Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

Q(β^-)=−4131 *6*; S(n)=7096 *6*; S(p)=5710 *40*; Q(α)=3559 *4* 2017Wa10

^{153}Dy Levels

See SD data set for discussion of possible observation of a hyperdeformed band.
See SD data set for population percentages for each of the five SD bands.

Cross Reference (XREF) Flags

A ^{153}Ho ε decay (2.01 min)
B ^{153}Ho ε decay (9.3 min)
C ^{110}Pd(^{48}Ca,5nγ),
D ^{152}Gd(α,3nγ), ^{154}Gd(α,5nγ),
E (HI,xnγ)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	7/2$^{(-)}$	6.4 h *1*	AB DE	%ε+%β^+=99.9906 *14*; %α=0.0094 *14* μ=−0.782 *6*; Q=−0.15 *9* <r^2>$^{1/2}$=5.10 fm 25 (2013An02,evaluation). J$^\pi$: From 1970Ro21 atomic-beam magnetic resonance. π=− suggested by analogy with N=87 isotones ^{151}Gd and ^{149}Sm. Probable configuration=(ν 2f$_{7/2}$). T$_{1/2}$: Weighted average of 6.4 h *2* (1964Ma19), 6.75 h *15* (1965Ma51), 5.8 h *9* (1967Go32), 6.29 h *10* (1970Ch09). Other measurements: 1958An39, 1958Do61, 1958Go86, 1958To27, 1960Ba31, 1961Dz04, 1962Ry03, 1970Ro21. μ: From 2014StZZ compilation based on a private communication from Neugart (by collinear fast beam laser spectroscopy − accelerated beam); other: −0.715 *6* from reevaluation of data of 1972Ro36. Q: From 2016St14 compilation based on a private communication from Neugart (by collinear fast beam laser spectroscopy − accelerated beam); other: −0.15 *9* from a reevaluation of data of 1972Ro36. %α: From average of 0.0113% *17* and 0.0083% *13* (1974To07); others: 0.0033% *2* (1960Ma47) and ≈ 0.004% (1960To05) which are much lower. 1991Ry01 evaluation recommends 0.009% *4*. Δ<r^2> can be read from a graph of 1985Ne09; these values are (152-153) ≈ 0.08 fm^2, (153-154) ≈ 0.24 fm^2, (151-153) ≈ 0.23 fm^2, and (153-155) ≈ 0.45 fm^2.
108.84 *11*	(3/2$^-$)	1.35 ns *10*	AB	J$^\pi$: From E2 γ to 7/2$^{(-)}$ level and strong ε feeding from 1/2$^+$ ^{153}Ho (9.3 min). T$_{1/2}$: From delayed coincidence in ^{153}Ho ε decay (1978An25).
270.49 *13*	(3/2$^-$,5/2$^-$)	≤0.25 ns	AB	J$^\pi$: From M1 γ to (3/2$^-$) level and E2 to 7/2$^{(-)}$. This value conflicts with the 1.8% ε+β^+ branch (with log *ft*=6.3) to this level from 11/2$^-$ ^{153}Ho (2.01 min), however, this intensity may be incorrect due to incompleteness of the scheme. T$_{1/2}$: From delayed coincidence in ^{153}Ho ε decay (1978An25).
295.80[#] *9*	(9/2$^-$)		A DE	J$^\pi$: From M1 γ to 7/2$^{(-)}$ and 70% ε branch (with log *ft*=4.7) from 11/2$^-$ ^{153}Ho (2.01 min).
365.97 *10*	(5/2$^-$,7/2$^-$,9/2$^-$)		AB	J$^\pi$: From M1 γ to 7/2$^{(-)}$ level.
500.66 *15*	($^-$)	≤0.2 ns	B	J$^\pi$: From M1 γ to (3/2$^-$,5/2$^-$) level. Current ^{153}Ho (9.3 min) decay scheme requires ε feeding from 1/2$^+$ parent which would further limit J to 1/2 or 3/2; however, this scheme is very incomplete. T$_{1/2}$: From delayed coincidence in ^{153}Ho ε decay (1978An25).

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Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
565.65 *14*	(3/2⁻,5/2⁻)		AB	Jπ: From M1 γ to (3/2⁻) level and E2 to 7/2(⁻). Current ^{153}Ho (9.3 min) decay scheme requires ε feeding from 1/2⁺ parent which would further limit J to 1/2 or 3/2; however, this scheme is very incomplete.
576.87 *15*	(3/2⁻,5/2,7/2⁻)		A	Jπ: From γ's to (3/2⁻) and 7/2(⁻) levels.
636.81 *14*	11/2(⁻)		A DE	Jπ: From stretched E2 γ to 7/2(⁻) level and ε feeding from 11/2⁻ parent.
688.41 *14*	(5/2⁻,7/2⁻)		A	Jπ: From γ's to (3/2⁻) and (9/2⁻) levels.
712.50& *15*	(13/2⁺)		A DE	Jπ: From E1 γ to 11/2(⁻) level.
829.67 *22*	(13/2⁺)		A E	E(level): Original ε decay scheme has one level at 830 keV, but due to the γ decays from it, the evaluator proposes two levels. Jπ: The γ's to (13/2⁺) and 11/2(⁻) levels and possible ε feeding (with log *ft*=6.0) from 11/2⁻ parent.
830.46 *20*	(7/2⁻)		A	E(level): Original ε decay scheme has one level at 830 keV, but due to the γ decays from it, the evaluator proposes two levels. Jπ: From γ's to (3/2⁻) and (5/2⁻,7/2⁻) levels.
837.28# *21*	(13/2⁻)		A D	Jπ: From E2 γ to (9/2⁻) level, γ to (13/2⁺), and band assignment.
1040.56 *24*	(13/2⁻)		E	Jπ: From γ's to 11/2(⁻) and (13/2⁺) levels.
1040.99 *22*	(11/2⁺)		A D	Jπ: From γ's to (9/2⁻) and (13/2⁻) levels.
1068.05‡ *22*	(11/2⁻)		A D	Jπ: From γ's to (9/2⁻) and 11/2(⁻) levels and band assignment.
1092.3 *3*	(9/2,11/2⁻)		A	Jπ: From γ to 7/2(⁻) level and probable ε feeding (with log *ft*=6.3) from 11/2⁻ parent.
1160.28& *18*	(17/2⁺)	11.6 ps *12*	DE	Jπ: From E2 γ to 13/2⁺ level and band assignment. $T_{1/2}$: From recoil-distance, plunger method (1977Ba77, (α,xnγ)).
1189.4 *4*	(7/2⁻,9/2,11/2⁻)		A	Jπ: From γ's to 7/2(⁻) and 11/2(⁻) levels.
1272.9 *3*	(15/2⁻)		DE	Jπ: From γ's to (13/2⁺) and (11/2)⁻ levels and expected progression of J values.
1276.4 *3*	(9/2⁻)		A	Jπ: From γ's to 7/2(⁻) level and ε feeding (with log *ft*=5.35) from 11/2⁻ parent.
1304.23 *21*	(15/2⁺)		D	Jπ: From ΔJ=1, (E2(+M1)) γ's to (13/2⁺) level and expected progression of J values.
1321.96‡ *22*	(13/2⁻)		A D	Jπ: From γ's (M1+E2) γ to (11/2⁻) levels and band assignment.
1381.36 *25*	(5/2⁻,7/2,9/2⁻)		A	Jπ: From γ's to (9/2⁻) and (3/2⁻,5/2⁻) levels.
1455.3# *5*	(17/2⁻)		D	Jπ: From E2 γ to (13/2⁻) level and band assignment.
1500.8 *3*	(9/2⁻)		A	Jπ: 9/2⁻,11/2⁻,13/2⁻ from ε feeding (with log *ft*=5.7) from 11/2⁻ parent. 11/2⁻,13/2⁻ less likely from γ to (5/2⁻,7/2⁻) level.
1522.0 *6*	(15/2⁺)		D	Jπ: From (E2) γ to (11/2⁺) level and expected progression of J.
1581.24 *23*	(9/2⁺,11/2⁻)		A	Jπ: From γ's to (5/2⁻,7/2⁻) and (13/2⁺) levels and ε feeding (with log *ft*=5.7) from 11/2⁻ parent.
1584.3‡ *3*	(15/2⁻)		D	Jπ: From γ to (11/2⁻) and D γ (13/2⁻).
1601.0@ *3*	(17/2⁻)		E	Jπ: From E2 γ to (13/2⁻) level and band assignment.
1648.2& *4*	(21/2⁺)	7.1 ps *6*	DE	Jπ: From E2 γ to (17/2⁺) level and band assignment. $T_{1/2}$: From recoil-distance, plunger method (1977Ba77, (α,xnγ)).
1753.7 *3*	(19/2⁻,17/2⁻)		D	Jπ: From (E2) γ to (13/2,15/2⁻) level.
1822.3f *4*	(19/2⁺)		D	Jπ: From (E1) γ to (17/2⁻) level, (M1) to (17/2⁺), and band assignment.
1861.9‡ *5*	(17/2⁻)		D	Jπ: From γ to (13/2⁻) and D γ to (15/2⁻) levels.
1892.1? *11*	(19/2⁺)		D	Jπ: From (M1+E2) γ to (17/2⁺).
1963.4 *8*	(19/2⁺)		D	Jπ: From (E2) γ to (15/2⁺) level.
2042.1@ *4*	(21/2⁻)		E	Jπ: From E2 γ to (17/2⁻) level, γ to (21/2⁺), and band assignment.
2152.1‡ *6*	(19/2⁻)		D	Jπ: From γ to (15/2⁻) and D+Q γ to (17/2⁻) levels.
2158?			D	
2180.5& *4*	(25/2⁺)	2.1 ps *4*	DE	Jπ: From E2 γ to (21/2⁺) level and band assignment. $T_{1/2}$: From recoil-distance, plunger method (1977Ba77, (α,xnγ)).
2194.8 *4*	(21/2⁻,19/2⁻)		D	Jπ: From γ to (19/2⁻,17/2⁻) level.

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Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

E(level)[†]	J$^{\pi}$	T$_{1/2}$	XREF	Comments
2231.3? *11*	(21/2$^-$)		D	J$^{\pi}$: From (E2) γ to (17/2$^-$).
2284.7[f] *6*	(23/2$^+$)		D	J$^{\pi}$: From E2 γ to (19/2$^+$) level and band assignment.
2453.9[‡] *7*	(21/2$^-$)		D	J$^{\pi}$: From γ to (17/2$^-$) and D γ to (19/2$^-$) levels.
2522.9[@] *4*	(25/2$^-$)		E	J$^{\pi}$: From E2 γ to (21/2$^-$) level, γ to (25/2$^+$), and band assignment.
2523.6 *9*	(23/2$^+$)		D	J$^{\pi}$: From E2 γ to (19/2$^+$) levels.
2685.9[f] *7*	(27/2$^+$)		D	J$^{\pi}$: From E2 γ to (23/2$^+$) level and band assignment.
2746.4 *5*			D	
2762.0[&] *4*	(29/2$^+$)		DE	J$^{\pi}$: From E2 γ to (25/2$^+$) level and band assignment.
2763.6[‡] *8*	(23/2$^-$)		D	J$^{\pi}$: From γ to (19/2$^-$) and (D+Q) γ to (21/2$^-$) levels.
3074.6[@] *5*	(29/2$^-$)		DE	J$^{\pi}$: From γ's to (25/2$^-$) and (29/2$^+$) levels and band assignment.
3080.1[‡] *9*	(25/2$^-$)		D	J$^{\pi}$: From γ's to (21/2$^-$) and (23/2$^-$) levels and band assignment.
3169.3 *9*	(29/2$^-$)		E	J$^{\pi}$: From E2 γ to (25/2$^-$) level.
3389.0[&] *5*	(33/2$^+$)		DE	J$^{\pi}$: From E2 γ to (29/2$^+$) level and band assignment.
3415.6 *9*			D	
3743.0[@] *9*	(33/2$^-$)		E	J$^{\pi}$: From E2 γ to (29/2$^-$) level and band assignment.
3828.7 *8*	(33/2$^-$)		E	J$^{\pi}$: From E2 γ to (29/2$^-$) level and γ to (33/2$^+$).
4063.0[&] *6*	(37/2$^+$)		DE	J$^{\pi}$: From E2 γ to (33/2$^+$) level and band assignment.
4133.6? *10*			D	
4461.1[@] *9*	(37/2$^-$)		E	J$^{\pi}$: From E2 γ to (33/2$^-$) level and band assignment.
4486.6 *8*	(37/2$^-$)		E	J$^{\pi}$: From E2 γ to (33/2$^-$) level and γ to (37/2$^+$).
4782.1[&] *10*	(41/2$^+$)		E	J$^{\pi}$: From E2 γ to (37/2$^+$) level and band assignment.
5140.6 *8*	(41/2$^-$)		E	J$^{\pi}$: From E2 γ to (37/2$^-$) level and γ to (41/2$^+$).
5207.0 *11*	(41/2$^-$)		E	J$^{\pi}$: (E2) γ to (37/2$^-$).
5244.2[@] *10*	(41/2$^-$)		E	J$^{\pi}$: From (E2) γ to (37/2$^-$) level and band assignment.
5377.4 *10*	(43/2$^-$)		E	J$^{\pi}$: From M1 γ to (41/2$^-$) level.
5541.4[&] *11*	(45/2$^+$)		E	J$^{\pi}$: From γ to (41/2$^+$) level and band assignment.
5591.3 *14*	(47/2$^-$)	2.3 ns	E	J$^{\pi}$: From E2 γ to (43/2$^-$) level. T$_{1/2}$: From γ(t) in (^{34}S,5nγ) (1983Ko45). Probable oblate aligned-particle yrast isomer, analogous to those known in ^{151}Dy and ^{152}Dy.
5760.4[g] *17*	(49/2)		E	J$^{\pi}$: From γ to (47/2$^-$) level and sequence assignment.
6109.2 *16*	(49/2$^+$)		E	J$^{\pi}$: From E1 γ to (47/2$^-$).
6227.4[h] *17*	(51/2)		E	J$^{\pi}$: From γ to (47/2$^-$) level and sequence assignment.
6340.6[&] *12*	(49/2$^+$)		E	J$^{\pi}$: From γ to 45/2$^+$ level and band assignment.
6717.9[g] *17*	(51/2)		E	J$^{\pi}$: From (E1) γ to (49/2) level and sequence assignment.
6741.4 *16*			E	
6946.4 *17*	(53/2$^+$)		E	J$^{\pi}$: From (E2) γ to (49/2$^+$).
6999.3[g] *18*	(53/2)		E	J$^{\pi}$: From M1 γ to (51/2) level and sequence assignment.
7064.7[h] *18*	(55/2)		E	J$^{\pi}$: From (E2) γ to (51/2) level and sequence assignment.
7180.9[&] *13*	(53/2$^+$)		E	J$^{\pi}$: From γ to 49/2$^+$ level and band assignment.
7534.1 *18*			E	
7582.4 *18*			E	
7764.3 *19*			E	
7883.7 *19*			E	
7933.9[h] *19*	(59/2)		E	J$^{\pi}$: From (E2) γ to (55/2) level and sequence assignment.
8029.1[g] *20*	(57/2)		E	J$^{\pi}$: From E2 γ to (53/2) level and sequence assignment.
8067.8[&] *14*	(57/2$^+$)		E	J$^{\pi}$: From γ to 53/2$^+$ level and band assignment.
8131.4 *19*			E	
8451.8[h] *18*	(61/2)		E	J$^{\pi}$: From γ to (59/2) level and sequence assignment.
8462.5 *20*			E	

