Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, Balraj Singh	NDS 142, 1 (2017)	15-Apr-2017

Q(β^-)=−5010 *30*; S(n)=7500 *30*; S(p)=4540 *30*; Q(α)=4640 *40* 2017Wa10
S(2n)=17650 *30*, S(2p)=7520 *40*, Q(εp)=910 30 (2017Wa10).
^{189}Hg produced and identified by 1955Sm42 in proton bombardment of gold target, followed by half-life measurements. Later studies of ^{189}Hg decay: 1957Ch34, 1960Po07, 1961An02, 1963Ka17, 1966Na01, 1966Fo13, 1967Na02, 1970ErZX, 1975Be17, 1976KeZO, 1988Ko22, 1996Wo04.
Additional information 1.

^{189}Hg Levels

Cross Reference (XREF) Flags

A	^{189}Tl ε decay (2.3 min)	D	^{160}Gd(^{34}S,5nγ):SD
B	^{189}Tl ε decay (1.4 min)	E	^{175}Lu(^{19}F,5nγ)
C	^{160}Gd(^{34}S,5nγ)	F	^{181}Ta(^{14}N,6nγ)

E(level)	J$^\pi$[†]	T$_{1/2}$	XREF	Comments
0.0	3/2$^-$	7.6 min *2*	A	%ε+%β^+=100; %α<0.00003 μ=−0.6086 *8* (1986Ul02,2014StZZ) Q=−0.8 *3* (1986Ul02,2016St14) RMS charge radius <r^2>$^{1/2}$=5.4100 fm *40* (2013An02 evaluation). %α: from 1963Ka17, determined for both parent and isomer assuming T$_{1/2}$=9.5 min. E(α)≈4850 from systematics. Not seen by 1963Ka17. μ: optical pumping/rad detection and NMR/rad detection (1986Ul02). Q: NMR optical pumping/rad detection (1986Ul02). Other values: 1.1 *4* (1985Kl09, optical pumping/rad detection), 1.15 *25* (1976Bo09). J$^\pi$: spin from optical pumping/rad detection (1976Bo09), parity from comparison of μ with Schmidt limit for configuration=νp$_{3/2}$. T$_{1/2}$: weighted average of 8.0 min *7* (1976KeZO), 7.5 min *2* (1975Be17) and 7.7 min *2* (1970ErZX). Others: 8.5 min *2* (1966Na01), 9.5 min (1963Ka17), 9.6 min (1961An02), 9 min (1960Po07), 23 min *2* (1957Ch34), 20 min *10* (1955Sm42).
64.3 *5*	(5/2)$^-$	0.40 ns *4*	A	J$^\pi$: M1+E2 to 3/2$^-$; systematics of odd-A Hg isotopes. T$_{1/2}$: from ^{189}Tl ε decay (2.3 min) (1985Ab03).
0.0+x[‡]	13/2$^+$	8.6 min *2*	C EF	%ε+%β^+=100; %α<0.00003 μ=−1.058 *6* (1979Da06,2014StZZ) Q=+0.66 *19* (1986Ul02,2016St14) %α: see comment on ground state. μ: collinear laser spectroscopy (1979Da06). Q: NMR/optical pumping/rad detection (1986Ul02). E(level): x=80 *30* (2001Sc41,2017Au03, mass doublet). J$^\pi$: spin from optical quantum beat spectroscopy (1979Da06), parity from comparison of μ with Schmidt limit for configuration=νi$_{13/2}$. T$_{1/2}$: weighted average of 8.7 min *2* (1975Be17), 8.7 min *2* (1970ErZX), 8.5 min *3* (1967Na02) and 8.4 min *5* (1966Fo13).
403.1+x[‡] *2*	17/2$^+$		C EF	
473.93+x *17*	15/2$^+$		C EF	
901.02+x[d] *24*	(15/2$^-$)		C	
1029.94+x[‡] *22*	21/2$^+$		C EF	
1110.26+x *19*	19/2$^+$		C EF	
1440.04+x[d] *23*	(19/2$^-$)		C	

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Adopted Levels, Gammas (continued)

^{189}Hg Levels (continued)

E(level)	Jπ†	XREF	E(level)	Jπ†	XREF
1691.05+x[a] 21	21/2−	C EF	4227.9+x[b] 5	(41/2−)	C
1762.9+x‡ 3	25/2+	C EF	4237.3+x[c] 5	(41/2−)	C
1916.9+x[a] 3	25/2−	C EF	4329.0+x@ 6	(41/2+)	C
1976.1+x& 4	(23/2−)	C F	4438.5+x 6	(41/2+)	C
2034.3+x[d] 3	(23/2−)	C	4479.3+x& 6	(43/2−)	C
2220.5+x& 3	(27/2−)	C F	4517.3+x 6	(43/2−)	C
2236.0+x 4	(29/2−)	C	4549.8+x 5	(39/2−)	C
2244.7+x 4	(29/2−)	C	4700.8+x[a] 6	(45/2−)	C
2253.1+x[a] 3	29/2−	C EF	4713.2+x# 6	45/2+	C F
2477.0+x# 4	29/2+	C EF	4760.7+x[c] 6	(45/2−)	C
2615.9+x‡ 4	29/2+	C F	4869.6+x 6	(45/2+)	C
2674.3+x# 4	33/2+	C EF	4960.4+x 6	(43/2−)	C
2675.6+x[d] 5	(25/2−)	C	5002.2+x@ 6	(45/2+)	C
2682.0+x 4	(29/2+)	C	5035.9+x[b] 5	(45/2−)	C
2686.1+x& 4	(31/2−)	C F	5117.7+x& 7	(47/2−)	C
2821.3+x[a] 4	33/2−	C EF	5544.5+x@ 7	(47/2+)	C
2947.2+x 4	(31/2−)	C	5583.2+x# 7	49/2+	C F
2949.2+x[b] 4	(33/2−)	C F	5702.5+x[c] 6	(49/2−)	C
3123.4+x@ 5	(33/2+)	C F	5899.9+x[b] 6	(49/2−)	C
3153.6+x# 5	37/2+	C EF	5952.2+x& 7	(51/2−)	C
3307.1+x 5	(33/2+)	C	6535.7+x# 8	(53/2+)	C
3343.9+x& 4	(35/2−)	C F	6819.7+x& 8	(55/2−)	C
3400.2+x‡ 4	(33/2+)	C	y[e]	J≈(29/2,31/2)	D
3439.3+x[c] 5	(37/2−)	C	366.4+y[e] 2	J+2	D
3449.3+x 5	(37/2−)	C	774.5+y[e] 3	J+4	D
3467.1+x[b] 4	(37/2−)	C F	1223.2+y[e] 4	J+6	D
3540.7+x[a] 4	37/2−	C F	1711.7+y[e] 4	J+8	D
3793.2+x@ 5	(37/2+)	C F	2239.7+y[e] 5	J+10	D
3826.0+x 5	(37/2+)	C	2806.6+y[e] 5	J+12	D
3875.4+x# 6	41/2+	C F	3410.5+y[e] 6	J+14	D
3992.4+x& 5	(39/2−)	C	4050.8+y[e] 6	J+16	D
4062.7+x 6	(41/2+)	C	4726.7+y[e] 6	J+18	D
4172.7+x[a] 5	(41/2−)	C	5434.3+y?[e] 9	J+20	D

† From heavy-ion reaction data, except as noted.

