Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

Q(β^-)=−6.60×10^3 *3*; S(n)=9.96×10^3 *4*; S(p)=5.76×10^3 *3*; Q(α)=2.67×10^3 *3* 2017Wa10
Q(ε)=8.8×10^2 *4*; S(2n)=1.723×10^4 *4*; S(2p)=9.35×10^3 *3* 2017Wa10
Additional information 1.
Additional information 2.

^{158}Er Levels

Additional information 3.
The K^π=0$^+$ β-vibrational band and the 3rd positive-parity, signature=0 band in (HI,xnγ) dataset share levels 6$^+$, 8$^+$, and 10$^+$ having same excitation energies and decay patterns. The first band has lower 0$^+$, 2$^+$, and 4$^+$ levels also assigned to this band in ^{158}Tm ε decay dataset and continues with higher 12$^+$ to 18$^+$ levels, while the second band terminates at 10$^+$ level. The evaluator adopted the common 6$^+$, 8$^+$, and 10$^+$ levels for the K^π=0$^+$ β-vibrational band (found by the most recent work, 2013DiZZ) and marked as tentative the three levels and their decay transitions for the 3rd positive-parity, signature=0 band (presuming that the authors of 2013DiZZ considered the previous assignments).

Cross Reference (XREF) Flags

A ^{158}Tm ε decay
B (HI,xnγ)
C ^{114}Cd(^{48}Ca,4nγ):SD

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0[#]	0$^+$	2.29 h *6*	AB	%ε=100 Evaluated RMS charge radius: <r^2>$^{1/2}$=5.1761 fm *312* (2013An02); other: <r^2>=26.78 fm^2 *24* (1993Ba55 and 1991Ho27, both from references cited therein). T$_{1/2}$: Weighted average of 150 min *10* (1961Bo24), 2.25 h *10* (1965St08), 2.4 h *2* (1968Ab14), 2.27 h *18* (1975Ru02,1974RuZX), 2.24 h *10* (1982Vy06, also given as 2.24 h *12* by 1977KaYG); other: 2.4 h (1960Dn01).
192.15[#] *3*	2$^+$	257 ps *18*	AB	μ=0.72 *11* J$^\pi$: From E2 γ to 0$^+$ level. μ: From 2014StZZ compilation and based on data of 1970No01; also given as ≈ 0.72 in 1989Ra17 evaluation based on the same data.
527.22[#] *4*	4$^+$	13.5 ps *4*	AB	J$^\pi$: From E2 γ to 2$^+$ level and expected band structure.
806.38[e] *6*	0$^+$		AB	J$^\pi$: From E0 γ to 0$^+$ level.
820.12[c] *4*	2$^+$		AB	J$^\pi$: From E2 γ to 0$^+$ level.
970.34[#] *5*	6$^+$	2.59 ps *8*	AB	J$^\pi$: From E2 γ to 4$^+$ level and expected band structure.
989.08[e] *5*	2$^+$		AB	J$^\pi$: From E2 γ to 0$^+$ level.
1043.39[b] *5*	3$^+$		AB	J$^\pi$: From E2 γ to 2$^+$ level, M1,E2 γ to 4$^+$, and assumed band structure.
1183.78[c] *6*	4$^+$		AB	J$^\pi$: From E2 γ's to 2$^+$ and expected band structure.
1210.56 *10*	$^+$		A	J$^\pi$: From E2,M1 γ to 2$^+$ level.
1257.28[e] *7*	4$^+$		AB	J$^\pi$: From E0 γ to 4$^+$ level.
1304.94 *17*	2$^+$,3,4$^+$		A	J$^\pi$: From γ's to 2$^+$ and 4$^+$ levels.
1341.93 *6*	3$^-$		A	J$^\pi$: From E1 γ's to 2$^+$ and 4$^+$ levels.
1386.9? *5*	0$^+$		A	J$^\pi$: From E0 γ to 0$^+$ level.
1417.55 *6*	2$^+$		A	J$^\pi$: From E0 γ to 2$^+$ level.
1418.25 *7*	(1$^-$)		A	J$^\pi$: From (E1) γ to 2$^+$ level and γ to 0$^+$.
1426.79 *25*	2$^+$,3,4$^+$		A	J$^\pi$: From γ's to 2$^+$ and 4$^+$ levels.

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Adopted Levels, Gammas (continued)

^{158}Er Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
1438.22[b] *10*	5^+		AB	Jπ: From M1 γ to 4^+ level and expected band structure.
1489.45 *7*	$2^+,3^+$		A	Jπ: From M1 γ to 2^+ level and γ to 4^+ level.
1493.47[#] *6*	8^+	0.94 ps *3*	B	Jπ: From E2 γ to 6^+ level and expected band structure.
1526.27 *6*	$(2,3)^-$		A	Jπ: From E1 γ to 2^+ level and γ's to 0^+ and 4^+; assignment requires M2 to 4^+ or E3 to 0^+.
1570.21 *7*	(2^+)		A	Jπ: From γ's to 0^+ and 4^+ levels.
1589.02?[c] *15*	(6^+)		B	Jπ: From expected band structure and (E2) γ's to 4^+ and 6^+.
1589.5[e] *6*	6^+		B	Jπ: From expected band structure and E2 γ's to 4^+.
1614.45 *9*	(2^-)		A	Jπ: From (E1) γ to 3^+ level and γ to 0^+.
1630.22? *20*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
1640.84 *11*	(2^+)		A	Jπ: From γ's to 0^+ and 4^+ levels.
1674.01 *8*	$(2^+,3)$		A	Jπ: From γ's to (1^-), 2^+, and 4^+ levels.
1686.97 *14*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
1697.94 *12*	$(1^-,2,3)$		A	Jπ: From γ's to 2^+, $(3)^-$, and $(2)^-$ levels.
1700.12 *11*			A	
1742.57 *8*	(2,3,4)		A	Jπ: From γ's to 2^+ and 4^+ levels.
1769.60 *13*			A	
1809.07 *20*	$(2^+,3,4^+)$		A	Jπ: From γ's to 2^+ and 4^+ levels.
1834.64 *13*			A	
1853.00 *17*	$(7^-,8^+)$		B	Jπ: From γ's to 6^+ and 9^- levels.
1913.14[b] *18*	(7^+)		B	Jπ: From expected band structure, (E2) γ to 5^+, and (M1,E2) γ to 6^+.
1977.45? *18*	$(1,2^+)$		A	Jπ: From γ to 0^+.
2018.68?[c] *17*	(8^+)		B	Jπ: From expected band structure and (E2) γ to 6^+ level.
2019.1[e] *7*	8^+		B	Jπ: From expected band structure and E2 γ to 6^+ level.
2029.25 *11*			A	
2059.68 *12*	$(1,2^+)$		A	Jπ: From γ to 0^+ level.
2072.53[#] *7*	10^+	0.68 ps *9*	B	μ=6.0 *4* Jπ: From E2 γ to 8^+ level and expected band structure. μ: From g-factor=0.58 *33* estimated by evaluator from 2001St09.
2143.59? *17*	$(1,2^+)$		A	Jπ: From γ to 0^+ level.
2228.80 *11*	$(2^+,3^+)$		A	Jπ: From (E1) γ to $(2)^-$ level and γ to 4^+.
2272.97[d] *16*	9^-		B	Jπ: From E1 γ to 8^+ level and expected band structure.
2305.15? *14*	$(2^+,3,4^+)$		A	Jπ: From γ's to 2^+ and 4^+ levels.
2333.48[a] *15*	8^-		B	Jπ: From E1 γ to 8^+ level and expected band structure.
2368.33? *20*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
2389.6? *3*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
2431.57[&] *15*	9^-		B	Jπ: From E1 γ to 8^+ level and expected band structure.
2487.38?[c] *23*	(10^+)		B	Jπ: From expected band structure and (E2) γ to (8^+).
2488.0[e] *7*	10^+		B	Jπ: From expected band structure and E2 γ to 8^+.
2569.96[a] *16*	10^-	56 ps *5*	B	Jπ: From E1 γ to 10^+ level, E2 γ to 8^-, and expected band structure.
2673.63? *16*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
2680.79[#] *8*	12^+	0.51 ps *6*	B	Jπ: From E2 γ to 10^+ level and expected band structure.
2731.27[&] *15*	11^-	12.4 ps *+9−11*	B	Jπ: From E1 γ to 10^+ level and expected band structure.
2760.68[d] *17*	11^-		B	Jπ: From E1 γ to 10^+ level and expected band structure.
2881.47[@] *14*	12^+		B	Jπ: From E2 γ to 10^+ level and expected band structure.
2954.66[a] *19*	12^-	7.7 ps *+1−5*	B	Jπ: From E2 γ to 10^- level and expected band structure.
3017.70? *16*	$(1,2^+)$		A	Jπ: From γ's to 0^+ and 2^+ levels.
3109.3[e] *7*	12^+		B	Jπ: From expected band structure and E2 γ to 10^+.
3154.80[&] *17*	13^-	4.7 ps *3*	B	Jπ: From E1 γ to 12^+ level and expected band structure.
3190.51[@] *10*	14^+	2.9 ps *3*	B	μ=0.3 *30* Jπ: From E2 γ to 12^+ level and expected band structure. μ: From g-factor=0.02 *20* estimated by evaluator from plot of 2001St09.

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Adopted Levels, Gammas (continued)

^{158}Er Levels (continued)

E(level)[†]	J^π	$T_{1/2}$[‡]	XREF	Comments
3304.5[d] *3*	(13^-)		B	J^π: From (E1) γ to 12^+ level and expected band structure.
3374.29[#] *20*	14^+		B	J^π: From E2 γ's to 12^+ levels and expected band structure.
3474.8[a] *3*	14^-		B	J^π: From E2 γ to 12^- level and expected band structure.
3663.26[@] *11*	16^+	2.32 ps *14*	B	μ=1.6 *16* J^π: From E2 γ to 14^+ level and expected band structure. μ: From g-factor=0.10 *10* estimated by evaluator from 2001St09.
3668.2[e] *7*	14^+		B	J^π: From E2 γ to 12^+ level and expected band structure.
3695.40[&] *20*	15^-	1.1 ps *+2–3*	B	J^π: From E2 γ to 13^- level and expected band structure.
3906.5[d] *5*	(15^-)		B	J^π: From expected band structure and (E2) γ to (13^-).
4026.1[#] *3*	(16^+)		B	J^π: From expected band structure and (E2) γ to (14^+).
4103.7[a] *4*	(16^-)	0.83 ps *+21–28*	B	J^π: From expected band structure and (E2) γ to (14^-).
4229.54[@] *12*	18^+	0.95 ps *6*	B	μ=0.9 *18* J^π: From E2 γ to 16^+ level and expected band structure. μ: From g-factor=0.04 *10* (2001St09).
4272.4[e] *7*	16^+		B	J^π: From expected band structure and E2 γ to 14^+.
4329.5[&] *3*	(17^-)	0.97 ps *+14–21*	B	J^π: From expected band structure and (E2) γ to 15^-.
4679.5[#] *4*	(18^+)		B	J^π: From expected band structure and γ to (16^+).
4812.8[a] *4*	(18^-)	0.89 ps *+12–17*	B	J^π: From expected band structure and (E2) γ to (16^-).
4888.43[@] *13*	20^+	0.55 ps *8*	B	J^π: From E2 γ to 18^+ level and expected band structure.
4948.9[e] *9*	18^+		B	J^π: From E2 γ to 16^+ level and expected band structure.
5021.8[&] *4*	(19^-)		B	J^π: From expected band structure and (E2) γ to (17^-).
5327.4[#] *4*	(20^+)		B	J^π: From expected band structure and (E2) γ to (18^+).
5538.2[a] *5*	(20^-)		B	J^π: From expected band structure and (E2) γ to (18^-).
5628.85[@] *17*	22^+	0.24 ps *+21–12*	B	J^π: From E2 γ to 20^+ level and expected band structure.
5739.3[&] *4*	(21^-)		B	J^π: From expected band structure and (E2) γ to (19^-).
6026.8[#] *5*	(22^+)		B	J^π: From expected band structure and (E2) γ to (20^+).
6219.7[a] *6*	(22^-)		B	J^π: From expected band structure and (E2) γ to (20^-).
6434.6[@] *5*	24^+		B	J^π: From E2 γ to 22^+ level and expected band structure.
6475.8[&] *5*	(23^-)		B	J^π: From expected band structure and (E2) γ to (21^-).
7000[a,j]	(24^-)		B	
7249.2[&]	(25^-)		B	J^π: From expected band structure and γ to (23^-).
7280.2[@] *5*	26^+		B	J^π: From E2 γ to 24^+ level and expected band structure.
7800[a,j]	(26^-)		B	
8069.8[&]	(27^-)		B	J^π: From expected band structure and γ to (25^-).
8138.6[@] *6*	28^+		B	J^π: From E2 γ to 26^+ level and expected band structure.
8602[a]	(28^-)		B	J^π: From proposed band structure.
8933.6[&]	(29^-)		B	J^π: From expected band structure and γ to (27^-).
9014.2[@] *7*	30^+		B	J^π: From E2 γ to 28^+ level and expected band structure.
9456[a]	(30^-)		B	J^π: From proposed band structure and γ to (28^-).
9474[f]	(30^+)		B	J^π: From expected band structure and γ to (28^+).
9820.0[&]	(31^-)		B	J^π: From expected band structure and γ to (29^-).
9920.4[@] *8*	32^+		B	J^π: From E2 γ to 30^+ level and expected band structure.
10281[f]	(32^+)		B	J^π: From expected band structure and γ to (30^+).
10336[a]	(32^-)		B	J^π: From proposed band structure and γ to (30^-).
10716.8[&]	(33^-)		B	J^π: From expected band structure and γ to (31^-).
10879.5[@] *12*	34^+		B	J^π: From E2 γ to 32^+ level and expected band structure.
11216[f]	(34^+)		B	J^π: From expected band structure and γ to (32^+).

