Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong	NDS 108,1093 (2007)	1-Jan-2006

Q(β^-)=−4330 *13*; S(n)=8898 *24*; S(p)=6546 *4*; Q(α)=2040 *5* 2012Wa38

Note: Current evaluation has used the following Q record −4330 128898 236546 3 *2041* 4 2003Au03.

Nuclear structure calculations: 1993Gu08, 1993Mi10, 1993Na05, 1992Hs03, 1991Sa12, 1991Tr01, 1990Du10, 1990Bo40, 1989Bo24, 1989Ha13, 1988Al13, 1988Ar12, 1988Ga23, 1988Zg01.

^{196}Hg 2β-decay: 1991Zd01.

^{196}Hg Levels

Cross Reference (XREF) Flags

A	^{196}Au β^- decay (6.1669 d)	E	^{194}Pt(^{3}He,n)	I	^{198}Pt(α,6nγ)
B	^{196}Tl ε decay (1.84 h)	F	^{196}Pt(α,4nγ), ^{197}Au(d,3nγ)	J	^{198}Hg(p,t)
C	^{196}Tl ε decay (1.41 h)	G	Coulomb excitation		
D	^{192}Os(^{9}Be,5nγ)	H	^{197}Au(p,2nγ)		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[#]	0$^+$	stable	ABCDEFGHIJ	
425.98[#] *10*	2$^+$	17.2 ps *6*	ABC FGHI	μ=−0.010 *80* μ: From g=−0.005 *40* (DPAD, IPAD. 1984Go06). J$^\pi$: 426γ E2 to 0$^+$ g.s. $T_{1/2}$: weighted average of 13.6 ps *20* from $\beta\gamma$(t) (1963De21) and 17.3 ps *3* deduced from B(E2)=1.12 *2* (1979Bo02).
958.4? *5*	1,2$^+$		B	J$^\pi$: 958γ to 0$^+$, 533γ to 2$^+$.
1036.65 *21*	1$^+$,2$^+$		BC H	J$^\pi$: 610γ E2+M1 to 2$^+$, 1036γ to 0$^+$.
1061.44[#] *14*	4$^+$		BC F HI	μ=−0.31 *13* J$^\pi$: 636γ E2 to 2$^+$. μ: From g=−0.077 *33* (1984Go06).
1319.0 *9*	0$^+$		B	J$^\pi$: 1319γ E0 to 0$^+$ g.s.
1390.9 *4*	(2$^+$,3$^+$,4$^+$)		B H	J$^\pi$: 965γ (E2) to 2$^+$, 330γ to 4$^+$.
1451.1 *6*	0$^+$		H J	XREF: I(1445). J$^\pi$: 1451γ E0 to 0$^+$ g.s. E(level): identified new level (1986VeZU), also seen in (p,t). ΔE from 1985VeZZ. Intruder proton configuration. X(i11)=0.059 *11*, 5 times larger than the vibrator value (0.017) (1985VeZZ).
1644.3 *6*	0$^+$		H J	XREF: I(1642). J$^\pi$: 1644γ E0 to 0$^+$ g.s. E(level): identified new level (1986VeZU), also seen in (p,t). ΔE from 1985VeZZ. Intruder proton configuration. X(i11)=0.076 *15*, X(i12)=0.006 *2* (1985VeZZ).
1695.8 *3*	(2$^+$,3,4$^+$)		H	J$^\pi$: 659γ to 1$^+$,2$^+$, 634γ to 4$^+$. E(level): identified new level (1986VeZU).
1757.03[@] *17*	5$^-$	0.555 ns *17*	C F HI	μ=−0.24 *25* J$^\pi$: 696γ E1 to 4$^+$, no γ to J^π<4, fed by ^{196}Tl ε decay from (7$^+$). μ: From g=−0.048 *50* (1984Go06). $T_{1/2}$: from ce-γ(t) in 1.41 h ^{196}Tl ε decay (1970To14).
1774.99 *21*	2$^+$,3,4$^+$		B H	J$^\pi$: 714γ to 4$^+$, 1350γ to 2$^+$, fed by ε decay from 2$^-$ with log *ft*=7.38 or log $f^{1u}t$=8.73.
1785.15[#] *17*	(6$^+$)		C F HI	J$^\pi$: 724γ (E2) to 4$^+$, rotational band member. $T_{1/2}$: $\omega\tau$=0.17 *7* (1980Kr21).
1815.2 *4*	(2$^+$,3$^+$)		B H	J$^\pi$: 754γ (E2) to 4$^+$, 1389γ (M1) to 2$^+$. Fed by ε decay from 2$^-$ with log *ft*=7.40.

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Adopted Levels, Gammas (continued)

^{196}Hg Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
1841.34[@] *22*	7^-	5.22 ns *16*	C F HI	μ=−0.21 *12* (2006Le06) J$^{\pi}$: 84γ E2 to 5^-, rotational band member. $T_{1/2}$: from ce-γ(t) in 1.41 h ^{196}Tl ε decay (1970To14). Other: 5.6 ns *6* from $\gamma\gamma$(t) in (p,2nγ) (1974Ca30). B(E2)(↓)=0.2041 *87* (1970To14). μ: From g=−0.030 *17* (2006Le06). μ: Other: −0.28 *13* (1984Go06),From g=−0.040 *19* (1984Go06). γ from −0.031 *28* for DPAD; −0.048 *23* for IPAD (1984Go06) g factor indicate that the quasiparticle structure of these states is determined mainly by the rotationally aligned i13/2 neutron and a neutron with low J.
1845.4 *5*	$1,2^+$		B	J$^{\pi}$: 809γ to $1^+,2^+$, 1845γ to 0^+ g.s., fed by ε decay from 2^- with log *ft*=7.68.
1922.0 *4*	$(2^+,3^+)$		B H	J$^{\pi}$: 1496γ (M1) to 2^+, 861γ to 4^+, fed by ε decay from 2^- with log *ft*=7.13.
1979.0 *7*	$1,2^+$		B H	J$^{\pi}$: 1979γ to 0^+ g.s., 1553γ to 2^+, fed by ε decay from 2^- with log *ft*=7.30.
1985.9 *4*	$1^+,2,3,4^+$		H	J$^{\pi}$: 595γ to $2^+,3,4^+$, 1560γ to 2^+.
1988.20 *21*	$(2^+,3,4^+)$		H	J$^{\pi}$: 927γ to 4^+, 952γ to $1^+,2^+$.
2012.6 *7*	$(2)^+$		B H	J$^{\pi}$: 2011γ to 0^+ g.s., 951γ to 4^+.
2044.1 *8*			H	
2058.46[&] *20*	(6^-)		F I	J$^{\pi}$: based on directional correlation ratios and proposed band structure (see (α,6nγ)). J$^{\pi}$: rotational band member, 302γ to 5^-, 273γ to (6^+). This level is confirmed by a definite 273γ deexcitation branch to the (6^+) level (1983He14).
2064.35[@] *23*	9^-	0.355 ns *18*	F I	J$^{\pi}$: 223γ E2 to 7^-, rotational band member. $T_{1/2}$: from ce(t) (1977Gu05).
2097.78[&] *25*	(8^-)		F I	J$^{\pi}$: 256γ (M1+E2) to 7^-, rotational band member.
2262.76[#] *19*	(8^+)		F HI	J$^{\pi}$: 478γ (E2) to (6^+), rotational band member. $T_{1/2}$: $\omega\tau$=0.11 *6* (1980Kr21).
2342.3[#] *3*	(10^+)	4.83 ns *19*	F I	μ=−1.9 *6* J$^{\pi}$: 80γ E2 to (8^+), rotational band member. $T_{1/2}$: weighted average of 4.75 ns *22* from ce time spectra (1985Ko13), and 5.1 ns *4* from ce time spectra (1981Kr04). $T_{1/2}$: average $\omega\tau$=0.14 *6* (1980Kr21). B(E2)=0.236 *13* (1985Ko13), 0.218 *20* (1983Gu05), 0.220 *17*, neglecting 10^+ to 9^- branch ≤15% (1981Kr04). μ: From g=−0.19 *6* (IPAD, 2006Le06). μ: Other: −2.6 *13*, From g=−0.26 *13* (IPAD, 1980Kr21), recalculated for adopted $T_{1/2}$. Note: the 2439 *12*+ level, with $T_{1/2}$=3.5 ns could be contributing to the precession, the authors' g factor measurement is probably a composite of values of the 10^+ 2342 and 12^+ 2439 levels. configuration: As ν(i13/2)−2 aligned quasiparticle state (1981Kr04).
2346.2? *6*	$(5^-,6,7^-)$		C	J$^{\pi}$: 505γ to 7^-, 589γ to 5^-.
2358.89 *23*	(8^-)		F I	J$^{\pi}$: 518γ (M1+E2) to 7^-, 301γ to (6^-), 261γ (M1+E2) to (8^-).
2439.0[#] *3*	(12^+)	3.5 ns *1*	F I	J$^{\pi}$: 97γ E2 to (10^+), rotational band member. $T_{1/2}$: weighted average of 3.5 ns *1* from time spectra (1983Gu05), 3.52 ns *32* from ce-$T_{1/2}$ (1985Ko13) and 3.49 ns *30* (1981Kr04). $T_{1/2}$: B(E2)=0.254 *23* (1985Ko13), 0.254 *15* (1983Gu05), and 0.256 *22*, neglecting 10^+ to 9^- branch ≤15% (1981Kr04).
2454.8 *5*	$(1,2^+)$		B	J$^{\pi}$: 1137γ to 0^+.
2495.9 *11*	$(2^+,3)$		B	J$^{\pi}$: 1434γ to 4^+, 2067γ to 2^+, fed by ε decay from 2^- with log *ft*=7.24.

