**896.2**$_{3}$(100)
B **10801.9**$_{14}$, $(71/2^{-})$, $\gamma_{9750.9}$**1051**$_{1}$(100)
D **10969.2**$_{18}$, $(73/2^{+})$, $\gamma_{9882.2}$**1087**$_{1}$(100)
F **10972.6**$_{12}$, $(73/2^{-})$, 0.4^{14}_{1} *ps*, $\gamma_{9965.6}$**1007**$_{1}$(100)
C **11349.0**$_{17}$, $(71/2^{-})$, $\gamma_{10272.0}$**1077**$_{1}$
G **11450.8**$_{17}$, $(75/2^{-})$, ≥ 1.0 *ps*, $\gamma_{10520.7}$**930**$_{1}$
B **11904.9**$_{17}$, $(75/2^{-})$, $\gamma_{10801.9}$**1103**$_{1}$
F **11972.2**$_{12}$, $(77/2^{-})$, ≤ 0.14 *ps*, $\gamma_{10972.6}$**999.6**$_{3}$(100)
D **12113.2**$_{21}$(?), $(77/2^{+})$, $\gamma_{10969.2}$**1144**$_{1}$(?)
G **12400.8**$_{20}$(?), $(79/2^{-})$, $\gamma_{11450.8}$**950**$_{1}$(100)(?)
C **12477.0**$_{20}$(?), $(75/2^{-})$, $\gamma_{11349.0}$**1128**$_{1}$(?)
F **12983.2**$_{16}$, $(81/2^{-})$, 0.44^{24}_{17} *ps*, $\gamma_{11972.2}$**1011**$_{1}$(100)
B **13066.9**$_{20}$(?), $(79/2^{-})$, $\gamma_{11904.9}$**1162**$_{1}$(?)
G **13343.7**$_{20}$(?), $(83/2^{-})$, $\gamma_{12400.8}$**942.9**$_{3}$(100)(?)
F **14040.2**$_{19}$, $(85/2^{-})$, $\gamma_{12983.2}$**1057**$_{1}$(100)
G **14468.7**$_{22}$(?), $(87/2^{-})$, $\gamma_{13343.7}$**1125**$_{1}$(100)(?)
F **15159.2**$_{21}$, $(89/2^{-})$, $\gamma_{14040.2}$**1119**$_{1}$(100)
G **15636.7**$_{24}$(?), $(91/2^{-})$, $\gamma_{14468.7}$**1168**$_{1}$(100)(?)
F **16345.2**$_{24}$(?), $(93/2^{-})$, $\gamma_{15159.2}$**1186**$_{1}$(?)
I **x**, J
I **909.6+x**, J+2, γ_{x}**909.6**$_{9}$(0.28_{14})
I **1862.2+x**, J+4, $\gamma_{909.6+x}$**952.5**$_{4}$(0.52_{12})
I **2860.3+x**, J+6, $\gamma_{1862.2+x}$**998.1**$_{2}$(0.98_{12})
I **3905.3+x**, J+8, $\gamma_{2860.3+x}$**1045.0**$_{2}$(0.92_{10})
I **4996.2+x**, J+10, $\gamma_{3905.3+x}$**1090.9**$_{2}$(1.04_{15})
I **6133.5+x**, J+12, $\gamma_{4996.2+x}$**1137.3**$_{2}$(0.96_{11})
I **7317.1+x**, J+14, $\gamma_{6133.5+x}$**1183.6**$_{2}$(1.07_{11})
I **8546.8+x**, J+16, $\gamma_{7317.1+x}$**1229.7**$_{2}$(0.98_{11})
I **9823.1+x**, J+18, $\gamma_{8546.8+x}$**1276.3**$_{2}$(0.97_{10})
I **11145.9+x**, J+20, $\gamma_{9823.1+x}$**1322.8**$_{2}$(0.92_{8})
I **12514.5+x**, J+22, $\gamma_{11145.9+x}$**1368.6**$_{2}$(1.00_{11})
I **13929.5+x**, J+24, $\gamma_{12514.5+x}$**1415.0**$_{2}$(0.81_{10})
I **15390.6+x**, J+26, $\gamma_{13929.5+x}$**1461.1**$_{2}$(0.56_{10})
I **16897.9+x**, J+28, $\gamma_{15390.6+x}$**1507.3**$_{3}$(0.45_{9})
I **18449.7+x**, J+30, $\gamma_{16897.9+x}$**1551.8**$_{6}$(0.16_{10})



SD band
(1996Fi08)
$^{155}_{66}$Dy$_{89}$

$^{153}_{67}Ho_{86}$

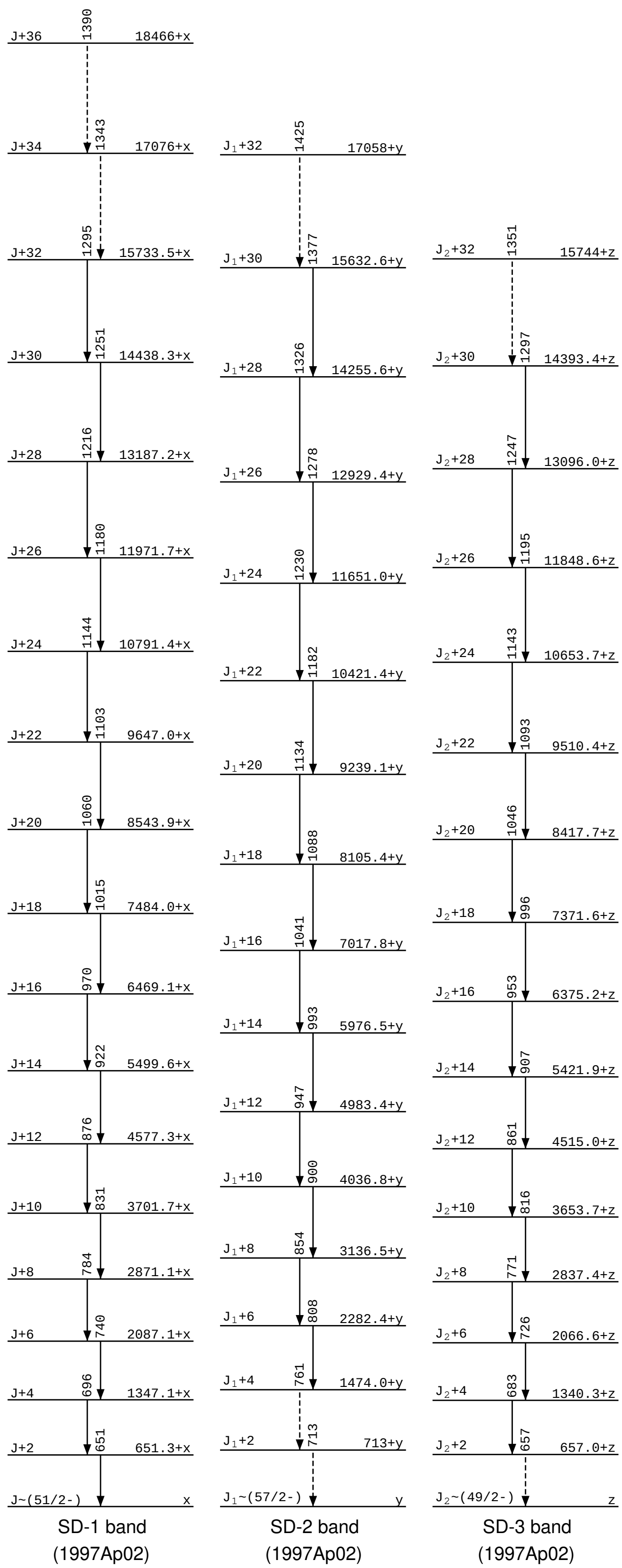
S_n: 951x10^1 $_3$, S_p: 2184 $_7$

Nuclear Bands

A SD-1 band (1997Ap02)
B SD-2 band (1997Ap02)
C SD-3 band (1997Ap02)

Levels and γ-ray branchings:

0, $11/2^-$, *2.01$_3$ min*, %ε+%β^+=99.949$_{25}$, %α=0.051$_{25}$, μ=+6.81$_5$, Q=-1.1$_5$
68.7$_3$, $1/2^+$, *9.3$_5$ min*, %ε+%β^+=99.82$_8$, %α=0.18$_8$, μ=+1.19$_1$
256.7$_3$, $(3/2^+)$, $\gamma_{68.7}$**188.0**$_2$(100) M1
351.2$_2$, $(7/2^-,9/2^-)$, $\gamma_{256.7}$**94.5**$_2$(0.15$_{10}$), γ_0**351.2**$_2$(100$_1$)
398.4$_2$, $(7/2^-,9/2^-)$, γ_0**398.4**$_2$(100)
576, $(15/2^-)$, γ_0**576**(100) E2
634.2$_3$, $(5/2^+)$, $\gamma_{256.7}$**377.5**$_2$(100$_7$) M1, $\gamma_{68.7}$**565.5**$_2$(10$_3$)
706.1$_4$, $\gamma_{256.7}$**449.4**$_2$(100)
727, $(15/2^-)$, γ_{576}**150** (M1), γ_0**727** E2
814.8$_3$, $\gamma_{351.2}$**463.6**$_2$(100)
926.6$_3$, $\gamma_{351.2}$**575.4**$_2$(100)
1091, $(15/2^+)$, γ_{727}**364** E1, γ_{576}**515** E1
1150.6$_2$, γ_0**1150.6**$_2$(100)
1207, $(19/2^-)$, γ_{576}**631**(100) E2
1359, $(19/2^-)$, γ_{1207}**152** (M1,E2), γ_{727}**633**, γ_{576}**783** E2
1646, $(19/2^+)$, γ_{1359}**287** E1, γ_{1207}**439** E1, γ_{1091}**555** E2
1700.1$_2$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{398.4}$**1301.4**(80), $\gamma_{351.2}$**1348.9**$_3$(100$_{13}$), γ_0**1700.1**$_3$(20$_7$)
1800.6, $\gamma_{634.2}$**1166.4**(100)
1873, $(23/2^-)$, γ_{1207}**666**(100) E2
2002(?), γ_{1207}**795**(100)
2030, $(23/2^-)$, γ_{1359}**671**, γ_{1207}**822**
2125, $(23/2^-)$, γ_{1873}**252** M1, γ_{1207}**918** E2
2203, $(23/2^+)$, γ_{2030}**173** E1+M2, γ_{1873}**330**, γ_{1646}**557** E2
2297, $(27/2^-)$, γ_{1873}**424**(100)
2358, $(25/2^-)$, γ_{2297}**61** M1(+E2), γ_{2125}**233** M1, γ_{2002}**356**, γ_{1873}**485** (M1)
2736, $(27/2^+)$, γ_{2358}**378** E1, γ_{2297}**439** E1, γ_{2203}**533** E2
2772, $(31/2^+)$, *229$_2$ ns*, γ_{2736}**36**(32) E2, γ_{2297}**475**(100) M2
3209, $(33/2^+)$, γ_{2772}**437**(100) M1
3686, $(35/2^+)$, γ_{3209}**476** (M1), γ_{2772}**913** E2
4316, $(39/2^+)$, γ_{3686}**631**(100) E2
4679, $(43/2^+)$, *0.5$_2$ ps*, γ_{4316}**363**(100) E2
5134, $(45/2^+)$, γ_{4679}**455**(100) M1
5771, $(47/2^-)$, γ_{5134}**637**(100) E1+M2
6076, $(49/2^-)$, γ_{5771}**305**(100) M1
6176, $(49/2^+)$, γ_{5134}**1042**(100) E2
6518, $(53/2^-)$, γ_{6076}**442**(100)
6673, $(51/2)$, γ_{6176}**497**(100)
6938, $(53/2^+)$, γ_{6176}**761**(100) E2
7403, $(57/2^+)$, γ_{6938}**466**(100) E2
7407, $(55/2)$, γ_{6673}**734**(100)
7598, $(61/2^+)$, *2.95$_{15}$ ns*, γ_{7403}**195**(100) E2
7933, $(63/2^+)$, γ_{7598}**335**(100) (M1)
8934, $(65/2^-)$, γ_{7933}**1001**(100) E1+M2
9074, $(67/2^-)$, *0.3$_1$ ns*, γ_{8934}**140** (M1), γ_{7598}**1476** E3
9871, $(67/2^-)$, γ_{9074}**796**(100)
10200(?), $(69/2)$, γ_{9074}**1126**(100)
10260, $(69/2^-)$, γ_{9871}**389**, γ_{9074}**1185**, γ_{8934}**1326**
10603, $(71/2^-)$, γ_{10260}**343**, γ_{9871}**732**, γ_{9074}**1528** E2
10912, $(71/2)$, γ_{10260}**652**, γ_{10200}**711**
11304, $(73/2)$, γ_{10912}**392**, γ_{10603}**701**
11680, $(75/2)$, γ_{11304}**376**(100)
12121, $(77/2)$, γ_{11680}**441**(100)
12477, $(81/2)$, γ_{12121}**356**(100)
A **x**, $J\approx(51/2^-)$
A **651.3+x**, $J+2$, γ_x**651.3**$_{19}$(0.44$_5$)
A **1347.1+x**, $J+4$, $\gamma_{651.3+x}$**695.8**$_{11}$(0.75$_8$) (Q)
A **2087.1+x**, $J+6$, $\gamma_{1347.1+x}$**740.0**$_8$(0.95$_8$) (Q)
A **2871.1+x**, $J+8$, $\gamma_{2087.1+x}$**784.0**$_2$(0.99$_8$) (Q)
A **3701.7+x**, $J+10$, $\gamma_{2871.1+x}$**830.6**$_5$
A **4577.3+x**, $J+12$, $\gamma_{3701.7+x}$**875.6**$_3$(0.97$_{10}$) (Q)
A **5499.6+x**, $J+14$, $\gamma_{4577.3+x}$**922.3**$_3$(1.06$_9$)
A **6469.1+x**, $J+16$, $\gamma_{5499.6+x}$**969.5**$_5$(0.89$_9$) (Q)
A **7484.0+x**, $J+18$, $\gamma_{6469.1+x}$**1014.9**$_5$(0.92$_8$) (Q)
A **8543.9+x**, $J+20$, $\gamma_{7484.0+x}$**1059.9**$_3$(0.60$_{10}$) (Q)
A **9647.0+x**, $J+22$, $\gamma_{8543.9+x}$**1103.1**$_3$(0.71$_{10}$)
A **10791.4+x**, $J+24$, $\gamma_{9647.0+x}$**1144.4**$_3$(0.41$_7$)
A **11971.7+x**, $J+26$, $\gamma_{10791.4+x}$**1180.3**$_3$(0.52$_8$)
A **13187.2+x**, $J+28$, $\gamma_{11971.7+x}$**1215.5**$_3$(0.27$_6$)
A **14438.3+x**, $J+30$, $\gamma_{13187.2+x}$**1251.1**$_3$(0.27$_5$)
A **15733.5+x**, $J+32$, $\gamma_{14438.3+x}$**1295.2**$_6$
A **17076+x**, $J+34$, $\gamma_{15733.5+x}$**1343**$_1$(?)
A **18466+x**, $J+36$, $\gamma_{17076+x}$**1390**$_1$(?)
B **y**, $J_1\approx(57/2^-)$
B **713+y**, J_1+2, γ_y**713**$_2$(?)
B **1474.0+y**, J_1+4, γ_{713+y}**761**$_2$(?)
B **2282.4+y**, J_1+6, $\gamma_{1474.0+y}$**808.4**$_3$(0.41$_8$)
B **3136.5+y**, J_1+8, $\gamma_{2282.4+y}$**854.1**$_3$(0.74$_8$)
B **4036.8+y**, J_1+10, $\gamma_{3136.5+y}$**900.3**$_3$(1.26$_9$)
B **4983.4+y**, J_1+12, $\gamma_{4036.8+y}$**946.6**$_3$(0.96$_9$)
B **5976.5+y**, J_1+14, $\gamma_{4983.4+y}$**993.1**$_5$
B **7017.8+y**, J_1+16, $\gamma_{5976.5+y}$**1041.3**$_5$
B **8105.4+y**, J_1+18, $\gamma_{7017.8+y}$**1087.6**$_3$(1.04$_{10}$)
B **9239.1+y**, J_1+20, $\gamma_{8105.4+y}$**1133.7**$_6$(0.92$_9$)
B **10421.4+y**, J_1+22, $\gamma_{9239.1+y}$**1182.3**$_3$(0.94$_9$)
B **11651.0+y**, J_1+24, $\gamma_{10421.4+y}$**1229.6**$_3$(0.84$_8$)
B **12929.4+y**, J_1+26, $\gamma_{11651.0+y}$**1278.4**$_4$(0.71$_8$)
B **14255.6+y**, J_1+28, $\gamma_{12929.4+y}$**1326.2**$_4$(0.24$_8$)
B **15632.6+y**, J_1+30, $\gamma_{14255.6+y}$**1377.0**$_4$
B **17058+y**, J_1+32, $\gamma_{15632.6+y}$**1425**$_2$(?)
C **z**, $J_2\approx(49/2^-)$
C **657.0+z**, J_2+2, γ_z**657**$_2$(?)
C **1340.3+z**, J_2+4, $\gamma_{657.0+z}$**683.3**$_7$(0.95$_8$)
C **2066.6+z**, J_2+6, $\gamma_{1340.3+z}$**726.3**$_5$
C **2837.4+z**, J_2+8, $\gamma_{2066.6+z}$**770.8**$_3$(0.83$_9$)
C **3653.7+z**, J_2+10, $\gamma_{2837.4+z}$**816.3**$_3$(0.98$_8$)
C **4515.0+z**, J_2+12, $\gamma_{3653.7+z}$**861.3**$_3$(1.00$_8$)
C **5421.9+z**, J_2+14, $\gamma_{4515.0+z}$**906.9**$_5$
C **6375.2+z**, J_2+16, $\gamma_{5421.9+z}$**953.3**$_3$(0.89$_8$)
C **7371.6+z**, J_2+18, $\gamma_{6375.2+z}$**996.4**$_5$
C **8417.7+z**, J_2+20, $\gamma_{7371.6+z}$**1046.1**$_4$(0.67$_{10}$)
C **9510.4+z**, J_2+22, $\gamma_{8417.7+z}$**1092.7**$_3$(0.71$_8$)
C **10653.7+z**, J_2+24, $\gamma_{9510.4+z}$**1143.3**$_5$(0.64$_8$)
C **11848.6+z**, J_2+26, $\gamma_{10653.7+z}$**1194.9**$_5$
C **13096.0+z**, J_2+28, $\gamma_{11848.6+z}$**1247.4**$_{10}$(0.51$_8$)
C **14393.4+z**, J_2+30, $\gamma_{13096.0+z}$**1297.4**$_{19}$(0.32$_9$)
C **15744+z**, J_2+32, $\gamma_{14393.4+z}$**1351**$_2$(?)



J+36 1390 18466+x
J+34 1343 17076+x
J+32 1295 15733.5+x
J+30 1251 14438.3+x
J+28 1216 13187.2+x
J+26 1180 11971.7+x
J+24 1144 10791.4+x
J+22 1103 9647.0+x
J+20 1060 8543.9+x
J+18 1015 7484.0+x
J+16 970 6469.1+x
J+14 922 5499.6+x
J+12 876 4577.3+x
J+10 831 3701.7+x
J+8 784 2871.1+x
J+6 740 2087.1+x
J+4 696 1347.1+x
J+2 651 651.3+x
J~(51/2-) x
SD-1 band
(1997Ap02)
J1+32 1425 17058+y
J1+30 1377 15632.6+y
J1+28 1326 14255.6+y
J1+26 1278 12929.4+y
J1+24 1230 11651.0+y
J1+22 1182 10421.4+y
J1+20 1134 9239.1+y
J1+18 1088 8105.4+y
J1+16 1041 7017.8+y
J1+14 993 5976.5+y
J1+12 947 4983.4+y
J1+10 900 4036.8+y
J1+8 854 3136.5+y
J1+6 808 2282.4+y
J1+4 761 1474.0+y
J1+2 713 713+y
J1~(57/2-) y
SD-2 band
(1997Ap02)
J2+32 1351 15744+z
J2+30 1297 14393.4+z
J2+28 1247 13096.0+z
J2+26 1195 11848.6+z
J2+24 1143 10653.7+z
J2+22 1093 9510.4+z
J2+20 1046 8417.7+z
J2+18 996 7371.6+z
J2+16 953 6375.2+z
J2+14 907 5421.9+z
J2+12 861 4515.0+z
J2+10 816 3653.7+z
J2+8 771 2837.4+z
J2+6 726 2066.6+z
J2+4 683 1340.3+z
J2+2 657 657.0+z
J2~(49/2-) z
SD-3 band
(1997Ap02)

$^{153}_{67}Ho_{86}$

$^{154}_{68}\mathrm{Er}_{86}$

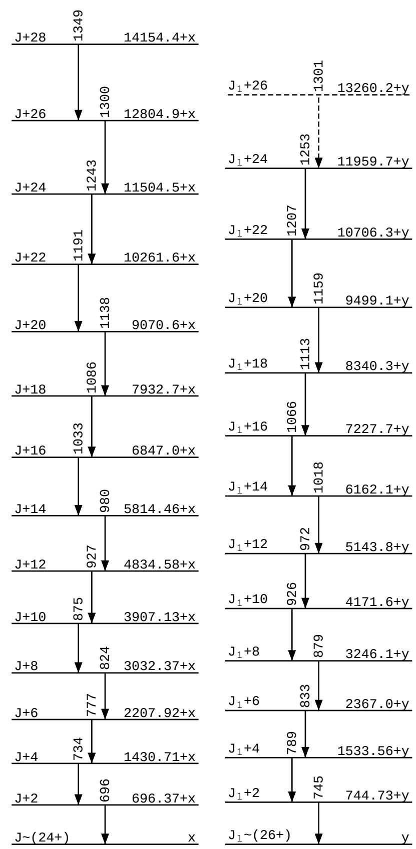
S_n: 10229 $_{12}$, S_p: 4883 $_7$

Nuclear Bands

A Band structure
B Band structure
C SD-1 band (2001La17,1995Be36)
D SD-2 band (2001La17)

Levels and γ-ray branchings:

A **0**, 0^+, *3.73$_9$ min*, %ε+%β$^+$=99.53$_{13}$, %α=0.47$_{13}$
A **560.8**$_1$, 2^+, γ_0**560.8**$_1$(100) E2
A **1162.2**$_1$, 4^+, $\gamma_{560.8}$**601.4**$_1$(100) E2
A **1787.6**$_2$, 6^+, $\gamma_{1162.2}$**625.4**$_1$(100) E2
B **1896**, 5^-, $\gamma_{1162.2}$**735**(100) D
A **2329.5**$_2$, 8^+, $\gamma_{1787.6}$**541.9**$_2$(100) E2
B **2461**, 7^-, γ_{1896}**565.0**(16), $\gamma_{1787.6}$**674.5**(100) D
2583.6$_3$, 8^+, $\gamma_{2329.5}$**253.8**(33) D, $\gamma_{1787.6}$**796.0**$_2$(100) E2
B **3014**, 9^-, $\gamma_{2583.6}$**432.2**(100), γ_{2461}**553.8**(85), $\gamma_{2329.5}$**686.3**(65)
A **3016**, 10^+, $\gamma_{2329.5}$**687.8**(100)
B **3025**, 11^-, *39$_4$ ns*, %IT=100, %α ≈ 0, μ=+0.169$_{13}$, γ_{3016}**(9)**, γ_{3014}**(11)**
A **3655**, 12^+, γ_{3016}**638.5**(100) E2
B **3830**, 13^-, γ_{3025}**805.0**(100) E2
A **4274**, 14^+, γ_{3655}**619.5**(100) E2
B **4499**, 15^-, γ_{3830}**668.8**(100) E2
4531, (15^+), γ_{4274}**256.8**(100) D
A **4678**, 16^+, γ_{4531}**146.7**(33) D, γ_{4274}**403.5**(100) E2
B **5006**, 17^-, γ_{4499}**506.9**(100) E2
A **5328**, 18^+, γ_{4678}**650.8**(100) E2
B **5462**, 19^-, γ_{5328}**134.1**(1.8) D, γ_{5006}**455.6**(100) E2
A **6063**, 20^+, γ_{5328}**735**(100) E2
6087, (20^-), γ_{5462}**625**(100) D
B **6289**, 21^-, γ_{6087}**202.2**(69) M1+E2, γ_{5462}**827.5**(100) E2
6575, (21^-), γ_{5462}**1113.7**(100) E2
A **6745**, 22^+, γ_{6063}**682.0**(100)
B **7015**, 23^-, γ_{6745}**270.7**(2.1) D, γ_{6575}**441.0**(5) E2, γ_{6289}**726.7**(100) E2
B **7334**, 25^-, γ_{7015}**318.3**(100) E2
8009, $(26)^-$, γ_{7334}**675.5**(100) M1+E2
B **8106**, 27^-, γ_{8009}**97.0**(27) D, γ_{7334}**772.6**(100) E2
8310, (26^+), γ_{7334}**976.3**(100) D
8658, (27^+), γ_{8310}**347.4**(88) D, γ_{8009}**647.8**(100) D
8669, $(28)^+$, γ_{8310}**359.0**(2), γ_{8106}**562.9**(100) E1
9294, (29^+), γ_{8669}**625**(100) D
B **9475**, 29^-, γ_{8106}**1368.8**(100) E2
9480, (29^+), γ_{8669}**811.4**(100) D
9589, $(30)^+$, γ_{9480}**108.5**(12) D, γ_{9475}**113.8**(2), γ_{9294}**294.5**(100) M1+E2, γ_{8669}**919.7**(90) E2
9843, (30^+), γ_{9480}**362.7**(100)
B **10108**, 31^-, γ_{9843}**265.0**(42) D, γ_{9589}**518.8**(38) D, γ_{9475}**632.8**(100) E2
10150, $(32)^+$, γ_{9843}**307.1**(14) E2, γ_{9589}**561.1**(100) E2
B **10429**, 33^-, γ_{10150}**279.2**(100) D, γ_{10108}**321.3**(24) E2
11354, (34), γ_{10429}**924.5**(100) D
11504(?), (35^+), γ_{11354}**150.0**(100) D
11621, (34^+), γ_{10429}**1192.3**(100) D, γ_{10150}**1471**(30)
11660, (34^+), γ_{10429}**1231.5**(100) D
11889, (35), γ_{11621}**267.6**(100) D
11897, (36^+), γ_{11660}**236.2**(11) E2, γ_{11621}**275.2**(5), γ_{11504}**393.6**(100) M1+E2
13209, (37), γ_{11897}**1313.0**(100) D
13500, (38^+), γ_{11897}**1603.5**(100) E2
13950(?), (40), γ_{13500}**450.1**(100)
14000, (38^+), γ_{13500}**500.0**(100) D, γ_{11897}**2103.5**(38) E2
14269, (39), γ_{14000}**268.7**(100.5) D
14382, (39), γ_{13209}**1172.5**(100) E2
14676, (39), γ_{13209}**1466.3**(100) E2
14921, (41), γ_{14269}**652.5**(100) E2
16030, (42), γ_{14921}**1108.5**(100) D
C **x**, $J\approx(24^+)$
C **696.37+x**, $J+2$, γ_x**696.37**$_{17}$(0.21$_5$)
C **1430.71+x**, $J+4$, $\gamma_{696.37+x}$**734.35**$_5$(1.00$_8$) (E2)
C **2207.92+x**, $J+6$, $\gamma_{1430.71+x}$**777.21**$_8$(0.98$_8$) (E2)
C **3032.37+x**, $J+8$, $\gamma_{2207.92+x}$**824.44**$_7$(0.96$_9$)
C **3907.13+x**, $J+10$, $\gamma_{3032.37+x}$**874.76**$_6$(0.68$_7$)
C **4834.58+x**, $J+12$, $\gamma_{3907.13+x}$**927.45**$_9$(0.76$_7$) (E2)
C **5814.46+x**, $J+14$, $\gamma_{4834.58+x}$**979.88**$_8$(0.73$_7$) (E2)
C **6847.0+x**, $J+16$, $\gamma_{5814.46+x}$**1032.58**$_9$(0.71$_9$) (E2)
C **7932.7+x**, $J+18$, $\gamma_{6847.0+x}$**1085.61**$_{10}$(0.71$_8$) (E2)
C **9070.6+x**, $J+20$, $\gamma_{7932.7+x}$**1137.98**$_{13}$(0.63$_7$) (E2)
C **10261.6+x**, $J+22$, $\gamma_{9070.6+x}$**1190.95**$_{23}$(0.63$_7$) (E2)
C **11504.5+x**, $J+24$, $\gamma_{10261.6+x}$**1242.93**$_{11}$(0.41$_7$)
C **12804.9+x**, $J+26$, $\gamma_{11504.5+x}$**1300.39**$_{18}$(0.37$_6$)
C **14154.4+x**, $J+28$, $\gamma_{12804.9+x}$**1349.49**$_{20}$
D **y**, $J_1\approx(26^+)$
D **744.73+y**, J_1+2, γ_y**744.73**$_{20}$
D **1533.56+y**, J_1+4, $\gamma_{744.73+y}$**788.84**$_{15}$
D **2367.0+y**, J_1+6, $\gamma_{1533.56+y}$**833.45**$_7$
D **3246.1+y**, J_1+8, $\gamma_{2367.0+y}$**879.04**$_8$
D **4171.6+y**, J_1+10, $\gamma_{3246.1+y}$**925.56**$_{17}$
D **5143.8+y**, J_1+12, $\gamma_{4171.6+y}$**972.13**$_{11}$
D **6162.1+y**, J_1+14, $\gamma_{5143.8+y}$**1018.36**$_{15}$
D **7227.7+y**, J_1+16, $\gamma_{6162.1+y}$**1065.53**$_{10}$
D **8340.3+y**, J_1+18, $\gamma_{7227.7+y}$**1112.59**$_{11}$
D **9499.1+y**, J_1+20, $\gamma_{8340.3+y}$**1158.81**$_{12}$
D **10706.3+y**, J_1+22, $\gamma_{9499.1+y}$**1207.19**$_{13}$
D **11959.7+y**, J_1+24, $\gamma_{10706.3+y}$**1253.39**$_{18}$
D **13260.2+y**(?), J_1+26, $\gamma_{11959.7+y}$**1300.54**$_{24}$(?)



SD-1 band (2001La17,1995Be36) SD-2 band (2001La17)

$^{154}_{68}\mathrm{Er}_{86}$

$^{163}_{71}Lu_{92}$

S_n: 9951 $_{SY}$, S_p: 2209 $_{SY}$

Nuclear Bands

A π7/2[404], α=+1/2
B π7/2[404], α=-1/2
C π7/2[523], α=+1/2
D π7/2[523], α=-1/2
E π1/2[411], α=+1/2
F π1/2[411], α=-1/2
G π5/2[402], α=+1/2 (2001JeZZ)
H π5/2[402], α=-1/2 (2001JeZZ)
I Band based on (21/2$^+$), α=+1/2 (2001JeZZ)
J Band based on (21/2$^+$), α=-1/2 (2001JeZZ)
K Band based on (39/2$^-$), α=-1/2 (2001JeZZ)
L Band based on (39/2), α=+1/2 (2001JeZZ)
M Triaxial SD-1 band (2001Od03,2001JeZZ,1999Do34,1995Sc39, 2002Sc11)
Q_0=8.2$^{10}_{6}$
N Wobbling-mode triaxial SD-2 band (2001Od03,2001JeZZ, 1999Do34)
O Triaxial SD-3 band (2001JeZZ)
P Triaxial SD-4 band (2001JeZZ)

Levels and γ-ray branchings:

E **0**, $1/2^{(+)}$, *3.97$_{13}$ min*, %ε+%β$^+$=100, μ=0.0769$_{10}$
F **16.8**$_3$, $(3/2^+)$
G **62.1**$_3$, $(5/2^+)$, $\gamma_{16.8}$**45.39**$_8$(100) M1
B **124.2**$_3$, $(7/2^+)$, $\gamma_{62.1}$**62.14**$_5$(100) M1
E **190.92**$_{20}$, $(5/2^+)$, $\gamma_{16.8}$**173.9**(42_{10}), γ_{0}**190.9**(100_7)
D **195.2**$_3$, $(7/2^-)$, $\gamma_{124.2}$**70.98**$_8$(100) E1, $\gamma_{62.1}$**133.08**$_{10}$(24_1)
C **210.1**$_3$, $(9/2^-)$, $\gamma_{124.2}$**85.9**(100)
H **224.5**$_3$, $(7/2^+)$, $\gamma_{62.1}$**162.25**$_{15}$(100)
F **250.1**$_3$, $(7/2^+)$, $\gamma_{62.1}$**188.2**(47_{10}), $\gamma_{16.8}$**233.35**$_{10}$(100_{10})
280.1$_3$(?), $\gamma_{195.2}$**84.9**$_1$
D **295.5**$_4$, $(11/2^-)$, $\gamma_{210.1}$**85.4**(100)
A **310.4**$_3$, $(9/2^+)$, $\gamma_{124.2}$**186.2**(100_{14}), $\gamma_{62.1}$**247.6**(5.4_{22})(?)
G **414.2**$_3$, $(9/2^+)$, $\gamma_{224.5}$**189.8**(100_{35}), $\gamma_{62.1}$**352.0**(52_{14})
C **492.1**$_3$, $(13/2^-)$, $\gamma_{295.5}$**196.6**(100_6), $\gamma_{210.1}$**282.0**(34_5)
B **520.5**$_3$, $(11/2^+)$, $\gamma_{414.2}$**106.2**(16.5_{17}), $\gamma_{310.4}$**210.3**(58_6), $\gamma_{224.5}$**296.1**(4.4_{14}), $\gamma_{124.2}$**396.5**(100_9) Q
E **521.0**$_3$, $(9/2^+)$, $\gamma_{250.1}$**270.9**(57_7), $\gamma_{224.5}$**296.5**(22_4), $\gamma_{190.92}$**329.8**(100_{10})
F **621.0**$_3$, $(11/2^+)$, $\gamma_{414.2}$**207.0**(4.4_{32}), $\gamma_{250.1}$**370.9**(100_{15}), $\gamma_{224.5}$**396.3**(65_{10})
H **642.2**$_3$, $(11/2^+)$, $\gamma_{414.2}$**228.0**(67_{16}), $\gamma_{224.5}$**417.8**(100_{13})
D **644.7**$_3$, $(15/2^-)$, *5.6$^{6}_{11}$ ps*, $\gamma_{492.1}$**152.7**(58_4) (M1+E2) $\delta=+0.22_1$, $\gamma_{295.5}$**349.2**(100_3) E2
691.3$_3$, $\gamma_{195.2}$**496.07**$_{10}$(100)
715.5$_3$, $\gamma_{195.2}$**520.32**$_{10}$(100)
730.5$_4$, $\gamma_{195.2}$**535.25**$_{20}$(100)
A **754.8**$_3$, $(13/2^+)$, $\gamma_{520.5}$**234.3**(33_6), $\gamma_{310.4}$**444.3**(100_8)
G **875.2**$_3$, $(13/2^+)$, $\gamma_{642.2}$**233.0**(91_{15}), $\gamma_{414.2}$**461.0**(100_{20})
883.5$_3$, $\gamma_{195.2}$**688.25**$_{10}$(100)
C **937.3**$_3$, $(17/2^-)$, *1.4$^{8}_{7}$ ps*, $\gamma_{644.7}$**292.6**(100_4) (M1+E2) $\delta=+0.03_1$, $\gamma_{492.1}$**445.3**(87_4) E2
E **968.0**$_3$, $(13/2^+)$, $\gamma_{621.0}$**347.1**(32_7), $\gamma_{521.0}$**446.9**(100_{11})
B **1008.2**$_3$, $(15/2^+)$, $\gamma_{754.8}$**253.4**(31_4), $\gamma_{520.5}$**487.7**(100_8)
F **1107.0**$_3$, $(15/2^+)$, $\gamma_{621.0}$**486.0**(100)
D **1115.3**$_3$, $(19/2^-)$, *1.9$^{2}_{4}$ ps*, $\gamma_{937.3}$**178.0**(24_3) (M1+E2) $\delta=+0.15_2$, $\gamma_{644.7}$**470.6**(100_2) E2
H **1152.4**$_3$, $(15/2^+)$, $\gamma_{875.2}$**277.2**(92_{17}), $\gamma_{642.2}$**510.2**(100_{17})
A **1282.5**$_3$, $(17/2^+)$, $\gamma_{1008.2}$**274.3**(24_3), $\gamma_{754.8}$**527.8**(100_{10})
G **1417.0**$_3$, $(17/2^+)$, $\gamma_{1152.4}$**264.6**(27_{10}), $\gamma_{875.2}$**541.8**(100_{15})
C **1485.8**$_3$, $(21/2^-)$, *0.9$_3$ ps*, $\gamma_{1115.3}$**370.5**(88_8) (M1+E2) $\delta=+0.05_3$, $\gamma_{937.3}$**548.5**(100_7) (E2)
E **1502.0**$_3$, $(17/2^+)$, $\gamma_{1107.0}$**394.9**(54_{11}), $\gamma_{968.0}$**533.8**(100_{13})
B **1562.1**$_3$, $(19/2^+)$, $\gamma_{1282.5}$**279.6**(25.9_{22}), $\gamma_{1008.2}$**553.9**(100_7)
F **1670.0**$_4$, $(19/2^+)$, $\gamma_{1107.0}$**563.0**(100)
D **1677.4**$_3$, $(23/2^-)$, *1.0$^{2}_{3}$ ps*, $\gamma_{1485.8}$**191.5**(13.4_{12}) (M1+E2) $\delta=+0.18_9$, $\gamma_{1115.3}$**562.0**(100.0_{21}) (E2)
H **1730.1**$_3$, $(19/2^+)$, $\gamma_{1417.0}$**313.1**(44_{33}), $\gamma_{1152.4}$**577.7**(100_{55})
M **1739.9**$_4$, $(13/2^+)$
A **1867.7**$_3$, $(21/2^+)$, $\gamma_{1562.1}$**305.6**(28_4), $\gamma_{1282.5}$**585.2**(100_{12})
M **1936.6**$_4$, $(17/2^+)$, $\gamma_{1739.9}$**196.7**(100_{56}), $\gamma_{644.7}$**1292.0**(<6)
2009.0$_3$, $(21/2^+)$, $\gamma_{1417.0}$**592.0**(100_{29}), $\gamma_{1115.3}$**893.7**(43_{29})
G **2020.5**$_4$, $(21/2^+)$, $\gamma_{1730.1}$**290.5**(<8)(?), $\gamma_{1417.0}$**603.5**(100_{17})
E **2087.8**$_4$, $(21/2^+)$, $\gamma_{1502.0}$**585.7**$_2$(100)
C **2104.4**$_3$, $(25/2^-)$, $\gamma_{1677.4}$**427.0**(89_8), $\gamma_{1485.8}$**618.7**(100_8)
B **2139.7**$_3$, $(23/2^+)$, $\gamma_{1867.7}$**272.0**(16.8_{18}), $\gamma_{1562.1}$**577.7**(100_7), $\gamma_{1485.8}$**653.8**(15.2_{20})
M **2199.8**$_3$, $(21/2^+)$, $\gamma_{1936.6}$**263.3**(100_{10}), $\gamma_{1670.0}$**529.8**(29_4), $\gamma_{1502.0}$**697.8**(47_{26})
2228.3$_3$, $(23/2^+)$, $\gamma_{1562.1}$**666.3**(100_{38}), $\gamma_{1485.8}$**742.5**(80_{20})
F **2276.9**$_4$, $(23/2^+)$, $\gamma_{1670.0}$**606.9**(100)
D **2307.5**$_4$, $(27/2^-)$, *1.2$^{3}_{5}$ ps*, $\gamma_{2104.4}$**203.2**(11.5_{22}) (M1+E2) $\delta=+0.30_8$, $\gamma_{1677.4}$**630.1**(100_3) (E2)
H **2339.7**$_4$, $(23/2^+)$, $\gamma_{2020.5}$**319.1**(<62)(?), $\gamma_{1730.1}$**609.6**(100_{99})
A **2400.5**$_3$, $(25/2^+)$, $\gamma_{2228.3}$**172.2**(20.5_{25}), $\gamma_{2139.7}$**260.8**(100_8), $\gamma_{2020.5}$**379.9**(31_3), $\gamma_{2009.0}$**391.5**(12.1_{25}), $\gamma_{1867.7}$**532.8**(48_5), $\gamma_{1677.4}$**723.1**(57_5)
I **2410.8**$_4$, $(21/2^+)$, $\gamma_{1730.1}$**680.7**(100)
J **2437.0**$_4$, $(23/2^+)$, $\gamma_{1730.1}$**706.9**(100_{88}), $\gamma_{1485.8}$**951.2**(62_{62})
2489.6$_4$, $(25/2^+)$, $\gamma_{2009.0}$**480.5**(8_7)(?), $\gamma_{1867.7}$**621.9**(100_{13})
M **2514.6**$_4$, $(25/2^+)$, *3.3$^{7}_{5}$ ps*, $\gamma_{2199.8}$**314.8**(100_{13}) (E2), $\gamma_{2087.8}$**426.8**(23_4) (E2), $\gamma_{2009.0}$**505.8**(5.1_{26})
I **2540.8**$_4$, $(25/2^+)$, $\gamma_{2437.0}$**103.8**(54_{25}), $\gamma_{2410.8}$**130.0**(69_{15}), $\gamma_{1677.4}$**863.4**(100_{46})
B **2614.5**$_3$, $(27/2^+)$, $\gamma_{2400.5}$**214.0**(100_5), $\gamma_{2228.3}$**386.2**(11.6_{17}), $\gamma_{2139.7}$**474.7**(58_4), $\gamma_{2104.4}$**510.1**(27_3)
J **2681.0**$_4$, $(27/2^+)$, $\gamma_{2540.8}$**140.3**(100_{12}), $\gamma_{2437.0}$**244.0**(32_5)
2685.6$_4$, $(27/2^+)$, $\gamma_{2139.7}$**545.9**(100_{12}), $\gamma_{2104.4}$**581.2**(13_7)
C **2748.3**$_4$, $(29/2^-)$, $\gamma_{2307.5}$**440.6**(68_7), $\gamma_{2104.4}$**643.8**(100_5)
F **2773.7**$_4$, $(27/2^+)$, $\gamma_{2276.9}$**496.7**(100)
A **2803.6**$_4$, $(29/2^+)$, $\gamma_{2685.6}$**117.9**(3.8_{16}), $\gamma_{2614.5}$**189.0**(100_6), $\gamma_{2489.6}$**313.9**(9.1_{21}), $\gamma_{2400.5}$**403.2**(75_6)
2855.5$_4$, $(29/2^-)$, $\gamma_{2104.4}$**751.2**(100)
I **2861.2**$_4$, $(29/2^+)$, $\gamma_{2681.0}$**180.2**(100_{10}), $\gamma_{2540.8}$**320.4**(42_{10})
M **2901.0**$_4$, $(29/2^+)$, *2.3$^{5}_{4}$ ps*, $\gamma_{2514.6}$**386.3**(100) (E2)
D **2925.0**$_4$, $(31/2^-)$, $\gamma_{2748.3}$**176.9**(14.0_{16}), $\gamma_{2307.5}$**617.5**(100_7)
B **3004.0**$_4$, $(31/2^+)$, $\gamma_{2803.6}$**200.4**(100_5), $\gamma_{2685.6}$**318.4**(<1.6)(?), $\gamma_{2614.5}$**389.7**(50_4)
3021.5$_4$, $(31/2^-)$, $\gamma_{2307.5}$**714.0**(100)
J **3078.4**$_4$, $(31/2^+)$, $\gamma_{2861.2}$**217.2**(100_{10}), $\gamma_{2681.0}$**397.3**(93_{10})
N **3079.4**$_4$, $(27/2^+)$, $\gamma_{2514.6}$**564.8**(100) (E2+M1) $\delta=-3.1_4$
C **3123.4**$_4$, $(33/2^-)$, $\gamma_{3021.5}$**102.0**(6.3_8), $\gamma_{2925.0}$**198.6**(100_{12}), $\gamma_{2855.5}$**268.1**(10_3), $\gamma_{2748.3}$**374.7**(20.2_{25})
F **3130.8**$_4$, $(31/2^+)$, $\gamma_{2773.7}$**357.1**(100)
A **3245.2**$_4$, $(33/2^+)$, $\gamma_{3004.0}$**241.2**(93_8), $\gamma_{2803.6}$**441.5**(100_8)
D **3320.8**$_4$, $(35/2^-)$, *4.2$^{5}_{6}$ ps*, $\gamma_{3123.4}$**197.3**(100_{17}), $\gamma_{3021.5}$**299.3**(<1.0), $\gamma_{2925.0}$**396.0**(20_3)
I **3323.9**$_4$, $(33/2^+)$, $\gamma_{3078.4}$**245.5**(100_{24}), $\gamma_{2861.2}$**462.7**(82_{29})
M **3351.3**$_4$, $(33/2^+)$, *0.9$^{5}_{3}$ ps*, $\gamma_{2901.0}$**450.3**(100)
B **3483.8**$_4$, $(35/2^+)$, $\gamma_{3245.2}$**238.6**(78_7), $\gamma_{3004.0}$**479.7**(100_5)
N **3486.8**$_4$, $(31/2^+)$, $\gamma_{3079.4}$**407.4**(69_{26}), $\gamma_{2901.0}$**585.9**(100_{35}) (E2+M1) $\delta=-3.1_4$
C **3551.9**$_4$, $(37/2^-)$, $\gamma_{3320.8}$**231.0**(100_4), $\gamma_{3123.4}$**428.4**(32_4)
F **3572.1**$_4$, $(35/2^+)$, $\gamma_{3323.9}$**248.2**(37_8), $\gamma_{3130.8}$**441.3**(57_{10}), $\gamma_{3078.4}$**493.7**(100_{14})
3667.5$_{11}$(?), $(35/2^-)$, $\gamma_{3021.5}$**646**(?)
A **3789.8**$_4$, $(37/2^+)$, $\gamma_{3483.8}$**306.1**(100_8), $\gamma_{3245.2}$**544.7**(87_7)
D **3822.8**$_4$, $(39/2^-)$, $\gamma_{3551.9}$**270.9**(100_6), $\gamma_{3320.8}$**501.9**(41_3)
O **3863.9**$_5$, $(33/2^+)$, $\gamma_{2901.0}$**962.8**(100)(?)
M **3866.5**$_4$, $(37/2^+)$, *0.31$^{14}_{11}$ ps*, $\gamma_{3351.3}$**515.3**(100)
I **3892.5**$_4$, $(37/2^+)$, $\gamma_{3572.1}$**320.4**(100_{27}), $\gamma_{3323.9}$**568.6**(41_{14})
N **3958.4**$_4$, $(35/2^+)$, $\gamma_{3486.8}$**471.6**(100_7), $\gamma_{3351.3}$**607.1**(83_6) (E2+M1) $\delta=-3.1_4$
B **4068.3**$_4$, $(39/2^+)$, $\gamma_{3789.8}$**278.4**(64_5), $\gamma_{3483.8}$**584.5**(100_8)
C **4104.0**$_4$, $(41/2^-)$, $\gamma_{3822.8}$**281.2**(100_7), $\gamma_{3551.9}$**552.1**(59_4)

F **4150.7**$_{4}$, $(39/2^{+})$, $\gamma_{3572.1}$**578.7**(100)

4254.5$_{15}$(?), $(39/2^{-})$, $\gamma_{3667.5}$**587**(?)

K **4309.4**$_{4}$, $(39/2^{-})$, $\gamma_{3551.9}$**757.6**(100_{25}), $\gamma_{3320.8}$**988.6**(<9)

O **4369.4**$_{5}$, $(37/2^{+})$, $\gamma_{3863.9}$**505.5**(100_{38}), $\gamma_{3351.3}$**1018.1**(<58)(?)

A **4405.9**$_{4}$, $(41/2^{+})$, $\gamma_{4068.3}$**337.7**(52_{6}), $\gamma_{3789.8}$**616.2**(100_{8})

D **4431.6**$_{4}$, $(43/2^{-})$, $\gamma_{4104.0}$**327.6**(100_{10}), $\gamma_{3822.8}$**608.8**(99_{8})

M **4445.1**$_{5}$, $(41/2^{+})$, *0.15^{6}_{5} ps*, $\gamma_{3866.5}$**578.6**(100)

N **4492.7**$_{4}$, $(39/2^{+})$, $\gamma_{3958.4}$**534.3**(100_{7}), $\gamma_{3866.5}$**626.2**(49_{4}) (E2+M1) $\delta=-3.1_{4}$

I **4529.3**$_{4}$, $(41/2^{+})$, $\gamma_{3892.5}$**636.8**(100)

L **4579.1**$_{4}$, $(41/2^{-})$, $\gamma_{4309.4}$**269.7**(100_{23}), $\gamma_{3822.8}$**756.4**(91_{21}), $\gamma_{3551.9}$**1027.1**(16_{7})

B **4719.9**$_{4}$, $(43/2^{+})$, $\gamma_{4405.9}$**313.7**(35_{3}), $\gamma_{4068.3}$**651.3**(100_{7})

C **4760.9**$_{4}$, $(45/2^{-})$, $\gamma_{4431.6}$**329.2**(62_{7}), $\gamma_{4104.0}$**656.6**(100_{8})

F **4817.2**$_{4}$, $(43/2^{+})$, $\gamma_{4150.7}$**666.5**(100)

K **4831.2**$_{4}$, $(43/2^{-})$, $\gamma_{4579.1}$**252.2**(100_{25}), $\gamma_{4309.4}$**522.0**(73_{17}), $\gamma_{4104.0}$**727.3**(48_{10})

J **4904.0**$_{5}$, $(43/2^{+})$, $\gamma_{4529.3}$**374.6**(100)

O **4937.4**$_{5}$, $(41/2^{+})$, $\gamma_{4369.4}$**568.0**(100_{19}), $\gamma_{3866.5}$**1070.8**(31_{9})

4981.5$_{18}$(?), $(43/2^{-})$, $\gamma_{4254.5}$**727**(?)

A **5057.9**$_{4}$, $(45/2^{+})$, $\gamma_{4719.9}$**337.8**(60_{13}), $\gamma_{4405.9}$**652.6**(100_{8})

M **5084.1**$_{5}$, $(45/2^{+})$, *0.10^{4}_{3} ps*, $\gamma_{4445.1}$**639.0**(100)

N **5088.4**$_{5}$, $(43/2^{+})$, $\gamma_{4492.7}$**595.8**(100_{7}), $\gamma_{4445.1}$**643.3**(36_{3}) (E2+M1) $\delta=-3.1_{4}$

L **5116.2**$_{4}$, $(45/2^{-})$, $\gamma_{4831.2}$**285.1**(100_{26}), $\gamma_{4579.1}$**537.3**(91_{22}), $\gamma_{4431.6}$**684.3**(<22), $\gamma_{4104.0}$**1012.2**(30_{13})

D **5132.0**$_{4}$, $(47/2^{-})$, *0.15_{5} ps*, $\gamma_{4760.9}$**371.0**(100_{12}), $\gamma_{4431.6}$**700.7**(89_{8})

I **5209.5**$_{5}$, $(45/2^{+})$, $\gamma_{4904.0}$**305.5**(47_{14}), $\gamma_{4529.3}$**680.1**(100_{29})

B **5388.3**$_{5}$, $(47/2^{+})$, $\gamma_{5057.9}$**330.4**(64_{7}), $\gamma_{4719.9}$**668.0**(100_{10})

K **5419.6**$_{4}$, $(47/2^{-})$, $\gamma_{5116.2}$**303.3**(85_{22}), $\gamma_{4831.2}$**588.4**(100_{25})

C **5505.4**$_{5}$, $(49/2^{-})$, *0.11^{5}_{3} ps*, $\gamma_{5132.0}$**373.4**(86_{8}), $\gamma_{4760.9}$**744.3**(100_{8})

J **5557.3**$_{5}$, $(47/2^{+})$, $\gamma_{5209.5}$**347.9**(58_{39}), $\gamma_{4904.0}$**653.4**(68_{16}), $\gamma_{4817.2}$**740.0**(100_{16})

F **5559.3**$_{5}$, $(47/2^{+})$, $\gamma_{4904.0}$**655.2**(17_{11}), $\gamma_{4817.2}$**742.2**(100_{19})

O **5564.3**$_{5}$, $(45/2^{+})$, $\gamma_{5088.4}$**476.0**(<16)(?), $\gamma_{4937.4}$**626.8**(100_{20}), $\gamma_{4445.1}$**1119.2**(25_{6}) (Q)

A **5720.4**$_{5}$, $(49/2^{+})$, $\gamma_{5388.3}$**332.1**(57_{6}), $\gamma_{5057.9}$**662.8**(100_{11})

N **5743.0**$_{5}$, $(47/2^{+})$, $\gamma_{5088.4}$**654.6**(100_{6}), $\gamma_{5084.1}$**658.9**(24_{3}) (E2+M1) $\delta=-3.1_{4}$

L **5757.0**$_{4}$, $(49/2^{-})$, $\gamma_{5419.6}$**337.4**(74_{18}), $\gamma_{5116.2}$**640.7**(100_{26}), $\gamma_{4760.9}$**996.4**(<15)(?)

M **5781.1**$_{5}$, $(49/2^{+})$, *0.08^{4}_{3} ps*, $\gamma_{5084.1}$**697.0**(100)

I **5898.0**$_{5}$, $(49/2^{+})$, $\gamma_{5559.3}$**338.8**(75_{13}), $\gamma_{5557.3}$**340.8**(63_{38}), $\gamma_{5209.5}$**688.5**(100_{44})

D **5917.1**$_{5}$, $(51/2^{-})$, *0.12^{3}_{6} ps*, $\gamma_{5505.4}$**411.5**(82_{8}), $\gamma_{5132.0}$**785.2**(100_{11})

B **6065.6**$_{5}$, $(51/2^{+})$, $\gamma_{5720.4}$**345.4**(60_{5}), $\gamma_{5388.3}$**677.1**(100_{6})

K **6108.2**$_{5}$, $(51/2^{-})$, $\gamma_{5757.0}$**351.2**(50_{13}), $\gamma_{5419.6}$**688.7**(100_{25})

J **6246.3**$_{5}$, $(51/2^{+})$, $\gamma_{5898.0}$**348.3**(78_{29}), $\gamma_{5559.3}$**686.8**(<17), $\gamma_{5557.3}$**689.1**(100_{22})

O **6249.4**$_{5}$, $(49/2^{+})$, $\gamma_{5564.3}$**685.1**(100_{19}), $\gamma_{5084.1}$**1165.3**(<24) Q

P **6320.0**$_{6}$, J, $\gamma_{5084.1}$**1235.9**(100)(?)

C **6334.2**$_{5}$, $(53/2^{-})$, *0.09^{6}_{4} ps*, $\gamma_{5917.1}$**417.2**(62_{7}), $\gamma_{5505.4}$**829.0**(100_{10})

F **6355.7**$_{5}$, $(51/2^{+})$, $\gamma_{5559.3}$**796.4**(100)

A **6415.4**$_{5}$, $(53/2^{+})$, $\gamma_{6065.6}$**349.6**(65_{7}), $\gamma_{5720.4}$**695.0**(100_{10})

N **6454.2**$_{5}$, $(51/2^{+})$, $\gamma_{5781.1}$**673.2**(25_{9}) (E2+M1) $\delta=-3.1_{4}$, $\gamma_{5743.0}$**711.2**(100_{15})

L **6502.7**$_{5}$, $(53/2^{-})$, $\gamma_{6108.2}$**394.5**(52_{14}), $\gamma_{5757.0}$**745.7**(100_{26})

M **6533.6**$_{5}$, $(53/2^{+})$, *0.055^{21}_{28} ps*, $\gamma_{5781.1}$**752.6**(100)

I **6616.3**$_{5}$, $(53/2^{+})$, $\gamma_{6246.3}$**370.0**(73_{40}), $\gamma_{5898.0}$**718.4**(100_{27})

B **6789.1**$_{5}$, $(55/2^{+})$, $\gamma_{6415.4}$**373.7**(43_{4}), $\gamma_{6065.6}$**723.7**(100_{10})

D **6790.1**$_{5}$, $(55/2^{-})$, $\gamma_{6334.2}$**456.0**(100_{11}), $\gamma_{5917.1}$**872.7**(100_{11})

K **6907.4**$_{5}$, $(55/2^{-})$, $\gamma_{6502.7}$**404.7**(42_{11}), $\gamma_{6108.2}$**799.2**(100_{23})

P **6965.1**$_{6}$, J+2, $\gamma_{6320.0}$**645.0**(<100)(?), $\gamma_{5781.1}$**1184.0**(<60)(?)

J **6979.9**$_{5}$, $(55/2^{+})$, $\gamma_{6616.3}$**363.6**(64_{21}), $\gamma_{6246.3}$**733.5**(100_{21})

O **6990.6**$_{5}$, $(53/2^{+})$, $\gamma_{6249.4}$**741.2**(100)

A **7174.4**$_{5}$, $(57/2^{+})$, $\gamma_{6789.1}$**385.5**(45_{4}), $\gamma_{6415.4}$**758.8**(100_{7})

F **7178.9**$_{5}$, $(55/2^{+})$, $\gamma_{6355.7}$**823.2**(100)

N **7220.5**$_{5}$, $(55/2^{+})$, $\gamma_{6533.6}$**686.8**(15_{4}) (E2+M1) $\delta=-3.1_{4}$, $\gamma_{6454.2}$**766.2**(100_{18})

C **7247.0**$_{5}$, $(57/2^{-})$, $\gamma_{6790.1}$**456.8**(16_{8}), $\gamma_{6334.2}$**913.0**(100_{11})

M **7339.3**$_{5}$, $(57/2^{+})$, *0.04_{3} ps*, $\gamma_{6533.6}$**805.6**(100)

L **7351.2**$_{5}$, $(57/2^{-})$, $\gamma_{6502.7}$**848.5**(100)

I **7390.8**$_{5}$, $(57/2^{+})$, $\gamma_{6979.9}$**410.9**(68_{14}), $\gamma_{6616.3}$**774.5**(100_{14})

B **7584.7**$_{5}$, $(59/2^{+})$, $\gamma_{7174.4}$**410.2**(51_{5}), $\gamma_{6789.1}$**795.5**(100_{10})

P **7667.3**$_{7}$, J+4, $\gamma_{6965.1}$**702.2**(100_{64}), $\gamma_{6533.6}$**1133.6**(<60)(?)

D **7729.4**$_{5}$, $(59/2^{-})$, $\gamma_{7247.0}$**482.4**(<14), $\gamma_{6790.1}$**939.2**(100_{29})

J **7785.2**$_{5}$, $(59/2^{+})$, $\gamma_{7390.8}$**394.3**(47_{13}), $\gamma_{6979.9}$**805.3**(100_{13})

O **7786.5**$_{6}$, $(57/2^{+})$, $\gamma_{6990.6}$**795.9**(100)

K **7813.9**$_{5}$, $(59/2^{-})$, $\gamma_{6907.4}$**906.5**(100)

A **8011.7**$_{5}$, $(61/2^{+})$, $\gamma_{7584.7}$**426.4**(52_{5}), $\gamma_{7174.4}$**837.5**(100_{9})

N **8040.3**$_{5}$, $(59/2^{+})$, $\gamma_{7339.3}$**701.1**(12_{4}) (E2+M1) $\delta=-3.1_{4}$, $\gamma_{7220.5}$**819.9**(100_{16})

F **8046.0**$_{6}$, $(59/2^{+})$, $\gamma_{7178.9}$**867.1**(100)

M **8196.9**$_{6}$, $(61/2^{+})$, *0.034^{35}_{33} ps*, $\gamma_{7339.3}$**857.7**(100)

C **8222.9**$_{5}$, $(61/2^{-})$, $\gamma_{7729.4}$**493**(?), $\gamma_{7247.0}$**975.9**(100)

I **8237.2**$_{5}$, $(61/2^{+})$, $\gamma_{7785.2}$**452.0**(57_{13}), $\gamma_{7390.8}$**846.3**(100_{13})

L **8291.2**$_{5}$, $(61/2^{-})$, $\gamma_{7351.2}$**940.0**(100)

P **8421.9**$_{7}$, J+6, $\gamma_{7667.3}$**754.6**(100_{50}), $\gamma_{7339.3}$**1082.6**(<50)(?)

B **8459.9**$_{5}$, $(63/2^{+})$, $\gamma_{8011.7}$**447.9**(51_{13}), $\gamma_{7584.7}$**875.5**(100_{11})

O **8636.3**$_{6}$, $(61/2^{+})$, $\gamma_{7786.5}$**849.8**(100)

J **8668.5**$_{5}$, $(63/2^{+})$, $\gamma_{8237.2}$**431.4**(57_{14}), $\gamma_{7785.2}$**883.4**(100_{19})

D **8713.7**$_{5}$, $(63/2^{-})$, $\gamma_{7729.4}$**984.3**(100)

K **8790.3**$_{6}$, $(63/2^{-})$, $\gamma_{7813.9}$**976.4**(100)

N **8913.3**$_{6}$, $(63/2^{+})$, $\gamma_{8040.3}$**872.9**(100)

A **8927.2**$_{6}$, $(65/2^{+})$, $\gamma_{8459.9}$**467**(?), $\gamma_{8011.7}$**915.6**(100)

M **9106.7**$_{6}$, $(65/2^{+})$, $\gamma_{8196.9}$**909.7**(100)

I **9154.0**$_{5}$, $(65/2^{+})$, $\gamma_{8668.5}$**485.5**(71_{29}), $\gamma_{8237.2}$**916.8**(100_{29})

P **9232.0**$_{7}$, J+8, $\gamma_{8421.9}$**810.1**(100)

C **9252.9**$_{6}$, $(65/2^{-})$, $\gamma_{8222.9}$**1030.0**(100)

L **9284.6**$_{6}$, $(65/2^{-})$, $\gamma_{8291.2}$**993.4**(100)

B **9409.3**$_{6}$, $(67/2^{+})$, $\gamma_{8927.2}$**483**(?), $\gamma_{8459.9}$**949.3**(100)

O **9538.8**$_{6}$, $(65/2^{+})$, $\gamma_{8636.3}$**902.5**(100)

J **9625.3**$_{5}$, $(67/2^{+})$, $\gamma_{9154.0}$**471.3**(<100), $\gamma_{8668.5}$**956.8**(100_{60})

D **9709.1**$_{6}$, $(67/2^{-})$, $\gamma_{8713.7}$**995.4**(100)

N **9839.8**$_{6}$, $(67/2^{+})$, $\gamma_{8913.3}$**926.5**(100)

A **9916.4**$_{6}$, $(69/2^{+})$, $\gamma_{8927.2}$**989.2**(100)

M **10069.2**$_{7}$, $(69/2^{+})$, $\gamma_{9106.7}$**962.5**(100)

P **10097.3**$_{7}$, J+10, $\gamma_{9232.0}$**865.3**(100)

I **10138.4**$_{6}$, $(69/2^{+})$, $\gamma_{9625.3}$**513.0**(?), $\gamma_{9154.0}$**984.4**

C **10265.2**$_{6}$, $(69/2^{-})$, $\gamma_{9252.9}$**1012.3**(100)

L **10346.6**$_{8}$, $(69/2^{-})$, $\gamma_{9284.6}$**1062.0**(100)(?)

B **10425.1**$_{6}$, $(71/2^{+})$, $\gamma_{9409.3}$**1015.9**(100)

O **10494.6**$_{7}$, $(69/2^{+})$, $\gamma_{9538.8}$**955.8**(100)

J **10653.3**$_{6}$, $(71/2^{+})$, $\gamma_{10138.4}$**515.0**(?), $\gamma_{9625.3}$**1028.0**

D **10715.0**$_{6}$, $(71/2^{-})$, $\gamma_{9709.1}$**1005.9**(100)

N **10819.9**$_{7}$, $(71/2^{+})$, $\gamma_{9839.8}$**980.2**(100)

A **10978.0**$_{6}$, $(73/2^{+})$, $\gamma_{9916.4}$**1061.6**(100)

P **11017.8**$_{8}$, J+12, $\gamma_{10097.3}$**920.5**(100)

M **11085.6**$_{7}$, $(73/2^{+})$, $\gamma_{10069.2}$**1016.5**(100)

I **11186.7**$_{6}$, $(73/2^{+})$, $\gamma_{10138.4}$**1048.3**

B **11503.3**$_{6}$, $(75/2^{+})$, $\gamma_{10425.1}$**1078.1**(100)

O **11503.8**$_{7}$, $(73/2^{+})$, $\gamma_{10494.6}$**1009.2**(100)

J **11748.8**$_{6}$, $(75/2^{+})$, $\gamma_{10653.3}$**1095.5**

N **11854.6**$_{7}$, $(75/2^{+})$, $\gamma_{10819.9}$**1034.7**(100)

P **11993.5**$_{8}$, J+14, $\gamma_{11017.8}$**975.7**(100)

A **12097.7**$_{7}$, $(77/2^{+})$, $\gamma_{10978.0}$**1119.7**(100)

M **12156.7**$_{7}$, $(77/2^{+})$, $\gamma_{11085.6}$**1071.1**(100)

O **12566.8**$_{7}$, $(77/2^{+})$, $\gamma_{11503.8}$**1063.0**(100)

B **12625.1**$_{7}$, $(79/2^{+})$, $\gamma_{11503.3}$**1121.8**(100)

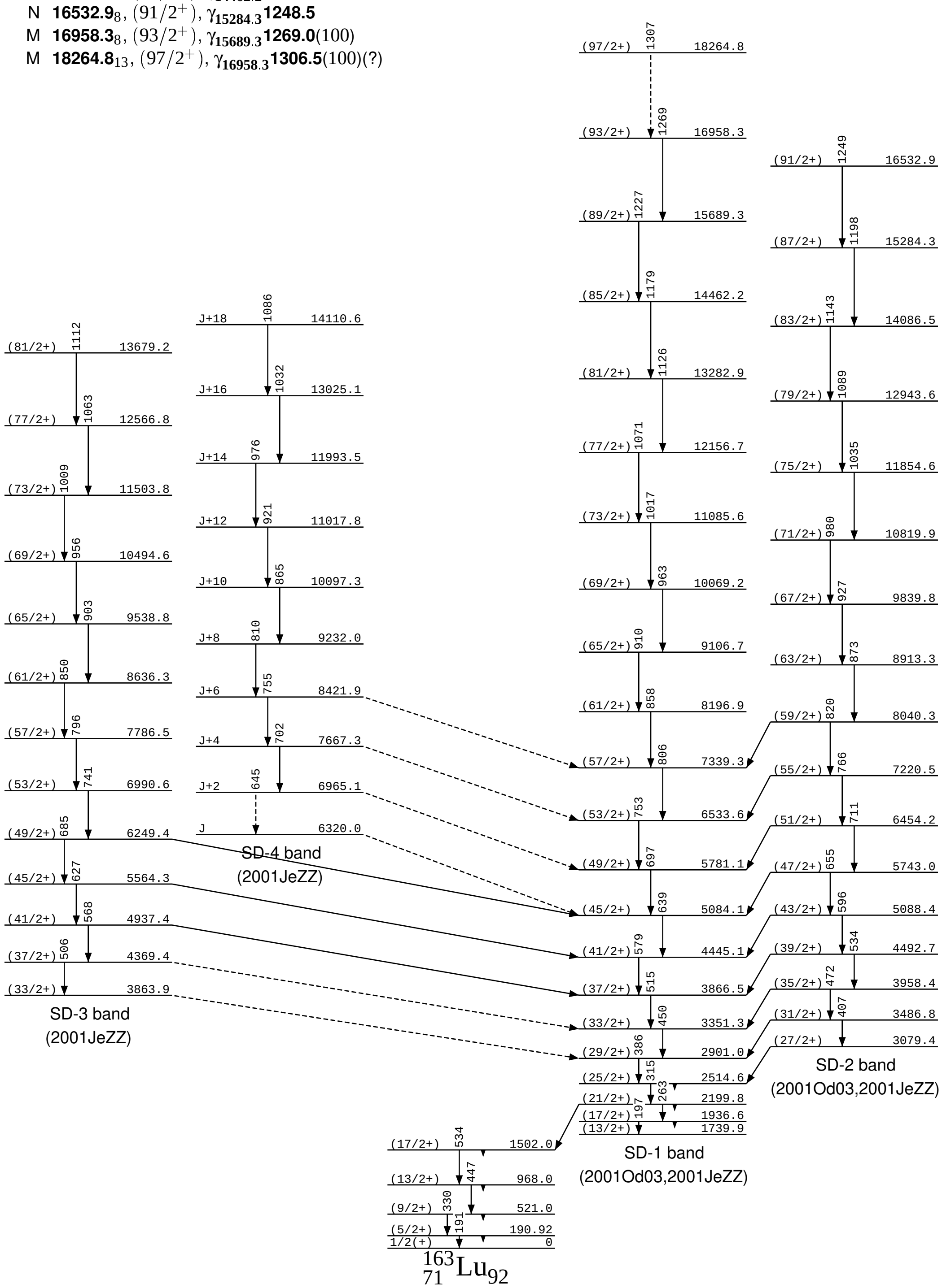
N **12943.6**$_{7}$, $(79/2^{+})$, $\gamma_{11854.6}$**1088.9**

P **13025.1**$_{8}$, J+16, $\gamma_{11993.5}$**1031.6**

A **13258.1**$_{12}$(?), $(81/2^{+})$, $\gamma_{12097.7}$**1160.4**(100)(?)

M **13282.9**$_{7}$, $(81/2^{+})$, $\gamma_{12156.7}$**1126.2**(100)

O **13679.2**$_8$, $(81/2^+)$, $\gamma_{\mathbf{12566.8}}$**1112.4**(100)
N **14086.5**$_7$, $(83/2^+)$, $\gamma_{\mathbf{12943.6}}$**1143.0**
P **14110.6**$_8$, $J+18$, $\gamma_{\mathbf{13025.1}}$**1085.5**
M **14462.2**$_8$, $(85/2^+)$, $\gamma_{\mathbf{13282.9}}$**1179.3**(100)
A **14483.5**$_{16}$(?), $(85/2^+)$, $\gamma_{\mathbf{13258.1}}$**1225.4**(?)
N **15284.3**$_8$, $(87/2^+)$, $\gamma_{\mathbf{14086.5}}$**1197.8**
M **15689.3**$_8$, $(89/2^+)$, $\gamma_{\mathbf{14462.2}}$**1227.0**(100)
N **16532.9**$_8$, $(91/2^+)$, $\gamma_{\mathbf{15284.3}}$**1248.5**
M **16958.3**$_8$, $(93/2^+)$, $\gamma_{\mathbf{15689.3}}$**1269.0**(100)
M **18264.8**$_{13}$, $(97/2^+)$, $\gamma_{\mathbf{16958.3}}$**1306.5**(100)(?)



$^{164}_{71}\mathrm{Lu}_{93}$

S_n: 8061 $_{SY}$, S_p: 2678 $_{SY}$

Nuclear Bands

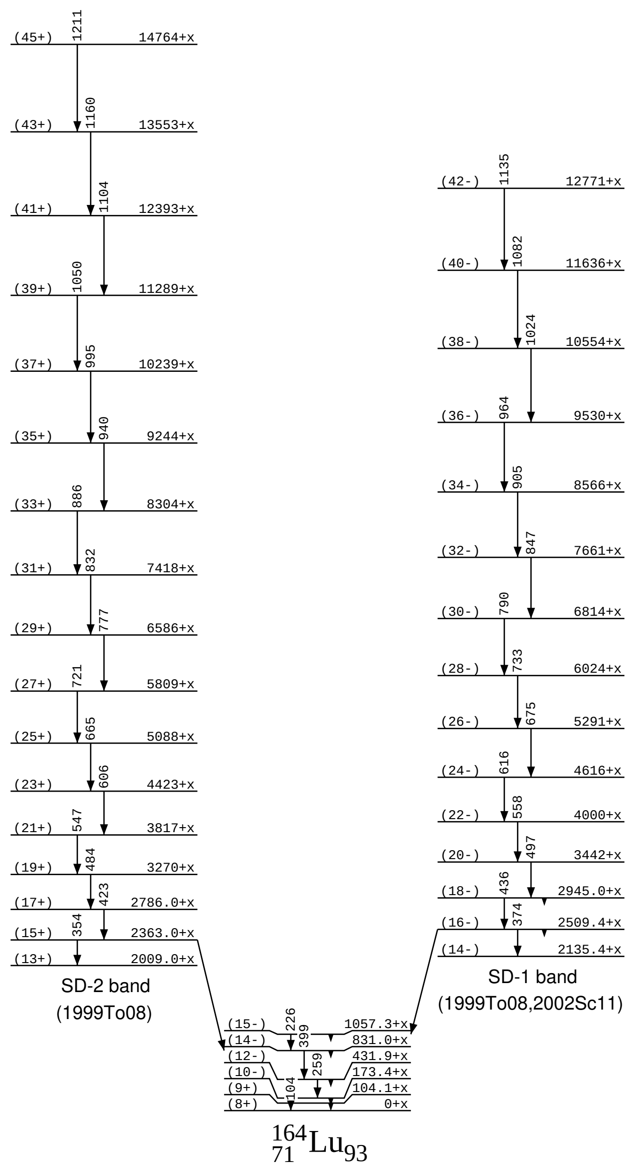
A $\pi(h_{11/2}/g_{7/2})\nu(i_{13/2}/h_{11/2})$, α=0
B $\pi(h_{11/2}/g_{7/2})\nu(i_{13/2}/h_{11/2})$, α=1
C $\pi h_{11/2}\nu i_{13/2}$, α=0
D $\pi h_{11/2}\nu i_{13/2}$, α=1
E Band based on (16^+), α=0
F Band based on (16^+), α=1
G Band based on 9 (?)
H SD-1 (triaxial) band (1999To08,2002Sc11) $Q_0=7.1^{5}_{6}$
I SD-2 (triaxial) band (1999To08)
J SD-3 (triaxial) band (1999To08)
K SD-4 (triaxial) band (1999To08)
L SD-5 (triaxial) band (1999To08)
M SD-6 (triaxial) band (1999To08)
N SD-7 (triaxial) band (1999To08)
O SD-8 (triaxial) band (1999To08)

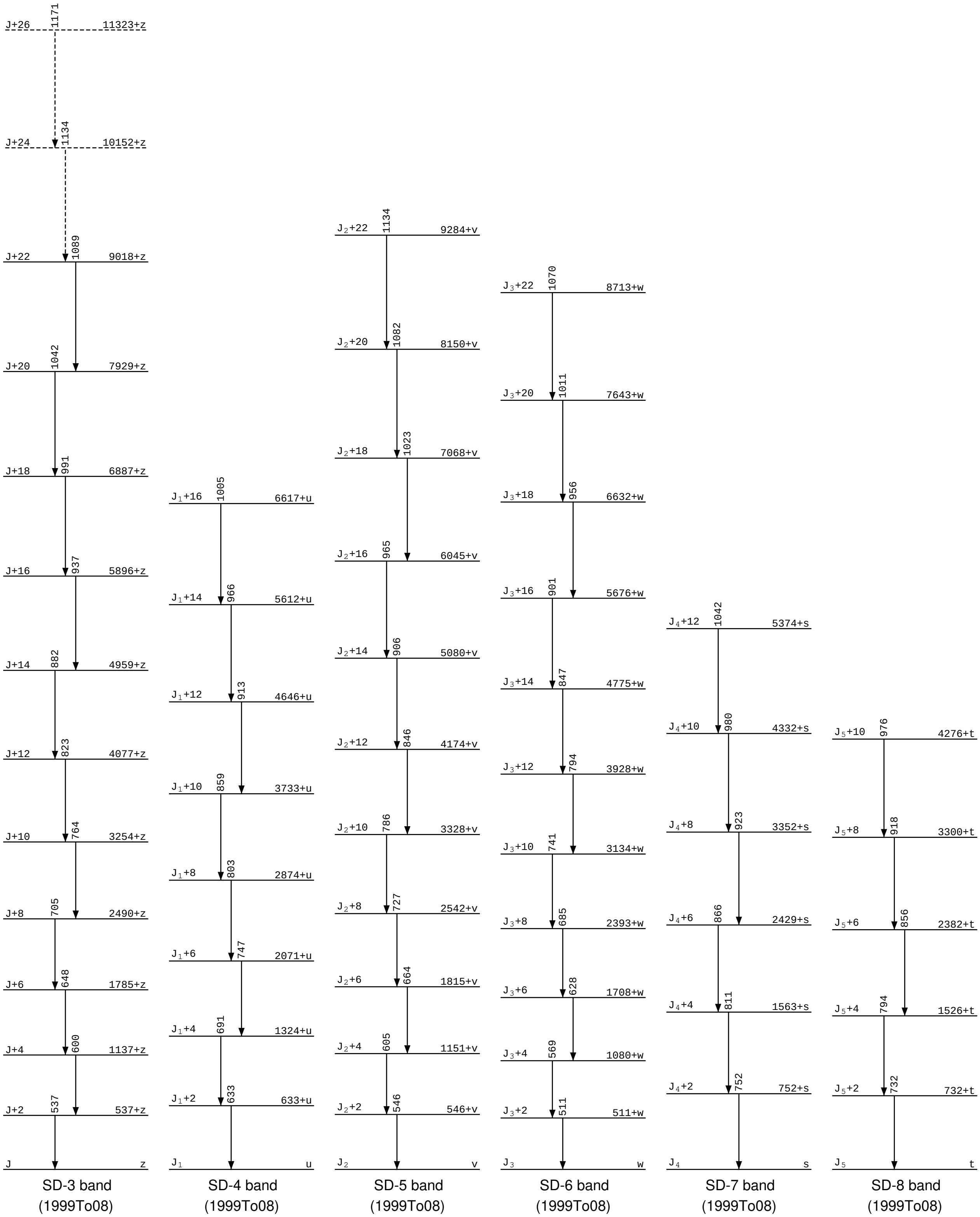
Levels and γ-ray branchings:

0, 1, *3.14_3 min*, %ε+%β$^+$=100, μ=+0.0591_{11}, Q=+0.608_7
31.3_3, <3, γ_{0} **31.4_4**(100)
126.3_4(?), γ_{0} **126.3_4**(100)(?)
153.3_3, ≤ 3, $\gamma_{31.3}$ **122.1_3**(211_{20}), γ_{0} **153.3_3**(100_8)
199.4_4, $\gamma_{153.3}$ **46.2_4**(100)
283.4_3, $\gamma_{199.4}$ **84.3_4**(<9.6), $\gamma_{153.3}$ **130.0_3**(100_9), $\gamma_{126.3}$ **157.3_3**(20_{10})(?), $\gamma_{31.3}$ **252.0_3**(54_7)
597.2_4, $\gamma_{283.4}$ **313.7_4**(100_{19}), $\gamma_{199.4}$ **397.9_4**(7.8_{13}), $\gamma_{153.3}$ **444.0_4**(3.9_7)
807.6_5, $\gamma_{199.4}$ **608.2_5**(100_{20}), $\gamma_{153.3}$ **654.3_5**(90_{20})
827.4_5, $\gamma_{199.4}$ **627.9_5**(78_{22}), $\gamma_{153.3}$ **674.2_5**(100_{28})

A **0+x**, (8^+)
C **18.4+x**, (8^-)
D **100.4+x**, (9^-), $\gamma_{18.4+x}$ **82**
B **104.11+x**, (9^+), γ_{0+x} **104.1_3**(100), $\gamma_{?}$ **119.5**(?)
C **173.4+x**, (10^-), $\gamma_{100.4+x}$ **73**
A **245.05+x**, (10^+), $\gamma_{104.11+x}$ **140.9_1**(100), γ_{0+x} **245.1_3**(21_5)
D **266.4+x**, (11^-), $\gamma_{173.4+x}$ **93.1_1**(100)
B **413.28+x**, (11^+), $\gamma_{245.05+x}$ **168.2_1**(100), $\gamma_{104.11+x}$ **309.3_2**(56_7)
C **431.9+x**, (12^-), $\gamma_{266.4+x}$ **165.5_1**(100), $\gamma_{173.4+x}$ **258.6_2**(16_2)
D **594.1+x**, (13^-), $\gamma_{431.9+x}$ **162.1_1**(100), $\gamma_{266.4+x}$ **327.6_1**(33_7)
A **623.65+x**, (12^+), $\gamma_{413.28+x}$ **210.3_1**(100), $\gamma_{245.05+x}$ **378.6_1**(83_{13})
C **831.0+x**, (14^-), $\gamma_{594.1+x}$ **237.0_1**(100), $\gamma_{431.9+x}$ **399.1_1**(50_8)
B **848.40+x**, (13^+), $\gamma_{623.65+x}$ **224.7_1**(84_{11}), $\gamma_{413.28+x}$ **435.2_1**(100)
D **1057.3+x**, (15^-), $\gamma_{831.0+x}$ **226.3_1**(100_{10}), $\gamma_{594.1+x}$ **463.2_1**(100)
A **1115.37+x**, (14^+), $\gamma_{848.40+x}$ **267.0_2**(53_8), $\gamma_{623.65+x}$ **491.7_1**(100)
C **1341.9+x**, (16^-), $\gamma_{1057.3+x}$ **284.6_1**(100), $\gamma_{831.0+x}$ **510.9_1**(91_{11})
B **1382.39+x**, (15^+), $\gamma_{1115.37+x}$ **267.0_2**(42_{12}), $\gamma_{848.40+x}$ **534.0_1**(100)
D **1625.9+x**, (17^-), $\gamma_{1341.9+x}$ **283.9_1**(62_{12}), $\gamma_{1057.3+x}$ **568.6_1**(100)
A **1690.0+x**, (16^+), $\gamma_{1382.39+x}$ **307.8_2**(34_9), $\gamma_{1115.37+x}$ **574.6_1**(100)
C **1938.6+x**, (18^-), $\gamma_{1625.9+x}$ **312.7_1**(67_9), $\gamma_{1341.9+x}$ **596.7_1**(100)
B **1987.9+x**, (17^+), $\gamma_{1690.0+x}$ **298.0_3**(16_5), $\gamma_{1382.39+x}$ **605.4_1**(100)
I **2009.0+x**, (13^+)
E **2021.9+x**, (16^+), $\gamma_{1057.3+x}$ **964.6_2**(100)
H **2135.4+x**, (14^-)
F **2206.9+x**, (17^+), $\gamma_{2021.9+x}$ **184.9_3**(54), $\gamma_{1341.9+x}$ **864.9_3**(100)
D **2270.4+x**, (19^-), $\gamma_{1938.6+x}$ **331.8_1**(40_6), $\gamma_{1625.9+x}$ **644.5_1**(100)
A **2314.2+x**, (18^+), $\gamma_{1987.9+x}$ **326.3_3**(14_3), $\gamma_{1690.0+x}$ **624.3_1**(100)
I **2363.0+x**, (15^+), $\gamma_{2009.0+x}$ **354**, $\gamma_{831.0+x}$ **1532**
E **2413.3+x**, (18^+), $\gamma_{2206.9+x}$ **206.4_3**(100), $\gamma_{2021.9+x}$ **391.6_3**(45_8)
H **2509.4+x**, (16^-), $\gamma_{2135.4+x}$ **374**, $\gamma_{1987.9+x}$ **522**(?), $\gamma_{1938.6+x}$ **570**(?), $\gamma_{1690.0+x}$ **820**(?), $\gamma_{1625.9+x}$ **883**(?), $\gamma_{1382.39+x}$ **1128**, $\gamma_{1341.9+x}$ **1167**, $\gamma_{1057.3+x}$ **1452**
C **2595.1+x**, (20^-), $\gamma_{2270.4+x}$ **324.8_1**(59_{10}), $\gamma_{1938.6+x}$ **656.5_1**(100)
B **2621.1+x**, (19^+), $\gamma_{2314.2+x}$ **307.1_3**(32_7), $\gamma_{1987.9+x}$ **633.2_1**(100)
F **2635.6+x**, (19^+), $\gamma_{2413.3+x}$ **222.5_3**(66), $\gamma_{2206.9+x}$ **428.6_3**(38), $\gamma_{1987.9+x}$ **647.8_2**(100)
I **2786.0+x**, (17^+), $\gamma_{2363.0+x}$ **423**
E **2873.4+x**, (20^+), $\gamma_{2635.6+x}$ **237.9_3**(100), $\gamma_{2621.1+x}$ **252.0_3**(37), $\gamma_{2413.3+x}$ **460.1_3**(80_{15})
A **2919.1+x**, (20^+), $\gamma_{2621.1+x}$ **297.8_3**(100), $\gamma_{2314.2+x}$ **605.0_3**(90_{30})
H **2945.0+x**, (18^-), $\gamma_{2509.4+x}$ **436**, $\gamma_{1938.6+x}$ **1006**
D **2958.8+x**, (21^-), $\gamma_{2595.1+x}$ **363.7_1**(50_{10}), $\gamma_{2270.4+x}$ **688.4_1**(100)
F **3140.5+x**, (21^+), $\gamma_{2873.4+x}$ **267.2_3**(100), $\gamma_{2635.6+x}$ **505.0_3**(94_{15})
B **3208.3+x**, (21^+), $\gamma_{2919.1+x}$ **289.2_3**(91_{25}), $\gamma_{2621.1+x}$ **587.2_3**(100)
I **3270+x**, (19^+), $\gamma_{2786.0+x}$ **484**
C **3282.0+x**, (22^-), $\gamma_{2958.8+x}$ **323.0_1**(42_{10}), $\gamma_{2595.1+x}$ **687.0_1**(100)
E **3424.4+x**, (22^+), $\gamma_{3140.5+x}$ **283.9_3**(100), $\gamma_{2873.4+x}$ **550.9_3**(67_{10})
H **3442+x**, (20^-), $\gamma_{2945.0+x}$ **497**
A **3519.0+x**, (22^+), $\gamma_{3208.3+x}$ **310.6_3**(66_{13}), $\gamma_{2919.1+x}$ **600.0_3**(100)
D **3659.2+x**, (23^-), $\gamma_{3282.0+x}$ **377.3_2**(45_8), $\gamma_{2958.8+x}$ **700.5_1**(100)
F **3746.4+x**, (23^+), $\gamma_{3424.4+x}$ **322.0_3**(71_{15}), $\gamma_{3140.5+x}$ **605.9_3**(100)
I **3817+x**, (21^+), γ_{3270+x} **547**
B **3836.7+x**, (23^+), $\gamma_{3519.0+x}$ **317.7_3**(34_8), $\gamma_{3208.3+x}$ **628.3_3**(100)
C **3979.2+x**, (24^-), $\gamma_{3659.2+x}$ **320.1_1**(52_8), $\gamma_{3282.0+x}$ **697.0_1**(100)
H **4000+x**, (22^-), γ_{3442+x} **558**
E **4084.1+x**, (24^+), $\gamma_{3746.4+x}$ **337.9_3**(59_{10}), $\gamma_{3424.4+x}$ **659.7_3**(100)
A **4182.8+x**, (24^+), $\gamma_{3836.7+x}$ **346.1_3**(20_5), $\gamma_{3519.0+x}$ **663.8_2**(100)
D **4367.6+x**, (25^-), $\gamma_{3979.2+x}$ **388.3_2**(66_{13}), $\gamma_{3659.2+x}$ **708.4_1**(100)
I **4423+x**, (23^+), γ_{3817+x} **606**
F **4452.7+x**, (25^+), $\gamma_{4084.1+x}$ **368.5_3**(40_{10}), $\gamma_{3746.4+x}$ **706.1_3**(100)
B **4537.2+x**, (25^+), $\gamma_{4182.8+x}$ **354.7_3**(23_4), $\gamma_{3836.7+x}$ **700.5_2**(100)
H **4616+x**, (24^-), γ_{4000+x} **616**
C **4702.1+x**, (26^-), $\gamma_{4367.6+x}$ **334.3_2**(62_{15}), $\gamma_{3979.2+x}$ **722.9_2**(100)
E **4844.9+x**, (26^+), $\gamma_{4452.7+x}$ **392.3_3**(50_{10}), $\gamma_{4084.1+x}$ **761.1_3**(100)
A **4920.4+x**, (26^+), $\gamma_{4537.2+x}$ **383.3_3**(28_5), $\gamma_{4182.8+x}$ **737.6_2**(100)
I **5088+x**, (25^+), γ_{4423+x} **665**
D **5115.3+x**, (27^-), $\gamma_{4702.1+x}$ **413.2_3**(91_{25}), $\gamma_{4367.6+x}$ **747.8_2**(100)
F **5243.6+x**, (27^+), $\gamma_{4844.9+x}$ **398.8_3**(31_8), $\gamma_{4452.7+x}$ **790.6_3**(100)
H **5291+x**, (26^-), γ_{4616+x} **675**
B **5316.2+x**, (27^+), $\gamma_{4920.4+x}$ **395_1**(42_{19}), $\gamma_{4537.2+x}$ **779.0_2**(100_{19})
C **5476.7+x**, (28^-), $\gamma_{5115.3+x}$ **361.5_3**(59_{21}), $\gamma_{4702.1+x}$ **774.6_2**(100)
E **5663.0+x**, (28^+), $\gamma_{5243.6+x}$ **419.3_3**(36_7), $\gamma_{4844.9+x}$ **818.3_3**(100)
A **5753.7+x**, (28^+), $\gamma_{5316.2+x}$ **438**, $\gamma_{4920.4+x}$ **833.1_5**
I **5809+x**, (27^+), γ_{5088+x} **721**
D **5925.8+x**, (29^-), $\gamma_{5476.7+x}$ **449.0_3**(71_{25}), $\gamma_{5115.3+x}$ **810.6_3**(100)
H **6024+x**, (28^-), γ_{5291+x} **733**
F **6080.6+x**, (29^+), $\gamma_{5663.0+x}$ **417.9_5**(18_4), $\gamma_{5243.6+x}$ **836.6_5**(100_{20})
B **6195.3+x**, (29^+), $\gamma_{5316.2+x}$ **879.1_5**(100)
C **6317.6+x**, (30^-), $\gamma_{5925.8+x}$ **391.8_5**(24_5), $\gamma_{5476.7+x}$ **840.9_3**(100_9)
E **6513.4+x**, (30^+), $\gamma_{6080.6+x}$ **432.6_5**(37_{10}), $\gamma_{5663.0+x}$ **850.5_5**(100_{20})
I **6586+x**, (29^+), γ_{5809+x} **777**
A **6675.7+x**, (30^+), $\gamma_{5753.7+x}$ **922_1**(100)
D **6809.6+x**, (31^-), $\gamma_{6317.6+x}$ **492.0_5**(62_{25}), $\gamma_{5925.8+x}$ **883.8_5**(100_{22})
H **6814+x**, (30^-), γ_{6024+x} **790**
F **6953.5+x**, (31^+), $\gamma_{6513.4+x}$ **440.1_5**(42_{17}), $\gamma_{6080.6+x}$ **872.9_5**(100_{25})
B **7155.9+x**, (31^+), $\gamma_{6195.3+x}$ **960.6_5**(100)
C **7228.1+x**, (32^-), $\gamma_{6809.6+x}$ **418.3_5**(29_{11}), $\gamma_{6317.6+x}$ **910.4_5**(100_{21})
E **7411.3+x**, (32^+), $\gamma_{6953.5+x}$ **457.9_5**(32_{16}), $\gamma_{6513.4+x}$ **897.9_5**(100_{24})
I **7418+x**, (31^+), γ_{6586+x} **832**
A **7652.7+x**, (32^+), $\gamma_{6675.7+x}$ **977**
H **7661+x**, (32^-), γ_{6814+x} **847**
D **7770.0+x**, (33^-), $\gamma_{7228.1+x}$ **542**, $\gamma_{6809.6+x}$ **960.6_5**
F **7871.8+x**, (33^+), $\gamma_{7411.3+x}$ **460.5_5**(56_{25}), $\gamma_{6953.5+x}$ **918.3_5**(100_{31})
B **8108.3+x**, (33^+), $\gamma_{7155.9+x}$ **952.4_5**(100)
C **8203.0+x**, (34^-), $\gamma_{7770.0+x}$ **434**, $\gamma_{7228.1+x}$ **974.7_5**
I **8304+x**, (33^+), γ_{7418+x} **886**
E **8363.7+x**, (34^+), $\gamma_{7411.3+x}$ **952.4_5**(100)
H **8566+x**, (34^-), γ_{7661+x} **905**
D **8803.0+x**, (35^-), $\gamma_{8203.0+x}$ **600**(?), $\gamma_{7770.0+x}$ **1033**
F **8841.3+x**, (35^+), $\gamma_{7871.8+x}$ **969.5_5**(100)
B **9098.3+x**, (35^+), $\gamma_{8108.3+x}$ **990**

C **9238.0+x**, (36^-), $\gamma_{8803.0+x}$**435**(?), $\gamma_{8203.0+x}$**1035**
I **9244+x**, (35^+), γ_{8304+x}**940**
E **9375.7+x**, (36^+), $\gamma_{8363.7+x}$**1012**$_1$(100)
H **9530+x**, (36^-), γ_{8566+x}**964**
F **9859.3+x**, (37^+), $\gamma_{8841.3+x}$**1018**$_1$(100)
D **9907.0+x**, (37^-), $\gamma_{8803.0+x}$**1104**
I **10239+x**, (37^+), γ_{9244+x}**995**
C **10326.0+x**, (38^-), $\gamma_{9238.0+x}$**1088**
E **10440.7+x**, (38^+), $\gamma_{9375.7+x}$**1065**$_1$(100)
H **10554+x**, (38^-), γ_{9530+x}**1024**
F **10928.3+x**, (39^+), $\gamma_{9859.3+x}$**1069**$_1$(100)
D **11069+x**, (39^-), $\gamma_{9907.0+x}$**1162**
I **11289+x**, (39^+), $\gamma_{10239+x}$**1050**
C **11450+x**, (40^-), $\gamma_{10326.0+x}$**1124**
H **11636+x**, (40^-), $\gamma_{10554+x}$**1082**
D **12256+x**(?), (41^-), $\gamma_{11069+x}$**1187**(?)
I **12393+x**, (41^+), $\gamma_{11289+x}$**1104**
H **12771+x**, (42^-), $\gamma_{11636+x}$**1135**
I **13553+x**, (43^+), $\gamma_{12393+x}$**1160**
I **14764+x**, (45^+), $\gamma_{13553+x}$**1211**
0+y
G **152.8+y**, (9), γ_{0+y}**152.8**$_5$(100)
G **554.0+y**, (11), $\gamma_{152.8+y}$**401.2**$_3$(100)
G **1059.7+y**, (13), $\gamma_{554.0+y}$**505.7**$_3$(100)
G **1645.0+y**, (15), $\gamma_{1059.7+y}$**585.3**$_3$(100)
G **2277.8+y**, (17), $\gamma_{1645.0+y}$**632.8**$_5$(100)
G **2926.7+y**, (19), $\gamma_{2277.8+y}$**648.9**$_5$(100)
G **3599.5+y**, (21), $\gamma_{2926.7+y}$**672.8**$_5$(100)
J **z**, J
J **537+z**, $J+2$, γ_{z}**537**
J **1137+z**, $J+4$, γ_{537+z}**600**
J **1785+z**, $J+6$, γ_{1137+z}**648**
J **2490+z**, $J+8$, γ_{1785+z}**705**
J **3254+z**, $J+10$, γ_{2490+z}**764**
J **4077+z**, $J+12$, γ_{3254+z}**823**
J **4959+z**, $J+14$, γ_{4077+z}**882**
J **5896+z**, $J+16$, γ_{4959+z}**937**
J **6887+z**, $J+18$, γ_{5896+z}**991**
J **7929+z**, $J+20$, γ_{6887+z}**1042**
J **9018+z**, $J+22$, γ_{7929+z}**1089**
J **10152+z**(?), $J+24$, γ_{9018+z}**1134**(?)
J **11323+z**(?), $J+26$, $\gamma_{10152+z}$**1171**(?)
K **u**, J_1
K **633+u**, J_1+2, γ_{u}**633**
K **1324+u**, J_1+4, γ_{633+u}**691**
K **2071+u**, J_1+6, γ_{1324+u}**747**
K **2874+u**, J_1+8, γ_{2071+u}**803**
K **3733+u**, J_1+10, γ_{2874+u}**859**
K **4646+u**, J_1+12, γ_{3733+u}**913**
K **5612+u**, J_1+14, γ_{4646+u}**966**
K **6617+u**, J_1+16, γ_{5612+u}**1005**
L **v**, J_2
L **546+v**, J_2+2, γ_{v}**546**
L **1151+v**, J_2+4, γ_{546+v}**605**
L **1815+v**, J_2+6, γ_{1151+v}**664**
L **2542+v**, J_2+8, γ_{1815+v}**727**
L **3328+v**, J_2+10, γ_{2542+v}**786**
L **4174+v**, J_2+12, γ_{3328+v}**846**
L **5080+v**, J_2+14, γ_{4174+v}**906**
L **6045+v**, J_2+16, γ_{5080+v}**965**
L **7068+v**, J_2+18, γ_{6045+v}**1023**
L **8150+v**, J_2+20, γ_{7068+v}**1082**
L **9284+v**, J_2+22, γ_{8150+v}**1134**
M **w**, J_3
M **511+w**, J_3+2, γ_{w}**511**
M **1080+w**, J_3+4, γ_{511+w}**569**
M **1708+w**, J_3+6, γ_{1080+w}**628**
M **2393+w**, J_3+8, γ_{1708+w}**685**
M **3134+w**, J_3+10, γ_{2393+w}**741**
M **3928+w**, J_3+12, γ_{3134+w}**794**
M **4775+w**, J_3+14, γ_{3928+w}**847**
M **5676+w**, J_3+16, γ_{4775+w}**901**
M **6632+w**, J_3+18, γ_{5676+w}**956**
M **7643+w**, J_3+20, γ_{6632+w}**1011**
M **8713+w**, J_3+22, γ_{7643+w}**1070**
N **s**, J_4
N **752+s**, J_4+2, γ_{s}**752**
N **1563+s**, J_4+4, γ_{752+s}**811**
N **2429+s**, J_4+6, γ_{1563+s}**866**
N **3352+s**, J_4+8, γ_{2429+s}**923**
N **4332+s**, J_4+10, γ_{3352+s}**980**
N **5374+s**, J_4+12, γ_{4332+s}**1042**
O **t**, J_5
O **732+t**, J_5+2, γ_{t}**732**
O **1526+t**, J_5+4, γ_{732+t}**794**
O **2382+t**, J_5+6, γ_{1526+t}**856**
O **3300+t**, J_5+8, γ_{2382+t}**918**
O **4276+t**, J_5+10, γ_{3300+t}**976**




SD-3 band
(1999To08)
SD-4 band
(1999To08)
SD-5 band
(1999To08)
SD-6 band
(1999To08)
SD-7 band
(1999To08)
SD-8 band
(1999To08)

$^{164}_{71}Lu_{93}$

$^{165}_{71}\mathrm{Lu}_{94}$

S_n: 9571 $_{SY}$, S_p: 2551 $_{SY}$

Nuclear Bands

- A 1/2[411] band, α=+1/2
- B 1/2[411] band, α=-1/2
- C 5/2[402] band, α=+1/2
- D 5/2[402] band, α=-1/2
- E 7/2[404] band, α=+1/2
- F 7/2[404] band, α=-1/2
- G 3-quasiparticle band, α=+1/2
- H 3-quasiparticle band, α=-1/2
- I 1/2[541] band, α=+1/2
- J 9/2[514] band, α=+1/2
- K 9/2[514] band, α=-1/2
- L SD (triaxial) band (1995Sc39)

Levels and γ-ray branchings:

A **0**, $1/2^+$, *10.74$_{10}$ min*, %ε+%β$^+$=100 , *μ*=-0.0245$_3$

B **0.0+x**, $(3/2^+)$

C **5.38+x**, $(5/2^+)$

F **23.2+x**, $(7/2^+)$

D **141.44+x**, $(7/2^+)$, $\gamma_{5.38+x}$**136.10**$_{12}(100)$ D+Q

A **147.70+x**, $(5/2^+)$, $\gamma_{0.0+x}$**147.67**$_{14}(100)$ D

E **182.2+x**, $(9/2^+)$, $\gamma_{23.2+x}$**159.18**$_{11}(100)$ D+Q

B **195.38+x**, $(7/2^+)$, $\gamma_{0.0+x}$**195.41**$_{11}(100)$ Q

203.3+x, $(7/2^-)$, $\gamma_{23.2+x}$**180.1**$_2(100)$ D+Q

J **234.5+x**, $(9/2^-)$, $\gamma_{23.2+x}$**211.3**$_2(100)$ D

C **305.56+x**, $(9/2^+)$, $\gamma_{141.44+x}$**164.28**$_{12}(100_3)$ D+Q, $\gamma_{5.38+x}$**300.12**$_{15}(39_2)$ Q

K **334.9+x**, $(11/2^-)$, $\gamma_{234.5+x}$**100.4**$_2(100_{11})$ D+Q, $\gamma_{182.2+x}$**152.6**$_6(21_7)$ D

I **345.3+x**, $(5/2^-)$, $\gamma_{0.0+x}$**345.3**$_5(100)$

F **366.4+x**, $(11/2^+)$, $\gamma_{182.2+x}$**184.27**$_{11}(79_5)$ D+Q $\delta=+0.47_7$, $\gamma_{23.2+x}$**343.03**$_{12}(100_2)$ Q

A **432.70+x**, $(9/2^+)$, $\gamma_{195.38+x}$**237.39**$_{16}(100_5)$ D, $\gamma_{147.70+x}$**284.96**$_{17}(98_5)$

I **466.47+x**, $(9/2^-)$, $\gamma_{345.3+x}$**121.1**$_5(10_3)$, $\gamma_{195.38+x}$**271.1**$_2(100_{10})$ D

J **494.2+x**, $(13/2^-)$, $\gamma_{334.9+x}$**159.3**$_2(100_9)$ D+Q, $\gamma_{234.5+x}$**259.7**$_2(<40)$ (Q)

D **499.22+x**, $(11/2^+)$, $\gamma_{305.56+x}$**193.80**$_{12}(100_3)$, $\gamma_{141.44+x}$**357.56**$_{16}(58_2)$

B **519.58+x**, $(11/2^+)$, $\gamma_{305.56+x}$**214.07**$_{16}(14.9_7)$, $\gamma_{195.38+x}$**324.18**$_{12}(100.0_{16})$ Q

E **573.9+x**, $(13/2^+)$, $\gamma_{366.4+x}$**207.59**$_{12}(47_4)$ D+Q $\delta=+0.57_{10}$, $\gamma_{182.2+x}$**391.71**$_{11}(100.0_{14})$ Q

K **662.1+x**, $(15/2^-)$, $\gamma_{494.2+x}$**167.9**$_2(100_{10})$ D+Q $\delta=+0.16_3$, $\gamma_{334.9+x}$**327.2**$_2(57_6)$ (Q)

I **694.7+x**, $(13/2^-)$, $\gamma_{519.58+x}$**175.0**$_5(10_3)$ D, $\gamma_{466.47+x}$**228.2**$_2(100_{10})$ (Q)

C **711.22+x**, $(13/2^+)$, $\gamma_{499.22+x}$**212.17**$_{14}(100_3)$ D+Q $\delta=+0.25_6$, $\gamma_{305.56+x}$**405.57**$_{16}(69_8)$ Q

F **802.0+x**, $(15/2^+)$, $\gamma_{573.9+x}$**228.18**$_{14}(29_3)$, $\gamma_{366.4+x}$**435.61**$_{12}(100.0_{12})$ (Q)

A **821.13+x**, $(13/2^+)$, $\gamma_{519.58+x}$**301.5**$_{10}(49.6_{17})$ D(+Q) $\delta=+0.07_7$, $\gamma_{432.70+x}$**388.46**$_{14}(100.0_{25})$ Q

J **892.9+x**, $(17/2^-)$, $\gamma_{662.1+x}$**230.8**$_2(100_{10})$ D+Q $\delta=+0.25_3$, $\gamma_{494.2+x}$**398.7**$_2(91_9)$ Q

B **943.32+x**, $(15/2^+)$, $\gamma_{711.22+x}$**231.88**$_{20}(17_5)$, $\gamma_{519.58+x}$**423.70**$_{12}(100.0_{14})$ Q, $\gamma_{499.22+x}$**444.10**$_{15}(34.5_9)$ Q

D **955.32+x**, $(15/2^+)$, $\gamma_{711.22+x}$**244.33**$_{15}(82_{11})$, $\gamma_{519.58+x}$**436.3**$_4(47_{13})$ (Q), $\gamma_{499.22+x}$**455.88**$_{18}(100_3)$

976.0+x, $\gamma_{203.3+x}$**772.7**$_5(100)$

I **1030.1+x**, $(17/2^-)$, $\gamma_{694.7+x}$**335.4**$_2(100_{10})$ Q

E **1048.7+x**, $(17/2^+)$, $\gamma_{802.0+x}$**246.69**$_{13}(22.9_{22})$ D+Q $\delta=+0.38_{13}$, $\gamma_{573.9+x}$**474.73**$_{12}(100.0_{10})$ Q

K **1099.2+x**, $(19/2^-)$, $\gamma_{892.9+x}$**206.3**$_2(71_7)$ D+Q $\delta=+0.16_3$, $\gamma_{662.1+x}$**437.1**$_2(100_{10})$ (Q)

C **1197.29+x**, $(17/2^+)$, $\gamma_{955.32+x}$**241.82**$_{15}(53.0_{24})$, $\gamma_{711.22+x}$**486.10**$_{15}(100.0_{22})$ (Q)

A **1291.99+x**, $(17/2^+)$, $\gamma_{943.32+x}$**348.32**$_{20}(27.8_{11})$ D(+Q) $\delta=+0.06_6$, $\gamma_{821.13+x}$**470.89**$_{15}(100.0_{22})$ (Q)

F **1310.5+x**, $(19/2^+)$, $\gamma_{1048.7+x}$**262.00**$_{14}(16.3_{17})$, $\gamma_{802.0+x}$**508.41**$_{12}(100.0_9)$

J **1386.4+x**, $(21/2^-)$, $\gamma_{1099.2+x}$**287.2**$_2(77_8)$ D+Q $\delta=+0.20_3$, $\gamma_{892.9+x}$**493.5**$_2(100_{10})$ Q

B **1445.39+x**, $(19/2^+)$, $\gamma_{943.32+x}$**502.07**$_{12}(100)$ Q

I **1462.7+x**, $(21/2^-)$, $\gamma_{1030.1+x}$**432.6**$_2(100)$ Q

D **1478.39+x**, $(19/2^+)$, $\gamma_{1197.29+x}$**281.10**$_{16}(53_3)$, $\gamma_{955.32+x}$**523.49**$_{18}(100_4)$

E **1587.0+x**, $(21/2^+)$, $\gamma_{1310.5+x}$**276.52**$_{13}(23.0_{10})$ D+Q $\delta=+0.26_7$, $\gamma_{1048.7+x}$**538.25**$_{12}(100.0_9)$ Q

K **1618.3+x**, $(23/2^-)$, $\gamma_{1386.4+x}$**231.9**$_2(33_3)$ D+Q $\delta=+0.11_3$, $\gamma_{1099.2+x}$**519.1**$_2(100_{10})$ Q

C **1740.02+x**, $(21/2^+)$, $\gamma_{1478.39+x}$**262.05**$_{18}(39_6)$, $\gamma_{1291.99+x}$**448.6**$_3(13.7_{23})$, $\gamma_{1197.29+x}$**542.58**$_{16}(100.0_{23})$ Q

A **1818.52+x**, $(21/2^+)$, $\gamma_{1291.99+x}$**526.14**$_{17}(100)$ Q

F **1871.5+x**, $(23/2^+)$, $\gamma_{1587.0+x}$**284.49**$_{15}(14.0_{18})$, $\gamma_{1310.5+x}$**561.03**$_{13}(100.0_{11})$ Q

1879.2+x, $(21/2^+)$

J **1945.1+x**, $(25/2^-)$, $\gamma_{1618.3+x}$**326.8**$_2(74_8)$ D+Q $\delta=+0.09_5$, $\gamma_{1386.4+x}$**558.7**$_2(100_{10})$ Q

I **1979.2+x**, $(25/2^-)$, $\gamma_{1462.7+x}$**516.5**$_2(100)$ Q

B **1990.12+x**, $(23/2^+)$, $\gamma_{1445.39+x}$**544.73**$_{13}(100)$ Q

D **2048.1+x**, $(23/2^+)$, $\gamma_{1478.39+x}$**569.75**$_{18}(100)$

E **2166.7+x**, $(25/2^+)$, $\gamma_{1871.5+x}$**295.04**$_{14}(17.3_4)$ D+Q $\delta=+0.40_{12}$, $\gamma_{1587.0+x}$**579.74**$_{12}(100.0_{11})$ Q

K **2196.3+x**, $(27/2^-)$, $\gamma_{1945.1+x}$**251.2**$_3(24_3)$ D(+Q) $\delta=+0.01_3$, $\gamma_{1618.3+x}$**578.0**$_2(100)$ Q

2222.7+x, $(25/2^+)$, $\gamma_{1879.2+x}$**343.5**$_3(100)$

L **2263.9+x**, $(25/2^+)$, $\gamma_{1818.52+x}$**445.4**$_3(64_8)$, $\gamma_{1740.02+x}$**523.6**$_{10}(100_{14})$

C **2294.37+x**, $(25/2^+)$, $\gamma_{1818.52+x}$**475.01**$_{24}(29.5_{13})$, $\gamma_{1740.02+x}$**554.59**$_{15}(100_3)$

A **2348.74+x**, $(25/2^+)$, $\gamma_{1818.52+x}$**530.23**$_{20}(100_3)$ (Q), $\gamma_{1740.02+x}$**608.84**$_{20}(85_8)$

F **2458.6+x**, $(27/2^+)$, $\gamma_{2166.7+x}$**291.80**$_{14}(21.8_5)$ D+Q $\delta=+0.44_{12}$, $\gamma_{1871.5+x}$**587.02**$_{13}(100.0_{15})$ Q

J **2535.5+x**, $(29/2^-)$, $\gamma_{2196.3+x}$**339.2**$_2(56_6)$ D+Q $\delta=+0.18_3$, $\gamma_{1945.1+x}$**590.4**$_2(100)$ Q

B **2538.57+x**, $(27/2^+)$, $\gamma_{1990.12+x}$**548.45**$_{15}(3100)$ Q

I **2564.4+x**, $(29/2^-)$, $\gamma_{1979.2+x}$**585.2**$_3(100)$

D **2612.2+x**, $(27/2^+)$, $\gamma_{2048.1+x}$**564.03**$_{23}(100)$

L **2709.1+x**, $(29/2^+)$, $\gamma_{2263.9+x}$**445.28**$_{24}(100_5)$, $\gamma_{2222.7+x}$**486.4**$_4(60_9)$

E **2730.16+x**, $(29/2^+)$, $\gamma_{2458.6+x}$**271.40**$_{14}(43.7_7)$, $\gamma_{2294.37+x}$**435.82**$_{16}(28_3)$, $\gamma_{2166.7+x}$**563.56**$_{14}(100.0_{17})$ Q

C **2753.44+x**, $(29/2^+)$, $\gamma_{2348.74+x}$**404.85**$_{20}(42.8_{18})$, $\gamma_{2294.37+x}$**458.97**$_{15}(100.0_{22})$, $\gamma_{2166.7+x}$**587.7**$_{10}(21_3)$

K **2789.7+x**, $(31/2^-)$, $\gamma_{2535.5+x}$**254.2**$_5(37_4)$ D+Q $\delta=+0.18_4$, $\gamma_{2196.3+x}$**593.4**$_2(100)$ Q

F **2956.62+x**, $(31/2^+)$, $\gamma_{2730.16+x}$**226.52**$_{14}(100.0_{20})$, $\gamma_{2538.57+x}$**418.06**$_{14}(57_{10})$, $\gamma_{2458.6+x}$**498.27**$_{18}(73_6)$

J **3039.3+x**, $(33/2^-)$, $\gamma_{2789.7+x}$**249.6**$_2(83_7)$ D+Q $\delta=+0.09_3$, $\gamma_{2535.5+x}$**503.8**$_2(100)$ Q

E **3180.34+x**, $(33/2^+)$, $\gamma_{2956.62+x}$**224.33**$_{16}(42_7)$, $\gamma_{2730.16+x}$**450.08**$_{13}(100.0_{18})$

I **3195.9+x**, $(33/2^-)$, $\gamma_{2564.4+x}$**631.5**$_5(100)$

G **3200.9+x**, $(33/2^+)$, $\gamma_{2956.62+x}$**244.11**$_{14}(83_5)$, $\gamma_{2730.16+x}$**470.65**$_{18}(100_3)$

L **3233.5+x**, $(33/2^+)$, $\gamma_{2753.44+x}$**480.0**$_4(56_5)$, $\gamma_{2709.1+x}$**524.44**$_{20}(100_8)$

K **3249.3+x**, $(35/2^-)$, $\gamma_{3039.3+x}$**210.0**$_2(100)$ D+Q $\delta=+0.07_3$, $\gamma_{2789.7+x}$**459.6**$_2(93_9)$ Q

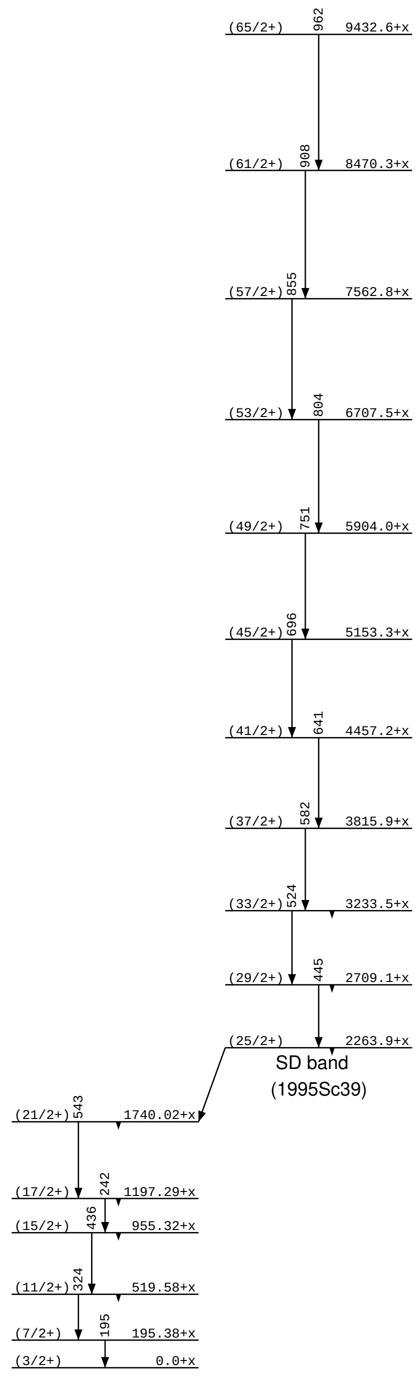
F **3417.2+x**, $(35/2^+)$, $\gamma_{3200.9+x}$**214.1**$_3(36_3)$, $\gamma_{3180.34+x}$**237.23**$_{14}(59.1_{14})$, $\gamma_{2956.62+x}$**460.51**$_{15}(100.0_{21})$

H **3436.5+x**, $(35/2^+)$, $\gamma_{3200.9+x}$**235.60**$_3(100.0_{20})$, $\gamma_{2956.62+x}$**479.83**$_{17}(88_3)$

J **3476.2+x**, $(37/2^-)$, $\gamma_{3249.3+x}$**227.4**$_5(100)$ D+Q $\delta=+0.09_2$, $\gamma_{3039.3+x}$**436.9**$_2(82_8)$ (Q)

E **3682.4+x**, $(37/2^+)$, $\gamma_{3417.2+x}$**265.33**$_{14}(60.4_{14})$,

$\gamma_{3180.34+x}$**502.04**$_{16}$(100.0$_{25}$)
G **3705.2+x**, $(37/2^+)$, $\gamma_{3436.5+x}$**268.63**$_{20}$(100)
K **3736.2+x**, $(39/2^-)$, $\gamma_{3476.2+x}$**260.0**$_{2}$(100), $\gamma_{3249.3+x}$**486.9**$_{3}$(86$_{9}$) (Q)
L **3815.9+x**, $(37/2^+)$, $\gamma_{3233.5+x}$**582.36**$_{18}$(100)
I **3854.9+x**, $(37/2^-)$, $\gamma_{3195.9+x}$**659.0**$_{5}$(100)
F **3970.0+x**, $(39/2^+)$, $\gamma_{3682.4+x}$**287.6**$_{10}$(44$_{3}$), $\gamma_{3417.2+x}$**552.9**$_{10}$(100$_{3}$)
H **3981.0+x**, $(39/2^+)$, $\gamma_{3705.2+x}$**275.2**$_{10}$(22.7$_{17}$), $\gamma_{3436.5+x}$**544.65**$_{15}$(100.0$_{24}$), $\gamma_{3417.2+x}$**562.5**$_{4}$(15.4$_{21}$)
J **4011.4+x**, $(41/2^-)$, $\gamma_{3736.2+x}$**275.4**$_{3}$(99$_{8}$) D+Q $\delta=+0.06_2$, $\gamma_{3476.2+x}$**534.9**$_{5}$(100)
G **4269.8+x**, $(41/2^+)$, $\gamma_{3981.0+x}$**288.46**$_{15}$(74$_{3}$), $\gamma_{3970.0+x}$**299.9**$_{10}$(80$_{15}$), $\gamma_{3705.2+x}$**564.0**$_{10}$(10$_{3}$), $\gamma_{3682.4+x}$**587.46**$_{21}$(100$_{5}$)
K **4323.7+x**, $(43/2^-)$, $\gamma_{4011.4+x}$**312.4**$_{5}$(86$_{8}$) D+Q $\delta=+0.19_3$, $\gamma_{3736.2+x}$**587.3**$_{5}$(100) Q
L **4457.2+x**, $(41/2^+)$, $\gamma_{3815.9+x}$**641.3**$_{2}$(100)
I **4484.0+x**, $(41/2^-)$, $\gamma_{3854.9+x}$**629.1**$_{5}$(100)
H **4579.2+x**, $(43/2^+)$, $\gamma_{4269.8+x}$**309.08**$_{20}$(44$_{4}$), $\gamma_{3981.0+x}$**598.55**$_{15}$(100.0$_{24}$), $\gamma_{3970.0+x}$**609.3**$_{10}$(49$_{3}$)
F **4613.7+x**, $(43/2^+)$, $\gamma_{3970.0+x}$**643.7**$_{10}$(100)
J **4647.2+x**, $(45/2^-)$, $\gamma_{4323.7+x}$**323.4**$_{5}$(64$_{3}$), $\gamma_{4011.4+x}$**635.9**$_{5}$(100)
G **4888.5+x**, $(45/2^+)$, $\gamma_{4579.2+x}$**309.36**$_{15}$(83.0$_{20}$), $\gamma_{4269.8+x}$**618.51**$_{15}$(100.0$_{18}$)
K **4998.5+x**, $(47/2^-)$, $\gamma_{4647.2+x}$**351.3**$_{5}$(64$_{3}$), $\gamma_{4323.7+x}$**674.7**$_{5}$(100)
L **5153.3+x**, $(45/2^+)$, $\gamma_{4457.2+x}$**696.10**$_{20}$(100)
H **5220.6+x**, $(47/2^+)$, $\gamma_{4888.5+x}$**331.86**$_{14}$(66.7$_{13}$), $\gamma_{4579.2+x}$**641.44**$_{17}$(100$_{3}$)
F **5325.7+x**, $(47/2^+)$, $\gamma_{4613.7+x}$**712.0**$_{10}$(100)
J **5366.0+x**, $(49/2^-)$, $\gamma_{4998.5+x}$**367.3**$_{5}$(54$_{3}$), $\gamma_{4647.2+x}$**719.1**$_{5}$(100)
G **5539.4+x**, $(49/2^+)$, $\gamma_{5220.6+x}$**318.58**$_{13}$(69.6$_{19}$), $\gamma_{4888.5+x}$**651.13**$_{15}$(100.0$_{22}$)
K **5743.7+x**, $(51/2^-)$, $\gamma_{5366.0+x}$**377.5**$_{5}$(50.5$_{25}$), $\gamma_{4998.5+x}$**745.1**$_{5}$(100)
H **5899.6+x**, $(51/2^+)$, $\gamma_{5539.4+x}$**360.06**$_{14}$(85$_{9}$), $\gamma_{5220.6+x}$**679.18**$_{18}$(100$_{3}$)
L **5904.0+x**, $(49/2^+)$, $\gamma_{5153.3+x}$**750.73**$_{20}$(100)
F **6101.5+x**, $(51/2^+)$, $\gamma_{5325.7+x}$**775.8**$_{10}$(100)
J **6150.8+x**, $(53/2^-)$, $\gamma_{5743.7+x}$**406.6**$_{5}$(50$_{5}$), $\gamma_{5366.0+x}$**784.9**$_{5}$(100)
G **6236.0+x**, $(53/2^+)$, $\gamma_{5899.6+x}$**335.99**$_{14}$(76.9$_{20}$), $\gamma_{5539.4+x}$**696.73**$_{17}$(100$_{3}$)
K **6544.1+x**, $(55/2^-)$, $\gamma_{6150.8+x}$**393.0**$_{5}$(51$_{3}$), $\gamma_{5743.7+x}$**800.8**$_{5}$(100)
H **6632.0+x**, $(55/2^+)$, $\gamma_{6236.0+x}$**395.84**$_{18}$(58.9$_{21}$), $\gamma_{5899.6+x}$**732.95**$_{20}$(100$_{3}$)
L **6707.5+x**, $(53/2^+)$, $\gamma_{5904.0+x}$**803.5**$_{3}$(100)
J **6987.9+x**, $(57/2^-)$, $\gamma_{6544.1+x}$**444**$_{1}$(41$_{4}$), $\gamma_{6150.8+x}$**837**$_{1}$(100)
G **6997.6+x**, $(57/2^+)$, $\gamma_{6632.0+x}$**365.94**$_{20}$(33$_{8}$), $\gamma_{6236.0+x}$**761.39**$_{18}$(100.0$_{25}$)
K **7389.2+x**, $(59/2^-)$, $\gamma_{6987.9+x}$**401**$_{1}$(38$_{5}$), $\gamma_{6544.1+x}$**845**$_{1}$(100)
H **7439.0+x**, $(59/2^+)$, $\gamma_{6997.6+x}$**442.0**$_{3}$(20.6$_{18}$), $\gamma_{6632.0+x}$**806.93**$_{20}$(100$_{3}$)
L **7562.8+x**, $(57/2^+)$, $\gamma_{6707.5+x}$**855.31**$_{25}$(100)
G **7837.4+x**, $(61/2^+)$, $\gamma_{7439.0+x}$**398.62**$_{20}$(60$_{3}$), $\gamma_{6997.6+x}$**839.50**$_{22}$(100$_{4}$)
J **7870.6+x**, $(61/2^-)$, $\gamma_{7389.2+x}$**481**$_{1}$(68$_{6}$), $\gamma_{6987.9+x}$**883**$_{1}$(100)
K **8275.2+x**, $(63/2^-)$, $\gamma_{7870.6+x}$**405**$_{1}$(47$_{7}$)(?), $\gamma_{7389.2+x}$**886**$_{1}$(100)
H **8330.7+x**, $(63/2^+)$, $\gamma_{7837.4+x}$**493.2**$_{3}$(29$_{4}$), $\gamma_{7439.0+x}$**891.77**$_{25}$(100$_{5}$)
L **8470.3+x**, $(61/2^+)$, $\gamma_{7562.8+x}$**907.5**$_{3}$(100)
G **8755.1+x**, $(65/2^+)$, $\gamma_{7837.4+x}$**917.66**$_{24}$(100)
J **8800.9+x**, $(65/2^-)$, $\gamma_{8275.2+x}$**526**$_{1}$(35$_{4}$)(?), $\gamma_{7870.6+x}$**930**$_{1}$(100)
9195.1+x(?), $(67/2^-)$, $\gamma_{8800.9+x}$**394**$_{1}$(?), $\gamma_{8275.2+x}$**920**$_{1}$(?)
H **9305.7+x**, $(67/2^+)$, $\gamma_{8330.7+x}$**975.0**$_{3}$(100)
L **9432.6+x**, $(65/2^+)$, $\gamma_{8470.3+x}$**962.3**$_{4}$(100)
9774.9+x(?), $(69/2^-)$, $\gamma_{8800.9+x}$**974**$_{1}$(?)