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Adopted Levels, Gammas (continued)

^{158}Er Levels (continued)

E(level)[†]	J^π	XREF	Comments
11234[a]	(34^-)	B	J^π: From proposed band structure and γ to (32^-).
11637.3[&]	(35^-)	B	J^π: From expected band structure and γ to (33^-).
11898.6[@] *15*	36^+	B	J^π: From E2 γ to 34^+ level and expected band structure.
12172[a]	(36^-)	B	J^π: From proposed band structure and γ to (34^-).
12232[f]	(36^+)	B	J^π: From expected band structure and γ to (34^+).
12601.2[&]	(37^-)	B	J^π: From expected band structure and γ to (35^-).
12957.8[@] *21*	38^+	B	J^π: From E2 γ to 36^+ level and expected band structure.
13157[a]	(38^-)	B	J^π: From proposed band structure and γ to (36^-).
13169[f]	(38^+)	B	J^π: From expected band structure and γ to (36^+).
13621.6[&]	(39^-)	B	J^π: From expected band structure and γ to (37^-).
13784.8[f]	(40^+)	B	J^π: From expected band structure and γ to 38^+.
14153[@]	(40^+)	B	J^π: From expected band structure and γ to (38^+).
14183[a]	(40^-)	B	J^π: From proposed band structure and γ to (38^-).
14694.8[&]	(41^-)	B	J^π: From expected band structure and γ to (39^-).
15059[f]	(42^+)	B	J^π: From expected band structure and γ to (40^+).
15194[a]	(42^-)	B	J^π: From proposed band structure and γ to (40^-).
15363[@]	(42^+)	B	J^π: From expected band structure and γ to (40^+).
15683.8[g]	(43^-)	B	J^π: From expected band structure and γ to (41^-).
15873[&]	(43^-)	B	J^π: From expected band structure and γ to (41^-).
16090[f]	(44^+)	B	J^π: From expected band structure and γ to (42^+).
16357[a]	(44^-)	B	J^π: From proposed band structure and γ to (42^-).
16507[@]	(44^+)	B	J^π: From expected band structure and γ to (42^+).
17013[g]	(45^-)	B	J^π: From expected band structure and γ to (43^-).
17061[f]	(46^+)	B	E(level): 1994Si10 suggests that this yrast band terminates at this point and is fed by several weak γ's, including those of 1380, 1454, 1539, 1602, and 1657 keV. J^π: From expected band structure and γ to (44^+).
17121[&]	(45^-)	B	J^π: From expected band structure and γ to (43^-).
17367[a]	(46^-)	B	J^π: From proposed band structure and γ to (44^-).
17659[@]	(46^+)	B	J^π: From expected band structure and γ to (44^+).
18001[g]	(47^-)	B	J^π: From expected band structure and γ to (45^-).
18131[a]	(48^-)	B	J^π: From proposed band structure and γ to (46^-).
18345[&]	(47^-)	B	J^π: From expected band structure and γ to (45^-).
18810[g]	(49^-)	B	J^π: From expected band structure and γ to (47^-).
18869?[@]	(48^+)	B	J^π: From expected band structure and γ to (46^+).
20143?[@]	(50^+)	B	J^π: From expected band structure and γ to (48^+).
x	J≈(23)	C	J^π: ≈65 for the highest level.
724.3+x[h] *5*	J+2	C	
1490.9+x[h] *7*	J+4	C	
2293.2+x[h] *9*	J+6	C	
3134.9+x[h] *10*	J+8	C	
4009.9+x[h] *12*	J+10	C	
4911.4+x[h] *13*	J+12	C	
5844.0+x[h] *14*	J+14	C	
6816.7+x[h] *15*	J+16	C	
7834.3+x[h] *15*	J+18	C	
8898.6+x[h] *16*	J+20	C	
10008.7+x[h] *17*	J+22	C	

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Adopted Levels, Gammas (continued)

^{158}Er Levels (continued)

E(level)†	Jπ	XREF	E(level)†	Jπ	XREF	E(level)†	Jπ	XREF
11165.0+x[h] *18*	J+24	C	22413+x[h] *3*	J+40	C	6386.0+y[i] *25*	J1+12	C
12369.9+x[h] *18*	J+26	C	24115+x[h] *3*	J+42	C	7598+y[i] *3*	J1+14	C
13625.8+x[h] *19*	J+28	C	y	J1	C	8858+y[i] *3*	J1+16	C
14936.1+x[h] *20*	J+30	C	959.0+y[i] *10*	J1+2	C	10167+y[i] *3*	J1+18	C
16305.1+x[h] *20*	J+32	C	1966.0+y[i] *15*	J1+4	C	11527+y[i] *4*	J1+20	C
17735.3+x[h] *21*	J+34	C	3012.0+y[i] *18*	J1+6	C	12943+y[i] *4*	J1+22	C
19226.3+x[h] *23*	J+36	C	4095.0+y[i] *20*	J1+8	C			
20788.3+x[h] *25*	J+38	C	5219.0+y[i] *23*	J1+10	C			

† From least-squares fit to γ energies.
‡ Unless noted otherwise, from (HI,xnγ) dataset by recoil-distance and Doppler-shift methods.
# Band(A): $K^\pi=0^+$ ground-state band.
@ Band(B): S band, positive-parity, signature=0.
& Band(C): Negative-parity, signature=1 band.
a Band(D): Negative-parity, signature=0 band.
b Band(E): Positive-parity, signature=1 band.
c Band(F): 3rd positive-parity, signature=0 band.
d Band(G): 2nd negative-parity, signature=1 band.
e Band(H): $K^\pi=0^+$ β-vibrational band. Terminology and assignment can be reconsidered in view of critique addressed by 2001Ga02 (same observation can also be applied to this band in in the particular datasets).
f Band(I): 4th positive-parity, signature=0 band.
g Band(J): 3rd negative-parity, signature=1 band.
h Band(K): Highly-deformed (triaxial) SD-1 band. Deformation parameters: ε_2=0.30-0.35, γ=20°−25°. Population intensity ≈0.01% relative to the channel leading to ^{158}Er. Probable configuration= $\pi[(g_{7/2}d_{5/2})^{-4}h^6_{11/2}h_{9/2}i_{13/2}]\otimes \nu[h^{-2}_{11/2}(N=4)^{-2}(h_{9/2}f_{7/2})^8(i_{13/2})^4]$. This structure, assigned by 2007Pa03, lies above the terminating bands.
i Band(L): Highly-deformed (triaxial) SD-2 band. Deformation parameters: ε_2=0.30-0.35, γ=20°−25°. Population intensity ≈0.003-0.005% relative to the channel leading to ^{158}Er. This structure, assigned by 2007Pa03, lies above the terminating bands.
j Estimated by evaluator to connect lower and upper portions of the band (HI dataset).

Adopted Levels, Gammas (continued)

$\gamma(^{158}Er)$

Unplaced γ's are not given here; see ^{158}Tm ε decay.

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#b]	α[a]	$I_{(\gamma+ce)}$	Comments
192.15	2^+	192.13 *3*	100	0.0	0^+	E2		0.288		α(K)=0.182 *3*; α(L)=0.0813 *12*; α(M)=0.0194 *3* α(N)=0.00442 *7*; α(O)=0.000543 *8*; α(P)=8.50×10^{-6} *12* B(E2)(W.u.)=129 *9*
527.22	4^+	335.10 *3*	100	192.15	2^+	E2		0.0496		α(K)=0.0372 *6*; α(L)=0.00960 *14*; α(M)=0.00223 *4* α(N)=0.000512 *8*; α(O)=6.66×10^{-5} *10*; α(P)=1.95×10^{-6} *3* B(E2)(W.u.)=186 *6*
806.38	0^+	614.26 *6*	100 *9*	192.15	2^+	E2		0.00987		α(K)=0.00802 *12*; α(L)=0.001441 *21*; α(M)=0.000326 *5* α(N)=7.53×10^{-5} *11*; α(O)=1.037×10^{-5} *15*; α(P)=4.50×10^{-7} *7*
		806.2 *5*		0.0	0^+	E0			1.39 *21*	
820.12	2^+	628.03 *6*	100 *9*	192.15	2^+	E2(+M1)		0.014 *5*		α(K)=0.012 *5*; α(L)=0.0019 *5*; α(M)=0.00041 *11* α(N)=0.00010 *3*; α(O)=1.4×10^{-5} *4*; α(P)=7.E−7 *3*
		820.09 *7*	49 *4*	0.0	0^+	E2		0.00511		α(K)=0.00423 *6*; α(L)=0.000684 *10*; α(M)=0.0001530 *22* α(N)=3.55×10^{-5} *5*; α(O)=4.98×10^{-6} *7*; α(P)=2.40×10^{-7} *4*
970.34	6^+	443.13 *3*	100	527.22	4^+	E2		0.0226		α(K)=0.01772 *25*; α(L)=0.00377 *6*; α(M)=0.000866 *13* α(N)=0.000199 *3*; α(O)=2.67×10^{-5} *4*; α(P)=9.68×10^{-7} *14* B(E2)(W.u.)=246 *8*
989.08	2^+	182.3 *3*	2.7 *12*	806.38	0^+					
		461.93 *7*	23.2 *22*	527.22	4^+	E2		0.0202		α(K)=0.01595 *23*; α(L)=0.00331 *5*; α(M)=0.000759 *11* α(N)=0.0001749 *25*; α(O)=2.35×10^{-5} *4*; α(P)=8.76×10^{-7} *13* Mult.: Assigned E2(+M1), but J^π's require E2.
		796.85 *15*	31.0 *25*	192.15	2^+	E0+E2+M1		0.113 *17*		α(K)=0.093 *15*; α(L)=0.015 α: Calculated from α_K(exp) in ε decay dataset.
		989.06 *10*	100 *8*	0.0	0^+	E2		0.00344		α(K)=0.00287 *4*; α(L)=0.000441 *7*; α(M)=9.81×10^{-5} *14* α(N)=2.28×10^{-5} *4*; α(O)=3.23×10^{-6} *5*; α(P)=1.635×10^{-7} *23*
1043.39	3^+	223.33 *6*	2.6 *3*	820.12	2^+					
		516.28 *20*	15 *4*	527.22	4^+	E2,M1		0.024 *9*		α(K)=0.020 *8*; α(L)=0.0031 *8*; α(M)=0.00070 *17* α(N)=0.00016 *4*; α(O)=2.3×10^{-5} *7*; α(P)=1.2×10^{-6} *5*
		851.19 *9*	100 *9*	192.15	2^+	E2(+M1)	≥1.2	0.0056 *10*		α(K)=0.0047 *8*; α(L)=0.00072 *10*; α(M)=0.000161 *22* α(N)=3.7×10^{-5} *5*; α(O)=5.3×10^{-6} *8*; α(P)=2.7×10^{-7} *5*
1183.78	4^+	363.75 *7*	15.6 *15*	820.12	2^+	E2		0.0391		α(K)=0.0298 *5*; α(L)=0.00723 *11*; α(M)=0.001674 *24* α(N)=0.000384 *6*; α(O)=5.04×10^{-5} *7*; α(P)=1.584×10^{-6} *23*
		656.57 *7*	100 *9*	527.22	4^+	E2(+M1)	≥1.0	0.0107 *23*		α(K)=0.0089 *20*; α(L)=0.00143 *23*; α(M)=0.00032 *5* α(N)=7.4×10^{-5} *12*; α(O)=1.05×10^{-5} *18*; α(P)=5.1×10^{-7} *13*
1210.56	$^+$	390.65 *20*	12.6 *18*	820.12	2^+					
		1018.36 *10*	100 *9*	192.15	2^+	E2,M1		0.0046 *14*		α(K)=0.0039 *12*; α(L)=0.00056 *15*; α(M)=0.00012 *4* α(N)=2.9×10^{-5} *8*; α(O)=4.1×10^{-6} *12*; α(P)=2.3×10^{-7} *8*
1257.28	4^+	268.31 *9*	12.8 *12*	989.08	2^+	E2		0.0974		α(K)=0.0694 *10*; α(L)=0.0216 *3*; α(M)=0.00509 *8* α(N)=0.001164 *17*; α(O)=0.0001478 *21*; α(P)=3.49×10^{-6} *5*

