Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Q(β^-)=−7.38×10^3 *3*; S(n)=1.007×10^4 *3*; S(p)=5.46×10^3 *3*; Q(α)=3.48×10^3 *3* 2017Wa10
Q(ε)=1.27×10^3 *6*; S(2n)=1.775×10^4 *3*; S(2p)=8.40×10^3 *3* 2017Wa10

Additional information 1.
Additional information 2.

In addition to the 3450 α transition, 1992KaZP and 1995KaZS report a weak α branch, with Eα=3.03 MeV *7*, from ^{156}Er. These authors report I$_\alpha$=5×10^{-6} *2* % per decay for this branch.

^{156}Er Levels

Model calculations related to level energies and B(E2) include 1976Fl15 and those related to yrast levels and backbending include 1977PlZX or 1977Pl05, 1978De02, 1985Ra31, and 1989Hs02. Results of model calculations of some properties of both the positive- and negative-parity bands are given in the study by 1980Zo02. See also the model-based discussions in 2009Pa17 and 2011Re06.

Cross Reference (XREF) Flags

A ^{114}Cd(^{48}Ca,6nγ):2
B ^{114}Cd(^{48}Ca,6nγ):1
C ^{156}Tm ε decay (83.8 s)
D (HI,xnγ)

E(level)†	J$^\pi$@	T$_{1/2}$#	XREF	Comments
0&	0$^+$	19.5 min *10*	ABCD	%ε+%β^+≈100; %α=17×10^{-6} *4* T$_{1/2}$: From 1975Al26, γ(t). Others: <15 min (1965Gr34), <12 min (1965Zh02) and <4 min (1966La11). These upper limits (see, e.g., 1965Zh02) come from an inability to observe a clear ingrowth of β^+ activity from ^{156}Ho in the decay of samples containing both Er and Ho. %α: From the sum of %α=12×10^{-6} *3* for a 3450 α transition (1996ByZY) and %α=5×10^{-6} *2* for a 3.30-MeV α transition (1992KaZP,1995KaZS). 2002KaZR report I$_\alpha$=1.0×10^{-6} per decay for the 3450 α. Δ<r^2>(156-154)=0.26 and Δ<r^2>(158-156)=0.29 fm^2 (1987NeZW, obtained from graph by evaluator). From an evaluation of data on nuclear rms charge radii, 2004An14 report <r^2>$^{1/2}$=5.134 fm *32*.
344.53& *6*	2$^+$	34.0 ps *9*	ABCD	μ≈0.80 J$^\pi$: E2 γ to 0$^+$ g.s. μ: From perturbed $\gamma\gamma(\theta)$ for recoiling nuclei in hyperfine magnetic fields (1970No01, in (HI,xnγ)). This is the value given in the evaluation by 1989Ra17.
797.39& *8*	4$^+$	5.0 ps *3*	ABCD	J$^\pi$: E2 γ to 2$^+$ level and expected band structure.
930.07b *16*	0$^+$		A C	J$^\pi$: E0 transition to the 0$^+$ g.s.
930.48d *7*	2$^+$		A C	J$^\pi$: E2 transition to the g.s.
1220.74b *9*	2$^+$		A C	J$^\pi$: E0 component in the transition to the 2$^+$ member of the g.s. band.
1243.01 *19*			C	J$^\pi$: γ's to 2$^+$ levels indicate J$^\pi$=0$^+$,1,2,3, or 4$^+$.
1303.54i *11*	3$^-$		BC	J$^\pi$: E1 γ to 2$^+$ level and assumed band structure.
1304.8? *4*			C	
1340.86& *16*	6$^+$	1.9 ps *3*	ABCD	J$^\pi$: Stretched E2 to 4$^+$ and expected band structure.
1351.33e *9*	3$^+$		A C	J$^\pi$: E2 γ to 2$^+$, γ to 4$^+$, and expected band structure. Additional information 3.
1381.9? *4*			C	

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Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

E(level)[†]	J$^{\pi}$[@]	T$_{1/2}$[#]	XREF	Comments
1406.15[d] *10*	4$^+$		A C	XREF: A(1404.7). J$^{\pi}$: γ's to 2$^+$ and 4$^+$ levels and expected band structure.
1476			D	J$^{\pi}$: Assigned as 5$^-$ by 1985AzZY (HI,xnγ), but this assignment is not adopted by the evaluator. (See the comment in the (HI,xnγ) data set.).
1517.90[i] *18*	(1$^-$)		C	E(level): Assigned by the evaluator as a member of this band based on the systematics of octupole-related states in the adjacent N=88 nuclides (see, e.g., 1980Zo02, ^{156}Tm ε decay). J$^{\pi}$: γ's to 0$^+$ and 2$^+$ levels and assumed band structure.
1546.68[b] *11*	4$^+$		A C	XREF: A(1545.4). J$^{\pi}$: E0 component in the transition to the 4$^+$ member of the g.s. band.
1570.75[g] *15*	2$^+$		C	J$^{\pi}$: E0 component in the transition to the 2$^+$ member of the γ-vibrational band.
1611.77[i] *20*	5$^-$		ABC	XREF: A(1610.8). J$^{\pi}$: γ to 4$^+$ level and expected band structure.
1630.52[n] *13*	2$^-$		BC	J$^{\pi}$: γ's only to 2$^+$ levels and assumed band structure.
1663.41 *16*			C	J$^{\pi}$: Previously tentatively assigned as the 5$^+$ member of the γ-vibrational band, but a subsequent high-spin study (2011Re06) places this band member elsewhere in the level scheme. See the comment in the ^{156}Tm ε Decay data set.
1710.54 *21*			C	J$^{\pi}$: γ to 2$^+$ level suggests J$^{\pi}$ from 0$^+$ through 4$^+$.
1814.48[n] *21*	4$^-$		BC	J$^{\pi}$: γ to 4$^+$ level and assumed band structure.
1835.2[e] *7*	5$^+$		A C	XREF: C(1836.1?).
1860.8[g] *6*	(3$^+$)		C	J$^{\pi}$: From expected band structure and γ to 2$^+$ level.
1885.9[d]	6$^+$		A	J$^{\pi}$: γ's to 4$^+$ and 6$^+$ levels and expected band structure.
1909.56 *19*	2$^+$,3,4$^+$		C	J$^{\pi}$: γ's to 2$^+$ and 4$^+$ levels. See the comment on this level in the ε-Decay data set.
1959.2[&] *3*	8$^+$	2.5 ps *6*	AB D	XREF: A(1957.6)D(1960.1). J$^{\pi}$: Stretched E2 to 6$^+$ and expected band structure. $\gamma(\theta)$ establishes the spin sequence 9→8 for the 531.2 γ populating this level from the 2491.4, 9$^-$ level.
1969.6[b]	6$^+$		A	J$^{\pi}$: γ's to 4$^+$ and 6$^+$ levels and expected band structure.
2014.52 *18*			C	Additional information 4.
2029.3[i] *3*	7$^-$		AB D	XREF: A(2028.1)D(2031.0). J$^{\pi}$: E1 γ to 6$^+$ level, γ to 5$^-$ level and proposed band structure.
2169.8 *3*			C	Additional information 5.
2204.3[n] *4*	6$^-$		B D	XREF: D(2206.1). J$^{\pi}$: E2 γ to 4$^-$, γ's to 5$^-$ and 6$^+$ levels and expected band structure.
2249.83 *22*			C	Additional information 6.
2368.6[e]	(7$^+$)		A	J$^{\pi}$: γ's to 5$^+$ and 6$^+$ levels and expected band structure.
2377.0[d]	8$^+$		A	J$^{\pi}$: γ's to 6$^+$ levels and expected band structure.
2480.7[b]	8$^+$		A	J$^{\pi}$: γ's to 6$^+$ and 8$^+$ levels and expected band structure.
2489.9[j] *4*	9$^-$	8 ps *5*	AB D	XREF: A(2488.1)D(2491.4). J$^{\pi}$: $\gamma(\theta)$, in (HI,xnγ), establishes the spin sequence 9→8 for the 530.6 γ deexciting this level.
2601.2[n] *4*	8$^-$		B D	XREF: D(2603.1). J$^{\pi}$: γ's to 6$^-$ and 7$^-$, probable nonstretched dipole to 8$^+$, and expected band structure.
2633.1[&] *4*	10$^+$	1.4 ps *3*	AB D	XREF: A(2631.9)D(2634.7). J$^{\pi}$: Stretched E2 to 8$^+$ and expected band structure. In (HI,xnγ), $\gamma(\theta)$ establishes the spin sequence 11→10 for the 290.7 γ populating this level from the 2925.4, 11$^-$ level.
2760.9[h]	(8$^+$)		A	J$^{\pi}$: γ's to 7$^-$ and (7$^+$) levels and proposed band structure.
2903.3[o] *5*	10$^-$		B D	XREF: D(2905.2). J$^{\pi}$: γ's to 8$^-$ and 9$^-$, nonstretched dipole to 10$^+$, and expected band structure.
2923.6[j] *4*	11$^-$	8.2 ps *7*	B D	XREF: D(2925.4). J$^{\pi}$: $\gamma(\theta)$ establishes the spin sequence 11→10 for the 290.4 γ deexciting this level.