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Adopted Levels, Gammas (continued)

^{196}Hg Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
2553.7[&] *3*	(10⁻)	F I	Jπ: 456γ (E2) to (8⁻), rotational band member.
2620.56[@] *25*	(11⁻)	F I	Jπ: 556γ (E2) to 9⁻, rotational band member.
2654.2 *7*	(1⁺,2,3)	B	Jπ: 2228γ to 2⁺, 1262γ to (2⁺,3,4⁺), log *ft*=7.31 from 2⁻.
2843.6[#] *3*	(14⁺)	F I	Jπ: 405γ (E2) to (12⁺), rotational band member.
2929.5[&] *3*	(10⁻)	F I	Jπ: 571γ (E2) to (8⁻).
2977?	(⁺)	F	Jπ: from 714γ (E2) to (8⁺) level. Proposed by 1983He14.
3.0×10³ *1*	0⁺	E	Jπ: L=0 in (^{3}He,n).
3164.0 *18*	(2⁺,3,4⁺)	B	Jπ: γ′s to 1⁺,2⁺ and 4⁺.
3199.6? *4*	(⁺)	F	Jπ: from 761γ D+Q to (12⁺) level. Proposed by 1983He14.
3236.5[&] *4*	(12⁻)	F I	Jπ: 683γ (E2) to (10⁻), rotational band member.
3310.9[@] *3*	(13⁻)	F I	Jπ: 690γ (E2) to (11⁻), rotational band member.
3402.1? *4*	(⁺)	F	Jπ: from 559γ Q to (14⁺) level.
3507.4[#] *4*	(16⁺)	F I	Jπ: 664γ (E2) to (14⁺), rotational band member.
3684.3? *4*	(⁺)	F	Jπ: from 841γ D+Q to (14⁺) level. Supposed by 1983He14.
3697.2[@] *3*	(15⁻)	F I	Jπ: 386γ (E2) to (13⁻), rotational band member.
3791.7 *5*	(15⁺)	F I	Jπ: 948γ (M1+E2) to (14⁺).
3976.0[@] *3*	(17⁻)	F I	Jπ: 279γ (E2) to (15⁻), rotational band member.
4321.0[#] *4*	(18⁺)	F I	Jπ: 814γ (E2) to (16⁺), rotational band member.
4387.9[@] *4*	(19⁻)	F I	Jπ: 412γ (E2) to (17⁻), rotational band member.
5038.2[@] *5*	(21⁻)	D F I	Jπ: 651γ (E2) to (19⁻), rotational band member.
5198.8[#] *4*	(20⁺)	I	Jπ: 878γ (E2) to (18⁺), rotational band member.
5350.3[@] *4*	(20)	I	Jπ: 962γ D to (19⁻), rotational band member.
5616.0[@] *4*	(21)	I	Jπ: 266γ D to (20), rotational band member.
5846.2[#] *5*	(22⁺)	I	Jπ: 647γ (E2) to (20⁺), rotational band member.
5858.9[@] *5*	(22)	I	Jπ: 242γ D to (21), 821γ D to (21⁻), rotational band member.
5957.9[@] *5*	(23⁻)	I	Jπ: 920γ (E2) to (21⁻), rotational band member.
6443.2[a] *11*	(22⁺)	D	
6499.2[#] *5*	(24⁺)	D I	Jπ: 653γ (E2) to (22⁺), rotational band member.
6600.4[a] *14*	(23⁺)	D	
6702.4[a] *14*	(24⁺)	D	
6959.0[a] *15*	(25⁺)	D	
7137.4[a] *15*	(26⁺)	D	
7325.7[#] *7*	(26⁺)	I	Jπ: 827γ (E2) to (24⁺), rotational band member.
7505.6[a] *16*	(27⁺)	D	
7793.7[a] *17*	(28⁺)	D	
8254.7[a] *17*	(29⁺)	D	
8652.3[a] *18*	(30⁺)	D	

[†] From least-squares fit to Eγ′s for states connected by definite placed γ′s. Others as noted in XREF column, comments, or footnotes.

[‡] J^{π} assignments are based on rotational structure, and on γ-ray multipolarities and decay patterns. Specific arguments are given with individual levels.

[#] Band(A): Positive-parity ground-state band. Higher states consistent with configuration=$(\nu\ 1i_{13/2})^{+2}$ (1980Kr21).

[@] Band(B): odd-spin negative-parity band built on 5⁻ level.

[&] Band(C): even-spin negative-parity band built on (6)⁻ level.

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Adopted Levels, Gammas (continued)

^{196}Hg Levels (continued)

[a] Band(D): A regular rotational-like ΔJ=1 oblate band With significantly lower B(M1)/B(E2) branching ratios. The decay out of the band proceeds mainly into the $J^{\pi}=19^{-}$ and 21^{-} states, but it is fragmented into several decay paths. 1993Ce04 tentatively assigned a 1405-keV transition (which only carries about 20% of the total band intensity) as a linking transition from the lowest observed level in the band to $J^{\pi}=21^{-}$ state. The band is strongly populated with an intensity of approximately 19% of 426γ in this nucleus. 509γ and 1007γ are tentatively assigned to the decay out of the band.