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#b]	α[a]	Comments
1257.28	4+	287.00 *20*	1.6 *4*	970.34	6+				
		729.8 *5*		527.22	4+	E0(+M1+E2)			
		1065.07 *8*	100 *8*	192.15	2+	E2,M1		0.0041 *12*	α(K)=0.0035 *10*; α(L)=0.00050 *13*; α(M)=0.00011 *3* α(N)=2.6×10^{-5} *7*; α(O)=3.7×10^{-6} *10*; α(P)=2.0×10^{-7} *7*
1304.94	2+,3,4+	484.85 *25*	100 *17*	820.12	2+				
		777.45 *25*	83 *25*	527.22	4+				
		1113.4[c] *4*	100[c] *25*	192.15	2+				
1341.93	3−	352.30[c] *20*	0.57[c] *25*	989.08	2+				
		814.75 *8*	15.3 *12*	527.22	4+	E1		0.00202	α(K)=0.001722 *25*; α(L)=0.000234 *4*; α(M)=5.14×10^{-5} *8* α(N)=1.195×10^{-5} *17*; α(O)=1.718×10^{-6} *24*; α(P)=9.39×10^{-8} *14*
		1149.83 *7*	100 *8*	192.15	2+	E1		1.07×10^{-3}	α(K)=0.000905 *13*; α(L)=0.0001213 *17*; α(M)=2.66×10^{-5} *4* α(N)=6.17×10^{-6} *9*; α(O)=8.92×10^{-7} *13*; α(P)=4.97×10^{-8} *7*; α(IPF)=7.52×10^{-6} *11*
1386.9?	0+	580.5[d] *5*	100	806.38	0+	E0			
1417.55	2+	374.15 *7*	77 *7*	1043.39	3+	E2(+M1)	>2.	0.040 *4*	α(K)=0.031 *4*; α(L)=0.0068 *3*; α(M)=0.00157 *6* α(N)=0.000361 *14*; α(O)=4.81×10^{-5} *24*; α(P)=1.71×10^{-6} *24*
		428.53 *10*	100 *10*	989.08	2+	E2(+M1)	>1.5	0.029 *5*	α(K)=0.023 *4*; α(L)=0.0045 *4*; α(M)=0.00103 *7* α(N)=0.000239 *17*; α(O)=3.2×10^{-5} *3*; α(P)=1.30×10^{-6} *25*
		597.12 *20*	25 *5*	820.12	2+	E0+M1,E2		0.20 *8*	α(K)=0.16 *6*; α(L)=0.03 α: Calculated from α_K(exp) in ε decay dataset.
		611.19 *8*	70 *8*	806.38	0+	E2		0.00999	α(K)=0.00811 *12*; α(L)=0.001461 *21*; α(M)=0.000330 *5* α(N)=7.64×10^{-5} *11*; α(O)=1.051×10^{-5} *15*; α(P)=4.55×10^{-7} *7*
		890.65 *25*	72 *18*	527.22	4+	E2		0.00428	α(K)=0.00356 *5*; α(L)=0.000561 *8*; α(M)=0.0001253 *18* α(N)=2.91×10^{-5} *4*; α(O)=4.10×10^{-6} *6*; α(P)=2.02×10^{-7} *3*
		1225.90[cd] *8*	367[c] *30*	192.15	2+				
1418.25	(1−)	1225.90[c] *8*	99[c] *8*	192.15	2+	(E1)		9.78×10^{-4}	α(K)=0.000807 *12*; α(L)=0.0001080 *16*; α(M)=2.36×10^{-5} *4* α(N)=5.49×10^{-6} *8*; α(O)=7.94×10^{-7} *12*; α(P)=4.44×10^{-8} *7*; α(IPF)=3.30×10^{-5} *5*
		1418.55 *10*	100 *9*	0.0	0+				
1426.79	2+,3,4+	900.0 *4*	59 *12*	527.22	4+				

$^{158}_{68}Er_{90}$-7

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#b]	α[a]	Comments
1426.79	2+,3,4+	1234.4 *3*	100 *24*	192.15	2+				
1438.22	5+	395.12 *20*	75[@] *4*	1043.39	3+	(E2)		0.0309	α(K)=0.0239 *4*; α(L)=0.00547 *8*; α(M)=0.001262 *18* α(N)=0.000290 *4*; α(O)=3.84×10^{-5} *6*; α(P)=1.286×10^{-6} *18* I_γ: Other: 17 *3* from ε decay.
		910.87 *10*	100[@] *4*	527.22	4+	E2+M1	0.47 *+28−14*	0.0071 *7*	α(K)=0.0060 *6*; α(L)=0.00086 *8*; α(M)=0.000189 *16* α(N)=4.4×10^{-5} *4*; α(O)=6.4×10^{-6} *6*; α(P)=3.6×10^{-7} *4*
1489.45	2+,3+	278.95[d] *15*	10.1 *15*	1210.56	+				
		305.82 *8*	16 *3*	1183.78	4+				
		445.90 *20*	33 *3*	1043.39	3+	(E2)		0.0222	α(K)=0.01744 *25*; α(L)=0.00370 *6*; α(M)=0.000849 *12* α(N)=0.000196 *3*; α(O)=2.62×10^{-5} *4*; α(P)=9.54×10^{-7} *14*
		500.40 *10*	100 *10*	989.08	2+	M1(+E2)	<0.5	0.0330 *19*	α(K)=0.0277 *17*; α(L)=0.00408 *18*; α(M)=0.00090 *4* α(N)=0.000211 *9*; α(O)=3.04×10^{-5} *14*; α(P)=1.67×10^{-6} *11*
		669.37 *15*	55 *6*	820.12	2+				
		961.68 *15*	38 *4*	527.22	4+				
1493.47	8+	523.14 *3*	100	970.34	6+	E2		0.01465	α(K)=0.01172 *17*; α(L)=0.00227 *4*; α(M)=0.000518 *8* α(N)=0.0001195 *17*; α(O)=1.624×10^{-5} *23*; α(P)=6.51×10^{-7} *10* B(E2)(W.u.)=298 *10*
1526.27	(2,3)−	482.85 *25*	2.6 *4*	1043.39	3+				
		706.05 *10*	22.6 *21*	820.12	2+	E1		0.00269	α(K)=0.00229 *4*; α(L)=0.000314 *5*; α(M)=6.89×10^{-5} *10* α(N)=1.599×10^{-5} *23*; α(O)=2.29×10^{-6} *4*; α(P)=1.242×10^{-7} *18*
		999.32 *10*	11.1 *17*	527.22	4+				
		1334.03 *10*	100 *9*	192.15	2+	(E1)		9.01×10^{-4}	α(K)=0.000696 *10*; α(L)=9.28×10^{-5} *13*; α(M)=2.03×10^{-5} *3* α(N)=4.72×10^{-6} *7*; α(O)=6.83×10^{-7} *10*; α(P)=3.83×10^{-8} *6*; α(IPF)=8.61×10^{-5} *12*
		1526.05 *15*	6.8 *9*	0.0	0+				
1570.21	(2+)	763.90 *15*	10.0 *15*	806.38	0+				
		1043.05 *10*	100 *10*	527.22	4+				
		1377.58 *15*	32 *4*	192.15	2+				

$^{158}_{68}Er_{90}$-8

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
1570.21	(2$^+$)	1570.45 *15*	44 *7*	0.0	0$^+$			
1589.02?	(6$^+$)	404.8[d] *3*	47[@] *4*	1183.78	4$^+$	(E2)	0.0289	α(K)=0.0224 *4*; α(L)=0.00505 *8*; α(M)=0.001164 *17* α(N)=0.000268 *4*; α(O)=3.55×10^{-5} *5*; α(P)=1.210×10^{-6} *17*
		618.8[d] *2*	76[@] *7*	970.34	6$^+$	(E2,M1)	0.015 *6*	α(K)=0.013 *5*; α(L)=0.0019 *6*; α(M)=0.00043 *12* α(N)=0.00010 *3*; α(O)=1.4×10^{-5} *5*; α(P)=7.E−7 *3*
		1061.8[d] *3*	100[@] *7*	527.22	4$^+$	(E2)	0.00297	α(K)=0.00249 *4*; α(L)=0.000376 *6*; α(M)=8.35×10^{-5} *12* α(N)=1.94×10^{-5} *3*; α(O)=2.76×10^{-6} *4*; α(P)=1.419×10^{-7} *20*
1589.5	6$^+$	332.8		1257.28	4$^+$	E2		
		618.9		970.34	6$^+$			
		1062.5		527.22	4$^+$			
1614.45	(2$^-$)	430.6 *3*	18 *7*	1183.78	4$^+$			
		571.20 *10*	78 *9*	1043.39	3$^+$	(E1)	0.00418	α(K)=0.00355 *5*; α(L)=0.000493 *7*; α(M)=0.0001083 *16* α(N)=2.51×10^{-5} *4*; α(O)=3.59×10^{-6} *5*; α(P)=1.91×10^{-7} *3*
		794.00 *15*	100 *11*	820.12	2$^+$			
		1615.1 *7*	20 *11*	0.0	0$^+$			
1630.22?	(1,2$^+$)	1438.0[d] *3*	100 *30*	192.15	2$^+$			
		1630.25[d] *25*	50 *13*	0.0	0$^+$			
1640.84	(2$^+$)	834.40 *20*	38 *8*	806.38	0$^+$			
		1113.4[c] *4*	25[c] *6*	527.22	4$^+$			
		1448.80 *15*	100 *17*	192.15	2$^+$			
		1640.6 *3*	71 *10*	0.0	0$^+$			
1674.01	(2$^+$,3)	256.50 *10*	11.1 *19*	1417.55	2$^+$			
		416.88[c] *20*	22[c] *4*	1257.28	4$^+$			
		684.85 *10*	100 *9*	989.08	2$^+$			
		853.90 *20*	93 *15*	820.12	2$^+$			
1686.97	(1,2$^+$)	1494.80 *15*	100 *10*	192.15	2$^+$			
		1687.0 *3*	26 *4*	0.0	0$^+$			
1697.94	(1$^-$,2,3)	172.0 *3*	13 *3*	1526.27	(2,3)$^-$			
		356.10 *20*	12 *3*	1341.93	3$^-$			
		1505.65 *15*	100 *9*	192.15	2$^+$			
1700.12		1172.90 *10*	100	527.22	4$^+$			
1742.57	(2,3,4)	698.9 *3*	3.9 *12*	1043.39	3$^+$			
		922.50 *20*	11.6 *16*	820.12	2$^+$			
		1215.32 *15*	40 *4*	527.22	4$^+$			
		1550.50 *10*	100 *9*	192.15	2$^+$			
1769.60		352.30[c] *20*	5.0[c] *21*	1417.55	2$^+$			
		780.7 *3*	8.6 *21*	989.08	2$^+$			
		948.9 *5*	39 *14*	820.12	2$^+$			
		1577.20 *20*	100 *14*	192.15	2$^+$			
1809.07	(2$^+$,3,4$^+$)	1282.00 *25*	50 *9*	527.22	4$^+$			
		1616.7 *3*	100 *25*	192.15	2$^+$			

$^{158}_{68}Er_{90}$-9

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
1834.64		416.88[c] *20*	20[c] *3*	1417.55	2^+			
		1307.53 *15*	100 *15*	527.22	4^+			
1853.00	$(7^-,8^+)$	882.5 *2*	100	970.34	6^+			
1913.14	(7^+)	474.4 *3*	67[@] *10*	1438.22	5^+	(E2)	0.0189	α(K)=0.01492 *21*; α(L)=0.00305 *5*; α(M)=0.000698 *10* α(N)=0.0001609 *23*; α(O)=2.17×10^{-5} *3*; α(P)=8.21×10^{-7} *12*
		942.8 *4*	100[@] *10*	970.34	6^+	(E2,M1)	0.0055 *17*	α(K)=0.0046 *15*; α(L)=0.00067 *18*; α(M)=0.00015 *4* α(N)=3.5×10^{-5} *10*; α(O)=5.0×10^{-6} *14*; α(P)=2.7×10^{-7} *9*
1977.45?	$(1,2^+)$	1785.30[d] *20*	100 *22*	192.15	2^+			
		1977.4[d] *4*	78 *17*	0.0	0^+			
2018.68?	(8^+)	429.4[d] *4*	20[@] *4*	1589.02?	(6^+)	(E2)	0.0246	α(K)=0.0192 *3*; α(L)=0.00417 *6*; α(M)=0.000959 *14* α(N)=0.000221 *4*; α(O)=2.94×10^{-5} *5*; α(P)=1.046×10^{-6} *15*
		1048.2[d] *2*	100[@] *4*	970.34	6^+	(E2)	0.00305	α(K)=0.00256 *4*; α(L)=0.000387 *6*; α(M)=8.60×10^{-5} *12* α(N)=2.00×10^{-5} *3*; α(O)=2.84×10^{-6} *4*; α(P)=1.456×10^{-7} *21*
2019.1	8^+	430.0		1589.5	6^+	E2		
		1048.2		970.34	6^+			
2029.25		1502.02 *10*	100	527.22	4^+			
2059.68	$(1,2^+)$	1239.80[c] *20*	67[c] *12*	820.12	2^+			
		1253.65 *25*	40 *17*	806.38	0^+			
		1867.25 *15*	100 *10*	192.15	2^+			
2072.53	10^+	579.08 *3*	100	1493.47	8^+	E2	0.01138	α(K)=0.00920 *13*; α(L)=0.001698 *24*; α(M)=0.000385 *6* α(N)=8.89×10^{-5} *13*; α(O)=1.218×10^{-5} *17*; α(P)=5.15×10^{-7} *8* B(E2)(W.u.)=2.5×10^2 *4*
2143.59?	$(1,2^+)$	1951.7[d] *3*	65 *13*	192.15	2^+			
		2143.45[d] *20*	100 *13*	0.0	0^+			
2228.80	$(2^+,3^+)$	702.40 *15*	100 *20*	1526.27	$(2,3)^-$	(E1)	0.00272	α(K)=0.00231 *4*; α(L)=0.000317 *5*; α(M)=6.96×10^{-5} *10* α(N)=1.616×10^{-5} *23*; α(O)=2.32×10^{-6} *4*; α(P)=1.255×10^{-7} *18*
		971.6 *3*	26 *8*	1257.28	4^+			
		1239.80[c] *20*	64[c] *12*	989.08	2^+			
		1701.1 *4*	24 *8*	527.22	4^+			
		2036.7 *3*	68 *12*	192.15	2^+			
2272.97	9^-	779.4 *2*	100	1493.47	8^+	E1	0.00221	α(K)=0.00188 *3*; α(L)=0.000256 *4*; α(M)=5.62×10^{-5} *8* α(N)=1.306×10^{-5} *19*; α(O)=1.88×10^{-6} *3*; α(P)=1.023×10^{-7} *15*
2305.15?	$(2^+,3,4^+)$	1777.87[d] *15*	100 *11*	527.22	4^+			
		2113.2[d] *3*	74 *11*	192.15	2^+			
2333.48	8^-	420.1 *2*	39.0[@] *15*	1913.14	(7^+)	(E1)	0.00828	α(K)=0.00701 *10*; α(L)=0.000991 *14*; α(M)=0.000218 *3* α(N)=5.06×10^{-5} *8*; α(O)=7.17×10^{-6} *10*; α(P)=3.72×10^{-7} *6*
		480.3 *4*	10[@] *3*	1853.00	$(7^-,8^+)$			
		840.1 *2*	100[@] *3*	1493.47	8^+	E1	0.00190	α(K)=0.001622 *23*; α(L)=0.000221 *3*; α(M)=4.84×10^{-5} *7* α(N)=1.124×10^{-5} *16*; α(O)=1.617×10^{-6} *23*; α(P)=8.86×10^{-8} *13*

