Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Q(β^-)=972 *4*; S(n)=6422 *7*; S(p)=4945 *6*; Q(α)=2237 *7* 2017Wa10
Q(ε)=2259 *6*; S(2n)=14636 *7*; S(2p)=12504 *6* 2017Wa10
Additional information 1.
α: Additional information 2.
α: Additional information 3.

^{150}Eu Levels

Cross Reference (XREF) Flags

A ^{150}Sm(p,nγ) D ^{148}Nd(^{7}Li,5nγ)
B ^{152}Sm(p,3nγ) E ^{152}Eu(p,t)
C ^{136}Xe(^{19}F,5nγ)

E(level)	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0	5$^-$	36.9 y *9*	ABC	%ε+%β^+=100 Q=+1.13 *5*; μ=+2.708 *11* (1989Ra17) J$^\pi$: J(42)=0 (atomic beam) and J(g.s.)-J(42)=5 from ^{150}Sm(p,nγ) in-beam γ-decay (1983SoZV) via the 195.3 and 183.4 γ's (if stretched dipole and quadrupole) and the 151.7 and 269.1 (if stretched dipoles). The first two γ's establish J of level 421 equal to 3 and the latter two γ's establish J(g.s.)=5. π=− from shell model and systematics of neighboring odd-A nuclei. T$_{1/2}$: from counting over 0.49×T$_{1/2\ 1/2}$, scin (1993Th04). Others: 34.2 y *12* (1975Ne05) scin counting over 0.17×T$_{1/2\ 1/2}$, 36.1 y *11* (1975Ne05) mass spect.
41.7 *10*	0$^-$	12.8 h *1*	A	%β^-=89 *2* (1965Gu03); %ε+%β^+=11 *2*; %IT≤5×10^{-8} %IT: From the assumption that B(M5)(W.u.) < 1, one gets %IT < 3×10^{-8}, for α(M5)=1.4×10^7 (1978Ba45). J$^\pi$: from atomic beam (1972Ek05). ε decay to 2$^+$ suggests π=− as do shell-model arguments and systematics of neighboring odd-A nuclei. T$_{1/2}$: from 1963Yo07.
42.7 *10*	(1$^-$)		A	
69.5 *8*	(2$^-$)		A	
118.6 *10*	(2$^-$)		A	
181.1 *8*	(3$^-$)		A	
190.37 *4*	6$^-$		ABC	J$^\pi$: M1 γ to 5$^-$.
195.2 *8*	(3$^-$)		A	
237.4 *10*	(1$^-$)		A	
247.89 *5*	6$^-$		ABC	J$^\pi$: M1 γ to 5$^-$.
269.0 *5*	(4$^-$)		A	
321.2 *6*	(4$^-$)		A	
343.1 *9*	(3,2)		A	
360.14 *10*	(5$^-$)		ABC	
406.4 *10*			A	
412.53 *6*	5$^-$		ABC	
417.25 *5*	7$^-$		ABC	
420.6 *8*	(3$^-$)		A	
427.7 *7*			A	
457.7 *9*			A	
465.4 *13*			A	
488.1? *7*			A	
496.3 *12*			A	
511.0 *10*			A	

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Adopted Levels, Gammas (continued)

^{150}Eu Levels (continued)

E(level)	J^{π}‡	$T_{1/2}$	XREF	Comments
532.3 *11*			A	
561.97 *5*	6^+		ABC	
588.81 *7*	8^+	45 ns *3*	ABCD	$T_{1/2}$: from γ(t) in (p,3nγ) (1983So13).
594.2 *9*			A	
598.6 *9*			A	
601.4? *12*			A	
601.8 *13*			A	
628.1 *11*			A	
633.6 *14*			A	
670.8 *13*			A	
675.4 *12*			A	
682.5 *7*			A	
718.3 *13*			A	
718.39[e] *10*	9^+		CD	
720.8 *11*			A	
743.3 *13*			A	
762.3 *13*			A	
779.27 *9*	10^+		CD	
877.4 *15*			A	
1207.99 *9*	10^+		CD	
1223.8 *6*	3^-		E	
1232.8 *6*	3^-		E	
1236.16[d] *12*	12^+		CD	
1267.92 *9*	(9^-)		C	
1274.69[e] *14*	(11^+)		C	
1287.17 *9*	(9^-)		C	E(level),J^{π}: adopted following 1995Jo18.
1320.6 *6*	(4^-)		E	
1371.89[@] *9*	11^-		CD	
1382.18[†#] *11*	12^-		C	
1438.0 *6*	(5^-)		E	
1787.00[@] *11*	13^-		C	
1829.85[d] *13*	14^+		CD	
1848.16[†#] *12*	14^-		C	
1897.29[e] *17*	(13^+)		C	
2168.51[&] *13*	14^-		C	
2343.96[@] *12*	15^-		C	
2387.03[b] *12*	15^-		C	
2440.54[†#] *13*	16^-		C	
2530.79[e] *20*	(15^+)		C	
2630.18[d] *14*	16^+		CD	
2685.69[&] *13*	16^-		C	
2827.89[b] *13*	17^-		C	
2987.21[@] *14*	17^-		C	
3106.06[†#] *14*	18^-		C	
3213.69[e] *22*	(17^+)		C	
3252.73[b] *14*	19^-		C	
3365.09[&] *17*	18^-		C	
3469.88[d] *17*	18^+		C	
3691.14[a] *15*	20^-		C	
3714.01[@] *18*	(19^-)		C	

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Adopted Levels, Gammas (continued)

^{150}Eu Levels (continued)

E(level)	Jπ‡	XREF	E(level)	Jπ‡	XREF	E(level)	Jπ‡	XREF
3841.46†# *17*	20^-	C	4453.01@ *20*	(21^-)	C	5334.34[c] *21*	24^-	C
3967.89[e] *24*	(19^+)	C	4576.54[c] *19*	22^-	C	6023.15[b] *21*	25^-	C
3979.99& *19*	(20^-)	C	4618.76†# *20*	(22^-)	C	6111.45[a] *23*	26^-	C
4124.14[b] *16*	21^-	C	5077.34[b] *19*	23^-	C	6191.85[c] *24*	(25^-)	C
4255.78[d] *20*	(20^+)	C	5197.95[a] *21*	24^-	C			
4394.45[a] *18*	22^-	C	5250.02@ *23*	(23^-)	C			

† Determined from (p,3nγ) in-beam intensities of the four strong transitions which form two parallel cascades from a 562 level to the g.s. The intensities were used to order the transitions thus establishing the positions of the intermediate levels.
‡ From γ(θ), excitation functions in (p,nγ), and the numerous γ-ray branchings.
# Band(A): Band 1.
@ Band(B): Band 2.
& Band(C): Band 3.
[a] Band(D): Band 4.
[b] Band(E): Band 5.
[c] Band(F): Band 6.
[d] Band(G): Band 7.
[e] Band(H): Band 8.

