Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev	NDS 112,855 (2011)	31-Oct-2010

Q(β^-)=−4481 *21*; S(n)=8.02×10^3 *3*; S(p)=5.98×10^3 *4*; Q(α)=220 *20* 2012Wa38
Note: Current evaluation has used the following Q record −4486 21 *8021* 26 *5988* 40 *215* 20 2009AuZZ.

^{133}Ce Levels

Cross Reference (XREF) Flags

- A ^{133}Pr ε decay (6.5 min)
- B ^{116}Cd(^{22}Ne,5nγ)
- C ^{119}Sn(^{18}O,4nγ)
- D ^{120}Sn(^{16}O,3nγ)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[@]	1/2$^+$	97 min *4*	ABCD	%ε+%β^+=100 J$^\pi$: Atomic beam magnetic resonance method (1973In04). T$_{1/2}$: from 1967Ge08. configuration: ν1/2[400] (s$_{1/2}$).
37.2[&] *7*	9/2$^-$	5.1 h *3*	BCD	%ε+%β^+<100; %IT=? J$^\pi$: Atomic beam magnetic resonance method (1973In04). T$_{1/2}$: weighted average of 4.9 h *4* (1976Ge10) and 5.4 h *5* (1967Ge08). Other: 6.3 h *1* (1951St03). configuration: ν9/2[514] (h$_{11/2}$).
134.20[@] *9*	3/2$^+$		A CD	J$^\pi$: 134.3γ M1 to 1/2$^+$; band assignment.
207.4[&] *7*	11/2$^-$	52.7[‡] ps *21*	BCD	J$^\pi$: 170.2γ M1+E2 to 9/2$^-$; band assignment.
241.99 *9*	5/2$^+$		A	J$^\pi$: 241.9γ E2 to 1/2$^+$.
315.69 *10*	3/2$^+$		A	J$^\pi$: 315.6γ M1 to 1/2$^+$, 73.6γ M1 to 5/2$^+$. configuration: Probable ν3/2[402] (d$_{3/2}$).
318.00[@] *9*	5/2$^+$		A CD	J$^\pi$: 183.8γ M1 to 3/2$^+$; band assignment.
465.18 *10*	1/2$^+$		A	J$^\pi$: 223.2γ E2 to 5/2$^+$, 465.2 M1 to 1/2$^+$.
496.75 *11*	(1/2,3/2,5/2)$^+$		A	J$^\pi$: 362.5γ M1 to 3/2$^+$; 178.8γ to 5/2$^+$.
570.4[@] *4*	7/2$^+$		A CD	J$^\pi$: 253.0γ (M1) to 5/2$^+$, 436.1γ (E2) to 3/2$^+$; band assignment.
592.1[&] *6*	13/2$^-$	5.5[‡] ps *3*	BCD	J$^\pi$: 384.7γ M1+E2 to 11/2$^-$, 554.9γ (E2) to 9/2$^-$; band assignment.
621.18 *10*	3/2$^-$		A	J$^\pi$: 303.0γ E1 to 5/2$^+$, 621.4γ to 1/2$^+$.
656.64 *12*	1/2$^+$,3/2,5/2$^+$		A	J$^\pi$: 656.7γ to 1/2$^+$, 414.5γ to 5/2$^+$.
779.33 *10*	(3/2,5/2)$^+$		A	J$^\pi$: 537.3γ M1 to 5/2$^+$, 779.4γ to 1/2$^+$.
787.62 *17*			A	
815.6[@] *4*	9/2$^+$		CD	J$^\pi$: 246γ to 7/2$^+$, 497.3γ to 5/2$^+$; band assignment.
827.0[&] *6*	15/2$^-$	2.6[‡] ps *6*	BCD	J$^\pi$: 619.7γ (E2) to 11/2$^-$, 234.9γ M1+E2 to 13/2$^-$; band assignment.
834.80 *15*	(1/2,3/2,5/2,5/2$^+$)		A	J$^\pi$: 834.9γ to 1/2$^+$, 700.5γ to 3/2$^+$.
902.68? *23*			A	
1005.56 *13*	(1/2$^+$,3/2,5/2$^+$)		A	J$^\pi$: 1005.5γ to 1/2$^+$, 687.8γ to 5/2$^+$.
1116.18? *23*			A	
1200.4 *7*	15/2$^-$		CD	J$^\pi$: 608.5γ (M1+E2) to 13/2$^-$, 896.4γ from 17/2$^-$.
1200.7[@] *5*	11/2$^+$		C	J$^\pi$: 385γ to 9/2$^+$, 630.5γ to 7/2$^+$; band assignment.
1335.18? *23*			A	
1343.5[&] *6*	17/2$^-$	≤0.7[‡] ps	BCD	J$^\pi$: 751.2γ E2 to 13/2$^-$, 516.8γ M1+E2 to 15/2$^-$; band assignment.
1445.1[@] *5*	13/2$^+$		C	J$^\pi$: 629.4γ (E2) to 9/2$^+$; band assignment.
1521.01? *22*			A	
1573.35? *23*			A	

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Adopted Levels, Gammas (continued)

^{133}Ce Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
1589.9& 6	19/2−	≤0.7‡ ps	BCD	Jπ: 762.7γ E2 to 15/2−, 246.5γ M1+E2 to 17/2−; band assignment.
1881.30 16			A	
1897.6a 6	15/2+		BCD	Jπ: 697.0γ to 11/2+, 1305.4γ to 13/2−; band assignment.
1932.1@ 6	15/2+		C	Jπ: 731.0γ to 11/2+; band assignment.
2096.4a 6	17/2+	3.7‡ ps 4	BCD	Jπ: 651.5γ (E2) to 13/2+; band assignment.
2199.3& 7	21/2−		BCD	Jπ: 856.0γ (E2) to 17/2−, 609.5γ M1+E2 to 19/2−; band assignment.
2297.2a 6	19/2+	3.1‡ ps 3	BCD	Jπ: 399.4γ (E2) to 15/2+, 200.7γ M1+E2 to 17/2+; band assignment.
2415.8c 6	(19/2+)		CD	Jπ: from 1071.6γ to 17/2−, 518.6γ to 15/2+.
2456.6a 6	21/2+	3.7‡ ps 4	BCD	Jπ: 159.5γ (M1) to 19/2+; band assignment.
2485.9& 7	23/2−		BCD	Jπ: 896.1γ (E2) to 19/2−; band assignment.
2501.8? 12			C	
2621.3c 7	(21/2+)		CD	Jπ: 205.5γ (M1) to (19/2+), 1031.5γ to 19/2−; band assignment.
2646.1a 7	23/2+		BCD	Jπ: 189.5γ (M1) to 21/2+, 349.0γ to 19/2+; band assignment.
2679.3 8	23/2−		C	Jπ: 1089.0γ (E2) to 19/2−, 851.0γ from 27/2−.
2743.8d 7	(21/2)		C	Jπ: 446γ to 19/2+, 1154.0γ to 19/2−; band assignment.
2844.9c 9	(23/2)		C	Jπ: 223.6γ (M1) to (21/2); band assignment.
2881.1a 7	25/2+		BCD	Jπ: 235.0γ (M1+E2) to 23/2+; band assignment.
2959.5d 7	(23/2)		C	Jπ: 215.5γ (M1) to (21/2); band assignment.
3128.4c 10	(25/2+)		C	
3129.1& 8	25/2−		BC	Jπ: 930.0γ to 21/2−; band assignment.
3175.7a 7	27/2+		BCD	Jπ: 294.6γ (M1+E2) to 25/2+; band assignment.
3236.0b 9	23/2−		BC	Jπ: 140.0γ (M1) from 25/2−; band assignment.
3236.1d 9	(25/2)		C	Jπ: 276.5γ (M1) to (23/2); band assignment.
3376.0b 7	25/2−		BC	Jπ: 1176.5γ (E2) to 21/2−; band assignment.
3433.0& 8	27/2−		C	Jπ: 946.9γ (E2) to 23/2−; band assignment.
3434.1c 11	(27/2+)		BC	Jπ: 305.7γ to (25/2+); band assignment.
3530.7b 7	27/2−		BC	Jπ: 154.7γ (M1) to 25/2−, 1045.4γ (E2) to 23/2−; band assignment.
3533.1a 8	29/2+		BCD	Jπ: 357.5γ (M1) to 27/2+; band assignment.
3571.5d 10	(27/2)		C	Jπ: 335.5γ to (25/2); band assignment.
3771.2b 8	29/2−		BC	Jπ: 240.6γ M1+E2 to 27/2−; band assignment.
3780.6c 12	(29/2+)		C	Jπ: 346.5γ (M1) to (27/2+); band assignment.
3917.7a 8	31/2+		BC	Jπ: 384.5γ (M1) to 29/2+, 742.0γ (E2) to 27/2+; band assignment.
3971.6d 12	(29/2)		C	Jπ: 400.1γ to (27/2); band assignment.
4066.1b 8	31/2−		BC	Jπ: 294.9γ M1+E2 to 29/2−; band assignment.
4212.4?c 13	(31/2+)		C	Jπ: 432.0γ to (27/2+); band assignment.
4375.3a 8	33/2+		BC	Jπ: 457.9γ to 31/2+, 842.4γ to 29/2+; band assignment.
4404.0& 9	(31/2−)		C	Jπ: 971.0γ to 27/2−; band assignment.
4408.2b 8	33/2−		BC	Jπ: 342.0γ M1+E2 to 31/2−; band assignment.
4799.4b 9	35/2−		BC	Jπ: 391.1γ M1+E2 to 33/2−; band assignment.
4831.4a 9	35/2+		BC	Jπ: 456.5γ (M1) to 33/2+, 913.3γ (E2) to 31/2+; band assignment.
5215.1b 9	37/2−		BC	Jπ: 415.6γ (M1) to 35/2−; band assignment.
5366.0a 11	(37/2+)		BC	Jπ: 535γ to 35/2+, 990γ to 33/2+; band assignment.
5669.8b 9	39/2−		BC	Jπ: 870.6γ (E2) to 35/2−; band assignment.
5876.2a 12	(39/2+)		B	Jπ: 510γ to (37/2+), 1045γ to 35/2+; band assignment.
6149.5b 11	(41/2−)		B	Jπ: 480γ to 39/2−, 934γ to 35/2+; band assignment.
6665.6b 12	(43/2−)		B	Jπ: 516γ to (41/2−), 996γ to 39/2−; band assignment.
7209.6b 13	(45/2−)		B	Jπ: 544γ to (43/2−), 1060γ to (41/2−); band assignment.
0+xe	(27/2−)		BC	Additional information 1.

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Adopted Levels, Gammas (continued)

^{133}Ce Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
				E(level): In accordance with 1996Ha20, 832-, 847-, 934- and 1177-keV γ′s are in coincidence with transitions that belong to bands B and F. However, since their exact placement cannot be unambiguously determined, the excitation energy of this band remains uncertain. Note that 1987Ma57 places the bands head at 3333 keV. Jπ: based on comparison between experiment and theory, and by assuming that J=(27/2) is the lowest observed state within the configuration=$\nu^3(h_{11/2})$ (1996Ha20, 1998Jo16). The in-band transitions are stretched E2′s, based on DCO values in ^{119}Sn(^{18}O,4nγ) reaction. Note that ν1/2[660] $(i_{13/2})\otimes\pi(h_{11/2})$ configuration was proposed in 1987Ma57 with J=(25/2$^+$).
423.7+x[e] *5*	(31/2$^-$)		BC	
913.1+x[e] *7*	(35/2$^-$)		BC	
1557.2+x[e] *9*	(39/2$^-$)		BC	
2326.0+x[e] *10*	(43/2$^-$)		BC	
3208.0+x[g] *15*			B	
3214.9+x[e] *12*	(47/2$^-$)	0.77[#] ps *9*	BC	
4090.0+x[g] *18*			B	
4215.4+x[e] *13*	(51/2$^-$)	0.23[#] ps *3*	BC	
4982.4+x[g] *18*			B	
5314.1+x[e] *14*	(55/2$^-$)	0.139[#] ps *14*	B	
5979.7+x[g] *19*			B	
6502.4+x[e] *15*	(59/2$^-$)	0.146[#] ps *14*	B	
7078.4+x[g] *20*			B	
7777.6+x[e] *15*	(63/2$^-$)		B	
8268.4+x[g] *22*			B	
9133.9+x[e] *16*	(67/2$^-$)		B	
9504.8+x[i] *23*			B	
9580.7+x[g] *23*			B	
10559.2+x[e] *17*	(71/2$^-$)		B	
10698.8+x[i] *23*			B	
10960.7+x[g] *23*			B	
11989.2+x[i] *24*			B	
12061.3+x[e] *18*	(75/2$^-$)		B	
12461.0+x[g] *24*			B	
13384.6+x[i] *24*			B	
14884.8+x[i] *25*			B	
16492.1+x[i] *25*			B	
18203+x[i] *3*			B	
20028+x?[i] *3*			B	
0+y[l]			B	Additional information 2. E(level): possibly decays to 5215.7-keV level.
966.3+y[l] *5*			B	
2028.1+y[l] *7*			B	
3184.3+y[l] *9*			B	
4425.0+y[l] *10*			B	
5625.7+y[k] *12*			B	
5732.0+y?[l] *15*			B	
6899.7+y[k] *13*			B	
8277.0+y[k] *14*			B	