Adopted Levels, Gammas (continued)

γ(^{196}Hg)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	δ	α[a]	Comments
425.98	2$^+$	426.0 *1*	100	0.0	0$^+$	E2		0.0402	B(E2)(W.u.)=33.3 *12* α(K)=0.0278 *4*; α(L)=0.00943 *14*; α(M)=0.00234 *4*; α(N+..)=0.000690 *10* Mult.: from α(L+...)expα(M)exp and K/L in ^{196}Au β$^-$ decay; DCO=1.00 (1991Me06).
958.4?	1,2$^+$	532.7[b] *5*	50[b] *13*	425.98	2$^+$				
		957.2 *10*	100 *16*	0.0	0$^+$				
1036.65	1$^+$,2$^+$	610.5[‡] *5*	100[‡] *10*	425.98	2$^+$	E2+M1	1.4 *4*	0.030 *6*	α(K)=0.024 *6*; α(L)=0.0046 *7*; α(M)=0.00108 *16*; α(N+..)=0.00032 *5* I$_\gamma$: branching: Iγ(611)/Iγ(1036)=3.6 (1968Pe13), 4.6 (1973BeYM). Mult.: from α(K)exp in ^{196}Tl ε decay. δ: based upon α(K)exp=0.028 *5* (1973BeYM), 0.021 *5* (1968Pe13).
		1036.2[‡] *10*	21.8[‡] *24*	0.0	0$^+$				I$_\gamma$: branching: Iγ(611)/Iγ(1036)=3.6 (1968Pe13), 4.6 (1973BeYM).
1061.44	4$^+$	635.5 *1*	100	425.98	2$^+$	E2		0.01546	α(K)=0.01176 *17*; α(L)=0.00281 *4*; α(M)=0.000680 *10*; α(N+..)=0.000202 *3* Mult.: from α(K)exp in ^{196}Tl ε decay; DCO=1.02 *5* (1991Me06).
1319.0	0$^+$	893.2[‡] *10*	100[‡] *15*	425.98	2$^+$	(E2)		0.00755	α(K)=0.00601 *9*; α(L)=0.001180 *17*; α(M)=0.000280 *4*; α(N+..)=8.36×10^{-5} *12* Mult.: from α(K)exp in ^{196}Tl ε decay (1.84 h).
		1319.2[‡] *20*	≤19[‡]	0.0	0$^+$	E0			Mult.: based upon α(K)exp>0.06; see ^{196}Tl ε decay (1.84 h). I$_{(\gamma+ce)}$: 0.0040 *12* from ce (1973BeYM).
1390.9	(2$^+$,3$^+$,4$^+$)	329.6[‡] *5*	9.2[‡] *14*	1061.44	4$^+$				
		354.5[‡] *5*	35[‡] *5*	1036.65	1$^+$,2$^+$				
		964.6[‡] *10*	100[‡] *11*	425.98	2$^+$	(E2)		0.00648	α(K)=0.00519 *8*; α(L)=0.000985 *14*; α(M)=0.000233 *4*; α(N+..)=6.97×10^{-5} *10* Mult.: from α(K)exp, M1 mixing cannot be excluded.
1451.1	0$^+$	1025.2[#] *7*	100[#]	425.98	2$^+$				
		1450.9[#] *8*	[#]	0.0	0$^+$	E0			Mult.: identified from singles ce and γ-ray spectra in (p,2nγ).
1644.3	0$^+$	607.9[#]	23[#]	1036.65	1$^+$,2$^+$	[E2]		0.01707	α(K)=0.01289 *18*; α(L)=0.00318 *5*; α(M)=0.000772 *11*; α(N+..)=0.000229 *4*
		1218.3[#]	100[#]	425.98	2$^+$				
		1644.1[#]	[#]	0.0	0$^+$	E0			Mult.: identified from singles ce and γ-ray spectra in (p,2nγ).
1695.8	(2$^+$,3,4$^+$)	634.4[#]	[#]	1061.44	4$^+$				

$^{196}_{80}Hg_{116}$-5

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
1695.8	(2⁺,3,4⁺)	659.1[#] *2*	100[#]	1036.65	1⁺,2⁺			
		1269.8[#]	45[#]	425.98	2⁺			
1757.03	5⁻	695.6 *1*	100	1061.44	4⁺	E1	0.00456	B(E1)(W.u.)=1.07×10^{-6} *4* α(K)=0.00380 *6*; α(L)=0.000582 *9*; α(M)=0.0001339 *19*; α(N+..)=4.01×10^{-5} *6* Mult.: from α(K)exp=0.0041 *8* (1968Pe13), and DCO=0.53 *3* (1991Me06).
1774.99	2⁺,3,4⁺	713.6[#] *2*	100[#]	1061.44	4⁺			
		738.2[#] *3*	38[#]	1036.65	1⁺,2⁺			
		1349.1[#] *7*	96[#]	425.98	2⁺			
1785.15	(6⁺)	723.7 *1*	100	1061.44	4⁺	(E2)	0.01166	α(K)=0.00905 *13*; α(L)=0.00199 *3*; α(M)=0.000477 *7*; α(N+..)=0.0001421 *20* Mult.: from DCO=0.96 *6* (1991Me06) and known J^π.
1815.2	(2⁺,3⁺)	754.0[‡] *5*	58[‡] *8*	1061.44	4⁺	(E2)	0.01069	α(K)=0.00835 *12*; α(L)=0.00179 *3*; α(M)=0.000428 *6*; α(N+..)=0.0001276 *18* Mult.: from α(K)exp=0.008 *3* (1973BeYM).
		778.4[‡] *5*	46[‡] *8*	1036.65	1⁺,2⁺			
		1389.0[‡] *5*	100[‡] *12*	425.98	2⁺	(M1)	0.00668	α(K)=0.00549 *8*; α(L)=0.000875 *13*; α(M)=0.000202 *3*; α(N+..)=0.0001169 *17* Mult.: from α(K)exp=0.0075 (1973BeYM).
1841.34	7⁻	(56)		1785.15	(6⁺)	[E1]	0.412	α(L)=0.316 *5*; α(M)=0.0745 *11*; α(N+..)=0.0214 *3* E_γ: an unobserved interband transition is proposed on the basis of the following observations: 724γ is seen in coincidence with 223γ, 386γ and 556γ; I(696γ) is found to be lower by about 15% than the 223γ, 556γ and 690γ in all coincidence spectra obtained by gating on the 386γ and higher-spin transition in the negative-parity band.
		84.3 *2*	100	1757.03	5⁻	E2	11.7	α(K)=0.556; α(L)=8.33; α(M)=2.17; α(N+..)=0.678 (L1+L2)/L3=1.3 *2* (1983Gu05) B(E2)(W.u.)=29.6 *18* Mult.: from L-subshell intensity ratio (1983Gu05).
1845.4	1,2⁺	808.9[c‡] *5*	29[c‡] *5*	1036.65	1⁺,2⁺			
		1418.6[‡b] *20*	36[‡b] *6*	425.98	2⁺			
		1844.9[‡] *20*	100[‡] *10*	0.0	0⁺			
1922.0	(2⁺,3⁺)	861.0[‡] *15*	5.4[‡] *11*	1061.44	4⁺			
		885.0[‡] *10*	2.1[‡] *4*	1036.65	1⁺,2⁺			
		1495.8[‡] *5*	100[‡] *11*	425.98	2⁺	(M1)	0.00560	α(K)=0.00456 *7*; α(L)=0.000725 *11*; α(M)=0.0001677 *24*; α(N+..)=0.0001536 *22* Mult.: from α(K)exp=0.0040 (1973BeYM).
1979.0	1,2⁺	1553.0[‡] *7*	100[‡] *10*	425.98	2⁺			