$^{158}_{68}Er_{90}$-10

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
2368.33?	(1,2$^+$)	2176.25[d] *25*	100 *13*	192.15	2$^+$			
		2368.2[d] *3*	67 *11*	0.0	0$^+$			
2389.6?	(1,2$^+$)	2197.4[cd] *3*	233[c] *40*	192.15	2$^+$			
		2389.6[d] *5*	100 *77*	0.0	0$^+$			
2431.57	9$^-$	412.6 *4*	6.7[@] *13*	2019.1	8$^+$	(E1)	0.00863	α(K)=0.00731 *11*; α(L)=0.001035 *15*; α(M)=0.000228 *4* α(N)=5.28×10^{-5} *8*; α(O)=7.48×10^{-6} *11*; α(P)=3.87×10^{-7} *6*
		578.3 *3*	27[@] *3*	1853.00	(7$^-$,8$^+$)			
		938.1 *2*	100[@] *3*	1493.47	8$^+$	E1	1.54×10^{-3}	α(K)=0.001315 *19*; α(L)=0.0001778 *25*; α(M)=3.90×10^{-5} *6* α(N)=9.06×10^{-6} *13*; α(O)=1.305×10^{-6} *19*; α(P)=7.20×10^{-8} *10*
2487.38?	(10$^+$)	468.2[d] *4*	100	2018.68?	(8$^+$)	(E2)	0.0195	α(K)=0.01542 *22*; α(L)=0.00318 *5*; α(M)=0.000728 *11* α(N)=0.0001676 *24*; α(O)=2.25×10^{-5} *4*; α(P)=8.48×10^{-7} *12*
2488.0	10$^+$	469.2		2019.1	8$^+$	E2		
		994.6		1493.47	8$^+$			
2569.96	10$^-$	236.3 *2*	100.0 *18*	2333.48	8$^-$	E2	0.1458	B(E2)(W.u.)=159 *16* α(K)=0.0999 *15*; α(L)=0.0353 *5*; α(M)=0.00836 *12* α(N)=0.00191 *3*; α(O)=0.000239 *4*; α(P)=4.89×10^{-6} *7*
		297.0 *4*	9 *4*	2272.97	9$^-$	E2+M1	0.10 *4*	α(K)=0.08 *4*; α(L)=0.0159 *11*; α(M)=0.00361 *16* α(N)=0.00083 *5*; α(O)=0.000114 *13*; α(P)=4.9×10^{-6} *22*
		497.6 *2*	45.6 *18*	2072.53	10$^+$	E1(+M2)	0.00565 *8*	B(E1)(W.u.)=8.7×10^{-6} *16* δ: −0.18 *+41−12* (1984Si05) in HI dataset seems too large to be realistic in view of expected short half-life of level and Recommended Upper Limits (RUL).
2673.63?	(1,2$^+$)	1867.25[d] *15*	100 *10*	806.38	0$^+$			
		2480.5[d] *15*	48 *17*	192.15	2$^+$			
		2673[d] *2*	38 *12*	0.0	0$^+$			
2680.79	12$^+$	608.28 *4*	100	2072.53	10$^+$	E2	0.01010	α(K)=0.00820 *12*; α(L)=0.001480 *21*; α(M)=0.000335 *5* α(N)=7.74×10^{-5} *11*; α(O)=1.065×10^{-5} *15*; α(P)=4.60×10^{-7} *7* B(E2)(W.u.)=2.6×10^2 *3*
2731.27	11$^-$	243.9 *4*	4.9 *12*	2488.0	10$^+$	(E1)	0.0312	B(E1)(W.u.)=4.2×10^{-5} *11* α(K)=0.0263 *4*; α(L)=0.00384 *6*; α(M)=0.000847 *13* α(N)=0.000196 *3*; α(O)=2.73×10^{-5} *4*; α(P)=1.329×10^{-6} *20*
		299.5 *2*	100.0 *12*	2431.57	9$^-$	E2	0.0694	α(K)=0.0508 *8*; α(L)=0.01437 *21*; α(M)=0.00336 *5* α(N)=0.000770 *11*; α(O)=9.89×10^{-5} *14*; α(P)=2.61×10^{-6} *4* B(E2)(W.u.)=250 *+24−20*
		658.8 *2*	37 *4*	2072.53	10$^+$	E1	0.00310	α(K)=0.00263 *4*; α(L)=0.000363 *5*; α(M)=7.96×10^{-5} *12* α(N)=1.85×10^{-5} *3*; α(O)=2.65×10^{-6} *4*; α(P)=1.427×10^{-7} *20* B(E1)(W.u.)=1.62×10^{-5} *+24−22*
2760.68	11$^-$	487.6 *2*	25 *4*	2272.97	9$^-$	E2	0.01755	α(K)=0.01393 *20*; α(L)=0.00281 *4*; α(M)=0.000641 *9* α(N)=0.0001478 *21*; α(O)=2.00×10^{-5} *3*; α(P)=7.69×10^{-7} *11*

$^{158}_{68}Er_{90}$-11

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#b]	α[a]	Comments
2760.68	11⁻	688.2 *2*	100 *4*	2072.53	10⁺	E1+M2	0.06 *6*	0.0030 *5*	α(K)=0.0025 *4*; α(L)=0.00035 *6*; α(M)=7.7×10⁻⁵ *13* α(N)=1.8×10⁻⁵ *3*; α(O)=2.6×10⁻⁶ *5*; α(P)=1.39×10⁻⁷ *24*
2881.47	12⁺	200.8 *4*	10.3[@] *22*	2680.79	12⁺	E2+M1		0.32 *8*	α(K)=0.25 *9*; α(L)=0.059 *10*; α(M)=0.014 *3* α(N)=0.0031 *6*; α(O)=0.00041 *5*; α(P)=1.4×10⁻⁵ *7*
		393.8 *3*	4.6[@] *23*	2488.0	10⁺	(E2)		0.0312	α(K)=0.0241 *4*; α(L)=0.00553 *8*; α(M)=0.001277 *19* α(N)=0.000293 *5*; α(O)=3.88×10⁻⁵ *6*; α(P)=1.296×10⁻⁶ *19*
		808.7 *2*	100[@] *3*	2072.53	10⁺	E2		0.00527	α(K)=0.00436 *7*; α(L)=0.000707 *10*; α(M)=0.0001583 *23* α(N)=3.67×10⁻⁵ *6*; α(O)=5.15×10⁻⁶ *8*; α(P)=2.47×10⁻⁷ *4*
2954.66	12⁻	384.7 *1*	100	2569.96	10⁻	E2		0.0333	α(K)=0.0256 *4*; α(L)=0.00598 *9*; α(M)=0.001382 *20* α(N)=0.000317 *5*; α(O)=4.19×10⁻⁵ *6*; α(P)=1.375×10⁻⁶ *20* B(E2)(W.u.)=166 *+11−2*
3017.70?	(1,2⁺)	788.5[d] *3*	83 *17*	2228.80	(2⁺,3⁺)				
		1275.38[d] *20*	100 *22*	1742.57	(2,3,4)				
		2197.4[cd] *3*	128[c] *22*	820.12	2⁺				
		2826[d] *4*	50 *28*	192.15	2⁺				
		3017[d] *4*	50 *17*	0.0	0⁺				
3109.3	12⁺	621.5		2488.0	10⁺	E2			
		1036.5		2072.53	10⁺				
3154.80	13⁻	423.5 *1*	100.0 *10*	2731.27	11⁻	E2		0.0255	B(E2)(W.u.)=143 *10* α(K)=0.0199 *3*; α(L)=0.00436 *7*; α(M)=0.001003 *14* α(N)=0.000231 *4*; α(O)=3.07×10⁻⁵ *5*; α(P)=1.082×10⁻⁶ *16*
		474.3 *3*	19.2 *19*	2680.79	12⁺	E1		0.00628	B(E1)(W.u.)=7.3×10⁻⁵ *9* α(K)=0.00533 *8*; α(L)=0.000748 *11*; α(M)=0.0001645 *24* α(N)=3.81×10⁻⁵ *6*; α(O)=5.43×10⁻⁶ *8*; α(P)=2.84×10⁻⁷ *4*
3190.51	14⁺	308.7 *2*	8.8 *7*	2881.47	12⁺	E2		0.0633	α(K)=0.0467 *7*; α(L)=0.01288 *19*; α(M)=0.00301 *5* α(N)=0.000689 *10*; α(O)=8.88×10⁻⁵ *13*; α(P)=2.42×10⁻⁶ *4* B(E2)(W.u.)=109 *15*
		509.75 *6*	100.0 *17*	2680.79	12⁺	E2		0.01565	α(K)=0.01249 *18*; α(L)=0.00246 *4*; α(M)=0.000560 *8* α(N)=0.0001292 *18*; α(O)=1.751×10⁻⁵ *25*; α(P)=6.92×10⁻⁷ *10* B(E2)(W.u.)=101 *11*
3304.5	(13⁻)	543.6 *4*	55[@] *15*	2760.68	11⁻	(E2)		0.01330	α(K)=0.01069 *15*; α(L)=0.00203 *3*; α(M)=0.000462 *7* α(N)=0.0001067 *16*; α(O)=1.455×10⁻⁵ *21*; α(P)=5.95×10⁻⁷ *9*
		623.8 *3*	100[@] *15*	2680.79	12⁺	(E1)		0.00347	α(K)=0.00295 *5*; α(L)=0.000407 *6*; α(M)=8.95×10⁻⁵ *13* α(N)=2.08×10⁻⁵ *3*; α(O)=2.97×10⁻⁶ *5*; α(P)=1.594×10⁻⁷ *23*
3374.29	14⁺	492.8 *4*	2.7 *27*	2881.47	12⁺	E2		0.01707	α(K)=0.01357 *20*; α(L)=0.00272 *4*; α(M)=0.000621 *9* α(N)=0.0001431 *21*; α(O)=1.93×10⁻⁵ *3*; α(P)=7.50×10⁻⁷ *11*
		693.5 *2*	100.0 *14*	2680.79	12⁺	E2		0.00743	α(K)=0.00609 *9*; α(L)=0.001042 *15*; α(M)=0.000235 *4* α(N)=5.43×10⁻⁵ *8*; α(O)=7.54×10⁻⁶ *11*; α(P)=3.44×10⁻⁷ *5*
3474.8	14⁻	520.1 *2*	100	2954.66	12⁻	E2		0.01487	α(K)=0.01189 *17*; α(L)=0.00231 *4*; α(M)=0.000527 *8* α(N)=0.0001216 *17*; α(O)=1.651×10⁻⁵ *24*; α(P)=6.60×10⁻⁷ *10*

$^{158}_{68}Er_{90}$-12

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3663.26	16^+	472.75 *5*	100	3190.51	14^+	E2	0.0190	α(K)=0.01505 *21*; α(L)=0.00309 *5*; α(M)=0.000706 *10* α(N)=0.0001627 *23*; α(O)=2.19×10^{-5} *3*; α(P)=8.28×10^{-7} *12* B(E2)(W.u.)=200 *12*
3668.2	14^+	559.0		3109.3	12^+	E2		
		786.6		2881.47	12^+			
3695.40	15^-	540.6 *1*	100	3154.80	13^-	E2	0.01349	α(K)=0.01083 *16*; α(L)=0.00207 *3*; α(M)=0.000470 *7* α(N)=0.0001085 *16*; α(O)=1.478×10^{-5} *21*; α(P)=6.03×10^{-7} *9* B(E2)(W.u.)=2.2×10^2 *+6−4*
3906.5	(15^-)	602.0 *4*	100	3304.5	(13^-)	(E2)	0.01036	α(K)=0.00840 *12*; α(L)=0.001523 *22*; α(M)=0.000345 *5* α(N)=7.97×10^{-5} *12*; α(O)=1.095×10^{-5} *16*; α(P)=4.71×10^{-7} *7*
4026.1	(16^+)	651.8 *2*	100	3374.29	14^+	(E2)	0.00858	α(K)=0.00700 *10*; α(L)=0.001227 *18*; α(M)=0.000277 *4* α(N)=6.40×10^{-5} *9*; α(O)=8.86×10^{-6} *13*; α(P)=3.94×10^{-7} *6*
4103.7	(16^-)	628.9 *2*	100	3474.8	14^-	(E2)	0.00933	α(K)=0.00759 *11*; α(L)=0.001351 *19*; α(M)=0.000305 *5* α(N)=7.06×10^{-5} *10*; α(O)=9.74×10^{-6} *14*; α(P)=4.27×10^{-7} *6* B(E2)(W.u.)=1.4×10^2 *+5−4*
4229.54	18^+	566.28 *5*	100	3663.26	16^+	E2	0.01202	α(K)=0.00969 *14*; α(L)=0.00181 *3*; α(M)=0.000410 *6* α(N)=9.48×10^{-5} *14*; α(O)=1.297×10^{-5} *19*; α(P)=5.42×10^{-7} *8* B(E2)(W.u.)=199 *13*
4272.4	16^+	604.1		3668.2	14^+	E2		
		897.9		3374.29	14^+			
4329.5	(17^-)	634.1 *2*	100	3695.40	15^-	(E2)	0.00915	α(K)=0.00745 *11*; α(L)=0.001321 *19*; α(M)=0.000298 *5* α(N)=6.90×10^{-5} *10*; α(O)=9.53×10^{-6} *14*; α(P)=4.19×10^{-7} *6* B(E2)(W.u.)=111 *+24−16*
4679.5	(18^+)	653.2 *3*		4026.1	(16^+)			
		1018.0		3663.26	16^+			
4812.8	(18^-)	709.1 *2*	100	4103.7	(16^-)	(E2)	0.00706	α(K)=0.00580 *9*; α(L)=0.000984 *14*; α(M)=0.000221 *4* α(N)=5.12×10^{-5} *8*; α(O)=7.13×10^{-6} *10*; α(P)=3.28×10^{-7} *5* B(E2)(W.u.)=69 *+14−10*
4888.43	20^+	658.89 *6*	100	4229.54	18^+	E2	0.00836	α(K)=0.00683 *10*; α(L)=0.001192 *17*; α(M)=0.000269 *4* α(N)=6.22×10^{-5} *9*; α(O)=8.61×10^{-6} *12*; α(P)=3.85×10^{-7} *6* B(E2)(W.u.)=162 *24*
4948.9	18^+	676.4		4272.4	16^+	E2		
		922.5		4026.1	(16^+)			
5021.8	(19^-)	692.3 *2*	100	4329.5	(17^-)	(E2)	0.00746	α(K)=0.00611 *9*; α(L)=0.001047 *15*; α(M)=0.000236 *4* α(N)=5.45×10^{-5} *8*; α(O)=7.58×10^{-6} *11*; α(P)=3.45×10^{-7} *5*
5327.4	(20^+)	647.9 *3*		4679.5	(18^+)	(E2)	0.00870	α(K)=0.00710 *10*; α(L)=0.001247 *18*; α(M)=0.000281 *4* α(N)=6.51×10^{-5} *10*; α(O)=9.00×10^{-6} *13*; α(P)=4.00×10^{-7} *6*
		1101.2		4229.54	18^+			
5538.2	(20^-)	725.4 *2*	100	4812.8	(18^-)	(E2)	0.00671	α(K)=0.00551 *8*; α(L)=0.000928 *13*; α(M)=0.000209 *3* α(N)=4.83×10^{-5} *7*; α(O)=6.73×10^{-6} *10*; α(P)=3.12×10^{-7} *5*
5628.85	22^+	740.42 *10*	100	4888.43	20^+	E2	0.00640	α(K)=0.00527 *8*; α(L)=0.000881 *13*; α(M)=0.000198 *3* α(N)=4.58×10^{-5} *7*; α(O)=6.39×10^{-6} *9*; α(P)=2.99×10^{-7} *5* B(E2)(W.u.)=2.1×10^2 *+11−19*