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Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

E(level)[†]	J^π	XREF	Comments
8605.1 *19*		E	
8636.4 *23*		E	
8637.6[g] *22*	(61/2)	E	J^π: From γ to (57/2) level and sequence assignment.
8664.9 *20*		E	
8823.8 *21*		E	
9005.6[&] *15*	(61/2$^+$)	E	J^π: From γ to (57/2$^+$) level and band assignment.
9018.7 *21*		E	
9170.4 *25*		E	
9213.0 *23*		E	
9272.7 *20*		E	
9619.9 *23*		E	
9805.5 *21*		E	
9854.5 *21*		E	
9882.4 *20*		E	
9927 *3*		E	
9966.1 *21*		E	
9999.4[&] *16*	(65/2$^+$)	E	J^π: From γ to (61/2$^+$) level and band assignment.
10117.0 *23*		E	
10270.7 *23*		E	
10380.5 *22*		E	
10684.1 *23*		E	
10801.8 *23*		E	
10841.6 *22*		E	
11050.8[&] *17*	(69/2$^+$)	E	J^π: From γ to (65/2$^+$) level and band assignment.
11115 *3*		E	
11336.8 *24*		E	
11431.6 *23*		E	
11535.2 *25*		E	
11540 *3*		E	
11615 *3*		E	
11758 *3*		E	
11852.4 *24*		E	
11898 *3*		E	
12092.5 *25*		E	
12119 *3*		E	
12161.3[&] *18*	(73/2$^+$)	E	J^π: From γ to (69/2$^+$) level and band assignment.
12335 *3*		E	
13332.1[&] *19*	(77/2$^+$)	E	J^π: From γ to (73/2$^+$) level and band assignment.
14069 *3*		E	
14562.4[&] *20*	(81/2$^+$)	E	J^π: From γ to (77/2$^+$) level and band assignment.
15850.5[&] *21*	(85/2$^+$)	E	J^π: From γ to (81/2$^+$) level and band assignment.
17194.8[&] *22*	(89/2$^+$)	E	J^π: From γ to (85/2$^+$) level and band assignment.
18594.3[&] *23*	(93/2$^+$)	E	J^π: From γ to (89/2$^+$) level and band assignment.
20052[&] *3*	(97/2$^+$)	E	J^π: From γ to (93/2$^+$) level and band assignment.
21565?[&] *4*	(101/2$^+$)	E	J^π: From γ to (97/2$^+$) level and band assignment.
x[a]	J	C	Additional information 1. J^π: J ≈ 63/2 (1995Ce03,1993Ra07,1992Wu05).
721.4+x[a] *10*	J+2	C	
1487.3+x[a] *15*	J+4	C E	
2297.9+x[a] *15*	J+6	C E	
3153.3+x[a] *15*	J+8	C E	
4053.5+x[a] *15*	J+10	C E	
4998.9+x[a] *15*	J+12	C E	

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Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

E(level)[†]	J^π	XREF	Comments
5990.0+x[a] *15*	J+14	C E	
7026.9+x[a] *15*	J+16	C E	
8109.5+x[a] *15*	J+18	C E	
9238.6+x[a] *15*	J+20	C E	
10413.6+x[a] *15*	J+22	C E	
11635.4+x[a] *15*	J+24	C E	
12903.7+x[a] *15*	J+26	C E	
14219.3+x[a] *15*	J+28	C E	
15581.3+x[a] *15*	J+30	C E	
16989.9+x[a] *15*	J+32	C E	
18445.2+x[a] *15*	J+34	C	
19945.1+x[a] *16*	J+36	C	
y[b]	J1	C	Additional information 2. J^π: $J_1 \approx 59/2$ (1995Ce03); others: 55/2 (1993Ra07,1992Wu05).
678.6+y[b] *5*	J1+2	C	
1403.1+y[b] *6*	J1+4	C	
2173.7+y[b] *6*	J1+6	C E	
2990.2+y[b] *6*	J1+8	C E	
3853.3+y[b] *6*	J1+10	C E	
4763.7+y[b] *7*	J1+12	C E	
5721.3+y[b] *7*	J1+14	C E	
6725.3+y[b] *8*	J1+16	C E	
7777.8+y[b] *9*	J1+18	C E	
8877.8+y[b] *10*	J1+20	C E	
10026.0+y[b] *10*	J1+22	C E	
11222.6+y[b] *11*	J1+24	C E	
12467.1+y[b] *12*	J1+26	C E	
13759.7+y[b] *12*	J1+28	C E	
15100.6+y[b] *13*	J1+30	C E	
16489.4+y[b] *15*	J1+32	C E	
17927.2+y[b] *16*	J1+34	C	
19412.5+y[b] *18*	J1+36	C	
z[c]	J2	C	Additional information 3. J^π: $J_2 \approx 61/2$ (1995Ce03); others: 57/2 (1993Ra07,1992Wu05).
702.0+z[c] *5*	J2+2	C	
1449.7+z[c] *6*	J2+4	C	
2243.6+z[c] *7*	J2+6	C	
3083.5+z[c] *7*	J2+8	C E	
3970.3+z[c] *8*	J2+10	C E	
4904.3+z[c] *8*	J2+12	C E	
5885.3+z[c] *9*	J2+14	C E	
6913.8+z[c] *10*	J2+16	C E	
7990.1+z[c] *10*	J2+18	C E	
9114.0+z[c] *11*	J2+20	C E	
10286.6+z[c] *12*	J2+22	C E	
11506.8+z[c] *13*	J2+24	C E	
12774.9+z[c] *14*	J2+26	C E	
14091.2+z[c] *15*	J2+28	C E	

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Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

E(level)[†]	J^π	XREF	Comments
15454.9+z[c] *16*	J2+30	C E	
16867.5+z[c] *17*	J2+32	C E	
18327.9+z[c] *20*	J2+34	C	
u[d]	J3	C	Additional information 4. J^π: $J_3 \approx 59/2$ (1995Ce03).
723.4+u[d] *15*	J3+2	C	
1490.5+u[d] *16*	J3+4	C	
2303.7+u[d] *18*	J3+6	C	
3162.1+u[d] *19*	J3+8	C	
4066.9+u[d] *20*	J3+10	C	
5020.1+u[d] *22*	J3+12	C	
6019.1+u[d] *23*	J3+14	C	
7064.8+u[d] *23*	J3+16	C	
8157.6+u[d] *25*	J3+18	C	
9298+u[d] *3*	J3+20	C	
10486+u[d] *3*	J3+22	C	
11721+u[d] *4*	J3+24	C	
13006+u[d] *4*	J3+26	C	
14337+u[d] *4*	J3+28	C	
15718+u[d] *4*	J3+30	C	
17146+u[d] *5*	J3+32	C	
v[e]	J4	C	Additional information 5. J^π: $J_4 \approx 65/2$ (1995Ce03).
743.2+v[e] *15*	J4+2	C	
1533.0+v[e] *17*	J4+4	C	
2368.6+v[e] *18*	J4+6	C	
3250.0+v[e] *19*	J4+8	C	
4177.7+v[e] *21*	J4+10	C	
5151.9+v[e] *22*	J4+12	C	
6174.9+v[e] *24*	J4+14	C	
7243.7+v[e] *24*	J4+16	C	
8360.2+v[e] *25*	J4+18	C	
9525+v[e] *3*	J4+20	C	
10737+v[e] *3*	J4+22	C	
11998+v[e] *3*	J4+24	C	
13306+v[e] *3*	J4+26	C	
14661+v[e] *3*	J4+28	C	
16065+v[e] *4*	J4+30	C	
17517+v[e] *4*	J4+32	C	

[†] For levels with associated γ rays, from least-squares fit to Eγ, otherwise from reactions.
[‡] Band(A): $h_{11/2}$-related band.
[#] Band(B): $h_{9/2}$-related band.
[@] Band(C): Negative parity band.
[&] Band(D): $i_{13/2}$-related band.
[a] Band(E): SD-1 band; configuration: $\pi 6^4 \nu 7^3$; π=−, α=−1/2.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{153}Dy Levels (continued)

[b] Band(F): SD-2 band; configuration: $\pi 6^4 \nu 7^2$; π=−, α=+1/2. Probable ν orbital is 5/2[402] or 9/2[514]. SD-2 and SD-3 are probable signature partners.
[c] Band(G): SD-3 band; configuration: $\pi 6^4 \nu 7^2$; π=−, α=−1/2. Probable ν orbital is 5/2[402] or 9/2[514].
[d] Band(H): SD-4 band; configuration=(ν 3/2[521]). Probable signature partner of SD-5 band.
[e] Band(I): SD-5 band; configuration=(ν 3/2[521]).
[f] Band(J): Possible π=+ band.
[g] Band(K): Probable oblate single-particle sequence.
[h] Band(L): Probable oblate single-particle sequence.

Adopted Levels, Gammas (continued)

γ(^{153}Dy)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
108.84	(3/2⁻)	108.7[@] *2*	100[&]	0.0	7/2[(−)]	E2	1.99	α(K)=0.907 *14*; α(L)=0.835 *14*; α(M)=0.200 *4* α(N)=0.0448 *8*; α(O)=0.00541 *9*; α(P)=3.79×10^{-5} *6* B(E2)(W.u.)=190 *+15−13*
270.49	(3/2⁻,5/2⁻)	161.6 *2*	100[&] *5*	108.84	(3/2⁻)	M1	0.614	α(K)=0.517 *8*; α(L)=0.0756 *11*; α(M)=0.01660 *24* α(N)=0.00384 *6*; α(O)=0.000562 *9*; α(P)=3.22×10^{-5} *5* E_γ: average of ε decays (with unc covering both values).
		270.6[@] *2*	86[&] *4*	0.0	7/2[(−)]	E2	0.0888	α(K)=0.0651 *10*; α(L)=0.0184 *3*; α(M)=0.00425 *6* α(N)=0.000964 *14*; α(O)=0.0001255 *18*; α(P)=3.32×10^{-6} *5*
295.80	(9/2⁻)	295.8[@] *1*	100[@]	0.0	7/2[(−)]	M1	0.1172	α(K)=0.0990 *14*; α(L)=0.01427 *20*; α(M)=0.00313 *5* α(N)=0.000724 *11*; α(O)=0.0001061 *15*; α(P)=6.11×10^{-6} *9*
365.97	(5/2⁻,7/2⁻,9/2⁻)	95.2[@] *3*	≈3.3[@]	270.49	(3/2⁻,5/2⁻)			
		366.0[&] *1*	100[@] *27*	0.0	7/2[(−)]	M1	0.0667	α(K)=0.0564 *8*; α(L)=0.00807 *12*; α(M)=0.001768 *25* α(N)=0.000409 *6*; α(O)=6.00×10^{-5} *9*; α(P)=3.47×10^{-6} *5*
500.66	(⁻)	230.2[&] *1*	100[&] *7*	270.49	(3/2⁻,5/2⁻)	M1	0.231	α(K)=0.195 *3*; α(L)=0.0282 *4*; α(M)=0.00620 *9* α(N)=0.001434 *21*; α(O)=0.000210 *3*; α(P)=1.206×10^{-5} *17*
		391.7[&] *2*	22[&] *5*	108.84	(3/2⁻)			
565.65	(3/2⁻,5/2⁻)	295.6[&] *5*		270.49	(3/2⁻,5/2⁻)			
		456.7 *2*	100[&] *4*	108.84	(3/2⁻)	M1+E2	0.0284 *92*	α(K)=0.0235 *82*; α(L)=0.0038 *8*; α(M)=0.00084 *16* α(N)=0.00019 *4*; α(O)=2.7×10^{-5} *6*; α(P)=1.40×10^{-6} *55* E_γ: average of ε decays (with unc covering both values).
		565.6 *2*	48 *15*	0.0	7/2[(−)]	E2	0.01107	α(K)=0.00901 *13*; α(L)=0.001605 *23*; α(M)=0.000359 *5* α(N)=8.24×10^{-5} *12*; α(O)=1.148×10^{-5} *17*; α(P)=5.09×10^{-7} *8* E_γ: average of ε decays (with unc covering both values).
576.87	(3/2⁻,5/2,7/2⁻)	468.2[@] *2*	88[@] *13*	108.84	(3/2⁻)			
		577.0[@] *3*	100[@] *19*	0.0	7/2[(−)]			
636.81	11/2[(−)]	341.0[a]	1.2[a]	295.80	(9/2⁻)	D		
		636.7[a] *2*	100[a] *4*	0.0	7/2[(−)]	E2	0.00829	α(K)=0.00681 *10*; α(L)=0.001156 *17*; α(M)=0.000258 *4* α(N)=5.92×10^{-5} *9*; α(O)=8.31×10^{-6} *12*; α(P)=3.88×10^{-7} *6*
688.41	(5/2⁻,7/2⁻)	392.5[@] *4*	9[@] *4*	295.80	(9/2⁻)			
		579.7[@] *3*	22[@] *9*	108.84	(3/2⁻)			
		688.5[@] *2*	100[@] *7*	0.0	7/2[(−)]			
712.50	(13/2⁺)	75.70[a] *5*	100[@] *23*	636.81	11/2[(−)]	E1	0.646	α(K)=0.535 *8*; α(L)=0.0871 *13*; α(M)=0.0191 *3* α(N)=0.00432 *7*; α(O)=0.000579 *9*; α(P)=2.37×10^{-5} *4*
		712.0[a] *5*	23[@] *8*	0.0	7/2[(−)]			E_γ,Mult.: This placement requires γ to have mult=E3.
829.67	(13/2⁺)	117.3[@] *3*	40[@] *30*	712.50	(13/2⁺)			
		192.8[@] *2*	100[@] *30*	636.81	11/2[(−)]			
830.46	(7/2⁻)	141.8[@] *3*	100[@] *30*	688.41	(5/2⁻,7/2⁻)			