$^{196}_{80}Hg_{116}$-6

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
1979.0	1,2$^+$	1979.0[‡] *20*	16.2[‡] *24*	0.0	0$^+$			
1985.9	1$^+$,2,3,4$^+$	595.0[#] *2*	100[#]	1390.9	(2$^+$,3$^+$,4$^+$)			
		1559.7[#] *8*	88[#]	425.98	2$^+$			
1988.20	(2$^+$,3,4$^+$)	926.8[#] *2*	100[#]	1061.44	4$^+$			
		951.5[#] *2*	100[#]	1036.65	1$^+$,2$^+$			
2012.6	(2)$^+$	951.3[#] *15*	46[#]	1061.44	4$^+$			E_γ,I_γ: from ^{197}Au(p,2nγ).
		976.1[‡] *15*	11.3[‡] *15*	1036.65	1$^+$,2$^+$			
		1586.7[‡] *10*	62[‡] *8*	425.98	2$^+$			
		2011.3[‡] *25*	100[‡] *10*	0.0	0$^+$			
2044.1		653.5[c#] *10*	100[c#]	1390.9	(2$^+$,3$^+$,4$^+$)			
		982.4[#] *10*	40[#]	1061.44	4$^+$			
2058.46	(6$^-$)	273.3 *2*	14 *3*	1785.15	(6$^+$)			
		301.5 *2*	100 *20*	1757.03	5$^-$			I_γ: derived from the coincidence data (1983He14).
2064.35	9$^-$	223.0 *1*	100	1841.34	7$^-$	E2	0.271	B(E2)(W.u.)=33.6 *18* α(K)=0.1301 *19*; α(L)=0.1055 *15*; α(M)=0.0271 *4*; α(N+..)=0.00791 *12* Mult.: deduced from K/L (1983Gu05), and DCO=1.00 *5* (1991Me06).
2097.78	(8$^-$)	(39.2)		2058.46	(6$^-$)			
		256.4 *2*	100	1841.34	7$^-$	(M1+E2)	0.36 *20*	α(K)=0.27 *19*; α(L)=0.068 *9*; α(M)=0.0165 *13*; α(N+..)=0.0049 *5* Mult.: from DCO=0.55 *7* (1991Me06) and known J^π.
2262.76	(8$^+$)	477.6 *1*	100	1785.15	(6$^+$)	(E2)	0.0301	α(K)=0.0215 *3*; α(L)=0.00652 *10*; α(M)=0.001607 *23*; α(N+..)=0.000475 *7* Mult.: from DCO=0.98 *4* (1991Me06) and known J^π.
2342.3	(10$^+$)	79.5 *3*	100 *19*	2262.76	(8$^+$)	E2	14.5 *4*	B(E2)(W.u.)=34 *10* α(L)=10.88 *25*; α(M)=2.84 *7*; α(N+..)=0.822 *19* Mult.: from L-subshell intensity ratio (1981Kr04).
		278.4 *5*	<47	2064.35	9$^-$	E1	0.0331	B(E1)(W.u.)=34 *10* α(K)=0.0272 *4*; α(L)=0.00453 *7*; α(M)=0.001050 *16*; α(N+..)=0.000312 *5* Mult.: deduced from ce(K)(278)/ce(K)(223) in the spectra in coin with 96γ and K/L (1983Gu05). E_γ,I_γ: ΔE,Iγ estimated by evaluator. I_γ: from (10$^+$) to 9$^-$ level, Branching≤3% (1983He14) in (α,4nγ). Others: Branching≈5% (1991Me06) in (α,6nγ); ≤15% proposed by 1981Kr04, not confirmed in the spectrum gated by 223γ.
2346.2?	(5$^-$,6,7$^-$)	505.2 *7*	100	1841.34	7$^-$			

$^{196}_{80}Hg_{116}$-7

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
2346.2?	(5⁻,6,7⁻)	588.8 *7*	26 *14*	1757.03	5⁻			
2358.89	(8⁻)	261.0 *2*	47 *13*	2097.78	(8⁻)	(M1+E2)	0.35 *19*	α(K)=0.26 *18*; α(L)=0.064 *9*; α(M)=0.0156 *14*; α(N+..)=0.0046 *5* Mult.: from DCO=0.76 *15* (1991Me06) and known J^π.
		300.5 *2*	80 *27*	2058.46	(6⁻)			
		517.6 *2*	100 *13*	1841.34	7⁻	(M1+E2)	0.05 *3*	α(K)=0.04 *3*; α(L)=0.008 *4*; α(M)=0.0019 *7*; α(N+..)=0.00058 *22* Mult.: from DCO=0.78 *22* (1991Me06) and known J^π.
2439.0	(12⁺)	96.7 *2*	100	2342.3	(10⁺)	E2	6.39 *11*	B(E2)(W.u.)=37.8 *15* α(K)=0.624 *9*; α(L)=4.31 *8*; α(M)=1.127 *20*; α(N+..)=0.326 *6* Mult.: from L-subshell intensity ratio (1981Kr04), and DCO=1.02 *15* (1991Me06).
2454.8	(1,2⁺)	532.7[b‡] *5*	8[b‡] *2*	1922.0	(2⁺,3⁺)			Placed from 958 level by 1973BeYM also.
		1064.9[‡] *20*	20[‡] *3*	1390.9	(2⁺,3⁺,4⁺)			
		1136.5[‡] *20*	17[‡] *3*	1319.0	0⁺			
		1418.6[‡b] *20*	45[‡b] *7*	1036.65	1⁺,2⁺			
		2029.1[‡]	100[‡]	425.98	2⁺			
2495.9	(2⁺,3)	1105.9[‡] *20*	39[‡] *6*	1390.9	(2⁺,3⁺,4⁺)			
		1434.2[‡] *20*	100[‡] *13*	1061.44	4⁺			
		1460.3[‡] *20*	46[‡] *7*	1036.65	1⁺,2⁺			
		2067.4[‡] *25*	73[‡] *13*	425.98	2⁺			
2553.7	(10⁻)	456.0 *2*	100 *10*	2097.78	(8⁻)	(E2)	0.0338	α(K)=0.0238 *4*; α(L)=0.00755 *11*; α(M)=0.00187 *3*; α(N+..)=0.000551 *8* Mult.: from DCO=1.21 *20* (1991Me06) and known J^π.
		489.3 *2*	52 *10*	2064.35	9⁻	(M1+E2)	0.06 *4*	α(K)=0.05 *4*; α(L)=0.010 *4*; α(M)=0.0023 *9*; α(N+..)=0.0007 *3* Mult.: from DCO=0.77 *40* (1991Me06) and known J^π.
2620.56	(11⁻)	556.2 *1*	100	2064.35	9⁻	(E2)	0.0209	α(K)=0.01551 *22*; α(L)=0.00411 *6*; α(M)=0.001002 *14*; α(N+..)=0.000297 *5* Mult.: from DCO=0.97 *5* (1991Me06) and known J^π.
2654.2	(1⁺,2,3)	808.9[c‡] *5*	45[c‡] *7*	1845.4	1,2⁺			
		1262.1[‡] *20*	64[‡] *9*	1390.9	(2⁺,3⁺,4⁺)			
		2227.7[‡] *25*	100[‡] *15*	425.98	2⁺			
2843.6	(14⁺)	404.6 *1*	100	2439.0	(12⁺)	(E2)	0.0460	α(K)=0.0312 *5*; α(L)=0.01120 *16*; α(M)=0.00279 *4*; α(N+..)=0.000822 *12* Mult.: from DCO=0.98 *8* (1991Me06) and known J^π.
2929.5	(10⁻)	570.6 *2*	100	2358.89	(8⁻)	(E2)	0.0197	α(K)=0.01470 *21*; α(L)=0.00381 *6*; α(M)=0.000929 *13*; α(N+..)=0.000275 *4* Mult.: from γ(θ) in ^{196}Pt(α,4nγ).
2977?	(⁺)	714.1[d] *2*	100	2262.76	(8⁺)	(E2)	0.01200	α(K)=0.00930 *13*; α(L)=0.00206 *3*; α(M)=0.000494 *7*; α(N+..)=0.0001472 *21*

