Adopted Levels, Gammas

Type	Author	Citation	Literature Cutoff Date
	History		
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Q(β^-)=−8656 *24*; S(n)=10427 *18*; S(p)=3970 *12*; Q(α)=5204 *10* 2021Wa16

Other Reactions:
^{114}Cd(^{76}Ge,4nγ), E=325 MeV (1989BiZU): 1989BiZU report preliminary precession data from IMPAC measurements for the strongest gammas de-exciting the following levels: 405, 808, 1165, 1588, 2078, 2620, 2833, 3089, 3201, 3471, 4268, 4775. These suggest g>0 in g.s. band, but of opposite sign and quite small in the band which includes the 3089 level (indicative of an unpaired n configuration, rather than the expected p configuration).

^{186}Hg Levels

General comments: Discrepancies exist between level schemes deduced by (^{36}S,4nγ) (1992Ra34 and 1993Ma02) and (^{28}Si,4nγ) (1992Po01), caused primarily by the assigned multipolarity of the 607.7 keV γ transition between the 1228 keV bandhead and the 2^+ 621 keV level. This is complicated further by another intraband γ transition of nearly the same energy (607.6 keV) that connects the previous band with a bandhead at 2185 keV. Conversion coefficient measurements in the ^{186}Tl decay (1977Co21) gives E1 for the 607.7 keV transition. This is the basis for the assignment by 1992Po01. However, the 607.7 keV γ-ray is a doublet in the high-spin work and is likely also in the ε decay of ^{186}Tl due to the mixed parentage (2^- and 7^+) and low statistics of the published data. With coincidence data, 1992Ra34 were able to separate the two transitions. The upper placed transition had a DCO ratio of 0.71 *7* indicating a dipole character. They were unable to extract a DCO ratio for the lower one. The intra-band transitions that de-excite the levels directly above the 1228 keV level in this band: 769.7 and 810.8 keV, have DCO ratios of 0.99 *8* and 1.1 *10* respectively (2017MaZZ). These values are consistent with a stretched E2 assignment. This evaluation therefore adopts the multipolarities as assigned in (^{36}S,4nγ). (See also the general comments of previous evaluation in 2003Ba44, adopted the proposed assignments of 1992Po01 (^{28}Si,4nγ).

Cross Reference (XREF) Flags

A	^{186}Tl ε decay (27.5 s)	E	^{156}Gd(^{34}S,4nγ),^{170}Yb(^{20}Ne,4nγ)
B	^{190}Pb α decay (71 s)	F	^{162}Dy(^{28}Si,4nγ)
C	^{150}Sm(^{40}Ar,4nγ)	G	Coulomb excitation
D	^{154}Gd(^{36}S,4nγ)		

E(level)†	J$^\pi$‡	T$_{1/2}$#	XREF	Comments
0.0&	0^+	1.38 min *10*	ABCDEFG	%ε+%β^+=99.984 *5*; %α=0.016 *5* Δ<r^2>(^{186}Hg−^{198}Hg)=−0.4643 fm^2 *10* (1986Ul02). T$_{1/2}$: Weighted average of 1.38 min *13* (1969Ha03), 1.33 min *10* (1970Fi16), 1.42 min *10* (1970Ha18). Other: 1.5 min (1960Al20). %α: From I(K x ray)/Iα (1970Ha18). Other: 0.018 (1993ToZY, from Iγ/Iα).
405.33& *13*	2^+	16.6 ps *21*	ABCDEFG	T$_{1/2}$: Others 16 ps *2* (^{40}Ar,4nγ) (2014Br05), 18 ps *3* (^{34}S,4nγ) (1974Pr02), 20 ps *25* ^{186}Tl ε decay (1994Jo13). J$^\pi$: E2 405γ to 0^+.
522.9[a] *3*	0^+	≤52 ps	AB D G	J$^\pi$: E0 523γ to 0^+. T$_{1/2}$: From ^{186}Tl ε decay.
621.07[a] *16*	2^+	48 ps *27*	A CDEFG	J$^\pi$: E0+M1+E2 216γ to 2^+; Band assignment. T$_{1/2}$: From ^{186}Tl ε decay. Other: ~38 ps (Coulomb excitation).
807.96[a] *16*	4^+	3.7 ps *5*	A CDEFG	J$^\pi$: Stretched E2 403γ to 2^+ 405; Band assignment. T$_{1/2}$: From Coulomb excitation. Others: 3.9 ps *14* (^{40}Ar,4nγ) and 9 ps *3* (^{34}S,4nγ),(^{20}Ne,4nγ).

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Adopted Levels, Gammas (continued)