‡ Band(A): Ground state band, π=+,α=+1/2. Quasiparticle configuration A (1994Be27,1983Gu12).

Band(B): Rotational band, π=+,α=+1/2. Quasiparticle configuration ABC (1994Be27,1983Gu12).

@ Band(C): Rotational band based on 33/2+. Quasiparticle configuration ACD (1983Gu12).

& Band(D): Rotational band, π=−,α=−1/2. Quasiparticle configuration ABE at low spin (1994Be27,1983Gu12), and ABCDE after crossing (1994Be27).

[a] Band(E): Rotational band, π=−,α=+1/2. Quasiparticle configuration ABF (1994Be27,1983Gu12).

[b] Band(F): Noncollective band based on 33/2−,α=+1/2. Quasiparticle configuration ABF′ (1994Be27).

[c] Band(G): Noncollective band based on 37/2−,α=+1/2.

[d] Band(H): Band based on (15/2−).

[e] Band(I): SD Band. Identified from $\gamma\gamma$ coin with known transitions in ^{189}Hg. Population of this band is 0.5% of total yield for ^{189}Hg.

Adopted Levels, Gammas (continued)

γ(^{189}Hg)

E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult. ‡	δ @	α a	Comments
64.3	(5/2)$^-$	64.3 *5*	100	0.0	3/2$^-$	M1(+E2)	≈0.01	5.18	B(M1)(W.u.)=0.033 *3*; B(E2)(W.u.)≈0.32 α(L)=3.98; α(M)=0.93; α(N)=0.233; α(O)=0.0440; α(P)=0.00336 E_γ,Mult.,δ: from ^{189}Tl ε decay (2.3 min) (1985Ab03).
403.1+x	17/2$^+$	403.1 *2*	100	0.0+x	13/2$^+$	E2		0.0465	α(K)=0.0315 *5*; α(L)=0.01134 *16*; α(M)=0.00283 *4* α(N)=0.000704 *10*; α(O)=0.0001237 *18*; α(P)=4.14×10^{-6} *6*
473.93+x	15/2$^+$	473.9 *2*	100	0.0+x	13/2$^+$	M1+E2	−0.11 *7*	0.1048 *21*	α(K)=0.0862 *18*; α(L)=0.01425 *25*; α(M)=0.00331 *6* α(N)=0.000830 *15*; α(O)=0.000157 *3*; α(P)=1.206×10^{-5} *25*
901.02+x	(15/2$^-$)	901.1 *3*	100	0.0+x	13/2$^+$	D			
1029.94+x	21/2$^+$	626.8 *2*	100	403.1+x	17/2$^+$	E2		0.01594	α(K)=0.01210 *17*; α(L)=0.00292 *5*; α(M)=0.000708 *10* α(N)=0.0001767 *25*; α(O)=3.19×10^{-5} *5*; α(P)=1.606×10^{-6} *23*
1110.26+x	19/2$^+$	636.3 *2*	100 *3*	473.93+x	15/2$^+$	E2		0.01542	α(K)=0.01173 *17*; α(L)=0.00280 *4*; α(M)=0.000678 *10* α(N)=0.0001693 *24*; α(O)=3.06×10^{-5} *5*; α(P)=1.557×10^{-6} *22*
		707.2 *2*	83 *3*	403.1+x	17/2$^+$	M1+E2	−0.52 *15*	0.0318 *25*	α(K)=0.0261 *21*; α(L)=0.0044 *3*; α(M)=0.00102 *7* α(N)=0.000255 *17*; α(O)=4.8×10^{-5} *4*; α(P)=3.6×10^{-6} *3*
1440.04+x	(19/2$^-$)	539.1 *3*	16 *5*	901.02+x	(15/2$^-$)				
		1036.9 *3*	100 *14*	403.1+x	17/2$^+$	D			
1691.05+x	21/2$^-$	251.0 *3*	5.4 *13*	1440.04+x	(19/2$^-$)				
		580.8 *2*	97 *2*	1110.26+x	19/2$^+$	E1		0.00652	α(K)=0.00543 *8*; α(L)=0.000844 *12*; α(M)=0.000194 *3* α(N)=4.85×10^{-5} *7*; α(O)=9.05×10^{-6} *13*; α(P)=6.43×10^{-7} *9*
		661.0 *2*	100 *4*	1029.94+x	21/2$^+$	E1		0.00504	α(K)=0.00420 *6*; α(L)=0.000646 *9*; α(M)=0.0001485 *21* α(N)=3.71×10^{-5} *6*; α(O)=6.93×10^{-6} *10*; α(P)=5.01×10^{-7} *7*
1762.9+x	25/2$^+$	733.0 *2*	100	1029.94+x	21/2$^+$	E2		0.01135	α(K)=0.00883 *13*; α(L)=0.00192 *3*; α(M)=0.000461 *7* α(N)=0.0001152 *17*; α(O)=2.10×10^{-5} *3*; α(P)=1.169×10^{-6} *17*
1916.9+x	25/2$^-$	154.1 *3*	1.7 *6*	1762.9+x	25/2$^+$	(D)			
		225.8 *2*	100.0 *14*	1691.05+x	21/2$^-$	E2		0.260	α(K)=0.1262 *18*; α(L)=0.1002 *15*; α(M)=0.0258 *4* α(N)=0.00640 *10*; α(O)=0.001088 *16*; α(P)=1.585×10^{-5} *23*
1976.1+x	(23/2$^-$)	946.2 *3*	100	1029.94+x	21/2$^+$	D			
2034.3+x	(23/2$^-$)	594.3 *3*	100 *15*	1440.04+x	(19/2$^-$)				
		1004.3 *3*	65 *23*	1029.94+x	21/2$^+$	D			
2220.5+x	(27/2$^-$)	244.4 *3*	69 *2*	1976.1+x	(23/2$^-$)	(E2)		0.201	α(K)=0.1039 *15*; α(L)=0.0727 *11*; α(M)=0.0186 *3* α(N)=0.00463 *7*; α(O)=0.000790 *12*; α(P)=1.314×10^{-5} *19*
		457.6 *2*	100 *5*	1762.9+x	25/2$^+$	D			
2236.0+x	(29/2$^-$)	319.1 *3*	100	1916.9+x	25/2$^-$	(E2)		0.0888	α(K)=0.0544 *8*; α(L)=0.0259 *4*; α(M)=0.00656 *10* α(N)=0.001633 *24*; α(O)=0.000283 *4*; α(P)=7.04×10^{-6} *10*
2244.7+x	(29/2$^-$)	327.9 *3*	100	1916.9+x	25/2$^-$	(E2)		0.0821	α(K)=0.0509 *8*; α(L)=0.0235 *4*; α(M)=0.00592 *9* α(N)=0.001475 *22*; α(O)=0.000256 *4*; α(P)=6.61×10^{-6} *10*
2253.1+x	29/2$^-$	336.0 *2*	100	1916.9+x	25/2$^-$	E2		0.0765	α(K)=0.0481 *7*; α(L)=0.0215 *3*; α(M)=0.00541 *8* α(N)=0.001348 *19*; α(O)=0.000234 *4*; α(P)=6.25×10^{-6} *9*