$^{196}_{80}Hg_{116}$-8

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
								Mult.: from γ(θ) in (α,4nγ). Sidefeeding transition populating positive-parity band.
3164.0	(2⁺,3,4⁺)	2102.1[‡] *25*	41[‡] *7*	1061.44	4⁺			
		2127.8[‡] *25*	100[‡] *14*	1036.65	1⁺,2⁺			
3199.6?	(⁺)	760.6 *2*	100	2439.0	(12⁺)	D+Q		Mult.: from γ(θ) in (α,4nγ). Sidefeeding transition populating positive-parity band.
3236.5	(12⁻)	682.8 *2*	100	2553.7	(10⁻)	(E2)	0.01321	α(K)=0.01017 *15*; α(L)=0.00232 *4*; α(M)=0.000558 *8*; α(N+..)=0.0001660 *24* Mult.: from DCO=0.87 *18* (1991Me06) and known J^π. Mult.: A_2/A_0=0.30 *5*; A_4/A_0=0.01 *7* (1983He14).
3310.9	(13⁻)	690.3 *1*	100	2620.56	(11⁻)	(E2)	0.01290	α(K)=0.00995 *14*; α(L)=0.00225 *4*; α(M)=0.000541 *8*; α(N+..)=0.0001612 *23* I_γ: Iγ=90 relative to 426γ as 1000, γ ray not placed in level scheme (1981Kr04). Mult.: from DCO=0.99 *5* (1991Me06) and known J^π. Mult.: A_2/A_0=0.36 *2*; A_4/A_0=−0.05 *3* (1983He14).
3402.1?	(⁺)	558.5 *2*	100	2843.6	(14⁺)	Q	0.02093	α(K)=0.01547; α(L)=0.00410 Mult.: from γ(θ) in (α,4nγ). Sidefeeding transition populating positive parity band.
3507.4	(16⁺)	663.8 *2*	100	2843.6	(14⁺)	(E2)	0.01405	α(K)=0.01077 *15*; α(L)=0.00250 *4*; α(M)=0.000603 *9*; α(N+..)=0.000179 *3* I_γ: 70 relative to 426γ as 1000 (1981Kr04). Mult.: A_2/A_0=0.31 *2*; A_4/A_0=−0.06 *3* (1983He14). Mult.: from DCO=1.12 *5* (1991Me06) and known J^π.
3684.3?	(⁺)	840.7 *2*	100	2843.6	(14⁺)	D+Q		Mult.: from γ(θ) in (α,4nγ). Sidefeeding transition populating positive-parity band.
3697.2	(15⁻)	386.3 *1*	100 *8*	3310.9	(13⁻)	(E2)	0.0520	α(K)=0.0347 *5*; α(L)=0.01311 *19*; α(M)=0.00328 *5*; α(N+..)=0.000964 *14* I_γ: Iγ=130 relative to 426γ as 1000, γ ray not placed in level scheme (1981Kr04). Mult.: from DCO=0.97 *5* (1991Me06) and known J^π. Mult.: A_2/A_0=0.34 *1*; A_4/A_0=−0.06 *2* (1983He14).
		853.7 *2*	21.6 *2*	2843.6	(14⁺)	(E1)	0.00308	α(K)=0.00258 *4*; α(L)=0.000389 *6*; α(M)=8.93×10^{-5} *13*; α(N+..)=2.68×10^{-5} *4* This interband transition has not been detected in other even-A Hg nuclei (1983He14). Mult.: from DCO=0.55 *5* (1991Me06) and known J^π. Mult.: A_2/A_0=−0.34 *5*; A_4/A_0=0.05 *7* (1983He14).
3791.7	(15⁺)	948.1[d] *2*	100	2843.6	(14⁺)	(M1+E2)	0.012 *6*	α(K)=0.010 *5*; α(L)=0.0017 *7*; α(M)=0.00039 *15*; α(N+..)=0.00012 *5* Mult.: from DCO=0.40 *16* (1991Me06) and known J^π. Mult.: A_2/A_0=−0.55 *5*; A_4/A_0=−0.06 *9* (1983He14). Sidefeeding transition populating positive-parity band.
3976.0	(17⁻)	278.9 *2*	100 *12*	3697.2	(15⁻)	(E2)	0.1326	α(K)=0.0753 *11*; α(L)=0.0432 *7*; α(M)=0.01100 *16*; α(N+..)=0.00321 *5*