γ(^{150}Eu)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.†	α	Comments
42.7	(1^-)	(≈1)	100	41.7	0^-			
69.5	(2^-)	26.5	100	42.7	(1^-)			
118.6	(2^-)	75.6	100	42.7	(1^-)			
181.1	(3^-)	111.5	100	69.5	(2^-)			
190.37	6^-	190.40 *7*	100	0.0	5^-	M1	0.301	α(K)=0.255 *4*; α(L)=0.0361 *5*; α(M)=0.00780 *11*; α(N)=0.00179 *3*; α(O)=0.000283 *4* α(P)=2.81×10^{-5} *4*; α(N+..)=0.00210 *3* E_γ: weighted average of 190.4 *1* (^{152}Sm(p,3nγ)), 190.4 *1* (^{136}Xe(^{19}F,5nγ)).
195.2	(3^-)	125.6	100	69.5	(2^-)			
237.4	(1^-)	118.6		118.6	(2^-)			
		167.7		69.5	(2^-)			
		195.3		42.7	(1^-)			
247.89	6^-	57.5# *1*		190.37	6^-			
		247.90 *7*	100 *5*	0.0	5^-	M1	0.1466	α(K)=0.1243 *18*; α(L)=0.01748 *25*; α(M)=0.00377 *6*; α(N)=0.000864 *13* α(O)=0.0001372 *20*; α(P)=1.366×10^{-5} *20*; α(N+..)=0.001015 *15* E_γ: weighted average of 247.9 *1* (^{152}Sm(p,3nγ)), 247.9 *1* (^{136}Xe(^{19}F,5nγ)).
269.0	(4^-)	87.9		181.1	(3^-)			
		269.1		0.0	5^-			
321.2	(4^-)	126.1		195.2	(3^-)			
		321.2		0.0	5^-			
343.1	(3,2)	273.6	100	69.5	(2^-)			
360.14	(5^-)	91.3		269.0	(4^-)			

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Adopted Levels, Gammas (continued)

γ(^{150}Eu) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
360.14	(5⁻)	169.4 *3*	100 *24*	190.37	6⁻			E_γ: weighted average of 170.0 *2* (^{152}Sm(p,3nγ)), 169.3 *1* (^{136}Xe(^{19}F,5nγ)).
406.4		211.3		195.2	(3⁻)			
		225.4		181.1	(3⁻)			
412.53	5⁻	143.5		269.0	(4⁻)			
		222.20 *7*	100 *25*	190.37	6⁻	M1	0.197	α(K)=0.1672 *24*; α(L)=0.0236 *4*; α(M)=0.00509 *8*; α(N)=0.001166 *17*; α(O)=0.000185 *3* α(P)=1.84×10^{-5} *3*; α(N+..)=0.001369 *20* E_γ: weighted average of 222.2 *1* (^{152}Sm(p,3nγ)), 222.2 *1* (^{136}Xe(^{19}F,5nγ)).
		412.6 *1*		0.0	5⁻			
417.25	7⁻	169.30 *9*	21 *5*	247.89	6⁻			E_γ: weighted average of 169.3 *2* (^{152}Sm(p,3nγ)), 169.3 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 17 *7* (^{152}Sm(p,3nγ)), 24 *6* (^{136}Xe(^{19}F,5nγ)).
		226.90 *7*	100 *4*	190.37	6⁻	M1	0.186	α(K)=0.1579 *23*; α(L)=0.0223 *4*; α(M)=0.00481 *7*; α(N)=0.001101 *16*; α(O)=0.0001748 *25* α(P)=1.738×10^{-5} *25*; α(N+..)=0.001293 *19* E_γ: weighted average of 226.9 *1* (^{152}Sm(p,3nγ)), 226.9 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 100 *10* (^{152}Sm(p,3nγ)), 100 *5* (^{136}Xe(^{19}F,5nγ)).
		417.3 *1*	17 *4*	0.0	5⁻			E_γ: weighted average of 417.3 *6* (^{152}Sm(p,3nγ)), 417.3 *1* (^{136}Xe(^{19}F,5nγ)).
420.6	(3⁻)	77.3		343.1	(3,2)			
		151.7		269.0	(4⁻)			
		183.4		237.4	(1⁻)			
		225.6		195.2	(3⁻)			
		301.8		118.6	(2⁻)			
		350.9		69.5	(2⁻)			
427.7		85		343.1	(3,2)			
		106.6		321.2	(4⁻)			
		158.7		269.0	(4⁻)			
		232.4		195.2	(3⁻)			
		246.6		181.1	(3⁻)			
457.7		136.6		321.2	(4⁻)			
		188.7		269.0	(4⁻)			
465.4		284.3	100	181.1	(3⁻)			
488.1?		76		412.53	5⁻			
		127.6		360.14	(5⁻)			
496.3		259.0	100	237.4	(1⁻)			
511.0		315.7		195.2	(3⁻)			
		330[#]		181.1	(3⁻)			
532.3		126[#]		406.4				
		337.1		195.2	(3⁻)			
561.97	6⁺	144.70 *10*	0.43 *16*	417.25	7⁻			E_γ: weighted average of 144.7 *4* (^{152}Sm(p,3nγ)), 144.7 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 1.4 *6* (^{152}Sm(p,3nγ)), 0.40 *10* (^{136}Xe(^{19}F,5nγ)).
		149.6 *1*	0.30 *10*	412.53	5⁻			E_γ: weighted average of 149.6 *8* (^{152}Sm(p,3nγ)), 149.6 *1* (^{136}Xe(^{19}F,5nγ)).
		201.8 *1*	1.8 *4*	360.14	(5⁻)	(E1)	0.0428	α(K)=0.0363 *6*; α(L)=0.00509 *8*; α(M)=0.001093 *16*; α(N)=0.000248 *4*; α(O)=3.82×10^{-5} *6* α(P)=3.32×10^{-6} *5*; α(N+..)=0.000289 *4*

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Adopted Levels, Gammas (continued)