$^{189}_{80}Hg_{109}$-3

Adopted Levels, Gammas (continued)

γ(^{189}Hg) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [#]	E_f	J_f^π	Mult. [‡]	α [a]	Comments
2477.0+x	29/2$^+$	714.1 *2*	100	1762.9+x	25/2$^+$	E2	0.01200	α(K)=0.00930 *13*; α(L)=0.00206 *3*; α(M)=0.000494 *7* α(N)=0.0001235 *18*; α(O)=2.25×10^{-5} *4*; α(P)=1.232×10^{-6} *18*
2615.9+x	29/2$^+$	853.3 *5*	100	1762.9+x	25/2$^+$	(E2)	0.00828	α(K)=0.00656 *10*; α(L)=0.001316 *19*; α(M)=0.000313 *5* α(N)=7.82×10^{-5} *11*; α(O)=1.438×10^{-5} *21*; α(P)=8.65×10^{-7} *13*
2674.3+x	33/2$^+$	58.8 *5*	0.56 *4*	2615.9+x	29/2$^+$	E2	62 *3*	α(L)=46.4 *21*; α(M)=12.1 *6* α(N)=2.99 *14*; α(O)=0.494 *22*; α(P)=0.000644 *24* I_γ: from B(E2)(58.8γ)/B(E2)(197.2γ)=1.84 *8* (1983Gu12) in (^{14}N,6nγ).
		197.2 *2*	100.0 *21*	2477.0+x	29/2$^+$	E2	0.410	α(K)=0.1753 *25*; α(L)=0.176 *3*; α(M)=0.0455 *7* α(N)=0.01131 *17*; α(O)=0.00191 *3*; α(P)=2.19×10^{-5} *4*
2675.6+x	(25/2$^-$)	641.3 *3*	100	2034.3+x	(23/2$^-$)	D		
2682.0+x	(29/2$^+$)	919.1 *3*	100	1762.9+x	25/2$^+$	Q		
2686.1+x	(31/2$^-$)	432.9 *3*	13 *2*	2253.1+x	29/2$^-$	D+Q		
		465.7 *2*	100 *6*	2220.5+x	(27/2$^-$)	(E2)	0.0321	α(K)=0.0228 *4*; α(L)=0.00706 *10*; α(M)=0.001744 *25* α(N)=0.000435 *7*; α(O)=7.71×10^{-5} *11*; α(P)=3.01×10^{-6} *5*
2821.3+x	33/2$^-$	568.2 *2*	100	2253.1+x	29/2$^-$	(E2)	0.0199	α(K)=0.01483 *21*; α(L)=0.00386 *6*; α(M)=0.000940 *14* α(N)=0.000235 *4*; α(O)=4.22×10^{-5} *6*; α(P)=1.97×10^{-6} *3* E_γ: 565.5 *2* in (^{19}F,5nγ) is not used in averaging.
2947.2+x	(31/2$^-$)	331.5 *3*	69 *15*	2615.9+x	29/2$^+$	D		
		470.0 *3*	100 *23*	2477.0+x	29/2$^+$	D		
2949.2+x	(33/2$^-$)	696.0 *3*	77 *9*	2253.1+x	29/2$^-$	Q		
		704.6 *3*	100 *9*	2244.7+x	(29/2$^-$)	Q		
		713.3 *3*	97 *9*	2236.0+x	(29/2$^-$)	Q		
3123.4+x	(33/2$^+$)	441.4 [b] *3*	6 *2*	2682.0+x	(29/2$^+$)	(E2)	0.0367	α(K)=0.0256 *4*; α(L)=0.00839 *12*; α(M)=0.00208 *3* α(N)=0.000518 *8*; α(O)=9.16×10^{-5} *13*; α(P)=3.39×10^{-6} *5*
		646.4 *3*	100 *5*	2477.0+x	29/2$^+$	Q		
3153.6+x	37/2$^+$	479.3 *2*	100	2674.3+x	33/2$^+$	(E2)	0.0299	α(K)=0.0214 *3*; α(L)=0.00645 *9*; α(M)=0.001589 *23* α(N)=0.000396 *6*; α(O)=7.05×10^{-5} *10*; α(P)=2.83×10^{-6} *4*
3307.1+x	(33/2$^+$)	830.1 *3*	100	2477.0+x	29/2$^+$	Q		
3343.9+x	(35/2$^-$)	657.8 *2*	100	2686.1+x	(31/2$^-$)	Q		
3400.2+x	(33/2$^+$)	784.0 *3*	100 *33*	2615.9+x	29/2$^+$	Q		
		923.5 *3*	67 *22*	2477.0+x	29/2$^+$	Q		
3439.3+x	(37/2$^-$)	618.0 *3*	100	2821.3+x	33/2$^-$	Q		
3449.3+x	(37/2$^-$)	628.0 *3*	100	2821.3+x	33/2$^-$			
3467.1+x	(37/2$^-$)	517.9 *3*	100 *8*	2949.2+x	(33/2$^-$)	(E2)	0.0248	α(K)=0.0181 *3*; α(L)=0.00508 *8*; α(M)=0.001245 *18* α(N)=0.000311 *5*; α(O)=5.55×10^{-5} *8*; α(P)=2.40×10^{-6} *4*
		645.8 *3*	6 *2*	2821.3+x	33/2$^-$	Q		
3540.7+x	37/2$^-$	719.4 *3*	100	2821.3+x	33/2$^-$	Q		
3793.2+x	(37/2$^+$)	669.7 *3*	100	3123.4+x	(33/2$^+$)	Q		
3826.0+x	(37/2$^+$)	702.6 *3*	100	3123.4+x	(33/2$^+$)	Q		
3875.4+x	41/2$^+$	721.8 *3*	100	3153.6+x	37/2$^+$	Q		
3992.4+x	(39/2$^-$)	648.5 *3*	100	3343.9+x	(35/2$^-$)	Q		
4062.7+x	(41/2$^+$)	909.1 *3*	100	3153.6+x	37/2$^+$	Q		