$^{196}_{80}Hg_{116}$-9

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
								I_γ: corrected for contributions from unresolved lines in ^{195}Hg and ^{197}Au (1983He14). Iγ=220 relative to 426γ as 1000, γ ray not placed in level scheme (1981Kr04).
								Mult.: from DCO=1.00 *5* (1991Me06) and known J^π.
								Mult.: A_2/A_0=0.27 *2*; A_4/A_0=−0.01 *3* (1983He14).
3976.0	(17$^-$)	468.5 *2*	9.2 *15*	3507.4	(16$^+$)	(E1)	0.01021	α(K)=0.00847 *12*; α(L)=0.001341 *19*; α(M)=0.000310 *5*; α(N+..)=9.24×10^{-5} *13*
								Mult.: from DCO=0.58 *11* (1991Me06) and known J^π.
								This interband transition has not been detected in other even-A Hg nuclei (1983He14).
4321.0	(18$^+$)	813.6 *2*	100	3507.4	(16$^+$)	(E2)	0.00913	α(K)=0.00719 *10*; α(L)=0.001479 *21*; α(M)=0.000352 *5*; α(N+..)=0.0001052 *15*
								Mult.: from DCO=0.97 *4* (1991Me06) and known J^π.
								Mult.: A_2/A_0=0.31 *3*; A_4/A_0=−0.06 *4* (1983He14).
4387.9	(19$^-$)	411.9 *2*	100	3976.0	(17$^-$)	(E2)	0.0439	α(K)=0.0299 *5*; α(L)=0.01054 *15*; α(M)=0.00262 *4*; α(N+..)=0.000773 *11*
								Mult.: from DCO=1.00 *7* (1991Me06) and known J^π.
								I_γ: Iγ=90 relative to 426γ as 1000, γ ray not placed in level scheme (1981Kr04).
								Mult.: A_2/A_0=0.31 *2*; A_4/A_0=−0.05 *3* both contains 40% contribution from the 411.8γ 2$^+$ to 0$^+$ transition in ^{198}Hg (1983He14).
5038.2	(21$^-$)	650.5 *2*	100	4387.9	(19$^-$)	(E2)	0.01468	α(K)=0.01122 *16*; α(L)=0.00264 *4*; α(M)=0.000637 *9*; α(N+..)=0.000190 *3*
								Mult.: from DCO=1.26 *18* (1991Me06) and known J^π.
5198.8	(20$^+$)	877.8[@] *1*	100[@]	4321.0	(18$^+$)	(E2)	0.00782	α(K)=0.00621 *9*; α(L)=0.001230 *18*; α(M)=0.000292 *4*; α(N+..)=8.72×10^{-5} *13*
								Mult.: from DCO=0.92 *20* (1991Me06) and known J^π.
5350.3	(20)	962.3[@] *1*	100[@]	4387.9	(19$^-$)	D		Mult.: from DCO=0.44 *5* (1991Me06).
5616.0	(21)	265.7[@] *1*	100[@]	5350.3	(20)	D		Mult.: from DCO=0.46 *6* (1991Me06).
5846.2	(22$^+$)	647.3[@] *2*	100[@]	5198.8	(20$^+$)	(E2)	0.01484	α(K)=0.01133 *16*; α(L)=0.00268 *4*; α(M)=0.000646 *9*; α(N+..)=0.000192 *3*
								Mult.: from DCO=0.97 *10* (1991Me06) and known J^π.
5858.9	(22)	242.2[@] *4*	40[@]	5616.0	(21)	D		Mult.: from DCO=0.40 *10* (1991Me06).
		820.7[@] *1*	100[@]	5038.2	(21$^-$)	D		Mult.: from DCO=0.56 *7* (1991Me06).
5957.9	(23$^-$)	919.7[@] *2*	100[@]	5038.2	(21$^-$)	(E2)	0.00712	α(K)=0.00568 *8*; α(L)=0.001101 *16*; α(M)=0.000261 *4*; α(N+..)=7.80×10^{-5} *11*
								Mult.: from DCO=0.92 *10* (1991Me06) and known J^π.
6443.2	(22$^+$)	1405.0	100	5038.2	(21$^-$)			
6499.2	(24$^+$)	653.0[@] *2*	100[@]	5846.2	(22$^+$)	(E2)	0.01456	α(K)=0.01113 *16*; α(L)=0.00261 *4*; α(M)=0.000631 *9*; α(N+..)=0.000188 *3*
								Mult.: from DCO=1.15 *13* (1991Me06) and known J^π.
6600.4	(23$^+$)	157.3	100	6443.2	(22$^+$)	D		Mult.: stretched dipole transition, DCO ratio R=0.50 *15* (1993Ce04).
6702.4	(24$^+$)	102.0	100	6600.4	(23$^+$)			
		259	≈100	6443.2	(22$^+$)			I_γ: estimated from figure 1 of 1993Ce04.
6959.0	(25$^+$)	256.6	100	6702.4	(24$^+$)	D		Mult.: stretched dipole transition, DCO ratio R=0.50 *15* (1993Ce04).
		358.6	≈10	6600.4	(23$^+$)			I_γ: estimated from figure 1 of 1993Ce04.
7137.4	(26$^+$)	178.4	100	6959.0	(25$^+$)	D		Mult.: stretched dipole transition, DCO ratio R=0.50 *15* (1993Ce04).
		435.0	≈100	6702.4	(24$^+$)			I_γ: estimated from figure 1 of 1993Ce04.

$^{196}_{80}Hg_{116}$-10

Adopted Levels, Gammas (continued)

γ(^{196}Hg) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[&]	E_f	J_f^π	Mult.	α[a]	Comments
7325.7	(26$^+$)	826.5[@] *4*	100[@]	6499.2	(24$^+$)	(E2)	0.00884	α(K)=0.00698 *10*; α(L)=0.001423 *20*; α(M)=0.000339 *5*; α(N+..)=0.0001011 *15* Mult.: from DCO=1.0 *3* (1991Me06) and known J^π.
7505.6	(27$^+$)	368.2	100	7137.4	(26$^+$)			
		546.6	≈40	6959.0	(25$^+$)	Q		Mult.: stretched quadrupole transition, DCO ratio R=1.16 *14* (1993Ce04). I_γ: estimated from figure 1 of 1993Ce04.
		1007.0		6499.2	(24$^+$)			
7793.7	(28$^+$)	288.1	100	7505.6	(27$^+$)			
		656.3	≈100	7137.4	(26$^+$)			I_γ: estimated from figure 1 of 1993Ce04.
8254.7	(29$^+$)	461.0	100	7793.7	(28$^+$)			
		749.1	≈60	7505.6	(27$^+$)			I_γ: estimated from figure 1 of 1993Ce04.
8652.3	(30$^+$)	397.6	100	8254.7	(29$^+$)			
		858.6	≈60	7793.7	(28$^+$)			I_γ: estimated from figure 1 of 1993Ce04.

[†] From ^{196}Pt(α,4nγ), ^{197}Au(d,3nγ), unless otherwise specified.
[‡] From ^{196}Tl ε decay (1.84 h).
[#] From ^{197}Au(p,2nγ).
[@] From ^{198}Pt(α,6nγ).
[&] From (α,4nγ), unless indicated otherwise.
[a] 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.
[b] Multiply placed with undivided intensity.
[c] Multiply placed with intensity suitably divided.
[d] Placement of transition in the level scheme is uncertain.

$^{196}_{80}Hg_{116}$-11

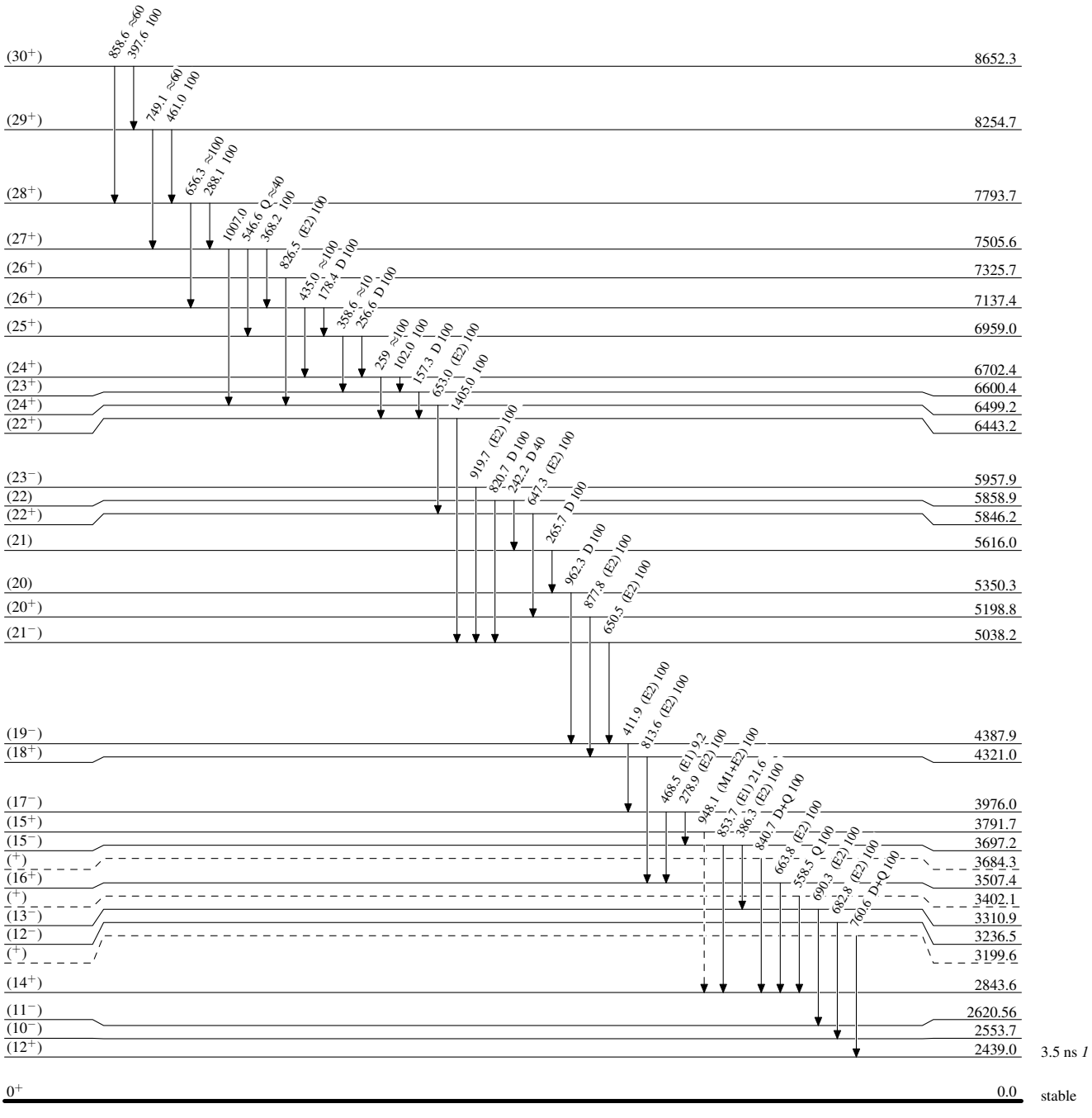
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{196}_{80}Hg_{116}$