$^{165}_{71}$Lu$_{94}$

$^{167}_{71}\mathrm{Lu}_{96}$

S_n: 9.43x10^3$_{19}$, S_p: 3.16x10^3$_{10}$

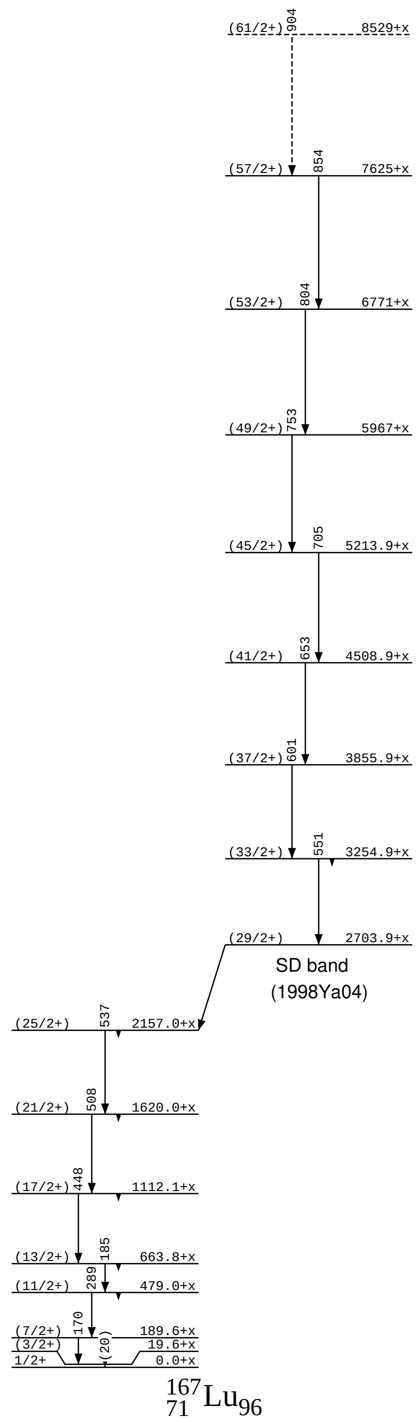
Nuclear Bands

A π7/2[404], α=+1/2
B π7/2[404], α=-1/2
C π7/2[523] (?)
D π9/2[514], α=+1/2
E π9/2[514], α=-1/2
F π1/2[411], α=-1/2
G π1/2[541], α=+1/2
H π1/2[541], α=-1/2
I π5/2[402], α=+1/2
J π5/2[402], α=-1/2
K α=+1/2 sideband
L α=-1/2 sideband
M SD (triaxial) band (?) (1998Ya04)

Levels and γ-ray branchings:

B **0**, $7/2^+$, *51.5$_{10}$ min*, %ε+%β$^+$=100 , μ=+2.325$_4$, Q=3.275$_{24}$
0.0+x, $1/2^+$, ≥*1 min*, %ε+%β$^+$=?, %IT=? , μ=-0.0999$_{13}$
F **19.6+x**, $(3/2^+)$, $\gamma_{0.0+x}$**(19.6)**$_5$(100)
I **39.2+x**, $(5/2^+)$
G **107.3+x**, $(1/2^-)$, $\gamma_{19.6+x}$**87.7**$_1$(< 290), $\gamma_{0.0+x}$**107.3**$_5$(100$_{10}$)
G **122.0+x**, $(5/2^-)$, $\gamma_{107.3+x}$**(14.7)**$_9$, $\gamma_{19.6+x}$**102.6**$_5$
A **140.04**$_8$, $(9/2^+)$, $\gamma_{0.0}$**139.9**$_2$(100)
J **155.9+x**, $(7/2^+)$, $\gamma_{39.2+x}$**116.7**$_1$(100)
F **189.6+x**, $(7/2^+)$, $\gamma_{19.6+x}$**170**$_1$(100)
G **233.9+x**, $(9/2^-)$, $\gamma_{122.0+x}$**111.7**$_5$(100)
H **244.0+x**(?), $(3/2^-)$, $\gamma_{122.0+x}$**122.1**$_5$(60$_{10}$)(?), $\gamma_{19.6+x}$**224.2**$_5$(81$_{14}$)(?), $\gamma_{0.0+x}$≈**243.3**(100$_{10}$)(?)
I **300.8+x**, $(9/2^+)$, $\gamma_{155.9+x}$**144.7**$_5$(< 540), $\gamma_{39.2+x}$**261.7**$_5$(100$_{10}$)
B **305.30**$_8$, $(11/2^+)$, $\gamma_{140.04}$**165.3**$_1$(91$_{10}$), $\gamma_{0.0}$**305.3**$_1$(100)
C **315.28**$_9$, $(7/2)^-$, $\gamma_{140.04}$**175.4**$_2$(6$_1$), $\gamma_{0.0}$**315.24**$_{10}$(100) E1
D **331.83**$_9$, $(9/2^-)$, $\gamma_{140.04}$**191.7**$_1$(< 71) D, $\gamma_{0.0}$**331.9**$_1$(100$_{10}$)
H **400.5+x**, $(7/2^-)$, $\gamma_{244.0+x}$**156.5**(?), $\gamma_{233.9+x}$**167.2**$_1$(?), $\gamma_{122.0+x}$**278.5**$_1$
E **433.6**$_3$, $(11/2^-)$, $\gamma_{331.83}$**101.7**$_5$(100$_{10}$), $\gamma_{140.04}$**294.0**$_5$(71$_7$)
G **446.7+x**, $(13/2^-)$, $\gamma_{233.9+x}$**212.8**$_1$(100) Q
J **470.5+x**, $(11/2^+)$, $\gamma_{300.8+x}$**169.7**$_1$(100$_{10}$), $\gamma_{155.9+x}$**314.9**$_1$(< 326)
F **479.0+x**, $(11/2^+)$, $\gamma_{300.8+x}$**178.2**$_5$, $\gamma_{189.6+x}$**289.4**$_5$
A **494.18**$_{10}$, $(13/2^+)$, $\gamma_{305.30}$**188.9**$_1$(38$_5$), $\gamma_{140.04}$**354.1**$_1$(100$_9$)
D **577.0**$_3$, $(13/2^-)$, $\gamma_{433.6}$**143.4**$_1$(100$_7$), $\gamma_{331.83}$**244.8**$_5$(32$_5$)
H **658.9+x**, $(11/2^-)$, $\gamma_{446.7+x}$**212.3**$_5$, $\gamma_{400.5+x}$**258.5**$_5$, $\gamma_{233.9+x}$**424.8**$_1$
I **663.8+x**, $(13/2^+)$, $\gamma_{479.0+x}$**185**, $\gamma_{470.5+x}$**193.1**$_5$, $\gamma_{300.8+x}$**363**$_1$
B **704.27**$_{11}$, $(15/2^+)$, $\gamma_{494.18}$**210.3**$_1$(29$_3$), $\gamma_{305.30}$**399.0**$_1$(100$_8$)
E **744.3**$_3$, $(15/2^-)$, $\gamma_{577.0}$**167.3**$_1$(100$_9$), $\gamma_{433.6}$**310.7**$_1$(52$_4$)
G **761.6+x**, $(17/2^-)$, $\gamma_{446.7+x}$**314.9**$_1$(100)
F **858.7+x**, $(15/2^+)$, $\gamma_{663.8+x}$**194**, $\gamma_{479.0+x}$**379.6**$_5$(81$_{13}$), $\gamma_{470.5+x}$**388.3**$_1$(100$_{13}$)
J **886.2+x**, $(15/2^+)$, $\gamma_{663.8+x}$**222.6**$_5$(100$_{10}$), $\gamma_{470.5+x}$**414**$_1$(< 76)
A **934.11**$_{12}$, $(17/2^+)$, $\gamma_{704.27}$**230.0**$_1$(14.6$_{15}$), $\gamma_{494.18}$**439.7**$_1$(100$_9$)
D **947.8**$_3$, $(17/2^-)$, $\gamma_{744.3}$**203.6**$_1$(100$_5$) D, $\gamma_{577.0}$**370.8**$_1$(66$_5$) Q
H **1000.6+x**, $(15/2^-)$, $\gamma_{658.9+x}$**341.7**$_1$(100$_{10}$), $\gamma_{446.7+x}$**553.8**$_5$(38$_{19}$)
I **1112.1+x**, $(17/2^+)$, $\gamma_{886.2+x}$**225**$_1$, $\gamma_{858.7+x}$**254**, $\gamma_{663.8+x}$**448**$_1$
E **1159.5**$_4$, $(19/2^-)$, $\gamma_{947.8}$**211.7**$_1$(96$_8$), $\gamma_{744.3}$**415.2**$_1$(100$_6$)
G **1172.8+x**, $(21/2^-)$, $\gamma_{761.6+x}$**411.2**$_1$(100) Q
B **1181.20**$_{13}$, $(19/2^+)$, $\gamma_{934.11}$**247.0**$_1$(< 31), $\gamma_{704.27}$**477.0**$_1$(100$_8$)
F **1318.2+x**, $(19/2^+)$, $\gamma_{1112.1+x}$**205**, $\gamma_{858.7+x}$**459.5**$_1$(100$_{15}$) Q
J **1376.6+x**, $(19/2^+)$, $\gamma_{1112.1+x}$**265**, $\gamma_{886.2+x}$**490**
D **1411.6**$_4$, $(21/2^-)$, $\gamma_{1159.5}$**252.1**$_1$(93$_7$), $\gamma_{947.8}$**463.8**$_1$(100$_6$)
H **1425.4+x**, $(19/2^-)$, $\gamma_{1000.6+x}$**424.8**$_1$(100)
A **1444.31**$_{14}$, $(21/2^+)$, $\gamma_{1181.20}$**263.6**$_5$(14.4$_{11}$), $\gamma_{934.11}$**510.2**$_1$(100$_7$)
I **1620.0+x**, $(21/2^+)$, $\gamma_{1376.6+x}$**243**, $\gamma_{1112.1+x}$**508**
E **1656.0**$_4$, $(23/2^-)$, $\gamma_{1411.6}$**244.4**$_1$(66$_6$), $\gamma_{1159.5}$**496.5**$_1$(100$_6$)
G **1671.0+x**, $(25/2^-)$, $\gamma_{1172.8+x}$**498.2**$_1$(100) Q
B **1720.23**$_{14}$, $(23/2^+)$, $\gamma_{1444.31}$**276.0**$_1$(15.8$_{13}$), $\gamma_{1181.20}$**539.0**$_1$(100$_8$)
F **1828.4+x**, $(23/2^+)$, $\gamma_{1318.2+x}$**510**$_1$(100) (Q)
J **1925.2+x**, $(23/2^+)$, $\gamma_{1620.0+x}$**305**, $\gamma_{1376.6+x}$**549**
D **1947.6**$_4$, $(25/2^-)$, $\gamma_{1656.0}$**291.6**$_1$(59$_4$), $\gamma_{1411.6}$**535.9**$_1$(100$_7$) Q
A **2007.96**$_{17}$, $(25/2^+)$, $\gamma_{1720.23}$**288.3**$_5$(17.0$_{14}$), $\gamma_{1444.31}$**563.6**$_1$(100$_9$)
I **2157.0+x**, $(25/2^+)$, $\gamma_{1925.2+x}$**232**, $\gamma_{1620.0+x}$**537**
E **2214.8**$_4$, $(27/2^-)$, $\gamma_{1947.6}$**267.6**$_5$(31$_5$), $\gamma_{1656.0}$**558.9**$_1$(100$_6$) Q
G **2246.0+x**, $(29/2^-)$, $\gamma_{1671.0+x}$**575.0**$_1$(100) (Q)
B **2299.40**$_{17}$, $(27/2^+)$, $\gamma_{2007.96}$**291.2**$_5$(12.8$_{13}$), $\gamma_{1720.23}$**579.2**$_1$(100$_8$)
F **2370.7+x**, $(27/2^+)$, $\gamma_{1828.4+x}$**542**$_1$(100)
D **2532.1**$_4$, $(29/2^-)$, $\gamma_{2214.8}$**316**$_1$(66$_{10}$), $\gamma_{1947.6}$**584.4**$_1$(100$_{12}$)
A **2580.58**$_{19}$, $(29/2^+)$, $\gamma_{2299.40}$**281.0**$_5$(19$_3$), $\gamma_{2007.96}$**572.6**$_1$(100$_7$)
2693.8+x, $\gamma_{2370.7+x}$**323**, $\gamma_{2157.0+x}$**537**
M **2703.9+x**, $(29/2^+)$, $\gamma_{2157.0+x}$**547**
E **2800.7**$_4$, $(31/2^-)$, $\gamma_{2532.1}$**268.5**$_1$(73$_{13}$), $\gamma_{2214.8}$**585.9**$_1$(100$_{11}$)
B **2823.18**$_{20}$, $(31/2^+)$, $\gamma_{2580.58}$**242.1**$_5$(30$_3$), $\gamma_{2299.40}$**523.8**$_1$(100$_9$)
G **2886.9+x**, $(33/2^-)$, $\gamma_{2246.0+x}$**640.9**$_1$(100)
F **2989.6+x**, $(31/2^+)$, $\gamma_{2370.7+x}$**619**(100)
A **3044.1**$_3$, $(33/2^+)$, $\gamma_{2823.18}$**221.1**$_5$(31.2$_{25}$), $\gamma_{2580.58}$**463**$_1$(100$_{14}$)
D **3070.2**$_4$, $(33/2^-)$, $\gamma_{2800.7}$**269.6**$_1$(100$_{16}$), $\gamma_{2532.1}$**538.2**$_1$(68$_5$) Q
M **3254.9+x**, $(33/2^+)$, $\gamma_{2703.9+x}$**551**, $\gamma_{2693.8+x}$**561**
B **3285.48**$_{22}$, $(35/2^+)$, $\gamma_{3044.1}$**241.2**$_5$(59$_6$), $\gamma_{2823.18}$**462.3**$_1$(100$_{19}$)
E **3289.0**$_4$, $(35/2^-)$, $\gamma_{3070.2}$**218.8**$_1$(100$_6$) D, $\gamma_{2800.7}$**488.3**$_1$(91$_6$)
D **3523.4**$_4$, $(37/2^-)$, $\gamma_{3289.0}$**234.4**$_1$(100$_6$) D, $\gamma_{3070.2}$**453.1**$_1$(70$_5$)
A **3532.4**$_3$, $(37/2^+)$, $\gamma_{3285.48}$**246.6**$_5$(< 59), $\gamma_{3044.1}$**488.4**$_1$(100$_8$)
G **3582.3+x**, $(37/2^-)$, $\gamma_{2886.9+x}$**695.4**$_1$(100)
E **3774.3**$_4$, $(39/2^-)$, $\gamma_{3523.4}$**251.0**$_5$(100$_{10}$), $\gamma_{3289.0}$**485.3**$_5$(93$_7$) Q
B **3812.98**$_{24}$, $(39/2^+)$, $\gamma_{3532.4}$**280.7**$_5$(23$_4$), $\gamma_{3285.48}$**527.5**$_1$(100$_9$)
M **3855.9+x**, $(37/2^+)$, $\gamma_{3254.9+x}$**601**
D **4046.0**$_4$, $(41/2^-)$, $\gamma_{3774.3}$**271.7**$_1$(100$_6$) D, $\gamma_{3523.4}$**522.6**$_1$(100$_7$) Q
A **4096.4**$_4$, $(41/2^+)$, $\gamma_{3812.98}$**283.6**$_5$(23.5$_{24}$), $\gamma_{3532.4}$**563.9**$_1$(100$_{16}$)
G **4273.9+x**, $(41/2^-)$, $\gamma_{3582.3+x}$**691.6**$_5$(100)
E **4339.7**$_4$, $(43/2^-)$, $\gamma_{4046.0}$**293.9**$_5$(87$_9$), $\gamma_{3774.3}$**565.2**$_5$(100$_7$) Q
K **4347.3+x**, $(41/2^-)$, $\gamma_{3582.3+x}$**765**$_1$(100)
B **4417.5**$_3$, $(43/2^+)$, $\gamma_{4096.4}$**321.5**$_5$(< 13.5)(?), $\gamma_{3812.98}$**604.5**$_1$(100$_8$)
M **4508.9+x**, $(41/2^+)$, $\gamma_{3855.9+x}$**653**
D **4656.2**$_4$, $(45/2^-)$, $\gamma_{4339.7}$**316.9**$_5$(65$_{12}$) D, $\gamma_{4046.0}$**610.2**$_1$(100$_7$)
A **4735.5**$_4$, $(45/2^+)$, $\gamma_{4417.5}$**317**$_1$(< 18)(?), $\gamma_{4096.4}$**639.1**$_1$(100$_9$)
G **4910.2+x**, $(45/2^-)$, $\gamma_{4273.9+x}$**636.3**$_5$(100)
E **4986.2**$_4$, $(47/2^-)$, $\gamma_{4656.2}$**330.0**$_1$(76$_7$), $\gamma_{4339.7}$**646.5**$_1$(100$_8$)
B **5093.5**$_6$, $(47/2^+)$, $\gamma_{4735.5}$**359**$_1$(< 14)(?), $\gamma_{4417.5}$**676.0**$_5$(100$_9$)
K **5107.3+x**, $(45/2^-)$, $\gamma_{4347.3+x}$**760**$_1$(100)
M **5213.9+x**, $(45/2^+)$, $\gamma_{4508.9+x}$**705**
D **5349.1**$_5$, $(49/2^-)$, $\gamma_{4986.2}$**363.0**$_5$(52$_{10}$), $\gamma_{4656.2}$**692.8**$_5$(100$_{14}$) (Q)
A **5443.1**$_4$, $(49/2^+)$, $\gamma_{4735.5}$**707.6**$_1$(100)
G **5606.4+x**, $(49/2^-)$, $\gamma_{4910.2+x}$**696.2**$_5$(100) (Q)
E **5705.5**$_4$, $(51/2^-)$, $\gamma_{5349.1}$**356.5**$_5$(47$_4$), $\gamma_{4986.2}$**719.3**$_1$(100$_{13}$)
B **5833.8**$_8$, $(51/2^+)$, $\gamma_{5093.5}$**740.3**$_5$(100)
K **5872.3+x**, $(49/2^-)$, $\gamma_{5107.3+x}$**765**$_1$(100)
M **5967+x**, $(49/2^+)$, $\gamma_{5213.9+x}$**753**
D **6116.8**$_5$, $(53/2^-)$, $\gamma_{5705.5}$**411.8**$_5$(32$_5$), $\gamma_{5349.1}$**767.5**$_5$(100$_8$) Q
A **6213.3**$_6$, $(53/2^+)$, $\gamma_{5443.1}$**770.2**$_5$(100)
G **6365.6+x**, $(53/2^-)$, $\gamma_{5606.4+x}$**759.2**$_5$(100)
E **6490.3**$_6$, $(55/2^-)$, $\gamma_{6116.8}$**373.8**$_5$(32$_4$), $\gamma_{5705.5}$**784.5**$_5$(100$_9$) (Q)
B **6631.5**$_9$, $(55/2^+)$, $\gamma_{5833.8}$**797.7**$_5$(100)
K **6689.3+x**, $(53/2^-)$, $\gamma_{5872.3+x}$**817**$_1$(100)
M **6771+x**, $(53/2^+)$, γ_{5967+x}**804**
D **6952.3**$_7$, $(57/2^-)$, $\gamma_{6490.3}$**462**$_1$(33$_4$), $\gamma_{6116.8}$**835.4**$_5$(100$_{10}$) (Q)
A **7036.3**$_8$, $(57/2^+)$, $\gamma_{6213.3}$**823.0**$_5$(100)
G **7183.1+x**, $(57/2^-)$, $\gamma_{6365.6+x}$**817.5**$_5$(100)
E **7333.6**$_7$, $(59/2^-)$, $\gamma_{6952.3}$**381.3**$_5$(33$_4$), $\gamma_{6490.3}$**843.4**$_5$(100$_{14}$) Q
B **7471.0**$_{11}$, $(59/2^+)$, $\gamma_{6631.5}$**839.5**$_5$(100)
K **7523.3+x**, $(57/2^-)$, $\gamma_{6689.3+x}$**834**$_1$(100)
M **7625+x**, $(57/2^+)$, γ_{6771+x}**854**
D **7854.2**$_8$, $(61/2^-)$, $\gamma_{6952.3}$**901.9**$_5$(100)
A **7876.1**$_{10}$, $(61/2^+)$, $\gamma_{7036.3}$**839.8**$_5$(100)
G **8056.7+x**, $(61/2^-)$, $\gamma_{7183.1+x}$**873.6**$_5$(100)

E **8232.9**$_{9}$, $(63/2^{-})$, $\gamma_{\mathbf{7333.6}}$**899.3**$_{5}$(100)
B **8341.6**$_{12}$, $(63/2^{+})$, $\gamma_{\mathbf{7471.0}}$**870.6**$_{5}$(100)
L **8382.5**$_{12}$, $(63/2^{+})$, $\gamma_{\mathbf{7471.0}}$**911.5**$_{5}$(100)
M **8529+x**(?), $(61/2^{+})$, $\gamma_{\mathbf{7625+x}}$**904**(?)
A **8747.1**$_{14}$, $(65/2^{+})$, $\gamma_{\mathbf{7876.1}}$**871**$_{1}$(100)
G **8982.7+x**, $(65/2^{-})$, $\gamma_{\mathbf{8056.7+x}}$**926**$_{1}$(100)
E **9187.9**$_{10}$(?), $(67/2^{-})$, $\gamma_{\mathbf{8232.9}}$**955.0**$_{5}$(?)
B **9266.1**$_{13}$, $(67/2^{+})$, $\gamma_{\mathbf{8341.6}}$**924.5**$_{5}$(100)
L **9374.1**$_{13}$, $(67/2^{+})$, $\gamma_{\mathbf{8382.5}}$**991.6**$_{5}$(100)
E **10195.9**$_{14}$(?), $(71/2^{-})$, $\gamma_{\mathbf{9187.9}}$**1008**$_{1}$(?)
B **10245.1**$_{14}$(?), $(71/2^{+})$, $\gamma_{\mathbf{9266.1}}$**979.0**$_{5}$(100)(?)



$^{168}_{72}$Hf$_{96}$

S_n: 9906 *SY*, S_p: 5125 *SY*

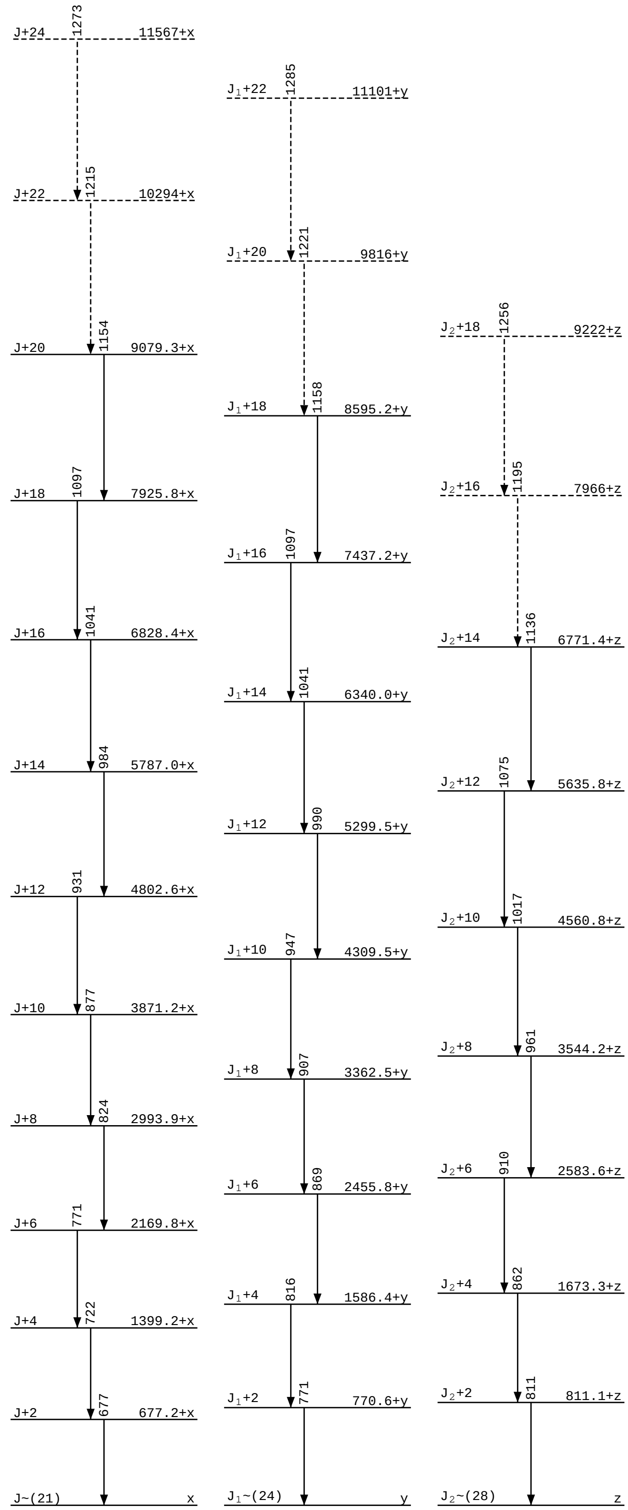
Nuclear Bands

A GS band
B Yrast band starting at 14^+
C γ band
D β band
E Band structure
F Band structure
G Band structure
H Band structure
I SD-1 (triaxial) band (2001Am02)
 $Q_0 \approx 11.4$
J SD-2 (triaxial) band (2001Am02)
K SD-3 (triaxial) band (2001Am02)

Levels and γ-ray branchings:

A **0**, 0^+, *25.95$_{20}$ min*, %ε+%β$^+$=100
A **124.0**$_2$, 2^+, *0.89$_4$ ns*, γ_{0}**124.0**$_2$(100) E2
A **385.6**$_3$, 4^+, *36$_4$ ps*, $\gamma_{124.0}$**261.6**$_2$(100) E2
A **756.9**$_4$, 6^+, *5.9$_6$ ps*, $\gamma_{385.6}$**371.3**$_2$(100) E2
C **875.4**$_4$, (2^+), $\gamma_{124.0}$**751.4**$_4$(100$_8$), γ_{0}**875.7**$_7$(62$_9$)(?)
D **941.6**$_9$, (0^+), $\gamma_{124.0}$**817.7**$_9$(100)
C **1030.6**$_{10}$, (3^+), $\gamma_{124.0}$**906.6**$_{10}$(100)
D **1057.9**$_4$, (2^+), $\gamma_{385.6}$**672.5**$_5$(73$_{20}$), $\gamma_{124.0}$**934.1**$_{12}$(49$_{13}$), γ_{0}**1057.8**$_7$(100$_{27}$)(?)
1159.5$_{10}$, (2), $\gamma_{385.6}$**774.1**$_9$(100)
A **1213.6**$_4$, 8^+, *2.0$_2$ ps*, $\gamma_{756.9}$**456.6**$_3$(100) E2
C **1216.5**$_{11}$, (4^+), $\gamma_{385.6}$**831.1**$_{10}$(100)
D **1284.3**$_{11}$, (4^+), $\gamma_{124.0}$**1160.4**$_{11}$(100)
1372.4$_8$, (2), $\gamma_{385.6}$**987.0**$_{10}$(100$_{24}$), $\gamma_{124.0}$**1248.6**$_{12}$(59$_{18}$)
1407.3$_{15}$, (4), $\gamma_{124.0}$**1283.4**$_{15}$(100)
1567.9$_{10}$, (3), $\gamma_{385.6}$**1181.9**$_{15}$(100$_{71}$), $\gamma_{124.0}$**1444.4**$_{13}$(61$_{21}$)
A **1735.6**$_5$, 10^+, *1.01$_{15}$ ps*, $\gamma_{1213.6}$**522.0**$_3$(100) E2
1793.7$_{11}$, (4), $\gamma_{385.6}$**1408.3**$_{10}$(100)
E **1813.2**$_4$, (6^-), $\gamma_{756.9}$**1056.4**$_3$(100)
F **1992.3**$_5$, $\gamma_{756.9}$**1236**$_1$(100)(?)
G **2066.7**$_5$, (9^-), $\gamma_{1735.6}$**331**$_1$(100)(?), $\gamma_{1213.6}$**853.0**$_3$(<1150)
H **2081.9**$_8$, $\gamma_{756.9}$**1325**$_1$(100)
E **2155.5**$_5$, (8^-), $\gamma_{1813.2}$**342.3**$_3$(100), $\gamma_{1213.6}$**942**$_1$(<25)
F **2193.2**$_4$, (8^-), $\gamma_{1992.3}$**201.0**$_3$(35), $\gamma_{1813.2}$**380.0**$_3$(58), $\gamma_{1213.6}$**979.4**$_3$(100)
A **2305.6**$_5$, 12^+, *0.52$_{18}$ ps*, $\gamma_{1735.6}$**570.1**$_3$(100) E2
H **2322.0**$_5$, (9^-), $\gamma_{2081.9}$**240**$_1$(<50), $\gamma_{1213.6}$**1109**$_1$(100)
F **2466.6**$_5$, (10^-), $\gamma_{2322.0}$**144.6**$_3$(19), $\gamma_{2193.2}$**273.3**$_3$(100), $\gamma_{2155.5}$**311.1**$_3$(25), $\gamma_{2066.7}$**399.8**$_3$(16)
G **2473.8**$_5$, (11^-), $\gamma_{2066.7}$**407.1**$_3$(56), $\gamma_{1735.6}$**738.2**$_3$(100)
E **2553.1**$_6$, (10^-), $\gamma_{2155.5}$**397.6**$_3$(100)
H **2646.6**$_6$, (11^-), $\gamma_{2322.0}$**325**$_1$(100)
F **2828.0**$_5$, (12^-), $\gamma_{2646.6}$**181.4**$_3$(9.3), $\gamma_{2466.6}$**361.4**$_3$(100)
B **2857.0**$_6$, 14^+, *0.84$_{18}$ ps*, $\gamma_{2305.6}$**551.5**$_3$(100) E2
G **2937.6**$_5$, (13^-), $\gamma_{2473.8}$**463.7**$_3$(100), $\gamma_{2305.6}$**632.1**$_3$(<109)
E **2976.9**$_6$, (12^-), $\gamma_{2553.1}$**423.8**$_3$(100)
A **2989.8**$_6$, 14^+, $\gamma_{2305.6}$**684.0**$_3$(100) E2
F **3269.0**$_6$, (14^-), $\gamma_{2828.0}$**441.0**$_3$(100)
B **3309.9**$_7$, 16^+, *1.82$_{20}$ ps*, $\gamma_{2989.8}$**320**$_1$(4.5), $\gamma_{2857.0}$**452.9**$_3$(100) E2
G **3442.0**$_7$, (15^-), $\gamma_{2989.8}$**452**$_1$(6.7), $\gamma_{2937.6}$**504.4**$_5$(100)
E **3452.7**$_7$, (14^-), $\gamma_{2976.9}$**475.8**$_3$(100)
A **3623.8**$_6$, 16^+, $\gamma_{2989.8}$**633.9**$_3$(<441), $\gamma_{2857.0}$**767.0**$_3$(100)
F **3777.2**$_7$, (16^-), $\gamma_{3269.0}$**508.2**$_3$(100)
B **3831.9**$_7$, 18^+, $\gamma_{3309.9}$**522.0**$_3$(100) E2
E **3989.4**$_8$, (16^-), $\gamma_{3452.7}$**536.7**$_3$(100)
G **3989.7**$_8$, (17^-), $\gamma_{3442.0}$**547.7**$_3$(100)
A **4322.4**$_7$, 18^+, $\gamma_{3623.8}$**698.6**$_3$(100)
F **4335.8**$_8$, (18^-), $\gamma_{3777.2}$**558.6**$_3$(100)
B **4439.5**$_8$, 20^+, $\gamma_{3831.9}$**607.6**$_3$(100) E2
G **4578.2**$_8$, (19^-), $\gamma_{3989.7}$**588.5**$_3$(100)
E **4579.4**$_8$, (18^-), $\gamma_{3989.4}$**590.0**$_3$(100)
F **4933.8**$_8$, (20^-), $\gamma_{4335.8}$**598.0**$_3$(100)
A **5049.1**$_7$, 20^+, $\gamma_{4322.4}$**726.7**$_3$(100)
B **5123.9**$_8$, 22^+, $\gamma_{4439.5}$**684.4**$_3$(100) E2
G **5199.0**$_9$, (21^-), $\gamma_{4578.2}$**619.6**$_3$(100)
E **5214.7**$_9$, (20^-), $\gamma_{4579.4}$**635.3**$_3$(100)
F **5574.1**$_9$, (22^-), $\gamma_{4933.8}$**640.3**$_3$(100)
A **5763.1**$_{12}$, (22^+), $\gamma_{5049.1}$**714**$_1$(100)(?)
G **5855.1**$_9$, (23^-), $\gamma_{5199.0}$**656.1**$_3$(100)
B **5874.9**$_9$, 24^+, $\gamma_{5123.9}$**751.0**$_4$(100) E2
E **5895.3**$_9$, (22^-), $\gamma_{5214.7}$**680.6**$_3$(100)
F **6268.7**$_9$, (24^-), $\gamma_{5574.1}$**694.6**$_3$(100)
G **6567.7**$_{10}$, (25^-), $\gamma_{5855.1}$**712.6**$_3$(100)
E **6629.4**$_{10}$, (24^-), $\gamma_{5895.3}$**734.1**$_3$(100)
B **6687.5**$_{10}$, 26^+, $\gamma_{5874.9}$**812.6**$_3$(100) E2
F **7029.2**$_{10}$, (26^-), $\gamma_{6268.7}$**760.5**$_3$(100)
G **7348.6**$_{10}$, (27^-), $\gamma_{6567.7}$**780.9**$_3$(100)
E **7424.9**$_{10}$, (26^-), $\gamma_{6629.4}$**795.5**$_3$(100)(?)
B **7562.8**$_{11}$, (28^+), $\gamma_{6687.5}$**875.3**$_4$(100)
7662.5$_{14}$, $\gamma_{6687.5}$**975**$_1$(100)(?)
F **7860.6**$_{10}$, (28^-), $\gamma_{7029.2}$**831.4**$_3$(100)
G **8199.5**$_{11}$, (29^-), $\gamma_{7348.6}$**850.9**$_3$(100)
B **8501.9**$_{12}$, (30^+), $\gamma_{7562.8}$**939.1**$_5$(100)
F **8762.7**$_{10}$, (30^-), $\gamma_{7860.6}$**902.1**$_3$(100)
G **9116.4**$_{11}$, (31^-), $\gamma_{8199.5}$**916.9**$_3$(100)
B **9501.3**$_{12}$, (32^+), $\gamma_{8501.9}$**999.4**$_3$(100)
F **9730.6**$_{11}$, (32^-), $\gamma_{8762.7}$**967.9**$_3$(100)
G **10093.3**$_{11}$, (33^-), $\gamma_{9116.4}$**976.9**$_3$(100)
B **10552.0**$_{13}$, (34^+), $\gamma_{9501.3}$**1050.7**$_5$(100)
F **10756.6**$_{11}$, (34^-), $\gamma_{9730.6}$**1026.0**$_3$(100)
G **11119.8**$_{12}$, (35^-), $\gamma_{10093.3}$**1026.5**$_3$(100)
B **11639.0**$_{13}$, (36^+), $\gamma_{10552.0}$**1087.0**$_3$(100)
F **11828.5**$_{12}$, (36^-), $\gamma_{10756.6}$**1071.9**$_3$(100)
G **12182.3**$_{12}$, (37^-), $\gamma_{11119.8}$**1062.5**$_3$(100)
B **12743.5**$_{14}$, (38^+), $\gamma_{11639.0}$**1104.5**$_3$(100)(?)
F **12932**$_2$, (38^-), $\gamma_{11828.5}$**1104**$_1$(100)
G **13258**$_2$, (39^-), $\gamma_{12182.3}$**1076**$_1$(100)(?)
G **14346**$_2$, (41^-), γ_{13258}**1088**$_1$(100)(?)
I **x**, $J \approx (21)$
I **677.2+x**, $J+2$, γ_{x}**677.2**(0.73_{12})
I **1399.2+x**, $J+4$, $\gamma_{677.2+x}$**722.0**
I **2169.8+x**, $J+6$, $\gamma_{1399.2+x}$**770.6**(0.97_{7})
I **2993.9+x**, $J+8$, $\gamma_{2169.8+x}$**824.1**(0.96_{7})
I **3871.2+x**, $J+10$, $\gamma_{2993.9+x}$**877.3**(0.89_{7})
I **4802.6+x**, $J+12$, $\gamma_{3871.2+x}$**931.4**(0.75_{7})
I **5787.0+x**, $J+14$, $\gamma_{4802.6+x}$**984.4**(0.66_{8})
I **6828.4+x**, $J+16$, $\gamma_{5787.0+x}$**1041.4**(0.54_{10})
I **7925.8+x**, $J+18$, $\gamma_{6828.4+x}$**1097.4**(0.34_{9})
I **9079.3+x**, $J+20$, $\gamma_{7925.8+x}$**1153.5**(0.23_{10})
I **10294+x**(?), $J+22$, $\gamma_{9079.3+x}$**1215**(?)
I **11567+x**(?), $J+24$, $\gamma_{10294+x}$**1273**(?)
J **y**, $J_1 \approx (24)$
J **770.6+y**, J_1+2, γ_{y}**770.6**
J **1586.4+y**, J_1+4, $\gamma_{770.6+y}$**815.8**(0.81_{12})
J **2455.8+y**, J_1+6, $\gamma_{1586.4+y}$**869.4**(0.83_{8})
J **3362.5+y**, J_1+8, $\gamma_{2455.8+y}$**906.7**(1.00_{10})
J **4309.5+y**, J_1+10, $\gamma_{3362.5+y}$**947.0**(0.78_{9})
J **5299.5+y**, J_1+12, $\gamma_{4309.5+y}$**990.0**(0.78_{10})
J **6340.0+y**, J_1+14, $\gamma_{5299.5+y}$**1040.5**(0.75_{13})
J **7437.2+y**, J_1+16, $\gamma_{6340.0+y}$**1097.2**(0.56_{16})
J **8595.2+y**, J_1+18, $\gamma_{7437.2+y}$**1158.0**(0.33_{18})
J **9816+y**(?), J_1+20, $\gamma_{8595.2+y}$**1221**(?)
J **11101+y**(?), J_1+22, γ_{9816+y}**1285**(?)
K **z**, $J_2 \approx (28)$
K **811.1+z**, J_2+2, γ_{z}**811.1**
K **1673.3+z**, J_2+4, $\gamma_{811.1+z}$**862.2**(0.98_{13})
K **2583.6+z**, J_2+6, $\gamma_{1673.3+z}$**910.3**(1.00_{8})
K **3544.2+z**, J_2+8, $\gamma_{2583.6+z}$**960.6**(0.89_{10})
K **4560.8+z**, J_2+10, $\gamma_{3544.2+z}$**1016.6**(0.89_{12})
K **5635.8+z**, J_2+12, $\gamma_{4560.8+z}$**1075.0**(0.67_{10})
K **6771.4+z**, J_2+14, $\gamma_{5635.8+z}$**1135.6**(0.37_{12})

K **7966+z**(?), J_2+16, $\gamma_{\mathbf{6771.4+z}}$**1195**(?)
K **9222+z**(?), J_2+18, $\gamma_{\mathbf{7966+z}}$**1256**(?)



SD-1 band (2001Am02) SD-2 band (2001Am02) SD-3 band (2001Am02)

$^{168}_{72}Hf_{96}$

$^{191}_{79}\mathrm{Au}_{112}$

S_n: 9049 $_{52}$, S_p: 3825 $_{50}$

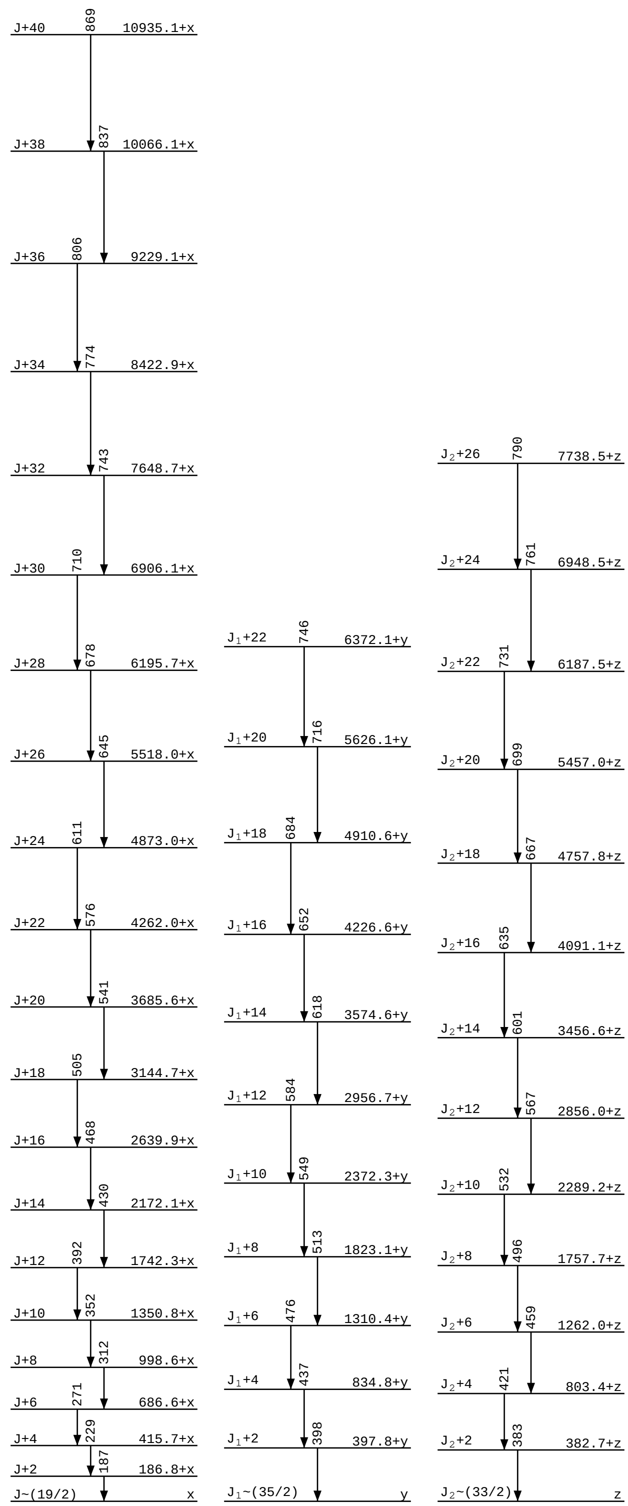
Nuclear Bands

A $\pi h_{11/2}$, α=-1/2
B $\pi h_{11/2}$, α=+1/2
C $\pi h_{9/2}$, α=+1/2
D $\pi h_{9/2}$, α=-1/2
E Band based on $(35/2^-)$
F Band based on $(39/2^-)$
G Band based on $(43/2^-)$
H Band based on $(31/2^+)$
I Band based on $(53/2^+)$
J Yrast SD-1 band (1997Sc22,1993Vo04)
K SD-2 band (1997Sc22)
L SD-3 band (1997Sc22)

Levels and γ-ray branchings:

0, $3/2^+$, *3.18$_8$ h*, %ε+%β$^+$=100, μ=+0.1369$_9$, Q=+0.72$_2$
11.6$_3$, $(1/2^+)$, *15.5$_5$ ns*, γ_{0}**11.2**(100)
207.9$_3$, $(3/2^+)$, $\gamma_{11.6}$**196.3**$_2$(100) M1
252.5$_2$, $(5/2)^+$, $\gamma_{11.6}$**240.9**$_2$(23.3$_{19}$) E2, γ_0**252.5**$_2$(100$_9$) M1+E2 $\delta=0.9_3$
A **266.2**$_5$, $(11/2^-)$, *0.92$_{11}$ s*, %IT=100 , μ=6.6$_6$, $\gamma_{252.5}$**13.7**$_6$(100) (E3)
331.4$_5$(?), $(5/2^+)$, γ_0**331.4**$_5$(100)
490.9$_6$, $(7/2^-)$, $\gamma_{266.2}$**224.7**$_2$(100) E2
521.3$_5$, $(5/2^+)$, $\gamma_{252.5}$**268.8**$_5$, γ_0**521.3**$_5$(100$_{13}$) E2
C **540.3**$_8$, $(9/2^-)$, *10$_2$ ns*, $\gamma_{266.2}$**274.2**$_5$(100) M1+E2 $\delta=-0.096_{15}$
662.5$_5$, $(7/2)^+$, $\gamma_{252.5}$**410.0**$_5$(100$_{20}$) M1, $\gamma_{207.9}$**454.6**$_5$, γ_0**662.5**$_5$(41$_{10}$)
A **686.3**$_7$, $(15/2^-)$, $\gamma_{266.2}$**420.1**$_4$(100) E2
788.6$_5$, $(9/2^+)$, $\gamma_{521.3}$**267.3**$_5$, $\gamma_{252.5}$**536.1**$_5$(100$_{11}$) (E2)
B **844.8**$_6$, $(13/2^-)$, $\gamma_{686.3}$**158.5**$_5$, $\gamma_{266.2}$**578.6**$_3$(100$_{10}$) M1+E2 $\delta=0.34_5$
876.7$_7$, $(9/2^-)$, $\gamma_{490.9}$**385.8**$_5$, $\gamma_{266.2}$**610.6**$_5$(100) M1+E2
D **897.3**$_8$, $(11/2^-)$, $\gamma_{540.3}$**356.9**$_4$(100) M1+E2 $\delta=-0.25_4$
C **911.4**$_7$, $(13/2^-)$, $\gamma_{540.3}$**371.1**$_3$(100$_{11}$) E2, $\gamma_{266.2}$**645.2**$_5$(14$_4$)
1066$_1$(?), $(3/2^-)$, $\gamma_{490.9}$**575**$_1$(100)
1132$_1$, $(11/2^+)$, $\gamma_{788.6}$**343.3**$_6$(100) M1
1268.5$_7$, $(11/2^-)$, $\gamma_{911.4}$**356.9**$_4$(286) M1+E2, $\gamma_{876.7}$**391.8**$_6$, $\gamma_{490.9}$**777.6**$_5$(100$_{26}$), $\gamma_{266.2}$**1002.4**$_5$(91$_{23}$)
1341.3$_6$, $\gamma_{788.6}$**552.8**$_6$(74$_{15}$), $\gamma_{662.5}$**678.8**$_6$(100$_{18}$), $\gamma_{521.3}$**820.0**$_6$(55$_{13}$)
D **1352**$_1$, $(15/2^-)$, $\gamma_{911.4}$**440.5**$_7$(100) M1+E2
1356$_1$, $\gamma_{844.8}$**511**$_1$(100)
B **1376.2**$_8$, $(17/2^-)$, $\gamma_{686.3}$**689.9**$_5$(100$_{26}$) M1+E2, $\gamma_{266.2}$**1110.0**$_6$(82$_{21}$)
1394$_1$, $\gamma_{844.8}$**549**$_1$(100)
A **1412**$_1$, $(19/2^-)$, $\gamma_{686.3}$**725**$_1$(100) E2
C **1431**$_1$, $(17/2^-)$, $\gamma_{911.4}$**519**$_1$(100) E2
1460$_1$, $(13/2^+)$, $\gamma_{788.6}$**671**$_1$(100)
1482$_1$, $\gamma_{844.8}$**637**$_1$(100)
1550$_1$, $\gamma_{686.3}$**864**$_1$(100)
1630$_1$, $\gamma_{911.4}$**718.2**$_6$(100$_{15}$), $\gamma_{897.3}$**732.4**$_7$(17$_4$)
1991$_1$, $(21/2^+)$, *<0.3 ns*, γ_{1412}**579.4**$_7$(100)
2024$_1$, $\gamma_{686.3}$**1338**$_1$(100)
C **2032**$_2$, $21/2^-$, γ_{1431}**601**$_1$(100)
2041$_1$, $\gamma_{686.3}$**1355**$_1$(100)
2130$_1$, $\gamma_{844.8}$**1285**$_1$(100$_{26}$), $\gamma_{266.2}$**1863.5**$_7$(32$_9$)
2159$_2$, $(25/2^+)$, *0.96$_{10}$ ns*, γ_{1991}**168**$_1$(100)
2175$_1$, $\gamma_{844.8}$**1329.7**$_6$(100$_{25}$), $\gamma_{686.3}$**1488.2**$_6$(25$_6$), $\gamma_{266.2}$**1908.3**$_6$(55$_{14}$)
A **2187**$_1$, $(23/2^-)$, γ_{1412}**775.3**$_7$(100) E2
2199$_2$, γ_{1991}**208**$_1$(100)
2219$_1$, $\gamma_{686.3}$**1533**$_1$(100)
2235$_1$, $\gamma_{686.3}$**1549**$_1$(100)
2348$_1$, $\gamma_{844.8}$**1504**$_1$(100)
2423$_2$, $(27/2^+)$, *<0.2 ns*, γ_{2159}**264**$_1$(100)
A **2447**$_2$, $(27/2^-)$, *0.89$_9$ ns*, μ<20 , γ_{2187}**260**$_1$(100) E2
H **2490**$_1$, $(31/2^+)$, *402$_{20}$ ns*, μ=6.5$_5$, γ_{2423}**67**$_1$(100) (E2)
A **2503**$_1$, $(31/2^-)$, *6.1$_5$ ns*, γ_{2447}**56**$_1$(100) (E2)
2804$_1$, $(33/2^-)$, *<0.4 ns*, γ_{2503}**301**$_1$(100)
2881, $(35/2^-)$, γ_{2804}**77**, γ_{2503}**378**
H **2998**, $(35/2^+)$, γ_{2490}**508**
E **3008**, $(35/2^-)$, γ_{2804}**204**, γ_{2503}**505**
3280, $(37/2^-)$, γ_{3008}**272**, γ_{2881}**399**, γ_{2804}**476**
F **3373**, $(39/2^-)$, γ_{3280}**93**, γ_{2881}**492**
3494, $(37/2^+)$, γ_{2998}**496**
E **3737**, $(39/2^-)$, γ_{3008}**729**
3788, $(39/2^-)$, γ_{3280}**508**, γ_{2881}**907**
H **3811**, $(39/2^+)$, γ_{3494}**317**, γ_{2998}**813**
F **3886**, $(43/2^-)$, γ_{3373}**513**
G **4032**, $(43/2^-)$, γ_{3788}**244**, γ_{3373}**659**
4289, $(41/2^+)$, γ_{3811}**478**, γ_{3494}**795**
E **4405**, $(43/2^-)$, γ_{4032}**373**, γ_{3737}**668**
H **4420**, $(43/2^+)$, γ_{4289}**131**, γ_{3811}**609**
H **4688**, $(47/2^+)$, γ_{4420}**268**
F **4715**, $(47/2^-)$, γ_{3886}**829**
G **4747**, $(47/2^-)$, γ_{4032}**715**
4817, $(47/2^-)$, γ_{4032}**785**
E **5082**, $(47/2^-)$, γ_{4405}**677**
5201, $(51/2^+)$, γ_{4688}**513**
G **5350**, $(51/2^-)$, γ_{4817}**533**, γ_{4747}**603**
I **5393**, $(53/2^+)$, γ_{5201}**192**
F **5455**, $(51/2^-)$, γ_{5082}**373**, γ_{4817}**638**, γ_{4715}**740**
I **5997**, $(57/2^+)$, γ_{5393}**604**
6032, $(55/2^+)$, γ_{5201}**832**
F **6033**, $(55/2^-)$, γ_{5455}**578**
6283, $(55/2^-)$, γ_{5350}**933**
G **6383**, $(55/2^-)$, γ_{5350}**1033**
G **6658**, $(59/2^-)$, γ_{6383}**275**, γ_{6283}**375**, γ_{6033}**625**, γ_{5997}**661**
F **6881**, $(59/2^-)$, γ_{6033}**848**
I **6898**, $(61/2^+)$, γ_{5997}**901**
7054, $(63/2^-)$, γ_{6658}**397**
7562, $(67/2^-)$, γ_{7054}**508**
I **7806**, $(65/2^+)$, γ_{6898}**908**
F **7829**, $(63/2^-)$, γ_{6881}**948**
7881, $(67/2^-)$, γ_{7054}**827**
8075, $(71/2^-)$, γ_{7562}**513**
8481, $(71/2^-)$, γ_{7562}**919**
I **8544**, $(69/2^+)$, γ_{7806}**738**
8900, $(71/2^-)$, γ_{7881}**1019**
9090, $(71/2^-)$, γ_{7881}**1209**
I **9524**, $(73/2^+)$, γ_{8544}**980**
9943, $(75/2^-)$, γ_{8900}**1043**
J **x**, $J\approx(19/2)$
J **186.8+x**, $J+2$, γ_x**186.8**$_3$
J **415.7+x**, $J+4$, $\gamma_{186.8+x}$**228.9**$_5$(0.45$_{15}$)
J **686.6+x**, $J+6$, $\gamma_{415.7+x}$**270.9**$_2$(0.62$_{20}$)
J **998.6+x**, $J+8$, $\gamma_{686.6+x}$**312.0**$_2$(0.87$_{15}$)
J **1350.8+x**, $J+10$, $\gamma_{998.6+x}$**352.2**$_2$(1.04$_{15}$)
J **1742.3+x**, $J+12$, $\gamma_{1350.8+x}$**391.5**$_2$(1.00$_{15}$)
J **2172.1+x**, $J+14$, $\gamma_{1742.3+x}$**429.8**$_2$
J **2639.9+x**, $J+16$, $\gamma_{2172.1+x}$**467.8**$_2$(0.86$_{15}$)
J **3144.7+x**, $J+18$, $\gamma_{2639.9+x}$**504.8**$_2$(0.83$_{20}$)
J **3685.6+x**, $J+20$, $\gamma_{3144.7+x}$**540.9**$_2$(0.69$_{15}$)
J **4262.0+x**, $J+22$, $\gamma_{3685.6+x}$**576.4**$_3$(0.52$_{15}$)
J **4873.0+x**, $J+24$, $\gamma_{4262.0+x}$**611.0**$_3$(0.66$_{20}$)
J **5518.0+x**, $J+26$, $\gamma_{4873.0+x}$**645.0**$_3$(0.53$_{15}$)
J **6195.7+x**, $J+28$, $\gamma_{5518.0+x}$**677.7**$_3$(0.54$_{15}$)
J **6906.1+x**, $J+30$, $\gamma_{6195.7+x}$**710.4**$_3$
J **7648.7+x**, $J+32$, $\gamma_{6906.1+x}$**742.6**$_3$
J **8422.9+x**, $J+34$, $\gamma_{7648.7+x}$**774.2**$_4$
J **9229.1+x**, $J+36$, $\gamma_{8422.9+x}$**806.2**$_4$
J **10066.1+x**, $J+38$, $\gamma_{9229.1+x}$**837.0**$_5$
J **10935.1+x**, $J+40$, $\gamma_{10066.1+x}$**869.0**$_5$
K **y**, $J_1\approx(35/2)$
K **397.8+y**, J_1+2, γ_y**397.8**$_5$
K **834.8+y**, J_1+4, $\gamma_{397.8+y}$**437.0**$_5$
K **1310.4+y**, J_1+6, $\gamma_{834.8+y}$**475.6**$_5$

K **1823.1+y**, J_1+8, $\gamma_{1310.4+y}$**512.7**$_5$
K **2372.3+y**, J_1+10, $\gamma_{1823.1+y}$**549.2**$_5$
K **2956.7+y**, J_1+12, $\gamma_{2372.3+y}$**584.4**$_5$
K **3574.6+y**, J_1+14, $\gamma_{2956.7+y}$**617.9**$_5$
K **4226.6+y**, J_1+16, $\gamma_{3574.6+y}$**652.0**$_5$
K **4910.6+y**, J_1+18, $\gamma_{4226.6+y}$**684.0**$_5$
K **5626.1+y**, J_1+20, $\gamma_{4910.6+y}$**715.5**$_5$
K **6372.1+y**, J_1+22, $\gamma_{5626.1+y}$**746.0**$_5$
L **z**, $J_2\approx(33/2)$
L **382.7+z**, J_2+2, γ_{z}**382.7**$_5$
L **803.4+z**, J_2+4, $\gamma_{382.7+z}$**420.7**$_5$
L **1262.0+z**, J_2+6, $\gamma_{803.4+z}$**458.6**$_5$
L **1757.7+z**, J_2+8, $\gamma_{1262.0+z}$**495.7**$_5$
L **2289.2+z**, J_2+10, $\gamma_{1757.7+z}$**531.5**$_5$
L **2856.0+z**, J_2+12, $\gamma_{2289.2+z}$**566.8**$_5$
L **3456.6+z**, J_2+14, $\gamma_{2856.0+z}$**600.6**$_5$
L **4091.1+z**, J_2+16, $\gamma_{3456.6+z}$**634.5**$_5$
L **4757.8+z**, J_2+18, $\gamma_{4091.1+z}$**666.7**$_5$
L **5457.0+z**, J_2+20, $\gamma_{4757.8+z}$**699.2**$_5$
L **6187.5+z**, J_2+22, $\gamma_{5457.0+z}$**730.5**$_5$
L **6948.5+z**, J_2+24, $\gamma_{6187.5+z}$**761.0**$_5$
L **7738.5+z**, J_2+26, $\gamma_{6948.5+z}$**790.0**$_5$



SD-1 band (1997Sc22,1993Vo04) SD-2 band (1997Sc22) SD-3 band (1997Sc22)

$^{191}_{79}Au_{112}$

$^{189}_{80}Hg_{109}$

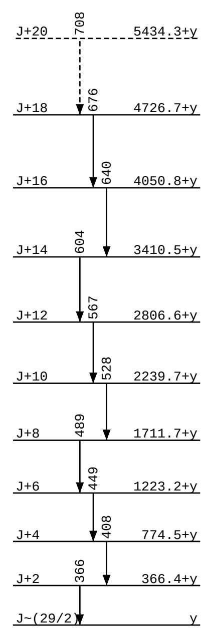
S_n: 7534 *SY*, S_p: 4451 *SY*

Nuclear Bands

A Band based on $13/2^+$
B Band based on $(29/2^+)$
C Band bsed on $(23/2^-)$
D Band based on $(33/2^+)$
E Band based on $(21/2^-)$
F Band based on $(33/2^-)$
G Band based on $(37/2^-)$
H Band based on (15/2)
I SD band (1992Be18,1991Dr04)

Levels and γ-ray branchings:

0, $3/2^-$, *7.6$_1$ min*, %ε+%β$^+$=100 , %α<0.00003 , μ=-0.6086$_8$, Q=-0.76$_{35}$
64.3$_5$, $(5/2)^-$, *0.40$_4$ ns*, γ_0**64.3**$_5$(100) M1+E2 $\delta\approx0.01$
A **0+x**, $13/2^+$, *8.6$_1$ min*, %ε+%β$^+$=100 , %α<0.00003 , μ=-1.058$_6$, Q=-0.66$_{26}$
A **403.3+x**, $17/2^+$, γ_{0+x}**403.3**$_3$(100) E2
474.1+x, $(15/2)^+$, γ_{0+x}**474.1**$_3$(100) M1+E2 $\delta=0.11_7$
H **901.1+x**, (15/2), γ_{0+x}**901.1**$_3$(100)
A **1030.2+x**, $(21/2)^+$, $\gamma_{403.3+x}$**626.9**$_3$(100) E2
1110.4+x, $(19/2)^+$, $\gamma_{474.1+x}$**636.3**$_3$(100$_3$) E2, $\gamma_{403.3+x}$**707.1**$_3$(83$_3$) M1+E2 $\delta=0.52_{15}$
H **1440.2+x**, (19/2), $\gamma_{901.1+x}$**539.1**$_3$(16$_5$), $\gamma_{403.3+x}$**1036.9**$_3$(100$_{14}$)
E **1691.2+x**, $(21/2)^-$, $\gamma_{1440.2+x}$**251.0**$_3$(5.4$_{13}$), $\gamma_{1110.4+x}$**580.8**$_3$(97$_2$) E1, $\gamma_{1030.2+x}$**661.0**$_3$(100$_4$) E1
A **1763.2+x**, $(25/2^+)$, $\gamma_{1030.2+x}$**733.0**$_3$(100) E2
E **1917.3+x**, $(25/2^-)$, $\gamma_{1763.2+x}$**154.1**$_3$(1.7$_6$), $\gamma_{1691.2+x}$**226.1**$_3$(100.0$_{14}$) E2
C **1976.4+x**, $(23/2^-)$, $\gamma_{1030.2+x}$**946.2**$_3$(100) (E1)
H **2034.5+x**, (23/2), $\gamma_{1440.2+x}$**594.3**$_3$(100$_{15}$), $\gamma_{1030.2+x}$**1004.3**$_3$(65$_{22}$)
C **2220.9+x**, $(27/2^-)$, $\gamma_{1976.4+x}$**244.5**$_3$(68$_2$), $\gamma_{1763.2+x}$**457.7**$_3$(100$_6$) (E1)
2236.4+x, $(29/2^-)$, $\gamma_{1917.3+x}$**319.1**$_3$(100)
2245.2+x, $(29/2^-)$, $\gamma_{1917.3+x}$**327.9**$_3$(100)
E **2253.7+x**, $(29/2^-)$, $\gamma_{1917.3+x}$**336.4**$_3$(100) E2
B **2476.6+x**, $(29/2^+)$, $\gamma_{1763.2+x}$**714.2**$_3$(100) E2
A **2615.7+x**, $(29/2^+)$, $\gamma_{1763.2+x}$**853.7**$_3$(100) E2
B **2674.8+x**, $(33/2^+)$, $\gamma_{2476.6+x}$**197.2**$_3$(100) E2
H **2675.8+x**, (25/2), $\gamma_{2034.5+x}$**641.3**$_3$(100)
2682.3+x, $(29/2^+)$, $\gamma_{1763.2+x}$**919.1**$_3$(100)
C **2686.6+x**, $(31/2^-)$, $\gamma_{2253.7+x}$**432.9**$_3$(13$_2$), $\gamma_{2220.9+x}$**465.7**$_3$(100$_6$) (E2)
E **2821.9+x**, $(33/2^-)$, $\gamma_{2253.7+x}$**568.2**$_3$(100) (E2)
2947.9+x, $(31/2^-)$, $\gamma_{2615.7+x}$**331.5**$_3$(69$_{15}$), $\gamma_{2476.6+x}$**470.0**$_3$(100$_{23}$)
F **2949.7+x**, $(33/2^-)$, $\gamma_{2253.7+x}$**696.0**$_3$(77$_9$), $\gamma_{2245.2+x}$**704.5**$_3$(100$_9$), $\gamma_{2236.4+x}$**713.3**$_3$(97$_9$)
D **3123.7+x**, $(33/2^+)$, $\gamma_{2682.3+x}$**441.4**$_3$(6$_2$)(?), $\gamma_{2476.6+x}$**646.3**$_3$(100$_5$)
B **3154.5+x**, $(37/2^+)$, $\gamma_{2674.8+x}$**479.7**$_3$(100) E2
3307.7+x, $(33/2^+)$, $\gamma_{2476.6+x}$**830.1**$_3$(100)
C **3344.4+x**, $(35/2^-)$, $\gamma_{2686.6+x}$**657.8**$_3$(100) E2
A **3400.9+x**, $(33/2^+)$, $\gamma_{2615.7+x}$**784.0**$_3$(100$_{33}$), $\gamma_{2476.6+x}$**923.5**$_3$(67$_{22}$)
G **3439.9+x**, $(37/2^-)$, $\gamma_{2821.9+x}$**618.0**$_3$(100)
3449.9+x, $(37/2^-)$, $\gamma_{2821.9+x}$**628.0**$_3$(100)
F **3467.6+x**, $(37/2^-)$, $\gamma_{2949.7+x}$**517.8**$_3$(100$_8$), $\gamma_{2821.9+x}$**645.8**$_3$(6$_2$)
E **3541.2+x**, $(37/2^-)$, $\gamma_{2821.9+x}$**719.3**$_3$(100)
D **3793.7+x**, $(37/2^+)$, $\gamma_{3123.7+x}$**669.8**$_3$(100)
3826.5+x, $(37/2^+)$, $\gamma_{3123.7+x}$**702.6**$_3$(100)
B **3876.3+x**, $(41/2^+)$, $\gamma_{3154.5+x}$**721.8**$_3$(100)
C **3992.9+x**, $(39/2^-)$, $\gamma_{3344.4+x}$**648.5**$_3$(100)
4063.6+x, $(41/2^+)$, $\gamma_{3154.5+x}$**909.1**$_3$(100)
E **4173.2+x**, $(41/2^-)$, $\gamma_{3541.2+x}$**632.0**$_3$(21$_5$), $\gamma_{3467.6+x}$**705.7**$_3$(100$_8$)
F **4228.3+x**, $(41/2^-)$, $\gamma_{3541.2+x}$**687.1**$_3$(26$_{11}$), $\gamma_{3467.6+x}$**760.8**$_3$(100$_{21}$)
G **4237.9+x**, $(41/2^-)$, $\gamma_{3449.9+x}$**788.0**$_3$(100$_{27}$), $\gamma_{3439.9+x}$**798.0**$_3$(100$_{27}$)
D **4329.5+x**, $(41/2^+)$, $\gamma_{3826.5+x}$**503.0**$_3$(100$_{22}$), $\gamma_{3793.7+x}$**535.8**$_3$(61$_{11}$)
4439.0+x, $(41/2^+)$, $\gamma_{3793.7+x}$**645.3**$_3$(100)
C **4479.8+x**, $(43/2^-)$, $\gamma_{3992.9+x}$**486.9**$_3$(100)
4517.9+x, $(43/2^-)$, $\gamma_{4237.9+x}$**280.0**$_3$(100)
4550.3+x, $(39/2^-)$, $\gamma_{3992.9+x}$**557.3**$_3$(38$_{15}$), $\gamma_{3344.4+x}$**1205.9**$_3$(100$_{31}$)
E **4701.2+x**, $(45/2^-)$, $\gamma_{4173.2+x}$**528.0**$_3$(100)
B **4714.0+x**, $(45/2^+)$, $\gamma_{3876.3+x}$**837.7**$_3$(100)
G **4761.3+x**, $(45/2^-)$, $\gamma_{4517.9+x}$**243.4**$_3$(100$_{12}$), $\gamma_{4237.9+x}$**523.4**$_3$(62$_{12}$)
4870.5+x, $(45/2^+)$, $\gamma_{3876.3+x}$**994.2**$_3$(100)
4960.9+x, $(43/2^-)$, $\gamma_{3992.9+x}$**968.0**$_3$(100)
D **5002.7+x**, $(45/2^+)$, $\gamma_{4329.5+x}$**673.2**$_3$(100)
F **5036.3+x**, $(45/2^-)$, $\gamma_{4228.3+x}$**808.0**$_3$(100$_{33}$), $\gamma_{4173.2+x}$**863.1**$_3$(100$_{33}$)
C **5118.2+x**, $(47/2^-)$, $\gamma_{4479.8+x}$**638.4**$_3$(100)
D **5545.0+x**, $(47/2^+)$, $\gamma_{5002.7+x}$**542.3**$_3$(100)
B **5584.0+x**, $(49/2^+)$, $\gamma_{4714.0+x}$**870.0**$_3$(100)
G **5703.1+x**, $(49/2^-)$, $\gamma_{4761.3+x}$**941.8**$_3$(100)
F **5900.3+x**, $(49/2^-)$, $\gamma_{5036.3+x}$**864.0**$_3$(100)
C **5952.7+x**, $(51/2^-)$, $\gamma_{5118.2+x}$**834.5**$_3$(100)
B **6536.5+x**, $(53/2^+)$, $\gamma_{5584.0+x}$**952.5**$_3$(100)
C **6820.2+x**, $(55/2^-)$, $\gamma_{5952.7+x}$**867.5**$_3$(100)
I **y**, $J\approx(29/2)$
I **366.4+y**, $J+2$, γ_y**366.4**$_2$(1.00$_{10}$)
I **774.5+y**, $J+4$, $\gamma_{366.4+y}$**408.1**$_2$(1.00$_{15}$)
I **1223.2+y**, $J+6$, $\gamma_{774.5+y}$**448.7**$_2$(0.86$_{19}$)
I **1711.7+y**, $J+8$, $\gamma_{1223.2+y}$**488.5**$_2$(0.89$_{16}$)
I **2239.7+y**, $J+10$, $\gamma_{1711.7+y}$**528.0**$_2$(0.62$_{11}$)
I **2806.6+y**, $J+12$, $\gamma_{2239.7+y}$**566.9**$_2$(0.58$_{11}$)
I **3410.5+y**, $J+14$, $\gamma_{2806.6+y}$**603.9**$_2$(0.53$_{14}$)
I **4050.8+y**, $J+16$, $\gamma_{3410.5+y}$**640.3**$_2$(0.58$_{11}$)
I **4726.7+y**, $J+18$, $\gamma_{4050.8+y}$**675.9**$_2$
I **5434.3+y**(?), $J+20$, $\gamma_{4726.7+y}$**707.6**$_6$(?)



SD band
(1992Be18,1991Dr04)
$^{189}_{80}Hg_{109}$

$^{190}_{80}$Hg$_{110}$

S$_n$: 9799 *SY*, S$_p$: 5067 *SY*

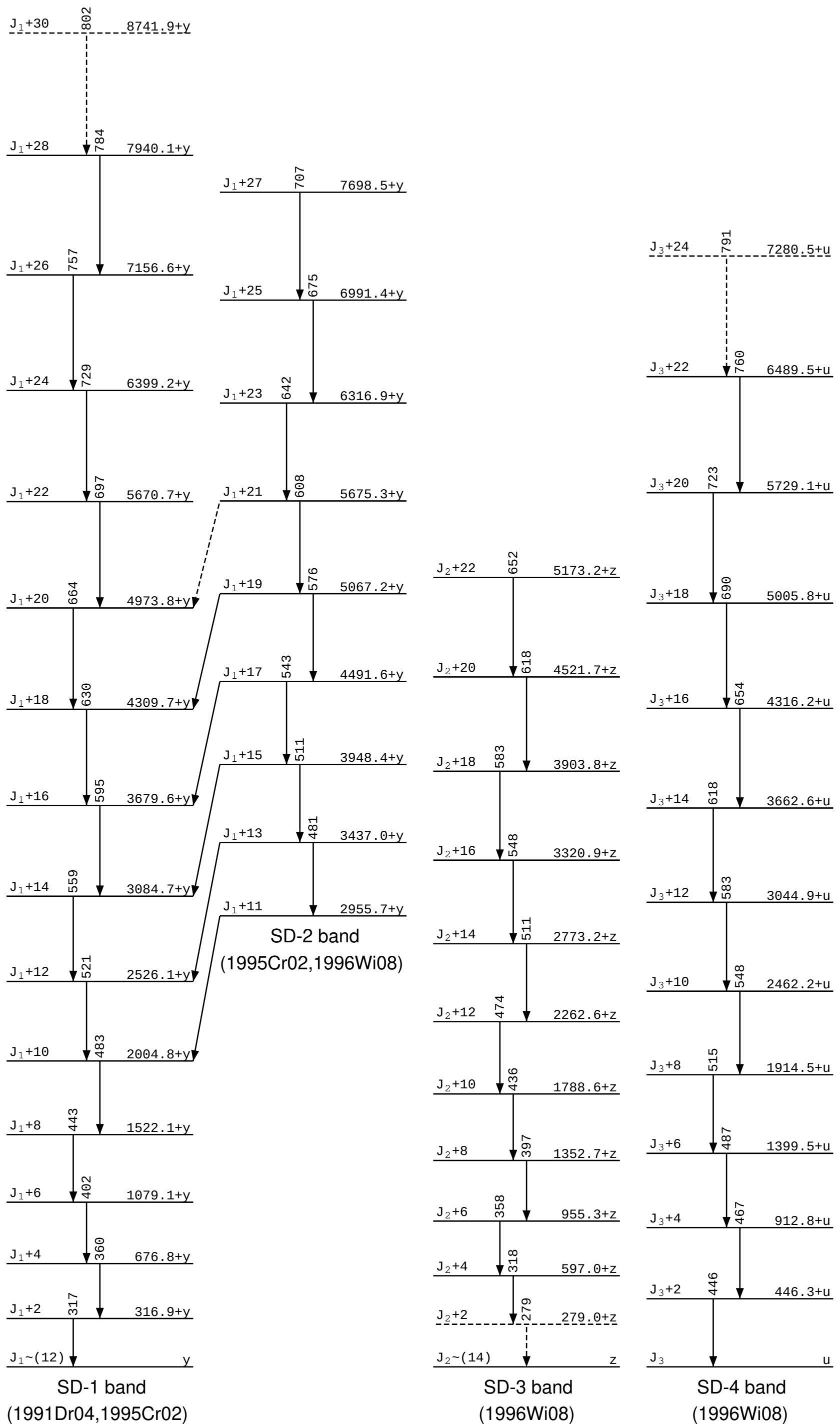
Nuclear Bands

A GS, oblate band
B Kπ=0$^+$ β band
C ν(5/2[642],α=+1/2) ν(5/2[642],α=-1/2), oblate band
D ν(5/2[642],α=+1/2) ν(5/2[503],α=+1/2), oblate band
E ν(5/2[642],α=+1/2) ν(5/2[503],α=-1/2), oblate band
F ν(5/2[642],α=+1/2) ν(1/2[541],α=+1/2) (?)
G ν(5/2[642],α=+1/2 and -1/2) ν(7/2[633],α=+1/2 and -1/2
H ν(5/2[642])^2 ν(7/2[633],α=+1/2) ν(5/2[503], α=+1/2)
I ν(5/2[642])^2 ν(7/2[633],α=+1/2) ν(5/2[503], α=-1/2)
J ν(5/2[642])^2 ν(7/2[633], α=+1/2) ν1/2[541] (?)
K Band based on (20$^+$), α=0
L Band based on (12$^+$), α=0
M Dipole band based on (22$^+$)
N Magnetic-dipole rotational band based on (17$^-$)
O Magnetic-dipole rotational band based on (17$^+$)
P Magnetic-dipole rotational band
Q γ sequence based on (8$^+$)
R SD-1 band (1991Dr04,1995Cr02,1996Wi08,1997Am06,2000Zw03) Q$_0$=17.7$_{25}$
S SD-2 band (1995Cr02,1996Wi08,1997Am06,1994Cr08) Q$_0$=17.6$_{25}$
T SD-3 band (1996Wi08)
U SD-4 band (1996Wi08)

Levels and γ-ray branchings:

A **0**, 0^+, *20.0$_5$ min*, %ε+%β^+=100, %$\alpha < 3.4$x10^{-7}
A **416.32**$_{14}$, 2^+, $\gamma_{\mathbf{0}}$**416.4**$_2$(100) E2
A **1041.77**$_{16}$, 4^+, $\gamma_{\mathbf{416.32}}$**625.4**$_2$(100) E2
1099.94$_{14}$, 2^+, $\gamma_{\mathbf{416.32}}$**683.5**$_2$(100$_{10}$) E2+M1 $\delta = 2.0^{10}_{5}$, $\gamma_{\mathbf{0}}$**1099.9**$_3$(63$_6$) E2
B **1278.6**$_3$, 0^+, $\gamma_{\mathbf{416.32}}$**862.2**$_3$(100), $\gamma_{\mathbf{0}}$**1278.7**(3.2) E0
1558.71$_{17}$, $(2)^+$, $\gamma_{\mathbf{1099.94}}$**458.7**$_3$(25$_3$), $\gamma_{\mathbf{1041.77}}$**516.8**$_3$(18$_2$), $\gamma_{\mathbf{416.32}}$**1142.5**$_3$(100$_7$) E2(+M1) $\delta > 2$, $\gamma_{\mathbf{0}}$**1558.9**$_3$(29$_2$)
B **1571.42**$_{19}$, 2^+, $\gamma_{\mathbf{1278.6}}$**292.6**$_3$(4$_3$)(?), $\gamma_{\mathbf{1041.77}}$**529.7**$_3$(26$_{10}$), $\gamma_{\mathbf{416.32}}$**1155.0**$_3$(100$_9$) E0+M1+E2, $\gamma_{\mathbf{0}}$**1571.2**$_3$(67$_{20}$)
1657.07$_{18}$, $(3)^+$, $\gamma_{\mathbf{1099.94}}$**557.0**$_2$(100$_{10}$) E2(+M1) $\delta > 3$, $\gamma_{\mathbf{1041.77}}$**615.3**$_3$(63$_6$) E2+M1 $\delta = 1.4_3$, $\gamma_{\mathbf{416.32}}$**1240.9**$_3$(16$_5$) (E2)
A **1772.94**$_{19}$, 6^+, $\gamma_{\mathbf{1041.77}}$**731.1**$_2$(100) E2
1850.78$_{19}$, $(2^+,3,4^+)$, $\gamma_{\mathbf{1099.94}}$**751.1**$_3$(100$_{10}$), $\gamma_{\mathbf{1041.77}}$**808.0**$_3$(66$_7$), $\gamma_{\mathbf{416.32}}$**1434.7**$_3$(12$_1$)
D **1881.18**$_{22}$, 5^-, $\gamma_{\mathbf{1041.77}}$**839.6**$_2$(100) E1
B **1975.30**$_{20}$, 4^+, $\gamma_{\mathbf{1571.42}}$**403.8**$_3$(20$_5$) E2, $\gamma_{\mathbf{1041.77}}$**933.4**$_3$(39$_{10}$) E0+M1+E2, $\gamma_{\mathbf{416.32}}$**1558.8**$_3$(100$_7$)
2072.8$_4$, $(4,5,6)^+$, $\gamma_{\mathbf{1041.77}}$**1030.9**$_3$(100) M1+E2 $\delta = 0.9_3$
D **2078.33**$_{23}$, 7^-, $\gamma_{\mathbf{1881.18}}$**196.9**$_2$(34$_2$) E2, $\gamma_{\mathbf{1772.94}}$**305.4**$_2$(100$_2$) E1
2162.92$_{21}$, (4^+), $\gamma_{\mathbf{1772.94}}$**390.1**$_3$($<$ 12), $\gamma_{\mathbf{1657.07}}$**506.0**$_3$(35$_4$), $\gamma_{\mathbf{1558.71}}$**604.3**$_3$(100$_{10}$), $\gamma_{\mathbf{1041.77}}$**1121.1**$_3$(51$_5$)
2200.97$_{20}$, $(5)^+$, $\gamma_{\mathbf{1772.94}}$**428.1**$_3$(5.6$_6$), $\gamma_{\mathbf{1657.07}}$**543.9**$_2$(100$_{10}$) E2, $\gamma_{\mathbf{1041.77}}$**1159.7**$_3$(9.4$_9$)
2251.4$_3$, $(6,7)^-$, $\gamma_{\mathbf{1881.18}}$**370.3**$_2$(100$_{10}$) E2(+M1) $\delta > 7$, $\gamma_{\mathbf{1772.94}}$**478.3**$_3$(27$_3$)
2318.6$_3$, $(4^-,5,6^+)$, $\gamma_{\mathbf{2078.33}}$**240.1**(?), $\gamma_{\mathbf{1881.18}}$**437.6**$_3$(70$_7$), $\gamma_{\mathbf{1041.77}}$**1276.7**$_3$(100$_{10}$)
E **2319.0**$_3$, $(8)^-$, $\gamma_{\mathbf{2078.33}}$**240.6**$_2$(100$_{10}$) M1+E2 $\delta = 1.5^5_3$
D **2335.5**$_3$, (9^-), $\gamma_{\mathbf{2078.33}}$**257.1**$_2$(100) (E2)
2342.98$_{21}$, $(4^+,5,6^+)$, $\gamma_{\mathbf{2200.97}}$**142.7**$_3$(37$_4$), $\gamma_{\mathbf{1850.78}}$**492.1**$_3$(78$_8$), $\gamma_{\mathbf{1772.94}}$**569.9**$_3$(50$_5$), $\gamma_{\mathbf{1657.07}}$**685.8**$_3$(100$_{10}$), $\gamma_{\mathbf{1041.77}}$**1300.8**$_3$(27$_3$)
2365.38$_{22}$, $(4^+,5,6^+)$, $\gamma_{\mathbf{1975.30}}$**390.1**$_3$($<$ 12), $\gamma_{\mathbf{1850.78}}$**514.5**$_3$(11$_1$), $\gamma_{\mathbf{1772.94}}$**592.6**$_3$(24$_2$), $\gamma_{\mathbf{1041.77}}$**1323.4**$_3$(100$_{10}$)
2392.0$_4$(?), $(5^- \to 9^-)$, $\gamma_{\mathbf{2078.33}}$**313.7**$_3$(100)(?)
2424.8$_4$(?), $(5^- \to 9^-)$, $\gamma_{\mathbf{2078.33}}$**346.5**$_3$(100)(?)
C **2465.0**$_3$, $(8)^+$, $\gamma_{\mathbf{1772.94}}$**692.0**$_2$(100) E2
B **2509.95**$_{24}$, 6^+, $\gamma_{\mathbf{1975.30}}$**534.7**$_3$(100$_8$), $\gamma_{\mathbf{1772.94}}$**736.9**$_3$(72$_{28}$) E0+M1+E2, $\gamma_{\mathbf{1041.77}}$**1468.1**$_3$(85$_{35}$)
Q **2573.0**$_3$, $(8)^+$, $\gamma_{\mathbf{1772.94}}$**800.1**$_2$(100) E2
C **2596.9**$_3$, (10^+), $\gamma_{\mathbf{2465.0}}$**131.9**$_3$(100$_{12}$) E2, $\gamma_{\mathbf{2335.5}}$**261.5**$_3$(6$_2$) D(?)
C **2620.7**$_5$, (12^+), *23$_1$ ns*, μ=-2.52$_{24}$, Q=1.17$_{14}$, $\gamma_{\mathbf{2596.9}}$**23.9**$_5$(100)
E **2724.3**$_4$, (10^-), $\gamma_{\mathbf{2335.5}}$**388.8**$_3$(51$_7$), $\gamma_{\mathbf{2319.0}}$**405.3**$_3$(100$_{11}$) Q
2821.5$_3$, $(3^+ \to 6^+)$, $\gamma_{\mathbf{2200.97}}$**620.4**$_3$(14$_2$), $\gamma_{\mathbf{2162.92}}$**658.7**$_3$(100$_{10}$)
2844.7$_4$, (10^-), $\gamma_{\mathbf{2319.0}}$**525.7**$_3$(100) Q
D **2865.6**$_4$, (11^-), $\gamma_{\mathbf{2335.5}}$**530.1**$_3$(100) Q
F **3007.1**$_4$, (11^-), $\gamma_{\mathbf{2844.7}}$**162.5**$_3$(100) D
C **3040.6**$_5$, (14^+), $\gamma_{\mathbf{2620.7}}$**419.9**$_2$(100) Q
Q **3213.0**$_3$, (10^+), $\gamma_{\mathbf{2596.9}}$**616.1**$_3$, $\gamma_{\mathbf{2573.0}}$**640.1**$_3$, $\gamma_{\mathbf{2465.0}}$**748.0**$_3$
L **3277.4**$_4$, (12^+), $\gamma_{\mathbf{2596.9}}$**680.5**$_3$(100) Q
3282.4$_3$, (10^-), $\gamma_{\mathbf{3213.0}}$**(69.4)**$_{10}$, $\gamma_{\mathbf{2865.6}}$**416.6**$_5$, $\gamma_{\mathbf{2596.9}}$**685.5**$_3$, $\gamma_{\mathbf{2573.0}}$**709.5**$_3$
3329.3$_4$, (12^-), $\gamma_{\mathbf{2844.7}}$**484.6**$_3$(100) Q
3350.3$_4$, (10^+), $\gamma_{\mathbf{2573.0}}$**777.3**$_3$
E **3358.3**$_4$, (12^-), $\gamma_{\mathbf{2865.6}}$**492.7**$_3$(10$_3$) (D), $\gamma_{\mathbf{2724.3}}$**633.9**$_3$(100$_5$) Q
Q **3446.0**$_4$, (11^+), $\gamma_{\mathbf{3350.3}}$**95.8**$_{10}$, $\gamma_{\mathbf{3282.4}}$**163.6**$_3$ D, $\gamma_{\mathbf{3213.0}}$**233.0**$_4$
F **3493.7**$_4$, (13^-), $\gamma_{\mathbf{3007.1}}$**486.6**$_3$(100) Q
D **3548.9**$_4$, (13^-), $\gamma_{\mathbf{2865.6}}$**683.2**$_3$(100) Q
C **3703.4**$_4$, (16^+), $\gamma_{\mathbf{3040.6}}$**662.8**$_2$(100) Q
L **3744.0**$_4$, (14^+), $\gamma_{\mathbf{3277.4}}$**466.6**$_3$(100) Q
Q **3951.1**$_5$, (13^+), $\gamma_{\mathbf{3446.0}}$**505.1**$_3$ E2
D **3962.0**$_4$, (15^-), $\gamma_{\mathbf{3548.9}}$**413.2**$_3$(100) Q
I **3980.0**$_4$, (14^-), $\gamma_{\mathbf{3358.3}}$**621.7**$_2$(100$_5$) (Q), $\gamma_{\mathbf{3329.3}}$**650.6**$_3$(23$_4$) Q
H **4087.8**$_4$, (15^-), $\gamma_{\mathbf{3962.0}}$**125.8**$_3$(2.8$_{14}$), $\gamma_{\mathbf{3744.0}}$**343.8**$_3$(5.6$_{14}$) D, $\gamma_{\mathbf{3548.9}}$**538.8**$_3$(100$_7$) Q, $\gamma_{\mathbf{3493.7}}$**594.0**$_3$(25$_3$) Q
F **4183.0**$_5$, (15^-), $\gamma_{\mathbf{3493.7}}$**689.4**$_3$(100) Q
I **4243.4**$_4$, (16^-), $\gamma_{\mathbf{4087.8}}$**155.7**$_3$(10$_3$) D, $\gamma_{\mathbf{3980.0}}$**263.4**$_3$(100$_4$) Q, $\gamma_{\mathbf{3703.4}}$**540.0**$_3$(36$_{10}$) (D)
D **4258.0**$_5$, (15^-), $\gamma_{\mathbf{3548.9}}$**709.2**$_3$(100) Q
H **4327.5**$_5$, (17^-), $\gamma_{\mathbf{4243.4}}$**84.4**(?), $\gamma_{\mathbf{4087.8}}$**239.4**$_4$(100$_9$) Q, $\gamma_{\mathbf{3703.4}}$**624.4**$_3$(14$_3$) (D)(?)
L **4360.0**$_5$, (16^+), $\gamma_{\mathbf{3744.0}}$**616.0**$_3$(100) Q
4416.6$_5$, (16^+), $\gamma_{\mathbf{3744.0}}$**672.6**$_3$(100) Q
C **4492.6**$_5$, (18^+), $\gamma_{\mathbf{3703.4}}$**789.2**$_2$(100) Q
I **4552.2**$_5$, (18^-), $\gamma_{\mathbf{4243.4}}$**308.7**$_3$(100) Q
Q **4577.9**$_7$, (15^+), $\gamma_{\mathbf{3951.1}}$**626.8**$_4$
4669.0$_6$, (17^-), $\gamma_{\mathbf{4183.0}}$**486.0**$_3$(100)
H **4711.0**$_5$, (19^-), $\gamma_{\mathbf{4552.2}}$**158.9**$_3$(3$_1$) D, $\gamma_{\mathbf{4327.5}}$**383.2**$_3$(100$_3$) Q
L **4915.7**$_6$, (18^+), $\gamma_{\mathbf{4360.0}}$**555.7**$_3$(100) Q
N **4953.0**$_5$, (17^-), $\gamma_{\mathbf{4258.0}}$**695.1**$_3$, $\gamma_{\mathbf{4183.0}}$**770.2**$_3$(100) Q
4991.8$_6$, (18^+), $\gamma_{\mathbf{4416.6}}$**575.2**$_3$(100) (Q)
N **5103.0**$_5$, (18^-), $\gamma_{\mathbf{4953.0}}$**150.0**$_3$
I **5106.5**$_5$, (20^-), $\gamma_{\mathbf{4552.2}}$**554.2**$_3$(100) Q
5220.9$_7$, (16^+), $\gamma_{\mathbf{4577.9}}$**643.0**$_3$
G **5229.0**$_6$, (20^+), $\gamma_{\mathbf{4492.6}}$**736.4**$_3$(100) Q
5263.4$_8$, (19^-), $\gamma_{\mathbf{4552.2}}$**711**, $\gamma_{\mathbf{4327.5}}$**936**
J **5281.5**$_5$, (20^-), $\gamma_{\mathbf{5106.5}}$**175**, $\gamma_{\mathbf{4711.0}}$**570.5**$_3$(100)
5329.3$_5$, (19^-), $\gamma_{\mathbf{4327.5}}$**1001.8**$_3$
H **5336.1**$_5$, (21^-), $\gamma_{\mathbf{4711.0}}$**625.0**$_3$(100)
C **5352.0**$_6$, (20^+), $\gamma_{\mathbf{4492.6}}$**859.3**$_3$(100) Q
N **5375.1**$_5$, (19^-), $\gamma_{\mathbf{5103.0}}$**272.2**$_3$, $\gamma_{\mathbf{4953.0}}$**422.2**$_3$
Q **5405.6**$_7$, (16^+), $\gamma_{\mathbf{4577.9}}$**827.7**$_3$ (M1+E2)
K **5482.2**$_6$, (20^+), $\gamma_{\mathbf{4492.6}}$**989.6**$_3$(100) Q
5556.4$_7$, (20^-), $\gamma_{\mathbf{5281.5}}$**275**, $\gamma_{\mathbf{5263.4}}$**293**, $\gamma_{\mathbf{5106.5}}$**450**
O **5639.6**$_7$, (17^+), $\gamma_{\mathbf{5405.6}}$**234.0**$_3$ D, $\gamma_{\mathbf{5220.9}}$**418.7**$_3$
L **5660.8**$_6$, (20^+), $\gamma_{\mathbf{4991.8}}$**669.1**$_3$(100$_{30}$) Q, $\gamma_{\mathbf{4915.7}}$**745.1**$_3$(90$_{30}$) Q
N **5672.4**$_5$, (20^-), $\gamma_{\mathbf{5375.1}}$**297.3**$_3$, $\gamma_{\mathbf{5103.0}}$**569.4**$_3$
O **5789.4**$_8$, (18^+), $\gamma_{\mathbf{5639.6}}$**149.8**$_3$ D
G **5795.2**$_6$, (22^+), $\gamma_{\mathbf{5229.0}}$**566.2**$_3$(100) Q
I **5857.2**$_5$, (22^-), $\gamma_{\mathbf{5106.5}}$**750.5**$_3$(100) Q
K **5943.6**$_6$, (22^+), $\gamma_{\mathbf{5482.2}}$**461.5**$_3$(100$_{36}$) Q, $\gamma_{\mathbf{5352.0}}$**591.6**$_3$(57$_{21}$) Q
5970.0$_6$, (22^+), $\gamma_{\mathbf{5229.0}}$**741.0**$_3$(100) Q
O **6005.3**$_8$, (19^+), $\gamma_{\mathbf{5789.4}}$**215.9**$_3$
N **6049.2**$_5$, (21^-), $\gamma_{\mathbf{5672.4}}$**376.9**$_3$, $\gamma_{\mathbf{5375.1}}$**674.2**$_3$, $\gamma_{\mathbf{5329.3}}$**720.0**$_3$
J **6126.1**$_5$, (22^-), $\gamma_{\mathbf{5556.4}}$**570**, $\gamma_{\mathbf{5336.1}}$**790.1**$_3$(35$_{13}$), $\gamma_{\mathbf{5281.5}}$**844.6**$_3$(100$_{13}$) Q
H **6143.9**$_6$, (23^-), $\gamma_{\mathbf{5336.1}}$**807.7**$_3$(100) Q
C **6219.9**$_6$, (22^+), $\gamma_{\mathbf{5352.0}}$**867.9**$_3$(100) Q
O **6261.0**$_9$, (20^+), $\gamma_{\mathbf{6005.3}}$**255.7**$_3$ D
6335.6$_7$(?), (24^+), $\gamma_{\mathbf{5795.2}}$**540.4**$_3$(100) Q

N **6485.3**$_5$, (22^-), $\gamma_{6049.2}$**436.2**$_3$, $\gamma_{5672.4}$**813.0**$_3$
G **6521.1**$_6$, (24^+), $\gamma_{5943.6}$**577.5**$_3$$(67_{11})$ Q, $\gamma_{5795.2}$**725.9**$_3$$(100_{11})$ (Q)
O **6565.1**$_{10}$, (21^+), $\gamma_{6261.0}$**304.1**$_3$ (M1+E2)
6576.6$_7$(?), (24^+), $\gamma_{5795.2}$**781.4**$_3$(100) Q
I **6684.1**$_6$, (24^-), $\gamma_{5857.2}$**826.9**$_3$(100) Q
N **6832.4**$_5$, (23^-), $\gamma_{6485.3}$**347.2**$_3$, $\gamma_{6049.2}$**783.3**$_3$, $\gamma_{5857.2}$**975.1**$_3$
O **6894.0**$_{10}$, (22^+), $\gamma_{6565.1}$**328.9**$_3$
J **6930.1**$_6$, (24^-), $\gamma_{6126.1}$**804.0**$_3$(100) Q
M **6936.1**$_{11}$, (22^+), $\gamma_{6565.1}$**371.0**$_5$
N **6971.3**$_5$, (24^-), $\gamma_{6832.4}$**138.9**$_3$, $\gamma_{6485.3}$**486.1**$_3$, $\gamma_{6126.1}$**845.3**$_3$, $\gamma_{5857.2}$**1114.0**$_3$
H **7036.8**$_6$, (25^-), $\gamma_{6143.9}$**892.7**$_3$(100) Q
N **7200.9**$_6$, (25^-), $\gamma_{6971.3}$**229.8**$_3$
O **7256.5**$_{10}$, (23^+), $\gamma_{6894.0}$**362.5**$_3$ D
K **7282.2**$_7$, (26^+), $\gamma_{6521.1}$**761.1**$_3$(100) Q
G **7297.8**$_7$, (26^+), $\gamma_{6521.1}$**776.7**$_3$(100) Q
M **7307.1**$_{12}$, (23^+), $\gamma_{6936.1}$**371.0**$_5$
N **7496.5**$_6$, (26^-), $\gamma_{7200.9}$**295.7**$_3$
I **7532.1**$_7$, (26^-), $\gamma_{6684.1}$**848.0**$_3$(100)
M **7621.3**$_{12}$, (24^+), $\gamma_{7307.1}$**314.2**$_3$
O **7639.7**$_{11}$, (24^+), $\gamma_{7256.5}$**383.2**$_3$ (M1+E2)
7656.0$_6$, (26^-), $\gamma_{7200.9}$**455.1**$_3$
J **7808.8**$_7$, (26^-), $\gamma_{6930.1}$**878.7**$_3$(100) Q
N **7810.5**$_7$, (27^-), $\gamma_{7496.5}$**314.0**$_4$
7826.7$_7$, (25), $\gamma_{6930.1}$**896.6**$_3$(100) D
M **7893.0**$_{13}$, (25^+), $\gamma_{7621.3}$**271.7**$_4$
7956.5$_7$, (27^-), $\gamma_{7036.8}$**919.7**$_3$(100) Q
H **7995.6**$_6$, (27^-), $\gamma_{7656.0}$**339.7**$_3$, $\gamma_{7496.5}$**499.2**$_3$, $\gamma_{7036.8}$**958.6**$_3$(100) Q
O **8052.2**$_{11}$, (25^+), $\gamma_{7639.7}$**412.5**$_3$ D
K **8090.6**$_7$, (28^+), $\gamma_{7282.2}$**808.4**$_3$(100) Q
N **8124.4**$_6$, (28^-), $\gamma_{7995.6}$**128.8**$_3$, $\gamma_{7810.5}$**314.0**$_4$
G **8227.5**$_7$, (28^+), $\gamma_{7297.8}$**929.6**$_3$(100) Q
I **8411.1**$_7$, (28^-), $\gamma_{7532.1}$**879.0**$_3$(100)
N **8439.4**$_7$, (29^-), $\gamma_{8124.4}$**315.0**$_4$
O **8481.4**$_{12}$, (26^+), $\gamma_{8052.2}$**429.2**$_3$ (D)
N **8735.1**$_7$, (30^-), $\gamma_{8439.4}$**295.7**$_3$, $\gamma_{8124.4}$**610.6**$_3$
O **8876.4**$_{13}$, (27^+), $\gamma_{8481.4}$**395.0**$_5$
N **9146.4**$_7$, (31^-), $\gamma_{8735.1}$**411.3**$_3$, $\gamma_{8439.4}$**707.1**$_3$
N **9583.3**$_7$, (32^-), $\gamma_{9146.4}$**436.8**$_3$, $\gamma_{8735.1}$**848.2**$_3$
N **10030.7**$_7$, (33^-), $\gamma_{9583.3}$**447.4**$_3$, $\gamma_{9146.4}$**884.2**$_3$
x
202.2+x, γ_{x}**202.2**$_3$
P **366.2+x**, $J\approx(20)$, $\gamma_{202.2+x}$**164.0**$_3$
P **653.0+x**, $J+1$, $\gamma_{366.2+x}$**286.8**$_3$ D
P **945.4+x**, $J+2$, $\gamma_{653.0+x}$**292.4**$_3$ D
P **1248.3+x**, $J+3$, $\gamma_{945.4+x}$**302.9**$_4$
P **1556.1+x**, $J+4$, $\gamma_{1248.3+x}$**307.8**$_5$
P **1863.6+x**, $J+5$, $\gamma_{1556.1+x}$**307.5**$_5$
P **2184.7+x**, $J+6$, $\gamma_{1863.6+x}$**321.1**$_5$ D
P **2506.7+x**, $J+7$, $\gamma_{2184.7+x}$**322.0**$_5$
P **2820.8+x**, $J+8$, $\gamma_{2506.7+x}$**314.1**$_3$
P **3156.6+x**, $J+9$, $\gamma_{2820.8+x}$**335.8**$_3$
P **3510.6+x**, $J+10$, $\gamma_{3156.6+x}$**354.0**$_3$
P **3891.9+x**, $J+11$, $\gamma_{3510.6+x}$**381.3**$_3$ D
P **4302.6+x**, $J+12$, $\gamma_{3891.9+x}$**410.7**$_4$
P **4740.6+x**, $J+13$, $\gamma_{4302.6+x}$**438.0**$_4$
R **y**, $J_1\approx(12)$
R **316.9+y**, J_1+2, γ_{y}**316.9**$_4$$(0.059_{11})$ (E2)
R **676.8+y**, J_1+4, $\gamma_{316.9+y}$**360**$_1$$(0.64_3)$ (E2)
R **1079.1+y**, J_1+6, $\gamma_{676.8+y}$**402.34**$_4$$(1.00_{17})$ (E2)
R **1522.1+y**, J_1+8, $\gamma_{1079.1+y}$**442.98**$_6$$(1.00_8)$ E2
R **2004.8+y**, J_1+10, $\gamma_{1522.1+y}$**482.71**$_6$$(1.00_9)$ (E2)
R **2526.1+y**, J_1+12, $\gamma_{2004.8+y}$**521.30**$_6$$(1.00_9)$ E2
S **2955.7+y**, J_1+11, $\gamma_{2004.8+y}$**950.8**$_3$$(0.03_1)$ E1
R **3084.7+y**, J_1+14, $\gamma_{2526.1+y}$**558.6**$_1$$(0.81_8)$ E2
S **3437.0+y**, J_1+13, *76*$_{14}$ *fs*, $\gamma_{2955.7+y}$**481.1**$_6$$(0.031_{10})$, $\gamma_{2526.1+y}$**910.9**$_3$$(0.06_2)$ E1
R **3679.6+y**, J_1+16, $\gamma_{3084.7+y}$**594.9**$_1$$(0.70_{12})$ (E2)
S **3948.4+y**, J_1+15, *69*$_{14}$ *fs*, $\gamma_{3437.0+y}$**511.4**$_4$$(0.08_2)$, $\gamma_{3084.7+y}$**864**$_1$$(0.08_2)$ E1
R **4309.7+y**, J_1+18, $\gamma_{3679.6+y}$**630.1**$_1$$(0.50_{14})$ (E2)
S **4491.6+y**, J_1+17, *90*$_{21}$ *fs*, $\gamma_{3948.4+y}$**543.2**$_3$$(0.17_3)$, $\gamma_{3679.6+y}$**812**$_1$$(0.07_2)$ (E1)
R **4973.8+y**, J_1+20, $\gamma_{4309.7+y}$**664.1**$_1$$(0.40_5)$ (E2)
S **5067.2+y**, J_1+19, *76*$_{14}$ *fs*, $\gamma_{4491.6+y}$**575.6**$_2$$(0.20_4)$, $\gamma_{4309.7+y}$**757**$_1$$(0.06_2)$
R **5670.7+y**, J_1+22, $\gamma_{4973.8+y}$**696.9**$_1$$(0.25_4)$
S **5675.3+y**, J_1+21, $\gamma_{5067.2+y}$**608.1**$_3$$(0.22_4)$, $\gamma_{4973.8+y}$**702**$_1$$(0.03_2)$(?)
S **6316.9+y**, J_1+23, $\gamma_{5675.3+y}$**641.6**$_3$$(0.19_4)$
R **6399.2+y**, J_1+24, $\gamma_{5670.7+y}$**728.5**$_4$$(0.14_4)$ (E2)
S **6991.4+y**, J_1+25, $\gamma_{6316.9+y}$**674.5**$_5$$(0.10_3)$
R **7156.6+y**, J_1+26, $\gamma_{6399.2+y}$**757.4**$_4$$(0.06_2)$
S **7698.5+y**, J_1+27, $\gamma_{6991.4+y}$**707.1**$_6$$(0.04_1)$
R **7940.1+y**, J_1+28, $\gamma_{7156.6+y}$**783.5**$_6$$(0.021_{12})$
R **8741.9+y**(?), J_1+30, $\gamma_{7940.1+y}$**801.8**$_8$$(\leq 0.01)$(?)
T **z**, $J_2\approx(14)$
T **279.0+z**(?), J_2+2, γ_{z}**279**(≤ 0.01)(?)
T **597.0+z**, J_2+4, $\gamma_{279.0+z}$**318.0**$_3$$(0.022_{12})$
T **955.3+z**, J_2+6, $\gamma_{597.0+z}$**358.3**$_4$$(0.030_{13})$
T **1352.7+z**, J_2+8, $\gamma_{955.3+z}$**397.4**$_4$$(0.039_{10})$
T **1788.6+z**, J_2+10, $\gamma_{1352.7+z}$**435.9**$_4$$(0.041_{10})$
T **2262.6+z**, J_2+12, $\gamma_{1788.6+z}$**474.0**$_5$$(0.041_{11})$
T **2773.2+z**, J_2+14, $\gamma_{2262.6+z}$**510.6**$_4$$(0.040_{10})$
T **3320.9+z**, J_2+16, $\gamma_{2773.2+z}$**547.7**$_8$$(0.032_{11})$
T **3903.8+z**, J_2+18, $\gamma_{3320.9+z}$**582.9**$_7$$(0.021_{12})$
T **4521.7+z**, J_2+20, $\gamma_{3903.8+z}$**617.9**$_7$$(0.011_9)$
T **5173.2+z**, J_2+22, $\gamma_{4521.7+z}$**651.5**$_7$$(\leq 0.005)$
U **u**, J_3
U **446.3+u**, J_3+2, γ_{u}**446.3**$_4$$(0.09_2)$
U **912.8+u**, J_3+4, $\gamma_{446.3+u}$**466.5**$_4$$(0.14_4)$
U **1399.5+u**, J_3+6, $\gamma_{912.8+u}$**486.7**$_4$$(0.14_4)$
U **1914.5+u**, J_3+8, $\gamma_{1399.5+u}$**515.0**$_4$$(0.14_3)$
U **2462.2+u**, J_3+10, $\gamma_{1914.5+u}$**547.7**$_4$$(0.14_3)$
U **3044.9+u**, J_3+12, $\gamma_{2462.2+u}$**582.7**$_5$$(0.14_4)$
U **3662.6+u**, J_3+14, $\gamma_{3044.9+u}$**617.7**$_4$$(0.14_4)$
U **4316.2+u**, J_3+16, $\gamma_{3662.6+u}$**653.6**$_4$$(0.11_3)$
U **5005.8+u**, J_3+18, $\gamma_{4316.2+u}$**689.6**$_6$$(0.06_2)$
U **5729.1+u**, J_3+20, $\gamma_{5005.8+u}$**723.3**$_6$$(0.039_{12})$
U **6489.5+u**, J_3+22, $\gamma_{5729.1+u}$**760.4**$_6$$(0.011_{10})$
U **7280.5+u**(?), J_3+24, $\gamma_{6489.5+u}$**791**(≤ 0.01)(?)


SD-1 band
(1991Dr04,1995Cr02)
SD-2 band
(1995Cr02,1996Wi08)
SD-3 band
(1996Wi08)
SD-4 band
(1996Wi08)
J₁+30 802 8741.9+y
J₁+28 784 7940.1+y
J₁+26 757 7156.6+y
J₁+24 729 6399.2+y
J₁+22 697 5670.7+y
J₁+20 664 4973.8+y
J₁+18 630 4309.7+y
J₁+16 595 3679.6+y
J₁+14 559 3084.7+y
J₁+12 521 2526.1+y
J₁+10 483 2004.8+y
J₁+8 443 1522.1+y
J₁+6 402 1079.1+y
J₁+4 360 676.8+y
J₁+2 317 316.9+y
J₁~(12) y
J₁+27 707 7698.5+y
J₁+25 675 6991.4+y
J₁+23 642 6316.9+y
J₁+21 608 5675.3+y
J₁+19 576 5067.2+y
J₁+17 543 4491.6+y
J₁+15 511 3948.4+y
J₁+13 481 3437.0+y
J₁+11 2955.7+y
J₂+22 652 5173.2+z
J₂+20 618 4521.7+z
J₂+18 583 3903.8+z
J₂+16 548 3320.9+z
J₂+14 511 2773.2+z
J₂+12 474 2262.6+z
J₂+10 436 1788.6+z
J₂+8 397 1352.7+z
J₂+6 358 955.3+z
J₂+4 318 597.0+z
J₂+2 279 279.0+z
J₂~(14) z
J₃+24 791 7280.5+u
J₃+22 760 6489.5+u
J₃+20 723 5729.1+u
J₃+18 690 5005.8+u
J₃+16 654 4316.2+u
J₃+14 618 3662.6+u
J₃+12 583 3044.9+u
J₃+10 548 2462.2+u
J₃+8 515 1914.5+u
J₃+6 487 1399.5+u
J₃+4 467 912.8+u
J₃+2 446 446.3+u
J₃ u

$^{190}_{80}Hg_{110}$

$^{191}_{80}Hg_{111}$

S_n: 7339 $_{SY}$, S_p: 5087 $_{88}$

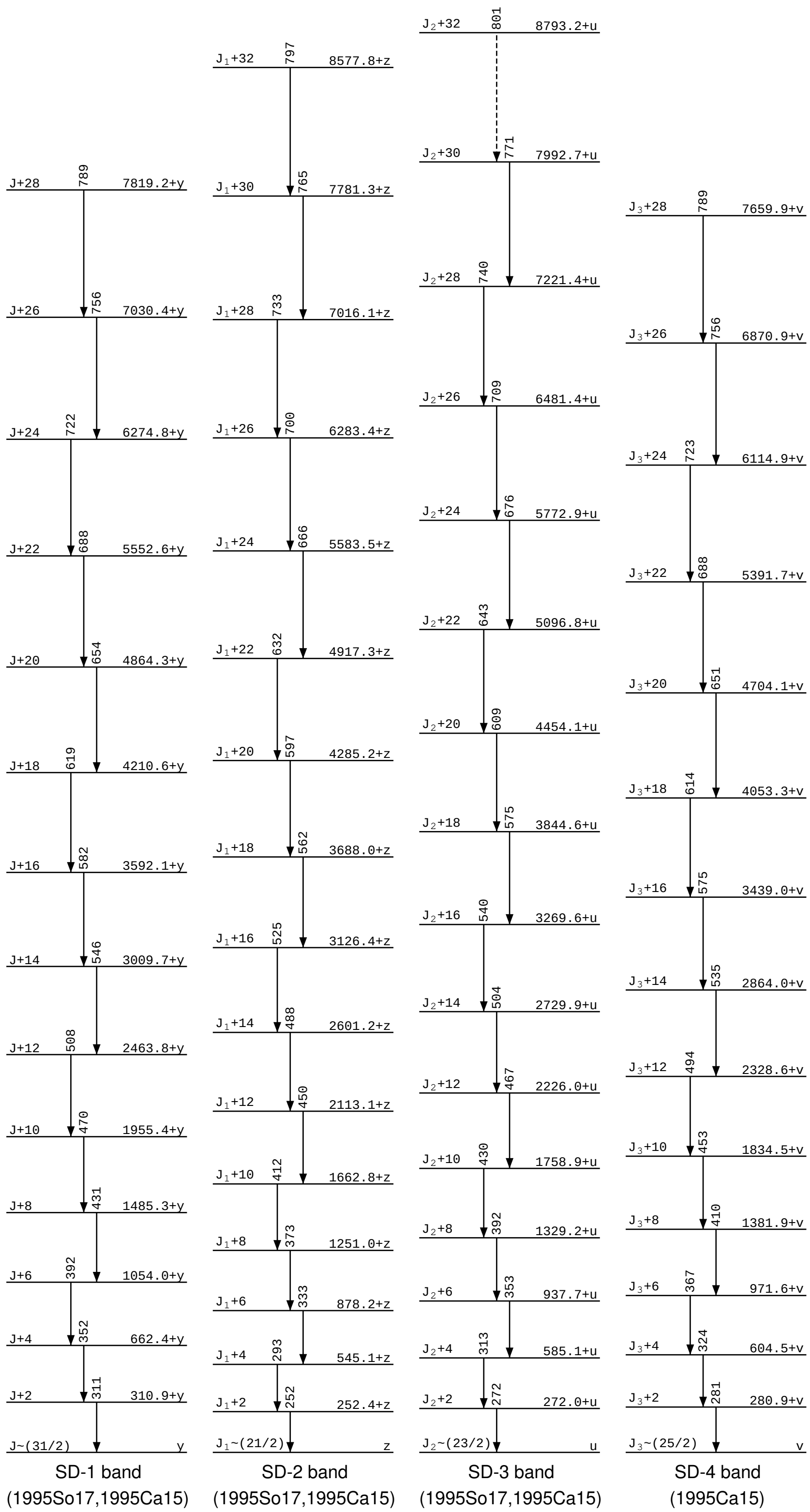
Nuclear Bands

A $\nu i_{13/2}$, α=+1/2
B Band based on ($15/2^+$), α=-1/2
C Band based on ($29/2^+$), α=+1/2
D Band based on ($29/2^+$), α=+1/2
E Band based on ($41/2^+$), α=+1/2
F Band based on ($23/2^-$), α=-1/2
G Band based on ($39/2^-$), α=-1/2
H Band based on ($21/2^-$), α=+1/2
I Band based on ($41/2^-$), α=+1/2
J Band based on ($41/2^-$), α=+1/2
K Terminating band based on ($33/2^-$), α=+1/2
L SD-1 band (1995So17,1995Ca15,1989Mo08,1990Ca18,1999Lu04) Q_0=17.5$_8$
M SD-2 band (1995So17,1995Ca15,1990Ca18) Q_0=17.5$_8$
N SD-3 band (1995So17,1995Ca15,1990Ca18)
O SD-4 band (1995Ca15)

Levels and γ-ray branchings:

0, $(3/2^-)$, *49$_{10}$ min*, %ε+%β$^+$=100, μ=-0.618$_{11}$, Q=-0.80$_{25}$
A **0+x**, $13/2^+$, *50.8$_{15}$ min*, %ε+%β$^+$=100, μ=-1.068$_5$, Q=+0.64$_{25}$
51.6$_2$, $(5/2^-)$, *0.42$_4$ ns*, γ_{0}**51.6**$_2$(100) M1+E2 $\delta\approx0.7$
103.7$_3$, $(1/2^-)$, γ_{0}**103.7**$_3$(100) M1+E2
216.0+x, $(9/2)^+$, γ_{0+x}**216.0**$_2$(100) E2
265.0+x, $(11/2)^+$, $\gamma_{216.0+x}$**49.1**$_2$ E2, γ_{0+x}**265.0**$_2$(100$_5$) M1+E2 $\delta=1.9^{10}_{5}$
336.3$_2$, $(5/2^-)$, $\gamma_{51.6}$**284.7**$_2$(10.0$_{10}$) M1, γ_{0}**336.3**$_2$(100$_6$) M1+E2 $\delta=1.6^{6}_{4}$
375.5$_3$, $(3/2^-)$, $\gamma_{103.7}$**271.8**$_4$(4.1$_{24}$), $\gamma_{51.6}$**323.9**$_4$(12$_6$), γ_{0}**375.5**$_3$(100$_{18}$) M1
377.9$_3$, $(7/2^-)$, $\gamma_{336.3}$**41.6**$_3$, $\gamma_{51.6}$**326.3**$_2$(100$_5$) M1+E2 $\delta=1.0_2$, γ_{0}**377.9**$_2$(13$_7$)
A **390.5+x**, $(17/2^+)$, γ_{0+x}**390.4**$_2$(100) (E2)
430.4$_3$, $(1/2^-,3/2^-,5/2^-)$, $\gamma_{51.6}$**378.8**$_3$($\approx$ 345), γ_{0}**430.4**$_3$(100$_{14}$) M1+E2 $\delta=0.8^{16}_{8}$
534.7+x, $\gamma_{216.0+x}$**318.7**$_4$(100)
B **535.3+x**, $(15/2^+)$, γ_{0+x}**535.4**$_2$(100) (M1+E2) $\delta=0.14_4$
563.5$_3$, $(7/2^-)$, $\gamma_{336.3}$**227.2**$_3$(5.1$_{24}$), $\gamma_{51.6}$**511.9**$_3$, γ_{0}**563.5**$_3$(100$_5$) E2
588.6+x, $(7/2)^+$, $\gamma_{265.0+x}$**323.6**$_4$(13$_7$), $\gamma_{216.0+x}$**372.7**$_3$(100$_{10}$) M1+E2 $\delta=1.8^{8}_{4}$
632.3$_3$, $(9/2^-)$, $\gamma_{377.9}$**254.4**$_3$(7$_3$), $\gamma_{51.6}$**580.7**$_3$(100$_5$) E2
659.1$_4$, $(9/2^-)$, $\gamma_{377.9}$**281.2**$_3$(77$_8$) M1+E2 $\delta=0.8_5$, $\gamma_{336.3}$**322.7**$_4$(27$_{14}$), $\gamma_{51.6}$**607.5**$_3$(100$_{10}$) E2
691.8$_3$, $\gamma_{430.4}$**261.4**$_3$(10.1$_{25}$), $\gamma_{336.3}$**355.5**$_3$(8$_3$), $\gamma_{51.6}$**640.2**$_3$(100$_{10}$), γ_{0}**691.8**$_3$(31$_8$)
742.7+x, $(13/2)^+$, $\gamma_{535.3+x}$**207.5**$_3$(10$_4$), $\gamma_{265.0+x}$**477.6**$_3$(90$_{10}$), $\gamma_{216.0+x}$**526.7**$_3$(11$_3$), γ_{0+x}**742.7**$_3$(100$_{10}$) (M1+)E2 $\delta\geq1.6$
761.1+x, $(11/2)^+$, $\gamma_{588.6+x}$**172.4**$_4$(12$_7$), $\gamma_{265.0+x}$**496.0**$_3$(100$_{11}$) M1(+E2), $\gamma_{216.0+x}$**545.1**$_3$(40$_{20}$) (M1+)E2 $\delta\geq1.6$, γ_{0+x}**761.1**$_3$(52$_{11}$)
880.3$_9$, $\gamma_{51.6}$**828.7**$_9$(100)
900.0+x, $(11/2,13/2)^+$, $\gamma_{265.0+x}$**635.0**$_4$(37$_7$), $\gamma_{216.0+x}$**684.1**$_4$(100$_{10}$) E2, γ_{0+x}**900.0**$_4$(71$_{10}$) M1+E2
911.3$_4$, $\gamma_{430.4}$**480.8**$_4$(100$_{77}$), $\gamma_{377.9}$**533.4**$_4$(96$_{23}$), $\gamma_{375.5}$**535.7**$_5$($\approx$ 200), $\gamma_{336.3}$**574.9**$_4$($\leq$ 80)
952.1$_4$, $(9/2^-)$, $\gamma_{430.4}$**521.7**$_4$(29$_{14}$), $\gamma_{336.3}$**615.8**$_4$(100$_{12}$) (E2)
997.1$_3$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{430.4}$**566.7**$_4$(82$_{15}$), $\gamma_{377.9}$**619.2**$_3$(100$_{12}$) M1+E2 $\delta=0.9^{9}_{5}$, $\gamma_{336.3}$**660.8**$_3$(92$_{10}$)
1016.3$_4$, $(11/2^-)$, $\gamma_{632.3}$**383.9**$_4$(14$_4$), $\gamma_{377.9}$**638.4**$_4$(100$_{21}$)
A **1019.3+x**, $(21/2^+)$, $\gamma_{390.5+x}$**628.7**$_2$(100) (E2)
1024$_1$, $\gamma_{336.3}$**687**$_1$(100)
1081.0$_5$, $\gamma_{336.3}$**744.7**$_5$(100$_{17}$), γ_{0}**1081.0**$_5$(70$_{13}$)
1088+x, $\gamma_{216.0+x}$**871.8**$_9$(100)
1105.7+x, $\gamma_{588.6+x}$**517.1**$_6$(100)
1107.2$_4$, $(7/2^-,9/2^-,11/2^-)$, $\gamma_{632.3}$**474.9**$_4$(19$_{10}$) M1+E2 $\delta\geq0.4$, $\gamma_{377.9}$**729.3**$_4$(100$_{11}$), $\gamma_{51.6}$**1055.6**$_4$(61$_7$)
1130.8+x, $(7/2,9/2,11/2^+)$, $\gamma_{265.0+x}$**865.6**$_9$(37$_{17}$), $\gamma_{216.0+x}$**914.9**$_7$(100$_{17}$) M1+E2
1133.3+x, $\gamma_{265.0+x}$**868.2**$_5$(32$_{16}$), $\gamma_{216.0+x}$**917.3**$_5$(100$_{16}$), γ_{0+x}**1133.3**$_5$(35$_{18}$)
1146.5$_5$, $\gamma_{632.3}$**514.2**$_5$(100$_{18}$), $\gamma_{563.5}$**583.0**$_5$(77$_{38}$)
B **1171.8+x**, $(19/2^+)$, $\gamma_{535.3+x}$**636.6**$_2$(82$_{18}$) (E2), $\gamma_{390.5+x}$**781.3**$_2$(100$_{15}$) (M1+E2) $\delta=0.14_4$
1178.3$_8$, $\gamma_{51.6}$**1126.7**$_8$(100)
1193.2$_5$, $\gamma_{691.8}$**501.4**$_5$(56$_{10}$) M1(+E2), $\gamma_{377.9}$**815.3**$_5$(100$_{21}$)
1199$_1$, $\gamma_{51.6}$**1148**$_1$(100)
1208+x, $\gamma_{216.0+x}$**992**$_1$(100)
1212.4$_7$, $\gamma_{377.9}$**834.5**$_7$(100) (E2)
1257+x, $\gamma_{265.0+x}$**992**$_1$(100)
1317.6$_9$, $(5/2^-,7/2^-,9/2^-)$, $\gamma_{563.5}$**754.1**$_8$(100) M1+E2 $\delta\geq1.2$
1319+x, $\gamma_{216.0+x}$**1102.6**$_9$(100$_{21}$), γ_{0+x}**1318.6**$_9$(75$_{25}$)
1320$_1$, $(13/2^-)$, $\gamma_{632.3}$**687**$_1$(100)
1434+x, $\gamma_{216.0+x}$**1218.2**$_9$(100)
1470.8$_9$, $\gamma_{377.9}$**1092.9**$_9$(100)
1539$_1$, $\gamma_{377.9}$**1161**$_1$(100)
H **1637.9+x**, $(21/2^-)$, $\gamma_{1171.8+x}$**466.2**$_2$(100$_{15}$) (E1), $\gamma_{1019.3+x}$**618.5**$_2$(33$_4$) (E1)
1688+x, $\gamma_{216.0+x}$**1472**$_1$(100)
A **1769.5+x**, $(25/2^+)$, $\gamma_{1019.3+x}$**750.1**$_7$(100) (E2)
H **1804.6+x**, $(25/2^-)$, *0.72$_7$ ns*, $\gamma_{1637.9+x}$**166.7**$_7$(100) (E2)
1844$_1$, $\gamma_{336.3}$**1508**$_1$(100)
F **1861.8+x**, $(23/2^-)$, $\gamma_{1637.9+x}$**223.9**$_6$(12$_2$) (M1), $\gamma_{1019.3+x}$**842.5**$_6$(100$_{16}$) (E1)
F **2064.8+x**, $(27/2^-)$, $\gamma_{1861.8+x}$**202.8**$_7$(100$_7$) (E2), $\gamma_{1804.6+x}$**260.0**$_7$(25$_4$) (M1), $\gamma_{1769.5+x}$**295.2**$_7$(49$_9$) (E1)
H **2123.6+x**, $(29/2^-)$, $\gamma_{1804.6+x}$**319.0**$_2$(100) (E2)
2286+x, $\gamma_{216.0+x}$**2070**$_2$(100)
2299+x, $\gamma_{265.0+x}$**2034.5**$_{15}$(100)
2303+x, $\gamma_{216.0+x}$**2087**$_1$(100)
2307+x, $\gamma_{216.0+x}$**2091.5**$_{11}$(100)
2310+x, $\gamma_{265.0+x}$**2045**$_1$(100)
2315+x, $\gamma_{216.0+x}$**2099**$_1$(100)
2328.9+x, $\gamma_{742.7+x}$**1586.3**$_7$(43$_9$), $\gamma_{216.0+x}$**2113.0**$_7$(45$_9$), γ_{0+x}**2328.9**$_7$(100$_{10}$)
2335+x, $\gamma_{265.0+x}$**2070**$_2$(100)
2340+x, $\gamma_{265.0+x}$**2075**$_1$(100)
2352+x, $\gamma_{265.0+x}$**2087**$_1$(100)
2357+x, $\gamma_{742.7+x}$**1613.9**$_9$, $\gamma_{216.0+x}$**2140.6**$_9$
2358.8+x, $\gamma_{742.7+x}$**1616.1**$_7$(100$_{10}$), γ_{0+x}**2358.7**$_7$(81$_{14}$)
2361.6+x, $\gamma_{742.7+x}$**1618.9**$_7$(46$_9$), γ_{0+x}**2361.6**$_7$(100$_{10}$)
2406+x, $\gamma_{265.0+x}$**2141**$_2$(100)
2409+x, $\gamma_{216.0+x}$**2193**$_2$(100)
2412.4$_{15}$, $\gamma_{377.9}$**2034.5**$_{15}$(100)
2423$_1$, $\gamma_{377.9}$**2045**$_1$(100)
C **2431.6+x**, $(29/2^+)$, $\gamma_{1769.5+x}$**662.1**$_2$(100) (E2)
2440.2$_9$, $\gamma_{952.1}$**1488.1**$_8$(100)
2442$_2$, $\gamma_{336.3}$**2105**$_2$(100)
2443$_1$, $\gamma_{377.9}$**2065**$_1$(100)
2460$_1$, $\gamma_{1016.3}$**1443.5**$_9$(100)
2475+x, $\gamma_{1019.3+x}$**1459**$_1$(100)
2476$_1$, $\gamma_{632.3}$**1844**$_1$(100)
2477$_1$, $\gamma_{377.9}$**2099**$_1$(100)
2543$_1$, $\gamma_{563.5}$**1980**$_1$(100)
F **2545.0+x**, $(31/2^-)$, $\gamma_{2064.8+x}$**479.7**$_9$(100) (E2)
A **2588.9+x**, $(29/2^+)$, $\gamma_{1769.5+x}$**819.4**$_8$(100) (E2)
2594.9+x, $(29/2^-)$, $\gamma_{1804.6+x}$**790.3**$_3$(100) (E2)
C **2598.6+x**, $(33/2^+)$, *0.92$_6$ ns*, $\gamma_{2431.6+x}$**167.0**$_7$(100) (E2)
K **2643.5+x**, $(33/2^-)$, $\gamma_{2123.6+x}$**519.9**$_3$(100) (E2)
H **2690.4+x**, $(33/2^-)$, $\gamma_{2123.6+x}$**566.8**$_2$(100) (E2)
D **2935.5+x**, $(29/2^+)$, $\gamma_{1769.5+x}$**1166.0**$_3$(100)
C **3078.5+x**, $(37/2^+)$, $\gamma_{2598.6+x}$**479.9**$_2$(100) (E2)
3117.5+x, $(33/2^+)$, $\gamma_{2588.9+x}$**528.6**$_3$(100) (E2)
D **3167.0+x**, $(33/2^+)$, $\gamma_{2935.5+x}$**231.6**$_3$(16$_5$) (E2), $\gamma_{2598.6+x}$**568.4**$_7$(100$_{26}$) (M1+E2), $\gamma_{2588.9+x}$**578.1**$_8$(38$_9$) (E2)
F **3222.2+x**, $(35/2^-)$, $\gamma_{2545.0+x}$**677**$_1$(100) (E2)
3252.8+x, $(33/2^-)$, $\gamma_{2594.9+x}$**658.0**$_3$(100$_{39}$), $\gamma_{2123.6+x}$**1129.3**$_3$(22$_{17}$)
H **3428.9+x**, $(37/2^-)$, $\gamma_{2690.4+x}$**738.5**$_2$(100) (E2)
D **3487.7+x**, $(37/2^+)$, $\gamma_{3167.0+x}$**320.6**$_8$(71$_{14}$) (E2), $\gamma_{3078.5+x}$**409.3**$_8$(100$_{20}$) (M1+E2)

K **3518.9+x**, $(37/2^-)$, $\gamma_{2643.5+x}$**875.4**$_3(100)$ (E2)
3728.1+x, $(35/2)$, $\gamma_{2690.4+x}$**1037.7**$_3(100)$
C **3792.7+x**, $(41/2^+)$, $\gamma_{3078.5+x}$**714**$_1(100)$ (E2)
3946.8+x, $(37/2^-)$, $\gamma_{3252.8+x}$**694.0**$_3(100_{21})$, $\gamma_{2690.4+x}$**1256.4**$_3(42_{33})$ (E2)
G **3957.2+x**, $(39/2^-)$, $\gamma_{3222.2+x}$**735**$_1(100)$ (E2)
F **3969.0+x**, $(39/2^-)$, $\gamma_{3222.2+x}$**746.8**$_3(100)$ (E2)
D **3988.6+x**, $(41/2^+)$, $\gamma_{3487.7+x}$**501**$_1(100)$ (E2)
J **4140.9+x**, $(41/2^-)$, $\gamma_{3428.9+x}$**712.0**$_3(100)$ (E2)
I **4217.7+x**, $(41/2^-)$, $\gamma_{3428.9+x}$**787**$_1(100)$ (E2)
K **4276.1+x**, $(41/2^-)$, $\gamma_{3518.9+x}$**757.2**$_3(100)$ (E2)
G **4357.4+x**, $(43/2^-)$, $\gamma_{3957.2+x}$**400**$_1(100)$ (E2)
4382.6+x, $(41/2^-)$, $\gamma_{3428.9+x}$**953.7**$_3(100)$ (E2)
E **4492.0+x**, $(41/2^+)$, $\gamma_{3487.7+x}$**1004.3**$_3(62_{15})$, $\gamma_{3078.5+x}$**1413.5**$_3(100_{23})$ (E2)
4529.8+x, $(39/2)$, $\gamma_{3728.1+x}$**801.7**$_3(53_{13})$, $\gamma_{3428.9+x}$**1100.9**$_3(100_{27})$ D
4587.1+x, $(41/2^-)$, $\gamma_{4529.8+x}$**57.3**$_3$, $\gamma_{3957.2+x}$**629.9**$_3(90_{20})$ (M1), $\gamma_{3946.8+x}$**640.3**$_3(80_{17})$ (E2), $\gamma_{3428.9+x}$**1158.2**$_3(100_7)$ (E2)
C **4632.3+x**, $(45/2^+)$, $\gamma_{3792.7+x}$**840**$_1(100)$ (E2)
4653.7+x, $(43/2)$, $\gamma_{4382.6+x}$**271.1**$_3(100)$ D
D **4667.4+x**, $(45/2^+)$, $\gamma_{3988.6+x}$**678.8**$_3(100)$ (E2)
E **4850.9+x**, $(45/2^+)$, $\gamma_{4492.0+x}$**358.9**$_3(100_{21})$ (E2), $\gamma_{3988.6+x}$**862.3**$_3(25_4)$ (E2)
4855.9+x, $(43/2^-)$, $\gamma_{4587.1+x}$**268.8**$_3(100)$ (M1)
4894.9+x, $(45/2^-)$, $\gamma_{4653.7+x}$**241.2**$_3(40_{20})$ D, $\gamma_{4382.6+x}$**512.3**$_3(100_{20})$ (E2)
4903.5+x, $(45/2)$, $\gamma_{4653.7+x}$**249.8**$_3(38_{13})$ D, $\gamma_{4382.6+x}$**520.9**$_3(100_{25})$
I **4957.7+x**, $\gamma_{4217.7+x}$**740**$_1(100)$
G **5006.5+x**, $(47/2^-)$, $\gamma_{4357.4+x}$**649.1**$_3(100)$ (E2)
J **5027.8+x**, $(45/2^-)$, $\gamma_{4140.9+x}$**886.9**$_3(100)$ (E2)
K **5072+x**, $(45/2^-)$, $\gamma_{4276.1+x}$**796**$_3(100)$ (E2)
5128.2+x, $(47/2)$, $\gamma_{4894.9+x}$**233.3**$_3(100)$ D
5142.5+x, $(45/2^-)$, $\gamma_{4855.9+x}$**286.6**$_3(100)$ (M1), $\gamma_{4587.1+x}$**555.4**$_3(86_5)$ (E2)
5296.1+x, $(47/2^-)$, $\gamma_{4855.9+x}$**440.2**$_3(100)$ (E2)
D **5427.3+x**, $(49/2^+)$, $\gamma_{4667.4+x}$**759.9**$_3(100)$ (E2)
5506.6+x, $(47/2^-)$, $\gamma_{5296.1+x}$**210.5**$_3(41_{10})$ (M1), $\gamma_{5142.5+x}$**364.1**$_3(100_{15})$ (M1), $\gamma_{4855.9+x}$**650.7**$_3(78_7)$ (E2)
E **5534.0+x**, $(49/2^+)$, $\gamma_{4850.9+x}$**683.1**$_3(100_{24})$ (E2), $\gamma_{4667.4+x}$**866.6**$_3(21_4)$, $\gamma_{4632.3+x}$**901.7**$_3(19_3)$ (E2)
C **5553.4+x**, $(49/2^+)$, $\gamma_{4632.3+x}$**921.1**$_3(100)$ (E2)
5653.8+x, $(49/2^-)$, $\gamma_{5506.6+x}$**147.2**$_3(100)$ (M1)
G **5795.7+x**, $(51/2^-)$, $\gamma_{5006.5+x}$**789.2**$_3(100)$ (E2)
I **5802.8+x**, $\gamma_{4957.7+x}$**845.1**$_3(100)$
J **6025.4+x**, $\gamma_{5027.8+x}$**997.6**$_3(100)$
6085.3+x, $(51/2^-)$, $\gamma_{5653.8+x}$**431.5**$_3(81_{13})$ (M1), $\gamma_{5506.6+x}$**578.7**$_3(100_{32})$ (E2)
D **6230.8+x**, $(53/2^+)$, $\gamma_{5427.3+x}$**803.5**$_3(100)$ (E2)
E **6333.7+x**, $(53/2^+)$, $\gamma_{5534.0+x}$**799.7**$_3(100)$ (E2)
6459.6+x, $(53/2)$, $\gamma_{6085.3+x}$**374.3**$_3(67_{20})$ D, $\gamma_{5653.8+x}$**805.8**$_3(100_{47})$ Q
C **6520.7+x**, $(53/2^+)$, $\gamma_{5553.4+x}$**967.3**$_3(100)$ (E2)
G **6678.2+x**, $(55/2^-)$, $\gamma_{5795.7+x}$**882.5**$_3(100)$ (E2)
6936.5+x, $(55/2^-)$, $\gamma_{6459.6+x}$**476.9**$_3(29_8)$ D, $\gamma_{6085.3+x}$**851.2**$_3(100_6)$ (E2)
D **7077.4+x**, $(57/2^+)$, $\gamma_{6230.8+x}$**846.6**$_3(100)$ (E2)
7227.0+x, $(57/2^-)$, $\gamma_{6936.5+x}$**290.5**$_3(100)$ (M1)
7527.8+x, $(59/2)$, $\gamma_{7227.0+x}$**300.8**$_3(100)$ D
G **7670.7+x**, $\gamma_{6678.2+x}$**992.5**$_3(100)$
7689.9+x, $(59/2)$, $\gamma_{7227.0+x}$**462.9**$_3(100)$ D
7697.0+x, $\gamma_{6678.2+x}$**1018.8**$_3(100)$
7987.4+x, $(61/2)$, $\gamma_{7527.8+x}$**459.6**$_3(100_{64})$ D, $\gamma_{7227.0+x}$**760.4**$_3(50_{27})$
8351.8+x, $(63/2)$, $\gamma_{7987.4+x}$**364.4**$_3(100_{79})$, $\gamma_{7689.9+x}$**661.9**$_3(75_{17})$, $\gamma_{7527.8+x}$**824**$_3(75_{29})$ Q
8668.9+x, $\gamma_{8351.8+x}$**317.1**$_3(100)$
L **y**, $J \approx (31/2)$
L **310.9+y**, $J+2$, γ_{y}**310.9**$_7(0.14_2)$
L **662.4+y**, $J+4$, $\gamma_{310.9+y}$**351.5**$_1(0.83_5)$ Q
L **1054.0+y**, $J+6$, $\gamma_{662.4+y}$**391.6**$_4(1.00_9)$ Q
L **1485.3+y**, $J+8$, $\gamma_{1054.0+y}$**431.3**$_1(0.98_4)$ Q
L **1955.4+y**, $J+10$, $\gamma_{1485.3+y}$**470.1**$_1(1.02_4)$ Q
L **2463.8+y**, $J+12$, $\gamma_{1955.4+y}$**508.4**$_1(0.97_6)$ Q
L **3009.7+y**, $J+14$, $\gamma_{2463.8+y}$**545.9**$_2(0.88_5)$ Q
L **3592.1+y**, $J+16$, $\gamma_{3009.7+y}$**582.4**$_1(0.77_4)$ Q
L **4210.6+y**, $J+18$, $\gamma_{3592.1+y}$**618.5**$_2(0.73_{10})$ Q
L **4864.3+y**, $J+20$, $\gamma_{4210.6+y}$**653.7**$_2(0.61_5)$ Q
L **5552.6+y**, $J+22$, $\gamma_{4864.3+y}$**688.3**$_2(0.53_5)$ Q
L **6274.8+y**, $J+24$, $\gamma_{5552.6+y}$**722.2**$_3(0.34_5)$ Q
L **7030.4+y**, $J+26$, $\gamma_{6274.8+y}$**755.6**$_3(0.17_4)$ Q
L **7819.2+y**, $J+28$, $\gamma_{7030.4+y}$**788.8**$_6(0.09_2)$
M **z**, $J_1 \approx (21/2)$
M **252.4+z**, J_1+2, γ_{z}**252.4**$_7$
M **545.1+z**, J_1+4, $\gamma_{252.4+z}$**292.7**$_1(0.43_7)$
M **878.2+z**, J_1+6, $\gamma_{545.1+z}$**333.1**$_1(0.76_{10})$
M **1251.0+z**, J_1+8, $\gamma_{878.2+z}$**372.75**$_{10}(1.07_{14})$
M **1662.8+z**, J_1+10, $\gamma_{1251.0+z}$**411.8**$_2(0.87_{19})$
M **2113.1+z**, J_1+12, $\gamma_{1662.8+z}$**450.3**$_1(0.97_{13})$
M **2601.2+z**, J_1+14, $\gamma_{2113.1+z}$**488.1**$_2(0.83_{13})$
M **3126.4+z**, J_1+16, $\gamma_{2601.2+z}$**525.2**$_2(0.57_{16})$
M **3688.0+z**, J_1+18, $\gamma_{3126.4+z}$**561.60**$_{25}(0.65_{10})$
M **4285.2+z**, J_1+20, $\gamma_{3688.0+z}$**597.2**$_{15}(0.97_{14})$
M **4917.3+z**, J_1+22, $\gamma_{4285.2+z}$**632.15**$_{15}(0.55_{10})$
M **5583.5+z**, J_1+24, $\gamma_{4917.3+z}$**666.2**$_2(0.53_6)$
M **6283.4+z**, J_1+26, $\gamma_{5583.5+z}$**699.9**$_2(0.40_8)$
M **7016.1+z**, J_1+28, $\gamma_{6283.4+z}$**732.7**$_4$
M **7781.3+z**, J_1+30, $\gamma_{7016.1+z}$**765.2**$_4$
M **8577.8+z**, J_1+32, $\gamma_{7781.3+z}$**796.5**$_6$
N **u**, $J_2 \approx (23/2)$
N **272.0+u**, J_2+2, γ_{u}**272.0**$_{10}$
N **585.1+u**, J_2+4, $\gamma_{272.0+u}$**313.1**$_2(0.95_{16})$
N **937.7+u**, J_2+6, $\gamma_{585.1+u}$**352.55**$_{10}(0.96_{16})$
N **1329.2+u**, J_2+8, $\gamma_{937.7+u}$**391.5**$_4(1.44_{19})$
N **1758.9+u**, J_2+10, $\gamma_{1329.2+u}$**429.7**$_1$
N **2226.0+u**, J_2+12, $\gamma_{1758.9+u}$**467.1**$_2(1.07_{19})$
N **2729.9+u**, J_2+14, $\gamma_{2226.0+u}$**503.9**$_1(0.78_{14})$
N **3269.6+u**, J_2+16, $\gamma_{2729.9+u}$**539.75**$_{25}(0.70_{10})$
N **3844.6+u**, J_2+18, $\gamma_{3269.6+u}$**575.0**$_1(0.71_{12})$
N **4454.1+u**, J_2+20, $\gamma_{3844.6+u}$**609.45**$_{10}(0.64_8)$
N **5096.8+u**, J_2+22, $\gamma_{4454.1+u}$**642.7**$_2(0.50_5)$
N **5772.9+u**, J_2+24, $\gamma_{5096.8+u}$**676.1**$_3(0.40_5)$
N **6481.4+u**, J_2+26, $\gamma_{5772.9+u}$**708.5**$_3(0.33_6)$
N **7221.4+u**, J_2+28, $\gamma_{6481.4+u}$**740.0**$_3$
N **7992.7+u**, J_2+30, $\gamma_{7221.4+u}$**771.3**$_3$
N **8793.2+u**, J_2+32, $\gamma_{7992.7+u}$**800.5**$_{10}(?)$
O **v**, $J_3 \approx (25/2)$
O **280.9+v**, J_3+2, γ_{v}**280.9**$_6(0.22_5)$
O **604.5+v**, J_3+4, $\gamma_{280.9+v}$**323.6**$_2(0.58_9)$
O **971.6+v**, J_3+6, $\gamma_{604.5+v}$**367.1**$_2(0.80_{12})$
O **1381.9+v**, J_3+8, $\gamma_{971.6+v}$**410.3**$_4(0.96_{17})$
O **1834.5+v**, J_3+10, $\gamma_{1381.9+v}$**452.6**$_3(1.04_{15})$
O **2328.6+v**, J_3+12, $\gamma_{1834.5+v}$**494.1**$_2(0.79_{12})$
O **2864.0+v**, J_3+14, $\gamma_{2328.6+v}$**535.4**$_3(0.71_{15})$
O **3439.0+v**, J_3+16, $\gamma_{2864.0+v}$**575.0**$_4(0.73_{15})$
O **4053.3+v**, J_3+18, $\gamma_{3439.0+v}$**614.3**$_5(0.58_{11})$
O **4704.1+v**, J_3+20, $\gamma_{4053.3+v}$**650.8**$_6(0.50_{12})$
O **5391.7+v**, J_3+22, $\gamma_{4704.1+v}$**687.6**$_7(0.46_{11})$
O **6114.9+v**, J_3+24, $\gamma_{5391.7+v}$**723.2**$_8(0.41_9)$
O **6870.9+v**, J_3+26, $\gamma_{6114.9+v}$**756.0**$_{12}(0.32_8)$
O **7659.9+v**, J_3+28, $\gamma_{6870.9+v}$**789.0**$_{13}(0.19_5)$