$^{153}_{66}Dy_{87}$-8

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
830.46	(7/2⁻)	253.8[@] *2*	50[@] *10*	576.87	(3/2⁻,5/2,7/2⁻)			
		721.0[@] *5*	20[@] *10*	108.84	(3/2⁻)			
837.28	(13/2⁻)	125.1[@] *3*	14[@] *7*	712.50	(13/2⁺)			
		541.3[@] *4*	100[@] *14*	295.80	(9/2⁻)	(E2)	0.01236	α(K)=0.01002 *15*; α(L)=0.00182 *3*; α(M)=0.000408 *6* α(N)=9.36×10^{-5} *14*; α(O)=1.299×10^{-5} *19*; α(P)=5.65×10^{-7} *8*
1040.56	(13/2⁻)	211.0[b]		829.67	(13/2⁺)			
		328.0[a] *3*		712.50	(13/2⁺)			
		403.7[b]		636.81	11/2$^{(-)}$	D		
1040.99	(11/2⁺)	203.8[@] *4*	≈50[@]	837.28	(13/2⁻)			
		404.1[@] *3*	100[@] *50*	636.81	11/2$^{(-)}$			
		745.2[@] *3*	100[@] *50*	295.80	(9/2⁻)			
1068.05	(11/2⁻)	431.0[@] *5*	≈17[@]	636.81	11/2$^{(-)}$			
		772.2[@] *3*	100[@] *33*	295.80	(9/2⁻)			
1092.3	(9/2,11/2⁻)	404.1[@] *3*	50[@] *25*	688.41	(5/2⁻,7/2⁻)			
		1091.8[@] *5*	100[@] *25*	0.0	7/2$^{(-)}$			
1160.28	(17/2⁺)	447.8[@] *1*	100[@]	712.50	(13/2⁺)	E2	0.0203	B(E2)(W.u.)=55 *+6−5* α(K)=0.01616 *23*; α(L)=0.00323 *5*; α(M)=0.000729 *11* α(N)=0.0001667 *24*; α(O)=2.28×10^{-5} *4*; α(P)=8.94×10^{-7} *13*
1189.4	(7/2⁻,9/2,11/2⁻)	552.0[@] *5*	100[@] *50*	636.81	11/2$^{(-)}$			
		893.9[e@] *5*	75[e@] *25*	295.80	(9/2⁻)			
		1189.9[@] *8*	≈100[@]	0.0	7/2$^{(-)}$			
1272.9	(15/2⁻)	560.4[a] *3*	<48[a]	712.50	(13/2⁺)			
		636.1[a]	100[a] *24*	636.81	11/2$^{(-)}$			
1276.4	(9/2⁻)	910.4[@] *4*	28[@] *4*	365.97	(5/2⁻,7/2⁻,9/2⁻)			
		1167.6[@] *5*	32[@] *4*	108.84	(3/2⁻)			E_γ: γ is to (3/2⁻) level, so γ is M3 or placement is wrong or J^π(108) is incorrect.
		1276.5[@] *4*	100[@] *8*	0.0	7/2$^{(-)}$			
1304.23	(15/2⁺)	467.1[a] *2*	≈36[a]	837.28	(13/2⁻)			
		591.6[a] *2*	100[a] *27*	712.50	(13/2⁺)	(E2(+M1))	0.0146 *48*	α(K)=0.0123 *42*; α(L)=0.0019 *5*; α(M)=0.00041 *10* α(N)=9.5×10^{-5} *23*; α(O)=1.37×10^{-5} *36*; α(P)=7.3×10^{-7} *28*
1321.96	(13/2⁻)	253.9[a] *2*	100[a] *20*	1068.05	(11/2⁻)	(M1+E2)	0.14 *4*	α(K)=0.114 *36*; α(L)=0.0225 *10*; α(M)=0.0051 *4* α(N)=0.00116 *7*; α(O)=0.0001598 *24*; α(P)=6.6×10^{-6} *27*

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
1321.96	(13/2$^-$)	685.2[a] 5	≈60[a]	636.81	11/2$^{(-)}$			
		745.2[a] 3	80[a] 40	576.87	(3/2$^-$,5/2,7/2$^-$)			E_γ: γ is to level with J^π (3/2$^-$,5/2,7/2$^-$), which makes placement questionable.
1381.36	(5/2$^-$,7/2,9/2$^-$)	693.0[@] 5	8[@] 3	688.41	(5/2$^-$,7/2$^-$)			
		815.5[@] 5	16[@] 5	565.65	(3/2$^-$,5/2$^-$)			
		1085.8[@] 4	100[@] 8	295.80	(9/2$^-$)			
		1381.0[@] 6	50[@] 8	0.0	7/2$^{(-)}$			
1455.3	(17/2$^-$)	617.5[a] 5	100[a]	837.28	(13/2$^-$)	E2	0.00893	α(K)=0.00731 *11*; α(L)=0.001257 *18*; α(M)=0.000280 *4* α(N)=6.43×10^{-5} *10*; α(O)=9.02×10^{-6} *13*; α(P)=4.16×10^{-7} *6*
1500.8	(9/2$^-$)	812.1[@] 5	17[@] 6	688.41	(5/2$^-$,7/2$^-$)			
		864.0[@] 5	33[@] 11	636.81	11/2$^{(-)}$			
		924.0[@] 4	100[@] 17	576.87	(3/2$^-$,5/2,7/2$^-$)			
1522.0	(15/2$^+$)	481.0[a] 5	[a]	1040.99	(11/2$^+$)	(E2)	0.01677	α(K)=0.01345 *20*; α(L)=0.00259 *4*; α(M)=0.000583 *9* α(N)=0.0001333 *20*; α(O)=1.83×10^{-5} *3*; α(P)=7.50×10^{-7} *11*
1581.24	(9/2$^+$,11/2$^-$)	868.6[@] 5	29[@] 7	712.50	(13/2$^+$)			
		893.9[e@] 5	21[e@] 7	688.41	(5/2$^-$,7/2$^-$)			
		1004.1[@] 4	29[@] 14	576.87	(3/2$^-$,5/2,7/2$^-$)			
		1015.4[@] 4	100[@] 14	565.65	(3/2$^-$,5/2$^-$)			E_γ: γ is to (3/2$^-$,5/2$^-$) level, so placement is questionable.
		1284.8[@] 8	≈7[@]	295.80	(9/2$^-$)			
1584.3	(15/2$^-$)	262.4[a] 2	[a]	1321.96	(13/2$^-$)	D		
		515[a]	[a]	1068.05	(11/2$^-$)			
1601.0	(17/2$^-$)	328.0[b] 3		1272.9	(15/2$^-$)			Doubly placed in (^{34}S,5nγ).
		440.7[b]		1160.28	(17/2$^+$)			Mult.: Assigned E2, but J^π's require E1.
		560.4[b] 3		1040.56	(13/2$^-$)	E2	0.01133	α(K)=0.00921 *13*; α(L)=0.001648 *24*; α(M)=0.000369 *6* α(N)=8.46×10^{-5} *12*; α(O)=1.178×10^{-5} *17*; α(P)=5.21×10^{-7} *8*
1648.2	(21/2$^+$)	488.0 3	100	1160.28	(17/2$^+$)	E2	0.01615	B(E2)(W.u.)=58 *5* α(K)=0.01297 *19*; α(L)=0.00247 *4*; α(M)=0.000558 *8* α(N)=0.0001275 *18*; α(O)=1.756×10^{-5} *25*; α(P)=7.24×10^{-7} *11* E_γ: weighted average of values from (α,xnγ) and (HI,xnγ).
1753.7	(19/2$^-$,17/2$^-$)	480.8[a] 1	100[a]	1272.9	(15/2$^-$)	(E2)	0.01679	α(K)=0.01347 *19*; α(L)=0.00259 *4*; α(M)=0.000584 *9* α(N)=0.0001335 *19*; α(O)=1.84×10^{-5} *3*; α(P)=7.51×10^{-7} *11*
1822.3	(19/2$^+$)	366.7[a] 4	64[a] 14	1455.3	(17/2$^-$)	(E1)	0.01053	α(K)=0.00894 *13*; α(L)=0.001249 *18*; α(M)=0.000272 *4* α(N)=6.26×10^{-5} *9*; α(O)=8.97×10^{-6} *13*; α(P)=4.78×10^{-7} *7*
		518.5[a]	100[a] 21	1304.23	(15/2$^+$)			
		662.4[a] 5	36[a] 7	1160.28	(17/2$^+$)	(M1)	0.01459	α(K)=0.01238 *18*; α(L)=0.001736 *25*; α(M)=0.000379 *6* α(N)=8.78×10^{-5} *13*; α(O)=1.291×10^{-5} *19*; α(P)=7.52×10^{-7} *11*

$^{153}_{66}Dy_{87}$-10

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
1861.9	(17/2⁻)	277.5[a] *5*		1584.3	(15/2⁻)	D		
		540.1[a]		1321.96	(13/2⁻)			
1892.1?	(19/2⁺)	731.8[a] *10*	100[a]	1160.28	(17/2⁺)	(M1+E2)	0.0087 *27*	α(K)=0.0073 *24*; α(L)=0.00108 *28*; α(M)=0.00024 *6* α(N)=5.5×10^{-5} *14*; α(O)=7.9×10^{-6} *22*; α(P)=4.4×10^{-7} *16*
1963.4	(19/2⁺)	441.4[a] *5*	100[a]	1522.0	(15/2⁺)	(E2)	0.0211	α(K)=0.01678 *24*; α(L)=0.00337 *5*; α(M)=0.000764 *11* α(N)=0.000174 *3*; α(O)=2.38×10^{-5} *4*; α(P)=9.27×10^{-7} *14*
2042.1	(21/2⁻)	393.7[b]		1648.2	(21/2⁺)			Probably the same as Eγ=393.2 *5* line placed from a 2285 level in (α,xnγ).
		441.1[b] *2*	100	1601.0	(17/2⁻)	E2	0.0212	α(K)=0.01681 *24*; α(L)=0.00338 *5*; α(M)=0.000765 *11* α(N)=0.0001748 *25*; α(O)=2.39×10^{-5} *4*; α(P)=9.28×10^{-7} *13*
2152.1	(19/2⁻)	290.1[a] *4*	100[a]	1861.9	(17/2⁻)	D+Q		
		568.0[a]		1584.3	(15/2⁻)			
2158?		404[af]	100	1753.7	(19/2⁻,17/2⁻)			
2180.5	(25/2⁺)	532.3[a] *1*	100[a]	1648.2	(21/2⁺)	E2	0.01290	B(E2)(W.u.)=128 *+30−20* α(K)=0.01044 *15*; α(L)=0.00191 *3*; α(M)=0.000429 *6* α(N)=9.83×10^{-5} *14*; α(O)=1.362×10^{-5} *19*; α(P)=5.88×10^{-7} *9*
2194.8	(21/2⁻,19/2⁻)	441.1[a] *2*	100[a]	1753.7	(19/2⁻,17/2⁻)			
2231.3?	(21/2⁻)	776[a]	100[a]	1455.3	(17/2⁻)	(E2)	0.00525	α(K)=0.00436 *7*; α(L)=0.000693 *10*; α(M)=0.0001534 *22* α(N)=3.53×10^{-5} *5*; α(O)=5.02×10^{-6} *7*; α(P)=2.51×10^{-7} *4*
2284.7	(23/2⁺)	393.2[af] *5*	33[a] *11*	1892.1?	(19/2⁺)			
		462.4[a] *4*	100[a] *11*	1822.3	(19/2⁺)	E2	0.0186	α(K)=0.01488 *21*; α(L)=0.00292 *5*; α(M)=0.000659 *10* α(N)=0.0001506 *22*; α(O)=2.06×10^{-5} *3*; α(P)=8.26×10^{-7} *12*
2453.9	(21/2⁻)	301.7[a] *5*		2152.1	(19/2⁻)	D		
		592[a]		1861.9	(17/2⁻)			
2522.9	(25/2⁻)	342.1[b]		2180.5	(25/2⁺)			
		480.8[b] *1*	100	2042.1	(21/2⁻)	E2	0.01679	α(K)=0.01347 *19*; α(L)=0.00259 *4*; α(M)=0.000584 *9* α(N)=0.0001335 *19*; α(O)=1.84×10^{-5} *3*; α(P)=7.51×10^{-7} *11*
2523.6	(23/2⁺)	560.2[a] *5*	100[a]	1963.4	(19/2⁺)	E2	0.01134	α(K)=0.00922 *13*; α(L)=0.001650 *24*; α(M)=0.000370 *6* α(N)=8.47×10^{-5} *12*; α(O)=1.179×10^{-5} *17*; α(P)=5.21×10^{-7} *8*
2685.9	(27/2⁺)	401.2[a] *3*	100[a]	2284.7	(23/2⁺)	E2	0.0275	α(K)=0.0216 *3*; α(L)=0.00459 *7*; α(M)=0.001043 *15* α(N)=0.000238 *4*; α(O)=3.22×10^{-5} *5*; α(P)=1.178×10^{-6} *17*
2746.4		551.6[a] *3*	100[a]	2194.8	(21/2⁻,19/2⁻)			
2762.0	(29/2⁺)	581.5[a] *2*	100[a]	2180.5	(25/2⁺)	E2	0.01033	α(K)=0.00843 *12*; α(L)=0.001484 *21*; α(M)=0.000332 *5* α(N)=7.61×10^{-5} *11*; α(O)=1.063×10^{-5} *15*; α(P)=4.78×10^{-7} *7*
2763.6	(23/2⁻)	309.7[a] *5*		2453.9	(21/2⁻)	(D+Q)		
		612[a]		2152.1	(19/2⁻)			
3074.6	(29/2⁻)	314.1[b]		2762.0	(29/2⁺)			
		551.8[b]		2522.9	(25/2⁻)	E2	0.01178	α(K)=0.00957 *14*; α(L)=0.001722 *25*; α(M)=0.000386 *6* α(N)=8.85×10^{-5} *13*; α(O)=1.230×10^{-5} *18*; α(P)=5.40×10^{-7} *8*
3080.1	(25/2⁻)	316.5[a] *5*		2763.6	(23/2⁻)			