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Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

E(level)[†]	J$^{\pi}$[@]	T$_{1/2}$[#]	XREF	Comments
2943.2[d]	10$^+$		A	J$^{\pi}$: γ to 8$^+$ and expected band structure.
2961.3[e]	(9$^+$)		A	J$^{\pi}$: γ to (7$^+$) level and expected band structure.
2998.1[h]	10$^+$		A	J$^{\pi}$: γ's to 8$^+$, 9$^-$ and 10$^+$ levels and proposed band structure.
3042.4[b]	10$^+$		A	J$^{\pi}$: γ to 8$^+$ level and expected band structure.
3081.5[l] 5	11$^-$		B D	XREF: D(3082.6). J$^{\pi}$: γ's to 9$^-$ and 10$^+$ levels. Proposed initial band member.
3314.6[a] 5	12$^+$	1.5 ps 7	AB D	XREF: A(3312.8)D(3317.2). J$^{\pi}$: Stretched E2 to 10$^+$ level and expected band structure.
3384.1[o] 5	12$^-$		B D	XREF: D(3386.5). J$^{\pi}$: E2 γ to 10$^-$ level, γ to 11$^-$ level and expected band structure.
3432.3[j] 6	13$^-$	3.3 ps 6	B D	XREF: D(3434.4). J$^{\pi}$: Stretched E2 to 11$^-$ level, E1 to 12$^+$, and expected band structure.
3439.5[&] 6	12$^+$		B D	XREF: D(3441.7). J$^{\pi}$: γ to 10$^+$ level and expected band structure.
3493.7[h]	12$^+$		A	J$^{\pi}$: γ to 10$^+$ level and expected band structure.
3588.5[d]	12$^+$		A	J$^{\pi}$: γ to 10$^+$ and expected band structure.
3599.3[e]	(11$^+$)		A	J$^{\pi}$: γ to (9$^+$) and expected band structure.
3627.7[f]	12$^+$		A	J$^{\pi}$: γ to 10$^+$ level and proposed band structure.
3651.3[b]	12$^+$		A	J$^{\pi}$: γ to 10$^+$ level and expected band structure.
3673.6[l] 5	13$^-$		B D	XREF: D(3675.1). J$^{\pi}$: γ's to 11$^-$ and 12$^-$ levels and expected band structure.
3836.7[a] 5	14$^+$	1.6 ps 4	AB D	XREF: A(3834.6)D(3839.8). J$^{\pi}$: Stretched E2 to 12$^+$ level and expected band structure.
3953.9[o] 5	14$^-$		B D	XREF: D(3956.8). J$^{\pi}$: E2 γ to 12$^-$ level, γ to 13$^-$ level and expected band structure.
4035.1[j] 5	15$^-$	2.0 ps 12	B D	XREF: D(4038.4). J$^{\pi}$: Stretched E2 to 13$^-$ level and expected band structure.
4087.6[h] 16	14$^+$		A	J$^{\pi}$: γ to 12$^+$ level and expected band structure.
4185.3[f]	14$^+$		A	J$^{\pi}$: γ's to 12$^+$ levels and proposed band structure.
4247.5[b]	14$^+$		A	J$^{\pi}$: γ to 12$^+$ level and expected band structure.
4269.8[e]	(13$^+$)		A	J$^{\pi}$: γ to (11$^+$) and expected band structure.
4280.7[d]	14$^+$		A	J$^{\pi}$: γ to 12$^+$ and expected band structure.
4309.9[l] 6	15$^-$		B D	XREF: D(4312.3). J$^{\pi}$: γ's to 13$^-$ and 14$^-$ levels and expected band structure.
4380.4[a] 6	16$^+$		AB D	XREF: A(4378.8)D(4384.9). J$^{\pi}$: γ to 14$^+$ level and expected band structure.
4593.1[o] 6	16$^-$		B D	XREF: D(4596.6). J$^{\pi}$: E2 γ to 14$^-$ level, γ to 15$^-$ level and expected band structure.
4711.5[j] 5	17$^-$	1.6 ps 6	B D	XREF: D(4715.0). J$^{\pi}$: γ to 15$^-$ level and expected band structure.
4764.0[h]	16$^+$		A	J$^{\pi}$: γ to 14$^+$ level and expected band structure.
4782.4[f] 6	16$^+$		AB D	XREF: A(4780.3)D(4786.1). J$^{\pi}$: γ to 14$^+$ level, (D) γ to 15$^-$ level and expected band structure.
4812.9[b]	16$^+$		A	J$^{\pi}$: γ to 14$^+$ level and expected band structure.
4967.4[e]	(15$^+$)		A	J$^{\pi}$: γ to (13$^+$) and expected band structure.
5000.7[l] 6	17$^-$		B D	XREF: D(5004.3). J$^{\pi}$: γ's to 15$^-$ and 16$^-$ levels and expected band structure.
5006.6[a] 6	18$^+$	1.2 ps 6	AB D	XREF: A(5003.8)D(5010.5). J$^{\pi}$: γ to 16$^+$ and expected band structure.
5297.3[o] 6	18$^-$		B D	XREF: D(5301.0).

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Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

E(level)[†]	Jπ[@]	$T_{1/2}$[#]	XREF	Comments
				Jπ: γ's to 16⁻ and 17⁻ levels and expected band structure.
5338.3[f] 6	18⁺		AB D	XREF: A(5335.9)D(5342.2). Jπ: E2 γ to 16⁺ and expected band structure.
5370.4[b]	18⁺		A	Jπ: γ to 16⁺ level and expected band structure.
5495.7[j] 6	19⁻	2.2 ps 8	B D	XREF: D(5499.8). Jπ: γ to 17⁻ level and expected band structure.
5537.1[h]	18⁺		A	Jπ: γ to 16⁺ level and expected band structure.
5674.5[k] 6	19⁻		B D	XREF: D(5678.8). Jπ: γ's to 17⁻ levels, 18⁻ level and proposed band structure.
5716.7[a] 7	20⁺	0.8 ps 6	AB D	XREF: A(5713.8)B(5715.7)D(5721.5). Jπ: E2 γ to 18⁺ level and expected band structure.
5787.8[l] 6	19⁻		B D	XREF: D(5791.8). Jπ: γ's to 17⁻ and 18⁻ levels and expected band structure.
5931.2[f] 6	20⁺		AB D	XREF: A(5927.8)D(5935.4).
6056.9[b]	20⁺		A	Jπ: γ to 18⁺ level and expected band structure.
6058.4[o] 6	20⁻		B D	XREF: D(6062.3). Jπ: γ's to 18⁻ and 19⁻ levels and expected band structure.
6261.2[k] 6	21⁻		B D	XREF: D(6265.6). Jπ: γ's to 19⁻ levels, 20⁻ level and expected band structure.
6295.4	(20⁺)		A	Jπ: γ to (18⁺) level.
6356.4[j] 6	21⁻		B D	XREF: D(6361.1). Jπ: γ's to 19⁻ levels and expected band structure.
6410.9[h]	(20⁺)		A	Jπ: γ to 18⁺ level and expected band structure.
6437.1[m] 7	21⁻		B D	XREF: D(6441.1). Jπ: γ's to 19⁻, 20⁻ and 21⁻ levels and expected band structure.
6489.3[a] 8	22⁺		AB D	XREF: A(6485.8)D(6494.5). Jπ: E2 γ to 20⁺ level and expected band structure.
6663.0[f] 7	22⁺		AB D	XREF: A(6658.8)D(6667.5). Jπ: E2 γ to 20⁺ level and expected band structure.
6740.7[p] 7	22⁻		B D	XREF: D(6744.9). Jπ: γ's to 21⁻ and 20⁻ levels and expected band structure.
6822.9[b]	(22⁺)		A	Jπ: γ to 20⁺ level and expected band structure.
6867.5[k] 7	23⁻		B D	XREF: D(6872.3). Jπ: γ to 21⁻ level and expected band structure.
7053.9[m] 7	23⁻		B D	XREF: D(7058.7). Jπ: γ's to 21⁻ and 23⁻ levels and expected band structure.
7109.7[j] 7	23⁻		B D	XREF: D(7115.2). Jπ: γ's to 22⁻ and 21⁻ levels and expected band structure.
7315.9[a] 9	24⁺		AB D	XREF: A(7312.8)D(7322.3). Jπ: E2 γ to 22⁺ level and expected band structure.
7414.7[p] 7	24⁻		B D	XREF: D(7420.1). Jπ: γ's to 22⁻, stretched dipole to 23⁻, and expected band structure.
7444.1[f] 8	24⁺		AB D	XREF: A(7438.8)B(7443.0)D(7448.6). Jπ: γ to 22⁺ level and expected band structure.
7492.5 8	(24⁺)		B D	XREF: D(7497.1). Jπ: γ to 22⁺ level.
7600.8[k] 8	25⁻		B D	XREF: D(7607.5). Jπ: γ to 23⁻ level and expected band structure.
7649.4[m] 7	25⁻		B D	XREF: D(7655.2). Jπ: γ's to 23⁻ and 24⁻ levels and expected band structure.
7979.9 8			B D	XREF: D(7984.9).
8082.2[a] 8	26⁺		AB D	XREF: A(8079)D(8087.7).

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Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

E(level)[†]	J$^{\pi}$[@]	XREF	Comments
			J$^{\pi}$: E2 γ to 24^{+} level and expected band structure.
8101.3[p] 8	26^{-}	B D	XREF: D(8106.8).
			J$^{\pi}$: γ to 24^{-} level and expected band structure.
8210.9[f] 8	26^{+}	AB D	XREF: A(8206)D(8215.6).
			J$^{\pi}$: γ to 24^{+} level and expected band structure.
8289.3[k] 10	27^{-}	B D	XREF: D(8297.3).
			J$^{\pi}$: γ to 25^{-} level and expected band structure.
8325.0 10		B D	XREF: D(8331).
8393.9[m] 8	27^{-}	B D	XREF: D(8400.3).
			J$^{\pi}$: E2 γ to 25^{-} level, γ's to 25^{-} and 26^{-} levels, and expected band structure.
8848.8[c] 8	28^{+}	B D	XREF: D(8854.5).
			J$^{\pi}$: γ's to 26^{+} levels.
8867.1[p] 9	28^{-}	B D	XREF: D(8873.0).
			J$^{\pi}$: γ to 26^{-} level and expected band structure.
8902.5 9		B D	XREF: D(8908.6).
			J$^{\pi}$: From (HI,xnγ), J$^{\pi}$=(28^{+}). 2009Pa17 do not list a J$^{\pi}$ value for this state.
8965.0[a] 9	28^{+}	B D	XREF: D(8971.9).
			J$^{\pi}$: E2 γ to 26^{+} level and expected band structure.
9068.2[f] 9	28^{+}	B D	XREF: D(9073.8).
			J$^{\pi}$: γ to 26^{+} level and expected band structure.
9197.7[k] 12	29^{-}	B D	XREF: D(9204.9).
			J$^{\pi}$: γ to 27^{-} level and expected band structure.
9288.3[m] 8	29^{-}	B D	XREF: D(9295.0).
			J$^{\pi}$: γ's to 27^{-} and 28^{-} level, fed by E1 γ from 30^{+}, and expected band structure.
9647.9[c] 8	30^{+}	B D	XREF: D(9654.2).
			J$^{\pi}$: E1 γ to 29^{-} level and E2 γ to 28^{+} level and proposed band structure.
9693.5[p] 9	30^{-}	B D	XREF: D(9700.4).
			J$^{\pi}$: γ to 28^{-} level and expected band structure.
9864[a]	30^{+}	D	XREF: D(9871).
			E(level): Level not reported by 2009Pa17. These authors do not report levels in this band above 28^{+}.
			J$^{\pi}$: γ to 28^{+} level and expected band structure.
10106.1[k] 13	31^{-}	B D	XREF: D(10115.9).
			J$^{\pi}$: γ to 29^{-} level and expected band structure.
10182.3[m] 9	31^{-}	B D	XREF: D(10189.9).
			J$^{\pi}$: γ to 29^{-} and 30^{-} levels and expected band structure.
10414.6[c] 18	32^{+}	B D	XREF: D(10421.1).
10532.2[p] 10	32^{-}	B D	XREF: D(10539.5).
			J$^{\pi}$: γ to 30^{-} level and expected band structure.
10926.5[m] 10	33^{-}	B D	XREF: D(10934.8).
			J$^{\pi}$: E2 γ to 31^{-} level and expected band structure.
11097.0[c] 11	34^{+}	B D	XREF: D(11103.6).
			J$^{\pi}$: γ to 32^{+} level and proposed band structure.
11187.1[k] 15	33^{-}	B	J$^{\pi}$: γ to 31^{-} and expected band structure.
11333.1 11	(34^{+})	B D	XREF: D(11338.8).
			J$^{\pi}$: γ to 32^{+} level.
11453.2[p] 11	34^{-}	B D	XREF: D(11460.5).
			J$^{\pi}$: γ to 32^{-} level and expected band structure.
11577.6 11	34^{-}	B D	XREF: D(11586.3).
			J$^{\pi}$: γ to 32^{-} level, γ from 36^{-} level.
11817.1 12	35^{+}	B D	XREF: D(11824.2).
			J$^{\pi}$: M1+E2 γ to 34^{+} level. Fed by M1+E2 γ from 36^{+}.
11974.6[m] 12	(35^{-})	B	J$^{\pi}$: γ to 33^{-} level.