$^{189}_{80}Hg_{109}$-4

Adopted Levels, Gammas (continued)

γ(^{189}Hg) (continued)

E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult. ‡	α a	$I_{(\gamma+ce)}$ &	Comments
4172.7+x	(41/2⁻)	632.0 *3*	21 *5*	3540.7+x	37/2⁻	Q			
		705.7 *3*	100 *8*	3467.1+x	(37/2⁻)	Q			
4227.9+x	(41/2⁻)	687.1 *3*	26 *11*	3540.7+x	37/2⁻	Q			
		760.8 *3*	100 *21*	3467.1+x	(37/2⁻)	Q			
4237.3+x	(41/2⁻)	788.0 *3*	100 *27*	3449.3+x	(37/2⁻)	Q			
		798.0 *3*	100 *27*	3439.3+x	(37/2⁻)	Q			
4329.0+x	(41/2⁺)	503.0 *3*	100 *22*	3826.0+x	(37/2⁺)	(E2)	0.0265		α(K)=0.0192 *3*; α(L)=0.00555 *8*; α(M)=0.001364 *20* α(N)=0.000340 *5*; α(O)=6.07×10^{-5} *9*; α(P)=2.55×10^{-6} *4*
		535.8 *3*	61 *11*	3793.2+x	(37/2⁺)	(E2)	0.0228		α(K)=0.01679 *24*; α(L)=0.00459 *7*; α(M)=0.001122 *16* α(N)=0.000280 *4*; α(O)=5.01×10^{-5} *7*; α(P)=2.23×10^{-6} *4*
4438.5+x	(41/2⁺)	645.3 *3*	100	3793.2+x	(37/2⁺)	Q			
4479.3+x	(43/2⁻)	486.9 *3*	100	3992.4+x	(39/2⁻)	(E2)	0.0287		α(K)=0.0206 *3*; α(L)=0.00614 *9*; α(M)=0.001511 *22* α(N)=0.000377 *6*; α(O)=6.71×10^{-5} *10*; α(P)=2.73×10^{-6} *4*
4517.3+x	(43/2⁻)	280.0 *3*	100	4237.3+x	(41/2⁻)	D			
4549.8+x	(39/2⁻)	557.3 *3*	38 *15*	3992.4+x	(39/2⁻)				
		1205.9 *3*	100 *31*	3343.9+x	(35/2⁻)				
4700.8+x	(45/2⁻)	528.0 *3*	100	4172.7+x	(41/2⁻)	(E2)	0.0236		α(K)=0.01733 *25*; α(L)=0.00479 *7*; α(M)=0.001173 *17* α(N)=0.000293 *5*; α(O)=5.24×10^{-5} *8*; α(P)=2.30×10^{-6} *4*
4713.2+x	45/2⁺	837.8 *3*	100	3875.4+x	41/2⁺	Q			
4760.7+x	(45/2⁻)	243.4 *3*	100 *13*	4517.3+x	(43/2⁻)	D			
		523.4 *3*	63 *13*	4237.3+x	(41/2⁻)	(E2)	0.0241		α(K)=0.01765 *25*; α(L)=0.00492 *7*; α(M)=0.001205 *17* α(N)=0.000301 *5*; α(O)=5.38×10^{-5} *8*; α(P)=2.34×10^{-6} *4*
4869.6+x	(45/2⁺)	994.2 *3*	100	3875.4+x	41/2⁺	Q			
4960.4+x	(43/2⁻)	968.0 *3*	100	3992.4+x	(39/2⁻)				
5002.2+x	(45/2⁺)	673.2 *3*	100	4329.0+x	(41/2⁺)	Q			
5035.9+x	(45/2⁻)	808.0 *3*	100 *33*	4227.9+x	(41/2⁻)				
		863.1 *3*	100 *33*	4172.7+x	(41/2⁻)	Q			
5117.7+x	(47/2⁻)	638.4 *3*	100	4479.3+x	(43/2⁻)	Q			
5544.5+x	(47/2⁺)	542.3 *3*	100	5002.2+x	(45/2⁺)	D			
5583.2+x	49/2⁺	870.0 *3*	100	4713.2+x	45/2⁺	Q			E_γ: 866.3 *6* in (^{14}N,6nγ) is not used in averaging.
5702.5+x	(49/2⁻)	941.8 *3*	100	4760.7+x	(45/2⁻)	Q			
5899.9+x	(49/2⁻)	864.0 *3*	100	5035.9+x	(45/2⁻)	Q			
5952.2+x	(51/2⁻)	834.5 *3*	100	5117.7+x	(47/2⁻)	Q			
6535.7+x	(53/2⁺)	952.5 *3*	100	5583.2+x	49/2⁺	Q			
6819.7+x	(55/2⁻)	867.5 *3*	100	5952.2+x	(51/2⁻)	Q			
366.4+y	J+2	366.4 *2*		y	J≈(29/2,31/2)	[E2]	0.0601	1.00 *10*	ce(K)/(γ+ce)=0.0370 *5*; ce(L)/(γ+ce)=0.01487 *21*; ce(M)/(γ+ce)=0.00373 *6* ce(N)/(γ+ce)=0.000928 *14*; ce(O)/(γ+ce)=0.0001621 *23*; ce(P)/(γ+ce)=4.84×10^{-6} *7* α(K)=0.0392 *6*; α(L)=0.01576 *23*; α(M)=0.00395 *6* α(N)=0.000984 *14*; α(O)=0.0001719 *25*; α(P)=5.13×10^{-6} *8*
774.5+y	J+4	408.1 *2*		366.4+y	J+2	[E2]	0.0450	1.00 *15*	ce(K)/(γ+ce)=0.0293 *4*; ce(L)/(γ+ce)=0.01041 *15*; ce(M)/(γ+ce)=0.00259 *4*

$^{189}_{80}Hg_{109}$-5

Adopted Levels, Gammas (continued)