γ(^{150}Eu) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
								E_γ: weighted average of 201.8 *1* (^{152}Sm(p,3nγ)), 201.8 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 1.4 *6* (^{152}Sm(p,3nγ)), 2.0 *5* (^{136}Xe(^{19}F,5nγ)).
561.97	6^+	314.10 *7*	100 *4*	247.89	6^-	E1	0.01365	α(K)=0.01163 *17*; α(L)=0.001590 *23*; α(M)=0.000341 *5*; α(N)=7.76×10^{-5} *11* α(O)=1.209×10^{-5} *17*; α(P)=7.42×10^{-7} *11*; α(N+..)=5.97×10^{-5} *9* E_γ: weighted average of 314.1 *1* (^{152}Sm(p,3nγ)), 314.1 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 100 *5* (^{152}Sm(p,3nγ)), 100 *5* (^{136}Xe(^{19}F,5nγ)).
		371.60 *7*	63 *2*	190.37	6^-	E1	0.00903 *13*	α(K)=0.00770 *11*; α(L)=0.001044 *15*; α(M)=0.000224 *4*; α(N)=5.10×10^{-5} *8*; α(O)=7.97×10^{-6} *12* α(P)=7.42×10^{-7} *11*; α(N+..)=5.97×10^{-5} *9* E_γ: weighted average of 371.6 *1* (^{152}Sm(p,3nγ)), 371.6 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 65 *4* (^{152}Sm(p,3nγ)), 62 *3* (^{136}Xe(^{19}F,5nγ)).
		561.80 *9*	6.4 *3*	0.0	5^-			E_γ: weighted average of 561.8 *3* (^{152}Sm(p,3nγ)), 561.8 *1* (^{136}Xe(^{19}F,5nγ)).
588.81	8^+	26.8[‡#] *1*		561.97	6^+	(E2)	712 *17*	α(L)=552 *13*; α(M)=129 *3*; α(N)=28.3 *7*; α(O)=3.74 *9*; α(P)=0.00149 *3*; α(N+..)=32.1 *8* Mult.: adopted from initial and final state spin-parity.
		171.50 *9*	100 *5*	417.25	7^-	[E1]	0.0660	α(K)=0.0560 *8*; α(L)=0.00792 *12*; α(M)=0.001703 *24*; α(N)=0.000386 *6*; α(O)=5.91×10^{-5} *9* α(P)=5.02×10^{-6} *7*; α(N+..)=0.000450 *7* B(E1)(W.u.)=9.9×10^{-7} *10* E_γ: weighted average of 171.5 *2* (^{152}Sm(p,3nγ)), 171.5 *1* (^{136}Xe(^{19}F,5nγ)). I_γ: weighted average of 100 *12* (^{152}Sm(p,3nγ)), 100 *6* (^{136}Xe(^{19}F,5nγ)).
594.2		273[#]		321.2	(4^-)			
		325.2		269.0	(4^-)			
598.6		277.6		321.2	(4^-)			
		329.5		269.0	(4^-)			
601.4?		113.3	100	488.1?				
601.8		181.2	100	420.6	(3^-)			
628.1		131.9		496.3				
		207.5		420.6	(3^-)			
633.6		396.2	100	237.4	(1^-)			
670.8		250.2	100	420.6	(3^-)			
675.4		354.2	100	321.2	(4^-)			
682.5		120.8		561.97	6^+			
		322[#]		360.14	(5^-)			
718.3		260.6	100	457.7				
718.39	9^+	129.6 *1*	100	588.81	8^+	M1,E2	0.92 *4*	α(K)=0.66 *9*; α(L)=0.20 *10*; α(M)=0.047 *24*; α(N)=0.010 *6*; α(O)=0.0015 *7*; α(P)=6.3×10^{-5} *20* α(N+..)=0.012 *6*

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Adopted Levels, Gammas (continued)

γ(^{150}Eu) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
720.8		92.7		628.1				
		300.1		420.6	(3^-)			
743.3		322.7	100	420.6	(3^-)			
762.3		341.7	100	420.6	(3^-)			
779.27	10^+	60.8 *1*	4.5 *3*	718.39	9^+	M1,E2	12 *5*	α(K)=4.9 *16*; α(L)=5 *5*; α(M)=1.3 *11*; α(N)=0.28 *24*; α(O)=0.04 *3*; α(P)=0.00050 *23* α(N+..)=0.3 *3*
		190.4 *1*	100 *5*	588.81	8^+	E2	0.254	α(K)=0.1772 *25*; α(L)=0.0596 *9*; α(M)=0.01364 *20*; α(N)=0.00305 *5*; α(O)=0.000432 *7* α(P)=1.499×10^{-5} *21*; α(N+..)=0.00349 *5*
877.4		381.1	100	496.3				
1207.99	10^+	428.7 *1*	26.9 *15*	779.27	10^+	M1	0.0346	α(K)=0.0294 *5*; α(L)=0.00406 *6*; α(M)=0.000876 *13*; α(N)=0.000201 *3*; α(O)=3.19×10^{-5} *5* α(P)=3.20×10^{-6} *5*; α(N+..)=0.000236 *4*
		489.7 *1*	25.1 *13*	718.39	9^+	M1	0.0246	α(K)=0.0209 *3*; α(L)=0.00288 *4*; α(M)=0.000620 *9*; α(N)=0.0001421 *20*; α(O)=2.26×10^{-5} *4* α(P)=2.27×10^{-6} *4*; α(N+..)=0.0001670 *24*
		619.1 *1*	100 *5*	588.81	8^+	E2	0.00776 *11*	α(K)=0.00643 *9*; α(L)=0.001039 *15*; α(M)=0.000227 *4*; α(N)=5.16×10^{-5} *8*; α(O)=7.95×10^{-6} *12* α(P)=6.51×10^{-7} *10*; α(N+..)=6.02×10^{-5} *9*
1236.16	12^+	456.9 *1*	100	779.27	10^+	E2	0.01705	α(K)=0.01383 *20*; α(L)=0.00252 *4*; α(M)=0.000557 *8*; α(N)=0.0001260 *18*; α(O)=1.91×10^{-5} *3* α(P)=1.365×10^{-6} *20*; α(N+..)=0.0001464 *21*
1267.92	(9^-)	850.7 *1*	100	417.25	7^-			
1274.69	(11^+)	556.3 *1*	100	718.39	9^+			
1287.17	(9^-)	870.0 *1*	100	417.25	7^-			
1371.89	11^-	84.8 *1*	5.7 *4*	1287.17	(9^-)			
		104.0 *1*	1.7 *5*	1267.92	(9^-)			
		163.9 *1*	100 *5*	1207.99	10^+	E1	0.0746	α(K)=0.0632 *9*; α(L)=0.00897 *13*; α(M)=0.00193 *3*; α(N)=0.000437 *7*; α(O)=6.69×10^{-5} *10* α(P)=5.63×10^{-6} *8*; α(N+..)=0.000509 *8*
		592.5 *1*	12.6 *7*	779.27	10^+	E1	0.00310 *5*	α(K)=0.00265 *4*; α(L)=0.000352 *5*; α(M)=7.53×10^{-5} *11*; α(N)=1.719×10^{-5} *24*; α(O)=2.71×10^{-6} *4* α(P)=2.62×10^{-7} *4*; α(N+..)=2.02×10^{-5} *3*
1382.18	12^-	10.3[#] *1*	100	1371.89	11^-			
1787.00	13^-	404.8 *1*	14.7 *7*	1382.18	12^-	M1	0.0401	α(K)=0.0341 *5*; α(L)=0.00472 *7*; α(M)=0.001017 *15*; α(N)=0.000233 *4*; α(O)=3.70×10^{-5} *6* α(P)=3.72×10^{-6} *6*; α(N+..)=0.000274 *4*
		415.1 *1*	100 *5*	1371.89	11^-	E2	0.0223	α(K)=0.0179 *3*; α(L)=0.00341 *5*; α(M)=0.000757 *11*; α(N)=0.0001711 *24*; α(O)=2.57×10^{-5} *4* α(P)=1.747×10^{-6} *25*; α(N+..)=0.000199 *3*
1829.85	14^+	593.7 *1*	100	1236.16	12^+	E2	0.00861 *12*	α(K)=0.00712 *10*; α(L)=0.001166 *17*; α(M)=0.000255 *4*; α(N)=5.80×10^{-5} *9*;

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Adopted Levels, Gammas (continued)