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Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

E(level)[†]	J$^{\pi}$[@]	XREF	Comments
11976	(36$^+$)	D	XREF: D(11983). J$^{\pi}$: γ to 34$^+$ level.
12035.4[c] *12*	36$^+$	B D	XREF: D(12043.0). J$^{\pi}$: E2 γ to 34$^+$ level and proposed band structure.
12139.6 *11*	(35$^-$)	B	J$^{\pi}$: γ from 36$^-$ level, γ to 33$^-$ level.
12423.1[p] *11*	36$^-$	B D	XREF: D(12431.2). J$^{\pi}$: γ's to 34$^-$ levels and expected band structure.
12668.2	(38$^+$)	D	XREF: D(12676.1). E(level): From the energy of the 36$^+$ level and the listed Eγ value. E(level)=12676.1 is listed in (HI,xnγ). J$^{\pi}$: γ to (36$^+$) level.
13058.2[p] *13*	38$^-$	B D	XREF: D(13066.3). J$^{\pi}$: γ to 36$^-$ level and expected band structure.
13202.5[c] *13*	38$^+$	B D	XREF: D(13211.3). J$^{\pi}$: E2 γ to 36$^+$ level and proposed band structure.
13402.3 *13*	38$^+$	B	J$^{\pi}$: E2 γ to 36$^+$.
13867.0[c] *14*	40$^+$	B D	XREF: D(13876.5). J$^{\pi}$: E2 γ to 38$^+$ level and proposed band structure.
14034.3 *13*	(40$^+$)	B D	XREF: D(14044.0). J$^{\pi}$: γ's to 38$^+$ levels.
14421.6[c] *14*	42$^+$	B D	XREF: D(14431.9). J$^{\pi}$: E2 γ to 40$^+$ level and proposed band structure. Band termination point. Above this level, the states are presumed (2009Pa17) to include excitations of the ^{146}Gd core. J$^{\pi}$: State represents the full alignment of the ten valence nucleons outside the ^{146}Gd core. Configuration is (π $h^4_{11/2\ 16+}$)$\otimes$[($i^2_{13/2\ 12+}$)(ν $f_{7/2}$,$h_{9/2}$)$^4_{14+}$)]$_{26+}$.
15478.7[‡] *15*	(43$^-$)	B D	XREF: D(15489.4). J$^{\pi}$: (E1) γ to 42$^+$ level. (43$^+$) proposed in (HI,xnγ).
15764[‡] *2*	(44)$^+$	B	J$^{\pi}$: E2 γ to 42$^+$ level.
15814[‡] *2*	(44)$^+$	B	J$^{\pi}$: E2 γ to 42$^+$ level.
15986[‡] *2*		B	
16043[‡] *2*	(44)$^+$	B	J$^{\pi}$: E2 γ to 42$^+$ level.
16375[‡] *2*		B	
16583[‡] *2*	(44)$^+$	B	J$^{\pi}$: E2 γ to 42$^+$ level.

[†] From the ^{156}Tm ε decay and heavy-ion data, where they are determined by least-squares fits to the γ energies.
[‡] Level is expected to involve excitations from the ^{146}Gd core.
[#] Unless otherwise noted, the values are from the (HI,xnγ) studies and were obtained using the Doppler-shift recoil-distance technique.
[@] For the levels seen only in the high-spin studies, the values are from the multipolarities of the γ transitions, where known, the γ branching of the levels, and the assumption of generally increasing spin with increasing excitation energy.
[&] Band(A): K$^{\pi}$=0$^+$ g.s. band. Band crossed by an aligned ($i_{13/2}$) two-quasineutron (AB) éxcitation near hω=0.30 MeV (above J=10).
[a] Band(a): Aligned $i_{13/2}$ two-quasineutron (AB) band.
[b] Band(B): First excited K$^{\pi}$=0$^+$ band.
[c] Band(C): Band based on a 28$^+$ level. Proposed extension of Bands(B) and (E), both of which experience band crossings near $\hbar\omega$=0.39 MeV (J$^{\pi}\approx$28$^+$). Above $\hbar\omega\approx$0.4 MeV, band seems noncollective in nature. Possible weakly deformed oblate triaxial terminating band (2009Pa17).
[d] Band(D): γ-vibrational band, α=0 branch.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{156}Er Levels (continued)

[e] Band(d): γ-vibrational band, α=1 branch.
[f] Band(E): Band based on 12^+. Band possibly results from the coupling of the aligned $i_{13/2}$ two-quasineutron (AB) band and the γ-vibrational band. The evaluator has assumed that this band is the same as the "positive-parity, even-spin band" proposed in the (HI,xnγ) study.
[g] Band(F): $K^\pi=2^+$ band. Possible two-phonon $\beta\gamma$ vibration.
[h] Band(G): Band based on an 8^+ level. Possible aligned $((\nu\ h_{9/2})(\nu\ f_{7/2}))_{2+}$ configuration.
[i] Band(H): Odd-spin negative-parity band. Probable octupole-based excitation. Undergoes a backbend near $\hbar\omega$=0.2 MeV (J>7).
[j] Band(h): Probable -π prolate two-neutron quasiparticle band. Associated with the band crossing of Band(h).
[k] Band(I): Odd-spin negative parity band based on 19^-. Band associated with Bands(H) and (h).
[l] Band(J): Odd-spin negative-parity band based on 11^-.
[m] Band(j): Band associated with Band(J).
[n] Band(K): Even-spin negative-parity band. Probable octupole-based excitation. Undergoes a backbend near $\hbar\omega$=0.2 MeV (J>8).
[o] Band(k): Probable -π prolate two-neutron quasiparticle band. Associated with the band crossing of Band(K).
[p] Band(L): Probable extension of Band(K).

Adopted Levels, Gammas (continued)

$\gamma(^{156}Er)$

The unplaced γ's observed in the ^{156}Tm ε decay are not included here.

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α[‡]	Comments
344.53	2^+	344.55 *7*	100	0	0^+	E2	0.0457	B(E2)(W.u.)=65.7 *18* Mult.: From $\gamma(\theta)$ in (HI,xnγ), mult=Q. RUL eliminates M2. This transition is the basis for normalizing the γ and ce intensities to obtain α(K)exp values for the other transitions in both the ^{156}Tm ε Decay and the (HI,xnγ) studies.
797.39	4^+	452.85 *7*	100	344.53	2^+	E2	0.0213	B(E2)(W.u.)=117 *7*
930.07	0^+	≈585.9[#]	100	344.53	2^+			E_γ,I_γ: The major part of this γ depopulates the 930.48, 2^+ level.
		930		0	0^+	E0		Mult.: Unresolved ce lines interpreted as including an E0 component.
930.48	2^+	585.93[#] *8*	≤100	344.53	2^+	E2	0.01106	E_γ,I_γ: a minor part of this γ depopulates the 930.07, 0^+ level.
		930.42 *9*	35	0	0^+	E2	0.00390	Mult.: Unresolved lines interpreted as including an E2 component.
1220.74	2^+	290.68 *14*	13 *2*	930.07	0^+			
		423.40 *17*	15 *2*	797.39	4^+			
		876.20 *14*	77 *6*	344.53	2^+	E0+E2(+M1)	0.043 *12*	α: Computed from α(K)exp and theoretical α/α(K) ratios.
		1220.83 *17*	100 *9*	0	0^+			
1243.01		312.4 *4*	20 *7*	930.48	2^+			
		898.5[#] *2*	≤100	344.53	2^+			
1303.54	3^-	959.00 *9*	100	344.53	2^+	E1	0.00148	
1304.8?		507.4[a] *4*	100	797.39	4^+			
1340.86	6^+	543.50 *15*	100	797.39	4^+	E2	0.01331	B(E2)(W.u.)=124 *20*
1351.33	3^+	420.78 *9*	50 *8*	930.48	2^+	E2	0.0260	
		553.98 *13*	29 *3*	797.39	4^+			
		1006.86 *16*	100 *8*	344.53	2^+			
1381.9?		451.5[a] *4*	100	930.48	2^+			
1406.15	4^+	475.63 *11*	62 *5*	930.48	2^+			
		608.84 *13*	100 *8*	797.39	4^+			
		1061.3 *4*	59 *18*	344.53	2^+			
1517.90	(1^-)	1173.34 *19*	≈23	344.53	2^+			
		1518.0 *4*	100 *23*	0	0^+			
1546.68	4^+	326.00 *10*	27 *4*	1220.74	2^+			
		749.0 *2*	58 *13*	797.39	4^+	E0+M1+E2	0.044 *19*	α: Computed from α(K)exp and theoretical α/α(K) ratios.
		1202.2 *2*	100 *14*	344.53	2^+			
1570.75	2^+	350.0 *5*	14 *6*	1220.74	2^+			
		640.44 *18*	41 *6*	930.48	2^+	E0+M1+E2	0.11 *3*	α: Computed from α(K)exp and theoretical α/α(K) ratios.
		773.0 *3*	16 *4*	797.39	4^+			
		1226.1 *3*	100 *10*	344.53	2^+			
1611.77	5^-	814.3 *2*	100	797.39	4^+			
1630.52	2^-	699.9 *2*	47 *5*	930.48	2^+			
		1286.05 *14*	100 *13*	344.53	2^+			

$^{156}_{68}Er_{88}$-8

Adopted Levels, Gammas (continued)