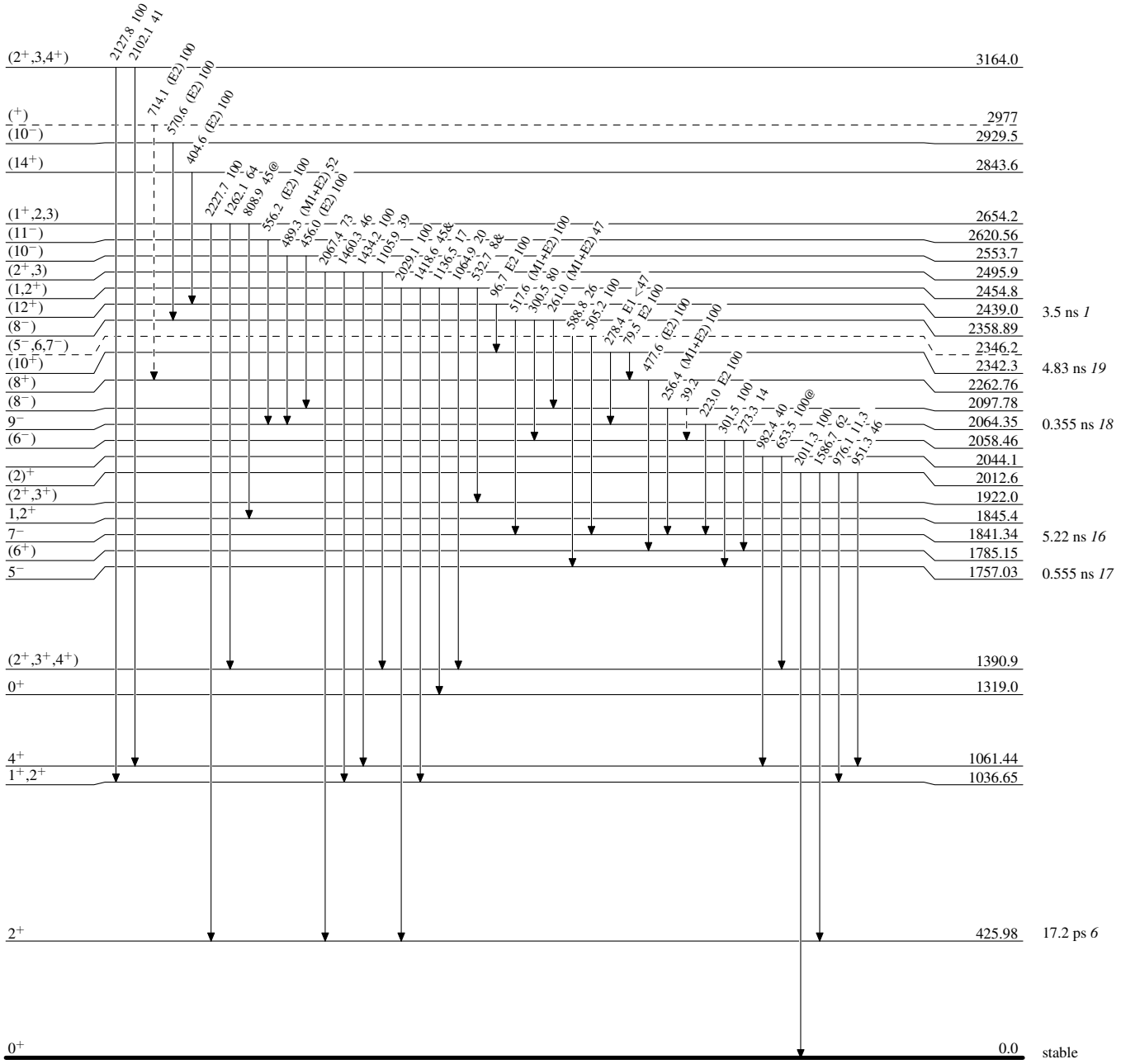
Adopted Levels, Gammas

Level Scheme (continued)

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

Legend

- - - - - - ► γ Decay (Uncertain)