J+28 789 7819.2+y
J+26 756 7030.4+y
J+24 722 6274.8+y
J+22 688 5552.6+y
J+20 654 4864.3+y
J+18 619 4210.6+y
J+16 582 3592.1+y
J+14 546 3009.7+y
J+12 508 2463.8+y
J+10 470 1955.4+y
J+8 431 1485.3+y
J+6 392 1054.0+y
J+4 352 662.4+y
J+2 311 310.9+y
J~(31/2) y
SD-1 band
(1995So17,1995Ca15)
J1+32 797 8577.8+z
J1+30 765 7781.3+z
J1+28 733 7016.1+z
J1+26 700 6283.4+z
J1+24 666 5583.5+z
J1+22 632 4917.3+z
J1+20 597 4285.2+z
J1+18 562 3688.0+z
J1+16 525 3126.4+z
J1+14 488 2601.2+z
J1+12 450 2113.1+z
J1+10 412 1662.8+z
J1+8 373 1251.0+z
J1+6 333 878.2+z
J1+4 293 545.1+z
J1+2 252 252.4+z
J1~(21/2) z
SD-2 band
(1995So17,1995Ca15)
J2+32 801 8793.2+u
J2+30 771 7992.7+u
J2+28 740 7221.4+u
J2+26 709 6481.4+u
J2+24 676 5772.9+u
J2+22 643 5096.8+u
J2+20 609 4454.1+u
J2+18 575 3844.6+u
J2+16 540 3269.6+u
J2+14 504 2729.9+u
J2+12 467 2226.0+u
J2+10 430 1758.9+u
J2+8 392 1329.2+u
J2+6 353 937.7+u
J2+4 313 585.1+u
J2+2 272 272.0+u
J2~(23/2) u
SD-3 band
(1995So17,1995Ca15)
J3+28 789 7659.9+v
J3+26 756 6870.9+v
J3+24 723 6114.9+v
J3+22 688 5391.7+v
J3+20 651 4704.1+v
J3+18 614 4053.3+v
J3+16 575 3439.0+v
J3+14 535 2864.0+v
J3+12 494 2328.6+v
J3+10 453 1834.5+v
J3+8 410 1381.9+v
J3+6 367 971.6+v
J3+4 324 604.5+v
J3+2 281 280.9+v
J3~(25/2) v
SD-4 band
(1995Ca15)

$^{191}_{80}Hg_{111}$

$^{192}_{80}$Hg$_{112}$

S$_n$: 9.46x10^3$_{SY}$, S$_p$: 5.5x10^3$_{SY}$

Nuclear Bands

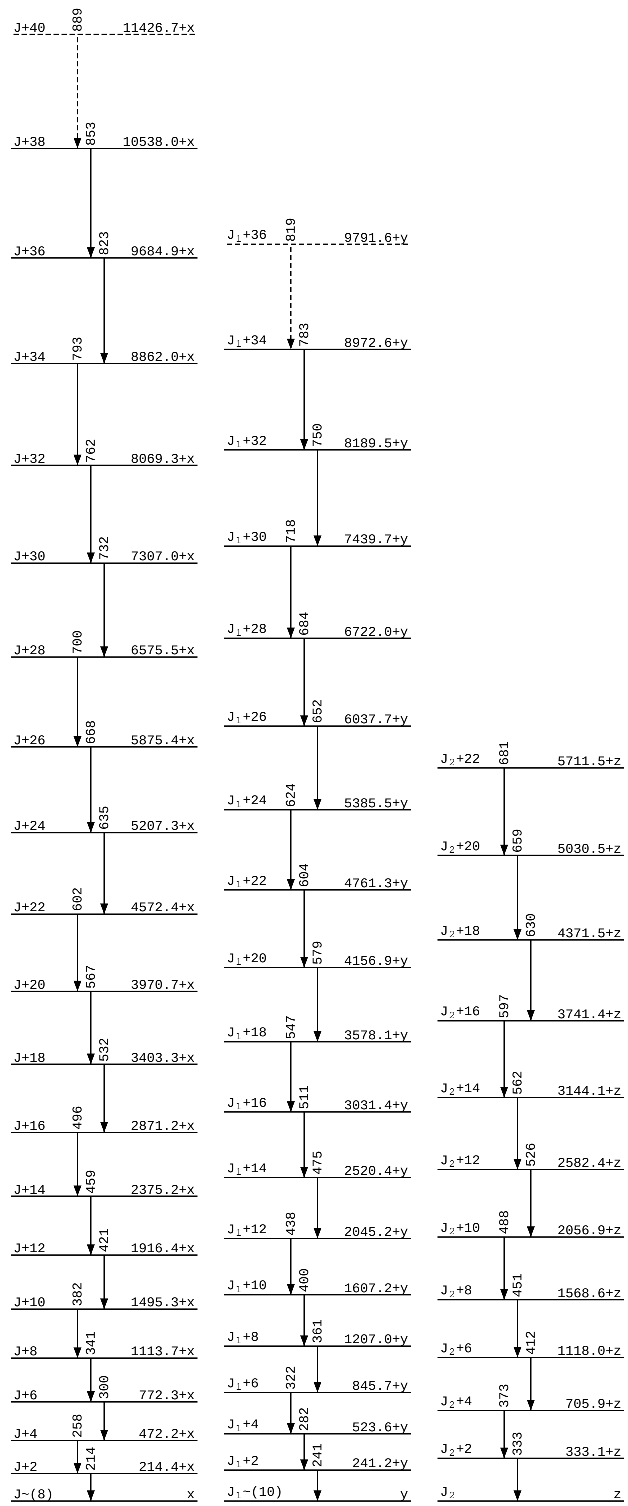
A GS band
B AE band, α=1
C AF band, α=0
D AB band, α=0
E α=0 vibrational band
F ABCF band, α=0
G ABCE band, α=1
H ABCD band, α=0
I ABDE band
J Magnetic-dipole rotational band based on (23^-)
K Magnetic-dipole rotational band based on (22^+)
L SD-1 band (1992La07,1994Ga07,1995Fa03,1990Mo16,1994Wi06, 1995Ko17,1997Mo12,1998Bu03,2000La31)
  Q_0=20.2$_{12}$
M SD-2 band (1995Fa03,1995Ko17)
  Q_0=19.5$_{15}$
N SD-3 band (1995Fa03)

Levels and γ-ray branchings:

A **0**, 0^+, *4.85$_{20}$ h*, %ε=100
A **422.79**$_{10}$, 2^+, γ_{0}**422.8**$_1$(100) E2
A **1057.58**$_{14}$, 4^+, $\gamma_{422.79}$**634.8**$_1$(100) E2
1113.60$_{14}$, $(2)^+$, $\gamma_{422.79}$**690.8**$_1$(100_4) M1+E2 $\delta=1.7^{5}_{3}$, γ_{0}**1113.0**$_2$(≈ 34) (M1,E2)
1535.2$_4$, $(3)^+$, $\gamma_{1057.58}$**477.6**$_3$(≈ 23) M1(+E2) $\delta=0.4^{5}_{4}$, $\gamma_{422.79}$**1113.0**$_2$(≈ 100) M1,E2
1732.98$_{16}$, $(4)^+$, $\gamma_{1113.60}$**619.4**$_2$(80_{12}) E2, $\gamma_{1057.58}$**675.4**$_1$(100_6) M1+E2 $\delta=0.7^{3}_{2}$
A **1803.05**$_{16}$, 6^+, $\gamma_{1057.58}$**745.5**$_1$(100) E2
1831.62$_{21}$, $(2^+,3,4^+)$, $\gamma_{1113.60}$**717.9**$_3$(100.0_{14}), $\gamma_{1057.58}$**774.1**$_2$(71_6)
B **1843.90**$_{16}$, $(5)^-$, $\gamma_{1057.58}$**786.3**$_1$(100) E1
1844.59$_{23}$, $(3,4)$, $\gamma_{422.79}$**1421.8**$_2$(100)
1908.58$_{25}$, $1,2^+$, $\gamma_{422.79}$**1486.1**$_4$(67_8), γ_{0}**1908.4**$_3$(100_8)
B **1977.03**$_{17}$, $(7)^-$, *1.04$_6$ ns*, $\gamma_{1843.90}$**133.1**$_1$(42.4_{27}) E2, $\gamma_{1803.05}$**174.0**$_1$(100_4) E1
C **1986.9**$_{11}$(?), (6^-), $\gamma_{1843.90}$**143**(?)
2056.29$_{23}$, $(1,2^+)$, $\gamma_{422.79}$**1633.5**$_2$(100_8), γ_{0}**2056.0**$_6$(< 58)(?)
2081.69$_{23}$, $(1,2^+)$, $\gamma_{422.79}$**1658.9**$_2$(100_8), γ_{0}**2081.9**$_6$(3.5_{13})(?)
2186.98$_{21}$, $(6)^-$, $\gamma_{1843.90}$**343.1**$_2$(35_{13}) M1, $\gamma_{1803.05}$**383.9**$_2$(100_{13}) E1
C **2216.20**$_{24}$, $(8)^-$, *0.92$_5$ ns*, $\gamma_{1977.03}$**239.2**$_2$(100) M1+E2 $\delta=0.64_{11}$
B **2223.85**$_{24}$, $(9)^-$, $\gamma_{1977.03}$**246.8**$_2$(100) E2
2276.9$_4$, $1,2^+$, $\gamma_{422.79}$**1854.0**$_4$(100_9), γ_{0}**2277.0**$_6$(56_9)
2284.7$_5$, $\gamma_{1113.60}$**1171.1**$_4$(100)
2300.7$_3$, $(6,7,8)^-$, $\gamma_{1977.03}$**323.7**$_2$(100) M1+E2 $\delta=0.75^{17}_{16}$
A **2447.2**$_3$, $(8)^+$, $\gamma_{1977.03}$**470**, $\gamma_{1803.05}$**644.1**$_2$(100) (E2)
2507.3$_3$, $(10)^+$, *3.6$_5$ ns*, $\gamma_{2447.2}$**60.1**(≈ 2.2) E2, $\gamma_{2223.85}$**283.4**$_2$(100_{20}) (E1)
2534.2$_5$(?), $\gamma_{1535.2}$**999.0**$_3$(100)(?)
D **2535.5**$_4$, (12^+), *11.1$_5$ ns*, $\gamma_{2507.3}$**28.4**(100) (E2)
C **2632.7**$_3$, (10^-), $\gamma_{2223.85}$**408.8**$_2$(38), $\gamma_{2216.20}$**416.5**$_2$(100)
2657.1$_{11}$(?), $\gamma_{1803.05}$**854**(100)(?)
B **2756.7**$_3$, (11^-), $\gamma_{2223.85}$**532.9**$_2$(100) (E2)
2902.3$_{11}$, (10^+), $\gamma_{2507.3}$**395**
D **2951.7**$_4$, (14^+), $\gamma_{2535.5}$**416.3**$_2$(100) (E2)
E **3047.0**$_4$, (12^+), $\gamma_{2902.3}$**144**, $\gamma_{2535.5}$**511.3**$_3$, $\gamma_{2507.3}$**539.7**$_3$ (E2)
C **3261.9**$_3$, (12^-), $\gamma_{2756.7}$**505.2**$_3$(3.8), $\gamma_{2632.7}$**629.2**$_2$(100) (E2)
B **3449.6**$_4$, (13^-), $\gamma_{2756.7}$**692.9**$_2$(100) (E2)
D **3608.6**$_5$, (16^+), $\gamma_{2951.7}$**656.8**$_2$(100) (E2)
E **3669.8**$_4$, (14^+), $\gamma_{3047.0}$**622.7**$_3$(100) (E2), $\gamma_{2951.7}$**718.4**$_3$(63), $\gamma_{2535.5}$**1134**
3725.6$_5$, (14^+), $\gamma_{3047.0}$**678.7**$_3$(100) (E2), $\gamma_{2535.5}$**1190**
F **3894.9**$_4$, (14^-), $\gamma_{3449.6}$**445.2**$_3$(3.8), $\gamma_{3261.9}$**633.0**$_2$(100) (E2)
C **3984.9**$_8$, (14^-), $\gamma_{3261.9}$**723**
G **4010.5**$_4$, (15^-), $\gamma_{3449.6}$**560.9**$_2$(100) (E2), $\gamma_{2951.7}$**1058.7**$_3$(24)
F **4089.9**$_4$, (16^-), *0.39$_4$ ns*, $\gamma_{3984.9}$**105**, $\gamma_{3894.9}$**195.0**$_2$ E2
E **4130.6**$_5$, (16^+), $\gamma_{3725.6}$**405.0**$_3$(26) (E2), $\gamma_{3669.8}$**460.9**$_3$(100) (E2), $\gamma_{3608.6}$**521.9**$_3$(30), $\gamma_{2951.7}$**1179**
G **4216.9**$_4$, (17^-), $\gamma_{4089.9}$**126.9**$_3$(33), $\gamma_{4010.5}$**206.5**$_2$(100) (E2)
F **4387.7**$_5$, (18^-), $\gamma_{4089.9}$**297.7**$_2$(100) (E2)
D **4389.4**$_5$, (18^+), $\gamma_{3608.6}$**780.8**$_2$(100) (E2)
I **4519.8**$_{10}$, (17^-), $\gamma_{4216.9}$**303**
G **4588.4**$_4$, (19^-), $\gamma_{4387.7}$**200.7**$_3$(8.2) (M1), $\gamma_{4216.9}$**371.5**$_2$(100) (E2)
E **4741.6**$_5$, (18^+), $\gamma_{4130.6}$**611.0**$_2$(100)
F **4950.5**$_5$, (20^-), $\gamma_{4387.7}$**562.8**$_3$(100) (E2)
I **5021.6**$_{10}$, (19^-), $\gamma_{4519.8}$**502**
H **5130.7**$_5$, (20^+), $\gamma_{4389.4}$**741.3**$_2$(100) (E2)
G **5216.0**$_5$, (21^-), $\gamma_{4588.4}$**627.6**$_2$(100)
D **5271.6**$_6$, (20^+), $\gamma_{4389.4}$**882.2**$_3$(100)
E **5316.5**$_6$, (20^+), $\gamma_{4741.6}$**574.8**$_3$(100) (E2)
I **5543.5**$_7$, (21^-), $\gamma_{5021.6}$**522**, $\gamma_{4950.5}$**593**, $\gamma_{4588.4}$**955**
5587.1$_8$, (20^+), $\gamma_{5316.5}$**270**, $\gamma_{4741.6}$**846**
F **5655.2**$_6$, $(22)^-$, $\gamma_{4950.5}$**704.7**$_3$(100) (E2)
H **5700.6**$_6$, $(22)^+$, $\gamma_{5130.7}$**569.9**$_2$(100) (E2)
E **5787.9**$_6$, (22^+), $\gamma_{5316.5}$**471.4**$_3$(100)
G **6012.2**$_6$, (23^-), $\gamma_{5216.0}$**796.2**$_3$(100) (E2)
D **6112.6**$_9$, (22^+), $\gamma_{5271.6}$**841**, $\gamma_{5130.7}$**982**
I **6125.5**$_8$, (23^-), $\gamma_{5543.5}$**582**, $\gamma_{5216.0}$**910**
6233.6$_{12}$, (22^+), $\gamma_{5271.6}$**962**
6294.6$_{10}$, (22^+), $\gamma_{5316.5}$**978**
J **6303.3**$_9$, (22^+), $\gamma_{5587.1}$**716**, $\gamma_{5316.5}$**987**
H **6428.1**$_6$, $(24)^+$, $\gamma_{5787.9}$**640**, $\gamma_{5700.6}$**727.5**$_3$(100) (E2)
J **6432.8**$_{11}$, (23^+), *10^{4}_{3} ps*, $\gamma_{6303.3}$**129.8** (M1), $\gamma_{6294.6}$**138**
F **6437.6**$_7$, (24^-), $\gamma_{5655.2}$**782.3**$_3$(100)
J **6709.4**$_{11}$, (24^+), *14^{3}_{4} ps*, $\gamma_{6432.8}$**276.3**(100) (M1), $\gamma_{6303.3}$**405.9**(29) E2
G **6855.0**$_6$, (25^-), $\gamma_{6012.2}$**842.8**$_3$(100)
K **6878.4**$_{11}$, (23^-)
I **6949.2**$_{10}$, (25^-), $\gamma_{6125.5}$**823**
K **7035.3**$_{10}$, (24^-), $\gamma_{6878.4}$**157**
J **7043.3**$_{12}$, (25^+), *0.7^{7}_{11} ps*, $\gamma_{6709.4}$**333.6**(35) (M1), $\gamma_{6432.8}$**611.0**(100) E2
F **7267.6**$_{12}$, (26^-), $\gamma_{6437.6}$**830**
K **7272.5**$_8$, (25^-), $\gamma_{7035.3}$**237**, $\gamma_{6878.4}$**394**, $\gamma_{6125.5}$**1148**, $\gamma_{6012.2}$**1260**
H **7320.1**$_{12}$, (26^+), $\gamma_{6428.1}$**892**
J **7434.9**$_{13}$, (26^+), *2.5^{13}_{7} ps*, $\gamma_{7043.3}$**391.9**(89) (M1), $\gamma_{6709.4}$**725.3**(100) E2
K **7516.1**$_9$, (26^-), $\gamma_{7272.5}$**244**, $\gamma_{7035.3}$**481**
7684.9$_9$, $(25^-,26^-)$, $\gamma_{7272.5}$**413**, $\gamma_{6437.6}$**1247**
G **7722.0**$_{12}$, (27^-), $\gamma_{6855.0}$**867**
K **7787.8**$_8$, (27^-), $\gamma_{7684.9}$**103**, $\gamma_{7516.1}$**272**, $\gamma_{7272.5}$**515**, $\gamma_{6855.0}$**933**
I **7819.6**$_{10}$, (27^-), $\gamma_{7516.1}$**304**, $\gamma_{6949.2}$**870**
7838.4$_{11}$, $(26^-,27^-)$, $\gamma_{6949.2}$**889**
K **7926.7**$_{10}$, (28^-), $\gamma_{7838.4}$**88**, $\gamma_{7819.6}$**107**, $\gamma_{7787.8}$**139**, $\gamma_{7516.1}$**410**(?)
J **7959.0**$_{14}$, (27^+), *1.2$_{10}$ ps*, $\gamma_{7434.9}$**524.4**(100) (M1), $\gamma_{7043.3}$**915.6**(60) E2
8180.7$_{16}$, (28^+), $\gamma_{7959.0}$**222**
F **8194.6**$_{16}$, (28^-), $\gamma_{7267.6}$**927**
8207.6$_{16}$, (28^-), $\gamma_{7267.6}$**940**
8224.3$_{11}$, (28^-), $\gamma_{7838.4}$**386**, $\gamma_{7819.6}$**405**, $\gamma_{7516.1}$**708**
K **8263.5**$_{11}$, (29^-), $\gamma_{7926.7}$**337**, $\gamma_{7787.8}$**476**
J **8302.6**$_{14}$, (28^+), *0.5$_5$ ps*, $\gamma_{7959.0}$**343.4**(59) (M1), $\gamma_{7434.9}$**867.6**(100) E2
H **8331.1**$_{16}$, (28^+), $\gamma_{7320.1}$**1011**
K **8543.2**$_{12}$, (30^-), $\gamma_{8263.5}$**280**, $\gamma_{7926.7}$**616**
G **8631.0**$_{16}$, (29^-), $\gamma_{7722.0}$**909**
8693.0$_{16}$, (29^-), $\gamma_{7722.0}$**971**
J **8712.6**$_{15}$, (29^+), *0.14^{49}_{14} ps*, $\gamma_{8302.6}$**409.1**(100) (M1), $\gamma_{7959.0}$**753.7**(66) E2
J **8961.3**$_{15}$, (30^+), *0.9$_4$ ps*, $\gamma_{8712.6}$**248.1**(100) (M1), $\gamma_{8302.6}$**659.2**(90) E2, $\gamma_{8180.7}$**781**
K **8990.2**$_{13}$, (31^-), $\gamma_{8543.2}$**447**, $\gamma_{8263.5}$**727**
J **9196.0**$_{16}$, (31^+), *2.4^{4}_{3} ps*, $\gamma_{8961.3}$**234.8**(100) (M1), $\gamma_{8712.6}$**483.2**(16) E2
J **9375.9**$_{17}$, (32^+), *1.5$_3$ ps*, $\gamma_{9196.0}$**179.8**(100) (M1), $\gamma_{8961.3}$**414.6**(18)

E2

K **9443.4**$_{13}$, (32^-), $\gamma_{\mathbf{8990.2}}$**454**, $\gamma_{\mathbf{8543.2}}$**900**
J **9666.0**$_{18}$, (33^+), $\gamma_{\mathbf{9375.9}}$**290**, $\gamma_{\mathbf{9196.0}}$**470**
K **9932.8**$_{14}$, (33^-), $\gamma_{\mathbf{9443.4}}$**490**, $\gamma_{\mathbf{8990.2}}$**942**
J **10038.0**$_{20}$, (34^+), $\gamma_{\mathbf{9666.0}}$**372**
K **10464.4**$_{17}$, (34^-), $\gamma_{\mathbf{9932.8}}$**532**(?), $\gamma_{\mathbf{9443.4}}$**1021**
L **x**, $J\approx(8)$
L **214.4+x**, $J+2$, <77 *ps*, $\gamma_{\mathbf{x}}$**214.4**$_3(0.08_2)$ (E2)
L **472.2+x**, $J+4$, 3.7^{18}_{6} *ps*, $\gamma_{\mathbf{214.4+x}}$**257.8**$_1(0.88_5)$ (E2)
L **772.3+x**, $J+6$, 1.74^{22}_{17} *ps*, $\gamma_{\mathbf{472.2+x}}$**300.1**$_1(1.01_5)$ (E2)
L **1113.7+x**, $J+8$, 0.84^{22}_{20} *ps*, $\gamma_{\mathbf{772.3+x}}$**341.4**$_1(1.07_6)$ (E2)
L **1495.3+x**, $J+10$, 0.48^{62}_{13} *ps*, $\gamma_{\mathbf{1113.7+x}}$**381.6**$_1(1.04_5)$ (E2)
L **1916.4+x**, $J+12$, $\gamma_{\mathbf{1495.3+x}}$**421.1**$_2$ (E2)
L **2375.2+x**, $J+14$, 0.18^{5}_{4} *ps*, $\gamma_{\mathbf{1916.4+x}}$**458.8**$_2(1.08_6)$ (E2)
L **2871.2+x**, $J+16$, 0.137^{17}_{21} *ps*, $\gamma_{\mathbf{2375.2+x}}$**496.0**$_2(0.94_6)$ (E2)
L **3403.3+x**, $J+18$, 0.093^{10}_{14} *ps*, $\gamma_{\mathbf{2871.2+x}}$**532.1**$_2(0.88_5)$ (E2)
L **3970.7+x**, $J+20$, 0.068^{10}_{11} *ps*, $\gamma_{\mathbf{3403.3+x}}$**567.4**$_2(0.69_4)$ (E2)
L **4572.4+x**, $J+22$, 0.062^{10}_{7} *ps*, $\gamma_{\mathbf{3970.7+x}}$**601.7**$_2(0.71_4)$ (E2)
L **5207.3+x**, $J+24$, 0.050^{10}_{12} *ps*, $\gamma_{\mathbf{4572.4+x}}$**634.9**$_2$ (E2)
L **5875.4+x**, $J+26$, 0.031^{9}_{8} *ps*, $\gamma_{\mathbf{5207.3+x}}$**668.1**$_2(0.55_5)$ (E2)
L **6575.5+x**, $J+28$, 0.032^{9}_{8} *ps*, $\gamma_{\mathbf{5875.4+x}}$**700.1**$_2(0.49_6)$ (E2)
L **7307.0+x**, $J+30$, 0.021^{11}_{21} *ps*, $\gamma_{\mathbf{6575.5+x}}$**731.5**$_2(0.42_6)$ (E2)
L **8069.3+x**, $J+32$, 0.019^{18}_{19} *ps*, $\gamma_{\mathbf{7307.0+x}}$**762.3**$_3(0.31_5)$ (E2)
L **8862.0+x**, $J+34$, $\gamma_{\mathbf{8069.3+x}}$**792.7**$_4(0.29_4)$ (E2)
L **9684.9+x**, $J+36$, $\gamma_{\mathbf{8862.0+x}}$**822.9**$_4(0.06_2)$ (E2)
L **10538.0+x**, $J+38$, $\gamma_{\mathbf{9684.9+x}}$**853.1**$_5(0.03_1)$
L **11426.7+x**(?), $J+40$, $\gamma_{\mathbf{10538.0+x}}$**888.7**$_7(\leq 0.05)$(?)
M **y**, $J_1\approx(10)$
M **241.2+y**, J_1+2, $\gamma_{\mathbf{y}}$**241.2**
M **523.6+y**, J_1+4, $\gamma_{\mathbf{241.2+y}}$**282.4**$_2(0.71_8)$
M **845.7+y**, J_1+6, $\gamma_{\mathbf{523.6+y}}$**322.1**$_2(1.03_8)$
M **1207.0+y**, J_1+8, $\gamma_{\mathbf{845.7+y}}$**361.3**$_2(1.00_7)$
M **1607.2+y**, J_1+10, $\gamma_{\mathbf{1207.0+y}}$**400.2**$_2(0.99_6)$
M **2045.2+y**, J_1+12, $\gamma_{\mathbf{1607.2+y}}$**438.0**$_2(0.96_6)$
M **2520.4+y**, J_1+14, 0.14_4 *ps*, $\gamma_{\mathbf{2045.2+y}}$**475.2**$_2(0.97_7)$
M **3031.4+y**, J_1+16, 0.15^{5}_{3} *ps*, $\gamma_{\mathbf{2520.4+y}}$**511.0**$_2(1.08_7)$
M **3578.1+y**, J_1+18, 0.100_{14} *ps*, $\gamma_{\mathbf{3031.4+y}}$**546.7**$_2(1.03_6)$
M **4156.9+y**, J_1+20, 0.064_8 *ps*, $\gamma_{\mathbf{3578.1+y}}$**578.8**$_2(0.91_7)$
M **4761.3+y**, J_1+22, 0.052^{6}_{7} *ps*, $\gamma_{\mathbf{4156.9+y}}$**604.4**$_2(0.82_7)$
M **5385.5+y**, J_1+24, 0.044_6 *ps*, $\gamma_{\mathbf{4761.3+y}}$**624.2**$_3(0.55_8)$
M **6037.7+y**, J_1+26, $\gamma_{\mathbf{5385.5+y}}$**652.2**$_3(0.65_8)$
M **6722.0+y**, J_1+28, $\gamma_{\mathbf{6037.7+y}}$**684.3**$_3(0.50_8)$
M **7439.7+y**, J_1+30, $\gamma_{\mathbf{6722.0+y}}$**717.7**$_3(0.30_7)$
M **8189.5+y**, J_1+32, $\gamma_{\mathbf{7439.7+y}}$**749.8**$_4(0.19_4)$
M **8972.6+y**, J_1+34, $\gamma_{\mathbf{8189.5+y}}$**783.1**$_5(0.12_3)$
M **9791.6+y**(?), J_1+36, $\gamma_{\mathbf{8972.6+y}}$**819**$_1$(?)
N **z**, J_2
N **333.1+z**, J_2+2, $\gamma_{\mathbf{z}}$**333.1**$_3(0.66_7)$
N **705.9+z**, J_2+4, $\gamma_{\mathbf{333.1+z}}$**372.8**$_2(1.13_8)$
N **1118.0+z**, J_2+6, $\gamma_{\mathbf{705.9+z}}$**412.1**$_2(0.90_9)$
N **1568.6+z**, J_2+8, $\gamma_{\mathbf{1118.0+z}}$**450.6**$_3(0.95_8)$
N **2056.9+z**, J_2+10, $\gamma_{\mathbf{1568.6+z}}$**488.3**$_3(0.97_8)$
N **2582.4+z**, J_2+12, $\gamma_{\mathbf{2056.9+z}}$**525.5**$_4(0.80_8)$
N **3144.1+z**, J_2+14, $\gamma_{\mathbf{2582.4+z}}$**561.7**$_4(0.44_7)$
N **3741.4+z**, J_2+16, $\gamma_{\mathbf{3144.1+z}}$**597.3**$_4(0.50_7)$
N **4371.5+z**, J_2+18, $\gamma_{\mathbf{3741.4+z}}$**630.1**$_5$
N **5030.5+z**, J_2+20, $\gamma_{\mathbf{4371.5+z}}$**659.0**$_8(0.20_4)$
N **5711.5+z**, J_2+22, $\gamma_{\mathbf{5030.5+z}}$**681.0**$_{15}(0.15_8)$



SD-1 band (1992La07,1994Ga07) SD-2 band (1995Fa03,1995Ko17) SD-3 band (1995Fa03)

$^{192}_{80}\mathrm{Hg}_{112}$

$^{193}_{80}$Hg$_{113}$

S$_n$: 7070 $_{SY}$, S$_p$: 5581 $_{25}$

Nuclear Bands

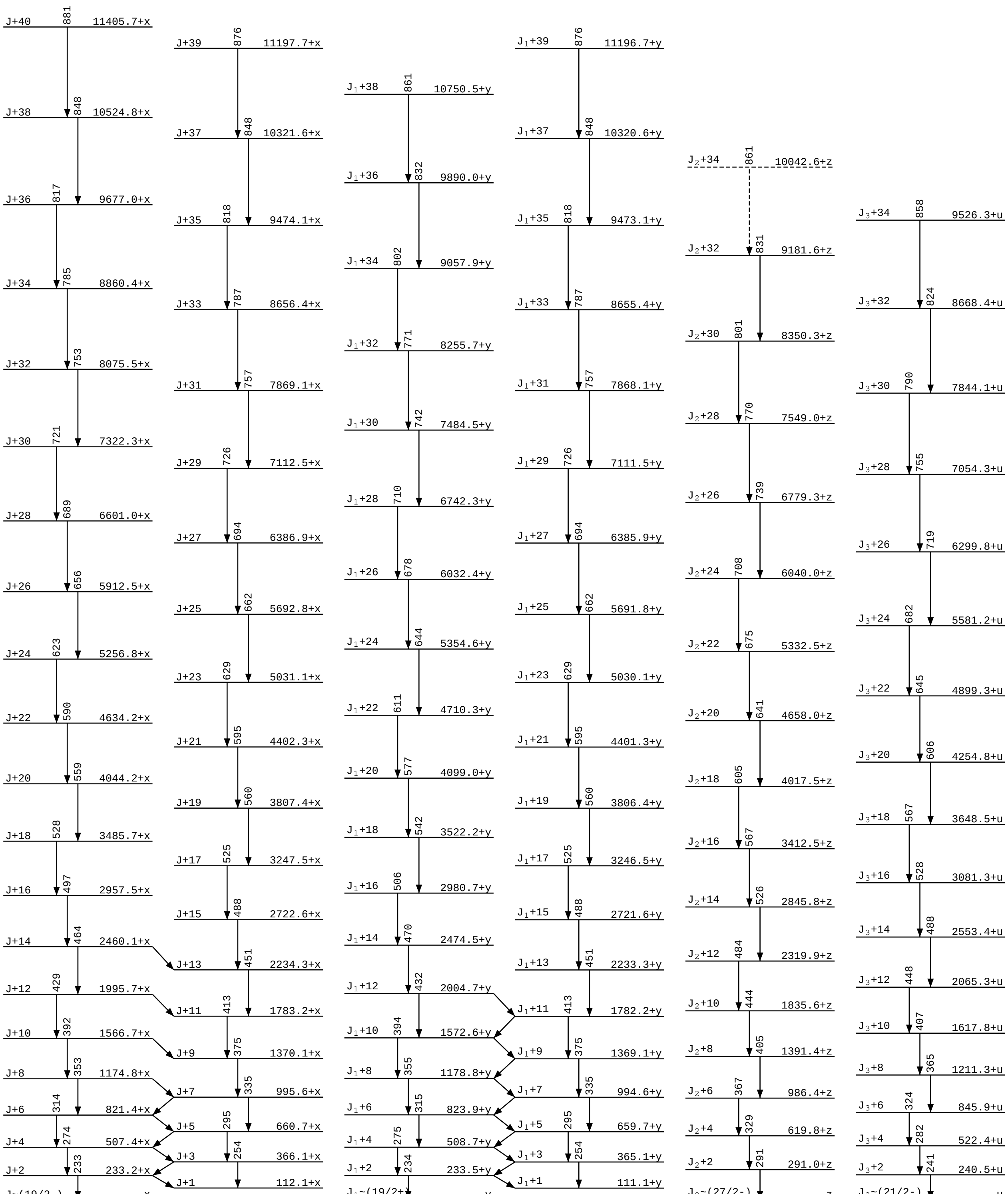
A Band based on 13/2$^+$
B Band absed on (23/2$^-$)
C Band based on (33/2$^+$)
D Band based on (39/2$^+$)
E Band based on (29/2$^+$)
F Band based on (39/2$^-$)
G Band based on (41/2$^-$)
H Band based on (21/2$^-$)
I Band based on (15/2$^+$)
J Magnetic-dipole rotational band based on (53/2$^-$)
K Magnetic-dipole rotational band based on (47/2$^-$)
L Magnetic-dipole rotational band based on (47/2$^+$)
M SD-1 band (1998Bu03,1994Jo10,1993Jo09,1990Cu05,2000Zw03)
Q$_0$=18.4$^{8}_{9}$
N SD-2 band (1998Bu03,1994Jo10,1993Jo09,1990Cu05,2000Zw03)
Q$_0$=17.3$^{11}_{9}$
O SD-3 band (1998Bu03,1994Jo10,1993Jo09,1990Cu05)
Q$_0$=17.3$^{11}_{9}$
P SD-4 band (1998Bu03,1994Jo10,1993Jo09,1990Cu05)
Q$_0$=16.1$^{15}_{14}$
Q SD-5 band (1998Bu03,1994Jo10,1993Jo09,1990Cu05)
Q$_0$=16.7$_{10}$
R SD-6 band (1998Bu03,1994Jo10)
Q$_0$=16.7$^{14}_{13}$

Levels and γ-ray branchings:

0, 3/2$^-$, *3.80$_{15}$ h*, %ε+%β$^+$=100 , μ=-0.62757$_{18}$, Q=-0.72$_{38}$
39.51$_3$, 5/2$^-$, *0.63$_3$ ns*, γ_0**39.51**$_3$(100) M1
49.95$_{14}$, (1/2$^-$), γ_0**49.5**$_{11}$(100) (M1)
A **140.76**$_5$, 13/2$^+$, *11.8$_2$ h*, %ε+%β$^+$=92.8$_5$, %IT=7.2$_5$, μ=-1.0584297$_{26}$, Q=+0.92$_{10}$, $\gamma_{39.51}$**101.25**$_4$(100) M4
207.74$_{20}$, (7/2$^-$), γ_0**207.74**$_{20}$(100) (E2)
324.36$_8$, (3/2$^-$,5/2$^-$), $\gamma_{49.95}$**274.39**$_{14}$(13.5$_{13}$) (E2), $\gamma_{39.51}$**284.89**$_{13}$(21.6$_{10}$) (M1), γ_0**324.37**$_{10}$(100) (M1)
344.00$_{10}$, (1/2$^-$,3/2$^-$), $\gamma_{49.95}$**294.08**$_{25}$(10.3$_{12}$) (M1), γ_0**343.99**$_{10}$(100$_4$) (M1+E2) $\delta = 1.7^{17}_{6}$
374.61$_{10}$, (3/2$^-$,5/2$^-$,7/2$^-$), $\gamma_{324.36}$**49.5**$_{11}$(40$_{19}$) (M1), $\gamma_{39.51}$**335.11**$_{10}$(100$_4$) (M1), γ_0**374.58**$_{22}$(29$_3$) (E2)
A **522.8**$_2$, (17/2$^+$), $\gamma_{140.76}$**382.0**$_2$(100) E2
I **746.8**$_4$, (15/2$^+$), $\gamma_{140.76}$**606.0**$_4$(100) (M1+E2)
752.6$_3$, (1/2$^-$,3/2$^-$,5/2$^-$), $\gamma_{39.51}$**713.0**$_4$(52$_6$) (E2), γ_0**752.5**$_4$(100$_{15}$) (M1)
1026.5$_5$, (13/2$^+$,15/2$^+$), $\gamma_{140.76}$**885.7**$_6$(100)
A **1145.3**$_4$, (21/2$^+$), $\gamma_{522.8}$**622.7**$_3$(100) E2
I **1380.3**$_4$, (19/2$^+$), $\gamma_{746.8}$**633.5**$_4$(67) E2, $\gamma_{522.8}$**857.5**$_4$(100) (M1+E2)
1523.2$_4$, (17/2$^+$,19/2$^+$), $\gamma_{1026.5}$**496.7**$_6$(33) (E2), $\gamma_{522.8}$**1000.4**$_4$(100) (M1+E2)
1523.3$_3$, (1/2$^-$,3/2$^-$,5/2$^-$), $\gamma_{752.6}$**770.4**$_4$(100$_6$) (M1+E2) $\delta = 0.9^{10}_{5}$, $\gamma_{39.51}$**1484.1**$_7$(26$_8$), γ_0**1523.4**$_4$(62$_{15}$)
1580.1$_3$, (1/2$^-$,3/2,5/2$^-$), $\gamma_{374.61}$**1205.4**$_3$(23$_3$), $\gamma_{324.36}$**1256.0**$_3$(23$_4$), $\gamma_{39.51}$**1539.4**$_{10}$(20$_5$), γ_0**1579.3**$_{10}$(100$_{22}$)
1735.8$_7$, (19/2$^+$), $\gamma_{746.8}$**989.0**$_7$(100) (E2)
H **1755.6**$_3$, (21/2$^-$), $\gamma_{1735.8}$**(19.9)**(< 1), $\gamma_{1523.2}$**232.3**$_4$(64$_2$) (D), $\gamma_{1380.3}$**375.2**$_4$(100$_3$) (E1), $\gamma_{1145.3}$**610.5**$_5$(31$_3$)
A **1884.2**$_5$, (25/2$^+$), $\gamma_{1145.3}$**738.9**$_4$(100) E2
H **1886.2**$_5$, (25/2$^-$), *1.58$_6$ ns*, $\gamma_{1755.6}$**130.5**$_4$(100) E2
B **1890.8**$_4$, (23/2$^-$), $\gamma_{1755.6}$**135.0**$_7$(21) (M1+E2), $\gamma_{1145.3}$**745.5**$_4$(100) (D)
B **2095.9**$_5$, (27/2$^-$), $\gamma_{1890.8}$**205.1**$_2$(100) E2, $\gamma_{1886.2}$**209.6**$_7$(8), $\gamma_{1884.2}$**211.9**$_7$(6) (E1)
H **2189.1**$_5$, (29/2$^-$), $\gamma_{2095.9}$**93.4**$_{10}$(1.0$_3$), $\gamma_{1886.2}$**302.9**$_4$(100$_2$) E2
2289.5$_7$, (27/2$^-$), $\gamma_{1886.2}$**403.2**$_6$(100) (D)
2351.8$_7$, (25/2$^+$), $\gamma_{1145.3}$**1206.6**$_7$(100)
E **2502.1**$_6$, (29/2$^+$), $\gamma_{2351.8}$**150.5**$_8$(3) Q, $\gamma_{1884.2}$**617.8**$_4$(100) Q
B **2583.6**$_5$, 31/2$^-$, $\gamma_{2189.1}$**394.7**$_7$(5$_1$), $\gamma_{2095.9}$**487.7**$_4$(100$_2$) E2
2617.2$_6$, (29/2$^-$), $\gamma_{2289.5}$**327.7**$_6$(100.0$_{23}$) (D), $\gamma_{2189.1}$**428.1**$_6$(89$_{11}$), $\gamma_{2095.9}$**521.3**$_8$(23$_5$), $\gamma_{1886.2}$**731.1**$_7$(40.9$_{23}$)
A **2641.7**$_7$, (29/2$^+$), $\gamma_{1884.2}$**757.5**$_5$(100) (E2)
E **2695.6**$_6$, 33/2$^+$, *0.57$_3$ ns*, $\gamma_{2502.1}$**193.5**$_4$(100) (E2)
H **2762.2**$_6$, 33/2$^-$, $\gamma_{2189.1}$**573.0**$_4$(100) (E2)
E **3176.2**$_7$, 37/2$^+$, $\gamma_{2695.6}$**480.6**$_4$(100) (E2)
3196.0$_7$, (33/2$^+$), $\gamma_{2695.6}$**500.3**$_{10}$(< 25), $\gamma_{2641.7}$**554.4**$_7$(100$_{25}$) (Q)
3202.5$_7$, (33/2$^-$), $\gamma_{2617.2}$**585.2**$_7$(100$_4$), $\gamma_{2189.1}$**1013.4**$_7$(62$_{19}$)
3220.1$_7$, (33/2$^-$), $\gamma_{2617.2}$**602.9**$_7$(100)
B **3223.6**$_6$, (35/2$^-$), $\gamma_{2762.2}$**461.4**$_7$(12$_1$), $\gamma_{2583.6}$**640.0**$_4$(100$_2$) (E2)
C **3260.2**$_7$, (33/2$^+$), $\gamma_{2695.6}$**564.7**$_9$(20$_3$), $\gamma_{2502.1}$**758.2**$_6$(100$_6$) (Q)
H **3497.4**$_6$, (37/2$^-$), $\gamma_{2762.2}$**735.2**$_4$(100) (E2)
C **3570.1**$_7$, (37/2$^+$), $\gamma_{3260.2}$**309.9**$_6$(70) (E2), $\gamma_{3176.2}$**393.9**$_6$(100)
3727.0$_6$, (37/2$^-$), $\gamma_{3220.1}$**507.0**$_7$(83$_4$), $\gamma_{3202.5}$**524.5**$_7$(100$_{13}$), $\gamma_{2762.2}$**965.0**$_7$(50$_{21}$)
3754.2$_8$, (37/2$^+$), $\gamma_{3196.0}$**558.2**$_7$(100$_{30}$) (Q), $\gamma_{2695.6}$**1058.6**$_{10}$(54$_8$)
3811(?), $\gamma_{2695.6}$**1115**(?)
3850.6$_8$, (37/2$^-$), $\gamma_{2762.2}$**1088.5**$_7$(100) Q
E **3880.5**$_7$, (41/2$^+$), $\gamma_{3176.2}$**704.3**$_4$(100) (E2)
F **3883.8**$_6$, (39/2$^-$), $\gamma_{3223.6}$**660.2**$_4$(100) Q
D **4119.7**$_8$, (39/2$^+$), $\gamma_{3570.1}$**549.5**$_9$(22$_3$), $\gamma_{3176.2}$**943.5**$_6$(100$_3$) D
C **4120.4**$_{10}$, (41/2$^+$), $\gamma_{3570.1}$**550.3**$_6$(100) (E2)
G **4150.8**$_7$, (41/2$^-$), $\gamma_{3497.4}$**653.3**$_4$(100) Q
4197.9$_7$, (39/2$^-$), $\gamma_{3883.8}$**314.2**$_8$(83$_{25}$), $\gamma_{3223.6}$**974.4**$_7$(100$_{25}$)
F **4396.7**$_7$, (43/2$^-$), $\gamma_{3883.8}$**512.9**$_4$(100) (E2)
H **4412.5**$_7$, 41/2$^-$, $\gamma_{3850.6}$**561.9**$_7$(24$_4$) Q, $\gamma_{3727.0}$**685.7**$_7$(20$_4$), $\gamma_{3497.4}$**915.1**$_5$(100.0$_{14}$) (E2)
4416.7$_{10}$, $\gamma_{3176.2}$**1240.5**$_7$(100)
4462.2$_{12}$, $\gamma_{3176.2}$**1286.0**$_{10}$
4539.0$_7$, (41/2$^+$), $\gamma_{3754.2}$**784.8**$_7$(100$_8$) (E2), $\gamma_{3176.2}$**1362.8**$_7$(56$_4$)
G **4674.1**$_7$, (45/2$^-$), $\gamma_{4150.8}$**523.2**$_4$(100) (E2)
D **4683.8**$_{10}$, (43/2$^+$), $\gamma_{4119.7}$**564.1**$_6$(100) (E2)
E **4688.4**$_9$, (45/2$^+$), $\gamma_{3880.5}$**807.9**$_5$(100) (E2)
4720.6$_8$, (39/2$^-$), $\gamma_{3727.0}$**993.6**$_7$(100)
4791.9$_7$, (41/2$^-$), $\gamma_{4720.6}$**(71.3)**, $\gamma_{4197.9}$**594.1**$_7$(100$_5$), $\gamma_{3883.8}$**908.2**$_7$(91$_{14}$) D, $\gamma_{3727.0}$**1064.8**$_8$(41$_{14}$), $\gamma_{3497.4}$**1294.4**$_9$(32$_{14}$)
4864.9$_8$, (43/2$^-$), $\gamma_{4791.9}$**(72.9)**, $\gamma_{4720.6}$**144.5**$_{10}$
C **4889.8**$_{11}$, (45/2$^+$), $\gamma_{4120.4}$**769.4**$_6$(100) (E2)
4958.4$_7$, (45/2$^-$), $\gamma_{4412.5}$**546.0**$_5$(100$_2$) (E2), $\gamma_{4396.7}$**561.4**$_7$(45$_5$)
4963.9$_{12}$, (43/2), $\gamma_{4120.4}$**843.5**$_7$(100) D
5033.1$_{11}$, $\gamma_{3880.5}$**1152.6**$_8$(100)
F **5047.9**$_9$, (47/2$^-$), $\gamma_{4396.7}$**651.2**$_6$(100) (E2)
5117.3$_8$, (45/2$^-$), $\gamma_{4864.9}$**252.5**$_4$(100.0$_{18}$) D, $\gamma_{4791.9}$**325.5**$_8$(3.6$_5$)(?)
5319.9$_8$, (43/2), $\gamma_{4150.8}$**1169.0**$_7$(100)
K **5339.0**$_8$, (47/2$^-$), $\gamma_{5117.3}$**221.7**$_4$(100$_3$) D, $\gamma_{4864.9}$**474.2**$_6$(29.2$_9$) (Q)
D **5361.7**$_{13}$, (47/2$^+$), $\gamma_{4683.8}$**677.9**$_7$(100)
5391.8$_9$, $\gamma_{3880.5}$**1511.5**$_7$(100)
5400.3$_{13}$, $\gamma_{4683.8}$**716.5**$_7$(100) D
G **5411.5**$_9$, (49/2$^-$), $\gamma_{4674.1}$**737.4**$_5$(100) (E2)
5442.5$_7$, (45/2$^+$), $\gamma_{5319.9}$**123.0**$_9$(9$_2$) D, $\gamma_{4539.0}$**903.5**$_6$(100$_2$), $\gamma_{4396.7}$**1046.0**$_7$(28$_2$), $\gamma_{3880.5}$**1562.0**$_{10}$(6$_2$)
L **5547.5**$_7$, (47/2$^+$), $\gamma_{5442.5}$**105.2**$_7$(19$_2$) D, $\gamma_{5391.8}$**155.9**$_9$(10$_2$), $\gamma_{5319.9}$**227.4**$_7$(19$_2$), $\gamma_{4958.4}$**589.1**$_7$(21$_2$), $\gamma_{4674.1}$**873.4**$_5$(100$_2$) D
E **5559.5**$_{11}$, (49/2$^+$), $\gamma_{4688.4}$**871.1**$_6$(100) (E2)
5560.5$_9$, (47/2$^-$), $\gamma_{5117.3}$**443.2**$_6$(100) (D)
5678.3$_8$, (49/2$^-$), $\gamma_{5339.0}$**339.4**$_8$(18$_4$), $\gamma_{4958.4}$**719.8**$_6$(100$_9$)
C **5698.0**$_{13}$, (49/2$^+$), $\gamma_{4889.8}$**808.2**$_7$(100) (E2)
5702.7$_8$, (49/2$^-$), $\gamma_{5339.0}$**363.6**$_7$(86$_3$) (D), $\gamma_{4958.4}$**744.4**$_7$(100$_{17}$)
K **5714.8**$_{13}$(?), (49/2$^-$), $\gamma_{5339.0}$**375.8**$_{10}$(100)(?)
5747.5$_9$, (49/2$^-$), $\gamma_{4958.4}$**789.0**$_8$(100)
5800.6$_9$, (49/2$^-$), $\gamma_{5560.5}$**240.1**$_6$(95$_9$), $\gamma_{5339.0}$**461.5**$_6$(100$_9$)
L **5832.0**$_7$, (49/2$^+$), $\gamma_{5547.5}$**284.5**$_4$(100.0$_{22}$) M1, $\gamma_{5442.5}$**389.6**$_7$(5.8$_4$) (Q)
F **5899.0**$_{11}$, (51/2$^-$), $\gamma_{5047.9}$**851.1**$_6$(100)
K **6017.0**$_{12}$, (51/2$^-$), $\gamma_{5714.8}$**302.2**$_9$(86$_{29}$)(?), $\gamma_{5339.0}$**678.0**$_9$(100$_{14}$) (Q)
L **6067.6**$_7$, (51/2$^+$), $\gamma_{5832.0}$**235.6**$_4$(100.0$_{19}$) M1, $\gamma_{5547.5}$**520.1**$_4$(50.6$_{12}$) (Q)
6103.8$_8$, (51/2$^-$), $\gamma_{5702.7}$**401.1**$_6$(100$_3$) D, $\gamma_{5678.3}$**425.5**$_7$(47$_9$), $\gamma_{5560.5}$**543.5**$_{10}$(16$_3$), $\gamma_{5339.0}$**765.0**$_7$(53$_3$)
6145.2$_9$, (51/2$^-$), $\gamma_{5702.7}$**442.6**$_7$(100$_{11}$) D, $\gamma_{5339.0}$**806.0**$_7$(41$_4$)
D **6163.6**$_{14}$, (51/2$^+$), $\gamma_{5361.7}$**801.9**$_7$(100)

6305.2$_9$, $(53/2^-)$, $\gamma_{5747.5}$**557.7**$_7(28_9)$, $\gamma_{5678.3}$**626.8**$_6(100.0_{18})$
G **6394.9**$_{11}$, $(53/2^-)$, $\gamma_{5411.5}$**983.4**$_7(100)$ (E2)
K **6401.0**$_{16}$, $(53/2^-)$
J **6419.4**$_8$, $(53/2^-)$, $\gamma_{6305.2}$**113.9**$_{10}(<7)$, $\gamma_{6145.2}$**274.2**$_6(42_{14})$ D, $\gamma_{6103.8}$**315.6**$_6(71_7)$ D, $\gamma_{5800.6}$**618.7**$_5(100_8)$, $\gamma_{5702.7}$**716.7**$_7(26_4)$
6428.5$_{13}$, $(53/2^+)$, $\gamma_{5559.5}$**869.0**$_8(100)$
L **6464.6**$_8$, $(53/2^+)$, $\gamma_{6067.6}$**397.0**$_4(100.0_{14})$ M1, $\gamma_{5832.0}$**632.6**$_6(38_4)$ Q
E **6496.9**$_{13}$, $(53/2^+)$, $\gamma_{5559.5}$**937.4**$_7(100)$
K **6726.3**$_{15}$, $(55/2^-)$, $\gamma_{6401.0}$**325.4**$_8(100_{22})$, $\gamma_{6017.0}$**709.3**$_8(100_{22})$ (Q)
6832.3$_8$, $(55/2^+)$, $\gamma_{6464.6}$**367.8**$_6(69_6)$ D, $\gamma_{6067.6}$**764.6**$_6(100.0_{19})$ Q
L **6839.9**$_8$, $(55/2^+)$, $\gamma_{6464.6}$**375.4**$_4(68_4)$ D, $\gamma_{6067.6}$**772.2**$_4(100.0_{19})$ (Q)
F **6913.3**$_{13}$, $(55/2^-)$, $\gamma_{5899.0}$**1014.3**$_7(100)$
J **6921.7**$_{15}$, $\gamma_{5899.0}$**1022.7**$_{10}(100)$
6921.9$_9$, $(55/2^-)$, $\gamma_{6419.4}$**502.4**$_6(100.0_{24})$ D, $\gamma_{6103.8}$**818.2**$_6(87.8_{24})$ (Q)
K **6978.6**$_{16}$, $(57/2^-)$, $\gamma_{6726.3}$**252.3**$_7(100_{36})$, $\gamma_{6401.0}$**577.6**$_8(91_{18})$ (Q)
L **7037.5**$_9$, $(57/2^+)$, $\gamma_{6839.9}$**197.6**$_4(100)$ M1, $\gamma_{6832.3}$**205.1**$_7(21)$
7038.0$_{14}$, $\gamma_{5899.0}$**1139.0**$_8(100)$
7133.3$_{10}$, $(57/2^+)$, $\gamma_{6839.9}$**293.4**$_6(100)$
7186.7$_{10}$, $(57/2^-)$, $\gamma_{6305.2}$**881.5**$_6(100)$
L **7197.9**$_9$, $(59/2^+)$, $\gamma_{7037.5}$**160.4**$_4(100)$ M1
K **7245.7**$_{17}$, $(59/2^-)$, $\gamma_{6978.6}$**267.0**$_6(100)$ D
J **7276.5**$_9$, $(57/2^-)$, $\gamma_{6921.9}$**354.7**$_6(61.5_{13})$, $\gamma_{6419.4}$**857.1**$_5(100_6)$ (Q)
7281.6$_{10}$, $(57/2^+)$, $\gamma_{6832.3}$**449.3**$_6(100)$ D
7440.0$_{12}$, $\gamma_{7133.3}$**306.7**$_6(100_6)$ D, $\gamma_{6839.9}$**600.2**$_9(24_6)$(?)
G **7476.4**$_{14}$, $(57/2^-)$, $\gamma_{6394.9}$**1081.5**$_8(100)$
7492.3$_{15}$, $\gamma_{6394.9}$**1097.4**$_{10}(100)$
L **7555.1**$_{10}$, $(61/2^+)$, $\gamma_{7197.9}$**357.3**$_4(100.0_{14})$ M1, $\gamma_{7037.5}$**517.6**$_7(11.8_7)$
K **7560.3**$_{17}$, $(61/2^-)$, $\gamma_{7245.7}$**314.7**$_6(100_3)$ D, $\gamma_{6978.6}$**581.9**$_8(31_6)$
7681.2$_{10}$, $\gamma_{6832.3}$**848.9**$_6(100)$
J **7699.5**$_9$, $(59/2^-)$, $\gamma_{7276.5}$**422.9**$_5(100_4)$ D, $\gamma_{7186.7}$**512.8**$_8(11.1_{14})$, $\gamma_{6921.9}$**777.6**$_6(68.1_{14})$ (Q)
J **7838.3**$_9$, $(61/2^-)$, $\gamma_{7699.5}$**138.8**$_4(100_3)$ D, $\gamma_{7276.5}$**561.8**$_5(52_3)$ (Q)
K **7919.9**$_{17}$, $(63/2^-)$, $\gamma_{7560.3}$**359.6**$_7(100_{11})$ D, $\gamma_{7245.7}$**674.1**$_7(75_4)$ (Q)
L **7924.8**$_{10}$, $(63/2^+)$, $\gamma_{7555.1}$**369.7**$_5(100_4)$ M1, $\gamma_{7197.9}$**726.9**$_6(80.3_{14})$ Q
J **8137.0**$_{10}$, $(63/2^-)$, $\gamma_{7838.3}$**298.7**$_4(100.0_{13})$ D, $\gamma_{7699.5}$**437.5**$_7(9.2_{20})$ (Q)
K **8330.9**$_{17}$, $(65/2^-)$, $\gamma_{7919.9}$**411.0**$_7(100_5)$ D, $\gamma_{7560.3}$**770.7**$_7(100_5)$ (Q)
L **8388.8**$_{10}$, $(65/2^+)$, $\gamma_{7924.8}$**464.0**$_6(100_9)$ D, $\gamma_{7555.1}$**833.6**$_6(88_3)$ (Q)
J **8394.8**$_{10}$, $(65/2^-)$, $\gamma_{8137.0}$**257.8**$_4(100.0_{18})$ D, $\gamma_{7838.3}$**556.5**$_6(38_4)$ (Q)
J **8750.9**$_{10}$, $(67/2^-)$, $\gamma_{8394.8}$**356.1**$_5(100_4)$ (D), $\gamma_{8137.0}$**614.0**$_6(51_6)$
K **8757.8**$_{18}$, $(67/2^-)$, $\gamma_{8330.9}$**426.9**$_7(55_5)$, $\gamma_{7919.9}$**837.8**$_7(100_5)$
L **8886.8**$_{11}$, $(67/2^+)$, $\gamma_{8388.8}$**497.9**$_7(58_3)$ D, $\gamma_{7924.8}$**962.0**$_6(100_3)$ (Q)
8978.1$_{12}$, $\gamma_{7924.8}$**1053.3**$_7(100)$
J **9221.5**$_{11}$, $(69/2^-)$, $\gamma_{8750.9}$**470.6**$_6(100.0_{20})$ D, $\gamma_{8394.8}$**826.6**$_6(68.0_{20})$ (Q)
L **9409.1**$_{12}$, $(69/2^+)$, $\gamma_{8886.8}$**522.2**(?), $\gamma_{8388.8}$**1020.3**$_6(100)$
J **9675.9**$_{11}$, $(71/2^-)$, $\gamma_{9221.5}$**454.4**$_7(65_5)$ D, $\gamma_{8750.9}$**924.9**$_7(100_5)$ (Q)
L **9923.1**$_{14}$, $(71/2^+)$, $\gamma_{9409.1}$**514.1**(?), $\gamma_{8886.8}$**1036.3**$_9(100)$
J **10290.4**$_{12}$, $(73/2^-)$, $\gamma_{9675.9}$**614.5**$_7(100_{15})$ D, $\gamma_{9221.5}$**1068.9**$_7(59_{11})$ (Q)
J **10853.6**$_{13}$, $(75/2^-)$, $\gamma_{10290.4}$**563**(?), $\gamma_{9675.9}$**1177.7**$_7(100)$ (Q)
M **x**, $J\approx(19/2^-)$
N **112.1+x**, $J+1$
M **233.2+x**, $J+2$, $\gamma_{112.1+x}$**121.1**$_5$, γ_{x}**233.2**$_2$
N **366.1+x**, $J+3$, $\gamma_{233.2+x}$**132.2**$_5$, $\gamma_{112.1+x}$**254.0**$_2$
M **507.4+x**, $J+4$, $\gamma_{366.1+x}$**141.6**$_5$, $\gamma_{233.2+x}$**274.2**$_2$
N **660.7+x**, $J+5$, $\gamma_{507.4+x}$**152.9**$_5$, $\gamma_{366.1+x}$**294.6**$_2$
M **821.4+x**, $J+6$, $\gamma_{660.7+x}$**160.7**$_5$, $\gamma_{507.4+x}$**314.0**$_2$
N **995.6+x**, $J+7$, $\gamma_{821.4+x}$**173.7**$_5$, $\gamma_{660.7+x}$**334.9**$_2$
M **1174.8+x**, $J+8$, $\gamma_{995.6+x}$**179.3**$_5$, $\gamma_{821.4+x}$**353.4**$_2$
N **1370.1+x**, $J+9$, $\gamma_{995.6+x}$**374.5**$_2$
M **1566.7+x**, $J+10$, $\gamma_{1370.1+x}$**196.9**$_5$, $\gamma_{1174.8+x}$**391.9**$_2$
N **1783.2+x**, $J+11$, $\gamma_{1370.1+x}$**413.1**$_2$
M **1995.7+x**, $J+12$, $\gamma_{1783.2+x}$**212.3**$_5$, $\gamma_{1566.7+x}$**429.0**$_2$
N **2234.3+x**, $J+13$, $\gamma_{1783.2+x}$**451.1**$_2$
M **2460.1+x**, $J+14$, $\gamma_{2234.3+x}$**226.4**$_5$, $\gamma_{1995.7+x}$**464.4**$_2$
N **2722.6+x**, $J+15$, $\gamma_{2234.3+x}$**488.3**$_2$
M **2957.5+x**, $J+16$, $\gamma_{2460.1+x}$**497.4**$_2$
N **3247.5+x**, $J+17$, $\gamma_{2722.6+x}$**524.9**$_2$
M **3485.7+x**, $J+18$, 0.132_{14} *ps*, $\gamma_{2957.5+x}$**528.2**$_2$
N **3807.4+x**, $J+19$, $\gamma_{3247.5+x}$**559.9**$_2$
M **4044.2+x**, $J+20$, 0.104_7 *ps*, $\gamma_{3485.7+x}$**558.5**$_2$
N **4402.3+x**, $J+21$, $\gamma_{3807.4+x}$**594.9**$_2$
M **4634.2+x**, $J+22$, 0.083^{7}_{14} *ps*, $\gamma_{4044.2+x}$**590.0**$_2$
N **5031.1+x**, $J+23$, $\gamma_{4402.3+x}$**628.8**$_2$
M **5256.8+x**, $J+24$, 0.062_7 *ps*, $\gamma_{4634.2+x}$**622.6**$_2$
N **5692.8+x**, $J+25$, $\gamma_{5031.1+x}$**661.7**$_2$
M **5912.5+x**, $J+26$, $\gamma_{5256.8+x}$**655.7**$_2$
N **6386.9+x**, $J+27$, $\gamma_{5692.8+x}$**694.1**$_2$
M **6601.0+x**, $J+28$, $\gamma_{5912.5+x}$**688.5**$_2$
N **7112.5+x**, $J+29$, $\gamma_{6386.9+x}$**725.6**$_2$
M **7322.3+x**, $J+30$, $\gamma_{6601.0+x}$**721.3**$_2$
N **7869.1+x**, $J+31$, $\gamma_{7112.5+x}$**756.6**$_2$
M **8075.5+x**, $J+32$, $\gamma_{7322.3+x}$**753.2**$_2$
N **8656.4+x**, $J+33$, $\gamma_{7869.1+x}$**787.3**$_2$
M **8860.4+x**, $J+34$, $\gamma_{8075.5+x}$**784.9**$_2$
N **9474.1+x**, $J+35$, $\gamma_{8656.4+x}$**817.7**$_3$
M **9677.0+x**, $J+36$, $\gamma_{8860.4+x}$**816.6**$_3$
N **10321.6+x**, $J+37$, $\gamma_{9474.1+x}$**847.5**$_4$
M **10524.8+x**, $J+38$, $\gamma_{9677.0+x}$**847.8**$_4$
N **11197.7+x**, $J+39$, $\gamma_{10321.6+x}$**876.1**$_5$
M **11405.7+x**, $J+40$, $\gamma_{10524.8+x}$**880.9**$_5$
O **y**, $J_1\approx(19/2^+)$
P **111.1+y**, J_1+1
O **233.5+y**, J_1+2, $\gamma_{111.1+y}$**122.6**$_5$, γ_{y}**233.5**$_2$
P **365.1+y**, J_1+3, $\gamma_{233.5+y}$**132.2**$_5$, $\gamma_{111.1+y}$**254.0**$_2$
O **508.7+y**, J_1+4, $\gamma_{365.1+y}$**142.7**$_5$, $\gamma_{233.5+y}$**275.2**$_2$
P **659.7+y**, J_1+5, $\gamma_{508.7+y}$**152.9**$_5$, $\gamma_{365.1+y}$**294.6**$_2$
O **823.9+y**, J_1+6, $\gamma_{659.7+y}$**162.5**$_5$, $\gamma_{508.7+y}$**315.2**$_2$
P **994.6+y**, J_1+7, $\gamma_{823.9+y}$**173.7**$_5$, $\gamma_{659.7+y}$**334.9**$_2$
O **1178.8+y**, J_1+8, $\gamma_{994.6+y}$**182.6**$_5$, $\gamma_{823.9+y}$**354.9**$_2$
P **1369.1+y**, J_1+9, $\gamma_{1178.8+y}$**192.3**$_5$, $\gamma_{994.6+y}$**374.5**$_2$
O **1572.6+y**, J_1+10, $\gamma_{1369.1+y}$**201.9**$_5$, $\gamma_{1178.8+y}$**393.8**$_2$
P **1782.2+y**, J_1+11, $\gamma_{823.9+y}$**212.9**$_5$, $\gamma_{1369.1+y}$**413.1**$_2$
O **2004.7+y**, J_1+12, $\gamma_{1782.2+y}$**220.5**$_5$, $\gamma_{1572.6+y}$**432.1**$_2$
P **2233.3+y**, J_1+13, $\gamma_{1782.2+y}$**451.1**$_2$
O **2474.5+y**, J_1+14, $\gamma_{2004.7+y}$**469.8**$_2$
P **2721.6+y**, J_1+15, $\gamma_{2233.3+y}$**488.3**$_2$
O **2980.7+y**, J_1+16, $\gamma_{2474.5+y}$**506.2**$_2$
P **3246.5+y**, J_1+17, 0.146^{14}_{21} *ps*, $\gamma_{2721.6+y}$**524.9**$_2$
O **3522.2+y**, J_1+18, $\gamma_{2980.7+y}$**541.5**$_2$
P **3806.4+y**, J_1+19, 0.076^{7}_{14} *ps*, $\gamma_{3246.5+y}$**559.9**$_2$
O **4099.0+y**, J_1+20, $\gamma_{3522.2+y}$**576.8**$_2$
P **4401.3+y**, J_1+21, 0.083_7 *ps*, $\gamma_{3806.4+y}$**594.9**$_2$
O **4710.3+y**, J_1+22, $\gamma_{4099.0+y}$**611.3**$_2$
P **5030.1+y**, J_1+23, $\gamma_{4401.3+y}$**628.8**$_2$
O **5354.6+y**, J_1+24, $\gamma_{4710.3+y}$**644.3**$_2$
P **5691.8+y**, J_1+25, $\gamma_{5030.1+y}$**661.7**$_2$
O **6032.4+y**, J_1+26, $\gamma_{5354.6+y}$**677.8**$_2$
P **6385.9+y**, J_1+27, $\gamma_{5691.8+y}$**694.1**$_2$
O **6742.3+y**, J_1+28, $\gamma_{6032.4+y}$**709.9**$_2$
P **7111.5+y**, J_1+29, $\gamma_{6385.9+y}$**725.6**$_2$
O **7484.5+y**, J_1+30, $\gamma_{6742.3+y}$**742.2**$_2$
P **7868.1+y**, J_1+31, $\gamma_{7111.5+y}$**756.6**$_2$
O **8255.7+y**, J_1+32, $\gamma_{7484.5+y}$**771.2**$_3$
P **8655.4+y**, J_1+33, $\gamma_{7868.1+y}$**787.3**$_2$
O **9057.9+y**, J_1+34, $\gamma_{8255.7+y}$**802.2**$_4$
P **9473.1+y**, J_1+35, $\gamma_{8655.4+y}$**817.7**$_3$
O **9890.0+y**, J_1+36, $\gamma_{9057.9+y}$**832.1**$_5$
P **10320.6+y**, J_1+37, $\gamma_{9473.1+y}$**847.5**$_4$
O **10750.5+y**, J_1+38, $\gamma_{9890.0+y}$**860.5**$_5$
P **11196.7+y**, J_1+39, $\gamma_{10320.6+y}$**876.1**$_5$
Q **z**, $J_2\approx(27/2^-)$
Q **291.0+z**, J_2+2, γ_{z}**291.0**$_2$

Q **619.8+z**, J_2+4, $\gamma_{\mathbf{291.0+z}}$**328.8**$_2$
Q **986.4+z**, J_2+6, $\gamma_{\mathbf{619.8+z}}$**366.6**$_2$
Q **1391.4+z**, J_2+8, $\gamma_{\mathbf{986.4+z}}$**405.0**$_2$
Q **1835.6+z**, J_2+10, $\gamma_{\mathbf{1391.4+z}}$**444.2**$_2$
Q **2319.9+z**, J_2+12, $\gamma_{\mathbf{1835.6+z}}$**484.3**$_2$
Q **2845.8+z**, J_2+14, $\gamma_{\mathbf{2319.9+z}}$**525.9**$_2$
Q **3412.5+z**, J_2+16, $\gamma_{\mathbf{2845.8+z}}$**566.7**$_2$
Q **4017.5+z**, J_2+18, $\gamma_{\mathbf{3412.5+z}}$**605.0**$_2$
Q **4658.0+z**, J_2+20, $\gamma_{\mathbf{4017.5+z}}$**640.5**$_2$
Q **5332.5+z**, J_2+22, $\gamma_{\mathbf{4658.0+z}}$**674.5**$_2$
Q **6040.0+z**, J_2+24, $\gamma_{\mathbf{5332.5+z}}$**707.5**$_2$
Q **6779.3+z**, J_2+26, $\gamma_{\mathbf{6040.0+z}}$**739.3**$_2$
Q **7549.0+z**, J_2+28, $\gamma_{\mathbf{6779.3+z}}$**769.7**$_4$
Q **8350.3+z**, J_2+30, $\gamma_{\mathbf{7549.0+z}}$**801.3**$_5$
Q **9181.6+z**, J_2+32, $\gamma_{\mathbf{8350.3+z}}$**831.3**$_5$
Q **10042.6+z**(?), J_2+34, $\gamma_{\mathbf{9181.6+z}}$**861**(?)
R **u**, $J_3 \approx (21/2^-)$
R **240.5+u**, J_3+2, $\gamma_{\mathbf{u}}$**240.5**$_2$
R **522.4+u**, J_3+4, $\gamma_{\mathbf{240.5+u}}$**281.9**$_2$
R **845.9+u**, J_3+6, $\gamma_{\mathbf{522.4+u}}$**323.5**$_2$
R **1211.3+u**, J_3+8, $\gamma_{\mathbf{845.9+u}}$**365.4**$_2$
R **1617.8+u**, J_3+10, $\gamma_{\mathbf{1211.3+u}}$**406.5**$_2$
R **2065.3+u**, J_3+12, $\gamma_{\mathbf{1617.8+u}}$**447.5**$_2$
R **2553.4+u**, J_3+14, $\gamma_{\mathbf{2065.3+u}}$**488.1**$_2$
R **3081.3+u**, J_3+16, $\gamma_{\mathbf{2553.4+u}}$**527.9**$_2$
R **3648.5+u**, J_3+18, $\gamma_{\mathbf{3081.3+u}}$**567.2**$_2$
R **4254.8+u**, J_3+20, $\gamma_{\mathbf{3648.5+u}}$**606.3**$_2$
R **4899.3+u**, J_3+22, $\gamma_{\mathbf{4254.8+u}}$**644.5**$_2$
R **5581.2+u**, J_3+24, $\gamma_{\mathbf{4899.3+u}}$**681.9**$_2$
R **6299.8+u**, J_3+26, $\gamma_{\mathbf{5581.2+u}}$**718.6**$_2$
R **7054.3+u**, J_3+28, $\gamma_{\mathbf{6299.8+u}}$**754.5**$_2$
R **7844.1+u**, J_3+30, $\gamma_{\mathbf{7054.3+u}}$**789.8**$_2$
R **8668.4+u**, J_3+32, $\gamma_{\mathbf{7844.1+u}}$**824.3**$_3$
R **9526.3+u**, J_3+34, $\gamma_{\mathbf{8668.4+u}}$**857.9**$_5$



SD-1 band (1998Bu03,1994Jo10)
SD-2 band (1998Bu03,1994Jo10)
SD-3 band (1998Bu03,1994Jo10)
SD-4 band (1998Bu03,1994Jo10)
SD-5 band (1998Bu03,1994Jo10)
SD-6 band (1998Bu03,1994Jo10)

$^{193}_{80}Hg_{113}$

$^{194}_{80}Hg_{114}$

S_n: 9247 $_{30}$, S_p: 6124 $_{25}$

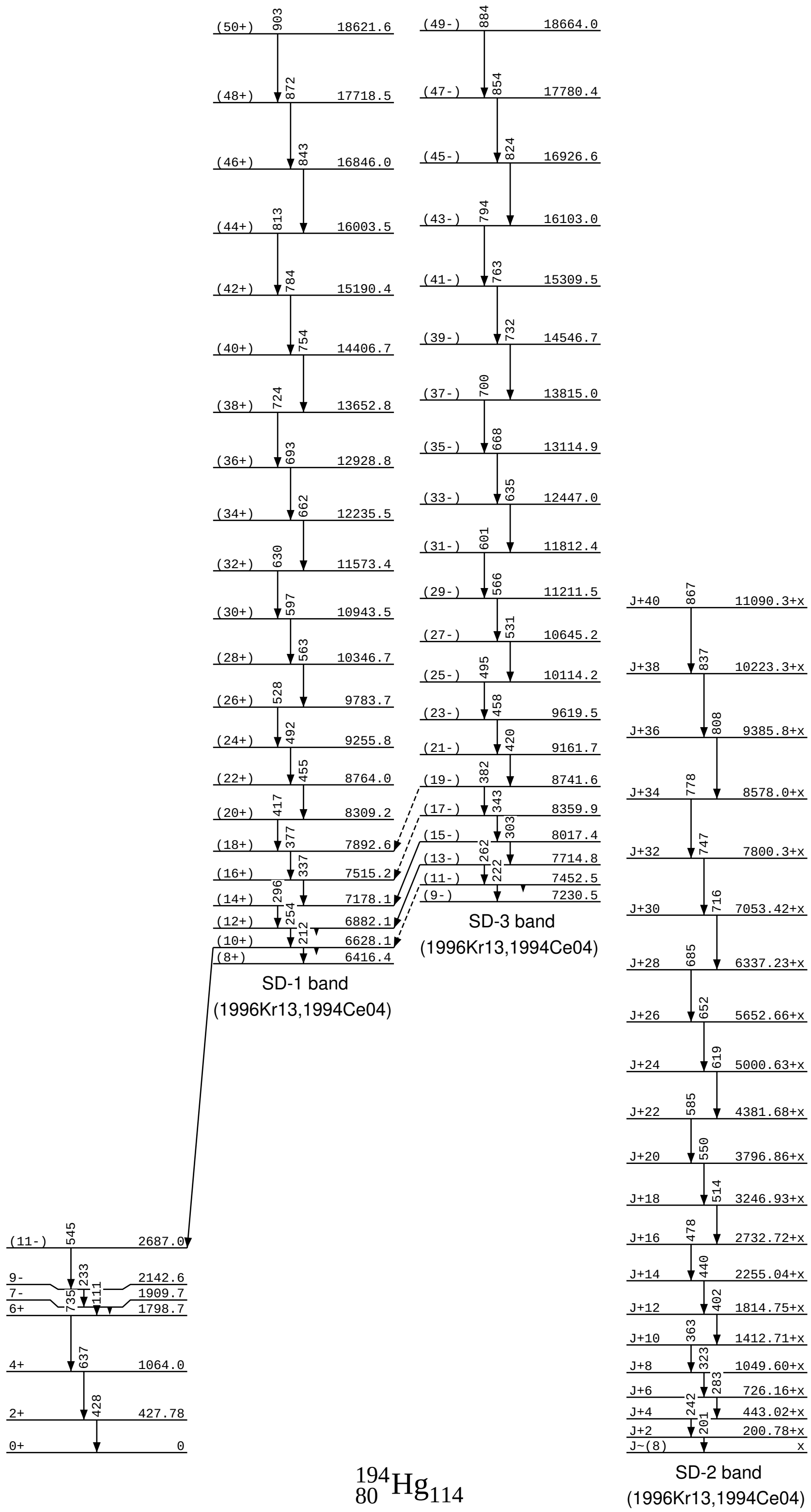
Nuclear Bands

A GS band
B AB band, α=0
C AE band, α=1
D AF band, α=0
E ABCD band, α=0
F ABCE band, α=1
G ABCF band, α=0
H ABCDab band, α=0
I ABEF band, α=0
J $\nu(i^2_{13/2})\ \pi(h^2_{11/2})$ (?)
K Dipole band (?)
L Dipole band (?)
M SD-1 band (1996Kr13,1994Ce04,1990Ri05,1990Be11,1990St12, 1994Hu05,1996Kh04,1997Ha09,1997Ka34,1997Ku03,1997Mo12, 1998Ma71,1999We04,2000La31,2001De42)
Q_0=16.8$_7$, g_{av}=+0.36$_{10}$
N SD-2 band (1996Kr13,1994Ce04,1990Ri05,1990Be11,1997Mo12, 1997Ku03,1994Hu05,1998Ma71,1999We04,2001De42)
Q_0=19.0$_{20}$, g_{av}=+0.41$_{20}$
O SD-3 band (1996Kr13,1994Ce04,1990Ri05,1990Be11,1997Mo12, 1997Ku03,1998Ma71,1999We04,2001De42)
Q_0=18.8$_{25}$, g_{av}=+0.72$_{26}$

Levels and γ-ray branchings:

A **0**, 0^+, *444$_{77}$ y*, %ε=100
A **427.78**$_{19}$, 2^+, γ_{0}**428.0**$_2$(100) E2
A **1064.0**$_3$, 4^+, $\gamma_{427.78}$**636.5**$_2$(100) E2
1073.0$_3$, $(2)^+$, $\gamma_{427.78}$**645.20**$_{25}$(100$_{25}$) E2(+M1) $\delta>1$, γ_{0}**1073.3**$_5$(33$_{12}$)
1468.2$_4$, $(3)^+$, $\gamma_{1073.0}$**395.5**$_5$(40$_8$) M1(+E2) $\delta<1$, $\gamma_{1064.0}$**403.9**$_7$(48$_{10}$) M1(+E2) $\delta<1$, $\gamma_{427.78}$**1040.3**$_5$(100$_{30}$)
1500, 0^+
A **1798.7**$_3$, 6^+, $\gamma_{1064.0}$**734.8**$_2$(100) E2
C **1812.8**$_3$, 5^-, $\leq$*0.15 ns*, $\gamma_{1064.0}$**748.9**$_2$(100) E1
C **1909.7**$_3$, 7^-, *3.75$_{11}$ ns*, $\gamma_{1812.8}$**96.95**$_8$(100$_{10}$) E2, $\gamma_{1798.7}$**110.98**$_8$(78$_8$)
D **2137.5**$_4$, 8^-, *0.91$_3$ ns*, $\gamma_{1909.7}$**227.9**$_2$(100) E2+M1 $\delta=1.2^{8}_{4}$
C **2142.6**$_4$, 9^-, *0.29$_5$ ns*, $\gamma_{1909.7}$**232.9**$_2$(100) E2
2165.1$_4$, 6^-, $\gamma_{1909.7}$**255.4**$_1$(100$_{17}$) M1(+E2) $\delta<1$, $\gamma_{1812.8}$**352.20**$_{25}$(18$_3$) M1+E2 $\delta=1.0_5$
2179.2$_4$, $5^-,6^-$, $\gamma_{1812.8}$**366.5**$_2$(100$_{17}$) M1(+E2) $\delta<1$, $\gamma_{1798.7}$**380.5**$_3$(78$_{13}$)
2259.3$_8$(?), $4^-,5^-,6^-$, $\gamma_{1812.8}$**446.5**$_7$(100) M1(+E2) $\delta<1$
2264.0$_4$, $5^-,6^-$, $\gamma_{2165.1}$**98.9**$_1$(12$_5$), $\gamma_{1812.8}$**451.0**$_7$(100$_{23}$) M1+E2 $\delta=1.0_5$
B **2363.6**$_4$, (8^+), $\gamma_{1798.7}$**565.0**$_2$(100) Q
2374.0$_4$, $6^-,7^-,8^-$, $\gamma_{2165.1}$**208.90**$_{18}$(100$_{25}$) E2, $\gamma_{1909.7}$**464.5**$_7$(38$_{13}$) M1(+E2) $\delta<1$
B **2422.9**$_4$, (10^+), *2.9$_5$ ns*, $\gamma_{2363.6}$**59.5**$_2$(1.5$_2$) E2, $\gamma_{2142.6}$**280.2**$_2$(100$_5$) (E1)
2463.1$_4$, 6^-, $\gamma_{2179.2}$**284.0**$_2$(27$_5$) M1(+E2) $\delta<1$, $\gamma_{2165.1}$**298.1**$_2$(30$_3$) E2(+M1) $\delta>1.5$, $\gamma_{1909.7}$**553.2**$_3$(67$_{17}$) M1, $\gamma_{1812.8}$**650.3**$_3$(100$_{22}$) M1+E2 $\delta=1.0_5$, $\gamma_{1798.7}$**664.2**$_7$(17$_5$)
B **2474.7**$_5$, (12^+), *8.1$_5$ ns*, $\gamma_{2422.9}$**52.0**$_4$(100) E2
D **2561.2**$_4$, (10^-), $\gamma_{2142.6}$**418.5**$_3$(28$_6$), $\gamma_{2137.5}$**423.8**$_2$(100$_6$) Q
C **2687.0**$_4$, (11^-), $\gamma_{2142.6}$**544.6**$_2$(100) Q
B **2887.6**$_5$, (14^+), $\gamma_{2474.7}$**412.9**$_2$(100) Q
3063.0$_6$(?), $\gamma_{2142.6}$**919**(?)
D **3172.4**$_5$, (12^-), $\gamma_{2687.0}$**485.2**$_4$, $\gamma_{2561.2}$**611.2**$_4$
C **3393.1**$_4$, (13^-), $\gamma_{2687.0}$**706.2**$_2$(100) Q
B **3530.7**$_5$, (16^+), $\gamma_{2887.6}$**643.1**$_2$(100) Q
G **3747.0**$_5$, (14^-), $\gamma_{3393.1}$**353.6**$_4$(2.6$_{13}$), $\gamma_{3172.4}$**574.7**$_2$(100$_9$) Q
3819.5$_5$, (15^-), $\gamma_{2887.6}$**932.0**$_2$(100)
F **3878.4**$_5$, (15^-), $\gamma_{3393.1}$**485.2**$_4$(100)
G **3983.2**$_5$, (16^-), <*0.50 ns*, $\gamma_{3747.0}$**236.3**$_4$(100)
J **4004.2**$_6$, (15^-), $\gamma_{2887.6}$**1116.6**$_8$(100)
I **4014.3**$_5$, (14^+), $\gamma_{3747.0}$**267.3**$_4$(100$_{50}$), $\gamma_{3393.1}$**621.3**$_4$, $\gamma_{2887.6}$**1126.5**$_4$(67$_{34}$)
F **4113.9**$_5$, (17^-), $\gamma_{3983.2}$**130.8**$_4$, $\gamma_{3878.4}$**235.5**$_2$, $\gamma_{3530.7}$**583.1**$_4$
B **4274.4**$_5$, (18^+), $\gamma_{3530.7}$**743.6**$_2$(100) Q
G **4289.2**$_5$, (18^-), $\gamma_{3983.2}$**305.9**$_2$(100) Q
I **4316.9**$_5$, (16^+), $\gamma_{4014.3}$**302.5**$_4$, $\gamma_{3983.2}$**333.6**$_4$(?)
4490.8$_6$, (17^-), $\gamma_{3819.5}$**671.4**$_4$(100)
F **4497.0**$_5$, (19^-), $\gamma_{4289.2}$**208.0**$_4$(100$_{20}$), $\gamma_{4113.9}$**383.1**$_2$(< 320)
J **4520.4**$_5$, (17^-), $\gamma_{4004.2}$**516.2**$_4$, $\gamma_{3819.5}$**701.0**$_4$(40$_{15}$), $\gamma_{3530.7}$**989.6**$_4$(100$_{40}$)
I **4796.9**$_6$, (18^+), $\gamma_{4316.9}$**480.0**$_4$, $\gamma_{4289.2}$**507.5**$_4$
G **4895.9**$_7$, (20^-), $\gamma_{4289.2}$**606.8**$_4$(100)
E **4984.7**$_5$, (20^+), $\gamma_{4274.4}$**710.4**$_2$(100) Q
J **5102.8**$_5$, (19^-), $\gamma_{4520.4}$**582.5**$_2$(100$_4$), $\gamma_{4490.8}$**612.1**$_4$, $\gamma_{4274.4}$**828.4**$_4$(20$_2$)
F **5162.9**$_5$, (21^-), $\gamma_{4497.0}$**665.9**$_2$(100) Q
5265.2$_6$, (20^+), $\gamma_{4274.4}$**990.8**$_4$(100)
5391.0$_6$, $\gamma_{4274.4}$**1116.5**$_4$(100)
5492.9$_5$, $\gamma_{4497.0}$**995.8**$_2$(100)
I **5522.4**$_6$, (20^+), $\gamma_{4796.9}$**725.2**$_4$(100)
E **5577.4**$_5$, (22^+), $\gamma_{4984.7}$**592.7**$_2$(100) Q
J **5609.4**$_5$, (21^-), $\gamma_{5102.8}$**506.7**$_2$(100$_4$) Q, $\gamma_{4984.7}$**625.1**$_8$(19$_1$)
G **5699.6**$_7$, (22^-), $\gamma_{4895.9}$**803.6**$_3$(100)
6012.5$_6$, $\gamma_{4984.7}$**1027.6**$_4$(100)
6031.9$_5$, (22^+), $\gamma_{5577.4}$**454.7**$_4$(52.7$_{14}$), $\gamma_{5492.9}$**538.9**$_4$(32.4$_{14}$), $\gamma_{5391.0}$**640.8**$_4$(47.3$_{14}$), $\gamma_{5265.2}$**766.4**$_{10}$(< 7)(?), $\gamma_{5162.9}$**869.1**$_2$(100$_4$), $\gamma_{4984.7}$**1047.0**$_4$(32.4$_{14}$)
F **6048.9**$_6$, (23^-), $\gamma_{5162.9}$**886.0**$_2$(100)
J **6119.4**$_6$, (23^-), $\gamma_{5609.4}$**510.1**$_2$(100$_4$), $\gamma_{5577.4}$**541.8**$_4$(29$_3$)
6255.6$_7$, $\gamma_{5577.4}$**678.2**$_4$(100)(?)
I **6349.0**$_8$, (22^+), $\gamma_{5522.4}$**826.6**$_4$(100)
E **6409.9**$_6$, (24^+), $\gamma_{5577.4}$**832.5**$_2$(100)
M **6416.4**$_{11}$, (8^+)
6454.3$_8$, $\gamma_{6012.5}$**441.5**$_8$(100)
M **6628.1**$_5$, (10^+), $\gamma_{6416.4}$**211.7**(0.03), $\gamma_{3063.0}$**3564.8**$_5$(0.006), $\gamma_{2687.0}$**3942.0**$_5$(0.002), $\gamma_{2142.6}$**4485.5**$_5$(0.011) D
G **6644.8**$_8$, (24^-), $\gamma_{5699.6}$**945.2**$_4$(100)
H **6674.8**$_6$(?), (22^+), $\gamma_{5522.4}$**1152.0**$_4$(100)(?)
6776.2$_8$, $\gamma_{6012.5}$**763.6**$_8$(100)
6789.7$_6$, (20^+), $\gamma_{6454.3}$**335.3**$_8$(13$_1$), $\gamma_{6031.9}$**757.8**$_2$(100$_4$)
J **6814.7**$_6$, (25^-), $\gamma_{6119.4}$**695.3**$_2$(100)
H **6833.1**$_6$, (24^+), $\gamma_{6674.8}$**158.0**$_4$(57$_{29}$), $\gamma_{6119.4}$**713.9**$_4$(100$_{40}$)
M **6882.1**$_5$, (12^+), *2.4$_4$ ps*, $\gamma_{6628.1}$**253.93**$_4$(0.58$_3$), $\gamma_{3393.1}$**3489.7**$_5$(0.01) D, $\gamma_{3172.4}$**3708**(0.001) D(?), $\gamma_{2687.0}$**4194.8**$_5$(0.008) D
F **6940.7**$_7$, (25^-), $\gamma_{6048.9}$**891.8**$_4$(100)
H **6988.3**$_6$, (26^+), $\gamma_{6833.1}$**155.1**$_4$(71$_{30}$), $\gamma_{6409.9}$**578.4**$_4$(100$_{41}$)
M **7178.1**$_5$, (14^+), *2.1$_4$ ps*, $\gamma_{6882.1}$**295.99**$_3$(0.97$_3$)
O **7230.5**$_{11}$, (9^-)
7262.1$_6$, $\gamma_{6789.7}$**472.3**$_4$(100$_4$), $\gamma_{6454.3}$**807.4**$_{10}$(26$_4$)
H **7303.0**$_8$, (28^+), $\gamma_{6988.3}$**314.7**$_4$(100)
O **7452.5**$_5$, (11^-), $\gamma_{7230.5}$**222**(< 0.01), $\gamma_{6628.1}$**824.2**(?), $\gamma_{2474.7}$**4978.1**$_5$(0.006) D, $\gamma_{2422.9}$**5029.9**$_5$(0.003)
M **7515.2**$_5$, (16^+), *1.36$_{17}$ ps*, $\gamma_{7178.1}$**337.18**$_3$(0.95$_3$)
7554.6$_6$, (27^-), $\gamma_{6814.7}$**739.8**$_2$(100)
L **7581.1**$_6$, (26), $\gamma_{7262.1}$**319.1**$_4$(33$_1$), $\gamma_{6789.7}$**791.5**$_2$(100$_4$), $\gamma_{6776.2}$**804.8**$_8$(13$_1$)
7587.1$_7$, (27^-), $\gamma_{6814.7}$**772.6**$_4$(100)
O **7714.8**$_5$, (13^-), *2.1$_7$ ps*, $\gamma_{7452.5}$**262.27**$_6$(0.76$_5$), $\gamma_{6882.1}$**832.4**$_5$(0.024)
F **7767.3**$_8$(?), (27), $\gamma_{6940.7}$**826.6**$_4$(100)(?)
H **7783.3**$_9$, (30^+), $\gamma_{7303.0}$**480.3**$_4$(100)
M **7892.6**$_5$, (18^+), $\gamma_{7515.2}$**377.39**$_3$(0.97$_3$)
L **7940.8**$_6$, (27), $\gamma_{7581.1}$**359.8**$_2$(100$_3$), $\gamma_{7262.1}$**678.7**$_2$(48$_2$)
O **8017.4**$_5$, (15^-), *2.1$_6$ ps*, $\gamma_{7714.8}$**302.68**$_6$(0.90$_5$), $\gamma_{7178.1}$**839.1**$_5$(0.01)
L **8286.2**$_6$, (28), $\gamma_{7940.8}$**345.4**$_2$(100)
M **8309.2**$_5$, (20^+), $\gamma_{7892.6}$**416.60**$_3$(1.00$_3$)
O **8359.9**$_5$, (17^-), *1.4$_5$ ps*, $\gamma_{8017.4}$**342.50**$_6$(0.90$_5$), $\gamma_{7515.2}$**844.6**(?)
8560.6$_6$, (29), $\gamma_{7587.1}$**973.6**$_4$(53$_4$), $\gamma_{7554.6}$**1006.0**$_2$(100$_9$)
L **8663.8**$_6$, (29), $\gamma_{8286.2}$**377.6**$_4$(100$_3$), $\gamma_{7940.8}$**723.0**$_2$(43$_2$)
O **8741.6**$_5$, (19^-), $\gamma_{8359.9}$**381.68**$_6$(0.97$_5$), $\gamma_{7892.6}$**848.8**(?)

M **8764.0**$_5$, (22^+), *0.27$_6$ ps*, $\gamma_{8309.2}$**454.76**$_3(0.99_3)$
L **9067.3**$_7$, (30), $\gamma_{8663.8}$**403.5**$_2(100_7)$, $\gamma_{8286.2}$**781.0**$_4(62_2)$
O **9161.7**$_5$, (21^-), $\gamma_{8741.6}$**420.08**$_6(1.00_5)$
M **9255.8**$_5$, (24^+), *0.166$_{22}$ ps*, $\gamma_{8764.0}$**491.86**$_5(1.01_3)$
L **9499.5**$_7$, (31), $\gamma_{9067.3}$**432.1**$_4$, $\gamma_{8663.8}$**835.7**$_4$
9563.8$_8$, (31), $\gamma_{8560.6}$**1003.2**$_4(100)$
9590.4$_9$, (31), $\gamma_{8560.6}$**1029.7**$_8(100)$
O **9619.5**$_5$, (23^-), $\gamma_{9161.7}$**457.79**$_6(0.99_5)$
M **9783.7**$_5$, (26^+), *0.120$_{25}$ ps*, $\gamma_{9255.8}$**527.88**$_3(1.00_3)$
K **9880.8**$_8$, (32), $\gamma_{9590.4}$**290.4**$_8(50_3)$, $\gamma_{9563.8}$**317.0**$_4(100_3)$
L **9932.1**$_9$, (32), $\gamma_{9499.5}$**432.6**$_8$, $\gamma_{9067.3}$**864.8**$_8$
O **10114.2**$_5$, (25^-), $\gamma_{9619.5}$**494.77**$_6(1.02_5)$
K **10224.4**$_9$, (33), $\gamma_{9880.8}$**343.6**$_4(100)$
M **10346.7**$_5$, (28^+), *0.114$_{39}$ ps*, $\gamma_{9783.7}$**562.92**$_3(0.94_3)$
K **10602.3**$_9$, (34), $\gamma_{10224.4}$**377.9**$_4(100_5)$, $\gamma_{9880.8}$**721.7**$_8(55_5)$
O **10645.2**$_5$, (27^-), $\gamma_{10114.2}$**531.01**$_7(1.04_5)$
M **10943.5**$_5$, (30^+), *0.078$_{17}$ ps*, $\gamma_{10346.7}$**596.87**$_5(0.89_3)$
K **11011.3**$_{10}$, (35), $\gamma_{10602.3}$**409.1**$_8(55_5)$, $\gamma_{10224.4}$**786.8**$_4(100_5)$
O **11211.5**$_5$, (29^-), $\gamma_{10645.2}$**566.26**$_6(1.05_5)$
M **11573.4**$_5$, (32^+), *0.060$_{21}$ ps*, $\gamma_{10943.5}$**629.93**$_3(0.87_3)$
O **11812.4**$_5$, (31^-), $\gamma_{11211.5}$**600.92**$_6(0.95_5)$
M **12235.5**$_5$, (34^+), *0.042$_{13}$ ps*, $\gamma_{11573.4}$**662.07**$_4(0.82_3)$
O **12447.0**$_5$, (33^-), $\gamma_{11812.4}$**634.60**$_{11}(0.91_5)$
M **12928.8**$_5$, (36^+), *0.026$_{11}$ ps*, $\gamma_{12235.5}$**693.40**$_4(0.76_3)$
O **13114.9**$_5$, (35^-), $\gamma_{12447.0}$**667.84**$_7(0.89_5)$
M **13652.8**$_5$, (38^+), $\gamma_{12928.8}$**723.91**$_6(0.68_3)$
O **13815.0**$_5$, (37^-), $\gamma_{13114.9}$**700.11**$_6(0.86_5)$
M **14406.7**$_5$, (40^+), $\gamma_{13652.8}$**753.92**$_6(0.56_3)$
O **14546.7**$_6$, (39^-), $\gamma_{13815.0}$**731.70**$_{17}(0.72_5)$
M **15190.4**$_5$, (42^+), $\gamma_{14406.7}$**783.67**$_8(0.48_3)$
O **15309.5**$_6$, (41^-), $\gamma_{14546.7}$**762.77**$_6(0.61_5)$
M **16003.5**$_5$, (44^+), $\gamma_{15190.4}$**813.12**$_3(0.33_3)$
O **16103.0**$_6$, (43^-), $\gamma_{15309.5}$**793.51**$_6(0.48_5)$
M **16846.0**$_5$, (46^+), $\gamma_{16003.5}$**842.55**$_6(0.19_3)$
O **16926.6**$_6$, (45^-), $\gamma_{16103.0}$**823.65**$_{13}(0.30_5)$
M **17718.5**$_5$, (48^+), $\gamma_{16846.0}$**872.41**$_{13}(0.10_3)$
O **17780.4**$_6$, (47^-), $\gamma_{16926.6}$**853.85**$_{12}(0.13_5)$
M **18621.6**$_5$, (50^+), $\gamma_{17718.5}$**903.10**$_{18}(0.05_3)$
O **18664.0**$_6$, (49^-), $\gamma_{17780.4}$**883.60**$_{22}(0.09_5)$
N **x**, $J \approx (8)$
N **200.78+x**, $J+2$, γ_x**200.79**$_6(0.36_5)$
N **443.02+x**, $J+4$, *3.0$_8$ ps*, $\gamma_{200.78+x}$**242.25**$_6(0.75_5)$
N **726.16+x**, $J+6$, *2.7$_6$ ps*, $\gamma_{443.02+x}$**283.14**$_6(1.00_5)$
N **1049.60+x**, $J+8$, *1.3$_5$ ps*, $\gamma_{726.16+x}$**323.45**$_6(0.97_5)$
N **1412.71+x**, $J+10$, $\gamma_{1049.60+x}$**363.12**$_6(1.00_5)$
N **1814.75+x**, $J+12$, $\gamma_{1412.71+x}$**402.05**$_6(1.00_5)$
N **2255.04+x**, $J+14$, *0.27$_9$ ps*, $\gamma_{1814.75+x}$**440.31**$_6(1.02_5)$
N **2732.72+x**, $J+16$, *0.20$_5$ ps*, $\gamma_{2255.04+x}$**477.68**$_6(1.01_5)$
N **3246.93+x**, $J+18$, *0.13$_5$ ps*, $\gamma_{2732.72+x}$**514.23**$_6(1.00_5)$
N **3796.86+x**, $J+20$, *0.100$_{33}$ ps*, $\gamma_{3246.93+x}$**549.93**$_6(1.02_5)$
N **4381.68+x**, $J+22$, *0.089$_{19}$ ps*, $\gamma_{3796.86+x}$**584.82**$_6(0.99_5)$
N **5000.63+x**, $J+24$, *0.065$_{28}$ ps*, $\gamma_{4381.68+x}$**618.96**$_6(0.89_5)$
N **5652.66+x**, $J+26$, $\gamma_{5000.63+x}$**652.03**$_6(0.86_5)$
N **6337.23+x**, $J+28$, $\gamma_{5652.66+x}$**684.57**$_7(0.84_5)$
N **7053.42+x**, $J+30$, $\gamma_{6337.23+x}$**716.20**$_6(0.71_5)$
N **7800.3+x**, $J+32$, $\gamma_{7053.42+x}$**746.89**$_{19}(0.54_5)$
N **8578.0+x**, $J+34$, $\gamma_{7800.3+x}$**777.73**$_6(0.44_5)$
N **9385.8+x**, $J+36$, $\gamma_{8578.0+x}$**807.76**$_8(0.35_5)$
N **10223.3+x**, $J+38$, $\gamma_{9385.8+x}$**837.48**$_7(0.18_5)$
N **11090.3+x**, $J+40$, $\gamma_{10223.3+x}$**867.08**$_{24}(0.08_5)$


(50+) 18621.6
(48+) 17718.5
(46+) 16846.0
(44+) 16003.5
(42+) 15190.4
(40+) 14406.7
(38+) 13652.8
(36+) 12928.8
(34+) 12235.5
(32+) 11573.4
(30+) 10943.5
(28+) 10346.7
(26+) 9783.7
(24+) 9255.8
(22+) 8764.0
(20+) 8309.2
(18+) 7892.6
(16+) 7515.2
(14+) 7178.1
(12+) 6882.1
(10+) 6628.1
(8+) 6416.4
903 872 843 813 784 754 724 693 662 630 597 563 528 492 455 417 377 337 296 254 212
SD-1 band
(1996Kr13,1994Ce04)
(49-) 18664.0
(47-) 17780.4
(45-) 16926.6
(43-) 16103.0
(41-) 15309.5
(39-) 14546.7
(37-) 13815.0
(35-) 13114.9
(33-) 12447.0
(31-) 11812.4
(29-) 11211.5
(27-) 10645.2
(25-) 10114.2
(23-) 9619.5
(21-) 9161.7
(19-) 8741.6
(17-) 8359.9
(15-) 8017.4
(13-) 7714.8
(11-) 7452.5
(9-) 7230.5
884 854 824 794 763 732 700 668 635 601 566 531 495 458 420 382 343 303 262 222
SD-3 band
(1996Kr13,1994Ce04)
J+40 11090.3+x
J+38 10223.3+x
J+36 9385.8+x
J+34 8578.0+x
J+32 7800.3+x
J+30 7053.42+x
J+28 6337.23+x
J+26 5652.66+x
J+24 5000.63+x
J+22 4381.68+x
J+20 3796.86+x
J+18 3246.93+x
J+16 2732.72+x
J+14 2255.04+x
J+12 1814.75+x
J+10 1412.71+x
J+8 1049.60+x
J+6 726.16+x
J+4 443.02+x
J+2 200.78+x
J~(8) x
867 837 808 778 747 716 685 652 619 585 550 514 478 440 402 363 323 283 242 201
SD-2 band
(1996Kr13,1994Ce04)
(11-) 2687.0
9- 2142.6
7- 1909.7
6+ 1798.7
4+ 1064.0
2+ 427.78
0+ 0
545 233 735 111 637 428
$^{194}_{80}Hg_{114}$

$^{195}_{80}$Hg$_{115}$

S$_n$: 6900 $_{55}$, S$_p$: 6078 $_{51}$

Nuclear Bands

A $\nu i_{13/2}$, α=+1/2
B Band based on $21/2^-$, α=+1/2
C Band based on $29/2^+$, α=+1/2
D Band based on $33/2^+$, α=+1/2
E Band based on $41/2^-$, α=+1/2
F Band based on $23/2^-$, α=-1/2
G Band based on $43/2^-$, α=-1/2
H Magnetic-dipole rotational band based on $57/2^-$
I Magnetic-dipole rotational band based on $43/2^+$
J Magnetic-dipole rotational band (?)
K SD-1 band (1997Ha01), α=+1/2
L SD-2 band (1997Ha01), α=-1/2
M SD-3 band (1997Ha01), α=+1/2
N SD-4 band (1997Ha01), α=-1/2

Levels and γ-ray branchings:

0, $1/2^-$, *10.53$_3$ h*, %ε+%β^+=100 , μ=+0.5414749$_{14}$

37.083$_{19}$, $3/2^-$, *<50 ps*, $\gamma_{\mathbf{0}}$**37.09**$_3$(100) M1+E2 $\delta=0.032_5$

53.289$_{20}$, $5/2^-$, *0.72$_3$ ns*, $\gamma_{\mathbf{37.083}}$**16.21**$_3$(100$_{11}$) M1+E2 $\delta=0.024_6$, $\gamma_{\mathbf{0}}$**53.29**$_3$(5.1$_4$) E2

A **176.07**$_4$, $13/2^+$, *41.6$_8$ h*, %IT=54.2$_{20}$, %ε+%β^+=45.8$_{20}$, μ=-1.0446473$_{26}$, Q=+1.08$_{11}$, Q=+1.08$_{11}$, $\gamma_{\mathbf{53.289}}$**122.78**$_3$(100) M4

279.203$_{24}$, $3/2^-$, $\gamma_{\mathbf{53.289}}$**225.93**$_5$(29.6$_{22}$) M1+E2 $\delta=0.47^{17}_{20}$, $\gamma_{\mathbf{37.083}}$**242.15**$_5$(100$_8$) M1(+E2) $\delta=0.42^{17}_{22}$, $\gamma_{\mathbf{0}}$**279.19**$_5$(87$_6$) M1+E2 $\delta=1.53_2$

300.55$_3$, $3/2^-,5/2^-$, $\gamma_{\mathbf{279.203}}$**21.36**$_4$, $\gamma_{\mathbf{53.289}}$**247.30**$_5$(53.7$_{35}$) M1(+E2) $\delta=0.52^{17}_{19}$, $\gamma_{\mathbf{37.083}}$**263.51**$_{10}$(36.6$_{22}$) M1(+E2) $\delta=1.0^3_2$, $\gamma_{\mathbf{0}}$**300.60**$_5$(100$_7$) E2

373.17$_{11}$, $(9/2^+)$, $\gamma_{\mathbf{176.07}}$**197.10**$_{10}$(100) (E2)

410.31$_4$, $3/2^-,5/2^-,7/2^-$, $\gamma_{\mathbf{300.55}}$**109.78**$_{10}$(9$_6$), $\gamma_{\mathbf{279.203}}$**131.14**$_{10}$(25$_6$), $\gamma_{\mathbf{53.289}}$**356.99**$_5$(77$_{76}$) M1, $\gamma_{\mathbf{37.083}}$**373.24**$_5$(100$_7$) (E2)

422.51$_{10}$, $(1/2^-\rightarrow 7/2^-)$, $\gamma_{\mathbf{300.55}}$**122.0**(?), $\gamma_{\mathbf{279.203}}$**143.4**(?), $\gamma_{\mathbf{53.289}}$**369.26**$_{10}$(100$_{15}$), $\gamma_{\mathbf{37.083}}$**385.5**(?)

A **547.06**$_{11}$, $17/2^+$, $\gamma_{\mathbf{176.07}}$**371.0**$_1$(100) E2

595.48$_4$, $(3/2)^-$, $\gamma_{\mathbf{422.51}}$**172.9**(?), $\gamma_{\mathbf{410.31}}$**185.8**$_5$(1.0$_8$), $\gamma_{\mathbf{300.55}}$**295.14**$_{20}$(5.4$_{17}$), $\gamma_{\mathbf{279.203}}$**316.27**$_{10}$(3.7$_{17}$), $\gamma_{\mathbf{53.289}}$**542.16**$_5$(41.2$_{33}$) (E2+M1), $\gamma_{\mathbf{37.083}}$**558.38**$_5$(100$_6$) M1, $\gamma_{\mathbf{0}}$**595.2**(3.7$_{12}$)

600.67$_4$, $3/2^-$, $\gamma_{\mathbf{422.51}}$**178.1**(?), $\gamma_{\mathbf{410.31}}$**190.4**(?), $\gamma_{\mathbf{300.55}}$**299.9**(?), $\gamma_{\mathbf{279.203}}$**321.3**(0.51$_{25}$), $\gamma_{\mathbf{53.289}}$**547.34**$_5$(6.4$_4$) M1, $\gamma_{\mathbf{37.083}}$**563.52**$_5$(100$_5$) M1, $\gamma_{\mathbf{0}}$**600.64**$_{10}$(6.2$_9$)

764.57$_5$, $1/2^-$, $\gamma_{\mathbf{600.67}}$**163.9**(?), $\gamma_{\mathbf{595.48}}$**169.2**(?), $\gamma_{\mathbf{300.55}}$**464.01**$_{10}$(14$_4$), $\gamma_{\mathbf{279.203}}$**485.38**$_{10}$(54$_6$) (M1+E2), $\gamma_{\mathbf{53.289}}$**711.15**$_{10}$(100$_7$), $\gamma_{\mathbf{37.083}}$**727.40**$_{15}$(80$_{11}$) (M1), $\gamma_{\mathbf{0}}$**764.52**$_{10}$(51$_6$) E0+M1

814.71$_4$, $1/2^-,3/2^-$, $\gamma_{\mathbf{600.67}}$**214.1**(?), $\gamma_{\mathbf{595.48}}$**219.3**(?), $\gamma_{\mathbf{422.51}}$**392.2**(?), $\gamma_{\mathbf{410.31}}$**404.5**(?), $\gamma_{\mathbf{300.55}}$**514.1**(?), $\gamma_{\mathbf{279.203}}$**535.5**(?), $\gamma_{\mathbf{53.289}}$**761.42**$_{15}$(8.9$_{17}$), $\gamma_{\mathbf{37.083}}$**777.68**$_{15}$(59$_9$), $\gamma_{\mathbf{0}}$**814.68**$_5$(100$_5$) M1

844.8$_4$, $(5/2^+)$, $\gamma_{\mathbf{373.17}}$**471.7**$_4$(100)

848.38$_{24}$, $(15/2^+)$, $\gamma_{\mathbf{547.06}}$**301.5**$_9$(100$_{50}$), $\gamma_{\mathbf{176.07}}$**672.1**$_5$

874.66$_{19}$, $(7/2^+)$, $\gamma_{\mathbf{373.17}}$**501.48**$_{15}$(100)

893.16$_5$, $3/2^-$, $\gamma_{\mathbf{764.57}}$**128.6**(?), $\gamma_{\mathbf{600.67}}$**292.5**(?), $\gamma_{\mathbf{595.48}}$**297.7**(?), $\gamma_{\mathbf{422.51}}$**470.8**$_4$(10$_5$) (E2), $\gamma_{\mathbf{410.31}}$**482.8**(29$_4$), $\gamma_{\mathbf{300.55}}$**592.59**$_{10}$(100$_{11}$) M1, $\gamma_{\mathbf{279.203}}$**613.88**$_{10}$(60$_7$) M1, $\gamma_{\mathbf{53.289}}$**839.9**(?), $\gamma_{\mathbf{37.083}}$**855.94**$_{10}$(24.8$_{22}$), $\gamma_{\mathbf{0}}$**893.06**$_{10}$(75$_6$) M1

921.56$_4$, $1/2^-,3/2^-$, $\gamma_{\mathbf{814.71}}$**107.0**(?), $\gamma_{\mathbf{764.57}}$**157.1**(?), $\gamma_{\mathbf{600.67}}$**321.3**(1.68$_{53}$), $\gamma_{\mathbf{595.48}}$**326.0**(1.5$_4$), $\gamma_{\mathbf{422.51}}$**499.0**(?), $\gamma_{\mathbf{410.31}}$**511.4**(4.8$_{16}$), $\gamma_{\mathbf{300.55}}$**620.96**$_{10}$(2.2$_3$) (E2), $\gamma_{\mathbf{279.203}}$**642.60**$_{20}$(1.5$_3$), $\gamma_{\mathbf{53.289}}$**868.56**$_{30}$(0.40$_{21}$), $\gamma_{\mathbf{37.083}}$**884.47**$_5$(100$_6$) M1, $\gamma_{\mathbf{0}}$**921.59**$_5$(22.5$_{13}$) M1

1004.56$_4$, $1/2^-,3/2^-$, $\gamma_{\mathbf{893.16}}$**111.5**(?), $\gamma_{\mathbf{814.71}}$**189.8**(?), $\gamma_{\mathbf{764.57}}$**240.0**(?), $\gamma_{\mathbf{600.67}}$**403.86**$_{10}$(5.4$_{12}$), $\gamma_{\mathbf{595.48}}$**408.8**(7.6$_{12}$) M1, $\gamma_{\mathbf{422.51}}$**582.3**$_3$(5.3$_{15}$), $\gamma_{\mathbf{410.31}}$**595.2**(10.4$_{15}$), $\gamma_{\mathbf{300.55}}$**704.03**$_{15}$(8.7$_{10}$), $\gamma_{\mathbf{279.203}}$**725.27**$_{15}$(29$_4$) M1, $\gamma_{\mathbf{53.289}}$**951.39**$_{30}$(8.3$_{25}$), $\gamma_{\mathbf{37.083}}$**967.46**$_5$(100$_6$) M1, $\gamma_{\mathbf{0}}$**1004.54**$_{10}$(7.1$_{10}$)

1067.43$_7$, $(3/2^-,5/2^-)$, $\gamma_{\mathbf{410.31}}$**657.11**$_{25}$(42$_{13}$), $\gamma_{\mathbf{279.203}}$**788.06**$_{15}$(23$_5$), $\gamma_{\mathbf{53.289}}$**1013.82**$_{20}$(11$_7$), $\gamma_{\mathbf{0}}$**1067.16**$_{10}$(100$_{10}$)

1140.33$_9$, $1/2^-,3/2,5/2^-$, $\gamma_{\mathbf{814.71}}$**326.0**(4$_3$), $\gamma_{\mathbf{595.48}}$**544.0**(3.3$_{20}$), $\gamma_{\mathbf{279.203}}$**861.13**$_{15}$(28$_4$), $\gamma_{\mathbf{53.289}}$**1086.90**$_{20}$(11$_3$), $\gamma_{\mathbf{37.083}}$**1102.93**$_{30}$(25$_{12}$), $\gamma_{\mathbf{0}}$**1140.47**$_{20}$(100$_{16}$)

A **1158.41**$_{14}$, $21/2^+$, $\gamma_{\mathbf{547.06}}$**611.3**$_1$(100) E2

1259.51$_{13}$, $1/2^-,3/2,5/2^-$, $\gamma_{\mathbf{600.67}}$**659.3**$_5$(26$_{21}$), $\gamma_{\mathbf{279.203}}$**980.23**$_{15}$(100$_{13}$), $\gamma_{\mathbf{37.083}}$**1222.37**$_{30}$(47$_{17}$), $\gamma_{\mathbf{0}}$**1260.0**$_5$(55$_{17}$)

1301.1$_4$, $(3/2^+)$, $\gamma_{\mathbf{874.66}}$**426**, $\gamma_{\mathbf{844.8}}$**456.35**$_{10}$(100$_{29}$)

1400.77$_5$, $1/2^-$, $\gamma_{\mathbf{1004.56}}$**396.55**$_{30}$(0.9$_5$), $\gamma_{\mathbf{814.71}}$**585.4**$_5$(0.45$_{37}$), $\gamma_{\mathbf{600.67}}$**799.9**$_4$(0.46$_{25}$), $\gamma_{\mathbf{595.48}}$**805.32**$_{15}$(2.1$_5$), $\gamma_{\mathbf{300.55}}$**1100.33**$_{10}$(27.8$_{15}$) E2, $\gamma_{\mathbf{279.203}}$**1121.66**$_{10}$(25$_4$) M1, $\gamma_{\mathbf{53.289}}$**1347.78**$_{10}$(13.8$_8$), $\gamma_{\mathbf{37.083}}$**1363.88**$_{10}$(100$_5$) M1, $\gamma_{\mathbf{0}}$**1400.7**$_3$(0.78$_{19}$) E0+M1

1460.91$_{19}$, $(19/2)^+$, $\gamma_{\mathbf{547.06}}$**913.8**$_2$(100) M1+E2

1486.50$_{18}$, $(19/2^+)$, $\gamma_{\mathbf{848.38}}$**638.1**$_2$(68$_{14}$), $\gamma_{\mathbf{547.06}}$**939.7**$_2$(100$_{18}$)

1548.67$_6$, $1/2^-,3/2^-$, $\gamma_{\mathbf{1140.33}}$**408.8**(2.3$_{11}$) M1, $\gamma_{\mathbf{1067.43}}$**482.8**(7.3$_{22}$), $\gamma_{\mathbf{1004.56}}$**544.0**(11.6$_{17}$) M1+E2, $\gamma_{\mathbf{893.16}}$**655.45**$_{20}$(19$_3$) M1, $\gamma_{\mathbf{814.71}}$**733.94**$_{10}$(26.3$_{22}$), $\gamma_{\mathbf{764.57}}$**783.72**$_{30}$(3.4$_{11}$), $\gamma_{\mathbf{600.67}}$**948.41**$_{30}$(3.3$_{17}$), $\gamma_{\mathbf{595.48}}$**953.0**$_{10}$(2.2$_{13}$), $\gamma_{\mathbf{300.55}}$**1248.00**$_{20}$(6.5$_{11}$), $\gamma_{\mathbf{279.203}}$**1269.51**$_{10}$(100$_5$) M1, $\gamma_{\mathbf{37.083}}$**1511.62**$_{10}$(60$_3$), $\gamma_{\mathbf{0}}$**1548.0**(5.2$_{17}$)

1664.24$_7$, $1/2,3/2,5/2^-$, $\gamma_{\mathbf{814.71}}$**849.3**(8$_6$), $\gamma_{\mathbf{600.67}}$**1063.14**$_{30}$(21$_6$), $\gamma_{\mathbf{300.55}}$**1363.88**$_{10}$(20$_{11}$), $\gamma_{\mathbf{37.083}}$**1627.00**$_{10}$(98$_9$), $\gamma_{\mathbf{0}}$**1664.20**$_{25}$(100$_{11}$)

1714.65$_{14}$, $1/2,3/2,5/2^-$, $\gamma_{\mathbf{921.56}}$**792.8**$_4$(6.3$_{25}$), $\gamma_{\mathbf{893.16}}$**821.3**(17$_5$), $\gamma_{\mathbf{814.71}}$**899.5**$_4$(5.4$_{25}$), $\gamma_{\mathbf{600.67}}$**1114.11**$_{30}$(16$_5$), $\gamma_{\mathbf{279.203}}$**1435.52**$_{20}$(100$_9$), $\gamma_{\mathbf{37.083}}$**1678.0**$_5$(15$_5$), $\gamma_{\mathbf{0}}$**1714.4**(63$_{15}$)

1742.59$_9$, $1/2,3/2$, $\gamma_{\mathbf{1067.43}}$**675.38**$_{20}$(4.3$_{18}$), $\gamma_{\mathbf{1004.56}}$**737.8**$_4$(2.8$_{14}$), $\gamma_{\mathbf{921.56}}$**821.3**(3.9$_{21}$), $\gamma_{\mathbf{893.16}}$**849.3**(9$_4$), $\gamma_{\mathbf{814.71}}$**927.90**$_{20}$(27$_3$), $\gamma_{\mathbf{600.67}}$**1140.47**$_{20}$(3.4$_{14}$), $\gamma_{\mathbf{53.289}}$**1690.0**$_6$(11$_4$), $\gamma_{\mathbf{37.083}}$**1705.88**$_{15}$(100$_7$), $\gamma_{\mathbf{0}}$**1743.08**$_{20}$(19.9$_{18}$)

B **1744.37**$_{16}$, $21/2^-$, $\gamma_{\mathbf{1486.50}}$**258.1**$_2$(3.9$_7$), $\gamma_{\mathbf{1460.91}}$**283.4**$_2$(14.8$_{13}$) (E1), $\gamma_{\mathbf{1158.41}}$**586.1**$_1$(100$_{10}$)

1831.39$_{14}$, $1/2,3/2$, $\gamma_{\mathbf{300.55}}$**1531.01**$_{25}$(40$_4$), $\gamma_{\mathbf{279.203}}$**1552.26**$_{25}$(62$_7$), $\gamma_{\mathbf{53.289}}$**1778.2**(62$_{15}$), $\gamma_{\mathbf{37.083}}$**1794.13**$_{20}$(100$_8$)

F **1865.95**$_{23}$, $23/2^-$, $\gamma_{\mathbf{1744.37}}$**122.2**$_2$(100)

A **1868.85**$_{22}$, $25/2^+$, $\gamma_{\mathbf{1158.41}}$**709.7**$_2$(100) E2

B **1870.1**$_4$, $25/2^-$, *1.48$_6$ ns*, $\gamma_{\mathbf{1744.37}}$**126.6**$_5$(100) E2

1879.26$_{19}$, $1/2,3/2$, $\gamma_{\mathbf{37.083}}$**1842.16**$_{20}$(100$_7$), $\gamma_{\mathbf{0}}$**1879.3**$_5$(10$_4$)

1893.13$_{25}$, $1/2,3/2$, $\gamma_{\mathbf{279.203}}$**1613.9**$_3$(93$_{25}$), $\gamma_{\mathbf{37.083}}$**1856.4**$_7$(100$_{30}$), $\gamma_{\mathbf{0}}$**1893.0**$_5$(51$_{20}$)

1975.37$_{15}$, $1/2,3/2$, $\gamma_{\mathbf{1140.33}}$**834.7**$_5$(64$_{30}$), $\gamma_{\mathbf{921.56}}$**1053.3**(57$_{30}$), $\gamma_{\mathbf{764.57}}$**1210.88**$_{25}$(98$_{25}$), $\gamma_{\mathbf{600.67}}$**1374.68**$_{20}$(90$_{15}$), $\gamma_{\mathbf{300.55}}$**1675.2**$_7$(54$_{30}$), $\gamma_{\mathbf{279.203}}$**1696.6**$_{10}$(100$_{40}$)

2014.69$_6$, $1/2,3/2$, $\gamma_{\mathbf{1004.56}}$**1009.99**$_{10}$(18.5$_{22}$), $\gamma_{\mathbf{921.56}}$**1092.82**$_{15}$(11.3$_{12}$), $\gamma_{\mathbf{893.16}}$**1121.66**$_{10}$(18$_4$), $\gamma_{\mathbf{814.71}}$**1200.00**$_{25}$(7.8$_{15}$), $\gamma_{\mathbf{595.48}}$**1419.6**$_5$(2.1$_{15}$), $\gamma_{\mathbf{300.55}}$**1714.4**(33$_5$), $\gamma_{\mathbf{279.203}}$**1735.4**$_4$(6.1$_{12}$), $\gamma_{\mathbf{53.289}}$**1961.6**$_3$(6.1$_{12}$), $\gamma_{\mathbf{37.083}}$**1977.75**$_{15}$(100$_2$), $\gamma_{\mathbf{0}}$**2014.75**$_{15}$(50.6$_{24}$)

2057.37$_{11}$, $1/2,3/2$, $\gamma_{\mathbf{1004.56}}$**1053.3**(6$_4$), $\gamma_{\mathbf{893.16}}$**1163.96**$_{20}$(12$_4$), $\gamma_{\mathbf{814.71}}$**1242.61**$_{20}$(10$_3$), $\gamma_{\mathbf{600.67}}$**1456.6**$_4$(19$_7$), $\gamma_{\mathbf{595.48}}$**1462.**$_1$(7$_4$), $\gamma_{\mathbf{300.55}}$**1756.93**$_{20}$(41$_4$), $\gamma_{\mathbf{279.203}}$**1778.2**(100$_{14}$), $\gamma_{\mathbf{53.289}}$**2004.4**(22$_6$), $\gamma_{\mathbf{37.083}}$**2020.8**$_4$(13$_4$), $\gamma_{\mathbf{0}}$**2057.4**$_4$(41$_6$)

F **2080.93**$_{24}$, $27/2^-$, $\gamma_{\mathbf{1870.1}}$**211.2**$_2$(31$_5$), $\gamma_{\mathbf{1865.95}}$**215.6**$_2$(100$_{10}$)

B **2171.6**$_4$, $29/2^-$, $\gamma_{\mathbf{2080.93}}$**89.6**$_4$(1.99), $\gamma_{\mathbf{1870.1}}$**301.5**$_1$(100$_8$) E2

2230.14$_{13}$, $1/2,3/2$, $\gamma_{\mathbf{893.16}}$**1337.1**$_5$(23$_{17}$), $\gamma_{\mathbf{300.55}}$**1929.56**$_{20}$(42$_9$), $\gamma_{\mathbf{279.203}}$**1950.88**$_{20}$(100$_{12}$), $\gamma_{\mathbf{37.083}}$**2193.2**$_4$(30$_{12}$)

2255.59$_{23}$, $1/2,3/2$, $\gamma_{\mathbf{595.48}}$**1660.7**$_7$(82$_{19}$), $\gamma_{\mathbf{53.289}}$**2202.5**$_7$(32$_{17}$), $\gamma_{\mathbf{37.083}}$**2218.34**$_{30}$(40$_{10}$), $\gamma_{\mathbf{0}}$**2255.6**$_5$(100$_{12}$)

2285.07$_6$, $1/2,3/2$, $\gamma_{\mathbf{1400.77}}$**884.47**$_5$(1.6$_{10}$), $\gamma_{\mathbf{1067.43}}$**1216.53**$_{15}$(37$_5$), $\gamma_{\mathbf{921.56}}$**1363.88**$_{10}$(24$_{12}$), $\gamma_{\mathbf{921.56}}$**1390.43**$_{20}$(55$_5$), $\gamma_{\mathbf{764.57}}$**1519.1**$_3$(6$_3$), $\gamma_{\mathbf{595.48}}$**1688.2**$_6$(26$_{10}$), $\gamma_{\mathbf{279.203}}$**2004.4**(21$_7$), $\gamma_{\mathbf{0}}$**2285**($<$ 100)(?)