γ(^{156}Er) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	δ	α[‡]	Comments
1663.41		866.02 *14*	100	797.39	4^+				
1710.54		1366.0 *2*	100	344.53	2^+				
1814.48	4^-	1017.1 *2*	100	797.39	4^+				
1835.2	5^+	483.7		1351.33	3^+				E_γ: From the heavy-ion study of 2011Re06. Eγ=484.85 *15* is reported in ^{156}Tm ε Decay, but the evaluator has chosen the listed value for purposes of internal consistency.
		1038.0		797.39	4^+				
1860.8	(3^+)	1516.3 *6*	100	344.53	2^+				
1885.9	6^+	479.7		1406.15	4^+				
		544.7		1340.86	6^+				
		1088.4		797.39	4^+				
1909.56	2^+,3,4^+	557.9 *4*	21 *11*	1351.33	3^+				
		1565.1 *2*	100 *16*	344.53	2^+				
1959.2	8^+	618.3 *3*	100	1340.86	6^+	E2		0.00972	B(E2)(W.u.)=50 *12*
1969.6	6^+	422.9		1546.68	4^+				
		628.6		1340.86	6^+				
		1172.1		797.39	4^+				
2014.52		1084.4 *3*	16 *5*	930.07	0^+				E_γ: 1975Ag02 provide no information on whether this γ goes to the 0^+ or the 2^+ level at 930 keV.
		1670.0 *2*	100 *12*	344.53	2^+				
2029.3	7^-	417.3 *6*	16.7 *17*	1611.77	5^-				
		688.6 *3*	100 *8*	1340.86	6^+	E1			
2169.8		1825.3 *3*	100	344.53	2^+				
2204.3	6^-	390.0 *6*	<45	1814.48	4^-	E2			
		592.1 *6*	<45	1611.77	5^-				
		863.5 *6*	100 *9*	1340.86	6^+				
2249.83		898.5[#] *2*	100	1351.33	3^+				
2368.6	(7^+)	533.5		1835.2	5^+				
		1027.8		1340.86	6^+				
2377.0	8^+	490.6		1885.9	6^+				
		1036.3		1340.86	6^+				
2480.7	8^+	510.9		1969.6	6^+				
		521.8		1959.2	8^+				
		1139.7		1340.86	6^+				
2489.9	9^-	460.8 *6*	23 *2*	2029.3	7^-	E2		0.0204	B(E2)(W.u.)=13 *8*
		530.6 *3*	100 *6*	1959.2	8^+	E1(+M2)	<0.16	0.0060 *11*	B(E1)(W.u.)=0.00016 *10*; B(M2)(W.u.)<1.0×10^2 B(E1)(W.u.) value computed for %M2=0. Mult.,δ: From α(K)exp<0.0061 in (HI,xnγ).
2601.2	8^-	396.7 *6*	100 *10*	2204.3	6^-				
		572.0 *6*	<48	2029.3	7^-				
		641.7 *6*	<48	1959.2	8^+	(D)			
2633.1	10^+	674.1 *3*	100	1959.2	8^+	E2		0.00793	B(E2)(W.u.)=58 *13*
2760.9	(8^+)	392.4		2368.6	(7^+)				

$^{156}_{68}Er_{88}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{156}Er)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	δ	α[‡]	Comments
2760.9	(8^+)	731.4		2029.3	7^-				
2903.3	10^-	270.4 *6*	41 *4*	2633.1	10^+	E1			Mult.: ΔJ=0 transition.
		301.8 *6*	74 *7*	2601.2	8^-	E2			
		413.7 *6*	100 *10*	2489.9	9^-				
2923.6	11^-	290.4 *3*	58 *3*	2633.1	10^+	E1(+M2)	≤0.055	0.0210 *10*	B(E1)(W.u.)=0.00042 *5*; B(M2)(W.u.)<76 B(E1)(W.u.) value computed for %M2=0. Mult.,δ: From α(K)exp=0.020 *7* and $\gamma(\theta)$ in (HI,xnγ).
		433.6 *3*	100 *6*	2489.9	9^-	E2		0.0240	B(E2)(W.u.)=56 *7*
2943.2	10^+	565.8	100	2377.0	8^+				
2961.3	(9^+)	592.7	100	2368.6	(7^+)				
2998.1	10^+	237.2		2760.9	(8^+)				
		364.6		2633.1	10^+				Transition may be a mixed E2/M1 transition with a large negative mixing ratio (2011Re06).
		508.6		2489.9	9^-				
3042.4	10^+	561.7	100	2480.7	8^+				
3081.5	11^-	447.9 *6*	79 *7*	2633.1	10^+				
		591.6[@] *6*	100[@] *11*	2489.9	9^-				
3314.6	12^+	681.8 *3*	100	2633.1	10^+	E2		0.00773	B(E2)(W.u.)=51 *24*
3384.1	12^-	460.9 *6*	16 *2*	2923.6	11^-				
		480.9 *6*	100 *10*	2903.3	10^-	E2			
3432.3	13^-	118.3 *6*	<2.4	3314.6	12^+	E1		0.208 *4*	B(E1)(W.u.)<0.0010
		508.4 *3*	100 *5*	2923.6	11^-	E2		0.01575	B(E2)(W.u.)=98 *20*
3439.5	12^+	806.8 *6*	100	2633.1	10^+				
3493.7	12^+	495.6	100	2998.1	10^+				
3588.5	12^+	645.2	100	2943.2	10^+				
3599.3	(11^+)	638.0	100	2961.3	(9^+)				
3627.7	12^+	684.3	100	2943.2	10^+				
3651.3	12^+	608.9	100	3042.4	10^+				
3673.6	13^-	289.8 *6*	<36	3384.1	12^-				
		591.6[@] *6*	100[@] *11*	3081.5	11^-				
3836.7	14^+	397.5 *6*	7.3 *7*	3439.5	12^+				
		522.2 *3*	100	3314.6	12^+	E2		0.01472	B(E2)(W.u.)=1.7×10^2 *5*
3953.9	14^-	522.0 *6*	<8	3432.3	13^-				
		569.8 *3*	100 *8*	3384.1	12^-	E2			
4035.1	15^-	602.5 *3*	100	3432.3	13^-	E2		0.01034	B(E2)(W.u.)=7.E+1 *5*
4087.6	14^+	593.9	100	3493.7	12^+				
4185.3	14^+	557.3		3627.7	12^+				
		870.4		3314.6	12^+				
4247.5	14^+	596.2	100	3651.3	12^+				
4269.8	(13^+)	670.5	100	3599.3	(11^+)				
4280.7	14^+	692.1	100	3588.5	12^+				
4309.9	15^-	356.3 *6*	<30	3953.9	14^-				
		636.2 *6*	100 *9*	3673.6	13^-				

$^{156}_{68}Er_{88}$-10

Adopted Levels, Gammas (continued)

γ(^{156}Er) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α[‡]	Comments
4380.4	16^+	543.8 *3*	100	3836.7	14^+			
4593.1	16^-	557.3 *6*	<11	4035.1	15^-			
		639.4 *6*	100 *10*	3953.9	14^-	E2		
4711.5	17^-	676.4 *3*	100	4035.1	15^-	[E2]	0.00787	B(E2)(W.u.)=50 *19*
4764.0	16^+	676.4	100	4087.6	14^+			
4782.4	16^+	501.6		4280.7	14^+			E_γ: From 2011Re06 only. γ not reported in the other high-spin studies.
		596.7		4185.3	14^+			E_γ: From 2011Re06 only. γ not reported in the other high-spin studies.
		747.0 *6*	100 *10*	4035.1	15^-	(D)		
		946.4 *6*	<20	3836.7	14^+			
4812.9	16^+	565.4	100	4247.5	14^+			
4967.4	(15^+)	697.6	100	4269.8	(13^+)			
5000.7	17^-	407.8 *6*	<37	4593.1	16^-			
		691.0 *6*	100 *11*	4309.9	15^-			
		965.3 *6*	<37	4035.1	15^-			
5006.6	18^+	626.3 *3*	100	4380.4	16^+	[E2]	0.00942	B(E2)(W.u.)=1.0×10^2 *5*
5297.3	18^-	585.9 *6*	<15	4711.5	17^-			
		703.7 *6*	100 *10*	4593.1	16^-			
5338.3	18^+	556.0 *6*	100 *10*	4782.4	16^+	E2		
		626.9 *6*	19.8 *23*	4711.5	17^-	(D)		
		957.9 *6*	<12	4380.4	16^+			
5370.4	18^+	557.5	100	4812.9	16^+			
5495.7	19^-	783.9 *3*	100	4711.5	17^-	[E2]	0.00564	B(E2)(W.u.)=17 *7*
5537.1	18^+	773.1	100	4764.0	16^+			
5674.5	19^-	376.6 *6*	<91	5297.3	18^-			
		673.6 *6*	<91	5000.7	17^-			
		964.0 *6*	100 *9*	4711.5	17^-			
5716.7	20^+	710.2 *3*	100	5006.6	18^+	E2	0.00704	B(E2)(W.u.)=8.E+1 *6*
5787.8	19^-	490.8 *6*	<30	5297.3	18^-			
		787.5 *6*	100 *9*	5000.7	17^-			
		1076.2 *6*	<30	4711.5	17^-			
5931.2	20^+	435.1 *6*	<12	5495.7	19^-			
		593.0 *6*	100 *10*	5338.3	18^+			
		924.8 *6*	<12	5006.6	18^+			
6056.9	20^+	686.5	100	5370.4	18^+			
6058.4	20^-	562.9 *6*	<24	5495.7	19^-			
		760.8 *6*	100 *10*	5297.3	18^-			
6261.2	21^-	202.5 *6*	<48	6058.4	20^-			
		587.1 *6*	<48	5674.5	19^-			
		765.5 *6*	100 *14*	5495.7	19^-			
6295.4	(20^+)	758.3	100	5537.1	18^+			
6356.4	21^-	681.6 *6*	<30	5674.5	19^-			
		859.7 *6*	100 *9*	5495.7	19^-			
6410.9	(20^+)	873.8	100	5537.1	18^+			

$^{156}_{68}Er_{88}$-11

Adopted Levels, Gammas (continued)