^{186}Hg Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
1080.29[&] *17*	4^+		A CDEFG	Jπ: E2 675γ to 2^+; g.s. band assignment.
1096.57[i] *23*	2^+		A	Jπ: 2 from 691γ-405γ(θ) in ^{186}Tl ε decay; Δπ=no for 573.2γ to 0^+ 523.
1164.74[a] *20*	6^+	6.31 ps *28*	A CDEFG	Jπ: Stretched E2 357γ to 4^+; Band assignment. $T_{1/2}$: Other: 5 ps *2* (^{34}S,4nγ),(^{20}Ne,4nγ) (1974Pr02).
1228.46[c] *25*	(4^+)		A DEF	Jπ: From ^{154}Gd(^{36}S,4n), positive parity assigned for the band from several Q crossing transitions (1993Ma02) to the K=0 prolate β band.
1433.77[i] *21*	(3^+)		A	Jπ: Band assignment, γ to 2^+ and 4^+.
1577.90[c] *22*	(6^+)		A DEF	Jπ: 770γ Q to 4^+ 808 keV; Band assignment.
1588.96[a] *23*	8^+	3.12 ps *21*	A CDEF	Jπ: Stretched E2 424γ to 6^+; Band assignment. $T_{1/2}$: Other: ~3 ps (^{34}S,4nγ),(^{20}Ne,4nγ) (1974Pr02).
1614.9 *6*			A	
1659.4[j] *3*	(2^+)		A	Jπ: 563γ to 2^+ 1097; 579γ to 4^+ 1080.
1677.87[&] *20*	6^+		A CDEF	Jπ: E2 to 598γ 4^+; g.s. band member.
1868.32[i] *22*	(5^+)		A D F	Jπ: γ to (3^+) and 4^+ and 6^+.
1906.8[g] *3*	$(5,6^+)$		A D F	Jπ: γ to 4^+ and band assignment.
1966.0 *3*	$4^+,5,6^+$		A	Jπ: 288γ to 6^+ 1678; 886γ to 4^+ 1080.
1975.7[c] *3*	(8^+)		A DEF	Jπ: ΔJ=2, Q γ to (6^+) and 6^+; band assignment.
2055.5 *5*	6^+		A	Jπ: 1248γ to 4^+ 808.
2077.8[a] *4*	10^+	1.32 ps *14*	A CDEF	Jπ: Stretched E2 489γ to 8^+ 1589; Band assignment.
2130.4 *4*			A	Jπ: 697γ to (3^+) 1434.
2137.9[j] *3*	(3^+)		A	Jπ: 479γ to (2^+) 1660; 1058γ to 4^+ 1080; possible band assignment.
2155.4[&] *4*	(8^+)		A CD F	Jπ: 478γ (possibly E2) to 6^+.
2185.5[d] *5*	$7^{(-)}$		DEF	Jπ: 607.6γ D to (6^+) (^{36}S,4nγ).
2211.6 *3*			A	Jπ: 778γ to (3^+) 1434; 1131γ to 4^+ 1080.
2217.2[e] *5*	(8^-)	82 μs *5*	DEF	Jπ: γ to 8^+ and (8^+) levels, systematics of K isomers in N=106 isotones. $T_{1/2}$: From (^{34}S,4nγ). Other value: 100 μs *10* in (^{28}Si,4nγ).
2267.3[g] *3*	(7^+)		A D F	
2349.0 *3*	$(6^+,7^+)$		A	Jπ: 760γ to 8^+ 1589; 430γ to (5^+) 1869.
2394.2[f] *6*	(9^-)		D F	
2427.4[c] *4*	(10^+)		D F	
2427.8[i] *3*	(7^+)		A	Jπ: 750γ to 6^+ 1678; 560γ to (5^+) 1869; band assignment.
2464.7[d] *5*	(9^-)		D F	
2573.0[g] *6*	(9)		D F	
2591.8[e] *6*	(10^-)		D F	
2618.8[a] *6*	12^+		CDEF	Jπ: 542γ E2 to 10^+; Band assignment.
2636.1[&] *5*	(10^+)		CD F	
2809.5[f] *7*	(11^-)		D F	
2833.8 *4*	10^+		CDEF	Jπ: 755.6γ D+Q to 10^+ and 1244.5γ Q to 8^+.
2848.1[d] *5*	(11^-)		D F	
2927.4[c] *5*	(12^+)		D F	
3016.3[g] *8*	(11)		D F	
3049.0[e] *7*	(12^-)		D F	
3088.9[b] *5*	11^-		CDEF	Jπ: ΔJ=1 E1 256γ to 10^+ 2834; 469γ to 12^+ 2619.
3200.4[a] *8*	14^+		CDEF	
3267.3[d] *7*	(13^-)		D F	
3305.1[f] *7*	(13^-)		D F	
3315.8[h] *6*			F	
3446.1 *7*	(13^-)		F	Jπ: 357γ to 11^-.
3470.6[@b] *7*	13^-		CDE	
3471.1[c] *7*	(14^+)		D F	

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Adopted Levels, Gammas (continued)

^{186}Hg Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
3502.1[g] *10*	(13)	D F	
3582.8[e] *8*	(14⁻)	D F	
3735.3[d] *9*	(15⁻)	D F	
3811.4[a] *9*	16⁺	CDEF	Jπ: 611γ E2 to 14⁺; Band assignment.
3827.2[b] *7*	(15⁻)	CDEF	
3873.4[f] *8*	(15⁻)	D F	
3970.8[h] *8*		F	
4039.8[g] *11*	(15)	D F	
4053.1[c] *9*	(16⁺)	D F	
4183.5[e] *8*	(16⁻)	D F	
4265.2[d] *10*	(17⁻)	D F	
4268.2[b] *9*	(17⁻)	DEF	
4448.0[a] *11*	18⁺	DEF	Jπ: 636.6γ E2 to 14⁺; Band assignment.
4501.5[f] *9*	(17⁻)	D F	
4625.8[h] *9*		F	
4641.5[g] *12*	(17)	D F	
4643.1[c] *10*	(18⁺)	D F	
4775.1[b] *10*	(19⁻)	DEF	
4838.4[e] *9*	(18⁻)	D	
4838.4[d] *12*	(19⁻)	D F	
4866.2 *12*		F	
5114.8[a] *12*	20⁺	DEF	
5190.3[f] *10*	(19⁻)	D	
5266.8[c] *11*	(20⁺)	D F	
5292.0[g] *13*	(19)	D	
5318.8[h] *11*		F	
5342.0[b] *11*	(21⁻)	D F	
5347.4 *11*	(21⁻)	E	Jπ: 572.3γ (Q) to 19⁻.
5404.2 *13*		F	
5429.4[d] *13*	(21⁻)	D F	
5815.5[a] *13*	(22⁺)	D F	
5962.6[b] *12*	(23⁻)	D F	
6038.4[d] *14*	(23⁻)	F	E(level): this band member appears at E=6071.7 in (^{36}S,4nγ) because the 609γ, thought to deexcite it in (^{28}Si,4nγ), is absent in (^{36}S,4nγ), and the 642.6-keV cascade γ above the 609γ was placed from this band member instead.
6554.4[a] *14*	(24⁺)	D F	
6633.4[b] *13*	(25⁻)	D F	
6680.4[d] *14*	(25⁻)	F	
7328.4[a] *15*	(26⁺)	D	
7355.7[b] *14*	(27⁻)	D F	
8096.7[b] *15*	(29⁻)	D	
8132.4[a] *16*	(28⁺)	D	
8872.7[b] *16*	(31⁻)	D	

[†] From least-squares adjustment of Eγ. ΔEγ=0.5 keV assumed for any γ-rays − if missing.
[‡] Based on unspecified DCO, γ(θ) and/or linear polarization data in (HI,xnγ) reactions and deduced band structure. Detailed

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Hg Levels (continued)

arguments also listed, when available.

[#] From (^{40}Ar,4nγ) (recoil-distance Doppler shift – 2014Ga04), unless noted otherwise.

[@] The order of the 356.7γ and 381.8γ is from (^{36}S,4nγ); it is uncertain in (^{34}S,4nγ), and reversed in (^{28}Si,4nγ), resulting in E(level)=3445 instead of 3471.

[&] Band(A): $K^{\pi}=0^{+}$ oblate g.s. band. (1993Ma02).

[a] Band(B): K=0 prolate β band. (1993Ma02). Average deduced transition Q=7.7 *13* (β_2=0.25 *3*) for band (from (^{36}S,4nγ)). Lowest energy configuration in prolate minimum (1993Ma02).

[b] Band(C): π=−, α=1 intruder band. (1993Ma02). Average deduced transition Q=10.7 *17* (β_2=0.34 *4*) for band (1993Ma02). Possible configuration=(ν 1/2[651])(ν 7/2[514]) and/or (ν 1/2[651])(ν 1/2[770]).

[c] Band(D): π=+, ΔJ=2 band. (1993Ma02).