γ(^{189}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π	Mult.[‡]	α[a]	$I_{(\gamma+ce)}$[&]	Comments
								ce(N)/(γ+ce)=0.000646 *10*; ce(O)/(γ+ce)=0.0001136 *16*; ce(P)/(γ+ce)=3.85×10^{-6} *6* α(K)=0.0306 *5*; α(L)=0.01088 *16*; α(M)=0.00271 *4* α(N)=0.000675 *10*; α(O)=0.0001187 *17*; α(P)=4.03×10^{-6} *6*
1223.2+y	J+6	448.7 *2*	774.5+y	J+4	[E2]	0.0352	0.86 *19*	ce(K)/(γ+ce)=0.0239 *4*; ce(L)/(γ+ce)=0.00769 *11*; ce(M)/(γ+ce)=0.00190 *3* ce(N)/(γ+ce)=0.000474 *7*; ce(O)/(γ+ce)=8.39×10^{-5} *12*; ce(P)/(γ+ce)=3.15×10^{-6} *5* α(K)=0.0247 *4*; α(L)=0.00796 *12*; α(M)=0.00197 *3* α(N)=0.000491 *7*; α(O)=8.69×10^{-5} *13*; α(P)=3.27×10^{-6} *5*
1711.7+y	J+8	488.5 *2*	1223.2+y	J+6	[E2]	0.0285	0.89 *16*	ce(K)/(γ+ce)=0.0199 *3*; ce(L)/(γ+ce)=0.00591 *9*; ce(M)/(γ+ce)=0.001454 *21* ce(N)/(γ+ce)=0.000363 *6*; ce(O)/(γ+ce)=6.46×10^{-5} *9*; ce(P)/(γ+ce)=2.64×10^{-6} *4* α(K)=0.0205 *3*; α(L)=0.00608 *9*; α(M)=0.001496 *21* α(N)=0.000373 *6*; α(O)=6.64×10^{-5} *10*; α(P)=2.72×10^{-6} *4*
2239.7+y	J+10	528.0 *2*	1711.7+y	J+8	[E2]	0.0236	0.62 *11*	ce(K)/(γ+ce)=0.01693 *24*; ce(L)/(γ+ce)=0.00468 *7*; ce(M)/(γ+ce)=0.001146 *16* ce(N)/(γ+ce)=0.000286 *4*; ce(O)/(γ+ce)=5.12×10^{-5} *8*; ce(P)/(γ+ce)=2.25×10^{-6} *4* α(K)=0.01733 *25*; α(L)=0.00479 *7*; α(M)=0.001173 *17* α(N)=0.000293 *5*; α(O)=5.24×10^{-5} *8*; α(P)=2.30×10^{-6} *4*
2806.6+y	J+12	566.9 *2*	2239.7+y	J+10	[E2]	0.0200	0.58 *11*	ce(K)/(γ+ce)=0.01461 *21*; ce(L)/(γ+ce)=0.00381 *6*; ce(M)/(γ+ce)=0.000928 *13* ce(N)/(γ+ce)=0.000232 *4*; ce(O)/(γ+ce)=4.16×10^{-5} *6*; ce(P)/(γ+ce)=1.94×10^{-6} *3* α(K)=0.01490 *21*; α(L)=0.00389 *6*; α(M)=0.000947 *14* α(N)=0.000236 *4*; α(O)=4.25×10^{-5} *6*; α(P)=1.98×10^{-6} *3*
3410.5+y	J+14	603.9 *2*	2806.6+y	J+12	[E2]	0.01733	0.53 *14*	ce(K)/(γ+ce)=0.01284 *18*; ce(L)/(γ+ce)=0.00319 *5*; ce(M)/(γ+ce)=0.000774 *11* ce(N)/(γ+ce)=0.000193 *3*; ce(O)/(γ+ce)=3.48×10^{-5} *5*; ce(P)/(γ+ce)=1.704×10^{-6} *24* α(K)=0.01306 *19*; α(L)=0.00324 *5*; α(M)=0.000787 *11* α(N)=0.000196 *3*; α(O)=3.54×10^{-5} *5*; α(P)=1.734×10^{-6} *25*
4050.8+y	J+16	640.3 *2*	3410.5+y	J+14	[E2]	0.01521	0.58 *11*	ce(K)/(γ+ce)=0.01141 *16*; ce(L)/(γ+ce)=0.00271 *4*; ce(M)/(γ+ce)=0.000656 *10* ce(N)/(γ+ce)=0.0001639 *23*; ce(O)/(γ+ce)=2.97×10^{-5} *5*; ce(P)/(γ+ce)=1.514×10^{-6} *22* α(K)=0.01159 *17*; α(L)=0.00276 *4*; α(M)=0.000666 *10* α(N)=0.0001664 *24*; α(O)=3.01×10^{-5} *5*; α(P)=1.537×10^{-6} *22*
4726.7+y	J+18	675.9 *2*	4050.8+y	J+16				
5434.3+y?	J+20	707.6[b] *6*	4726.7+y	J+18				

[†] Weighted averages of values from ^{160}Gd(^{34}S,5nγ), ^{175}Lu(^{19}F,5nγ) and ^{181}Ta(^{14}N,6nγ), as available, with exceptions noted. For SD band, values are from ^{160}Gd(^{34}S,5nγ):SD.

[‡] From γ(θ), γγ(θ)(DCO), γγ(lin pol) and ce data in various heavy-ion reaction datasets, except as noted.

[#] Relative photon branching ratios deduced from ^{160}Gd(^{34}S,5nγ).

[@] From 1981Bo08 unless otherwise stated.

[&] Relative I(γ+ce) values within the superdeformed band.

$^{189}_{80}Hg_{109}$-6

Adopted Levels, Gammas (continued)

$\gamma(^{189}Hg)$ (continued)

[a] From BrIcc code (2008Ki07), “Frozen Orbitals” appr.
[b] Placement of transition in the level scheme is uncertain.