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Adopted Levels, Gammas (continued)

^{133}Ce Levels (continued)

E(level)[†]	Jπ	XREF	Comments
9759.8+y[k] *15*		B	
11351.5+y[k] *15*		B	
13051.9+y[k] *16*		B	
14831.2+y[k] *17*		B	
16687.2+y?[k] *20*		B	
0+z[h]		B	Additional information 3. E(level): higher than 1557.2+x level.
703.5+z[h] *5*		B	E(level): possibly decays to 1557.2+x level.
1475.2+z[h] *12*		B	E(level): possibly decays to 2326.0+x level.
2356.5+z[h] *13*		B	
3342.9+z[h] *14*		B	
4422.0+z[h] *15*		B	
5590.1+z[h] *15*		B	
6832.2+z[h] *16*		B	
8003.6+z[j] *17*		B	
8152.2+z[h] *19*		B	
9226.1+z[j] *18*		B	
9537.2+z[h] *22*		B	
10562.6+z[j] *18*		B	
11998.7+z[j] *21*		B	
0+u[f]		B	Additional information 4. E(level): possibly decays to 4375.7-keV level.
774.2+u[f] *5*		B	
1634.5+u[f] *7*		B	
2600.2+u[f] *9*		B	
3663.0+u[f] *10*		B	
4815.6+u[f] *12*		B	
6059.8+u[f] *13*		B	
7401.1+u[f] *14*		B	
8840.4+u[f] *15*		B	
0+r[m]	(43/2)	B	Additional information 5. SD-1 band; Q(intrinsic)=7.4 *7*; percent population ≈ 3%. Jπ: J=(43/2) from feeding the 35/2$^-$ level of normal deformed band and the assumption that the unobserved linking transitions contribute ≈ 4ħ to total spin (1995Ha34).
748.30+r[m] *11*	J+2	B	
1557.43+r[m] *12*	J+4	B	
2430.30+r[m] *13*	J+6	B	
3367.57+r[m] *16*	J+8	B	
4370.61+r[m] *17*	J+10	B	
5438.17+r[m] *18*	J+12	B	
6570.44+r[m] *19*	J+14	B	
7768.83+r[m] *22*	J+16	B	
9035.44+r[m] *23*	J+18	B	
10372.84+r[m] *24*	J+20	B	
11784.24+r[m] *25*	J+22	B	
13272.9+r[m] *3*	J+24	B	
14843.0+r[m] *3*	J+26	B	

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Adopted Levels, Gammas (continued)

^{133}Ce Levels (continued)

E(level)[†]	J^π	XREF	Comments
16497.7+r[m] *3*	J+28	B	
18240.7+r[m] *4*	J+30	B	
20074.2+r[m] *7*	J+32	B	
22001.7+r[m] *14*	J+34	B	
0+s[n]	J1≈37/2	B	Additional information 6. SD-2 band; Q(intrinsic)=7.5 *8* (1995Ha28); percent population ≈1.5%. J^π: J_1=(37/2) from feeding by the third lowest state the $37/2^-$ level of the normal deformed band and the assumption that the unobserved linking transitions contribute ≈ 4ħ to total spin (1995Ha34).
720.32+s[n] *9*	J1+2	B	
1505.75+s[n] *14*	J1+4	B	
2359.98+s[n] *16*	J1+6	B	
3280.27+s[n] *17*	J1+8	B	
4267.19+s[n] *19*	J1+10	B	
5319.39+s[n] *20*	J1+12	B	
6437.62+s[n] *22*	J1+14	B	
7621.96+s[n] *24*	J1+16	B	
8875.16+s[n] *25*	J1+18	B	
10199.0+s[n] *3*	J1+20	B	
11596.9+s[n] *3*	J1+22	B	
13072.4+s[n] *3*	J1+24	B	
14629.7+s[n] *4*	J1+26	B	
16272.7+s[n] *4*	J1+28	B	
18004.1+s[n] *5*	J1+30	B	
19825.7+s[n] *5*	J1+32	B	
21735.7+s[n] *6*	J1+34	B	
0+t[o]	J2≈45/2	B	Additional information 7. SD-3 band; percent population ≈ 0.6%. J^π: J_2=(45/2) from feeding by the lowest state the $37/2^+$ level of the normal deformed band and the assumption that the unobserved linking transitions contribute ≈ 4ħ to total spin (1995Ha34).
956.9+t[o] *10*	J2+2	B	
1942.8+t[o] *15*	J2+4	B	
2963.3+t[o] *18*	J2+6	B	
4045.4+t[o] *20*	J2+8	B	
5193.9+t[o] *23*	J2+10	B	
6401.5+t[o] *25*	J2+12	B	
7676+t[o] *3*	J2+14	B	
9011+t[o] *3*	J2+16	B	
10399+t[o] *3*	J2+18	B	
11838+t[o] *4*	J2+20	B	
13327+t[o] *4*	J2+22	B	
14875+t[o] *4*	J2+24	B	
16487+t[o] *4*	J2+26	B	
18174+t[o] *4*	J2+28	B	
19938+t?[o] *4*	J2+30	B	

[†] From a least-squares fit to Eγ's.
[‡] From RDDS measurements in 1997Em01.
[#] From DSAM measurements in 1998Jo16.

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Adopted Levels, Gammas (continued)

^{133}Ce Levels (continued)

[@] Band(A): Band based on $1/2^+$ state; configuration=$\nu 1/2[400]$ ($s_{1/2}$).
[&] Band(B): Band based on $9/2^-$ state; configuration=$\nu 9/2[514]$ ($h_{11/2}$).
[a] Band(C): Band based on $15/2^+$ state; possible 3-qp configuration=$\nu 9/2[514]$ ($h_{11/2}$)$\otimes\pi(h_{11/2},g_{7/2})$.
[b] Band(D): Band based on $23/2^-$ state; possible 3-qp configuration=$\nu 9/2[514]$ ($h_{11/2}$)$\otimes\pi(h^2_{11/2})$.
[c] Band(E): Band based on (19/2) state; possible 3-qp configuration=$\nu 9/2[514](h_{11/2})\otimes\pi(h_{11/2},g_{7/2})$.
[d] Band(F): Band based on (21/2) state; possible 3-qp configuration=$\nu 9/2[514](h_{11/2})\otimes\pi(h_{11/2},g_{7/2})$.
[e] Band(G): Triaxial band based on $(27/2^-)$ state; possible 3-qp configuration=$\nu(h^3_{11/2})$; Q_t=2.2 *1*, β_2=0.186 *7*, γ=−83° (1998Jo16). Note that 1987Ma57 assign $\nu 1/2[660]$ ($i_{13/2}$)$\otimes\nu(h^2_{11/2})$ configuration.
[f] Band(H): Triaxial band; possible 5-qp configuration=$\nu(h^2_{11/2},s_{1/2})\otimes\pi(h_{11/2},g_{7/2})$.
[g] Band(I): Triaxial band; possible 5-qp configuration=$\nu(h^3_{11/2})\otimes\pi(h^2_{11/2})$.
[h] Band(J): Triaxial band; possible 5-qp configuration=$\nu(h^3_{11/2})\otimes\pi(h^2_{11/2})$.
[i] Band(K): Triaxial band; possible 7-qp configuration=$\nu(h^3_{11/2})\otimes\pi(h^2_{11/2},g^2_{7/2})$.
[j] Band(L): Triaxial band; possible 7-qp configuration=$\nu(h^3_{11/2})\otimes\pi(h^2_{11/2},g^2_{7/2})$.
[k] Band(M): Triaxial band; possible 7-qp configuration= $\nu(h^2_{11/2},s_{1/2})\otimes\pi(h^2_{11/2},g^2_{7/2})$.
[l] Band(N): Rotational level sequence.
[m] Band(O): SD-1 band based on (43/2) state; possible configuration=$\nu 1/2[530]$ coupled to $(\pi 5^4\nu 6^2)$.
[n] Band(P): SD-2 band based on (37/2) state; possible configuration=$\nu 1/2[530]$ coupled to $(\pi 5^4\nu 6^2)$.
[o] Band(Q): SD-3 band based on (45/2) state; possible configuration=$(\pi 5^4\nu 6^3)$. At low frequencies, there may be admixtures from the configuration=$(\pi 5^4\nu 6^1)$.

Adopted Levels, Gammas (continued)

γ(^{133}Ce)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
134.20	3/2+	134.3[&] 2	100[&]	0.0	1/2+	M1		0.513	α(K)=0.438 7; α(L)=0.0596 9; α(M)=0.01248 19; α(N+..)=0.00325 5 α(N)=0.00277 4; α(O)=0.000448 7; α(P)=3.39×10^{-5} 5
207.4	11/2−	170.2 2	100	37.2	9/2−	M1+E2	−0.16 8	0.267 5	B(M1)(W.u.)=0.065 3; B(E2)(W.u.)=4.E+1 4 α(K)=0.227 4; α(L)=0.0316 12; α(M)=0.0066 3; α(N+..)=0.00172 7 α(N)=0.00147 6; α(O)=0.000237 8; α(P)=1.74×10^{-5} 3
241.99	5/2+	107.7[&] 2	0.95[&] 24	134.20	3/2+				
		241.9[&] 2	100[&]	0.0	1/2+	E2		0.0975	α(K)=0.0763 11; α(L)=0.01669 24; α(M)=0.00362 6; α(N+..)=0.000908 13 α(N)=0.000786 12; α(O)=0.0001177 17; α(P)=4.86×10^{-6} 7
315.69	3/2+	73.6[&] 2	2.5[&] 23	241.99	5/2+	M1		2.86 5	α(K)=2.44 4; α(L)=0.334 6; α(M)=0.0700 12; α(N+..)=0.0182 3 α(N)=0.01553 25; α(O)=0.00251 4; α(P)=0.000189 3
		181.3[&] 2	4.2[&] 5	134.20	3/2+	M1		0.223	α(K)=0.191 3; α(L)=0.0258 4; α(M)=0.00539 8; α(N+..)=0.001405 21 α(N)=0.001196 18; α(O)=0.000194 3; α(P)=1.470×10^{-5} 21
		315.6[&] 2	100[&] 10	0.0	1/2+	M1		0.0504	α(K)=0.0432 6; α(L)=0.00575 9; α(M)=0.001200 17; α(N+..)=0.000313 5 α(N)=0.000266 4; α(O)=4.32×10^{-5} 6; α(P)=3.30×10^{-6} 5
318.00	5/2+	76.0[&] 2	11.6[&] 11	241.99	5/2+				
		183.8[&] 2	100[&] 10	134.20	3/2+	M1		0.215	α(K)=0.184 3; α(L)=0.0248 4; α(M)=0.00519 8; α(N+..)=0.001353 20 α(N)=0.001152 17; α(O)=0.000187 3; α(P)=1.415×10^{-5} 21
		318.0[&] 2	77[&] 7	0.0	1/2+				
465.18	1/2+	147.2[&] 2	3.3[&] 3	318.00	5/2+				
		149.6[&] 2	10.3[&] 10	315.69	3/2+				
		223.2[&] 2	8.9[&] 8	241.99	5/2+	E2		0.1273	α(K)=0.0984 14; α(L)=0.0227 4; α(M)=0.00493 8; α(N+..)=0.001236 18 α(N)=0.001070 16; α(O)=0.0001594 23; α(P)=6.17×10^{-6} 9
		330.9[&] 2	84[&] 8	134.20	3/2+	M1		0.0446	α(K)=0.0382 6; α(L)=0.00507 8; α(M)=0.001059 15; α(N+..)=0.000276 4 α(N)=0.000235 4; α(O)=3.82×10^{-5} 6; α(P)=2.92×10^{-6} 5
		465.2[&] 2	100[&] 10	0.0	1/2+	M1		0.0186	α(K)=0.01597 23; α(L)=0.00210 3; α(M)=0.000438 7; α(N+..)=0.0001141 16 α(N)=9.71×10^{-5} 14; α(O)=1.578×10^{-5} 23; α(P)=1.215×10^{-6} 17