[d] Band(E): High-K, ΔJ=2 band. (1992Po01). Possible configuration=(ν 9/2[624])(ν 1/2[521]). No connection observed to K=0 bands. J values are adopted from (^{28}Si,4nγ) and are 1 unit lower than those from (^{36}S,4nγ) because the latter study assigned J to be 1 unit higher than in (^{28}Si,4nγ) for the band populated by this one. Also, the 609 keV cascade γ is absent in (^{36}S,4nγ), resulting in different E(level) for the highest energy member of this band reported in that reaction.

[e] Band(F): (ν 9/2[624])+(ν 7/2[514]) α=0 band. (1993Ma02).

[f] Band(G): (ν 9/2[624])+(ν 7/2[514]) α=1 band. (1993Ma02).

[g] Band(H): Possible collective band. (1993Ma02).

[h] Band(I): Possible collective band. (1992Po01). Existence of band not confirmed in (^{36}S,4nγ) reaction.

[i] Band(J): Possible $K^{\pi}=2^{+}$ quasi-γ band. (1994De25). Assignment of levels to band is based on comparison between observed and calculated level energies, and consistency of observed γ deexcitation.

[j] Band(K): Possible second γ band. (1994De25). Assignment of levels to band is based on comparison between observed and calculated level energies, and consistency of observed γ deexcitation.

Adopted Levels, Gammas (continued)

γ(^{186}Hg)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
405.33	2+	405.30 *14*	100	0.0	0+	E2		0.0458	B(E2)(W.u.)=71.3 *13* Mult.: Stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ and RUL.
522.9	0+	522.5 *7*		0.0	0+	E0			ρ^2(E0)>0.032 (1994Jo13).
621.07	2+	98.2 *7*	15 *8*	522.9	0+	[E2]		6.0 *2*	B(E2)(W.u.)=500 *300*
		215.53 *17*	100 *10*	405.33	2+	E0+M1+E2[@]		3.5 *5*	α: Calculated from α(K)exp=2.8 *3* (1977Be23) and K/L=5.3 *14* (1977Co21), assuming M+/L=0.33 (^{186}Tl ε Decay (27.5 s).
		621.3 *3*	≈18	0.0	0+				
807.96	4+	186.4 *4*	5 *1*	621.07	2+	(E2)[@]		0.498	B(E2)(W.u.)=4.8×10^2 *12*
		402.60 *13*	100.0 *18*	405.33	2+	E2		0.0466	B(E2)(W.u.)=2.0×10^2 *3* Mult.: Stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ and RUL.
1080.29	4+	271.9 *3*	5.8	807.96	4+				
		459.2 *2*	16.2 *19*	621.07	2+	E2		0.0332	
		675.30 *21*	100 *4*	405.33	2+	E2		0.0135	
1096.57	2+	573.57 *24*	100 *20*	522.9	0+	E2		<0.0195	Mult.: E2(+M1) (δ≥1.4) from α(K)exp; feeds 0+ state.
		691.2 *3*	≈200	405.33	2+	M1+E2	+5.7 *+20−12*	0.0137	Mult.,δ: D+Q from γγ(θ) in Tl ε decay; δ unreasonably large for E1+M2.
1164.74	6+	356.74 *13*	100	807.96	4+	E2		0.0647	B(E2)(W.u.)=231 *11*
1228.46	(4+)	607.35 *21*	100	621.07	2+	[E2]		0.0171	Mult.: See general comments on levels.
1433.77	(3+)	337.1 *3*	≈9	1096.57	2+	[M1]		0.263 *4*	
		626.1 *3*	94 *6*	807.96	4+				
		812.7 *3*	100	621.07	2+				
1577.90	(6+)	349.2[‡]		1228.46	(4+)	Q			I_γ: probably stronger than 770γ (from (^{34}S,4nγ)); not reported in ^{186}Tl ε decay but may be masked there by 349.1γ from daughter. Mult.: From (^{36}S,4nγ).
		412.9		1164.74	6+				E_γ: Reported in (^{36}S,4nγ) only; strength comparable to that for 498γ (based on line width in drawing).
		497.6 *3*	12 *3*	1080.29	4+				
		770.06 *24*	100 *6*	807.96	4+	Q			Mult.: From (^{36}S,4nγ).
1588.96	8+	424.16 *17*	100	1164.74	6+	E2		0.0407	B(E2)(W.u.)=201 *14*
1614.9		1209.6 *5*	100	405.33	2+				
1659.4	(2+)	562.8 *3*	33	1096.57	2+				
		579.2 *3*	100	1080.29	4+				
1677.87	6+	597.52 *18*	100 *5*	1080.29	4+	E2		0.0178	
		869.8 *2*	22 *5*	807.96	4+				
1868.32	(5+)	434.7 *3*	≈69	1433.77	(3+)			0.038	
		704.0 *3*	≈69	1164.74	6+				
		788.2 *3*	100 *10*	1080.29	4+	M1(+E2)		0.019 *9*	Mult.: From (^{36}S,4nγ).

$^{186}_{80}Hg_{106}$-5

Adopted Levels, Gammas (continued)

γ(^{186}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[#]	α[&]	Comments
1906.8	(5,6$^+$)	826.5 *3*		1080.29	4$^+$			
		1098.6[‡]		807.96	4$^+$			
1966.0	4$^+$,5,6$^+$	287.97 *24*	100 *13*	1677.87	6$^+$			I_γ: May be overestimated; possible contribution from contaminant line (see ^{186}Tl ε decay).
		886.4	47	1080.29	4$^+$			
1975.7	(8$^+$)	386.4		1588.96	8$^+$			E_γ: from (^{34}S,4nγ).
		397.84 *24*	48 *7*	1577.90	(6$^+$)	(E2)	0.0481	α(K)=0.0324 *5*; α(L)=0.01186 *17*; α(M)=0.00296 *5* α(N)=0.000737 *11*; α(O)=0.0001294 *19*; α(P)=4.26×10^{-6} *6* Mult.: placed as member of ΔJ=2 intraband cascade in (^{36}S,4nγ) and (^{28}Si,4nγ), based on unenumerated DCO or γ(θ) data; M1+E2 from α(K)exp for doublet dominated by this transition in ^{186}Tl ε decay favors Δπ=no.
		811.4 *4*	100 *15*	1164.74	6$^+$	Q		Mult.: From (^{36}S,4nγ).
2055.5	6$^+$	1247.5 *4*	100	807.96	4$^+$			
2077.8	10$^+$	488.9	100	1588.96	8$^+$	E2	0.0284	B(E2)(W.u.)=2.4×10^2 *3* E_γ: from (^{34}S,4nγ). Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ and RUL.
2130.4		696.6 *3*	100	1433.77	(3$^+$)			
2137.9	(3$^+$)	478.6 *3*	≈30	1659.4	(2$^+$)			Mult.: E2 for (477.9γ+478.6γ) from α(K)exp in ^{186}Tl ε decay.
		1057.6 *3*	100	1080.29	4$^+$			
2155.4	(8$^+$)	477.6 *3*	100	1677.87	6$^+$			Mult.: E2 for (477.9γ+478.6γ) from α(K)exp in ^{186}Tl ε decay.
2185.5	7$^{(-)}$	210[a]		1975.7	(8$^+$)			E_γ: from (^{34}S,4nγ).
		607.6[‡]	100	1577.90	(6$^+$)	D		I_γ: from (^{34}S,4nγ). Mult.: From (^{36}S,4nγ).
2211.6		777.9 *3*	100	1433.77	(3$^+$)			
		1131.3 *3*	21	1080.29	4$^+$			
2217.2	(8$^-$)	241.5[‡]		1975.7	(8$^+$)			
		628.1[‡]		1588.96	8$^+$			
2267.3	(7$^+$)	360.2[‡]		1906.8	(5,6$^+$)			
		399.6 *3*	100	1868.32	(5$^+$)			
		1101		1164.74	6$^+$			E_γ: From (^{28}Si,4nγ).
2349.0	(6$^+$,7$^+$)	442.5 *3*	33	1906.8	(5,6$^+$)			
		480.6 *3*	100	1868.32	(5$^+$)			
		760.1 *3*	40	1588.96	8$^+$			
2394.2	(9$^-$)	177.0[‡]	100	2217.2	(8$^-$)			
2427.4	(10$^+$)	451.8[‡]		1975.7	(8$^+$)	Q		Mult.: From (^{36}S,4nγ).
		838.4[‡]		1588.96	8$^+$			
2427.8	(7$^+$)	559.7 *3*	100	1868.32	(5$^+$)			
		749.8 *3*	38	1677.87	6$^+$			
2464.7	(9$^-$)	279.2[‡]		2185.5	7$^{(-)}$			
		489.0[‡]		1975.7	(8$^+$)			