$\gamma(^{156}Er)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
6437.1	21^-	176.1 *6*	<29	6261.2	21^-		
		378.5 *6*	<29	6058.4	20^-		
		649.8 *6*	100 *11*	5787.8	19^-		
6489.3	22^+	772.9 *6*	100	5716.7	20^+	E2	
6663.0	22^+	306.7 *6*	<11	6356.4	21^-		
		731.7 *6*	100 *10*	5931.2	20^+	E2	
6740.7	22^-	384.5 *6*	<33	6356.4	21^-		
		479.6 *6*	<33	6261.2	21^-		
		682.9 *6*	100 *10*	6058.4	20^-		
6822.9	(22^+)	766.0	100	6056.9	20^+		
6867.5	23^-	605.9 *6*	100	6261.2	21^-		
7053.9	23^-	186.0 *6*	<19	6867.5	23^-		
		617.4 *6*	100 *10*	6437.1	21^-		
		793.0[&] *6*	<19[&]	6261.2	21^-		
7109.7	23^-	369.8 *6*		6740.7	22^-		
		752.0 *6*		6356.4	21^-		
7315.9	24^+	826.9 *6*	100	6489.3	22^+	E2	
7414.7	24^-	547.2 *6*	<16	6867.5	23^-	(D)	
		673.9 *6*	100 *10*	6740.7	22^-		
7444.1	24^+	780.9 *6*	100	6663.0	22^+		
7492.5	(24^+)	1003.1 *6*	100	6489.3	22^+		
7600.8	25^-	733.3 *6*	100	6867.5	23^-		
7649.4	25^-	234.6 *6*	<20	7414.7	24^-		
		539.2 *6*	<20	7109.7	23^-		
		595.8 *6*	100 *10*	7053.9	23^-		
		783[a]		6867.5	23^-		E_γ: From (HI,xnγ). γ not reported in the high-spin study (2009Pa17).
7979.9		487.1 *6*		7492.5	(24^+)		
		536.1 *6*		7444.1	24^+		
8082.2	26^+	589.9 *6*	<22	7492.5	(24^+)		
		766.7[&] *6*	100[&] *11*	7315.9	24^+	E2	
8101.3	26^-	686.8 *6*	100	7414.7	24^-		
8210.9	26^+	766.5 *6*	100	7444.1	24^+		
8289.3	27^-	688.5 *6*	100	7600.8	25^-		
8325.0		345 *1*		7979.9			
8393.9	27^-	292.4 *6*	<13	8101.3	26^-		
		744.2[@] *6*	100[@] *10*	7649.4	25^-	E2	Note: γ is doubly placed.
		793.0[&] *6*	14[&] *1*	7600.8	25^-		
8848.8	28^+	637.4 *6*	<36	8210.9	26^+		
		766.7[&] *6*	100[&] *11*	8082.2	26^+		
8867.1	28^-	766.0 *6*	100	8101.3	26^-		
8902.5		577.5 *6*		8325.0			
		821.0		8082.2	26^+		E_γ: From (HI,xnγ). 2009Pa17 do not report this γ.

$^{156}_{68}Er_{88}$-12

Adopted Levels, Gammas (continued)

γ(^{156}Er) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
8965.0	28^+	882.9 *6*	100	8082.2	26^+	E2	
9068.2	28^+	857.4 *6*	100	8210.9	26^+		
9197.7	29^-	908.4[@] *6*	100[@]	8289.3	27^-		
9288.3	29^-	421.5 *6*	<14	8867.1	28^-		
		894.0[@] *6*	100[@] *10*	8393.9	27^-		
9647.9	30^+	359.5 *6*	<45	9288.3	29^-	E1	
		579.8 *6*	50 *5*	9068.2	28^+		
		683.0 *6*	<45	8965.0	28^+		
		745.7 *6*	<45	8902.5			
		798.9 *6*	100 *9*	8848.8	28^+	E2	
9693.5	30^-	826.4 *6*	100	8867.1	28^-		
9864	30^+	899		8965.0	28^+		
10106.1	31^-	908.4[@] *6*	100[@]	9197.7	29^-		
10182.3	31^-	488.8 *6*	<14	9693.5	30^-		
		894.0[@] *6*	100[@] *10*	9288.3	29^-		
10414.6	32^+	548[a]		9864	30^+		E_γ: From (HI,xnγ). γ not reported by 2009Pa17.
		766.7[&] *6*	100[&]	9647.9	30^+		
10532.2	32^-	838.8 *6*	100	9693.5	30^-		
10926.5	33^-	744.2[@] *6*	100[@]	10182.3	31^-	E2	Note: γ is doubly placed.
11097.0	34^+	682.4 *6*	100	10414.6	32^+		
11187.1	33^-	1081.0 *6*	100	10106.1	31^-		
11333.1	(34^+)	918.4 *6*	100	10414.6	32^+		
11453.2	34^-	920.9 *6*	100	10532.2	32^-		
11577.6	34^-	651.1 *6*		10926.5	33^-		
		1045.5 *6*		10532.2	32^-		
11817.1	35^+	720.1 *6*	100	11097.0	34^+	M1+E2	
11974.6	(35^-)	1048.1 *6*	100	10926.5	33^-		
11976	(36^+)	879	100	11097.0	34^+		
12035.4	36^+	218.3 *6*	65 *6*	11817.1	35^+	M1+E2	
		702.2 *6*	<29	11333.1	(34^+)		
		938.4 *6*	100 *9*	11097.0	34^+	E2	
12139.6	(35^-)	1212.9 *6*	100	10926.5	33^-		
12423.1	36^-	283.4 *6*		12139.6	(35^-)		
		845.7 *6*		11577.6	34^-		
		969.8 *6*		11453.2	34^-		
12668.2	(38^+)	632.8	100	12035.4	36^+		
13058.2	38^-	635.1 *6*	100	12423.1	36^-		
13202.5	38^+	1167.1 *6*	100	12035.4	36^+	E2	
13402.3	38^+	1367.0 *6*	100	12035.4	36^+	E2	
13867.0	40^+	664.4 *6*	100	13202.5	38^+	E2	
14034.3	(40^+)	632.0 *6*		13402.3	38^+		E_γ: From 2009Pa17. γ not reported in (HI,xnγ).
		831.9 *6*		13202.5	38^+		E_γ: In (HI,xnγ), a 1368.0 γ is placed from a 14044.0 level, assumed to be the same as the

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Adopted Levels, Gammas (continued)

$\gamma(^{156}Er)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	Comments
							14033.2 level here. However, 2009Pa17 report a 1367.0 γ, which they place from a level at 13401.3.
14421.6	42^+	387.4 *6*	<48	14034.3	(40^+)		
		554.4 *6*	100 *10*	13867.0	40^+	E2	
15478.7	(43^-)	1057.1 *6*	100	14421.6	42^+	(E1)	
15764	$(44)^+$	1342 *1*	100	14421.6	42^+	E2	
15814	$(44)^+$	1392 *1*	100	14421.6	42^+	E2	
15986		507 *1*	100	15478.7	(43^-)		
16043	$(44)^+$	1621 *1*	100	14421.6	42^+	E2	
16375		611 *1*	100	15764	$(44)^+$		
16583	$(44)^+$	2161 *1*	100	14421.6	42^+	E2	

[†] From ^{156}Tm ε decay, based on α(K)exp measurements (1975Ag02,1980Zo02) and from heavy-ion-induced reaction studies, based on $\gamma(\theta)$ measurements (1973Be43,1976Su05,2009Pa17,2011Re06) and α(K)exp measurements (1974Go14).

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[#] Multiply placed.

[@] Multiply placed with undivided intensity.

[&] Multiply placed with intensity suitably divided.

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

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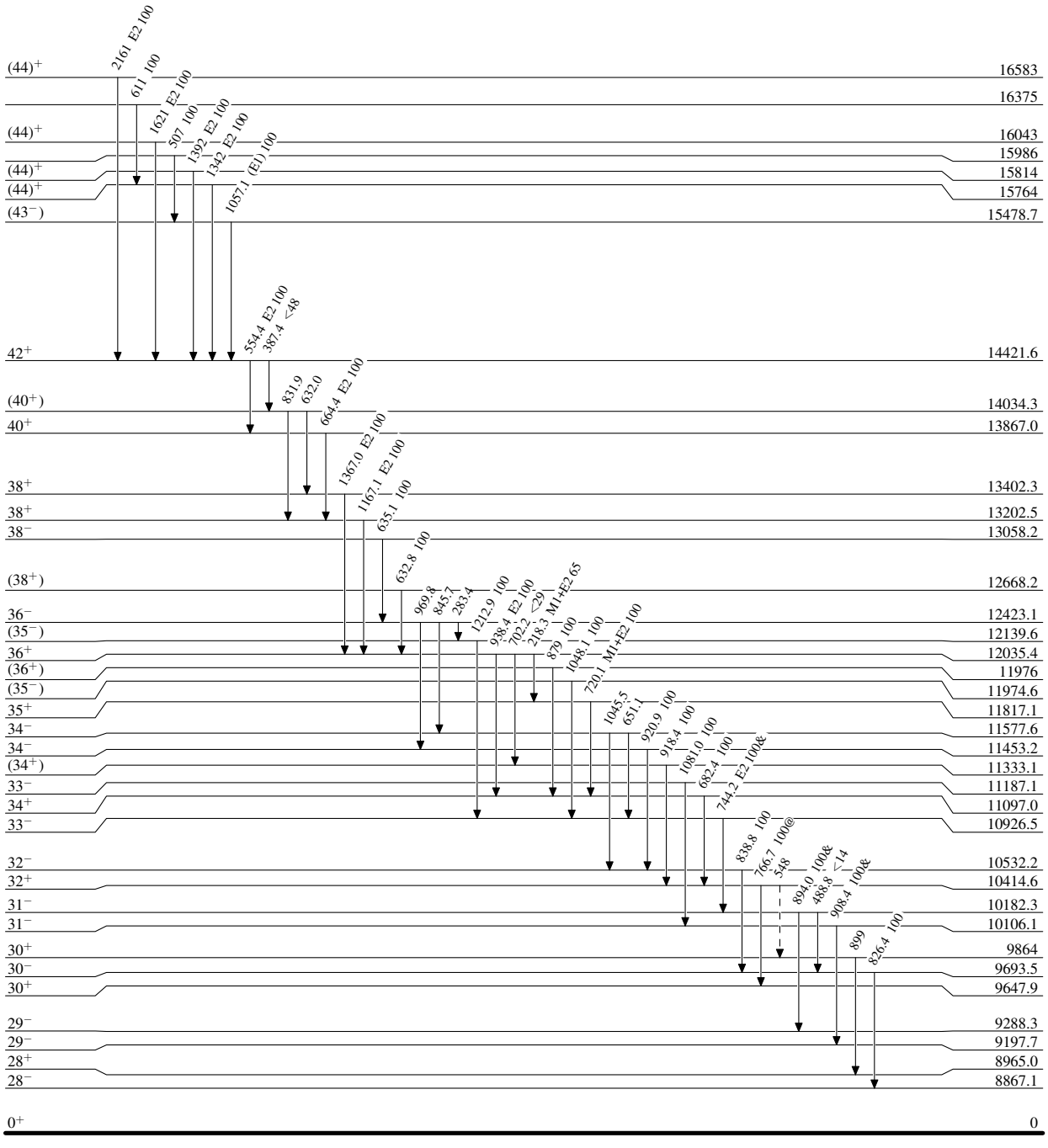
Adopted Levels, Gammas