$^{133}_{58}Ce_{75}$-7

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
496.75	(1/2,3/2,5/2)$^+$	178.8[&] *2*	5.2[&] *7*	318.00	5/2$^+$				
		254.8[&] *2*	5.9[&] *7*	241.99	5/2$^+$				
		362.5[&] *2*	100[&] *10*	134.20	3/2$^+$	M1		0.0352	α(K)=0.0301 *5*; α(L)=0.00399 *6*; α(M)=0.000834 *12*; α(N+..)=0.000217 *3* α(N)=0.000185 *3*; α(O)=3.00×10^{-5} *5*; α(P)=2.30×10^{-6} *4*
		496.4[&] *2*	54[&] *5*	0.0	1/2$^+$				
570.4	7/2$^+$	253.0 *5*	84 *10*	318.00	5/2$^+$	(M1)		0.0905	α(K)=0.0774 *12*; α(L)=0.01037 *16*; α(M)=0.00217 *4*; α(N+..)=0.000565 *9* α(N)=0.000481 *8*; α(O)=7.80×10^{-5} *12*; α(P)=5.94×10^{-6} *9* I$_\gamma$: Note that Iγ=45 *15* in ^{120}Sn(^{16}O,3nγ).
		436.1 *5*	100 *10*	134.20	3/2$^+$	(E2)		0.01579	α(K)=0.01307 *19*; α(L)=0.00215 *4*; α(M)=0.000456 *7*; α(N+..)=0.0001166 *17* α(N)=0.0001001 *15*; α(O)=1.558×10^{-5} *23*; α(P)=9.06×10^{-7} *13*
592.1	13/2$^-$	384.7 *3*	100	207.4	11/2$^-$	M1+E2	−0.25 *13*	0.0297 *7*	α(K)=0.0254 *6*; α(L)=0.00341 *5*; α(M)=0.000712 *11*; α(N+..)=0.000185 *3* α(N)=0.0001580 *23*; α(O)=2.56×10^{-5} *4*; α(P)=1.93×10^{-6} *6* B(M1)(W.u.)=0.047 *5*; B(E2)(W.u.)=13 *13*
		554.9 *4*	37 *4*	37.2	9/2$^-$	(E2)		0.00816 *12*	α(K)=0.00684 *10*; α(L)=0.001040 *15*; α(M)=0.000220 *4*; α(N+..)=5.64×10^{-5} *8* α(N)=4.83×10^{-5} *7*; α(O)=7.61×10^{-6} *11*; α(P)=4.85×10^{-7} *7* B(E2)(W.u.)=12.8 *16* I$_\gamma$: Note that Iγ=20 *4* in ^{120}Sn(^{16}O,3nγ).
621.18	3/2$^-$	124.4[&] *2*	2.5[&] *13*	496.75	(1/2,3/2,5/2)$^+$				
		303.0[&] *2*	100[&] *10*	318.00	5/2$^+$	E1		0.01214	α(K)=0.01042 *15*; α(L)=0.001360 *20*; α(M)=0.000283 *4*; α(N+..)=7.30×10^{-5} *11* α(N)=6.24×10^{-5} *9*; α(O)=9.97×10^{-6} *14*; α(P)=7.07×10^{-7} *10*
		379.3[&] *2*	29[&] *3*	241.99	5/2$^+$				
		487.1[&] *2*	26[&] *3*	134.20	3/2$^+$				
		621.4[&] *2*	16.3[&] *13*	0.0	1/2$^+$				
656.64	1/2$^+$,3/2,5/2$^+$	340.9[&] *2*	44[&] *6*	315.69	3/2$^+$				
		414.5[&] *2*	56[&] *6*	241.99	5/2$^+$				

$^{133}_{58}Ce_{75}$-8

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
656.64	1/2$^+$,3/2,5/2$^+$	522.6[&] 2	100[&] 11	134.20	3/2$^+$				
		656.7[&] 2	72[&] 6	0.0	1/2$^+$				
779.33	(3/2,5/2)$^+$	158.4[&] 2	5.1[&] 9	621.18	3/2$^-$				
		314.2[&] 2	38[&] 3	465.18	1/2$^+$				
		461.2[&] 2	21.4[&] 17	318.00	5/2$^+$				
		463.4[&] 2	8.6[&] 9	315.69	3/2$^+$				
		537.3[&] 2	51[&] 5	241.99	5/2$^+$	M1		0.01298	α(K)=0.01114 16; α(L)=0.001457 21; α(M)=0.000304 5; α(N+..)=7.92×10^{-5} 12 α(N)=6.74×10^{-5} 10; α(O)=1.096×10^{-5} 16; α(P)=8.45×10^{-7} 12
		645.2[&] 2	100[&] 10	134.20	3/2$^+$	(E2)		0.00555 8	α(K)=0.00468 7; α(L)=0.000684 10; α(M)=0.0001439 21; α(N+..)=3.71×10^{-5} 6 α(N)=3.17×10^{-5} 5; α(O)=5.03×10^{-6} 7; α(P)=3.35×10^{-7} 5
		779.4[&] 2	22[&] 3	0.0	1/2$^+$				
787.62		290.6[&] 2	<71[&]	496.75	(1/2,3/2,5/2)$^+$				
		653.7[&] 2	100[&]	134.20	3/2$^+$				
815.6	9/2$^+$	246[ca]		570.4	7/2$^+$				
		497.3 4	100	318.00	5/2$^+$				
827.0	15/2$^-$	234.9 4	22.6 23	592.1	13/2$^-$	M1+E2	−0.07 7	0.1104 17	B(M1)(W.u.)=0.12 4; B(E2)(W.u.)=7 +14−7 α(K)=0.0943 14; α(L)=0.01270 21; α(M)=0.00266 5; α(N+..)=0.000692 12 α(N)=0.000589 10; α(O)=9.55×10^{-5} 15; α(P)=7.25×10^{-6} 11
		619.7 3	100 10	207.4	11/2$^-$	(E2)		0.00614 9	B(E2)(W.u.)=47 13 α(K)=0.00517 8; α(L)=0.000763 11; α(M)=0.0001607 23; α(N+..)=4.14×10^{-5} 6 α(N)=3.54×10^{-5} 5; α(O)=5.61×10^{-6} 8; α(P)=3.69×10^{-7} 6
834.80	(1/2,3/2,5/2$^+$)	700.5[&] 2	96[&] 8	134.20	3/2$^+$				
		834.9[&] 2	100[&] 8	0.0	1/2$^+$				
902.68?		281.5[&] 2	100[&]	621.18	3/2$^-$				
1005.56	(1/2$^+$,3/2,5/2$^+$)	687.8[&] 2	<38.1[&]	318.00	5/2$^+$				
		689.7[&] 2	100[&] 10	315.69	3/2$^+$				
		1005.5[&] 2	33.3[&] 24	0.0	1/2$^+$				

$^{133}_{58}Ce_{75}$-9

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
1116.18?		495.0[&] *2*	100[&]	621.18	3/2$^-$				
1200.4	15/2$^-$	608.5 *4*	100	592.1	13/2$^-$	(M1+E2)		0.0080 *16*	α(K)=0.0068 *14*; α(L)=0.00093 *14*; α(M)=0.00020 *3*; α(N+..)=5.1×10^{-5} *8* α(N)=4.3×10^{-5} *7*; α(O)=7.0×10^{-6} *11*; α(P)=5.0×10^{-7} *12*
1200.7	11/2$^+$	385		815.6	9/2$^+$				
		630.5 *5*		570.4	7/2$^+$				
1335.18?		714.0[&] *2*	100[&]	621.18	3/2$^-$				
1343.5	17/2$^-$	516.8 *4*	69 *7*	827.0	15/2$^-$	M1+E2	−0.45 *9*	0.0136 *4*	α(K)=0.0116 *3*; α(L)=0.00155 *3*; α(M)=0.000324 *6*; α(N+..)=8.43×10^{-5} *16* α(N)=7.19×10^{-5} *14*; α(O)=1.162×10^{-5} *23*; α(P)=8.73×10^{-7} *24* B(M1)(W.u.)>0.072; B(E2)(W.u.)>25
		751.2 *4*	100 *9*	592.1	13/2$^-$	E2		0.00384 *6*	B(E2)(W.u.)>49 α(K)=0.00326 *5*; α(L)=0.000459 *7*; α(M)=9.64×10^{-5} *14*; α(N+..)=2.49×10^{-5} *4* α(N)=2.13×10^{-5} *3*; α(O)=3.39×10^{-6} *5*; α(P)=2.34×10^{-7} *4*
1445.1	13/2$^+$	246[c]		1200.7	11/2$^+$				
		629.4 *5*	100	815.6	9/2$^+$	(E2)		0.00590 *9*	α(K)=0.00498 *7*; α(L)=0.000731 *11*; α(M)=0.0001540 *22*; α(N+..)=3.97×10^{-5} *6* α(N)=3.39×10^{-5} *5*; α(O)=5.38×10^{-6} *8*; α(P)=3.55×10^{-7} *5*
1521.01?		1386.8[&] *2*	100[&]	134.20	3/2$^+$				
1573.35?		1076.6[&] *2*	100[&]	496.75	(1/2,3/2,5/2)$^+$				
1589.9	19/2$^-$	246.5 *4*	22.1 *23*	1343.5	17/2$^-$	M1+E2		0.094 *3*	α(K)=0.077 *6*; α(L)=0.0133 *23*; α(M)=0.0028 *6*; α(N+..)=0.00073 *12* α(N)=0.00062 *11*; α(O)=9.7×10^{-5} *13*; α(P)=5.5×10^{-6} *9*
		762.7 *3*	100 *10*	827.0	15/2$^-$	E2		0.00370 *6*	B(E2)(W.u.)>62 α(K)=0.00314 *5*; α(L)=0.000442 *7*; α(M)=9.28×10^{-5} *13*; α(N+..)=2.40×10^{-5} *4* α(N)=2.05×10^{-5} *3*; α(O)=3.27×10^{-6} *5*; α(P)=2.26×10^{-7} *4*
1881.30		1639.3[&] *2*	100[&] *20*	241.99	5/2$^+$				
		1747.1[&] *2*	80[&] *20*	134.20	3/2$^+$				
1897.6	15/2$^+$	697.0 *5*	<36	1200.7	11/2$^+$				
		1305.4 *5*	100 *9*	592.1	13/2$^-$				
1932.1	15/2$^+$	731.0 *5*	100	1200.7	11/2$^+$				
2096.4	17/2$^+$	164.0 *5*	<6	1932.1	15/2$^+$	[M1]		0.294	α(K)=0.251 *5*; α(L)=0.0340 *6*; α(M)=0.00713 *12*; α(N+..)=0.00186 *3* α(N)=0.00158 *3*; α(O)=0.000256 *5*; α(P)=1.94×10^{-5} *4* B(M1)(W.u.)=0.03 *3*