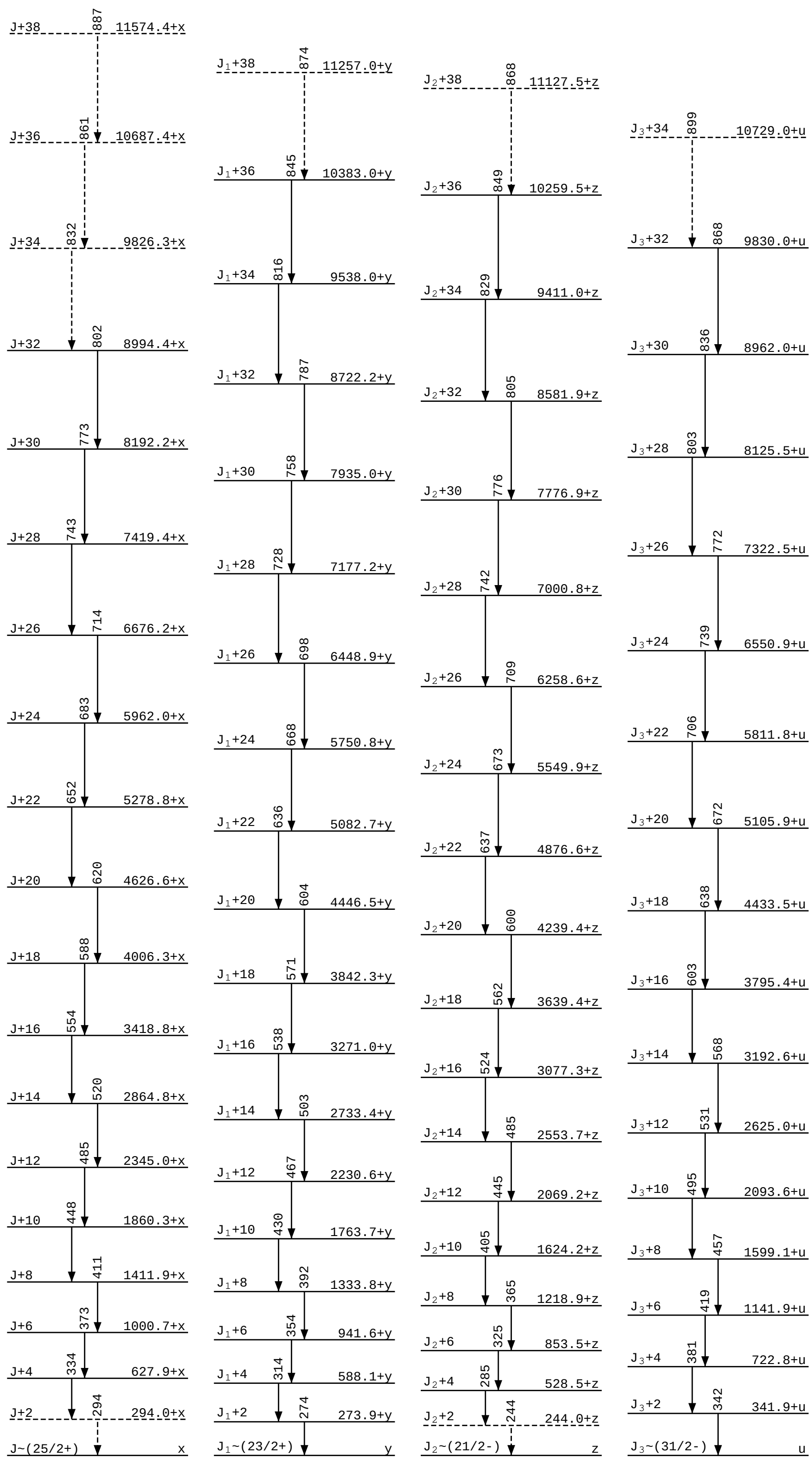
2305.01$_{11}$, $1/2,3/2$, $\gamma_{\mathbf{921.56}}$**1383.43**$_{20}$(41$_5$), $\gamma_{\mathbf{893.16}}$**1412.1**$_4$(15$_6$), $\gamma_{\mathbf{814.71}}$**1490.25**$_{25}$(100$_9$), $\gamma_{\mathbf{279.203}}$**2025.85**$_{30}$(78$_7$), $\gamma_{\mathbf{53.289}}$**2251.9**$_5$(24$_6$), $\gamma_{\mathbf{37.083}}$**2267.85**$_{20}$(42$_5$)

2311.5$_3$, $1/2,3/2$, $\gamma_{\mathbf{279.203}}$**2031.8**$_4$(87$_{11}$), $\gamma_{\mathbf{37.083}}$**2274.8**$_4$(100$_{18}$)

2338.4$_4$, $1/2,3/2$, $\gamma_{\mathbf{53.289}}$**2285**($<$ 100), $\gamma_{\mathbf{37.083}}$**2301.2**$_5$(20.3$_{26}$),

γ_{0}**2338.4**$_{5}(11.9_{26})$
2339.2$_{6}$, $1/2,3/2$, $\gamma_{279.203}$**2060.4**$_{7}(16.7_{43})$, $\gamma_{53.289}$**2285**(<100)
2363.1$_{3}$, $1/2,3/2$, $\gamma_{814.71}$**1548.0**(67_{20}), $\gamma_{279.203}$**2084.0**$_{4}(27_{7})$, γ_{0}**2362.9**$_{5}(100_{17})$
2403.1$_{4}$, $1/2,3/2$, $\gamma_{814.71}$**1588.4**$_{5}(21_{6})$, $\gamma_{279.203}$**2123.9**$_{7}(5_{4})$, $\gamma_{37.083}$**2366.0**$_{5}(100_{10})$
C **2413.01**$_{24}$, $29/2^{+}$, $\gamma_{1868.85}$**544.2**$_{1}(100)$ E2
2420.27$_{14}$, $1/2,3/2$, $\gamma_{1548.67}$**871.85**$_{30}(10_{5})$, $\gamma_{1004.56}$**1415.6**$_{4}(16_{7})$, $\gamma_{595.48}$**1824.6**$_{4}(18_{6})$, $\gamma_{300.55}$**2119.9**$_{4}(20_{5})$, $\gamma_{279.203}$**2140.97**$_{20}(100_{9})$, $\gamma_{37.083}$**2382.9**$_{25}(90_{8})$, γ_{0}**2420.2**(<30.4)
2428.79$_{16}$, $1/2,3/2$, $\gamma_{1140.33}$**1288.36**$_{20}(39_{8})$, $\gamma_{595.48}$**1833.2**$_{4}(18_{6})$, $\gamma_{279.203}$**2150.1**$_{5}(72_{10})$, $\gamma_{37.083}$**2391.75**$_{30}(100_{10})$, γ_{0}**2429.0**$_{7}(7_{6})$
2456.8$_{4}$, $1/2,3/2$, $\gamma_{279.203}$**2177.9**$_{4}(100_{13})$, $\gamma_{37.083}$**2420.2**(<72.2)(?), γ_{0}**2456.4**$_{5}(54_{10})$
2508.24$_{19}$, $1/2,3/2$, $\gamma_{600.67}$**1907.9**$_{7}(23_{17})$, $\gamma_{300.55}$**2207.2**$_{7}(26_{21})$, $\gamma_{279.203}$**2228.9**$_{4}(60_{14})$, $\gamma_{37.083}$**2471.13**$_{25}(100_{10})$, γ_{0}**2508.8**$_{7}(60_{21})$
2513.23$_{10}$, $1/2^{+},3/2^{+}$, $\gamma_{921.56}$**1591.7**$_{4}(45_{7})$, $\gamma_{893.16}$**1619.5**$_{10}(14_{11})$, $\gamma_{814.71}$**1698.8**$_{10}(13_{7})$, $\gamma_{600.67}$**1912.34**$_{25}(29_{6})$, $\gamma_{595.48}$**1917.6**$_{2}(20_{5})$, $\gamma_{300.55}$**2212.8**$_{4}(46_{7})$, $\gamma_{279.203}$**2234.21**$_{20}(52_{5})$, $\gamma_{53.289}$**2459.8**$_{7}(9_{5})$, $\gamma_{37.083}$**2476.12**$_{25}(38_{4})$, γ_{0}**2513.28**$_{20}(100_{7})$
F **2627.8**$_{3}$, $31/2^{-}$, $\gamma_{2080.93}$**546.9**$_{2}(100)$
C **2691.3**$_{3}$, $33/2^{+}$, $\leq$*0.25 ns*, $\gamma_{2413.01}$**278.4**$_{1}(100)$ E2
A **2759.0**$_{4}$, $(29/2^{+})$, $\gamma_{1868.85}$**890.1**$_{3}(100)$
B **2773.8**$_{4}$, $33/2^{-}$, $\gamma_{2171.6}$**602.2**$_{1}(100)$
C **3159.2**$_{3}$, $37/2^{+}$, $\gamma_{2691.3}$**467.9**$_{1}(100)$
3214.9$_{3}$, $33/2^{+}$, $\gamma_{2413.01}$**801.8**$_{2}(100)$
D **3264.9**$_{4}$, $33/2^{+}$, $\gamma_{2691.3}$**573.9**$_{3}(100)$, $\gamma_{2413.01}$**851.3**$_{4}(50)$
F **3366.8**$_{4}$, $35/2^{-}$, $\gamma_{2627.8}$**739.0**$_{2}(100)$
3403.3$_{4}$, $35/2$, $\gamma_{2691.3}$**711.8**$_{5}(100)$
3505.0$_{5}$, $\gamma_{2691.3}$**813.6**$_{5}(100)$
B **3556.0**$_{4}$, $37/2^{-}$, $\gamma_{2773.8}$**782.1**$_{1}(100)$
D **3562.6**$_{3}$, $37/2^{+}$, $\gamma_{3264.9}$**297.7**$_{4}(11_{2})$, $\gamma_{3214.9}$**347.7**$_{2}(19_{2})$, $\gamma_{3159.2}$**403.4**$_{2}(100_{9})$
3699.7$_{4}$, $37/2^{+}$, $\gamma_{3264.9}$**434.6**$_{5}(50_{15})$, $\gamma_{3214.9}$**484.4**$_{4}(100_{20})$
3866.7$_{4}$, $39/2$, $\gamma_{3505.0}$**361.6**$_{7}(12_{3})$, $\gamma_{3403.3}$**463.3**$_{3}(88_{9})$, $\gamma_{3159.2}$**707.6**$_{3}(100_{15})$
C **3868.8**$_{5}$, $41/2^{+}$, $\gamma_{3159.2}$**710.8**$_{6}(100)$
D **4080.2**$_{4}$, $41/2^{+}$, $\gamma_{3562.6}$**517.7**$_{2}(100)$
E **4183.0**$_{5}$, $41/2^{-}$, $\gamma_{3556.0}$**626.7**$_{3}(100)$
F **4197.1**$_{5}$, $39/2^{-}$, $\gamma_{3366.8}$**830.3**$_{2}(100)$
4397.4$_{4}$, $41/2^{+}$, $\gamma_{3699.7}$**697.2**$_{4}(100_{16})$, $\gamma_{3159.2}$**1239.2**$_{5}(47_{11})$
4519.8$_{4}$, $43/2$, $\gamma_{3866.7}$**653.1**$_{2}(100)$
4580.8$_{7}$, $\gamma_{3556.0}$**1024.8**$_{7}(100)$
E **4709.6**$_{5}$, $45/2^{-}$, $\gamma_{4183.0}$**526.5**$_{2}(100)$
C **4741.7**$_{5}$, $45/2^{+}$, $\gamma_{3868.8}$**872.9**$_{2}(100)$
G **4802.5**$_{6}$, $43/2^{-}$, $\gamma_{4197.1}$**605.4**$_{3}(100)$
4808.9$_{5}$, $\gamma_{3866.7}$**942.0**$_{5}(100)$
D **4901.5**$_{5}$, $45/2^{+}$, $\gamma_{4080.2}$**821.2**$_{3}(100)$
4982.2$_{4}$, $43/2^{+}$, $\gamma_{4808.9}$**174.0**$_{8}(11.4_{46})$, $\gamma_{4080.2}$**902.1**$_{3}(100_{11})$
5136.5$_{6}$, $\gamma_{4580.8}$**555.7**$_{5}(83_{25})$, $\gamma_{4183.0}$**953.5**$_{5}(100_{33})$
I **5175.8**$_{5}$, $43/2^{+}$, $\gamma_{4183.0}$**992.5**$_{4}(100_{14})$, $\gamma_{3868.8}$**1307.3**$_{5}(18_{11})$
5242.2$_{6}$, $\gamma_{4397.4}$**844.8**$_{4}(100)$
5253.5$_{4}$, $\gamma_{4982.2}$**271.5**$_{3}(47_{13})$, $\gamma_{4808.9}$**444.3**$_{4}(20_{7})$, $\gamma_{4519.8}$**733.6**$_{2}(100_{27})$
I **5309.4**$_{5}$, $45/2^{+}$, $\gamma_{5175.8}$**133.4**, $\gamma_{4397.4}$**912.0**$_{3}(100_{16})$, $\gamma_{3868.8}$**1440.9**$_{4}(31_{6})$
G **5379.3**$_{6}$, $47/2^{-}$, $\gamma_{4802.5}$**576.8**$_{3}(100)$
E **5400.4**$_{5}$, $49/2^{-}$, $\gamma_{4709.6}$**690.8**$_{2}(100)$
I **5410.8**$_{5}$, $47/2^{+}$, $\gamma_{5309.4}$**103.2**, $\gamma_{4709.6}$**701.2**$_{2}(100_{10})$
5446.0$_{5}$, $53/2^{-}$, $\gamma_{4519.8}$**926.2**$_{3}(100)$
5490.1$_{6}$, $\gamma_{4519.8}$**970.2**$_{4}(100)$
5499.3$_{6}$, $\gamma_{4709.6}$**789.7**$_{4}(100)$
5558.0$_{6}$(?), $\gamma_{5253.5}$**305.4**$_{3}(100)$(?)
5591.4$_{7}$, $\gamma_{5253.5}$**338.0**$_{7}(100_{38})$, $\gamma_{4901.5}$**689.9**$_{7}(75_{25})$
5597.7$_{7}$, $\gamma_{5253.5}$**344.5**$_{8}(25_{13})$, $\gamma_{4901.5}$**696.0**$_{7}(100_{25})$
I **5686.8**$_{6}$, $49/2^{+}$, $\gamma_{5410.8}$**276.4**$_{3}(100_{13})$, $\gamma_{5309.4}$**378.6**$_{8}(11_{4})$(?)
C **5748.6**$_{6}$, $49/2^{+}$, $\gamma_{4741.7}$**1006.9**$_{3}(100)$
5799.6$_{7}$, $\gamma_{5136.5}$**663.1**$_{4}(100)$
5869.0$_{8}$, $\gamma_{4901.5}$**967.5**$_{6}(100)$
I **5892.2**$_{6}$, $51/2^{+}$, $\gamma_{5686.8}$**205.9**$_{3}(100_{23})$, $\gamma_{5410.8}$**481.3**$_{3}(83_{8})$, $\gamma_{5400.4}$**491.5**$_{4}(38_{6})$
5962.9$_{9}$, $\gamma_{4901.5}$**1061.4**$_{7}(100)$
6175.4$_{6}$, $\gamma_{5490.1}$**685.1**$_{7}(38_{15})$, $\gamma_{5446.0}$**729.5**$_{5}(100_{23})$
I **6298.6**$_{6}$, $53/2^{+}$, $\gamma_{5892.2}$**406.5**$_{3}(100_{10})$, $\gamma_{5686.8}$**611.5**$_{4}(52_{13})$
E **6326.5**$_{6}$, $53/2^{-}$, $\gamma_{5400.4}$**926.0**$_{3}(100)$
6495.4$_{8}$, $55/2$, $\gamma_{6298.6}$**196.7**$_{6}(100)$
I **6650.5**$_{6}$, $55/2^{+}$, $\gamma_{6298.6}$**352.0**$_{4}(76_{10})$, $\gamma_{5892.2}$**758.3**$_{3}(100_{12})$
6791.6$_{8}$, $57/2$, $\gamma_{6495.4}$**296.0**$_{7}(100)$
I **7127.1**$_{7}$, $57/2^{+}$, $\gamma_{6791.6}$**335.4**$_{7}(36_{14})$, $\gamma_{6650.5}$**476.9**$_{5}(82_{14})$, $\gamma_{6298.6}$**828.3**$_{4}(100_{18})$
7188.8$_{10}$, $\gamma_{6175.4}$**1013.4**$_{7}(100)$
7404.9$_{7}$, $57/2^{(-)}$, $\gamma_{6326.5}$**1078.5**$_{4}(100)$
H **7411.8**$_{7}$, $57/2^{(-)}$, $\gamma_{6326.5}$**1085.3**$_{5}(100)$
I **7536.6**$_{8}$, $59/2^{+}$, $\gamma_{7127.1}$**409.2**$_{8}(37_{11})$, $\gamma_{6650.5}$**886.1**$_{6}(100_{21})$
H **7744.1**$_{8}$, $59/2^{(-)}$, $\gamma_{7411.8}$**332.7**$_{7}(70_{15})$, $\gamma_{7404.9}$**339.4**$_{6}(100_{20})$
I **8008.9**$_{9}$, $61/2^{+}$, $\gamma_{7536.6}$**472.1**$_{8}(42_{17})$, $\gamma_{7127.1}$**882.0**$_{7}(100_{25})$
H **8066.6**$_{8}$, $61/2^{(-)}$, $\gamma_{7744.1}$**322.6**$_{6}(100_{16})$, $\gamma_{7411.8}$**654.5**$_{7}(68_{16})$, $\gamma_{7404.9}$**661.5**$_{6}(84_{21})$
I **8381.7**$_{10}$, $63/2^{+}$, $\gamma_{7536.6}$**845.1**$_{6}(100)$
H **8456.1**$_{8}$, $63/2^{(-)}$, $\gamma_{8066.6}$**389.2**$_{5}(100_{21})$, $\gamma_{7744.1}$**712.2**$_{5}(89_{32})$
H **8891.8**$_{9}$, $65/2^{(-)}$, $\gamma_{8456.1}$**435.4**$_{6}(65_{18})$, $\gamma_{8066.6}$**825.1**$_{5}(100_{35})$
H **9331.4**$_{9}$, $67/2^{(-)}$, $\gamma_{8891.8}$**439.1**$_{8}(50_{17})$, $\gamma_{8456.1}$**875.7**$_{6}(100_{25})$
H **9785.3**$_{10}$, $69/2^{(-)}$, $\gamma_{9331.4}$**454.0**$_{8}(42_{17})$, $\gamma_{8891.8}$**893.4**$_{6}(100_{25})$
H **10220.8**$_{12}$, $71/2^{(-)}$, $\gamma_{9331.4}$**889.4**$_{8}(100)$
J **v**, J
J **171.8+v**, $\mathrm{J}+1$, γ_{v}**171.8**$_{5}(100)$
J **443.2+v**, $\mathrm{J}+2$, $\gamma_{171.8+\mathrm{v}}$**271.5**$_{5}(100)$
J **748.8+v**, $\mathrm{J}+3$, $\gamma_{443.2+\mathrm{v}}$**305.7**$_{5}(100_{16})$, $\gamma_{171.8+\mathrm{v}}$**576.9**$_{7}(29_{10})$
K **x**, $\mathrm{J}_1\approx(25/2^{+})$
K **294.0+x**(?), J_1+2, γ_{x}**294**(?)
K **627.9+x**, J_1+4, $\gamma_{294.0+\mathrm{x}}$**333.9**$_{1}(0.64_{7})$
K **1000.7+x**, J_1+6, $\gamma_{627.9+\mathrm{x}}$**372.8**$_{3}(1.07_{30})$
K **1411.9+x**, J_1+8, $\gamma_{1000.7+\mathrm{x}}$**411.2**$_{3}(0.65_{8})$
K **1860.3+x**, J_1+10, $\gamma_{1411.9+\mathrm{x}}$**448.4**$_{1}(0.86_{7})$
K **2345.0+x**, J_1+12, $\gamma_{1860.3+\mathrm{x}}$**484.7**$_{1}(0.96_{9})$
K **2864.8+x**, J_1+14, $\gamma_{2345.0+\mathrm{x}}$**519.8**$_{1}(0.92_{10})$
K **3418.8+x**, J_1+16, $\gamma_{2864.8+\mathrm{x}}$**554.0**$_{1}(1.01_{9})$
K **4006.3+x**, J_1+18, $\gamma_{3418.8+\mathrm{x}}$**587.5**$_{2}(1.00_{9})$
K **4626.6+x**, J_1+20, $\gamma_{4006.3+\mathrm{x}}$**620.3**$_{3}(1.06_{10})$
K **5278.8+x**, J_1+22, $\gamma_{4626.6+\mathrm{x}}$**652.2**$_{3}(1.05_{9})$
K **5962.0+x**, J_1+24, $\gamma_{5278.8+\mathrm{x}}$**683.2**$_{2}(0.70_{7})$
K **6676.2+x**, J_1+26, $\gamma_{5962.0+\mathrm{x}}$**714.2**$_{3}(0.62_{8})$
K **7419.4+x**, J_1+28, $\gamma_{6676.2+\mathrm{x}}$**743.2**$_{8}(0.41_{7})$
K **8192.2+x**, J_1+30, $\gamma_{7419.4+\mathrm{x}}$**772.8**$_{4}(0.34_{4})$
K **8994.4+x**, J_1+32, $\gamma_{8192.2+\mathrm{x}}$**802.2**$_{9}(0.32_{4})$
K **9826.3+x**(?), J_1+34, $\gamma_{8994.4+\mathrm{x}}$**832**(?)
K **10687.4+x**(?), J_1+36, $\gamma_{9826.3+\mathrm{x}}$**861**(?)
K **11574.4+x**(?), J_1+38, $\gamma_{10687.4+\mathrm{x}}$**887**(?)
L **y**, $\mathrm{J}_2\approx(23/2^{+})$
L **273.9+y**, J_2+2, γ_{y}**273.9**$_{2}(0.49_{5})$
L **588.1+y**, J_2+4, $\gamma_{273.9+\mathrm{y}}$**314.2**$_{1}(0.64_{5})$
L **941.6+y**, J_2+6, $\gamma_{588.1+\mathrm{y}}$**353.5**$_{1}(0.88_{5})$
L **1333.8+y**, J_2+8, $\gamma_{941.6+\mathrm{y}}$**392.2**$_{1}(0.92_{5})$
L **1763.7+y**, J_2+10, $\gamma_{1333.8+\mathrm{y}}$**429.9**$_{1}(1.00_{6})$
L **2230.6+y**, J_2+12, $\gamma_{1763.7+\mathrm{y}}$**466.9**$_{1}(0.94_{5})$
L **2733.4+y**, J_2+14, $\gamma_{2230.6+\mathrm{y}}$**502.8**$_{1}(1.02_{5})$
L **3271.0+y**, J_2+16, $\gamma_{2733.4+\mathrm{y}}$**537.6**$_{1}(1.05_{6})$
L **3842.3+y**, J_2+18, $\gamma_{3271.0+\mathrm{y}}$**571.3**$_{1}(0.87_{6})$
L **4446.5+y**, J_2+20, $\gamma_{3842.3+\mathrm{y}}$**604.2**$_{1}(1.04_{7})$
L **5082.7+y**, J_2+22, $\gamma_{4446.5+\mathrm{y}}$**636.2**$_{4}(1.16_{8})$
L **5750.8+y**, J_2+24, $\gamma_{5082.7+\mathrm{y}}$**668.1**$_{1}(1.08_{7})$
L **6448.9+y**, J_2+26, $\gamma_{5750.8+\mathrm{y}}$**698.1**$_{2}(0.96_{7})$
L **7177.2+y**, J_2+28, $\gamma_{6448.9+\mathrm{y}}$**728.3**$_{2}(0.69_{5})$
L **7935.0+y**, J_2+30, $\gamma_{7177.2+\mathrm{y}}$**757.8**$_{2}(0.71_{5})$
L **8722.2+y**, J_2+32, $\gamma_{7935.0+\mathrm{y}}$**787.2**$_{3}(0.54_{5})$
L **9538.0+y**, J_2+34, $\gamma_{8722.2+\mathrm{y}}$**815.8**$_{9}(0.38_{4})$
L **10383.0+y**, J_2+36, $\gamma_{9538.0+\mathrm{y}}$**845.0**$_{9}(0.16_{3})$

L **11257.0+y**(?), J_2+38, $\gamma_{\mathbf{10383.0+y}}$**874**(?)
M **z**, $J_3 \approx (21/2^-)$
M **244.0+z**(?), J_2+2, $\gamma_{\mathbf{z}}$**244**(?)
M **528.5+z**, J_3+4, $\gamma_{\mathbf{244.0+z}}$**284.5**$_1(0.76_5)$
M **853.5+z**, J_3+6, $\gamma_{\mathbf{528.5+z}}$**325.0**$_1(0.92_6)$
M **1218.9+z**, J_3+8, $\gamma_{\mathbf{853.5+z}}$**365.4**$_1(0.99_6)$
M **1624.2+z**, J_3+10, $\gamma_{\mathbf{1218.9+z}}$**405.3**$_1(0.93_6)$
M **2069.2+z**, J_3+12, $\gamma_{\mathbf{1624.2+z}}$**445.0**$_1(0.97_6)$
M **2553.7+z**, J_3+14, $\gamma_{\mathbf{2069.2+z}}$**484.5**$_1(0.99_6)$
M **3077.3+z**, J_3+16, $\gamma_{\mathbf{2553.7+z}}$**523.6**$_1(1.03_6)$
M **3639.4+z**, J_3+18, $\gamma_{\mathbf{3077.3+z}}$**562.1**$_1(0.82_7)$
M **4239.4+z**, J_3+20, $\gamma_{\mathbf{3639.4+z}}$**600.0**$_1(1.01_7)$
M **4876.6+z**, J_3+22, $\gamma_{\mathbf{4239.4+z}}$**637.1**$_4(1.00_9)$
M **5549.9+z**, J_3+24, $\gamma_{\mathbf{4876.6+z}}$**673.4**$_2(1.07_7)$
M **6258.6+z**, J_3+26, $\gamma_{\mathbf{5549.9+z}}$**708.7**$_4(1.12_9)$
M **7000.8+z**, J_3+28, $\gamma_{\mathbf{6258.6+z}}$**742.2**$_9(0.64_{10})$
M **7776.9+z**, J_3+30, $\gamma_{\mathbf{7000.8+z}}$**776.1**$_3(0.54_4)$
M **8581.9+z**, J_3+32, $\gamma_{\mathbf{7776.9+z}}$**805.0**$_4(0.33_5)$
M **9411.0+z**, J_3+34, $\gamma_{\mathbf{8581.9+z}}$**829.1**$_6(0.22_4)$
M **10259.5+z**, J_3+36, $\gamma_{\mathbf{9411.0+z}}$**848.5**$_5(0.17_4)$
M **11127.5+z**(?), J_3+38, $\gamma_{\mathbf{10259.5+z}}$**868**(?)
N **u**, $J_4 \approx (31/2^-)$
N **341.9+u**, J_4+2, $\gamma_{\mathbf{u}}$**341.9**$_1(0.89_{16})$
N **722.8+u**, J_4+4, $\gamma_{\mathbf{341.9+u}}$**380.9**$_1(1.06_{22})$
N **1141.9+u**, J_4+6, $\gamma_{\mathbf{722.8+u}}$**419.1**$_1(0.81_{16})$
N **1599.1+u**, J_4+8, $\gamma_{\mathbf{1141.9+u}}$**457.2**$_1(1.00_{16})$
N **2093.6+u**, J_4+10, $\gamma_{\mathbf{1599.1+u}}$**494.5**$_1(1.03_{16})$
N **2625.0+u**, J_4+12, $\gamma_{\mathbf{2093.6+u}}$**531.4**$_1(0.90_{17})$
N **3192.6+u**, J_4+14, $\gamma_{\mathbf{2625.0+u}}$**567.6**$_1(0.97_{18})$
N **3795.4+u**, J_4+16, $\gamma_{\mathbf{3192.6+u}}$**602.8**$_1(1.00_{18})$
N **4433.5+u**, J_4+18, $\gamma_{\mathbf{3795.4+u}}$**638.1**$_1(1.02_{21})$
N **5105.9+u**, J_4+20, $\gamma_{\mathbf{4433.5+u}}$**672.4**$_2(1.12_{22})$
N **5811.8+u**, J_4+22, $\gamma_{\mathbf{5105.9+u}}$**705.9**$_2(1.00_{26})$
N **6550.9+u**, J_4+24, $\gamma_{\mathbf{5811.8+u}}$**739.1**$_8(0.75_{20})$
N **7322.5+u**, J_4+26, $\gamma_{\mathbf{6550.9+u}}$**771.6**$_2(0.64_{18})$
N **8125.5+u**, J_4+28, $\gamma_{\mathbf{7322.5+u}}$**803.4**$_5(0.40_{16})$
N **8962.0+u**, J_4+30, $\gamma_{\mathbf{8125.5+u}}$**836.1**$_5(0.38_{15})$
N **9830.0+u**, J_4+32, $\gamma_{\mathbf{8962.0+u}}$**868.0**$_6(0.38_{17})$
N **10729.0+u**(?), J_4+34, $\gamma_{\mathbf{9830.0+u}}$**899**(?)



SD-1 band (1997Ha01) SD-2 band (1997Ha01) SD-3 band (1997Ha01) SD-4 band (1997Ha01)

$^{195}_{80}$Hg$_{115}$

$^{189}_{81}\mathrm{Tl}_{108}$

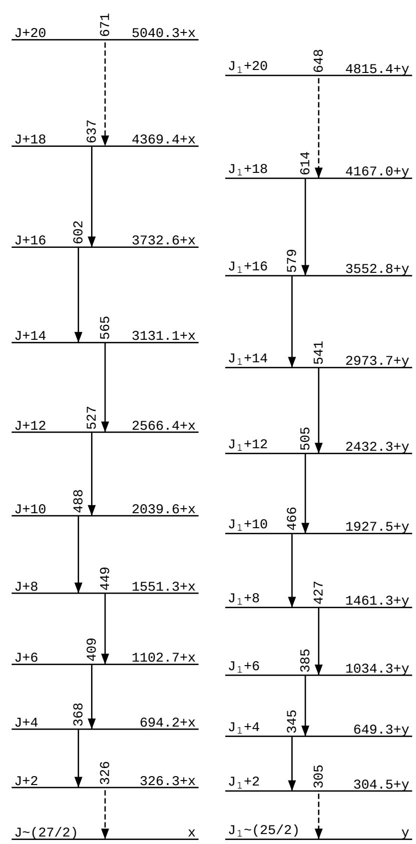
S_n: 10149 *SY*, S_p: 1575 *SY*

Nuclear Bands

A $\pi h_{9/2}$ oblate band
B $\pi i_{13/2}$ oblate structure
C $\pi i_{13/2}$ prolate band
D Band based on $(19/2^-)$
E Band based on $(23/2^-)$
F Band based on $(9/2^-)$
G SD-1 band (1998Re20)
H SD-2 band (1998Re20)

Levels and γ-ray branchings:

0, $(1/2^+)$, *2.3_2 min*, %ε+%β^+=100
24, $(1/2^+)$
A **281_7**, $(9/2^-)$, *1.4_1 min*, %ε+%β^+=100 , %IT<4 , μ=+3.878$_6$, Q=-2.29$_4$
342_1, $(3/2^+)$, γ_{24}**318**
611_1, $(5/2^+)$, γ_{342}**269**, γ_{24}**587**
A **667.0_2**, $(11/2^-)$, γ_{281}**386.0_2**(100) M1+E2
772_1, γ_{342}**430**
A **981.0_2**, $(13/2^-)$, $\gamma_{667.0}$**314.0_3**(100_{20}) M1(+E2), γ_{281}**700.0_3**(100_{20}) E2
1062_1, $(7/2^-)$, γ_{772}**291**, $\gamma_{667.0}$**395**, γ_{611}**451**, γ_{281}**781**
B **1146.8_3**, $(13/2^+)$, $\gamma_{981.0}$**165.9_3**, $\gamma_{667.0}$**479.8_3**(100_{20}) E1
1324.6_4, $(13/2^-)$, $\gamma_{667.0}$**657.6_3**(100) M1(+E2)
A **1408.3_3**, $(15/2^-)$, $\gamma_{981.0}$**427.3_5**(71_{28}) M1(+E2), $\gamma_{667.0}$**741.1_5**(100_{28})
F **1525_1**, $(9/2^-)$, γ_{1062}**463**
B **1545.4_4**, $(15/2^+)$, $\gamma_{1146.8}$**398.6_3**(100) M1+E2
A **1645.1_3**, $(17/2^-)$, $\gamma_{1408.3}$**236.9_3**, $\gamma_{981.0}$**664.2_3**(100_{20}) E2
1745.0_4, $\gamma_{1545.4}$**199.6_3**, $\gamma_{1408.3}$**336.7_3**
B **1828.7_4**, $(17/2^+)$, $\gamma_{1545.4}$**283.3_5**(47_{13}) D, $\gamma_{1146.8}$**681.8_3**(100_{33}) E2
1844.1_5, $(17/2^-)$, $\gamma_{1645.1}$**199**, $\gamma_{1408.3}$**436**, $\gamma_{981.0}$**863**
F **1962_1**, $(13/2^-)$, γ_{1525}**437**
C **1994.5_4**, $(17/2^+)$, $\gamma_{1545.4}$**449.2_3**, $\gamma_{1146.8}$**848**(?)
2062.0_5, $\gamma_{1745.0}$**317.0_3**
D **2146.9_4**, $(19/2^-)$, $\gamma_{1844.1}$**303**, $\gamma_{1645.1}$**501.9_3**(100)
A **2163.1_4**, $(19/2^-)$, $\gamma_{1844.1}$**319**, $\gamma_{1645.1}$**518**, $\gamma_{1408.3}$**754.7_3**
C **2236.0_4**, $(21/2^+)$, $\gamma_{1994.5}$**241.6_3**, $\gamma_{1828.7}$**407.3_3**(100_{33}) E2
2236.1_5, $(17/2)$, $\gamma_{1545.4}$**690.7_3**
B **2307.1_4**, $(19/2^+)$, $\gamma_{1828.7}$**479_1**, $\gamma_{1745.0}$**562.0_3**, $\gamma_{1645.1}$**662_1**, $\gamma_{1545.4}$**761.7_3**
F **2446_1**, $(17/2^-)$, γ_{1962}**484**
A **2500.9_6**, $(21/2^-)$, $\gamma_{2163.1}$**338**, $\gamma_{1844.1}$**657**, $\gamma_{1645.1}$**856**
C **2631.2_5**, $(25/2^+)$, $\gamma_{2236.0}$**395.2_3**(100) E2
E **2648.8_5**, $(23/2^-)$, $\gamma_{2163.1}$**484**, $\gamma_{2146.9}$**501.9_3**(100) E2
D **2667.9_{11}**, $(23/2^-)$, $\gamma_{2146.9}$**521**
A **2698.0_9**, $(23/2^-)$, $\gamma_{2500.9}$**197**, $\gamma_{2163.1}$**535**
E **2788.3_6**, $(25/2^-)$, $\gamma_{2648.8}$**139.5_3**(100) D, $\gamma_{2500.9}$**288**
F **2986_2**, $(21/2^-)$, γ_{2446}**540**
E **3025.3_6**, $(27/2^-)$, $\gamma_{2788.3}$**236.9_3**(100) D
C **3093.2_{12}**, $(29/2^+)$, $\gamma_{2631.2}$**462**
D **3252.9_{15}**, $(27/2^-)$, $\gamma_{2667.9}$**585**
E **3277.4_6**, $(29/2^-)$, $\gamma_{3025.3}$**252.2_3**(100_{27}) D, $\gamma_{2788.3}$**489.2_3**
3441.2_{12}, $\gamma_{3093.2}$**348.0_3**
F **3583_3**, $(25/2^-)$, γ_{2986}**597**
E **3627.0_7**, $(31/2^-)$, $\gamma_{3277.4}$**349.7_3**, $\gamma_{3025.3}$**601**
C **3627.6_{12}**, $(33/2^+)$, $\gamma_{3093.2}$**534.4_3**(100) E2
D **3901_2**, $(31/2^-)$, $\gamma_{3252.9}$**648**
E **3957.8_9**, $(33/2^-)$, $\gamma_{3627.0}$**331**, $\gamma_{3277.4}$**680**
F **4219_2**, $(29/2^-)$, γ_{3583}**636**
C **4230.7_{12}**, $(37/2^+)$, $\gamma_{3627.6}$**603.1_3**
E **4359.9_{10}**(?), $(35/2^-)$, $\gamma_{3957.8}$**402**(?), $\gamma_{3627.0}$**733**(?)
4456_2, γ_{4219}**237**
D **4605_2**, $(35/2^-)$, γ_{3901}**704**
4645_2, γ_{4456}**189**
E **4728.9_{11}**(?), $(37/2^-)$, $\gamma_{4359.9}$**369**(?), $\gamma_{3957.8}$**771**(?)
F **4892_2**(?), γ_{4219}**673**(?)
C **4895_2**, $\gamma_{4230.7}$**664_1**
4937_2(?), γ_{4645}**292**(?)
D **5361_2**, $(39/2^-)$, γ_{4605}**756**
C **5605_2**, γ_{4895}**710**
C **6332_2**, γ_{5605}**727**
G **x**, $J \approx (27/2)$
G **326.3+x**, $J+2$, γ_x**326.3_{10}**(0.13_8)(?)
G **694.2+x**, $J+4$, $\gamma_{326.3+x}$**367.9_6**(0.38_7)
G **1102.7+x**, $J+6$, $\gamma_{694.2+x}$**408.5_3**(1.09_8)
G **1551.3+x**, $J+8$, $\gamma_{1102.7+x}$**448.6_3**(1.00_8)
G **2039.6+x**, $J+10$, $\gamma_{1551.3+x}$**488.3_3**(0.95_8)
G **2566.4+x**, $J+12$, $\gamma_{2039.6+x}$**526.8_3**(0.94_7)
G **3131.1+x**, $J+14$, $\gamma_{2566.4+x}$**564.7_3**(0.83_{10})
G **3732.6+x**, $J+16$, $\gamma_{3131.1+x}$**601.5_6**(0.50_7)
G **4369.4+x**, $J+18$, $\gamma_{3732.6+x}$**636.8_6**(0.33_8)
G **5040.3+x**, $J+20$, $\gamma_{4369.4+x}$**670.9_{10}**(0.23_7)(?)
H **y**, $J_1 \approx (25/2)$
H **304.5+y**, J_1+2, γ_y**304.5_{10}**(0.39_8)(?)
H **649.3+y**, J_1+4, $\gamma_{304.5+y}$**344.8_6**(0.45_8)
H **1034.3+y**, J_1+6, $\gamma_{649.3+y}$**385_1**
H **1461.3+y**, J_1+8, $\gamma_{1034.3+y}$**427_1**(0.97_{11})
H **1927.5+y**, J_1+10, $\gamma_{1461.3+y}$**466.2_3**(1.00_9)
H **2432.3+y**, J_1+12, $\gamma_{1927.5+y}$**504.8_3**(0.86_9)
H **2973.7+y**, J_1+14, $\gamma_{2432.3+y}$**541.4_3**(0.82_8)
H **3552.8+y**, J_1+16, $\gamma_{2973.7+y}$**579.1_6**(0.54_8)
H **4167.0+y**, J_1+18, $\gamma_{3552.8+y}$**614.2_6**(0.47_9)
H **4815.4+y**, J_1+20, $\gamma_{4167.0+y}$**648.4_{10}**(0.35_7)(?)



SD-1 band (1998Re20) SD-2 band (1998Re20)

$^{189}_{81}\mathrm{Tl}_{108}$

$^{191}_{81}\mathrm{Tl}_{110}$

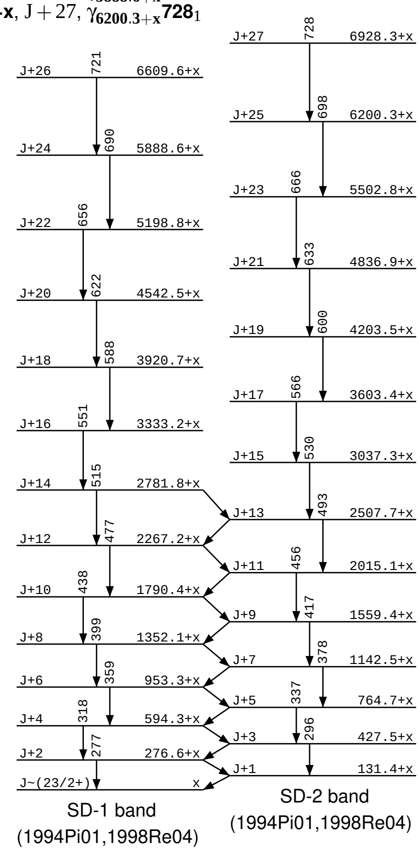
S_n: 9846 $_{SY}$, S_p: 2064 $_{SY}$

Nuclear Bands

A π9/2[505]
B Kπ=(3/2$^+$)
C Kπ=(7/2$^-$)
D π13/2[606]
E Band based on (21/2$^+$)
F Band based on (19/2$^-$)
G Band based on (17/2$^+$)
H SD-1 band (1994Pi01,1998Re04)
Q_0=18.0$_{10}$
I SD-2 band (1994Pi01,1998Re04)
Q_0=18.0$_{10}$

Levels and γ-ray branchings:

0, $(1/2^+)$, *unknown* , %ε+%β^+=? , μ=+1.588$_4$
A **299**$_7$, $9/2^{(-)}$, *5.22$_{16}$ min*, %ε+%β^+=100 , μ=+3.880$_7$, Q=-2.23$_2$
B **341.2**$_2$, $(3/2^+)$, γ_0**341.2**$_2$(100)
A **686.1**$_2$, $(11/2^-)$, γ_{299}**387.1**$_2$(100)
B **745.3**$_7$(?), $(5/2^+)$, $\gamma_{341.2}$**404.0**(100)(?)
C **859.6**$_2$, $(7/2^-)$, γ_{299}**560.6**$_2$(100)
A **1011.2**$_2$, $(13/2^-)$, $\gamma_{686.1}$**325.0**$_2$(59_2), γ_{299}**712.2**$_2$(100_7)
C **1172.8**$_2$, $(9/2^-)$, $\gamma_{859.6}$**313.0**$_2$(35_4), γ_{299}**873.9**$_2$(100_4)
B **1216.6**$_7$(?), $(7/2^+)$, $\gamma_{745.3}$**471.3**$_2$(67_{34}), $\gamma_{341.2}$**875.5**(100_7)
D **1299.8**$_2$, $(13/2^+)$, $\gamma_{1011.2}$**288.1**, $\gamma_{686.1}$**613.5**$_2$(100)
1392.1$_2$, $(13/2^-)$, $\gamma_{686.1}$**705.7**$_2$(100_{13}), γ_{299}**1093.3**$_2$(94_{13})
A **1438.9**, $(15/2^-)$, $\gamma_{1011.2}$**427.3**, $\gamma_{686.1}$**752.8**
1704.7(?), $(15/2^+)$, $\gamma_{1299.8}$**404.6**(100)(?)
A **1760.2**, $(17/2^-)$, $\gamma_{1438.9}$**321.3**, $\gamma_{1011.2}$**748.8**
1929.3, $(17/2^-)$, $\gamma_{1438.9}$**490.4**, $\gamma_{1011.2}$**918.5**
2010.7, $(17/2^+)$, $\gamma_{1704.7}$**306.0**, $\gamma_{1438.9}$**571.6**, $\gamma_{1299.8}$**710.9**
G **2077.5**, $(17/2^+)$, $\gamma_{1704.7}$**372.4**, $\gamma_{1299.8}$**777.4**
2183.7, $(19/2^+)$, $\gamma_{2077.5}$**106.6**, $\gamma_{2010.7}$**173.0**, $\gamma_{1760.2}$**422.9**
A **2231.8**, $(19/2^-)$, $\gamma_{1760.2}$**471.6**, $\gamma_{1438.9}$**792.8**
2321.0, $(21/2^+)$, $\gamma_{2183.7}$**137.3**
E **2329.2**, $(21/2^+)$, $\gamma_{2183.7}$**145.5**
2387.1, $(19/2^-)$, $\gamma_{1929.3}$**457.8**, $\gamma_{1438.9}$**948.3**
F **2407.5**, $(19/2^-)$, $\gamma_{2231.8}$**175.9**, $\gamma_{2183.7}$**225.4**(?), $\gamma_{1760.2}$**647.3**
G **2431.9**, $(19/2^+)$, $\gamma_{2183.7}$**248.2**, $\gamma_{2077.5}$**354.4**
2486.3, $(21/2^+)$, $\gamma_{2321.0}$**165.5**, $\gamma_{2183.7}$**303.4**
A **2600.3**, $(21/2^-)$, $\gamma_{2407.5}$**193.0**(?), $\gamma_{2387.1}$**212.8**, $\gamma_{2231.8}$**368.7**, $\gamma_{1760.2}$**839.8**
F **2622.1**, $(21/2^-)$, $\gamma_{2407.5}$**214.6**
E **2642.0**, $(23/2^+)$, $\gamma_{2329.2}$**312.8**, $\gamma_{2321.0}$**321.0**, $\gamma_{2183.7}$**458.6**
2676.1, $(23/2^+)$, $\gamma_{2486.3}$**189.6**, $\gamma_{2431.9}$**244.2**, $\gamma_{2407.5}$**269.2**(?)
G **2738.5**, $(21/2^+)$, $\gamma_{2486.3}$**252.0**, $\gamma_{2431.9}$**306.6**
A **2852.0**, $(23/2^-)$, $\gamma_{2600.3}$**251.5**
F **2861.5**, $(23/2^-)$, $\gamma_{2622.1}$**239.4**
G **2882.7**, $(23/2^+)$, $\gamma_{2738.5}$**144.2**, $\gamma_{2600.3}$**282.8**(?)
2955.6, $(25/2^+)$, $\gamma_{2676.1}$**279.5**
E **2968.7**, $(25/2^+)$, $\gamma_{2642.0}$**326.7**, $\gamma_{2329.2}$**639.6**
3018(?), $(23/2^-)$, $\gamma_{2600.3}$**418**(?), $\gamma_{2231.8}$**786**(?)
A **3077.3**, $(25/2^-)$, $\gamma_{2852.0}$**225.3**, $\gamma_{2600.3}$**476.8**
F **3093.5**, $(25/2^-)$, $\gamma_{2861.5}$**232.0**
G **3131.1**, $(25/2^+)$, $\gamma_{2882.7}$**248.4**
3323.4, $(27/2^+)$, $\gamma_{3131.1}$**192.5**, $\gamma_{2955.6}$**367.8**
E **3343.7**, $(27/2^+)$, $\gamma_{2968.7}$**375.0**, $\gamma_{2642.0}$**702.0**
A **3446.4**, $(27/2^-)$, $\gamma_{3077.3}$**369.1**, $\gamma_{2852.0}$**594.6**
3595.4, $(29/2^+)$, $\gamma_{3323.4}$**272.0**
E **3674.3**, $(29/2^+)$, $\gamma_{3343.7}$**330.6**, $\gamma_{2968.7}$**706.2**
A **3763.0**, $(29/2^-)$, $\gamma_{3446.4}$**316.6**, $\gamma_{3077.3}$**685.8**
E **3963.4**, $(31/2^+)$, $\gamma_{3674.3}$**289.1**, $\gamma_{3343.7}$**620.0**
E **4123.0**, $(33/2^+)$, $\gamma_{3963.4}$**159.6**, $\gamma_{3674.3}$**449.0**
A **4194.7**, $(31/2^-)$, $\gamma_{3763.0}$**431.7**, $\gamma_{3446.4}$**748.6**
E **4323.9**, $(35/2^+)$, $\gamma_{4123.0}$**200.9**
E **4513.1**, $(37/2^+)$, $\gamma_{4323.9}$**189.2**, $\gamma_{4123.0}$**390.4**
A **4566.4**, $(33/2^-)$, $\gamma_{4194.7}$**371.7**, $\gamma_{3763.0}$**803.2**
E **4792.6**, $(39/2^+)$, $\gamma_{4513.1}$**279.5**
A **5030.4**, $(35/2^-)$, $\gamma_{4566.4}$**464.0**, $\gamma_{4194.7}$**836.5**
E **5075.5**, $(41/2^+)$, $\gamma_{4792.6}$**282.5**, $\gamma_{4513.1}$**564.1**
A **5425.9**, $(37/2^-)$, $\gamma_{5030.4}$**395.5**, $\gamma_{4566.4}$**859.9**
E **5430.0**, $(43/2^+)$, $\gamma_{5075.5}$**354.5**
E **5793.0**, $(45/2^+)$, $\gamma_{5430.0}$**363.0**
H **x**, $J\approx(23/2^+)$
I **131.4+x**, $J+1$, γ_x**132**
H **276.6+x**, $J+2$, $\gamma_{131.4+x}$**145**, γ_x**276.5**$_4$(0.39_4)
I **427.5+x**, $J+3$, $\gamma_{276.6+x}$**150**, $\gamma_{131.4+x}$**296.3**$_4$(0.20_2)
H **594.3+x**, $J+4$, $\gamma_{427.5+x}$**166**, $\gamma_{276.6+x}$**317.7**$_3$(0.56_6)
I **764.7+x**, $J+5$, $\gamma_{594.3+x}$**170**, $\gamma_{427.5+x}$**337.2**$_3$(0.31_3)
H **953.3+x**, $J+6$, $\gamma_{764.7+x}$**190**, $\gamma_{594.3+x}$**359.0**$_2$(0.82_8)
I **1142.5+x**, $J+7$, $\gamma_{953.3+x}$**189**, $\gamma_{764.7+x}$**377.8**$_2$(0.41_4)
H **1352.1+x**, $J+8$, $\gamma_{1142.5+x}$**209**, $\gamma_{953.3+x}$**398.8**$_2$(0.95_9) (E2)
I **1559.4+x**, $J+9$, $\gamma_{1352.1+x}$**208**, $\gamma_{1142.5+x}$**416.9**$_2$(0.90_9) (E2)
H **1790.4+x**, $J+10$, $\gamma_{1559.4+x}$**230**, $\gamma_{1352.1+x}$**438.3**$_2$(1.00_{10}) (E2)
I **2015.1+x**, $J+11$, $\gamma_{1790.4+x}$**225**, $\gamma_{1559.4+x}$**455.7**$_2$(1.00_{10}) (E2)
H **2267.2+x**, $J+12$, $\gamma_{2015.1+x}$**252**, $\gamma_{1790.4+x}$**476.8**$_2$(0.97_{10}) (E2)
I **2507.7+x**, $J+13$, $\gamma_{2267.2+x}$**240**, $\gamma_{2015.1+x}$**492.8**$_3$(1.00_{10}) (E2)
H **2781.8+x**, $J+14$, $\gamma_{2507.7+x}$**275**, $\gamma_{2267.2+x}$**514.5**$_3$(0.77_8)
I **3037.3+x**, $J+15$, $\gamma_{2507.7+x}$**529.6**$_3$(0.70_7) (E2)
H **3333.2+x**, $J+16$, $\gamma_{2781.8+x}$**551.4**$_3$(0.70_7) (E2)
I **3603.4+x**, $J+17$, $\gamma_{3037.3+x}$**566.1**$_3$(0.52_5) (E2)
H **3920.7+x**, $J+18$, $\gamma_{3333.2+x}$**587.5**$_3$(0.49_5) (E2)
I **4203.5+x**, $J+19$, $\gamma_{3603.4+x}$**600.1**$_4$(0.40_4)
H **4542.5+x**, $J+20$, $\gamma_{3920.7+x}$**621.8**$_3$(0.31_3)
I **4836.9+x**, $J+21$, $\gamma_{4203.5+x}$**633.4**$_4$(0.29_3)
H **5198.8+x**, $J+22$, $\gamma_{4542.5+x}$**656.3**$_4$(0.21_2)
I **5502.8+x**, $J+23$, $\gamma_{4836.9+x}$**665.9**$_4$(0.18_2)
H **5888.6+x**, $J+24$, $\gamma_{5198.8+x}$**689.8**$_4$(0.19_2)
I **6200.3+x**, $J+25$, $\gamma_{5502.8+x}$**697.5**$_5$(0.15_2)
H **6609.6+x**, $J+26$, $\gamma_{5888.6+x}$**721**$_1$
I **6928.3+x**, $J+27$, $\gamma_{6200.3+x}$**728**$_1$



$^{191}_{81}\mathrm{Tl}_{110}$

$^{192}_{81}\mathrm{Tl}_{111}$

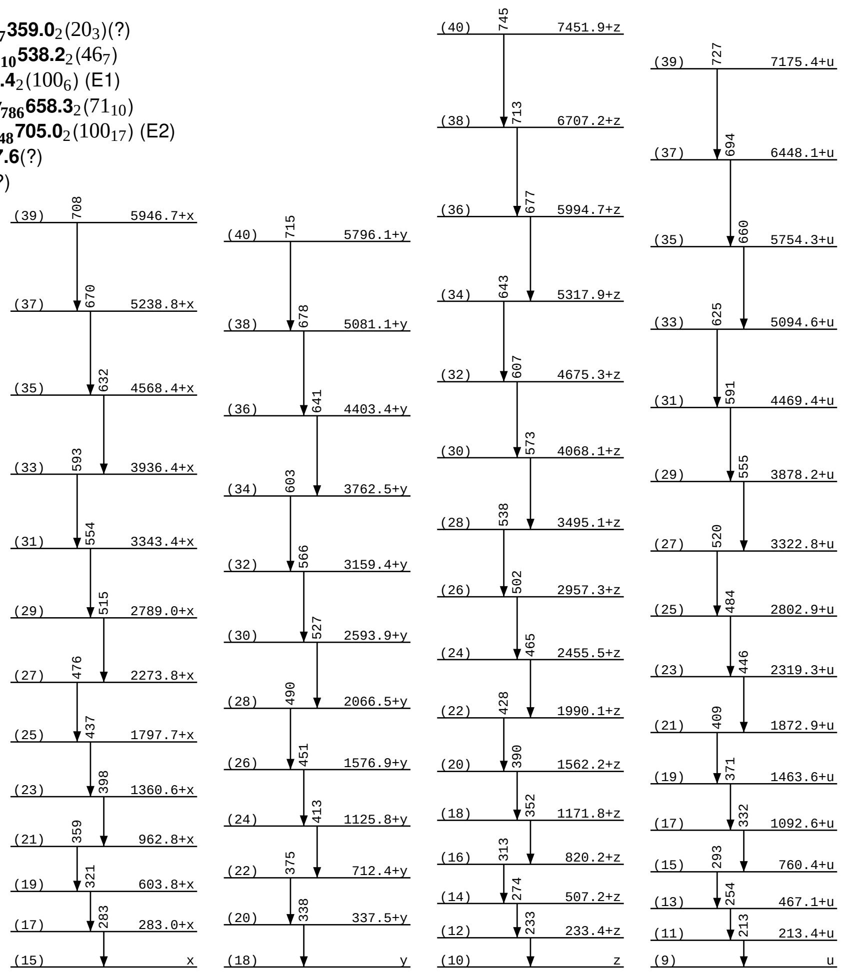
S_n: 7.8x10$^3_{SY}$, S_p: 2.56x10$^3_{SY}$

Nuclear Bands

- A Band based on (10^-)
- B SD-1 band (1996Fi02,1992Li21)
- C SD-2 band (1996Fi02,1992Li21)
- D SD-3 band (1996Fi02,1992Li21)
- E SD-4 band (1996Fi02)

Levels and γ-ray branchings:

0, (2^-), *9.6$_4$ min*, %ε+%β$^+$=100, μ=+0.200$_3$, Q=-0.328$_{11}$
156$_{54}$, (7^+), *10.8$_2$ min*, %ε+%β$^+$=100, μ=+0.502$_8$, Q=+0.464$_{20}$
167.49$_{10}$, (1^-), $\gamma_{\mathbf{0}}$**167.5**$_1$(100) M1,E2
200$_{50}$, (3^+), $\gamma_{\mathbf{0}}$**200**$_{50}$(?)
371.05$_{18}$, (1^-), $\gamma_{\mathbf{0}}$**371.0**$_2$(100) M1(+E2) $\delta=0.6^{5}_{6}$
407, (8^-), *296$_5$ ns*, μ=+1.66$_4$, Q=0.44$_7$, $\gamma_{\mathbf{156}}$**250.6**$_2$(100) (E1)
413.98$_{23}$, $(1^-,2^-)$, $\gamma_{\mathbf{0}}$**414.1**$_3$(100) M1(+E2) $\delta\leq2.2$
427$_{50}$(?), (9^-), $\gamma_{\mathbf{407}}$**20**$_{20}$(?)
A **510**, (10^-), $\gamma_{\mathbf{427}}$**83**$_1$(100) (M1,E2)
775.67$_{14}$, $(0^-,1^-)$, $\gamma_{\mathbf{371.05}}$**404.5**$_3$(17.1$_{24}$), $\gamma_{\mathbf{167.49}}$**608.2**$_1$(100$_8$) M1+E2 $\delta=1.7^{7}_{4}$
A **786**, (11^-), $\gamma_{\mathbf{510}}$**275.8**$_2$(100$_{15}$) (M1+E2), $\gamma_{\mathbf{427}}$**359.0**$_2$(20$_3$)(?)
A **1048**, (12^-), $\gamma_{\mathbf{786}}$**261.8**$_2$(100$_{16}$) (M1+E2), $\gamma_{\mathbf{510}}$**538.2**$_2$(46$_7$)
1195.46$_{18}$, $(1)^+$, $\gamma_{\mathbf{413.98}}$**781.6**$_3$(18$_2$), $\gamma_{\mathbf{0}}$**1195.4**$_2$(100$_6$) (E1)
A **1444**, (13^-), $\gamma_{\mathbf{1048}}$**396.4**$_2$(100$_{15}$) (M1+E2), $\gamma_{\mathbf{786}}$**658.3**$_2$(71$_{10}$)
A **1753**, (14^-), $\gamma_{\mathbf{1444}}$**308.7**$_2$(37$_5$) (M1+E2), $\gamma_{\mathbf{1048}}$**705.0**$_2$(100$_{17}$) (E2)
A **2211**, (15^-), $\gamma_{\mathbf{1753}}$**458.2**$_2$ (M1+E2), $\gamma_{\mathbf{1444}}$**767.6**(?)
A **2432**(?), (16^-), $\gamma_{\mathbf{2211}}$**220.9**$_2$(100) (M1+E2)(?)
B **x**, (15)
B **283.0+x**, (17), $\gamma_{\mathbf{x}}$**283.0**$_2$
B **603.8+x**, (19), $\gamma_{\mathbf{283.0+x}}$**320.8**$_2$
B **962.8+x**, (21), $\gamma_{\mathbf{603.8+x}}$**359.0**$_2$
B **1360.6+x**, (23), $\gamma_{\mathbf{962.8+x}}$**397.8**$_2$
B **1797.7+x**, (25), $\gamma_{\mathbf{1360.6+x}}$**437.1**$_2$
B **2273.8+x**, (27), $\gamma_{\mathbf{1797.7+x}}$**476.1**$_2$
B **2789.0+x**, (29), $\gamma_{\mathbf{2273.8+x}}$**515.2**$_2$
B **3343.4+x**, (31), $\gamma_{\mathbf{2789.0+x}}$**554.4**$_2$
B **3936.4+x**, (33), $\gamma_{\mathbf{3343.4+x}}$**593.0**$_2$
B **4568.4+x**, (35), $\gamma_{\mathbf{3936.4+x}}$**632.0**$_3$
B **5238.8+x**, (37), $\gamma_{\mathbf{4568.4+x}}$**670.4**$_4$
B **5946.7+x**, (39), $\gamma_{\mathbf{5238.8+x}}$**707.9**$_8$
C **y**, (18)
C **337.5+y**, (20), $\gamma_{\mathbf{y}}$**337.5**$_2$
C **712.4+y**, (22), $\gamma_{\mathbf{337.5+y}}$**374.9**$_2$
C **1125.8+y**, (24), $\gamma_{\mathbf{712.4+y}}$**413.4**$_2$
C **1576.9+y**, (26), $\gamma_{\mathbf{1125.8+y}}$**451.1**$_2$
C **2066.5+y**, (28), $\gamma_{\mathbf{1576.9+y}}$**489.6**$_2$
C **2593.9+y**, (30), $\gamma_{\mathbf{2066.5+y}}$**527.4**$_2$
C **3159.4+y**, (32), $\gamma_{\mathbf{2593.9+y}}$**565.5**$_2$
C **3762.5+y**, (34), $\gamma_{\mathbf{3159.4+y}}$**603.1**$_3$
C **4403.4+y**, (36), $\gamma_{\mathbf{3762.5+y}}$**640.9**$_3$
C **5081.1+y**, (38), $\gamma_{\mathbf{4403.4+y}}$**677.7**$_5$
C **5796.1+y**, (40), $\gamma_{\mathbf{5081.1+y}}$**715.0**$_8$
D **z**, (10)
D **233.4+z**, (12), $\gamma_{\mathbf{z}}$**233.4**$_2$
D **507.2+z**, (14), $\gamma_{\mathbf{233.4+z}}$**273.8**$_2$
D **820.2+z**, (16), $\gamma_{\mathbf{507.2+z}}$**313.0**$_2$
D **1171.8+z**, (18), $\gamma_{\mathbf{820.2+z}}$**351.6**$_2$
D **1562.2+z**, (20), $\gamma_{\mathbf{1171.8+z}}$**390.4**$_2$
D **1990.1+z**, (22), $\gamma_{\mathbf{1562.2+z}}$**427.9**$_2$
D **2455.5+z**, (24), $\gamma_{\mathbf{1990.1+z}}$**465.4**$_2$
D **2957.3+z**, (26), $\gamma_{\mathbf{2455.5+z}}$**501.8**$_2$
D **3495.1+z**, (28), $\gamma_{\mathbf{2957.3+z}}$**537.8**$_2$
D **4068.1+z**, (30), $\gamma_{\mathbf{3495.1+z}}$**573.0**$_2$
D **4675.3+z**, (32), $\gamma_{\mathbf{4068.1+z}}$**607.2**$_3$
D **5317.9+z**, (34), $\gamma_{\mathbf{4675.3+z}}$**642.6**$_4$
D **5994.7+z**, (36), $\gamma_{\mathbf{5317.9+z}}$**676.8**$_3$
D **6707.2+z**, (38), $\gamma_{\mathbf{5994.7+z}}$**712.5**$_8$
D **7451.9+z**, (40), $\gamma_{\mathbf{6707.2+z}}$**744.7**$_8$
E **u**, (9)
E **213.4+u**, (11), $\gamma_{\mathbf{u}}$**213.4**$_3$
E **467.1+u**, (13), $\gamma_{\mathbf{213.4+u}}$**253.7**$_2$
E **760.4+u**, (15), $\gamma_{\mathbf{467.1+u}}$**293.3**$_2$
E **1092.6+u**, (17), $\gamma_{\mathbf{760.4+u}}$**332.2**$_2$
E **1463.6+u**, (19), $\gamma_{\mathbf{1092.6+u}}$**371.0**$_2$
E **1872.9+u**, (21), $\gamma_{\mathbf{1463.6+u}}$**409.3**$_2$
E **2319.3+u**, (23), $\gamma_{\mathbf{1872.9+u}}$**446.4**$_2$
E **2802.9+u**, (25), $\gamma_{\mathbf{2319.3+u}}$**483.6**$_2$
E **3322.8+u**, (27), $\gamma_{\mathbf{2802.9+u}}$**519.9**$_2$
E **3878.2+u**, (29), $\gamma_{\mathbf{3322.8+u}}$**555.4**$_2$
E **4469.4+u**, (31), $\gamma_{\mathbf{3878.2+u}}$**591.2**$_3$
E **5094.6+u**, (33), $\gamma_{\mathbf{4469.4+u}}$**625.2**$_3$
E **5754.3+u**, (35), $\gamma_{\mathbf{5094.6+u}}$**659.7**$_3$
E **6448.1+u**, (37), $\gamma_{\mathbf{5754.3+u}}$**693.8**$_4$
E **7175.4+u**, (39), $\gamma_{\mathbf{6448.1+u}}$**727.3**$_8$



SD-1 band (1996Fi02,1992Li21) SD-2 band (1996Fi02,1992Li21) SD-3 band (1996Fi02,1992Li21) SD-4 band (1996Fi02)

$^{192}_{81}\mathrm{Tl}_{111}$

$^{193}_{81}\mathrm{Tl}_{112}$

S_n: 9560 *SY*, S_p: 2650 *SY*

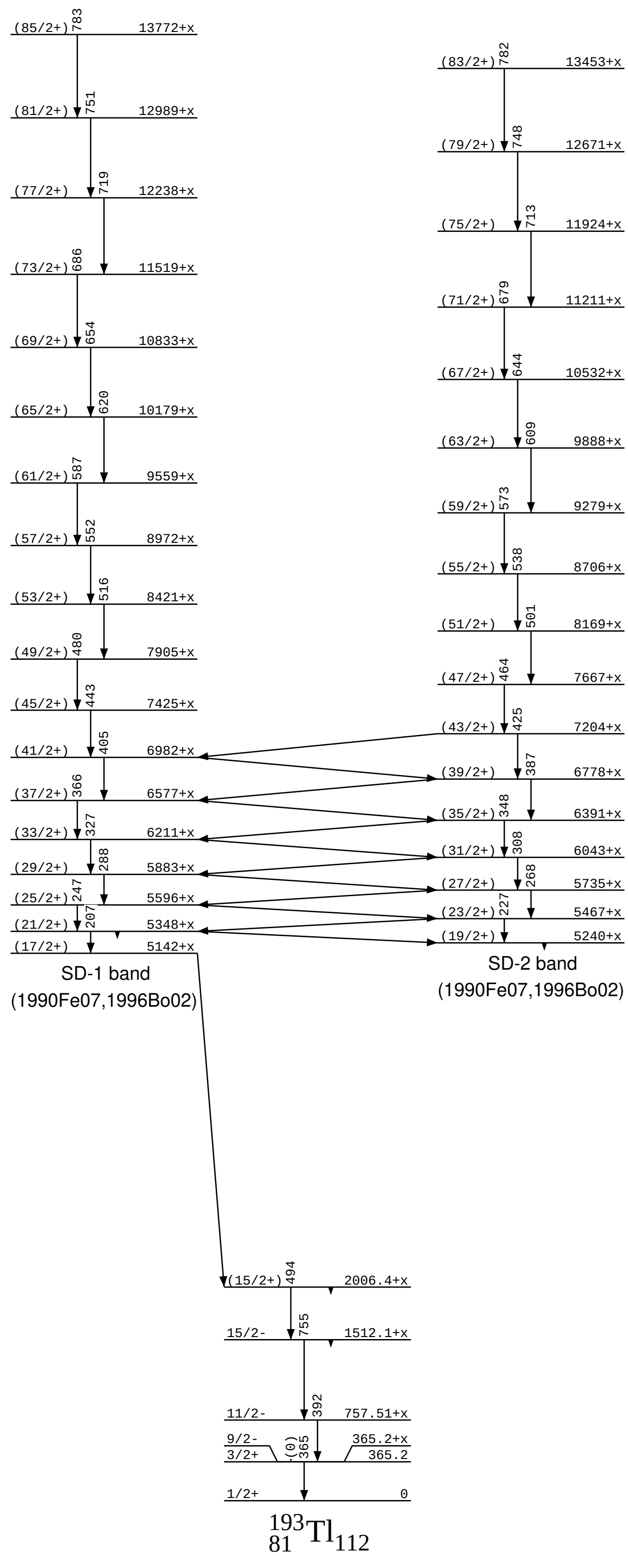
Nuclear Bands

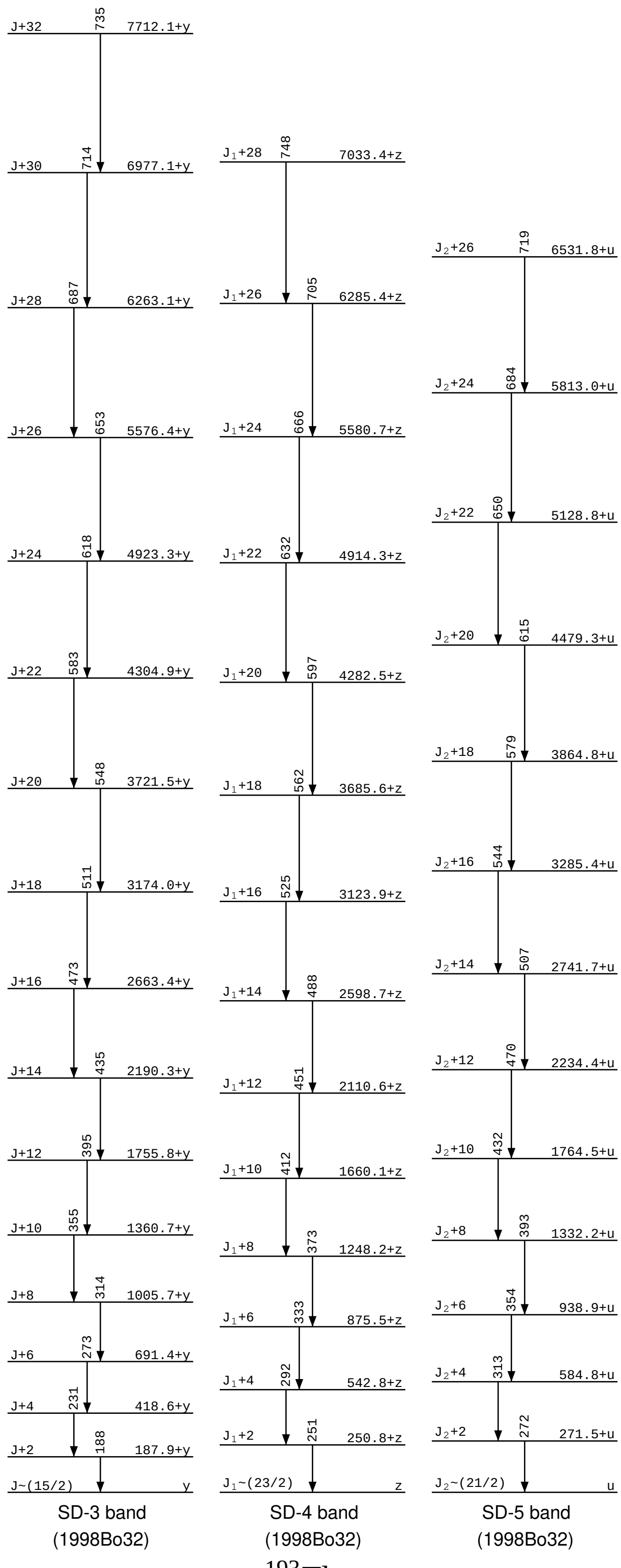
A π9/2[505]
B Band based on $(21/2^-)$
C Band based on $(23/2^-)$
D Band based on $(25/2^-)$
E Band based on (19/2)
F Non- γ cascade based on $(15/2^+)$
G SD-1 band (1990Fe07,1996Bo02,1998Bo20,1999Kr19) Q_0=18.3$_{10}$
H SD-2 band (1990Fe07,1996Bo02,1998Bo20,1999Kr19) Q_0=17.4$_{10}$
I SD-3 band (1998Bo32)
J SD-4 band (1998Bo32)
K SD-5 band (1998Bo32)

Levels and γ-ray branchings:

0, $1/2^+$, *21.6$_8$ min*, %ε+%β$^+$=100, μ=+1.5912$_{22}$
365.2, $3/2^+$, γ_0**365.2**(100) M1+E2 $\delta=1.7^{5}_{4}$
A **365.2+x**, $9/2^-$, *2.11$_{15}$ min*, %IT=75 , %ε+%β$^+$=25 , μ=+3.948$_4$, Q=-2.20$_2$, $\gamma_{365.2}$**( )**
A **757.51+x**, $11/2^-$, $\gamma_{365.2+x}$**392.2**$_3$(100) M1+E2 $\delta=-0.59_{14}$
A **1081.10+x**, $13/2^-$, $\gamma_{757.51+x}$**323.8**$_3$(83.1_{11}) M1+E2 $\delta=0.6_4$, $\gamma_{365.2+x}$**716.0**$_3$(100.0_5) E2
1423.7+x, $\gamma_{757.51+x}$**666.2**
1493.4+x, $(13/2)^+$, $\gamma_{1081.10+x}$**412.6**$_3$(15_5), $\gamma_{757.51+x}$**735.5**$_3$(100.0_5) E1
A **1512.1+x**, $15/2^-$, $\gamma_{1081.10+x}$**430.9**$_3$(50_{11}) M1(+E2), $\gamma_{757.51+x}$**754.7**$_3$(100_5) E2
A **1833.2+x**, $17/2^-$, $\gamma_{1512.1+x}$**320.9**$_3$(56.0_{13}) D, $\gamma_{1081.10+x}$**752.4**$_3$(100.0_{13}) E2
1871.0+x, $\gamma_{757.51+x}$**1113.5**(100)
1899.6+x, $(15/2)^+$, $\gamma_{1493.4+x}$**406.2**$_3$(100) M1
1928.4+x, $(17/2^-)$, $\gamma_{1512.1+x}$**416.4**$_3$(93_{90}) D, $\gamma_{1081.10+x}$**847.1**$_3$(100_{79}) (Q)
1960.0+x, $(15/2)^+$, $\gamma_{1493.4+x}$**466.6**$_3$(100) M1
F **2006.4+x**, $(15/2^+)$, $\gamma_{1960.0+x}$**(46.4)**, $\gamma_{1899.6+x}$**106.7**$_3$(56_{23}), $\gamma_{1512.1+x}$**494.3**$_3$(100_{28})
2056.4+x, $(15/2^+)$, $\gamma_{1960.0+x}$**96.4**$_3$(100)
F **2131.7+x**, $(17/2^+)$, $\gamma_{2056.4+x}$**(75.3)**, $\gamma_{2006.4+x}$**125.3**$_3$ D
A **2303.2+x**, $(19/2^-)$, $\gamma_{1833.2+x}$**470.0**$_3$(62_{23}) D, $\gamma_{1512.1+x}$**790.9**$_3$(100_{11}) (E2)
2351.9+x, $(19/2^+)$, $\gamma_{2131.7+x}$**220.2**$_3$(100)
E **2392.0+x**, (19/2), $\gamma_{1928.4+x}$**463.6**$_3$(100) D+Q
2400.8+x, $(19/2^+)$, $\gamma_{2131.7+x}$**269.1**$_3$(100) D
F **2448.2+x**, $(19/2^+)$, $\gamma_{2131.7+x}$**316.4**$_3$(100.0_{17}) (M1+E2), $\gamma_{2056.4+x}$**(391.5)**
B **2505.2+x**, $(21/2^-)$, $\gamma_{2303.2+x}$**201.9**$_3$(24_{12}), $\gamma_{1833.2+x}$**672.1**$_3$(100.0_8) (Q)
A **2574.9+x**, $(21/2^-)$, $\gamma_{2303.2+x}$**271.6**$_3$(49_{27}), $\gamma_{1833.2+x}$**741.7**$_3$(100_{36}) (E2)
2609.4+x, $(19/2^+)$, $\gamma_{2448.2+x}$**161.3**$_3$(>35), $\gamma_{2131.7+x}$**478.1**$_3$(100_{30}) (Q)
2611.2+x, $(21/2^+)$, $\gamma_{2351.9+x}$**259.3**$_3$(100) D
2621.0+x, $(21/2^+)$, $\gamma_{2448.2+x}$**(172.8)**, $\gamma_{2400.8+x}$**220.2**$_3$(100)
F **2764.8+x**, $(21/2^+)$, $\gamma_{2609.4+x}$**155.8**$_3$(21_{12}) D, $\gamma_{2448.2+x}$**316.4**$_3$(100_5) (M1+E2), $\gamma_{2131.7+x}$**632.8**$_3$(88_5) (E2)
C **2774.3+x**, $(23/2^-)$, $\gamma_{2505.2+x}$**268.9**$_3$(100) D
2858.8+x, $(23/2^+)$, $\gamma_{2764.8+x}$**94.2**, $\gamma_{2621.0+x}$**237.8**$_3$(100) D
E **2888.2+x**, (21/2), $\gamma_{2505.2+x}$**383.3**$_3$(100)
B **2982.3+x**, $(25/2^-)$, $\gamma_{2774.3+x}$**207.9**$_3$(100_7) D, $\gamma_{2505.2+x}$**477.1**$_3$(97_{11}) (E2)
D **3005.5+x**, $(25/2^-)$, $\gamma_{2774.3+x}$**231.2**$_3$(100) (M1+E2)
E **3143.6+x**, (23/2), $\gamma_{2888.2+x}$**255.6**$_3$(100_{89}) D, $\gamma_{2774.3+x}$**368.9**$_3$(<86)
F **3144.5+x**, $(23/2^+)$, $\gamma_{2764.8+x}$**379.6**$_3$(100_{18}) D, $\gamma_{2448.2+x}$**696.2**$_3$(70_{13}) (E2)
3184.5+x, $(25/2^+)$, $\gamma_{2858.8+x}$**325.7**$_3$(100) D
E **3342.6+x**, (25/2), $\gamma_{3143.6+x}$**198.9**$_3$(100_{57}) D, $\gamma_{2774.3+x}$**568.3**$_3$(<30)
C **3374.6+x**, $(27/2^-)$, $\gamma_{2982.3+x}$**392.2**$_3$(>52) D, $\gamma_{2774.3+x}$**600.4**$_3$(100_{27}) (E2)
F **3483.9+x**, $(25/2^+)$, $\gamma_{3144.5+x}$**339.5**$_3$(96_{17}) D, $\gamma_{2764.8+x}$**719.3**$_3$(100_{10}) (E2)
3521.8+x, $(27/2^+)$, $\gamma_{3184.5+x}$**337.2**$_3$(100_{54}) D, $\gamma_{2858.8+x}$**663.0**$_3$(62_{58}) (E2)
D **3548.2+x**, $(29/2^-)$, $\gamma_{3005.5+x}$**542.7**$_3$(100) (E2)
B **3667.1+x**, $(29/2^-)$, $\gamma_{3374.6+x}$**292.5**$_3$(73_{15}) D, $\gamma_{2982.3+x}$**684.7**$_3$(100.0_{20}) (E2)
E **3711.4+x**, (27/2), $\gamma_{3342.6+x}$**368.9**$_3$(100) D
F **3744.0+x**, $(27/2^+)$, $\gamma_{3483.9+x}$**260.4**$_3$(100_{12}) D, $\gamma_{3144.5+x}$**599.3**$_3$(77_{17}) (E2)
F **3905.3+x**, $(29/2^+)$, $\gamma_{3744.0+x}$**161.3**$_3$(100)
E **3964.2+x**, (29/2), $\gamma_{3711.4+x}$**252.9**$_3$(93_{86}) D, $\gamma_{3342.6+x}$**621.6**$_3$(100_{62}) (E2)
F **4054.1+x**, $(31/2^+)$, $\gamma_{3905.3+x}$**148.8**$_3$(100) D
C **4123.5+x**, $(31/2^-)$, $\gamma_{3667.1+x}$**456.5**$_3$(100_{19}) D, $\gamma_{3374.6+x}$**749.0**$_3$(>27) (E2)
D **4179.1+x**, $(33/2^-)$, $\gamma_{3548.2+x}$**630.9**$_3$(100) (E2)
F **4260.2+x**, $(33/2^+)$, $\gamma_{4054.1+x}$**205.9**$_3$(100) D
E **4320.0+x**(?), (31/2), $\gamma_{3964.2+x}$**355.8**$_3$(100) D(?)
4324.3+x, $(33/2^-)$, $\gamma_{3548.2+x}$**776.1**$_3$(100)
B **4463.1+x**, $(33/2^-)$, $\gamma_{4123.5+x}$**339.7**$_3$(59_{22}) D, $\gamma_{3667.1+x}$**795.9**$_3$(100_{13}) (E2)
F **4539.2+x**, $(35/2^+)$, $\gamma_{4260.2+x}$**279.0**$_3$(100_{13}) D, $\gamma_{4054.1+x}$**485.2**$_3$(27_{22}) (E2)
F **4858.9+x**, $(37/2^+)$, $\gamma_{4539.2+x}$**319.9**$_3$(100_{67}) D, $\gamma_{4260.2+x}$**598.5**$_3$(>28) (E2)
C **4941.4+x**, $(35/2^-)$, $\gamma_{4463.1+x}$**478.3**$_3$(100_{60}) D, $\gamma_{4123.5+x}$**817.8**$_3$(100_{80})
D **5016.0+x**, $(37/2^-)$, $\gamma_{4179.1+x}$**836.9**$_3$(100) (E2)
5086.4+x(?) >3 *ps*, $\gamma_{4539.2+x}$**547.2**$_3$(100)(?)
G **5142+x**, $(17/2^+)$, $\gamma_{2006.4+x}$**3134**$_4$
F **5224.5+x**, $(41/2^+)$, $\gamma_{4858.9+x}$**365.6**$_3$(100)
H **5240+x**, $(19/2^+)$, $\gamma_{2131.7+x}$**3113**$_5$
B **5286.8+x**, $(37/2^-)$, $\gamma_{4941.4+x}$**345.5**$_3$(100_{50}) D, $\gamma_{4463.1+x}$**823.6**$_3$(100_{83})
G **5348+x**, $(21/2^+)$, γ_{5240+x}**108.0**$_3$, γ_{5142+x}**206.6**$_3$, $\gamma_{2303.2+x}$**3046**$_6$
H **5467+x**, $(23/2^+)$, γ_{5348+x}**118.9**$_3$, γ_{5240+x}**227.3**$_3$(0.98_{10})
G **5596+x**, $(25/2^+)$, γ_{5467+x}**128.3**$_3$, γ_{5348+x}**247.3**$_3$(0.39_6)
C **5670.6+x**(?), $(39/2^-)$, $\gamma_{5286.8+x}$**383.8**$_3$(100_{27}) D(?), $\gamma_{4941.4+x}$**728.9**$_3$(39_{16})(?)
H **5735+x**, $(27/2^+)$, γ_{5596+x}**139.2**$_3$ (M1), γ_{5467+x}**267.9**$_3$(1.13_{23})
G **5883+x**, $(29/2^+)$, γ_{5735+x}**148.2**$_3$ (M1), γ_{5596+x}**287.7**$_3$(0.45_5)
H **6043+x**, $(31/2^+)$, γ_{5883+x}**160.1**$_3$ (M1), γ_{5735+x}**308.2**$_3$(0.86_9)
B **6088.3+x**(?), $(41/2^-)$, $\gamma_{5670.6+x}$**417.8**$_3$(80_{60}) D(?), $\gamma_{5286.8+x}$**801.5**$_3$(100_{80})(?)
G **6211+x**, $(33/2^+)$, γ_{6043+x}**167.4**$_3$ (M1), γ_{5883+x}**327.4**$_3$(0.53_5)
H **6391+x**, $(35/2^+)$, γ_{6211+x}**180.6**$_3$ (M1), γ_{6043+x}**348.0**$_3$(1.01_{11})
G **6577+x**, $(37/2^+)$, γ_{6391+x}**185.8**$_3$ (M1), γ_{6211+x}**366.4**$_3$(1.15_{23})
H **6778+x**, $(39/2^+)$, γ_{6577+x}**201.4**$_3$ (M1), γ_{6391+x}**387.0**$_3$(1.4_4)
G **6982+x**, $(41/2^+)$, γ_{6778+x}**203.5**$_3$, γ_{6577+x}**405.3**$_4$(0.93_{19})
H **7204+x**, $(43/2^+)$, γ_{6982+x}**221.5**$_3$, γ_{6778+x}**425.4**$_3$(1.22_{12})
G **7425+x**, $(45/2^+)$, γ_{6982+x}**442.9**$_3$
H **7667+x**, $(47/2^+)$, γ_{7204+x}**463.7**$_3$(1.60_{16})
G **7905+x**, $(49/2^+)$, γ_{7425+x}**479.7**$_3$(0.72_{17})
H **8169+x**, $(51/2^+)$, γ_{7667+x}**501.1**$_3$
G **8421+x**, $(53/2^+)$, γ_{7905+x}**516.1**$_3$(1.11_{17})
H **8706+x**, $(55/2^+)$, γ_{8169+x}**537.5**$_3$(1.30_{14})
G **8972+x**, $(57/2^+)$, γ_{8421+x}**551.6**$_3$(1.00_{14})
H **9279+x**, $(59/2^+)$, γ_{8706+x}**573.4**$_3$(1.00_{10})
G **9559+x**, $(61/2^+)$, γ_{8972+x}**586.5**$_3$(0.84_{17})
H **9888+x**, $(63/2^+)$, γ_{9279+x}**608.8**$_3$(0.96_{10})
G **10179+x**, $(65/2^+)$, γ_{9559+x}**620.3**$_3$(0.81_{13})
H **10532+x**, $(67/2^+)$, γ_{9888+x}**643.8**$_3$(1.09_{22})
G **10833+x**, $(69/2^+)$, $\gamma_{10179+x}$**653.6**$_4$(0.42_{11})
H **11211+x**, $(71/2^+)$, $\gamma_{10532+x}$**678.7**$_4$(0.75_{14})

G **11519+x**, $(73/2^{+})$, $\gamma_{\mathbf{10833+x}}$**686.1**$_{4}$$(0.46_{11})$
H **11924+x**, $(75/2^{+})$, $\gamma_{\mathbf{11211+x}}$**713.2**$_{5}$
G **12238+x**, $(77/2^{+})$, $\gamma_{\mathbf{11519+x}}$**718.7**$_{5}$
H **12671+x**, $(79/2^{+})$, $\gamma_{\mathbf{11924+x}}$**747.5**$_{5}$
G **12989+x**, $(81/2^{+})$, $\gamma_{\mathbf{12238+x}}$**751.3**$_{5}$
H **13453+x**, $(83/2^{+})$, $\gamma_{\mathbf{12671+x}}$**781.9**$_{5}$
G **13772+x**, $(85/2^{+})$, $\gamma_{\mathbf{12989+x}}$**783.4**$_{5}$
I **y**, $J\approx(15/2)$
I **187.9+y**, $J+2$, $\gamma_{\mathbf{y}}$**187.9**$_{3}$
I **418.6+y**, $J+4$, $\gamma_{\mathbf{187.9+y}}$**230.7**$_{3}$
I **691.4+y**, $J+6$, $\gamma_{\mathbf{418.6+y}}$**272.8**$_{3}$
I **1005.7+y**, $J+8$, $\gamma_{\mathbf{691.4+y}}$**314.3**$_{3}$
I **1360.7+y**, $J+10$, $\gamma_{\mathbf{1005.7+y}}$**355.0**$_{3}$
I **1755.8+y**, $J+12$, $\gamma_{\mathbf{1360.7+y}}$**395.1**$_{3}$
I **2190.3+y**, $J+14$, $\gamma_{\mathbf{1755.8+y}}$**434.5**$_{3}$
I **2663.4+y**, $J+16$, $\gamma_{\mathbf{2190.3+y}}$**473.1**$_{3}$
I **3174.0+y**, $J+18$, $\gamma_{\mathbf{2663.4+y}}$**510.6**$_{3}$
I **3721.5+y**, $J+20$, $\gamma_{\mathbf{3174.0+y}}$**547.5**$_{3}$
I **4304.9+y**, $J+22$, $\gamma_{\mathbf{3721.5+y}}$**583.4**$_{3}$
I **4923.3+y**, $J+24$, $\gamma_{\mathbf{4304.9+y}}$**618.4**$_{3}$
I **5576.4+y**, $J+26$, $\gamma_{\mathbf{4923.3+y}}$**653.1**$_{3}$
I **6263.1+y**, $J+28$, $\gamma_{\mathbf{5576.4+y}}$**686.7**$_{4}$
I **6977.1+y**, $J+30$, $\gamma_{\mathbf{6263.1+y}}$**714.0**$_{7}$
I **7712.1+y**, $J+32$, $\gamma_{\mathbf{6977.1+y}}$**735.0**$_{10}$
J **z**, $J_1\approx(23/2)$
J **250.8+z**, J_1+2, $\gamma_{\mathbf{z}}$**250.8**$_{3}$
J **542.8+z**, J_1+4, $\gamma_{\mathbf{250.8+z}}$**292.0**$_{3}$
J **875.5+z**, J_1+6, $\gamma_{\mathbf{542.8+z}}$**332.7**$_{3}$
J **1248.2+z**, J_1+8, $\gamma_{\mathbf{875.5+z}}$**372.7**$_{3}$
J **1660.1+z**, J_1+10, $\gamma_{\mathbf{1248.2+z}}$**411.9**$_{3}$
J **2110.6+z**, J_1+12, $\gamma_{\mathbf{1660.1+z}}$**450.5**$_{3}$
J **2598.7+z**, J_1+14, $\gamma_{\mathbf{2110.6+z}}$**488.1**$_{3}$
J **3123.9+z**, J_1+16, $\gamma_{\mathbf{2598.7+z}}$**525.2**$_{3}$
J **3685.6+z**, J_1+18, $\gamma_{\mathbf{3123.9+z}}$**561.7**$_{3}$
J **4282.5+z**, J_1+20, $\gamma_{\mathbf{3685.6+z}}$**596.9**$_{3}$
J **4914.3+z**, J_1+22, $\gamma_{\mathbf{4282.5+z}}$**631.8**$_{3}$
J **5580.7+z**, J_1+24, $\gamma_{\mathbf{4914.3+z}}$**666.4**$_{3}$
J **6285.4+z**, J_1+26, $\gamma_{\mathbf{5580.7+z}}$**704.7**$_{7}$
J **7033.4+z**, J_1+28, $\gamma_{\mathbf{6285.4+z}}$**748.0**$_{10}$
K **u**, $J_2\approx(21/2)$
K **271.5+u**, J_2+2, $\gamma_{\mathbf{u}}$**271.5**$_{5}$
K **584.8+u**, J_2+4, $\gamma_{\mathbf{271.5+u}}$**313.4**$_{4}$
K **938.9+u**, J_2+6, $\gamma_{\mathbf{584.8+u}}$**354.1**$_{3}$
K **1332.2+u**, J_2+8, $\gamma_{\mathbf{938.9+u}}$**393.3**$_{4}$
K **1764.5+u**, J_2+10, $\gamma_{\mathbf{1332.2+u}}$**432.3**$_{3}$
K **2234.4+u**, J_2+12, $\gamma_{\mathbf{1764.5+u}}$**469.9**$_{3}$
K **2741.7+u**, J_2+14, $\gamma_{\mathbf{2234.4+u}}$**507.3**$_{3}$
K **3285.4+u**, J_2+16, $\gamma_{\mathbf{2741.7+u}}$**543.7**$_{3}$
K **3864.8+u**, J_2+18, $\gamma_{\mathbf{3285.4+u}}$**579.4**$_{4}$
K **4479.3+u**, J_2+20, $\gamma_{\mathbf{3864.8+u}}$**614.5**$_{4}$
K **5128.8+u**, J_2+22, $\gamma_{\mathbf{4479.3+u}}$**649.5**$_{4}$
K **5813.0+u**, J_2+24, $\gamma_{\mathbf{5128.8+u}}$**684.2**$_{4}$
K **6531.8+u**, J_2+26, $\gamma_{\mathbf{5813.0+u}}$**718.8**$_{7}$





$^{193}_{81}Tl_{112}$

$^{194}_{81}\mathrm{Tl}_{113}$

S_n: 7601 *SY*, S_p: 3182 *SY*

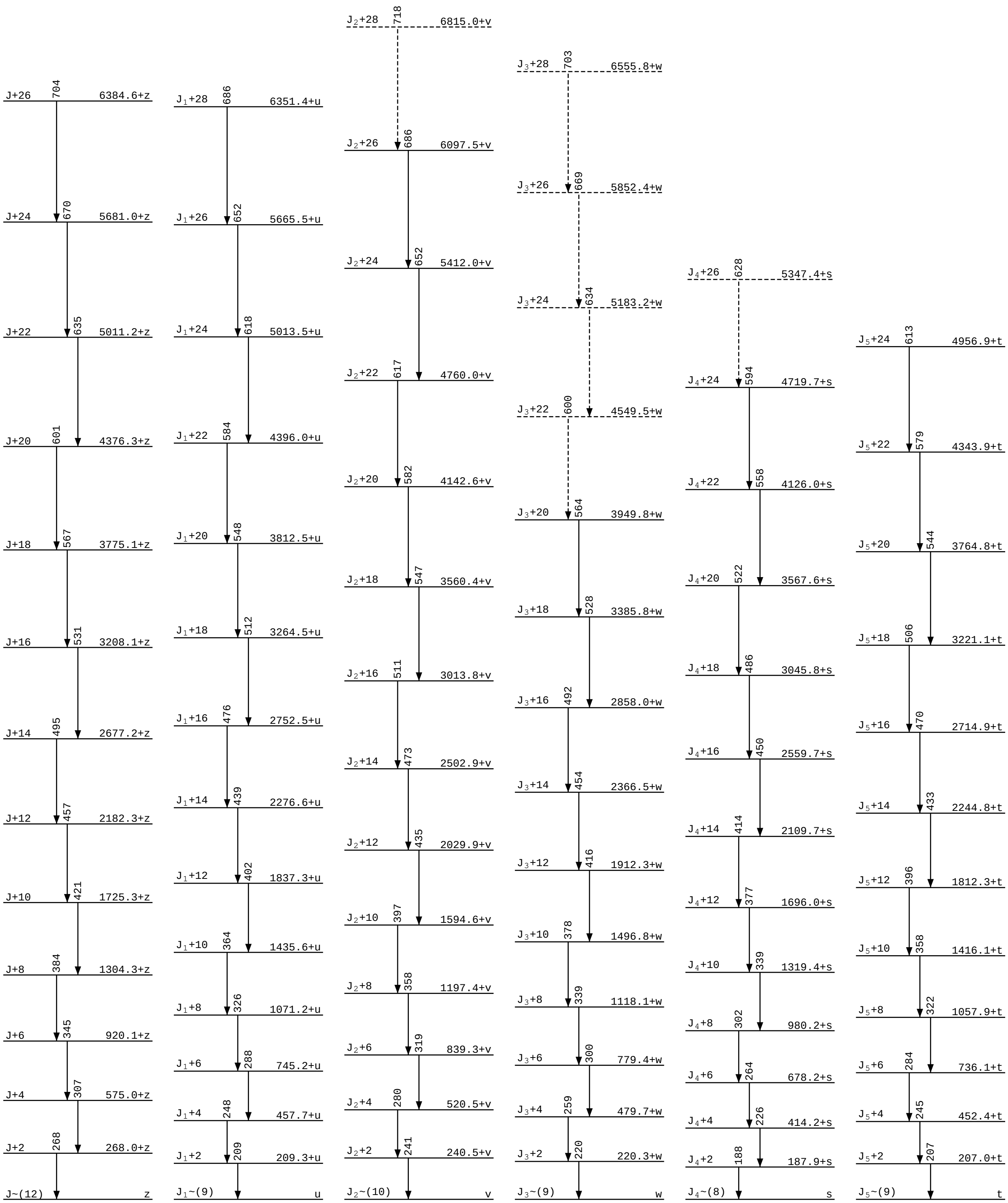
Nuclear Bands

A $\pi h_{9/2}\nu i_{13/2}$
B SD-1 band (1991Az03,1995Az01)
C SD-2 band (1991Az03,1995Az01)
D SD-3 band (1991Az03,1995Az01)
E SD-4 band (1991Az03,1995Az01)
F SD-5 band (1991Az03,1995Az01)
G SD-6 band (1991Az03,1995Az01)

Levels and γ-ray branchings:

0, 2^-, *33.0$_5$ min*, %ε+%β$^+$=100 , %α<1x10^{-7} , μ=0.140$_3$, Q=-0.282$_7$
0+x, (7^+), *32.8$_2$ min*, %ε+%β$^+$=100 , μ=+0.530$_8$, Q=+0.607$_{16}$
192.14$_4$, $(0)^-$, $\gamma_{\mathbf{0}}$**192.02**$_5$(100) E2
203.82$_3$, 1^-, $\gamma_{\mathbf{0}}$**203.80**$_6$(100) M1(+E2) $\delta<0.3$
225.01$_4$, $(2)^-$, $\gamma_{\mathbf{0}}$**225.00**$_8$(100) M1(+E2) $\delta<0.3$
270.50$_3$, $(3)^-$, $\gamma_{\mathbf{225.01}}$**45.5**$_{10}$($\approx$ 1.4), $\gamma_{\mathbf{203.82}}$**66.7**$_{10}$($\approx$ 0.9), $\gamma_{\mathbf{0}}$**270.52**$_4$(100$_5$) M1(+E2) $\delta<0.25$
292.8+x, (8^-), $\gamma_{\mathbf{0+x}}$**292.8**$_2$(100)
A **292.8+y**, $(8^-,9^-,10^-)$
367.76$_4$, 1^-, $\gamma_{\mathbf{225.01}}$**142.94**$_{10}$(3.4$_4$), $\gamma_{\mathbf{203.82}}$**163.90**$_{10}$(5.14$_{12}$) M1+E2 $\delta\approx1$, $\gamma_{\mathbf{192.14}}$**175.68**$_{12}$(4.2$_2$) M1, $\gamma_{\mathbf{0}}$**367.80**$_{10}$(100$_8$) M1(+E2) $\delta<0.1$
A **389.1+y**, $(9^-,10^-,11^-)$, $\gamma_{\mathbf{292.8+y}}$**96.3**$_2$(100)
459.92$_4$, $(2)^-$, $\gamma_{\mathbf{367.76}}$**92.2**$_2$(2.3$_3$), $\gamma_{\mathbf{270.50}}$**189.44**$_5$(50$_7$) M1(+E2) $\delta<0.1$, $\gamma_{\mathbf{192.14}}$**267.92**$_{10}$(4.9$_2$)(?), $\gamma_{\mathbf{0}}$**460.05**$_{10}$(100$_2$) M1+E2 $\delta=0.9_2$
521.52$_3$, 1^-, $\gamma_{\mathbf{367.76}}$**153.8**$_2$(6.0$_6$) (M1), $\gamma_{\mathbf{225.01}}$**296.40**$_6$(11.9$_3$) (M1), $\gamma_{\mathbf{203.82}}$**317.70**$_5$(14.2$_3$) M1(+E2) $\delta<0.5$, $\gamma_{\mathbf{192.14}}$**329.48**$_5$(3.9$_4$) M1, $\gamma_{\mathbf{0}}$**521.55**$_5$(100$_2$) M1(+E2) $\delta<0.3$
589.16$_4$, $(2)^-$, $\gamma_{\mathbf{270.50}}$**318.69**$_5$(100$_2$) M1(+E2) $\delta<0.4$, $\gamma_{\mathbf{203.82}}$**385.33**$_3$(43$_4$), $\gamma_{\mathbf{0}}$**589.1**$_2$(59$_2$) M1(+E2) $\delta<0.3$
A **667.0+y**, $(10^-,11^-,12^-)$, $\gamma_{\mathbf{389.1+y}}$**277.9**$_2$(100$_6$), $\gamma_{\mathbf{292.8+y}}$**373.5**(8$_4$)(?)
752.94$_6$, (1^-), $\gamma_{\mathbf{459.92}}$**292.98**$_6$(< 56)(?), $\gamma_{\mathbf{225.01}}$**527.7**$_2$(5.1$_8$), $\gamma_{\mathbf{203.82}}$**549.0**$_1$(53$_1$) (M1,E2), $\gamma_{\mathbf{0}}$**752.8**$_2$(100$_4$)
785.78$_5$, $(1)^-$, $\gamma_{\mathbf{367.76}}$**417.92**$_6$(12.1$_2$) M1(+E2) $\delta<0.3$, $\gamma_{\mathbf{225.01}}$**560.69**$_{10}$(7.2$_{15}$), $\gamma_{\mathbf{203.82}}$**581.82**$_{10}$(100$_3$) M1(+E2) $\delta<0.4$, $\gamma_{\mathbf{0}}$**785.54**$_{10}$(2.1$_{12}$)
833.28$_4$, $(1)^-$, $\gamma_{\mathbf{521.52}}$**311.84**$_5$(37$_3$) M1+E2 $\delta=1.0_3$, $\gamma_{\mathbf{459.92}}$**373.39**$_4$(43$_3$) M1(+E2) $\delta<0.5$, $\gamma_{\mathbf{367.76}}$**465.8**$_2$(21$_2$) (M1), $\gamma_{\mathbf{203.82}}$**629.9**$_3$(100$_{11}$) (M1), $\gamma_{\mathbf{192.14}}$**640.55**$_8$(90$_{13}$), $\gamma_{\mathbf{0}}$**833.4**$_3$(24$_8$)
A **911.7+y**, $(11^-,12^-,13^-)$, $\gamma_{\mathbf{667.0+y}}$**244.7**$_2$(100$_{11}$), $\gamma_{\mathbf{389.1+y}}$**522.7**$_2$(54$_9$)
979.01$_{11}$, $(1^-,2^-)$, $\gamma_{\mathbf{521.52}}$**457.5**$_2$(59$_{15}$), $\gamma_{\mathbf{367.76}}$**611.0**$_3$(39$_4$), $\gamma_{\mathbf{225.01}}$**754.4**$_2$(100$_{11}$), $\gamma_{\mathbf{203.82}}$**774.9**$_3$(26$_1$) (M1), $\gamma_{\mathbf{192.14}}$**786.7**$_1$(22$_{11}$)(?)
998.43$_8$, 1^-, $\gamma_{\mathbf{752.94}}$**244.93**$_{10}$(9.8$_6$), $\gamma_{\mathbf{367.76}}$**630.8**$_3$($\approx$ 10), $\gamma_{\mathbf{225.01}}$**773.46**$_{20}$(20.2$_6$) M1(+E2) $\delta<0.7$, $\gamma_{\mathbf{203.82}}$**794.85**$_7$(54$_5$) (M1,E2), $\gamma_{\mathbf{0}}$**998.47**$_{10}$(100$_8$) M1(+E2) $\delta<0.7$
1010.52$_5$, $(1)^-$, $\gamma_{\mathbf{752.94}}$**257.95**$_{10}$(23$_2$), $\gamma_{\mathbf{521.52}}$**489.0**$_2$(25$_1$), $\gamma_{\mathbf{459.92}}$**550.6**$_3$(18$_1$), $\gamma_{\mathbf{367.76}}$**642.79**$_8$(80$_9$) (M1), $\gamma_{\mathbf{225.01}}$**785.54**$_{10}$(29$_{18}$), $\gamma_{\mathbf{203.82}}$**806.52**$_7$(91$_3$), $\gamma_{\mathbf{192.14}}$**818.0**$_2$(77$_3$) M1, $\gamma_{\mathbf{0}}$**1010.54**$_{10}$(100$_5$)
1152.01$_7$, $(1)^-$, $\gamma_{\mathbf{367.76}}$**784.2**$_4$(25$_{12}$), $\gamma_{\mathbf{225.01}}$**926.97**$_9$(100$_{21}$) M1(+E2) $\delta<0.7$, $\gamma_{\mathbf{0}}$**1152.04**$_9$(38$_1$)
1178.81$_8$, (1^-), $\gamma_{\mathbf{785.78}}$**392.63**$_{10}$(27$_4$) E2(+M1) $\delta>3$, $\gamma_{\mathbf{367.76}}$**811.49**$_{10}$(72$_3$) (M1,E2), $\gamma_{\mathbf{0}}$**1178.6**$_2$(100$_4$)
1187.56$_7$, $(0,1)^-$, $\gamma_{\mathbf{998.43}}$**189.0**$_4$($\approx$ 5), $\gamma_{\mathbf{521.52}}$**666.05**$_8$(74$_1$) M1(+E2) $\delta<0.4$, $\gamma_{\mathbf{367.76}}$**819.50**$_{20}$(100$_2$), $\gamma_{\mathbf{225.01}}$**962.64**$_{12}$(49$_1$) (E2)
1272.20$_8$, $(0^-,1^-,2^-)$, $\gamma_{\mathbf{979.01}}$**292.98**$_6$(< 210)(?), $\gamma_{\mathbf{833.28}}$**438.83**$_{10}$(54$_3$), $\gamma_{\mathbf{203.82}}$**1068.47**$_{10}$(100$_9$) (M1)
A **1314.9+y**, $(12^-,13^-,14^-)$, $\gamma_{\mathbf{911.7+y}}$**403.2**$_2$(100$_{10}$), $\gamma_{\mathbf{667.0+y}}$**648.5**$_2$(43$_7$)
1519.34$_6$, 1^+, $\gamma_{\mathbf{979.01}}$**540.5**$_2$(2.61$_8$), $\gamma_{\mathbf{833.28}}$**685.93**$_{10}$(3.80$_7$), $\gamma_{\mathbf{459.92}}$**1059.38**$_{10}$(23.6$_4$) E1, $\gamma_{\mathbf{225.01}}$**1294.4**$_2$(11.6$_4$) E1, $\gamma_{\mathbf{203.82}}$**1315.6**$_2$(3.4$_4$), $\gamma_{\mathbf{0}}$**1519.45**$_{13}$(100$_8$)
1553.10$_{13}$, $(0,1)$, $\gamma_{\mathbf{367.76}}$**1185.35**$_{15}$(92$_5$), $\gamma_{\mathbf{203.82}}$**1349.25**$_{20}$(100$_4$)
A **1598.2+y**, $(13^-,14^-,15^-)$, $\gamma_{\mathbf{1314.9+y}}$**283.3**$_2$(60$_7$), $\gamma_{\mathbf{911.7+y}}$**686.7**$_2$(100$_{10}$)
1602.8$_2$, $(0^-,1,2^-)$, $\gamma_{\mathbf{0}}$**1602.8**$_2$(100)
1639.07$_7$, $(1)^-$, $\gamma_{\mathbf{1010.52}}$**628.1**$_3$(21$_4$)(?), $\gamma_{\mathbf{785.78}}$**852.94**$_{10}$(59$_2$) E2(+M1) $\delta>2$, $\gamma_{\mathbf{367.76}}$**1271.98**$_{25}$(100$_2$), $\gamma_{\mathbf{225.01}}$**1414.3**$_5$(30$_6$), $\gamma_{\mathbf{0}}$**1639.29**$_{10}$(68$_2$)
1707.61$_9$, $(1)^-$, $\gamma_{\mathbf{589.16}}$**1118.44**$_{10}$(100$_{13}$) M1,E2, $\gamma_{\mathbf{367.76}}$**1339.6**$_2$(54$_{18}$), $\gamma_{\mathbf{225.01}}$**1482.9**$_2$(62$_5$), $\gamma_{\mathbf{192.14}}$**1515**$_1$($\approx$ 13)
1722.97$_{17}$, $(0^-,1)$, $\gamma_{\mathbf{521.52}}$**1200.9**$_3$(31$_4$), $\gamma_{\mathbf{0}}$**1723.2**$_2$(100$_{20}$)
1753.13$_{15}$, $(0,1)$, $\gamma_{\mathbf{521.52}}$**1231.5**$_2$(53$_3$), $\gamma_{\mathbf{203.82}}$**1549.4**$_2$(100$_4$)
1810.46$_{12}$, (1), $\gamma_{\mathbf{225.01}}$**1585.3**$_2$(26$_1$), $\gamma_{\mathbf{192.14}}$**1618.5**$_2$(35$_1$), $\gamma_{\mathbf{0}}$**1810.4**$_2$(100$_2$)
1858.8$_{10}$, $(0,1,2^-)$, $\gamma_{\mathbf{1639.07}}$**220.05**$_{12}$(160$_{16}$)(?), $\gamma_{\mathbf{203.82}}$**1655**$_1$(100$_{20}$)
A **2056.8+y**, $(14^-,15^-,16^-)$, $\gamma_{\mathbf{1598.2+y}}$**458.6**$_2$(100$_{11}$), $\gamma_{\mathbf{1314.9+y}}$**741.9**$_2$(46$_7$)
2192.7$_3$, $(1,2^-)$, $\gamma_{\mathbf{1639.07}}$**553.3**$_2$(172$_{10}$)(?), $\gamma_{\mathbf{521.52}}$**1671**$_1$(42$_{22}$), $\gamma_{\mathbf{192.14}}$**2000.6**$_3$(100$_7$)
2343.4$_5$, $(0^-,1)$, $\gamma_{\mathbf{0}}$**2343.4**$_5$(100)
A **2346.2+y**, $(15^-,16^-,17^-)$, $\gamma_{\mathbf{2056.8+y}}$**289.4**$_2$(100$_{11}$), $\gamma_{\mathbf{1598.2+y}}$**748.6**(?)
B **z**, $J\approx(12)$
B **268.0+z**, $J+2$, $\gamma_{\mathbf{z}}$**268.0**$_3$
B **575.0+z**, $J+4$, $\gamma_{\mathbf{268.0+z}}$**307.0**$_3$
B **920.1+z**, $J+6$, $\gamma_{\mathbf{575.0+z}}$**345.1**$_3$
B **1304.3+z**, $J+8$, $\gamma_{\mathbf{920.1+z}}$**384.2**$_3$
B **1725.3+z**, $J+10$, $\gamma_{\mathbf{1304.3+z}}$**421.0**$_3$
B **2182.3+z**, $J+12$, $\gamma_{\mathbf{1725.3+z}}$**457.0**$_5$
B **2677.2+z**, $J+14$, $\gamma_{\mathbf{2182.3+z}}$**494.9**$_5$
B **3208.1+z**, $J+16$, $\gamma_{\mathbf{2677.2+z}}$**530.9**$_5$
B **3775.1+z**, $J+18$, $\gamma_{\mathbf{3208.1+z}}$**567.0**$_5$
B **4376.3+z**, $J+20$, $\gamma_{\mathbf{3775.1+z}}$**601.2**$_{10}$
B **5011.2+z**, $J+22$, $\gamma_{\mathbf{4376.3+z}}$**634.9**$_{10}$
B **5681.0+z**, $J+24$, $\gamma_{\mathbf{5011.2+z}}$**669.8**$_{10}$
B **6384.6+z**, $J+26$, $\gamma_{\mathbf{5681.0+z}}$**703.6**$_{10}$
C **u**, $J_1\approx(9)$
C **209.3+u**, J_1+2, $\gamma_{\mathbf{u}}$**209.3**$_3$
C **457.7+u**, J_1+4, $\gamma_{\mathbf{209.3+u}}$**248.4**$_3$
C **745.2+u**, J_1+6, $\gamma_{\mathbf{457.7+u}}$**287.5**$_3$
C **1071.2+u**, J_1+8, $\gamma_{\mathbf{745.2+u}}$**326.0**$_3$
C **1435.6+u**, J_1+10, $\gamma_{\mathbf{1071.2+u}}$**364.4**$_3$
C **1837.3+u**, J_1+12, $\gamma_{\mathbf{1435.6+u}}$**401.7**$_5$
C **2276.6+u**, J_1+14, $\gamma_{\mathbf{1837.3+u}}$**439.3**$_5$
C **2752.5+u**, J_1+16, $\gamma_{\mathbf{2276.6+u}}$**475.9**$_5$
C **3264.5+u**, J_1+18, $\gamma_{\mathbf{2752.5+u}}$**512.0**$_5$
C **3812.5+u**, J_1+20, $\gamma_{\mathbf{3264.5+u}}$**548.0**$_5$
C **4396.0+u**, J_1+22, $\gamma_{\mathbf{3812.5+u}}$**583.5**$_{10}$
C **5013.5+u**, J_1+24, $\gamma_{\mathbf{4396.0+u}}$**617.5**$_{10}$
C **5665.5+u**, J_1+26, $\gamma_{\mathbf{5013.5+u}}$**652.0**$_{10}$
C **6351.4+u**, J_1+28, $\gamma_{\mathbf{5665.5+u}}$**685.9**$_{10}$
D **v**, $J_2\approx(10)$
D **240.5+v**, J_2+2, $\gamma_{\mathbf{v}}$**240.5**$_3$
D **520.5+v**, J_2+4, $\gamma_{\mathbf{240.5+v}}$**280.0**$_3$
D **839.3+v**, J_2+6, $\gamma_{\mathbf{520.5+v}}$**318.8**$_3$
D **1197.4+v**, J_2+8, $\gamma_{\mathbf{839.3+v}}$**358.1**$_3$
D **1594.6+v**, J_2+10, $\gamma_{\mathbf{1197.4+v}}$**397.2**$_3$
D **2029.9+v**, J_2+12, $\gamma_{\mathbf{1594.6+v}}$**435.3**$_3$
D **2502.9+v**, J_2+14, $\gamma_{\mathbf{2029.9+v}}$**473.0**$_3$
D **3013.8+v**, J_2+16, $\gamma_{\mathbf{2502.9+v}}$**510.9**$_5$
D **3560.4+v**, J_2+18, $\gamma_{\mathbf{3013.8+v}}$**546.6**$_5$
D **4142.6+v**, J_2+20, $\gamma_{\mathbf{3560.4+v}}$**582.2**$_5$
D **4760.0+v**, J_2+22, $\gamma_{\mathbf{4142.6+v}}$**617.4**$_5$
D **5412.0+v**, J_2+24, $\gamma_{\mathbf{4760.0+v}}$**652.0**$_{10}$
D **6097.5+v**, J_2+26, $\gamma_{\mathbf{5412.0+v}}$**685.5**$_{10}$
D **6815.0+v**(?), J_2+28, $\gamma_{\mathbf{6097.5+v}}$**717.5**$_{10}$(?)
E **w**, $J_3\approx(9)$
E **220.3+w**, J_3+2, $\gamma_{\mathbf{w}}$**220.3**$_3$
E **479.7+w**, J_3+4, $\gamma_{\mathbf{220.3+w}}$**259.4**$_3$
E **779.4+w**, J_3+6, $\gamma_{\mathbf{479.7+w}}$**299.7**$_3$
E **1118.1+w**, J_3+8, $\gamma_{\mathbf{779.4+w}}$**338.7**$_3$
E **1496.8+w**, J_3+10, $\gamma_{\mathbf{1118.1+w}}$**378.3**$_3$
E **1912.3+w**, J_3+12, $\gamma_{\mathbf{1496.8+w}}$**415.5**$_3$
E **2366.5+w**, J_3+14, $\gamma_{\mathbf{1912.3+w}}$**454.2**$_5$

E **2858.0+w**, J_3+16, $\gamma_{\mathbf{2366.5+w}}$**491.5**$_5$
E **3385.8+w**, J_3+18, $\gamma_{\mathbf{2858.0+w}}$**527.8**$_5$
E **3949.8+w**, J_3+20, $\gamma_{\mathbf{3385.8+w}}$**564.0**$_5$
E **4549.5+w**(?), J_3+22, $\gamma_{\mathbf{3949.8+w}}$**599.7**$_{10}$(?)
E **5183.2+w**(?), J_3+24, $\gamma_{\mathbf{4549.5+w}}$**633.7**$_{10}$(?)
E **5852.4+w**(?), J_3+26, $\gamma_{\mathbf{5183.2+w}}$**669.2**$_{10}$(?)
E **6555.8+w**(?), J_3+28, $\gamma_{\mathbf{5852.4+w}}$**703.4**$_{10}$(?)
F **s**, $J_4 \approx (8)$
F **187.9+s**, J_4+2, $\gamma_{\mathbf{s}}$**187.9**$_3$
F **414.2+s**, J_4+4, $\gamma_{\mathbf{187.9+s}}$**226.3**$_3$
F **678.2+s**, J_4+6, $\gamma_{\mathbf{414.2+s}}$**264.0**$_3$
F **980.2+s**, J_4+8, $\gamma_{\mathbf{678.2+s}}$**302.0**$_3$
F **1319.4+s**, J_4+10, $\gamma_{\mathbf{980.2+s}}$**339.2**$_3$
F **1696.0+s**, J_4+12, $\gamma_{\mathbf{1319.4+s}}$**376.6**$_3$
F **2109.7+s**, J_4+14, $\gamma_{\mathbf{1696.0+s}}$**413.7**$_5$
F **2559.7+s**, J_4+16, $\gamma_{\mathbf{2109.7+s}}$**450.0**$_5$
F **3045.8+s**, J_4+18, $\gamma_{\mathbf{2559.7+s}}$**486.1**$_5$
F **3567.6+s**, J_4+20, $\gamma_{\mathbf{3045.8+s}}$**521.8**$_5$
F **4126.0+s**, J_4+22, $\gamma_{\mathbf{3567.6+s}}$**558.4**$_{10}$
F **4719.7+s**, J_4+24, $\gamma_{\mathbf{4126.0+s}}$**593.7**$_{10}$
F **5347.4+s**(?), J_4+26, $\gamma_{\mathbf{4719.7+s}}$**627.7**$_{10}$(?)
G **t**, $J_5 \approx (9)$
G **207.0+t**, J_5+2, $\gamma_{\mathbf{t}}$**207.0**$_3$
G **452.4+t**, J_5+4, $\gamma_{\mathbf{207.0+t}}$**245.4**$_3$
G **736.1+t**, J_5+6, $\gamma_{\mathbf{452.4+t}}$**283.7**$_3$
G **1057.9+t**, J_5+8, $\gamma_{\mathbf{736.1+t}}$**321.8**$_3$
G **1416.1+t**, J_5+10, $\gamma_{\mathbf{1057.9+t}}$**358.2**$_3$
G **1812.3+t**, J_5+12, $\gamma_{\mathbf{1416.1+t}}$**396.2**$_3$
G **2244.8+t**, J_5+14, $\gamma_{\mathbf{1812.3+t}}$**432.5**$_5$
G **2714.9+t**, J_5+16, $\gamma_{\mathbf{2244.8+t}}$**470.1**$_5$
G **3221.1+t**, J_5+18, $\gamma_{\mathbf{2714.9+t}}$**506.2**$_5$
G **3764.8+t**, J_5+20, $\gamma_{\mathbf{3221.1+t}}$**543.7**$_5$
G **4343.9+t**, J_5+22, $\gamma_{\mathbf{3764.8+t}}$**579.1**$_{10}$
G **4956.9+t**, J_5+24, $\gamma_{\mathbf{4343.9+t}}$**613.0**$_{10}$



SD-1 band
(1991Az03,1995Az01)
SD-2 band
(1991Az03,1995Az01)
SD-3 band
(1991Az03,1995Az01)
SD-4 band
(1991Az03,1995Az01)
SD-5 band
(1991Az03,1995Az01)
SD-6 band
(1991Az03,1995Az01)

$^{194}_{81}Tl_{113}$

$^{195}_{81}Tl_{114}$

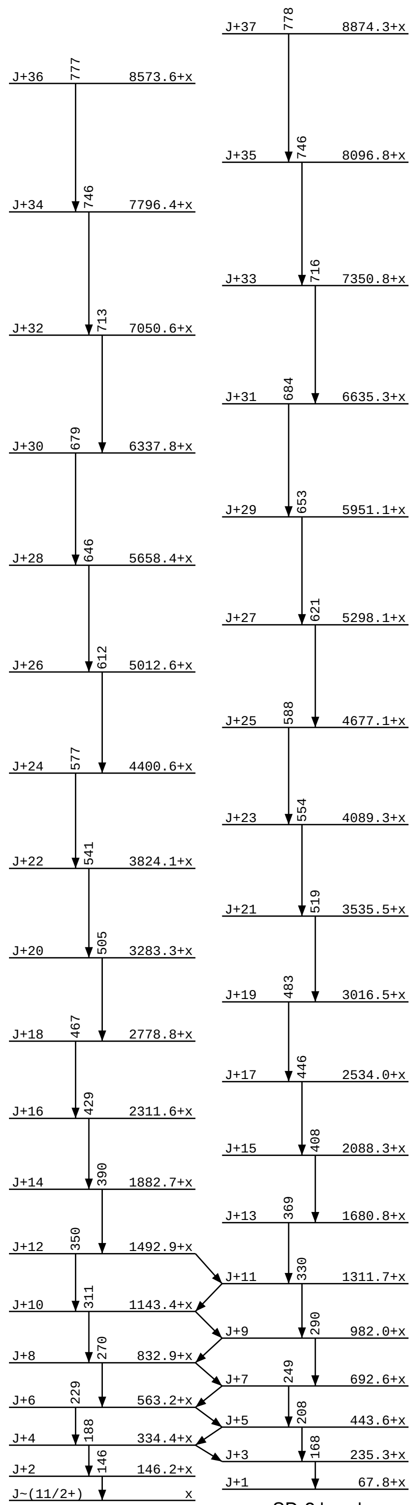
S_n: 9378 $_{SY}$, S_p: 3313 $_{SY}$

Nuclear Bands

- A $\pi h_{9/2}\pi(h_{11/2}^{-2})$
- B $\pi h_{9/2}\nu i_{13/2}\nu(p_{1/2}, p_{3/2}$ or $f_{5/2})$
- C Member of 3-quasiparticle ($\pi\nu\nu$) structure
- D SD-1 band (1994Du16,1991Az04)
- E SD-2 band (1994Du16,1991Az04)

Levels and γ-ray branchings:

0, $1/2^+$, 1.16_5 *h*, %ε+%β$^+$=100, μ=+1.58$_4$
383.66$_{12}$, $3/2^+$, γ_{0}**383.64**$_{12}$(100) M1+E2 $\delta=1.8^{4}_{3}$
A **482.63**$_{17}$, $9/2^-$, 3.64 *s*, %IT=100, , $\gamma_{383.66}$**98.97**$_{12}$(100) E3
777.55$_{17}$, $(5/2^+)$, $\gamma_{383.66}$**393.7**$_3$(100.0$_{89}$), γ_{0}**777.6**$_2$(71.1$_{89}$)
811.1$_6$, $\gamma_{383.66}$**427.4**$_5$(100)
A **876.69**$_{19}$, $11/2^-$, $\gamma_{482.63}$**394.21**$_{12}$(100) M1(+E2) $\delta=0.42_{13}$
1079.7$_8$, $\gamma_{383.66}$**696.0**$_8$(100)
1173.79$_{20}$, $9/2^-,11/2^-$, $\gamma_{482.63}$**691.17**$_{15}$(100) M1
A **1190.12**$_{19}$, $13/2^-$, $\gamma_{876.69}$**313.22**$_{12}$(50$_3$) M1+E2 $\delta=0.38_{10}$, $\gamma_{482.63}$**707.67**$_{15}$(100$_6$) E2
1267.0$_3$, $(1/2^+,3/2^+,5/2^+)$, $\gamma_{383.66}$**883.1**$_3$(100) (E2)
1285.3$_4$, $\gamma_{777.55}$**507.8**$_3$(100)
C **1360.95**$_{22}$, $11/2^-$, $\gamma_{482.63}$**878.40**$_{16}$(100) M1(+E2)
1378(?), $\gamma_{383.66}$**994.3**$_8$(100)(?)
C **1410.68**$_{20}$, $11/2^-,13/2^-$, $\gamma_{1173.79}$**236.60**$_{23}$(1.12$_{11}$) M1, $\gamma_{876.69}$**534.11**$_{14}$(≈ 44.9) M1, $\gamma_{482.63}$**928.02**$_{16}$(100$_{15}$) (E2)
1434.7$_7$, $\gamma_{383.66}$**1051.0**$_8$(100)
C **1484.04**$_{21}$, $13/2^-$, $\gamma_{1190.12}$**294.2**$_5$(65$_{48}$), $\gamma_{876.69}$**607.64**$_{15}$(100$_{11}$) M1+E2 $\delta=0.66_{19}$, $\gamma_{482.63}$**1000.92**$_{18}$(16.6$_{14}$)
1612.7$_9$, $(3/2^+,5/2^+,7/2^+)$, $\gamma_{1267.0}$**346.0**$_5$(18$_{12}$)(?), $\gamma_{777.55}$**835.2**$_8$(100$_{15}$) M1
1616.42$_{21}$, $9/2^-,11/2^-,13/2^-$, $\gamma_{1173.79}$**442.74**$_{14}$(100$_{10}$) M1, $\gamma_{876.69}$**739.47**$_{23}$(47$_8$), $\gamma_{482.63}$**1133.73**$_{21}$(98.9$_{11}$)
A **1618.74**$_{20}$, $15/2^-$, $\gamma_{1190.12}$**428.44**$_{13}$(100$_6$) M1+E2 $\delta=0.34_6$, $\gamma_{876.69}$**742.19**$_{15}$(93$_6$) E2
1648.6$_5$, $\gamma_{777.55}$**871.0**$_5$(100)
1687.9$_7$, $\gamma_{1434.7}$**253.2**$_5$(29$_{12}$), $\gamma_{383.66}$**1304.2**$_8$(100$_{15}$)
1725.26$_{23}$, $(13/2)^+$, $\gamma_{876.69}$**848.66**$_{16}$(100$_{25}$) E1(+M2), $\gamma_{482.63}$**1242.24**$_{32}$(11.3$_{25}$)
1843.7$_{10}$, $\gamma_{383.66}$**1461.1**$_8$(100)
1844.8$_4$, $\gamma_{1648.6}$**196.1**$_5$(73$_{14}$), $\gamma_{1267.0}$**578.0**$_5$(36$_{18}$), $\gamma_{777.55}$**1067.0**$_8$(100$_{18}$)
1924.46$_{22}$, $17/2^-$, $\gamma_{1618.74}$**305.67**$_{15}$(58$_6$) M1+E2 $\delta=0.11^{3}_{4}$, $\gamma_{1190.12}$**734.43**$_{15}$(100$_{25}$) E2
C **1944.61**$_{21}$, $13/2^-$, $\gamma_{1618.74}$**325.85**$_{14}$(10.6$_{13}$) M1+E2, $\gamma_{1410.68}$**534.11**(≈ 8.39), $\gamma_{1190.12}$**754.73**$_{32}$(13$_3$) M1, $\gamma_{876.69}$**1067.88**$_{17}$(100$_6$) M1(+E2)
C **1991.47**$_{22}$, $11/2^-,13/2^-$, $\gamma_{1360.95}$**630.58**$_{14}$(100$_8$) M1(+E2), $\gamma_{1190.12}$**801.26**$_{17}$(62$_6$) M1
A **2011.5**$_3$, $17/2^-$, $\gamma_{1618.74}$**392.8**$_5$(100$_{47}$) (M1+E2) $\delta=0.42_{13}$, $\gamma_{1190.12}$**821.3**$_3$(82$_{47}$) E2
C **2023.5**$_3$, $11/2^-,13/2^-,15/2^-$, $\gamma_{1484.04}$**539.50**$_{15}$(100) M1
2033.7$_5$(?), $\gamma_{1190.12}$**843.2**$_5$(100)
B **2037.1**$_3$, $15/2^+$, $\gamma_{1618.74}$**418.5**$_3$(20$_3$) (E1), $\gamma_{1484.04}$**552.9**$_3$(24$_4$) (E1), $\gamma_{1190.12}$**847.1**$_5$(100$_{35}$) (E1), $\gamma_{876.69}$**1161.6**$_5$(?)
2115.1$_5$(?), $\gamma_{1484.04}$**630.58**$_{14}$(100$_8$)
2145.1$_3$, $(11/2,13/2,15/2)^+$, $\gamma_{1725.26}$**419.81**$_{16}$(100) M1
B **2212.9**$_4$, $17/2^+$, $\gamma_{2037.1}$**175.7**$_3$(100) M1+E2 $\delta=0.13_5$
2361.9$_4$, $(11/2,13/2,15/2)$, $\gamma_{1484.04}$**877.9**$_3$(100)
2367.9$_5$(?), $\gamma_{1618.74}$**748.8**$_5$(100)
A **2470.1**$_3$, $19/2^-$, $\gamma_{2011.5}$**458.7**$_3$(100$_{13}$) M1+E2 $\delta=0.75_{15}$, $\gamma_{1924.46}$**545.7**$_3$(21$_5$) M1+E2 $\delta=0.57_{16}$, $\gamma_{1618.74}$**851.3**$_3$(17$_8$) E2
B **2529.6**$_4$, $19/2^+$, $\gamma_{2212.9}$**316.8**$_3$(100$_{12}$) M1+E2 $\delta=0.21_4$, $\gamma_{2037.1}$**492.6**$_3$(16$_5$) E2
2581.5$_5$(?), $\gamma_{2115.1}$**466.4**$_5$(32$_{14}$), $\gamma_{1190.12}$**1391.0**$_5$(100$_{32}$)
A **2587.4**$_3$, $21/2^-$, $\gamma_{2470.1}$**117.3**$_5$(26$_9$) (M1+E2), $\gamma_{2011.5}$**575.8**$_3$(42$_6$) E2, $\gamma_{1924.46}$**663.1**$_3$(100$_{11}$) E2
B **2840.7**$_5$, $21/2^+$, $\gamma_{2529.6}$**311.4**$_5$(100$_{31}$) M1+E2 $\delta=0.23_5$, $\gamma_{2212.9}$**627.7**$_3$(50$_8$) E2
A **2861.1**$_4$, $23/2^-$, $\gamma_{2587.4}$**273.7**$_3$(100) M1(+E2) $\delta\le 0.14$
A **3059.8**$_4$, $25/2^-$, $\gamma_{2861.1}$**198.8**$_3$(100$_{25}$) (M1+E2), $\gamma_{2587.4}$**472.3**$_3$(64$_{21}$) E2
A **3157.1**$_5$, $27/2^{(-)}$, $\gamma_{3059.8}$**97.3**$_3$(100) (M1+E2)
B **3201.9**$_5$, $23/2^+$, $\gamma_{2840.7}$**361.1**$_3$(69$_8$) M1+E2 $\delta=0.23_4$, $\gamma_{2529.6}$**672.3**$_5$(< 100) E2
B **3513.9**$_5$, $25/2^+$, $\gamma_{3201.9}$**312.3**$_5$(70$_{22}$) M1+E2 $\delta=0.27_6$, $\gamma_{2840.7}$**673.2**$_5$(< 100) (E2)
B **3729.6**$_5$, $27/2^+$, $\gamma_{3513.9}$**215.8**$_3$(100$_{10}$) M1(+E2) $\delta\le 0.14$, $\gamma_{3201.9}$**527.6**$_3$(60$_{12}$) E2
B **3885.3**$_6$, $29/2^{(+)}$, $\gamma_{3729.6}$**155.7**$_3$(100) (M1+E2)
B **4002.8**$_8$, $31/2^{(+)}$, $\gamma_{3885.3}$**117.5**$_5$(100) (M1+E2)
B **4174.8**$_9$, $33/2^{(+)}$, $\gamma_{4002.8}$**172.0**$_3$(100) (M1+E2)
B **4393.3**$_9$, $35/2^{(+)}$, $\gamma_{4174.8}$**218.5**$_3$(100) (M1+E2)
D **x**, $J\approx(11/2^+)$
E **67.8+x**, $J+1$
D **146.2+x**, $J+2$, γ_{x}**146.2**$_5$
E **235.3+x**, $J+3$, $\gamma_{67.8+x}$**167.5**$_5$
D **334.4+x**, $J+4$, $\gamma_{235.3+x}$**99.0**$_5$, $\gamma_{146.2+x}$**188.2**$_5$
E **443.6+x**, $J+5$, $\gamma_{334.4+x}$**109.0**$_5$, $\gamma_{235.3+x}$**208.4**$_5$
D **563.2+x**, $J+6$, $\gamma_{443.6+x}$**119.5**$_5$, $\gamma_{334.4+x}$**228.8**$_5$
E **692.6+x**, $J+7$, $\gamma_{563.2+x}$**129.5**$_5$, $\gamma_{443.6+x}$**249.1**$_5$
D **832.9+x**, $J+8$, $\gamma_{692.6+x}$**140.5**$_5$, $\gamma_{563.2+x}$**269.7**$_3$
E **982.0+x**, $J+9$, $\gamma_{832.9+x}$**149.0**$_5$, $\gamma_{692.6+x}$**289.5**$_3$
D **1143.4+x**, $J+10$, $\gamma_{982.0+x}$**161.5**$_5$, $\gamma_{832.9+x}$**310.5**$_3$
E **1311.7+x**, $J+11$, $\gamma_{1143.4+x}$**168.0**$_5$, $\gamma_{982.0+x}$**329.6**$_3$
D **1492.9+x**, $J+12$, $\gamma_{1311.7+x}$**181.0**$_5$, $\gamma_{1143.4+x}$**349.6**$_3$
E **1680.8+x**, $J+13$, $\gamma_{1311.7+x}$**369.1**$_3$
D **1882.7+x**, $J+14$, $\gamma_{1492.9+x}$**389.8**$_3$
E **2088.3+x**, $J+15$, $\gamma_{1680.8+x}$**407.5**$_3$
D **2311.6+x**, $J+16$, $\gamma_{1882.7+x}$**428.9**$_3$
E **2534.0+x**, $J+17$, $\gamma_{2088.3+x}$**445.7**$_3$
D **2778.8+x**, $J+18$, $\gamma_{2311.6+x}$**467.2**$_3$
E **3016.5+x**, $J+19$, $\gamma_{2534.0+x}$**482.5**$_3$
D **3283.3+x**, $J+20$, $\gamma_{2778.8+x}$**504.5**$_3$
E **3535.5+x**, $J+21$, $\gamma_{3016.5+x}$**519.0**$_3$
D **3824.1+x**, $J+22$, $\gamma_{3283.3+x}$**540.8**$_3$
E **4089.3+x**, $J+23$, $\gamma_{3535.5+x}$**553.8**$_3$
D **4400.6+x**, $J+24$, $\gamma_{3824.1+x}$**576.5**$_3$
E **4677.1+x**, $J+25$, $\gamma_{4089.3+x}$**587.8**$_3$
D **5012.6+x**, $J+26$, $\gamma_{4400.6+x}$**612.0**$_3$
E **5298.1+x**, $J+27$, $\gamma_{4677.1+x}$**621.0**$_3$
D **5658.4+x**, $J+28$, $\gamma_{5012.6+x}$**645.7**$_3$
E **5951.1+x**, $J+29$, $\gamma_{5298.1+x}$**653.0**$_3$
D **6337.8+x**, $J+30$, $\gamma_{5658.4+x}$**679.4**$_3$
E **6635.3+x**, $J+31$, $\gamma_{5951.1+x}$**684.2**$_3$
D **7050.6+x**, $J+32$, $\gamma_{6337.8+x}$**712.8**$_5$
E **7350.8+x**, $J+33$, $\gamma_{6635.3+x}$**715.5**$_5$
D **7796.4+x**, $J+34$, $\gamma_{7050.6+x}$**745.8**$_5$
E **8096.8+x**, $J+35$, $\gamma_{7350.8+x}$**746.0**$_5$
D **8573.6+x**, $J+36$, $\gamma_{7796.4+x}$**777.2**$_5$
E **8874.3+x**, $J+37$, $\gamma_{8096.8+x}$**777.5**$_5$



SD-1 band
(1994Du16,1991Az04)

SD-2 band
(1994Du16,1991Az04)

$^{195}_{81}Tl_{114}$

$^{192}_{82}Pb_{110}$

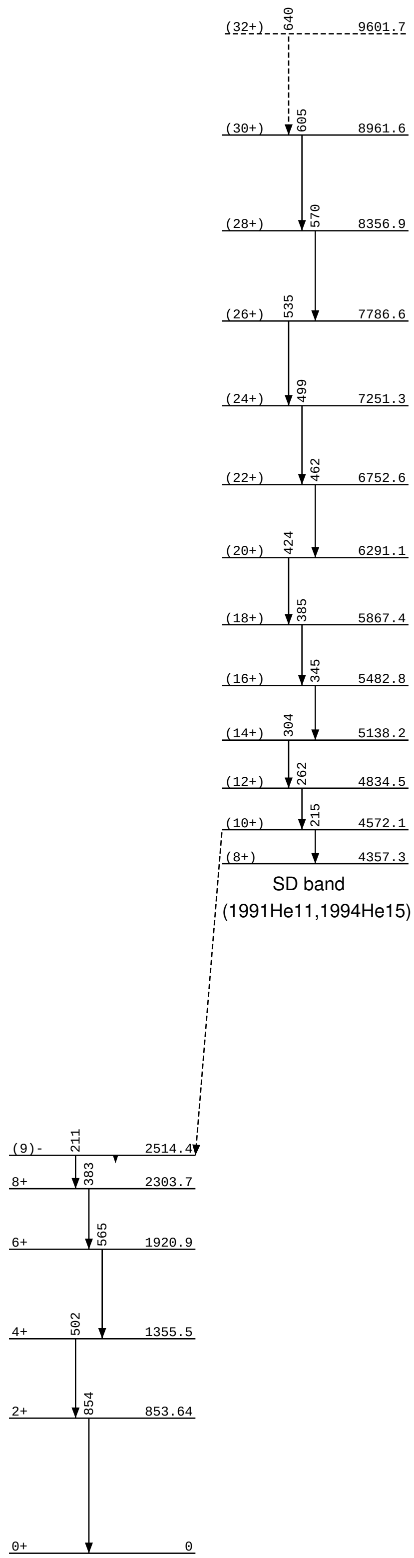
S_n: 10.3x10$^3_{SY}$, S_p: 3.7x10$^3_{SY}$

Nuclear Bands

A Low-spin yrast states
B $\nu(i^{-2}_{13/2})$
C 2-quasineutron states
D Magnetic-dipole rotational band based on 15^-
E Magnetic-dipole rotational band based on 18^-
F 4-quasiparticle states based on 9^- (?)
G 4-quasiparticle states based on 8^- (?)
H 4-quasiparticle states based on 12^+ (?)
I 4-quasiparticle states based on 10^+ (?)
J SD band (1991He11,1994He15,1995Du07,1995As04)

Levels and γ-ray branchings:

A **0**, 0^+, *3.5$_1$ min*, %ε+%β$^+$=99.9941$_7$, %α=0.0059$_7$
768.84$_{23}$, 0^+, *0.75$_{10}$ ns*, γ_0**768.5**$_4$ E0
A **853.64**$_{18}$, 2^+, γ_0**853.8**$_2$(100) E2
1237.88$_{22}$, (2^+), $\gamma_{853.64}$**383.9**$_4$(< 10), $\gamma_{768.84}$**469.4**$_3$(4$_3$), γ_0**1237.7**$_3$(100$_8$)
A **1355.5**$_3$, 4^+, $\gamma_{853.64}$**501.8**$_2$(100) E2
1430.2$_3$, $\gamma_{853.64}$**576.6**$_2$(100)
1544.09$_{22}$, $1,2^+$, $\gamma_{853.64}$**690.7**$_2$(100$_{25}$), $\gamma_{768.84}$**775.0**$_2$(30$_8$)
1680.1$_6$, $\gamma_{1355.5}$**324.6**$_5$(100)
C **1859.8**$_3$, $(5)^-$, $\gamma_{1355.5}$**504.3**$_2$(100) E1
A **1920.9**$_3$, 6^+, $\gamma_{1355.5}$**565.4**$_2$(100) E2
1983.3$_4$, $\gamma_{1237.88}$**745.4**$_3$(100)
2303.7$_4$, 8^+, $\gamma_{1920.9}$**382.8**$_2$(100) E2
C **2323.2**$_4$, $(7)^-$, $\gamma_{1920.9}$**402.4**$_2$(23.6$_{14}$) (E1), $\gamma_{1859.8}$**463.4**$_2$(100$_{10}$) E2
C **2507.2**$_4$, $(8)^-$, $\gamma_{2323.2}$**184.0**$_2$(100) M1+E2 $\delta=0.94_{13}$
C **2514.4**$_4$, $(9)^-$, $\gamma_{2507.2}$**(7.1)**, $\gamma_{2323.2}$**191.1**$_2$(100$_5$) E2, $\gamma_{2303.7}$**210.7**$_2$(12.8$_{19}$) E1+M2 $\delta=0.27_4$
B **2520.3**$_4$, $(8)^+$, $\gamma_{1920.9}$**599.5**$_2$(100) E2
2562.5$_4$, $\gamma_{1920.9}$**641.6**$_2$(100)
B **2581.1**$_4$, $(10)^+$, *93$_{11}$ ns*, $\gamma_{2520.3}$**60.8**$_4$ (E2), $\gamma_{2514.4}$**66.9**$_4$ E1, $\gamma_{2303.7}$**277.3**$_6$ E2
2622.4$_4$, $(2^+,3,4^+)$, $\gamma_{1355.5}$**1266.9**$_3$(97$_9$), $\gamma_{853.64}$**1768.9**$_4$(100$_{43}$)
2623.1$_5$, $(8^-,9^-)$, $\gamma_{2323.2}$**299.7**$_5$(100$_{19}$), $\gamma_{2303.7}$**319.5**$_5$(77$_{12}$)
B **2625.1**$_{11}$, (12^+), *1.10$_5$ μs*, μ=-2.076$_{24}$, $\gamma_{2581.1}$**44.0**$_{10}$(100) (E2)
2743.5$_4$, 11^-, *0.756$_{21}$ μs*, $\gamma_{2625.1}$**120.6**(30.5$_{12}$) E1, $\gamma_{2581.1}$**162.5**$_3$(100.0$_{21}$) E1, $\gamma_{2303.7}$**439.7**$_3$(16.3$_{16}$) E3
2789.9$_4$, $7^{(-)},8,9$, $\gamma_{2303.7}$**486.1**$_2$(100$_{60}$) D, $\gamma_{1859.8}$**928.7**$_3$(93$_{33}$)(?)
2893.8$_4$, (9^-), $\gamma_{2789.9}$**103.4**$_5$(< 20), $\gamma_{2323.2}$**570.8**$_3$(100$_{15}$)
G **3174.6**$_5$, (10^-), $\gamma_{2623.1}$**551.4**$_5$(62$_9$), $\gamma_{2514.4}$**660.1**$_5$(100$_9$), $\gamma_{2507.2}$**667.6**$_5$(74$_{10}$) (E2)
F **3254.3**$_5$, (11^-), $\gamma_{2893.8}$**360.6**$_5$(29.2$_{23}$) (E2), $\gamma_{2514.4}$**739.9**$_5$(100$_4$) (E2)
3274.5$_6$, (12^-), $\gamma_{2743.5}$**530.9**$_5$(100) (M1)
3304.3$_7$, $\gamma_{2562.5}$**741.8**$_6$(100)
H **3499.8**$_{12}$, (14^+), $\gamma_{2625.1}$**874.7**$_5$(100) (E2)
I **3527.6**$_7$, (12^+), $\gamma_{2581.1}$**946.5**$_5$(100) (E2)
G **3663.7**$_7$, (12^-), $\gamma_{3174.6}$**489.1**$_5$(100) (E2)
3679.2$_6$, (13^-), $\gamma_{3274.5}$**404.7**$_5$(86$_{12}$) (M1), $\gamma_{2743.5}$**935.8**$_5$(100) (E2)
F **3788.5**$_7$, (13^-), $\gamma_{3254.3}$**534.2**$_5$(100) (E2)
H **3938.8**$_{13}$, $\gamma_{3499.8}$**439.0**$_5$(100)
H **4029.4**$_{13}$, (16^+), $\gamma_{3499.8}$**529.6**$_5$(100) (E2)
H **4036.8**$_{13}$, (15), $\gamma_{3499.8}$**537.0**$_5$(100) D
I **4094.1**$_8$, $(13,14)$, $\gamma_{3527.6}$**566.5**$_5$(100)
I **4154.7**$_8$, $\gamma_{3527.6}$**627.1**$_5$(100)
H **4193.4**$_{14}$, $\gamma_{4036.8}$**156.6**$_5$(100)
G **4200.9**$_9$, (14^-), $\gamma_{3663.7}$**537.2**$_5$(100)
H **4218.4**$_{13}$, (15), $\gamma_{3499.8}$**718.6**$_5$(100) D
G **4235.8**$_9$, (14^-), $\gamma_{3663.7}$**572.1**$_5$(100) (E2)
D **4241.2**$_8$, (15^-), $\gamma_{3679.2}$**562.0**$_5$(100) (E2)
H **4267.2**$_{13}$, $(15,16)$, $\gamma_{3499.8}$**767.4**$_5$(100)
4288.2$_7$, (15^-), $\gamma_{3679.2}$**609.0**$_5$(100) (E2)
4322.3$_8$, (14), $\gamma_{3679.2}$**643.1**$_5$(100) D
I **4325.7**$_8$, (14^+), $\gamma_{3527.6}$**798.1**$_5$(100) (E2)
F **4331.8**$_8$, (15^-), $\gamma_{3788.5}$**543.1**$_5$(100) (E2)
J **4357.3**$_8$, (8^+)
F **4366.4**$_7$, (15^-), $\gamma_{3788.5}$**578.0**$_5$(100)
D **4370.1**$_9$, (16^-), $\gamma_{4241.2}$**128.9**$_5$(100) (M1)
I **4423.5**$_{10}$, $\gamma_{4094.1}$**329.4**$_5$(100)
H **4443.9**$_{14}$, (16), $\gamma_{4036.8}$**407.1**$_5$(100) D
D **4519.2**$_{11}$, (17^-), $\gamma_{4370.1}$**149.1**$_5$(100)
J **4572.1**$_7$, (10^+), $\gamma_{4357.3}$**214.8**$_2$(0.05$_2$), $\gamma_{2514.4}$**2057.7**$_6$(0.041$_{12}$)(?)
G **4580.1**$_{10}$, $\gamma_{4200.9}$**379.2**$_5$(100)
F **4621.5**$_7$, (16^-), $\gamma_{4366.4}$**255.1**$_5$(100$_{18}$) (M1), $\gamma_{4331.8}$**289.6**$_5$(24$_{12}$)
H **4651.2**$_{14}$, (18^+), $\gamma_{4029.4}$**621.8**$_5$(100) (E2)
H **4651.3**$_{14}$, (16), $\gamma_{4036.8}$**614.5**$_5$(100) D
G **4681.2**$_{10}$, (15), $\gamma_{4200.9}$**480.3**$_5$(100) D
D **4702.3**$_{12}$, (18^-), $\gamma_{4519.2}$**183.1**$_5$(100) (M1)
4722.1$_7$, (17^-), $\gamma_{4621.5}$**100.6**$_5$, $\gamma_{4288.2}$**433.9**$_5$
I **4733.6**$_{10}$, $(15,16)$, $\gamma_{4094.1}$**639.5**$_5$(100)
F **4753.4**$_8$, (17^-), $\gamma_{4621.5}$**131.8**$_5$(100$_{50}$), $\gamma_{4366.4}$**387.0**$_5$(64$_{25}$)
H **4815.5**$_{15}$, (18), $\gamma_{4443.9}$**371.6**$_5$(100) (E2)
J **4834.5**$_7$, (12^+), $\gamma_{4572.1}$**262.4**$_1$(0.45$_3$)
I **4849.7**$_{10}$, $\gamma_{4154.7}$**695.0**$_5$(100)
H **4914.0**$_{14}$, (17), $\gamma_{4218.4}$**695.6**$_5$(100)
E **4963.0**$_9$, (18^-), $\gamma_{4722.1}$**240.9**$_5$(100) (M1)
D **4989.6**$_{13}$, (19^-), $\gamma_{4702.3}$**287.3**$_5$(100)
H **5055.7**$_{14}$, $(17,18)$, $\gamma_{4267.2}$**788.5**$_5$(100)
H **5065.7**$_{14}$, (16), $\gamma_{4218.4}$**847.3**$_5$(100) D
E **5087.1**$_{10}$, (19^-), $\gamma_{4963.0}$**124.1**$_5$(100)
H **5105.5**$_{14}$, (17), $\gamma_{4651.2}$**455**(< 13)(?), $\gamma_{4029.4}$**1076.1**$_5$(100$_{13}$) D
F **5113.3**$_9$, (17^-), $\gamma_{4331.8}$**781.5**$_5$(100) (E2)
I **5136.8**$_{11}$, $\gamma_{4733.6}$**403.2**$_5$(100)
J **5138.2**$_7$, (14^+), $\gamma_{4834.5}$**303.7**$_1$(0.87$_3$)
F **5201.3**$_9$, (18), $\gamma_{4753.4}$**447.8**$_5$(100)
5229.9$_9$, (18), $\gamma_{4722.1}$**507.8**$_5$(100) D
D **5276.9**$_{14}$, (20^-), $\gamma_{4989.6}$**287.3**$_5$(100)
E **5286.3**$_{12}$, (20^-), $\gamma_{5087.1}$**199.2**$_5$(100) (M1)
I **5289.2**$_{10}$, $\gamma_{4325.7}$**963.5**$_5$(100)
H **5378.0**$_{15}$, $\gamma_{4651.2}$**726.8**$_5$(100)
F **5436.8**$_9$, (19^-), $\gamma_{5201.3}$**235.4**$_5$, $\gamma_{4753.4}$**683.5**$_5$
I **5456.9**$_{11}$, $(16,17)$, $\gamma_{4733.6}$**723.3**$_5$(100) D
H **5461.8**$_{15}$, $\gamma_{5105.5}$**356.3**$_5$(100)
J **5482.8**$_8$, (16^+), $\gamma_{5138.2}$**344.6**$_1$(1.00$_4$)
H **5494.3**$_{16}$, (20), $\gamma_{4815.5}$**678.8**$_5$(100)
E **5531.7**$_{13}$, (21^-), $\gamma_{5286.3}$**245.4**$_5$(100)
I **5538.3**$_{11}$, $\gamma_{5289.2}$**249.1**$_5$(100)
5540.6$_{10}$, (20), $\gamma_{5229.9}$**310.7**$_5$(100) (E2)
D **5559.5**$_{14}$, (21^-), $\gamma_{5276.9}$**282.6**$_5$(100) (M1)
H **5635.0**$_{16}$, $\gamma_{5378.0}$**257.0**$_5$(100)
5646.6$_{10}$, (20), $\gamma_{5229.9}$**416.7**$_5$(100)
D **5708.6**$_{15}$, (22^-), $\gamma_{5559.5}$**149.1**$_5$(84$_{40}$), $\gamma_{5276.9}$**431.7**$_5$(100$_{50}$)
I **5794.6**$_{12}$, $\gamma_{5136.8}$**657.8**$_5$(100)
J **5867.4**$_8$, (18^+), $\gamma_{5482.8}$**384.6**$_1$(0.85$_7$)
E **5871.0**$_{14}$, (22^-), $\gamma_{5531.7}$**339.3**$_5$(100) (M1)
6030.4$_{12}$, (21), $\gamma_{5646.6}$**383.8**$_5$(100) (M1)
E **6232.1**$_{15}$, (23^-), $\gamma_{5871.0}$**361.1**$_5$(100) (M1)
J **6291.1**$_8$, (20^+), $\gamma_{5867.4}$**423.7**$_2$(0.67$_6$)
H **6390.5**$_{17}$, (21), $\gamma_{5494.3}$**896.2**$_5$(100) D
E **6666.0**$_{15}$, (24^-), $\gamma_{6232.1}$**433.9**$_5$(100)
J **6752.6**$_8$, (22^+), $\gamma_{6291.1}$**461.5**$_2$(0.31$_4$)
E **7155.5**$_{16}$, (25^-), $\gamma_{6666.0}$**489.5**$_5$(100)
J **7251.3**$_8$, (24^+), $\gamma_{6752.6}$**498.7**$_2$(0.27$_5$)
J **7786.6**$_{10}$, (26^+), $\gamma_{7251.3}$**535.3**$_5$
J **8356.9**$_{12}$, (28^+), $\gamma_{7786.6}$**570.3**$_6$
J **8961.6**$_{14}$, (30^+), $\gamma_{8356.9}$**604.7**$_7$
J **9601.7**$_{17}$(?), (32^+), $\gamma_{8961.6}$**640**(?)