$^{189}_{80}Hg_{109}$-7

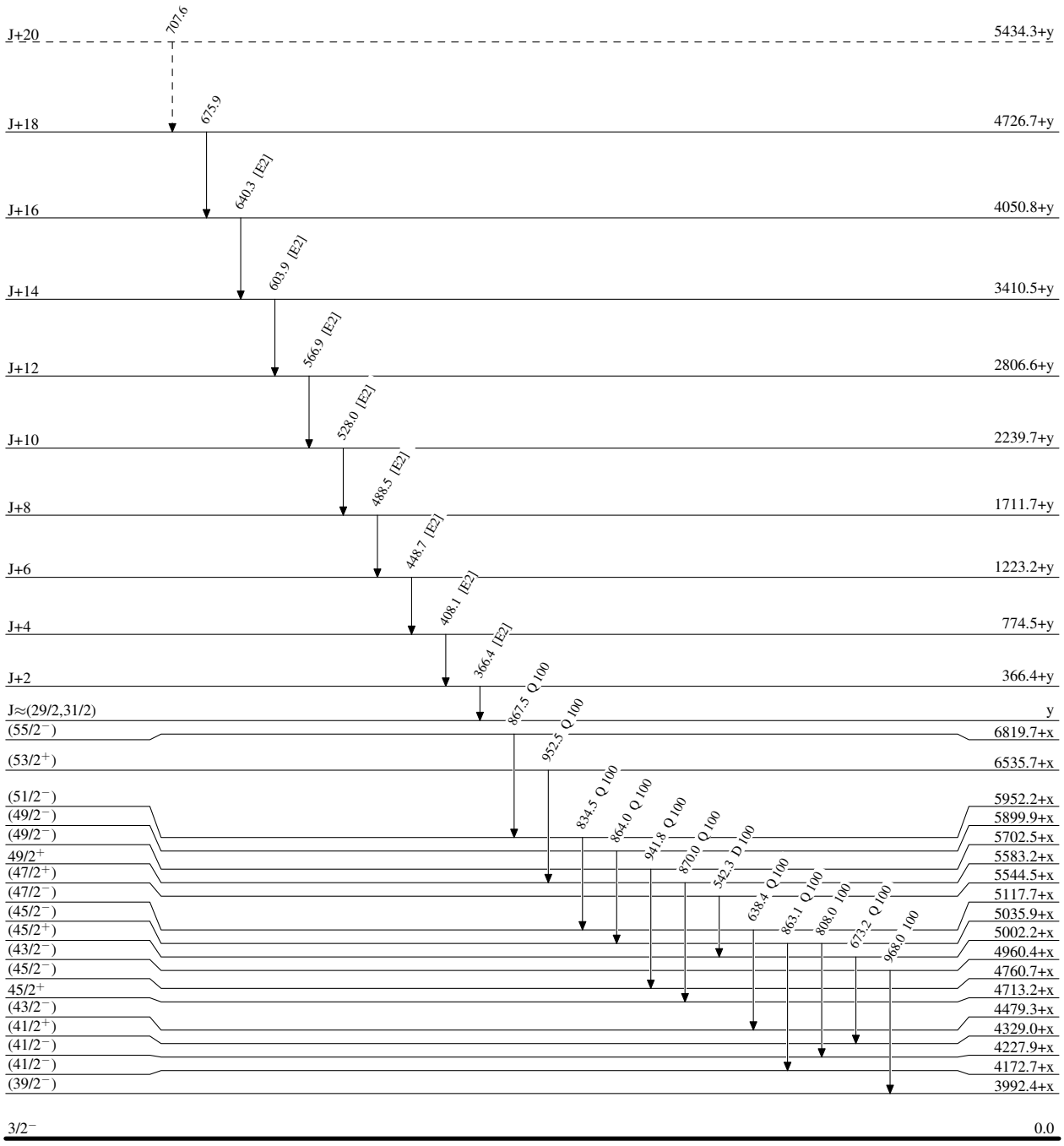
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)

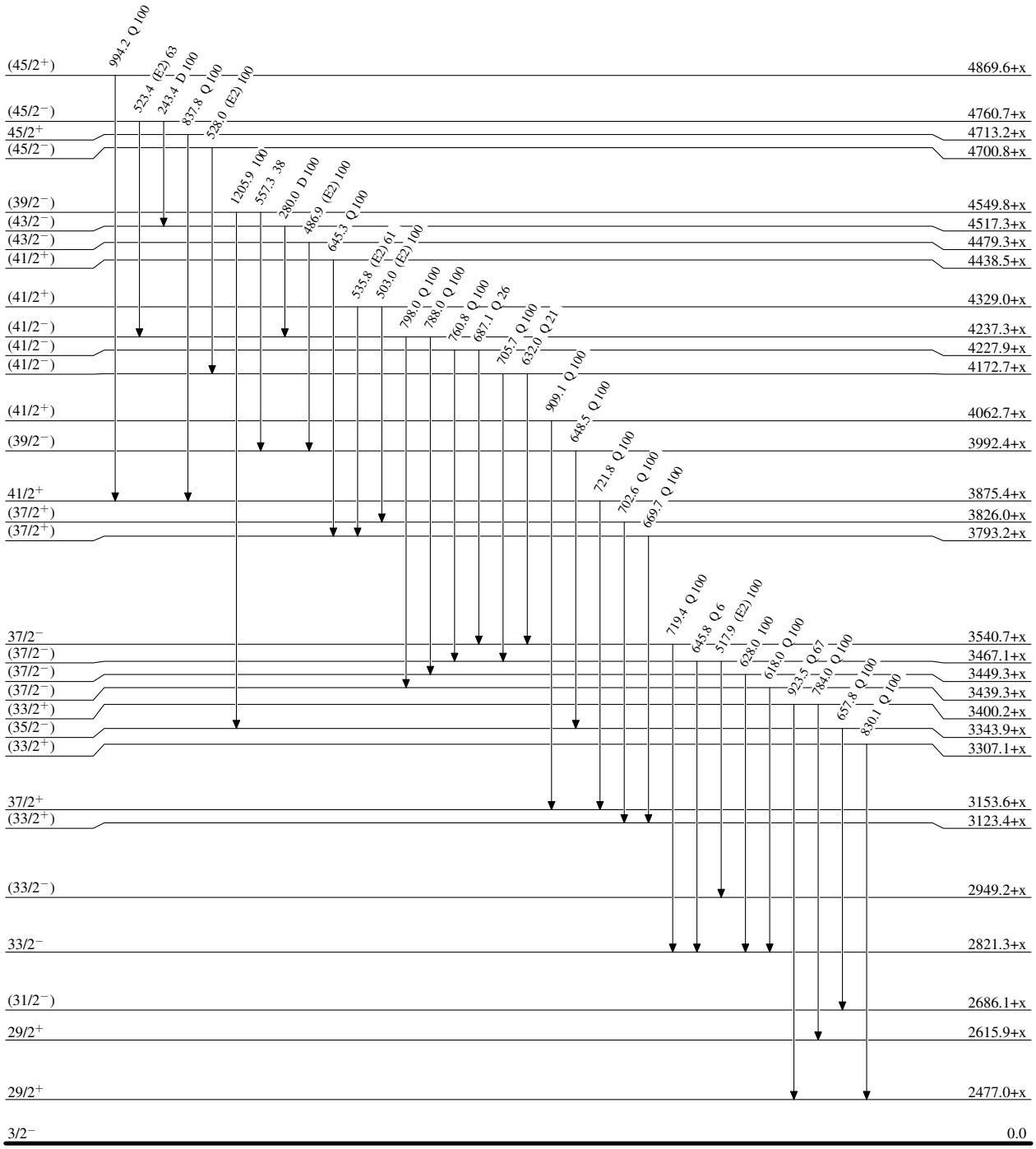


$^{189}_{80}Hg_{109}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{189}_{80}Hg_{109}$