$^{133}_{58}Ce_{75}$-10

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
2096.4	17/2$^+$	198.8 *4*	33 *3*	1897.6	15/2$^+$	(M1)		0.173	α(K)=0.1481 *23*; α(L)=0.0200 *3*; α(M)=0.00418 *7*; α(N+..)=0.001090 *17* α(N)=0.000928 *14*; α(O)=0.0001504 *23*; α(P)=1.141×10^{-5} *18* B(M1)(W.u.)=0.16 *3*
		651.5 *5*		1445.1	13/2$^+$	(E2)		0.00542 *8*	α(K)=0.00457 *7*; α(L)=0.000666 *10*; α(M)=0.0001402 *20*; α(N+..)=3.61×10^{-5} *6* α(N)=3.09×10^{-5} *5*; α(O)=4.90×10^{-6} *7*; α(P)=3.27×10^{-7} *5*
		896.4 *5*	17.0 *19*	1200.4	15/2$^-$	[E1]		0.001042 *15*	α(K)=0.000900 *13*; α(L)=0.0001125 *16*; α(M)=2.33×10^{-5} *4*; α(N+..)=6.07×10^{-6} α(N)=5.17×10^{-6} *8*; α(O)=8.37×10^{-7} *12*; α(P)=6.39×10^{-8} *9* B(E1)(W.u.)=1.04×10^{-5} *18*
		1269.3 *4*	100 *11*	827.0	15/2$^-$	[E1]		0.000610 *9*	α(K)=0.000473 *7*; α(L)=5.85×10^{-5} *9*; α(M)=1.211×10^{-5} *17*; α(N+..)=6.58×10^{-5} *10* α(N)=2.68×10^{-6} *4*; α(O)=4.36×10^{-7} *7*; α(P)=3.37×10^{-8} *5*; α(IPF)=6.26×10^{-5} *9* B(E1)(W.u.)=2.1×10^{-5} *4*
2199.3	21/2$^-$	609.5 *5*	100 *9*	1589.9	19/2$^-$	M1+E2	−0.35 *14*	0.0092 *3*	α(K)=0.0079 *3*; α(L)=0.00103 *3*; α(M)=0.000216 *6*; α(N+..)=5.62×10^{-5} *15* α(N)=4.79×10^{-5} *13*; α(O)=7.76×10^{-6} *21*; α(P)=5.93×10^{-7} *22* I_γ: Note that Iγ=51 *11* in ^{120}Sn(^{16}O,3nγ).
		856.0 *5*	99 *9*	1343.5	17/2$^-$	(E2)		0.00284 *4*	α(K)=0.00242 *4*; α(L)=0.000333 *5*; α(M)=6.97×10^{-5} *10*; α(N+..)=1.80×10^{-5} *3* α(N)=1.540×10^{-5} *22*; α(O)=2.47×10^{-6} *4*; α(P)=1.748×10^{-7} *25*
2297.2	19/2$^+$	200.7 *3*	100 *9*	2096.4	17/2$^+$	M1+E2		0.175 *7*	α(K)=0.141 *4*; α(L)=0.027 *8*; α(M)=0.0058 *18*; α(N+..)=0.0015 *4* α(N)=0.0013 *4*; α(O)=0.00019 *5*; α(P)=9.8×10^{-6} *14*
		365.0		1932.1	15/2$^+$				
		399.4 *5*	<4.3	1897.6	15/2$^+$	(E2)		0.0204	α(K)=0.01676 *25*; α(L)=0.00285 *5*; α(M)=0.000606 *9*; α(N+..)=0.0001545 *23* α(N)=0.0001328 *20*; α(O)=2.06×10^{-5} *3*; α(P)=1.151×10^{-6} *17* B(E2)(W.u.)=6 *6*
		954.0 *4*	48 *5*	1343.5	17/2$^-$	[E1]		0.000924 *13*	α(K)=0.000798 *12*; α(L)=9.96×10^{-5} *14*; α(M)=2.06×10^{-5} *3*; α(N+..)=5.37×10^{-6} *8* α(N)=4.57×10^{-6} *7*; α(O)=7.41×10^{-7} *11*; α(P)=5.67×10^{-8} *8* B(E1)(W.u.)=2.8×10^{-5} *5*
2415.8	(19/2$^+$)	319.6 *5*	<34	2096.4	17/2$^+$				
		518.6 *5*	<34	1897.6	15/2$^+$				
		1071.6 *5*	100 *10*	1343.5	17/2$^-$				
2456.6	21/2$^+$	159.5 *3*	100 *7*	2297.2	19/2$^+$	(M1)		0.318	α(K)=0.271 *4*; α(L)=0.0368 *6*; α(M)=0.00770 *12*;

$^{133}_{58}Ce_{75}$-11

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
								α(N+..)=0.00201 *3* α(N)=0.00171 *3*; α(O)=0.000277 *5*; α(P)=2.09×10^{-5} *4* B(M1)(W.u.)=1.11 *17*
2456.6	21/2$^+$	360.0 *5*		2096.4	17/2$^+$			
2485.9	23/2$^-$	287.4 *8*		2199.3	21/2$^-$			
		896.1 *4*	100 *9*	1589.9	19/2$^-$	(E2)	0.00256 *4*	α(K)=0.00219 *3*; α(L)=0.000298 *5*; α(M)=6.24×10^{-5} *9*; α(N+..)=1.617×10^{-5} *23* α(N)=1.380×10^{-5} *20*; α(O)=2.21×10^{-6} *4*; α(P)=1.582×10^{-7} *23*
2501.8?		(405.4)		2096.4	17/2$^+$			E$_\gamma$: is calculated by evaluators as level energy difference according to level scheme (fig.1 of 1987Ma57).
2621.3	(21/2$^+$)	205.5 *4*	100 *10*	2415.8	(19/2$^+$)	(M1)	0.1584	α(K)=0.1354 *21*; α(L)=0.0183 *3*; α(M)=0.00382 *6*; α(N+..)=0.000995 *15* α(N)=0.000847 *13*; α(O)=0.0001373 *21*; α(P)=1.043×10^{-5} *16*
		1031.5 *5*	<23	1589.9	19/2$^-$			
2646.1	23/2$^+$	189.5 *3*	100 *11*	2456.6	21/2$^+$	(M1)	0.198	α(K)=0.1688 *25*; α(L)=0.0228 *4*; α(M)=0.00477 *7*; α(N+..)=0.001243 *19* α(N)=0.001059 *16*; α(O)=0.000172 *3*; α(P)=1.301×10^{-5} *19*
		349.0 *5*	<3.6	2297.2	19/2$^+$			
2679.3	23/2$^-$	1089.0 *5*	100	1589.9	19/2$^-$	(E2)	0.001683 *24*	α(K)=0.001442 *21*; α(L)=0.000191 *3*; α(M)=3.99×10^{-5} *6*; α(N+..)=1.036×10^{-5} *1* α(N)=8.83×10^{-6} *13*; α(O)=1.423×10^{-6} *20*; α(P)=1.047×10^{-7} *15*
2743.8	(21/2)	446		2297.2	19/2$^+$			
		1154.0 *5*	100	1589.9	19/2$^-$			
2844.9	(23/2)	223.6 *5*	100	2621.3	(21/2$^+$)	(M1)	0.1261 *20*	α(K)=0.1077 *17*; α(L)=0.01449 *23*; α(M)=0.00303 *5*; α(N+..)=0.000790 *12* α(N)=0.000672 *11*; α(O)=0.0001090 *17*; α(P)=8.29×10^{-6} *13*
2881.1	25/2$^+$	235.0 *3*	100 *10*	2646.1	23/2$^+$	(M1+E2)	0.1088 *22*	α(K)=0.089 *6*; α(L)=0.016 *3*; α(M)=0.0033 *7*; α(N+..)=0.00085 *17* α(N)=0.00073 *15*; α(O)=0.000113 *18*; α(P)=6.3×10^{-6} *10*
		424.5 *5*	4.6 *8*	2456.6	21/2$^+$			
2959.5	(23/2)	215.5 *5*	100 *10*	2743.8	(21/2)	(M1)	0.1393 *22*	α(K)=0.1190 *19*; α(L)=0.01603 *25*; α(M)=0.00335 *6*; α(N+..)=0.000873 *14* α(N)=0.000744 *12*; α(O)=0.0001206 *19*; α(P)=9.16×10^{-6} *14*
		503.0 *5*	59 *6*	2456.6	21/2$^+$			
3128.4	(25/2$^+$)	283.5 *4*	100	2844.9	(23/2)	(M1)	0.0669	α(K)=0.0572 *9*; α(L)=0.00764 *11*; α(M)=0.001597 *24*; α(N+..)=0.000416 *6* α(N)=0.000354 *6*; α(O)=5.75×10^{-5} *9*; α(P)=4.39×10^{-6} *7*
3129.1	25/2$^-$	643		2485.9	23/2$^-$			
		930.0 *5*	100	2199.3	21/2$^-$			
3175.7	27/2$^+$	294.6 *4*	100 *10*	2881.1	25/2$^+$	(M1+E2)	0.056 *5*	α(K)=0.047 *6*; α(L)=0.0075 *6*; α(M)=0.00159 *15*; α(N+..)=0.00041 *4* α(N)=0.00035 *3*; α(O)=5.5×10^{-5} *3*; α(P)=3.3×10^{-6} *7*
		529.5 *5*	12.3 *13*	2646.1	23/2$^+$			
3236.0	23/2$^-$	750		2485.9	23/2$^-$			

$^{133}_{58}Ce_{75}$-12

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
3236.1	(25/2)	276.5 *5*	100	2959.5	(23/2)	(M1)		0.0714	α(K)=0.0611 *9*; α(L)=0.00817 *13*; α(M)=0.00171 *3*; α(N+..)=0.000445 *7* α(N)=0.000379 *6*; α(O)=6.15×10^{-5} *10*; α(P)=4.69×10^{-6} *7*
3376.0	25/2$^-$	140.0 *5*	38 *4*	3236.0	23/2$^-$	(M1)		0.457 *8*	α(K)=0.390 *7*; α(L)=0.0530 *10*; α(M)=0.01110 *20*; α(N+..)=0.00289 *5* α(N)=0.00246 *5*; α(O)=0.000399 *7*; α(P)=3.01×10^{-5} *6*
		(247[c])		3129.1	25/2$^-$				
		890.5 *5*	<36	2485.9	23/2$^-$				
		1176.5 *5*	100 *9*	2199.3	21/2$^-$	(E2)		0.001438 *21*	α(K)=0.001230 *18*; α(L)=0.0001616 *23*; α(M)=3.37×10^{-5} *5*; α(N+..)=1.251×10^{-5} α(N)=7.46×10^{-6} *11*; α(O)=1.204×10^{-6} *17*; α(P)=8.94×10^{-8} *13*; α(IPF)=3.76×10^{-6} *7*
3433.0	27/2$^-$	304.0 *5*	<7.8	3129.1	25/2$^-$				
		946.9 *4*	100 *10*	2485.9	23/2$^-$	(E2)		0.00227 *4*	α(K)=0.00194 *3*; α(L)=0.000262 *4*; α(M)=5.48×10^{-5} *8*; α(N+..)=1.421×10^{-5} *20* α(N)=1.212×10^{-5} *17*; α(O)=1.95×10^{-6} *3*; α(P)=1.404×10^{-7} *20*
3434.1	(27/2$^+$)	305.7 *5*	100	3128.4	(25/2$^+$)				
3530.7	27/2$^-$	154.7 *4*	100 *10*	3376.0	25/2$^-$	(M1)		0.346 *6*	α(K)=0.295 *5*; α(L)=0.0401 *7*; α(M)=0.00839 *14*; α(N+..)=0.00219 *4* α(N)=0.00186 *3*; α(O)=0.000301 *5*; α(P)=2.28×10^{-5} *4*
		851.0 *5*	<12.9	2679.3	23/2$^-$				
		1045.4 *5*	54 *5*	2485.9	23/2$^-$	(E2)		0.00183 *3*	α(K)=0.001570 *22*; α(L)=0.000209 *3*; α(M)=4.37×10^{-5} *7*; α(N+..)=1.134×10^{-5} *16* α(N)=9.67×10^{-6} *14*; α(O)=1.557×10^{-6} *22*; α(P)=1.139×10^{-7} *16*
3533.1	29/2$^+$	357.5 *4*	100 *10*	3175.7	27/2$^+$	(M1)		0.0365	α(K)=0.0312 *5*; α(L)=0.00414 *6*; α(M)=0.000864 *13*; α(N+..)=0.000225 *4* α(N)=0.000192 *3*; α(O)=3.11×10^{-5} *5*; α(P)=2.39×10^{-6} *4*
		652.0 *5*	17.7 *19*	2881.1	25/2$^+$				
3571.5	(27/2)	335.5 *5*	100	3236.1	(25/2)				
3771.2	29/2$^-$	240.6 *4*	100 *13*	3530.7	27/2$^-$	M1+E2	−0.03 *8*	0.1035 *16*	α(K)=0.0885 *13*; α(L)=0.01188 *19*; α(M)=0.00248 *4*; α(N+..)=0.000647 *10* α(N)=0.000551 *9*; α(O)=8.94×10^{-5} *14*; α(P)=6.80×10^{-6} *11*
		338.0 *5*	<6	3433.0	27/2$^-$				
3780.6	(29/2$^+$)	346.5 *5*	100	3434.1	(27/2$^+$)	(M1)		0.0395	α(K)=0.0339 *5*; α(L)=0.00449 *7*; α(M)=0.000938 *14*; α(N+..)=0.000245 *4* α(N)=0.000208 *3*; α(O)=3.38×10^{-5} *5*; α(P)=2.59×10^{-6} *4*
3917.7	31/2$^+$	384.5 *4*	100 *10*	3533.1	29/2$^+$	(M1)		0.0302	α(K)=0.0259 *4*; α(L)=0.00342 *5*; α(M)=0.000715 *11*; α(N+..)=0.000186 *3* α(N)=0.0001587 *23*; α(O)=2.58×10^{-5} *4*; α(P)=1.98×10^{-6} *3*