$^{158}_{68}Er_{90}$-13

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α [a]	Comments
5739.3	(21⁻)	717.5 *2*	100	5021.8	(19⁻)	(E2)	0.00687	α(K)=0.00565 *8*; α(L)=0.000954 *14*; α(M)=0.000215 *3* α(N)=4.97×10^{-5} *7*; α(O)=6.92×10^{-6} *10*; α(P)=3.20×10^{-7} *5*
6026.8	(22⁺)	699.4 *3*		5327.4	(20⁺)	(E2)	0.00729	α(K)=0.00598 *9*; α(L)=0.001019 *15*; α(M)=0.000229 *4* α(N)=5.31×10^{-5} *8*; α(O)=7.38×10^{-6} *11*; α(P)=3.38×10^{-7} *5*
		1141.4		4888.43	20⁺			
6219.7	(22⁻)	681.5 *3*	100	5538.2	(20⁻)	(E2)	0.00773	α(K)=0.00633 *9*; α(L)=0.001091 *16*; α(M)=0.000246 *4* α(N)=5.68×10^{-5} *8*; α(O)=7.89×10^{-6} *11*; α(P)=3.57×10^{-7} *5*
6434.6	24⁺	805.7 *4*	100	5628.85	22⁺	E2	0.00531	α(K)=0.00439 *7*; α(L)=0.000714 *10*; α(M)=0.0001598 *23* α(N)=3.70×10^{-5} *6*; α(O)=5.20×10^{-6} *8*; α(P)=2.49×10^{-7} *4*
6475.8	(23⁻)	736.5 *3*	100	5739.3	(21⁻)	(E2)	0.00648	α(K)=0.00533 *8*; α(L)=0.000893 *13*; α(M)=0.000200 *3* α(N)=4.64×10^{-5} *7*; α(O)=6.48×10^{-6} *9*; α(P)=3.02×10^{-7} *5*
7000	(24⁻)	780&	100	6219.7	(22⁻)			
7249.2	(25⁻)	773.4	100	6475.8	(23⁻)			
7280.2	26⁺	845.6 *2*	100	6434.6	24⁺	E2	0.00478	α(K)=0.00397 *6*; α(L)=0.000635 *9*; α(M)=0.0001419 *20* α(N)=3.29×10^{-5} *5*; α(O)=4.63×10^{-6} *7*; α(P)=2.25×10^{-7} *4*
7800	(26⁻)	800&	100	7000	(24⁻)			
8069.8	(27⁻)	820.6	100	7249.2	(25⁻)			
8138.6	28⁺	858.4 *3*	100	7280.2	26⁺	E2	0.00463	α(K)=0.00384 *6*; α(L)=0.000613 *9*; α(M)=0.0001369 *20* α(N)=3.17×10^{-5} *5*; α(O)=4.47×10^{-6} *7*; α(P)=2.18×10^{-7} *3*
8933.6	(29⁻)	863.8	100	8069.8	(27⁻)			
9014.2	30⁺	875.6 *4*	100	8138.6	28⁺	E2	0.00444	α(K)=0.00369 *6*; α(L)=0.000584 *9*; α(M)=0.0001305 *19* α(N)=3.03×10^{-5} *5*; α(O)=4.27×10^{-6} *6*; α(P)=2.10×10^{-7} *3*
9456	(30⁻)	854		8602	(28⁻)			
9474	(30⁺)	1336		8138.6	28⁺			
9820.0	(31⁻)	886.4	100	8933.6	(29⁻)			
9920.4	32⁺	906.2 *4*	100	9014.2	30⁺	E2	0.00413	α(K)=0.00343 *5*; α(L)=0.000539 *8*; α(M)=0.0001202 *17* α(N)=2.79×10^{-5} *4*; α(O)=3.94×10^{-6} *6*; α(P)=1.95×10^{-7} *3*
10281	(32⁺)	807		9474	(30⁺)			
		1270		9014.2	30⁺			
10336	(32⁻)	880		9456	(30⁻)			
10716.8	(33⁻)	896.8	100	9820.0	(31⁻)			
10879.5	34⁺	959.1 *8*	100	9920.4	32⁺	E2	0.00366	α(K)=0.00306 *5*; α(L)=0.000473 *7*; α(M)=0.0001053 *15* α(N)=2.44×10^{-5} *4*; α(O)=3.46×10^{-6} *5*; α(P)=1.740×10^{-7} *25*
11216	(34⁺)	935		10281	(32⁺)			
		1299		9920.4	32⁺			
11234	(34⁻)	898		10336	(32⁻)			
11637.3	(35⁻)	920.5	100	10716.8	(33⁻)			
11898.6	36⁺	1019.1 *9*	100	10879.5	34⁺	E2	0.00323	α(K)=0.00270 *4*; α(L)=0.000412 *6*; α(M)=9.16×10^{-5} *13* α(N)=2.13×10^{-5} *3*; α(O)=3.02×10^{-6} *5*; α(P)=1.540×10^{-7} *22*
12172	(36⁻)	939		11234	(34⁻)			
12232	(36⁺)	1016		11216	(34⁺)			
		1356		10879.5	34⁺			

$^{158}_{68}Er_{90}$-14

Adopted Levels, Gammas (continued)

γ(^{158}Er) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α [a]	Comments
12601.2	(37$^-$)	963.9	100	11637.3	(35$^-$)			
12957.8	38$^+$	1059.2 *15*	100	11898.6	36$^+$	E2	0.00299	α(K)=0.00250 *4*; α(L)=0.000378 *6*; α(M)=8.40×10^{-5} *12* α(N)=1.95×10^{-5} *3*; α(O)=2.77×10^{-6} *4*; α(P)=1.426×10^{-7} *21*
13157	(38$^-$)	985		12172	(36$^-$)			
13169	(38$^+$)	937		12232	(36$^+$)			
		1276		11898.6	36$^+$			
13621.6	(39$^-$)	1020.4	100	12601.2	(37$^-$)			
13784.8	(40$^+$)	609		13169	(38$^+$)			
		827.0		12957.8	38$^+$			
14153	(40$^+$)	1202	100	12957.8	38$^+$			
14183	(40$^-$)	1026	100	13157	(38$^-$)			
14694.8	(41$^-$)	1073.2	100	13621.6	(39$^-$)			
15059	(42$^+$)	1281	100	13784.8	(40$^+$)			
15194	(42$^-$)	1011	100	14183	(40$^-$)			
15363	(42$^+$)	1210	100	14153	(40$^+$)			
15683.8	(43$^-$)	985	100	14694.8	(41$^-$)			
15873	(43$^-$)	1176	100	14694.8	(41$^-$)			
16090	(44$^+$)	1031	100	15059	(42$^+$)			
16357	(44$^-$)	1163	100	15194	(42$^-$)			
16507	(44$^+$)	1143	100	15363	(42$^+$)			
17013	(45$^-$)	1139		15873	(43$^-$)			
		1330		15683.8	(43$^-$)			
17061	(46$^+$)	971	100	16090	(44$^+$)			
17121	(45$^-$)	1248		15873	(43$^-$)			
		1439		15683.8	(43$^-$)			
17367	(46$^-$)	1010	100	16357	(44$^-$)			
17659	(46$^+$)	1153	100	16507	(44$^+$)			
18001	(47$^-$)	939 [d]		17061	(46$^+$)			
		988		17013	(45$^-$)			
18131	(48$^-$)	764	100	17367	(46$^-$)			
18345	(47$^-$)	1224	100	17121	(45$^-$)			
18810	(49$^-$)	809	100	18001	(47$^-$)			
18869?	(48$^+$)	1210 [d]	100	17659	(46$^+$)			
20143?	(50$^+$)	1274 [d]	100	18869?	(48$^+$)			
724.3+x	J+2	724.3 *5*		x	J≈(23)			
1490.9+x	J+4	766.6 *5*		724.3+x	J+2			
2293.2+x	J+6	802.3 *5*		1490.9+x	J+4			
3134.9+x	J+8	841.7 *5*		2293.2+x	J+6			
4009.9+x	J+10	875.0 *5*		3134.9+x	J+8			
4911.4+x	J+12	901.5 *5*		4009.9+x	J+10			
5844.0+x	J+14	932.6 *5*		4911.4+x	J+12			
6816.7+x	J+16	972.7 *5*		5844.0+x	J+14			
7834.3+x	J+18	1017.6 *5*		6816.7+x	J+16			

$^{158}_{68}Er_{90}$-15

Adopted Levels, Gammas (continued)

$\gamma(^{158}Er)$ (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
8898.6+x	J+20	1064.3 *5*	7834.3+x	J+18	959.0+y	J1+2	959 *1*	y	J1
10008.7+x	J+22	1110.1 *5*	8898.6+x	J+20	1966.0+y	J1+4	1007 *1*	959.0+y	J1+2
11165.0+x	J+24	1156.3 *5*	10008.7+x	J+22	3012.0+y	J1+6	1046 *1*	1966.0+y	J1+4
12369.9+x	J+26	1204.9 *5*	11165.0+x	J+24	4095.0+y	J1+8	1083 *1*	3012.0+y	J1+6
13625.8+x	J+28	1255.9 *5*	12369.9+x	J+26	5219.0+y	J1+10	1124 *1*	4095.0+y	J1+8
14936.1+x	J+30	1310.2 *5*	13625.8+x	J+28	6386.0+y	J1+12	1167 *1*	5219.0+y	J1+10
16305.1+x	J+32	1369.0 *5*	14936.1+x	J+30	7598+y	J1+14	1212 *1*	6386.0+y	J1+12
17735.3+x	J+34	1430.2 *5*	16305.1+x	J+32	8858+y	J1+16	1260 *1*	7598+y	J1+14
19226.3+x	J+36	1491 *1*	17735.3+x	J+34	10167+y	J1+18	1309 *1*	8858+y	J1+16
20788.3+x	J+38	1562 *1*	19226.3+x	J+36	11527+y	J1+20	1360 *1*	10167+y	J1+18
22413+x	J+40	1625 *1*	20788.3+x	J+38	12943+y	J1+22	1416 *1*	11527+y	J1+20
24115+x	J+42	1702 *1*	22413+x	J+40					

[†] Most of the γ rays originate in a single dataset, whence they were adopted here. For the rare occasions when a γ ray was observed in both ε decay and HI datasets, the more precise figures were adopted (mostly from the ε decay).

[‡] From α_K(exp) data from ^{158}Tm ε decay and for E2 γ's in ground-state band from $\gamma(\theta)$ or DCO in (HI,xnγ) studies (1972Be39,1972Li34,1977Le10,1982Bu28,1984Si05,1985Ho04,2013DiZZ). For many others, assignments are from 1984Si05 and are based on analysis of data for the whole scheme including the deduced J^π assignments.

[#] From (HI,xnγ) (1984Si05).

[@] Relative photon branching measured by 1984Si05 (HI dataset).

[&] Estimated by evaluator to connect lower and upper portions of the band (HI dataset).

[a] Additional information 4.

[b] If no value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.

[c] Multiply placed with undivided intensity.

[d] Placement of transition in the level scheme is uncertain.