γ(^{150}Eu) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
								α(O)=8.91×10^{-6} *13* α(P)=7.18×10^{-7} *10*; α(N+..)=6.76×10^{-5} *10*
1848.16	14$^-$	61.2[#] *1*		1787.00	13$^-$			
		466.0 *1*	100 *5*	1382.18	12$^-$	E2	0.01616	α(K)=0.01313 *19*; α(L)=0.00237 *4*; α(M)=0.000523 *8*; α(N)=0.0001185 *17*; α(O)=1.79×10^{-5} *3* α(P)=1.299×10^{-6} *19*; α(N+..)=0.0001378 *20*
1897.29	(13$^+$)	622.6 *1*	100	1274.69	(11$^+$)	E2	0.00765 *11*	α(K)=0.00635 *9*; α(L)=0.001023 *15*; α(M)=0.000224 *4*; α(N)=5.08×10^{-5} *8*; α(O)=7.83×10^{-6} *11* α(P)=6.43×10^{-7} *9*; α(N+..)=5.93×10^{-5} *9*
2168.51	14$^-$	381.4 *1*	100	1787.00	13$^-$	M1	0.0468	α(K)=0.0398 *6*; α(L)=0.00552 *8*; α(M)=0.001189 *17*; α(N)=0.000272 *4*; α(O)=4.33×10^{-5} *6* α(P)=4.34×10^{-6} *6*; α(N+..)=0.000320 *5*
2343.96	15$^-$	495.8 *1*		1848.16	14$^-$			
		557.0 *1*	100 *5*	1787.00	13$^-$	E2	0.01011	α(K)=0.00832 *12*; α(L)=0.001396 *20*; α(M)=0.000306 *5*; α(N)=6.95×10^{-5} *10* α(O)=1.064×10^{-5} *15*; α(P)=8.37×10^{-7} *12*; α(N+..)=8.10×10^{-5} *12*
2387.03	15$^-$	218.4 *1*	16.3 *6*	2168.51	14$^-$	M1,E2	0.184 *24*	α(K)=0.15 *3*; α(L)=0.030 *5*; α(M)=0.0066 *13*; α(N)=0.0015 *3*; α(O)=0.00022 *3* α(P)=1.5×10^{-5} *5*; α(N+..)=0.0017 *3*
		538.9 *1*	30.6 *13*	1848.16	14$^-$	M1	0.0193	α(K)=0.01644 *23*; α(L)=0.00225 *4*; α(M)=0.000485 *7*; α(N)=0.0001112 *16* α(O)=1.769×10^{-5} *25*; α(P)=1.783×10^{-6} *25*; α(N+..)=0.0001306 *19*
		557.2 *1*	100 *5*	1829.85	14$^+$	E1,M1	0.011 *8*	α(K)=0.009 *6*; α(L)=0.0012 *9*; α(M)=0.00027 *18*; α(N)=6.E−5 *5*; α(O)=1.0×10^{-5} *7* α(P)=1.0×10^{-6} *7*; α(N+..)=7.E−5 *5*
2440.54	16$^-$	96.6 *1*		2343.96	15$^-$			
		592.4 *1*	100 *5*	1848.16	14$^-$	E2	0.00865 *13*	α(K)=0.00715 *10*; α(L)=0.001173 *17*; α(M)=0.000257 *4*; α(N)=5.84×10^{-5} *9*; α(O)=8.96×10^{-6} *13* α(P)=7.22×10^{-7} *11*; α(N+..)=6.80×10^{-5} *10*
2530.79	(15$^+$)	633.5 *1*	100	1897.29	(13$^+$)	E2	0.00733 *11*	α(K)=0.00609 *9*; α(L)=0.000976 *14*; α(M)=0.000213 *3*; α(N)=4.85×10^{-5} *7*; α(O)=7.47×10^{-6} *11* α(P)=6.17×10^{-7} *9*; α(N+..)=5.66×10^{-5} *8*
2630.18	16$^+$	800.3 *1*	100	1829.85	14$^+$	E2	0.00425 *6*	α(K)=0.00356 *5*; α(L)=0.000534 *8*; α(M)=0.0001160 *17*; α(N)=2.64×10^{-5} *4*; α(O)=4.12×10^{-6} *6* α(P)=3.65×10^{-7} *6*; α(N+..)=3.09×10^{-5} *5*
2685.69	16$^-$	341.7 *1*	59 *3*	2343.96	15$^-$	M1	0.0624	α(K)=0.0530 *8*; α(L)=0.00738 *11*; α(M)=0.001590 *23*; α(N)=0.000364 *6*; α(O)=5.79×10^{-5} *9* α(P)=5.79×10^{-6} *9*; α(N+..)=0.000428 *6*
		517.2 *1*	100 *5*	2168.51	14$^-$	E2	0.01224	α(K)=0.01003 *14*; α(L)=0.001731 *25*; α(M)=0.000381 *6*; α(N)=8.64×10^{-5} *13* α(O)=1.316×10^{-5} *19*; α(P)=1.002×10^{-6} *14*; α(N+..)=0.0001005 *14*
2827.89	17$^-$	142.2 *1*	22.7 *5*	2685.69	16$^-$	M1,E2	0.685 *12*	α(K)=0.50 *8*; α(L)=0.14 *6*; α(M)=0.032 *15*;

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Adopted Levels, Gammas (continued)