$^{133}_{58}Ce_{75}$-13

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
3917.7	31/2$^+$	742.0 *4*	22.1 *22*	3175.7	27/2$^+$	(E2)		0.00395 *6*	α(K)=0.00335 *5*; α(L)=0.000474 *7*; α(M)=9.95×10^{-5} *14*; α(N+..)=2.57×10^{-5} *4* α(N)=2.20×10^{-5} *3*; α(O)=3.50×10^{-6} *5*; α(P)=2.41×10^{-7} *4*
3971.6	(29/2)	400.1 *5*		3571.5	(27/2)				
4066.1	31/2$^-$	294.9 *4*	100 *11*	3771.2	29/2$^-$	M1+E2	−0.10 *7*	0.0602	α(K)=0.0515 *8*; α(L)=0.00689 *11*; α(M)=0.001440 *22*; α(N+..)=0.000375 *6* α(N)=0.000320 *5*; α(O)=5.18×10^{-5} *8*; α(P)=3.94×10^{-6} *7*
		535.5 *5*	11.3 *15*	3530.7	27/2$^-$				
4212.4?	(31/2$^+$)	432.0[d] *5*	100	3780.6	(29/2$^+$)				
4375.3	33/2$^+$	457.9 *5*		3917.7	31/2$^+$				
		842.4 *5*	100	3533.1	29/2$^+$				
4404.0	(31/2$^-$)	971.0 *5*	100	3433.0	27/2$^-$				
4408.2	33/2$^-$	342.0 *4*	100 *10*	4066.1	31/2$^-$	M1+E2	−0.09 *13*	0.0408 *7*	α(K)=0.0350 *6*; α(L)=0.00465 *7*; α(M)=0.000971 *14*; α(N+..)=0.000253 *4* α(N)=0.000216 *4*; α(O)=3.50×10^{-5} *5*; α(P)=2.67×10^{-6} *6*
		636.9 *4*	20.6 *18*	3771.2	29/2$^-$				
4799.4	35/2$^-$	391.1 *4*	100 *10*	4408.2	33/2$^-$	M1+E2	−0.10 *7*	0.0289 *5*	α(K)=0.0247 *4*; α(L)=0.00327 *5*; α(M)=0.000684 *10*; α(N+..)=0.000178 *3* α(N)=0.0001517 *22*; α(O)=2.46×10^{-5} *4*; α(P)=1.88×10^{-6} *3*
		733.5 *5*	46 *4*	4066.1	31/2$^-$				
4831.4	35/2$^+$	456.5 *4*	100 *10*	4375.3	33/2$^+$	(M1)		0.0195	α(K)=0.01675 *24*; α(L)=0.00220 *4*; α(M)=0.000459 *7*; α(N+..)=0.0001198 *17* α(N)=0.0001019 *15*; α(O)=1.656×10^{-5} *24*; α(P)=1.274×10^{-6} *18*
		913.3 *5*	13.7 *16*	3917.7	31/2$^+$	(E2)		0.00246 *4*	α(K)=0.00210 *3*; α(L)=0.000285 *4*; α(M)=5.97×10^{-5} *9*; α(N+..)=1.546×10^{-5} *22* α(N)=1.319×10^{-5} *19*; α(O)=2.12×10^{-6} *3*; α(P)=1.518×10^{-7} *22*
5215.1	37/2$^-$	415.6 *5*	100 *10*	4799.4	35/2$^-$	(M1)		0.0248	α(K)=0.0212 *3*; α(L)=0.00280 *4*; α(M)=0.000584 *9*; α(N+..)=0.0001524 *22* α(N)=0.0001297 *19*; α(O)=2.11×10^{-5} *3*; α(P)=1.618×10^{-6} *24*
		806.8 *5*	43 *4*	4408.2	33/2$^-$				
5366.0	(37/2$^+$)	535[b]		4831.4	35/2$^+$				
		990		4375.3	33/2$^+$				
5669.8	39/2$^-$	454.4 *5*	100 *10*	5215.1	37/2$^-$				
		870.6 *4*	47.7 *5*	4799.4	35/2$^-$	(E2)		0.00273 *4*	α(K)=0.00233 *4*; α(L)=0.000320 *5*; α(M)=6.69×10^{-5} *10*; α(N+..)=1.732×10^{-5} *25* α(N)=1.478×10^{-5} *21*; α(O)=2.37×10^{-6} *4*; α(P)=1.684×10^{-7} *24*
5876.2	(39/2$^+$)	510[b]		5366.0	(37/2$^+$)				
		1045[b]		4831.4	35/2$^+$				
6149.5	(41/2$^-$)	480[b]		5669.8	39/2$^-$				

$^{133}_{58}Ce_{75}$-14

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
6149.5	(41/2$^-$)	934[b]		5215.1	37/2$^-$			
6665.6	(43/2$^-$)	516[b]		6149.5	(41/2$^-$)			
		996[b]		5669.8	39/2$^-$			
7209.6	(45/2$^-$)	544[b]		6665.6	(43/2$^-$)			
		1060[b]		6149.5	(41/2$^-$)			E_γ: from level energy difference. Eγ=1055 in figure 3 of 1996Ha20.
423.7+x	(31/2$^-$)	423.7 *5*	100	0+x	(27/2$^-$)	[E2]	0.01715	α(K)=0.01417 *21*; α(L)=0.00235 *4*; α(M)=0.000500 *8*; α(N+..)=0.0001277 *19* α(N)=0.0001097 *16*; α(O)=1.705×10^{-5} *25*; α(P)=9.80×10^{-7} *14*
913.1+x	(35/2$^-$)	489.4 *5*	100	423.7+x	(31/2$^-$)	(E2)	0.01144	α(K)=0.00953 *14*; α(L)=0.001504 *22*; α(M)=0.000319 *5*; α(N+..)=8.17×10^{-5} *12* α(N)=7.00×10^{-5} *10*; α(O)=1.097×10^{-5} *16*; α(P)=6.68×10^{-7} *10*
1557.2+x	(39/2$^-$)	644.1 *5*	100	913.1+x	(35/2$^-$)	(E2)	0.00557 *8*	α(K)=0.00470 *7*; α(L)=0.000687 *10*; α(M)=0.0001446 *21*; α(N+..)=3.73×10^{-5} *6* α(N)=3.19×10^{-5} *5*; α(O)=5.05×10^{-6} *8*; α(P)=3.36×10^{-7} *5*
2326.0+x	(43/2$^-$)	768.8 *5*	100	1557.2+x	(39/2$^-$)	(E2)	0.00363 *6*	α(K)=0.00309 *5*; α(L)=0.000433 *7*; α(M)=9.09×10^{-5} *13*; α(N+..)=2.35×10^{-5} *4* α(N)=2.01×10^{-5} *3*; α(O)=3.20×10^{-6} *5*; α(P)=2.22×10^{-7} *4*
3208.0+x		882[c]		2326.0+x	(43/2$^-$)	[E2]	0.00266 *4*	α(K)=0.00226 *4*; α(L)=0.000310 *5*; α(M)=6.48×10^{-5} *9*; α(N+..)=1.679×10^{-5} *24* α(N)=1.433×10^{-5} *20*; α(O)=2.30×10^{-6} *4*; α(P)=1.637×10^{-7} *23*
3214.9+x	(47/2$^-$)	888.9 *5*	100	2326.0+x	(43/2$^-$)	(E2)	0.00261 *4*	B(E2)(W.u.)=33 *4* α(K)=0.00223 *4*; α(L)=0.000304 *5*; α(M)=6.36×10^{-5} *9*; α(N+..)=1.648×10^{-5} *24* α(N)=1.407×10^{-5} *20*; α(O)=2.26×10^{-6} *4*; α(P)=1.610×10^{-7} *23*
4090.0+x		882[c]		3208.0+x				E_γ: 887.4 keV (1998Jo16).
4215.4+x	(51/2$^-$)	1000.5[&] *5*	100[&]	3214.9+x	(47/2$^-$)	[E2]	0.00201 *3*	α(K)=0.001723 *25*; α(L)=0.000231 *4*; α(M)=4.83×10^{-5} *7*; α(N+..)=1.252×10^{-5} *18* α(N)=1.068×10^{-5} *15*; α(O)=1.718×10^{-6} *25*; α(P)=1.249×10^{-7} *18* B(E2)(W.u.)=61 *8* E_γ: 999.3 keV in 1998Jo16.
4982.4+x		892.4 *5*		4090.0+x				
5314.1+x	(55/2$^-$)	1098.7[c] *5*		4215.4+x	(51/2$^-$)	[E2]	0.001652 *24*	α(K)=0.001416 *20*; α(L)=0.000188 *3*; α(M)=3.91×10^{-5} *6*; α(N+..)=1.016×10^{-5} *1* α(N)=8.66×10^{-6} *13*; α(O)=1.395×10^{-6} *20*; α(P)=1.028×10^{-7} *15* B(E2)(W.u.)=63 *7* E_γ: 1097.6 (1998Jo16).
5979.7+x		997.3 *5*		4982.4+x				

$^{133}_{58}Ce_{75}$-15

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	E_f	J_f^π	Mult.[@]	α[†]	Comments
6502.4+x	(59/2$^-$)	1188.3 *5*	5314.1+x	(55/2$^-$)	[E2]	0.001410 *20*	α(K)=0.001206 *17*; α(L)=0.0001582 *23*; α(M)=3.30×10^{-5} *5*; α(N+..)=1.342×10^{-5} α(N)=7.30×10^{-6} *11*; α(O)=1.178×10^{-6} *17*; α(P)=8.76×10^{-8} *13*; α(IPF)=4.86×10^{-6} *9* B(E2)(W.u.)=41 *4*
7078.4+x		1098.7[c] *5*	5979.7+x				
7777.6+x	(63/2$^-$)	1275.2 *5*	6502.4+x	(59/2$^-$)			
8268.4+x		1190.0	7078.4+x				
9133.9+x	(67/2$^-$)	1356.3 *5*	7777.6+x	(63/2$^-$)			
9504.8+x		1236.4 *5*	8268.4+x				
9580.7+x		1312.3 *5*	8268.4+x				E_γ: 1319 in figure 3 of 1996Ha20.
10559.2+x	(71/2$^-$)	1425.3 *5*	9133.9+x	(67/2$^-$)			
10698.8+x		1194.0 *5*	9504.8+x				
10960.7+x		1380.0 *5*	9580.7+x				
11989.2+x		1290.4 *5*	10698.8+x				
12061.3+x	(75/2$^-$)	1502.0 *5*	10559.2+x	(71/2$^-$)			
12461.0+x		1500.2[c#] *5*	10960.7+x				
13384.6+x		1395.3 *5*	11989.2+x				
14884.8+x		1500.2[c] *5*	13384.6+x				
16492.1+x		1607.3 *5*	14884.8+x				
18203+x		1711.1 *5*	16492.1+x				
20028+x?		1824.9[d] *5*	18203+x				
966.3+y		966.3 *5*	0+y				
2028.1+y		1061.8 *5*	966.3+y				
3184.3+y		1156.2 *5*	2028.1+y				
4425.0+y		1240.7 *5*	3184.3+y				
5625.7+y		1200.7 *5*	4425.0+y				
5732.0+y?		1307[d]	4425.0+y				
6899.7+y		1274.0 *5*	5625.7+y				
8277.0+y		1377.3 *5*	6899.7+y				
9759.8+y		1482.8 *5*	8277.0+y				
11351.5+y		1591.6 *5*	9759.8+y				
13051.9+y		1700.4 *5*	11351.5+y				
14831.2+y		1779.3 *5*	13051.9+y				
16687.2+y?		1856[d]	14831.2+y				
703.5+z		703.5 *5*	0+z				
1475.2+z		771.7	703.5+z				
2356.5+z		881.3 *5*	1475.2+z				
3342.9+z		986.4 *5*	2356.5+z				
4422.0+z		1079.1 *5*	3342.9+z				
5590.1+z		1168.1 *5*	4422.0+z				

$^{133}_{58}Ce_{75}$-16

Adopted Levels, Gammas (continued)