(32+) 640 9601.7
(30+) 605 8961.6
(28+) 570 8356.9
(26+) 535 7786.6
(24+) 499 7251.3
(22+) 462 6752.6
(20+) 424 6291.1
(18+) 385 5867.4
(16+) 345 5482.8
(14+) 304 5138.2
(12+) 262 4834.5
(10+) 215 4572.1
(8+) 4357.3
SD band
(1991He11,1994He15)
(9)- 211 2514.4
8+ 383 2303.7
6+ 565 1920.9
4+ 502 1355.5
2+ 854 853.64
0+ 0

$^{192}_{82}Pb_{110}$

$^{193}_{82}Pb_{111}$

S_n: 7780 *SY*, S_p: 3620 *SY*

Nuclear Bands

- A Magnetic-dipole rotational band based on (29/2$^-$)
- B Magnetic-dipole rotational band based on (45/2$^-$)
- C Magnetic-dipole rotational band based on (49/2$^-$)
- D Magnetic-dipole rotational band based on (39/2$^+$)
- E Magnetic-dipole rotational band based on (43/2$^+$)
- F Band based on (29/2$^+$)
- G Band based on (31/2$^-$)
- H SD-1 band (1999Ro21,1998Va18,1995Hu01,1996Du05, 1996Pe20)
  Q_0=17.3$^{7}_{8}$
- I SD-2 band (1999Ro21,1995Hu01,1996Du05)
- J SD-3 band (1999Ro21,1995Hu01,1996Du05)
- K SD-4 band (1999Ro21,1995Hu01,1996Du05)
- L SD-5 band (1999Ro21,1995Hu01,1996Du05)
- M SD-6 band (1999Ro21,1995Hu01,1996Du05)
- N SD-7 band (1999Ro21)
- O SD-8 band (1999Ro21)
- P SD-9 band (1999Ro21)

Levels and γ-ray branchings:

0, $(3/2^-)$, *unknown* , %ε+%β$^+$=?

0+x, $(13/2^+)$, *5.8$_2$ min*, %ε+%β$^+$=100 , μ=-1.150$_7$, Q=+0.195$_{10}$

881.57+x, $(17/2^+)$, γ_{0+x}**881.6**$_2$ E2

1022.1+x, $(15/2^+)$, γ_{0+x}**1022.0**$_3$ (M1+E2)

1401.8+x, $(21/2^+)$, $\gamma_{881.57+x}$**520.2**$_2$ E2

1519.4+x(?), $(19/2^+)$, $\gamma_{1022.1+x}$**497.3** (E2)(?)

1550.2+x, $(19/2^+)$, $\gamma_{1022.1+x}$**528.0**$_4$(100$_{19}$) E2, $\gamma_{881.57+x}$**668.7**$_3$(88$_{17}$) E2+M1 $\delta=1.9^{8}_{4}$

1585.9+x, $(21/2^-)$, *22$_2$ ns*, $\gamma_{1519.4+x}$**(66.5)**, $\gamma_{1401.8+x}$**184.0** E1

1994.8+x, $(25/2^+)$, $\gamma_{1401.8+x}$**593.1**$_4$ E2

2058.9+x, $(23/2^-)$, $\gamma_{1585.9+x}$**472.7** D

2141.4+x, $(23/2^+)$, $\gamma_{1550.2+x}$**591.2**$_4$(100$_{21}$) E2, $\gamma_{1401.8+x}$**739.6**$_3$(63$_{13}$) M1+E2 $\delta=0.70^{17}_{15}$

2142.1+x, $(25/2^-)$, $\gamma_{1585.9+x}$**556.1**$_4$ E2

2172.6+x, $(23/2^+)$, $\gamma_{1550.2+x}$**622.3**

2213.8+x, $(25/2^+)$, $\gamma_{2172.6+x}$**(41.2)**, $\gamma_{2141.4+x}$**72.6**$_5$ M1+E2 $\delta=0.21^{4}_{2}$, $\gamma_{1994.8+x}$**219.1**(43$_{10}$) (M1,E2), $\gamma_{1401.8+x}$**812.2**$_4$(100$_{19}$) E2

2322.2+x, $(27/2^-)$, $\gamma_{2142.1+x}$**180.0**$_3$ M1,E2, $\gamma_{2058.9+x}$**263.1**

2404.9+x(?), $\gamma_{1585.9+x}$**819.0**(?)

2426.7+x, $(27/2^+)$, $\gamma_{2213.8+x}$**212.9**$_3$(100$_{13}$) M1, $\gamma_{1994.8+x}$**431.9**(7$_3$) (M1+E2)

2524.9+x, $(27/2^+)$, $\gamma_{2426.7+x}$**98.2**(22$_8$), $\gamma_{2213.8+x}$**311.1**(100$_{19}$) D

2526.9+x, $(29/2^+)$, $\gamma_{2322.2+x}$**204.6** D+Q, $\gamma_{1994.8+x}$**532.2**$_3$ E2

A **2584.8+x**, $(29/2^-)$, *11$_2$ ns*, μ=9.9$_4$, $\gamma_{2426.7+x}$**158.1** E1

2612.5+x, $(33/2^+)$, *135$^{25}_{15}$ ns*, $\gamma_{2526.9+x}$**85.6** (E2)

2653.6+x, $(27/2^-)$, $\gamma_{2322.2+x}$**331.3**(19$_{11}$), $\gamma_{2058.9+x}$**595.0**(100$_{50}$)

2672.2+x, $(29/2^+)$, $\gamma_{1994.8+x}$**677.6**

A **2686.9+x**, $(31/2^-)$, $\gamma_{2584.8+x}$**102.1** (M1)

2707.2+x, $(29/2^-)$, $\gamma_{2404.9+x}$**301.6**(25$_8$)(?), $\gamma_{2322.2+x}$**385.0**(21$_{10}$), $\gamma_{2142.1+x}$**565.0**(100$_{26}$) (E2)

F **2769.4+x**, $(29/2^+)$, $\gamma_{2426.7+x}$**342.7** (M1)

A **2939.2+x**, $(33/2^-)$, $\gamma_{2686.9+x}$**252.3** (M1)

G **2994.6+x**, $(31/2^-)$, $\gamma_{2653.6+x}$**341.0**(28$_9$), $\gamma_{2322.2+x}$**672.6**(100$_{26}$) (E2)

3080.2+x, $(29/2^+)$, $\gamma_{2524.9+x}$**555.4** D+Q

3128.6+x, $(31/2^-)$, $\gamma_{2707.2+x}$**421.4**(50$_{15}$), $\gamma_{2322.2+x}$**806.4**(100$_{25}$) (E2)

F **3133.4+x**, $(31/2^+)$, $\gamma_{2769.4+x}$**364.0**(100$_{21}$) (M1), $\gamma_{2672.2+x}$**461.5**, $\gamma_{2426.7+x}$**706.7**(36$_8$) (Q)

3249.9+x, $(31/2^-)$, $\gamma_{2707.2+x}$**542.7**

3260.7+x, $(31/2^-)$, $\gamma_{2584.8+x}$**675.8**

3282.1+x, $(33/2^+)$, $\gamma_{2672.2+x}$**609.9**(100$_{25}$), $\gamma_{2526.9+x}$**755.1**(83$_{17}$) (Q)

A **3320.7+x**, $(35/2^-)$, $\gamma_{2939.2+x}$**381.5**(100$_{21}$) (M1), $\gamma_{2686.9+x}$**633.8**(7$_3$)

3376.4+x, $(31/2^+)$, $\gamma_{3080.2+x}$**296.3**(31$_9$) D, $\gamma_{2524.9+x}$**851.7**(100$_{31}$) (E2)

3414.8+x, $(33/2^+)$, $\gamma_{2672.2+x}$**742.3** (E2)

3418.8+x, $(33/2^-)$, $\gamma_{3260.7+x}$**158.0**, $\gamma_{2584.8+x}$**834.0**

G **3541.6+x**, $(35/2^-)$, $\gamma_{2994.6+x}$**547.0** (E2)

F **3542.8+x**, $(33/2^+)$, $\gamma_{3133.4+x}$**409.5**(100$_{23}$) (M1), $\gamma_{2769.4+x}$**773.5**(68$_{18}$)

3609.0+x, $\gamma_{2612.5+x}$**996.5**

3640.3+x, $(37/2^-)$, $\gamma_{3320.7+x}$**319.6** D

3673.0+x, $(33/2^+)$, $\gamma_{2526.9+x}$**1145.2** (Q)

3702.2+x, $(33/2^+)$, $\gamma_{2672.2+x}$**1030.1**, $\gamma_{2526.9+x}$**1174.9**

A **3722.3+x**, $(37/2^-)$, $\gamma_{3320.7+x}$**401.6**(100$_{22}$) (M1), $\gamma_{2939.2+x}$**783.1**(25$_6$) (E2)

3741.8+x, $(35/2^-)$, $\gamma_{3128.6+x}$**613.2** (E2)

3772.1+x, $(35/2^+)$, $\gamma_{3376.4+x}$**395.8** (E2)

3822.5+x, $(35/2^+)$, $\gamma_{3282.1+x}$**540.4**

3839.5+x, $(33/2^+)$, $\gamma_{3376.4+x}$**462.9**(100$_{23}$) D, $\gamma_{3080.2+x}$**759.4**(18$_5$) (E2)

3906.6+x, $(35/2^-)$, $\gamma_{3418.8+x}$**487.8** (D)

F **3924.8+x**, $(35/2^+)$, $\gamma_{3542.8+x}$**382.0**(100$_{33}$) (M1), $\gamma_{3414.8+x}$**510.2**, $\gamma_{3133.4+x}$**791.5**(80$_{20}$)

3989.4+x, $\gamma_{3249.9+x}$**739.5**

3991.7+x, $(35/2^+)$, $\gamma_{3542.8+x}$**448.9**

3997.1+x, $(37/2^+)$, $\gamma_{3702.2+x}$**294.8**, $\gamma_{3673.0+x}$**324.0**, $\gamma_{3414.8+x}$**581.8**

4003.5+x, $(35/2^+)$, $\gamma_{3839.5+x}$**164.0** D, $\gamma_{3542.8+x}$**461.2**

4055.9+x, $(39/2^-)$, $\gamma_{3640.3+x}$**415.6**

4063.1+x, $(37/2^-)$, $\gamma_{3906.6+x}$**156.5**

4116.5+x, $(37/2^+)$, $\gamma_{3414.8+x}$**701.7** (E2)

A **4136.1+x**, $(39/2^-)$, $\gamma_{3722.3+x}$**413.8**(100$_{24}$) (M1), $\gamma_{3320.7+x}$**815.4**(44$_{13}$)

4149.4+x, $(37/2^+)$, $\gamma_{4003.5+x}$**146.0** D, $\gamma_{3772.1+x}$**377.3**

4167.2+x, $(39/2^-)$, $\gamma_{3722.3+x}$**444.9**(100$_{32}$) D, $\gamma_{3320.7+x}$**846.5**(32$_{15}$)

G **4180.3+x**, $(39/2^-)$, $\gamma_{3541.6+x}$**638.7** (E2)

4191.4+x, $(39/2^+)$, $\gamma_{4149.4+x}$**(42.0)**, $\gamma_{3772.1+x}$**419.6** (E2)

4210.9+x, $(37/2^+)$, $\gamma_{3772.1+x}$**438.7** (D)

4241.2+x, $\gamma_{3609.0+x}$**632.2**

4271.1+x, $(39/2^-)$, $\gamma_{4063.1+x}$**208.0**

D **4298.0+x**, $(39/2^+)$, $\gamma_{4149.4+x}$**148.4** D

F **4313.4+x**, $37/2^+$, $\gamma_{3924.8+x}$**388.7**, $\gamma_{3542.8+x}$**770.2**

4360.8+x, $(37/2^+)$, $\gamma_{3414.8+x}$**946.0**

D **4388.1+x**, $(41/2^+)$, $\gamma_{4298.0+x}$**90.0**, $\gamma_{4191.4+x}$**196.9** D

4399.2+x, $(39/2^-)$, $\gamma_{3741.8+x}$**657.4**

4435.2+x, $(39/2^-)$, $\gamma_{3741.8+x}$**693.4** (E2)

4445.5+x, $(39/2^+)$, $\gamma_{4210.9+x}$**234.5**, $\gamma_{4149.4+x}$**296.4**, $\gamma_{3997.1+x}$**448.1**

A **4470.6+x**, $(41/2^-)$, $\gamma_{4167.2+x}$**303.4**(29$_{12}$) D, $\gamma_{4136.1+x}$**334.5**(100$_{26}$) (M1), $\gamma_{3722.3+x}$**748.3**(14$_6$)

4532.8+x, $(41/2^-)$, $\gamma_{4271.1+x}$**261.7** (D), $\gamma_{4136.1+x}$**396.6**

D **4537.0+x**, $(43/2^+)$, $\gamma_{4388.1+x}$**148.9** (D+Q)

4538.8+x, $(41/2^-)$, $\gamma_{4055.9+x}$**482.9** D

4564.6+x, $(39/2^+)$, $\gamma_{3997.1+x}$**567.5**

4577.2+x, $(41/2^+)$, $\gamma_{4298.0+x}$**279.2**

4591.3+x, $(41/2^-)$, $\gamma_{4167.2+x}$**424.1**(100$_{38}$) D, $\gamma_{4136.1+x}$**455.3**(54$_{31}$), $\gamma_{3722.3+x}$**869.1**(92$_{38}$)

4636.9+x, $\gamma_{3989.4+x}$**647.5**

4661.8+x, $\gamma_{4116.5+x}$**545.3**

4760.6+x, $(41/2^+)$, $\gamma_{4116.5+x}$**644.1** (E2)

D **4769.0+x**, $(45/2^+)$, $\gamma_{4537.0+x}$**232.0** (M1)

4784.2+x, $(41/2^+)$, $\gamma_{4445.5+x}$**338.7**

A **4828.1+x**, $(43/2^-)$, $\gamma_{4532.8+x}$**295.2**, $\gamma_{4470.6+x}$**357.7**(100$_{31}$) (M1), $\gamma_{4136.1+x}$**692.3**(10$_3$)

4861.6+x, $(43/2^-)$, $\gamma_{4532.8+x}$**328.8**, $\gamma_{4470.6+x}$**390.8** (D)

G **4893.1+x**, $(43/2^-)$, $\gamma_{4180.3+x}$**712.8** (E2)

4917.0+x, $(43/2^-)$, $\gamma_{4591.3+x}$**325.7**

E **4945.1+x**, $(43/2^+)$, $\gamma_{4577.2+x}$**367.9** (D)

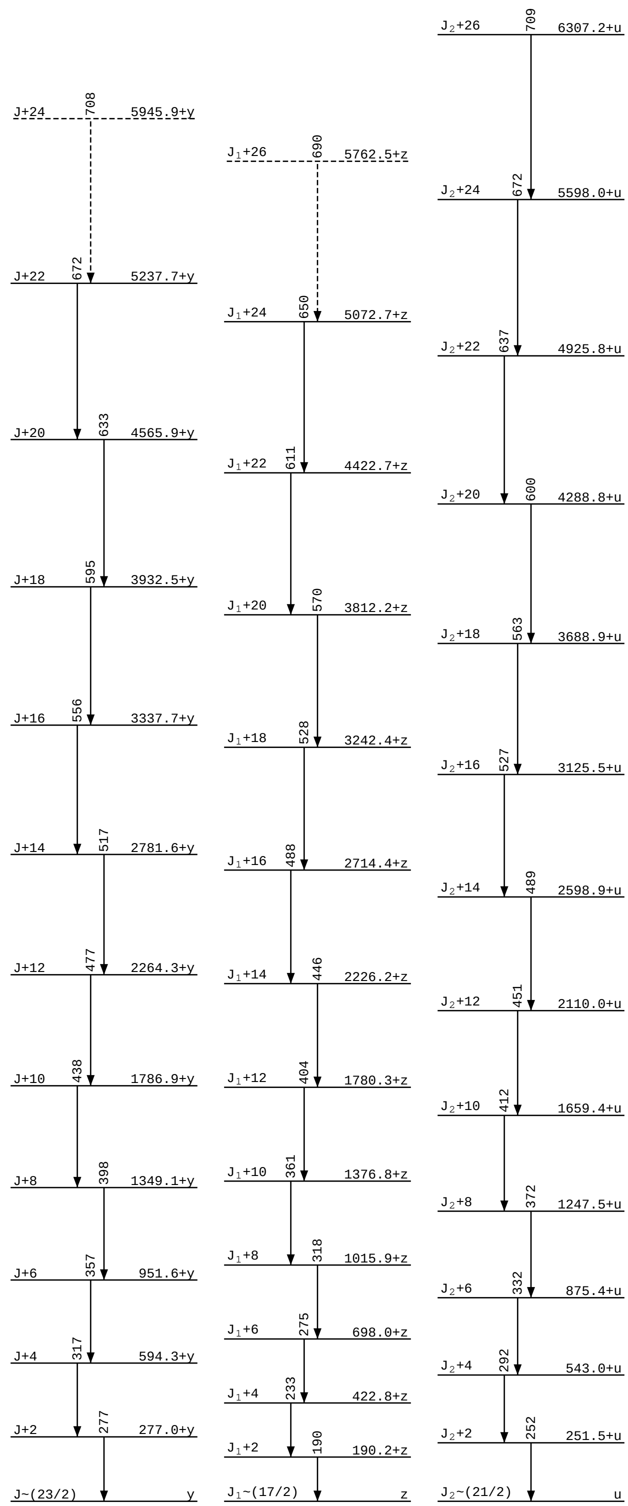
5033.3+x, $(43/2^-)$, $\gamma_{4591.3+x}$**442.0** (D)

D **5060.6+x**, $(47/2^+)$, *0.229$_{28}$ ps*, $\gamma_{4769.0+x}$**291.6** (M1)

B **5092.8+x**, $(45/2^-)$, $\gamma_{4917.0+x}$**175.9** (D), $\gamma_{4861.6+x}$**231.1** (D),

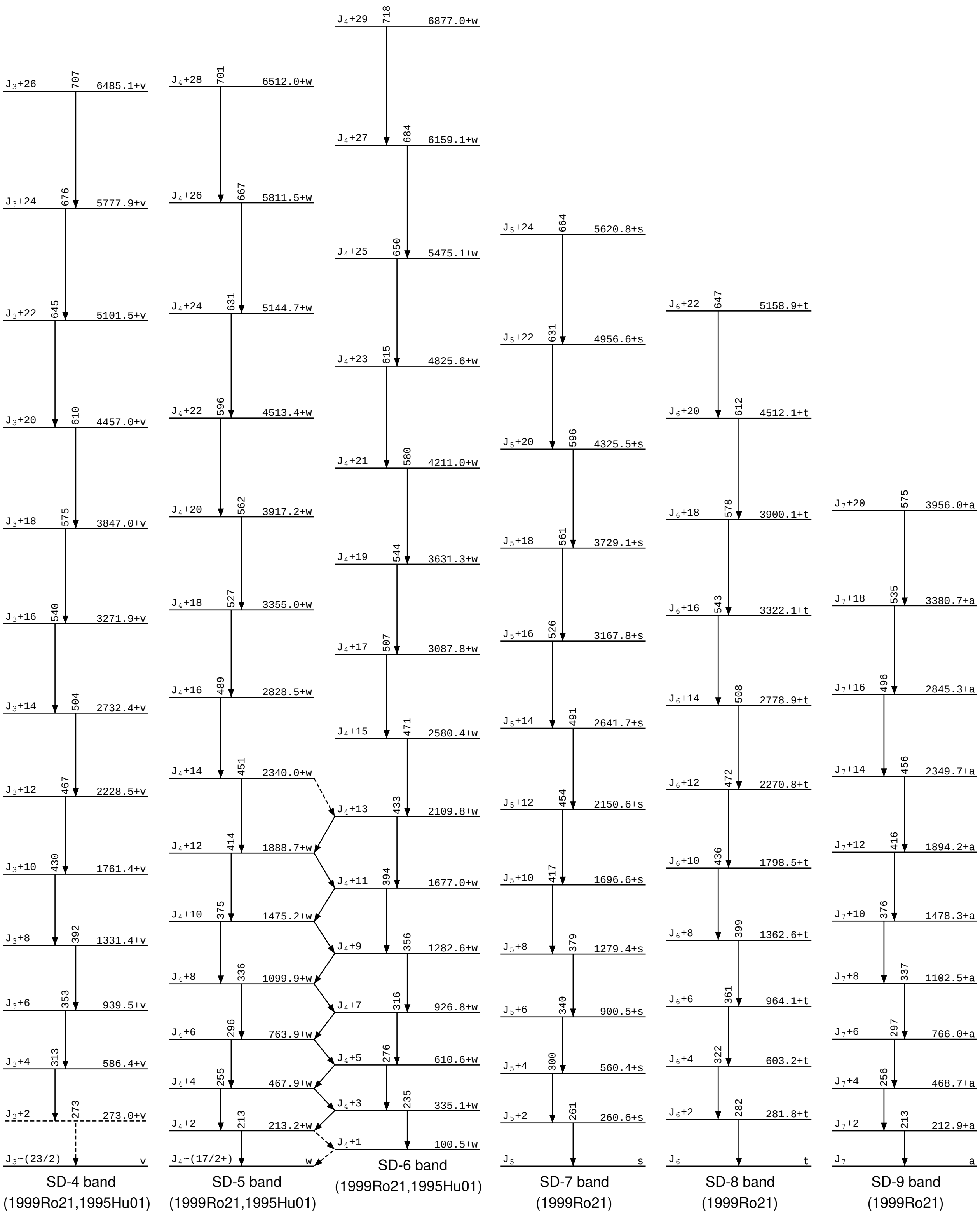
$\gamma_{4828.1+x}$**264.8**
5165.8+x, $(43/2^-)$, $\gamma_{4435.2+x}$**730.6**(100_{40}) (E2), $\gamma_{4399.2+x}$**766.6**(53_{27})
E **5169.4+x**, $(45/2^+)$, $\gamma_{4945.1+x}$**224.3** (M1+E2)
5182.0+x, $(45/2^-)$, $\gamma_{4828.1+x}$**353.7**(100_{43}) D, $\gamma_{4470.6+x}$**711.7**(29_{15})
A **5218.4+x**, $45/2^-$, $\gamma_{4828.1+x}$**390.3** (M1)
5281.1+x, $(43/2^-)$, $\gamma_{4055.9+x}$**1225.2**
B **5331.9+x**, $(47/2^-)$, $\gamma_{5092.8+x}$**239.1** (M1)
D **5425.8+x**, $(49/2^+)$, *0.159^{28}_{21} ps*, $\gamma_{5060.6+x}$**365.2** (M1), $\gamma_{4769.0+x}$**656.8**
E **5436.9+x**, $(47/2^+)$, $\gamma_{5169.4+x}$**267.5** (M1)
5439.8+x, $(45/2^-)$, $\gamma_{5033.3+x}$**406.5**
5501.7+x, $(47/2^-)$, $\gamma_{5182.0+x}$**319.7** (D)
B **5597.5+x**, $(49/2^-)$, $\gamma_{5331.9+x}$**265.6** (M1)
5668.3+x, $(45/2^-)$, $\gamma_{4538.8+x}$**1129.5**
E **5763.1+x**, $(49/2^+)$, $\gamma_{5436.9+x}$**326.2** (M1)
5802.2+x, $(47/2^-)$, $\gamma_{5439.8+x}$**362.4**
D **5815.4+x**, $(51/2^+)$, *0.146^{28}_{35} ps*, $\gamma_{5425.8+x}$**389.6**(100_{32}) (M1), $\gamma_{5060.6+x}$**754.7**(36_{12})
C **5825.3+x**, $(49/2^-)$, $\gamma_{5501.7+x}$**323.6** D
B **5927.0+x**, $(51/2^-)$, $\gamma_{5597.5+x}$**329.5** (M1)
C **6001.5+x**, $(51/2^-)$, $\gamma_{5825.3+x}$**176.3** (M1)
E **6145.5+x**, $(51/2^+)$, $\gamma_{5763.1+x}$**382.4** (M1)
D **6231.4+x**, $(53/2^+)$, *0.173_{21} ps*, $\gamma_{5815.4+x}$**416.1** (M1), $\gamma_{5425.8+x}$**805.6**
C **6285.2+x**, $(53/2^-)$, $\gamma_{6001.5+x}$**283.7** (M1)
B **6302.6+x**, $(53/2^-)$, $\gamma_{5927.0+x}$**375.6** (M1)
C **6597.1+x**, $(55/2^-)$, $\gamma_{6285.2+x}$**311.9** (M1)
D **6657.6+x**, $(55/2^+)$, $\gamma_{6231.4+x}$**426.1** (M1), $\gamma_{5815.4+x}$**842.2**
B **6715.5+x**, $(55/2^-)$, $\gamma_{6302.6+x}$**412.9**
C **6927.5+x**, $(57/2^-)$, $\gamma_{6597.1+x}$**330.4** (M1)
D **7090.3+x**, $(57/2^+)$, $\gamma_{6657.6+x}$**432.7**, $\gamma_{6231.4+x}$**858.8**
B **7154.7+x**, $(57/2^-)$, $\gamma_{6715.5+x}$**439.2**
C **7312.0+x**, $(59/2^-)$, $\gamma_{6927.5+x}$**384.5**
D **7516+x**(?), $(59/2^+)$, $\gamma_{7090.3+x}$**426.1**(?)
C **7713.5+x**, $(61/2^-)$, $\gamma_{7312.0+x}$**401.5**
D **7932+x**(?), $(61/2^+)$, γ_{7516+x}**416.1**(?)
H **y**, $J \approx (23/2)$
H **277.0+y**, $J+2$, γ_{y}**277.0**$_{3}(0.47_{5})$
H **594.3+y**, $J+4$, $\gamma_{277.0+y}$**317.3**$_{3}(0.95_{9})$
H **951.6+y**, $J+6$, $\gamma_{594.3+y}$**357.3**$_{3}(0.90_{9})$
H **1349.1+y**, $J+8$, $\gamma_{951.6+y}$**397.5**$_{3}(1.05_{11})$
H **1786.9+y**, $J+10$, $\gamma_{1349.1+y}$**437.8**$_{3}(0.90_{9})$
H **2264.3+y**, $J+12$, $\gamma_{1786.9+y}$**477.4**$_{3}(0.86_{9})$
H **2781.6+y**, $J+14$, $\gamma_{2264.3+y}$**517.3**$_{4}(0.73_{6})$
H **3337.7+y**, $J+16$, $\gamma_{2781.6+y}$**556.1**$_{3}(0.74_{6})$
H **3932.5+y**, $J+18$, $\gamma_{3337.7+y}$**594.8**$_{4}(0.46_{5})$
H **4565.9+y**, $J+20$, $\gamma_{3932.5+y}$**633.4**$_{5}(0.22_{5})$
H **5237.7+y**, $J+22$, $\gamma_{4565.9+y}$**671.8**$_{6}(0.14_{5})$
H **5945.9+y**(?), $J+24$, $\gamma_{5237.7+y}$**708.2**$_{8}(0.05_{4})$(?)
I **z**, $J_1 \approx (17/2)$
I **190.2+z**, J_1+2, γ_{z}**190.2**$_{5}(0.19_{5})$
I **422.8+z**, J_1+4, $\gamma_{190.2+z}$**232.6**$_{3}(0.55_{5})$
I **698.0+z**, J_1+6, $\gamma_{422.8+z}$**275.2**$_{3}(0.68_{5})$
I **1015.9+z**, J_1+8, $\gamma_{698.0+z}$**317.9**$_{3}(0.91_{9})$
I **1376.8+z**, J_1+10, $\gamma_{1015.9+z}$**360.9**$_{3}(1.07_{10})$
I **1780.3+z**, J_1+12, $\gamma_{1376.8+z}$**403.5**$_{3}(0.97_{10})$
I **2226.2+z**, J_1+14, $\gamma_{1780.3+z}$**445.9**$_{3}(0.78_{7})$
I **2714.4+z**, J_1+16, $\gamma_{2226.2+z}$**488.2**$_{4}(0.68_{6})$
I **3242.4+z**, J_1+18, $\gamma_{2714.4+z}$**528.0**$_{5}(0.30_{5})$
I **3812.2+z**, J_1+20, $\gamma_{3242.4+z}$**569.8**$_{6}(0.15_{5})$
I **4422.7+z**, J_1+22, $\gamma_{3812.2+z}$**610.5**$_{7}(0.08_{5})$
I **5072.7+z**, J_1+24, $\gamma_{4422.7+z}$**650.0**$_{7}(0.05_{4})$
I **5762.5+z**(?), J_1+26, $\gamma_{5072.7+z}$**689.8**$_{8}(0.04_{4})$(?)
J **u**, $J_2 \approx (21/2)$
J **251.5+u**, J_2+2, γ_{u}**251.5**$_{6}(0.07_{7})$
J **543.0+u**, J_2+4, $\gamma_{251.5+u}$**291.5**$_{3}(0.76_{7})$
J **875.4+u**, J_2+6, $\gamma_{543.0+u}$**332.4**$_{3}(0.86_{7})$
J **1247.5+u**, J_2+8, $\gamma_{875.4+u}$**372.1**$_{3}(1.03_{9})$
J **1659.4+u**, J_2+10, $\gamma_{1247.5+u}$**411.9**$_{3}(1.04_{9})$
J **2110.0+u**, J_2+12, $\gamma_{1659.4+u}$**450.6**$_{3}(1.04_{10})$
J **2598.9+u**, J_2+14, $\gamma_{2110.0+u}$**488.9**$_{3}(1.00_{10})$
J **3125.5+u**, J_2+16, $\gamma_{2598.9+u}$**526.6**$_{4}(0.95_{10})$
J **3688.9+u**, J_2+18, $\gamma_{3125.5+u}$**563.4**$_{4}(0.54_{7})$
J **4288.8+u**, J_2+20, $\gamma_{3688.9+u}$**599.9**$_{5}(0.36_{7})$
J **4925.8+u**, J_2+22, $\gamma_{4288.8+u}$**637.0**$_{5}(0.30_{7})$
J **5598.0+u**, J_2+24, $\gamma_{4925.8+u}$**672.2**$_{6}(0.15_{6})$
J **6307.2+u**, J_2+26, $\gamma_{5598.0+u}$**709.2**$_{7}(0.07_{6})$
K **v**, $J_3 \approx (23/2)$
K **273.0+v**(?), J_2+2, γ_{v}**273.0**$_{7}(0.17_{7})$(?)
K **586.4+v**, J_2+4, $\gamma_{273.0+v}$**313.4**$_{6}(0.44_{7})$
K **939.5+v**, J_2+6, $\gamma_{586.4+v}$**353.1**$_{4}(0.68_{7})$
K **1331.4+v**, J_2+8, $\gamma_{939.5+v}$**391.9**$_{3}(0.85_{7})$
K **1761.4+v**, J_2+10, $\gamma_{1331.4+v}$**430.0**$_{3}(0.81_{8})$
K **2228.5+v**, J_2+12, $\gamma_{1761.4+v}$**467.1**$_{4}(0.97_{10})$
K **2732.4+v**, J_2+14, $\gamma_{2228.5+v}$**503.9**$_{4}(1.00_{10})$
K **3271.9+v**, J_2+16, $\gamma_{2732.4+v}$**539.5**$_{4}(1.02_{10})$
K **3847.0+v**, J_2+18, $\gamma_{3271.9+v}$**575.1**$_{3}(0.82_{8})$
K **4457.0+v**, J_2+20, $\gamma_{3847.0+v}$**610.0**$_{5}(0.66_{7})$
K **5101.5+v**, J_2+22, $\gamma_{4457.0+v}$**644.5**$_{6}(0.31_{7})$
K **5777.9+v**, J_2+24, $\gamma_{5101.5+v}$**676.4**$_{6}(0.20_{7})$
K **6485.1+v**, J_2+26, $\gamma_{5777.9+v}$**707.2**$_{8}(0.07_{7})$
L **w**, $J_3 \approx (17/2^+)$
M **100.5+w**, J_3+1, γ_{w}**101**(?)
L **213.2+w**, J_3+2, $\gamma_{100.5+w}$**112**(?), γ_{w}**213.2**$_{4}(0.53_{10})$
M **335.1+w**, J_3+3, $\gamma_{213.2+w}$**122.0**$_{5}$, $\gamma_{100.5+w}$**234.6**$_{5}(0.13_{7})$
L **467.9+w**, J_3+4, $\gamma_{335.1+w}$**132.9**$_{5}$, $\gamma_{213.2+w}$**254.6**$_{7}(0.72_{11})$
M **610.6+w**, J_3+5, $\gamma_{467.9+w}$**142.5**$_{5}$, $\gamma_{335.1+w}$**275.5**$_{5}(0.35_{7})$
L **763.9+w**, J_3+6, $\gamma_{610.6+w}$**153.2**$_{5}$, $\gamma_{467.9+w}$**296.2**$_{5}(0.71_{14})$
M **926.8+w**, J_3+7, $\gamma_{763.9+w}$**163.0**$_{5}$, $\gamma_{610.6+w}$**316.2**$_{5}(0.45_{7})$
L **1099.9+w**, J_3+8, $\gamma_{926.8+w}$**172.8**$_{5}$, $\gamma_{763.9+w}$**336.1**$_{4}(0.91_{10})$
M **1282.6+w**, J_3+9, $\gamma_{1099.9+w}$**182.7**$_{5}$, $\gamma_{926.8+w}$**355.9**$_{5}(0.87_{8})$
L **1475.2+w**, J_3+10, $\gamma_{1282.6+w}$**193.0**$_{5}$, $\gamma_{1099.9+w}$**375.1**$_{5}(0.92_{10})$
M **1677.0+w**, J_3+11, $\gamma_{1475.2+w}$**201.9**$_{5}$, $\gamma_{1282.6+w}$**394.4**$_{5}(0.95_{9})$
L **1888.7+w**, J_3+12, $\gamma_{1677.0+w}$**211.7**$_{5}$, $\gamma_{1475.2+w}$**413.5**$_{5}(1.04_{14})$
M **2109.8+w**, J_3+13, $\gamma_{1888.7+w}$**221.0**$_{5}$, $\gamma_{1677.0+w}$**432.8**$_{4}(1.02_{10})$
L **2340.0+w**, J_3+14, $\gamma_{2109.8+w}$**231**(?), $\gamma_{1888.7+w}$**451.2**$_{5}(0.89_{10})$
M **2580.4+w**, J_3+15, $\gamma_{2109.8+w}$**470.6**$_{4}(0.90_{9})$
L **2828.5+w**, J_3+16, $\gamma_{2340.0+w}$**488.6**$_{5}(0.73_{10})$
M **3087.8+w**, J_3+17, $\gamma_{2580.4+w}$**507.4**$_{4}(0.83_{9})$
L **3355.0+w**, J_3+18, $\gamma_{2828.5+w}$**526.5**$_{5}(0.95_{16})$
M **3631.3+w**, J_3+19, $\gamma_{3087.8+w}$**543.5**$_{5}(0.75_{7})$
L **3917.2+w**, J_3+20, $\gamma_{3355.0+w}$**562.2**$_{6}(0.71_{13})$
M **4211.0+w**, J_3+21, $\gamma_{3631.3+w}$**579.7**$_{5}(0.44_{7})$
L **4513.4+w**, J_3+22, $\gamma_{3917.2+w}$**596.2**$_{7}(0.35_{10})$
M **4825.6+w**, J_3+23, $\gamma_{4211.0+w}$**614.6**$_{7}(0.35_{7})$
L **5144.7+w**, J_3+24, $\gamma_{4513.4+w}$**631.3**$_{8}(0.43_{10})$
M **5475.1+w**, J_3+25, $\gamma_{4825.6+w}$**649.5**$_{5}(0.25_{7})$
L **5811.5+w**, J_3+26, $\gamma_{5144.7+w}$**666.8**$_{9}(0.18_{9})$
M **6159.1+w**, J_3+27, $\gamma_{5475.1+w}$**684.0**$_{6}(0.13_{7})$
L **6512.0+w**, J_3+28, $\gamma_{5811.5+w}$**700.5**$_{8}(0.18_{9})$
M **6877.0+w**, J_3+29, $\gamma_{6159.1+w}$**717.9**$_{7}(0.07_{7})$
N **s**, J_4
N **260.6+s**, J_4+2, γ_{s}**260.6**$_{7}(0.24_{4})$
N **560.4+s**, J_4+4, $\gamma_{260.6+s}$**299.8**$_{6}(0.51_{7})$
N **900.5+s**, J_4+6, $\gamma_{560.4+s}$**340.1**$_{4}(0.52_{7})$
N **1279.4+s**, J_4+8, $\gamma_{900.5+s}$**378.9**$_{5}(0.63_{10})$
N **1696.6+s**, J_4+10, $\gamma_{1279.4+s}$**417.2**$_{5}(1.00_{18})$
N **2150.6+s**, J_4+12, $\gamma_{1696.6+s}$**454.0**$_{5}(0.69_{11})$
N **2641.7+s**, J_4+14, $\gamma_{2150.6+s}$**491.1**$_{5}(0.54_{11})$
N **3167.8+s**, J_4+16, $\gamma_{2641.7+s}$**526.1**$_{5}(0.82_{12})$
N **3729.1+s**, J_4+18, $\gamma_{3167.8+s}$**561.3**$_{5}(0.80_{12})$
N **4325.5+s**, J_4+20, $\gamma_{3729.1+s}$**596.4**$_{6}(0.65_{12})$
N **4956.6+s**, J_4+22, $\gamma_{4325.5+s}$**631.1**$_{7}(0.44_{10})$
N **5620.8+s**, J_4+24, $\gamma_{4956.6+s}$**664.2**$_{7}(0.35_{10})$
O **t**, J_5
O **281.8+t**, J_5+2, γ_{t}**281.8**$_{6}(0.15_{2})$
O **603.2+t**, J_5+4, $\gamma_{281.8+t}$**321.5**$_{6}(0.43_{7})$
O **964.1+t**, J_5+6, $\gamma_{603.2+t}$**360.9**$_{5}(0.62_{11})$
O **1362.6+t**, J_5+8, $\gamma_{964.1+t}$**398.5**$_{5}(1.00_{17})$
O **1798.5+t**, J_5+10, $\gamma_{1362.6+t}$**435.9**$_{4}(0.58_{11})$
O **2270.8+t**, J_5+12, $\gamma_{1798.5+t}$**472.3**$_{6}(0.51_{7})$

O **2778.9+t**, J_5+14, $\gamma_{\mathbf{2270.8+t}}$**508.1**$_6(0.58_8)$
O **3322.1+t**, J_5+16, $\gamma_{\mathbf{2778.9+t}}$**543.2**$_6(0.36_7)$
O **3900.1+t**, J_5+18, $\gamma_{\mathbf{3322.1+t}}$**578.0**$_5(0.67_8)$
O **4512.1+t**, J_5+20, $\gamma_{\mathbf{3900.1+t}}$**612.0**$_6(0.29_5)$
O **5158.9+t**, J_5+22, $\gamma_{\mathbf{4512.1+t}}$**646.8**$_7(0.43_7)$
P **a**, J_6
P **212.9+a**, J_6+2, $\gamma_{\mathbf{a}}$**212.9**$_5(0.40_5)$
P **468.7+a**, J_6+4, $\gamma_{\mathbf{212.9+a}}$**255.8**$_5(1.00_{12})$
P **766.0+a**, J_6+6, $\gamma_{\mathbf{468.7+a}}$**297.3**$_6(0.36_5)$
P **1102.5+a**, J_6+8, $\gamma_{\mathbf{766.0+a}}$**336.6**$_6(0.54_7)$
P **1478.3+a**, J_6+10, $\gamma_{\mathbf{1102.5+a}}$**375.8**$_5(0.63_7)$
P **1894.2+a**, J_6+12, $\gamma_{\mathbf{1478.3+a}}$**415.9**$_4(0.62_7)$
P **2349.7+a**, J_6+14, $\gamma_{\mathbf{1894.2+a}}$**455.5**$_4(0.60_5)$
P **2845.3+a**, J_6+16, $\gamma_{\mathbf{2349.7+a}}$**495.6**$_6(0.40_7)$
P **3380.7+a**, J_6+18, $\gamma_{\mathbf{2845.3+a}}$**535.4**$_7(0.29_5)$
P **3956.0+a**, J_6+20, $\gamma_{\mathbf{3380.7+a}}$**575.3**$_8(0.12_4)$



SD-1 band (1999Ro21,1998Va18) SD-2 band (1999Ro21,1998Va18) SD-3 band (1999Ro21,1995Hu01)

$^{193}_{82}\mathrm{Pb}_{111}$


J3+26 707 6485.1+v
J3+24 676 5777.9+v
J3+22 645 5101.5+v
J3+20 610 4457.0+v
J3+18 575 3847.0+v
J3+16 540 3271.9+v
J3+14 504 2732.4+v
J3+12 467 2228.5+v
J3+10 430 1761.4+v
J3+8 392 1331.4+v
J3+6 353 939.5+v
J3+4 313 586.4+v
J3+2 273 273.0+v
J3~(23/2) v
SD-4 band
(1999Ro21,1995Hu01)
J4+28 701 6512.0+w
J4+26 667 5811.5+w
J4+24 631 5144.7+w
J4+22 596 4513.4+w
J4+20 562 3917.2+w
J4+18 527 3355.0+w
J4+16 489 2828.5+w
J4+14 451 2340.0+w
J4+12 414 1888.7+w
J4+10 375 1475.2+w
J4+8 336 1099.9+w
J4+6 296 763.9+w
J4+4 255 467.9+w
J4+2 213 213.2+w
J4~(17/2+) w
SD-5 band
(1999Ro21,1995Hu01)
J4+29 718 6877.0+w
J4+27 684 6159.1+w
J4+25 650 5475.1+w
J4+23 615 4825.6+w
J4+21 580 4211.0+w
J4+19 544 3631.3+w
J4+17 507 3087.8+w
J4+15 471 2580.4+w
J4+13 433 2109.8+w
J4+11 394 1677.0+w
J4+9 356 1282.6+w
J4+7 316 926.8+w
J4+5 276 610.6+w
J4+3 235 335.1+w
J4+1 100.5+w
SD-6 band
(1999Ro21,1995Hu01)
J5+24 664 5620.8+s
J5+22 631 4956.6+s
J5+20 596 4325.5+s
J5+18 561 3729.1+s
J5+16 526 3167.8+s
J5+14 491 2641.7+s
J5+12 454 2150.6+s
J5+10 417 1696.6+s
J5+8 379 1279.4+s
J5+6 340 900.5+s
J5+4 300 560.4+s
J5+2 261 260.6+s
J5 s
SD-7 band
(1999Ro21)
J6+22 647 5158.9+t
J6+20 612 4512.1+t
J6+18 578 3900.1+t
J6+16 543 3322.1+t
J6+14 508 2778.9+t
J6+12 472 2270.8+t
J6+10 436 1798.5+t
J6+8 399 1362.6+t
J6+6 361 964.1+t
J6+4 322 603.2+t
J6+2 282 281.8+t
J6 t
SD-8 band
(1999Ro21)
J7+20 575 3956.0+a
J7+18 535 3380.7+a
J7+16 496 2845.3+a
J7+14 456 2349.7+a
J7+12 416 1894.2+a
J7+10 376 1478.3+a
J7+8 337 1102.5+a
J7+6 297 766.0+a
J7+4 256 468.7+a
J7+2 213 212.9+a
J7 a
SD-9 band
(1999Ro21)

$^{193}_{82}Pb_{111}$

$^{194}_{82}\mathrm{Pb}_{112}$

S_n: 10040 *SY*, S_p: 4105 *SY*

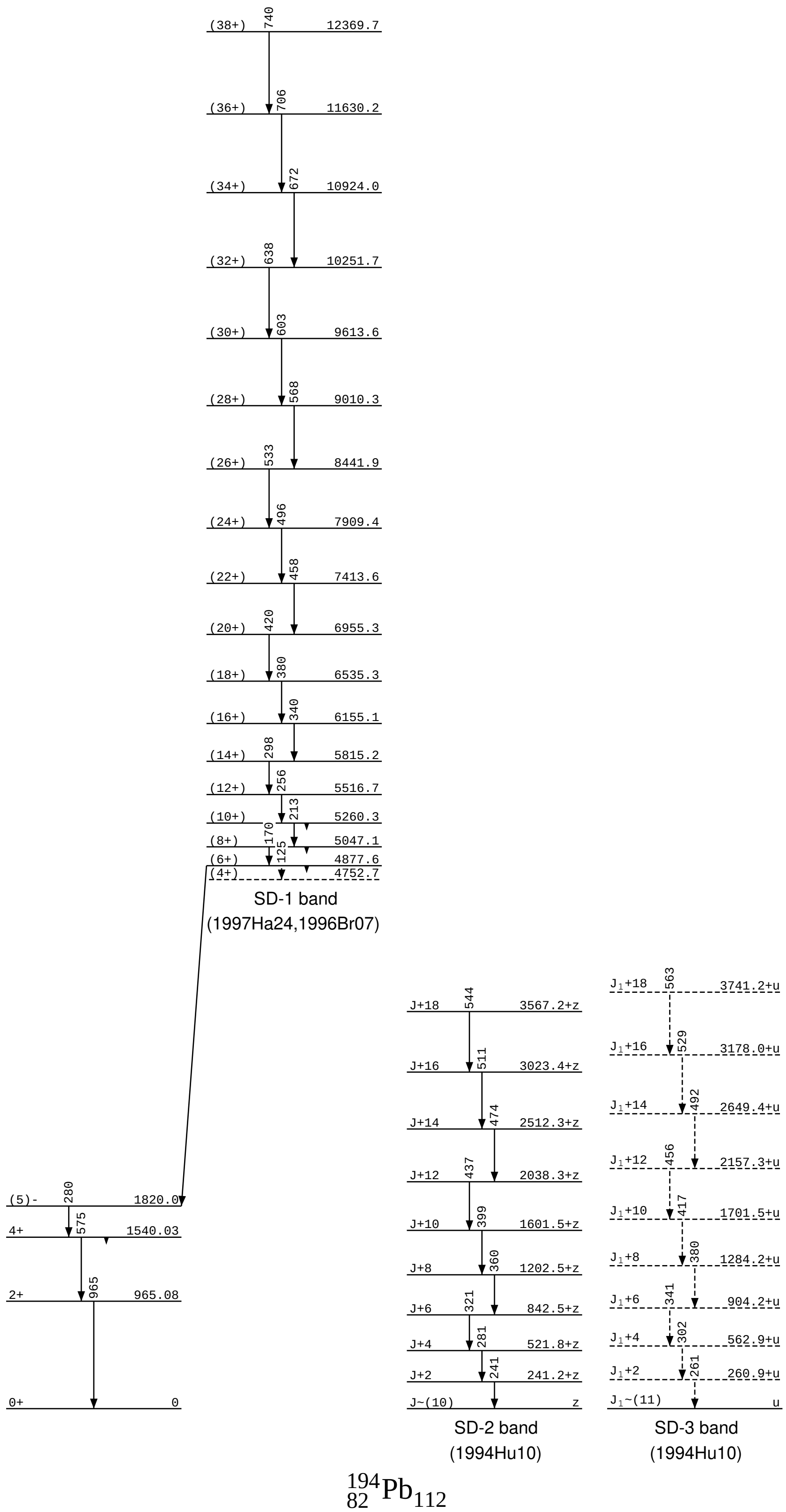
Nuclear Bands

A K^{π}=0^+ (oblate) band
B $\pi 9/2[505]\pi 7/2[514]$
C $\pi 9/2[505]\pi 13/2[606]$
D Magnetic-dipole rotational band based on (16^-)
E Magnetic-dipole rotational band based on (13^+)
F Magnetic-dipole rotational band based on (21^+)
G Magnetic-dipole rotational band based on (16^+)
H Dipole band based on (10^-)
I Dipole band based on (20^+)
J Dipole band
K Dipole band
L Dipole band
M SD-1 band (1997Ha24,1996Br07,1995Ga10,1990Br10,1990Hu10, 1993Wi02,1993Ko08,1993Ha20,1994Hu10,1994Kr18,1995De26, 1996Lo12,1997Ha44,1997Kr03,1998Va18,1999Lu04,2000Mc01) Q_0=20.1^{3}_{5}
N SD-2 band (1994Hu10)
O SD-3 band (?) (1994Hu10)

Levels and γ-ray branchings:

0, 0^+, *12.0$_5$ min*, %ε+%β^+=100, %α=7.3x10^{-6}$_{29}$
A **930.67**$_{22}$, 0^+, *1.1$_2$ ns*, γ_0**930.6**$_4$ E0
965.08$_{15}$, 2^+, γ_0**965.2**$_2$(100) E2
A **1308.23**$_{15}$, (2^+), $\gamma_{965.08}$**343.2**$_2$(16$_5$) (E0+M1+E2), $\gamma_{930.67}$**377.5**$_3$(6$_3$), γ_0**1308.3**$_2$(100$_5$) (E2)
1540.03$_{20}$, 4^+, $\gamma_{1308.23}$**231.9**$_2$(0.4$_2$), $\gamma_{965.08}$**575.1**$_2$(100$_2$) E2
1636.88$_{25}$, (≤ 4), $\gamma_{965.08}$**671.8**$_2$(100)
1738.75$_{20}$, (1,2^+), $\gamma_{965.08}$**773.5**$_3$(100$_{50}$), $\gamma_{930.67}$**808.1**$_3$(20$_{15}$), γ_0**1738.9**$_3$(30$_{10}$)
1820.0$_3$, $(5)^-$, *1.1$_2$ ns*, $\gamma_{1540.03}$**280.1**$_2$(100) E1
2019.13$_{25}$, (≤ 4), $\gamma_{1308.23}$**710.9**$_2$(100)
A **2135.1**$_3$, $(6)^+$, $\gamma_{1820.0}$**315**(?), $\gamma_{1540.03}$**595.4**$_3$(100) E2
2241.1$_3$, $(7)^-$, $\gamma_{1820.0}$**421.2**$_2$(100) E2
2298.5$_4$, (5^-,6^-), $\gamma_{1820.0}$**479**
2407.1$_4$, $(9)^-$, *18$_3$ ns*, μ=-0.63$_{36}$, $\gamma_{2241.1}$**166.1**$_2$(100) E2
2407.6$_5$, (4^+,5,6^+), $\gamma_{2135.1}$**272**(?), $\gamma_{1540.03}$**867**
2419.3$_4$, (8^-), $\gamma_{2241.1}$**178.1**$_2$(100) (M1+E2) $\delta < 0.7$
B **2437.4**$_3$, $(8)^+$, *17$_4$ ns*, $\gamma_{2241.1}$**196.2**$_2$(24$_2$) (E1), $\gamma_{2135.1}$**302.5**$_2$(100$_4$) E2
2501.7$_4$, (8^-), $\gamma_{2241.1}$**260.5**$_3$(100) (M1)
2524.1$_4$, $\gamma_{2437.4}$**86**(?), $\gamma_{2241.1}$**283**
2580.8$_4$, $(10)^+$, *17.2$_5$ ns*, $\gamma_{2407.1}$**173.7**$_2$(100) E1
2608.5$_5$, $\gamma_{1820.0}$**788**
2628.1$_4$, (12^+), *350$_{10}$ ns*, μ=-2.076$_{12}$, Q=0.49$_3$, $\gamma_{2580.8}$**47.0**$_3$(100)
2645.4$_5$, (11), $\gamma_{2580.8}$**(64.8)**$_3$(100) D
2799.3$_4$, (4 → 8), $\gamma_{2135.1}$**664.2**$_2$(100)
2913.2$_4$, (9^-), $\gamma_{2241.1}$**672.3**$_2$(100) (Q)
B **2930.6**$_4$, (9^+), $\gamma_{2437.4}$**493.2**$_1$(100)
C **2933.0**$_4$, $(11)^-$, *124$_{10}$ ns*, Q=4.5$_9$, $\gamma_{2628.1}$**305.0**$_1$(61$_{11}$) E1, $\gamma_{2580.8}$**352.2**$_1$(100$_{12}$) E1, $\gamma_{2437.4}$**496**$_1$(100$_{38}$) (O)
3178.3$_6$, $\gamma_{2645.4}$**534**
H **3207.2**$_4$, (10^-), $\gamma_{2501.7}$**705.4**$_2$(33$_9$), $\gamma_{2419.3}$**787.7**$_2$(100$_5$) (Q), $\gamma_{2407.1}$**800.4**$_2$(24$_8$)
H **3271.1**$_4$, (11^-), $\gamma_{2913.2}$**358.1**$_3$(31$_7$), $\gamma_{2407.1}$**863.9**$_2$(100$_{11}$)
B **3282.7**$_4$, (10^+), $\gamma_{2930.6}$**351.8**$_2$, $\gamma_{2437.4}$**845.4**$_2$
3348.7$_4$, $\gamma_{2580.8}$**767.9**$_2$(100)
3372.6$_4$, (11^-), $\gamma_{2913.2}$**459.5**$_2$(100)
3470.3$_{11}$, $\gamma_{2799.3}$**671**
C **3474.6**$_4$, $(12)^-$, $\gamma_{2933.0}$**541.6**$_2$(100) M1+E2
3521.3$_{11}$, $\gamma_{2799.3}$**722**
3560.8$_4$, (14^+), $\gamma_{2628.1}$**932.7**$_2$(100) E2
3609.1$_4$, (10^+,11,12^+), $\gamma_{2645.4}$**963**(?), $\gamma_{2628.1}$**980.9**$_2$, $\gamma_{2580.8}$**1028.3**$_3$
3646.7$_5$, (12^+), $\gamma_{2580.8}$**1065.9**$_3$(100)
H **3726.7**$_4$, (12^-), $\gamma_{3271.1}$**456**$_1$(6$_2$), $\gamma_{3207.2}$**519.6**$_2$(100$_{10}$) (Q)
B **3771.3**$_4$, (11^+), $\gamma_{3282.7}$**488.4**$_2$, $\gamma_{2930.6}$**840.8**$_2$
C **3839.2**$_4$, $(13)^-$, $\gamma_{3474.6}$**364.6**$_1$(100$_4$) M1, $\gamma_{2933.0}$**906.6**$_5$(85$_2$) E2
3844.1$_5$, $\gamma_{3560.8}$**283**(?), $\gamma_{2628.1}$**1215.5**$_5$(100$_{33}$)
H **3849.2**$_4$, (13^-), $\gamma_{3372.6}$**477**, $\gamma_{3271.1}$**577.9**$_3$(100$_7$)
3935.7$_5$, $\gamma_{3348.7}$**587.0**$_3$
3984.6$_{11}$, $\gamma_{3372.6}$**612**$_1$(100)
4002.3$_5$, (15^-), $\gamma_{3844.1}$**158.1**$_2$, $\gamma_{3560.8}$**441.6**$_2$(100$_{14}$) E1
4135.4$_5$, (16^+), $\gamma_{3560.8}$**574.6**$_2$(100) (Q)
B **4235.9**$_4$, (12^+), $\gamma_{3771.3}$**464.7**$_2$, $\gamma_{3282.7}$**953.2**$_2$, $\gamma_{2933.0}$**1302.5**$_5$
H **4264.8**$_4$, (14^-), $\gamma_{3726.7}$**538.1**$_2$(100)
E **4332.6**$_4$, (12^+), $\gamma_{3609.1}$**723.1**$_3$, $\gamma_{3474.6}$**858.0**$_2$(100$_{28}$), $\gamma_{3178.3}$**1154.5**$_5$, $\gamma_{2933.0}$**1399.5**$_5$, $\gamma_{2645.4}$**1687.5**$_5$, $\gamma_{2628.1}$**1704.7**$_8$
C **4365.4**$_4$, (14^-), $\gamma_{3839.2}$**526.4**$_2$(100) D, $\gamma_{3474.6}$**890.6**$_3$
4374.5$_5$, (16^-), $\gamma_{4002.3}$**372.5**$_2$(100) M1
E **4376.0**$_4$, (13^+), $\gamma_{4332.6}$**(43)**, $\gamma_{4235.9}$**140.1**$_3$ M1+E2, $\gamma_{3839.2}$**536.9**$_2$(100$_{15}$)
H **4408.0**$_5$, (15^-), $\gamma_{4264.8}$**143.4**$_3$(100$_{29}$) D, $\gamma_{3849.2}$**558.6**$_3$(57$_{14}$)
C **4448.6**$_5$, $(15)^-$, $\gamma_{4365.4}$**(83)**, $\gamma_{3839.2}$**609.3**$_2$(100$_8$) E2
4453.5$_5$, (15^+), $\gamma_{3560.8}$**892.7**$_2$(100) D
4477.1$_5$, (15^-), $\gamma_{3849.2}$**627.9**$_3$(100)
E **4505.9**$_5$, (14^+), $\gamma_{4376.0}$**130.1**$_4$(100) M1
4599.3$_5$, (17^-), $\gamma_{4002.3}$**597.0**$_2$(100) (Q)
4615.5$_5$, (16^-), $\gamma_{4002.3}$**613.0**$_2$(100) D
E **4642.3**$_5$, (15^+), $\gamma_{4505.9}$**136.6**$_4$(100$_{50}$) M1, $\gamma_{4135.4}$**506.8**$_3$(60$_{30}$), $\gamma_{3560.8}$**1081.7**$_5$(100$_{40}$)
H **4692.0**$_5$, (16^-), $\gamma_{4408.0}$**284.0**$_2$(100) (D)
4700.6$_5$, (18^-), $\gamma_{4374.5}$**326.3**$_2$(100) E2
4708.1$_5$, (15^-), $\gamma_{4365.4}$**342.8**$_2$(100), $\gamma_{3839.2}$**869**(?)
G **4726.5**$_5$, (16^+), $\gamma_{4453.5}$**273.0**$_3$(38$_{15}$), $\gamma_{4135.4}$**591.2**$_2$(100$_{15}$), $\gamma_{3560.8}$**1165.6**$_5$
M **4752.7**$_{11}$(?), (4^+)
4794.8$_5$, (18^+), $\gamma_{4135.4}$**659.5**$_2$(100) E2
E **4805.3**$_5$, (16^+), $\gamma_{4642.3}$**162.9**$_2$(100) M1
M **4877.6**$_3$, (6^+), $\gamma_{4752.7}$**124.9**(≈ 0.05)(?), $\gamma_{2524.1}$**2353.4**$_3$(0.028$_6$), $\gamma_{2407.6}$**2469.7**$_4$(0.015$_6$), $\gamma_{2298.5}$**2579.1**$_2$(0.030$_6$), $\gamma_{2241.1}$**2636.6**$_2$(0.018$_6$) (E1), $\gamma_{2135.1}$**2742.5**$_2$(0.033$_6$) (M1), $\gamma_{1820.0}$**3056.4**$_{12}$(0.008$_5$)
G **4888.7**$_5$, (17^+), $\gamma_{4726.5}$**162.2**$_2$(28$_7$), $\gamma_{4135.4}$**753.3**$_2$(100$_{14}$) D
4889.0$_{11}$, $\gamma_{4692.0}$**197**$_1$(100)
4950.2$_5$, (17^-), $\gamma_{4374.5}$**576**$_1$(100$_{43}$), $\gamma_{4002.3}$**947.9**$_2$(100$_{57}$)
D **4963.5**$_5$, (16^-), $\gamma_{4708.1}$**255.5**$_3$, $\gamma_{4448.6}$**514.8**$_2$(100$_{12}$) M1+E2
M **5047.1**$_3$, (8^+), *14$_5$ ps*, $\gamma_{4877.6}$**169.52**$_4$(0.56$_4$) (E2), $\gamma_{2930.6}$**2116.5**$_4$(0.009$_5$) (M1+E2), $\gamma_{2608.5}$**2438.5**$_4$(0.009$_4$), $\gamma_{2437.4}$**2609.6**$_4$(0.017$_6$) (M1), $\gamma_{2419.3}$**2627.9**$_4$(0.013$_6$) (E1), $\gamma_{2241.1}$**2806.1**$_3$(0.017$_5$) (E1)
H **5053.2**$_6$, $\gamma_{4692.0}$**361.2**$_3$(100) (D)
5059.2$_6$, $\gamma_{4002.3}$**1056.9**$_4$
D **5082.7**$_5$, (17^-), $\gamma_{4963.5}$**119.2**$_2$(100) M1
5089.3$_5$, (17^-), $\gamma_{4615.5}$**473.5**$_2$(50$_{14}$), $\gamma_{4374.5}$**714.9**$_2$(100$_{21}$) (D)
5108.2$_7$, $\gamma_{4692.0}$**416.2**$_4$(100)
E **5108.4**$_6$, (17^+), $\gamma_{4805.3}$**303.2**$_2$(100) M1+E2
5109.2$_6$, $\gamma_{4477.1}$**632.1**$_3$(100)
G **5121.5**$_5$, (18^+), $\gamma_{4888.7}$**232.8**$_2$(100) D
5183.6$_{12}$, $\gamma_{4889.0}$**294.6**$_3$(100)
D **5227.4**$_6$, (18^-), $\gamma_{5082.7}$**144.7**$_2$(100) M1
5256.7$_5$, $\gamma_{4794.8}$**461.8**$_2$(100)
M **5260.3**$_3$, (10^+), *5.8$_{12}$ ps*, $\gamma_{5047.1}$**213.26**$_3$(0.90$_5$) (E2), $\gamma_{3372.6}$**1887.9**$_3$(0.010$_4$) (E1)
5326.2$_{11}$, $\gamma_{4950.2}$**376**$_1$(100)
5326.8$_6$, (19^-), $\gamma_{4599.3}$**727.5**$_2$(100) (D)
G **5409.5**$_5$, (19^+), $\gamma_{5121.5}$**287.9**$_2$(100$_{24}$) D, $\gamma_{4794.8}$**614.7**$_3$(29$_{12}$) D
D **5424.3**$_6$, (19^-), $\gamma_{5227.4}$**196.9**$_2$(100) M1+E2
5433.6$_7$, $\gamma_{5053.2}$**380.4**$_3$(100)
J **5462.3**$_6$, $\gamma_{4963.5}$**498.8**$_3$(100) D
E **5505.4**$_6$, (18^+), $\gamma_{5108.4}$**396.9**$_2$(100$_{22}$) M1, $\gamma_{4805.3}$**700**$_1$
M **5516.7**$_3$, (12^+), *3.8$_7$ ps*, $\gamma_{5260.3}$**256.32**$_3$(1.00$_5$) (E2)
5549.4$_5$, (19^-), $\gamma_{5089.3}$**459.9**$_2$(23$_8$) (Q), $\gamma_{4700.6}$**849.1**$_3$(100$_{13}$)
5549.8$_5$, (20^+), $\gamma_{4794.8}$**755.0**$_2$(100) (Q)
J **5591.3**$_7$, $\gamma_{5462.3}$**129.0**$_4$(100) D
D **5684.4**$_6$, (20^-), *0.159$^{28}_{42}$ ps*, $\gamma_{5424.3}$**260.1**$_2$(100) M1
5685.3$_8$, $\gamma_{4374.5}$**1310.8**$_6$(100)
5729.4$_6$, (20^-), $\gamma_{4700.6}$**1028.8**$_3$(100) (E2)
G **5757.4**$_5$, (20^+), $\gamma_{5409.5}$**347.8**$_2$(100$_{19}$) D, $\gamma_{5121.5}$**636.0**$_3$(12$_6$)

5759.4$_7$, $\gamma_{\mathbf{4700.6}}$**1058.8**$_4$(100)
J **5787.1**$_7$, $\gamma_{\mathbf{5591.3}}$**195.8**$_2$ D
M **5815.2**$_3$, (14^+), *1.8$_5$ ps*, $\gamma_{\mathbf{5516.7}}$**298.49**$_3$(0.94$_4$) (E2)
5823.9$_7$, $\gamma_{\mathbf{4700.6}}$**1123.3**$_5$(100)
5824.7$_6$, $\gamma_{\mathbf{5256.7}}$**568.0**$_3$(100)
E **5881.9**$_6$, (19^+), $\gamma_{\mathbf{5505.4}}$**376.4**$_4$(100$_{33}$) M1, $\gamma_{\mathbf{5108.4}}$**773.5**$_3$(17$_8$)
5907.9$_6$, (21^-), $\gamma_{\mathbf{5326.8}}$**581.1**$_2$(100)
5934.1$_6$, $\gamma_{\mathbf{5256.7}}$**677.4**$_3$(100)
5942.1$_7$, $\gamma_{\mathbf{4700.6}}$**1241.5**$_5$(100)
J **5995.5**$_8$, $\gamma_{\mathbf{5787.1}}$**208.4**$_2$(100) D
D **6020.5**$_7$, (21^-), *0.146$_{14}$ ps*, $\gamma_{\mathbf{5684.4}}$**336.2**$_2$(100) M1
G **6131.7**$_6$, (21^+), $\gamma_{\mathbf{5757.4}}$**374.3**$_3$(100$_{30}$), $\gamma_{\mathbf{5409.5}}$**722.2**$_3$(20$_{10}$)
M **6155.1**$_3$, (16^+), $\gamma_{\mathbf{5815.2}}$**339.90**$_5$(0.92$_4$) (E2)
6203.5$_6$, $\gamma_{\mathbf{5549.4}}$**654.1**$_2$(100)
6219.6$_6$, $\gamma_{\mathbf{5256.7}}$**962.9**$_3$(100)
E **6245.2**$_7$, (20^+), $\gamma_{\mathbf{5881.9}}$**363**$_1$(100$_{15}$) M1, $\gamma_{\mathbf{5505.4}}$**739.8**$_3$(18$_5$)
6263.7$_8$, $\gamma_{\mathbf{5256.7}}$**1007.0**$_5$(100)
J **6264.9**$_8$, $\gamma_{\mathbf{5995.5}}$**269.4**$_2$(100) D
I **6291.3**$_7$, (20^+), $\gamma_{\mathbf{5881.9}}$**409.4**$_2$(100) D
L **6300+x**
6369.3$_6$, $\gamma_{\mathbf{5549.8}}$**819.9**$_3$(100)
6374.2$_6$, $\gamma_{\mathbf{5549.8}}$**824.4**$_2$(100)
D **6396.1**$_7$, (22^-), *0.125$^{35}_{28}$ ps*, $\gamma_{\mathbf{6020.5}}$**375.5**$_2$(100$_{40}$) M1, $\gamma_{\mathbf{5684.4}}$**711.7**$_4$(12$_6$)
6426.1$_7$, $\gamma_{\mathbf{5729.4}}$**696.7**$_3$
6489.3$_7$, $\gamma_{\mathbf{5729.4}}$**759.9**$_2$(100)
L **6501.9+x**, $\gamma_{\mathbf{6300+x}}$**201.9**$_3$(100) D
F **6505.8**$_7$, (21^+), $\gamma_{\mathbf{6245.2}}$**260.6**$_2$(100) M1
G **6528.6**$_6$, (22^+), $\gamma_{\mathbf{6131.7}}$**396.9**$_2$(100$_{33}$) D, $\gamma_{\mathbf{5757.4}}$**771.1**$_3$(33$_{17}$)
M **6535.3**$_3$, (18^+), *>0.5 ps*, $\gamma_{\mathbf{6155.1}}$**380.20**$_5$(0.91$_4$) (E2)
6561.3$_7$, $\gamma_{\mathbf{6219.6}}$**341.7**$_3$(100)
6629.9$_7$, $\gamma_{\mathbf{6374.2}}$**255.7**$_3$(100)
I **6639.3**$_7$, (21^+), $\gamma_{\mathbf{6291.3}}$**348.0**$_3$(100) D, $\gamma_{\mathbf{5881.9}}$**757**(?)
F **6718.0**$_7$, (22^+), $\gamma_{\mathbf{6505.8}}$**212.2**$_2$(100) D
L **6751.0+x**, $\gamma_{\mathbf{6501.9+x}}$**249.1**$_2$(100) D
K **6800+y**
D **6813.3**$_7$, (23^-), *0.125$_{28}$ ps*, $\gamma_{\mathbf{6396.1}}$**417.1**$_3$(100$_{24}$) M1, $\gamma_{\mathbf{6020.5}}$**793.3**$_5$(21$_8$)
G **6906.1**$_8$, $\gamma_{\mathbf{6528.6}}$**377.5**$_5$(100)
F **6945.6**$_8$, (23^+), $\gamma_{\mathbf{6718.0}}$**227.6**$_2$(100) M1
M **6955.3**$_4$, (20^+), *0.24$^{43}_{14}$ ps*, $\gamma_{\mathbf{6535.3}}$**420.0**$_2$(0.96$_{10}$)
6961.8$_6$, $\gamma_{\mathbf{6203.5}}$**758.3**$_2$(100)
I **6989.9**$_8$, (22^+), $\gamma_{\mathbf{6639.3}}$**350.6**$_3$ D, $\gamma_{\mathbf{6291.3}}$**699**(?)
L **7027.3+x**, $\gamma_{\mathbf{6751.0+x}}$**276.3**$_2$(100) D
K **7128.60+y**, $\gamma_{\mathbf{6800+y}}$**328.6**$_2$(100) D
7160.0$_7$, $\gamma_{\mathbf{6374.2}}$**785.8**$_4$(100)
F **7212.9**$_8$, (24^+), $\gamma_{\mathbf{6945.6}}$**267.3**$_2$(100) D
D **7236.9**$_8$, (24^-), $\gamma_{\mathbf{6813.3}}$**423.7**$_3$(100$_{33}$) D, $\gamma_{\mathbf{6396.1}}$**840**(?)
G **7267.1**$_{13}$, $\gamma_{\mathbf{6906.1}}$**361**$_1$
I **7306.3**$_8$, (23^+), $\gamma_{\mathbf{6989.9}}$**316.4**$_3$ D
7306.9$_7$, $\gamma_{\mathbf{6489.3}}$**817.6**$_2$(100)
L **7344.8+x**, $\gamma_{\mathbf{7027.3+x}}$**317.5**$_2$(100) D
M **7413.6**$_4$, (22^+), *0.14$^{10}_{7}$ ps*, $\gamma_{\mathbf{6955.3}}$**458.4**$_1$(0.85$_{10}$)
K **7492.1+y**, $\gamma_{\mathbf{7128.60+y}}$**363.5**$_5$ D
F **7519.8**$_8$, (25^+), $\gamma_{\mathbf{7212.9}}$**306.9**$_2$(100) D
I **7611.3**$_9$, (24), $\gamma_{\mathbf{7306.3}}$**305.0**$_2$
D **7678.9**$_8$, (25^-), $\gamma_{\mathbf{7236.9}}$**441.9**$_2$(100) D
L **7707.9+x**, $\gamma_{\mathbf{7344.8+x}}$**363.1**$_2$(100) D
K **7864.9+y**, $\gamma_{\mathbf{7492.1+y}}$**372.8**$_3$ D
F **7880.8**$_{13}$, (26^+), $\gamma_{\mathbf{7519.8}}$**361**$_1$(100) D
I **7907.8**$_9$, (25), $\gamma_{\mathbf{7611.3}}$**296.5**$_2$
M **7909.4**$_4$, (24^+), *0.13$_5$ ps*, $\gamma_{\mathbf{7413.6}}$**495.8**$_1$(0.83$_{10}$)
L **8092.6+x**, $\gamma_{\mathbf{7707.9+x}}$**384.7**$_2$(100) D
D **8107.1**$_9$, (26^-), $\gamma_{\mathbf{7678.9}}$**428.2**$_3$(100) D
K **8261.5+y**, $\gamma_{\mathbf{7864.9+y}}$**396.6**$_2$(100) D
F **8274.4**$_{13}$, (27^+), $\gamma_{\mathbf{7880.8}}$**393.6**$_3$(100) D
M **8441.9**$_5$, (26^+), *0.08$_5$ ps*, $\gamma_{\mathbf{7909.4}}$**532.5**$_2$(0.65$_{10}$)
D **8492.1**$_{13}$, (27), $\gamma_{\mathbf{8107.1}}$**385**$_1$(100)
L **8505.1+x**, $\gamma_{\mathbf{8092.6+x}}$**412.5**$_3$(100) D
K **8649.3+y**, $\gamma_{\mathbf{8261.5+y}}$**387.8**$_3$ D
F **8695.3**$_{14}$, (28), $\gamma_{\mathbf{8274.4}}$**420.9**$_3$(100)
M **9010.3**$_5$, (28^+), *0.07$_2$ ps*, $\gamma_{\mathbf{8441.9}}$**568.3**$_2$(0.50$_7$)
F **9136.2**$_{14}$, (29), $\gamma_{\mathbf{8695.3}}$**440.9**$_3$(100)
F **9598.2**$_{17}$, (30), $\gamma_{\mathbf{9136.2}}$**462**$_1$(100)
M **9613.6**$_6$, (30^+), $\gamma_{\mathbf{9010.3}}$**603.4**$_2$(0.42$_5$)
F **10082.4**$_{17}$, (31), $\gamma_{\mathbf{9598.2}}$**484.2**$_2$(100)
M **10251.7**$_7$, (32^+), $\gamma_{\mathbf{9613.6}}$**638.1**$_4$(0.32$_5$)
F **10587.4**$_{20}$, (32), $\gamma_{\mathbf{10082.4}}$**505**$_1$
M **10924.0**$_8$, (34^+), $\gamma_{\mathbf{10251.7}}$**672.3**$_4$(0.20$_5$)
F **11112.4**$_{23}$(?), (33), $\gamma_{\mathbf{10587.4}}$**525**(?)
M **11630.2**$_8$, (36^+), $\gamma_{\mathbf{10924.0}}$**706.2**$_2$(0.12$_5$)
M **12369.7**$_9$, (38^+), $\gamma_{\mathbf{11630.2}}$**739.5**$_4$(0.10$_5$)
N **z**, $J \approx (10)$
N **241.2+z**, $J+2$, $\gamma_{\mathbf{z}}$**241.2**$_3$(0.036$_4$)
N **521.8+z**, $J+4$, $\gamma_{\mathbf{241.2+z}}$**280.6**$_4$(0.096$_{10}$)
N **842.5+z**, $J+6$, $\gamma_{\mathbf{521.8+z}}$**320.7**$_2$(0.052$_5$)
N **1202.5+z**, $J+8$, $\gamma_{\mathbf{842.5+z}}$**360.0**$_2$(0.060$_6$)
N **1601.5+z**, $J+10$, $\gamma_{\mathbf{1202.5+z}}$**399.0**$_2$(0.071$_7$)
N **2038.3+z**, $J+12$, $\gamma_{\mathbf{1601.5+z}}$**436.8**$_3$(0.064$_7$)
N **2512.3+z**, $J+14$, $\gamma_{\mathbf{2038.3+z}}$**474.0**$_3$(0.072$_8$)
N **3023.4+z**, $J+16$, $\gamma_{\mathbf{2512.3+z}}$**511.1**$_5$(0.051$_6$)
N **3567.2+z**, $J+18$, $\gamma_{\mathbf{3023.4+z}}$**543.8**$_5$(0.031$_4$)
O **u**, $J_1 \approx (11)$
O **260.9+u**(?), J_1+2, $\gamma_{\mathbf{u}}$**260.9**$_4$(0.057$_7$)
O **562.9+u**(?), J_1+4, $\gamma_{\mathbf{260.9+u}}$**302.0**$_3$(0.072$_8$)
O **904.2+u**(?), J_1+6, $\gamma_{\mathbf{562.9+u}}$**341.3**$_3$(0.027$_4$)
O **1284.2+u**(?), J_1+8, $\gamma_{\mathbf{904.2+u}}$**380.0**$_5$(0.046$_6$)
O **1701.5+u**(?), J_1+10, $\gamma_{\mathbf{1284.2+u}}$**417.3**$_3$(0.048$_6$)
O **2157.3+u**(?), J_1+12, $\gamma_{\mathbf{1701.5+u}}$**455.8**$_3$(0.063$_8$)
O **2649.4+u**(?), J_1+14, $\gamma_{\mathbf{2157.3+u}}$**492.1**$_4$(0.082$_{10}$)
O **3178.0+u**(?), J_1+16, $\gamma_{\mathbf{2649.4+u}}$**528.6**$_8$(0.044$_6$)
O **3741.2+u**(?), J_1+18, $\gamma_{\mathbf{3178.0+u}}$**563.2**$_8$(0.069$_9$)


SD-1 band
(1997Ha24,1996Br07)
SD-2 band
(1994Hu10)
SD-3 band
(1994Hu10)
$^{194}_{82}Pb_{112}$

$^{195}_{82}$Pb$_{113}$

S_n: 7601 $_{SY}$, S_p: 4106 $_{SY}$

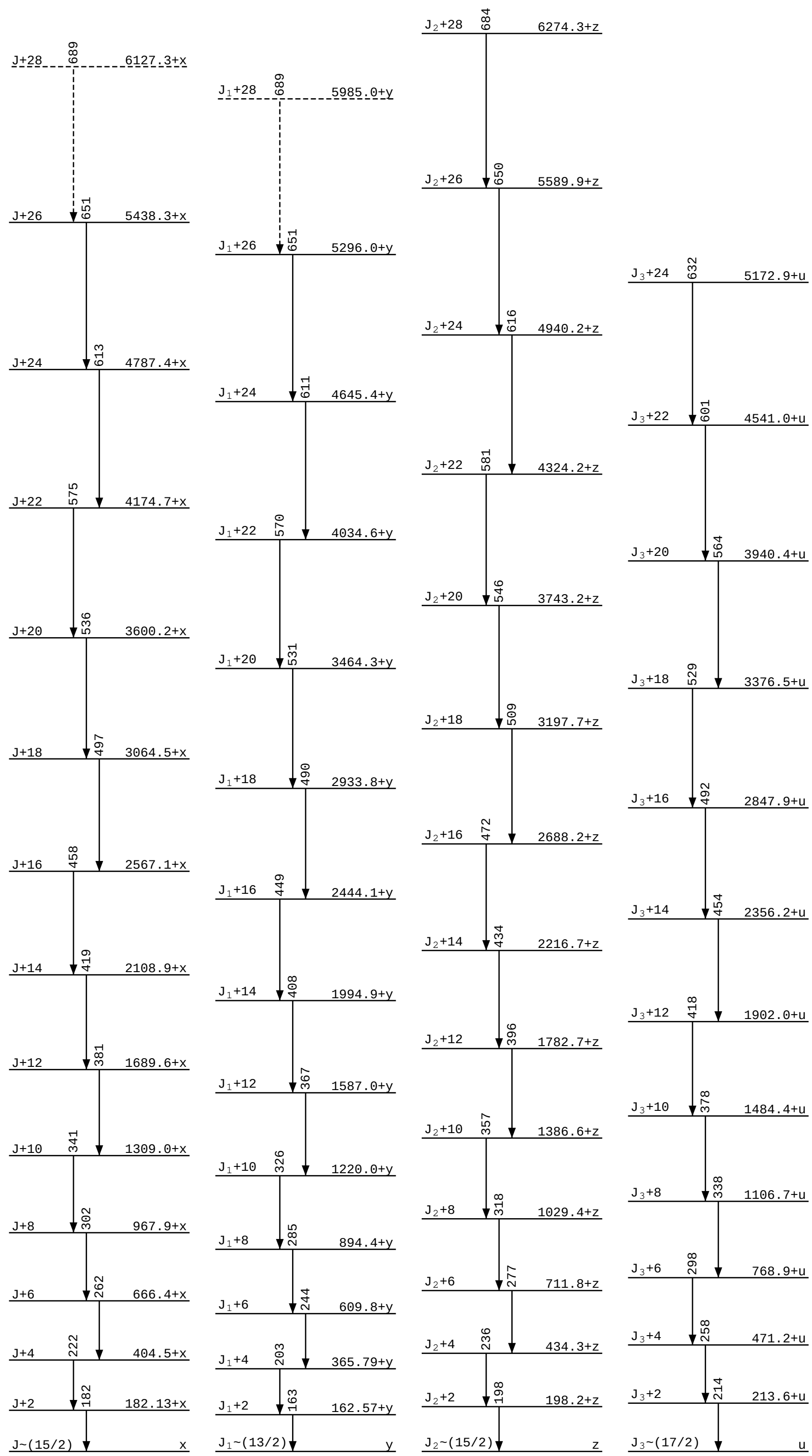
Nuclear Bands

A Yrast Band
B Magnetic-dipole rotational band based on $27/2^-$
C Magnetic-dipole rotational band based on $39/2^-$
D Magnetic-dipole rotational band based on $33/2^-$
E SD-1 band (1995Fa11,1998Va18)
Q_0=19.5^{10}_{9}
F SD-2 band (1995Fa11,1998Va18)
Q_0=19.5^{9}_{10}
G SD-3 band (1995Fa11)
H SD-4 band (1995Fa11)

Levels and γ-ray branchings:

0, $3/2^-$, *≈15 min*, %ε+%β$^+$=100,
134.52$_{20}$, $(5/2)^-$, $\gamma_{\mathbf{0}}$**134.4**$_3$(100) M1(+E2)
A **202.9**$_7$, $13/2^+$, *15.0$_{12}$ min*, %ε+%β$^+$=100, μ=-1.128$_7$, Q=+0.306$_{15}$
329.29$_{16}$, $1/2^-,3/2^-,5/2^-$, $\gamma_{\mathbf{0}}$**329.2**$_2$(100) M1
829.9$_4$, $(7/2)^-$, $\gamma_{\mathbf{134.52}}$**695.4**$_3$(100) M1
966.94$_{20}$, $(3/2,5/2)^-$, $\gamma_{\mathbf{134.52}}$**831.7**$_7$(100$_7$) M1(+E2), $\gamma_{\mathbf{0}}$**967.0**$_2$(17.9$_{13}$) M1(+E2)
978.8$_7$, $(11/2)^+$, $\gamma_{\mathbf{202.9}}$**776.2**$_3$(100) E2
1009.86$_{24}$, $(1/2\rightarrow 7/2)^-$, $\gamma_{\mathbf{134.52}}$**875.4**$_3$(77$_{10}$) E2, $\gamma_{\mathbf{0}}$**1009.8**$_3$(100$_7$) E2
1010.7$_7$, $(9/2)^+$, $\gamma_{\mathbf{202.9}}$**807.6**$_4$(100) E2
1093.0$_8$, $13/2^+$, $\gamma_{\mathbf{202.9}}$**890.0**$_4$(100) E0+M1+E2
1095.98$_{15}$, $3/2^-,5/2^-,7/2^-$, $\gamma_{\mathbf{329.29}}$**766.6**$_2$(20.0$_{16}$), $\gamma_{\mathbf{134.52}}$**961.4**$_3$(52.6$_{45}$) M1(+E2), $\gamma_{\mathbf{0}}$**1096.1**$_2$(100$_{10}$) E2
1120.3$_5$, $9/2^-,(1/2\rightarrow 7/2)^-$, $_{-}$, $\gamma_{\mathbf{134.52}}$**985.8**$_4$(100) E2
A **1172.5**$_7$, $17/2^+$, $\gamma_{\mathbf{202.9}}$**969.6**$_2$(100) E2
1180.1$_3$, $(1/2\rightarrow 7/2)^-$, $\gamma_{\mathbf{329.29}}$**850.8**$_2$(100) M1
1212.8$_6$, $(1/2\rightarrow 7/2)^-$, $\gamma_{\mathbf{134.52}}$**1078.3**$_5$(100) E2
1308.1$_3$, $(3/2,5/2,7/2)^-$, $\gamma_{\mathbf{134.52}}$**1173.6**$_2$(100) M1
1328.7$_7$, $(9/2)^+$, $\gamma_{\mathbf{1010.7}}$**317.7**$_5$(1.5$_{10}$) E0+M1+E2, $\gamma_{\mathbf{829.9}}$**498.8**$_5$(43.9$_{36}$) E1, $\gamma_{\mathbf{202.9}}$**1125.8**$_2$(100$_7$) E2
1379.7$_7$, $(11/2)^+$, $\gamma_{\mathbf{1093.0}}$**286.4**$_6$(37.2$_{43}$) M1, $\gamma_{\mathbf{1010.7}}$**368.9**$_3$(100$_7$) M1(+E2), $\gamma_{\mathbf{978.8}}$**401.3**$_4$(10.6$_{32}$) E0+M1+E2, $\gamma_{\mathbf{202.9}}$**1176.5**$_5$(78.7$_{64}$) M1
1391.5$_7$, $(7/2)^+$, $\gamma_{\mathbf{1010.7}}$**380.6**$_3$(100$_{33}$) M1+E2, $\gamma_{\mathbf{978.8}}$**412.7**$_2$(87$_{13}$) E2
1428.5$_3$, $(3/2,5/2,7/2)^-$, $\gamma_{\mathbf{134.52}}$**1294.0**$_2$(100) M1,E2
1443.2$_3$, $(5/2\rightarrow 13/2)^+$, $\gamma_{\mathbf{1009.86}}$**433.3**$_2$(100) E2
1566.8$_8$, $(9/2,11/2)^+$, $\gamma_{\mathbf{1010.7}}$**556.2**$_4$(64$_{13}$) M1+E2, $\gamma_{\mathbf{978.8}}$**587.6**$_6$(100$_{11}$) M1+E2
1644.9$_7$, $(7/2\rightarrow 11/2)^+$, $\gamma_{\mathbf{1010.7}}$**634.2**$_2$(100) M1+E2
1670.2$_5$, $(3/2\rightarrow 11/2)^-$, $\gamma_{\mathbf{829.9}}$**840.3**$_3$(100) E2
A **1753.9**$_7$, $21/2^+$, $\gamma_{\mathbf{1172.5}}$**581.4**$_2$(100) E2
1759.0$_7$, $21/2^-$, *10.0$_7$ μs*, $\gamma_{\mathbf{1753.9}}$**5.1**, $\gamma_{\mathbf{1172.5}}$**586.5**$_2$ E3(+M2) $\delta=4.5^{26}_{10}$
1780.0$_6$, $^{(-)}$, $\gamma_{\mathbf{1095.98}}$**684.0**$_5$(100) E2(+M1)
1884.0$_7$, $(23/2^-)$, $\gamma_{\mathbf{1759.0}}$**125.0**$_1$(100) (E2)+M1 $\delta\le 0.65$, $\gamma_{\mathbf{1753.9}}$**130**
2186.0$_7$, $(23/2^-)$, $\gamma_{\mathbf{1759.0}}$**427.0**$_2$(100) M1, $\gamma_{\mathbf{1753.9}}$**432**
A **2371.7**$_7$, $(25/2^+)$, $\gamma_{\mathbf{1753.9}}$**617.8**$_2$(100)
2413.2$_7$, $27/2^-$, *2.3$_7$ ns*, $\gamma_{\mathbf{2186.0}}$**227.1**$_1$ E2, $\gamma_{\mathbf{1884.0}}$**529.2**$_1$ E2
2463.1$_8$, $23/2$, $\gamma_{\mathbf{1753.9}}$**709.2**$_3$(100)
2469.0$_8$, $23/2^+$, $\gamma_{\mathbf{2463.1}}$**6**, $\gamma_{\mathbf{2371.7}}$**97.3**$_5$(4.2$_{21}$) (M1), $\gamma_{\mathbf{1753.9}}$**715.2**$_2$(100$_{13}$) M1
2571.7$_8$, $25/2^+$, $\gamma_{\mathbf{2469.0}}$**102.7**$_5$(50$_{17}$) M1, $\gamma_{\mathbf{2371.7}}$**199.9**$_5$(67$_{17}$) M1, $\gamma_{\mathbf{1753.9}}$**817.8**$_4$(100$_{33}$) E2
2805.0$_8$, $27/2^-$, $\gamma_{\mathbf{2571.7}}$**233.3**$_2$(100) E1
A **2814.9**$_7$, $29/2^+$, $\gamma_{\mathbf{2413.2}}$**401.8**$_1$ E1, $\gamma_{\mathbf{2371.7}}$**443.3**$_2$
A **2901.7**$_8$, $33/2^+$, *95$_{20}$ ns*, μ=-2.57$_{10}$, $\gamma_{\mathbf{2814.9}}$**86.8**$_3$(100) E2
2903.1$_8$, $27/2^+$, $\gamma_{\mathbf{2805.0}}$**99**, $\gamma_{\mathbf{2571.7}}$**331.4**$_3$(100$_{18}$) M1
B **2968.0**$_8$, $27/2^-$, $\gamma_{\mathbf{2805.0}}$**162.8**$_5$(10.3$_{34}$) M1, $\gamma_{\mathbf{2571.7}}$**396.4**$_2$(100$_{10}$) E1, $\gamma_{\mathbf{2371.7}}$**596.4**$_3$(55$_{14}$) E1
3053.8$_8$, $29/2^+$, $\gamma_{\mathbf{2371.7}}$**682.1**$_4$(100) E2
3063.5$_9$, $29/2^+$, $\gamma_{\mathbf{2903.1}}$**160.4**$_5$(100) M1
B **3097.7**$_9$, $29/2^-$, $\gamma_{\mathbf{2968.0}}$**129.7**$_4$(100) M1
3150.3$_8$, $\gamma_{\mathbf{2805.0}}$**345.3**$_4$(100) M1
B **3361.8**$_9$, $31/2^-$, $\gamma_{\mathbf{3097.7}}$**264.0**$_2$(100) M1
3496.0$_8$, $\gamma_{\mathbf{3150.3}}$**345.3**$_4$(100$_{20}$) M1, $\gamma_{\mathbf{3053.8}}$**442.4**$_5$(80$_{20}$)
3646.5$_{10}$, $31/2^+$, $\gamma_{\mathbf{3063.5}}$**583.0**$_5$(100)
B **3734.5**$_9$, $33/2^-$, $\gamma_{\mathbf{3361.8}}$**372.7**$_2$(100$_{21}$) M1, $\gamma_{\mathbf{3097.7}}$**637.0**$_5$(8.8$_{25}$) E2
3787.3$_9$, $33/2^+$, $\gamma_{\mathbf{3496.0}}$**291.4**$_5$(22$_8$), $\gamma_{\mathbf{3053.8}}$**733.3**$_4$(100$_{20}$) E2
3868.2$_{10}$, $33/2^+$, $\gamma_{\mathbf{3646.5}}$**221.5**$_5$(22$_8$) (M1), $\gamma_{\mathbf{3063.5}}$**804.6**$_4$(100$_{22}$) E2
3903.6$_9$, $\gamma_{\mathbf{3496.0}}$**407.3**$_5$(100$_{30}$), $\gamma_{\mathbf{3150.3}}$**754.0**$_5$(30$_7$)
B **4119.7**$_9$, $35/2^-$, $\gamma_{\mathbf{3734.5}}$**385.2**$_3$(100$_{21}$) M1, $\gamma_{\mathbf{3361.8}}$**757.7**$_5$(16.3$_5$) E2
4199.1$_9$, $\gamma_{\mathbf{3903.6}}$**295.9**$_5$(53$_{13}$), $\gamma_{\mathbf{3787.3}}$**412.1**$_5$(93$_{27}$), $\gamma_{\mathbf{3496.0}}$**703.0**$_5$(100$_{27}$)
4411.4$_{10}$, $35/2^+$, $\gamma_{\mathbf{3868.2}}$**543.1**$_4$(100$_{22}$) M1, $\gamma_{\mathbf{3646.5}}$**765.0**$_5$(21$_7$)
4432.4$_{10}$, $\gamma_{\mathbf{3734.5}}$**697.9**$_5$(100)
D **4465.4**$_9$, $(33/2^-)$, $\gamma_{\mathbf{4411.4}}$**54**, $\gamma_{\mathbf{4199.1}}$**266.7**$_5$(75$_{25}$), $\gamma_{\mathbf{3787.3}}$**677.7**$_5$(100$_{30}$)
4499.7$_{10}$, $\gamma_{\mathbf{4119.7}}$**380.1**$_4$(100$_{25}$), $\gamma_{\mathbf{3734.5}}$**765.1**$_5$(35$_3$)
4523.6$_{10}$, $\gamma_{\mathbf{4119.7}}$**404.0**$_4$(100)
D **4559.2**$_{10}$, $(35/2^-)$, $\gamma_{\mathbf{4465.4}}$**93.8**$_5$(100$_{30}$) M1, $\gamma_{\mathbf{4199.1}}$**361.9**$_5$(95$_{30}$)
B **4566.2**$_{10}$, $(37/2)^-$, $\gamma_{\mathbf{4119.7}}$**446.3**$_4$(100$_{20}$), $\gamma_{\mathbf{3734.5}}$**832.0**$_5$(24$_8$) E2
D **4692.7**$_{11}$, $(37/2^-)$, $\gamma_{\mathbf{4559.2}}$**133.5**$_4$(100) M1
4834.5$_{10}$, $\gamma_{\mathbf{4432.4}}$**402.1**$_5$(100)
D **4865.3**$_{12}$, $(39/2^-)$, $\gamma_{\mathbf{4692.7}}$**172.6**$_4$(100) M1
B **4966.7**$_{10}$, $(39/2)$, $\gamma_{\mathbf{4566.2}}$**400.6**$_5$(100)
D **5106.9**$_{12}$, $(41/2^-)$, $\gamma_{\mathbf{4865.3}}$**241.6**$_3$(100) M1
C **5123.5**$_{10}$, $(39/2^-)$, $\gamma_{\mathbf{4834.5}}$**288.9**$_5$(43$_{14}$), $\gamma_{\mathbf{4566.2}}$**557.1**$_5$(100$_{29}$), $\gamma_{\mathbf{4523.6}}$**600.0**$_5$(100$_{29}$)
C **5270.2**$_{10}$, $(41/2^-)$, $\gamma_{\mathbf{5123.5}}$**146.7**$_4$(100$_{30}$) M1, $\gamma_{\mathbf{4966.7}}$**303.6**$_5$(80$_{25}$)
D **5411.7**$_{13}$, $(43/2^-)$, $\gamma_{\mathbf{5106.9}}$**304.8**$_3$(100) M1
C **5467.5**$_{11}$, $(43/2^-)$, $\gamma_{\mathbf{5270.2}}$**197.3**$_4$(100) M1
C **5702.3**$_{12}$, $(45/2^-)$, $\gamma_{\mathbf{5467.5}}$**234.8**$_5$(100) M1
D **5769.8**$_{13}$, $(45/2^-)$, $\gamma_{\mathbf{5411.7}}$**358.0**$_3$(100$_{23}$) M1, $\gamma_{\mathbf{5106.9}}$**663.0**$_5$(11.5$_{31}$)
C **5978.2**$_{13}$, $(47/2^-)$, *0.19$^{4}_{5}$ ps*, $\gamma_{\mathbf{5702.3}}$**275.9**$_4$(100) M1
D **6143.7**$_{13}$, $(47/2^-)$, $\gamma_{\mathbf{5769.8}}$**373.8**$_3$(100$_{27}$) (M1), $\gamma_{\mathbf{5411.7}}$**732.0**$_5$(14.6$_{36}$)
C **6307.9**$_{13}$, $(49/2^-)$, *0.146$_{21}$ ps*, $\gamma_{\mathbf{5978.2}}$**329.7**$_4$(100) M1
D **6528.7**$_{13}$, $(49/2^-)$, $\gamma_{\mathbf{6143.7}}$**384.8**$_4$(100$_{25}$) (M1), $\gamma_{\mathbf{5769.8}}$**759.0**$_5$(17.5$_{50}$)
C **6674.0**$_{14}$, $(51/2^-)$, *0.152$^{21}_{14}$ ps*, $\gamma_{\mathbf{6307.9}}$**366.1**$_4$(100) M1
D **6906.5**$_{13}$, $(51/2^-)$, $\gamma_{\mathbf{6528.7}}$**377.7**$_4$(100$_{17}$) (M1), $\gamma_{\mathbf{6143.7}}$**763.0**$_5$(23$_7$)
C **7090.6**$_{15}$, $(53/2^-)$, $\gamma_{\mathbf{6674.0}}$**416.6**$_4$(100)
D **7280.5**$_{14}$, $(53/2^-)$, $\gamma_{\mathbf{6906.5}}$**374.0**$_4$(100) (M1)
C **7538**, $(55/2^-)$, $\gamma_{\mathbf{7090.6}}$**446.0**$_5$(100)(?)
E **x**, $J\approx(15/2)$
E **182.13+x**, $J+2$, $\gamma_{\mathbf{x}}$**182.13**$_{21}$(0.30)
E **404.5+x**, $J+4$, $\gamma_{\mathbf{182.13+x}}$**222.33**$_{14}$(0.45)
E **666.4+x**, $J+6$, $\gamma_{\mathbf{404.5+x}}$**261.97**$_{10}$(0.78)
E **967.9+x**, $J+8$, $\gamma_{\mathbf{666.4+x}}$**301.52**$_9$(0.87)
E **1309.0+x**, $J+10$, $\gamma_{\mathbf{967.9+x}}$**341.09**$_9$(1.00)
E **1689.6+x**, $J+12$, $\gamma_{\mathbf{1309.0+x}}$**380.54**$_{10}$(0.90)
E **2108.9+x**, $J+14$, $\gamma_{\mathbf{1689.6+x}}$**419.29**$_{16}$(0.95)
E **2567.1+x**, $J+16$, $\gamma_{\mathbf{2108.9+x}}$**458.26**$_9$(0.84)
E **3064.5+x**, $J+18$, $\gamma_{\mathbf{2567.1+x}}$**497.38**$_9$(0.86)
E **3600.2+x**, $J+20$, $\gamma_{\mathbf{3064.5+x}}$**535.69**$_{15}$(0.80)
E **4174.7+x**, $J+22$, $\gamma_{\mathbf{3600.2+x}}$**574.52**$_{18}$(0.50)
E **4787.4+x**, $J+24$, $\gamma_{\mathbf{4174.7+x}}$**612.7**$_3$(0.42)
E **5438.3+x**, $J+26$, $\gamma_{\mathbf{4787.4+x}}$**650.9**$_4$(0.35)
E **6127.3+x**(?), $J+28$, $\gamma_{\mathbf{5438.3+x}}$**689**(0.10)(?)
F **y**, $J_1\approx(13/2)$
F **162.57+y**, J_1+2, $\gamma_{\mathbf{y}}$**162.58**$_{18}$(0.50)
F **365.79+y**, J_1+4, $\gamma_{\mathbf{162.57+y}}$**203.22**$_{16}$(0.62)
F **609.8+y**, J_1+6, $\gamma_{\mathbf{365.79+y}}$**243.99**$_{11}$(0.90)
F **894.4+y**, J_1+8, $\gamma_{\mathbf{609.8+y}}$**284.63**$_9$(0.86)
F **1220.0+y**, J_1+10, $\gamma_{\mathbf{894.4+y}}$**325.64**$_9$(0.95)
F **1587.0+y**, J_1+12, $\gamma_{\mathbf{1220.0+y}}$**366.91**$_{10}$(0.85)
F **1994.9+y**, J_1+14, $\gamma_{\mathbf{1587.0+y}}$**407.99**$_{11}$(0.95)
F **2444.1+y**, J_1+16, $\gamma_{\mathbf{1994.9+y}}$**449.14**$_9$(0.80)
F **2933.8+y**, J_1+18, $\gamma_{\mathbf{2444.1+y}}$**489.70**$_8$(0.86)
F **3464.3+y**, J_1+20, $\gamma_{\mathbf{2933.8+y}}$**530.51**$_{13}$(1.00)
F **4034.6+y**, J_1+22, $\gamma_{\mathbf{3464.3+y}}$**570.32**$_{16}$(0.78)

F **4645.4+y**, J_1+24, $\gamma_{\mathbf{4034.6+y}}$**610.75**$_{23}$(0.56)
F **5296.0+y**, J_1+26, $\gamma_{\mathbf{4645.4+y}}$**650.6**$_{3}$(0.38)
F **5985.0+y**(?), J_1+28, $\gamma_{\mathbf{5296.0+y}}$**689**(0.10)(?)
G **z**, $J_2\approx(15/2)$
G **198.2+z**, J_2+2, $\gamma_{\mathbf{z}}$**198.2**$_{4}$(0.28)
G **434.3+z**, J_2+4, $\gamma_{\mathbf{198.2+z}}$**236.19**$_{14}$(0.70)
G **711.8+z**, J_2+6, $\gamma_{\mathbf{434.3+z}}$**277.47**$_{13}$(0.56)
G **1029.4+z**, J_2+8, $\gamma_{\mathbf{711.8+z}}$**317.60**$_{12}$(0.62)
G **1386.6+z**, J_2+10, $\gamma_{\mathbf{1029.4+z}}$**357.22**$_{11}$(0.85)
G **1782.7+z**, J_2+12, $\gamma_{\mathbf{1386.6+z}}$**396.08**$_{13}$(0.90)
G **2216.7+z**, J_2+14, $\gamma_{\mathbf{1782.7+z}}$**434.02**$_{13}$(0.80)
G **2688.2+z**, J_2+16, $\gamma_{\mathbf{2216.7+z}}$**471.52**$_{15}$(0.70)
G **3197.7+z**, J_2+18, $\gamma_{\mathbf{2688.2+z}}$**509.46**$_{14}$(0.70)
G **3743.2+z**, J_2+20, $\gamma_{\mathbf{3197.7+z}}$**545.51**$_{16}$(0.65)
G **4324.2+z**, J_2+22, $\gamma_{\mathbf{3743.2+z}}$**581.04**$_{17}$(1.00)
G **4940.2+z**, J_2+24, $\gamma_{\mathbf{4324.2+z}}$**616.0**$_{3}$(0.42)
G **5589.9+z**, J_2+26, $\gamma_{\mathbf{4940.2+z}}$**649.7**$_{5}$(0.30)
G **6274.3+z**, J_2+28, $\gamma_{\mathbf{5589.9+z}}$**684.4**$_{8}$(0.24)
H **u**, $J_3\approx(17/2)$
H **213.6+u**, J_3+2, $\gamma_{\mathbf{u}}$**213.6**$_{4}$(0.45)
H **471.2+u**, J_3+4, $\gamma_{\mathbf{213.6+u}}$**257.66**$_{23}$(0.60)
H **768.9+u**, J_3+6, $\gamma_{\mathbf{471.2+u}}$**297.70**$_{17}$(0.72)
H **1106.7+u**, J_3+8, $\gamma_{\mathbf{768.9+u}}$**337.83**$_{16}$(1.00)
H **1484.4+u**, J_3+10, $\gamma_{\mathbf{1106.7+u}}$**377.68**$_{17}$(0.90)
H **1902.0+u**, J_3+12, $\gamma_{\mathbf{1484.4+u}}$**417.59**$_{19}$(0.72)
H **2356.2+u**, J_3+14, $\gamma_{\mathbf{1902.0+u}}$**454.21**$_{14}$(0.80)
H **2847.9+u**, J_3+16, $\gamma_{\mathbf{2356.2+u}}$**491.68**$_{20}$(0.70)
H **3376.5+u**, J_3+18, $\gamma_{\mathbf{2847.9+u}}$**528.6**$_{3}$(0.80)
H **3940.4+u**, J_3+20, $\gamma_{\mathbf{3376.5+u}}$**563.9**$_{3}$(0.65)
H **4541.0+u**, J_3+22, $\gamma_{\mathbf{3940.4+u}}$**600.6**$_{4}$(0.45)
H **5172.9+u**, J_3+24, $\gamma_{\mathbf{4541.0+u}}$**631.9**$_{4}$(0.28)



SD-1 band (1995Fa11,1998Va18) SD-2 band (1995Fa11,1998Va18) SD-3 band (1995Fa11) SD-4 band (1995Fa11)

$^{195}_{82}\mathrm{Pb}_{113}$

$^{196}_{82}$Pb$_{114}$

S$_n$: 9712 $_{SY}$, S$_p$: 4439 $_{SY}$

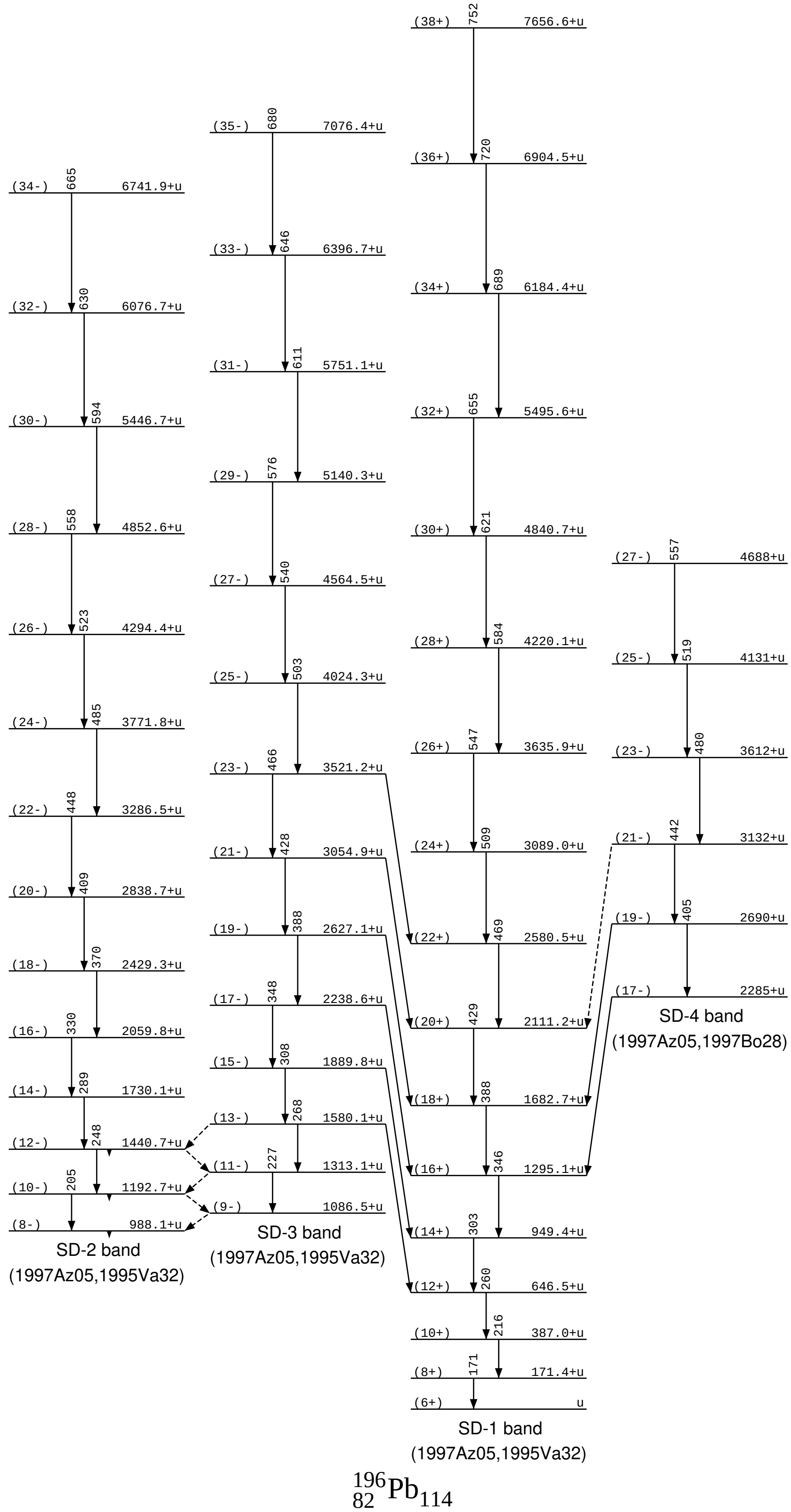
Nuclear Bands

A Band based on 0^+
B Magnetic-dipole rotational band (oblate)
C Magnetic-dipole rotational band (oblate)
D Magnetic-dipole rotational band (oblate)
E Magnetic-dipole rotational band (?)
F SD-1 band (1997Az05,1995Va32,1994Cl02,1990Br10,1991Wa14, 1993Mo19,1997Bo28,1998Va18,2001Ro20)
Q_0=19.5^4_3
G SD-2 band (1997Az05,1995Va32,1997Bo28,2001R020)
H SD-3 band (1997Az05,1995Va32,1997Bo28,2001Ro20)
I SD-4 band (1997Az05,1997Bo28)

Levels and γ-ray branchings:

0, 0^+, *37$_3$ min*, %ε+%β$^+$=100 , %α≤3x10^{-5}
1049.20$_9$, 2^+, *<100 ns*, $\gamma_{\mathbf{0}}$**1049.21**$_9$(100) E2
A **1142.86**$_{17}$, 0^+, $\gamma_{\mathbf{0}}$**1142.7**$_3$(2.0$_3$) E0
A **1449.87**$_{13}$, 2^+, $\gamma_{\mathbf{1142.86}}$**306.9**$_3$(16$_5$), $\gamma_{\mathbf{1049.20}}$**400.9**$_2$(91$_5$) E0+M1+E2, $\gamma_{\mathbf{0}}$**1449.7**$_3$(100$_9$) E2
1697.8$_5$, 0^+, $\gamma_{\mathbf{0}}$**1697.8**$_5$(0.2$_1$) E0
1738.27$_{12}$, 4^+, *<1 μs*, $\gamma_{\mathbf{1449.87}}$**288.7**$_2$(1.3$_4$), $\gamma_{\mathbf{1049.20}}$**689.00**$_9$(100$_4$) E2
1797.51$_{14}$, 5^-, *140$_{14}$ ns*, *μ*=+0.490$_{15}$, $\gamma_{\mathbf{1738.27}}$**59.23**$_9$(100$_{23}$) E1, $\gamma_{\mathbf{1049.20}}$**748.4**$_3$(10$_1$) E3
1825.60$_{16}$, 3^+,4^+, $\gamma_{\mathbf{1449.87}}$**375.5**$_2$(9$_2$), $\gamma_{\mathbf{1049.20}}$**776.6**$_2$(100$_7$) E2(+M1)
A **1861.7**$_6$, (4^+), $\gamma_{\mathbf{1449.87}}$**411.8**$_5$(100)
1896.10$_{17}$, 2^+, $\gamma_{\mathbf{1142.86}}$**753.4**$_2$(58$_{25}$) E2, $\gamma_{\mathbf{1049.20}}$**846.7**$_2$(100$_8$) E2+(M1), $\gamma_{\mathbf{0}}$**1896.3**$_5$(38$_{17}$)
1991.61$_{22}$, 2^-,3^-, $\gamma_{\mathbf{1049.20}}$**942.4**$_2$(100) E1
2060.06$_{23}$, $(1^-,2^+)$, $\gamma_{\mathbf{1142.86}}$**916.8**$_3$(33$_{25}$), $\gamma_{\mathbf{1049.20}}$**1011.1**$_3$(100$_{17}$), $\gamma_{\mathbf{0}}$**2060.9**$_7$(17$_8$)
2124.42$_{22}$, $(1^-,2,3)$, $\gamma_{\mathbf{1449.87}}$**674.6**$_2$(100$_{20}$), $\gamma_{\mathbf{1049.20}}$**1075.0**$_4$(70$_{50}$)
2169.43$_{16}$, 7^-, *<5 ns*, $\gamma_{\mathbf{1797.51}}$**371.93**$_8$(100) E2
2203.27$_{24}$, 4^+, $\gamma_{\mathbf{1449.87}}$**753.4**$_2$(100) E2
2307.84$_{18}$, 9^-, *52$_5$ ns*, $\gamma_{\mathbf{2169.43}}$**138.41**$_7$(100) E2
2333.9$_3$, (8^-), $\gamma_{\mathbf{2169.43}}$**164.5**$_2$(100)
2376.05$_{20}$, $(5)^+$,$(6)^+$, $\gamma_{\mathbf{1825.60}}$**550.4**$_3$(12$_6$), $\gamma_{\mathbf{1738.27}}$**637.8**$_2$(100$_{18}$) E2
A **2423.9**$_8$, (6^+), $\gamma_{\mathbf{1861.7}}$**562.2**$_5$(100)
2470.77$_{23}$, $(3,4,5^-)$, $\gamma_{\mathbf{1738.27}}$**732.5**$_2$(100)
2590.96$_{19}$, 8^+, $\gamma_{\mathbf{2307.84}}$**283.2**$_2$(63$_8$), $\gamma_{\mathbf{2169.43}}$**421.5**$_1$(100$_{13}$) E1
A **2621.9**$_9$, (8^+), *50$_{15}$ ns*, $\gamma_{\mathbf{2423.9}}$**198.0**$_5$(100)
2645.12$_{19}$, 10^+, *<2 ns*, $\gamma_{\mathbf{2307.84}}$**337.29**$_7$(100) E1
2693.5$_5$, (12^+), *270$_4$ ns*, *μ*=-1.920$_{18}$, Q=0.65$_5$, $\gamma_{\mathbf{2645.12}}$**47.7**$_5$(100) (E2)
3041.4$_3$, 4^+, $\gamma_{\mathbf{2376.05}}$**665.4**$_2$(100) E2
3087.25$_{25}$, $(9,10)^+$, $\gamma_{\mathbf{2590.96}}$**496.3**$_2$(100) M1+(E2)
3191.3$_5$, (11^-), *72$_4$ ns*, *μ*=10.6$_9$, Q=(-)3.4$_7$, $\gamma_{\mathbf{2693.5}}$**497.7**$_2$(100) (E1), $\gamma_{\mathbf{2645.12}}$**548.4**
3281.0$_8$, $\gamma_{\mathbf{2333.9}}$**947.1**, $\gamma_{\mathbf{2307.84}}$**973.1**
3394.12$_{25}$, $(9,10)^+$, $\gamma_{\mathbf{3087.25}}$**306.9**$_3$(75$_{25}$) (E2), $\gamma_{\mathbf{2645.12}}$**749.0**$_2$(< 100), $\gamma_{\mathbf{2590.96}}$**803.1**$_5$(50$_{25}$)
3460.4$_7$, $\gamma_{\mathbf{2693.5}}$**766.4**, $\gamma_{\mathbf{2645.12}}$**816.0**
3653.2$_5$, (14^+), $\gamma_{\mathbf{2693.5}}$**959.69**$_9$(100) E2
3738.6$_7$, $(12^-,13^-)$, $\gamma_{\mathbf{3191.3}}$**547.4**$_4$(100) (E2+M1)
3829.1$_{13}$, $\gamma_{\mathbf{3281.0}}$**548.1**
3916.9$_7$, $\gamma_{\mathbf{3460.4}}$**456.6**, $\gamma_{\mathbf{2693.5}}$**1222.7**
4046.6$_9$, (13^-), $\gamma_{\mathbf{3738.6}}$**308.7**(100$_7$) D, $\gamma_{\mathbf{3191.3}}$**854.7**(90$_3$) Q
4120.8$_5$, (15^-), $\gamma_{\mathbf{3916.9}}$**203.9**, $\gamma_{\mathbf{3653.2}}$**467.61**$_9$(100) E1
4217.9$_5$, (16^+), $\gamma_{\mathbf{3653.2}}$**564.7**$_1$(100) E2
4332.8$_6$, (16^+), $\gamma_{\mathbf{3916.9}}$**415.5**, $\gamma_{\mathbf{3653.2}}$**679.7**$_3$(100) E2
4385.3$_{16}$, $\gamma_{\mathbf{3829.1}}$**556.2**(100)
4478.7$_5$, (15^-), *5.0$_5$ ns*, $\gamma_{\mathbf{4120.8}}$**357.9**$_1$(100) M1+E2 $\delta=1.5^{20}_5$
4588.1$_{12}$, $\gamma_{\mathbf{3191.3}}$**1396.8**(100)
4646.7$_6$, (16^-), $\gamma_{\mathbf{4120.8}}$**525.9**$_3$(100) M1+E2 $\delta=-0.4^3_{40}$
4652.2$_{14}$, (15^-), $\gamma_{\mathbf{4046.6}}$**605.6**(100) Q
4675.7$_7$, (13^-), $\gamma_{\mathbf{4478.7}}$**197.0**$_4$(100) (E2)
4723.0$_5$, (16^-), $\gamma_{\mathbf{4478.7}}$**244.31**$_{10}$(100) M1(+E2) $\delta=0.3^1_5$
4963.1$_5$, (18^+), $\gamma_{\mathbf{4332.8}}$**630.4**$_3$(91$_9$) E2, $\gamma_{\mathbf{4217.9}}$**745.2**$_2$(100$_{18}$) E2
D **5154.4**$_{17}$, $16^{(-)}$, Q=-0.32$_{10}$, $\gamma_{\mathbf{4652.2}}$**502.2**(100) D
D **5261.6**$_{20}$, $17^{(-)}$, $\gamma_{\mathbf{5154.4}}$**107.2**(100) D
D **5399.8**$_{21}$, $18^{(-)}$, $\gamma_{\mathbf{5261.6}}$**138.4**(100) D
5492.2$_6$, (20^+), $\gamma_{\mathbf{4963.1}}$**529.1**$_3$(100) E2
D **5603.9**$_{21}$, $19^{(-)}$, $\gamma_{\mathbf{5399.8}}$**204.2**(100$_4$) D, $\gamma_{\mathbf{5261.6}}$**342**(< 10) Q
5607.5$_{12}$, $\gamma_{\mathbf{4723.0}}$**884.5**(100)
5708.4$_{16}$, (19^-), $\gamma_{\mathbf{4963.1}}$**745.2**$_2$(100) E1(?)
D **5871.8**$_{22}$, $20^{(-)}$, $\gamma_{\mathbf{5603.9}}$**267.9**(100) D, $\gamma_{\mathbf{5399.8}}$**472**(< 12) Q
D **6203.6**$_{24}$, $21^{(-)}$, $\gamma_{\mathbf{5871.8}}$**331.9**(100) D
6360.0$_{12}$, $\gamma_{\mathbf{5708.4}}$**651.6**, $\gamma_{\mathbf{5492.2}}$**867.8**
6378.9$_{15}$, $\gamma_{\mathbf{5607.5}}$**771.4**(100)
D **6570.6**$_{24}$, $22^{(-)}$, *<0.28 ps*, $\gamma_{\mathbf{6203.6}}$**367.1**(100) D, $\gamma_{\mathbf{5871.8}}$**698.7** Q
D **6963.1**$_{24}$, $23^{(-)}$, *0.146$^{10}_8$ ps*, $\gamma_{\mathbf{6570.6}}$**392.4**(100) D, $\gamma_{\mathbf{6203.6}}$**759.3** Q
D **7360.6**$_{25}$, $24^{(-)}$, *0.12$^8_6$ ps*, $\gamma_{\mathbf{6963.1}}$**397.7**(100) D, $\gamma_{\mathbf{6570.6}}$**790.3** Q
D **7769.5**$_{25}$, $25^{(-)}$, *0.27$_8$ ps*, $\gamma_{\mathbf{7360.6}}$**408.3**(100) D, $\gamma_{\mathbf{6963.1}}$**806.1** Q
D **8103.3**, (26), $\gamma_{\mathbf{7769.5}}$**333.8**(100)(?)
8165$_3$, $\gamma_{\mathbf{7769.5}}$**395.4**(100)(?)
D **8475.2**, (27), $\gamma_{\mathbf{8103.3}}$**371.9**(100)(?)
8477$_3$, $\gamma_{\mathbf{8103.3}}$**373.8**(100)(?)
8587$_3$ *0.33$_7$ ps*, $\gamma_{\mathbf{8165}}$**422.1**(100)(?)
D **8811.9**, (28), $\gamma_{\mathbf{8475}}$**336.7**(100)(?)
8991$_3$, $\gamma_{\mathbf{8587}}$**404.1**(100)(?)
D **9170.5**, (29), $\gamma_{\mathbf{8811.9}}$**358.6**(100)(?)
9420$_4$ *0.16$_6$ ps*, $\gamma_{\mathbf{8991}}$**428.5**(100)(?)
D **9613.0**, (30), $\gamma_{\mathbf{9170.5}}$**442.5**(100)(?)
C **x**, (17^+)
C **192.9+x**, (18^+), *0.89$_{15}$ ps*, $\gamma_{\mathbf{x}}$**192.9**(100) D
C **507.6+x**, (19^+), *0.67$_{14}$ ps*, $\gamma_{\mathbf{192.9+x}}$**314.6**(100) D, $\gamma_{\mathbf{x}}$**507.6** Q
C **882.1+x**, (20^+), *0.93$_{35}$ ps*, $\gamma_{\mathbf{507.6+x}}$**374.5**(100) D, $\gamma_{\mathbf{192.9+x}}$**689.2** Q
C **1237.5+x**, (21), $\gamma_{\mathbf{882.1+x}}$**355.4**(100$_3$) D, $\gamma_{\mathbf{507.6+x}}$**730.0**(24$_3$) Q
C **1579.0+x**, (22), $\gamma_{\mathbf{1237.5+x}}$**341.5**(100$_3$) D, $\gamma_{\mathbf{882.1+x}}$**696.8**(21$_1$) Q
C **1822.7+x**, (23), $\gamma_{\mathbf{1579.0+x}}$**243.7**(100$_3$) D, $\gamma_{\mathbf{1237.5+x}}$**585.2** Q
C **2032.6+x**, (24), $\gamma_{\mathbf{1822.7+x}}$**209.9**(100) D
C **2272.1+x**, (25), $\gamma_{\mathbf{2032.6+x}}$**239.5**(100) D
C **2558.3+x**, (26), *0.132$^{21}_{28}$ ps*, $\gamma_{\mathbf{2272.1+x}}$**286.2**(100) D
C **2897.5+x**, (27), *0.112$^{21}_{28}$ ps*, $\gamma_{\mathbf{2558.3+x}}$**339.2**(100) D
C **3295.2+x**, (28), *0.104$_{21}$ ps*, $\gamma_{\mathbf{2897.5+x}}$**397.7**(100) D
C **3743.8+x**, (29), *0.090$^{21}_{14}$ ps*, $\gamma_{\mathbf{3295.2+x}}$**448.6**(100) D
C **4234.3+x**, (30), *0.125$_{28}$ ps*, $\gamma_{\mathbf{3743.8+x}}$**490.5**(100) D
C **4761.0+x**, $\gamma_{\mathbf{4234.3+x}}$**526.7**(100) D
B **y**
B **164.4+y**, $\gamma_{\mathbf{y}}$**164.4**(100) D
B **372.9+y**, $\gamma_{\mathbf{164.4+y}}$**208.5**(100) D
B **623.2+y**, $\gamma_{\mathbf{372.9+y}}$**250.3**(100) D
B **932.3+y**, $\gamma_{\mathbf{623.2+y}}$**309.1**(100) D
B **1307.4+y**, $\gamma_{\mathbf{932.3+y}}$**375.1**(100) D
B **1711.8+y**, $\gamma_{\mathbf{1307.4+y}}$**404.4**(100) D
E **z**
E **295.7+z**, $\gamma_{\mathbf{z}}$**295.7**(100) D
E **638.5+z**, $\gamma_{\mathbf{295.7+z}}$**342.8**(100) D
E **1018.4+z**, $\gamma_{\mathbf{638.5+z}}$**379.9**(100) D
E **1431.1+z**, $\gamma_{\mathbf{1018.4+z}}$**412.7**(100) D
E **1863.5+z**, $\gamma_{\mathbf{1431.1+z}}$**432.4**(100) D
F **u**, (6^+)
F **171.4+u**, (8^+), $\gamma_{\mathbf{u}}$**171.4**$_2$(0.20$_5$)
F **387.0+u**, (10^+), $\gamma_{\mathbf{171.4+u}}$**215.6**$_2$(0.60$_5$) (E2)
F **646.5+u**, (12^+), $\gamma_{\mathbf{387.0+u}}$**259.5**$_2$(0.90$_5$) E2
F **949.4+u**, (14^+), $\gamma_{\mathbf{646.5+u}}$**303.0**$_2$(0.95$_5$) (E2)
G **988.1+u**, (8^-), $\gamma_{\mathbf{171.4+u}}$**815**(?)
H **1086.5+u**, (9^-), $\gamma_{\mathbf{988.1+u}}$**98**(?)
G **1192.7+u**, (10^-), $\gamma_{\mathbf{1086.5+u}}$**107**(?), $\gamma_{\mathbf{988.1+u}}$**204.5**, $\gamma_{\mathbf{387.0+u}}$**805**(?)
F **1295.1+u**, (16^+), $\gamma_{\mathbf{949.4+u}}$**345.8**$_2$(1.00$_5$) E2
H **1313.1+u**, (11^-), $\gamma_{\mathbf{1192.7+u}}$**120**(?), $\gamma_{\mathbf{1086.5+u}}$**226.7**
G **1440.7+u**, (12^-), $\gamma_{\mathbf{1313.1+u}}$**128**(?), $\gamma_{\mathbf{1192.7+u}}$**247.9**, $\gamma_{\mathbf{646.5+u}}$**794**(?)
H **1580.1+u**, (13^-), $\gamma_{\mathbf{1440.7+u}}$**140**(?), $\gamma_{\mathbf{1313.1+u}}$**267.7**, $\gamma_{\mathbf{646.5+u}}$**934** (E1)