$\gamma(^{150}Eu)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
								α(N)=0.007 *4*; α(O)=0.0010 *4*; α(P)=4.9×10^{-5} *15*
								α(N+..)=0.008 *4*
2827.89	17$^-$	197.7 *1*	11.4 *5*	2630.18	16$^+$	(E1)	0.0452	α(K)=0.0383 *6*; α(L)=0.00538 *8*; α(M)=0.001156 *17*; α(N)=0.000262 *4*; α(O)=4.03×10^{-5} *6*
								α(P)=3.49×10^{-6} *5*; α(N+..)=0.000306 *5*
		387.3 *1*	85 *4*	2440.54	16$^-$	M1	0.0450	α(K)=0.0382 *6*; α(L)=0.00530 *8*; α(M)=0.001142 *16*; α(N)=0.000262 *4*; α(O)=4.16×10^{-5} *6*
								α(P)=4.17×10^{-6} *6*; α(N+..)=0.000307 *5*
		440.8 *1*	100 *5*	2387.03	15$^-$	E2	0.0188	α(K)=0.01522 *22*; α(L)=0.00282 *4*; α(M)=0.000624 *9*; α(N)=0.0001411 *20*; α(O)=2.13×10^{-5} *3*
								α(P)=1.496×10^{-6} *21*; α(N+..)=0.0001639 *23*
2987.21	17$^-$	643.3 *1*	100	2343.96	15$^-$	E2	0.00707 *10*	α(K)exp=0.005 *1*; α(K)=0.00587 *9*; α(L)=0.000936 *14*; α(M)=0.000205 *3*; α(N)=4.65×10^{-5} *7*; α(O)=7.17×10^{-6} *10*
								α(P)=5.96×10^{-7} *9*; α(N+..)=5.43×10^{-5} *8*; DCO=0.93 *5*.
3106.06	18$^-$	118.9 *1*		2987.21	17$^-$			
		665.6 *1*	100 *6*	2440.54	16$^-$	E2	0.00651 *10*	α(K)exp=0.005 *1*; α(K)=0.00542 *8*; α(L)=0.000855 *12*; α(M)=0.000187 *3*; α(N)=4.24×10^{-5} *6*; α(O)=6.55×10^{-6} *10*
								α(P)=5.51×10^{-7} *8*; α(N+..)=4.95×10^{-5} *7*; DCO=0.95 *5*.
3213.69	(17$^+$)	682.9 *1*	100	2530.79	(15$^+$)			
3252.73	19$^-$	146.8 *1*	1.22 *24*	3106.06	18$^-$			
		424.7 *1*	100 *5*	2827.89	17$^-$	E2	0.0209	α(K)=0.01682 *24*; α(L)=0.00317 *5*; α(M)=0.000703 *10*; α(N)=0.0001589 *23*
								α(O)=2.39×10^{-5} *4*; α(P)=1.647×10^{-6} *23*; α(N+..)=0.000184 *3*
3365.09	18$^-$	679.4 *1*	100	2685.69	16$^-$	E2	0.00620 *9*	α(K)exp=0.006 *1*; α(K)=0.00516 *8*; α(L)=0.000810 *12*; α(M)=0.0001766 *25*; α(N)=4.02×10^{-5} *6*; α(O)=6.21×10^{-6} *9*
								α(P)=5.25×10^{-7} *8*; α(N+..)=4.69×10^{-5} *7*
3469.88	18$^+$	839.7 *1*	100	2630.18	16$^+$	E2	0.00381 *6*	α(K)=0.00321 *5*; α(L)=0.000475 *7*; α(M)=0.0001031 *15*; α(N)=2.35×10^{-5} *4*; α(O)=3.66×10^{-6} *6*
								α(P)=3.29×10^{-7} *5*; α(N+..)=2.75×10^{-5} *4*
3691.14	20$^-$	438.3 *1*	100 *6*	3252.73	19$^-$	(E2)	0.0191	α(K)=0.01545 *22*; α(L)=0.00287 *4*; α(M)=0.000635 *9*; α(N)=0.0001437 *21*; α(O)=2.17×10^{-5} *3*
								α(P)=1.518×10^{-6} *22*; α(N+..)=0.0001668 *24*
		585.1 *1*	78 *6*	3106.06	18$^-$	E2	0.00893 *13*	α(K)exp=2.1 *4*; α(K)=0.00737 *11*; α(L)=0.001215 *17*; α(M)=0.000266 *4*; α(N)=6.04×10^{-5} *9*; α(O)=9.27×10^{-6} *13*
								α(P)=7.44×10^{-7} *11*; α(N+..)=7.05×10^{-5} *10*
3714.01	(19$^-$)	726.8 *1*	100	2987.21	17$^-$			
3841.46	20$^-$	735.4 *1*	100	3106.06	18$^-$	E2	0.00515 *8*	α(K)exp=0.004 *1*

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Adopted Levels, Gammas (continued)

γ(^{150}Eu) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	α	Comments
								α(K)=0.00431 *6*; α(L)=0.000660 *10*; α(M)=0.0001436 *21*; α(N)=3.27×10^{-5} *5*; α(O)=5.07×10^{-6} *8*; α(P)=4.40×10^{-7} *7*; α(N+..)=3.82×10^{-5} *6*; DCO=1.13 *7*.
3967.89	(19$^+$)	754.2 *1*	100	3213.69	(17$^+$)			
3979.99	(20$^-$)	614.9 *1*	100	3365.09	18$^-$			
4124.14	21$^-$	432.9 *1*	100 *7*	3691.14	20$^-$			
		871.5 *1*		3252.73	19$^-$			
4255.78	(20$^+$)	785.9 *1*	100	3469.88	18$^+$			
4394.45	22$^-$	703.3 *1*	100	3691.14	20$^-$	E2	0.00571 *8*	α(K)exp=0.003 *1*; α(K)=0.00477 *7*; α(L)=0.000740 *11*; α(M)=0.0001612 *23*; α(N)=3.67×10^{-5} *6*; α(O)=5.68×10^{-6} *8*; α(P)=4.86×10^{-7} *7*; α(N+..)=4.29×10^{-5} *6*
4453.01	(21$^-$)	739.0 *1*	100	3714.01	(19$^-$)	E2	0.00509 *8*	α(K)=0.00426 *6*; α(L)=0.000652 *10*; α(M)=0.0001418 *20*; α(N)=3.23×10^{-5} *5*; α(O)=5.01×10^{-6} *7*; α(P)=4.35×10^{-7} *6*; α(N+..)=3.77×10^{-5} *6*
4576.54	22$^-$	452.4 *1*	100	4124.14	21$^-$	M1	0.0301	α(K)=0.0256 *4*; α(L)=0.00353 *5*; α(M)=0.000761 *11*; α(N)=0.0001744 *25*; α(O)=2.77×10^{-5} *4*; α(P)=2.79×10^{-6} *4*; α(N+..)=0.000205 *3*
4618.76	(22$^-$)	777.3 *1*	100	3841.46	20$^-$			
5077.34	23$^-$	953.2 *1*	100	4124.14	21$^-$			
5197.95	24$^-$	803.5 *1*	3.0 *1*	4394.45	22$^-$	E2	0.00421 *6*	α(K)=0.00353 *5*; α(L)=0.000529 *8*; α(M)=0.0001149 *16*; α(N)=2.62×10^{-5} *4*; α(O)=4.08×10^{-6} *6*; α(P)=3.62×10^{-7} *5*; α(N+..)=3.06×10^{-5} *5*
5250.02	(23$^-$)	797.0 *1*	100	4453.01	(21$^-$)			
5334.34	24$^-$	757.8 *1*	100	4576.54	22$^-$	E2	0.00480 *7*	α(K)=0.00402 *6*; α(L)=0.000612 *9*; α(M)=0.0001330 *19*; α(N)=3.03×10^{-5} *5*; α(O)=4.71×10^{-6} *7*; α(P)=4.11×10^{-7} *6*; α(N+..)=3.54×10^{-5} *5*
6023.15	25$^-$	945.8 *1*	100	5077.34	23$^-$			
6111.45	26$^-$	913.5 *1*	100	5197.95	24$^-$	E2	0.00317 *5*	α(K)=0.00268 *4*; α(L)=0.000389 *6*; α(M)=8.43×10^{-5} *12*; α(N)=1.92×10^{-5} *3*; α(O)=3.01×10^{-6} *5*; α(P)=2.75×10^{-7} *4*; α(N+..)=2.25×10^{-5} *4*
6191.85	(25$^-$)	857.5 *1*	100	5334.34	24$^-$			

[†] From ^{152}Sm(p,3nγ).
[‡] This as yet unobserved transition is inferred from the decay of the 562 state to be the major mode of decay of the 589-keV level.
[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