γ(^{133}Ce) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π
6832.2+z		1242.1 *5*		5590.1+z	
8003.6+z		1171.4 *5*		6832.2+z	
8152.2+z		1320		6832.2+z	
9226.1+z		1222.5 *5*		8003.6+z	
9537.2+z		1385[d]		8152.2+z	
10562.6+z		1336.5 *5*		9226.1+z	
11998.7+z		1436		10562.6+z	
774.2+u		774.2 *5*		0+u	
1634.5+u		860.3 *5*		774.2+u	
2600.2+u		965.7 *5*		1634.5+u	
3663.0+u		1062.8 *5*		2600.2+u	
4815.6+u		1152.6 *5*		3663.0+u	
6059.8+u		1244.2 *5*		4815.6+u	
7401.1+u		1341.3 *5*		6059.8+u	
8840.4+u		1439.3 *5*		7401.1+u	
748.30+r	J+2	748.30 *11*	100	0+r	(43/2)
1557.43+r	J+4	809.13 *3*	100	748.30+r	J+2
2430.30+r	J+6	872.86 *5*	100	1557.43+r	J+4
3367.57+r	J+8	937.27 *9*	100	2430.30+r	J+6
4370.61+r	J+10	1003.03 *7*	100	3367.57+r	J+8
5438.17+r	J+12	1067.56 *6*	100	4370.61+r	J+10
6570.44+r	J+14	1132.26 *6*	100	5438.17+r	J+12
7768.83+r	J+16	1198.39 *10*	100	6570.44+r	J+14
9035.44+r	J+18	1266.60 *6*	100	7768.83+r	J+16
10372.84+r	J+20	1337.40 *8*	100	9035.44+r	J+18
11784.24+r	J+22	1411.39 *8*	100	10372.84+r	J+20
13272.9+r	J+24	1488.63 *9*	100	11784.24+r	J+22
14843.0+r	J+26	1570.09 *8*	100	13272.9+r	J+24
16497.7+r	J+28	1654.70 *12*	100	14843.0+r	J+26
18240.7+r	J+30	1743.04 *14*	100	16497.7+r	J+28
20074.2+r	J+32	1833.4 *6*	100	18240.7+r	J+30
22001.7+r	J+34	1927.5 *12*	100	20074.2+r	J+32
720.32+s	J1+2	720.32 *9*	100	0+s	J1≈37/2
1505.75+s	J1+4	785.43 *10*	100	720.32+s	J1+2
2359.98+s	J1+6	854.22 *7*	100	1505.75+s	J1+4
3280.27+s	J1+8	920.29 *7*	100	2359.98+s	J1+6
4267.19+s	J1+10	986.92 *8*	100	3280.27+s	J1+8
5319.39+s	J1+12	1052.19 *7*	100	4267.19+s	J1+10
6437.62+s	J1+14	1118.23 *8*	100	5319.39+s	J1+12
7621.96+s	J1+16	1184.33 *9*	100	6437.62+s	J1+14
8875.16+s	J1+18	1253.19 *8*	100	7621.96+s	J1+16
10199.0+s	J1+20	1323.86 *10*	100	8875.16+s	J1+18
11596.9+s	J1+22	1397.89 *11*	100	10199.0+s	J1+20
13072.4+s	J1+24	1475.51 *9*	100	11596.9+s	J1+22
14629.7+s	J1+26	1557.29 *11*	100	13072.4+s	J1+24
16272.7+s	J1+28	1642.98 *21*	100	14629.7+s	J1+26
18004.1+s	J1+30	1731.35 *21*	100	16272.7+s	J1+28
19825.7+s	J1+32	1821.62 *22*	100	18004.1+s	J1+30
21735.7+s	J1+34	1910.00 *20*	100	19825.7+s	J1+32
956.9+t	J2+2	956.9	100	0+t	J2≈45/2
1942.8+t	J2+4	985.9	100	956.9+t	J2+2
2963.3+t	J2+6	1020.5	100	1942.8+t	J2+4
4045.4+t	J2+8	1082.1	100	2963.3+t	J2+6
5193.9+t	J2+10	1148.5	100	4045.4+t	J2+8
6401.5+t	J2+12	1207.6	100	5193.9+t	J2+10
7676+t	J2+14	1274.7	100	6401.5+t	J2+12
9011+t	J2+16	1334.7	100	7676+t	J2+14
10399+t	J2+18	1388.3	100	9011+t	J2+16
11838+t	J2+20	1438.6	100	10399+t	J2+18
13327+t	J2+22	1488.9	100	11838+t	J2+20
14875+t	J2+24	1547.8	100	13327+t	J2+22
16487+t	J2+26	1612.6	100	14875+t	J2+24
18174+t	J2+28	1686.7	100	16487+t	J2+26
19938+t?	J2+30	1764	100	18174+t	J2+28

† Additional information 8.
‡ From ^{119}Sn(^{18}O,4nγ), unless otherwise stated.
# 1502 in figure 3 of 1996Ha20.
@ From α(K)exp, α(L)exp and α(M)exp in ^{133}Pr ε decay (6.5 min), γ(θ) in ^{120}Sn(^{16}O,3nγ), DCO data in ^{119}Sn(^{18}O,4nγ) and the apparent band structures. δ is from 1991Pa04.
& From ^{133}Pr ε decay (6.5 min).
[a] From ^{120}Sn(^{16}O,3nγ).

$^{133}_{58}Ce_{75}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{133}Ce)$ (continued)

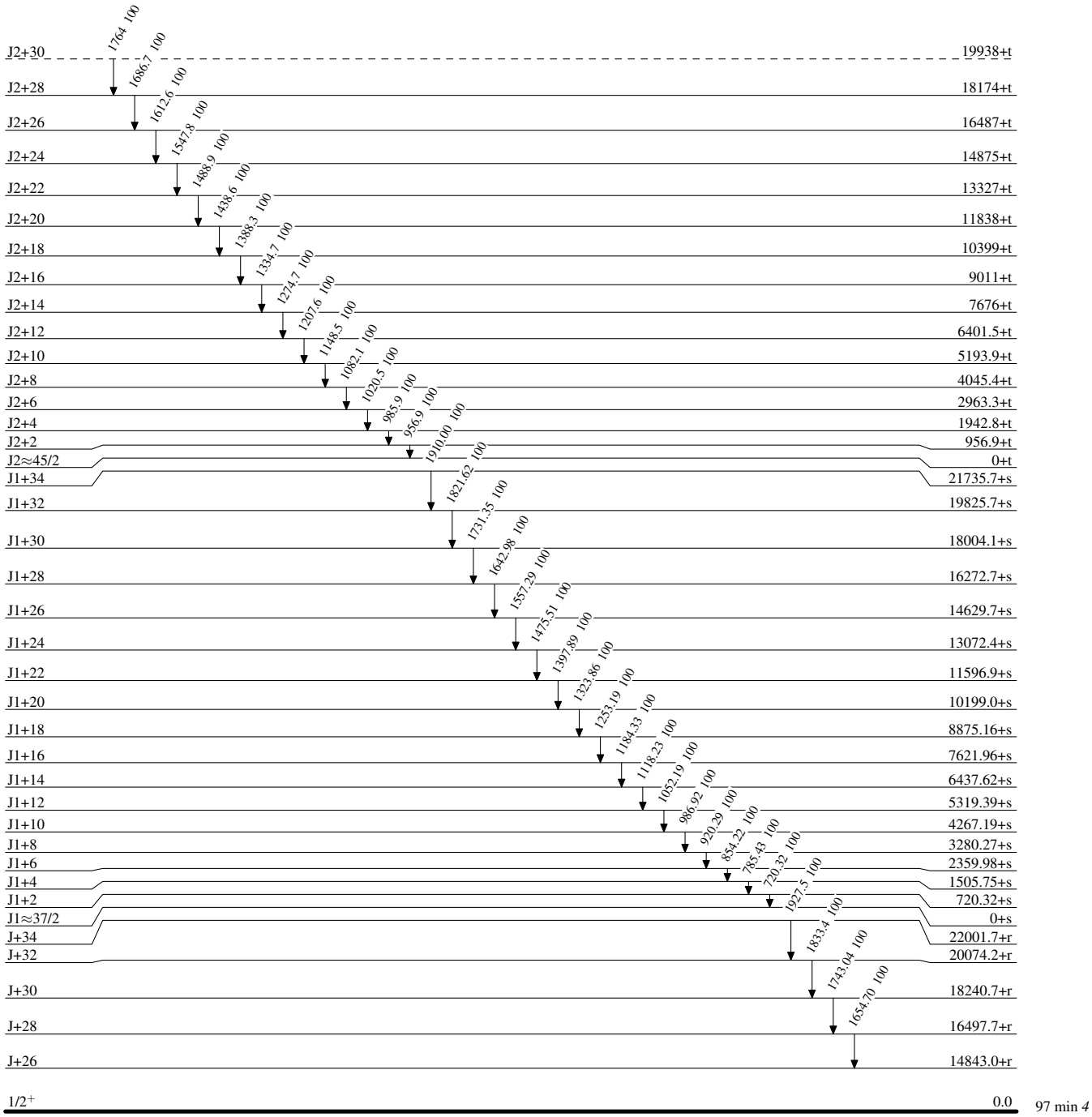
[b] From $^{116}Cd(^{22}Ne,5n\gamma)$.
[c] Multiply placed.
[d] Placement of transition in the level scheme is uncertain.

$^{133}_{58}Ce_{75}$-18

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{133}_{58}Ce_{75}$

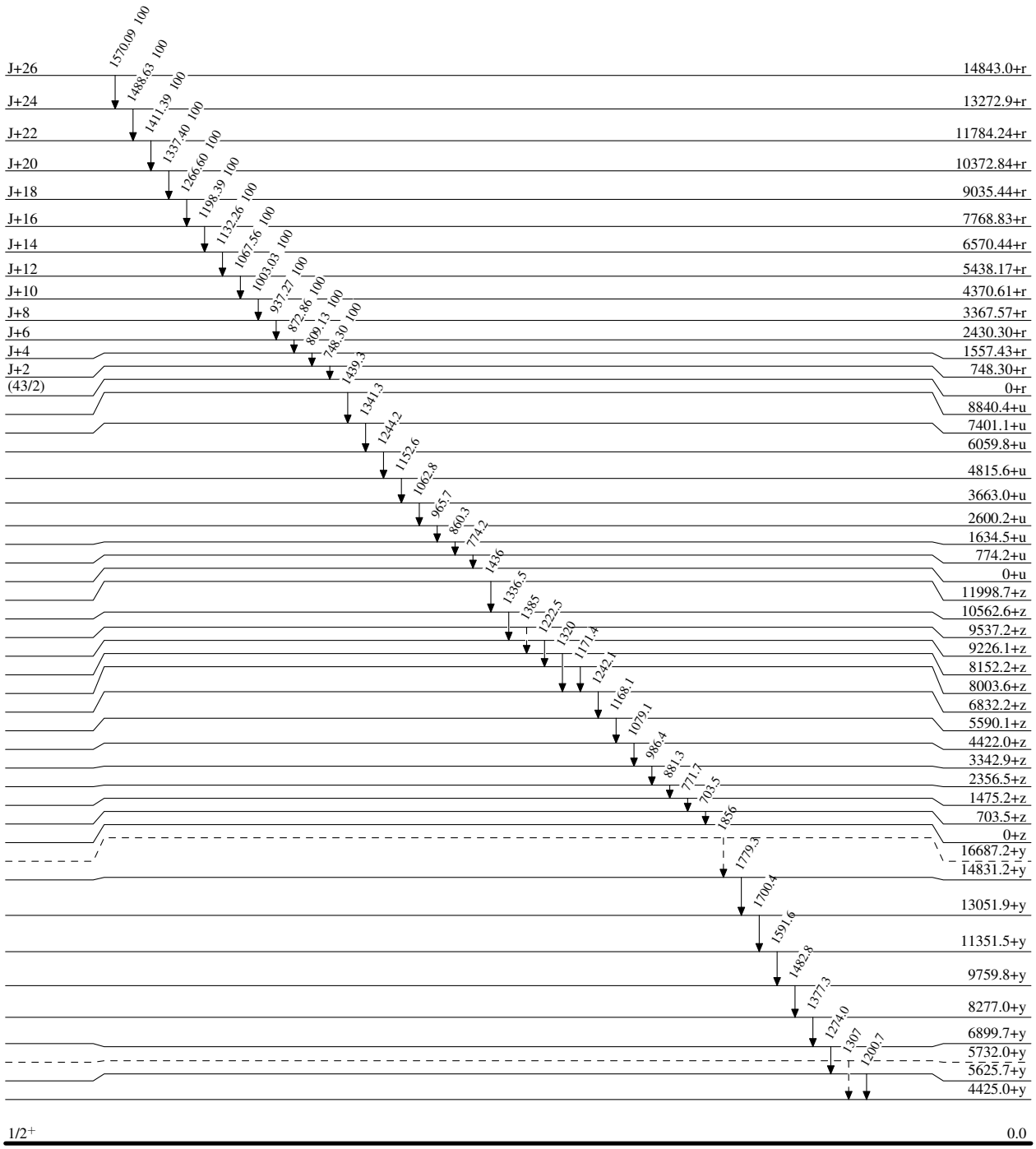
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{133}_{58}Ce_{75}$