F **1682.7+u**, (18$^+$), $\gamma_{1295.1+u}$**387.6**$_2$(1.05$_5$) (E2)
G **1730.1+u**, (14$^-$), $\gamma_{1440.7+u}$**289.4**
H **1889.8+u**, (15$^-$), $\gamma_{1580.1+u}$**308.3**, $\gamma_{949.4+u}$**940** (E1)
G **2059.8+u**, (16$^-$), $\gamma_{1730.1+u}$**329.7**
F **2111.2+u**, (20$^+$), $\gamma_{1682.7+u}$**428.5**$_2$(1.03$_5$) (E2)
H **2238.6+u**, (17$^-$), $\gamma_{1889.8+u}$**348.4**, $\gamma_{1295.1+u}$**944** (E1)
I **2285+u**, (17$^-$), $\gamma_{1295.1+u}$**990**
G **2429.3+u**, (18$^-$), $\gamma_{2059.8+u}$**369.5**
F **2580.5+u**, (22$^+$), *0.23$_{10}$ ps*, $\gamma_{2111.2+u}$**469.4**$_2$(1.00$_5$) E2
H **2627.1+u**, (19$^-$), $\gamma_{2238.6+u}$**388.2**, $\gamma_{1682.7+u}$**945** (E1)
I **2690+u**, (19$^-$), γ_{2285+u}**405**, $\gamma_{1682.7+u}$**1008**
G **2838.7+u**, (20$^-$), $\gamma_{2429.3+u}$**409.4**
H **3054.9+u**, (21$^-$), $\gamma_{2627.1+u}$**427.6**, $\gamma_{2111.2+u}$**944** (E1)
F **3089.0+u**, (24$^+$), *0.12$^{3}_{5}$ ps*, $\gamma_{2580.5+u}$**508.5**$_2$(0.85$_5$) (E2)
I **3132+u**, (21$^-$), γ_{2690+u}**442**, $\gamma_{2111.2+u}$**1021**(?)
G **3286.5+u**, (22$^-$), $\gamma_{2838.7+u}$**447.8**
H **3521.2+u**, (23$^-$), $\gamma_{3054.9+u}$**466.2**, $\gamma_{2580.5+u}$**941** (E1)
I **3612+u**, (23$^-$), γ_{3132+u}**480**
F **3635.9+u**, (26$^+$), *0.08$^{5}_{2}$ ps*, $\gamma_{3089.0+u}$**546.9**$_2$(1.00$_5$) (E2)
G **3771.8+u**, (24$^-$), $\gamma_{3286.5+u}$**485.3**
H **4024.3+u**, (25$^-$), $\gamma_{3521.2+u}$**503.1**
I **4131+u**, (25$^-$), γ_{3612+u}**519**
F **4220.1+u**, (28$^+$), $\gamma_{3635.9+u}$**584.2**$_2$(0.75$_5$) (E2)
G **4294.4+u**, (26$^-$), $\gamma_{3771.8+u}$**522.6**
H **4564.5+u**, (27$^-$), $\gamma_{4024.3+u}$**540.2**
I **4688+u**, (27$^-$), γ_{4131+u}**557**
F **4840.7+u**, (30$^+$), $\gamma_{4220.1+u}$**620.6**$_2$(0.65$_5$) (E2)
G **4852.6+u**, (28$^-$), $\gamma_{4294.4+u}$**558.2**
H **5140.3+u**, (29$^-$), $\gamma_{4564.5+u}$**575.8**
G **5446.7+u**, (30$^-$), $\gamma_{4852.6+u}$**594.1**
F **5495.6+u**, (32$^+$), $\gamma_{4840.7+u}$**654.9**$_3$(0.65$_5$)
H **5751.1+u**, (31$^-$), $\gamma_{5140.3+u}$**610.8**
G **6076.7+u**, (32$^-$), $\gamma_{5446.7+u}$**630.0**
F **6184.4+u**, (34$^+$), $\gamma_{5495.6+u}$**688.8**$_3$(0.55$_5$)
H **6396.7+u**, (33$^-$), $\gamma_{5751.1+u}$**645.6**
G **6741.9+u**, (34$^-$), $\gamma_{6076.7+u}$**665.2**
F **6904.5+u**, (36$^+$), $\gamma_{6184.4+u}$**720.1**$_5$(0.35$_5$)
H **7076.4+u**, (35$^-$), $\gamma_{6396.7+u}$**679.7**
F **7656.6+u**, (38$^+$), $\gamma_{6904.5+u}$**752.1**$_5$(0.20$_5$)



$^{197}_{82}$Pb$_{115}$

S$_n$: 7447 *SY*, S$_p$: 4620 *SY*

Nuclear Bands

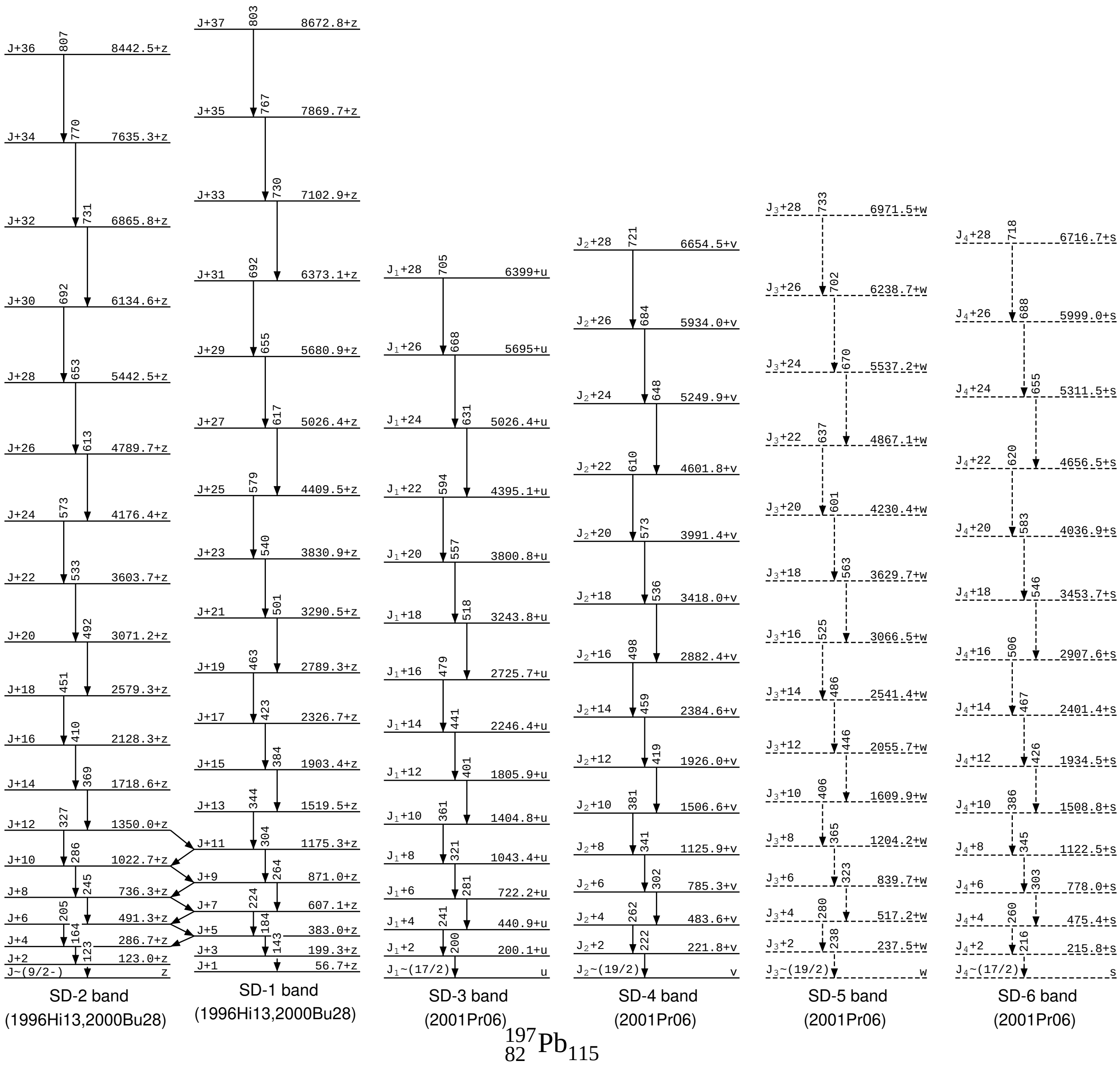
A Magnetic-dipole rotational band based on ($27/2^-$)
B Magnetic-dipole rotational band based on ($37/2^+$)
C Magnetic-dipole rotational band based on ($39/2^+$)
D Magnetic-dipole rotational band based on ($43/2^-$)
E Magnetic-dipole rotational band based on ($45/2^+$)
F SD-1 band (1996Hi13,2000Bu28,2001Pr06)
G SD-2 band (1996Hi13,2000Bu28,2001Pr06)
H SD-3 band (2001Pr06), α=+1/2
I SD-4 band (2001Pr06), α=-1/2
J SD-5 band (?) (2001Pr06)
K SD-6 band (?) (2001Pr06)

Levels and γ-ray branchings:

0, $3/2^-$, *8$_2$ min*, %ε+%β$^+$=100 , μ=-1.0753$_{22}$, Q=-0.08$_{18}$
84.88$_7$, $5/2^-$, γ_0**84.9**$_1$(100) M1
319.31$_{11}$, $13/2^+$, *43$_1$ min*, %ε+%β$^+$=81$_2$, %IT=19$_2$, μ=-1.098$_{11}$, Q=+0.38$_2$, $\gamma_{84.88}$**234.4**$_1$(100) M4
952.04$_{10}$, $7/2^-$, $\gamma_{84.88}$**867.2**$_1$(100$_1$) M1, γ_0**952.1**$_3$(9.6$_5$) E2
988.95$_{10}$, $3/2^-,5/2^-$, $\gamma_{84.88}$**904.5**$_3$(11.2$_{12}$) M1, γ_0**988.9**$_1$(100$_2$) E2+M1
1015.34$_{22}$, $(5/2,7/2)^-$, $\gamma_{84.88}$**930.5**$_3$(96$_{12}$), γ_0**1015.3**$_3$(100$_{12}$)
1079.38$_{12}$, $(7/2,9/2)^-$, $\gamma_{84.88}$**994.5**$_1$(100) E2
1089.41$_8$, $5/2^-$, $\gamma_{84.88}$**1004.5**$_1$(100$_2$) E2, γ_0**1089.4**$_1$(34$_1$) E2+M1
1147.49$_{13}$, $11/2^+$, $\gamma_{319.31}$**828.2**$_1$(100) E2
1164.88$_{12}$, $(9/2)^-$, $\gamma_{84.88}$**1080.0**$_1$(100) E2
1166.66$_8$, $(7/2)^-$, $\gamma_{84.88}$**1081.7**$_1$(47.3$_{11}$) M1, γ_0**1166.7**$_1$(100$_2$) E2
1173.76$_{12}$, $9/2^+$, $\gamma_{319.31}$**854.5**$_1$(100) E2
1295.10$_{13}$, $(13/2^+)$, $\gamma_{319.31}$**975.7**$_1$(100) E2+M1
1324.47$_{15}$, $17/2^+$, $\gamma_{319.31}$**1005.3**$_2$(100) E2
1401.68$_{14}$, $15/2^+$, $\gamma_{319.31}$**1082.3**$_1$(100) E2(+M1) $\delta \geq 2.7$
1430.52$_{14}$, $13/2^+$, $\gamma_{319.31}$**1111.2**$_1$(100) E0+M1+E2
1472.88$_{12}$, $(7/2)^-$, $\gamma_{952.04}$**520.8**$_3$(20.3$_{14}$) M1, $\gamma_{84.88}$**1388.0**$_1$(100$_3$) E2
1495.05$_{22}$, $3/2^-,5/2^-,7/2^-$, $\gamma_{1089.41}$**405.4**$_3$(50$_7$) M1, $\gamma_{84.88}$**1410.4**$_3$(100$_{10}$) M1
1518.79$_{12}$, $\gamma_{84.88}$**1433.9**$_1$(100)
1524.55$_{12}$, $9/2^+$, $\gamma_{1295.10}$**229.4**$_3$(9.2$_{11}$), $\gamma_{1173.76}$**350.8**$_1$(45.0$_{15}$) E0+M1+E2, $\gamma_{952.04}$**572.5**$_1$(100$_2$) E1+M2, $\gamma_{319.31}$**1205.2**$_3$(12.2$_{11}$)
1525.09$_{12}$, $7/2^+$, $\gamma_{1147.49}$**377.6**$_3$(16.2$_{19}$), $\gamma_{84.88}$**1440.2**$_1$(100$_3$) E1
1553.85$_{18}$, $(5/2,7/2)^-$, $\gamma_{952.04}$**601.8**$_3$(100$_6$) E2, $\gamma_{84.88}$**1469.0**$_3$(43$_6$), γ_0**1553.8**$_3$(95$_6$) E2
1571.18$_{14}$, $^-$, $\gamma_{1147.49}$**424.0**$_3$(6.9$_{12}$), $\gamma_{952.04}$**619.4**$_3$(33.5$_{12}$) E2+M1, $\gamma_{319.31}$**1251.8**$_1$(100$_2$) E1+M2
1577.9$_3$, $(9/2)^-$, $\gamma_{84.88}$**1493.0**$_3$(100) E2
1588.00$_{17}$, $11/2^+,13/2^+$, $\gamma_{1295.10}$**292.9**$_1$(100) M1
1624.45$_{14}$, $11/2^+$, $\gamma_{1295.10}$**329.5**$_3$(20$_2$), $\gamma_{1173.76}$**450.8**$_3$(30$_2$), $\gamma_{1147.49}$**477.0**$_3$(7.1$_{17}$) E0+M1+E2, $\gamma_{319.31}$**1305.1**$_1$(100$_2$) M1+E2
1633.70$_{14}$, $11/2^+,13/2^+$, $\gamma_{1164.88}$**468.9**$_3$(10.7$_{11}$), $\gamma_{1147.49}$**486.0**$_3$(17$_6$), $\gamma_{319.31}$**1314.4**$_1$(100$_3$) M1
1648.9$_3$, $3/2^-,5/2^-,7/2^-$, $\gamma_{1089.41}$**559.5**$_3$(100) M1+E2
1675.9$_3$, $5/2^-$, $\gamma_{84.88}$**1591.0**$_3$(100) E0+M1+E2
1686.58$_{17}$, $(17/2^+)$, $\gamma_{1430.52}$**256.0**$_3$(18$_6$), $\gamma_{1324.47}$**362.0**$_3$(93$_{21}$), $\gamma_{1295.10}$**391.7**$_3$(100$_{19}$), $\gamma_{319.31}$**1367.3**$_3$(43$_6$)
1689.1$_3$, $3/2^+,5/2^+,7/2^+$, $\gamma_{84.88}$**1604.2**$_3$(100) E1
1730.0$_4$, $\gamma_{988.95}$**741.0**$_3$(100)
1739.92$_{20}$, $9/2^+,11/2^+,13/2^+$, $\gamma_{1173.76}$**566.2**$_2$(100$_6$), $\gamma_{1147.49}$**592.3**$_3$(40$_6$) M1
1748.9$_4$, $\gamma_{1173.76}$**575.1**$_3$(100)
1770.3$_3$, $(15/2)$, $\gamma_{319.31}$**1451.0**$_3$(100) D
1773.56$_{15}$, $9/2^+$, $\gamma_{1173.76}$**600.0**$_3$(31$_3$) E0+M1+E2, $\gamma_{1147.49}$**626.0**$_1$(100$_4$) M1+E2, $\gamma_{319.31}$**1454.6**$_3$(26$_4$)
1850.1$_3$, $(15/2)$, $\gamma_{319.31}$**1530.8**$_3$(100) D
1856.03$_{15}$, $19/2^+$, $\gamma_{1401.68}$**454.3**$_1$(16.3$_3$) E2, $\gamma_{1324.47}$**531.5**$_1$(100$_3$) E2+M1 $\delta = -1.3^{2}_{3}$
1881.21$_{16}$, $21/2^+$, $\gamma_{1324.47}$**556.9**$_1$(100) E2
1913.50$_{16}$, $21/2^-$, *1.15$_{20}$ μs*, μ=-0.531$_7$, $\gamma_{1881.21}$**32.4**$_1$(6.5$_{35}$) (E1), $\gamma_{1856.03}$**57.35**$_{10}$(100$_{10}$) (E1), $\gamma_{1324.47}$**589.0**$_2$(9$_5$) M2+E3 $\delta = 1.4_2$
1922.06$_{13}$, $(5/2,7/2,9/2)^+$, $\gamma_{1166.66}$**755.4**$_1$(100) E1
1946.06$_{21}$, $11/2^+$, $\gamma_{1295.10}$**650.8**$_3$(21$_4$) M1+E2, $\gamma_{1173.76}$**772.1**$_3$(100$_6$) M1, $\gamma_{319.31}$**1627.1**$_3$(77$_6$)
1985.40$_{23}$, $\gamma_{1166.66}$**818.5**$_3$(92$_{17}$), $\gamma_{952.04}$**1033.6**$_3$(100$_{13}$)
2024.3$_4$, $\gamma_{988.95}$**1035.3**$_3$(100)
2059.3$_3$, $\gamma_{1089.41}$**969.9**$_3$(100)
2062.92$_{18}$, $21/2^+$, $\gamma_{1881.21}$**181.8**$_3$(1.7$_5$), $\gamma_{1686.58}$**376.3**$_3$(7.6$_{17}$), $\gamma_{1324.47}$**738.4**$_2$(100$_{14}$) E2
2200.53$_{21}$, $13/2^+$, $\gamma_{1295.10}$**904.5**$_3$(88$_9$) M1, $\gamma_{1147.49}$**1053.7**$_3$(55$_9$), $\gamma_{319.31}$**1881.5**$_3$(100$_9$) E0+M1+E2
2297.33$_{22}$, $(19/2^+)$, $\gamma_{1401.68}$**895.7**$_3$(100$_{23}$) Q, $\gamma_{1324.47}$**972.8**$_3$(91$_{18}$) D
2300.51$_{19}$, $(23/2)^-$, $\gamma_{1913.50}$**387.0**$_1$(100) M1
2350.84$_{21}$, $(19/2^+)$, $\gamma_{1850.1}$**500.8**$_3$(100$_{19}$) Q, $\gamma_{1770.3}$**580.6**$_3$(94$_{19}$) Q, $\gamma_{1401.68}$**949.1**$_3$(87$_{19}$) Q
2392.10$_{20}$, $(25/2)^-$, $\gamma_{2300.51}$**91.6**$_1$(100) M1
2467.16$_{23}$, $(21/2)$, $\gamma_{1686.58}$**780.6**$_3$(84$_{16}$) Q, $\gamma_{1324.47}$**1142.6**$_3$(100$_{16}$) Q
2472.98$_{21}$, $(27/2)^-$, $\gamma_{2392.10}$**80.9**$_1$(100$_5$) M1, $\gamma_{2300.51}$**172.4**$_2$(38$_3$) E2
2652.61$_{22}$, $(25/2)^+$, $\gamma_{2062.92}$**589.7**$_3$(100$_9$) E2, $\gamma_{1881.21}$**771.4**$_3$(55$_9$) E2
2689.73$_{18}$, $(21/2^+)$, $\gamma_{2467.16}$**222.5**$_3$(20$_{10}$) D, $\gamma_{2350.84}$**338.9**$_3$(51$_{12}$), $\gamma_{2297.33}$**392.4**$_3$(14$_3$), $\gamma_{2062.92}$**626.8**$_2$(100$_9$) D, $\gamma_{1881.21}$**808.6**$_3$(48$_6$) D, $\gamma_{1686.58}$**1003.2**$_2$(48$_5$) Q, $\gamma_{1324.47}$**1365.2**$_3$(9.1$_{12}$) Q
2724.3$_3$, $(23/2^+)$, $\gamma_{2689.73}$**34.6**$_3$(100)
2851.15$_{22}$, $(25/2)^+$, $\gamma_{2724.3}$**126.9**$_3$(100$_{13}$) M1, $\gamma_{2652.61}$**198.5**$_3$(15$_4$) D, $\gamma_{2062.92}$**788.2**$_3$(25$_4$) Q, $\gamma_{1881.21}$**970.0**$_3$(16$_3$) Q
3079.49$_{22}$, $(29/2)^+$, $\gamma_{2652.61}$**427.0**$_3$(11.1$_{15}$) E2, $\gamma_{2472.98}$**606.5**$_1$(100$_3$) E1
3097.4$_3$, $(27/2^+)$, $\gamma_{2851.15}$**246.3**$_3$(100) D
3168.18$_{24}$, $(33/2)^+$, *55$_5$ ns*, μ=-2.51$_{10}$, $\gamma_{3079.49}$**88.7**$_1$(100) E2
3266.2$_3$, $(27/2)$, $\gamma_{3097.4}$**168.7**$_3$(15$_4$), $\gamma_{2851.15}$**415.0**$_3$(100$_{41}$) D
A **3283.6**$_3$, $(27/2)^-$, $\gamma_{3097.4}$**186.2**$_3$(8.3$_{23}$) E1, $\gamma_{2851.15}$**432.5**$_2$(100$_{13}$) E1
3313.1$_3$, $(29/2^+)$, $\gamma_{2652.61}$**660.4**$_3$(100) Q
3426.4$_4$, $(29/2)$, $\gamma_{3097.4}$**329.0**$_3$(100) D
A **3436.2**$_4$, $(29/2)^-$, *0.76$_{21}$ ps*, $\gamma_{3283.6}$**152.6**$_2$(100) M1
A **3706.8**$_4$, $(31/2)^-$, *0.49$_{13}$ ps*, $\gamma_{3436.2}$**270.5**$_2$(100) M1
3756.0$_3$, $(33/2^+)$, $\gamma_{3313.1}$**442.9**$_3$(53$_{15}$) Q, $\gamma_{3168.18}$**587.8**$_3$(62$_{10}$), $\gamma_{3079.49}$**676.4**$_3$(100$_{17}$)
3768.3$_3$, $(31/2)$, $\gamma_{3426.4}$**342.0**$_3$(100$_{24}$) D, $\gamma_{3313.1}$**455.2**$_3$(36$_{10}$) D
4024.5$_4$, $(31/2)$, $\gamma_{3266.2}$**758.3**$_3$(100) Q
4058.3$_3$, $\gamma_{3168.18}$**890.1**$_2$(100)
A **4065.9**$_4$, $(33/2)^-$, *0.42$_{11}$ ps*, $\gamma_{3706.8}$**359.1**$_2$(100$_{11}$) M1, $\gamma_{3436.2}$**629.8**$_3$(5.1$_{15}$)
4081.7$_3$, $(33/2^+)$, $\gamma_{3768.3}$**313.3**$_3$(92$_{27}$) D, $\gamma_{3313.1}$**768.6**$_3$(100$_{15}$) Q
4182.0$_4$, $(33/2)$, $\gamma_{3768.3}$**413.6**$_3$(100$_{24}$) D, $\gamma_{3426.4}$**755.5**$_3$(82$_{12}$)
A **4435.8**$_5$, $(35/2)^-$, *0.34$_{10}$ ps*, $\gamma_{4065.9}$**369.8**$_2$(100$_{12}$) M1, $\gamma_{3706.8}$**729.0**$_5$(11$_3$) Q
4496.9$_3$, $(35/2)$, $\gamma_{4182.0}$**314.8**$_3$(79$_{20}$) D, $\gamma_{4081.7}$**415.1**$_3$(100$_{38}$) D, $\gamma_{3768.3}$**728.7**$_3$(92$_{13}$) (Q)
4581.1$_4$, $(33/2)$, $\gamma_{4024.5}$**556.6**$_3$(100) D
4676.9$_4$, $(35/2)$, $\gamma_{4581.1}$**95.8**$_3$, $\gamma_{4024.5}$**652.4**$_3$(100$_{32}$) Q
B **4794.5**$_3$, $(37/2^+)$, $\gamma_{4676.9}$**117.6**$_3$(37$_{10}$) D, $\gamma_{4496.9}$**297.7**$_3$(100$_{24}$) D, $\gamma_{4081.7}$**712.6**$_3$(51$_{15}$) Q, $\gamma_{3168.18}$**1626.4**$_3$(12$_5$)
A **4820.8**$_5$, $(37/2)^-$, *0.70$_{35}$ ps*, $\gamma_{4435.8}$**385.0**$_2$(100$_{12}$) M1, $\gamma_{4065.9}$**754.9**$_2$(14$_3$) Q
B **4906.9**$_4$, $(39/2^+)$, $\gamma_{4794.5}$**112.4**$_2$(100) D
4911.8$_5$, $(37/2)$, $\gamma_{4496.9}$**415.0**$_3$(100)
B **5058.2**$_4$, $(41/2)^+$, *1.2$_6$ ps*, $\gamma_{4906.9}$**151.3**$_2$(100) M1
A **5186.0**$_5$, $(39/2)^-$, *0.55$_{28}$ ps*, $\gamma_{4820.8}$**365.2**$_2$(100$_{12}$) M1, $\gamma_{4435.8}$**750.2**$_2$(16$_4$) Q
C **5232.8**$_7$, $(39/2^+)$, $\gamma_{4911.8}$**321.0**$_5$(100)
B **5258.8**$_5$, $(43/2)^+$, *0.62$_3$ ps*, $\gamma_{5058.2}$**200.6**$_2$(100) M1
C **5395.5**$_7$, $(41/2^+)$, $\gamma_{5232.8}$**162.7**$_3$(100) D
A **5479.8**$_5$, $(41/2)^-$, *0.49$_{14}$ ps*, $\gamma_{5186.0}$**293.8**$_2$(100$_{14}$) M1, $\gamma_{4820.8}$**659.2**$_5$(6.3$_{21}$)
B **5525.5**$_5$, $(45/2)^+$, *0.83$_2$ ps*, $\gamma_{5258.8}$**266.7**$_2$(100) M1
C **5614.3**$_7$, $(43/2^+)$, $\gamma_{5395.5}$**218.8**$_3$(100) D
5680.7$_5$, $(41/2)$, $\gamma_{5186.0}$**494.7**$_2$(100)
A **5707.4**$_5$, $(43/2)^-$, *0.55$_{21}$ ps*, $\gamma_{5479.8}$**227.6**$_2$(100$_{12}$) M1,

$\gamma_{5186.0}$**521.7**$_{5}$(6.1_{21})
B **5862.2**$_{6}$, $(47/2)^{+}$, *0.118_{21} ps*, $\gamma_{5525.5}$**336.7**$_{2}$(100) M1
C **5879.0**$_{8}$, $(45/2^{+})$, $\gamma_{5614.3}$**264.7**$_{3}$(100) D
A **5952.8**$_{6}$, $(45/2)^{-}$, $\gamma_{5707.4}$**245.4**$_{2}$(100_{15}) M1, $\gamma_{5479.8}$**473.2**$_{8}$(2.0_{9})
5997.3$_{5}$, $(43/2^{-})$, $\gamma_{5680.7}$**316.5**$_{3}$(100_{19}), $\gamma_{5479.8}$**517.7**$_{8}$(23_{6}), $\gamma_{5186.0}$**811.3**$_{5}$(46_{11})
D **6013.9**$_{7}$, $(43/2^{-})$
C **6195.5**$_{8}$, $(47/2^{+})$, $\gamma_{5879.0}$**316.6**$_{3}$(100) D
D **6202.1**$_{6}$, $(45/2^{-})$, $\gamma_{6013.9}$**188.0**$_{5}$(100_{20}) D, $\gamma_{5997.3}$**204.7**$_{5}$(77_{20}) D
A **6238.0**$_{6}$, $(47/2)^{-}$, *0.277_{14} ps*, $\gamma_{5952.8}$**285.2**$_{2}$(100_{15}) M1, $\gamma_{5707.4}$**531.0**$_{8}$(3.9_{18})
E **6263.0**$_{6}$, $(45/2^{+})$, $\gamma_{6013.9}$**249.5**$_{8}$(20_{6}), $\gamma_{5997.3}$**265.6**$_{3}$(100_{19}) D
B **6266.1**$_{6}$, $(49/2)^{+}$, *0.090^{21}_{14} ps*, $\gamma_{5862.2}$**403.9**$_{2}$(100_{11}) M1, $\gamma_{5525.5}$**740.7**$_{8}$(2.7_{14})
D **6408.0**$_{6}$, $(47/2^{-})$, $\gamma_{6202.1}$**205.8**$_{3}$(100) D
E **6518.3**$_{7}$, $(47/2^{+})$, $\gamma_{6263.0}$**255.3**$_{3}$(100) D
C **6558.8**$_{9}$, $(49/2^{+})$, $\gamma_{6195.5}$**363.3**$_{5}$(100) D
A **6565.1**$_{6}$, $(49/2)^{-}$, *0.201^{21}_{14} ps*, $\gamma_{6238.0}$**327.2**$_{2}$(100_{15}) M1, $\gamma_{5952.8}$**612.4**$_{5}$(6.9_{28})
D **6659.4**$_{6}$, $(49/2^{-})$, $\gamma_{6408.0}$**251.4**$_{2}$(100_{13}) D, $\gamma_{6238.0}$**421.3**$_{5}$(36_{10}) D
B **6712.2**$_{6}$, $(51/2)^{+}$, *0.111_{14} ps*, $\gamma_{6266.1}$**446.1**$_{2}$(100_{15}) M1, $\gamma_{5862.2}$**849.9**$_{5}$(13_{4}) Q
E **6806.9**$_{8}$, $(49/2^{+})$, $\gamma_{6518.3}$**288.6**$_{3}$(100) D
A **6904.0**$_{6}$, $(51/2)^{-}$, *0.118^{21}_{14} ps*, $\gamma_{6565.1}$**338.9**$_{2}$(100_{18}) M1, $\gamma_{6238.0}$**666.1**$_{8}$(3.8_{18})
C **6912.6**$_{9}$, $(51/2^{+})$, $\gamma_{6558.8}$**353.8**$_{5}$(100) D
D **6993.6**$_{6}$, $(51/2^{-})$, $\gamma_{6659.4}$**334.1**$_{2}$(100_{25}) D, $\gamma_{6565.1}$**428.5**$_{3}$(82_{10}) D
E **7147.6**$_{8}$, $(51/2^{+})$, $\gamma_{6806.9}$**340.7**$_{3}$(100) D
B **7179.3**$_{6}$, $(53/2^{+})$, *0.19_{4} ps*, $\gamma_{6712.2}$**467.1**$_{2}$(100_{17}) D, $\gamma_{6266.1}$**913.3**$_{8}$(12_{5}) Q
A **7257.3**$_{6}$, $(53/2)^{-}$, *0.118^{14}_{7} ps*, $\gamma_{6904.0}$**353.3**$_{2}$(100_{15}) M1, $\gamma_{6565.1}$**692.1**$_{8}$(3.7_{17})
C **7286.4**$_{8}$, $(53/2^{+})$, $\gamma_{6912.6}$**373.9**$_{8}$(100) D
D **7406.9**$_{6}$, $(53/2^{-})$, $\gamma_{6993.6}$**413.2**$_{2}$(100_{20}) D, $\gamma_{6904.0}$**503.2**$_{5}$(14_{3})
E **7551.2**$_{9}$, $(53/2^{+})$, $\gamma_{7147.6}$**403.6**$_{3}$(100) D
B **7613.0**$_{6}$, $(55/2^{+})$, $\gamma_{7179.3}$**433.7**$_{2}$(100_{14}) D, $\gamma_{6712.2}$**900.6**$_{8}$(7.9_{36})
A **7660.1**$_{7}$, $(55/2^{-})$, $\gamma_{7257.3}$**402.8**$_{2}$(100_{14}) D, $\gamma_{6904.0}$**756.0**$_{8}$(5.7_{31})
C **7677.4**$_{8}$, $(55/2^{+})$, $\gamma_{7286.4}$**391.1**$_{5}$(100_{33}) (D), $\gamma_{7179.3}$**498.1**$_{5}$(86_{28}) D
D **7859.7**$_{7}$, $(55/2^{-})$, $\gamma_{7406.9}$**452.9**$_{2}$(100_{17}) D, $\gamma_{6993.6}$**866.1**$_{8}$(13_{4})
B **7984.4**$_{7}$, $(57/2^{+})$, *0.25_{9} ps*, $\gamma_{7613.0}$**371.4**$_{2}$(100) D
E **8015.8**$_{9}$, $(55/2^{+})$, $\gamma_{7551.2}$**464.6**$_{3}$(100_{19}) D, $\gamma_{7147.6}$**868.2**$_{8}$(6.4_{24})
C **8067.6**$_{9}$, $(57/2^{+})$, $\gamma_{7677.4}$**390.2**$_{5}$(100) (D)
A **8120.3**$_{7}$, $(57/2^{-})$, $\gamma_{7660.1}$**460.3**$_{2}$(100_{17}) D, $\gamma_{7257.3}$**862.8**$_{8}$(8_{4})
D **8352.9**$_{7}$, $(57/2^{-})$, $\gamma_{7859.7}$**493.2**$_{3}$(100_{15}) D, $\gamma_{7406.9}$**946.1**$_{8}$(19_{7})
B **8372.0**$_{7}$, $(59/2^{+})$, $\gamma_{7984.4}$**387.6**$_{3}$(100) D
C **8438.6**$_{12}$, $(59/2^{+})$, $\gamma_{8067.6}$**371.0**$_{8}$(100) D
E **8520.0**$_{10}$, $(57/2^{+})$, $\gamma_{8015.8}$**504.2**$_{5}$(100_{26}) D, $\gamma_{7551.2}$**968.8**$_{8}$(27_{10})
A **8635.4**$_{7}$, $(59/2^{-})$, $\gamma_{8120.3}$**515.1**$_{3}$(100_{19}) D, $\gamma_{7660.1}$**975.1**$_{8}$(28_{11}) Q
B **8794.6**$_{9}$, $(61/2^{+})$, $\gamma_{8372.0}$**422.6**$_{5}$(100) D
C **8830.4**$_{13}$, $(61/2^{+})$, $\gamma_{8438.6}$**391.8**$_{5}$(100) (D)
D **8878.3**$_{9}$, $(59/2^{-})$, $\gamma_{8352.9}$**525.4**$_{5}$(100) D
E **9041.8**$_{13}$, $(59/2^{+})$, $\gamma_{8520.0}$**521.8**$_{8}$(100) D
A **9197.8**$_{8}$, $(61/2^{-})$, $\gamma_{8635.4}$**562.6**$_{5}$(100_{20}) D, $\gamma_{8120.3}$**1077.4**$_{8}$(31_{12})
B **9246.3**$_{10}$, $(63/2^{+})$, $\gamma_{8794.6}$**451.7**$_{5}$(100) D
D **9441.2**$_{10}$, $(61/2^{-})$, $\gamma_{8878.3}$**562.9**$_{5}$(100) D
E **9581.7**$_{15}$, $(61/2^{+})$, $\gamma_{9041.8}$**539.9**$_{8}$(100) D
B **9723.4**$_{13}$, $(65/2^{+})$, $\gamma_{9246.3}$**477.1**$_{8}$(100) D
A **9793.8**$_{8}$, $(63/2^{-})$, $\gamma_{9197.8}$**596.0**$_{3}$(100_{27}), $\gamma_{8635.4}$**1158.1**$_{8}$(12_{8})
D **10023.1**$_{13}$, $(63/2^{-})$, $\gamma_{9441.2}$**581.9**$_{8}$(100)
A **10405.4**$_{9}$, $(65/2^{-})$, $\gamma_{9793.8}$**611.7**$_{5}$(100_{33}), $\gamma_{9197.8}$**1207.4**$_{8}$(17_{9})
G **z**, $J \approx (9/2^{-})$
F **56.7+z**, $J+1$
G **123.0+z**, $J+2$, γ_{z}**123.0**$_{5}$(?)
F **199.3+z**, $J+3$, $\gamma_{56.7+z}$**142.6**$_{5}$(?)
G **286.7+z**, $J+4$, $\gamma_{123.0+z}$**163.7**$_{5}$ Q
F **383.0+z**, $J+5$, $\gamma_{286.7+z}$**96.4**$_{4}$, $\gamma_{199.3+z}$**183.7**$_{4}$(0.54_{10}) Q
G **491.3+z**, $J+6$, $\gamma_{383.0+z}$**108.5**$_{4}$ (D), $\gamma_{286.7+z}$**204.6**$_{4}$(0.71_{8}) Q
F **607.1+z**, $J+7$, $\gamma_{491.3+z}$**115.8**$_{5}$ (D), $\gamma_{383.0+z}$**223.8**$_{5}$(0.94_{8}) Q
G **736.3+z**, $J+8$, $\gamma_{607.1+z}$**129.0**$_{4}$ (D), $\gamma_{491.3+z}$**245.2**$_{5}$(0.95_{9}) Q
F **871.0+z**, $J+9$, $\gamma_{736.3+z}$**134.8**$_{5}$, $\gamma_{607.1+z}$**264.0**$_{5}$(0.95_{9}) Q
G **1022.7+z**, $J+10$, $\gamma_{871.0+z}$**151.9**$_{6}$, $\gamma_{736.3+z}$**286.4**$_{5}$(0.89_{6}) Q
F **1175.3+z**, $J+11$, $\gamma_{1022.7+z}$**152.6**$_{6}$, $\gamma_{871.0+z}$**304.3**$_{5}$(0.96_{6}) Q
G **1350.0+z**, $J+12$, $\gamma_{1175.3+z}$**174.6**$_{5}$, $\gamma_{1022.7+z}$**327.3**$_{5}$(1.00_{6}) Q
F **1519.5+z**, $J+13$, $\gamma_{1175.3+z}$**344.2**$_{5}$(0.95_{6}) Q
G **1718.6+z**, $J+14$, $\gamma_{1350.0+z}$**368.6**$_{5}$(0.57_{5}) Q
F **1903.4+z**, $J+15$, $\gamma_{1519.5+z}$**383.9**$_{5}$(0.91_{7}) Q
G **2128.3+z**, $J+16$, $\gamma_{1718.6+z}$**409.7**$_{5}$(0.47_{5}) Q
F **2326.7+z**, $J+17$, $\gamma_{1903.4+z}$**423.3**$_{5}$(1.00_{7}) Q
G **2579.3+z**, $J+18$, $\gamma_{2128.3+z}$**451.0**$_{5}$(0.24_{4}) Q
F **2789.3+z**, $J+19$, $\gamma_{2326.7+z}$**462.6**$_{5}$(0.84_{6}) Q
G **3071.2+z**, $J+20$, $\gamma_{2579.3+z}$**491.9**$_{5}$(0.31_{5}) Q
F **3290.5+z**, $J+21$, $\gamma_{2789.3+z}$**501.2**$_{5}$(0.71_{5}) Q
G **3603.7+z**, $J+22$, $\gamma_{3071.2+z}$**532.5**$_{5}$(0.25_{4}) Q
F **3830.9+z**, $J+23$, $\gamma_{3290.5+z}$**540.4**$_{5}$(0.65_{4}) Q
G **4176.4+z**, $J+24$, $\gamma_{3603.7+z}$**572.7**$_{5}$(0.24_{4}) Q
F **4409.5+z**, $J+25$, $\gamma_{3830.9+z}$**578.6**$_{5}$(0.64_{4}) Q
G **4789.7+z**, $J+26$, $\gamma_{4176.4+z}$**613.3**$_{6}$(0.33_{4}) Q
F **5026.4+z**, $J+27$, $\gamma_{4409.5+z}$**616.9**$_{5}$(0.54_{4}) Q
G **5442.5+z**, $J+28$, $\gamma_{4789.7+z}$**652.8**$_{6}$(0.26_{4}) Q
F **5680.9+z**, $J+29$, $\gamma_{5026.4+z}$**654.5**$_{6}$(0.46_{4}) Q
G **6134.6+z**, $J+30$, $\gamma_{5442.5+z}$**692.1**$_{6}$(0.12_{2}) Q
F **6373.1+z**, $J+31$, $\gamma_{5680.9+z}$**692.2**$_{6}$(0.35_{4})
G **6865.8+z**, $J+32$, $\gamma_{6134.6+z}$**731.2**$_{7}$(0.09_{5})
F **7102.9+z**, $J+33$, $\gamma_{6373.1+z}$**729.8**$_{7}$(0.24_{3})
G **7635.3+z**, $J+34$, $\gamma_{6865.8+z}$**769.5**$_{8}$(0.06_{4})
F **7869.7+z**, $J+35$, $\gamma_{7102.9+z}$**766.8**$_{8}$(0.14_{2})
G **8442.5+z**, $J+36$, $\gamma_{7635.3+z}$**807.2**$_{8}$(0.15_{4})
F **8672.8+z**, $J+37$, $\gamma_{7869.7+z}$**803.1**$_{10}$(0.10_{2})
H **u**, $J_1 \approx (17/2)$
H **200.1+u**, J_1+2, γ_{u}**200.1**$_{8}$
H **440.9+u**, J_1+4, $\gamma_{200.1+u}$**240.8**$_{8}$
H **722.2+u**, J_1+6, $\gamma_{440.9+u}$**281.3**$_{6}$
H **1043.4+u**, J_1+8, $\gamma_{722.2+u}$**321.2**$_{6}$
H **1404.8+u**, J_1+10, $\gamma_{1043.4+u}$**361.4**$_{6}$
H **1805.9+u**, J_1+12, $\gamma_{1404.8+u}$**401.1**$_{6}$
H **2246.4+u**, J_1+14, $\gamma_{1805.9+u}$**440.5**$_{7}$
H **2725.7+u**, J_1+16, $\gamma_{2246.4+u}$**479.3**$_{6}$
H **3243.8+u**, J_1+18, $\gamma_{2725.7+u}$**518.1**$_{7}$
H **3800.8+u**, J_1+20, $\gamma_{3243.8+u}$**557.0**$_{8}$
H **4395.1+u**, J_1+22, $\gamma_{3800.8+u}$**594.3**$_{7}$
H **5026.4+u**, J_1+24, $\gamma_{4395.1+u}$**631.3**$_{7}$
H **5695+u**, J_1+26, $\gamma_{5026.4+u}$**668.3**$_{8}$
H **6399+u**, J_1+28, γ_{5695+u}**704.7**$_{13}$
I **v**, $J_2 \approx (19/2)$
I **221.8+v**, J_2+2, γ_{v}**221.8**$_{5}$
I **483.6+v**, J_2+4, $\gamma_{221.8+v}$**261.8**$_{5}$
I **785.3+v**, J_2+6, $\gamma_{483.6+v}$**301.7**$_{5}$
I **1125.9+v**, J_2+8, $\gamma_{785.3+v}$**340.6**$_{5}$
I **1506.6+v**, J_2+10, $\gamma_{1125.9+v}$**380.7**$_{5}$
I **1926.0+v**, J_2+12, $\gamma_{1506.6+v}$**419.4**$_{5}$
I **2384.6+v**, J_2+14, $\gamma_{1926.0+v}$**458.6**$_{5}$
I **2882.4+v**, J_2+16, $\gamma_{2384.6+v}$**497.8**$_{5}$
I **3418.0+v**, J_2+18, $\gamma_{2882.4+v}$**535.6**$_{5}$
I **3991.4+v**, J_2+20, $\gamma_{3418.0+v}$**573.4**$_{5}$
I **4601.8+v**, J_2+22, $\gamma_{3991.4+v}$**610.4**$_{5}$
I **5249.9+v**, J_2+24, $\gamma_{4601.8+v}$**648.1**$_{5}$
I **5934.0+v**, J_2+26, $\gamma_{5249.9+v}$**684.1**$_{6}$
I **6654.5+v**, J_2+28, $\gamma_{5934.0+v}$**720.5**$_{10}$
J **w**(?), $J_3 \approx (19/2)$
J **237.5+w**(?), J_3+2, γ_{w}**237.5**$_{7}$
J **517.2+w**(?), J_3+4, $\gamma_{237.5+w}$**279.7**$_{6}$
J **839.7+w**(?), J_3+6, $\gamma_{517.2+w}$**322.5**$_{6}$
J **1204.2+w**(?), J_3+8, $\gamma_{839.7+w}$**364.5**$_{6}$
J **1609.9+w**(?), J_3+10, $\gamma_{1204.2+w}$**405.7**$_{6}$
J **2055.7+w**(?), J_3+12, $\gamma_{1609.9+w}$**445.8**$_{6}$
J **2541.4+w**(?), J_3+14, $\gamma_{2055.7+w}$**485.7**$_{6}$
J **3066.5+w**(?), J_3+16, $\gamma_{2541.4+w}$**525.1**$_{6}$
J **3629.7+w**(?), J_3+18, $\gamma_{3066.5+w}$**563.2**$_{6}$
J **4230.4+w**(?), J_3+20, $\gamma_{3629.7+w}$**600.7**$_{6}$
J **4867.1+w**(?), J_3+22, $\gamma_{4230.4+w}$**636.7**$_{6}$
J **5537.2+w**(?), J_3+24, $\gamma_{4867.1+w}$**670.1**$_{6}$
J **6238.7+w**(?), J_3+26, $\gamma_{5537.2+w}$**701.5**$_{7}$

J **6971.5+w**(?), J_3+28, $\gamma_{6238.7+w}$**732.8**$_9$
K **s**(?), $J_4 \approx (17/2)$
K **215.8+s**(?), J_4+2, γ_s**215.8**$_5$
K **475.4+s**(?), J_4+4, $\gamma_{215.8+s}$**259.6**$_5$
K **778.0+s**(?), J_4+6, $\gamma_{475.4+s}$**302.6**$_5$
K **1122.5+s**(?), J_4+8, $\gamma_{778.0+s}$**344.6**$_5$
K **1508.8+s**(?), J_4+10, $\gamma_{1122.5+s}$**386.3**$_5$
K **1934.5+s**(?), J_4+12, $\gamma_{1508.8+s}$**425.7**$_5$
K **2401.4+s**(?), J_4+14, $\gamma_{1934.5+s}$**466.9**$_6$
K **2907.6+s**(?), J_4+16, $\gamma_{2401.4+s}$**506.2**$_6$
K **3453.7+s**(?), J_4+18, $\gamma_{2907.6+s}$**546.1**$_5$
K **4036.9+s**(?), J_4+20, $\gamma_{3453.7+s}$**583.2**$_5$
K **4656.5+s**(?), J_4+22, $\gamma_{4036.9+s}$**619.6**$_5$
K **5311.5+s**(?), J_4+24, $\gamma_{4656.5+s}$**655.0**$_5$
K **5999.0+s**(?), J_4+26, $\gamma_{5311.5+s}$**687.5**$_7$
K **6716.7+s**(?), J_4+28, $\gamma_{5999.0+s}$**717.7**$_9$



$^{198}_{82}$Pb$_{116}$

S$_n$: 9375 $_{SY}$, S$_p$: 5013 $_{SY}$

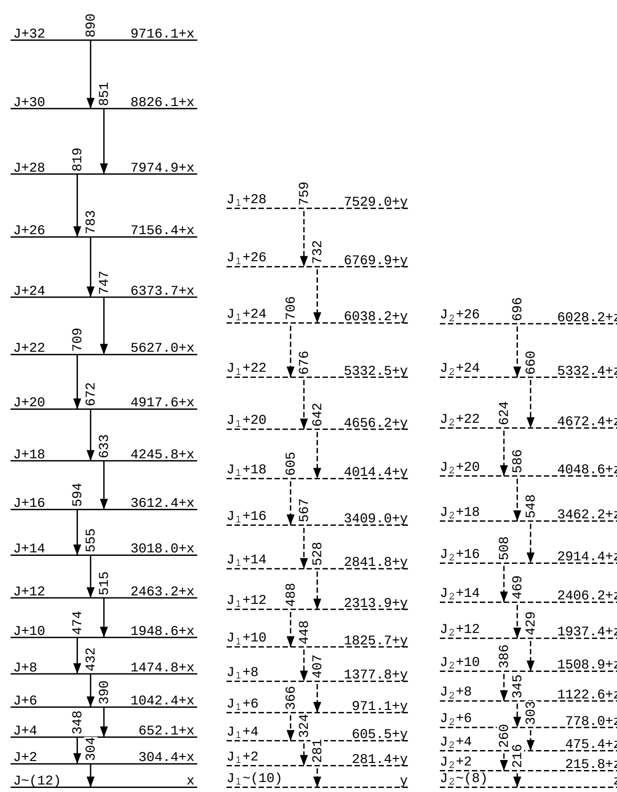
Nuclear Bands

- A Magnetic-dipole rotational band based on (14^+)
- B Magnetic-dipole rotational band based on (20^-)
- C Magnetic-dipole rotational band based on (16^-)
- D Magnetic-dipole rotational band based on (18^-)
- E Magnetic-dipole rotational band based on (14^+)
- F SD-1 band (2001Pr06,1996Hi13,1994Cl02,1991Wa14)
- G SD-2 band (?) (2001Pr06)
- H SD-3 band (?) (2001Pr06)

Levels and γ-ray branchings:

0, 0^+, *2.4$_1$ h*, %ε+%β$^+$=100
1063.52$_{20}$, 2^+, $\gamma_{0.0}$**1063.5**$_2$(100) E2
1392.1$_{10}$, (0^+), γ_0**1392.1** (E0)
1625.9$_3$, 4^+, $\gamma_{1063.52}$**562.4**$_2$(100) E2
1734.7$_{10}$, (0^+), γ_0**1734.7** (E0)
1823.5$_4$, $(5)^-$, *50.4$_5$ ns*, μ=+0.38$_3$, $\gamma_{1625.9}$**197.6**$_2$(100) E1
1980.7$_{11}$, (4^+), $\gamma_{1063.52}$**917.2**(100)
1996.4$_{11}$, (5), $\gamma_{1625.9}$**370.5**(100)
2099.4$_{11}$, (4,5,6), $\gamma_{1625.9}$**473.5**(100)
2141.4$_4$, $(7)^-$, *4.19$_{10}$ μs*, μ=-0.377$_6$, $\gamma_{1823.5}$**317.9**$_2$(100) E2
2190.7$_{11}$, (6), $\gamma_{1823.5}$**367.2**(100)
2231.5$_5$, $(9)^-$, *137$_{10}$ ns*, $\gamma_{2141.4}$**90.0**$_2$(100) E2
2257.7$_4$, (6^-), $\gamma_{1823.5}$**434.2**$_2$(100) (M1+E2)
2342.5$_{11}$, $\gamma_{1823.5}$**519**(100)
2345.5$_{11}$, $\gamma_{1823.5}$**522**(100)
2369.5$_{11}$, (6^-), $\gamma_{1823.5}$**546**(100)
2568.7$_{15}$, (6^+), $\gamma_{1980.7}$**588.0**(100)
2602.7$_{15}$, $\gamma_{2190.7}$**412**(100)
2611.5$_{11}$, $\gamma_{1823.5}$**788**(100)
2695.5$_{11}$, $\gamma_{1823.5}$**872**(100)
2703.5$_{11}$, $\gamma_{1823.5}$**880**(100)
2772.4$_5$, $(10)^+$, $\gamma_{2231.5}$**540.9**$_2$(100) E1
2821.5$_6$, $(12)^+$, *212$_4$ ns*, μ=-1.86$_2$, Q=0.75$_5$, $\gamma_{2772.4}$**48.2**$_5$(100) E2
3033.3$_6$, $\gamma_{2231.5}$**801.6**$_5$(100$_{39}$), $\gamma_{2141.4}$**891.7**$_8$(20$_{11}$)
3184.7$_6$, $\gamma_{2231.5}$**953.1**$_5$(100)
3268.6$_5$, $\gamma_{2231.5}$**1037.1**$_2$(100)
3489.0$_5$, (11^-), $\gamma_{3268.6}$**220.3**$_5$(7.2$_{17}$), $\gamma_{3184.7}$**304.2**$_5$(7.7$_{22}$), $\gamma_{3033.3}$**455.3**$_5$(6.6$_{22}$), $\gamma_{2231.5}$**1257.6**$_2$(100$_9$)
3564.6$_6$
3574.3$_6$, (12), $\gamma_{2821.5}$**752.6**$_2$(100$_{12}$), $\gamma_{2772.4}$**802.1**$_2$(81$_9$)
3750.6$_6$, (14^+), $\gamma_{2821.5}$**929.1**$_2$(100) E2
3810.4$_5$, (12^-), $\gamma_{3489.0}$**321.4**$_2$(100) (M1)
3965.5$_6$, $\gamma_{3750.6}$**215.0**$_8$(8$_4$), $\gamma_{2821.5}$**1143.8**$_3$(100$_{15}$)
4029.9$_8$, $\gamma_{3574.3}$**455.4**$_8$(100)
4032.4$_6$, (14), $\gamma_{3750.6}$**282.0**$_2$(73$_9$), $\gamma_{3574.3}$**458.1**$_2$(100$_{12}$)
4042.7$_6$, (13^-), $\gamma_{3810.4}$**232.2**$_3$(59$_8$) (M1), $\gamma_{3564.6}$**478.1**$_2$(100$_{12}$), $\gamma_{3489.0}$**553.7**$_5$(16$_5$)
4191.2$_6$, (16^+), $\gamma_{3750.6}$**440.6**$_2$(100) E2
4235.8$_6$, $\gamma_{3268.6}$**967.3**$_3$(100)
4380.5$_6$, (15^-), $\gamma_{3750.6}$**630.0**$_2$(100) E1
4511.6$_6$, $(16)^+$, $\gamma_{4032.4}$**479.4**$_3$(17$_2$), $\gamma_{3750.6}$**760.9**$_2$(100$_{10}$) E2
4573.3$_6$, (14^-), *>2.8 ps*, $\gamma_{4042.7}$**530.5**$_2$(59$_6$) (M1), $\gamma_{3810.4}$**762.9**$_2$(100$_8$)
4700.8$_6$, (17), $\gamma_{4191.2}$**509.6**$_2$(100)
4702.9$_6$, (16^+), *>5.5 ps*, $\gamma_{4380.5}$**322.3**$_2$(100) (E1)
4774.1$_7$, (17^-), $\gamma_{4380.5}$**393.6**$_2$(100) (E2)
E **4776.1**$_7$, (14^+), $\gamma_{4032.4}$**743.6**$_3$(100)
4817.7$_8$, $\gamma_{4700.8}$**116.9**$_5$(100)
4837.3$_6$, (15^-), *>2.8 ps*, $\gamma_{4573.3}$**264.0**$_3$(100$_{12}$) (M1), $\gamma_{4042.7}$**794.5**$_3$(93$_{14}$) (E2)
4843.8$_6$, $\gamma_{4702.9}$**140.8**$_3$(36$_7$), $\gamma_{4380.5}$**463.4**$_2$(100$_{12}$)
E **4878.7**$_6$, (15^+), $\gamma_{4776.1}$**102.0**$_8$(13$_8$) (M1), $\gamma_{4032.4}$**846.6**$_3$(100$_{13}$)
A **4883.0**$_7$, (14^+), $\gamma_{4029.9}$**852.9**$_8$(< 3), $\gamma_{3965.5}$**917.5**$_2$(100$_{12}$)
4895.7$_7$, (19^+), *6.3$_3$ ns*
A **4976.4**$_8$, (15^+), $\gamma_{4883.0}$**93.0**$_5$(100) (M1)
E **5003.6**$_7$, (16^+), $\gamma_{4878.7}$**125.5**$_5$(100$_{18}$) (M1), $\gamma_{4511.6}$**491.5**$_8$(18$_{12}$) (M1)
5015.6$_8$, $\gamma_{4235.8}$**779.8**$_8$(100)
5019.0$_8$, $\gamma_{4235.8}$**783.3**$_8$(100)
5066.2$_6$, (17^-), $\gamma_{4702.9}$**363.2**$_8$(6.6$_{22}$), $\gamma_{4380.5}$**685.8**$_2$(100$_{12}$) Q
5071.8$_6$, $(18)^+$, $\gamma_{4511.6}$**560.3**$_5$(12$_3$), $\gamma_{4191.2}$**880.3**$_3$(100$_{12}$) E2
A **5093.1**$_8$, (16^+), $\gamma_{4976.4}$**116.5**$_3$(100) (M1)
E **5203.0**$_7$, (17^+), $\gamma_{5003.6}$**199.6**$_3$(100$_{14}$) (M1), $\gamma_{4511.6}$**691.2**$_8$(29$_{10}$)
5209.3$_6$, $(18)^+$, $\gamma_{4511.6}$**697.6**$_2$(100$_{12}$) E2, $\gamma_{4191.2}$**1018.3**$_3$(9.8$_{23}$)
A **5249.8**$_8$, (17^+), $\gamma_{5093.1}$**156.7**$_2$(100) (M1)
5304.2$_{11}$, (16)
C **5379.2**$_6$, (16^-), $\gamma_{5019.0}$**360.4**$_8$(6.2$_{14}$), $\gamma_{5015.6}$**363.7**$_8$(4.8$_{14}$), $\gamma_{4837.3}$**541.9**$_2$(79$_8$) (M1), $\gamma_{4573.3}$**805.9**$_2$(100$_9$)
5452.1$_7$, (19^-), $\gamma_{5066.2}$**385.9**$_2$(100$_{16}$) Q, $\gamma_{4895.7}$**556.3**$_3$(73$_{11}$) D
E **5467.5**$_7$, (18^+), $\gamma_{5203.0}$**264.6**$_3$(100) (M1)
A **5477.5**$_8$, (18^+), *3.2$_{10}$ ps*, $\gamma_{5249.8}$**227.6**$_2$(100) (M1)
C **5492.9**$_{10}$, (17^-), $\gamma_{5379.2}$**113.6**$_8$(100) (M1)
5523.7$_{10}$, (17), $\gamma_{5304.2}$**219.5**$_5$(100)
5544.5$_7$, (19^-), $\gamma_{5066.2}$**478.3**$_2$(100) Q
C **5648.6**$_{11}$, (18^-), *0.44$_7$ ps*, $\gamma_{5492.9}$**155.7**$_3$(100) (M1)
E **5778.9**$_7$, (19^+), $\gamma_{5467.5}$**311.5**$_3$(100$_{14}$) (M1), $\gamma_{5209.3}$**569.6**$_8$(43$_{14}$)
A **5813.5**$_8$, (19^+), $\gamma_{5477.5}$**336.0**$_2$(100) (M1)
5821.6$_9$, (18), $\gamma_{5523.7}$**297.9**$_3$(100)
5843.2$_7$, (21^+), $\gamma_{4895.7}$**947.5**$_2$(100) (E2)
C **5863.6**$_{11}$, (19^-), *0.49$^{7}_{14}$ ps*, $\gamma_{5648.6}$**215.0**$_2$(100) (M1)
5870.6$_6$, $(20)^+$, $\gamma_{5209.3}$**661.4**$_2$(100$_{10}$) E2, $\gamma_{5071.8}$**798.7**$_2$(23$_3$) E2, $\gamma_{4895.7}$**975.1**$_3$(9.2$_{15}$)
6041.0$_7$, $\gamma_{5843.2}$**197.8**$_3$(100)
6046.9$_7$, (21^-), $\gamma_{5452.1}$**595.0**$_3$(100)
6119.5$_9$, (19), $\gamma_{5821.6}$**297.9**$_3$(100)
6126.1$_7$, (21^-), $\gamma_{5544.5}$**581.7**$_3$(62$_7$) Q, $\gamma_{5452.1}$**673.9**$_2$(100$_{13}$) Q
C **6142.0**$_{11}$, (20^-), *0.24$^{10}_{7}$ ps*, $\gamma_{5863.6}$**278.4**$_2$(100) (M1)
6151.8$_{10}$, (17^-), $\gamma_{5379.2}$**772.6**$_8$(100)
E **6166.8**$_8$, (20^+), $\gamma_{5778.9}$**387.8**$_3$(100$_{14}$) (M1), $\gamma_{5467.5}$**700.0**$_8$(2$_1$)
A **6242.1**$_8$, (20^+), *2.4$_{10}$ ps*, $\gamma_{5813.5}$**428.5**$_2$(100) (M1)
D **6392.7**$_{13}$, (18^-), $\gamma_{6151.8}$**240.9**$_8$(100)
6425.3$_9$, (20), $\gamma_{6119.5}$**305.8**$_2$(100)
C **6484.3**$_{11}$, (21^-), *0.14$^{14}_{7}$ ps*, $\gamma_{6142.0}$**342.2**$_2$(100$_{10}$) (M1), $\gamma_{5863.6}$**621.0**$_8$(4.1$_{17}$)
6501.0$_7$, (22^+), $\gamma_{5870.6}$**630.4**$_2$(100) Q
D **6515.4**$_{15}$, (19^-), $\gamma_{6392.7}$**122.7**$_8$(100) (M1)
B **6519.7**$_{14}$, (20^-)
E **6554.6**$_8$, (21^+), $\gamma_{6166.8}$**387.8**$_3$(100$_{14}$) (M1), $\gamma_{5778.9}$**776.6**$_8$(4.9$_{28}$)
6660.3$_7$, (23^-), $\gamma_{5843.2}$**817.1**$_3$(100)
A **6660.6**$_8$, (21^+), $\gamma_{6425.3}$**235.5**$_3$(33$_5$), $\gamma_{6242.1}$**418.4**$_2$(100$_{11}$) (M1)
D **6674.5**$_{17}$, (20^-), $\gamma_{6515.4}$**159.1**$_8$(100) (M1)
6690.7$_8$, (21^+), $\gamma_{6425.3}$**264.8**$_5$(25$_5$) (M1), $\gamma_{6242.1}$**448.7**$_2$(100$_{11}$) (M1)
6719.1$_7$, $\gamma_{6501.0}$**218.1**$_2$(100)
6730.0$_7$, $\gamma_{6501.0}$**229.0**$_2$(100)
B **6735.0**$_{14}$, (21^-), $\gamma_{6519.7}$**215.3**$_5$(100) (M1)
A **6867.2**$_9$, (22^+), $\gamma_{6690.7}$**176.7**$_5$(33$_7$) (M1), $\gamma_{6660.6}$**206.5**$_3$(100$_{29}$) (M1)
C **6873.1**$_{11}$, (22^-), *0.17$_3$ ps*, $\gamma_{6484.3}$**388.8**$_2$(100$_{10}$) (M1), $\gamma_{6142.0}$**731.2**$_8$(6.3$_{27}$)
6873.6$_7$, (23^-), $\gamma_{6126.1}$**747.4**$_2$(100$_{13}$) Q, $\gamma_{6046.9}$**827.4**$_5$(18$_5$), $\gamma_{5843.2}$**1030.2**$_5$(27$_6$)
D **6878.4**$_{18}$, (21^-), $\gamma_{6674.5}$**203.9**$_3$(100) (M1)
E **6942.4**$_8$, (22^+), $\gamma_{6554.6}$**387.8**$_3$(100$_{14}$) (M1), $\gamma_{6166.8}$**776.6**(?)
6996.6$_{11}$(?), (22^+), $\gamma_{6554.6}$**442.0**$_8$(100) (M1)
B **7017.5**$_{13}$, (22^-), $\gamma_{6735.0}$**282.5**$_3$(100) (M1)
A **7073.7**$_9$, (23^+), *1.46$_{28}$ ps*, $\gamma_{6867.2}$**206.5**$_2$(100) (M1)
7079.0$_8$, (22^+), $\gamma_{6690.7}$**388.1**$_3$(87$_{13}$), $\gamma_{6660.6}$**418.4**$_3$(100$_{17}$) (M1), $\gamma_{6242.1}$**836.5**$_8$(27$_7$)
D **7143.0**$_{18}$, (22^-), $\gamma_{6878.4}$**264.6**$_3$(100) (M1)
C **7295.5**$_{11}$, (23^-), *0.12$^{12}_{3}$ ps*, $\gamma_{6873.1}$**422.4**$_2$(100$_{10}$) (M1), $\gamma_{6484.3}$**811.2**$_8$(9$_4$)
A **7311.4**$_9$, (24^+), *0.59$_{21}$ ps*, $\gamma_{7073.7}$**237.7**$_2$(100) (M1)
E **7333.7**$_8$, (23^+), $\gamma_{7079.0}$**254.6**$_3$(100$_{13}$) (M1), $\gamma_{6942.4}$**391.5**$_3$(83$_9$) (M1)
B **7361.2**$_{13}$, (23^-), $\gamma_{7017.5}$**343.7**$_3$(100) (M1)
7455.7$_{14}$, (23^+), $\gamma_{6996.6}$**459.1**$_8$(100) (M1)
D **7480.2**$_{18}$, (23^-), $\gamma_{7143.0}$**337.2**$_2$(100) (M1)
E **7554.7**$_8$, (24^+), $\gamma_{7333.7}$**221.0**$_2$(100) (M1)

A **7590.9**$_9$, (25^+), *0.76$_{42}$ ps*, $\gamma_{7311.4}$**279.5**$_2$(100) (M1)
C **7739.6**$_{12}$, (24^-), *0.14$^{6}_{4}$ ps*, $\gamma_{7295.5}$**444.1**$_3$(100$_{11}$) (M1), $\gamma_{6873.1}$**866.5**$_8$(16$_5$) E2
7748.0$_7$, (25^-), $\gamma_{6873.6}$**874.4**$_2$(100$_{11}$) Q, $\gamma_{6660.3}$**1087.7**$_8$(13$_7$)
7758.3$_7$, (25^-), $\gamma_{6873.6}$**884.8**$_3$(100) Q
B **7779.7**$_{12}$, (24^-), $\gamma_{7361.2}$**418.5**$_3$(100$_{12}$) (M1), $\gamma_{7295.5}$**484.2**$_5$(40$_{16}$)
E **7795.1**$_9$, (25^+), $\gamma_{7554.7}$**240.4**$_2$(100) (M1)
D **7835.1**$_{18}$, (24^-), $\gamma_{7480.2}$**354.9**$_3$(100) (M1)
A **7916.5**$_{10}$, (26^+), *0.40$_{10}$ ps*, $\gamma_{7590.9}$**325.6**$_2$(100) (M1)
E **8076.4**$_9$, (26^+), $\gamma_{7795.1}$**281.3**$_2$(100) (M1)
C **8211.1**$_{12}$, (25^-), *0.14$_4$ ps*, $\gamma_{7739.6}$**471.5**$_3$(100$_{13}$) (M1), $\gamma_{7295.5}$**915.6**$_8$(21$_6$) (E2)
D **8243.6**$_{19}$, (25^-), $\gamma_{7835.1}$**408.5**$_5$(100) (M1)
B **8256.3**$_{13}$, (25^-), $\gamma_{7779.7}$**476.6**$_5$(100) (M1)
8268.4$_7$, $\gamma_{7758.3}$**510.4**$_5$(48$_8$), $\gamma_{7748.0}$**520.3**$_3$(100$_{12}$)
A **8290.9**$_{10}$, (27^+), *0.097$^{21}_{28}$ ps*, $\gamma_{7916.5}$**374.4**$_2$(100$_{12}$) M1, $\gamma_{7590.9}$**700.2**$_8$(2.9$_{16}$)
E **8408.5**$_9$, (27^+), $\gamma_{8076.4}$**332.1**$_3$(100) (M1)
C **8686.3**$_{12}$, (26^-), *0.19$_5$ ps*, $\gamma_{8211.1}$**475.2**$_3$(100$_{13}$) (M1), $\gamma_{7739.6}$**946.7**$_8$(19$_7$) (E2)
D **8695.1**$_{19}$, (26^-), $\gamma_{8243.6}$**451.5**$_5$(100) (M1)
A **8712.6**$_{10}$, (28^+), *0.105$^{21}_{28}$ ps*, $\gamma_{8290.9}$**421.7**$_3$(100$_{13}$) (M1), $\gamma_{7916.5}$**796.1**$_8$(<3.3)
B **8740.2**$_{14}$, (26^-), $\gamma_{8256.3}$**483.9**$_5$(100) (M1)
E **8800.0**$_{10}$, (28^+), $\gamma_{8408.5}$**391.5**$_3$(100) (M1)
C **9112.6**$_{12}$, (27^-), $\gamma_{8686.3}$**426.3**$_3$(100$_{17}$) (M1), $\gamma_{8211.1}$**901.5**$_8$(16$_6$)
D **9146.6**$_{20}$, (27^-), $\gamma_{8695.1}$**451.5**$_5$(100$_{27}$) (M1), $\gamma_{8243.6}$**903.0**$_8$(<14)
B **9155.2**$_{16}$, (27^-), $\gamma_{8740.2}$**415.0**$_8$(100) (M1)
A **9176.2**$_{10}$, (29^+), *0.097$^{21}_{28}$ ps*, $\gamma_{8712.6}$**463.6**$_3$(100$_{13}$) (M1), $\gamma_{8290.9}$**885.3**$_8$(<5)
E **9255.1**$_{11}$, (29^+), $\gamma_{8800.0}$**455.2**$_5$(100) (M1)
C **9512.6**$_{13}$, (28^-), $\gamma_{9112.6}$**400.0**$_5$(100$_{17}$) (M1), $\gamma_{8686.3}$**826.3**$_8$(8.3$_{22}$)
A **9681.5**$_{11}$, (30^+), *0.14$_4$ ps*, $\gamma_{9176.2}$**505.3**$_3$(100$_{16}$) (M1), $\gamma_{8712.6}$**968.9**$_8$(7$_3$) (E2)
E **9770.1**$_{12}$, (30^+), $\gamma_{9255.1}$**515.2**$_8$(100$_{25}$) (M1), $\gamma_{8800.0}$**969.8**$_8$(24$_{14}$)
C **9930.8**$_{13}$, (29^-), $\gamma_{9512.6}$**418.2**$_5$(100$_{18}$) (M1), $\gamma_{9112.6}$**818.2**$_8$(<9)
A **10230.9**$_{11}$, (31^+), $\gamma_{9681.5}$**549.4**$_5$(100$_{27}$) (M1), $\gamma_{9176.2}$**1054.6**$_8$(14$_7$) Q
E **10329.1**$_{14}$, (31^+), $\gamma_{9770.1}$**559.0**$_8$(100) (M1)
C **10380.6**$_{14}$, (30^-), $\gamma_{9930.8}$**449.8**$_5$(100) (M1)
A **10821.2**$_{12}$, (32^+), $\gamma_{10230.9}$**590.3**$_8$(100$_{38}$) (M1), $\gamma_{9681.5}$**1139.7**$_8$(<19)
C **10869.6**$_{15}$, (31^-), $\gamma_{10380.6}$**489.0**$_5$(100) (M1)
E **10921.3**$_{16}$, (32^+), $\gamma_{10329.1}$**592.2**$_8$(100)
C **11399.0**$_{17}$, (32^-), $\gamma_{10869.6}$**529.4**$_8$(100)
A **11438.9**$_{12}$, (33^+), $\gamma_{10821.2}$**617.7**$_8$(100$_{38}$) (M1), $\gamma_{10230.9}$**1208.0**$_8$(86$_{41}$)
C **11971.1**$_{19}$, (33^-), $\gamma_{11399.0}$**572.1**$_8$(100)
A **12059.9**$_{13}$, (34^+), $\gamma_{11438.9}$**621.0**$_8$(100$_{54}$) (M1), $\gamma_{10821.2}$**1238.7**$_8$(<62)
C **12580.1**$_{21}$, (34^-), $\gamma_{11971.1}$**609.0**$_8$(100)
A **12699.4**$_{16}$, (35^+), $\gamma_{12059.9}$**639.5**$_8$(100) (M1)
F **x**, $J\approx(12)$
F **304.4+x**, $J+2$, γ_{x}**304.4**$_5$(1.00$_5$)
F **652.1+x**, $J+4$, $\gamma_{304.4+x}$**347.7**$_5$(0.92$_4$)
F **1042.4+x**, $J+6$, $\gamma_{652.1+x}$**390.3**$_4$(0.78$_5$)
F **1474.8+x**, $J+8$, $\gamma_{1042.4+x}$**432.4**$_5$(0.68$_5$)
F **1948.6+x**, $J+10$, $\gamma_{1474.8+x}$**473.8**$_5$(0.70$_5$)
F **2463.2+x**, $J+12$, $\gamma_{1948.6+x}$**514.6**$_5$(0.68$_4$)
F **3018.0+x**, $J+14$, $\gamma_{2463.2+x}$**554.8**$_5$(0.60$_5$)
F **3612.4+x**, $J+16$, $\gamma_{3018.0+x}$**594.4**$_5$(0.65$_4$)
F **4245.8+x**, $J+18$, $\gamma_{3612.4+x}$**633.4**$_5$(0.59$_4$)
F **4917.6+x**, $J+20$, $\gamma_{4245.8+x}$**671.8**$_5$(0.37$_3$)
F **5627.0+x**, $J+22$, $\gamma_{4917.6+x}$**709.4**$_5$(0.30$_3$)
F **6373.7+x**, $J+24$, $\gamma_{5627.0+x}$**746.7**$_5$(0.23$_3$)
F **7156.4+x**, $J+26$, $\gamma_{6373.7+x}$**782.7**$_5$(0.07$_3$)
F **7974.9+x**, $J+28$, $\gamma_{7156.4+x}$**818.5**$_6$(0.08$_3$)
F **8826.1+x**, $J+30$, $\gamma_{7974.9+x}$**851.2**$_7$(0.05$_3$)
F **9716.1+x**, $J+32$, $\gamma_{8826.1+x}$**890.0**$_8$
G **y**(?), $J_1\approx(10)$
G **281.4+y**(?), J_1+2, γ_{y}**281.4**$_6$
G **605.5+y**(?), J_1+4, $\gamma_{281.4+y}$**324.1**$_5$
G **971.1+y**(?), J_1+6, $\gamma_{605.5+y}$**365.6**$_5$
G **1377.8+y**(?), J_1+8, $\gamma_{971.1+y}$**406.7**$_5$
G **1825.7+y**(?), J_1+10, $\gamma_{1377.8+y}$**447.9**$_5$
G **2313.9+y**(?), J_1+12, $\gamma_{1825.7+y}$**488.2**$_5$
G **2841.8+y**(?), J_1+14, $\gamma_{2313.9+y}$**527.9**$_5$
G **3409.0+y**(?), J_1+16, $\gamma_{2841.8+y}$**567.2**$_5$
G **4014.4+y**(?), J_1+18, $\gamma_{3409.0+y}$**605.4**$_5$
G **4656.2+y**(?), J_1+20, $\gamma_{4014.4+y}$**641.8**$_5$
G **5332.5+y**(?), J_1+22, $\gamma_{4656.2+y}$**676.3**$_5$
G **6038.2+y**(?), J_1+24, $\gamma_{5332.5+y}$**705.7**$_5$
G **6769.9+y**(?), J_1+26, $\gamma_{6038.2+y}$**731.7**$_5$
G **7529.0+y**(?), J_1+28, $\gamma_{6769.9+y}$**759.1**$_6$
H **z**(?), $J_2\approx(8)$
H **215.8+z**(?), J_2+2, γ_{z}**215.8**$_6$
H **475.4+z**(?), J_2+4, $\gamma_{215.8+z}$**259.6**$_5$
H **778.0+z**(?), J_2+6, $\gamma_{475.4+z}$**302.6**$_5$
H **1122.6+z**(?), J_2+8, $\gamma_{778.0+z}$**344.6**$_5$
H **1508.9+z**(?), J_2+10, $\gamma_{1122.6+z}$**386.3**$_5$
H **1937.4+z**(?), J_2+12, $\gamma_{1508.9+z}$**428.5**$_5$
H **2406.2+z**(?), J_2+14, $\gamma_{1937.4+z}$**468.8**$_5$
H **2914.4+z**(?), J_2+16, $\gamma_{2406.2+z}$**508.2**$_5$
H **3462.2+z**(?), J_2+18, $\gamma_{2914.4+z}$**547.8**$_5$
H **4048.6+z**(?), J_2+20, $\gamma_{3462.2+z}$**586.4**$_5$
H **4672.4+z**(?), J_2+22, $\gamma_{4048.6+z}$**623.8**$_5$
H **5332.4+z**(?), J_2+24, $\gamma_{4672.4+z}$**660.0**$_5$
H **6028.2+z**(?), J_2+26, $\gamma_{5332.4+z}$**695.8**$_6$



SD-1 band (2001Pr06,1996Hi13) | SD-2 band (2001Pr06) | SD-3 band (2001Pr06)

$^{198}_{82}$Pb$_{116}$

$^{195}_{83}\mathrm{Bi}_{112}$

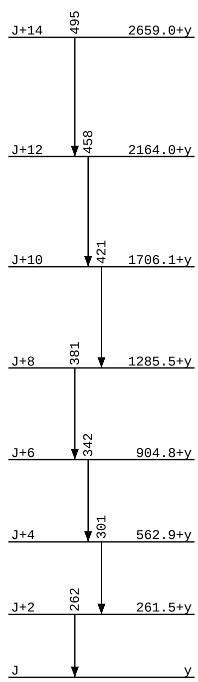
S_n: 9932 *SY*, S_p: 969 *SY*

Nuclear Bands

A SD band (1996Cl01)

Levels and γ-ray branchings:

0, $(9/2^-)$, *1834 s*, %ε+%β+=99.97$_2$, %α=0.03$_2$
401$_7$, $(1/2^+)$, *87$_1$ s*, %ε+%β+=67$_{17}$, %α=33$_{17}$
887.9, $(13/2^+)$, *32$_2$ ns*, $\gamma_{\mathbf{0}}$**887.9**(100) M2(+E3)
1232.2, $(15/2^-)$, $\gamma_{\mathbf{887.9}}$**344.3**(100) (E1)
1623.9, $(17/2^+)$, $\gamma_{\mathbf{1232.2}}$**391.7**(100) (E1)
2044.9$_{20}$, $(21/2^+)$, $\gamma_{\mathbf{1623.9}}$**421.0**(100) (E2)
2196.2, $(25/2^+)$, *80$_{10}$ ns*, $\gamma_{\mathbf{2044.9}}$**151.3**(100) (E2)
2311.4, $(27/2^+)$, $\gamma_{\mathbf{2196.2}}$**115.2**(100) (M1)
2311.4+x(?), $(29/2^-)$, *0.75$_5$ μs*
A **y**, J
A **261.5+y**, J+2, $\gamma_{\mathbf{y}}$**261.5**$_5$(1.04$_{10}$)
A **562.9+y**, J+4, $\gamma_{\mathbf{261.5+y}}$**301.4**$_5$(0.93$_{10}$)
A **904.8+y**, J+6, $\gamma_{\mathbf{562.9+y}}$**341.9**$_5$(1.04$_{10}$)
A **1285.5+y**, J+8, $\gamma_{\mathbf{904.8+y}}$**380.7**$_5$(1.00$_{10}$)
A **1706.1+y**, J+10, $\gamma_{\mathbf{1285.5+y}}$**420.6**$_5$(0.96$_{10}$)
A **2164.0+y**, J+12, $\gamma_{\mathbf{1706.1+y}}$**457.9**$_5$(0.84$_{10}$)
A **2659.0+y**, J+14, $\gamma_{\mathbf{2164.0+y}}$**495**$_1$(0.33$_8$)



SD band
(1996Cl01)
$^{195}_{83}\mathrm{Bi}_{112}$

$^{196}_{83}\mathrm{Bi}_{113}$

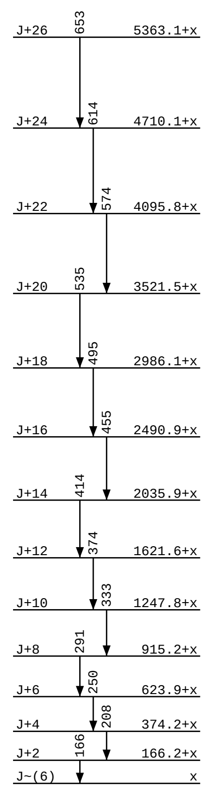
S_n: 8205 *SY*, S_p: 1573 *SY*

Nuclear Bands

A SD band (1996Cl01)

Levels and γ-ray branchings:

0, (3^+), *308$_{12}$ s*, %ε+%β+ ≈ 100 , %α=0.00115$_{34}$
158.3$_3$, (6^+), $\gamma_{\mathbf{0}}$**158.3**$_3$(100) M3
167$_4$, (7^+), *0.6$_5$ s*, %IT=? , %ε+%β+=? , $\gamma_{\mathbf{158.3}}$**11**$_4$(100)
269$_4$, (10^-), *240$_3$ s*, %ε+%β+=74.2$_{25}$, %IT=25.8$_{25}$, %α=0.00038$_{10}$, $\gamma_{\mathbf{167}}$**102.0**$_{20}$(100) (E3)
A **x**, J ≈ (6)
A **166.2+x**, J+2, $\gamma_{\mathbf{x}}$**166.2**$_3$(0.80$_{10}$)
A **374.2+x**, J+4, $\gamma_{\mathbf{166.2+x}}$**208.0**$_3$(1.01$_5$)
A **623.9+x**, J+6, $\gamma_{\mathbf{374.2+x}}$**249.7**$_3$(0.96$_5$)
A **915.2+x**, J+8, $\gamma_{\mathbf{623.9+x}}$**291.3**$_3$(1.09$_7$)
A **1247.8+x**, J+10, $\gamma_{\mathbf{915.2+x}}$**332.6**$_3$(0.91$_5$)
A **1621.6+x**, J+12, $\gamma_{\mathbf{1247.8+x}}$**373.8**$_3$(1.03$_5$)
A **2035.9+x**, J+14, $\gamma_{\mathbf{1621.6+x}}$**414.3**$_3$(0.85$_5$)
A **2490.9+x**, J+16, $\gamma_{\mathbf{2035.9+x}}$**455.0**$_3$(0.89$_5$)
A **2986.1+x**, J+18, $\gamma_{\mathbf{2490.9+x}}$**495.2**$_3$(0.81$_5$)
A **3521.5+x**, J+20, $\gamma_{\mathbf{2986.1+x}}$**535.4**$_3$(0.70$_5$)
A **4095.8+x**, J+22, $\gamma_{\mathbf{3521.5+x}}$**574.3**$_3$(0.46$_5$)
A **4710.1+x**, J+24, $\gamma_{\mathbf{4095.8+x}}$**614.3**$_5$(0.42$_5$)
A **5363.1+x**, J+26, $\gamma_{\mathbf{4710.1+x}}$**653**$_1$(0.19$_5$)



SD band
(1996Cl01)
$^{196}_{83}\mathrm{Bi}_{113}$

$^{197}_{83}Bi_{114}$

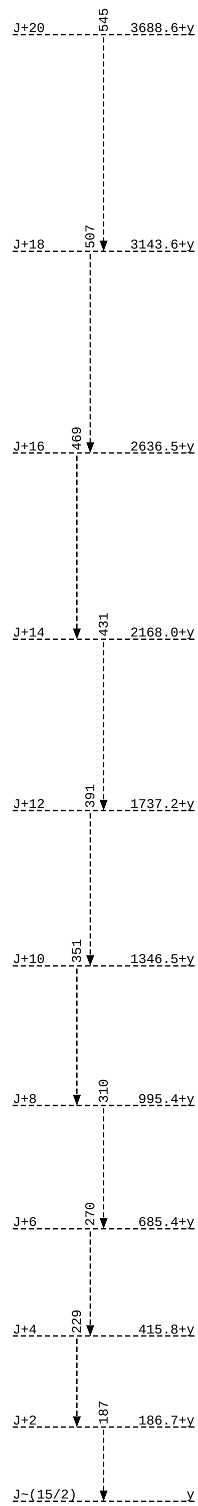
S_n: 9.63x$10^3$$_{70}$, S_p: 1489 $_{SY}$

Nuclear Bands

A SD band (?) (1996Cl01,1995Cl01)

Levels and γ-ray branchings:

0, $(9/2^-)$, *9.33$_{50}$ min*, %ε+%β^+=100
500$_{SY}$, $(1/2^+)$, *5.04$_{16}$ min*, %ε+%β^+=45$_{40}$, %α=55$_{40}$, %IT<0.3
1000.73$_{16}$, $(13/2^-)$, γ_0**1000.8**$_2$(100) (E2)
1009.23$_{16}$, $(11/2^-)$, γ_0**1009.2**$_2$(100) (M1+E2) $\delta=-0.38_{14}$
1196.25$_{15}$, $(13/2^+)$, $\gamma_{1009.23}$**187.0**$_2$($\approx$ 100) (E1), $\gamma_{1000.73}$**195.6**$_2$(83_{17}) (E1), γ_0**1196.2**$_2$(53_6) (M2)
1600.95$_{25}$, $(17/2^+)$, *15$_3$ ns*, $\gamma_{1196.25}$**404.7**$_2$(100) (E2)
1968.6$_4$, $(21/2^+)$, $\gamma_{1600.95}$**367.6**$_2$(100) (E2)
1968.6+x *18$_3$ ns*, $\gamma_{1968.6}$
2065.5$_4$, $(25/2^+)$, *37$_7$ ns*, $\gamma_{1968.6}$**96.9**$_2$(100) (E2)
2089.6$_{11}$, $(25/2^+)$, *19$_5$ ns*, $\gamma_{1968.6}$**121**
2129.30+x *204$_{18}$ ns*, $\gamma_{1968.6+x}$**160.7**$_2$(100) (E1)
2358.4$_{11}$ *53$_{21}$ ns*, $\gamma_{2065.5}$**293**
2360.4$_5$, $(27/2^+)$, $\gamma_{2065.5}$**294.9**$_2$(100) (E2)
2384.5+x, $(29/2^-)$, *263$_{13}$ ns*, $\gamma_{2129.30+x}$**255.2**$_2$(100) D
2498.5$_{11}$, $\gamma_{2065.5}$**433**
2636.5$_{15}$, $\gamma_{2358.4}$**278**
2688.6$_5$, $(27/2)$, $\gamma_{2065.5}$**623.2**$_2$(100) D
2870.1+x, $(31/2^-)$, $\gamma_{2384.5+x}$**485.6**$_2$(100) (M1+E2) $\delta=-0.33_{18}$
2929.5$_5$, $(31/2^-)$, *209$_{30}$ ns*, $\gamma_{2688.6}$**241**, $\gamma_{2065.5}$**864.0**$_2$(100) (E3)
3071.5$_{11}$, $\gamma_{2065.5}$**1006**
3079.5$_{15}$, $\gamma_{2498.5}$**581**
3309.0+x, $(33/2^-)$, $\gamma_{2870.1+x}$**438.9**$_2$(100) (M1+E2) $\delta=-0.37_{21}$, $\gamma_{2384.5+x}$**924**
3558.3$_7$, $\gamma_{2929.5}$**628.8**$_5$
3686.0+x, $\gamma_{3309.0+x}$**377**
3869.3$_{12}$, $\gamma_{3558.3}$**311**
4026.5$_{18}$, $\gamma_{3079.5}$**947**
A **y**(?), $J\approx(15/2)$
A **186.7+y**(?), $J+2$, γ_y**186.7**$_5$(0.66_7)
A **415.8+y**(?), $J+4$, $\gamma_{186.7+y}$**229.1**$_5$(1.09_{10})
A **685.4+y**(?), $J+6$, $\gamma_{415.8+y}$**269.6**$_5$(1.03_{10})
A **995.4+y**(?), $J+8$, $\gamma_{685.4+y}$**310.0**$_5$(0.94_{10})
A **1346.5+y**(?), $J+10$, $\gamma_{995.4+y}$**351.1**$_5$(0.98_{10})
A **1737.2+y**(?), $J+12$, $\gamma_{1346.5+y}$**390.7**$_5$(0.97_{10})
A **2168.0+y**(?), $J+14$, $\gamma_{1737.2+y}$**430.8**$_5$(0.87_8)
A **2636.5+y**(?), $J+16$, $\gamma_{2168.0+y}$**468.5**$_5$(0.46_8)
A **3143.6+y**(?), $J+18$, $\gamma_{2636.5+y}$**507.1**$_5$(0.56_8)
A **3688.6+y**(?), $J+20$, $\gamma_{3143.6+y}$**545**$_1$(?)



SD band
(1996Cl01,1995Cl01)
$^{197}_{83}Bi_{114}$

$^{198}_{84}$Po$_{114}$

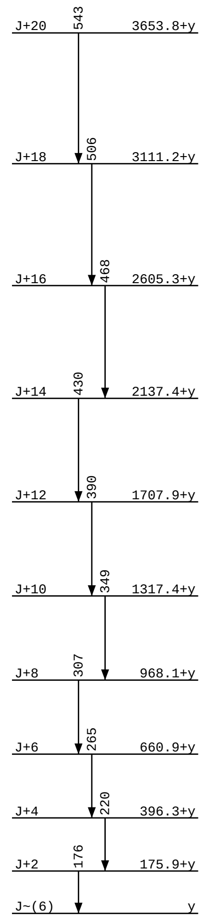
S$_n$: 10143 *SY*, S$_p$: 3183 *SY*

Nuclear Bands

- A GS band
- B Oblate band
- C Band based on 7^-
- D Band based on 9^-
- E Band based on 8^-
- F SD band (1996Mc01)

Levels and γ-ray branchings:

A **0**, 0^+, *1.77_3 min*, %α=57_2, %ε+%β^+=43_2
A **604.70**$_{10}$, 2^+, $\gamma_{\mathbf{0}}$**604.7**$_1$(100) E2
B **816.0**$_{10}$, 0^+, *<0.4 ns*, $\gamma_{\mathbf{0}}$**(816.0)** E0
B **1038.91**$_{14}$, 2^+, $\gamma_{\mathbf{604.70}}$**434.2**$_2$(100_{22}), $\gamma_{\mathbf{0}}$**1038.9**$_2$(48_{22})
A **1157.90**$_{13}$, 4^+, $\gamma_{\mathbf{604.70}}$**553.2**$_1$(100) E2
B **1482.92**$_{17}$, 4^+, $\gamma_{\mathbf{1157.90}}$**325.0**$_3$($48_{17}$), $\gamma_{\mathbf{1038.91}}$**444.0**$_2$($100_{17}$)
A **1716.79**$_{16}$, 6^+, $\gamma_{\mathbf{1157.90}}$**558.9**$_1$(100) E2
1807.69$_{16}$, 5^-, $\gamma_{\mathbf{1482.92}}$**324.7**$_2$($22_5$), $\gamma_{\mathbf{1157.90}}$**649.8**$_1$($100_5$) E1
1852.92$_{21}$, 8^+, *29_2 ns*, μ=+7.28_{24}, $\gamma_{\mathbf{1716.79}}$**136.1**$_2$(100) E2
B **1874.37**$_{19}$, (6^+), $\gamma_{\mathbf{1482.92}}$**391.5**$_2$($<22$), $\gamma_{\mathbf{1157.90}}$**716.4**$_2$($100_{11}$) E2
C **2113.61**$_{19}$, 7^-, $\gamma_{\mathbf{1874.37}}$**239.2**$_3$($36_4$) E1, $\gamma_{\mathbf{1807.69}}$**305.9**$_2$($100_5$) E2, $\gamma_{\mathbf{1716.79}}$**396.8**$_2$($22_6$) E1
E **2286.9**$_3$, 8^-, $\gamma_{\mathbf{2113.61}}$**173.2**$_2$(100) D
D **2323.94**$_{21}$, 9^-, $\gamma_{\mathbf{2113.61}}$**210.3**$_2$($85_4$) E2, $\gamma_{\mathbf{1852.92}}$**471.0**$_2$($100_4$) E1
2343.8$_3$, (8^+), $\gamma_{\mathbf{1716.79}}$**627.0**$_2$(100) (Q)
2565.00$_{22}$, 11^-, *200_{20} ns*, μ=+12.1_6, $\gamma_{\mathbf{2323.94}}$**241.0**$_2$($13.9_{16}$) E2, $\gamma_{\mathbf{1852.92}}$**712.1**$_1$($100_3$) E3
2619.51$_{24}$, (8^+), $\gamma_{\mathbf{1852.92}}$**766.4**$_3$($100_{44}$) (E2), $\gamma_{\mathbf{1716.79}}$**902.8**$_2$($89_{28}$) E2
C **2640.57**$_{23}$, 9^-, $\gamma_{\mathbf{2323.94}}$**316.6**$_2$($<36$), $\gamma_{\mathbf{2113.61}}$**527.0**$_2$($100_{21}$)
2690.86$_{24}$, 10^+, $\gamma_{\mathbf{2565.00}}$**125.9**$_2$($100_9$) E1, $\gamma_{\mathbf{2323.94}}$**366.9**$_2$($91_9$) E1, $\gamma_{\mathbf{1852.92}}$**837.9**$_3$($37_{12}$) E2
2691.86+x, (12^+), *0.75_5 μs*, μ=-1.86_4
E **2812.3**$_3$, (10^-), $\gamma_{\mathbf{2323.94}}$**488.5**$_3$($52_{14}$), $\gamma_{\mathbf{2286.9}}$**525.4**$_2$(100_{14})
D **2899.64**$_{23}$, (11^-), $\gamma_{\mathbf{2323.94}}$**575.7**$_1$(100) (Q)
2963.0$_4$, $\gamma_{\mathbf{2343.8}}$**619.2**$_3$(100)
3009.4$_4$, (10^+), $\gamma_{\mathbf{2343.8}}$**665.6**$_3$(100) (Q)
3149.63+x(?), $\gamma_{\mathbf{2691.86+x}}$**457.8**$_2$(?)
C **3173.8**$_3$, (11^-), $\gamma_{\mathbf{2640.57}}$**533.2**$_2$(100) (Q)
3241.37+x, (14^+), $\gamma_{\mathbf{2691.86+x}}$**549.5**$_1$
E **3307.8**$_4$, (12^-), $\gamma_{\mathbf{2812.3}}$**495.5**$_2$(100) Q
3444.4+x, $\gamma_{\mathbf{2691.86+x}}$**752.5**$_3$
D **3464.5**$_3$, (13^-), $\gamma_{\mathbf{2899.64}}$**564.9**$_2$(100) Q
3579.27+x, $\gamma_{\mathbf{3241.37+x}}$**337.8**$_2$($100_{20}$), $\gamma_{\mathbf{3149.63+x}}$**429.7**$_3$(?)
C **3645.4**$_4$, (13^-), $\gamma_{\mathbf{3173.8}}$**471.6**$_3$(72_{28}) (Q), $\gamma_{\mathbf{2899.64}}$**745.7**$_3$($100_{39}$)
3782.96+x, (16^+), $\gamma_{\mathbf{3241.37+x}}$**541.6**$_1$(100) Q
3801.1$_4$, $\gamma_{\mathbf{3464.5}}$**336.6**$_2$(100)
E **3867.6**$_4$, (14^-), $\gamma_{\mathbf{3307.8}}$**559.8**$_2$(100) (Q)
3984.77+x, $\gamma_{\mathbf{3241.37+x}}$**743.4**$_2$(100)
4010.63+x, (16^+), $\gamma_{\mathbf{3782.96+x}}$**227.8**$_3$($13_3$), $\gamma_{\mathbf{3579.27+x}}$**431.2**$_3$($33_7$), $\gamma_{\mathbf{3241.37+x}}$**769.3**$_2$($100_{10}$) (Q)
C **4051.5**$_5$, $\gamma_{\mathbf{3645.4}}$**406.1**$_3$(100)
D **4085.6**$_4$, (15^-), $\gamma_{\mathbf{3464.5}}$**621.1**$_2$(100) (Q)
E **4321.3**$_5$, (16^-), $\gamma_{\mathbf{3867.6}}$**453.7**$_2$(100) (Q)
4391.81+x, (17), $\gamma_{\mathbf{4010.63+x}}$**381.2**$_2$($100_{13}$) D, $\gamma_{\mathbf{3782.96+x}}$**608.8**$_3$($37_8$)
4407.66+x, (18^+), $\gamma_{\mathbf{3782.96+x}}$**624.7**$_2$(100) (Q)
D **4520.2**$_5$, $\gamma_{\mathbf{4085.6}}$**434.6**$_2$(100)
E **4595.2**$_5$, $\gamma_{\mathbf{4321.3}}$**273.9**$_2$(100)
4662.1+x, $\gamma_{\mathbf{4391.81+x}}$**270.3**$_2$(100)
5113.2+x, $\gamma_{\mathbf{4407.66+x}}$**705.5**$_3$(100)
F **y**, J ≈ (6)
F **175.9+y**, J + 2, $\gamma_{\mathbf{y}}$**175.9**$_3$
F **396.3+y**, J + 4, $\gamma_{\mathbf{175.9+y}}$**220.37**$_{20}$($0.47_8$)
F **660.9+y**, J + 6, $\gamma_{\mathbf{396.3+y}}$**264.59**$_{15}$($0.85_9$)
F **968.1+y**, J + 8, $\gamma_{\mathbf{660.9+y}}$**307.29**$_{15}$($0.97_9$)
F **1317.4+y**, J + 10, $\gamma_{\mathbf{968.1+y}}$**349.29**$_{16}$($1.00_{10}$)
F **1707.9+y**, J + 12, $\gamma_{\mathbf{1317.4+y}}$**390.46**$_{20}$($0.89_{10}$)
F **2137.4+y**, J + 14, $\gamma_{\mathbf{1707.9+y}}$**429.54**$_{19}$
F **2605.3+y**, J + 16, $\gamma_{\mathbf{2137.4+y}}$**467.9**$_4$($0.87_{10}$)
F **3111.2+y**, J + 18, $\gamma_{\mathbf{2605.3+y}}$**505.9**$_4$($0.87_{12}$)
F **3653.8+y**, J + 20, $\gamma_{\mathbf{3111.2+y}}$**542.6**$_4$($0.40_9$)



SD band
(1996Mc01)
$^{198}_{84}$Po$_{114}$

$^{233}_{90}Th_{143}$

S_n: 4786.35$_{25}$, S_p: 7.70x10^3$_{10}$

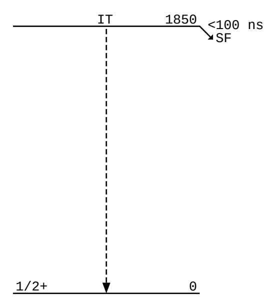
Nuclear Bands

A 1/2[631]
B 5/2[622]
C 7/2[743]
D 5/2[633]
E 7/2[624]
F 3/2[631]
G 5/2[752]
H 1/2[501]
I 7/2[743] + 2$^+$
J 5/2[622] + 2$^+$
K 5/2[622] + 0$^+$
L 1/2[631] + 0$^+$
M Fission isomer

Levels and γ-ray branchings:

M **0**, $1/2^+$, *22.3$_1$ min*, %β^-=100
B **6.04**$_2$, $(5/2)^+$
C **6.06**$_2$, $(7/2)^-$
A **16.86**$_2$, $3/2^+$
B **50.38**$_2$, $(7/2)^+$, $\gamma_{6.04}$**44.364**$_6$ M1+E2 $\delta=0.23_9$
A **54.546**$_6$, $5/2^+$, $\gamma_{16.86}$**37.697**$_8$ (M1+E2), $\gamma_{6.04}$**48.533**$_8$, γ_0**54.545**$_3$ E2
A **93.62**$_2$, $7/2^+$, $\gamma_{54.546}$**39.091**$_7$, $\gamma_{16.86}$**76.740**$_4$ (E2)
B **107.34**$_2$, $(9/2^+)$, $\gamma_{50.38}$**56.960**$_4$ (M1)
A **159.0**$_{10}$, $(9/2^+)$
B **178**$_2$, $(11/2^+)$
A **220**$_2$, $(11/2^+)$
C **252.3**$_5$, $(15/2^-)$
D **262.24**$_2$, $(5/2)^+$, $\gamma_{50.38}$**211.869**$_6$(17$_3$) M1, $\gamma_{6.06}$**256.190**$_4$(100$_{12}$) M1
E **279.40**$_2$, $(7/2)^+$, $\gamma_{107.34}$**172.072**$_{13}$(23$_7$), $\gamma_{50.38}$**229.017**$_7$(100$_{14}$) M1
A **297**, $(13/2^+)$
309.5$_{20}$, $(1/2,3/2)$
E **326.0**$_{10}$, $(9/2^+)$
F **335.928**$_3$, $3/2^+$, $\gamma_{54.546}$**281.365**$_{13}$(20$_3$) M1, $\gamma_{16.86}$**319.067**$_3$(92.9$_{10}$) M1, $\gamma_{6.04}$**329.879**$_7$(26$_3$) M1, γ_0**335.928**$_3$(100$_{11}$) M1
337.35$_6$, $(5/2,7/2)^+$, $\gamma_{50.38}$**286.2**$_4$(10$_{10}$)(?), $\gamma_{6.04}$**331.314**$_4$(100$_{11}$) M1
F **371.17**$_2$, $(5/2)^+$, $\gamma_{93.62}$**277.549**$_{10}$(36$_6$) M1, $\gamma_{54.546}$**316.642**$_7$(100$_{10}$) M1, $\gamma_{50.38}$**320.79**$_3$(13$_3$) M1, $\gamma_{16.86}$**354.313**$_4$(95$_{12}$) M1, $\gamma_{6.04}$**365.113**$_{15}$(11.8$_{17}$) M1+E2 $\delta=1.3_5$
E **388.5**$_{10}$, $(11/2^+)$
D **388.5**$_{10}$, $(9/2^+)$
405.8$_{20}$, $1/2,3/2,5/2^+$
410.0$_{15}$
413.8$_{20}$, $(1/2,3/2)$
F **421.15**$_2$, $(7/2)^+$, $\gamma_{107.34}$**313.814**$_{17}$, $\gamma_{93.62}$**327.527**$_9$(100$_{11}$) M1+E2 $\delta=0.65_{35}$, $\gamma_{54.546}$**366.622**$_{13}$(53$_8$) M1
443$_5$(?)
D **464**$_3$, $(11/2^+)$
G **478.36**$_{17}$, $(5/2)^-$, $\gamma_{6.06}$**472.300**$_5$ M1
F **480.9**$_{10}$, $(9/2^+)$
510(?)
H **539.61**$_2$, $(1/2)^-$, $\gamma_{16.86}$**522.757**$_6$(100$_{11}$) E1, γ_0**539.599**$_9$(64$_7$) E1
I **572.70**$_3$, $(3/2)^-$, $\gamma_{335.928}$**236.81**$_3$(3.2$_7$) E1, $\gamma_{6.06}$**566.630**$_7$(100$_{10}$) E2
J **583.932**$_8$, $(1/2)^+$, $\gamma_{6.04}$**577.888**$_6$(100$_{15}$) (E2), γ_0**583.932**$_8$(57$_6$) M1
H **586.135**$_9$, $3/2^-$, $\gamma_{54.546}$**531.582**$_{11}$(97$_{11}$) (E1), $\gamma_{16.86}$**569.19**$_5$(24$_4$), γ_0**586.140**$_7$(100$_{11}$) E1
599.29$_6$(?), $(5/2^-)$, $\gamma_{16.86}$**582.44**$_7$(21$_6$), $\gamma_{6.06}$**593.21**$_4$(100$_{11}$) (E2)
J **611.476**$_{12}$, $(3/2)^+$, $\gamma_{54.546}$**556.931**$_{19}$(77$_8$) M1, $\gamma_{50.38}$**561.088**$_{17}$(64$_7$), $\gamma_{6.04}$**605.442**$_{13}$(100$_{10}$)
J **628.97**$_2$, $(5/2)^+$, $\gamma_{107.34}$**521.66**$_3$(37$_{14}$) (E2), $\gamma_{93.62}$**535.28**$_3$(34$_6$) E2, $\gamma_{54.546}$**574.37**$_9$(32$_5$) M1, $\gamma_{50.38}$**578.607**$_{17}$(100$_{13}$) (E1), $\gamma_{16.86}$**612.10**$_3$(93$_{12}$) M1, $\gamma_{6.04}$**622.95**$_6$(49$_6$) (E2)
632.8$_{20}$, $1/2,3/2,5/2^+$
645.5$_{20}$, $1/2,3/2$
681.846$_{19}$(?), $(1/2)^-$, γ_0**681.846**$_{19}$ E1(?)
682.11$_3$, $(3/2^-)$, $\gamma_{16.86}$**665.252**$_{17}$(100$_{10}$), $\gamma_{6.06}$**676.02**$_9$(4.9$_{14}$)(?)
691.2$_{15}$
695.6$_{20}$, $1/2,3/2,5/2^+$
K **711.19**$_{18}$, $(5/2)^+$, $\gamma_{50.38}$**660.49**$_{13}$(100$_{30}$), $\gamma_{16.86}$**694.40**$_7$(100$_{20}$), $\gamma_{6.04}$**705.158**$_{20}$ E0+M1(+E2), γ_0**711.18**$_6$(90$_{18}$)
L **713.72**$_2$, $1/2^+$, $\gamma_{16.86}$**696.85**$_4$(73$_{11}$), γ_0**713.719**$_{16}$(100$_{16}$) E0+M1
L **721.84**$_5$, $3/2^+$, $\gamma_{539.61}$**182.12**$_3$(20$_7$), $\gamma_{93.62}$**628.38**$_8$(47$_6$) (E2), $\gamma_{16.86}$**704.98**$_3$(100$_{15}$) E0+M1(+E2), γ_0**721.95**$_6$(38$_8$) M1+E2 $\delta=0.9_5$
725.8$_{10}$
741.32$_4$, $(3/2)^-$, $\gamma_{539.61}$**201.677**$_{20}$(46$_{11}$) M1+E2 $\delta=0.5_5$, $\gamma_{478.36}$**263.02**$_3$(54$_7$) M1+E2 $\delta=0.5_5$, $\gamma_{371.17}$**370.15**$_5$(31$_5$), $\gamma_{6.04}$**735.30**$_4$(100$_{14}$), γ_0**741.22**$_{10}$(100$_{14}$)
749.9$_{20}$, $1/2,3/2$
K **753.98**$_5$, $(7/2)^+$, $\gamma_{50.38}$**703.61**$_4$(100$_{30}$) E0+M1(+E2), $\gamma_{6.06}$**747.76**$_{14}$(58$_{24}$)
768.18$_2$, $1/2^+,3/2^+$, $\gamma_{586.135}$**182.12**, $\gamma_{335.928}$**432.25**$_2$($\leq$ 69) M1+E2 $\delta=0.6_4$, $\gamma_{16.86}$**751.25**$_8$(100$_{19}$)
L **769.60**$_2$, $5/2^+$, $\gamma_{54.546}$**715.06**$_3$(100$_{17}$) E0+M1(+E2), $\gamma_{16.86}$**752.62**$_6$(47$_8$) M1, γ_0**769.83**$_9$(33$_7$)
783.64$_8$(?), $(1/2^+,3/2^+)$, $\gamma_{371.17}$**412.47**$_7$(25$_4$), $\gamma_{6.04}$**777.71**$_{13}$(100$_{28}$)
796$_3$
803.41$_6$, $(5/2)^+$, $\gamma_{371.17}$**432.250**, $\gamma_{262.24}$**541.21**$_5$(18$_4$), $\gamma_{16.86}$**786.45**$_{13}$(25$_7$) M1, $\gamma_{6.04}$**797.25**$_6$(100$_{20}$) (M1)
814.74$_{13}$, $3/2^+$, $\gamma_{16.86}$**798.08**$_8$(63$_{16}$) (M1), $\gamma_{6.04}$**808.71**$_{13}$(92$_{13}$) M1+E2, γ_0**814.74**$_{13}$(100$_{14}$) M1+E2
830.5$_{20}$, $(1/2,3/2)$
839.66$_8$, $(3/2^-)$, $\gamma_{6.04}$**833.63**$_7$(100$_{14}$), γ_0**839.5**$_5$(15$_3$)
842.26$_9$, $(1/2,3/2)^+$, $\gamma_{611.476}$**230.784**$_6$(64$_{10}$) M1+E2 $\delta=1.1_5$, $\gamma_{583.932}$**258.335**$_{16}$(73), $\gamma_{371.17}$**471.28**$_9$(55$_{12}$), $\gamma_{335.928}$**506.25**$_5$(64$_{14}$), $\gamma_{262.24}$**579.99**$_3$(100$_{12}$) (E2), $\gamma_{16.86}$**825.37**$_{14}$(73$_{16}$), γ_0**842.47**$_{18}$(41$_{13}$)
846$_3$
852.28$_{17}$, $1/2^+,3/2,5/2^+$, $\gamma_{262.24}$**590.04**$_{16}$, $\gamma_{16.86}$**835.05**
861.54$_{11}$, $1/2^+,3/2^+$, $\gamma_{583.932}$**277.549**, $\gamma_{16.86}$**844.55**$_{12}$(62$_{14}$), γ_0**861.64**$_{10}$(100$_{18}$) M1
873.7$_{15}$, $1/2,3/2,5/2^+$
884.94$_8$, $1/2^+,3/2^+,5/2^+$, $\gamma_{335.928}$**548.95**$_{13}$(34$_4$) M1, $\gamma_{54.546}$**830.41**$_7$(100$_{15}$) (E2)
891.4$_2$, $1/2,3/2$
900$_3$
904.6$_5$, $(1/2^+,3/2^+)$
918.0$_{10}$, $(1/2^-,3/2^-)$
924.58$_{20}$, $(3/2)^-$, $\gamma_{539.61}$**384.94**$_3$(25$_6$) M1+E2 $\delta=1.0_5$, $\gamma_{371.17}$**553.39**$_3$(50$_9$), $\gamma_{335.928}$**588.72**$_{12}$(71$_{13}$), $\gamma_{262.24}$**661.88**$_6$(50$_9$), $\gamma_{16.86}$**907.42**$_{13}$(71$_{13}$), $\gamma_{6.04}$**918.68**$_7$(100$_{15}$)
947.2$_4$, $(3/2^-)$, $\gamma_{262.24}$**684.97**$_4$(77$_{10}$), $\gamma_{6.06}$**940.53**$_{12}$(100$_{19}$)(?), γ_0**947.2**$_4$(25$_4$)
954$_4$
957.5$_{15}$(?), $(5/2^+)$
968.1$_2$, $(1/2,3/2)^+$, $\gamma_{335.928}$**632.47**$_9$(22$_6$) M1, $\gamma_{54.546}$**913.63**$_{10}$(50$_9$), $\gamma_{16.86}$**951.4**$_4$(20$_5$) (M1), γ_0**967.13**$_6$(100$_{18}$) M1(+E2)(?)
973$_4$
984.2$_8$, $(1/2^+,3/2^+)$
991$_3$
1013.1$_3$, $1/2^-,3/2^-$, $\gamma_{586.135}$**427.31**$_3$(11$_2$) (M1+E2), $\gamma_{16.86}$**996.1**$_3$(21$_7$), γ_0**1012.97**$_{11}$(100$_{18}$) E1
1026$_3$
1031.6$_2$, $1/2^-,3/2^-$, $\gamma_{16.86}$**1014.85**$_{11}$(100$_{18}$), γ_0**1031.1**$_4$(10$_3$)
1040.0$_3$, $(1/2,3/2)$
1046$_4$
1051.5$_5$, $(3/2)^-$, $\gamma_{54.546}$**996.15**(?), $\gamma_{16.86}$**1034.27**$_7$(100$_{24}$), γ_0**1052.11**$_{19}$(56$_{13}$)
1061.43$_{15}$, $(1/2^+,3/2^+)$, $\gamma_{16.86}$**1044.68**$_{13}$(100$_{19}$), $\gamma_{6.04}$**1055.39**$_{14}$(100$_{19}$)
1074.0$_6$, $(1/2^-,3/2^-)$
1087.4$_5$(?), $(1/2,3/2)$
1101.7$_7$, $(1/2^+,3/2^+)$
1115.3$_7$, $(1/2^+,3/2^+)$
1132.11$_9$, $(3/2)^+$, $\gamma_{262.24}$**869.87**$_8$(100$_{17}$) M1+E2, $\gamma_{50.38}$**1081.4**$_4$(31$_8$), $\gamma_{6.04}$**1125.7**$_3$(65$_8$)
1151.72$_{22}$, $(3/2,5/2)^+$, $\gamma_{371.17}$**780.77**$_{12}$(23$_6$) M1+E2, $\gamma_{54.546}$**1097.2**$_3$(41$_6$), $\gamma_{50.38}$**1101.15**$_{10}$(100$_{16}$),

$\gamma_{\mathbf{6.04}}$**1145.66**$_{21}$(51_{12}) M1, $\gamma_{\mathbf{0}}$**1151.7**$_4$(33_8)
1164$_4$
1171.2$_{10}$, $3/2^-$, $\gamma_{\mathbf{54.546}}$**1117.7**$_3$(69_{23}), $\gamma_{\mathbf{16.86}}$**1154.3**$_4$(50_8),
$\gamma_{\mathbf{6.06}}$**1164.2**$_3$(100_{12})(?)
1182.8$_6$, $1/2,3/2,5/2^+$
1185.5$_4$, $(3/2^+)$, $\gamma_{\mathbf{335.928}}$**850.01**$_8$($100_{20}$), $\gamma_{\mathbf{93.62}}$**1091.1**$_7$(19_7),
$\gamma_{\mathbf{0}}$**1185.1**$_3$(87_{13})
1212.5$_{12}$(?), $1/2,3/2,5/2^+$
1219$_5$
1225.7$_7$, $(1/2^+,3/2^+)$
1238.2$_6$, $1/2,3/2,5/2^+$
1256.7$_6$, $1/2^-,3/2^-$
1259.4$_5$, $1/2,3/2$
1262.8$_6$, $1/2,3/2$
1276.8$_5$, $1/2,3/2,5/2^+$
1282.9$_6$, $1/2,3/2$
1293.4$_4$, $1/2^-,3/2^-$
1304.8$_6$, $(1/2^+,3/2^+)$
1313.41$_8$, $(3/2)^-$, $\gamma_{\mathbf{478.36}}$**835.05**$_7$ M1+E2
1324.7$_4$, $1/2,3/2,5/2^+$
1330.2$_6$, $(1/2,3/2)$
1338.1$_6$, $1/2^-,3/2^-$
1344$_5$
1350.7$_2$, $(3/2)^-$, $\gamma_{\mathbf{478.36}}$**872.34**$_{15}$ M1
1367$_5$
1388.5$_{10}$, $(1/2^-,3/2^-)$
1395.2$_4$, $1/2,3/2$
1402$_5$
1408.4$_3$, $1/2,3/2$
1422.6$_4$, $1/2,3/2,5/2^+$
1430$_4$
1445.5$_{10}$, $1/2,3/2$
1459.7$_6$, $1/2,3/2$
1479.1$_4$, $1/2^-,3/2^-$
1491.0$_4$, $1/2,3/2,5/2^+$
1498.1$_4$, $1/2,3/2$
1509.9$_4$, $1/2,3/2,5/2^+$
1517.4$_7$, $1/2,3/2,5/2^+$
1525.1$_4$, $1/2,3/2,5/2^+$
1532.7$_8$, $(1/2,3/2)$
1540.8$_5$, $1/2,3/2,5/2^+$
1554.7$_5$, $1/2,3/2,5/2^+$
1557.5$_5$, $1/2,3/2,5/2^+$
1580.2$_8$, $(1/2,3/2)$
1589.8$_{10}$, $1/2^-,3/2^-$
1601.3$_5$, $1/2,3/2,5/2^+$
1612.3$_5$, $1/2,3/2,5/2^+$
1638.0$_3$, $1/2,3/2$
1653.6$_5$, $1/2,3/2,5/2^+$
1658.7$_4$, $1/2,3/2,5/2^+$
1668.3$_5$, $(1/2^+,3/2^+)$
1688.7$_{13}$, $1/2^+,3/2^+,5/2^+$
1699.3$_4$, $1/2,3/2$
1716.5$_{12}$, $1/2^{(-)},3/2^{(-)}$
1727.7$_7$, $1/2,3/2$
1730.6$_7$, $1/2,3/2,5/2^+$
1736.7$_7$, $1/2,3/2,5/2^+$
1741.2$_9$, $1/2,3/2,5/2^+$
1776.4$_8$, $1/2,3/2,5/2^+$
1796.8$_5$, $1/2,3/2,5/2^+$
1805.6$_5$, $1/2,3/2$
1816.0$_5$, $1/2,3/2,5/2^+$
1842.0$_{11}$(?)
M **1850**$_{25}$ $<$*100 ns*, %SF$\leq$100
1859.7$_9$, $1/2,3/2,5/2^+$
1862.5$_7$, $1/2,3/2,5/2^+$
1894.9$_7$, $1/2,3/2,5/2^+$
1905.4$_4$, $1/2,3/2$
1935.4$_5$, $1/2,3/2,5/2^+$
1944.4$_7$, $1/2^-,3/2^-$
1948.0$_6$, $1/2,3/2,5/2^+$
1961.4$_5$, $1/2,3/2$
1964.2$_6$, $1/2,3/2,5/2^+$
1970.7$_{10}$, $1/2,3/2,5/2^+$
1979.0$_5$, $1/2,3/2$
1991.0$_7$, $1/2,3/2,5/2^+$
1995.9$_7$, $1/2,3/2,5/2^+$
2002.1$_5$, $1/2,3/2,5/2^+$
2014.7$_7$, $1/2,3/2,5/2^+$
2026.4$_7$, $1/2,3/2,5/2^+$
2041.5$_6$, $1/2,3/2,5/2^+$
2046.6$_6$, $1/2,3/2,5/2^+$
2053.5$_4$, $1/2,3/2,5/2^+$
2066.3$_5$, $1/2,3/2$
2069.6$_9$, $1/2,3/2,5/2^+$
2073.9$_4$, $1/2,3/2$
2083.1$_5$, $1/2,3/2$
2097.2$_6$, $1/2,3/2,5/2^+$
2114.5$_5$, $1/2,3/2,5/2^+$
2126.8$_4$, $1/2,3/2$
2132.9$_4$, $1/2,3/2$
2145.1$_5$, $1/2,3/2$
2150.1$_7$, $1/2,3/2,5/2^+$
2156.2$_5$, $1/2,3/2,5/2^+$
2176.3$_6$, $1/2,3/2,5/2^+$
2179.6$_7$, $1/2,3/2,5/2^+$
2189.4$_4$, $1/2,3/2$
2195.3$_6$, $1/2,3/2,5/2^+$
2228.1$_6$, $1/2,3/2,5/2^+$
2234.4$_6$, $1/2,3/2,5/2^+$
2240.9$_6$, $1/2,3/2,5/2^+$
2244.0$_7$, $1/2,3/2,5/2^+$
2261.5$_6$, $1/2,3/2,5/2^+$
2282.6$_6$, $1/2,3/2$
2300.6$_6$, $1/2,3/2,5/2^+$



$^{233}_{90}\mathrm{Th}_{143}$

$^{236}_{92}U_{144}$

S_n: 6544.8 $_6$, S_p: 7172 $_{50}$

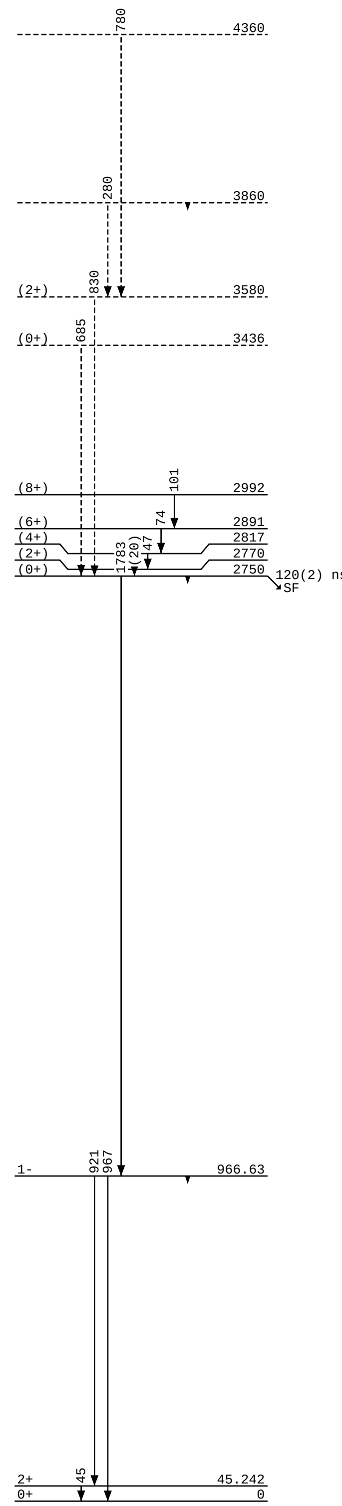
Nuclear Bands

A GS band
B Kπ=0^- band
C Kπ=3^-, ν7/2[743]-ν1/2[631]
D Kπ=6^-, ν7/2[743]+ν5/2[622]
E Kπ=0^+ band
F Kπ=2^+ band
G Kπ=1^-, ν7/2[743]-ν5/2[622]
H Kπ=4^-, ν7/2[743]+ν1/2[631]
I Kπ=2^- band
J Fission isomer band (1994ReAA,1990Ma59,1989Ma57,1980Me15, 1978Gu02)
Q_0=32_5
K Fission isomer (β) band (?) (1982Go02)

Levels and γ-ray branchings:

A **0**, 0^+, *2.342x10^7 $_3$ y*, %α=100 , %SF=9.6x10^{-8}$_6$,
A **45.242**$_3$, 2^+, *234_6 ps*, $\gamma_{\mathbf{0}}$**45.242**$_3$(100) E2
A **149.476**$_{15}$, 4^+, *124_7 ps*, $\gamma_{\mathbf{45.242}}$**104.234**$_6$(100) E2
A **309.784**$_8$, 6^+, *58_3 ps*, $\gamma_{\mathbf{149.476}}$**160.308**$_3$(100) E2
A **522.24**$_5$, 8^+, *24_2 ps*, $\gamma_{\mathbf{309.784}}$**212.46**$_5$(100) E2
B **687.60**$_5$, 1^-, *3.78_9 ns*, $\gamma_{\mathbf{149.476}}$**538.11**$_{10}$($1.20_{10}$) E3, $\gamma_{\mathbf{45.242}}$**642.35**$_9$(100) E1(+M2+E3), $\gamma_{\mathbf{0}}$**687.59**$_9$(27.3_5) E1
B **744.15**$_8$, 3^-, $\gamma_{\mathbf{687.60}}$**56.6**$_5$(≈ 5) (E2), $\gamma_{\mathbf{149.476}}$**594.5**$_3$(100)
A **782.3**$_5$, 10^+, *11.6_{11} ps*, $\gamma_{\mathbf{522.24}}$**260.1**$_5$(100) E2
B **848.3**$_8$, 5^-, $\gamma_{\mathbf{744.15}}$**(104.1)**$_{10}$(100) (E2)
E **919.21**$_{17}$, 0^+, $\gamma_{\mathbf{45.242}}$**874.1**$_2$(100), $\gamma_{\mathbf{0}}$**918.9**$_3$ (E0)
F **957.99**$_{17}$, (2^+), $\gamma_{\mathbf{45.242}}$≈**912.7**(≈ 71) (M1), $\gamma_{\mathbf{0}}$**958.0**$_2$(100)
E **960.3**$_3$, (2^+), $\gamma_{\mathbf{149.476}}$≈**810.9**(≈ 68), $\gamma_{\mathbf{45.242}}$**915.1**$_3$(100) (M1+E0), $\gamma_{\mathbf{0}}$≈**959.9**(≈ 80)
G **966.63**$_9$, 1^-, $\gamma_{\mathbf{687.60}}$**279.0**$_1$(60_4) (M1,E2), $\gamma_{\mathbf{45.242}}$**921.2**$_2$(44_{11}) E1, $\gamma_{\mathbf{0}}$**966.9**$_2$(100) E1
G **987.67**$_8$, 2^-, $\gamma_{\mathbf{744.15}}$**243.6**$_2$(28_3) E2+M1 $\delta = 1.6^{15}_{6}$, $\gamma_{\mathbf{687.60}}$**300.0**$_1$(20_3) (E2), $\gamma_{\mathbf{45.242}}$**942.4**$_2$(100) E1
B **999.8**$_9$, 7^-, $\gamma_{\mathbf{848.3}}$**151.5**$_5$(100) E2
F **1001.5**$_3$, (3^+), $\gamma_{\mathbf{744.15}}$≈**258.4**, $\gamma_{\mathbf{149.476}}$≈**852.2**(≈ 13), $\gamma_{\mathbf{45.242}}$**956.2**$_3$(100)
G **1035.6**$_7$, (3^-), $\gamma_{\mathbf{149.476}}$**886.2**$_{10}$(100), $\gamma_{\mathbf{45.242}}$**990.2**$_{10}$(≈ 88)
E **1050.85**$_{15}$, (4^+), $\gamma_{\mathbf{149.476}}$**901.25**$_{17}$, $\gamma_{\mathbf{45.242}}$**1006.0**$_3$(100)
H **1052.89**$_{19}$, $(4)^-$, *100_4 ns*, $\gamma_{\mathbf{987.67}}$**65**$_1$(1.5_2) (E2), $\gamma_{\mathbf{848.3}}$**204.6**$_{10}$(41_6) (E2), $\gamma_{\mathbf{744.15}}$**308.0**$_6$(37_6) E2+M1 $\delta = 1.4_7$, $\gamma_{\mathbf{149.476}}$**903.5**$_2$($17_3$) E1
F **1058.61**$_{20}$, (4^+), $\gamma_{\mathbf{149.476}}$**909.1**$_2$(100) (M1), $\gamma_{\mathbf{45.242}}$**1014.1**(100)
1066.1$_{10}$, (3^+,4^+)
G **1070.0**$_{10}$, (4^-), $\gamma_{\mathbf{149.476}}$**920.5**(100)
A **1085.3**$_7$, 12^+, *5.3_8 ps*, $\gamma_{\mathbf{782.3}}$**303.0**$_5$(100) E2
1093.8$_{10}$, (2^+,5^+)
H **1104.4**$_{14}$, (5^-)
I **1110.67**$_8$, (2^-), $\gamma_{\mathbf{744.15}}$**366.6**$_1$(82_{10}), $\gamma_{\mathbf{687.60}}$**423.1**$_1$(100_6), $\gamma_{\mathbf{45.242}}$**1065.0**$_2$(34_4)
F **1126.9**$_6$, (5^+), $\gamma_{\mathbf{149.476}}$**977.4**$_6$(100)
1147.0$_{10}$, (3^+,4^+)
I **1149.4**$_{10}$, (3^-), $\gamma_{\mathbf{744.15}}$**405.2**(100)
G **1164**$_3$, (5^-)
H **1164**$_3$, (6^-)
1171.8$_2$
1190$_2$(?)
B **1198.6**$_{10}$, 9^-, $\gamma_{\mathbf{999.8}}$**198.8**$_3$(100) E2
1206$_2$
1221.4$_{10}$, (2^+,5^+)
H ≈**1232**, (7^-)
C **1232.2**$_{10}$, (4^-)
1249.3$_{10}$, 2^+,5^+
1265.2$_{10}$, 3^+,4^+
1271.09$_8$, (1^-,2,3), $\gamma_{\mathbf{744.15}}$**526.7**$_2$(39_4), $\gamma_{\mathbf{45.242}}$**1225.9**$_1$(100_8)
C **1282.2**$_{10}$, (5^-)
H **1320**$_4$, (8^-)
1320.4$_{10}$, 2^+,5^+
1329.0$_{10}$, 3^+,4^+
1332.8$_{10}$, 3^+,4^+
C **1342.8**$_{10}$, (6^-)
1347.5$_{10}$, (3^+,4^+)
1351.3$_{10}$, 3^+,4^+
1381.3$_{10}$, 3^+,4^+
1399.8$_{10}$, 2^+,5^+
C **1413.3**$_{19}$, (7^-)
1423$_2$
A **1426.3**$_9$, 14^+, *2.8_3 ps*, $\gamma_{\mathbf{1085.3}}$**341.0**$_5$(100) E2
B **1443.6**$_{11}$, 11^-, $\gamma_{\mathbf{1198.6}}$**245.0**$_5$(100) E2
D **1471.7**$_{10}$, (6^-)
1481$_2$(?)
1491$_2$(?)
D **1541.8**$_{13}$, (7^-)
1572.2$_6$
1580$_{11}$(?), (1,2), $\gamma_{\mathbf{0}}$**1580**$_{11}$(?)
1604.80$_7$, 1^-,2^+, $\gamma_{\mathbf{1271.09}}$**333.7**$_1$($37_2$), $\gamma_{\mathbf{987.67}}$**617.1**$_2$(9.5_{20}), $\gamma_{\mathbf{744.15}}$**860.6**$_1$(35_1), $\gamma_{\mathbf{687.60}}$**917.0**$_3$(62_4), $\gamma_{\mathbf{45.242}}$**1559.6**$_1$(100_9), $\gamma_{\mathbf{0}}$**1604.9**$_2$(18_5)
D **1621.8**$_{12}$, (8^-)
1642.5$_{20}$
1662.37$_8$, 1,2^+, $\gamma_{\mathbf{987.67}}$**674.5**$_2$(23_8), $\gamma_{\mathbf{687.60}}$**975.0**$_2$(21_5), $\gamma_{\mathbf{45.242}}$**1617.1**$_1$(100_9), $\gamma_{\mathbf{0}}$**1662.4**$_2$(66_7)
B **1732.6**$_{15}$, 13^-, $\gamma_{\mathbf{1443.6}}$**289**$_1$(100) E2
1791.3$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**1746.1**$_{10}$(38_8) (M1), $\gamma_{\mathbf{0}}$**1791.3**$_{10}$(100) (M1)
A **1800.9**$_{10}$, 16^+, *2.1_2 ps*, $\gamma_{\mathbf{1426.3}}$**374.6**$_5$(100) E2
1807.88$_7$, 1,2^+, $\gamma_{\mathbf{45.242}}$**1762.7**$_1$(100_5), $\gamma_{\mathbf{0}}$**1807.8**$_1$(37_2)
1865.41$_{15}$, 1,2^+, $\gamma_{\mathbf{687.60}}$**1177.7**$_2$(100_{14}), $\gamma_{\mathbf{0}}$**1865.5**$_2$(67_8)
1896.9$_7$
1972.62$_9$, 1,2^+, $\gamma_{\mathbf{45.242}}$**1927.0**$_2$(100_7), $\gamma_{\mathbf{0}}$**1972.7**$_1$(100_9)
1979.1, 1^-,2, $\gamma_{\mathbf{744.15}}$**1234.9**$_1$(100_8), $\gamma_{\mathbf{687.60}}$**1291.6**$_1$(100_8), $\gamma_{\mathbf{45.242}}$**1934.1**$_2$(98_8)
1981.06$_{16}$, 1,2^+, $\gamma_{\mathbf{1110.67}}$**870.4**$_2$($100_9$), $\gamma_{\mathbf{957.99}}$**1023.1**$_3$(84_8), $\gamma_{\mathbf{0}}$**1981.0**$_3$(74_7)
2054.2$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2009.0**$_{10}$(75_{14}) (M1), $\gamma_{\mathbf{0}}$**2054.2**$_{10}$(100) (M1)
B **2060.6**$_{18}$, 15^-, $\gamma_{\mathbf{1732.6}}$**328**$_1$(100) E2
2086.54$_9$, $1^{(-)}$, $\gamma_{\mathbf{45.242}}$**2041.3**$_1$(100_5) (E1), $\gamma_{\mathbf{0}}$**2086.5**$_2$(56_5) (E1)
2095.7$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2050.5**$_{10}$(47_{15}) (M1), $\gamma_{\mathbf{0}}$**2095.7**$_{10}$(100) (M1)
2155.40$_{12}$, 0,1,2, $\gamma_{\mathbf{1604.80}}$**550.6**$_1$(100)
2188.8$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2143.6**$_{10}$(49_3) (M1), $\gamma_{\mathbf{0}}$**2188.8**$_{10}$(100) (M1)
2190$_{10}$, (1,2^+), $\gamma_{\mathbf{0}}$**2190**$_{30}$(100)
A **2203.9**$_{12}$, 18^+, *1.17_{12} ps*, $\gamma_{\mathbf{1800.9}}$**403.0**$_5$(100) E2
2226.9$_3$(?), (2), $\gamma_{\mathbf{45.242}}$**2181.6**$_3$(100)
2243.9$_{10}$, 1, $\gamma_{\mathbf{0}}$**2243.9**$_{10}$(100)
2251.1$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2205.9**$_{10}$(100), $\gamma_{\mathbf{0}}$**2251.1**$_{10}$(96_{13})
2284.7$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2239.5**$_{10}$(51_7) (M1), $\gamma_{\mathbf{0}}$**2284.7**$_{10}$(100) (M1)
B **2426.6**$_{21}$, 17^-, $\gamma_{\mathbf{2060.6}}$**366**$_1$(100) E2
2435.6$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2390.4**$_{10}$(34_7) (M1), $\gamma_{\mathbf{0}}$**2435.6**$_{10}$(100) (M1)
2440.2$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2395.0**$_{10}$(26_7) (M1), $\gamma_{\mathbf{0}}$**2440.2**$_{10}$(100) (M1)
2457.3$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2412.1**$_{10}$(50_9) (M1), $\gamma_{\mathbf{0}}$**2457.3**$_{10}$(100) (M1)
2494.5$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2449.3**$_{10}$(29_8) (M1), $\gamma_{\mathbf{0}}$**2494.5**$_{10}$(100) (M1)
2498.5$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2453.3**$_{10}$(66_{12}) (M1), $\gamma_{\mathbf{0}}$**2498.5**$_{10}$(100) (M1)
A **2631.7**$_{13}$, 20^+, *0.84_{12} ps*, $\gamma_{\mathbf{2203.9}}$**427.8**$_5$(100) E2
2699.0$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2653.8**$_{10}$(62_{10}) (M1), $\gamma_{\mathbf{0}}$**2699.0**$_{10}$(100) (M1)
2712.1$_8$, $1^{(-)}$, $\gamma_{\mathbf{45.242}}$**2666.9**$_{10}$(100_{12}) (E1), $\gamma_{\mathbf{0}}$**2712.1**$_{10}$(44_8) (E1)
J **2750**$_{10}$, (0^+), *120_2 ns*, %SF=13_6, %IT=87_6, %α<10, $\gamma_{\mathbf{2190}}$**560**$_{10}$(12), $\gamma_{\mathbf{1580}}$**1170**$_{10}$(20), $\gamma_{\mathbf{966.63}}$**1783**$_{10}$(100), $\gamma_{\mathbf{687.60}}$**2062**$_{10}$(26), $\gamma_{\mathbf{45.242}}$≈**2705**(< 12)
2756.2$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2711.0**$_{10}$(55_{16}) (M1), $\gamma_{\mathbf{0}}$**2756.2**$_{10}$(100) (M1)
J **2770**$_{10}$, (2^+), $\gamma_{\mathbf{2750}}$**(20.16)**$_{CA}$(100)
J **2817**$_{10}$, (4^+), $\gamma_{\mathbf{2770}}$**47.0**(100) (E2)
2823.3$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2778.1**$_{10}$(97_{26}) (M1), $\gamma_{\mathbf{0}}$**2823.3**$_{10}$(100) (M1)
B ≈**2825**, (19^-), $\gamma_{\mathbf{2426.6}}$≈**396**(100) (E2)
2838.3$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2793.1**$_{10}$(100) (M1), $\gamma_{\mathbf{0}}$**2838.3**$_{10}$(92_{27}) (M1)
2877.8$_8$, $1^{(-)}$, $\gamma_{\mathbf{45.242}}$**2832.6**$_{10}$(100) (E1), $\gamma_{\mathbf{0}}$**2877.8**$_{10}$(45_{12}) (E1)
J **2891**$_{10}$, (6^+), $\gamma_{\mathbf{2817}}$**73.9**(100) (E2)
2924.0$_8$, (2), $\gamma_{\mathbf{45.242}}$**2878.8**$_{10}$(100), $\gamma_{\mathbf{0}}$**2924.0**$_{10}$(60_{17})