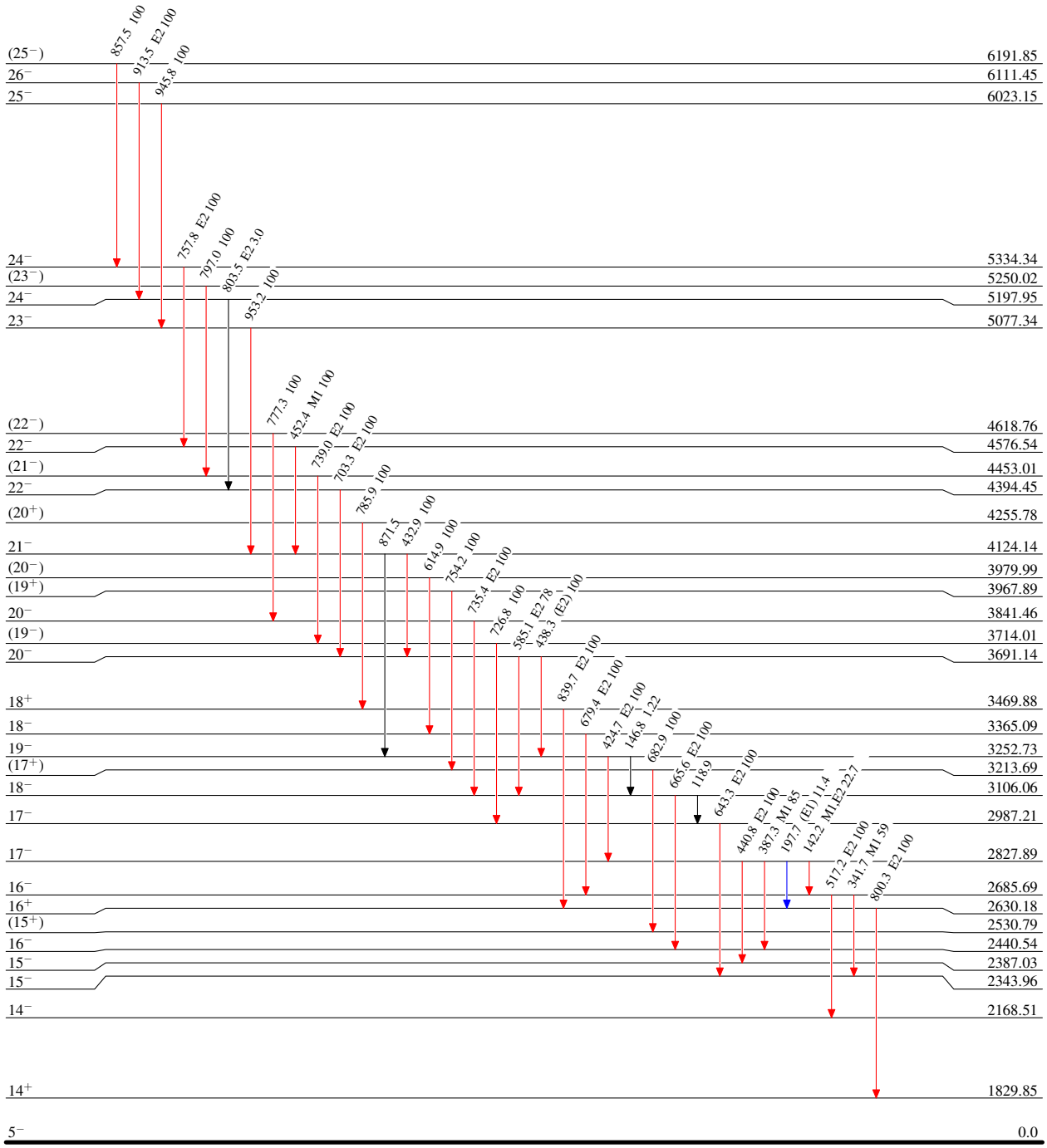
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