$^{186}_{80}Hg_{106}$-6

Adopted Levels, Gammas (continued)

γ(^{186}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[#]	α[&]	Comments
2573.0	(9)	305.7[‡]	100	2267.3	(7$^+$)			
2591.8	(10$^-$)	197.6[‡]		2394.2	(9$^-$)			
		374.6[‡]		2217.2	(8$^-$)			
2618.8	12$^+$	542.0[‡]	100	2077.8	10$^+$	E2	0.0222	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
2636.1	(10$^+$)	480.8[‡]		2155.4	(8$^+$)			
		558		2077.8	10$^+$			E_γ: from (^{28}Si,4nγ).
2809.5	(11$^-$)	217.7[‡]		2591.8	(10$^-$)			
		415.3[‡]		2394.2	(9$^-$)			
2833.8	10$^+$	755.6[‡]	100	2077.8	10$^+$	D+Q		I_γ,Mult.: from (^{34}S,4nγ).
		1244.5[‡]	39	1588.96	8$^+$	Q		I_γ,Mult.: From (^{34}S,4nγ).
2848.1	(11$^-$)	383.4[‡]		2464.7	(9$^-$)			
		420.6[‡]		2427.4	(10$^+$)			
2927.4	(12$^+$)	500.0[‡]		2427.4	(10$^+$)	Q		Mult.: From (^{36}S,4nγ).
		849.5[‡]		2077.8	10$^+$			
3016.3	(11)	443.3[‡]	100	2573.0	(9)			
3049.0	(12$^-$)	239.5[‡]		2809.5	(11$^-$)			
		457.2[‡]		2591.8	(10$^-$)			
3088.9	11$^-$	255.5[‡]	100	2833.8	10$^+$	E1	0.0407	I_γ: from (^{34}S,4nγ). Mult.: from DCO ratio and linear polarization in (^{36}S,4nγ). Q in (^{28}Si,4nγ) in disagreement.
		452.6[‡]		2636.1	(10$^+$)			
		469[a]		2618.8	12$^+$			E_γ: From (^{28}Si,4nγ).
		1011.1[‡]	40	2077.8	10$^+$	D		I_γ: From (^{34}S,4nγ). Mult.: From (^{36}S,4nγ); Q in (^{34}S,4nγ) in disagreement.
3200.4	14$^+$	581.6[‡]	100	2618.8	12$^+$	E2	0.0189	Mult.: Stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
3267.3	(13$^-$)	419.2[‡]	100	2848.1	(11$^-$)			
3305.1	(13$^-$)	256.1[‡]		3049.0	(12$^-$)			
		495.6[‡]		2809.5	(11$^-$)			
3315.8		481		2833.8	10$^+$			E_γ: from (^{28}Si,4nγ).
		698		2618.8	12$^+$			E_γ: from (^{28}Si,4nγ).
3446.1	(13$^-$)	357	100	3088.9	11$^-$			
3470.6	13$^-$	381.8[‡]	100	3088.9	11$^-$	E2	0.0537	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
3471.1	(14$^+$)	543.7[‡]		2927.4	(12$^+$)			
3502.1	(13)	485.8[‡]	100	3016.3	(11)			
3582.8	(14$^-$)	277.7[‡]		3305.1	(13$^-$)			
		533.8[‡]		3049.0	(12$^-$)			

$^{186}_{80}Hg_{106}$-7

Adopted Levels, Gammas (continued)

γ(^{186}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[#]	α[&]	Comments
3735.3	(15⁻)	468.0[‡]	100	3267.3	(13⁻)			
3811.4	16⁺	611.0[‡]	100	3200.4	14⁺	E2	0.0169	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
3827.2	(15⁻)	356.7[‡]	100	3470.6	13⁻	(E2)	0.0647	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ) for doublet in which this is minor component; intraband γ.
		381		3446.1	(13⁻)			
3873.4	(15⁻)	290.6[‡]		3582.8	(14⁻)			
		568.3[‡]		3305.1	(13⁻)			
3970.8		655	100	3315.8				E_γ: from (^{28}Si,4nγ).
4039.8	(15)	537.7[‡]	100	3502.1	(13)			
4053.1	(16⁺)	582.0[‡]	100	3471.1	(14⁺)	Q		Mult.: From (^{36}S,4nγ).
4183.5	(16⁻)	310.1[‡]		3873.4	(15⁻)			
		600.7[‡]		3582.8	(14⁻)			
4265.2	(17⁻)	529.9[‡]	100	3735.3	(15⁻)			
4268.2	(17⁻)	441.0[‡]	100	3827.2	(15⁻)	E2	0.0368	Mult.: Stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
4448.0	18⁺	636.6[‡]	100	3811.4	16⁺	E2	0.0154	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
4501.5	(17⁻)	318.0[‡]		4183.5	(16⁻)			
		628.1[‡]		3873.4	(15⁻)			
4625.8		655	100	3970.8				E_γ: from (^{28}Si,4nγ).
4641.5	(17)	601.7[‡]	100	4039.8	(15)			
4643.1	(18⁺)	590.0[‡]	100	4053.1	(16⁺)			
4775.1	(19⁻)	506.9[‡]	100	4268.2	(17⁻)	E2	0.0261	Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
4838.4	(18⁻)	336.9[‡]		4501.5	(17⁻)			
		654.9[‡]		4183.5	(16⁻)			
4838.4	(19⁻)	573.2[‡]	100	4265.2	(17⁻)			
4866.2		601	100	4265.2	(17⁻)			E_γ: from (^{28}Si,4nγ).
5114.8	20⁺	666.8	100	4448.0	18⁺	E2	0.0139	E_γ: from (^{34}S,4nγ). Mult.: stretched Q from γ(θ) in (^{34}S,4nγ); intraband γ.
5190.3	(19⁻)	688.8[‡]	100	4501.5	(17⁻)			
5266.8	(20⁺)	623.7[‡]	100	4643.1	(18⁺)			
5292.0	(19)	650.5[‡]	100	4641.5	(17)			
5318.8		693	100	4625.8				E_γ: from (^{28}Si,4nγ).
5342.0	(21⁻)	566.9[‡]	100	4775.1	(19⁻)			E_γ: 572.3γ, mult=(Q) in (^{34}S,4nγ); γ probably misplaced there.
5347.4	(21⁻)	572.3	100	4775.1	(19⁻)	(Q)		Mult.: From (^{34}S,4nγ).
5404.2		538	100	4866.2				E_γ: from (^{28}Si,4nγ).
5429.4	(21⁻)	591.0[‡]	100	4838.4	(19⁻)			
5815.5	(22⁺)	700.7[‡]	100	5114.8	20⁺			