$^{153}_{66}Dy_{87}$-11

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
3080.1	(25/2⁻)	626[a]		2453.9	(21/2⁻)			
3169.3	(29/2⁻)	646.6[b]	100	2522.9	(25/2⁻)	E2	0.00799	α(K)=0.00657 *10*; α(L)=0.001109 *16*; α(M)=0.000247 *4* α(N)=5.67×10^{-5} *8*; α(O)=7.98×10^{-6} *12*; α(P)=3.75×10^{-7} *6*
3389.0	(33/2⁺)	626.9[a] *3*	100[a]	2762.0	(29/2⁺)	E2	0.00861	α(K)=0.00706 *10*; α(L)=0.001206 *17*; α(M)=0.000269 *4* α(N)=6.17×10^{-5} *9*; α(O)=8.66×10^{-6} *13*; α(P)=4.02×10^{-7} *6*
3415.6		669.2[a] *7*	100[a]	2746.4				
3743.0	(33/2⁻)	668.9[b]	100	3074.6	(29/2⁻)	E2	0.00738	α(K)=0.00608 *9*; α(L)=0.001013 *15*; α(M)=0.000226 *4* α(N)=5.18×10^{-5} *8*; α(O)=7.30×10^{-6} *11*; α(P)=3.47×10^{-7} *5*
3828.7	(33/2⁻)	439.5[b]		3389.0	(33/2⁺)			
		659.6[b]		3169.3	(29/2⁻)	E2	0.00763	α(K)=0.00628 *9*; α(L)=0.001052 *15*; α(M)=0.000234 *4* α(N)=5.38×10^{-5} *8*; α(O)=7.57×10^{-6} *11*; α(P)=3.58×10^{-7} *5*
4063.0	(37/2⁺)	674.0[a] *4*	100[a]	3389.0	(33/2⁺)	E2	0.00725	α(K)=0.00597 *9*; α(L)=0.000993 *14*; α(M)=0.000221 *4* α(N)=5.08×10^{-5} *8*; α(O)=7.16×10^{-6} *10*; α(P)=3.41×10^{-7} *5*
4133.6?		718.1[f] *3*	100	3415.6				
4461.1	(37/2⁻)	718.1 *3*	100	3743.0	(33/2⁻)	E2	0.00626	α(K)=0.00518 *8*; α(L)=0.000843 *12*; α(M)=0.000187 *3* α(N)=4.30×10^{-5} *6*; α(O)=6.09×10^{-6} *9*; α(P)=2.97×10^{-7} *5*
4486.6	(37/2⁻)	423.4		4063.0	(37/2⁺)			
		657.9		3828.7	(33/2⁻)	E2	0.00767	α(K)=0.00631 *9*; α(L)=0.001059 *15*; α(M)=0.000236 *4* α(N)=5.41×10^{-5} *8*; α(O)=7.62×10^{-6} *11*; α(P)=3.60×10^{-7} *5*
4782.1	(41/2⁺)	719.0	100	4063.0	(37/2⁺)	E2	0.00624	α(K)=0.00516 *8*; α(L)=0.000840 *12*; α(M)=0.000186 *3* α(N)=4.28×10^{-5} *6*; α(O)=6.07×10^{-6} *9*; α(P)=2.96×10^{-7} *5*
5140.6	(41/2⁻)	358.4		4782.1	(41/2⁺)			
		654.0		4486.6	(37/2⁻)	E2	0.00778	α(K)=0.00640 *9*; α(L)=0.001076 *15*; α(M)=0.000240 *4* α(N)=5.50×10^{-5} *8*; α(O)=7.74×10^{-6} *11*; α(P)=3.65×10^{-7} *6*
		679.8		4461.1	(37/2⁻)	(E2)	0.00710	α(K)=0.00586 *9*; α(L)=0.000971 *14*; α(M)=0.000216 *3* α(N)=4.96×10^{-5} *7*; α(O)=7.00×10^{-6} *10*; α(P)=3.35×10^{-7} *5*
		1077.4		4063.0	(37/2⁺)			
5207.0	(41/2⁻)	720.3	100	4486.6	(37/2⁻)	(E2)	0.00621	α(K)=0.00514 *8*; α(L)=0.000836 *12*; α(M)=0.000186 *3* α(N)=4.26×10^{-5} *6*; α(O)=6.04×10^{-6} *9*; α(P)=2.95×10^{-7} *5*
5244.2	(41/2⁻)	757.6		4486.6	(37/2⁻)	(E2)	0.00554	α(K)=0.00460 *7*; α(L)=0.000736 *11*; α(M)=0.0001630 *23* α(N)=3.75×10^{-5} *6*; α(O)=5.32×10^{-6} *8*; α(P)=2.64×10^{-7} *4*
		783.4		4461.1	(37/2⁻)			Mult.: E1 assignment conflicts with J^π's which require E2.
5377.4	(43/2⁻)	133.3		5244.2	(41/2⁻)	M1	1.055	α(K)=0.889 *13*; α(L)=0.1303 *19*; α(M)=0.0286 *4* α(N)=0.00662 *10*; α(O)=0.000969 *14*; α(P)=5.53×10^{-5} *8*
		170.3		5207.0	(41/2⁻)			
		236.6	100	5140.6	(41/2⁻)			Mult.: (E1,M2) conflicts with ΔJ^π.
5541.4	(45/2⁺)	759.3 *5*	100	4782.1	(41/2⁺)			
5591.3	(47/2⁻)	213.9	100	5377.4	(43/2⁻)	E2	0.189	B(E2)(W.u.)=9.51 α(K)=0.1300 *19*; α(L)=0.0457 *7*; α(M)=0.01069 *15* α(N)=0.00242 *4*; α(O)=0.000308 *5*; α(P)=6.30×10^{-6} *9*
5760.4	(49/2)	169.3	100	5591.3	(47/2⁻)			

$^{153}_{66}Dy_{87}$-12

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
6109.2	(49/2$^+$)	517.7	100	5591.3	(47/2$^-$)	E1	0.00475	α(K)=0.00405 *6*; α(L)=0.000555 *8*; α(M)=0.0001208 *17* α(N)=2.78×10^{-5} *4*; α(O)=4.02×10^{-6} *6*; α(P)=2.21×10^{-7} *3*
6227.4	(51/2)	636.3	100	5591.3	(47/2$^-$)			
6340.6	(49/2$^+$)	799.2 *5*	100	5541.4	(45/2$^+$)			
6717.9	(51/2)	608.7		6109.2	(49/2$^+$)			
		957.7	100	5760.4	(49/2)	E1	1.35×10^{-3}	α(K)=0.001157 *17*; α(L)=0.0001538 *22*; α(M)=3.34×10^{-5} *5* α(N)=7.70×10^{-6} *11*; α(O)=1.124×10^{-6} *16*; α(P)=6.45×10^{-8} *9*
6741.4		1150.1	100	5591.3	(47/2$^-$)			
6946.4	(53/2$^+$)	204.9		6741.4				
		837.1		6109.2	(49/2$^+$)	(E2)	0.00444	α(K)=0.00371 *6*; α(L)=0.000576 *8*; α(M)=0.0001272 *18* α(N)=2.93×10^{-5} *4*; α(O)=4.18×10^{-6} *6*; α(P)=2.13×10^{-7} *3*
6999.3	(53/2)	281.5	100	6717.9	(51/2)	M1	0.1339	α(K)=0.1130 *16*; α(L)=0.01631 *23*; α(M)=0.00358 *5* α(N)=0.000827 *12*; α(O)=0.0001213 *17*; α(P)=6.98×10^{-6} *10*
7064.7	(55/2)	837.4	100	6227.4	(51/2)	(E2)	0.00444	α(K)=0.00370 *6*; α(L)=0.000575 *8*; α(M)=0.0001271 *18* α(N)=2.92×10^{-5} *4*; α(O)=4.18×10^{-6} *6*; α(P)=2.13×10^{-7} *3*
7180.9	(53/2$^+$)	840.2 *5*	100	6340.6	(49/2$^+$)			
7534.1		792.6	100	6741.4				
7582.4		635.9	100	6946.4	(53/2$^+$)			
7764.3		1046.3	100	6717.9	(51/2)			
7883.7		1165.7	100	6717.9	(51/2)			
7933.9	(59/2)	869.3	100	7064.7	(55/2)	(E2)	0.00409	α(K)=0.00342 *5*; α(L)=0.000526 *8*; α(M)=0.0001161 *17* α(N)=2.67×10^{-5} *4*; α(O)=3.82×10^{-6} *6*; α(P)=1.97×10^{-7} *3*
8029.1	(57/2)	1029.9	100	6999.3	(53/2)	E2	0.00286	α(K)=0.00241 *4*; α(L)=0.000356 *5*; α(M)=7.83×10^{-5} *11* α(N)=1.80×10^{-5} *3*; α(O)=2.60×10^{-6} *4*; α(P)=1.390×10^{-7} *20*
8067.8	(57/2$^+$)	886.9 *5*	100	7180.9	(53/2$^+$)			
8131.4		247.7		7883.7				
		367.1		7764.3				
		1132.1		6999.3	(53/2)			
8451.8	(61/2)	518.0		7933.9	(59/2)			
		869.2		7582.4		(E2)	0.00409	α(K)=0.00342 *5*; α(L)=0.000526 *8*; α(M)=0.0001161 *17* α(N)=2.67×10^{-5} *4*; α(O)=3.82×10^{-6} *6*; α(P)=1.97×10^{-7} *3*
8462.5		880.1	100	7582.4				
8605.1		1022.7		7582.4				
		1070.9		7534.1				
8636.4		173.9	100	8462.5				
8637.6	(61/2)	608.1	100	8029.1	(57/2)	(E2)	0.00926	α(K)=0.00758 *11*; α(L)=0.001311 *19*; α(M)=0.000293 *4* α(N)=6.71×10^{-5} *10*; α(O)=9.40×10^{-6} *14*; α(P)=4.31×10^{-7} *6*
8664.9		636.2	100	8029.1	(57/2)			
8823.8		692.4	100	8131.4				
9005.6	(61/2$^+$)	937.8 *5*	100	8067.8	(57/2$^+$)			
9018.7		354.1	100	8664.9				
9170.4		534	100	8636.4		E2	0.01279	α(K)=0.01036 *15*; α(L)=0.00189 *3*; α(M)=0.000425 *6* α(N)=9.74×10^{-5} *14*; α(O)=1.350×10^{-5} *19*; α(P)=5.83×10^{-7} *9*