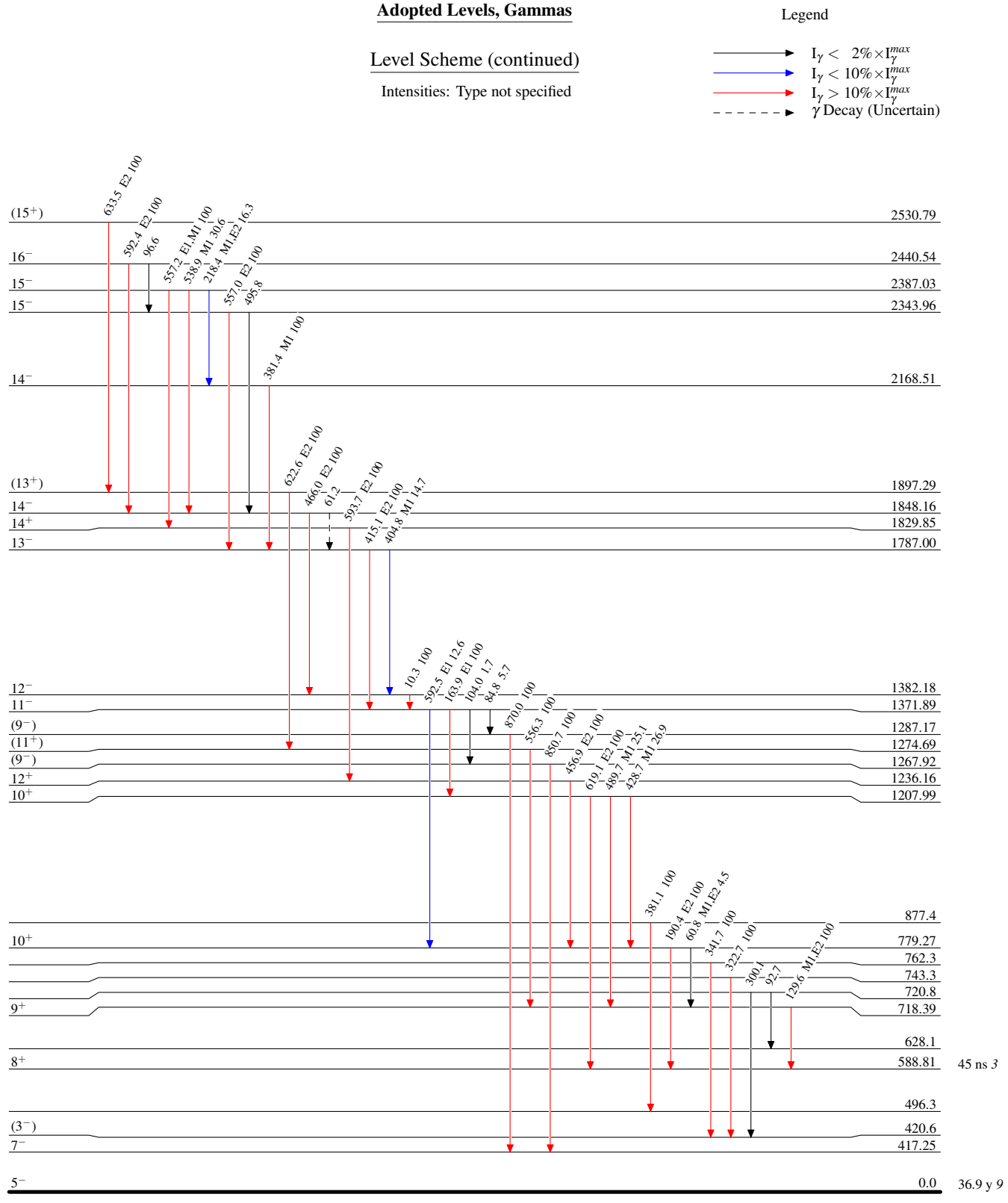
$^{150}_{63}Eu_{87}$

36.9 y 9

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

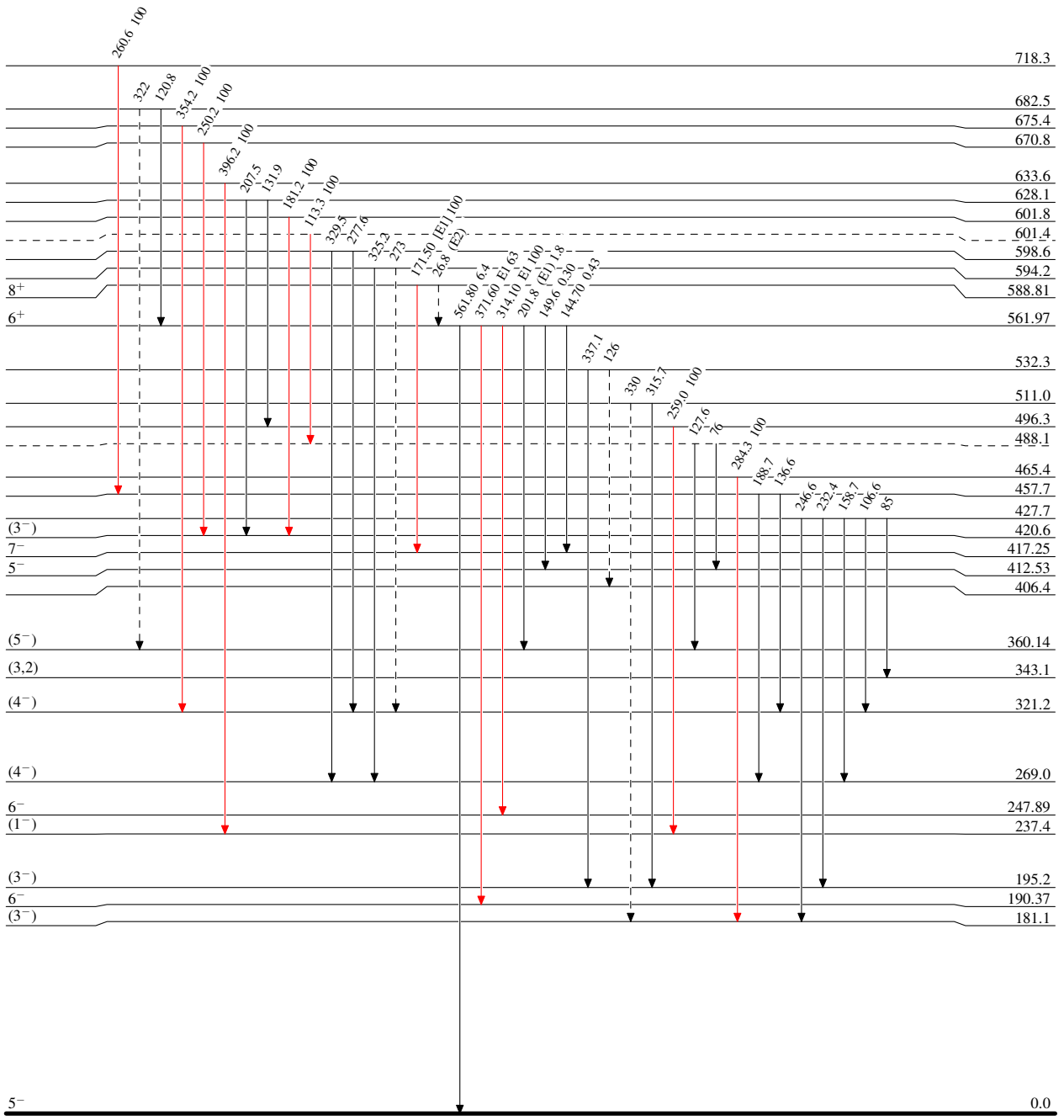


$^{150}_{63}Eu_{87}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

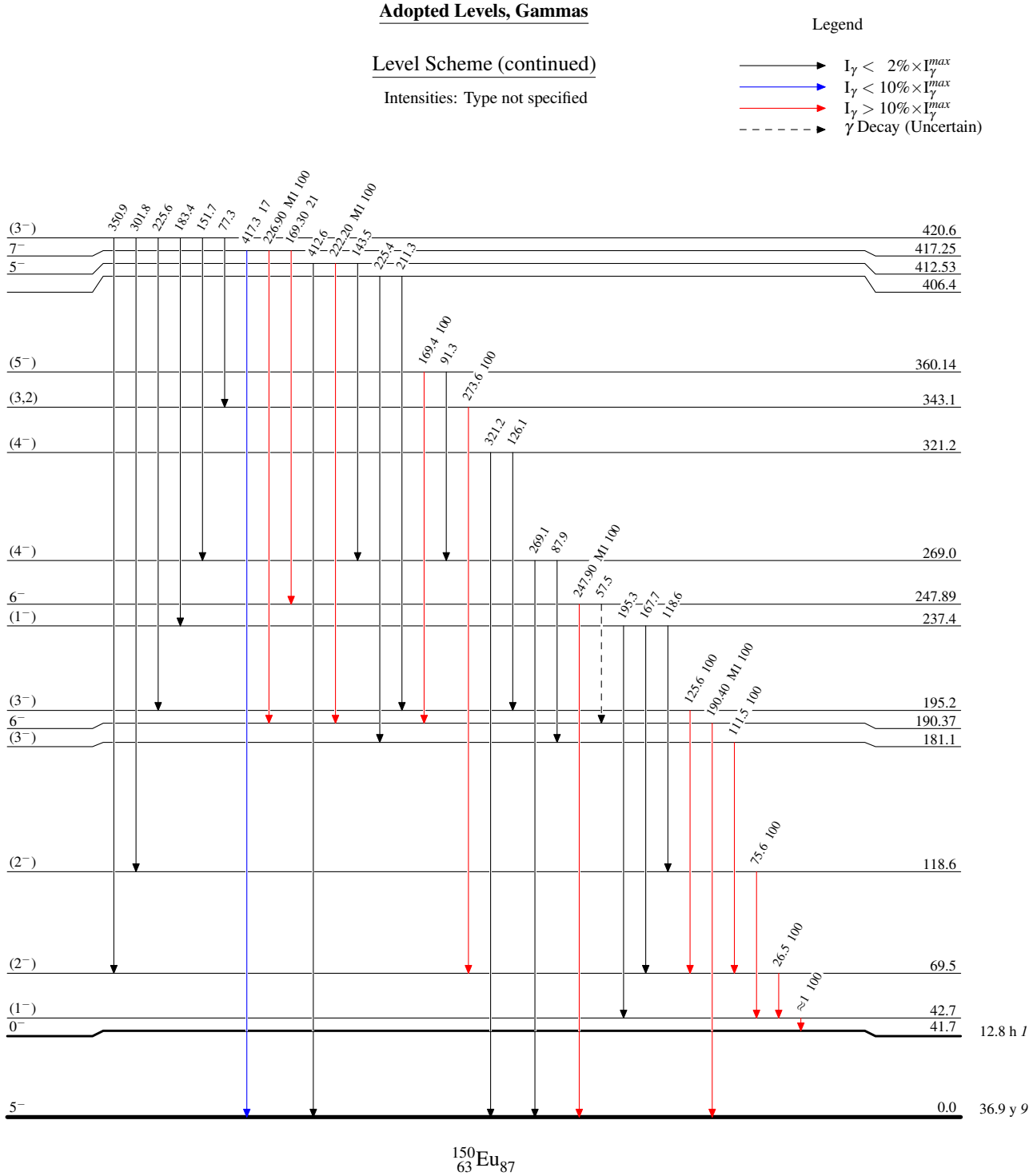


$^{150}_{63}Eu_{87}$