$^{196}_{80}Hg_{116}$

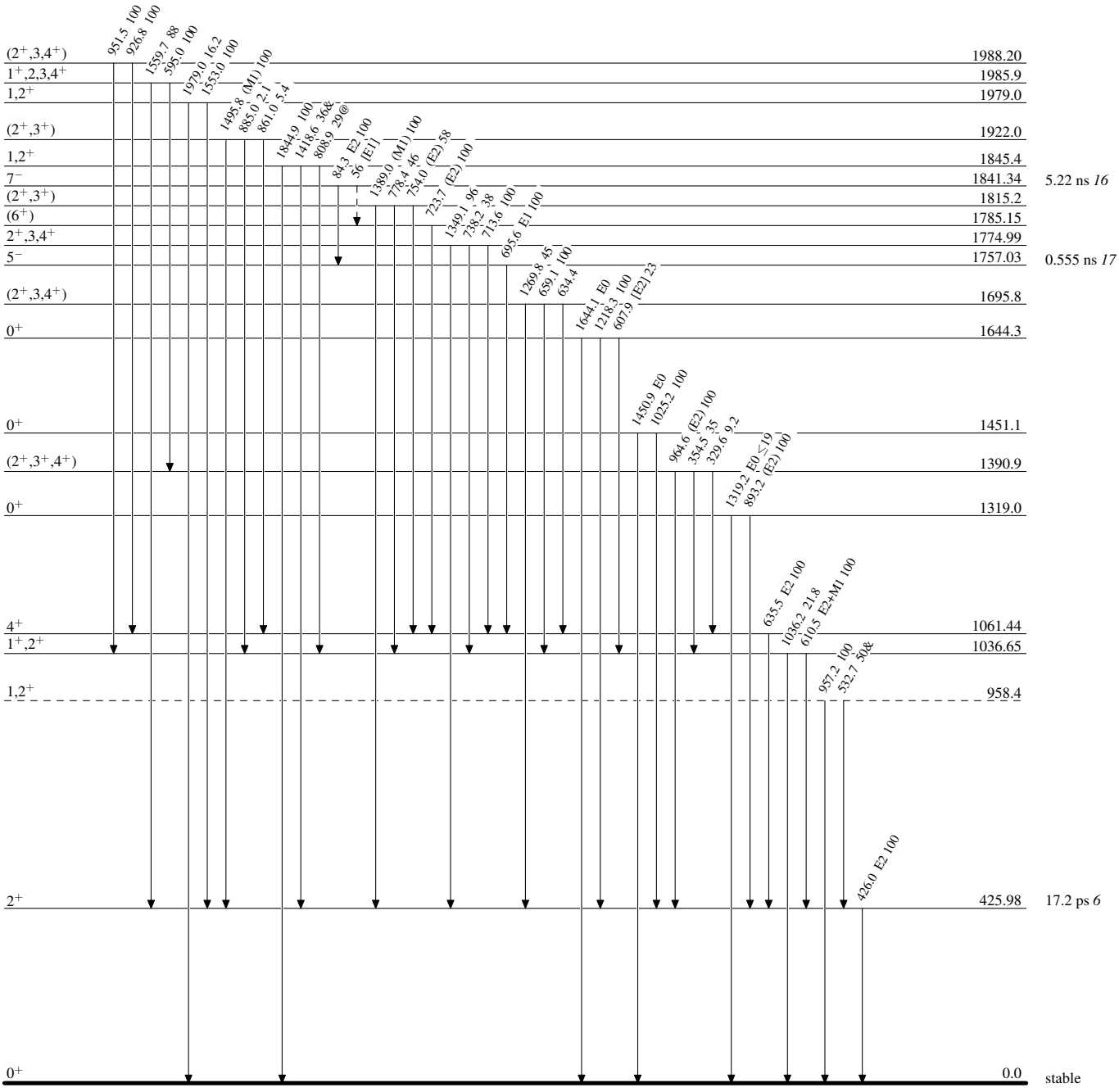
Adopted Levels, Gammas

Level Scheme (continued)

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

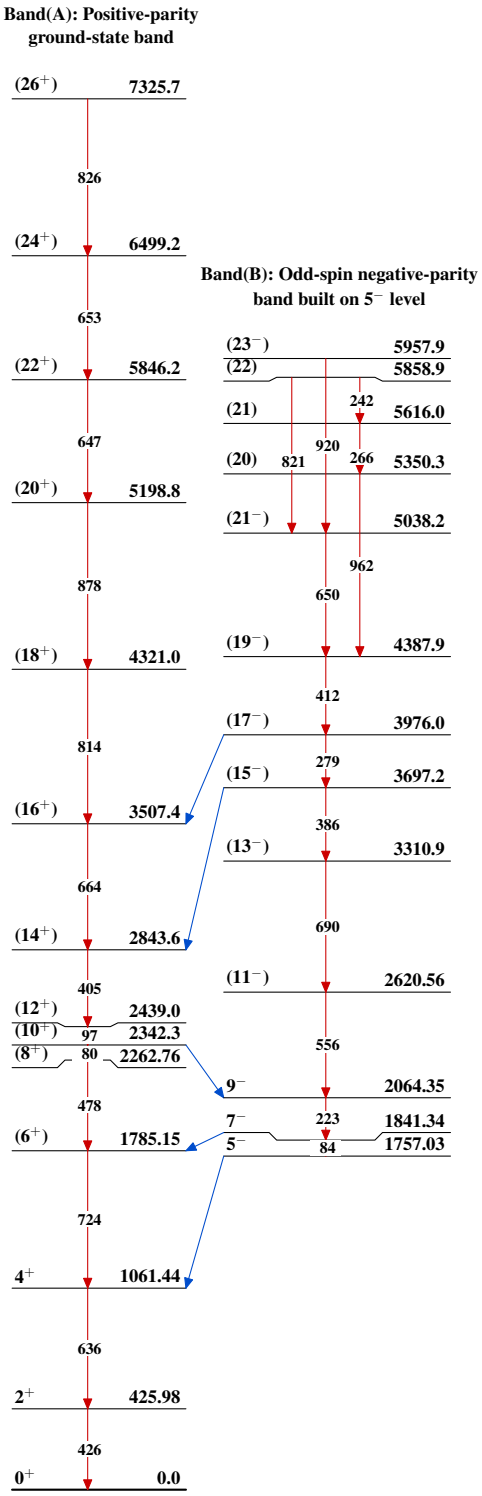
Legend

- - - - - - ► γ Decay (Uncertain)



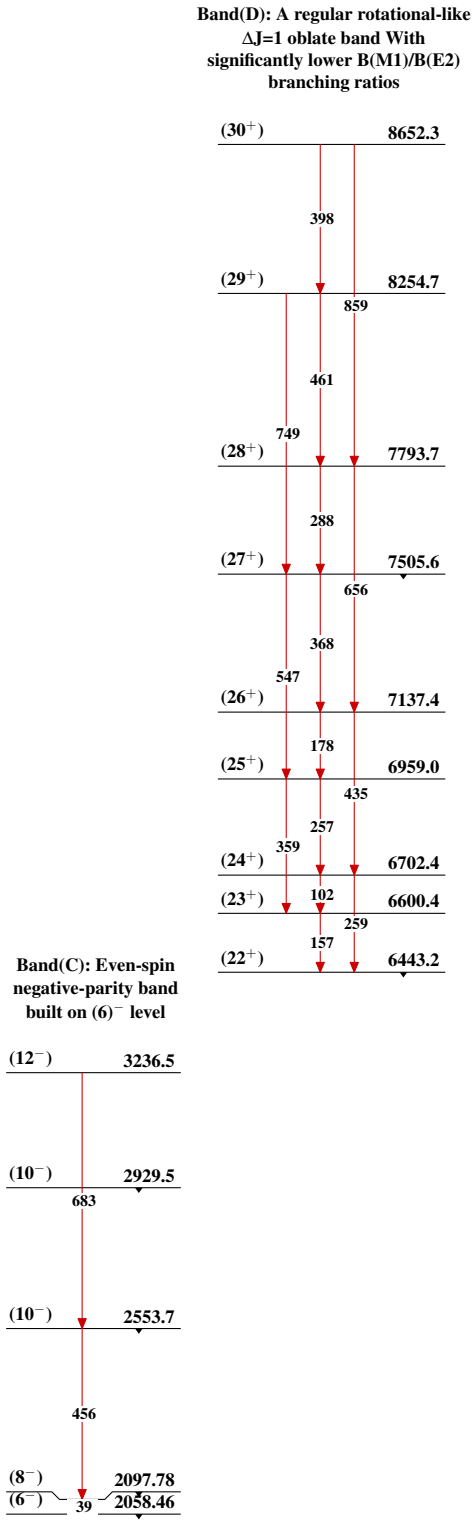
$^{196}_{80}Hg_{116}$

Adopted Levels, Gammas



$^{196}_{80}Hg_{116}$

Adopted Levels, Gammas (continued)



$^{196}_{80}Hg_{116}$