2969.0$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**2923.8**$_{10}$(50_{12}) (M1), $\gamma_{\mathbf{0}}$**2969.0**$_{10}$(100) (M1)
J **2992**$_{10}$, (8^+), $\gamma_{\mathbf{2891}}$**100.8**
3040(?), (1^-)
A **3081.2**$_{14}$, 22^+, *0.65*$_{15}$ *ps*, $\gamma_{\mathbf{2631.7}}$**449.2**$_5$(100) E2
3143.8$_8$, $1^{(+)}$, $\gamma_{\mathbf{45.242}}$**3098.6**$_{10}$(56_{14}) (M1), $\gamma_{\mathbf{0}}$**3143.8**$_{10}$(100) (M1)
K **3436**$_{10}$(?), (0^+), $\gamma_{\mathbf{2750}}$**684.5**$_7$ (E0)
A **3550**$_2$, (24^+), *0.41*$_8$ *ps*, $\gamma_{\mathbf{3081.2}}$**469**$_1$(100) (E2)
K **3580**(?), (2^+), $\gamma_{\mathbf{2750}}$**830**
K **3860**(?), $\gamma_{\mathbf{3580}}$**280**, $\gamma_{\mathbf{3040}}$**830**
A **4039**$_2$, (26^+), *0.33*$_9$ *ps*, $\gamma_{\mathbf{3550}}$**489**$_1$(100) (E2)
K **4360**(?), $\gamma_{\mathbf{3580}}$**780**
A **4549**$_2$, (28^+), *0.17*$_7$ *ps*, $\gamma_{\mathbf{4039}}$**510**$_1$(100) (E2)
A ≈**5077**, (30^+), $\gamma_{\mathbf{4549}}$≈**528**(100) (E2)



$^{236}_{92}U_{144}$

$^{238}_{92}U_{146}$

S_n: 6153.7 $_{12}$, S_p: 7.62x10^3 $_{10}$

Nuclear Bands

A GS band
B Kπ=0$^-$ octupole band
C Kπ=0$^+$ band
D Kπ=0$^+$ β band
E Kπ=2$^+$ γ band
F Kπ=(1$^-$) band (?)
G Kπ=(1$^-$) band (?)
H Kπ=3$^+$,ν1/2[631]+ν5/2[622]
I Kπ=(0$^+$) band (?)
J Fission isomer (1992St05,1989Ha40,1982Go02,1980Me15, 1979Ul01,1969La14)
K Fission isomer (1980Me15)
Q_0=29$_3$

Levels and γ-ray branchings:

0, 0^+, *4.468x10^9$_3$ y*, %SF=5.38x10^{-5}$_{11}$, %α=100 , Q=13.9$_{20}$
A **44.921**$_{13}$, 2^+, *203$_7$ ps*, μ=0.508$_{30}$, γ_{0}**44.915**$_{13}$(100) E2
A **148.39**$_3$, 4^+, $\gamma_{44.921}$**103.50**$_4$(100)
A **307.23**$_8$, 6^+, $\gamma_{148.39}$**158.80**$_8$(100)
A **518.4**$_3$, 8^+, *23$_3$ ps*, $\gamma_{307.23}$**211.2**$_3$(100)
B **680.09**$_4$, 1^-, $\gamma_{44.921}$**635.18**$_3$(100$_2$), γ_{0}**680.1**$_3$(74$_4$)
B **731.92**$_3$, 3^-, $\gamma_{148.39}$**583.55**$_3$(83$_2$), $\gamma_{44.921}$**686.99**$_3$(100$_2$)
A **776.2**$_5$, 10^+, *9.0$_9$ ps*, $\gamma_{518.4}$**257.8**$_4$(100)
B **826.66**$_{11}$, 5^-, $\gamma_{307.23}$**519.44**$_8$(57$_4$), $\gamma_{148.39}$**678.4**$_6$(100$_6$)
C **927.23**$_{19}$, (0^+), $\gamma_{44.921}$**882.3**$_2$(100)
F **930.66**$_{21}$, (1^-), $\gamma_{680.09}$**251.3**$_{10}$(11$_3$), $\gamma_{44.921}$**886.2**$_4$(100$_4$), γ_{0}**931.5**$_6$(27$_2$)
F **950.22**$_{18}$, (2^-), $\gamma_{731.92}$**218.0**$_3$(43$_5$), $\gamma_{680.09}$**270.1**$_4$(37$_6$), $\gamma_{44.921}$**905.6**$_6$(100$_6$)
C **966.14**$_4$, 2^+, *0.6$_4$ ps*, $\gamma_{731.92}$**234.5**$_{10}$(16$_2$), $\gamma_{680.09}$**286.4**$_{10}$(14$_1$), $\gamma_{148.39}$**818.4**$_4$(100$_5$), $\gamma_{44.921}$**921.19**$_3$(59$_3$) E2+M1+E0 $\delta=+4.10^{6}_{5}$, γ_{0}**967.3**$_2$(18$_1$)
B **966.61**$_{15}$, 7^-, $\gamma_{518.4}$**448.4**$_9$, $\gamma_{307.23}$**659.1**$_2$
D **996.94**$_{24}$, 0^+, γ**947** (E2), γ_{0}**997.23**$_{24}$ E0
F **997.63**$_7$, 3^-, $\gamma_{826.66}$**171**(≤ 1.5), $\gamma_{680.09}$**318.0**$_{10}$(7.6$_3$), $\gamma_{148.39}$**849.1**$_4$(100$_3$), $\gamma_{44.921}$**952.70**$_7$(61$_3$)
D **1037.28**$_7$, 2^+, *0.67$_{15}$ ps*, $\gamma_{731.92}$**305.5**$_6$(10.5$_4$) E1, $\gamma_{680.09}$**357.7**$_4$(9.0$_4$) E1, $\gamma_{148.39}$**888.9**$_3$(76.5$_{15}$) E2, $\gamma_{44.921}$**992.31**$_7$(73.8$_{15}$) E2+M1+E0 $\delta=+3.48_{22}$, γ_{0}**1037.4**$_2$(100$_3$) E2
C **1056.5**$_3$, (4^+), $\gamma_{307.23}$**749.3**$_3$(100) E2, $\gamma_{148.39}$**908**
H **1059.7**$_4$, (3^+), $\gamma_{148.39}$**911.1**(43), $\gamma_{44.921}$**1014.6**(100)
E **1060.53**$_{11}$, 2^+, *0.66$_3$ ps*, $\gamma_{148.39}$**911.9**$_4$(3.3$_2$) E2, $\gamma_{44.921}$**1015.3**$_2$(100$_2$) M1+E2 $\delta=10.1_{16}$, γ_{0}**1060.3**$_2$(68.4$_{13}$) E2
A **1077.0**$_7$, 12^+, *4.2$_6$ ps*, $\gamma_{776.2}$**300.6**$_9$(100)
E **1105.73**$_7$, (3^+), $\gamma_{148.39}$**957.33**$_6$(100)
G **1112.60**$_{17}$, (1^-), $\gamma_{680.09}$**432.5**$_3$, γ_{0}**1112.7**$_3$
G **1128.70**$_{17}$, (2^-), $\gamma_{950.22}$**179**, $\gamma_{930.66}$**198.6**$_3$(≈ 12)(?), $\gamma_{731.92}$**396.4**$_3$(25.5$_{14}$), $\gamma_{680.09}$**448.3**$_4$(100$_4$), $\gamma_{44.921}$**1084.0**$_4$(<80)
D **1129.92**$_{22}$, (4^+), $\gamma_{826.66}$**300.6**$_{10}$(?), $\gamma_{148.39}$**982.44**$_{24}$
1135.82$_{17}$, $\gamma_{307.23}$**828.3**$_6$(25$_8$), $\gamma_{44.921}$**1090.9**$_2$(100$_8$)
B **1151.0**$_5$, 9^-, $\gamma_{776.2}$**374.8**$_4$, $\gamma_{518.4}$**632.6**$_4$
E **1168.06**$_8$, 4^+, $\gamma_{307.23}$**861** E2, $\gamma_{148.39}$**1019.61**$_8$(100$_7$) E2, $\gamma_{44.921}$**1123.1**$_2$(40$_4$) E2
G **1170.21**$_{19}$, 3^-, $\gamma_{997.63}$**172**, $\gamma_{966.61}$**203.4**$_{10}$, $\gamma_{731.92}$**437** M1+E2 $\delta=+0.23^{11}_{8}$, $\gamma_{680.09}$**490.3**$_2$ E2, $\gamma_{148.39}$**1021**$_1$, $\gamma_{44.921}$**1124**
1224.17$_{14}$, 2^+, $\gamma_{1060.53}$**163.9**$_5$(17.4$_{15}$) M1+E2(?), $\gamma_{966.14}$**258** E2, $\gamma_{950.22}$**274.0**$_{10}$(≤ 11) E1, $\gamma_{930.66}$**293** E1, $\gamma_{927.23}$**296** E2, $\gamma_{148.39}$**1076** E2, $\gamma_{44.921}$**1179.4**$_2$(93$_4$) M1+E2 $\delta=+7.2_{12}$, γ_{0}**1223.7**$_4$(100$_4$) E2
1231
G **1232.5**$_5$, (4^-), $\gamma_{950.22}$**282.2**$_6$(100$_{43}$), $\gamma_{826.66}$**405.8**$_{10}$(57$_{28}$), $\gamma_{731.92}$**501**$_1$(100$_{30}$), $\gamma_{148.39}$**(1084.2)**
1260.90$_{16}$, $\gamma_{1037.28}$**223.4**$_4$(100$_{24}$), $\gamma_{148.39}$**1112.7**$_3$(<41), $\gamma_{44.921}$**1215.9**$_2$(65$_6$), γ_{0}**1262**$_1$(12$_6$)
D **1269.2**$_{10}$, (6^+), $\gamma_{307.23}$**962.0**$_{10}$(100)
1278.80$_{15}$, 2^+, $\gamma_{731.92}$**547.0**$_3$(80$_{20}$) E1, $\gamma_{148.39}$**1130** E2, $\gamma_{44.921}$**1233.8**$_3$(80$_{20}$) E2, γ_{0}**1278.8**$_2$(100$_{10}$) E2
G **1285.78**$_{19}$, (5^-), $\gamma_{997.63}$**287.9**$_4$(<100), $\gamma_{307.23}$**978.5**$_3$(<63), $\gamma_{148.39}$**1138.0**$_{10}$(27$_9$)
1355.4$_3$, $(1,2^+)$, $\gamma_{44.921}$**1310.5**$_4$(100$_{20}$), γ_{0}**1354.5**$_{10}$(60$_{20}$)
1375
B **1379.1**$_5$, 11^-, $\gamma_{1151.0}$**228.1**$_4$, $\gamma_{1077.0}$**302.3**, $\gamma_{776.2}$**602.9**$_4$
G **1381.70**$_{19}$, (6^-), $\gamma_{826.66}$**555.3**$_5$(71$_{28}$), $\gamma_{307.23}$**1074.4**$_2$(100$_{14}$)
1412.98$_{12}$, 2^+, $\gamma_{1112.60}$**300.6**$_{10}$, $\gamma_{1060.53}$**352.3**$_1$(100$_8$) E2, $\gamma_{930.66}$**482.9**$_3$(28$_8$), $\gamma_{148.39}$**1265.6**$_{10}$(12$_4$), $\gamma_{44.921}$**1368.3**$_2$, γ_{0}**1414** E2
A **1415.8**$_7$, 14^+, *2.6$_2$ ps*, $\gamma_{1077.0}$**338.8**$_4$(100)
I **1482.06**$_{16}$, (0^+), $\gamma_{1112.60}$**369.5**$_2$(100$_{15}$), $\gamma_{1037.28}$**443.8**$_{10}$(38$_{16}$), $\gamma_{930.66}$**552.5**$_{10}$(38$_{16}$), $\gamma_{44.921}$**1437.1**$_2$(100$_{15}$)
1516.53$_{16}$, (4^+), $\gamma_{950.22}$**566.1**$_3$, $\gamma_{307.23}$**1209.3**$_3$, $\gamma_{148.39}$**1368.3**$_2$, $\gamma_{44.921}$**1470**$_1$
I **1530.59**$_{16}$, 2^+, $\gamma_{1128.70}$**401.6**$_3$(91$_{18}$) E1, $\gamma_{966.14}$**564**, $\gamma_{930.66}$**599**, $\gamma_{731.92}$**798.9**$_2$(100$_{10}$), $\gamma_{148.39}$**1381.8**$_5$(36$_9$) E2, $\gamma_{44.921}$**1485**$_1$(18$_9$) M1+E2 $\delta=-30_{10}$, γ_{0}**1531.6**$_{10}$(18$_9$) E2
1594.82$_{22}$, $(2^+,3,4^+)$, $\gamma_{826.66}$**768.3**, $\gamma_{731.92}$**863.5**$_6$(<37), $\gamma_{148.39}$**1446.2**$_3$(100$_{13}$), $\gamma_{44.921}$**1550.0**$_4$(75$_{13}$)
1630
I **1643.33**$_{21}$, 4^+, $\gamma_{1355.4}$**287.9**$_4$(<100), $\gamma_{826.66}$**(816.6)**$_{CA}$, $\gamma_{307.23}$**1336.2**$_3$(54$_9$), $\gamma_{148.39}$**1495**$_1$(36$_{12}$), $\gamma_{44.921}$**1598.2**$_4$(46$_{13}$)
B **1649.5**$_6$, 13^-, $\gamma_{1379.1}$**270.5**$_4$, $\gamma_{1077.0}$**572.4**$_4$
1665
1671.99$_{21}$, $\gamma_{1105.73}$**566.1**$_3$(<100), $\gamma_{148.39}$**1523.7**$_3$(56$_{11}$), $\gamma_{44.921}$**1627.3**$_6$(33$_{11}$)
1712
1761.06$_{21}$, (4^+), $\gamma_{1224.17}$**536.8**$_4$(46$_{18}$), $\gamma_{1135.82}$**625.2**$_2$(100$_{20}$), $\gamma_{1105.73}$**655**$_1$(46$_{18}$), $\gamma_{307.23}$**1454**$_1$(27$_9$), $\gamma_{44.921}$**1716.7**$_6$(36$_9$)
1775.08$_{15}$, $(3^-,4,5^-)$, $\gamma_{1168.06}$**606.6**$_2$(100$_{12}$), $\gamma_{1129.92}$**647.7**$_4$(24$_8$), $\gamma_{966.61}$**808.4**$_1$(56$_8$), $\gamma_{731.92}$**1043**$_1$(4$_4$), $\gamma_{148.39}$**1627.3**$_6$(12$_3$)
1782.0$_7$, 2^+, $\gamma_{44.921}$**1737** M1+E2 $\delta=11^{19}_{4}$, γ_{0}**1782** E2
A **1788.7**$_8$, 16^+, *1.66$_7$ ps*, $\gamma_{1415.8}$**372.9**$_4$(100)
I **1814.27**$_{24}$, (6^+), $\gamma_{1381.70}$**432.5**$_3$(<100), $\gamma_{518.4}$**1296**$_1$(37$_{12}$), $\gamma_{307.23}$**1507.1**$_3$(100$_{12}$)
1892.25$_{17}$, $(4^+,5^-)$, $\gamma_{1643.33}$**248.6**$_7$(90$_{40}$), $\gamma_{731.92}$**1160.4**$_2$(100$_{10}$), $\gamma_{307.23}$**1584.9**$_3$(70$_{10}$)
B **1959.4**$_7$, 15^-, $\gamma_{1649.5}$**309.9**$_4$, $\gamma_{1415.8}$**543.7**$_4$
1992.45$_{18}$, (3^-), $\gamma_{1285.78}$**706.6**$_2$(100$_{13}$), $\gamma_{1224.17}$**768.3**$_2$(<69), $\gamma_{1128.70}$**863.5**$_6$(<19), $\gamma_{1059.7}$**932.7**$_3$(50$_6$), $\gamma_{148.39}$**1844.6**$_5$(25$_6$)
2163.5$_3$, $\gamma_{731.92}$**1431.3**$_{10}$(67$_{15}$), $\gamma_{307.23}$**1856.6**$_4$(100$_{15}$), $\gamma_{148.39}$**2014.8**$_4$(84$_{15}$)
2176.0$_7$, 1^+, *58x10^{-3}$_3$ eV*, $\gamma_{44.921}$**2131**(52$_2$), γ_{0}**2176**(100) M1
A **2191.3**$_8$, 18^+, *1.18$_7$ ps*, $\gamma_{1788.7}$**402.6**$_4$(100)
2209.0$_7$, 1^+, *61x10^{-3}$_3$ eV*, $\gamma_{44.921}$**2164**(55$_3$), γ_{0}**2209**(100) M1
2245.0$_7$, 1^+, *33.5x10^{-3}$_{20}$ eV*, $\gamma_{44.921}$**2200**(47$_3$), γ_{0}**2245**(100) M1
2295.0$_7$, 1^+, *14.6x10^{-3}$_{16}$ eV*, $\gamma_{44.921}$**2250**(59$_{10}$), γ_{0}**2295**(100) M1
B **2306.9**$_8$, 17^-, $\gamma_{1959.4}$**347.5**$_4$, $\gamma_{1788.7}$**518.3**$_4$
2410.0$_7$, 1^+, *28.2x10^{-3}$_{19}$ eV*, $\gamma_{44.921}$**2365**(54$_5$), γ_{0}**2410**(100) M1
2468.0$_7$, 1^+, *33.2x10^{-3}$_{22}$ eV*, $\gamma_{44.921}$**2423**(50$_5$), γ_{0}**2468**(100) M1
J **2557.9**$_5$, 0^+, *274$_{10}$ ns*, %IT ≈ 95, %SF ≈ 5 , %α<0.5 , $\gamma_{680.09}$**1879**(≈ 37), $\gamma_{44.921}$**2512.7**$_5$(≈ 100), γ_{0}**2558**$_2$ E0
K **2557.9+x**(?) *>1 ns*
J **2577.5**$_{11}$, (2^+), $\gamma_{2557.9}$**19.6**
A **2619.2**$_9$, 20^+, *0.90$_7$ ps*, $\gamma_{2191.3}$**427.9**$_4$(100)
B **2689.6**$_8$, 19^-, $\gamma_{2306.9}$**382.7**$_4$, $\gamma_{2191.3}$**498.3**
2754.0$_7$, (1), *8.4x10^{-5} eV*, $\gamma_{44.921}$**2709**(20$_{10}$), γ_{0}**2754**(100)
A **3068.1**$_{10}$, 22^+, *0.69$_{14}$ ps*, $\gamma_{2619.2}$**448.9**$_4$(100)
B **3104.7**$_{13}$, 21^-, $\gamma_{2689.6}$**415.1**$_{10}$
J **3203.1**$_{11}$(?), (0^+), $\gamma_{2557.9}$**645.2** (E0)
3253.8$_3$, 1^-, *5.2x10^{-4}$_{19}$ eV*, $\gamma_{1128.70}$**2125**(44), $\gamma_{1037.28}$**2217**(9), $\gamma_{997.63}$**2256**(8), $\gamma_{966.14}$**2288**(91), $\gamma_{950.22}$**2303**(16), $\gamma_{930.66}$**2323**(32), $\gamma_{927.23}$**2327**(33), $\gamma_{731.92}$**2522**(14), $\gamma_{680.09}$**2574**(28), $\gamma_{44.921}$**3209**(22), γ_{0}**3253**(100)
A **3535.1**$_{14}$, 24^+, *0.51$_4$ ps*, $\gamma_{3068.1}$**467**$_1$(100)
B **3548.3**$_{17}$, 23^-, $\gamma_{3104.7}$**443.6**$_{10}$
3808.8$_5$, (1,2), *>1.6x10^{-3} eV*, $\gamma_{927.23}$**2882**(55$_{22}$), $\gamma_{680.09}$**3128**(28$_{22}$), $\gamma_{44.921}$**3764**(96$_{14}$), γ_{0}**3809**(100)
A **4017.9**$_{18}$, 26^+, *0.40$_6$ ps*, $\gamma_{3535.1}$**482.8**$_{10}$(100)

4495.0$_{10}$, $(1,2)$, $>4.7x10^{-5}$ *eV*, $\gamma_{\mathbf{44.921}}$**4450**(32_{28})(?), $\gamma_{\mathbf{0}}$**4495**(100)

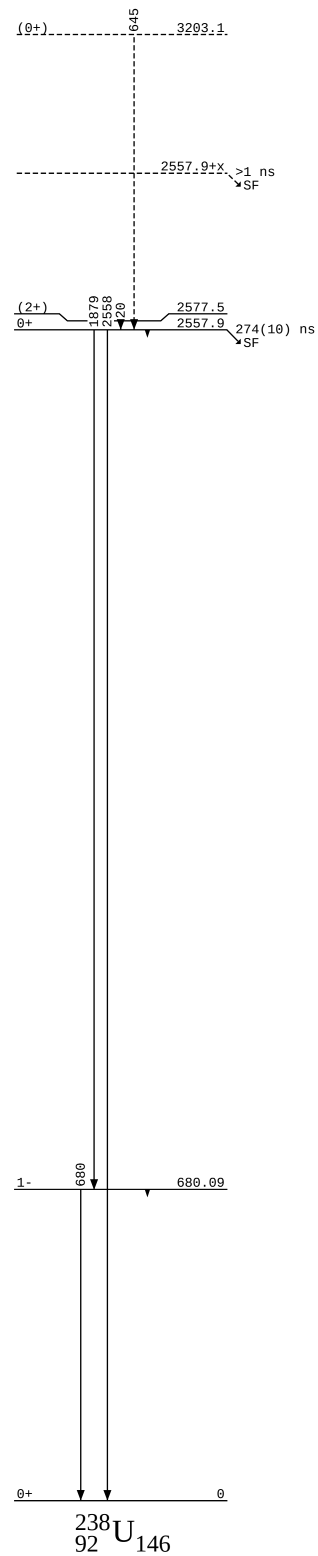
A **4517.2**$_{20}$, 28^{+}, *0.37*$_{9}$ *ps*, $\gamma_{\mathbf{4017.9}}$**499.3**$_{10}$(100)

4591.5$_{7}$, $(1,2)$, $>2.8x10^{-4}$ *eV*, $\gamma_{\mathbf{44.921}}$**4546**(190), $\gamma_{\mathbf{0}}$**4592**(100)

4806.6$_{7}$, (1), *2.5x10*$^{-4}{}_{5}$ *eV*, $\gamma_{\mathbf{966.14}}$**3840**(47_{17}), $\gamma_{\mathbf{0}}$**4807**(100)

A **5034.9**$_{23}$, 30^{+}, $\gamma_{\mathbf{4517.2}}$**517.7**$_{10}$

5205.5$_{7}$, $(1,2)$, $>4.1x10^{-4}$ *eV*, $\gamma_{\mathbf{1056.5}}$**4148**(33_{26})(?), $\gamma_{\mathbf{44.921}}$**5160**(90_{28}), $\gamma_{\mathbf{0}}$**5206**(100)



$^{237}_{93}$Np$_{144}$

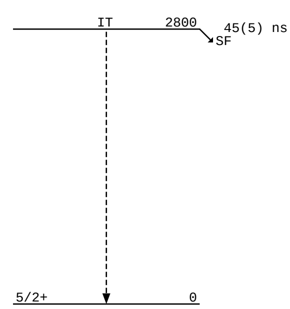
S$_n$: 6574 $_{50}$, S$_p$: 4862.1 $_3$

Nuclear Bands

A 5/2[642]
B 5/2[523]
C 1/2[530]
D 1/2[400]
E 3/2[521]
F K=5/2
G Fission isomer (1977Mi09,1973Wo03)

Levels and γ-ray branchings:

A **0**, $5/2^+$, *2.144x10^6$_7$ y*, %α=100 , %SF≤2x10^{-10}, μ=+3.14$_4$, Q=+3.886$_6$
A **33.1964**$_3$, $7/2^+$, *54$_{24}$ ps*, γ_0**33.1964**$_3$ M1+E2 $\delta=0.13_3$
B **59.5412**$_1$, $5/2^-$, *67$_2$ ns*, μ=+1.68$_3$, Q=+3.85$_4$, $\gamma_{33.1964}$**26.3448**$_2$(6.71$_{14}$) E1, γ_0**59.5412**$_2$(100) E1
A **75.92**$_4$, $9/2^+$, *≈56 ps*, $\gamma_{33.1964}$**42.73**$_5$(100$_{15}$), γ_0**75.8**$_2$(≈ 11)
B **102.96**$_2$, $7/2^-$, *80$_{40}$ ps*, $\gamma_{75.92}$**27.03**(?), $\gamma_{59.5412}$**43.423**$_{10}$(100$_{11}$) M1+E2 $\delta=0.41_2$, $\gamma_{33.1964}$**69.76**$_3$(4.0$_6$) (E1), γ_0**102.98**$_2$(26.7$_2$) E1
A **130.00**$_3$, $11/2^+$, $\gamma_{75.92}$**54.0**, $\gamma_{33.1964}$**96.7**
B **158.51**$_2$, $9/2^-$, $\gamma_{102.96}$**55.56**$_2$(89$_9$) M1+E2 $\delta=0.46_4$, $\gamma_{59.5412}$**98.97**$_2$(100$_2$) E2, $\gamma_{33.1964}$**125.30**$_2$(20.1$_2$)
A **191.46**$_8$, $13/2^+$, $\gamma_{75.92}$**115.5**$_1$(100)
B **225.96**$_2$, $11/2^-$, $\gamma_{158.51}$**67.45**$_5$(42$_{10}$) (M1+E2) $\delta=0.46_{12}$, $\gamma_{102.96}$**123.01**$_2$(100$_1$) E2, $\gamma_{75.92}$**150.04**$_3$(7.40$_{15}$)
C **267.54**$_2$, $3/2^-$, *5.2$_2$ ns*, $\gamma_{102.96}$**164.61**$_2$(8.6$_2$) E2, $\gamma_{59.5412}$**208.00**$_1$(100$_1$) M1+E2 $\delta=+0.156_5$, $\gamma_{33.1964}$**234.40**$_4$(0.097$_{10}$) M2, γ_0**267.54**$_4$(3.36$_{10}$) E1+M2 $\delta=0.490_{15}$
A **269.9**$_5$, $15/2^+$, $\gamma_{130.00}$**139.9**(100)
C **281.35**$_2$, $1/2^-$, $\gamma_{267.54}$**13.81**$_2$(21.4$_8$) M1+E2 $\delta=0.0321_{10}$, $\gamma_{59.5412}$**221.80**$_4$(100$_4$) E2
B **305.06**$_4$, $13/2^-$, $\gamma_{158.51}$**146.55**$_3$(100$_2$) E2, $\gamma_{130.00}$**175.07**$_4$(3.9$_3$)
316.8$_2$(?), γ_0**316.8**$_2$
C **324.42**$_5$, $(7/2^-)$, $\gamma_{158.51}$**165.81**$_6$(54.7$_{24}$), $\gamma_{102.96}$**221.46**$_3$(100$_2$), $\gamma_{75.92}$**249.00**$_{15}$(1.3), $\gamma_{59.5412}$**264.89**$_6$(21.2$_{10}$), $\gamma_{33.1964}$**291.30**$_{20}$(7.3$_8$)
D **332.36**$_3$, $1/2^+$, *≤1.0 ns*, $\gamma_{281.35}$**51.01**$_3$(93.4$_{16}$) E1, $\gamma_{267.54}$**64.83**$_2$(100$_2$) E1, γ_0**332.36**$_4$(26.6$_8$) E2
A **348.5**$_5$, $17/2^+$, $\gamma_{191.46}$**157.0**(100)
C **359.7**$_1$, $(5/2^-)$, $\gamma_{59.5412}$**300.13**$_6$(?)
D **368.59**$_3$, $5/2^+$, $\gamma_{75.92}$**292.77**$_6$(2.86$_{11}$), $\gamma_{59.5412}$**309.1**$_3$(0.28), $\gamma_{33.1964}$**335.38**$_3$(100$_1$) M1+E2 $\delta=0.46_{17}$, γ_0**368.59**$_4$(43.7$_2$) M1(+E2) $\delta<0.31$
D **370.93**$_3$, $3/2^+$, $\gamma_{332.36}$**38.54**$_3$ (M1+E2), $\gamma_{33.1964}$**337.7**$_2$(8.3$_5$) (E2), γ_0**370.94**$_3$(100$_1$) M1+E2 $\delta=0.43^{7}_{21}$
B **395.52**$_5$, $15/2^-$, $\gamma_{225.96}$**169.56**$_3$(100$_2$) E2, $\gamma_{191.46}$**204.06**$_6$(1.68$_{11}$)
C **434.12**$_{16}$, $(11/2^-)$, $\gamma_{324.42}$**109.70**$_7$(74), $\gamma_{305.06}$**129.2**, $\gamma_{158.51}$**275.77**$_8$(100$_7$), $\gamma_{130.00}$**304.21**$_{20}$(15$_4$), $\gamma_{75.92}$**358.25**$_{20}$(18$_4$)
D **452.53**$_5$, $9/2^+$, $\gamma_{191.46}$**260.80**$_{15}$(0.87$_{14}$), $\gamma_{130.00}$**322.52**$_3$(110$_1$) (M1+E2) $\delta\approx0.6$, $\gamma_{75.92}$**376.65**$_3$(100$_1$) (M1), $\gamma_{33.1964}$**419.33**$_4$(20.8$_5$), γ_0**452.6**$_2$(1.74$_{18}$)
A **454.4**$_{10}$, $19/2^+$, $\gamma_{269.9}$**184.5**
D **459.69**$_4$, $7/2^+$, $\gamma_{324.42}$**135.3**, $\gamma_{75.92}$**383.81**$_3$(100$_2$), $\gamma_{33.1964}$**426.47**$_4$(87.2$_{18}$), γ_0**459.68**$_{10}$(12.8$_{11}$)
C **485.96**$_{12}$, $(9/2^-)$, $\gamma_{324.42}$**161.54**$_{10}$(100), $\gamma_{225.96}$**260.80**$_{15}$
B **497.02**$_6$, $17/2^-$, $\gamma_{305.06}$**191.96**$_4$(100)
E **514.19**$_6$, $(3/2^-)$, $\gamma_{359.7}$**154.27**$_{20}$(11.7)(?), $\gamma_{281.35}$**232.81**$_5$(100$_7$), $\gamma_{267.54}$**246.73**$_{10}$(52$_7$), $\gamma_{59.5412}$**454.66**$_8$(211$_7$), γ_0**514.0**$_5$(57$_7$)
E **545.59**$_{16}$, $(5/2^-)$, $\gamma_{281.35}$**264.89**$_6$, $\gamma_{267.54}$**278.04**$_{15}$(38), $\gamma_{33.1964}$**512.5**$_3$(100$_{20}$), γ_0**545.4**$_3$(64)
A **547.0**$_{10}$, $21/2^+$, $\gamma_{348.5}$**198.5**
E **590.28**$_{15}$, $(7/2^-)$, $\gamma_{267.54}$**322.52**$_3$, $\gamma_{102.96}$**487.3**$_3$(15.4), γ_0**590.28**$_{15}$(100$_7$)
D **592.3**$_{10}$, $13/2^+$, $\gamma_{452.53}$**139.44**$_8$(100$_{21}$), $\gamma_{434.12}$**159.26**$_{20}$(26$_{10}$), $\gamma_{395.52}$**197.0**$_2$(9.2), $\gamma_{191.46}$**401**$_3$(9.2), $\gamma_{130.00}$**463.22**$_{20}$(19)
D **598.0**$_2$, $11/2^+$, $\gamma_{459.69}$**138.5**, $\gamma_{191.46}$**406.35**$_{15}$(50$_8$), $\gamma_{130.00}$**468.12**$_{15}$(100$_8$), $\gamma_{75.92}$**522.06**$_{15}$(31$_{11}$)
618$_2$
E **646.1**$_2$, $(9/2^-)$, $\gamma_{158.51}$**487.3**$_3$, $\gamma_{59.5412}$**586.59**$_{20}$(100)
666.2$_2$, $(5/2^+,7/2^-)$, $\gamma_{267.54}$**398.64**$_{15}$(160)(?), $\gamma_{75.92}$**590.28**$_{15}$, $\gamma_{33.1964}$**632.93**$_{15}$(100), γ_0**666.5**$_3$(39)
A **684.4**$_{12}$, $23/2^+$, $\gamma_{547.0}$**137.6**(?), $\gamma_{454.4}$**230.0**
E **709**$_3$, $(11/2^-)$
F **721.95**$_5$, $5/2^-$, $\gamma_{267.54}$**454.66**$_8$(?), $\gamma_{158.51}$**563.05**$_{30}$(0.20), $\gamma_{102.96}$**619.01**$_2$(16.3$_2$), $\gamma_{59.5412}$**662.40**$_2$(100$_1$) E0+M1+E2, $\gamma_{33.1964}$**688.72**$_4$(8.9$_2$), γ_0**722.01**$_3$(53.8$_3$)
F **756.00**$_{10}$, $7/2^-$, $\gamma_{158.51}$**597.48**$_8$(19.7$_8$), $\gamma_{102.96}$**653.02**$_4$(100$_3$), $\gamma_{75.92}$**680.10**$_{10}$(8.3$_5$), $\gamma_{59.5412}$**696.60**$_5$(14.2$_5$), $\gamma_{33.1964}$**722.01**$_3$, γ_0**755.90**$_5$(20.2$_7$)
758$_6$
770.57$_5$, $\gamma_{324.42}$**446.43**$_{15}$(6.1$_2$), $\gamma_{33.1964}$**737.34**$_5$(100$_3$), γ_0**770.57**$_{10}$(59$_3$)
A **787.1**$_{12}$, $25/2^+$, $\gamma_{547.0}$**240.1**
F **800.00**$_{10}$, $9/2^-$, $\gamma_{225.96}$**573.94**$_{20}$(18$_3$), $\gamma_{158.51}$**641.47**$_5$(100$_5$), $\gamma_{130.00}$**669.83**$_{20}$(5.4$_{17}$), $\gamma_{102.96}$**696.60**$_5$, $\gamma_{33.1964}$**767.00**$_{10}$(70.4$_{22}$)
805.8$_2$, $(7/2^+,9/2^+)$, $\gamma_{130.00}$**676.03**$_{30}$(24$_5$), $\gamma_{75.92}$**729.72**$_{15}$(50$_6$), $\gamma_{33.1964}$**772.4**$_3$(100$_6$), γ_0**806.3**$_3$(11.7)
823$_3$
F **853.36**$_{20}$, $11/2^-$, $\gamma_{324.42}$**529.17**$_{20}$(82), $\gamma_{225.96}$**627.18**$_{20}$(100$_{31}$)
861.7$_5$, $(5/2^+,7/2)$, $\gamma_{75.92}$**786.00**$_{15}$(46)(?), $\gamma_{59.5412}$**801.94**$_{20}$(100), $\gamma_{33.1964}$**828.5**(18$_5$), γ_0**862.7**$_5$(39$_5$)
906$_2$
914$_4$
920.9$_5$, $\gamma_{59.5412}$**860.7**$_5$(37$_{12}$), $\gamma_{33.1964}$**887.3**$_3$(100$_{23}$), γ_0**921.5**$_3$(86$_{19}$)
945.3$_2$, $11/2,13/2$, *0.71$_4$ μs*, %IT=100 , $\gamma_{305.06}$**640.4**$_3$(33$_7$), $\gamma_{269.9}$**675.6**$_4$(5.4$_{11}$), $\gamma_{225.96}$**719.2**$_2$(41$_9$), $\gamma_{191.46}$**753.6**$_2$(48$_{10}$), $\gamma_{158.51}$**786.8**$_2$(45$_9$), $\gamma_{130.00}$**815.3**$_2$(100$_{20}$)
946$_2$
A **959.6**$_{15}$, $27/2^+$, $\gamma_{787.1}$**172.6**, $\gamma_{684.4}$**275.1**
961$_3$
963$_2$
984$_2$
1013$_3$
1020$_3$
1030$_3$
1040$_4$
1066$_3$
A **1068.3**$_{13}$, $29/2^+$, $\gamma_{787.1}$**281.2**
1072$_6$
1112$_4$
A **1278.8**$_{14}$, $31/2^+$, $\gamma_{1068.3}$**210.5**, $\gamma_{959.6}$**319**
A **1389**, $33/2^+$, $\gamma_{1068.3}$**321**
A **1639**, $35/2^+$, γ_{1389}**249.4**, $\gamma_{1278.8}$**361**
A **1749**, $37/2^+$, γ_{1389}**360**
A **2041**, $39/2^+$, γ_{1749}**292.7**, γ_{1639}**401.1**
A **2146**, $41/2^+$, γ_{1749}**396.9**
A **2480**, $43/2^+$, γ_{2146}**334.8**, γ_{2041}**439.0**
A **2578**, $45/2^+$, γ_{2146}**431.9**
G **2.8x10^3$_4$** *45$_5$ ns*, %SF≤100
A **2955**, $47/2^+$, γ_{2578}**378.2**, γ_{2480}**475.3**
A **3043**, $49/2^+$, γ_{2578}**465.5**
A **3464**, $51/2^+$, γ_{2955}**508.6**
A **3541**, $53/2^+$
A **4004**, $55/2^+$, γ_{3464}**540.1**
A **4069**, $57/2^+$, γ_{3541}**527.5**



$^{237}_{93}$Np$_{144}$

$^{235}_{94}Pu_{141}$

S_n: 6230 $_{22}$, S_p: 5060 $_{22}$

Nuclear Bands

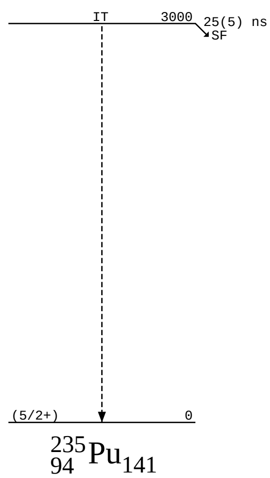
A 5/2[633]

B Fission isomer (1969Me11,1970Bu02,1978SoZP,1989SoZZ)

Levels and γ-ray branchings:

A **0**, $(5/2^+)$, *25.3$_5$ min*, %ε+%β^+=99.9973$_5$, %α=0.0027$_5$

B **3.0x10**$^3{}_2$ *25$_5$ ns*, %SF≤100



$^{236}_{94}Pu_{142}$

S_n: 7357 $_{21}$, S_p: 5433.2 $_{19}$

Nuclear Bands

A GS band

B Fission isomer (1969La14,1971Br39,1974MeYP,1977Me08)

Levels and γ-ray branchings:

A **0**, 0^+, *2.858$_8$ y*, %α=100, %SF=1.36x10$^{-7}{}_4$

A **44.63**$_{10}$, 2^+, $\gamma_{\mathbf{0}}$**44.63**$_{10}$(100) E2

A **147.45**$_{10}$, 4^+, $\gamma_{\mathbf{44.63}}$**102.82**$_2$(100)

A **305.80**$_{11}$, 6^+, $\gamma_{\mathbf{147.45}}$**158.35**$_2$(100) E2

A **515.7**$_2$, 8^+, $\gamma_{\mathbf{305.80}}$**209.9**$_2$(100) E2

A **773.5**$_3$, 10^+, $\gamma_{\mathbf{515.7}}$**257.8**$_2$(100)

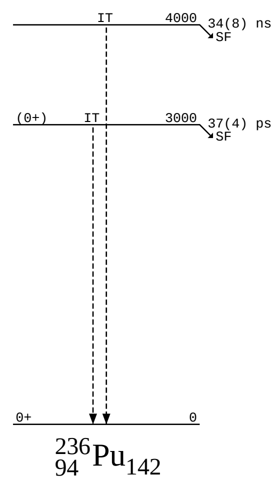
A **1074.3**$_4$, 12^+, $\gamma_{\mathbf{773.5}}$**300.8**$_2$(100)

A **1413.6**$_4$, 14^+, $\gamma_{\mathbf{1074.3}}$**339.3**$_2$(100)

A **1786.0**$_5$, 16^+, $\gamma_{\mathbf{1413.6}}$**372.4**$_3$(100)

B ≈**3000**, (0^+), *37$_4$ ps*, %SF≤100

B **4.0x10**$^3{}_2$ *34$_8$ ns*, %SF≤100



$^{237}_{94}\mathbf{Pu}_{143}$

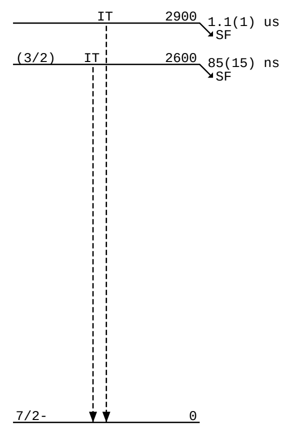
S_n: 5877.0 $_{24}$, S_p: 5571 $_{50}$

Nuclear Bands

A 7/2[743]
B 1/2[631]
C 5/2[622]
D 3/2[631]
E 5/2[633]
F 7/2[624]
G 1/2[501]
H $K\pi=5/2^-$
I $K\pi=1/2$, 0^+ phonon + 1/2[631]
J Fission isomer (1969La14,1970Po01,1973Va16,1979Gu03, 1982Ra04)

Levels and γ-ray branchings:

A **0**, $7/2^-$, 45.2_1 *d*, %α=0.0042_4, %ε=99.9958_4
A **47.71_4**, $9/2^-$, γ_0**47.71_4** M1+E2 $\delta=0.24_8$
A **106_5**, $11/2^-$
B **145.544_{10}**, $1/2^+$, 0.18_2 *s*, %IT=100 , γ_0**145.544_{10}** E3
B **155.45_2**, $3/2^+$, $\gamma_{145.544}$**9.903_{16}** M1+E2 $\delta=0.07_2$
A **175_7**, $13/2^-$
B **201.18_2**, $5/2^+$, $\gamma_{155.45}$**45.724_8**(46_{12}) M1+E2 $\delta=0.47_{13}$, $\gamma_{145.544}$**55.638_{11}**(100_{16}) (E2)
B **224.25_5**, $7/2^+$, $\gamma_{155.45}$**68.8_1** (E2)
A **257**, $15/2^-$
C **280.22_2**, $5/2^+$, $\gamma_{201.18}$**79.05_2**(0.42_7) (M1), $\gamma_{155.45}$**124.72_3**(0.59_{11}) (M1), γ_0**280.23_2**(100_5) E1
B **304_4**, $9/2^+$
C **320.97_2**, $7/2^+$, $\gamma_{280.22}$**40.748_6**(2.0_4) M1+E2 $\delta=0.19_3$, $\gamma_{47.71}$**273.3_1**(54_4), γ_0**321.0_1**(100_8) E1
D **370.40_4**, $3/2^+$, $\gamma_{155.45}$**214.9_2**(100_{21}) (M1), $\gamma_{145.544}$**224.86_4**(100_{21}) (M1)
C **371_5**, $9/2^+$
D **404.19_5**, $5/2^+$, $\gamma_{280.22}$**123.8_3**(≈ 7), $\gamma_{224.25}$**179.94_2**(41_9) (M1(+E2)) $\delta=0.7_7$, $\gamma_{201.18}$**203.03_5**(71_9) M1(+E2) $\delta=0.4_4$, $\gamma_{155.45}$**248.7_2**(100_{10}) (M1(+E2)) $\delta=0.6_6$
E **407.83_6**, $5/2^+$, $\gamma_{280.22}$**127.5_2**(17_4), $\gamma_{224.25}$**183.7_2**(30_8) M1(+E2) $\delta=0.7_7$, $\gamma_{201.18}$**206.7_1**(52_7) M1(+E2) $\delta=0.3_3$, $\gamma_{155.45}$**252.2_2**(43_{12}) M1(+E2) $\delta=0.6_6$, γ_0**407.8_1**(100_8) (E1)
E **438.41_{10}**, $7/2^+$, $\gamma_{280.22}$**158.3_3**(0.8_3), $\gamma_{47.71}$**390.7_1**(6.6_5) E1, γ_0**438.4_1**(100_5) E1
D **453.2_2**, $7/2^+$, $\gamma_{224.25}$**229.1_3**(100_{34}), $\gamma_{201.18}$**252.2_2**(100_{34}), γ_0**453.2_3**(67_{14})
F **473.50_{10}**, $7/2^+$, $\gamma_{280.22}$**193.4_3**(2.1_7), $\gamma_{47.71}$**425.8_1**(45_3) E1, γ_0**473.5_1**(100_7) E1
E **486**, $(9/2^+)$
D **513**, $9/2^+$
G **545**, $(1/2^-)$
G **582**, $(5/2^-)$
G **591**, $(3/2^-)$
655
H **655.3_2**, $(5/2)^-$, γ_0**655.3_2** M1
G **691**, $(7/2^-)$
H **696.2_3**, $7/2^-$, $\gamma_{655.3}$**40.748_6**, $\gamma_{47.71}$**648.5_3**(100_{16}) M1, γ_0**696.2_3**(77_{16}) M1
716
741
757
775
I **800_2**, $1/2^+$
809
840
851_5, $3/2^+,5/2^+$
852
884
908.9_2, $7/2^+$, $\gamma_{473.50}$**435.2_3**(9.6_{16}) M1, $\gamma_{453.2}$**455.8_3**(3.5_8) M1, $\gamma_{407.83}$**501.2_3**(10.8_{16}) M1, $\gamma_{404.19}$**504.8_3**(7.3_{16}) M1, $\gamma_{47.71}$**861.2_3**(14.2_{16}), γ_0**908.8_2**(100_6)
933
964
998_5
1000.6_3, $3/2^+,5/2,7/2$, $\gamma_{280.22}$**720.4_5**(100_{21}), γ_0**1000.6_3**(79_{21})
1014
1025_3
1053
1104
1189
1216
1250
1264
1348
1383
1397
1463
1481
1534
J **$26.0\mathrm{x}10^2{}_{20}$**, $(3/2)$, 85_{15} *ns*, %SF≤100 , μ=-0.68_5
J **$29.0\mathrm{x}10^2{}_{25}$** 1.1_1 *μs*, %SF≤100 , g=$+0.14_2$



$^{237}_{94}\mathrm{Pu}_{143}$

$^{238}_{94}\mathbf{Pu}_{144}$

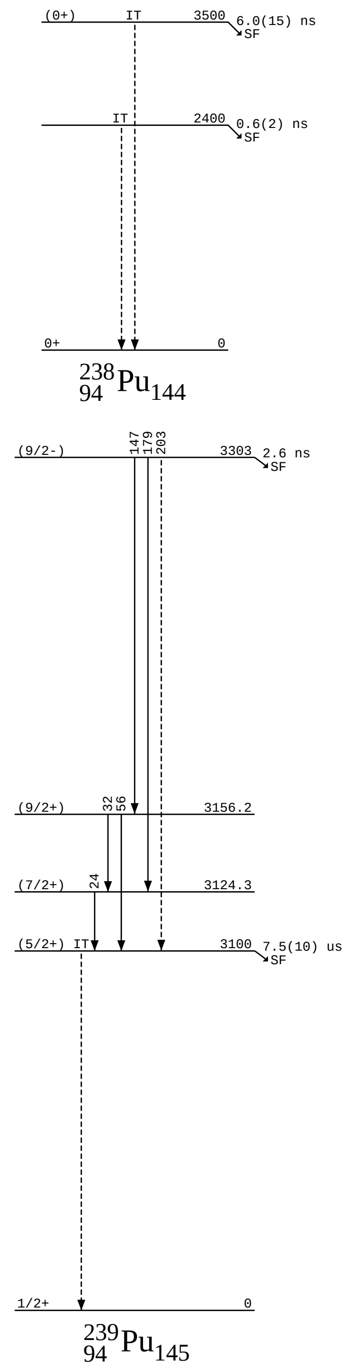
S_n: 7000.4 $_{14}$, S_p: 5997.8 $_7$

Nuclear Bands

A Kπ=0^+, GS band
B Kπ=0^-, octupole band
C Kπ=0^+, β band
D Kπ=1^-, ν7/2[743]-ν5/2[622]
E Kπ=2^+
F Kπ=0^+
G Kπ=0^+
H Kπ=(4^-), ν7/2[743]+ν1/2[631]
I Kπ=(3^-), ν7/2[743]-ν1/2[631]
J Fission isomer (1970Bu02,1971Br39,1973Li01,1973Na35, 1974MeYP,1992DeZZ)

Levels and γ-ray branchings:

A **0**, 0^+, *87.7$_3$ y*, %α=100, %SF=1.9x$10^{-7}{}_1$
A **44.08**$_3$, 2^+, *177$_5$ ps*, $\gamma_{\mathbf{0}}$**44.08**$_3$(100) E2
A **145.96**$_4$, 4^+, $\gamma_{\mathbf{44.08}}$**101.90**$_3$(100) E2
A **303.40**$_7$, 6^+, $\gamma_{\mathbf{145.96}}$**157.42**$_5$(100) E2
A **513.4**$_2$, 8^+, $\gamma_{\mathbf{303.40}}$**210.0**$_2$(100)
B **605.18**$_6$, 1^-, *4.7$_5$ ps*, $\gamma_{\mathbf{44.08}}$**561.11**$_7$(100_2) E1, $\gamma_{\mathbf{0}}$**605.13**$_9$(76_4) E1+M2 $\delta > -0.1$
B **661.43**$_{10}$, 3^-, *3.7$_{11}$ ps*, $\gamma_{\mathbf{145.96}}$**515.5**$_2$(66_3) E1+M2 $\delta = -0.2_{-5}$, $\gamma_{\mathbf{44.08}}$**617.36**$_{11}$(100_7) E1+M2 $\delta = -0.2_{-2}$
B **763.2**$_3$, (5^-), $\gamma_{\mathbf{303.40}}$**459.80**$_{22}$, $\gamma_{\mathbf{145.96}}$**617.36**$_{11}$
A **772.8**$_2$, 10^+, $\gamma_{\mathbf{513.4}}$**259.4**$_2$(100)
C **941.5**$_2$, 0^+, $\gamma_{\mathbf{605.18}}$**336.38**$_{15}$(3.1_{12}), $\gamma_{\mathbf{44.08}}$**897.33**$_{10}$(100_7), $\gamma_{\mathbf{0}}$**941.5**$_3$ E0
D **962.77**$_3$, 1^-, *6.2$_{12}$ ps*, $\gamma_{\mathbf{661.43}}$**301.4**$_3$(1.7_2), $\gamma_{\mathbf{605.18}}$**357.62**$_7$(7.6_4) M1+E2 $\delta = 2.7_4$, $\gamma_{\mathbf{44.08}}$**918.69**$_4$(84_3) E1+M2 $\delta = -0.02_{-3}$, $\gamma_{\mathbf{0}}$**962.77**$_3$(100_3) E1
968.1$_8$(?), (2^-), $\gamma_{\mathbf{44.08}}$**924**(100)(?)
C **983.1**$_1$, 2^+, *0.5$_3$ ps*, $\gamma_{\mathbf{661.43}}$**321.75**$_{20}$(1.7_8), $\gamma_{\mathbf{605.18}}$**378.05**$_{13}$(4.4_8), $\gamma_{\mathbf{145.96}}$**837.11**$_{15}$(37_3), $\gamma_{\mathbf{44.08}}$**938.95**$_{10}$(35_4) E0+E2, $\gamma_{\mathbf{0}}$**983.0**$_3$(100_{25})
D **985.46**$_5$, 2^-, $\gamma_{\mathbf{661.43}}$**323.98**$_9$(2.9_2) M1+E2 $\delta = 2.8_8$, $\gamma_{\mathbf{605.18}}$**380.29**$_{13}$(2.18_{10}), $\gamma_{\mathbf{44.08}}$**941.38**$_5$(100_4) E1+M2 $\delta = -0.17_{+1}$
E **1028.55**$_2$, 2^+, $\gamma_{\mathbf{145.96}}$**882.63**$_3$(3.1_1), $\gamma_{\mathbf{44.08}}$**984.45**$_2$(100) M1+E2 $\delta > +23$, $\gamma_{\mathbf{0}}$**1028.54**$_2$(73_3) E2
E **1069.95**$_2$, 3^+, $\gamma_{\mathbf{145.96}}$**923.98**$_2$(29.5_{10}) M1+E2 $\delta = +76_{40}$, $\gamma_{\mathbf{44.08}}$**1025.87**$_2$(100_6) M1+E2 $\delta > +31$
A **1078.5**$_2$, 12^+, $\gamma_{\mathbf{772.8}}$**305.7**$_2$(100)
H **1082.57**$_7$, (4^-), *8.5$_5$ ns*, $\gamma_{\mathbf{968.1}}$**114.4**$_4$(1.5_2), $\gamma_{\mathbf{763.2}}$**319.29**$_{11}$(2.2_2) M1+E2 $\delta = 1.0_5$, $\gamma_{\mathbf{661.43}}$**421.14**$_{11}$(5.7_3), $\gamma_{\mathbf{145.96}}$**936.61**$_6$(100_3) E1+M2 $\delta = -0.24_4$
E **1125.8**$_3$, (4^+), $\gamma_{\mathbf{145.96}}$**979.8**$_2$(100_{17}), $\gamma_{\mathbf{44.08}}$**1081.7**$_3$(19_6)
1134$_4$, (0^+)
1174.4$_4$, $(2^+,1)$, $\gamma_{\mathbf{44.08}}$**1130.2**$_5$(100_{16}), $\gamma_{\mathbf{0}}$**1174.5**$_5$(83_{16})
I **1202.66**$_{10}$, (3^-), $\gamma_{\mathbf{1082.57}}$**119.9**$_1$($100_7$) (M1), $\gamma_{\mathbf{1069.95}}$**132.49**$_{11}$($2.7_2$), $\gamma_{\mathbf{1028.55}}$**174.0**$_2$($25_1$)
F **1228.7**$_3$, 0^+, $\gamma_{\mathbf{44.08}}$**1184.5**$_3$(100) E2, $\gamma_{\mathbf{0}}$**1228.7**$_3$ E0
1252$_2$
F **1264.2**$_3$, 2^+, $\gamma_{\mathbf{145.96}}$**1118.2**$_3$, $\gamma_{\mathbf{44.08}}$**1220.0**$_3$ E0+E2+M1
1310.3$_3$(?), $(2)^+$, $\gamma_{\mathbf{44.08}}$**1266.2**$_3$(100) M1
G **1426.6**$_3$, 0^+, $\gamma_{\mathbf{605.18}}$**821.5**$_4$(100) E1, $\gamma_{\mathbf{0}}$**1426.6**$_3$ E0
A **1427.2**$_3$, 14^+, $\gamma_{\mathbf{1078.5}}$**348.7**$_3$(100)
1447.3$_2$, 1^-, $\gamma_{\mathbf{605.18}}$**841.9**$_4$ E0, $\gamma_{\mathbf{44.08}}$**1403.2**$_3$(100_8) E1, $\gamma_{\mathbf{0}}$**1447.3**$_3$(63_4) E1
G **1458.3**$_3$, 2^+, $\gamma_{\mathbf{44.08}}$**1414.0**$_3$(≈ 23), $\gamma_{\mathbf{0}}$**1458.5**$_3$(100_{11})
1559.9$_2$, (1^-), $\gamma_{\mathbf{985.46}}$**574.0**$_3$(65_9) (E2+M1), $\gamma_{\mathbf{962.77}}$**597.0**$_3$(79_{10}), $\gamma_{\mathbf{605.18}}$**954.7**$_3$(≈ 58), $\gamma_{\mathbf{44.08}}$**1515.9**$_3$(100_{12}), $\gamma_{\mathbf{0}}$**1560.0**$_3$(77_{19})
1596.4$_3$, (2^+), $\gamma_{\mathbf{145.96}}$**1450.4**$_5$(≈ 77)(?), $\gamma_{\mathbf{44.08}}$**1552.2**$_3$(100_{16}), $\gamma_{\mathbf{0}}$**1596.5**$_5$(≈ 31)
1621.3$_2$, 1^-, $\gamma_{\mathbf{962.77}}$**658.4**$_2$(6.2_7) E0+E2+M1, $\gamma_{\mathbf{941.5}}$**679.5**$_4$(8.9_8) E1, $\gamma_{\mathbf{605.18}}$**1016.2**$_2$(9.7_9) E0+E2+M1, $\gamma_{\mathbf{44.08}}$**1577.3**$_3$(100_8) E1, $\gamma_{\mathbf{0}}$**1621.4**$_4$(≈ 0.6)
1636.4$_2$, 1^-, $\gamma_{\mathbf{983.1}}$**653.3**$_5$(≈ 4), $\gamma_{\mathbf{962.77}}$**673.4**$_2$ E0, $\gamma_{\mathbf{605.18}}$**1031.3**$_3$ E0, $\gamma_{\mathbf{44.08}}$**1592.5**$_3$(38_4), $\gamma_{\mathbf{0}}$**1636.6**$_3$(100_9) E1
1651.2$_4$, $(1,2^+)$, $\gamma_{\mathbf{44.08}}$**1607.0**$_4$(100_{15}), $\gamma_{\mathbf{0}}$**1651.4**$_5$(18_6)
1726.4$_3$, $(1,2^+)$, $\gamma_{\mathbf{44.08}}$**1682.2**$_3$(100_{10}), $\gamma_{\mathbf{0}}$**1726.4**$_3$(59_6)
1783.6$_3$, $(1,2^+)$, $\gamma_{\mathbf{44.08}}$**1739.4**$_4$(48_5), $\gamma_{\mathbf{0}}$**1783.6**$_4$(100_{20})
A **1816.2**$_3$, 16^+, $\gamma_{\mathbf{1427.2}}$**389.0**$_3$(100)
1898.3$_3$, 2^-, $\gamma_{\mathbf{661.43}}$**1237.0**$_3$(81_8) M1, $\gamma_{\mathbf{605.18}}$**1293.2**$_3$(100_{10}) M1
A **2240.5**$_4$, 18^+, $\gamma_{\mathbf{1816.2}}$**424.3**$_4$(100)
J ≈**2400** *0.6$_2$ ns*, %SF≤100
A **2702.8**$_8$, 20^+, $\gamma_{\mathbf{2240.5}}$**461.0**$_3$
A **3195.9**$_9$, 22^+, $\gamma_{\mathbf{2702.8}}$**493.1**$_3$
J ≈**3500**, (0^+), *6.0$_{15}$ ns*, %SF≤100
A **3717.1**$_{10}$, 24^+, $\gamma_{\mathbf{3195.9}}$**521.2**$_5$
A **4262.1**$_{12}$, 26^+, $\gamma_{\mathbf{3717.1}}$**(545.0)**$_7$



$^{239}_{94}\mathbf{Pu}_{145}$

S$_n$: 5646.5 $_3$, S$_p$: 6156.2 $_6$

Nuclear Bands

A 1/2[631], α=+1/2
B 1/2[631], α=-1/2
C Octupole band, α=+1/2
D Octupole band, α=-1/2
E 5/2[622]
F 7/2[743]
G 7/2[624]
H 1/2[761]
I 1/2[620]
J 7/2[613] (?)
K 3/2[622] (?)
L Fission isomer band (1970Po01,1977Ha01,177GoZH,1979Ba02, 1980Gu20)
Q$_0$=36$_4$

Levels and γ-ray branchings:

A **0**, $1/2^+$, *24110$_{30}$ y*, %α=100, %SF=3.1x10^{-10}$_6$, μ=+0.203$_4$
B **7.861**$_2$, $3/2^+$, *36$_3$ ps*, Q=-2.319$_7$, , $\gamma_{\mathbf{0}}$**7.861**$_2$(100) M1+E2 $\delta=0.055_2$
A **57.276**$_2$, $5/2^+$, *101$_5$ ps*, Q=-3.345$_{13}$, , $\gamma_{\mathbf{7.861}}$**49.415**$_2$(85$_9$) M1+E2 $\delta=0.50_3$, $\gamma_{\mathbf{0}}$**57.276**$_2$(100$_6$) E2
B **75.706**$_3$, $7/2^+$, *83$_8$ ps*, Q=-3.826$_{26}$, , $\gamma_{\mathbf{57.276}}$**18.430**$_2$(<20), $\gamma_{\mathbf{7.861}}$**67.846**$_2$(100$_{25}$) E2
A **163.76**$_2$, $9/2^+$, *73$_4$ ps*, $\gamma_{\mathbf{75.706}}$**88.05**$_2$(12$_4$) M1+E2 $\delta=0.50_{10}$, $\gamma_{\mathbf{57.276}}$**106.48**$_2$(100$_{16}$) E2
B **192.81**$_{10}$, $11/2^+$, $\gamma_{\mathbf{75.706}}$**117.1**$_1$(100) E2
E **285.460**$_2$, $5/2^+$, *1.12$_5$ ns*, μ=-1.25$_{29}$, , $\gamma_{\mathbf{75.706}}$**209.753**$_2$(23.7$_3$) M1(+E2) $\delta=-0.004^{1}_{24}$, $\gamma_{\mathbf{57.276}}$**228.183**$_1$(78.0$_{13}$) M1(+E2) $\delta=+0.001^{9}_{1}$, $\gamma_{\mathbf{7.861}}$**277.599**$_1$(100.0$_{15}$) M1+E2 $\delta=+0.165_2$, $\gamma_{\mathbf{0}}$**285.460**$_2$(5.4$_1$) E2
A **318.3**$_1$, $13/2^+$, $\gamma_{\mathbf{163.76}}$**154.50**$_8$(100) E2
E **330.125**$_4$, $7/2^+$, $\gamma_{\mathbf{285.460}}$**44.665**$_2$(100$_8$) M1+E2 $\delta=0.20_3$, $\gamma_{\mathbf{163.76}}$**166.369**$_2$(13$_6$) M1, $\gamma_{\mathbf{75.706}}$**254.418**$_3$(85$_5$) M1+E2 $\delta=-0.159_{12}$, $\gamma_{\mathbf{57.276}}$**272.848**$_3$(60$_4$) M1+E2 $\delta=+0.165_9$, $\gamma_{\mathbf{7.861}}$**322.264**$_3$(4.0$_{12}$)
B **358.3**$_1$, $15/2^+$, $\gamma_{\mathbf{192.81}}$**165.45**$_8$ E2
E **387.41**$_2$, $9/2^+$, $\gamma_{\mathbf{330.125}}$**57.29**$_2$(100$_{40}$) M1(+E2), $\gamma_{\mathbf{285.460}}$**101.95**$_2$($\approx 16$) E2, $\gamma_{\mathbf{75.706}}$**311.70**$_2$(34$_4$) (M1+E2)
F **391.586**$_3$, $7/2^-$, *1934 ns*, $\gamma_{\mathbf{330.125}}$**61.461**$_2$(4.7$_1$) E1, $\gamma_{\mathbf{285.460}}$**106.125**$_2$(100$_2$) E1(+M2) $\delta=-0.007_7$, $\gamma_{\mathbf{75.706}}$**315.879**$_2$(5.9$_2$) E1(+M2) $\delta=+0.008_7$, $\gamma_{\mathbf{57.276}}$**334.309**$_2$(7.7$_2$) E1(+M2) $\delta=+0.006_4$
F **434**$_3$, $(9/2^-)$
E **462**$_3$, $(11/2^+)$
C **469.8**$_4$, $(1/2^-)$, $\gamma_{\mathbf{7.861}}$**461.9**$_4$(100$_{15}$), $\gamma_{\mathbf{0}}$**469.8**$_4$(60$_{15}$)
F **487**$_3$, $(11/2^-)$
D **492.1**$_3$, $3/2^-$, $\gamma_{\mathbf{57.276}}$**434.9**$_3$(100$_{15}$) E1(+M2) $\delta=-0.002_2$, $\gamma_{\mathbf{7.861}}$**484.3**$_3$(10$_3$), $\gamma_{\mathbf{0}}$**492.1**$_3$(60$_{15}$)
C **505.5**$_2$, $(5/2^-)$, $\gamma_{\mathbf{75.706}}$**429.8**$_2$(100$_{15}$), $\gamma_{\mathbf{57.276}}$**448.2**$_2$(7$_2$), $\gamma_{\mathbf{7.861}}$**497.8**$_2$(88$_{18}$)
G **511.838**$_{13}$, $7/2^+$, $\gamma_{\mathbf{387.41}}$**124.434**$_8$(3.0$_3$) M1(+E2) $\delta<0.26$, $\gamma_{\mathbf{330.125}}$**181.711**$_7$(31$_2$) M1+E2 $\delta=-0.150_7$, $\gamma_{\mathbf{285.460}}$**226.378**$_8$(100$_7$) M1+E2 $\delta=+0.133_6$, $\gamma_{\mathbf{75.706}}$**436.136**$_{14}$(0.24$_3$), $\gamma_{\mathbf{57.276}}$**454.565**$_{12}$(0.36$_4$), $\gamma_{\mathbf{7.861}}$**503.977**$_{12}$(0.42$_4$)
A **519.3**$_1$, $17/2^+$, $\gamma_{\mathbf{318.3}}$**201.02**$_8$(100) E2
538$_3$
D **556.1**$_5$, $(7/2^-)$, $\gamma_{\mathbf{163.76}}$**392.4**$_5$(100$_{20}$), $\gamma_{\mathbf{57.276}}$**498.8**$_5$(≈ 70)
G **565**, $(9/2^+)$
B **570.3**$_1$, $19/2^+$, $\gamma_{\mathbf{358.3}}$**212.09**$_8$(100) E2
C **583**$_3$, $(9/2^-)$
F **620**, $(15/2^-)$
G **634**, $11/2^+$
D **659**$_3$, $(11/2^-)$
716
752.5$_5$, $1/2^+,3/2$
756$_5$
763$_3$
A **764.8**$_2$, $(21/2^+)$, $\gamma_{\mathbf{519.3}}$**245.5**$_1$ (E2)
779$_3$
798.2$_5$, $1/2,3/2$
D **804.6**$_{30}$, $(15/2^-)$, $\gamma_{\mathbf{659}}$**145.6**$_2$
805.1$_5$, $1/2,3/2$
813$_3$
825.5$_{10}$, $1/2,3/2$
B **827.3**$_2$, $(23/2^+)$, $\gamma_{\mathbf{570.3}}$**256.9**$_1$ (E2)
854$_2$
888.0$_5$, $1/2,3/2$
900$_2$
915$_3$
933.3$_{10}$, $1/2,3/2$
948$_3$
H **990**, $(3/2^-)$
D **990.4**$_{30}$, $(19/2^-)$, $\gamma_{\mathbf{804.6}}$**185.8**$_2$
C **990.4+x**, $(21/2^-)$
H **1017**, $(1/2^-)$
1027$_2$
H **1038**, $(7/2^-)$
A **1052.9**$_3$, $(25/2^+)$, $\gamma_{\mathbf{764.8}}$**288.1**$_2$(100) (E2)
1062$_2$
1099.9$_5$, $1/2,3/2$
H **1100**, $(5/2^-)$
B **1126.8**$_3$, $(27/2^+)$, $\gamma_{\mathbf{827.3}}$**299.6**$_2$(100) (E2)
H **1137**, $(11/2^-)$
1174
I **1214**, $(1/2^+)$
D **1217.7**$_{30}$, $(23/2^-)$, $\gamma_{\mathbf{990.4}}$**227.3**$_2$
I **1233**, $(3/2^+)$
J **1233**, $(9/2^-)$
C **1233.4+x**(?), $(25/2^-)$, $\gamma_{\mathbf{990.4+x}}$**243.0**$_3$(?)
I **1261**, $(5/2^+)$
K **1261**, $(3/2^+)$
K **1289**, $(5/2^+)$
I **1311**, $(7/2^+)$
K **1342**, $(7/2^+)$
I **1359**, $(9/2^+)$
A **1381.7**$_4$, $(29/2^+)$, $\gamma_{\mathbf{1052.9}}$**328.8**$_3$(100)
1390
K **1409**, $(9/2^+)$
1437
1465
B **1466.8**$_3$, $(31/2^+)$, $\gamma_{\mathbf{1126.8}}$**340.0**$_2$(100) (E2)
D **1485.7**$_{30}$, $(27/2^-)$, $\gamma_{\mathbf{1217.7}}$**268.0**$_2$
1488
C **1516.9+x**(?), $(29/2^-)$, $\gamma_{\mathbf{1233.4+x}}$**283.5**$_2$
A **1748.7**$_5$, $(33/2^+)$, $\gamma_{\mathbf{1381.7}}$**367.0**$_2$(100) (E2)
D **1793.7**$_{30}$(?), $(31/2^-)$, $\gamma_{\mathbf{1485.7}}$**308.0**$_5$(?)
C **1840.8+x**(?), $(33/2^-)$, $\gamma_{\mathbf{1516.9+x}}$**323.9**$_2$
B **1845.8**$_4$, $(35/2^+)$, $\gamma_{\mathbf{1466.8}}$**379.0**$_2$(100) (E2)
D **2141.7**$_{30}$(?), $(35/2^-)$, $\gamma_{\mathbf{1793.7}}$**348.0**$_5$(?)
A **2152.2**$_5$, $(37/2^+)$, $\gamma_{\mathbf{1748.7}}$**403.5**$_2$(100) (E2)
C **2203.6+x**(?), $(37/2^-)$, $\gamma_{\mathbf{1840.8+x}}$**362.8**$_2$
B **2261.2**$_5$, $(39/2^+)$, $\gamma_{\mathbf{1845.8}}$**415.4**$_2$(100) (E2)
A **2589.9**$_5$, $(41/2^+)$, $\gamma_{\mathbf{2152.2}}$**437.7**$_2$(100) (E2)
B **2712.1**$_5$, $(43/2^+)$, $\gamma_{\mathbf{2261.2}}$**450.8**$_2$(100) (E2)
A **3060.3**$_6$, $(45/2^+)$, $\gamma_{\mathbf{2589.9}}$**470.4**$_3$(100) E2
L **31x10**^{2}$_2$, $(5/2^+)$, *7.5$_{10}$ μs*, %SF $\leq$ 100
L **3124.3**, $(7/2^+)$, $\gamma_{\mathbf{31x10^2}}$**24.3**
L **3156.2**, $(9/2^+)$, $\gamma_{\mathbf{3124.3}}$**31.9** M1+E2 $\delta>0.85$, $\gamma_{\mathbf{31x10^2}}$**56.2** E2
B **3195.3**$_6$, $(47/2^+)$, $\gamma_{\mathbf{2712.1}}$**483.3**$_4$(100) (E2)
L **3303**, $(9/2^-)$, *2.6$^{40}_{12}$ ns*, %SF $\leq$ 100 , $\gamma_{\mathbf{3156.2}}$**146.6** (E1), $\gamma_{\mathbf{3124.3}}$**178.5** (E1), $\gamma_{\mathbf{31x10^2}}$**202.8**(?)
A **3559.4**$_8$, $(49/2^+)$, $\gamma_{\mathbf{3060.3}}$**499.1**$_4$(100) (E2)
B **3709.4**$_{10}$(?), $(51/2^+)$, $\gamma_{\mathbf{3195.3}}$**514**$_1$(?)

$^{240}_{94}Pu_{146}$

S_n: 6533.5 $_5$, S_p: 6472.9 $_{10}$

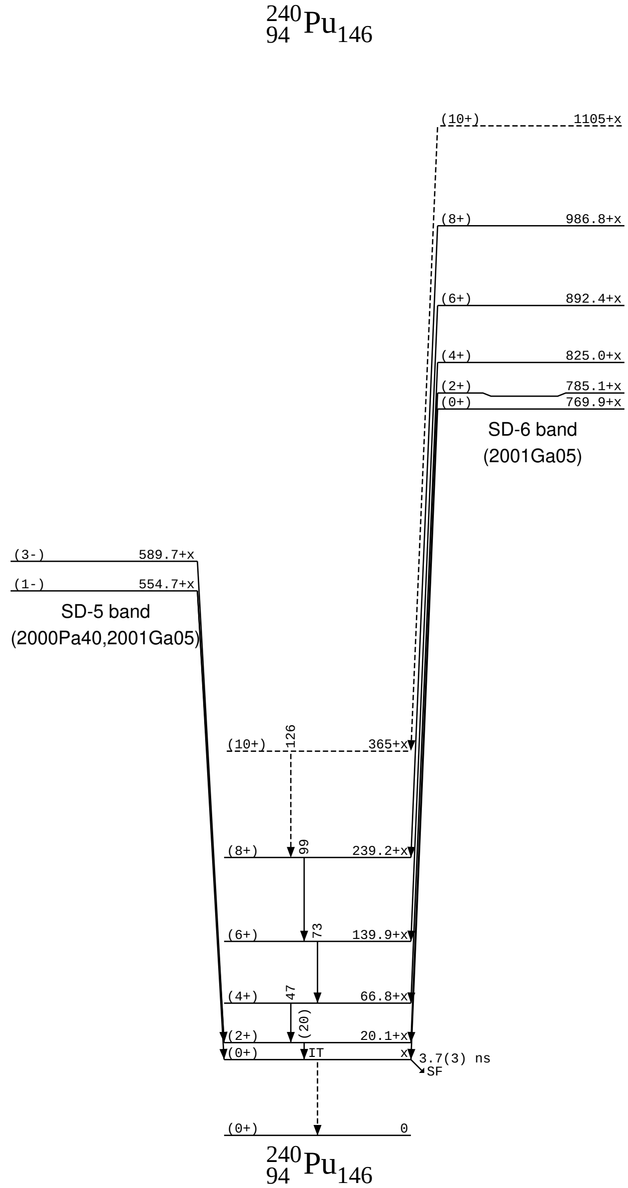
Nuclear Bands

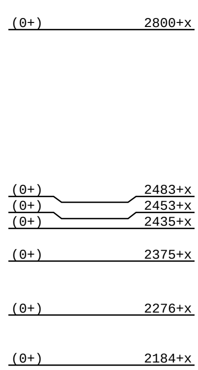
A $K^\pi=0^+$ GS band
B $K^\pi=0^-$ Octupole band (1998Ha08)
C $K^\pi=0^+$ band
D $K^\pi=1^-$ band
E $K^\pi=3^+$ band
F $K^\pi=0^+$ band
G $K^\pi=2^+$ band
H $K^\pi=2^-$ band
I $K^\pi=5^-$ band
J $K^\pi=0^-$ band
K $K^\pi=0^+$ band
L SD-1 (Fission isomer) band, $K^\pi=0^+$ (2000Pa40,2001Ga05,1986De04,1973Be10, 1972Sp06,1971Br39)
M SD-2 band, $K^\pi=2^-$ (2000Pa40,2001Ga05)
N SD-3 band, $K^\pi=1^-$ (2000Pa40,2001Ga05)
O SD-4 band, $K^\pi=1^-$ (2000Pa40,2001Ga05)
P SD-5 band, $K^\pi=0^-$ octupole (2000Pa40,2001Ga05)
Q SD-6 band, $K^\pi=0^+$ β vibration (2001Ga05)
R $K^\pi=0^+$ SD bandhead, 3-phonon (2001Hu12)
S $K^\pi=0^+$ SD bandhead, 4-phonon (2001Hu12)

Levels and γ-ray branchings:

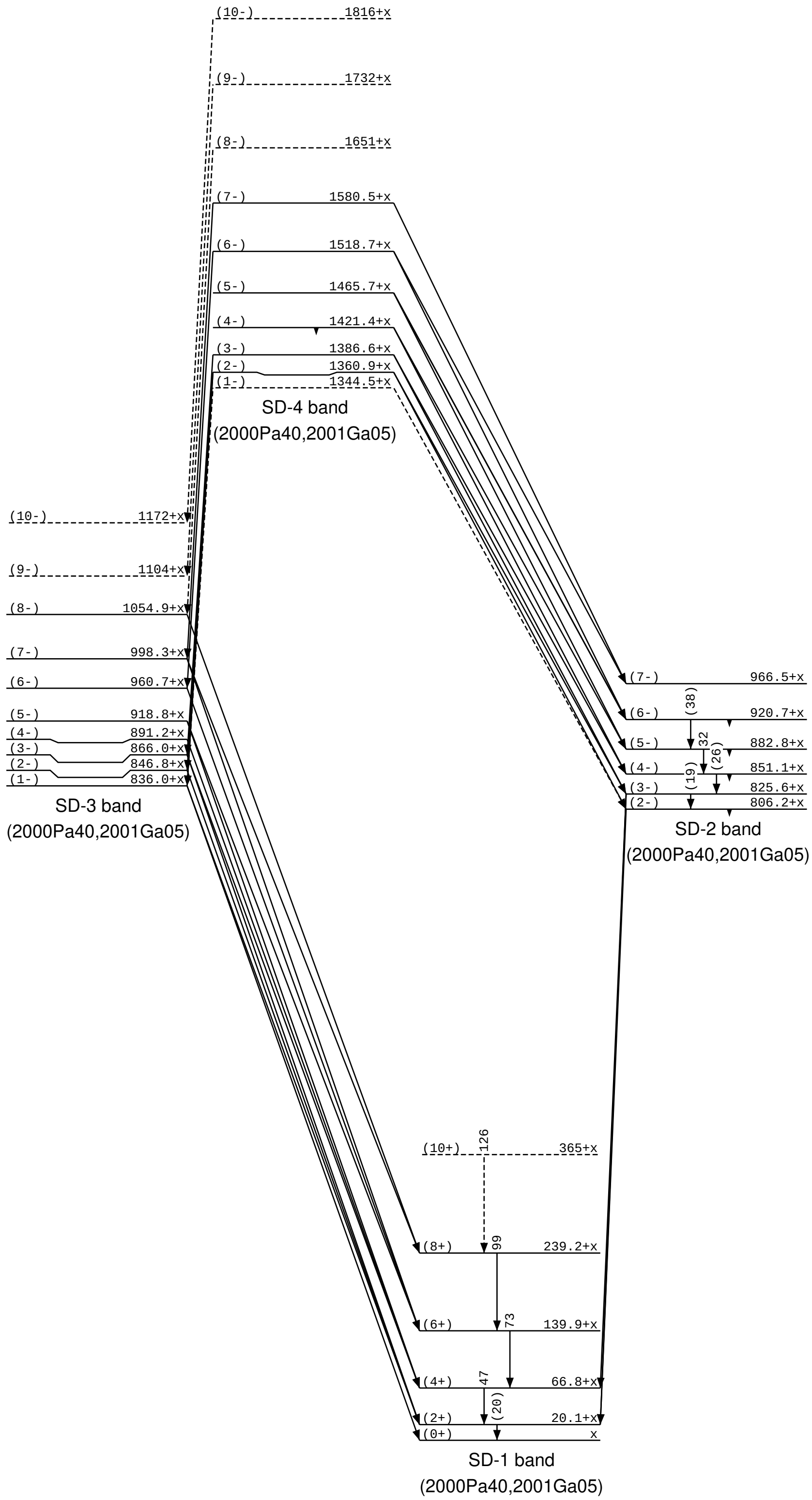
A **0**, 0^+, *6564$_{11}$ y*, %α=100 , %SF=5.7x10$^{-6}{}_2$
A **42.824**$_8$, 2^+, *164$_5$ ps*, γ_0**42.824**$_8$(100) E2
A **141.690**$_{15}$, 4^+, $\gamma_{42.824}$**98.860**$_{13}$(100) E2
A **294.319**$_{24}$, 6^+, $\gamma_{141.690}$**152.630**$_{20}$(100) E2
A **497.52**$_{21}$, 8^+, $\gamma_{294.319}$**203.2**$_2$(100)
B **597.34**$_4$, 1^-, $\gamma_{42.824}$**554.60**$_7$(100$_6$) E1, γ_0**597.40**$_7$(62$_6$) E1
B **648.85**$_4$, 3^-, $\gamma_{141.690}$**507.20**$_{10}$(100), $\gamma_{42.824}$**606.10**$_7$(97$_5$)
B **742.33**$_4$, 5^-, *<2 ns*, $\gamma_{294.319}$**448.01**$_6$(67$_3$), $\gamma_{141.690}$**600.57**$_6$(100$_5$)
A **747.8**$_3$, (10^+), $\gamma_{497.52}$**250.3**$_2$(100)
C **860.71**$_7$, 0^+, $\gamma_{597.34}$**263.37**$_7$(89$_2$), $\gamma_{42.824}$**817.89**$_{10}$(100) E2, γ_0**860.7** E0
C **900.32**$_4$, 2^+, $\gamma_{648.85}$**251.47**$_7$(73$_3$), $\gamma_{597.34}$**302.98**$_7$(85$_3$), $\gamma_{141.690}$**758.61**$_8$(100$_3$) E2, $\gamma_{42.824}$**857.48**$_{10}$(42$_2$), γ_0**900.37**$_{10}$(14$_2$)
D **938.06**$_6$, (1^-), $\gamma_{648.85}$**289.21**$_{10}$(1.4$_3$), $\gamma_{597.34}$**340.70**$_{10}$(5.0$_5$), $\gamma_{42.824}$**895.30**$_{10}$(5$_1$), γ_0**938.02**$_{10}$(100$_4$)
D **958.85**$_6$, (2^-), $\gamma_{648.85}$**309.99**$_9$(4.3$_4$), $\gamma_{597.34}$**361.55**$_{10}$(3.5$_6$), $\gamma_{42.824}$**915.98**$_9$(100$_3$)
C **992.2**$_6$, (4^+), $\gamma_{742.33}$**249.7**$_{10}$(41$_{15}$), $\gamma_{648.85}$**343.7**$_{10}$(100$_{10}$), $\gamma_{294.319}\approx$**697.8**(71$_{16}$)
D **1001.93**$_{10}$, (3^-), $\gamma_{42.824}$**959.1**$_1$(100)
E **1030.53**$_5$, $(3)^+$, *1.32$_{15}$ ns*, $\gamma_{141.690}$**888.80**$_5$(34.3$_5$) E2, $\gamma_{42.824}$**987.76**$_6$(100$_2$) E2
D **1037.52**$_6$, (4^-), $\gamma_{742.33}$**295.20**$_{10}$(3.2$_4$), $\gamma_{648.85}$**388.70**$_{10}$(6.6$_5$), $\gamma_{141.690}$**895.80**$_{10}$(100$_5$)
A **1041.8**$_4$, (12^+), $\gamma_{747.8}$**294.00**$_{20}$(100)
B **1055.7**, (9^-), $\gamma_{497.52}$**559**
E **1076.22**$_9$, (4^+), $\gamma_{141.690}$**934.50**$_{10}$(100$_{12}$), $\gamma_{42.824}$**1033.50**$_{20}$(40$_4$)
F **1089.45**$_{10}$, 0^+, $\gamma_{42.824}$**1046.62**$_{10}$(100)
D **1115.53**$_6$, (5^-), $\gamma_{648.85}$**466.70**$_{10}$(4.5$_4$), $\gamma_{294.319}$**821.20**$_{10}$(4.5$_4$), $\gamma_{141.690}$**973.90**$_{10}$(100$_5$)
F **1131.95**$_{10}$, (2^+), $\gamma_{141.690}$**989.20**$_{10}$(100$_7$), $\gamma_{42.824}$**1088.30**$_{20}$(39$_4$), γ_0**1131.00**$_{20}$(75$_6$)
G **1136.97**$_{13}$, (2^+), $\gamma_{42.824}$**1094.20**$_{20}$(100$_{15}$), γ_0**1137.0**$_4$(67$_{10}$)
D **1161.53**$_7$, (6^-), $\gamma_{742.33}$**419.20**$_{10}$(9.8$_8$), $\gamma_{294.319}$**867.20**$_{10}$(100$_6$)
G **1177.50**$_{10}$, (3^+), $\gamma_{1037.52}$**139.90**$_{10}$, $\gamma_{1001.93}$**175.40**$_{10}$(?), $\gamma_{141.690}$**1036.1**$_3$, $\gamma_{42.824}$**1135.1**$_3$
1180.4, (2^+)
1199$_2$
1223.00$_{20}$, (2^+), $\gamma_{42.824}$**1180.20**$_{20}$(100$_8$), γ_0**1223.00**$_{20}$(80$_{12}$)
G **1232.46**$_{10}$, (4^+), $\gamma_{294.319}$**938.20**$_{10}$(100$_{17}$), $\gamma_{141.690}$**1090.50**$_{20}$(44$_9$), $\gamma_{42.824}$**1190.0**$_{10}$(7$_4$)
H **1240.8**$_3$, (2^-), $\gamma_{42.824}$**1198.0**$_3$(100)
1262.0$_3$, (3^+), $\gamma_{141.690}$**1120.3**$_4$(31$_3$), $\gamma_{42.824}$**1219.2**$_3$(100$_6$)
B **1276.8**, (11^-), $\gamma_{1055.7}$**221**, $\gamma_{1041.8}$**236**, $\gamma_{747.8}$**530**
H **1282**$_2$, (3^-)
I **1308.74**$_5$, (5^-), *165$_{10}$ ns*, $\gamma_{1161.53}$**147.20**$_{10}$(4.0$_3$) (M1+E2), $\gamma_{1115.53}$**193.30**$_{10}$(22.1$_{11}$) (M1+E2), $\gamma_{1037.52}$**271.30**$_{10}$(22.5$_{11}$) (M1+E2), $\gamma_{1001.93}$**306.80**$_{10}$(1.6$_2$) (M1+E2), $\gamma_{742.33}$**566.34**$_6$(100$_5$) (M1+E2), $\gamma_{294.319}$**1014.40**$_{10}$(0.83$_{22}$), $\gamma_{141.690}$**1167.10**$_{10}$(17.8$_{11}$)
1321.10$_{10}$(?), γ_0**1321.10**$_{10}$(100)(?)
1337.0$_3$, $(3,4)$, $\gamma_{141.690}$**1195.5**$_4$(100$_{20}$), $\gamma_{42.824}$**1294.0**$_3$(35$_4$)
A **1375.6**$_6$, (14^+), $\gamma_{1041.8}$**333.8**$_4$(100)
1379$_4$
1407$_3$
J **1410.75**$_{15}$, $0^{(-)}$, $\gamma_{597.34}$**813.41**$_{10}$(100)
1413.0, $^{(+)}$
J **1438.45**$_8$, $2^{(-)}$, $\gamma_{648.85}$**789.59**$_{10}$(100$_{17}$), $\gamma_{597.34}$**841.11**$_{10}$(83$_9$), γ_0**1438.5**(<0.6)
1488.17$_7$, (1^-), $\gamma_{42.824}$**1445.30**$_{10}$(100$_3$), γ_0**1488.20**$_{10}$(53$_3$)
K **1525.86**$_8$, (0^+), $\gamma_{597.34}$**928.55**$_{10}$(100$_{13}$), $\gamma_{42.824}$**1483.00**$_{10}$(18$_3$)
B **1539.1**, (13^-), $\gamma_{1375.6}$**164**, $\gamma_{1276.8}$**262**, $\gamma_{1041.8}$**499**
1539.67$_6$, (1^-), $\gamma_{958.85}$**580.70**$_{20}$(0.53$_{15}$), $\gamma_{648.85}$**890.60**$_{20}$(1.3$_2$), $\gamma_{597.34}$**942.39**$_{10}$(7.2$_7$), $\gamma_{42.824}$**1496.90**$_{10}$(100$_2$), γ_0**1539.62**$_9$(63.2$_{15}$)
K **1558.87**$_5$, (2^+), $\gamma_{648.85}$**910.10**$_{10}$(100$_{14}$), $\gamma_{597.34}$**961.62**$_{10}$(93$_5$), $\gamma_{141.690}$**1417.20**$_{10}$(16$_3$), $\gamma_{42.824}$**1515.90**$_{10}$(11$_4$), γ_0**1558.80**$_{10}$(4.3$_{14}$)
1574
1580
1607.72$_{15}$, (1^-), $\gamma_{1089.45}$**518.2**$_3$(11$_4$), $\gamma_{648.85}$**959.0**$_2$(13$_4$), γ_0**1607.60**$_{20}$(100$_9$)
1626.77$_{15}$, (1^-), $\gamma_{42.824}$**1584.10**$_{20}$(100$_{12}$), γ_0**1626.60**$_{20}$(29$_6$)
1633.37$_8$, (1^-), $\gamma_{1136.97}$**496.7**$_3$(6.5$_{13}$), $\gamma_{597.34}$**1036.5**$_3$(1.9$_{13}$), $\gamma_{42.824}$**1590.50**$_{10}$(63$_3$), γ_0**1633.33**$_{10}$(100$_3$)
1641$_5$
1675$_2$
1710.43$_8$, (2^+), $\gamma_{1136.97}$**573.40**$_{20}$(28$_7$), $\gamma_{648.85}$**1061.60**$_{20}$(100$_{24}$), $\gamma_{597.34}$**1113.20**$_{20}$(62$_{10}$), $\gamma_{141.690}$**1568.60**$_{20}$(21$_3$), $\gamma_{42.824}$**1667.60**$_{10}$(66$_{10}$), γ_0**1711.0**$_{10}$(7$_4$)
A **1745.6**, (16^+), $\gamma_{1375.6}$**371**
1752$_3$
1775.30$_{20}$, (1^-), $\gamma_{42.824}$**1732.40**$_{20}$(67$_{34}$), γ_0**1775.30**$_{20}$(100$_{33}$)
1784$_3$
1796.34$_{15}$, (1^-), $\gamma_{1321.10}$**475.0**$_3$(100$_{27}$), $\gamma_{1223.00}$**573.40**$_{20}$(73$_{18}$), $\gamma_{958.85}$**837.60**$_{20}$(73$_{27}$), γ_0**1796.2**$_3$(27$_9$)
1808.00$_{20}$, $(1^-,2^+)$, $\gamma_{648.85}$**1159.20**$_{20}$(40$_{13}$), $\gamma_{597.34}$**1210.5**$_5$(100$_{30}$), $\gamma_{42.824}$**1765.20**$_{20}$(47$_7$), γ_0**1807.9**$_4$(13$_7$)
B **1841.4**, (15^-), $\gamma_{1539.1}$**302**, $\gamma_{1375.6}$**467**
1861$_3$
1902$_3$
1917.8$_3$, (1^-), $\gamma_{42.824}$**1874.9**$_3$(100$_8$), γ_0**1918.0**$_{10}$(7$_3$)
1954.50$_{10}$, (2^+), $\gamma_{648.85}$**1305.80**$_{20}$(100$_{26}$), $\gamma_{597.34}$**1357.20**$_{20}$(57$_{13}$), $\gamma_{141.690}$**1812.80**$_{10}$(22$_9$), $\gamma_{42.824}$**1911.4**$_3$(61$_4$)
1996.40$_{20}$, $(1^-,2^+)$, $\gamma_{597.34}$**1398.5**$_5$(100$_{40}$), $\gamma_{42.824}$**1953.60**$_{20}$(46$_{10}$), γ_0**1996.7**$_4$(20$_8$)
2117.60$_{20}$, $\gamma_{42.824}$**2074.80**$_{20}$(100$_{16}$)(?), γ_0**2117.5**$_{10}$(23$_{13}$)
2127.4, $^{(-)}$
A **2152**, (18^+), $\gamma_{1745.6}$**406**
B **2182.5**, (17^-), $\gamma_{1841.4}$**341**, $\gamma_{1745.6}$**437**
B **2561**, (19^-), $\gamma_{2182.5}$**378**, γ_{2152}**409**
A **2591**, (20^+), γ_{2152}**439**
B **2975**, (21^-), γ_{2561}**414**
A **3061**, (22^+), γ_{2591}**470**
B **3423**, (23^-), γ_{2975}**448**
A **3560**, (24^+), γ_{3061}**499**
B **3903**, (25^-), γ_{3423}**480**
A **4088**, (26^+), γ_{3560}**528**
B **4414**, (27^-), γ_{3903}**511**
L **x**, (0^+), *3.7$_3$ ns*, %SF>0
L **20.1+x**, (2^+), γ_x**(20.1)**
L **66.8+x**, (4^+), $\gamma_{20.1+x}$**46.72**$_9$ (E2)
L **139.9+x**, (6^+), $\gamma_{66.8+x}$**73.12**$_{12}$ (E2)
L **239.2+x**, (8^+), $\gamma_{139.9+x}$**99.35**$_{13}$ (E2)
L **365+x**(?), (10^+), $\gamma_{239.2+x}\approx$**126**(?)
P **554.7+x**, (1^-), $\gamma_{20.1+x}$**534.6**(100), γ_x**554.7**(<750)

P **589.7+x**, (3^-), $\gamma_{20.1+x}$**569.6**(100)
Q **769.9+x**, (0^+), γ_{x}**769.9**$_{10}$ E0
Q **785.1+x**, (2^+), $\gamma_{20.1+x}$**765.0**$_{11}$ E0
M **806.2+x**, (2^-), $\gamma_{589.7+x}$**216.5**$_5$(1.9), $\gamma_{554.7+x}$**251.5**$_2$(3.6), $\gamma_{20.1+x}$**786.1**$_1$(100.0$_{25}$) E1
Q **825.0+x**, (4^+), $\gamma_{66.8+x}$**758.2**$_{11}$ E0
M **825.6+x**, (3^-), $\gamma_{806.2+x}$**(19.4)**, $\gamma_{66.8+x}$**758.9**$_2$($<$ 70), $\gamma_{20.1+x}$**805.4**$_2$(100$_{13}$)
N **836.0+x**, (1^-), $\gamma_{20.1+x}$**816**$_1$(100$_{18}$), γ_{x}**836**$_1$(29$_{17}$)
N **846.8+x**, (2^-), $\gamma_{20.1+x}$**826.7**$_3$(100)
M **851.1+x**, (4^-), $\gamma_{825.6+x}$**(25.5)**, $\gamma_{806.2+x}$**44.8** E2
N **866.0+x**, (3^-), $\gamma_{66.8+x}$**799**$_1$(100$_{22}$), $\gamma_{20.1+x}$**846**$_1$(67$_{33}$)
M **882.8+x**, (5^-), $\gamma_{851.1+x}$**31.7** E2, $\gamma_{825.6+x}$**57.2** E2
N **891.2+x**, (4^-), $\gamma_{66.8+x}$**824.4**$_3$(100)
Q **892.4+x**, (6^+), $\gamma_{139.9+x}$**752.5**$_{12}$ E0
N **918.8+x**, (5^-), $\gamma_{139.9+x}$**778.9**$_3$(100$_{25}$), $\gamma_{66.8+x}$**852.0**$_5$(42$_{17}$)
M **920.7+x**, (6^-), $\gamma_{882.8+x}$**(37.9)**, $\gamma_{851.1+x}$**(69.6)**
N **960.7+x**, (6^-), $\gamma_{139.9+x}$**820.8**$_2$(100)
M **966.5+x**, (7^-)
Q **986.8+x**, (8^+), $\gamma_{239.2+x}$**747.6**$_{13}$ E0
N **998.3+x**, (7^-), $\gamma_{239.2+x}$**758.9**$_7$($<$ 320), $\gamma_{139.9+x}$**858.7**$_3$(100$_{40}$)
N **1054.9+x**, (8^-), $\gamma_{239.2+x}$**815.7**$_5$(100)
N **1104+x**(?), (9^-)
Q **1105+x**(?), (10^+), γ_{365+x}**739.6**$_{14}$ E0
N **1172+x**(?), (10^-)
O **1344.5+x**(?), (1^-), $\gamma_{836.0+x}$**508.4**(100) E0, $\gamma_{806.2+x}$**538**$_1$($<$ 300)
O **1360.9+x**, (2^-), $\gamma_{846.8+x}$**514.8**$_{15}$(100) E0, $\gamma_{836.0+x}$**525**(42), $\gamma_{825.6+x}$**535.2**$_2$(100$_{25}$), $\gamma_{806.2+x}$**554.8**$_2$($<$ 225) E0
O **1386.6+x**, (3^-), $\gamma_{866.0+x}$**520.4**$_1$(4) E0, $\gamma_{851.1+x}$**535.5**$_3$(61$_{17}$), $\gamma_{825.6+x}$**561.0**$_2$(100$_{17}$) E0
O **1421.4+x**, (4^-), $\gamma_{892.4+x}$**529.0**$_1$(2) E0, $\gamma_{882.8+x}$**538.6**$_2$($<$ 43), $\gamma_{851.1+x}$**570.3**$_4$(100$_{14}$) E0
O **1465.7+x**, (5^-), $\gamma_{920.7+x}$**543.6**$_1$(2) E0, $\gamma_{920.7+x}$**545**$_1$(64), $\gamma_{882.8+x}$**582.9**$_2$(100$_{27}$) E0
O **1518.7+x**, (6^-), $\gamma_{966.5+x}$**554.3**$_4$($<$ 340), $\gamma_{960.7+x}$**556.5**$_1$(2) E0, $\gamma_{920.7+x}$**598.0**$_5$(100) E0
O **1580.5+x**, (7^-), $\gamma_{998.3+x}$**581.8**$_{12}$ E0, $\gamma_{966.5+x}$**614.0**$_5$(100) E0
O **1651+x**(?), (8^-), $\gamma_{1054.9+x}$**595.1**$_{18}$ E0(?)
O **1732+x**(?), (9^-), γ_{1104+x}**628.3**$_{13}$ E0(?)
O **1816+x**(?), (10^-), γ_{1172+x}**644.9**$_{14}$ E0(?)
R **2184+x**, (0^+)
R **2276+x**, (0^+)
R **2375+x**, (0^+)
R **2435+x**, (0^+)
R **2453+x**, (0^+)
R **2483+x**, (0^+)
S **2800+x**, (0^+)





SD bandheads
(2001Hu12)



$^{240}_{94}\mathrm{Pu}_{146}$

$^{241}_{94}$Pu$_{147}$

S$_n$: 5241.60$_{19}$, S$_p$: 6659 $_{15}$

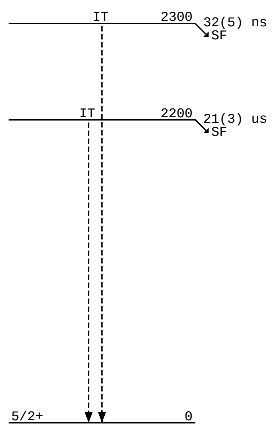
Nuclear Bands

A 5/2[622]
B 1/2[631]
C 7/2[624]
D 7/2[743]
E 5/2[622]+0$^-$ octupole band
F 1/2[620]
G 1/2[761]+(1/2[631]+0$^-$)
H 3/2[631]
I (1/2[631]+0$^-$)+(1/2[620]+0$^-$), octupole band
J 1/2[501]
K Fission isomer (1969La14,1970Po01,1970Ga10,1973Be05, 1981Gu04)

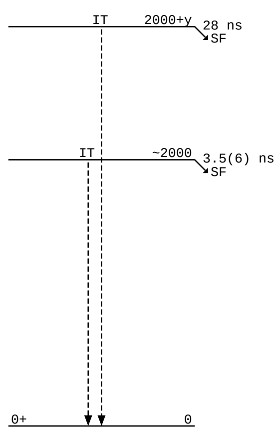
Levels and γ-ray branchings:

A **0**, $5/2^+$, *14.35$_{10}$ y*, %β^-=99.998 , %α=2.45x10^{-3}$_2$, %SF<2.4x10^{-14}, μ=-0.683$_{15}$, Q=+5.6$_{20}$
A **41.972**$_1$, $7/2^+$, $\gamma_{\mathbf{0}}$**41.972**$_1$(100) M1+E2
A **95.780**$_1$, $9/2^+$, $\gamma_{\mathbf{41.972}}$**53.807**$_1$(100) M1+E2
A **161.315**$_3$, $11/2^+$, $\gamma_{\mathbf{95.780}}$**65.535**$_3$(100) M1
B **161.686**$_1$, $1/2^+$, *0.88$_5$ μs*, $\gamma_{\mathbf{0}}$**161.685**$_1$(100) E2
B **170.940**$_1$, $3/2^+$, $\gamma_{\mathbf{0}}$**170.940**$_1$(100) M1
C **175.052**$_1$, $7/2^+$, $\gamma_{\mathbf{95.780}}$**79.262**$_7$(1.58$_9$) M1+E2, $\gamma_{\mathbf{41.972}}$**133.081**$_2$(29.2$_{15}$) M1+E2, $\gamma_{\mathbf{0}}$**175.051**$_2$(100) M1+E2
B **222.988**$_1$, $5/2^+$, $\gamma_{\mathbf{170.940}}$**52.048**$_2$(21.6$_{24}$) M1+E2, $\gamma_{\mathbf{161.686}}$**61.303**$_1$(36.4$_{12}$) E2, $\gamma_{\mathbf{41.972}}$**181.017**$_2$(100$_3$) M1+E2, $\gamma_{\mathbf{0}}$**222.971**$_3$(50.4$_{20}$) M1+E2
C **231.934**$_8$, $9/2^+$, $\gamma_{\mathbf{175.052}}$**56.89**$_3$(18.7$_{10}$) (M1+E2) $\delta=0.59_8$, $\gamma_{\mathbf{95.780}}$**136.127**$_{20}$(58$_4$) M1+E2, $\gamma_{\mathbf{41.972}}$**189.965**$_{10}$(100$_7$), $\gamma_{\mathbf{0}}$**231.96**$_3$(6.2$_{12}$)
A **235**$_4$, $(13/2^+)$
B **244.889**$_1$, $7/2^+$, $\gamma_{\mathbf{170.940}}$**73.950**$_1$(100$_5$) E2, $\gamma_{\mathbf{95.780}}$**149.107**$_6$(62$_5$) M1, $\gamma_{\mathbf{41.972}}$**202.910**$_7$(70$_{13}$) M1+E2
C **301.176**$_{16}$, $11/2^+$, $\gamma_{\mathbf{231.934}}$**69.17**$_6$(100$_{43}$) (M1+E2)(?), $\gamma_{\mathbf{175.052}}$**126.09**$_4$ (E2), $\gamma_{\mathbf{161.315}}$**139.85**$_4$(86$_{29}$), $\gamma_{\mathbf{95.780}}$**205.404**$_{20}$ M1+E2
337, $(1/2,3/2)$
B **337.136**$_2$, $9/2^+$, $\gamma_{\mathbf{222.988}}$**114.148**$_2$(100$_5$) E2, $\gamma_{\mathbf{95.780}}$**241.381**$_{17}$(52$_6$) E2(+M1)
B **373**$_2$, $(11/2^+)$
$\approx$**376**, $(1/2,3/2)$
C **385**$_3$, $(13/2^+)$
D **404.453**$_1$, $(9/2)^-$, $\gamma_{\mathbf{175.052}}$**229.403**$_4$(7.5$_5$), $\gamma_{\mathbf{95.780}}$**308.674**$_2$(39.6$_6$) E1, $\gamma_{\mathbf{41.972}}$**362.479**$_2$(100.0$_{14}$) E1
D **408.899**$_2$, $(7/2)^-$, $\gamma_{\mathbf{175.052}}$**233.844**$_3$(32.7$_{11}$) (E1), $\gamma_{\mathbf{95.780}}$**313.123**$_4$(29.7$_{19}$) (E1), $\gamma_{\mathbf{41.972}}$**367.10**$_8$(100$_4$) (E1)
D **448**$_2$, $(11/2^-)$
473
495$_{10}$
B **505**$_2$, $(13/2^+)$
E **518.812**$_2$, $(5/2)^-$, $\gamma_{\mathbf{41.972}}$**476.840**$_3$(32.5$_{14}$), $\gamma_{\mathbf{0}}$**518.810**$_4$(100.0$_{19}$) E1
534.205$_{13}$(?), $^{(+)}$, $\gamma_{\mathbf{175.052}}$**359.149**$_{13}$(100) E2
E **561.421**$_4$, $(7/2)^-$, $\gamma_{\mathbf{95.780}}$**465.646**$_5$(54.4$_{21}$) E1, $\gamma_{\mathbf{41.972}}$**519.433**$_8$(100$_7$), $\gamma_{\mathbf{0}}$**561.437**$_{20}$(69$_4$)
D **571**$_2$, $(15/2^-)$
E **614.836**$_9$, $(9/2)^-$, $\gamma_{\mathbf{41.972}}$**572.863**$_9$(100) E1
645$_9$
681, $(1/2,3/2)$
F **755.174**$_2$, $1/2^+$, $\gamma_{\mathbf{161.686}}$**593.488**$_4$(100.0$_{14}$) (M1), $\gamma_{\mathbf{0}}$**755.154**$_{14}$(21.6$_{17}$) E2
G **769.268**$_3$, $(1/2)^-$, $\gamma_{\mathbf{170.940}}$**598.328**$_6$(100.0$_{16}$) E1, $\gamma_{\mathbf{161.686}}$**607.580**$_5$(62.5$_{16}$) E1
G **779.150**$_2$, $3/2^-$, $\gamma_{\mathbf{222.988}}$**556.164**$_3$(100.0$_{17}$) E1, $\gamma_{\mathbf{170.940}}$**608.229**$_9$(14.8$_5$), $\gamma_{\mathbf{161.686}}$**617.457**$_5$(73.6$_{10}$) E1
F **784.152**$_2$, $3/2^+$, $\gamma_{\mathbf{222.988}}$**561.168**$_4$(100.0$_{23}$) M1(+E2), $\gamma_{\mathbf{161.686}}$**622.464**$_{14}$(8.5$_5$) M1+E2, $\gamma_{\mathbf{0}}$**784.153**$_{16}$(23.0$_7$) E2
797$_4$, $(1/2,3/2)$
H **800.452**$_5$, $3/2^+$, $\gamma_{\mathbf{161.686}}$**638.757**$_5$(100.0$_{23}$) M1+E2, $\gamma_{\mathbf{41.972}}$**758.494**$_{15}$(<35), $\gamma_{\mathbf{0}}$**800.461**$_{11}$(<69) M1+E2
F **800.475**$_5$, $(5/2)^+$, $\gamma_{\mathbf{170.940}}$**629.539**$_6$(100.0$_{20}$) M1+E2, $\gamma_{\mathbf{95.780}}$**704.70**$_{14}$(6.2$_{17}$) E2, $\gamma_{\mathbf{41.972}}$**758.494**$_{15}$(<25), $\gamma_{\mathbf{0}}$**800.461**$_{11}$(<50) M1+E2
G **810.945**$_3$, $5/2^-$, $\gamma_{\mathbf{244.889}}$**566.057**$_{14}$(100$_3$) E1, $\gamma_{\mathbf{222.988}}$**587.953**$_{24}$(8.5$_8$), $\gamma_{\mathbf{170.940}}$**640.001**$_6$(94$_3$) E1
H **831.588**$_7$, $(5/2)^+$, $\gamma_{\mathbf{244.889}}$**586.703**$_{16}$(16.4$_{17}$) M1, $\gamma_{\mathbf{222.988}}$**608.608**$_{10}$(63.9$_{20}$) M1+E2, $\gamma_{\mathbf{170.940}}$**660.625**$_{13}$(100$_5$) M1+E2, $\gamma_{\mathbf{41.972}}$**789.63**$_4$(37$_4$) M1+E2
G **833.353**$_4$, $(7/2^-)$, $\gamma_{\mathbf{337.136}}$**496.217**$_4$(100) (E1)
834.839$_{17}$, $(3/2,5/2,7/2)^+$, $\gamma_{\mathbf{0}}$**834.837**$_{17}$(100) M1+E2
I **841.957**$_2$, $(1/2)^-$, $\gamma_{\mathbf{784.152}}$**57.806**$_2$(18$_3$), $\gamma_{\mathbf{755.174}}$**86.783**$_1$(35.6$_{16}$), $\gamma_{\mathbf{170.940}}$**671.007**$_9$(81$_4$) E1, $\gamma_{\mathbf{161.686}}$**680.274**$_{16}$(100$_3$) E1
844$_3$
I **850.540**$_2$, $3/2^-$, $\gamma_{\mathbf{779.150}}$**71.390**$_2$(3.15$_{23}$) M1(+E2), $\gamma_{\mathbf{755.174}}$**95.365**$_1$(5.8$_3$), $\gamma_{\mathbf{222.988}}$**627.552**$_5$(100.0$_{19}$) E1, $\gamma_{\mathbf{161.686}}$**688.851**$_{14}$(50.9$_{19}$) E1
863$_2$
F **869.379**$_6$, $7/2^+$, $\gamma_{\mathbf{800.475}}$**68.904**$_2$(14.7$_{25}$) M1, $\gamma_{\mathbf{161.315}}$**708.01**$_6$(70$_{12}$) (E2), $\gamma_{\mathbf{95.780}}$**773.59**$_4$(100$_{11}$) E2+M1
H **877**$_2$, $(7/2^+)$
I **897.503**$_{22}$, $(5/2^-)$, $\gamma_{\mathbf{170.940}}$**726.562**$_{22}$(100)
F **898**$_2$, $(9/2^+)$
I **918**$_2$, $(7/2^-)$
929.7$_2$, $(7/2^+)$, $\gamma_{\mathbf{95.780}}$**834.6**$_2$(?), $\gamma_{\mathbf{0}}$**929.7**$_2$
G **937**$_2$, $(11/2^-)$
H **937**$_2$, $(9/2^+)$
940.309$_9$, $(3/2^+)$, $\gamma_{\mathbf{755.174}}$**185.132**$_{22}$(1.8$_9$), $\gamma_{\mathbf{175.052}}$**765.23**$_3$(4.1$_8$) E2, $\gamma_{\mathbf{0}}$**940.315**$_{12}$(100$_4$) E2+M1
942.584$_5$, $(1/2,3/2)^+$, $\gamma_{\mathbf{755.174}}$**187.414**$_6$(2.2$_4$) M1+E2, $\gamma_{\mathbf{170.940}}$**771.64**$_4$(8$_4$) E2+M1, $\gamma_{\mathbf{161.686}}$**780.889**$_8$(100.0$_{16}$) M1+E2, $\gamma_{\mathbf{0}}$**942.58**$_4$(26$_3$)
950$_3$
J **964.928**$_6$, $(1/2)^-$, $\gamma_{\mathbf{769.268}}$**195.669**$_{10}$(3.5$_5$) M1, $\gamma_{\mathbf{755.174}}$**209.745**$_9$(3.4$_8$), $\gamma_{\mathbf{170.940}}$**793.95**$_5$(100$_7$), $\gamma_{\mathbf{161.686}}$**803.265**$_{19}$(54.0$_{15}$) E1
974$_2$
J **995.610**$_{11}$, $3/2^-$, $\gamma_{\mathbf{222.988}}$**772.645**$_{21}$(60$_6$) E1, $\gamma_{\mathbf{161.686}}$**833.904**$_{13}$(100$_4$) E1
H **996**$_2$, $(11/2^+)$
1009.438$_7$, $3/2^-$, $\gamma_{\mathbf{769.268}}$**240.167**$_{12}$(8.2$_{10}$) M1, $\gamma_{\mathbf{518.812}}$**490.624**$_9$(38$_3$) M1(+E2), $\gamma_{\mathbf{222.988}}$**786.454**$_{16}$(100$_6$)
1020$_3$
1049, $1/2,3/2$
1062$_3$
1084$_3$
1090.022$_4$, $(1/2,3/2)^-$, $\gamma_{\mathbf{850.540}}$**239.493**$_8$(72$_7$) M1, $\gamma_{\mathbf{841.957}}$**248.066**$_6$(100$_8$) M1(+E2), $\gamma_{\mathbf{769.268}}$**320.746**$_7$(74$_5$) M1
1118$_3$
1173
1178$_3$
1196
1206$_3$
1223.839$_9$, $(1/2,3/2)^-$, $\gamma_{\mathbf{779.150}}$**444.687**$_9$(15.4$_{22}$), $\gamma_{\mathbf{170.940}}$**1052.93**$_3$(100$_5$) E1
1244$_3$
1253.790$_6$, $(1/2,3/2)^-$, $\gamma_{\mathbf{850.540}}$**403.260**$_{14}$(6.9$_{10}$) E2(+M1), $\gamma_{\mathbf{769.268}}$**484.521**$_7$(47.4$_{22}$), $\gamma_{\mathbf{170.940}}$**1082.80**$_4$(70$_3$) E1, $\gamma_{\mathbf{161.686}}$**1092.08**$_5$(100$_6$) E1
1258$_4$
1268.86$_3$, $(1/2,3/2)$
1277$_4$
1288$_4$
1296.671$_6$, $3/2^-$, $\gamma_{\mathbf{800.452}}$**496.217**$_4$($<370$) E1, $\gamma_{\mathbf{518.812}}$**777.89**$_5$(100$_{10}$) M1+E2
1309$_4$
1316.24$_{10}$
1351.60$_{20}$
1357.66$_2$, $(1/2,3/2)$, $\gamma_{\mathbf{841.957}}$**515.70**$_3$(45$_9$) E2+M1, $\gamma_{\mathbf{755.174}}$**602.53**$_3$(100$_{20}$) M1+E2
1362.83$_8$
1384$_3$
1390$_6$
1441$_5$

$\mathbf{1452}_{5}$
$\mathbf{1472.08}_{12}$
$\mathbf{1478.18}_{13}$
$\mathbf{1489}_{5}$
$\mathbf{1501.32}_{21}$
$\mathbf{1505.21}_{19}$
$\mathbf{1513.97}_{10}$
$\mathbf{1523.74}_{4}$
$\mathbf{1530.91}_{20}$
$\mathbf{1546}_{5}$
$\mathbf{1594}_{5}$
$\mathbf{1611.02}_{3}$
$\mathbf{1762}_{3}$
$\mathbf{1801}_{4}$
$\mathbf{1826}_{4}$
$\mathbf{1868}_{5}$, $(15/2)^-$
$\mathbf{1944}_{5}$
$\mathbf{1991}_{4}$
$\approx\mathbf{2045}$(?)
$\mathbf{2199}$, $1/2,3/2$
K $\approx\mathbf{2200}$ 21_{3} μs, %SF=100
K $\approx\mathbf{2300}$ 32_{5} ns, %SF=100



$^{241}_{94}\mathrm{Pu}_{147}$



$^{242}_{94}\mathrm{Pu}_{148}$

$^{242}_{94}\mathrm{Pu}_{148}$

S_n: 6309.4 $_7$, S_p: 6.83x10^3 $_7$

Nuclear Bands

A GS band
B Octupole band
C γ band (?)
D Kπ=3$^-$ band (?)
E Kπ=0$^+$ band
F Fission isomer

Levels and γ-ray branchings:

A $\mathbf{0}$, 0^+, $3.75x10^5{}_2$ *y*, %α=100 , %SF=5.50x10$^{-4}{}_6$
A $\mathbf{44.54}_2$, 2^+, 158_3 *ps*, $\gamma_{\mathbf{0}}\mathbf{44.54}_2$ E2
A $\mathbf{147.3}_2$, 4^+, $\gamma_{\mathbf{44.54}}\mathbf{102.8}_1$
A $\mathbf{306.4}_2$, 6^+, $\gamma_{\mathbf{147.3}}\mathbf{159.0}_1$
A $\mathbf{518.1}_5$, 8^+, $\gamma_{\mathbf{306.4}}\mathbf{211.7}_4$
A $\mathbf{778.6}_8$, 10^+, $\gamma_{\mathbf{518.1}}\mathbf{260.5}_6$
B $\mathbf{780.45}_5$, (1^-), $\gamma_{\mathbf{44.54}}\mathbf{735.93}_7(100)$, $\gamma_{\mathbf{0}}\mathbf{780.44}_5(53_1)$
B $\mathbf{832.3}_3$, 3^-, $\gamma_{\mathbf{147.3}}\mathbf{685.0}_1$, $\gamma_{\mathbf{44.54}}\mathbf{787.8}_2$
$\mathbf{865}$
B $\mathbf{927}$, (5^-)
E $\mathbf{956}$, (0^+)
E $\mathbf{992.5}_3$, (2^+), $\gamma_{\mathbf{44.54}}\mathbf{948.0}_2$
D $\mathbf{1019.5}_8$, 3^-, $\gamma_{\mathbf{44.54}}\mathbf{974.9}$
$\mathbf{1039.2}_3$, $(1^+,2^+)$, $\gamma_{\mathbf{0}}\mathbf{1039.2}_3$(?)
D $\mathbf{1064.0}_9$, (4^-), $\gamma_{\mathbf{147.3}}\mathbf{915.7}$
A $\mathbf{1084.4}_{12}$, 12^+, $\gamma_{\mathbf{778.6}}\mathbf{305.8}_8$
$\mathbf{1092.1}_2$, (6^+), $\gamma_{\mathbf{306.4}}\mathbf{785.7}_1(100)$, $\gamma_{\mathbf{147.3}}\mathbf{944.8}_1(63_3)$
C $\mathbf{1102}_4$, (2^+)
D $\mathbf{1122}$, (5^-)
$\mathbf{1150}_2$, (2^-), $\gamma_{\mathbf{44.54}}\mathbf{1105.6}$
$\mathbf{1154.5}_2$, (3^-), $\gamma_{\mathbf{147.3}}\mathbf{1007.3}_2(43_8)$, $\gamma_{\mathbf{44.54}}\mathbf{1110.0}_2(100_{15})$
$\mathbf{1181.6}_2$, (2^+), $\gamma_{\mathbf{147.3}}\mathbf{1034.2}_2(22_4)$, $\gamma_{\mathbf{44.54}}\mathbf{1137.1}_1(100_4)$, $\gamma_{\mathbf{0}}\mathbf{1181.6}_2(12_2)$
$\mathbf{1204}$
$\mathbf{1259}$
$\mathbf{1357.2}_3$(?), $\gamma_{\mathbf{1092.1}}\mathbf{265.1}_1$
$\mathbf{1401.0}_2$(?), $(0,1^+)$, $\gamma_{\mathbf{780.45}}\mathbf{620.6}_1(100_{12})$
$\mathbf{1428.0}_4$, (2^-), $\gamma_{\mathbf{780.45}}\mathbf{647.4}_3(100_{10})$, $\gamma_{\mathbf{44.54}}\mathbf{1383.6}_4(45_{19})$
A $\mathbf{1431.7}_{16}$, 14^+, $\gamma_{\mathbf{1084.4}}\mathbf{347.3}_{10}$
$\mathbf{1501}$
$\mathbf{1517.6}_1$, (1^-), $\gamma_{\mathbf{44.54}}\mathbf{1473.1}_1(100_3)$, $\gamma_{\mathbf{0}}\mathbf{1517.6}_1(53_3)$
$\mathbf{1613}$
$\mathbf{1638}$
$\mathbf{1650}$, (3^-)
$\mathbf{1683}$
$\mathbf{1701}$
$\mathbf{1744.9}$
$\mathbf{1776}$
A $\mathbf{1816.7}_{20}$, 16^+, $\gamma_{\mathbf{1431.7}}\mathbf{385.0}_{11}$
$\mathbf{1826.0}_{10}$, (4^+), $\gamma_{\mathbf{306.4}}\mathbf{1518.6}$
$\mathbf{1871.4}_3$, $\gamma_{\mathbf{832.3}}\mathbf{1039.2}_3(\leq 96)$, $\gamma_{\mathbf{44.54}}\mathbf{1826.9}_3(100_{22})$
$\mathbf{1874.1}_2$, $\gamma_{\mathbf{780.45}}\mathbf{1093.5}_1(100_9)$, $\gamma_{\mathbf{0}}\mathbf{1874.5}_3(22_5)$
$\mathbf{1903.6}_3$, $\gamma_{\mathbf{780.45}}\mathbf{1123.1}_2(45_9)$, $\gamma_{\mathbf{44.54}}\mathbf{1859.2}_3(100_5)$
$\mathbf{1949.8}_2$, $(1,2^+)$, $\gamma_{\mathbf{44.54}}\mathbf{1905.1}_2(37_4)$, $\gamma_{\mathbf{0}}\mathbf{1949.9}_2(100_4)$
$\mathbf{1969.9}_2$, $(1,2^+)$, $\gamma_{\mathbf{44.54}}\mathbf{1925.4}_2(43_5)$, $\gamma_{\mathbf{0}}\mathbf{1969.9}_2(100_5)$
F $\approx\mathbf{2000}$ 3.5_6 *ns*, %SF$\leq$100
F $\mathbf{2000+y}$ 28 *ns*, %SF$\leq$100
$\mathbf{2091.8}_{20}$, $\gamma_{\mathbf{1150}}\mathbf{941.1}$(?)
A $\mathbf{2236.0}_{24}$, 18^+, $\gamma_{\mathbf{1816.7}}\mathbf{419.3}_{12}$
$\mathbf{2246.0}_4$, $(1,2^+)$, $\gamma_{\mathbf{44.54}}\mathbf{2201.6}_5(100_{25})$, $\gamma_{\mathbf{0}}\mathbf{2246.0}_5(75_{25})$
$\mathbf{2331.3}_2$, (2^+), $\gamma_{\mathbf{1517.6}}\mathbf{813.6}_1(100_9)$, $\gamma_{\mathbf{780.45}}\mathbf{1550.9}_1(29_5)$
$\mathbf{2437.5}$
A $\mathbf{2686}_3$, 20^+, $\gamma_{\mathbf{2236.0}}\mathbf{450.2}_{13}$
A $\mathbf{3163}_4$, 22^+, $\gamma_{\mathbf{2686}}\mathbf{477.2}_{14}$
A $\mathbf{3662}_4$, 24^+, $\gamma_{\mathbf{3163}}\mathbf{499.2}_{15}$
A $\mathbf{4172}_4$, 26^+, $\gamma_{\mathbf{3662}}\mathbf{510.0}_{15}$

$^{243}_{94}\mathbf{Pu}_{149}$

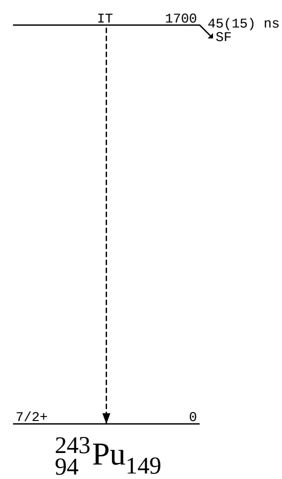
S_n: 5034.5 $_{26}$, S_p: 6952 $_{SY}$

Nuclear Bands

- A 7/2[624]
- B 5/2[622]
- C 1/2[631]
- D 9/2[734]
- E 1/2[620]
- F 7/2[613]
- G K=3/2
- H 1/2[761]
- I 3/2[622]
- J 1/2[501]
- K 3/2[631]
- L Fission isomer (1980Bj02,1970Vi05,1969La14)

Levels and γ-ray branchings:

- A $\mathbf{0}$, $7/2^+$, 4.956_3 *h*, %β^-=100
- A $\mathbf{58.1}_4$, $9/2^+$
- A $\mathbf{124.6}_{10}$, $11/2^+$
- A $\mathbf{204.4}_{15}$, $(13/2^+)$
- B $\mathbf{287.4}_3$, $5/2^+$, $\gamma_{\mathbf{58.1}}\mathbf{229.3}_2(1.8_4)$, $\gamma_{\mathbf{0}}\mathbf{287.4}_3(100_{14})$ M1
- B $\mathbf{333.2}_4$, $7/2^+$, $\gamma_{\mathbf{58.1}}\mathbf{275.1}_2(100_{19})$, $\gamma_{\mathbf{0}}\mathbf{333.0}_{10}(64_{28})$
- C $\mathbf{383.6}_4$, $(1/2^+)$, 0.33_3 μs, $\gamma_{\mathbf{287.4}}\mathbf{96.2}_2$
- B $\approx\mathbf{388}$(?), $(9/2^+)$
- C $\mathbf{392.0}_5$, $(3/2^+)$
- D $\mathbf{402.6}_3$, $9/2^-$, $\gamma_{\mathbf{124.6}}\mathbf{278.0}_8(4.7_{10})$, $\gamma_{\mathbf{58.1}}\mathbf{344.5}_5(\approx 1.8)$, $\gamma_{\mathbf{0}}\mathbf{402.6}_3(100_9)$ E1
- C $\mathbf{446.8}_4$, $(5/2^+)$
- C $\mathbf{450.1}_{15}$, $(7/2^+)$
- D $\mathbf{454}_6$, $11/2^-$
- B $\mathbf{466.7}_{15}$, $(11/2^+)$
- B $\mathbf{536.6}_{15}$, $(13/2^+)$
- C $\mathbf{564.5}_{15}$, $(9/2^+)$
- D $\mathbf{595.3}_{15}$, $(15/2^-)$
- E $\mathbf{625.6}_4$, $(1/2^+)$, $\gamma_{\mathbf{392.0}}\mathbf{233.9}_6(5.0_{16})$, $\gamma_{\mathbf{383.6}}\mathbf{242.0}_2(100_{19})$
- F $\mathbf{626}_2$, $(9/2^+)$
- E $\mathbf{653.8}_4$, $(3/2^+)$, $\gamma_{\mathbf{392.0}}\mathbf{261.7}_3$
- E $\mathbf{677.2}_5$, $(5/2^+)$, $\gamma_{\mathbf{392.0}}\mathbf{284.4}_3(100_{40})$(?), $\gamma_{\mathbf{333.2}}\mathbf{343.9}$(?)
- G $\mathbf{703.9}_4$, $(3/2^-)$, $\gamma_{\mathbf{287.4}}\mathbf{416.5}_2$
- $\mathbf{734.1}_{20}$
- E $\mathbf{741.8}_{15}$, $(7/2^+)$
- H $\mathbf{790.7}_4$, $(3/2^-)$, $\gamma_{\mathbf{446.8}}\mathbf{343.9}_2(<158)$, $\gamma_{\mathbf{383.6}}\mathbf{407.1}_3(100_{12})$
- $\mathbf{809.5}_3$, $(1/2^+,3/2)$, $\gamma_{\mathbf{383.6}}\mathbf{426.0}_6(\leq 29)$, $\gamma_{\mathbf{287.4}}\mathbf{522.1}_3(\leq 100)$
- I $\mathbf{813.8}_2$, $3/2^+$, $\gamma_{\mathbf{653.8}}\mathbf{159.2}_{13}(27_{11})$, $\gamma_{\mathbf{333.2}}\mathbf{480.6}_3(31_4)$, $\gamma_{\mathbf{287.4}}\mathbf{526.2}_3(100_{11})$, $\gamma_{\mathbf{0}}\mathbf{813.8}_2(96_{10})$
- H $\mathbf{834.4}_{15}$, $(7/2^-)$
- I $\mathbf{845.4}_4$, $(5/2^+)$, $\gamma_{\mathbf{287.4}}\mathbf{558.0}_3(100_{11})$, $\gamma_{\mathbf{58.1}}\mathbf{787.5}_8(34_{17})$, $\gamma_{\mathbf{0}}\mathbf{844.3}_8(\leq 26)$(?)
- H $\mathbf{873.7}_{10}$, $(1/2^-)$, $\gamma_{\mathbf{653.8}}\mathbf{219.9}_3$(?)
- $\mathbf{884}_3$
- I $\mathbf{895.6}_{15}$, $(7/2^+)$
- J $\mathbf{905.7}_5$, $(1/2^-)$, $\gamma_{\mathbf{392.0}}\mathbf{513.6}_3(100_{12})$, $\gamma_{\mathbf{383.6}}\mathbf{522.1}_3(\leq 34)$
- H $\mathbf{920.6}_{15}$, $(11/2^-)$
- J $\mathbf{948.0}_4$, $(3/2^-)$, $\gamma_{\mathbf{446.8}}\mathbf{501.2}_3(59_7)$, $\gamma_{\mathbf{392.0}}\mathbf{555.7}_5(51_{17})$, $\gamma_{\mathbf{383.6}}\mathbf{564.7}_4(100_{11})$
- I $\mathbf{954}_2$, $(9/2^+)$
- K $\mathbf{981.0}_4$, $(5/2^+)$, $\gamma_{\mathbf{446.8}}\mathbf{533.9}_4(80_{16})$, $\gamma_{\mathbf{392.0}}\mathbf{589.1}_3(100_{12})$, $\gamma_{\mathbf{333.2}}\mathbf{648.8}_8(\leq 48)$(?), $\gamma_{\mathbf{287.4}}\mathbf{693.5}_7(32_{12})$
- $\mathbf{1044}_2$
- K $\mathbf{1080}_2$, $(9/2^+)$
- $\mathbf{1114}_3$
- $\mathbf{1130.1}_4$, $(1/2^+,3/2)$, $\gamma_{\mathbf{703.9}}\mathbf{426.0}_6(\leq 38)$, $\gamma_{\mathbf{446.8}}\mathbf{683.4}_4(\leq 53)$, $\gamma_{\mathbf{392.0}}\mathbf{738.2}_3(79_9)$, $\gamma_{\mathbf{383.6}}\mathbf{746.4}_3(100_{11})$
- $\mathbf{1145}_3$
- $\mathbf{1176.5}_3$, $3/2^+,5/2^+$, $\gamma_{\mathbf{790.7}}\mathbf{385.7}_3(13.5_{23})$, $\gamma_{\mathbf{625.6}}\mathbf{551.7}_5(6.7_{18})$(?), $\gamma_{\mathbf{446.8}}\mathbf{730.1}_7(5.4_{18})$, $\gamma_{\mathbf{333.2}}\mathbf{844.3}_8(\leq 9.9)$(?), $\gamma_{\mathbf{287.4}}\mathbf{889.1}_6(100_{14})$, $\gamma_{\mathbf{0}}\mathbf{1176.5}_5(52_{11})$
- $\mathbf{1197}_3$
- $\mathbf{1213}_2$, $\gamma_{\mathbf{333.2}}\mathbf{879.8}_{10}(75_{35})$(?), $\gamma_{\mathbf{287.4}}\mathbf{925.3}_{10}(100_{50})$(?)
- $\mathbf{1233}_3$
- $\mathbf{1243}_3$
- $\mathbf{1265}_3$
- $\mathbf{1286}_3$
- $\mathbf{1299}_2$
- $\mathbf{1301.6}_5$, $1/2,3/2$, $\gamma_{\mathbf{653.8}}\mathbf{648.8}_8(\leq 37)$(?), $\gamma_{\mathbf{625.6}}\mathbf{676.0}_3(100_{10})$, $\gamma_{\mathbf{383.6}}\mathbf{918.0}_{10}(43_{16})$
- $\mathbf{1324}_2$
- $\mathbf{1354}_2$
- $\mathbf{1359}_3$
- $\mathbf{1367.8}_6$, $1/2,3/2$, $\gamma_{\mathbf{703.9}}\mathbf{663.9}_6(100_{16})$, $\gamma_{\mathbf{653.8}}\mathbf{714.7}_{11}(31_{16})$(?), $\gamma_{\mathbf{392.0}}\mathbf{976.0}_{12}(84_{42})$
- $\mathbf{1387.4}_4$, $3/2^+$, $\gamma_{\mathbf{948.0}}\mathbf{439.4}_3(93_{14})$, $\gamma_{\mathbf{703.9}}\mathbf{683.4}_4(\leq 107)$, $\gamma_{\mathbf{333.2}}\mathbf{1053.8}_{10}(100_{38})$
- $\mathbf{1403}_3$
- $\mathbf{1420.5}_6$, $(3/2^+)$, $\gamma_{\mathbf{703.9}}\mathbf{716.9}_5(61_{13})$(?), $\gamma_{\mathbf{392.0}}\mathbf{1028.4}_{10}(\approx 39)$(?), $\gamma_{\mathbf{333.2}}\mathbf{1087.1}_8(100_{52})$(?)
- $\mathbf{1434.7}_4$, $1/2^{(+)},3/2$, $\gamma_{\mathbf{809.5}}\mathbf{625.2}_2(100_{11})$, $\gamma_{\mathbf{790.7}}\mathbf{644.2}_4(38_9)$, $\gamma_{\mathbf{677.2}}\mathbf{757.5}_4(44_8)$, $\gamma_{\mathbf{653.8}}\mathbf{781.1}_{12}(25_{17})$(?), $\gamma_{\mathbf{392.0}}\mathbf{1042.1}_5(73_{11})$
- $\mathbf{1444}_3$
- $\mathbf{1465}_3$
- $\mathbf{1491.0}_{10}$, $1/2,3/2$
- $\mathbf{1516.6}_{10}$, $3/2$, $\gamma_{\mathbf{677.2}}\mathbf{838.7}_5$(?)
- L $\mathbf{1.7x10^3}_3$ 45_{15} *ns*, %SF=100



$^{244}_{94}\mathbf{Pu}_{150}$

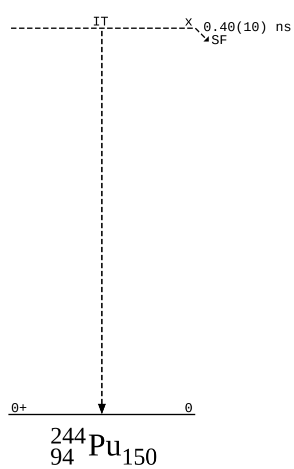
S_n: 6021 $_4$, S_p: 7359 $_{SY}$

Nuclear Bands

- A GS Band
- B Fission isomer (1974MoYC)

Levels and γ-ray branchings:

- A **0**, 0^+, *8.08x10^7 $_{10}$ y*, %SF=0.123$_6$, %α=99.877$_6$
- A **46**$_2$, 2^+, *155$_2$ ps*, γ_0**(46)**$_{CA}$
- A **156.8**$_{11}$, 4^+, γ_{46}**110.8**$_2$(100)
- A **319.7**$_{11}$, 6^+, $\gamma_{156.8}$**162.9**$_1$(100)
- A **536.8**$_{10}$, 8^+, $\gamma_{319.7}$**217.1**$_1$(100)
- **708**$_4$, $(2^+,3^-)$
- A **803.3**$_{12}$, 10^+, $\gamma_{536.8}$**266.5**$_6$
- **957**$_2$, (3^-)
- **1015**$_2$, (2^+)
- **1068**$_4$
- **1108**$_2$, (3^-)
- A **1115.7**$_{15}$, 12^+, $\gamma_{803.3}$**312.4**$_8$
- **1194**$_3$, (5^-)
- **1210**$_3$
- **1217.8**$_{11}$, $(7,8)$, $\gamma_{536.8}$**681.0**$_1$(100)
- **1353**$_4$
- **1378**$_3$
- **1434**$_3$
- A **1469.4**$_{18}$, 14^+, $\gamma_{1115.7}$**353.7**$_{10}$
- **1613**$_3$, (3^-)
- **1783**$_3$
- **1805**$_3$
- **1847**$_3$
- A **1860.4**$_{21}$, 16^+, $\gamma_{1469.4}$**391.0**$_{11}$
- **1896**$_3$
- A **2284.2**$_{24}$, 18^+, $\gamma_{1860.4}$**423.8**$_{12}$
- A **2736**$_3$, 20^+, $\gamma_{2284.2}$**451.5**$_{14}$
- A **3208**$_4$(?), 22^+, γ_{2736}**472.0**$_{25}$
- A **3680**$_5$(?), 24^+, γ_{3208}**472.0**$_{25}$
- A **4137**$_5$(?), (26^+), γ_{3680}**457.7**$_{14}$
- B **x**(?) *0.40$_{10}$ ns*, %SF $\leq$ 100



$^{245}_{94}\mathbf{Pu}_{151}$

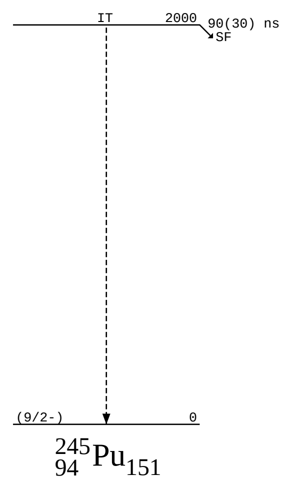
S_n: 4773 $_{14}$, S_p: 7393 $_{SY}$

Nuclear Bands

- A 9/2[734]
- B 1/2[620]
- C 7/2[613]
- D 3/2[622]
- E 1/2[761] (?)
- F Fission isomer (1980Bj02,1971Au06)

Levels and γ-ray branchings:

- A **0**, $(9/2^-)$, *10.5$_1$ h*, %β^-=100
- A **217**, $(15/2^-)$
- **246**$_4$
- B **306**$_3$, $(1/2^+)$
- C **325**$_2$, $(9/2^+)$
- B **355**$_3$, $(5/2^+)$
- B **423**$_5$, $(7/2^+)$
- B **459**$_5$, $(9/2^+)$
- D **575**$_4$, $(3/2^+)$
- D **613**$_4$, $(5/2^+)$
- E **637**$_4$, $(3/2^-)$
- D **660**$_3$, $(7/2^+)$
- E **675**$_3$, $(7/2^-)$
- D **723**$_3$, $(9/2^+)$
- **738**$_3$
- **758**$_4$
- **802**$_2$
- **1071**$_3$
- **1128**$_3$
- **1279**$_3$
- **1389**$_4$
- F **2.0x10^3**$_4$ *90$_{30}$ ns*, %SF $\leq$ 100



$^{237}_{95}\mathbf{Am}_{142}$

S_n: 7697 $_{SY}$, S_p: 3635 $_{52}$

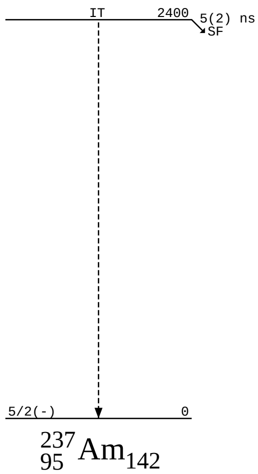
Nuclear Bands

A Fission isomer (1970Po01,1971Br39,1973Br38)

Levels and γ-ray branchings:

0, $5/2^{(-)}$, *73.0$_{10}$ min*, %α=0.025$_3$, %ε=99.975$_3$

A **24.0x10^2**$_{20}$ *5$_2$ ns*, %SF≤100



$^{238}_{95}\mathbf{Am}_{143}$

S_n: 6202 $_{72}$, S_p: 3960 $_{51}$

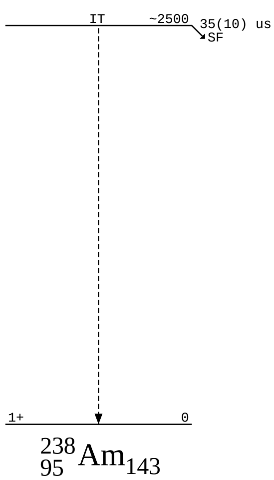
Nuclear Bands

A Fission isomer (1967Bo23,1972Br35)

Levels and γ-ray branchings:

0, 1^+, *98$_2$ min*, %α=1.0x10^{-4}$_4$

A ≈**2500** *35$_{10}$ μs*, %SF≤100



$^{239}_{95}\mathbf{Am}_{144}$

S_n: 7102 $_{51}$, S_p: 4061.3 $_{20}$

Nuclear Bands

A 5/2[523]
B 5/2[642]
C 3/2[521]
D Fission isomer (1969La14,1972Br35,1973Fl03,1985Ra28)

Levels and γ-ray branchings:

A **0**, $(5/2)^-$, *11.9$_1$ h*, %ε=99.990$_1$, %α=0.010$_1$

A **40.7**$_7$, $(7/2^-)$

A **94**$_6$, $(9/2^-)$

A **156**$_7$, $(11/2^-)$

B **187.1**$_5$, $(5/2^+)$, $\gamma_{\mathbf{40.7}}$**146.4**$_5$(20$_6$) (E1), $\gamma_{\mathbf{0}}$**187.1**$_5$(100$_{25}$) (E1)

B **220**$_6$, $(7/2^+)$

B **260**$_6$, $(9/2^+)$

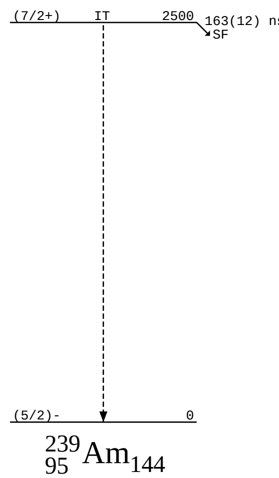
B **317**$_7$, $(11/2^+)$

B ≈**370**, $(13/2^+)$

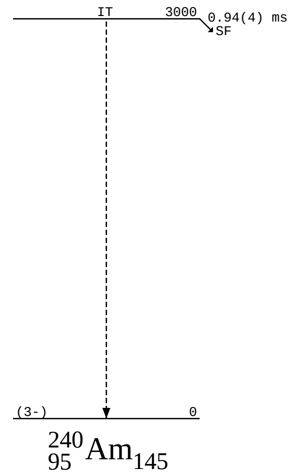
C **557**$_6$, $(3/2^-)$

C **586**$_6$, $(5/2^-)$

D **25x10^2**$_2$, $(7/2^+)$, *163$_{12}$ ns*, %SF≤100 , MOMM1



$^{240}_{95}\mathbf{Am}_{145}$



S_n: 5957 $_{14}$, S_p: 4372 $_{14}$

Nuclear Bands

A π5/2[523]+ν1/2[631]
B π5/2[523]-ν1/2[631]
C π5/2[523]-ν5/2[622]
D π5/2[523]+ν5/2[622]
E π5/2[523]+ν1/2[501]
F π5/2[523]-ν1/2[501]
G Fission isomer (1971Br39,1979Be46,1985Jo04)
Q_0=29.0$_{13}$

Levels and γ-ray branchings:

A **0**, (3^-), *50.8$_3$ h*, %ε=100, %α=1.9x10$^{-4}{}_7$
A **41**, (4^-)
B **53**, (2^-)
B **87**, (3^-)
A **96**, (5^-)
B **130**, (4^-)
A **158**, (6^-)
B **186**, (5^-)
213
A **233**, (7^-)
B **252**, (6^-)
281
A **316**, (8^-)
B **329**, (7^-)
C **346**, (1^-)
C **398**, (3^-)
D **398**, (5^-)
C **423**, (2^-)
D **458**, (6^-)
474
C **498**, (4^-)
C **498**, (5^-)
D **534**, (7^-)
551
C **616**, (6^-)
C **640**, (7^-)
660
757
777
809
819
845
856
877
898
917
932
956
E **973**, (3^+)
997
F **1016**, (2^+)
E **1016**, (4^+)
F **1052**, (3^+)
1066
1079
1194
1218
1235
1248
1305
1318
1335
1349
1372
1386
1407
1437
1495
1515
1545
G **3.0x10**$^3{}_2$ *0.94$_4$ ms*, %SF≤100

$^{241}_{95}Am_{146}$

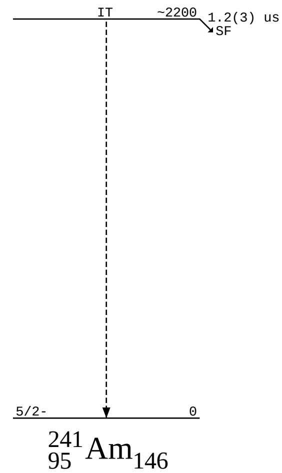
S_n: 6641 $_{14}$, S_p: 4480.1 $_3$

Nuclear Bands

- A 5/2[523]
- B 5/2[642]
- C 3/2[521]
- D 1/2[400]
- E 1/2[530]
- F 3/2[651]
- G Fission isomer (1969La14,1972Br35,1973Be04,1993Ku16)

Levels and γ-ray branchings:

A **0**, $5/2^-$, *432.2$_7$ y*, %α=100 , %SF=4.3x10^{-10}$_{18}$, μ=+1.58$_1$, Q=+3.14$_5$
A **41.176**$_3$, $7/2^-$, γ_0**41.176**$_3$(100) M1+E2 $\delta = 0.48_5$
A **93.65**$_{10}$, $9/2^-$
A **158.0**$_{15}$, $11/2^-$
B **205.883**$_{10}$, $5/2^+$, $\gamma_{41.176}$**164.8**$_2$(16_3), γ_0**205.879**$_{13}$(100_6) E1
A **234.0**$_{13}$, $(13/2^-)$
B **235**$_1$, $(7/2^+)$, $\gamma_{41.176}$**195**$_1$(100)
239$_2$(?)
B **272**$_2$, $(9/2^+)$
273$_2$(?)
B **320**$_2$, $(11/2^+)$
B **380**$_1$, $(13/2^+)$
459(?)
C **471.810**$_9$, $3/2^-$, $\gamma_{205.883}$**265.922**$_{12}$(0.56_6) (E1), $\gamma_{41.176}$**430.634**$_{20}$(5.7_3) E2, γ_0**471.805**$_{20}$(100_5) M1+E2
495
C **504.448**$_9$, $5/2^-$, $\gamma_{471.810}$**32.639**$_3$(17_3) M1+E2 $\delta = 0.125_{10}$, $\gamma_{205.883}$**298.57**$_5$(6.4_{17}), $\gamma_{93.65}$**410.8**$_1$(7.0_7), $\gamma_{41.176}$**463.273**$_{20}$(100_7) M1+E2, γ_0**504.45**$_3$(48_4) (M1+E2)
543(?)
C **549**$_1$, $7/2^-$
D **623.10**$_4$, $(1/2^+)$, $\gamma_{471.810}$**151.4**$_4$(≈ 3), $\gamma_{205.883}$**417.24**$_4$(100_7) (E2), γ_0**623.1**$_3$(1.8_5)
E **636.861**$_{10}$, $3/2^-$, $\gamma_{504.448}$**132.413**$_7$(100_6) M1+E2 $\delta = 0.060_{20}$, $\gamma_{471.810}$**165.049**$_8$(77_6) M1+E2 $\delta = 0.22_3$, $\gamma_{205.883}$**430**$_1$(≈ 1.0), $\gamma_{41.176}$**595.8**$_3$(0.38_8), γ_0**636.88**$_3$(40_3) M1+E2 $\delta = 0.57_{20}$
E **652.089**$_{10}$, $(1/2)^-$, $\gamma_{636.861}$**15.228**$_2$(11.5_7) M1+E2 $\delta = 0.032_7$, $\gamma_{623.10}$**29.02**$_5$(6.3_{13}), $\gamma_{504.448}$**147.67**$_3$(4.2_{17}), $\gamma_{471.810}$**180.277**$_8$(100_9) M1(+E2), γ_0**652.1**$_4$(8.3_{21})
D **653.23**$_4$, $(3/2^+)$, $\gamma_{205.883}$**447.35**$_4$(80_{10}) (M1+E2) $\delta = 0.36^{50}_{36}$, γ_0**653.2**$_2$(100_7)
F **670.24**$_8$, $(3/2^+)$, $\gamma_{205.883}$**464.36**$_8$(15_3) (M1+E2) $\delta = 1.5^{20}_{7}$, γ_0**670.2**$_2$(100_7)
C **682**$_3$, $(11/2^-)$
732$_4$
822$_4$
884$_4$
952$_1$, $5/2^-$
982$_2$
1020$_4$
1064$_4$
1106$_4$
1132$_5$
1136$_3$
1163$_3$
1227$_3$
1550$_4$, $(5/2^-)$
G ≈**2200** *1.2$_3$ μs*, %SF=100



$^{242}_{95}\mathbf{Am}_{147}$

S$_n$: 5537.57 $_{10}$, S$_p$: 4776.03 $_{22}$

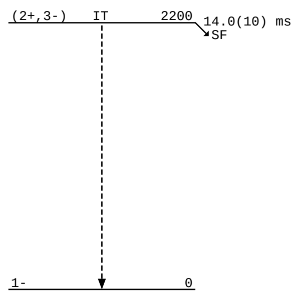
Nuclear Bands

A K^π=0$^-$, π5/2[523]-ν5/2[622]
B K^π=5$^-$, π5/2[523]+ν5/2[622]
C K^π=0$^+$, π5/2[642]-ν5/2[622]
D K^π=3$^-$, π5/2[523]+ν1/2[631]
E K^π=1$^-$, π5/2[523]-ν7/2[624]
F K^π=2$^-$, π5/2[523]-ν1/2[631]
G K^π=3$^+$, π5/2[642]+ν1/2[631]
H K^π=2$^+$, π5/2[642]-ν1/2[631]
I K^π=2$^-$, π5/2[523]-ν1/2[620]
J K^π=3$^-$, π5/2[523]+ν1/2[620]
K K^π=3$^+$, π5/2[523]+ν1/2[501]
L K^π=2$^+$, π5/2[523]-ν1/2[501]
M K^π=1$^-$ band
N Fission isomer (1962Po09,1963Pe27,1985Ku18,1992Ba67)

Levels and γ-ray branchings:

A **0**, 1^-, 16.02_2 *h*, %β$^-$=82.7$_3$, %ε=17.3$_3$, μ=+0.3879$_{15}$, Q=-2.4$_7$
A **44.092**$_3$, 0^-, $\gamma_{\mathbf{0}}$**44.092**$_3$ M1
B **48.60**$_5$, 5^-, 141_2 *y*, %IT=99.55$_2$, %α=0.45$_2$, %SF<4.7x10^{-9}, μ=+0.97$_5$, Q=+6.5$_{20}$, $\gamma_{\mathbf{0}}$**48.63**$_5$ E4
A **52.70**$_4$, 3^-, $\gamma_{\mathbf{0}}$**52.77**$_4$ E2
A **75.82**$_1$, 2^-, $\gamma_{\mathbf{0}}$**75.823**$_4$ M1
99
B **114**, 6^-
A **148**, 5^-
A **149.69**$_2$, 4^-, $\gamma_{\mathbf{75.82}}$**73.864**$_{11}$(0.96) E2, $\gamma_{\mathbf{52.70}}$**96.994**$_2$(100$_4$) M1
171
B **190**, 7^-
197.7$_7$
C **230.53**$_1$, 1^+, $\gamma_{\mathbf{75.82}}$**154.708**$_2$(100.0$_9$) E1, $\gamma_{\mathbf{44.092}}$**186.433**$_2$(91.2$_9$) E1
D **244.36**$_2$, 3^-, $\gamma_{\mathbf{149.69}}$**94.671**$_6$(18.0$_{18}$) M1+E2 $\delta=0.47_{12}$, $\gamma_{\mathbf{75.82}}$**168.519**$_8$(24.3$_{29}$) M1+E2, $\gamma_{\mathbf{52.70}}$**191.667**$_5$(96.3$_{12}$) M1, $\gamma_{\mathbf{48.60}}$**195.778**$_6$(100.0$_{10}$) E2
A **263**, (6^-)
C **269.90**$_2$, 3^+, $\gamma_{\mathbf{230.53}}$**39.42**$_7$ (E2)
E **274.33**$_1$, 1^-, $\gamma_{\mathbf{75.82}}$**198.498**$_{12}$(23.9$_9$) M1+E2 $\delta=0.90_{23}$, $\gamma_{\mathbf{44.092}}$**230.242**$_7$(39.5$_8$) M1, $\gamma_{\mathbf{0}}$**274.331**$_6$(100.0$_{10}$) M1
283.5$_2$
D **289.01**$_8$, 4^-, $\gamma_{\mathbf{244.36}}$**44.557**$_{25}$($\approx$ 2.7) M1+E2, $\gamma_{\mathbf{75.82}}$**213.37**$_8$(100$_4$) E2, $\gamma_{\mathbf{48.60}}$**240.443**$_{32}$(54$_7$) M1+E2 $\delta=1.4_3$
F **292.84**$_4$, 2^-, $\gamma_{\mathbf{244.36}}$**48.514**$_{30}$, $\gamma_{\mathbf{75.82}}$**217.043**$_{28}$(100$_{19}$) M1+E2 $\delta=1.00_{16}$, $\gamma_{\mathbf{52.70}}$**240.115**$_{14}$(98$_9$) M1+E2 $\delta=0.94_{17}$
E **296.41**$_3$, 2^-, $\gamma_{\mathbf{244.36}}$**52.05**$_7$(0.5) M1, $\gamma_{\mathbf{75.82}}$**220.600**$_{24}$(65$_4$) M1, $\gamma_{\mathbf{52.70}}$**243.690**$_{11}$(66$_4$) M1+E2 $\delta=0.55_{24}$, $\gamma_{\mathbf{0}}$**296.412**$_{25}$(100$_8$) M1+E2
307.0$_4$
F **327.84**$_5$, 3^-, $\gamma_{\mathbf{292.84}}$**35.049**$_{11}$, $\gamma_{\mathbf{149.69}}$**178.11**$_7$(41$_7$) M1+E2, $\gamma_{\mathbf{75.82}}$**252.049**$_{15}$(74$_{13}$) M1+E2, $\gamma_{\mathbf{52.70}}$**275.087**$_{16}$(100$_7$) M1+E2
E **330.71**$_3$, 3^-, $\gamma_{\mathbf{296.41}}$**34.441**$_{13}$(0.47) M1(?), $\gamma_{\mathbf{292.84}}$**37.910**$_5$(52$_{13}$), $\gamma_{\mathbf{274.33}}$**56.421**$_{18}$ (E2), $\gamma_{\mathbf{244.36}}$**86.316**$_{30}$(53$_{20}$), $\gamma_{\mathbf{75.82}}$**254.840**$_{16}$(70$_6$) M1+E2 $\delta=0.62_{15}$, $\gamma_{\mathbf{52.70}}$**278.000**$_{18}$(100$_7$)
C **341.58**$_5$, 0^+, $\gamma_{\mathbf{230.53}}$**111.100**$_{18}$(70$_{10}$) (M1), $\gamma_{\mathbf{0}}$**341.528**$_{22}$(100$_{12}$)
D **342**, (5^-)
H **355.69**$_6$, $(2)^+$, $\gamma_{\mathbf{327.84}}$**27.82**$_6$(40) E1, $\gamma_{\mathbf{292.84}}$**62.876**$_{15}$(16.2$_{15}$) (E1), $\gamma_{\mathbf{244.36}}$**111.27**$_5$(100$_9$) E1
C **364.70**$_3$, 2^+, $\gamma_{\mathbf{341.58}}$**23.12**$_7$(0.2) E2, $\gamma_{\mathbf{269.90}}$**94.804**$_5$(100$_{12}$), $\gamma_{\mathbf{230.53}}$**134.20**$_6$(63$_{19}$) M1+E2
370.4$_3$
E **372.47**$_6$, 4^-, $\gamma_{\mathbf{330.71}}$**41.71**$_5$(17$_2$), $\gamma_{\mathbf{296.41}}$**76.092**$_{14}$(54$_{16}$), $\gamma_{\mathbf{149.69}}$**222.75**$_9$(43$_{16}$) M1+E2, $\gamma_{\mathbf{75.82}}$**296.732**$_{34}$(100$_{12}$) (E2), $\gamma_{\mathbf{52.70}}$**319.75**$_6$(75$_{16}$) M1+E2
F **373.74**$_4$, 4^-, $\gamma_{\mathbf{330.71}}$**43.023**$_6$(90$_{38}$) (M1+E2), $\gamma_{\mathbf{327.84}}$**45.91**$_6$($\approx$ 239) M1+E2, $\gamma_{\mathbf{292.84}}$**80.905**$_{19}$(100$_{30}$)
H **376.93**$_3$, $(3)^+$, $\gamma_{\mathbf{327.84}}$**49.03**$_5$, $\gamma_{\mathbf{292.84}}$**84.124**$_{20}$(36.3$_{12}$) (E1), $\gamma_{\mathbf{244.36}}$**132.565**$_4$(100.0$_{10}$) E1
G **388.18**$_5$, 3^+, $\gamma_{\mathbf{292.84}}$**95.44**$_6$(380) E1, $\gamma_{\mathbf{289.01}}$**99.269**$_{15}$(1020) E1, $\gamma_{\mathbf{244.36}}$**143.789**$_{28}$(100$_{24}$)
M **400.53**$_6$, $(1)^-$, $\gamma_{\mathbf{364.70}}$**35.84**$_8$, $\gamma_{\mathbf{330.71}}$**69.781**$_6$(31$_{11}$) (E2), $\gamma_{\mathbf{327.84}}$**72.806**$_{30}$(0.75) (E2), $\gamma_{\mathbf{75.82}}$**324.84**$_6$(100$_{20}$) M1+E2 $\delta=1.2^2_6$
H **405.91**$_7$, $(4)^+$, $\gamma_{\mathbf{376.93}}$**28.937**$_{25}$, $\gamma_{\mathbf{373.74}}$**32.195**$_2$(100$_{16}$), $\gamma_{\mathbf{372.47}}$**33.443**$_2$(93$_{17}$) E1, $\gamma_{\mathbf{355.69}}$**50.27**$_4$(0.06) (E2), $\gamma_{\mathbf{327.84}}$**77.988**$_{23}$(19$_8$), $\gamma_{\mathbf{244.36}}$**161.459**$_{18}$(74$_{11}$)
D **409**, (6^-)
C **417.77**$_3$, $(4)^+$, $\gamma_{\mathbf{269.90}}$**147.870**$_{22}$ M1+E2 $\delta=1.2^2_6$(?)
G **418.07**$_6$, $(4)^+$, $\gamma_{\mathbf{388.18}}$**29.94**$_6$, $\gamma_{\mathbf{327.84}}$**90.178**$_{22}$(100$_{28}$), $\gamma_{\mathbf{289.01}}$**129.056**$_{29}$(71$_{25}$), $\gamma_{\mathbf{244.36}}$**173.60**$_{16}$(41$_{27}$)
M **419.14**$_6$, $(2)^-$, $\gamma_{\mathbf{388.18}}$**30.973**$_1$(100$_{14}$), $\gamma_{\mathbf{372.47}}$**46.598**$_{16}$(22) (E2), $\gamma_{\mathbf{330.71}}$**88.44**$_5$($\approx$ 28) M1+E2, $\gamma_{\mathbf{327.84}}$**91.229**$_{24}$(22$_8$), $\gamma_{\mathbf{274.33}}$**144.890**$_{29}$(40$_7$), $\gamma_{\mathbf{52.70}}$**366.35**$_4$(39$_8$) M1
428.8$_4$
F **434**, (5^-)
H **442.39**$_5$, (5^+), $\gamma_{\mathbf{405.91}}$**36.453**$_3$(49$_{10}$) (M1), $\gamma_{\mathbf{376.93}}$**65.408**$_{28}$(14$_5$), $\gamma_{\mathbf{373.74}}$**68.701**$_3$(100$_7$)
M **446.68**$_7$, $(3)^-$, $\gamma_{\mathbf{400.53}}$**46.13**$_4$, $\gamma_{\mathbf{372.47}}$**74.248**$_{23}$(3.5) M1, $\gamma_{\mathbf{355.69}}$**90.985**$_4$(77$_8$), $\gamma_{\mathbf{149.69}}$**296.996**$_{25}$(100$_{14}$)
G **457.15**$_7$, $(5)^+$, $\gamma_{\mathbf{418.07}}$**38.996**$_9$(5.7) M1+E2, $\gamma_{\mathbf{388.18}}$**68.997**$_{17}$(48$_{13}$), $\gamma_{\mathbf{373.74}}$**83.399**$_{17}$(100$_{20}$), $\gamma_{\mathbf{289.01}}$**168.125**$_{30}$(31$_8$) E1
464.37$_5$, $3^-,4^-$, $\gamma_{\mathbf{388.18}}$**76.258**$_{13}$(5.0$_{23}$), $\gamma_{\mathbf{330.71}}$**133.595**$_{28}$(8.1$_{19}$), $\gamma_{\mathbf{289.01}}$**175.31**$_4$(6.3$_{14}$) M1+E2 $\delta=1.4_4$, $\gamma_{\mathbf{269.90}}$**194.510**$_5$(100.0$_9$) E1, $\gamma_{\mathbf{149.69}}$**314.71**$_7$(9.1$_{21}$) M1+E2
M **483.67**$_7$, (4^-), $\gamma_{\mathbf{419.14}}$**64.54**$_3$, $\gamma_{\mathbf{418.07}}$**65.557**$_3$(32$_4$) (E1), $\gamma_{\mathbf{149.69}}$**334.06**$_4$(25$_6$) (M1), $\gamma_{\mathbf{48.60}}$**435.038**$_{22}$(100$_5$)
D **486**, (7^-)
F **500**, (6^-)
568.22$_6$, $(4)^-$, $\gamma_{\mathbf{483.67}}$**84.601**$_{20}$(3.8$_{12}$), $\gamma_{\mathbf{442.39}}$**125.832**$_4$(69.0$_7$) E1, $\gamma_{\mathbf{418.07}}$**150.10**$_5$(7.6$_{13}$), $\gamma_{\mathbf{376.93}}$**191.23**$_4$(100.0$_{10}$) E1
F **581**, (7^-)
608
612.76$_7$, 2^-, $\gamma_{\mathbf{464.37}}$**148.39**$_4$(21$_6$) (M1+E2), $\gamma_{\mathbf{419.14}}$**193.677**$_{23}$(90$_{27}$), $\gamma_{\mathbf{296.41}}$**316.377**$_{25}$(78$_8$) M1+E2, $\gamma_{\mathbf{292.84}}$**319.91**$_6$(45$_{11}$) M1+E2, $\gamma_{\mathbf{244.36}}$**368.24**$_6$(54$_{12}$) M1+E2, $\gamma_{\mathbf{230.53}}$**382.234**$_{30}$(100$_{10}$) (E1)
626
658
F **677**, (8^-)
697
790
795.8$_4$
796
821
833
846
I **874.05**$_9$, (2^-), $\gamma_{\mathbf{289.01}}$**585.21**$_{16}$(46$_{15}$), $\gamma_{\mathbf{244.36}}$**629.64**$_8$(100$_4$)
883.9$_4$
896.7$_3$
J **902.47**$_{12}$, (3^-), $\gamma_{\mathbf{292.84}}$**609.28**$_{19}$(27$_5$), $\gamma_{\mathbf{244.36}}$**658.11**$_6$(100$_{16}$)
I **906.58**$_{10}$, (3^-), $\gamma_{\mathbf{874.05}}$**32.526**$_{21}$ M1+E2
916
919.6$_4$
930.5$_3$
934.7$_4$
935
I **949.73**$_{10}$, (4^-), $\gamma_{\mathbf{906.58}}$**43.17**$_5$($\approx$ 15) M1+E2, $\gamma_{\mathbf{874.05}}$**75.664**$_7$(100$_{18}$)
951
968.8$_3$
K **975.0**$_5$, (3^+)
978.4$_3$
994
I **1002.71**$_{10}$, (5^-), $\gamma_{\mathbf{949.73}}$**53.00**$_5$(63$_{12}$) M1, $\gamma_{\mathbf{906.58}}$**96.115**$_{16}$(100$_{21}$)
L **1011**, (2^+)
K **1012**, (4^+)
1029
L **1049**, (3^+)
K **1065**, (5^+)
1073
1088
L **1097**, (4^+)
1119
1142
1151
1162
1170
1187

1192
1199
1210
1227
1243
1262
1287
1300
1325
1343
1362
1380
1406
1417
1443
1455
1467
1482
1507
1519
1562
N **2200**$_{80}$, $(2^+,3^-)$, *14.0$_{10}$ ms*, %SF≈100, %IT>0, %α<0.005, μ=-1.14$_8$, Q=35.5$_{16}$, γ_0**2200**$_{80}$



$^{242}_{95}\mathrm{Am}_{147}$

$^{243}_{95}\mathrm{Am}_{148}$

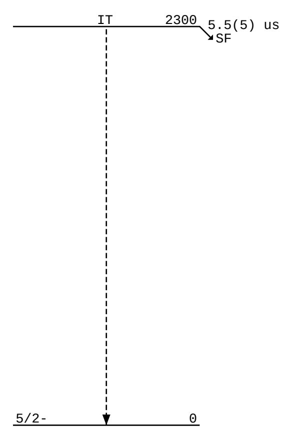
S_n: 6367.0 $_{11}$, S_p: 4833.7 $_{12}$

Nuclear Bands

A 5/2[523]
B 5/2[642]
C 3/2[521]
D 7/2[633]
E Fission isomer (1970Po01,1972Wo07,1987Gu03)

Levels and γ-ray branchings:

A **0**, $5/2^-$, *7370$_{40}$ y*, %α=100, %SF=3.7x10$^{-9}{}_2$, μ=1.53$_3$, Q=+4.30$_3$
A **42.2**$_3$, $7/2^-$, ≈*40 ps*, γ_0**42.2**$_5$ M1+E2 $\delta \approx 0.29$
B **84.0**$_2$, $5/2^+$, *2.34$_7$ ns*, μ=+2.74$_{14}$, Q=4.20$_3$, $\gamma_{42.2}$**41.8**$_2$(3.3$_3$), γ_0**84.0**$_2$(100) E1
A **96.4**$_4$, $9/2^-$, $\gamma_{42.2}$**54**$_1$($\le$ 100), γ_0**96.4**$_4$(60$_{10}$) (E2)
B **109.2**$_2$, $7/2^+$, $\gamma_{42.2}$**67**$_1$(100$_{50}$), γ_0**109.2**$_2$(70$_7$)
B **143.5**$_5$, $(9/2^+)$, $\gamma_{109.2}$≈**34**, $\gamma_{42.2}$**101.3**
A **162.3**$_{10}$, $11/2^-$
B **189.3**$_7$, $(11/2^+)$
A **238**$_1$, $13/2^-$
B **244**$_2$, $(13/2^+)$
C **266**$_2$, $(3/2^-)$, γ_0**265**$_{10}$ (M1+E2)
C **300**$_2$, $(5/2^-)$
C **345**$_1$, $(7/2^-)$
383$_2$
407.1$_5$(?), γ_0**407.1**$_5$(?)
423$_5$
445$_3$
D **465.7**$_3$, $7/2^+$, $\gamma_{143.5}$**322.2**$_3$(5.0$_5$), $\gamma_{109.2}$**356.4**$_3$(24$_2$) (M1+E2) $\delta = 0.4_4$, $\gamma_{84.0}$**381.7**$_3$(100$_9$) M1, $\gamma_{42.2}$**423.2**(?), γ_0**465.7**$_5$($\le$ 0.04)
C **466**$_5$, $(11/2^-)$
D **532.5**$_4$, $(9/2^+)$, $\gamma_{189.3}$**343.2**$_5$($\approx$ 11), $\gamma_{143.5}$**388.9**$_3$(38$_6$), $\gamma_{109.2}$**423.2**$_3$(100$_{12}$), $\gamma_{84.0}$**448.7**$_5$($\approx$ 1.9)
586$_5$
D **704**$_2$, $(13/2^+)$
724$_4$
933$_4$
977$_3$
1053$_3$
1123$_3$
1174$_3$
1222$_3$
E **2.3x10**$^3{}_2$ *5.5$_5$ μs*, %SF≤100



$^{243}_{95}\mathrm{Am}_{148}$

$^{244}_{95}\mathrm{Am}_{149}$

S_n: 5363.7 $_9$, S_p: 5162.9 $_{28}$

Nuclear Bands

A π5/2[523]+ν7/2[624]
B π5/2[642]-ν7/2[624]
C π5/2[523]-ν7/2[624]
D π3/2[521]-ν7/2[624]
E π5/2[523]-ν5/2[622]
F π1/2[400]-ν7/2[624]
G π7/2[633]-ν7/2[624]
H π5/2[642]-ν1/2[631] (?)
I π5/2[523]-ν9/2[734]
J π5/2[523]+ν1/2[631]
K π5/2[523]-ν1/2[631]
L π5/2[642]-ν9/2[734]
M π3/2[651]-ν7/2[624]
N π3/2[521]-ν5/2[622]
O Fission isomer (1968Bj04,1969Bo25,1969SlZZ,1972Wo07)

Levels and γ-ray branchings:

A **0**, (6$^-$), *10.1$_1$ h*, %β$^-$=100

B **88.0**$_{30}$, 1$^+$, ≈*26 min*, %β$^-$=99.9639$_{13}$, %ε=0.0361$_{13}$

B **100.3092**$_{11}$, (2)$^+$

B **123.2811**$_{11}$, (3)$^+$, $\gamma_{100.3092}$**22.975**$_{10}$(100$_{20}$) M1, $\gamma_{88.0}$**35.31**$_3$(0.10$_2$) E2

B **148.2831**$_{16}$, (4)$^+$, $\gamma_{123.2811}$**25.034**$_{20}$(100) M1

C **175.6573**$_{10}$, (1)$^-$, $\gamma_{100.3092}$**75.3475**$_{13}$(67$_{10}$) E1+M2 $\delta=0.025_6$, $\gamma_{88.0}$**87.6553**$_{15}$(100$_{17}$) E1+M2 $\delta=0.020_6$

B **183.511**$_5$, (5)$^+$, $\gamma_{148.2831}$**35.23**$_3$(100) M1

C **197.2947**$_{11}$, (2)$^-$, $\gamma_{175.6573}$**21.636**$_{10}$(49$_{10}$) M1, $\gamma_{123.2811}$**74.0144**$_7$(100$_{14}$) E1(+M2) $\delta=0.052_{20}$, $\gamma_{100.3092}$**96.9851**$_{10}$(63$_{10}$) E1

C **228.2990**$_{12}$, (3)$^-$, $\gamma_{197.2947}$**31.00**$_1$(30$_6$) M1, $\gamma_{175.6573}$**52.64**$_1$(2.9$_6$) E2, $\gamma_{148.2831}$**80.0156**$_{11}$(41$_7$) E1(+M2) $\delta=0.123_{25}$, $\gamma_{123.2811}$**105.011**$_6$(3.3$_{14}$), $\gamma_{100.3092}$**127.9891**$_{24}$(100$_8$) E1(+M2) $\delta=0.12_5$

D **261.6962**$_{11}$, (2)$^-$, $\gamma_{228.2990}$**33.396**$_{10}$(8.5$_{16}$) M1, $\gamma_{197.2947}$**64.4013**$_{20}$(60$_9$) M1+E2 $\delta=0.015_{10}$, $\gamma_{175.6573}$**86.0376**$_{10}$(100$_{14}$) M1+E2 $\delta=0.3_2$, $\gamma_{123.2811}$**138.4157**$_{17}$(22$_4$), $\gamma_{100.3092}$**161.391**$_4$(6.4$_{16}$), $\gamma_{88.0}$**173.698**$_4$(68$_{11}$)

C **272.2018**$_{17}$, (4)$^-$, $\gamma_{228.2990}$**43.904**$_{10}$(77$_{15}$) M1, $\gamma_{197.2947}$**74.918**$_{10}$(29$_5$) E2, $\gamma_{123.2811}$**148.9208**$_{19}$(100$_{20}$) E1

E **289.2119**$_{12}$, (1)$^-$, $\gamma_{197.2947}$**91.9252**$_{13}$(55$_{10}$) M1, $\gamma_{175.6573}$**113.5625**$_{12}$(100$_{17}$) M1+E2 $\delta=0.3_2$, $\gamma_{100.3092}$**188.910**$_5$(35$_5$) E1, $\gamma_{88.0}$**201.219**$_4$(20$_4$) E1

D **296.6583**$_{26}$, (3)$^-$, $\gamma_{261.6962}$**34.975**$_{15}$(100) E2

C **322.7506**$_{24}$, (5)$^-$, $\gamma_{272.2018}$**50.550**$_{10}$(54$_{12}$) M1, $\gamma_{228.2990}$**94.454**$_4$(31$_7$), $\gamma_{148.2831}$**174.466**$_5$(100$_{17}$)

E **335.575**$_4$, (0)$^-$, $\gamma_{289.2119}$**46.375**$_{20}$(100) M1

E **342.6498**$_{13}$, (3)$^-$, $\gamma_{289.2119}$**53.43**$_1$(14$_3$) E2, $\gamma_{272.2018}$**70.4522**$_{24}$(8.9$_{36}$) M1, $\gamma_{261.6962}$**81.3663**$_{10}$(29$_5$) M1, $\gamma_{228.2990}$**114.3510**$_{17}$(100$_{15}$) M1, $\gamma_{197.2947}$**145.356**$_4$(26$_4$) M1, $\gamma_{148.2831}$**194.363**$_8$(28$_7$), $\gamma_{123.2811}$**219.365**$_{13}$(25$_{10}$)

D **343.658**$_3$, (4)$^-$, $\gamma_{228.2990}$**115.362**$_4$(70$_{14}$) M1, $\gamma_{123.2811}$**220.380**$_5$(100$_{20}$) E1

F **348.4047**$_{16}$, (3)$^+$, $\gamma_{148.2831}$**200.117**$_3$(17$_4$) M1+E2 $\delta=1.1_3$, $\gamma_{123.2811}$**225.120**$_5$(60$_{11}$) M1+E2 $\delta=0.76_{20}$, $\gamma_{100.3092}$**248.097**$_5$(100$_{17}$) M1+E2 $\delta=0.66_{22}$, $\gamma_{88.0}$**260.39**$_4$(2.0$_7$)

E **361.8376**$_{20}$, (2)$^-$, $\gamma_{289.2119}$**72.6184**$_{12}$(100) M1

367.6$_{10}$(?)

G **377.0566**$_{22}$, (0)$^+$, $\gamma_{175.6573}$**201.393**$_9$(11$_4$), $\gamma_{88.0}$**289.0570**$_{22}$(100$_{25}$) M1

F **390.028**$_7$, (4)$^+$, $\gamma_{348.4047}$**41.63**$_2$(24$_{12}$) M1, $\gamma_{183.511}$**206.559**$_{20}$(100$_{25}$), $\gamma_{148.2831}$**241.721**$_{13}$(30$_{10}$) (M1), $\gamma_{123.2811}$**266.732**$_4$(91$_{14}$) (M1)

D **398.743**$_4$, (5$^-$), $\gamma_{272.2018}$**126.541**$_5$(43$_{13}$), $\gamma_{148.2831}$**250.43**$_5$(100$_{25}$)

G **414.6889**$_{14}$, (2)$^+$, $\gamma_{148.2831}$**266.37**$_3$(1.5$_5$), $\gamma_{123.2811}$**291.4059**$_{19}$(73$_{18}$) M1, $\gamma_{100.3092}$**314.382**$_3$(100$_{17}$) M1, $\gamma_{88.0}$**326.6902**$_{22}$(37$_7$) M1

H **418.957**$_2$, (2)$^+$, $\gamma_{296.6583}$**122.299**$_3$(22$_4$) E1, $\gamma_{100.3092}$**318.6478**$_{24}$(100$_{20}$) M1, $\gamma_{88.0}$**330.9556**$_{23}$(84$_{14}$) M1

I **420.1309**$_{14}$, (2)$^+$, $\gamma_{261.6962}$**158.4352**$_{10}$(7.1$_{10}$) E1, $\gamma_{228.2990}$**191.829**$_4$(1.0$_2$), $\gamma_{197.2947}$**222.834**$_3$(28$_5$) E1, $\gamma_{175.6573}$**244.471**$_3$(100$_{20}$) E1+(M2) $\delta=0.10_3$, $\gamma_{123.2811}$**296.848**$_3$(29$_5$) M1, $\gamma_{100.3092}$**319.821**$_3$(5.8$_{19}$) M1+E2 $\delta=1.5_5$, $\gamma_{88.0}$**332.134**$_3$(5.1$_9$) M1

J **421.2035**$_{16}$, (3)$^-$, $\gamma_{348.4047}$**72.7992**$_7$(100$_{17}$) E1(+M2) $\delta=0.04_2$, $\gamma_{261.6962}$**159.506**$_{10}$(6.5$_{13}$), $\gamma_{228.2990}$**192.907**$_4$(5.4$_{11}$), $\gamma_{123.2811}$**297.920**$_6$(5.3$_{16}$), $\gamma_{100.3092}$**320.887**$_4$(6.5$_{22}$)

431.0$_3$

E **435.036**$_3$, (4)$^-$, $\gamma_{322.7506}$**112.285**$_3$(80$_{19}$) M1, $\gamma_{272.2018}$**162.819**$_6$($\leq$ 130), $\gamma_{228.2990}$**206.718**$_{18}$(100$_{19}$), $\gamma_{183.511}$**251.509**$_{13}$(54$_{12}$), $\gamma_{148.2831}$**286.74**$_3$($\leq$ 54)

E **437.310**$_3$, (5$^-$), $\gamma_{342.6498}$**94.666**$_5$(54$_{13}$), $\gamma_{322.7506}$**114.557**$_3$(100$_{17}$), $\gamma_{272.2018}$**165.110**$_6$(61$_{15}$)

I **444.381**$_3$, (3)$^+$, $\gamma_{228.2990}$**216.087**$_5$(80$_{16}$), $\gamma_{148.2831}$**296.103**$_5$(100$_{18}$) M1, $\gamma_{123.2811}$**321.098**$_9$(23$_6$), $\gamma_{100.3092}$**344.054**$_9$(86$_{40}$) M1

G **454.002**$_3$, (1)$^+$, $\gamma_{420.1309}$**33.888**$_{10}$(6.8$_{12}$) M1, $\gamma_{100.3092}$**353.693**$_4$(54$_{10}$) M1, $\gamma_{88.0}$**365.9998**$_{24}$(100$_{17}$) M1

H **456.8632**$_{23}$, (4)$^+$, $\gamma_{148.2831}$**308.5818**$_{21}$(100$_{15}$) M1, $\gamma_{123.2811}$**333.585**$_3$(33$_6$) M1

J **466.263**$_5$, (4)$^-$, $\gamma_{421.2035}$**45.074**$_{10}$(100$_{30}$) M1, $\gamma_{296.6583}$**169.597**$_7$($\leq$ 80) M1, $\gamma_{272.2018}$**194.079**$_{13}$(24$_6$)

478.0960$_{18}$, (2)$^+$, $\gamma_{418.957}$**59.139**$_{10}$(8$_2$) M1, $\gamma_{123.2811}$**354.8132**$_{24}$(80$_{20}$) M1, $\gamma_{100.3092}$**377.790**$_3$(100$_{20}$) M1, $\gamma_{88.0}$**390.100**$_3$(24$_5$)

I **478.3491**$_{26}$, (4)$^+$, $\gamma_{272.2018}$**206.147**$_{10}$(37$_8$), $\gamma_{228.2990}$**250.044**$_4$(100$_{20}$), $\gamma_{148.2831}$**330.067**$_7$(17$_4$), $\gamma_{123.2811}$**355.068**$_4$(90$_{20}$) M1, $\gamma_{100.3092}$**378.051**$_7$($\leq$ 33)

K **484.7911**$_{20}$, (2)$^-$, $\gamma_{348.4047}$**136.3836**$_{15}$(100$_{16}$) E1, $\gamma_{197.2947}$**287.5004**$_{19}$(85$_{15}$) M1, $\gamma_{175.6573}$**309.138**$_7$(4.0$_8$)

G **495.394**$_3$, (4)$^+$, $\gamma_{183.511}$**311.899**$_{11}$(11$_3$), $\gamma_{148.2831}$**347.110**$_3$(92$_{23}$) M1, $\gamma_{123.2811}$**372.113**$_3$(100$_{20}$) M1

G **514.1423**$_{22}$, (3)$^+$, $\gamma_{148.2831}$**365.859**$_3$(100$_{24}$) M1, $\gamma_{123.2811}$**390.858**$_4$(64$_{13}$) M1, $\gamma_{100.3092}$**413.836**$_4$(24$_8$) (M1)

I **516.267**$_8$, (5$^+$), $\gamma_{322.7506}$**193.522**$_6$(100$_{20}$), $\gamma_{272.2018}$**244.11**$_5$($\leq$ 51), $\gamma_{183.511}$**332.738**$_{13}$(49$_{12}$), $\gamma_{148.2831}$**367.93**$_4$(40$_{20}$)

L **516.8230**$_{13}$, (2)$^-$, $\gamma_{420.1309}$**96.6925**$_{19}$(2.4$_5$), $\gamma_{261.6962}$**255.127**$_6$(57$_{11}$) M1, $\gamma_{228.2990}$**288.5229**$_{19}$(26$_7$) M1, $\gamma_{197.2947}$**319.5279**$_{21}$(70$_{13}$) M1, $\gamma_{175.6573}$**341.1649**$_{22}$(100$_{20}$) M1, $\gamma_{123.2811}$**393.549**$_{14}$(0.8$_4$), $\gamma_{100.3092}$**416.520**$_4$(5.0$_{12}$), $\gamma_{88.0}$**428.825**$_5$(14$_3$)

K **524.2516**$_{24}$, (3)$^-$, $\gamma_{348.4047}$**175.840**$_8$(4.2$_{14}$), $\gamma_{272.2018}$**252.052**$_3$(100$_{16}$) M1(+E2) $\delta=0.4_3$, $\gamma_{228.2990}$**295.953**$_3$(19$_4$)

L **535.7558**$_{17}$, (3)$^-$, $\gamma_{444.381}$**91.369**$_5$(1.5$_4$) (E1), $\gamma_{420.1309}$**115.6262**$_{20}$(3.2$_6$), $\gamma_{418.957}$**116.801**$_7$(0.7$_2$), $\gamma_{296.6583}$**239.09**$_2$(3.6$_8$), $\gamma_{272.2018}$**263.554**$_4$(50$_{10}$) M1, $\gamma_{261.6962}$**274.054**$_3$(3.5$_9$), $\gamma_{228.2990}$**307.455**$_2$(100$_{15}$) M1, $\gamma_{197.2947}$**338.460**$_3$(59$_{10}$) M1, $\gamma_{100.3092}$**435.450**$_7$(13$_4$)

L **561.5594**$_{26}$, (4)$^-$, $\gamma_{444.381}$**117.185**$_3$(8.0$_{16}$), $\gamma_{398.743}$**162.819**$_6$($\leq$ 11), $\gamma_{322.7506}$**238.784**$_{12}$(80$_{16}$) M1, $\gamma_{272.2018}$**289.3540**$_{22}$(58$_{15}$) M1, $\gamma_{228.2990}$**333.256**$_6$(25$_6$) M1, $\gamma_{183.511}$**378.051**$_7$($\leq$ 17), $\gamma_{148.2831}$**413.282**$_4$(100$_{20}$)(?), $\gamma_{123.2811}$**438.282**$_{13}$(15$_4$)

K **578.842**$_6$, (4$^-$), $\gamma_{348.4047}$**230.49**$_7$($\leq$ 20), $\gamma_{342.6498}$**236.203**$_6$(100$_{20}$), $\gamma_{322.7506}$**256.06**$_4$($\leq$ 36), $\gamma_{272.2018}$**306.646**$_{11}$(30$_{14}$), $\gamma_{123.2811}$**455.524**$_{22}$(86$_{22}$)

584.041$_3$, (2)$^-$, $\gamma_{484.7911}$**99.246**$_5$(3.2$_{11}$), $\gamma_{361.8376}$**222.205**$_9$(9.3$_{21}$) M1, $\gamma_{289.2119}$**294.8242**$_{22}$(100$_{25}$), $\gamma_{197.2947}$**386.746**$_3$(39$_9$), $\gamma_{175.6573}$**408.386**$_6$(30$_6$), $\gamma_{123.2811}$**460.733**$_{22}$(9.3$_{21}$), $\gamma_{100.3092}$**483.708**$_{12}$(60$_{20}$), $\gamma_{88.0}$**496.029**$_6$(93$_{24}$)

608.4$_3$

G **610.887**$_4$, (5)$^+$, $\gamma_{343.658}$**267.230**$_6$(28$_{10}$), $\gamma_{183.511}$**427.371**$_9$(50$_{15}$) (M1), $\gamma_{148.2831}$**462.604**$_6$(100$_{25}$) M1

M **615.243**$_4$, (2)$^+$, $\gamma_{524.2516}$**90.992**$_3$(3.2$_8$)(?), $\gamma_{100.3092}$**514.925**$_4$(39$_{13}$) M1, $\gamma_{88.0}$**527.252**$_4$(100$_{25}$) M1

643.114$_5$, (3)$^+$, $\gamma_{418.957}$**224.21**$_3$(4.0$_{15}$), $\gamma_{183.511}$**459.603**$_{15}$(12$_3$), $\gamma_{148.2831}$**494.870**$_{15}$(21$_8$), $\gamma_{123.2811}$**519.831**$_7$(100$_{25}$) M1, $\gamma_{100.3092}$**542.809**$_7$(40$_{16}$) (M1)

M **650.187**$_4$, (3)$^+$, $\gamma_{484.7911}$**165.422**$_{16}$(1.6$_9$), $\gamma_{261.6962}$**388.481**$_6$(12$_3$), $\gamma_{148.2831}$**501.893**$_{10}$(14$_6$), $\gamma_{123.2811}$**526.910**$_5$(100$_{25}$) M1, $\gamma_{100.3092}$**549.880**$_5$(61$_{20}$) M1

670.758$_5$, (2)$^+$, $\gamma_{456.8632}$**213.952**$_{24}$(6.7$_{18}$), $\gamma_{420.1309}$**250.615**$_5$(51$_8$) M1, $\gamma_{414.6889}$**256.06**$_4$($\leq$ 12), $\gamma_{175.6573}$**495.121**$_{10}$(29$_9$), $\gamma_{100.3092}$**570.468**$_9$(100$_{30}$) (M1), $\gamma_{88.0}$**582.743**$_{14}$(41$_{14}$)

N **680.5726**$_{23}$, $(1)^-$, $\gamma_{516.8230}$**163.743**$_{5}$(26_{6}) M1, $\gamma_{420.1309}$**260.39**$_{4}$(≤ 9.6), $\gamma_{335.575}$**345.000**$_{6}$(≤ 13), $\gamma_{289.2119}$**391.360**$_{4}$(33_{8}) M1, $\gamma_{197.2947}$**483.276**$_{5}$(100_{24}) M1, $\gamma_{175.6573}$**504.915**$_{4}$(100_{25}) M1

M **696.825**$_{6}$, (4^+), $\gamma_{183.511}$**513.34**$_{8}$(≤ 42), $\gamma_{148.2831}$**548.560**$_{9}$(100_{30}) (M1), $\gamma_{123.2811}$**573.522**$_{17}$(80_{28}) (M1)

N **699.7788**$_{21}$, $(2)^-$, $\gamma_{535.7558}$**164.020**$_{3}$(14_{3}) M1(+E2) $\delta = 1.15_{50}$, $\gamma_{516.8230}$**182.960**$_{4}$(7.2_{12}), $\gamma_{289.2119}$**410.561**$_{8}$(28_{7}), $\gamma_{228.2990}$**471.482**$_{6}$(46_{15}) M1, $\gamma_{175.6573}$**524.120**$_{4}$(100_{30}) M1

N **731.141**$_{4}$, $(3)^-$, $\gamma_{561.5594}$**169.597**$_{7}$(≤ 17), $\gamma_{444.381}$**286.74**$_{3}$(≤ 5.3), $\gamma_{435.036}$**296.103**$_{5}$(61_{12}) M1, $\gamma_{342.6498}$**388.481**$_{6}$(26_{5}), $\gamma_{272.2018}$**458.933**$_{5}$(51_{11}) M1, $\gamma_{197.2947}$**533.855**$_{6}$(100_{25}) M1

749

M **756.705**$_{6}$, (5^+), $\gamma_{610.887}$**145.816**$_{6}$(20_{5}), $\gamma_{183.511}$**573.187**$_{18}$(79_{26}) (M1), $\gamma_{148.2831}$**608.437**$_{15}$(100_{30})

774.914$_{6}$, $(1)^+$, $\gamma_{335.575}$**439.347**$_{7}$(5.4_{16}), $\gamma_{261.6962}$**513.34**$_{8}$(≤ 17), $\gamma_{100.3092}$**674.596**$_{7}$(78_{23}) (M1), $\gamma_{88.0}$**686.922**$_{7}$(100_{25}) M1

N **779.914**$_{5}$, (4^-), $\gamma_{561.5594}$**218.332**$_{16}$(32_{8}), $\gamma_{535.7558}$**244.11**$_{5}$(≤ 22), $\gamma_{421.2035}$**358.70**$_{3}$(11_{6}), $\gamma_{390.028}$**389.873**$_{5}$(74_{13}), $\gamma_{343.658}$**436.269**$_{7}$(70_{18}), $\gamma_{272.2018}$**507.731**$_{7}$(100_{32}) (M1)

780.152$_{4}$, $(2)^-$, $\gamma_{514.1423}$**266.025**$_{16}$(≤ 22), $\gamma_{478.0960}$**302.069**$_{6}$(12_{4}), $\gamma_{454.002}$**326.165**$_{16}$(7.5_{20}), $\gamma_{420.1309}$**360.053**$_{12}$(6.5_{20}), $\gamma_{418.957}$**361.187**$_{3}$(26_{6}), $\gamma_{296.6583}$**483.492**$_{5}$(100_{30}) M1, $\gamma_{100.3092}$**679.86**$_{6}$(41_{14}), $\gamma_{88.0}$**692.18**$_{7}$(38_{17})

782.875$_{5}$, $(2)^-$, $\gamma_{578.842}$**204.052**$_{8}$(8.5_{12}), $\gamma_{535.7558}$**247.107**$_{5}$(100_{25}) (M1+E2) $\delta = 1.75_{35}$, $\gamma_{524.2516}$**258.70**$_{3}$(36_{12}) M1, $\gamma_{516.8230}$**266.025**$_{16}$(≤ 13) (M1), $\gamma_{435.036}$**347.836**$_{6}$(9_{3}), $\gamma_{342.6498}$**440.233**$_{10}$(7.9_{21}), $\gamma_{335.575}$**447.285**$_{8}$(6.7_{21}), $\gamma_{228.2990}$**554.52**$_{3}$(12_{4}), $\gamma_{123.2811}$**659.620**$_{13}$(40_{12})(?)

795.006$_{7}$, (4^-), $\gamma_{535.7558}$**259.16**$_{4}$(18_{13}), $\gamma_{516.8230}$**278.205**$_{16}$(30_{10}), $\gamma_{398.743}$**396.262**$_{4}$(100_{25}) M1, $\gamma_{343.658}$**451.360**$_{11}$(19_{7}), $\gamma_{322.7506}$**472.272**$_{13}$(75_{50}), $\gamma_{197.2947}$**597.66**$_{3}$(30_{10}), $\gamma_{183.511}$**611.489**$_{10}$(≤ 92)

799.006$_{5}$, $(2)^-$, $\gamma_{454.002}$**345.000**$_{6}$(≤ 12.5), $\gamma_{296.6583}$**502.358**$_{7}$(79_{24}) M1, $\gamma_{289.2119}$**509.775**$_{12}$(25_{13}) (M1), $\gamma_{197.2947}$**601.73**$_{3}$(18_{8}), $\gamma_{123.2811}$**675.716**$_{19}$(100_{33})

808.800$_{4}$, $(3)^-$, $\gamma_{650.187}$**158.616**$_{7}$(16_{8}), $\gamma_{456.8632}$**351.942**$_{5}$(57_{9}), $\gamma_{435.036}$**373.760**$_{6}$(100_{20}) M1, $\gamma_{361.8376}$**446.944**$_{17}$(23_{7}), $\gamma_{348.4047}$**460.379**$_{9}$(23_{7}), $\gamma_{289.2119}$**519.593**$_{13}$(67_{22}), $\gamma_{261.6962}$**547.16**$_{3}$(17_{8}), $\gamma_{197.2947}$**611.489**$_{10}$(≤ 89)

825.526$_{4}$, $(2)^-$, $\gamma_{466.263}$**359.265**$_{3}$(43_{13}), $\gamma_{421.2035}$**404.318**$_{5}$(34_{8}) (M1), $\gamma_{335.575}$**489.952**$_{5}$(77_{18}), $\gamma_{296.6583}$**528.90**$_{3}$(46_{18}), $\gamma_{261.6962}$**563.88**$_{4}$(100_{33}) M1, $\gamma_{123.2811}$**702.18**$_{5}$(46_{18})

832.2$_{3}$

840.648$_{6}$, $(2)^+$, $\gamma_{456.8632}$**383.786**$_{4}$(37_{9}), $\gamma_{444.381}$**396.262**$_{4}$(100_{25}) M1, $\gamma_{197.2947}$**643.43**$_{5}$(67_{28}), $\gamma_{175.6573}$**665.10**$_{5}$(28_{12}), $\gamma_{100.3092}$**740.41**$_{3}$(100_{33}), $\gamma_{88.0}$**752.66**$_{6}$(51_{20})

842.754$_{4}$, $(3)^+$, $\gamma_{584.041}$**258.70**$_{3}$(70_{23})(?), $\gamma_{456.8632}$**385.896**$_{4}$(48_{11}) M1, $\gamma_{454.002}$**388.735**$_{12}$(11_{6}), $\gamma_{444.381}$**398.371**$_{11}$(13_{6}), $\gamma_{420.1309}$**422.618**$_{3}$(100_{17}) M1, $\gamma_{418.957}$**423.811**$_{6}$(65_{14}) M1, $\gamma_{289.2119}$**553.61**$_{3}$(15_{5})(?)

859.195$_{4}$, (3^+), $\gamma_{696.825}$**162.374**$_{5}$(6.8_{15}), $\gamma_{643.114}$**216.087**$_{5}$(30_{6}), $\gamma_{495.394}$**363.801**$_{3}$(100_{33}) (M1), $\gamma_{478.3491}$**380.836**$_{15}$(11_{4}), $\gamma_{390.028}$**469.145**$_{8}$(22_{5}) (M1), $\gamma_{361.8376}$**497.35**$_{3}$(7.5_{25}), $\gamma_{123.2811}$**735.93**$_{3}$(27_{9}), $\gamma_{100.3092}$**758.89**$_{5}$(36_{12})

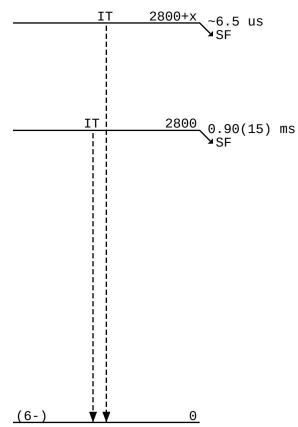
875.059$_{5}$, (2^+), $\gamma_{782.875}$**92.181**$_{3}$(7.3_{20}), $\gamma_{615.243}$**259.88**$_{3}$(16_{6}), $\gamma_{535.7558}$**339.319**$_{8}$(5.3_{20}), $\gamma_{420.1309}$**454.879**$_{24}$(14_{3}), $\gamma_{414.6889}$**460.379**$_{9}$(19_{5}), $\gamma_{175.6573}$**699.44**$_{4}$(33_{12}), $\gamma_{148.2831}$**726.793**$_{23}$(87_{27}), $\gamma_{123.2811}$**751.804**$_{20}$(100_{33}) (M1), $\gamma_{100.3092}$**774.75**$_{5}$(87_{29})

880.786$_{4}$, (3^-), $\gamma_{779.914}$**100.872**$_{3}$(10_{4}) M1, $\gamma_{650.187}$**230.49**$_{7}$(≤ 9.0), $\gamma_{524.2516}$**356.536**$_{6}$(75_{13}), $\gamma_{421.2035}$**459.603**$_{15}$(31_{7}), $\gamma_{418.957}$**461.819**$_{15}$(44_{14}), $\gamma_{261.6962}$**619.09**$_{4}$(100_{30}), $\gamma_{197.2947}$**683.495**$_{17}$(82_{28}), $\gamma_{88.0}$**792.75**$_{13}$(27_{11})

893.7$_{3}$
901.4$_{3}$
914.2$_{3}$
933.2$_{4}$
951.3$_{3}$
982
999.6$_{3}$
1015.8$_{9}$
1030.5$_{3}$
1046.1$_{5}$
1052.4$_{3}$
1063.2$_{5}$
1071.3$_{14}$(?)
1097
1125
1142
1151.3$_{3}$
1179
1203
1252
1281
1335
1357

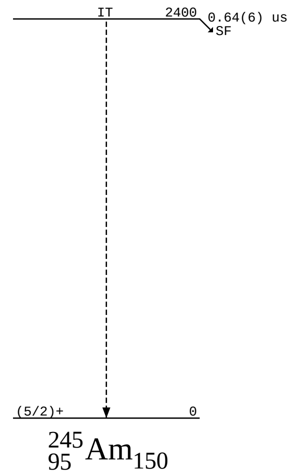
O **2.8x10^{3}**$_{4}$ *0.90$_{15}$ ms*, %SF$\leq$100

O **2800+x** $\approx$*6.5 μs*, %SF$\leq$100



$^{244}_{95}$Am$_{149}$

$^{245}_{95}\mathrm{Am}_{150}$



S_n: 6054 $_4$, S_p: 5195 $_6$

Nuclear Bands

- A 5/2[642]
- B 5/2[523]
- C 7/2[633]
- D Kπ=7/2+ (?)
- E Fission isomer (1972Wo07,1973Br38,1980Bj02)

Levels and γ-ray branchings:

- A $\mathbf{0}$, $(5/2)^+$, 2.05_1 *h*, %β^-=100
- A $\mathbf{19.20}_2$, $(7/2)^+$
- B $\mathbf{27.93}_{20}$, $(5/2^-)$, $\gamma_0\mathbf{28}_1$ (E1)
- A $\mathbf{47.07}_2$, $(9/2^+)$
- B $\mathbf{70.43}_{20}$, $(7/2^-)$
- A $\mathbf{87.65}_{10}$, $(11/2^+)$
- B $\mathbf{124.59}_{20}$, $(9/2^-)$
- A $\mathbf{134.51}_{20}$, $(13/2^+)$
- B $\mathbf{190.82}_{20}$, $(11/2^-)$
- C $\mathbf{327.428}_8$, $7/2^+$, $\gamma_{47.07}\mathbf{280.385}_{13}(5.1_8)$ (M1+E2) $\delta=0.75_{25}$, $\gamma_{27.93}\mathbf{299.8}_7(0.07_4)$, $\gamma_{19.20}\mathbf{308.222}_8(19_3)$ M1+E2 $\delta=0.6^{3}_{6}$, $\gamma_0\mathbf{327.428}_8(100_{15})$ M1+E2 $\delta=0.5_5$
- C $\mathbf{395.87}_2$, $9/2^+$, $\gamma_{87.65}\mathbf{308.222}$(?), $\gamma_{47.07}\mathbf{348.782}_9(30_5)$, $\gamma_{19.20}\mathbf{376.676}_3(100)$ (M1), $\gamma_0\mathbf{395.87}_{20}(3_1)$
- C $\mathbf{475.52}_3$, $11/2^+$, $\gamma_{134.51}\mathbf{341.00}_{20}(19_4)$, $\gamma_{87.65}\mathbf{387.88}_4(55_{14})$, $\gamma_{47.07}\mathbf{428.438}_{22}(100)$
- C $\mathbf{563.1}_3$, $(13/2^+)$, $\gamma_{134.51}\mathbf{428.438}$(?), $\gamma_{87.65}\mathbf{475.1}_6$
- D $\mathbf{887.47}_{10}$, $(7/2^+)$, $\gamma_{475.52}\mathbf{411.93}_5(9.1_{13})$, $\gamma_{395.87}\mathbf{491.591}_9(50_8)$ (E2), $\gamma_{327.428}\mathbf{560.13}_5(100)$ (E2), $\gamma_{124.59}\mathbf{762.73}_{20}(13.1_{18})$, $\gamma_{87.65}\mathbf{799.87}_{20}(29_5)$, $\gamma_{70.43}\mathbf{817.04}_{20}(16_3)$, $\gamma_{47.07}\mathbf{840.56}_{20}(24_4)$, $\gamma_{27.93}\mathbf{859.53}_{20}(9.4_{14})$, $\gamma_{19.20}\mathbf{868.8}_4(2.2_7)$, $\gamma_0\mathbf{887.14}$(?)
- $\mathbf{921.01}_{20}$, $(9/2^+,11/2^+)$, $\gamma_{563.1}\mathbf{357.90}_{20}(17_6)$, $\gamma_{475.52}\mathbf{445.34}_{20}(82_{18})$, $\gamma_{395.87}\mathbf{525.08}_{20}(73_{14})$, $\gamma_{327.428}\mathbf{593.7}_6(9_5)$, $\gamma_{190.82}\mathbf{730.40}_{20}(50_{12})$, $\gamma_{134.51}\mathbf{786.54}_{20}(100)$, $\gamma_{124.59}\mathbf{796.37}_{20}(68_{21})$, $\gamma_{87.65}\mathbf{833.14}_{20}(\leq 141)$, $\gamma_{47.07}\mathbf{874.16}_{20}(36_{11})$, $\gamma_{19.20}\mathbf{901.9}_8(14_8)$
- D $\mathbf{957.53}_2$, $(9/2)^+$, $\gamma_{475.52}\mathbf{481.9}_{10}(0.50_{26})$, $\gamma_{395.87}\mathbf{560.13}$(?), $\gamma_{327.428}\mathbf{630.102}_{14}(100)$ M1(+E2), $\gamma_{190.82}\mathbf{766.59}_{15}(13_3)$, $\gamma_{134.51}\mathbf{824}(<1.3)$(?), $\gamma_{124.59}\mathbf{833.14}_{20}(\leq 19)$, $\gamma_{87.65}\mathbf{870.5}_5(2.5_{13})$, $\gamma_{70.43}\mathbf{887.14}_{20}(26_5)$, $\gamma_{47.07}\mathbf{910.46}_{20}(51_8)$, $\gamma_{19.20}\mathbf{938.4}_2(37_8)$, $\gamma_0\mathbf{957.59}_{20}(36_6)$
- $\mathbf{987.51}_5$, $(7/2^+,9/2^+)$, $\gamma_{475.52}\mathbf{511.5}_{10}(2.6_{13})$, $\gamma_{395.87}\mathbf{591.6}_3(13_3)$, $\gamma_{327.428}\mathbf{660.08}_5(64_{12})$, $\gamma_{70.43}\mathbf{917.0}_5(6_3)$, $\gamma_{47.07}\mathbf{941.0}_{10}(19_{13})$, $\gamma_{19.20}\mathbf{968.5}_7(2.6_{13})$, $\gamma_0\mathbf{987.60}_{20}(100)$
- $\mathbf{1024.22}_{20}$, $(7/2^+,9/2^-)$, $\gamma_{475.52}\mathbf{549.2}_6(12_8)$, $\gamma_{395.87}\mathbf{630.102}$(?), $\gamma_{327.428}\mathbf{696.8}_4(31_{17})$, $\gamma_{124.59}\mathbf{899.3}_{10}(12_8)$, $\gamma_{70.43}\mathbf{953}_2(6_4)$, $\gamma_{47.07}\mathbf{977.2}_2(\leq 144)$, $\gamma_{27.93}\mathbf{996.0}_3(75_{31})$, $\gamma_{19.20}\mathbf{1005.1}_3(100)$
- $\mathbf{1065.30}_{20}$, $\gamma_{395.87}\mathbf{669.28}_{20}(33_7)$, $\gamma_{327.428}\mathbf{737.96}_{20}(21_6)$, $\gamma_{134.51}\mathbf{930.3}_6(5_3)$, $\gamma_{87.65}\mathbf{977.2}$(?), $\gamma_{47.07}\mathbf{1018.33}_{20}(100)$
- $\mathbf{1111.2}_3$, $\gamma_{87.65}\mathbf{1023.32}_{20}(100)$, $\gamma_{70.43}\mathbf{1040.2}_{12}(1.3_7)$, $\gamma_{27.93}\mathbf{1083.9}_5(6.3_{18})$, $\gamma_0\mathbf{1111.9}_5(10_3)$
- $\mathbf{1185.6}_5$, $\gamma_{134.51}\mathbf{1051.3}_8(10_4)$, $\gamma_{87.65}\mathbf{1097.9}_7(33_{11})$, $\gamma_{47.07}\mathbf{1138.5}_5(83_{18})$, $\gamma_{19.20}\mathbf{1166.3}_5(100)$
- E $\mathbf{2.4x10^3}_4$ 0.64_6 *μs*, %SF≤100

$^{246}_{95}$Am$_{151}$

S_n: 4976 $_{19}$, S_p: 5398 $_{23}$

Nuclear Bands

A Fission isomer (1972Wo07,1983Po14)

Levels and γ-ray branchings:

0, (7^-), *39$_3$ min*, %β^-=100

0.0+x, $2^{(-)}$, *25.0$_2$ min*, %β^-=100, %IT<0.02

16.22+x, $(0^-,1^-,2^-)$, $\gamma_{0.0+x}$**(16.23)**$_3$(100)

43.81+x, (1^+), *4.3$_3$ ns*, $\gamma_{16.22+x}$**27.58**$_2$(14.1$_{15}$) (E1), $\gamma_{0.0+x}$**43.81**$_2$(100$_5$) (E1)

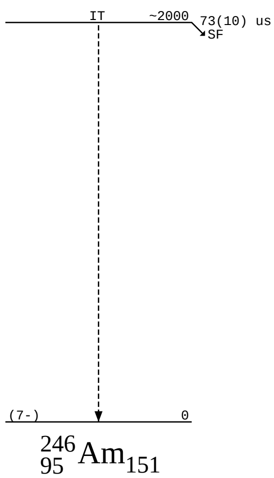
74.34+x

223.74+x, (1^+), $\gamma_{74.34+x}$**149.42**$_3$(0.24$_{20}$), $\gamma_{43.81+x}$**179.94**$_2$(41.3$_{20}$) (M1), $\gamma_{0.0+x}$**223.75**$_2$(100$_7$) (E1)

232.77+x, $\gamma_{74.34+x}$**158.42**$_3$(31$_7$), $\gamma_{43.81+x}$**189.00**$_4$(42$_7$), $\gamma_{16.22+x}$**216.55**$_4$(100$_{16}$), $\gamma_{0.0+x}$**232.75**$_2$(71$_{11}$)

299.37+x, $0^-,1$, $\gamma_{232.77+x}$**66.60**$_2$(100$_7$), $\gamma_{223.74+x}$**75.64**$_2$(71$_{10}$), $\gamma_{43.81+x}$**255.54**$_3$(90$_7$), $\gamma_{0.0+x}$**299.34**$_6$(12$_3$)

A ≈**2000** *73$_{10}$ μs*, %SF≤100



$^{240}_{96}$Cm$_{144}$

S_n: 7542 $_{SY}$, S_p: 4960$_3$

Nuclear Bands

A Fission isomer (1976Sl01,1978Ul01)

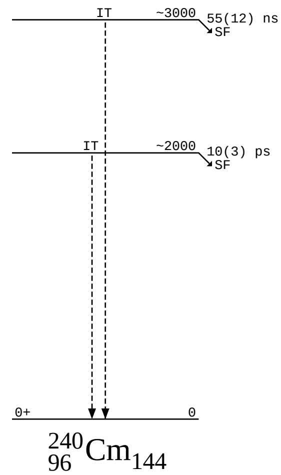
Levels and γ-ray branchings:

0, 0^+, *27$_1$ d*, %α>99.5 , %ε<0.5 , %SF=3.9x10^{-6}$_8$

38$_5$, 2^+

A ≈**2000** *10$_3$ ps*, %SF≤100

A ≈**3000** *55$_{12}$ ns*, %SF≈100



$^{241}_{96}\mathbf{Cm}_{145}$

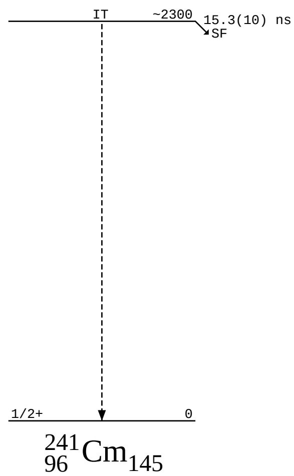
S_n: 6089.4 $_{24}$, S_p: 5092 $_{14}$

Nuclear Bands

A Fission isomer (1969Me11,1971Br39,1972Vy07)

Levels and γ-ray branchings:

0, $1/2^+$, *32.8$_2$ d*, %α=1.0$_1$, %ε=99.0$_1$
0.0+x
53+x
103+x
157+x
255+x
A ≈**2300** *15.3$_{10}$ ns*, %SF=100



$^{242}_{96}\mathbf{Cm}_{146}$

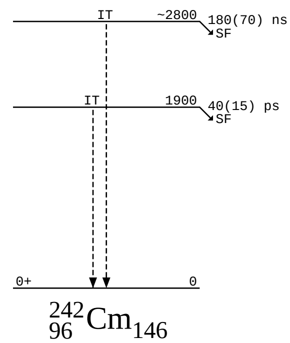
S_n: 6969.7 $_{14}$, S_p: 5420.0 $_{7}$

Nuclear Bands

A GS band
B Fission isomer

Levels and γ-ray branchings:

A **0**, 0^+, *162.8$_2$ d*, %α=100, %SF=6.2x10^{-6}$_3$, %34Si=1.0x10^{-14} $^{4}_{3}$
A **42.13**$_5$, 2^+, $\gamma_{\mathbf{0}}$**42.13**$_5$ E2
A **137**$_2$, 4^+, $\gamma_{\mathbf{42.13}}$**96**$_3$
A **288**$_6$, 6^+, $\gamma_{\mathbf{137}}$**147**$_5$
B **19.0x10**^{2}$_{20}$, *40$_{15}$ ps*, %SF≤100
B ≈**2800**, *180$_{70}$ ns*, %SF=?, %IT=?



${}^{243}_{96}\mathbf{Cm}_{147}$

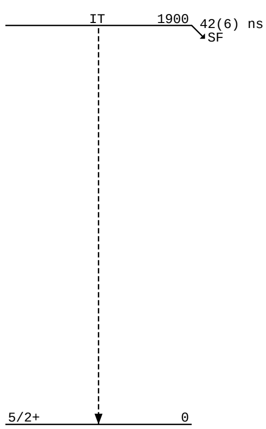
S_n: 5693.3 $_{11}$, S_p: 5575.8 $_{12}$

Nuclear Bands

- A 5/2[622]
- B 1/2[631]
- C 7/2[624]
- D 1/2[501]
- E Fission isomer (1969MeZX,1971Re11,1980Bj02)

Levels and γ-ray branchings:

- A **0**, $5/2^+$, *29.1$_1$ y*, %α=99.71$_3$, %ε=0.29$_3$, %SF=5.3x10^{-9}$_9$, μ=0.40$_8$
- A **42**$_2$, $7/2^+$
- B **87.4**$_1$, $1/2^+$, *1.08$_3$ μs*, γ_0**87.4**$_1$(100) E2
- A **94**$_2$, $9/2^+$
- B **94**$_2$, $(3/2^+)$
- C **128**$_4$, $(7/2^+)$
- **153**$_2$
- **164**$_2$
- C **187**$_9$, $(9/2^+)$
- **219**$_3$
- **228**$_3$
- B **260**$_2$, $(9/2^+)$
- **530**$_3$
- D **729**$_2$, $(1/2^-)$
- **769**$_2$
- **798**$_2$
- **842**$_2$
- **860**$_4$(?)
- **892**$_2$
- **904**$_3$
- **930**$_4$
- **973**$_2$
- **1015**$_3$
- **1023**$_2$
- **1046**$_4$
- **1136**$_2$
- **1217**$_3$
- **1222**$_4$
- **1359**$_3$
- **1367**$_4$
- E **1.9x10**^{3}$_3$ *42$_6$ ns*, %SF ≤ 100



${}^{243}_{96}\mathrm{Cm}_{147}$

${}^{244}_{96}\mathbf{Cm}_{148}$

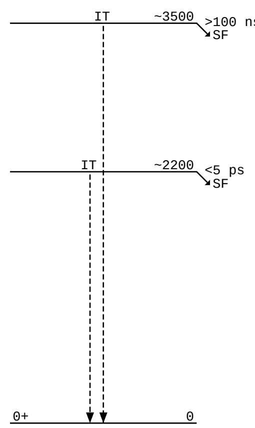
S_n: 6800.7 $_{11}$, S_p: 6009.4 $_{10}$

Nuclear Bands

- A GS band
- B Fission isomer (1969Me11,1971Re11,1980Bj02,1980Me15, 1989Ha40)

Levels and γ-ray branchings:

- A **0**, 0^+, *18.10$_2$ y*, %SF=1.347x10^{-4}$_8$, %α=100
- A **42.965**$_{10}$, 2^+, *97$_5$ ps*, γ_0**42.965**$_{10}$(100) E2
- A **142.348**$_4$, 4^+, $\gamma_{42.965}$**99.383**$_4$(100) E2
- A **296.211**$_{11}$, 6^+, $\gamma_{142.348}$**153.863**$_2$(100) E2
- A **501.787**$_{12}$, 8^+, $\gamma_{296.211}$**205.575**$_4$(100)
- **970**$_4$, $(2^+,3^-)$
- **984.915**$_{15}$, 0^+, $\gamma_{42.965}$**941.95**$_2$, γ_0**984.919**$_{20}$ E0
- **1020.759**$_{22}$(?), (2^+), $\gamma_{42.965}$**977.80**$_2$(100) E0(+M1)
- **1038**$_6$, $(2^+,3^-)$
- **1040.181**$_{11}$, 6^+, *34$_2$ ms*, $\gamma_{501.787}$**538.400**$_{16}$(1.0$_2$), $\gamma_{296.211}$**743.971**$_5$(100$_{30}$) M1+E2 $\delta=-0.92_8$, $\gamma_{142.348}$**897.848**$_7$(42$_{12}$) E2
- **1084.199**$_{12}$(?), $(1,2^+)$, $\gamma_{42.965}$**1041.278**$_{22}$(53$_{18}$), γ_0**1084.181**$_{14}$(100$_{30}$)
- **1105.908**$_{20}$(?), $(1,2^-)$, $\gamma_{42.965}$**1062.953**$_{18}$(100$_{30}$) (D), γ_0**1105.43**$_{19}$(15$_8$)
- **1187**$_4$, $(2^+,3^-)$
- B ≈**2200** *<5 ps*, %SF ≤ 100
- B ≈**3500** *>100 ns*, %SF ≤ 100



${}^{244}_{96}\mathrm{Cm}_{148}$

$^{245}_{96}\mathbf{Cm}_{149}$

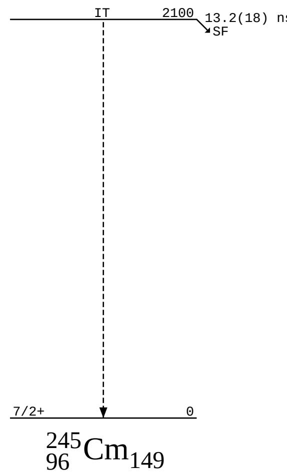
S_n: 5519.7 $_{19}$, S_p: 6165.4 $_{21}$

Nuclear Bands

A 7/2[624]
B 5/2[622]
C 1/2[631]
D 9/2[734]
E K=3/2 band
F 7/2[743]
G 7/2[613]
H 1/2[620]
I 1/2[501]
J Fission isomer (1971Br39,1972Wo07,1980Bj02)

Levels and γ-ray branchings:

A **0**, $7/2^+$, *8500_{100} y*, %α=100, %SF=6.1x10$^{-7}_{9}$, μ=0.5_1
A $\mathbf{54.81}_5$, $9/2^+$, *≤0.10 ns*, $\gamma_{\mathbf{0}}\mathbf{54.81}_5$ M1+E2 $\delta = 1.3_2$
A $\mathbf{121.60}_4$, $11/2^+$, $\gamma_{\mathbf{54.81}}\mathbf{66.80}_2(64_4)$ M1+E2 $\delta = 0.86_{30}$, $\gamma_{\mathbf{0}}\mathbf{121.60}_4(100_{10})$
A $\mathbf{197.4}_{20}$, $13/2^+$, $\gamma_{\mathbf{121.60}}\mathbf{75.8}_{20}$(?)
B $\mathbf{252.80}_2$, $5/2^+$, $\gamma_{\mathbf{54.81}}\mathbf{198.0}_1(0.54_7)$ E2, $\gamma_{\mathbf{0}}\mathbf{252.80}_2(100_7)$ M1+E2 $\delta = 0.16_3$
B $\mathbf{295.72}_2$, $7/2^+$, $\gamma_{\mathbf{252.80}}\mathbf{42.88}_2(17.5_{10})$, $\gamma_{\mathbf{54.81}}\mathbf{240.86}_2(100_4)$ M1(+E2) $\delta < 0.7$, $\gamma_{\mathbf{0}}\mathbf{295.72}_2(65_3)$ M1+E2 $\delta = 0.22_{22}$
B $\mathbf{350.64}_4$, $9/2^+$, $\gamma_{\mathbf{295.72}}\mathbf{54.8}(20_{15})$, $\gamma_{\mathbf{121.60}}\mathbf{229.50}_{10}(100_5)$
C $\mathbf{355.90}_{10}$, $1/2^+$, *0.29_2 μs*, $\gamma_{\mathbf{252.80}}\mathbf{103.1}_1$ E2
C $\mathbf{361.4}_4$, $(3/2^+)$
D $\mathbf{388.18}_5$, $9/2^-$, *0.450_{20} ns*, $\gamma_{\mathbf{350.64}}\mathbf{37.54}_3(0.0224_{11})$, $\gamma_{\mathbf{295.72}}\mathbf{92.51}_2(0.494_{16})$, $\gamma_{\mathbf{121.60}}\mathbf{266.62}_2(1.05_4)$ (E1), $\gamma_{\mathbf{54.81}}\mathbf{333.37}_2(21.1_6)$ E1, $\gamma_{\mathbf{0}}\mathbf{388.16}_2(100_3)$ E1
B $\mathbf{416.60}_5$, $11/2^+$, $\gamma_{\mathbf{350.64}}\mathbf{65.96}_2$
C $\mathbf{418.7}_5$, $(5/2^+)$
C $\mathbf{431}_2$, $(7/2^+)$
D $\mathbf{442.84}_5$, $11/2^-$, $\gamma_{\mathbf{388.18}}\mathbf{54.8}(56_{13})$ M1+E2 $\delta = 0.68_{17}$, $\gamma_{\mathbf{121.60}}\mathbf{321.24}_3(100_6)$
B $\mathbf{498}_2$, $13/2^+$
D $\mathbf{509.0}_2$, $13/2^-$, $\gamma_{\mathbf{442.84}}\mathbf{65.96}$, $\gamma_{\mathbf{388.18}}\mathbf{120.80}_{10}$
C $\mathbf{532}_2$, $(9/2^+)$
$\mathbf{545}_3$
C $\mathbf{555}_5$, $(11/2^+)$
$\mathbf{558}_3$
D $\mathbf{588}_3$, $(15/2^-)$
B $\mathbf{598}_3$, $(15/2^+)$
E $\mathbf{633.60}_{11}$, $(3/2)^-$, $\gamma_{\mathbf{361.4}}\mathbf{272.2}_3(0.50_{13})$, $\gamma_{\mathbf{252.80}}\mathbf{380.8}_1(100)$ E1
≈**638**(?)
F $\mathbf{643.65}_6$, $(7/2^-)$, $\gamma_{\mathbf{388.18}}\mathbf{255.45}_3(100_{13})$, $\gamma_{\mathbf{252.80}}\mathbf{390.85}_5(67_8)$, $\gamma_{\mathbf{54.81}}\mathbf{589.00}_{10}(9.2_{15})$, $\gamma_{\mathbf{0}}\mathbf{643.2}_3(49_{18})$
$\mathbf{660}_5$(?)
E $\mathbf{661.52}_{10}$, $5/2^-$, $\gamma_{\mathbf{295.72}}\mathbf{365.8}_1(100)$ E1, $\gamma_{\mathbf{252.80}}\mathbf{408.7}_1(51_9)$
D $\mathbf{672}_3$, $(17/2^-)$
F $\mathbf{701.72}_{11}$, $(9/2^-)$, $\gamma_{\mathbf{295.72}}\mathbf{406.00}_{10}(100_8)$, $\gamma_{\mathbf{0}}\approx\mathbf{700}(\approx 55)$(?)
G $\mathbf{722}_3$, $(7/2^+)$
$\mathbf{735}_3$(?)
H $\mathbf{740.9}_2$, $(1/2)^+$, $\gamma_{\mathbf{355.90}}\mathbf{385.0}_1(100)$ M1, $\gamma_{\mathbf{252.80}}\mathbf{488.2}_2(2.5_6)$
H $\mathbf{769.2}_5$, $(3/2^+)$, $\gamma_{\mathbf{418.7}}\mathbf{350.5}_1(100)$ M1, $\gamma_{\mathbf{361.4}}\mathbf{407.8}_2(\approx 37)$ (M1)
$\mathbf{772}_3$
F $\mathbf{773}_4$, $(11/2^-)$
G $\mathbf{782}_4$, $(9/2^+)$
H $\mathbf{791}_4$, $(5/2^+)$
≈**838**
≈**848**
G ≈**853**, $(11/2^+)$
H $\mathbf{856}_3$, $(7/2^+)$
F ≈**866**, $(13/2^-)$
H $\mathbf{891}_4$, $(9/2^+)$
≈**901**
$\mathbf{908}_5$
I $\mathbf{913}_3$, $(1/2^-)$
≈**936**
$\mathbf{942}_3$
I $\mathbf{956}_2$, $(3/2^-,5/2^-)$
≈**972**
$\mathbf{980}_5$
$\mathbf{995}_5$
≈**1009**
$\mathbf{1017}_4$
$\mathbf{1042}_5$
$\mathbf{1050}_5$
$\mathbf{1056}_3$
$\mathbf{1083}_3$
$\mathbf{1103}_3$
$\mathbf{1259}_5$
$\mathbf{1271}_2$
$\mathbf{1473}_3$
J $\mathbf{2.1x10^3}_3$ *13.2_{18} ns*, %SF≤100



$^{242}_{97}\mathbf{Bk}_{145}$

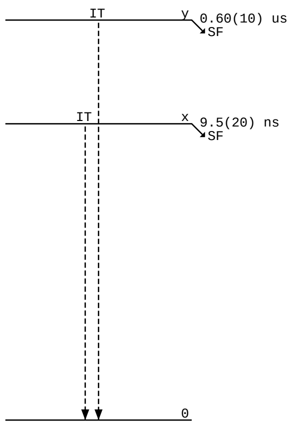
S_n: 6370 *SY*, S_p: 3190 *SY*

Nuclear Bands

A Fission isomer

Levels and γ-ray branchings:

0 *7.0₁₃ min*, %ε+%$\beta^+ \leq$100
≈**250**
A **x** 9.5_{20} *ns*, %SF≤100
A **y** 0.60_{10} *μs*, %SF≤100



$^{242}_{97}Bk_{145}$

$^{243}_{97}\mathbf{Bk}_{146}$

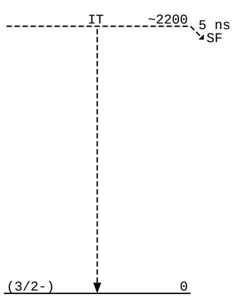
S_n: 7185 *SY*, S_p: 3403 $_5$

Nuclear Bands

A 7/2[633]
B Fission isomer

Levels and γ-ray branchings:

0, $(3/2^-)$, 4.5_2 *h*, %ε≈99.85, %α≈0.15
A **0.0+x**, $(7/2^+)$
A **49+x**, $(9/2^+)$
A **112+x**, $(11/2^+)$
B ≈**2200**(?), *5 ns*, %SF≤100



$^{243}_{97}Bk_{146}$

$^{244}_{97}\mathbf{Bk}_{147}$

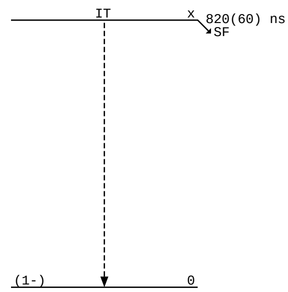
S_n: 6053 $_{15}$, S_p: 3763 $_{14}$

Nuclear Bands

A Fission isomer

Levels and γ-ray branchings:

0, (1^-), 4.35_{15} *h*, %ε=99.994$_2$, %α=0.006$_2$
≈**130**
≈**158**
≈**190**
A **x**, 820_{60} *ns*, %SF≤100



$^{244}_{97}Bk_{147}$

$^{245}_{97}\mathbf{Bk}_{148}$

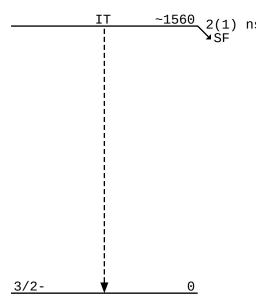
S_n: 6965 $_{14}$, S_p: 3927.2 $_{15}$

Nuclear Bands

A 3/2[521]
B 7/2[633]
C Fission isomer

Levels and γ-ray branchings:

A **0**, $3/2^-$, 4.94_3 *d*, %ε=99.88$_1$, %α=0.12$_1$
B **0+x**, $7/2^{(+)}$
B **61+x**, $(9/2^+)$
C ≈**1560**, 2_1 *ns*, %SF=100



$^{245}_{97}Bk_{148}$

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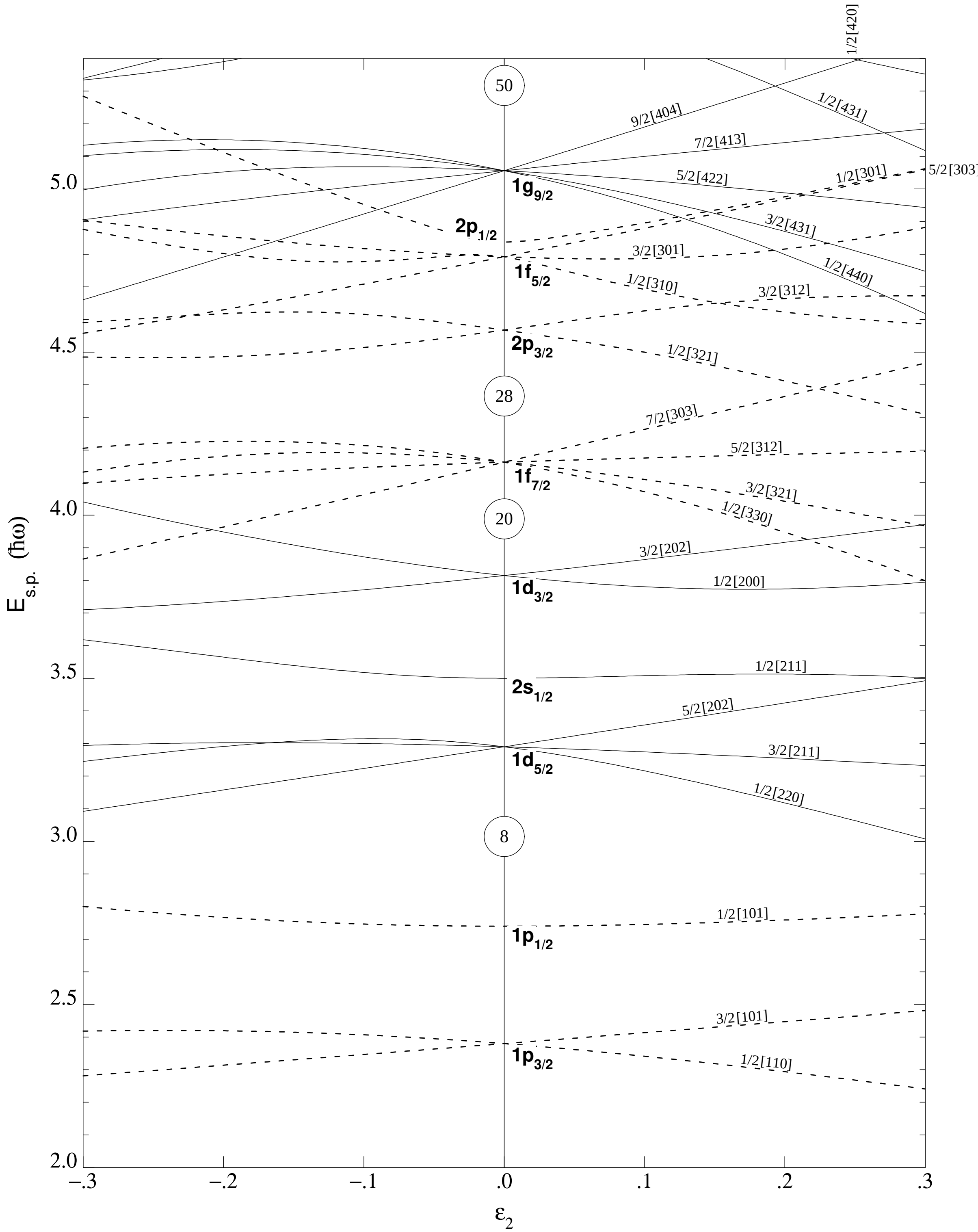

Figure 1. Nilsson diagram for protons or neutrons, Z, N ≤ 50 (ε_4 = 0).

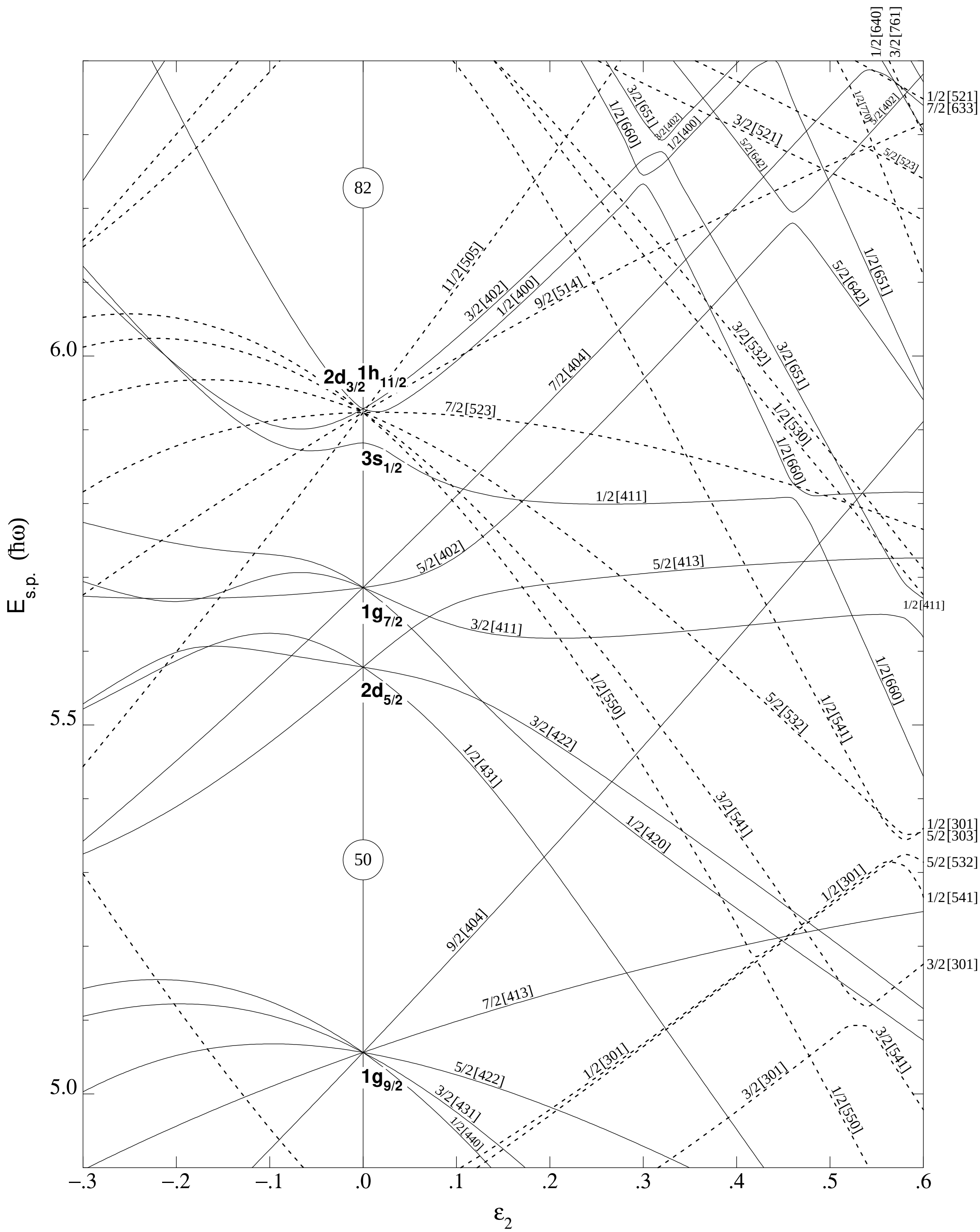

Figure 2. Nilsson diagram for neutrons, $50 \leq N \leq 82$ ($\varepsilon_4 = \varepsilon_2^2/6$).

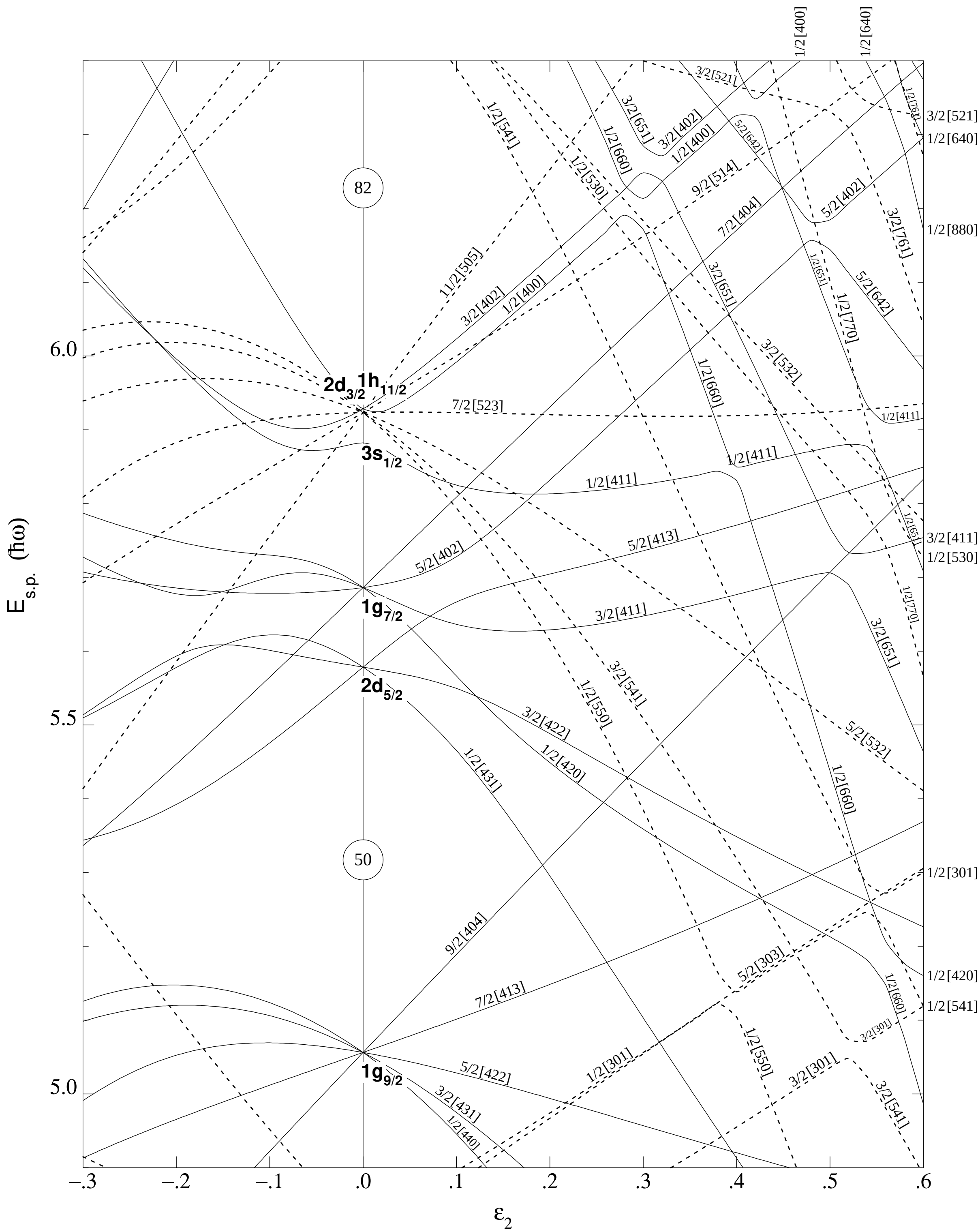

Figure 3. Nilsson diagram for neutrons, $50 \leq N \leq 82$ ($\varepsilon_4 = -\varepsilon_2^2/6$).

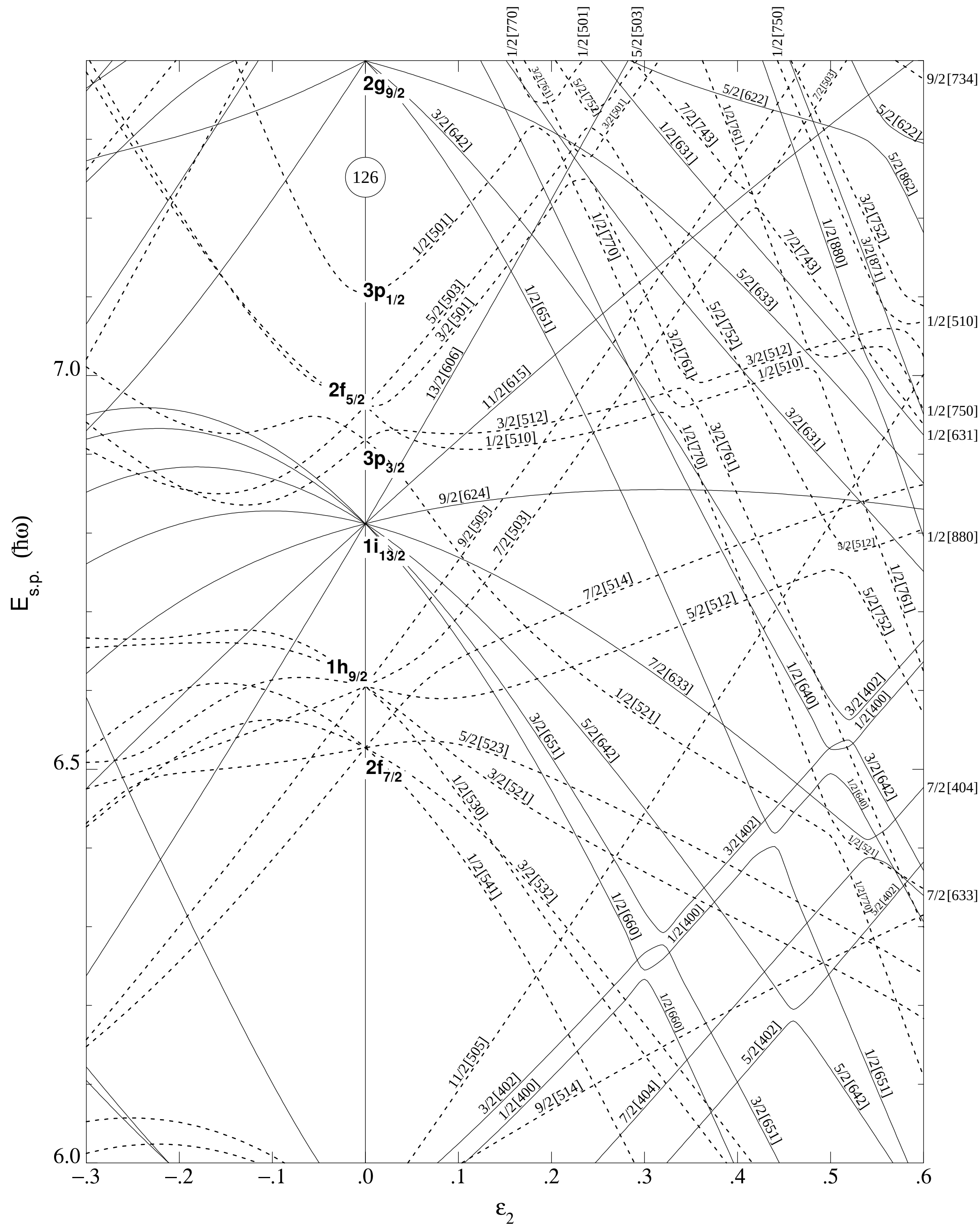

Figure 4. Nilsson diagram for neutrons, $82 \leq N \leq 126$ ($\varepsilon_4 = \varepsilon_2^2/6$).

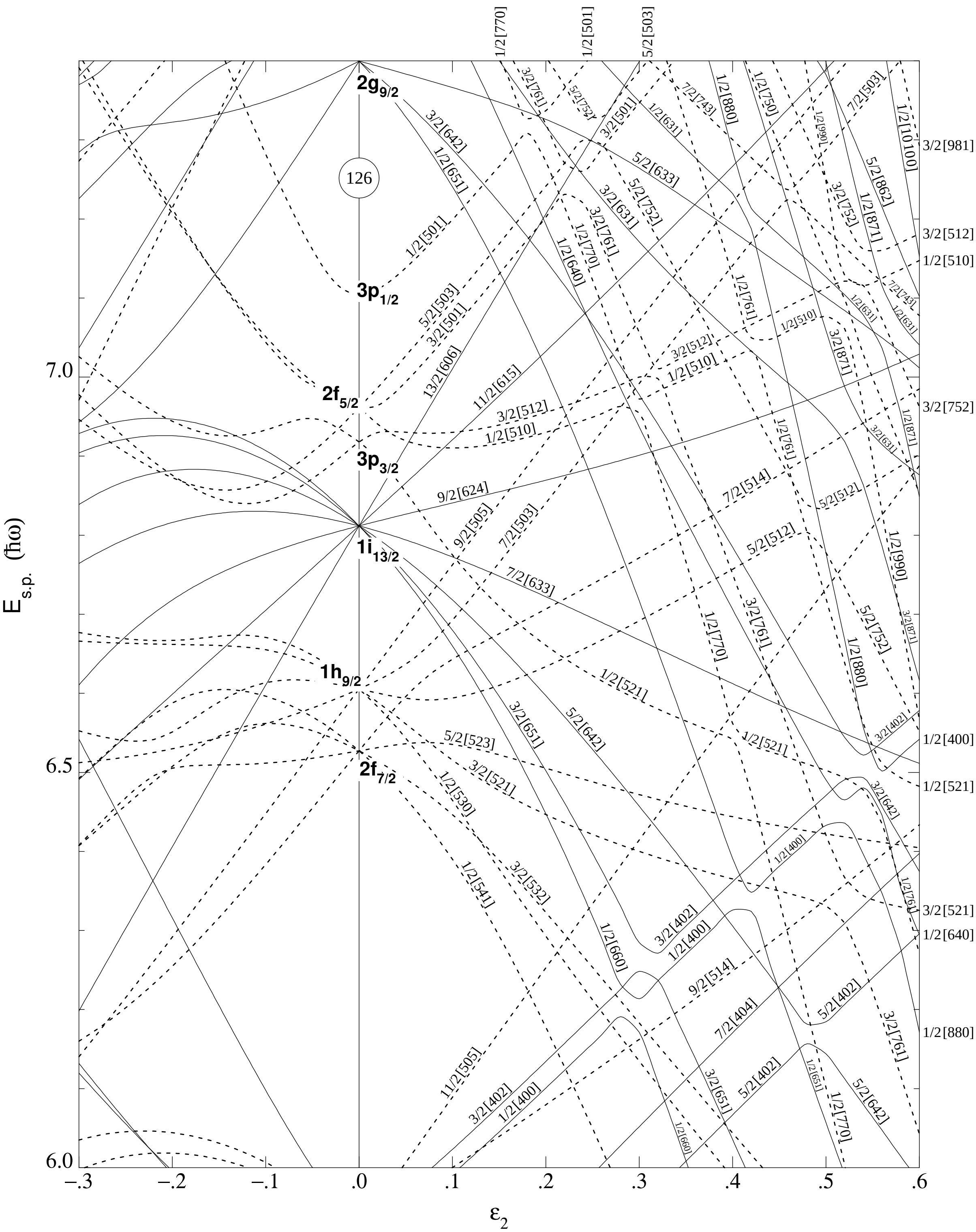

Figure 5. Nilsson diagram for neutrons, $82 \leq N \leq 126$ ($\varepsilon_4 = -\varepsilon_2^2/6$).

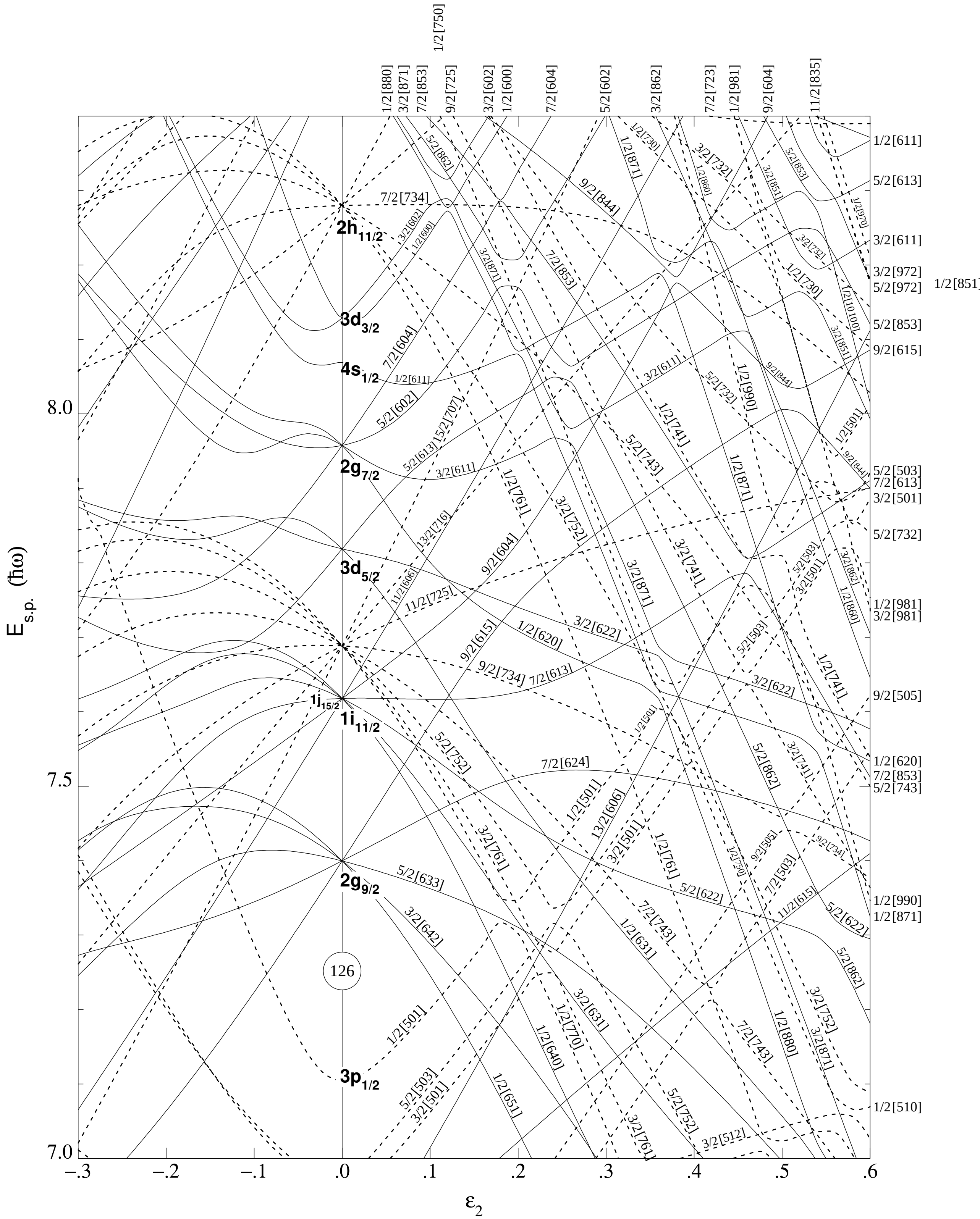

Figure 6. Nilsson diagram for neutrons, N ≥ 126 ($\varepsilon_4 = \varepsilon_2^2/6$).

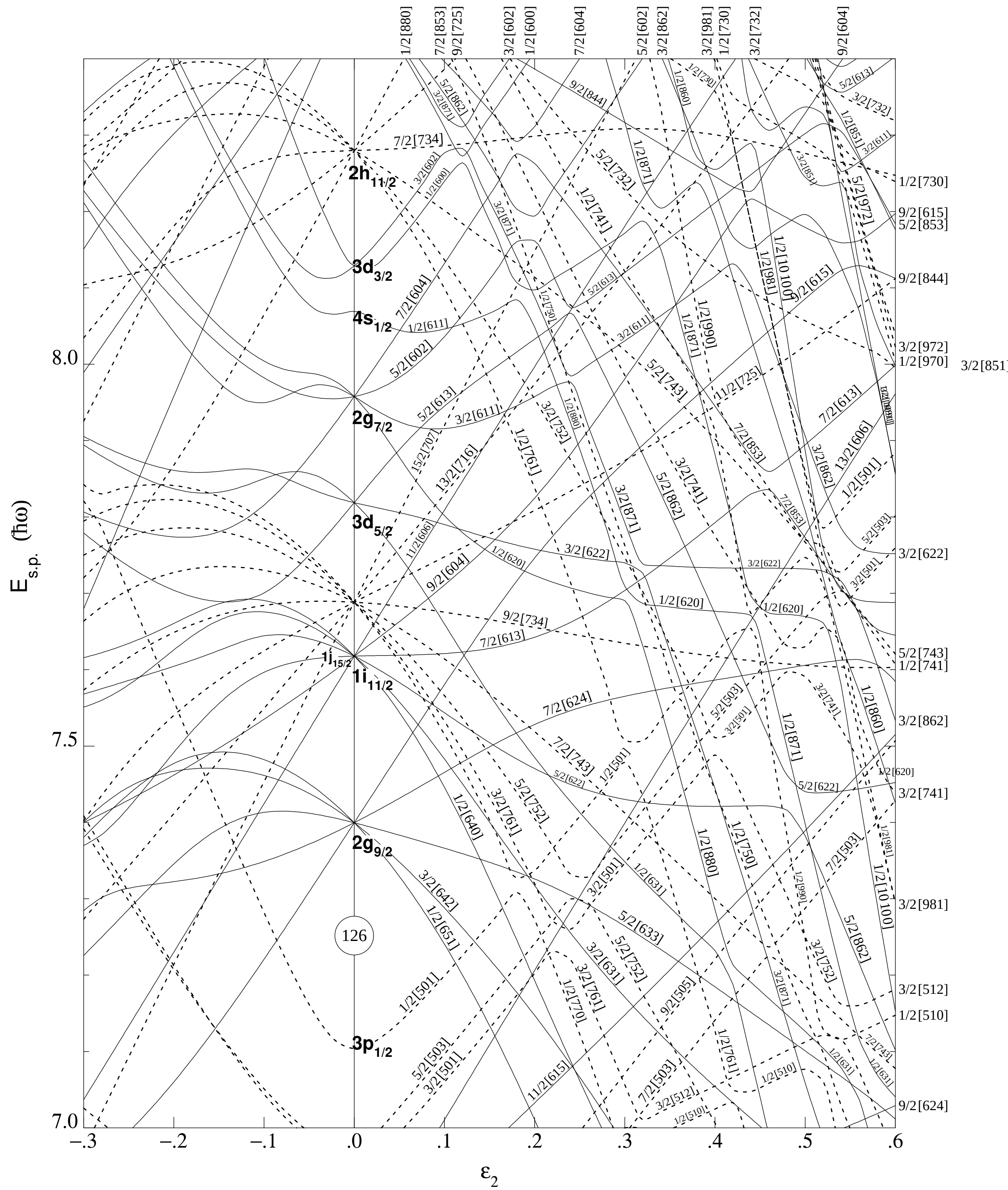

Figure 7. Nilsson diagram for neutrons, N ≥ 126 ($\varepsilon_4 = -\varepsilon_2^2/6$).

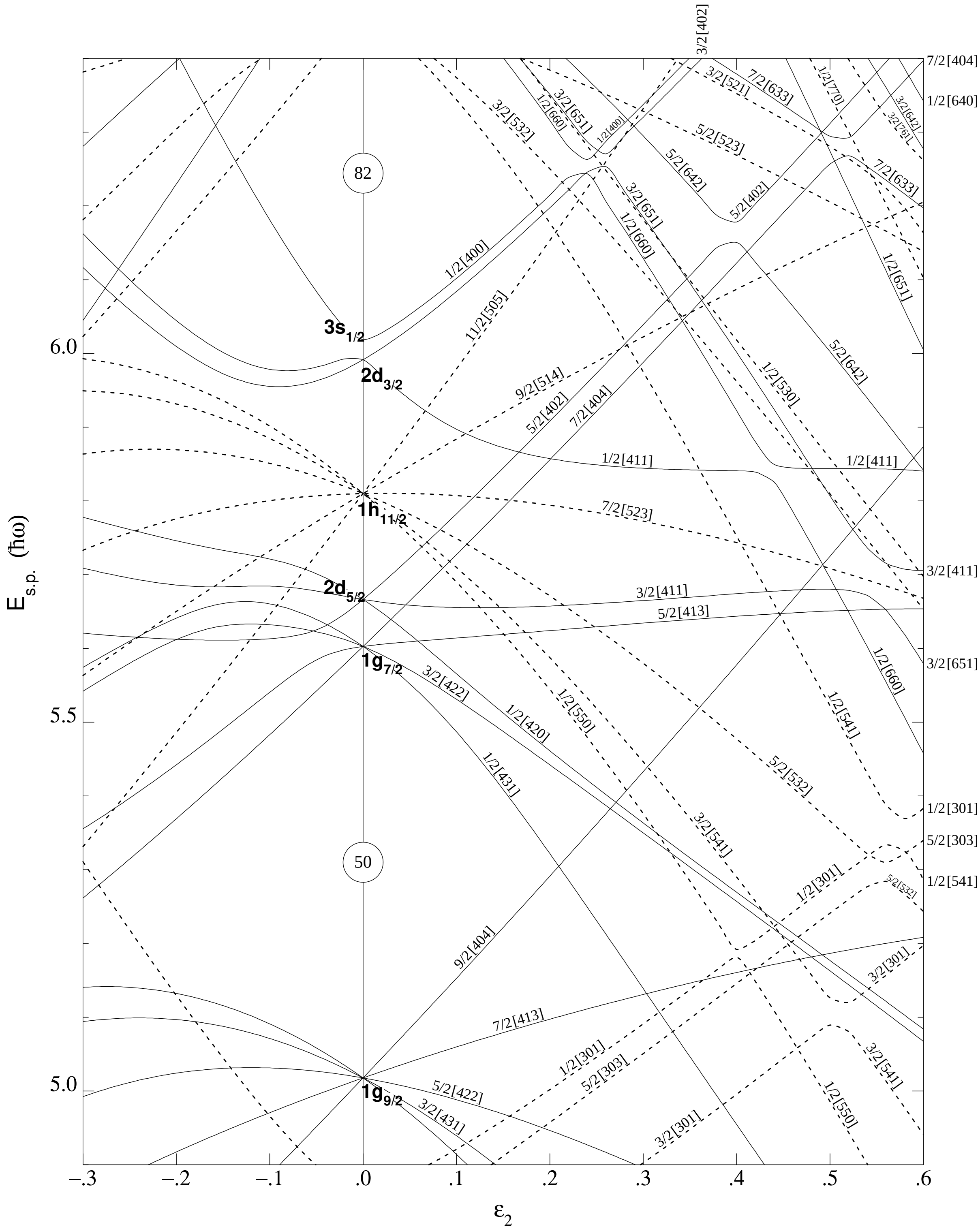

Figure 8. Nilsson diagram for protons, $50 \le Z \le 82$ ($\varepsilon_4 = \varepsilon_2^2/6$).

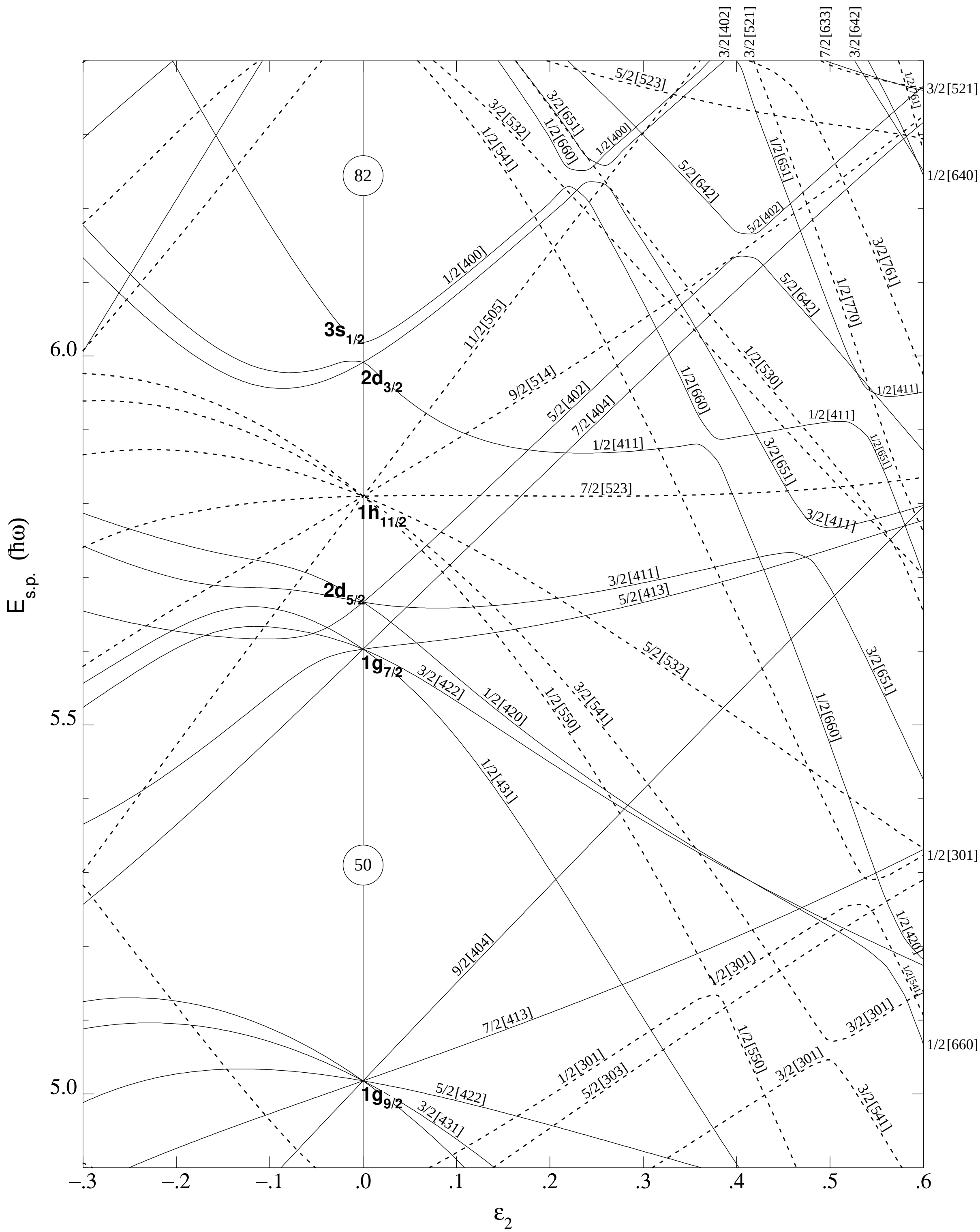

Figure 9. Nilsson diagram for protons, $50 \leq Z \leq 82$ ($\varepsilon_4 = -\varepsilon_2^2/6$).

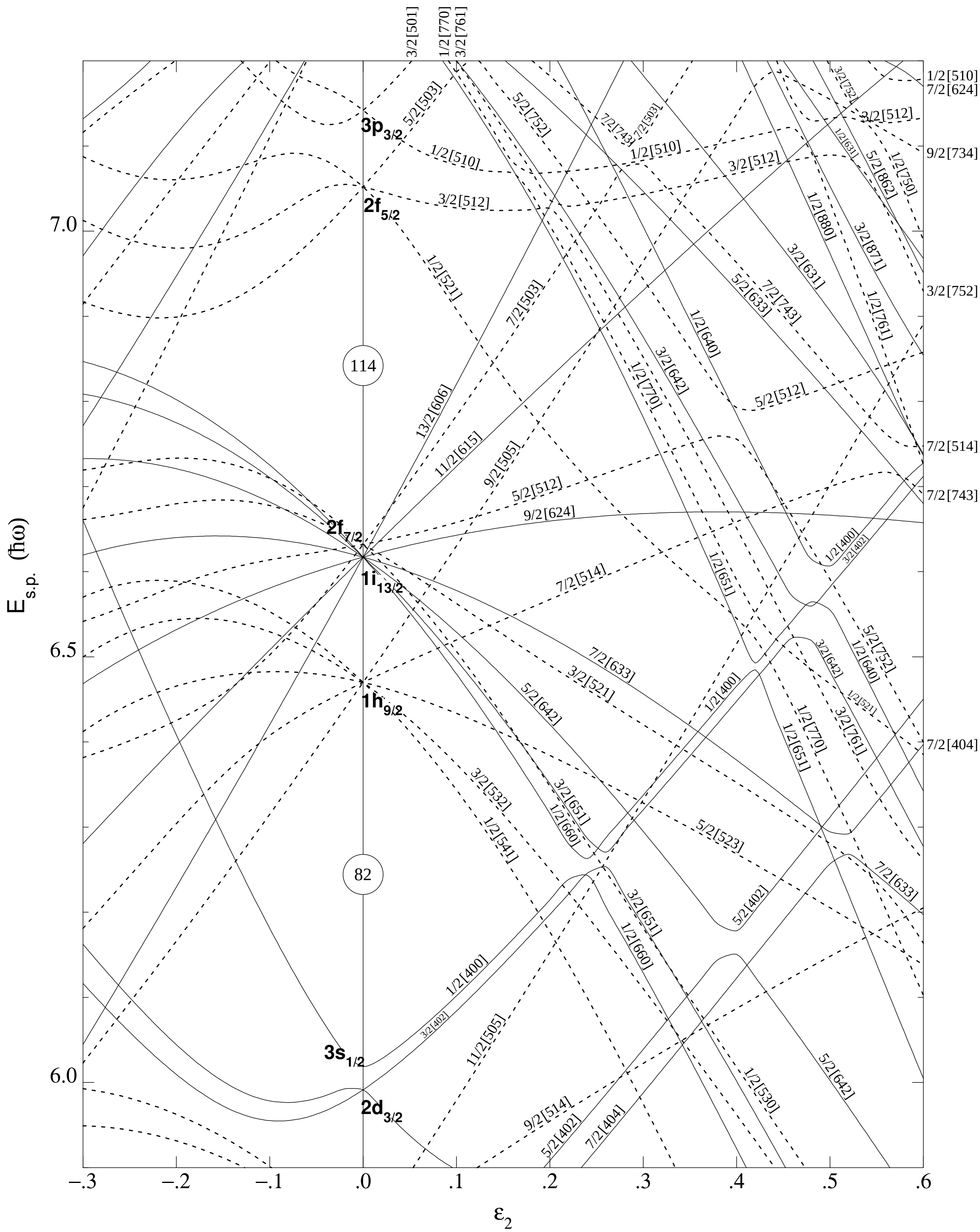

Figure 10. Nilsson diagram for protons, Z ≥ 82 ($\varepsilon_4 = \varepsilon_2^2/6$).

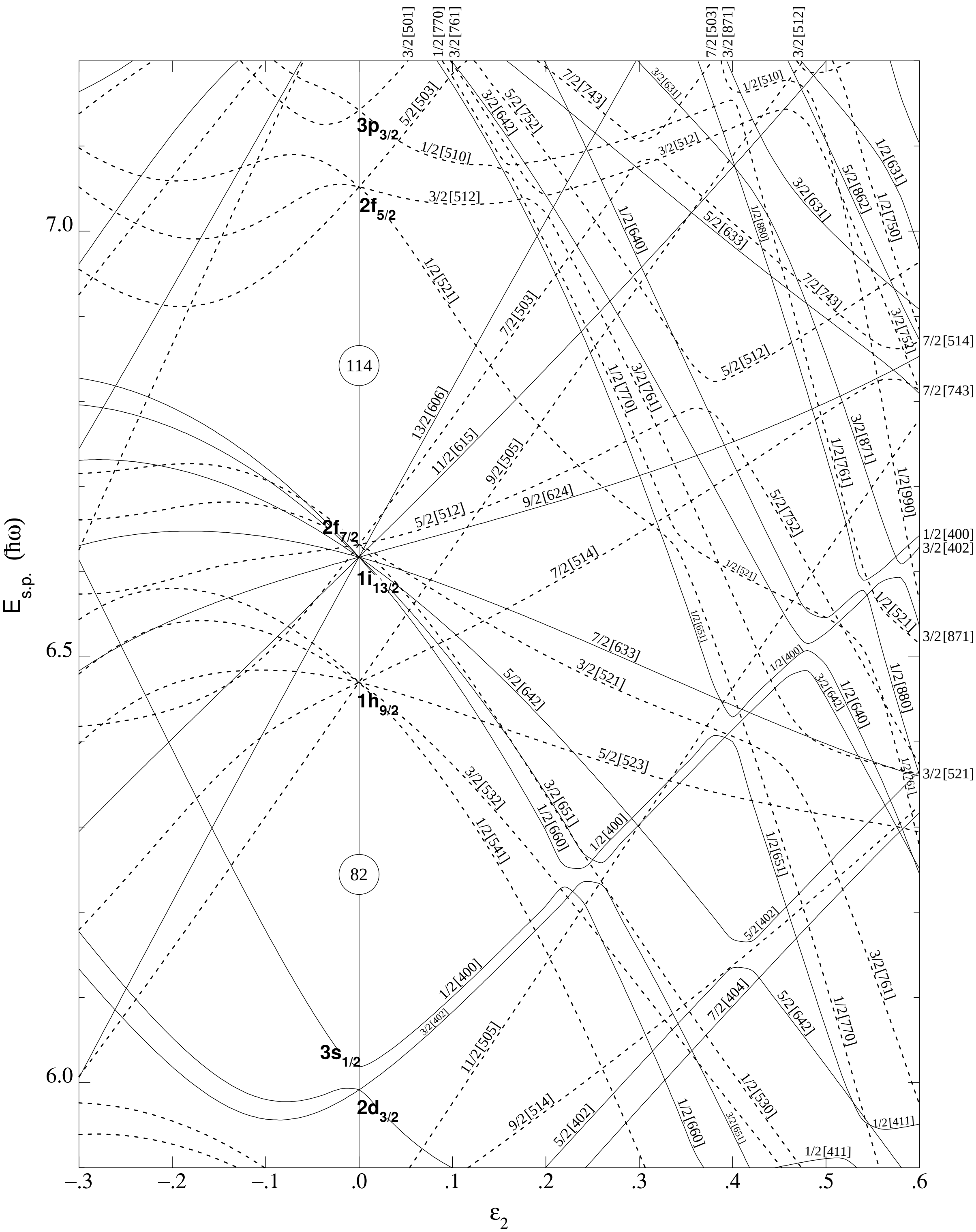

Figure 11. Nilsson diagram for protons, Z ≥ 82 ($\varepsilon_4 = -\varepsilon_2^2/6$).