Adopted Levels, Gammas

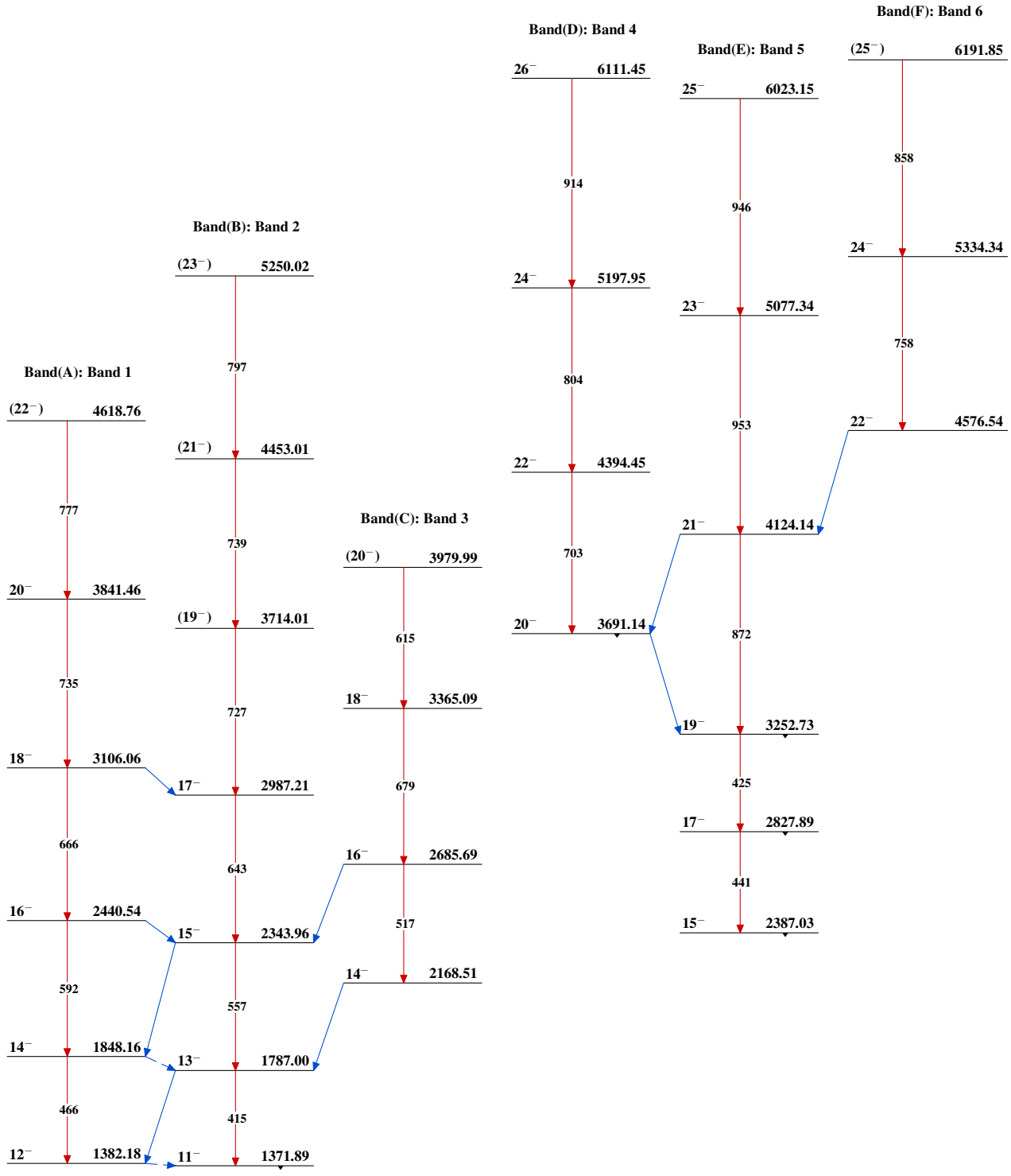
Level Scheme (continued)

Intensities: Type not specified



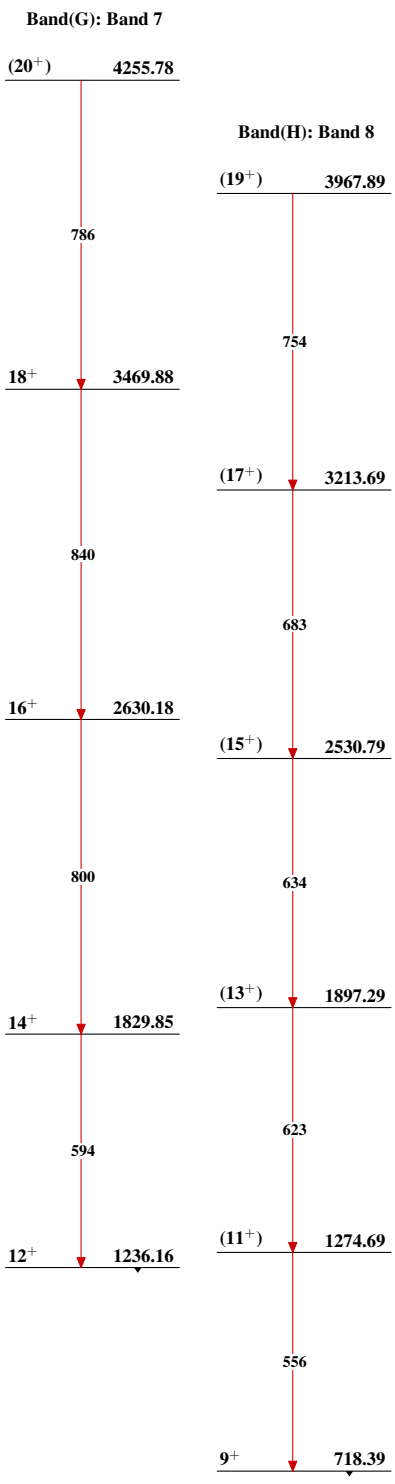
$^{150}_{63}Eu_{87}$

Adopted Levels, Gammas



$^{150}_{63}Eu_{87}$

Adopted Levels, Gammas (continued)



$^{150}_{63}Eu_{87}$