$^{158}_{68}Er_{90}$-16

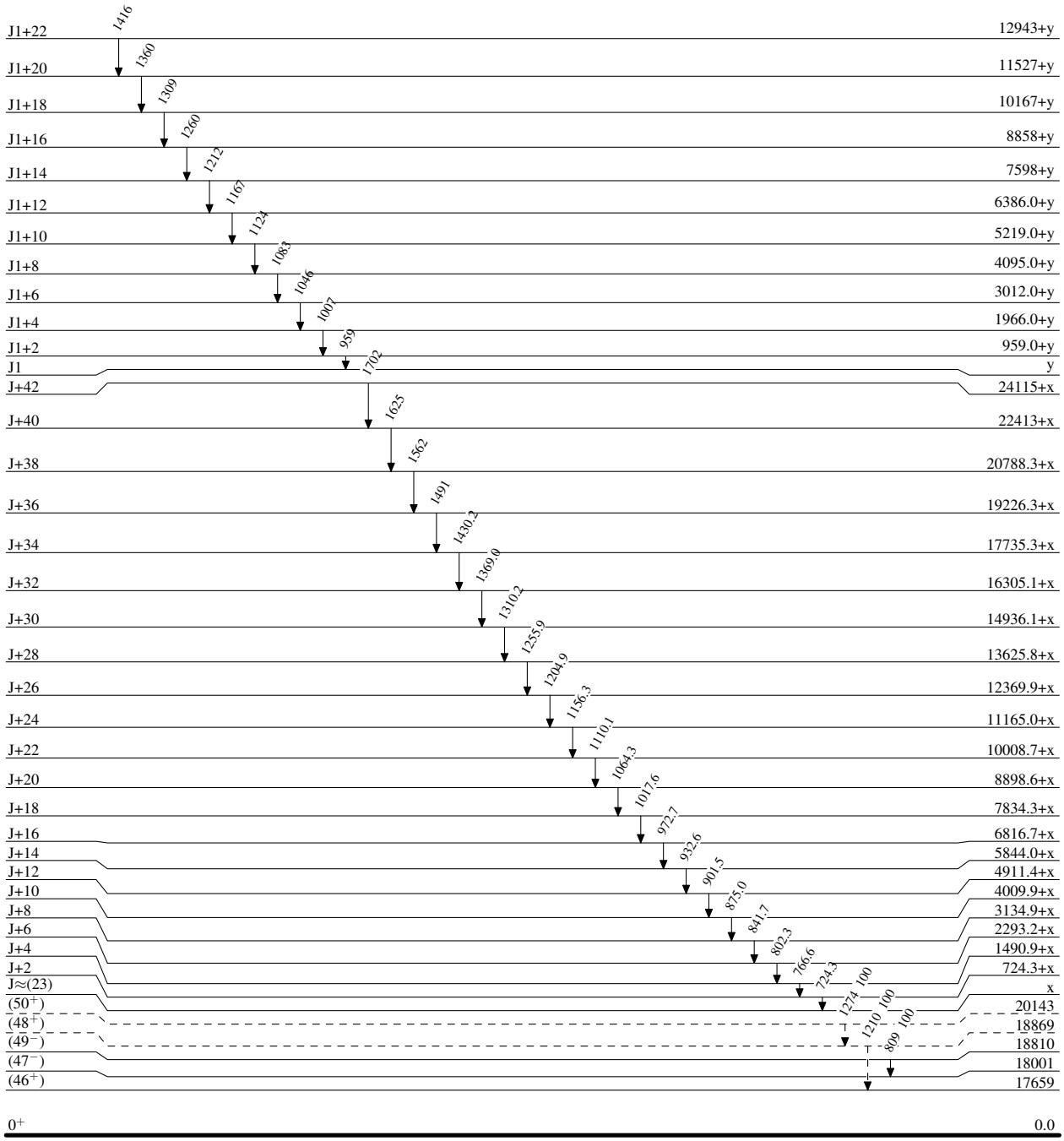
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

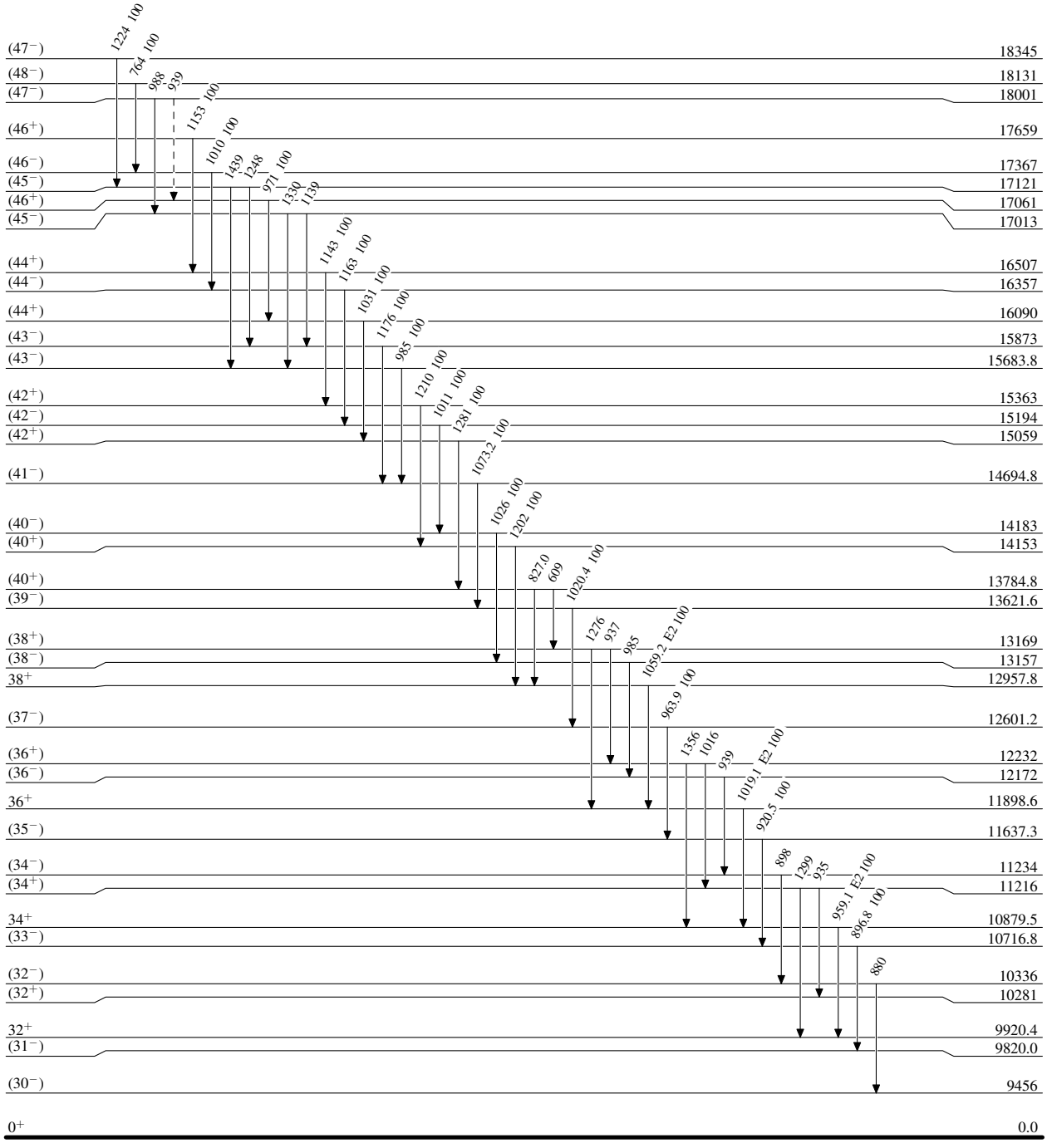
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

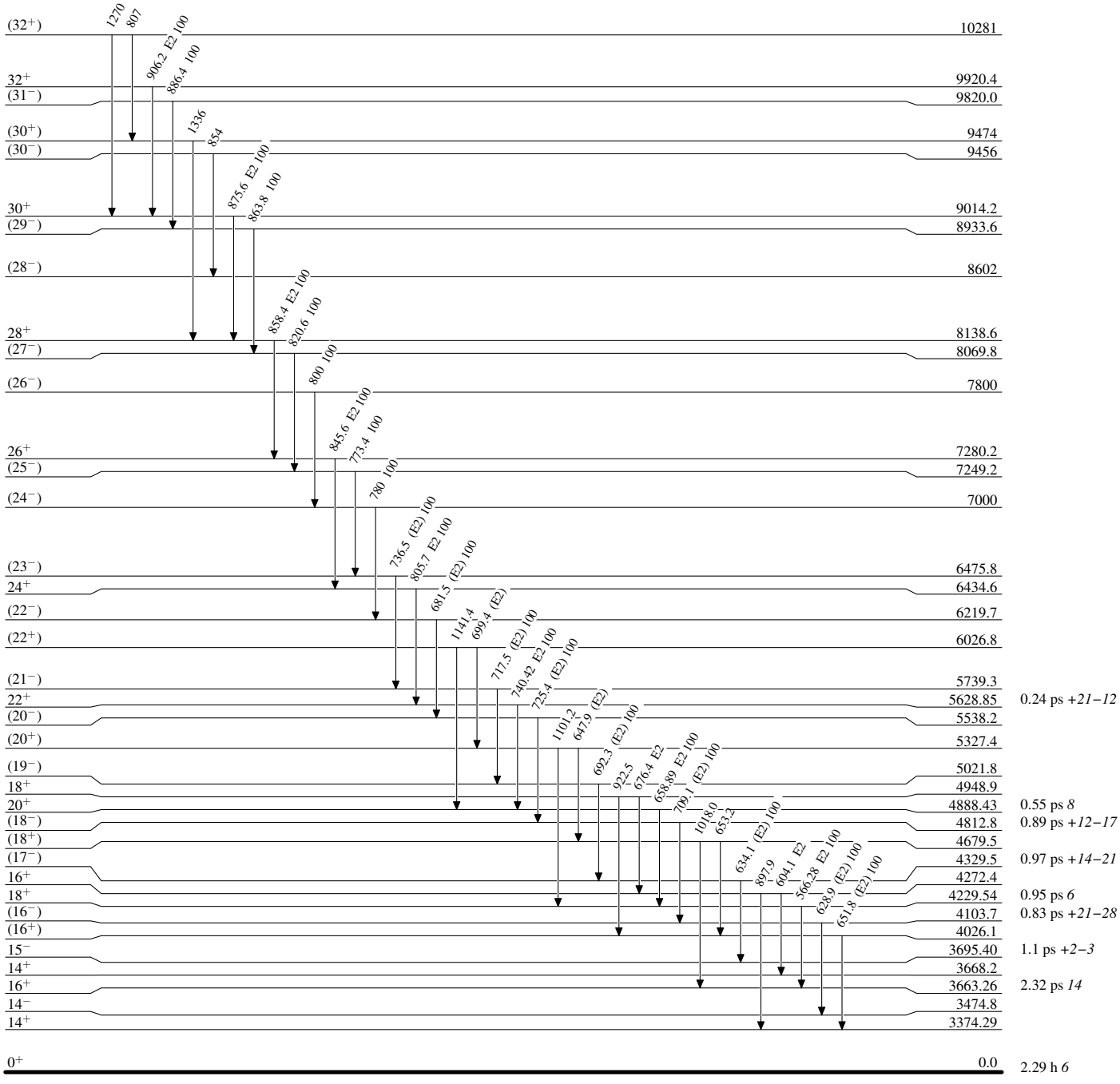


$^{158}_{68}Er_{90}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{158}_{68}Er_{90}$

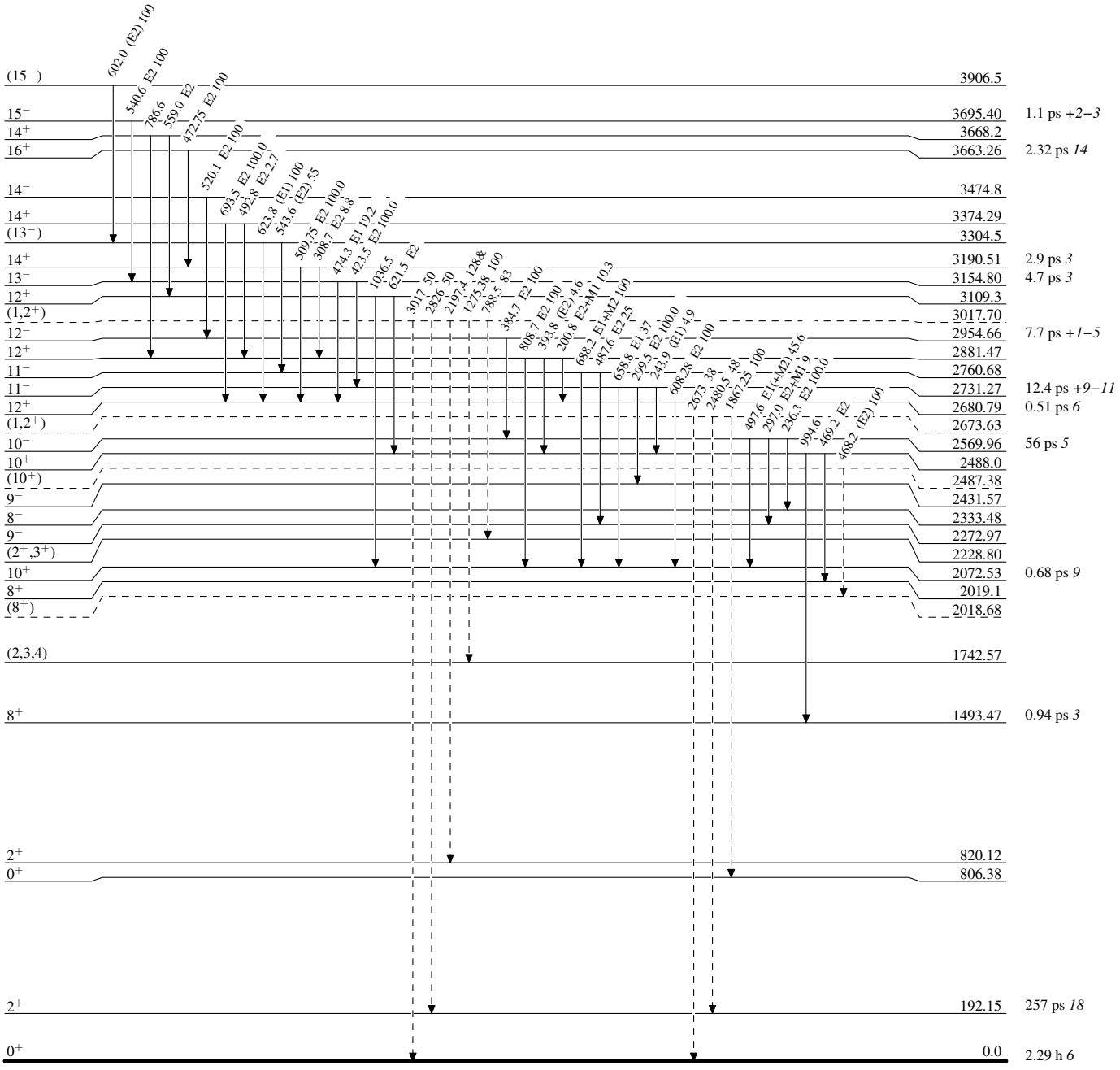
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