$^{153}_{66}Dy_{87}$-13

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[d]	Comments
9213.0		575.0	100	8637.6	(61/2)	(E2)	0.01063	α(K)=0.00866 *13*; α(L)=0.001532 *22*; α(M)=0.000343 *5* α(N)=7.86×10^{-5} *11*; α(O)=1.096×10^{-5} *16*; α(P)=4.90×10^{-7} *7*
9272.7		608.1	100	8664.9				
9619.9		796.1	100	8823.8				
9805.5		533.0		9272.7				
		787.0		9018.7				
9854.5		1402.7	100	8451.8	(61/2)			
9882.4		609.8		9272.7				
		1430.5		8451.8	(61/2)			
9927		757	100	9170.4				
9966.1		1514.3	100	8451.8	(61/2)	E2	1.42×10^{-3}	α(K)=0.001137 *16*; α(L)=0.0001580 *23*; α(M)=3.45×10^{-5} *5* α(N)=7.96×10^{-6} *12*; α(O)=1.161×10^{-6} *17*; α(P)=6.57×10^{-8} *10*; α(IPF)=7.79×10^{-5} *11*
9999.4	(65/2$^+$)	993.8 *5*	100	9005.6	(61/2$^+$)			
10117.0		903.7	100	9213.0		(E2)	0.00377	α(K)=0.00315 *5*; α(L)=0.000480 *7*; α(M)=0.0001058 *15* α(N)=2.44×10^{-5} *4*; α(O)=3.49×10^{-6} *5*; α(P)=1.82×10^{-7} *3*
10270.7		465.2	100	9805.5				
10380.5		575.3	100	9805.5				
10684.1		718	100	9966.1				
10801.8		835.7	100	9966.1				
10841.6		959.2	100	9882.4				
11050.8	(69/2$^+$)	1051.4 *6*	100	9999.4	(65/2$^+$)			
11115		844.5	100	10270.7				
11336.8		495.2	100	10841.6				
11431.6		1051.5	100	10380.5				
11535.2		733.4	100	10801.8				
11540		424.8	100	11115				
11615		278.4	100	11336.8				
11758		142.1		11615				
		421.2		11336.8				
11852.4		421.2		11431.6				
		1735		10117.0		(E2)	1.20×10^{-3}	α(K)=0.000882 *13*; α(L)=0.0001208 *17*; α(M)=2.63×10^{-5} *4* α(N)=6.08×10^{-6} *9*; α(O)=8.89×10^{-7} *13*; α(P)=5.09×10^{-8} *8*; α(IPF)=0.0001642 *23*
11898		782.9	100	11115				
12092.5		1712.0	100	10380.5				
12119		361.7	100	11758				
12161.3	(73/2$^+$)	1110.5 *6*	100	11050.8	(69/2$^+$)			
12335		903.3	100	11431.6				
13332.1	(77/2$^+$)	1170.8 *6*	100	12161.3	(73/2$^+$)			
14069		1733.8	100	12335				
14562.4	(81/2$^+$)	1230.3 *6*	100	13332.1	(77/2$^+$)			
15850.5	(85/2$^+$)	1288.1 *7*	100	14562.4	(81/2$^+$)			

$^{153}_{66}Dy_{87}$-14

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π
17194.8	(89/2$^+$)	1344.3 *7*	100	15850.5	(85/2$^+$)	1449.7+z	J2+4	747.7 *3*		702.0+z	J2+2
18594.3	(93/2$^+$)	1399.5 *7*	100	17194.8	(89/2$^+$)	2243.6+z	J2+6	793.9 *3*		1449.7+z	J2+4
20052	(97/2$^+$)	1457.9 *10*	100	18594.3	(93/2$^+$)	3083.5+z	J2+8	839.9 *2*		2243.6+z	J2+6
21565?	(101/2$^+$)	1515[f] *2*	100	20052	(97/2$^+$)	3970.3+z	J2+10	886.8 *2*	0.36[c] *9*	3083.5+z	J2+8
721.4+x	J+2	721.4		x	J	4904.3+z	J2+12	934.0 *3*	0.45[c] *14*	3970.3+z	J2+10
1487.3+x	J+4	765.9		721.4+x	J+2	5885.3+z	J2+14	981.0 *4*	0.45[c] *6*	4904.3+z	J2+12
2297.9+x	J+6	810.6 *1*	1.06[c] *9*	1487.3+x	J+4	6913.8+z	J2+16	1028.5 *4*	0.45[c] *9*	5885.3+z	J2+14
3153.3+x	J+8	855.4 *1*	1.09[c] *12*	2297.9+x	J+6	7990.1+z	J2+18	1076.3 *3*	0.55[c] *9*	6913.8+z	J2+16
4053.5+x	J+10	900.2 *1*	0.79[c] *8*	3153.3+x	J+8	9114.0+z	J2+20	1123.9 *4*	0.55[c] *9*	7990.1+z	J2+18
4998.9+x	J+12	945.4 *1*	1.00[c] *6*	4053.5+x	J+10	10286.6+z	J2+22	1172.6 *4*	0.39[c] *9*	9114.0+z	J2+20
5990.0+x	J+14	991.1 *1*	0.88[c] *12*	4998.9+x	J+12	11506.8+z	J2+24	1220.2 *4*	0.24[c] *17*	10286.6+z	J2+22
7026.9+x	J+16	1036.9 *1*	1.09[c] *6*	5990.0+x	J+14	12774.9+z	J2+26	1268.1 *5*	0.21[c] *9*	11506.8+z	J2+24
8109.5+x	J+18	1082.6 *1*	1.18[c] *12*	7026.9+x	J+16	14091.2+z	J2+28	1316.2 *5*	0.64[c] *17*	12774.9+z	J2+26
9238.6+x	J+20	1129.1 *1*	1.03[c] *12*	8109.5+x	J+18	15454.9+z	J2+30	1363.7 *6*	0.27[c] *6*	14091.2+z	J2+28
10413.6+x	J+22	1175.0 *1*	0.94[c] *8*	9238.6+x	J+20	16867.5+z	J2+32	1412.6 *7*	0.36[c] *9*	15454.9+z	J2+30
11635.4+x	J+24	1221.8 *1*	0.88[c] *6*	10413.6+x	J+22	18327.9+z	J2+34	1460.4 *9*		16867.5+z	J2+32
12903.7+x	J+26	1268.3 *1*	0.79[c] *21*	11635.4+x	J+24	723.4+u	J3+2	723.4 *15*		u	J3
14219.3+x	J+28	1315.5 *1*	0.79[c] *9*	12903.7+x	J+26	1490.5+u	J3+4	767.1 *5*		723.4+u	J3+2
15581.3+x	J+30	1362.0 *2*	0.39[c] *11*	14219.3+x	J+28	2303.7+u	J3+6	813.2 *8*		1490.5+u	J3+4
16989.9+x	J+32	1408.6 *2*	0.58[c] *15*	15581.3+x	J+30	3162.1+u	J3+8	858.4 *6*		2303.7+u	J3+6
18445.2+x	J+34	1455.3 *2*		16989.9+x	J+32	4066.9+u	J3+10	904.8 *7*		3162.1+u	J3+8
19945.1+x	J+36	1499.9 *5*		18445.2+x	J+34	5020.1+u	J3+12	953.2 *7*		4066.9+u	J3+10
678.6+y	J1+2	678.6 *5*		y	J1	6019.1+u	J3+14	999.0 *7*		5020.1+u	J3+12
1403.1+y	J1+4	724.5 *3*		678.6+y	J1+2	7064.8+u	J3+16	1045.7 *6*		6019.1+u	J3+14
2173.7+y	J1+6	770.6 *1*		1403.1+y	J1+4	8157.6+u	J3+18	1092.8 *8*		7064.8+u	J3+16
2990.2+y	J1+8	816.5 *1*		2173.7+y	J1+6	9298+u	J3+20	1140.3 *13*		8157.6+u	J3+18
3853.3+y	J1+10	863.1 *1*	0.76[c] *18*	2990.2+y	J1+8	10486+u	J3+22	1188.3 *12*		9298+u	J3+20
4763.7+y	J1+12	910.4 *1*	0.79[c] *21*	3853.3+y	J1+10	11721+u	J3+24	1234.9 *12*		10486+u	J3+22
5721.3+y	J1+14	957.6 *2*		4763.7+y	J1+12	13006+u	J3+26	1284.8 *13*		11721+u	J3+24
6725.3+y	J1+16	1004.0 *4*		5721.3+y	J1+14	14337+u	J3+28	1331.4 *14*		13006+u	J3+26
7777.8+y	J1+18	1052.5 *4*	0.61[c] *14*	6725.3+y	J1+16	15718+u	J3+30	1380.8 *13*		14337+u	J3+28
8877.8+y	J1+20	1100.0 *3*	0.61[c] *14*	7777.8+y	J1+18	17146+u	J3+32	1428.3 *19*		15718+u	J3+30
10026.0+y	J1+22	1148.2 *3*	0.85[c] *18*	8877.8+y	J1+20	743.2+v	J4+2	743.2 *15*		v	J4
11222.6+y	J1+24	1196.6 *4*	0.82[c] *6*	10026.0+y	J1+22	1533.0+v	J4+4	789.8 *6*		743.2+v	J4+2
12467.1+y	J1+26	1244.5 *4*	0.94[c] *12*	11222.6+y	J1+24	2368.6+v	J4+6	835.6 *7*		1533.0+v	J4+4
13759.7+y	J1+28	1292.6 *4*	0.94[c] *12*	12467.1+y	J1+26	3250.0+v	J4+8	881.4 *7*		2368.6+v	J4+6
15100.6+y	J1+30	1340.8 *5*	0.39[c] *12*	13759.7+y	J1+28	4177.7+v	J4+10	927.7 *8*		3250.0+v	J4+8
16489.4+y	J1+32	1388.8 *6*	0.55[c] *9*	15100.6+y	J1+30	5151.9+v	J4+12	974.2 *6*		4177.7+v	J4+10
17927.2+y	J1+34	1437.8 *7*		16489.4+y	J1+32	6174.9+v	J4+14	1023.0 *9*		5151.9+v	J4+12
19412.5+y	J1+36	1485.3 *8*		17927.2+y	J1+34	7243.7+v	J4+16	1068.8 *5*		6174.9+v	J4+14
702.0+z	J2+2	702.0 *5*		z	J2	8360.2+v	J4+18	1116.5 *6*		7243.7+v	J4+16

$^{153}_{66}Dy_{87}$-15

Adopted Levels, Gammas (continued)

γ(^{153}Dy) (continued)

E_i(level)	J_i^π	E_γ †	E_f	J_f^π	E_i(level)	J_i^π	E_γ †	E_f	J_f^π
9525+v	J4+20	1164.4 *7*	8360.2+v	J4+18	14661+v	J4+28	1355.3 *10*	13306+v	J4+26
10737+v	J4+22	1212.6 *8*	9525+v	J4+20	16065+v	J4+30	1403.6 *13*	14661+v	J4+28
11998+v	J4+24	1260.9 *7*	10737+v	J4+22	17517+v	J4+32	1452.2 *14*	16065+v	J4+30
13306+v	J4+26	1307.6 *7*	11998+v	J4+24					

† Up to 4200 keV excitation energy see the respective footnotes, and above 4200 keV from (HI,xnγ); γ′s from levels not linked to g.s. are from ^{110}Pd(^{48}Ca,5nγ), ^{124}Sn(^{34}S,5nγ):SD dataset.

‡ Relative photon branchings unless otherwise stated.

From α(K)exp and K/L in ^{153}Ho ε decays; γ(θ), α(K)exp γ linear polarization in ^{152}Gd(α,3nγ), ^{154}Gd(α,5nγ), ^{155}Gd(α,5nγ); and γ(θ) and γ linear polarization in (HI,xnγ).

@ From ^{153}Ho ε decay (2.01 min).

& From ^{153}Ho ε decay (9.3 min).

a From ^{152}Gd(α,3nγ), ^{154}Gd(α,5nγ), ^{155}Gd(α,5nγ).

b From (HI,xnγ).

c Relative intensity within the SD band, normalized to 1.00 for 945.4γ in SD-1 band.

d Additional information 6.

e Multiply placed with undivided intensity.

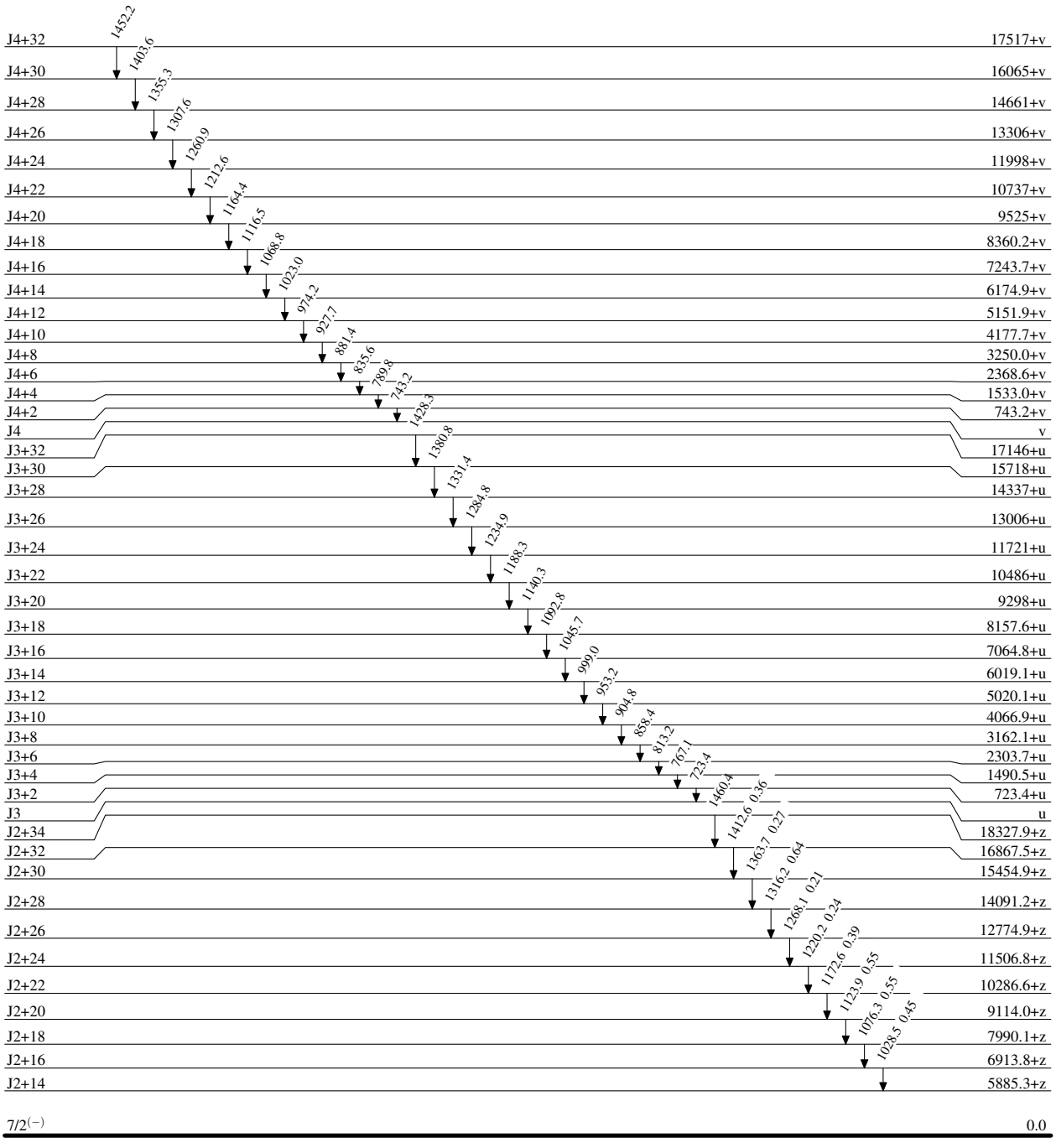
f Placement of transition in the level scheme is uncertain.