$^{186}_{80}Hg_{106}$-8

Adopted Levels, Gammas (continued)

$\gamma(^{186}Hg)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Comments
5962.6	(23$^-$)	620.6‡	100	5342.0	(21$^-$)	
6038.4	(23$^-$)	609	100	5429.4	(21$^-$)	E_γ: 609γ reported in (^{28}Si,4nγ) only. See comment on 6039 level energy.
6554.4	(24$^+$)	738.9‡	100	5815.5	(22$^+$)	
6633.4	(25$^-$)	670.8‡	100	5962.6	(23$^-$)	
6680.4	(25$^-$)	642	100	6038.4	(23$^-$)	E_γ: from (^{28}Si,4nγ). Presumed to be the same γ as the differently-placed 642.6γ in (^{36}S,4nγ).
7328.4	(26$^+$)	774‡	100	6554.4	(24$^+$)	
7355.7	(27$^-$)	722.3‡	100	6633.4	(25$^-$)	
8096.7	(29$^-$)	741‡	100	7355.7	(27$^-$)	
8132.4	(28$^+$)	804‡	100	7328.4	(26$^+$)	
8872.7	(31$^-$)	776‡	100	8096.7	(29$^-$)	

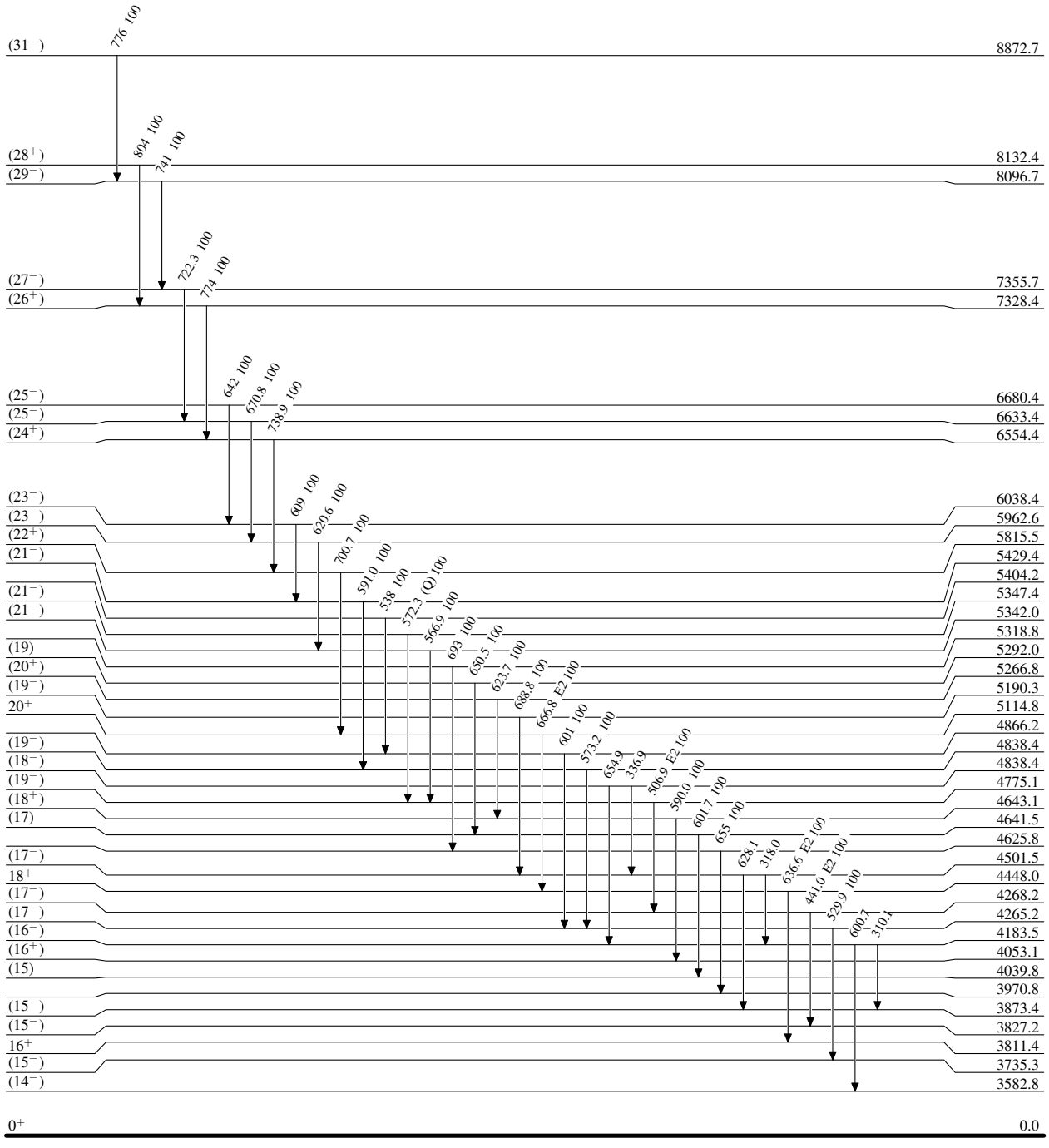
† From ^{186}Tl ε decay, except as noted.
‡ From (^{36}S,4nγ).
# From α(K)exp in ^{186}Tl ε decay, except as noted.
@ From (^{40}Ar,4nγ).
& Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
a Placement of transition in the level scheme is uncertain.