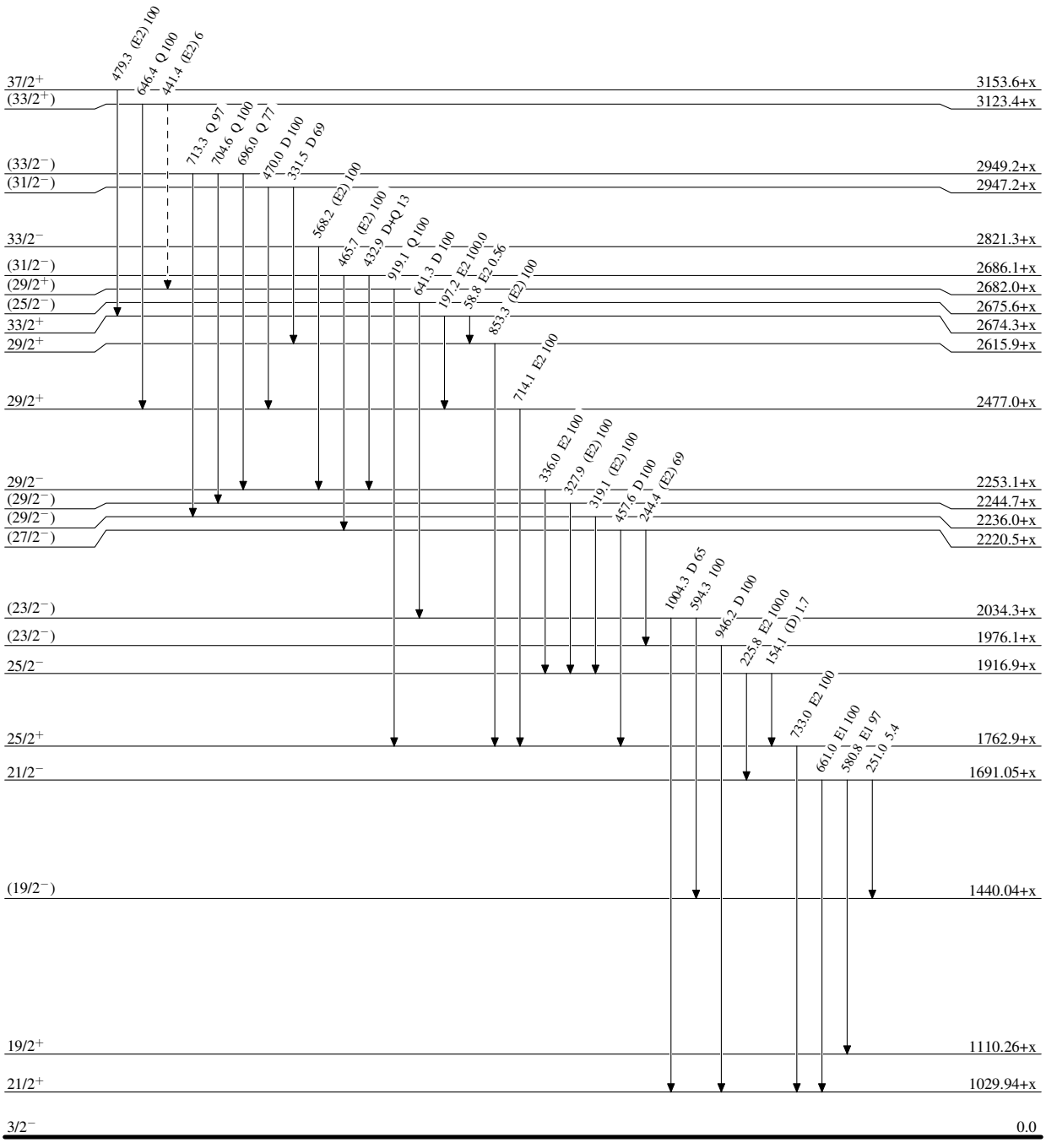
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