$^{153}_{66}Dy_{87}$-16

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

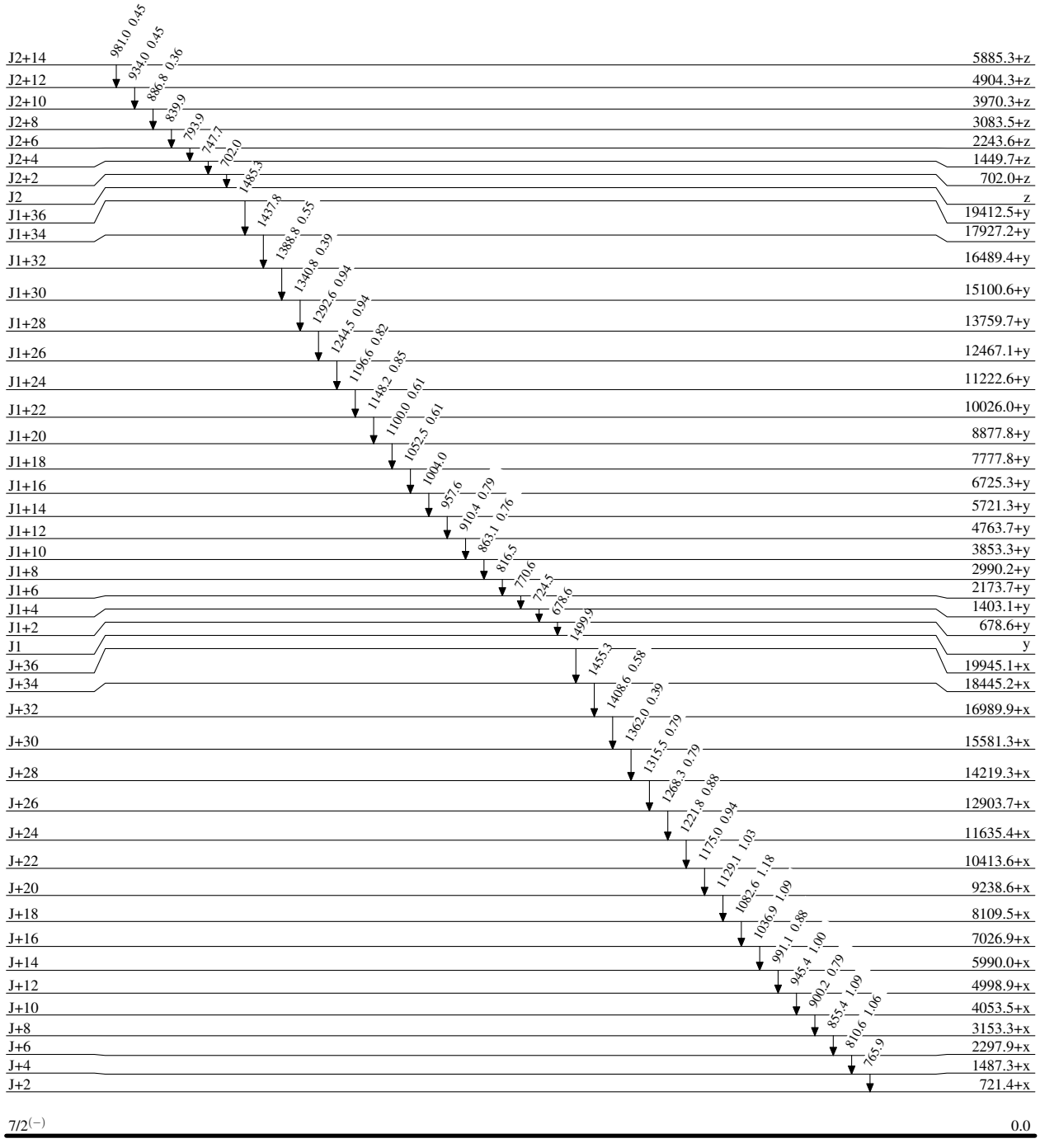


$^{153}_{66}Dy_{87}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{153}_{66}Dy_{87}$

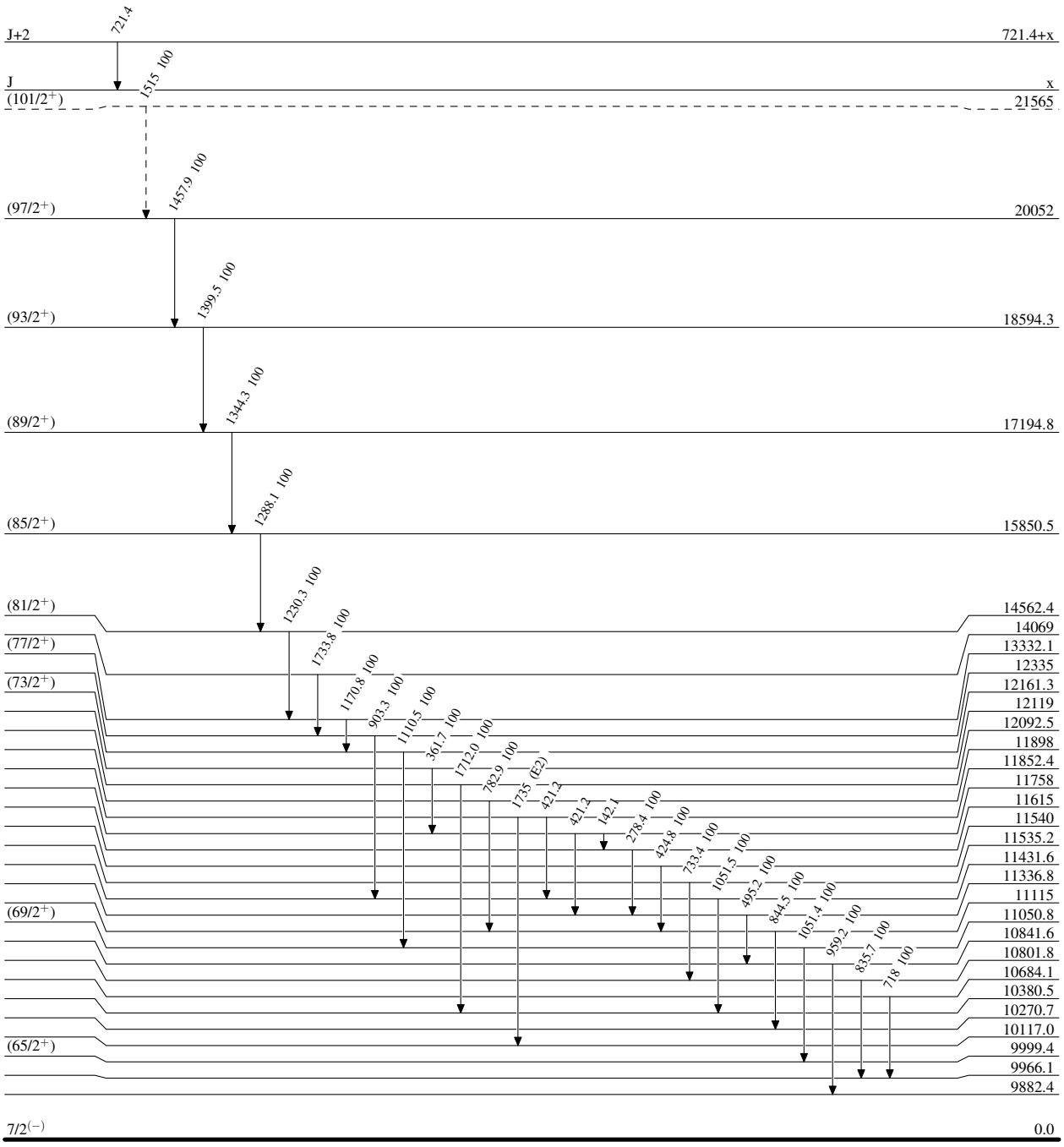
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

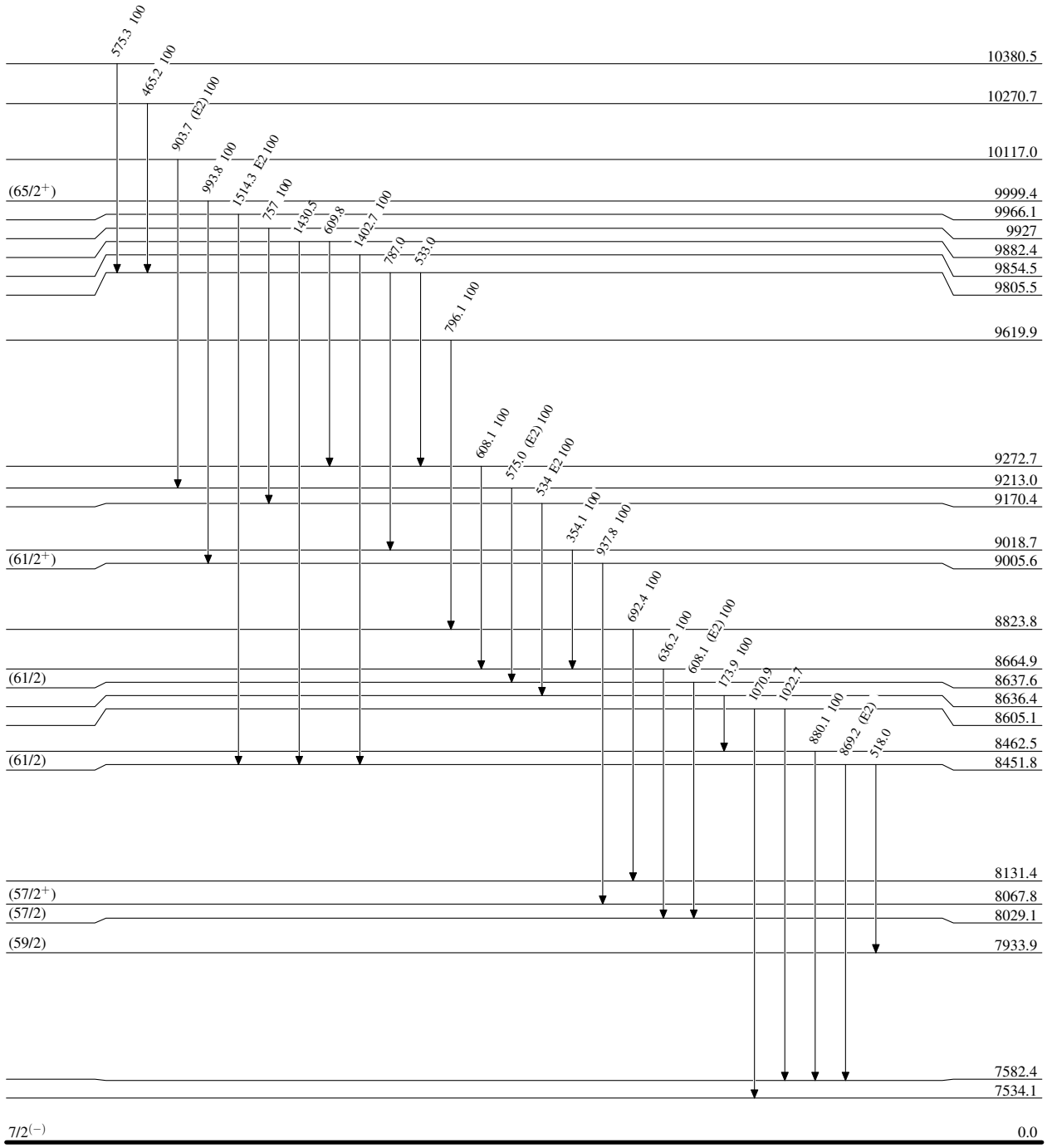


$^{153}_{66}Dy_{87}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{153}_{66}Dy_{87}$