$^{186}_{80}Hg_{106}$-9

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{186}_{80}Hg_{106}$

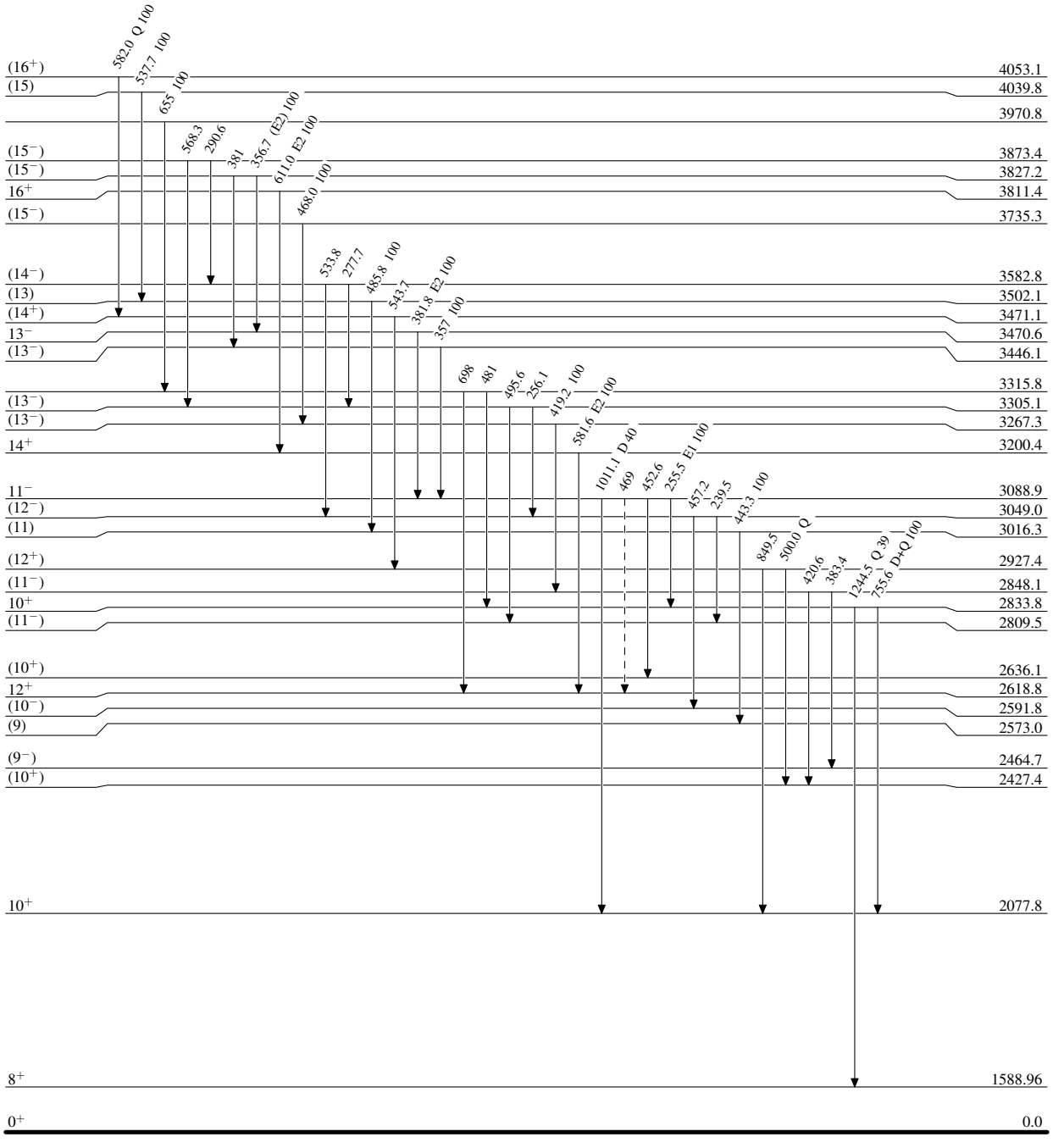
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{186}_{80}Hg_{106}$

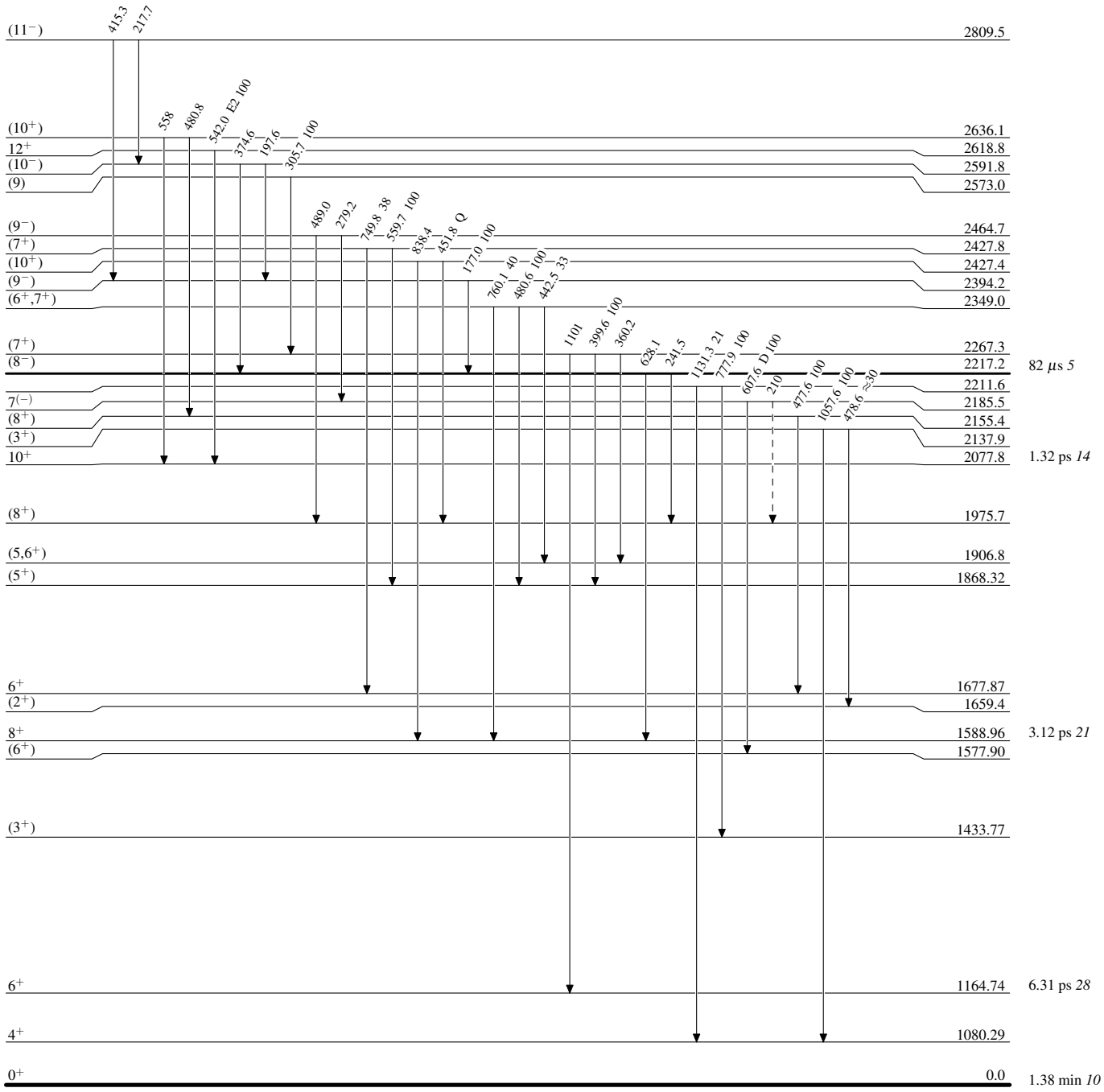
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{186}_{80}Hg_{106}$