Level Scheme

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

Legend

- - - - - - ► γ Decay (Uncertain)



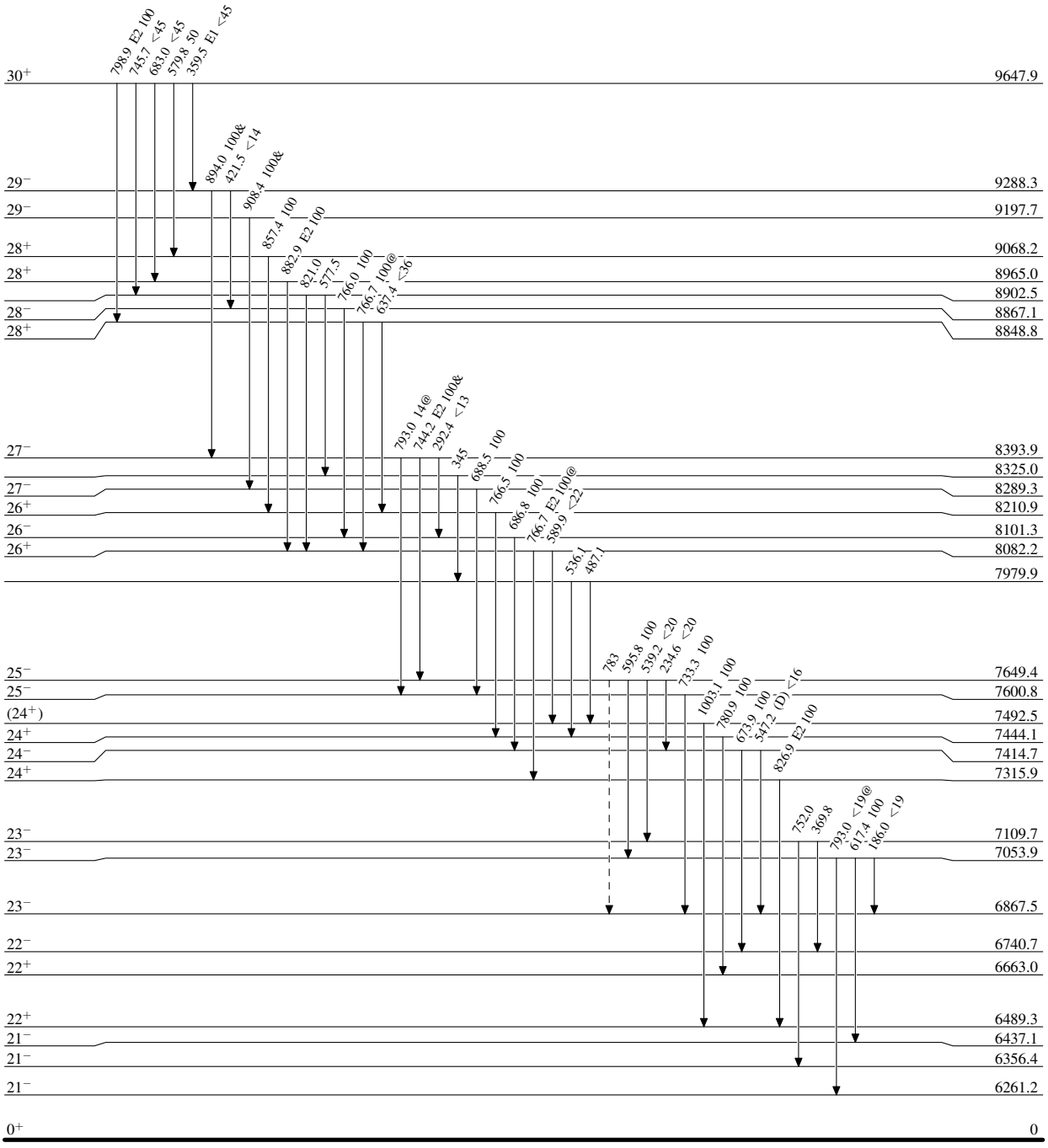
$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
- - - - - - ► γ Decay (Uncertain)

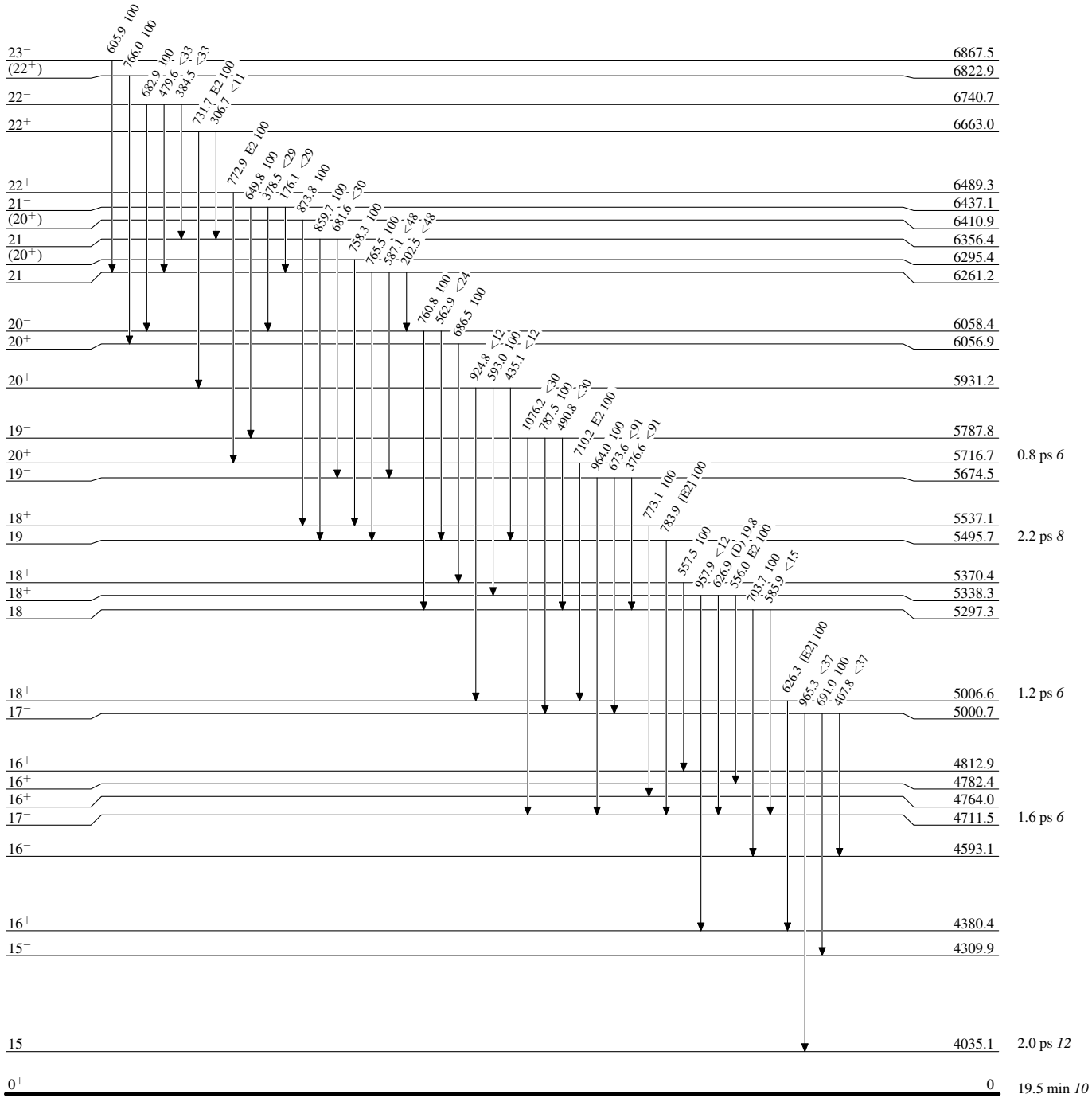


$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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

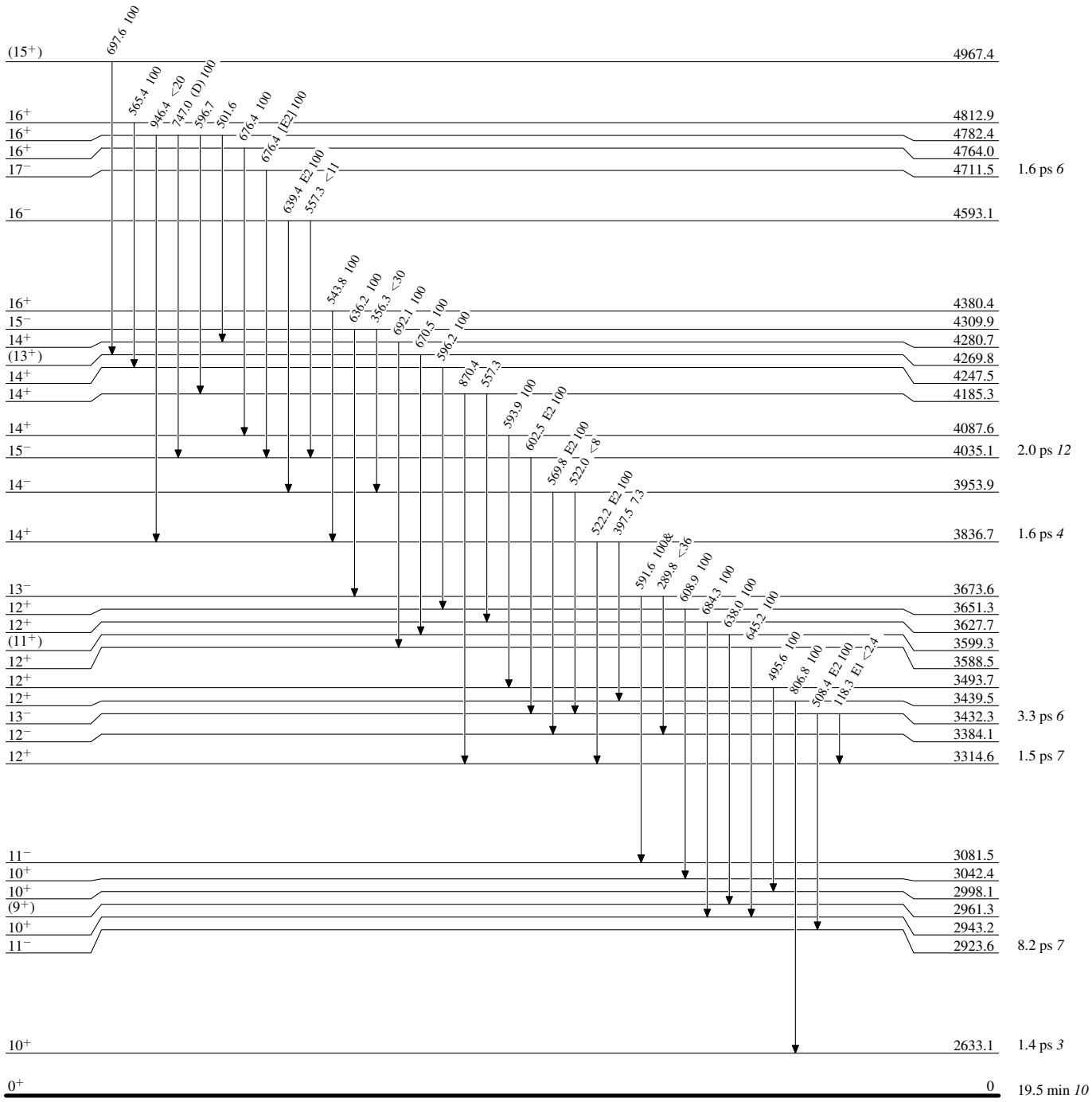


$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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