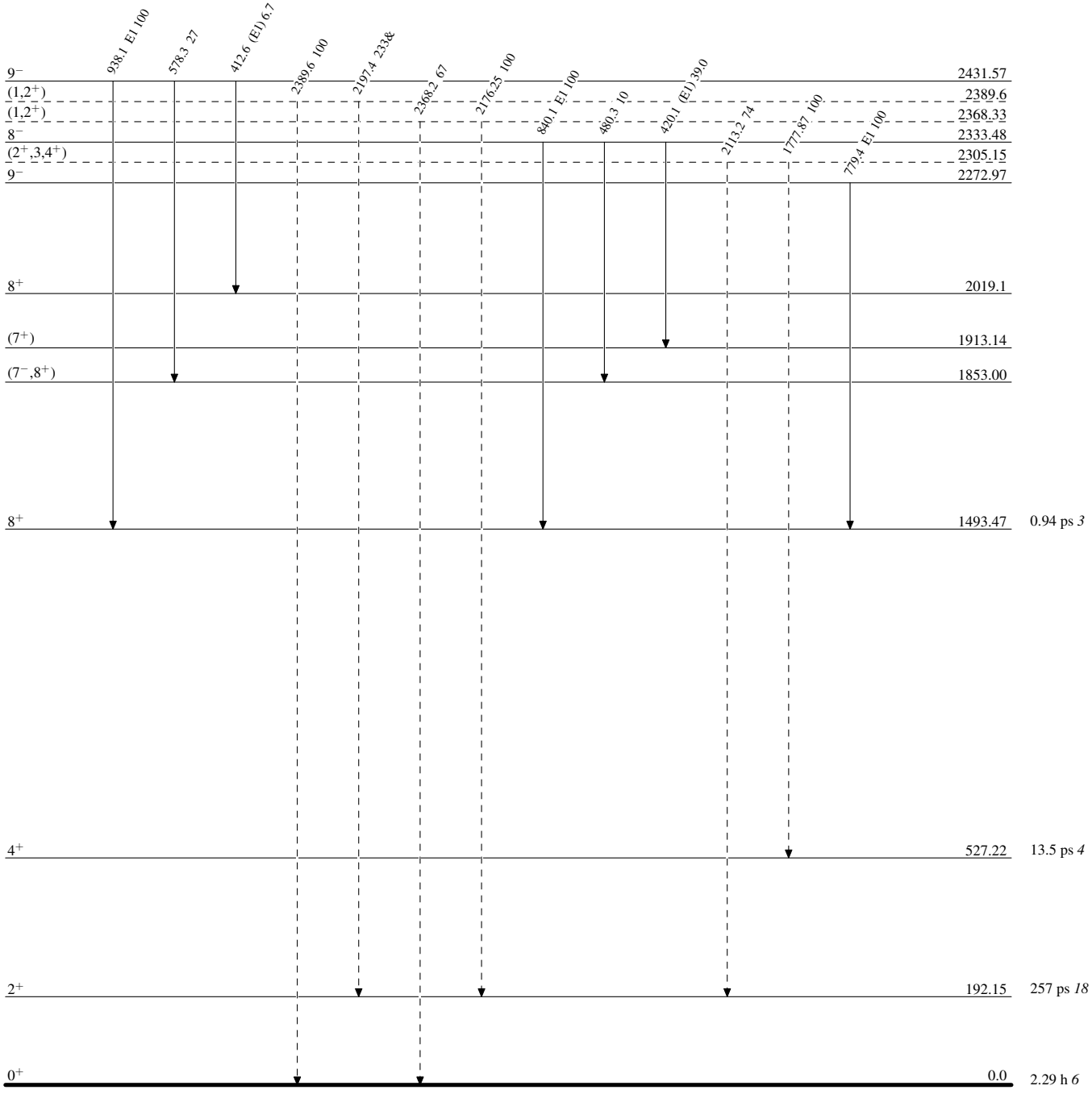
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

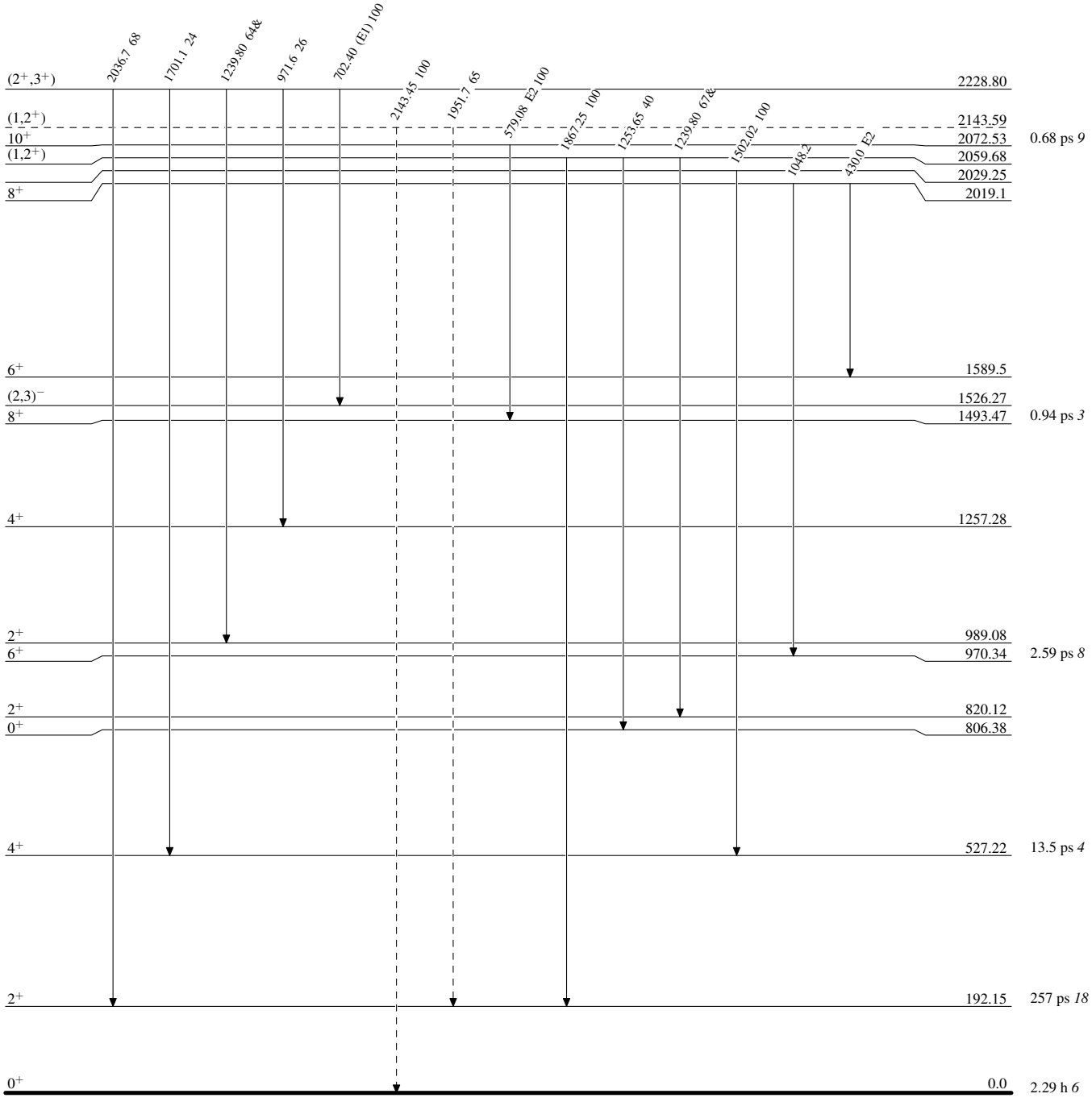
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

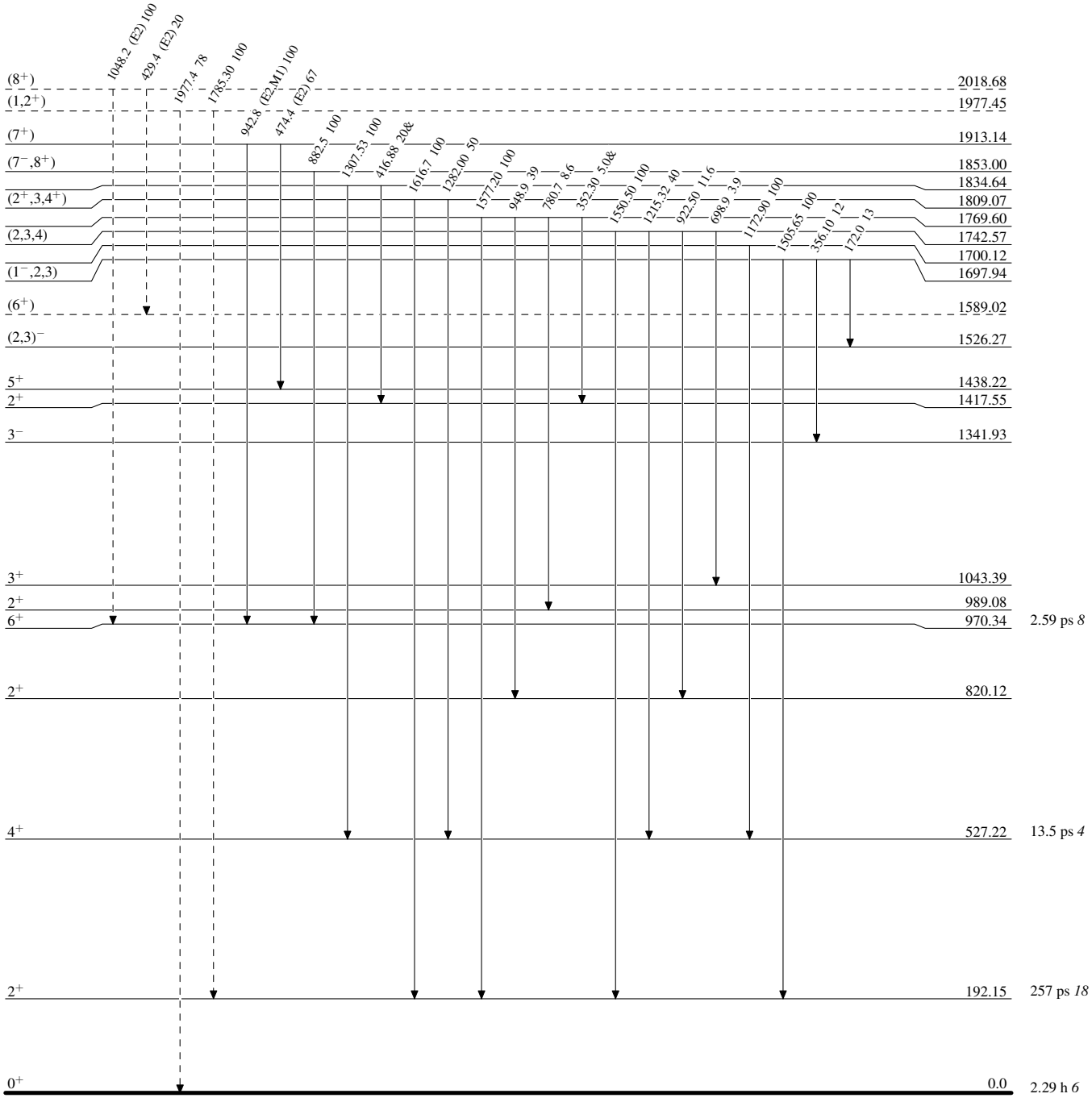
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