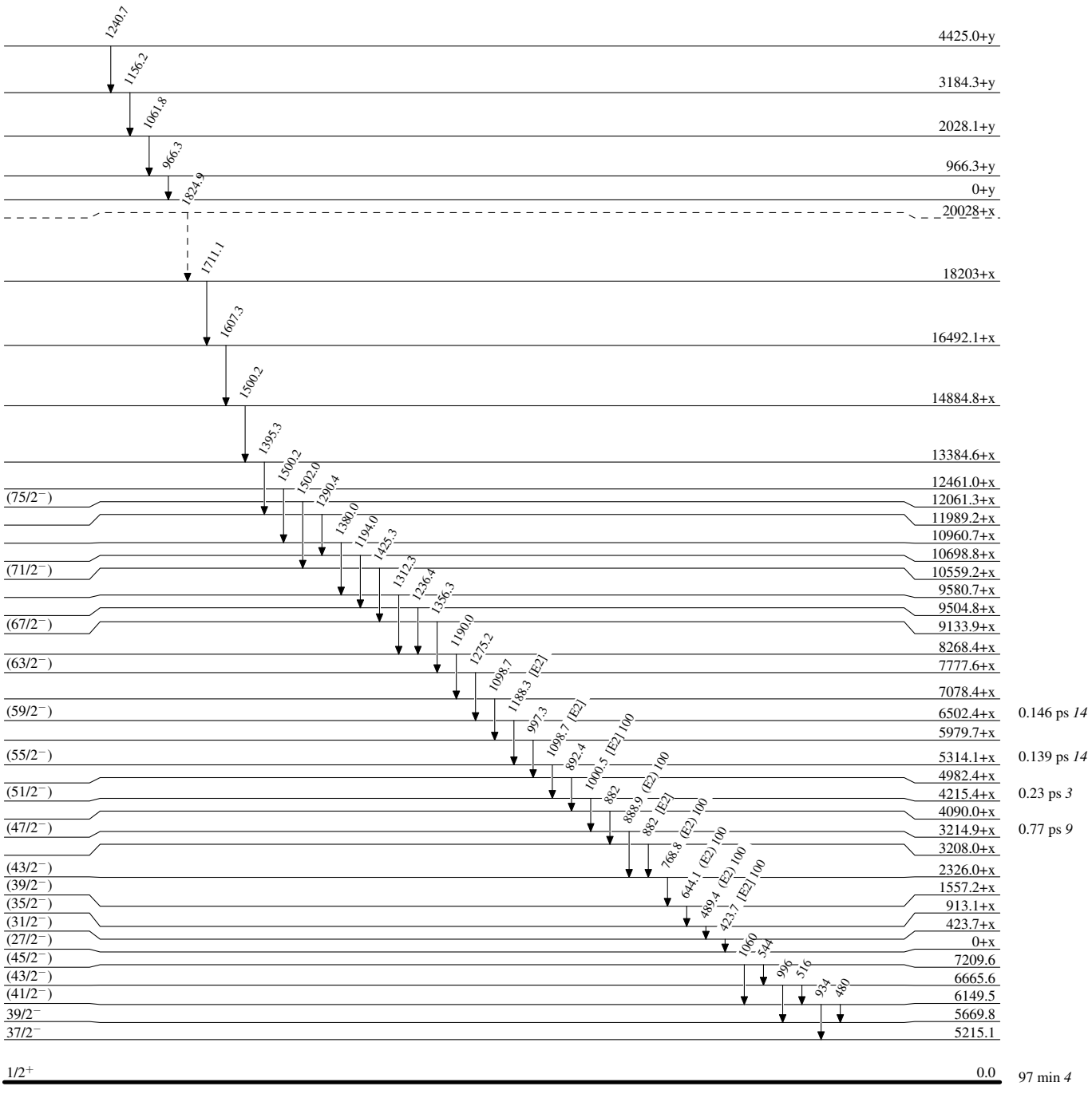
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{133}_{58}Ce_{75}$

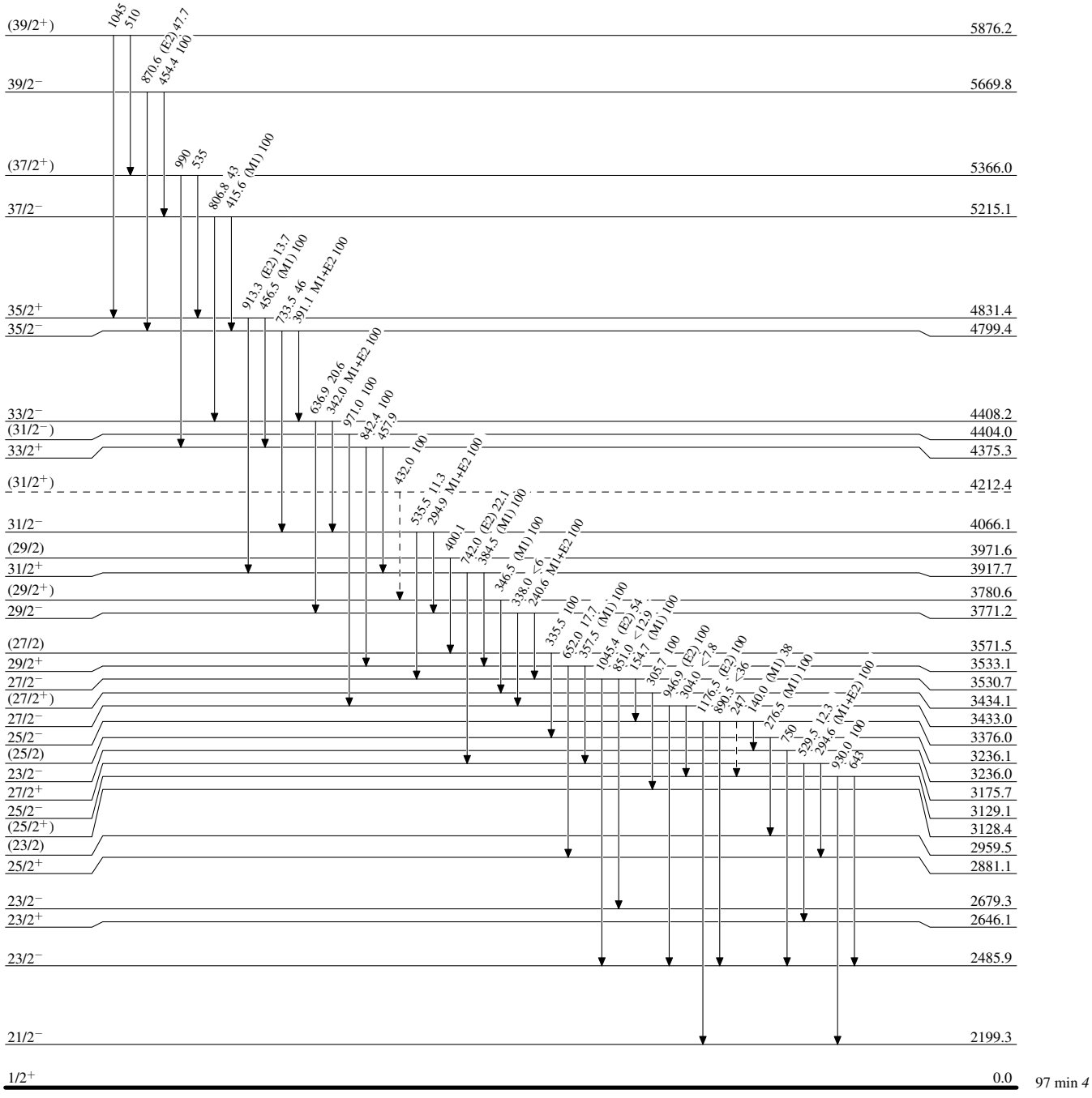
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{133}_{58}Ce_{75}$

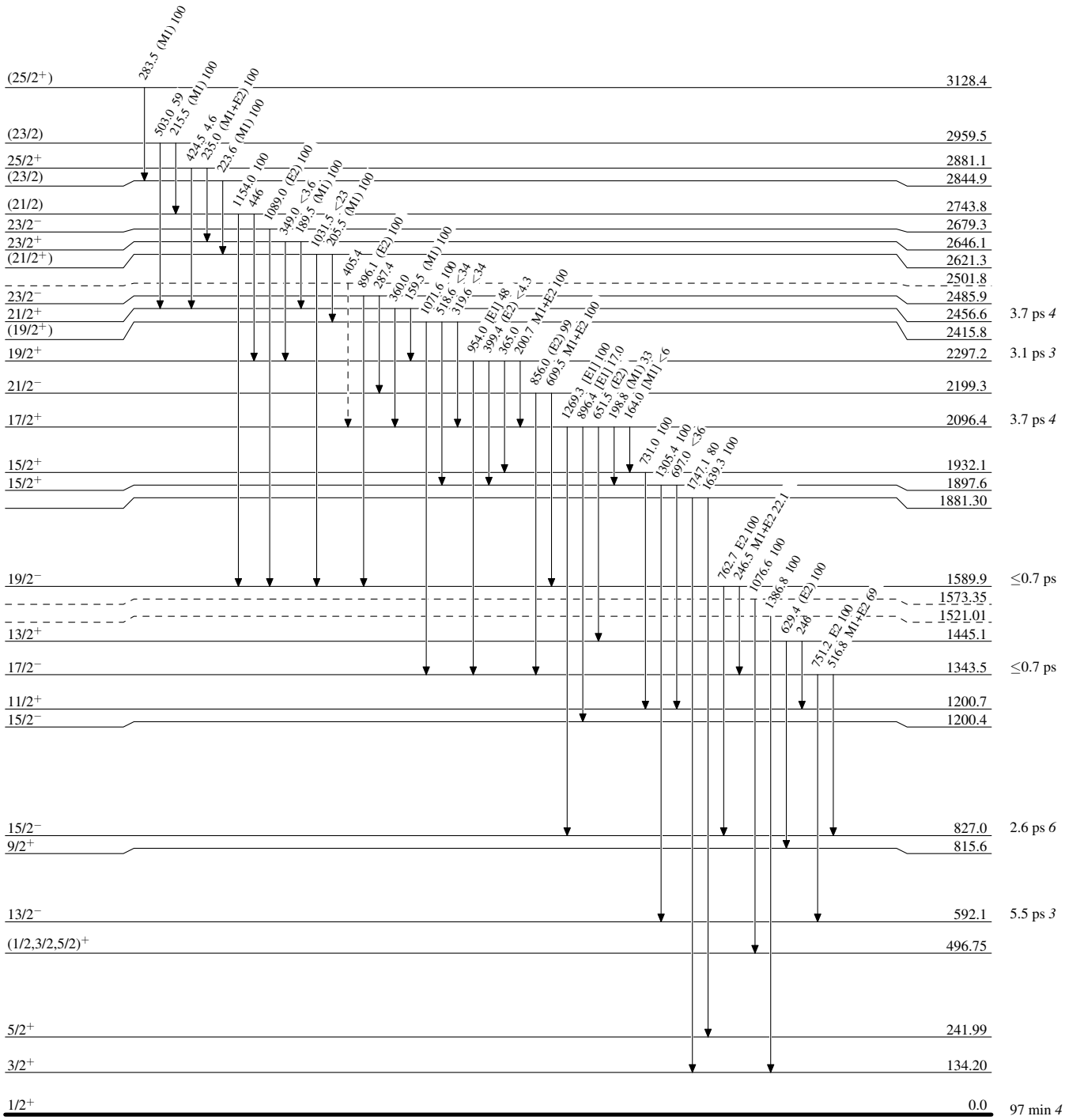
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