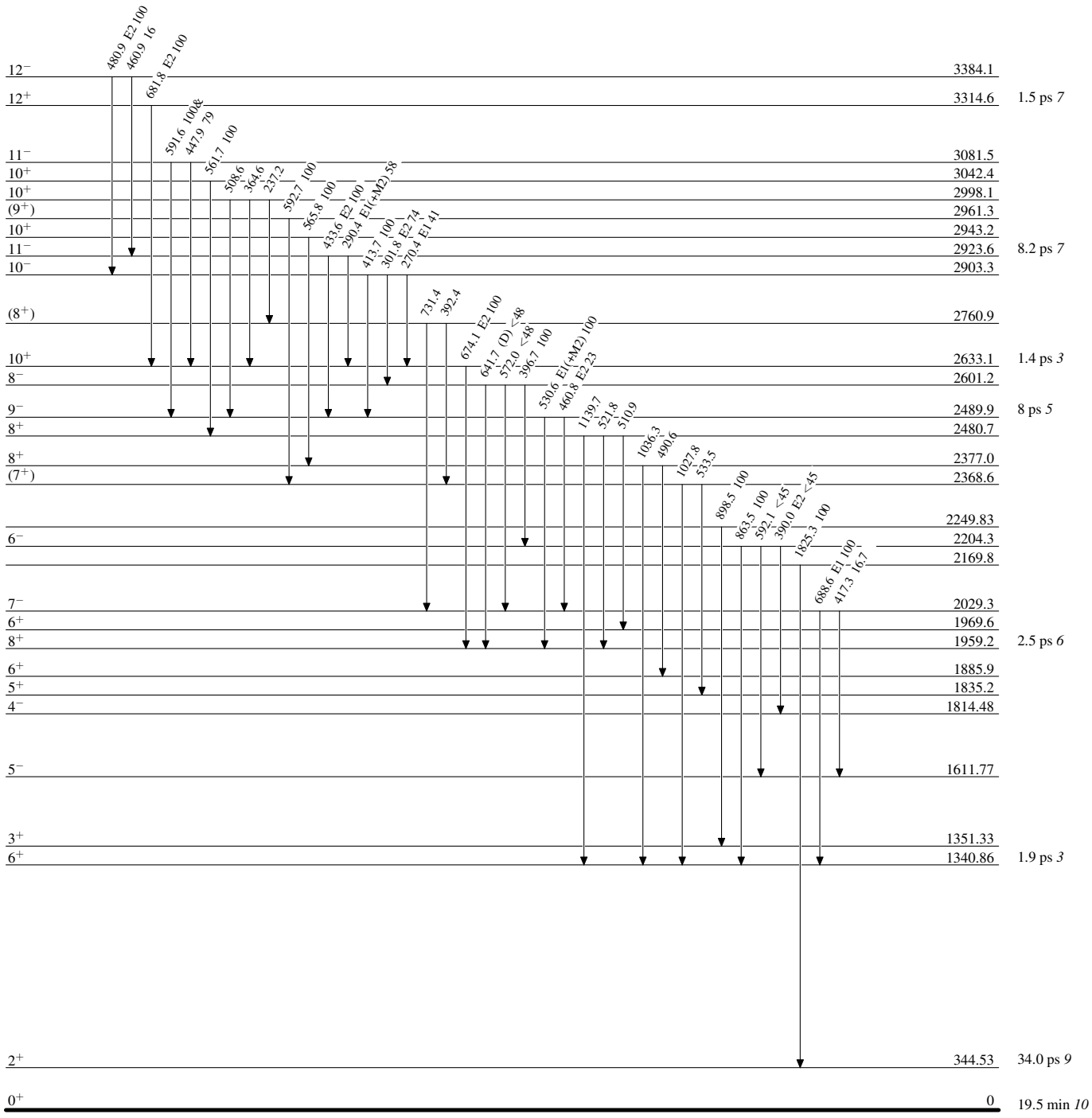


$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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



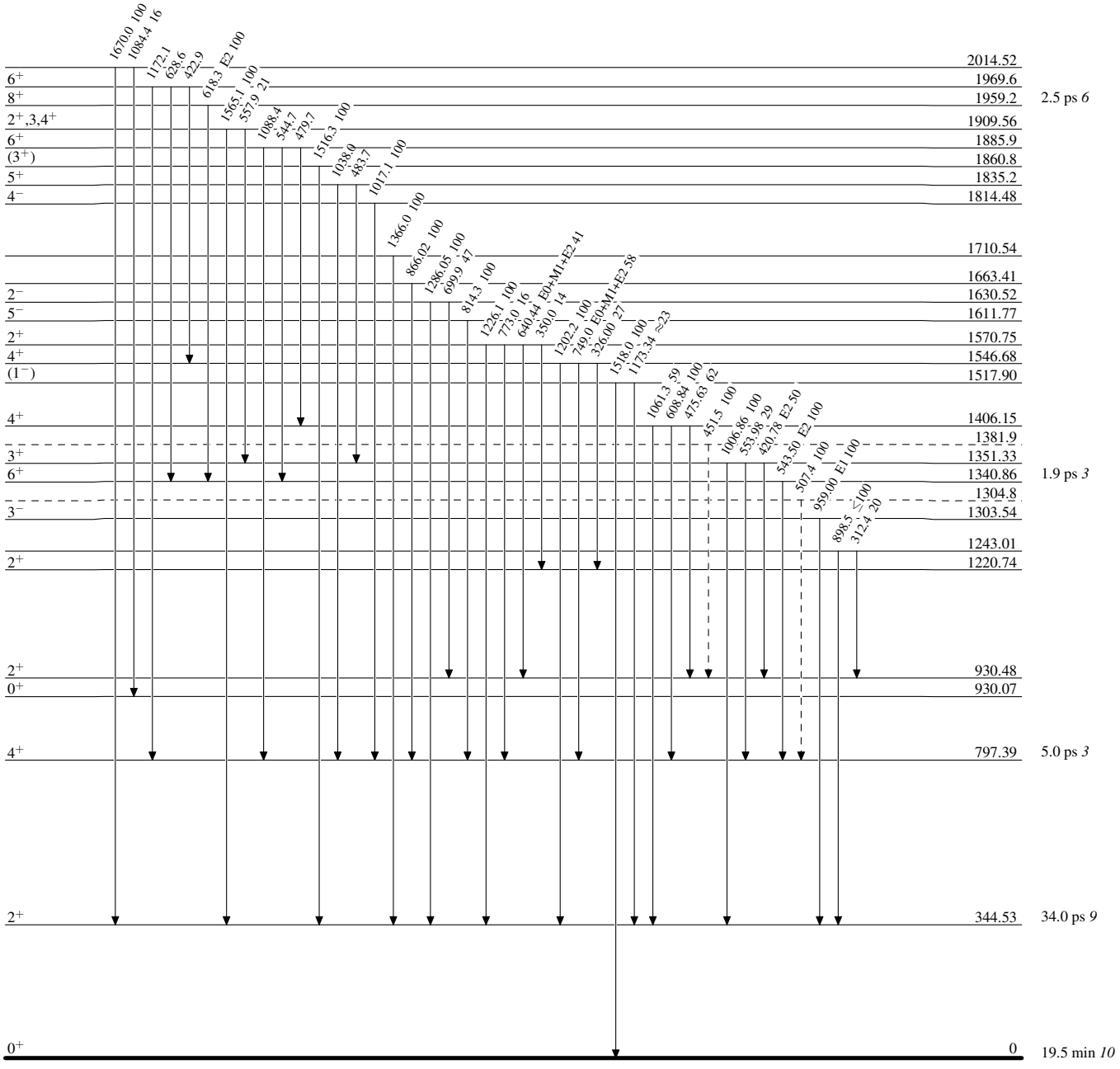
$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
- - - - - - ► γ Decay (Uncertain)

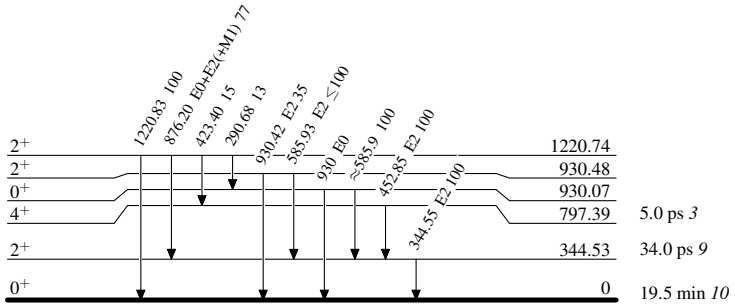


$^{156}_{68}Er_{88}$

Adopted Levels, Gammas

Level Scheme (continued)