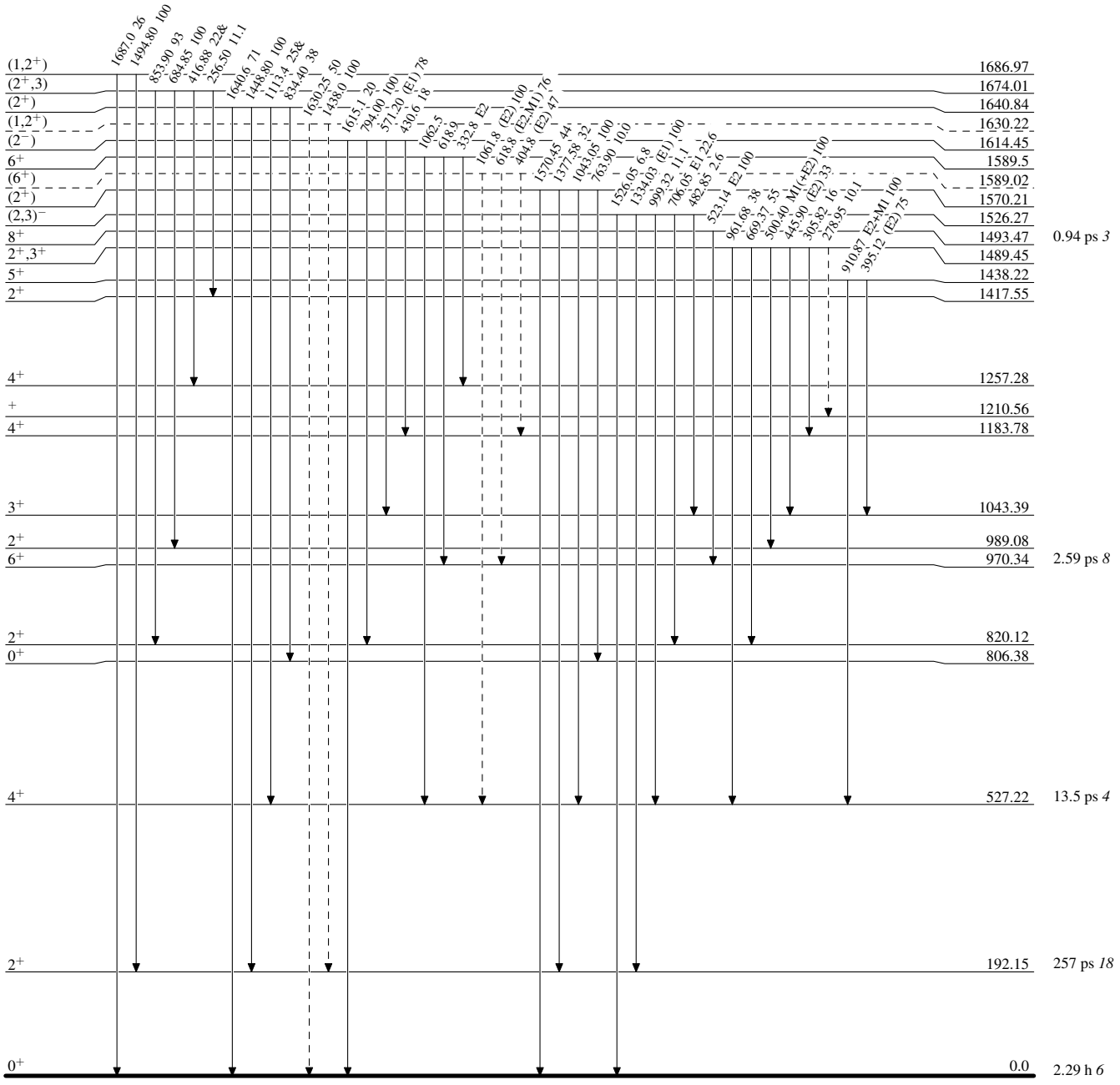
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{158}_{68}Er_{90}$

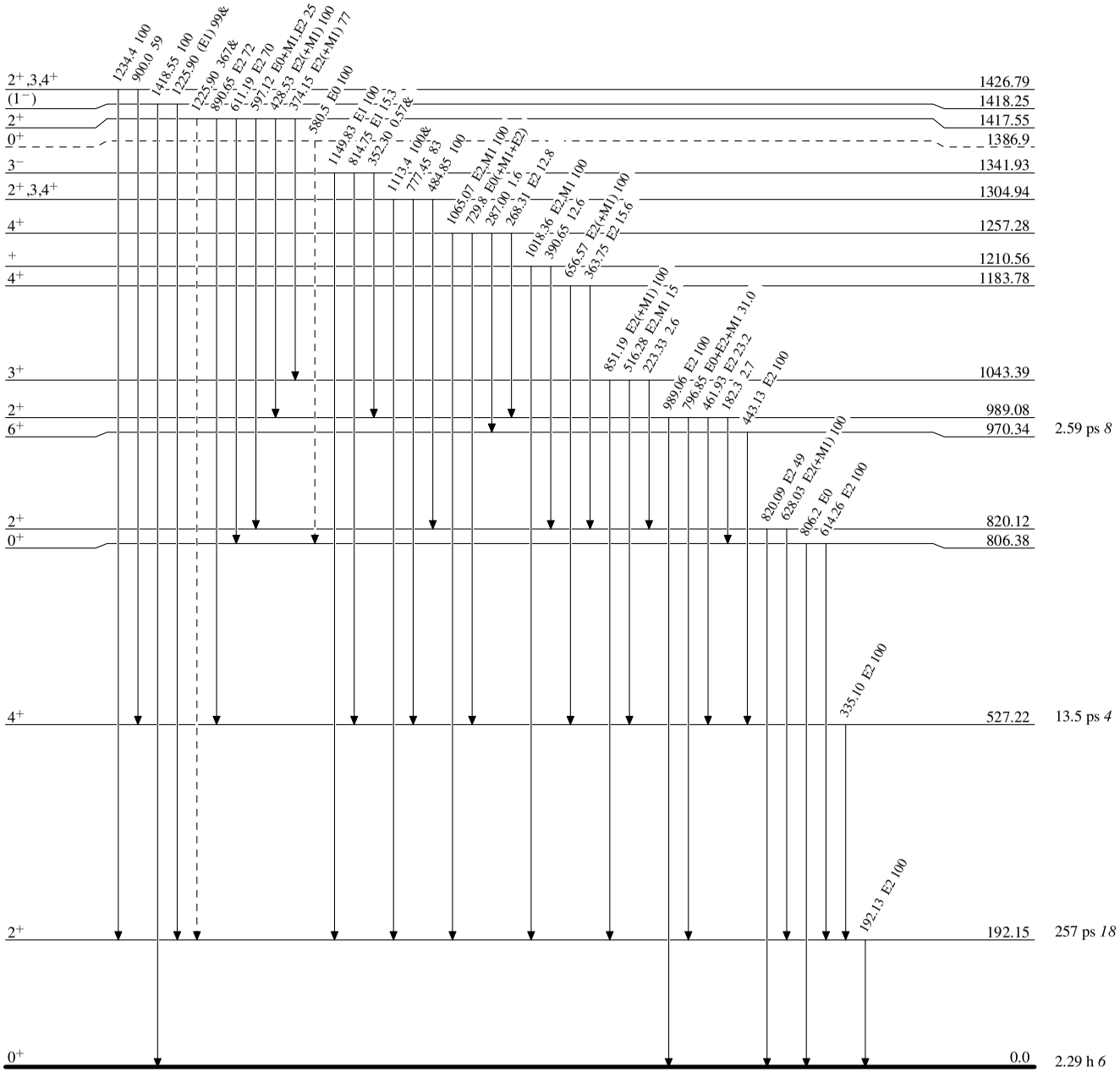
Adopted Levels, Gammas

Legend

Level Scheme (continued)

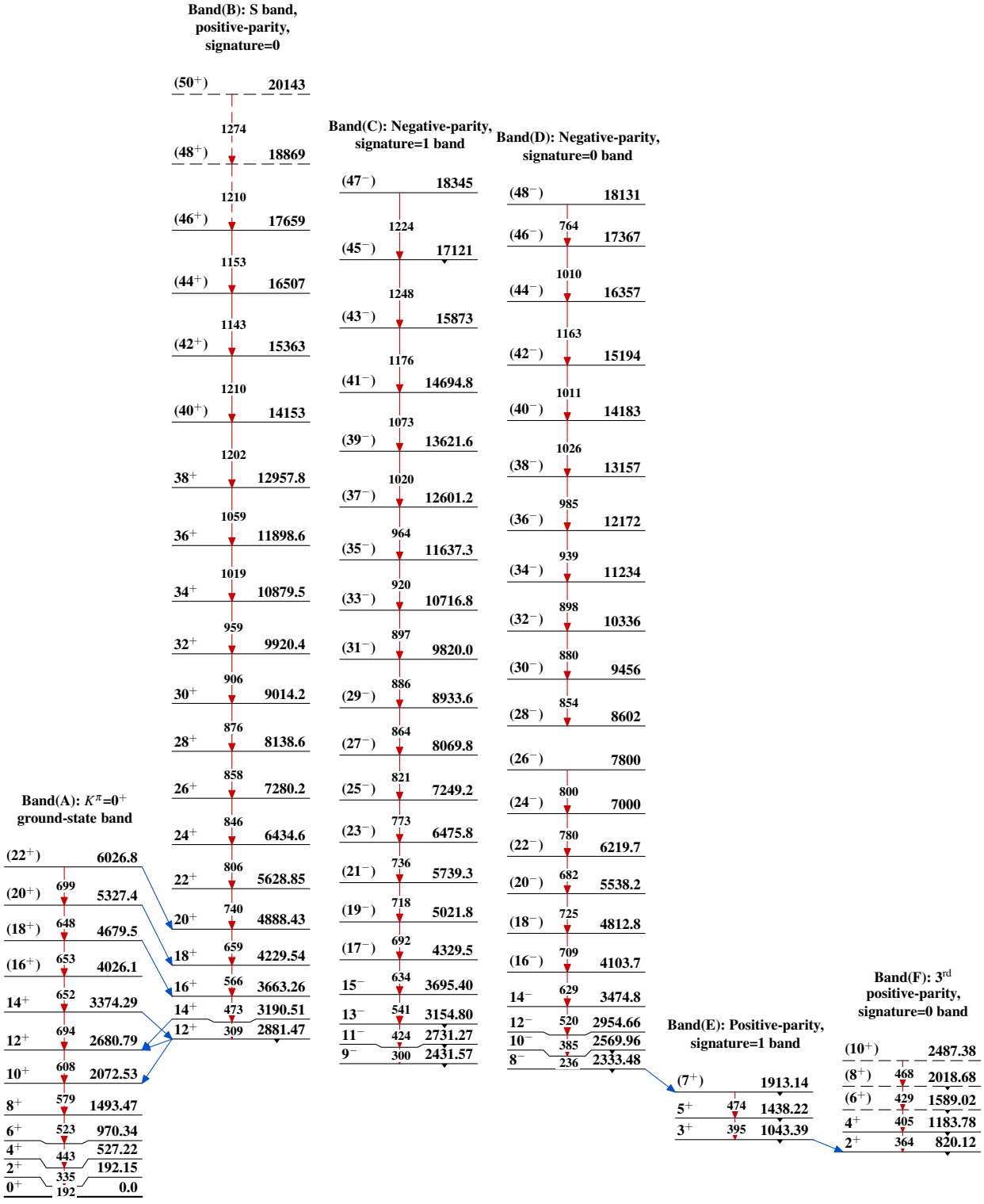
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

γ Decay (Uncertain)



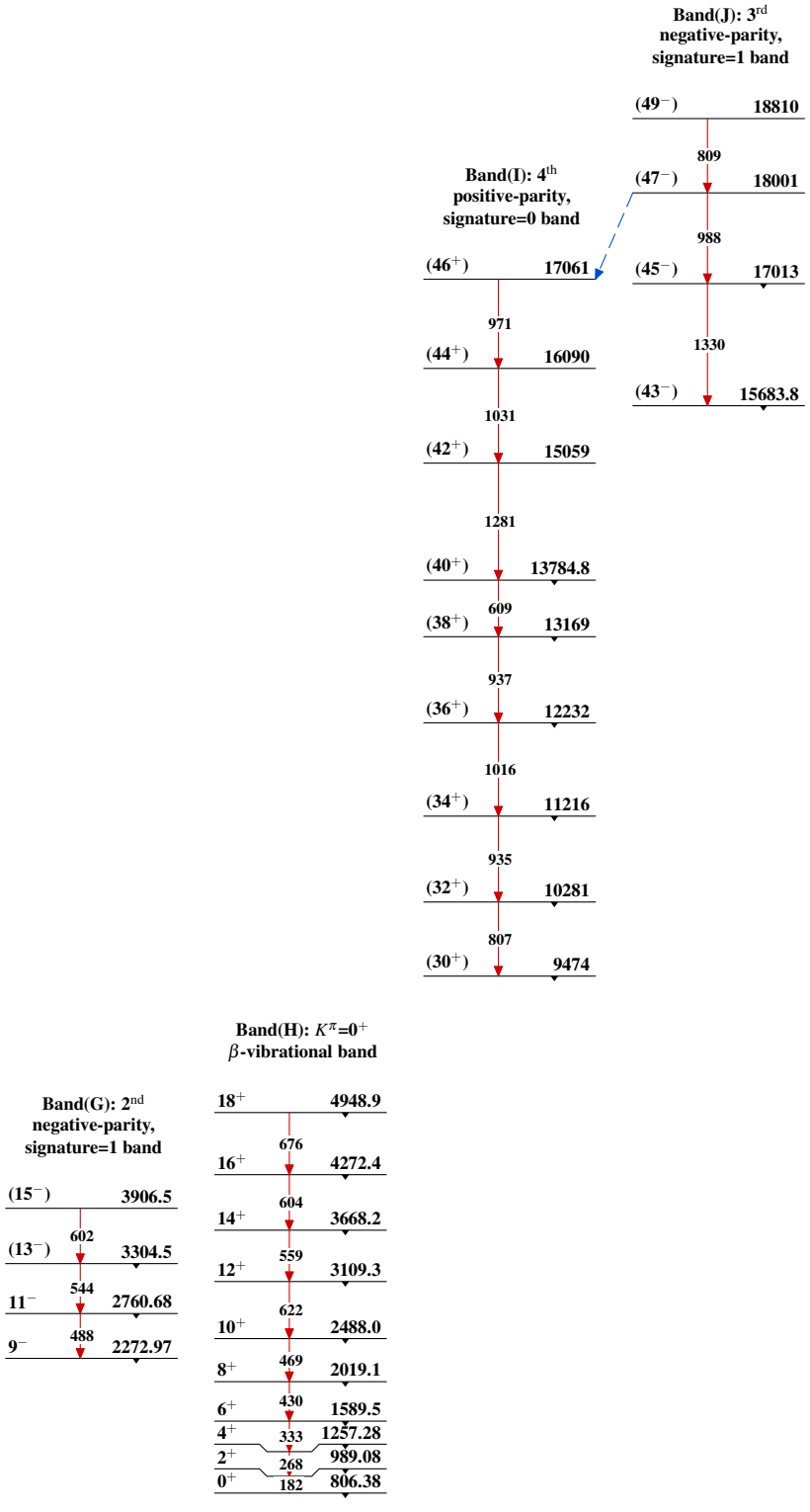
$^{158}_{68}Er_{90}$

Adopted Levels, Gammas



$^{158}_{68}Er_{90}$

Adopted Levels, Gammas (continued)



$^{158}_{68}Er_{90}$

Adopted Levels, Gammas (continued)