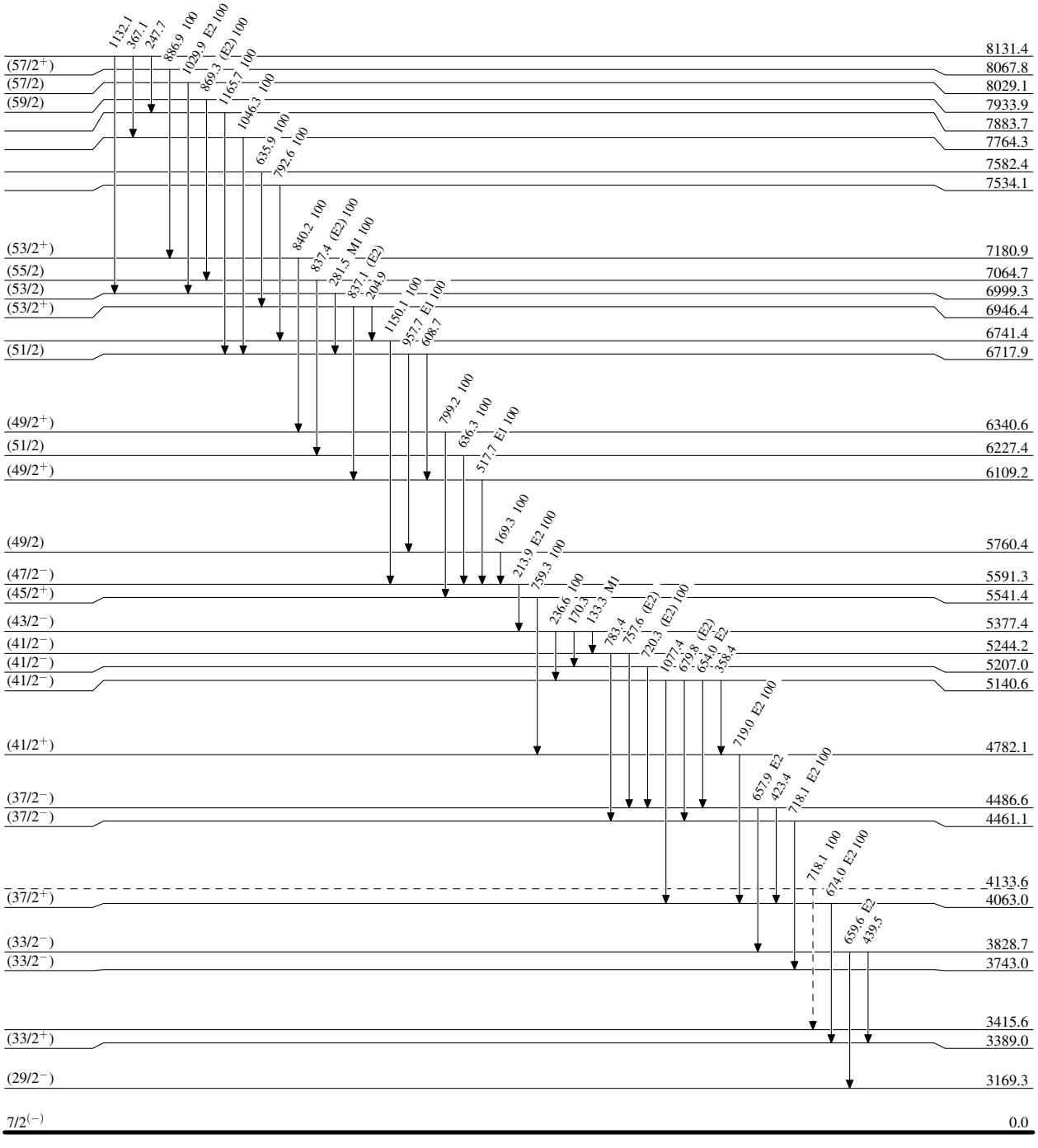
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{153}_{66}Dy_{87}$

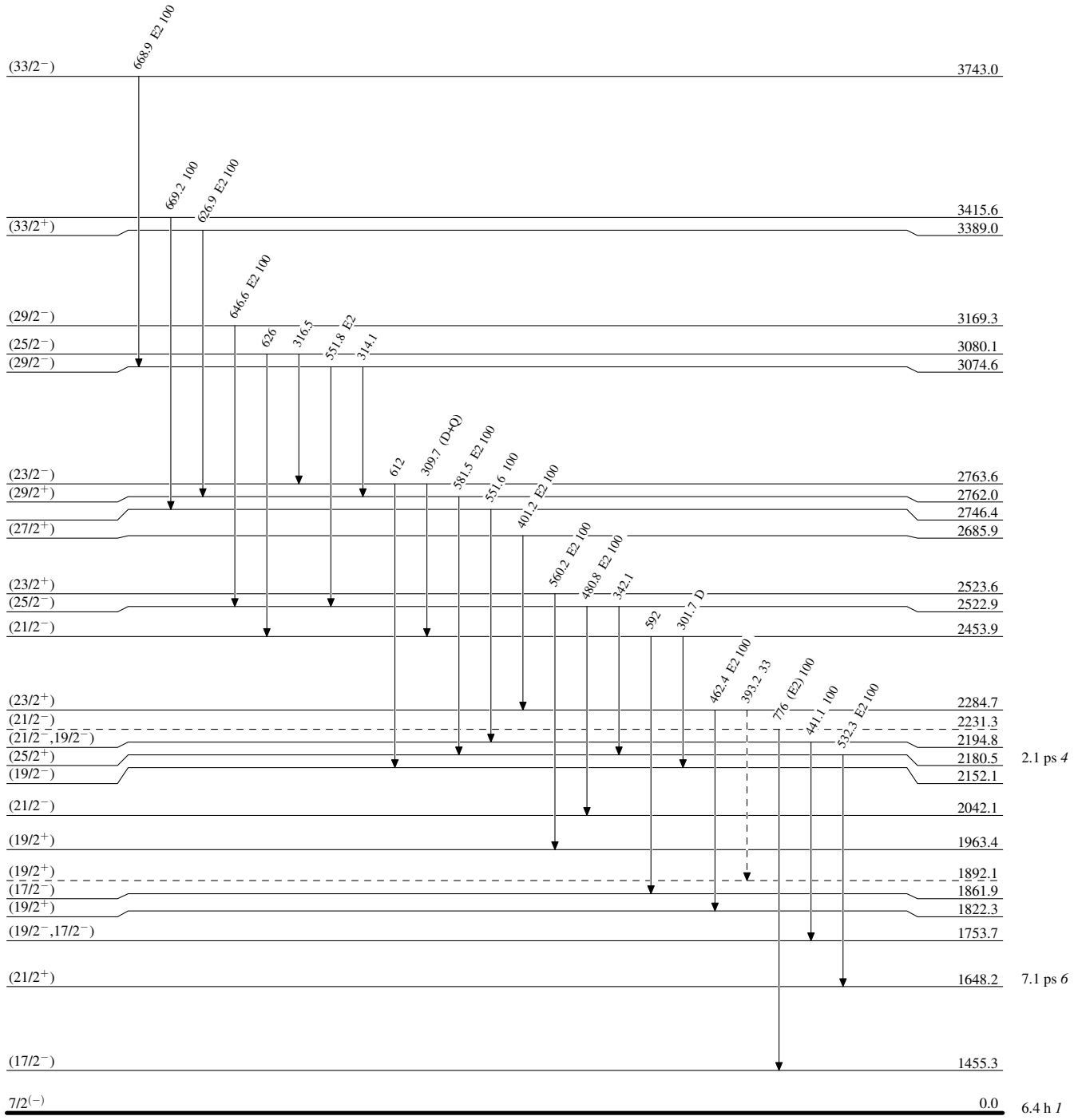
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{153}_{66}Dy_{87}$

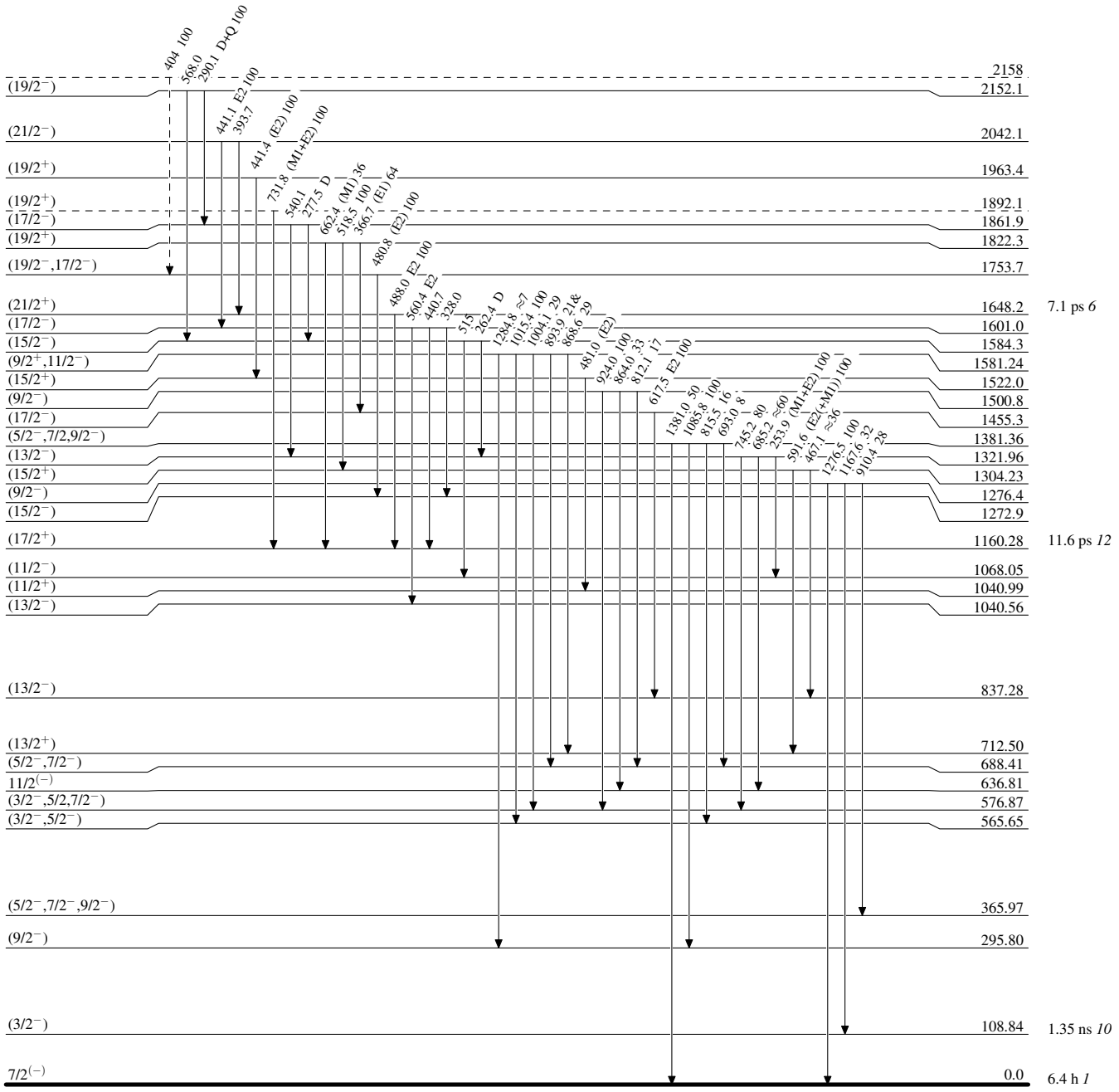
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

γ Decay (Uncertain)