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



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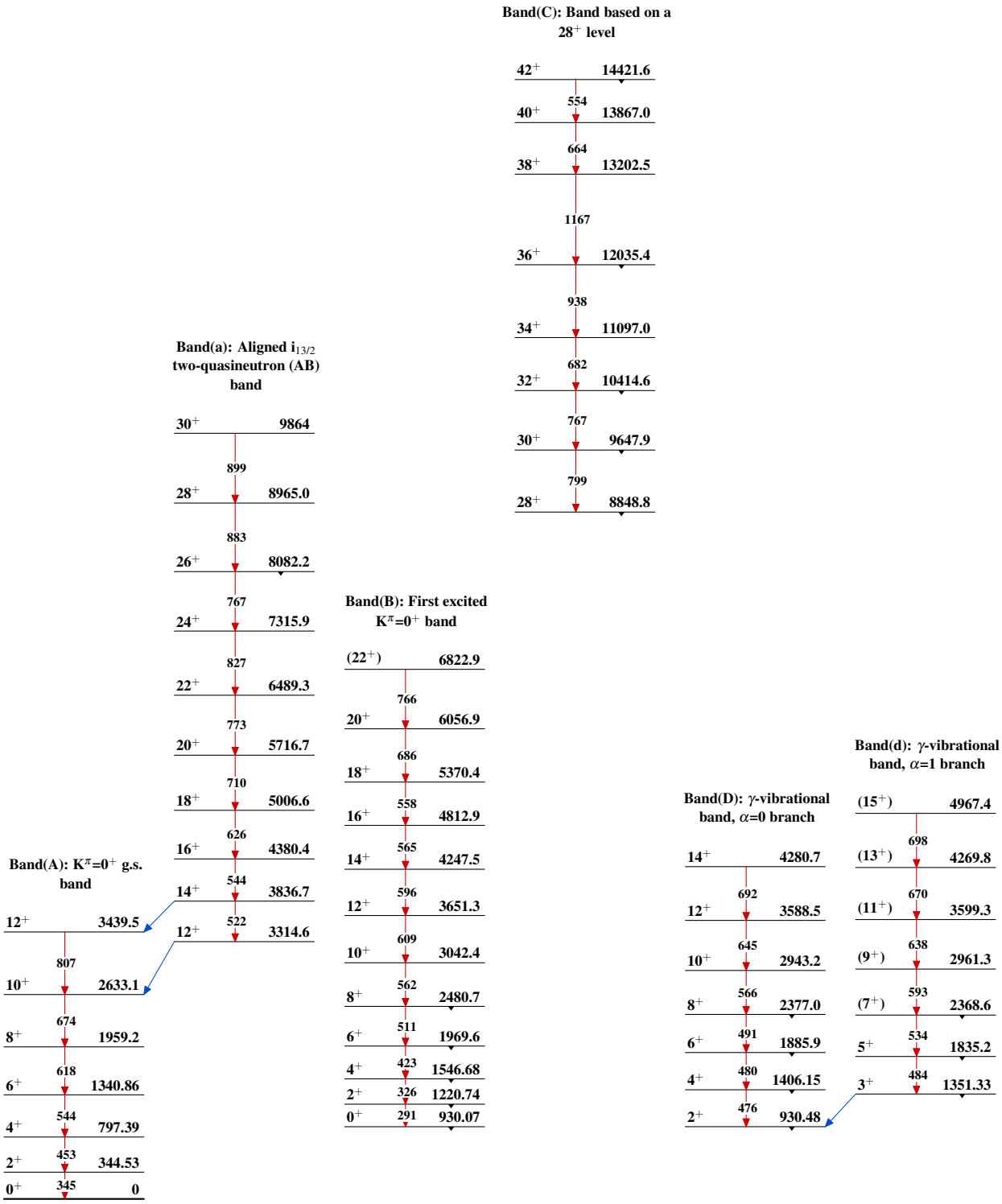
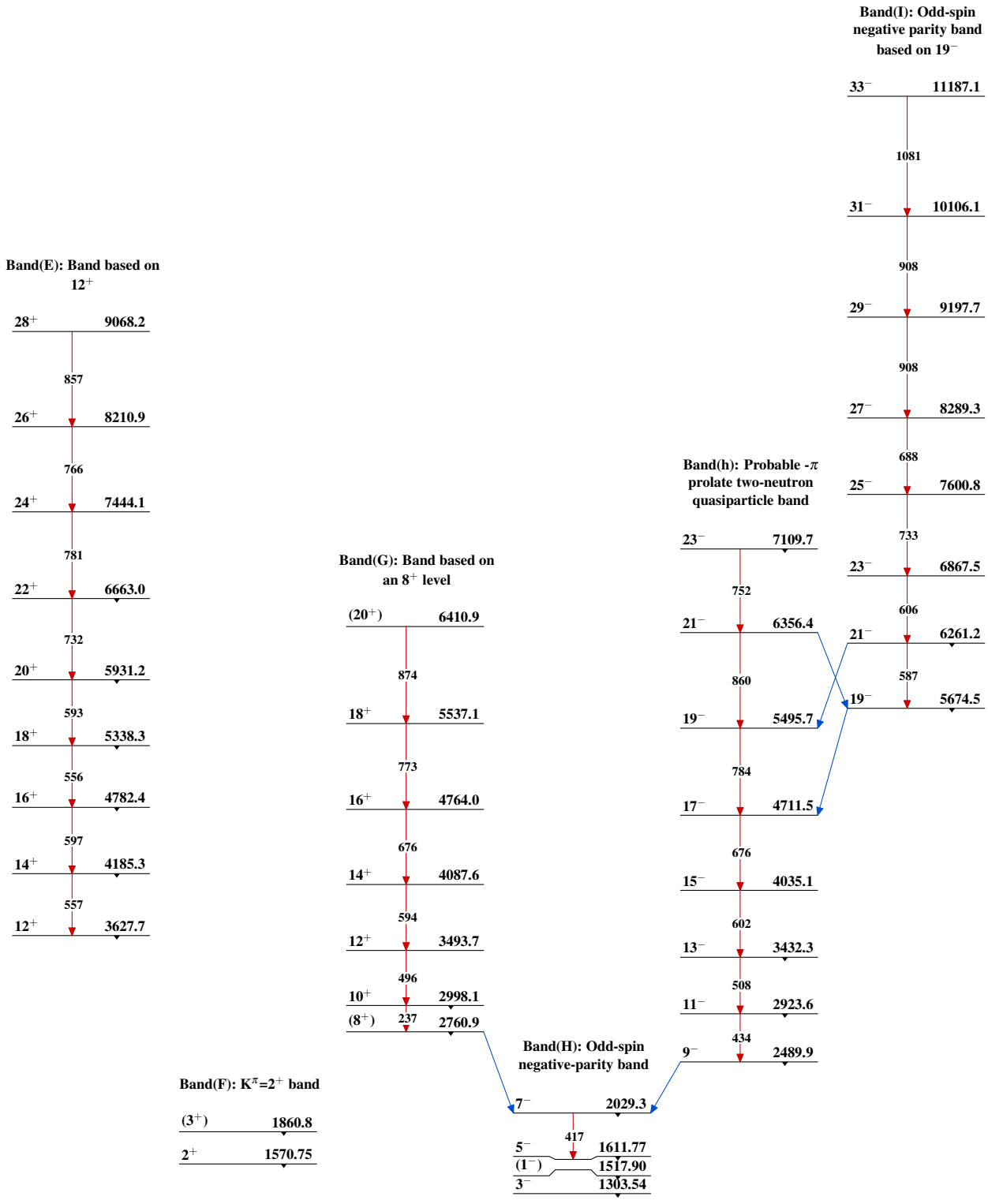
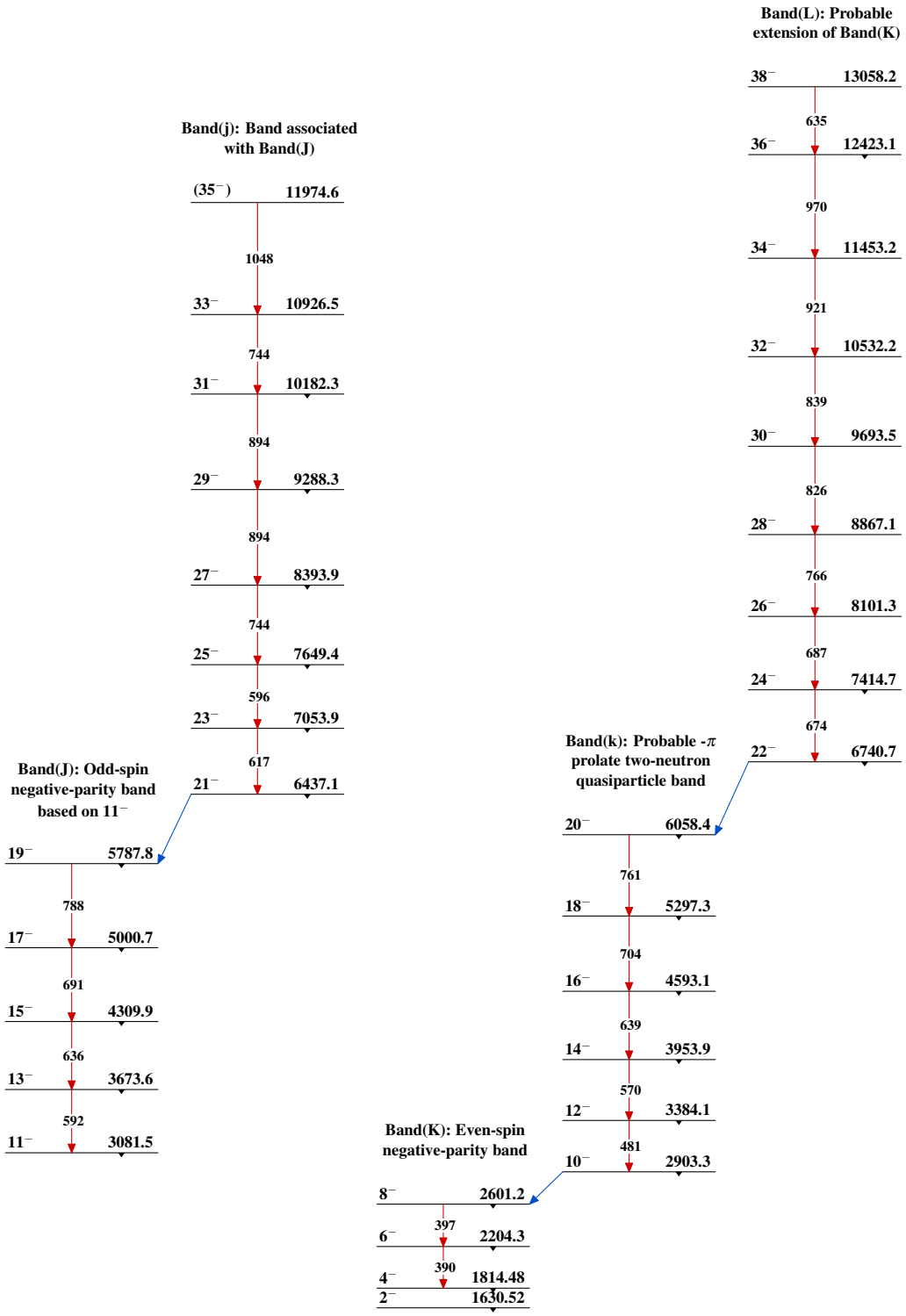
Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



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