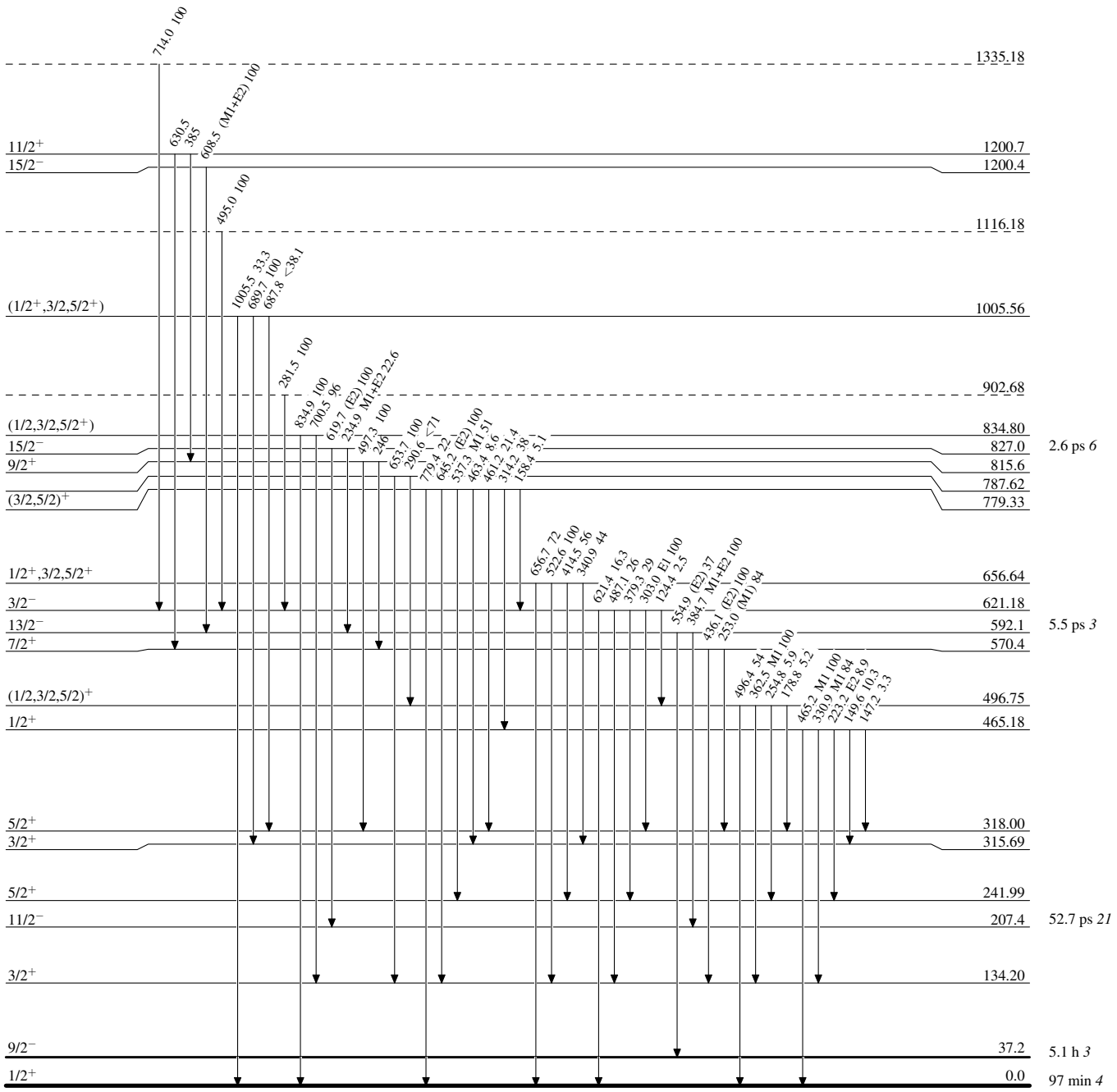


$^{133}_{58}Ce_{75}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

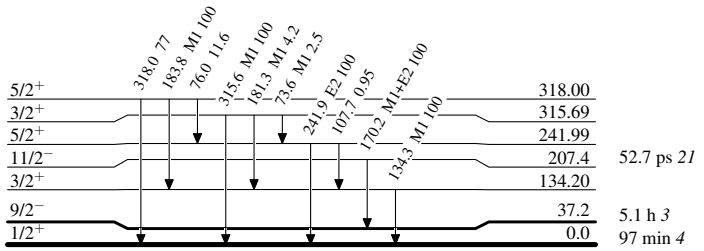


$^{133}_{58}Ce_{75}$

Adopted Levels, Gammas

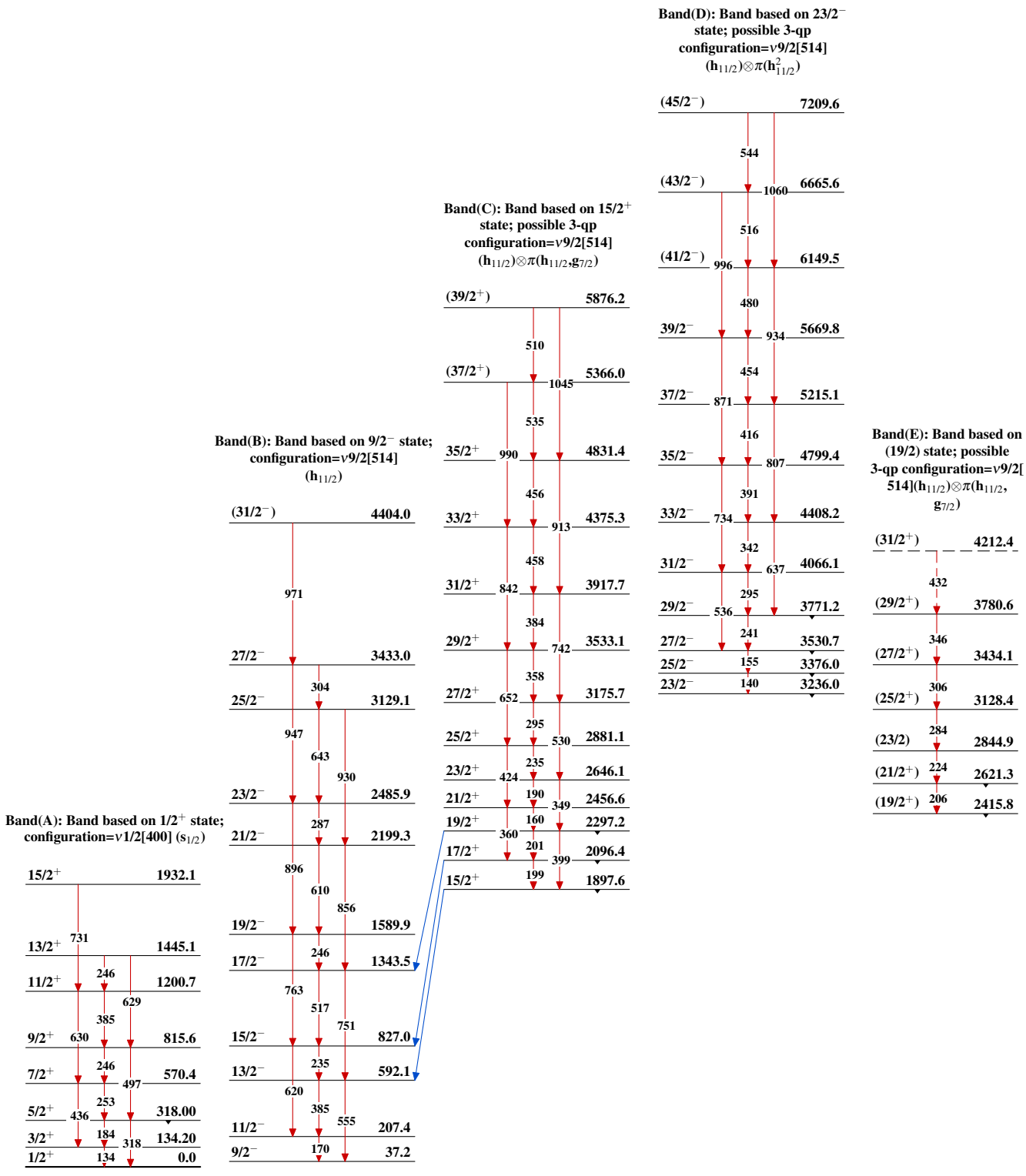
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{133}_{58}Ce_{75}$

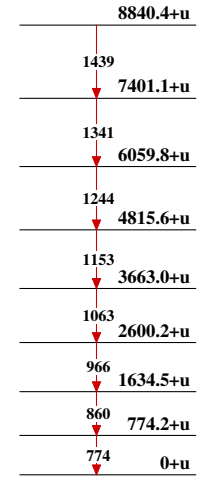
Adopted Levels, Gammas



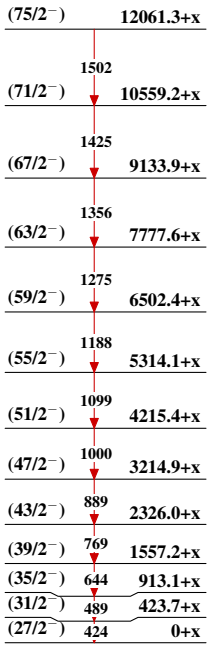
$^{133}_{58}Ce_{75}$

Adopted Levels, Gammas (continued)

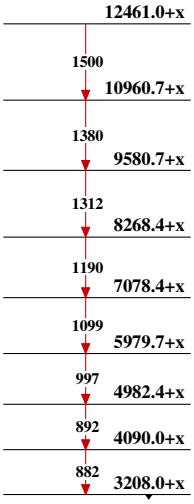
Band(H): Triaxial band; possible 5-qp configuration=$\nu(h^2_{11/2}, s_{1/2})\otimes\pi(h_{11/2}, g_{7/2})$



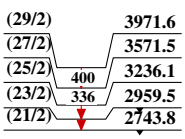
Band(G): Triaxial band based on $(27/2^-)$ state; possible 3-qp configuration=$\nu(h^3_{11/2})$; Q_t=2.2 *1*, β_2=0.186 *7*, γ=−83° (1998Jo16)



Band(I): Triaxial band; possible 5-qp configuration=$\nu(h^3_{11/2})\otimes\pi(h^2_{11/2})$



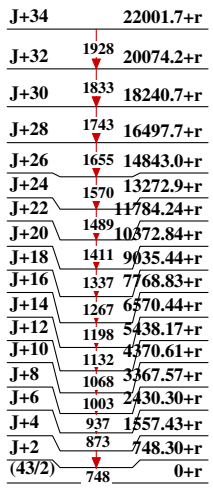
Band(F): Band based on (21/2) state; possible 3-qp configuration=ν9/2[514]$(h_{11/2})\otimes\pi(h_{11/2}, g_{7/2})$



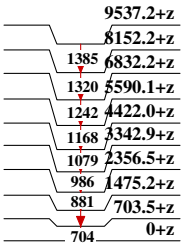
$^{133}_{58}Ce_{75}$

Adopted Levels, Gammas (continued)

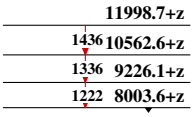
Band(O): SD-1 band based on (43/2) state; possible configuration= ν1/2[530] coupled to ($\pi 5^4 \nu 6^2$)



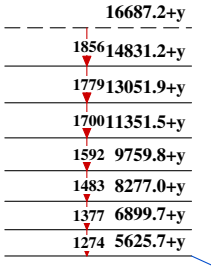
Band(J): Triaxial band; possible 5-qp configuration=ν($h^3_{11/2}$)$\otimes\pi$($h^2_{11/2}$)



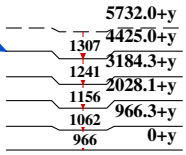
Band(L): Triaxial band; possible 7-qp configuration=ν($h^3_{11/2}$)$\otimes\pi$($h^2_{11/2}$, $g^2_{7/2}$)



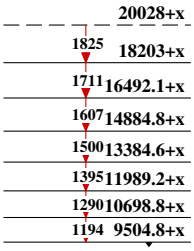
Band(M): Triaxial band; possible 7-qp configuration= ν($h^2_{11/2}$, $s_{1/2}$)$\otimes\pi$($h^2_{11/2}$, $g^2_{7/2}$)



Band(N): Rotational level sequence



Band(K): Triaxial band; possible 7-qp configuration=ν($h^3_{11/2}$)$\otimes\pi$($h^2_{11/2}$, $g^2_{7/2}$)



Adopted Levels, Gammas (continued)