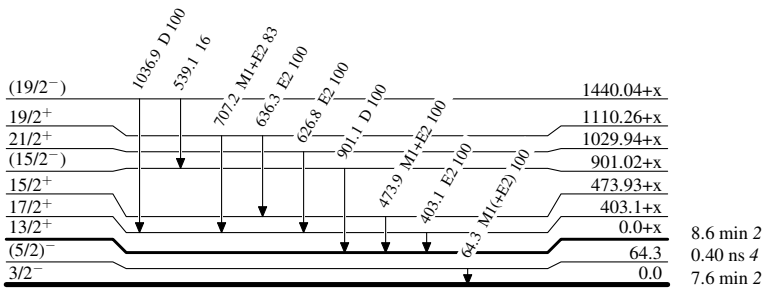
7.6 min *2*

$^{189}_{80}Hg_{109}$

Adopted Levels, Gammas

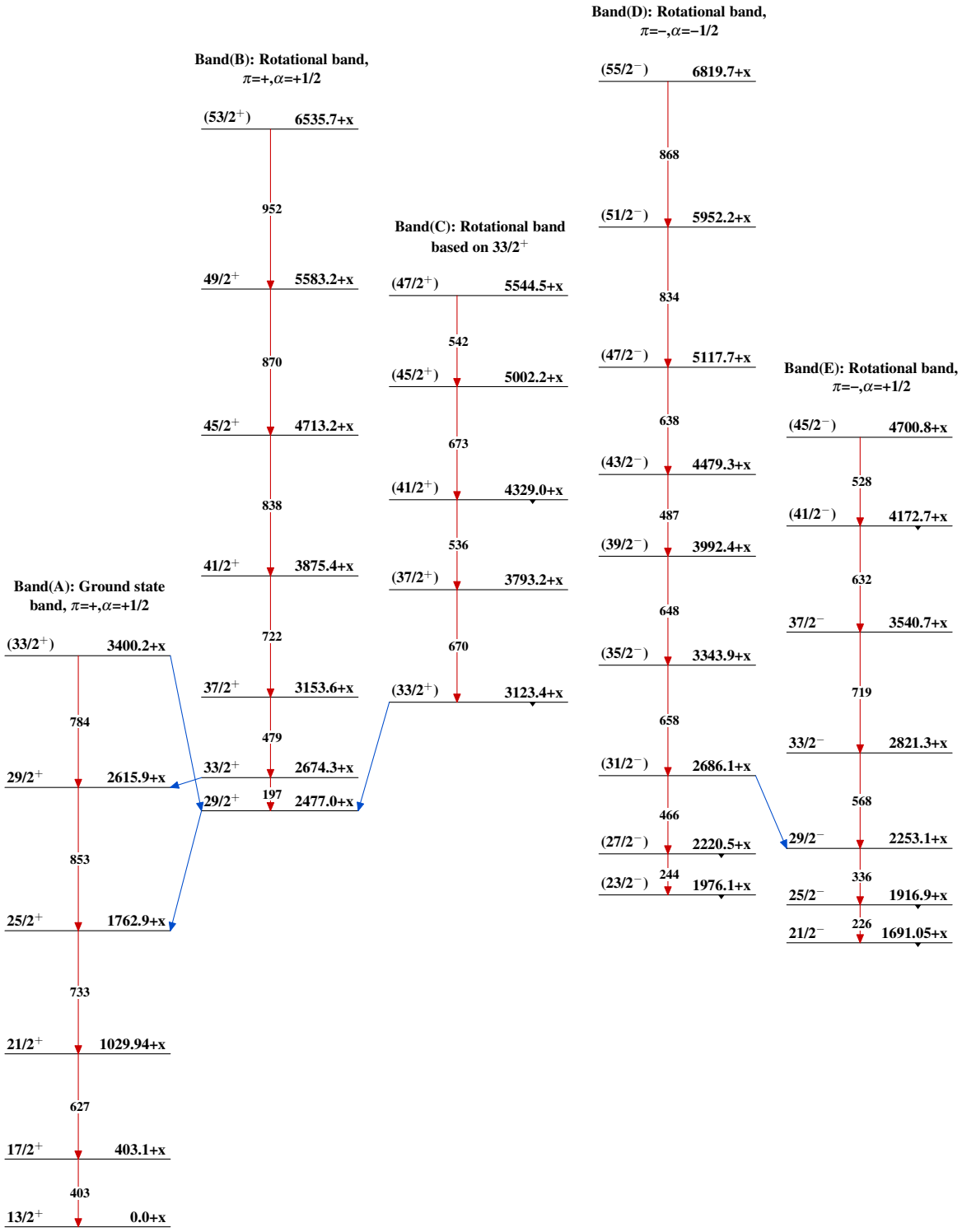
Level Scheme (continued)

Intensities: Relative photon branching from each level



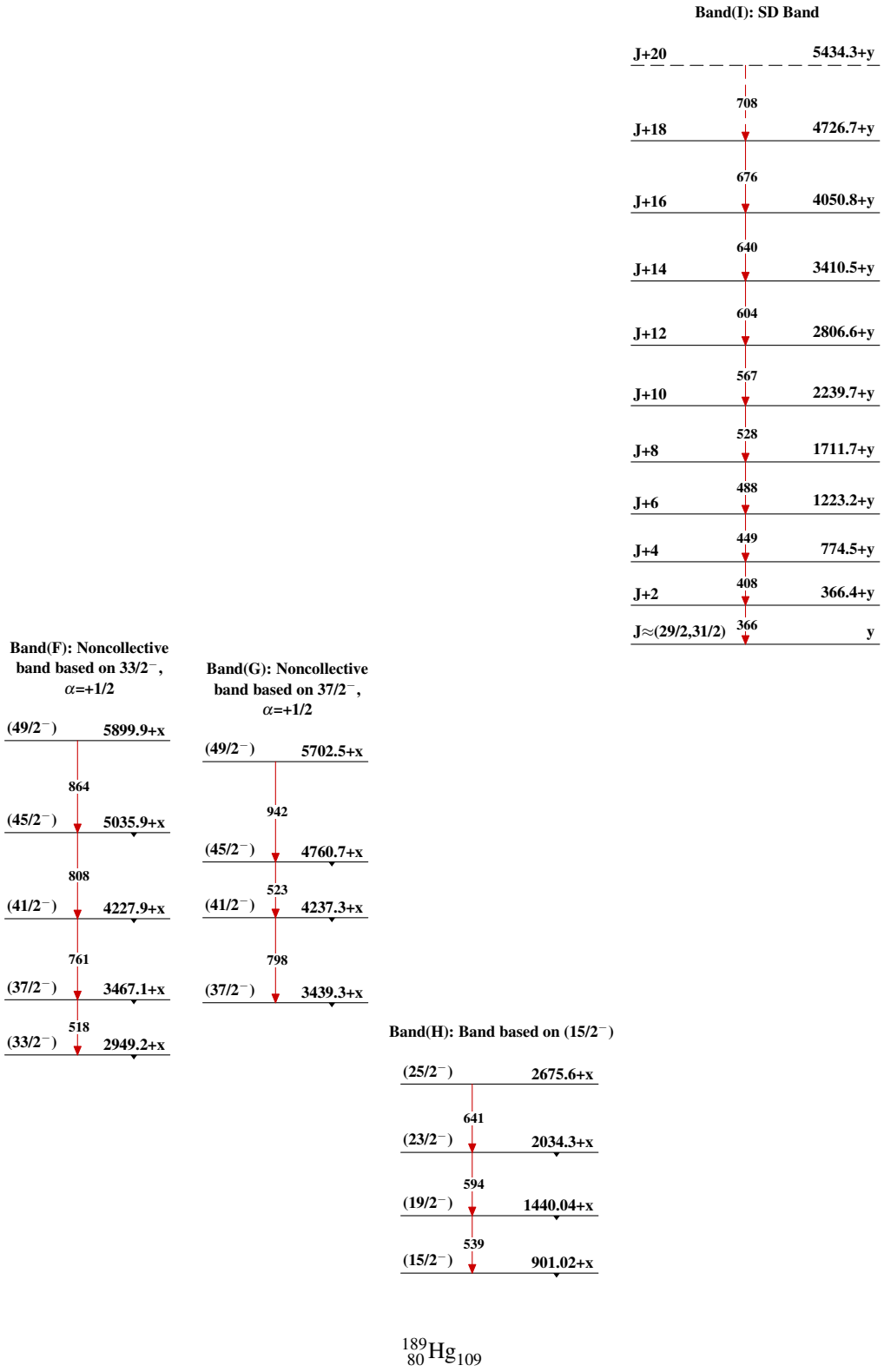
$^{189}_{80}Hg_{109}$

Adopted Levels, Gammas



$^{189}_{80}Hg_{109}$

Adopted Levels, Gammas (continued)



$^{189}_{80}Hg_{109}$