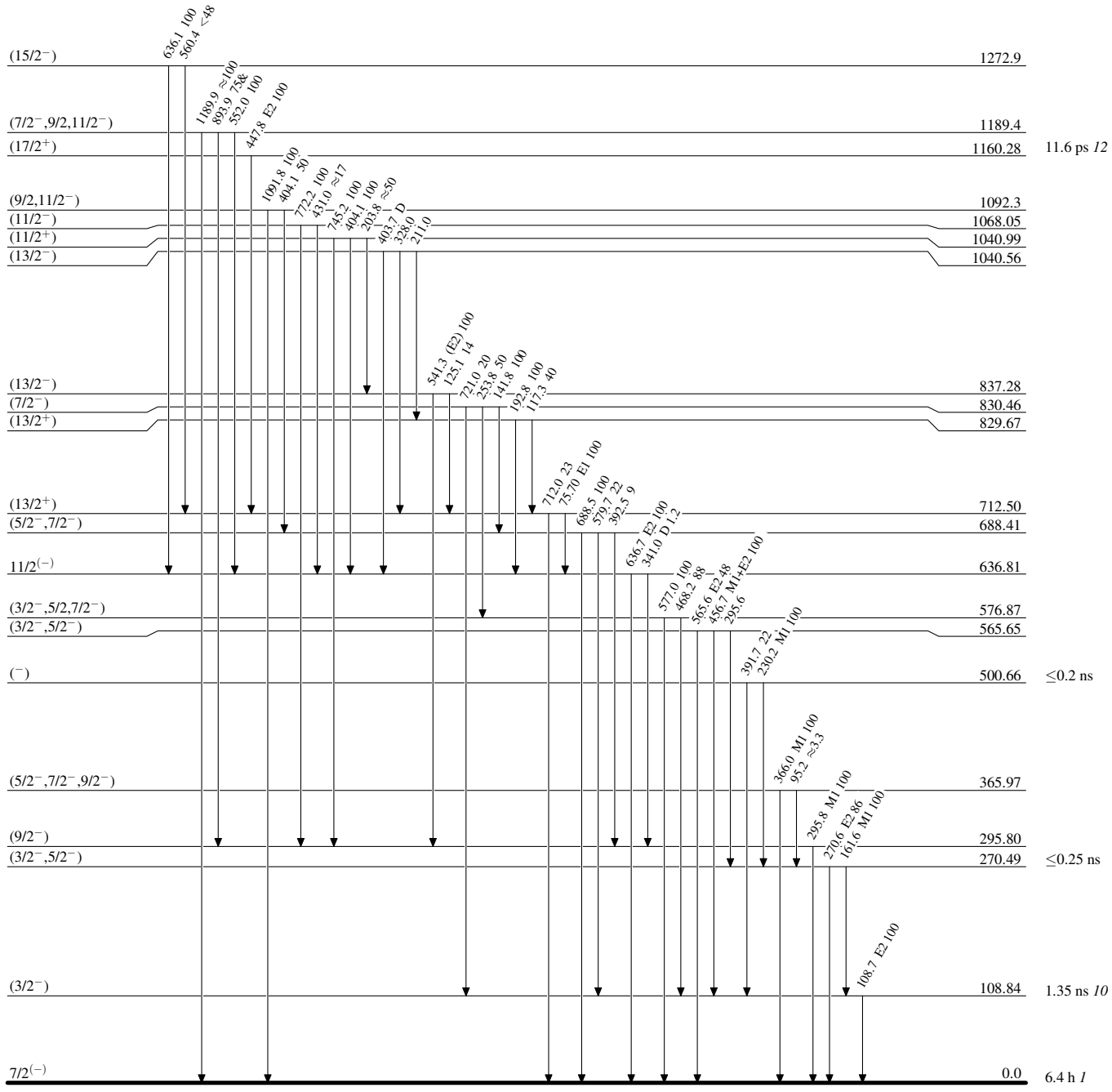


$^{153}_{66}Dy_{87}$

Adopted Levels, Gammas

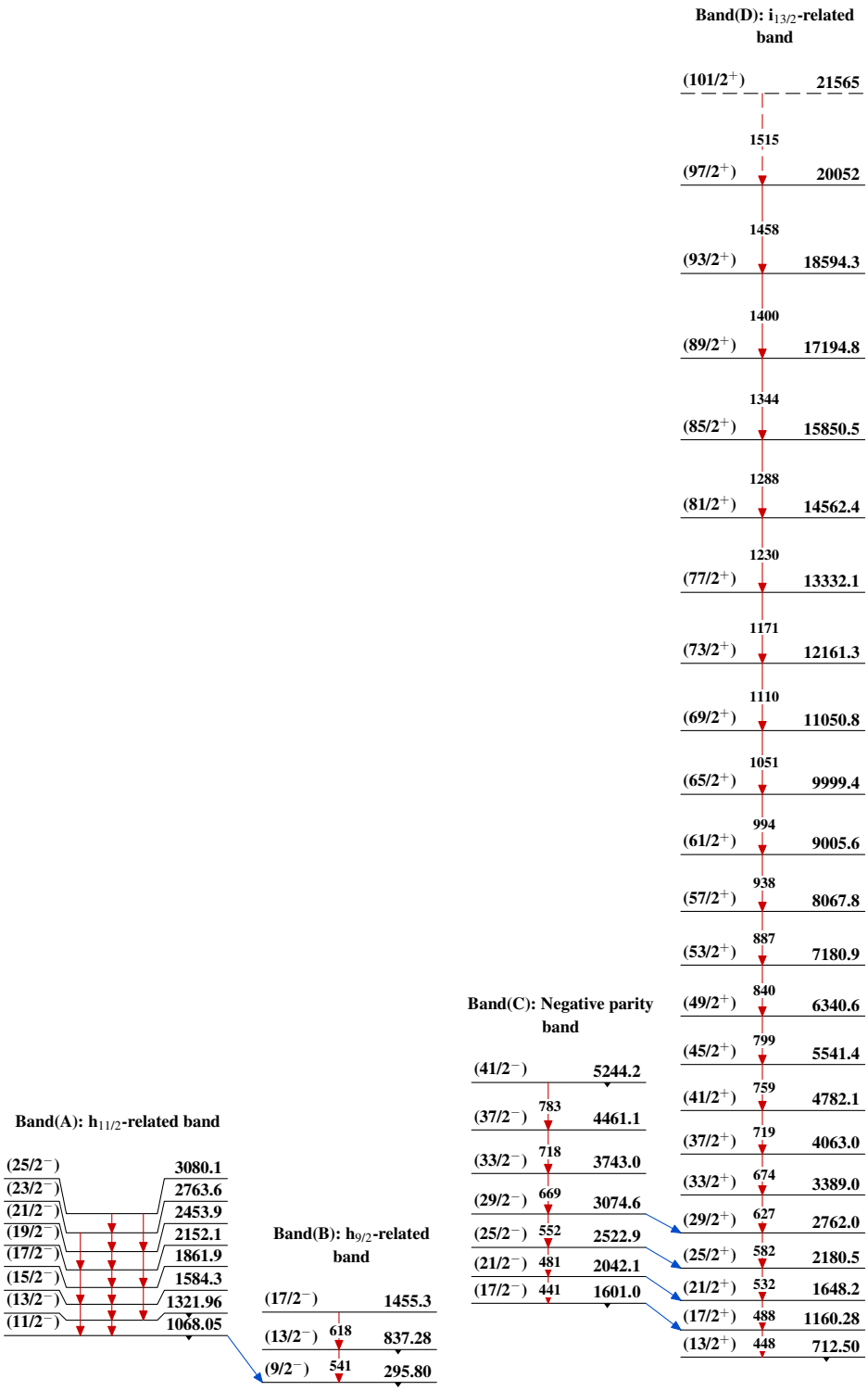
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

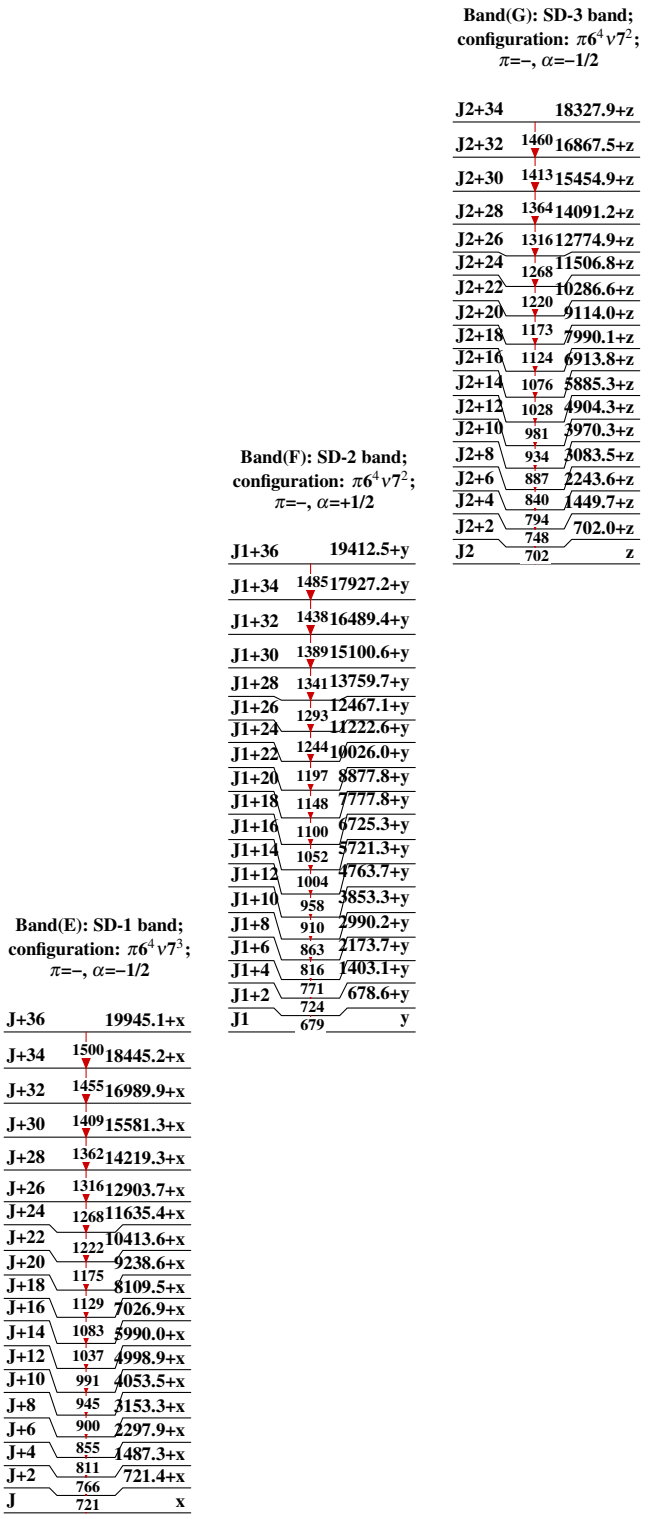


$^{153}_{66}Dy_{87}$

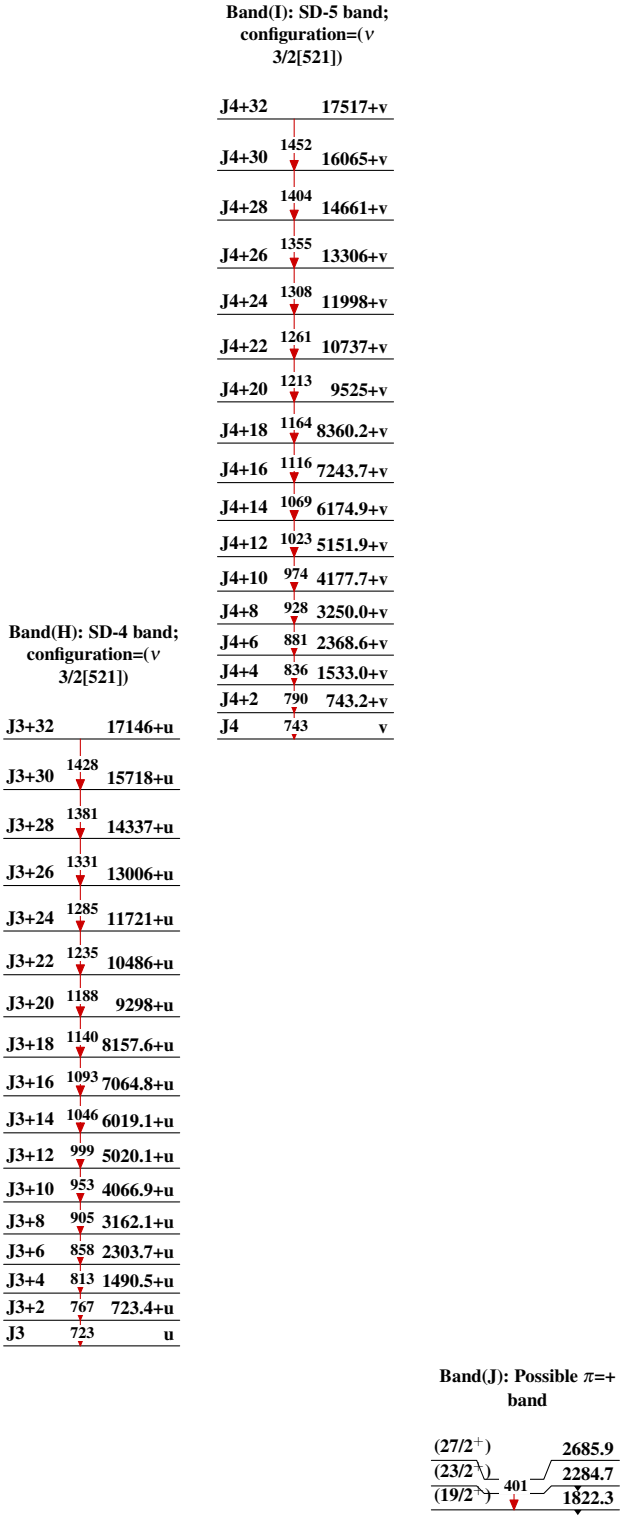
Adopted Levels, Gammas



Adopted Levels, Gammas (continued)

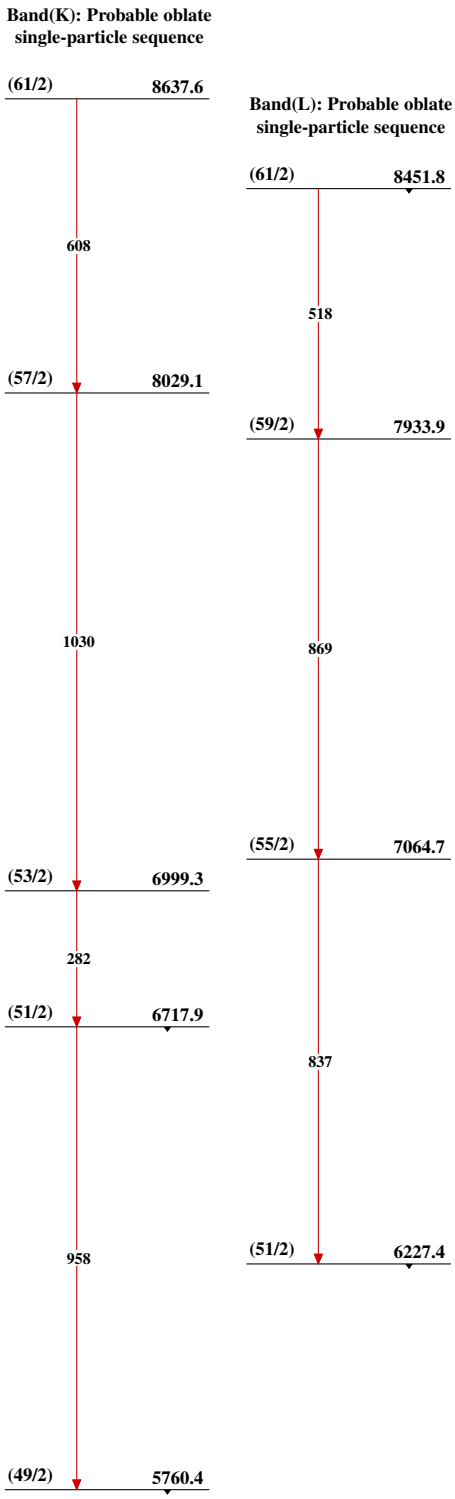


Adopted Levels, Gammas (continued)



$^{153}_{66}Dy_{87}$

Adopted Levels, Gammas (continued)



$^{153}_{66}Dy_{87}$