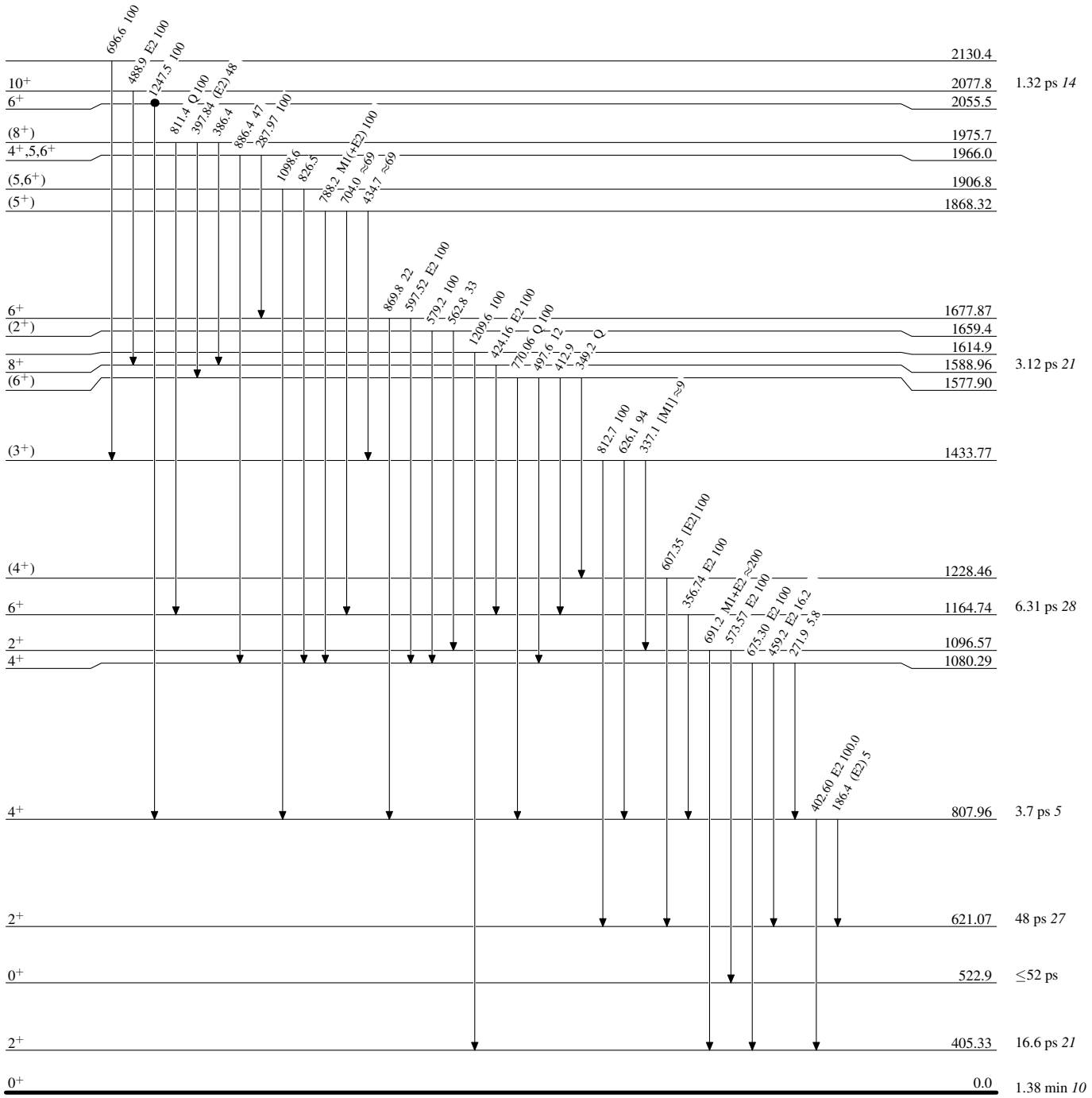
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence

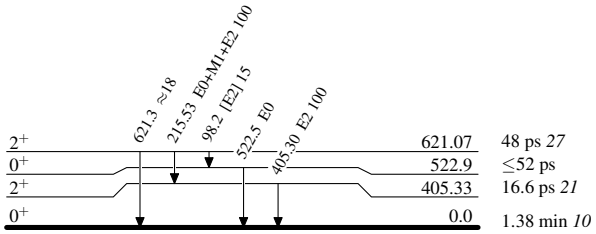


$^{186}_{80}Hg_{106}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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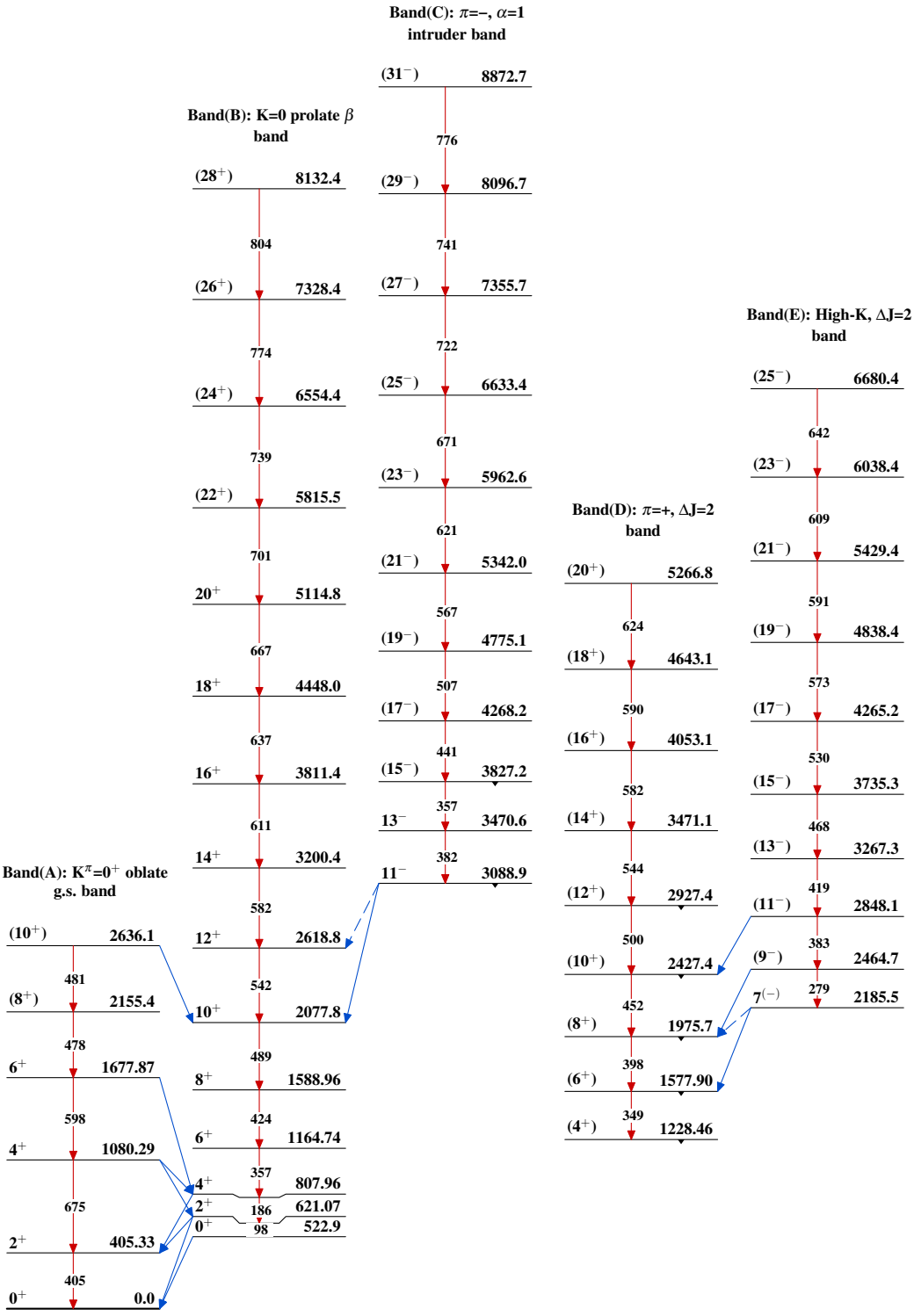
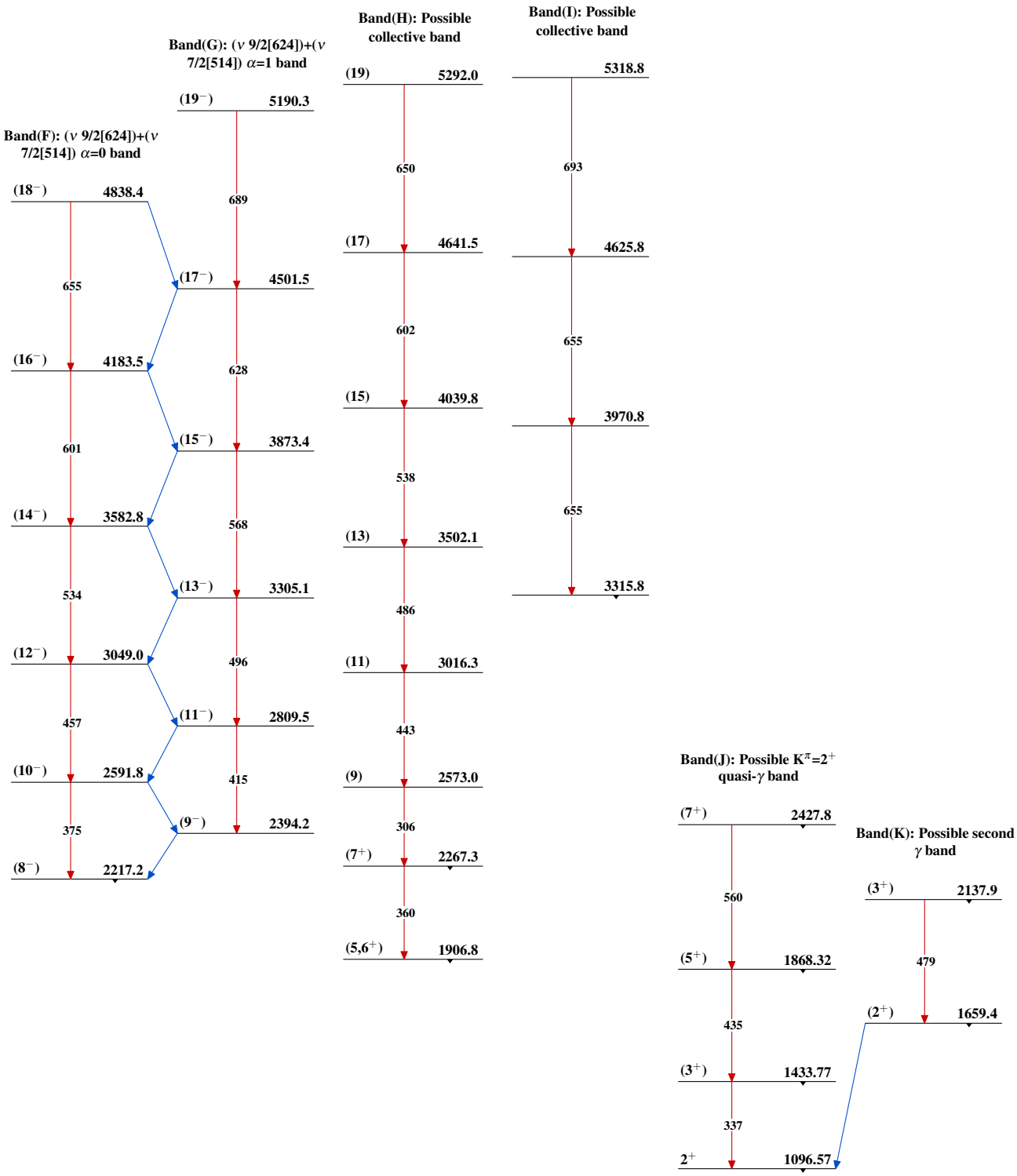
Adopted Levels, Gammas



$^{186}_{80}Hg_{106}$

Adopted Levels, Gammas (continued)



$^{186}_{80}Hg_{106}$