Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. J. Chiara and F. G. Kondev	NDS 111,141 (2010)	1-Oct-2009

Q(β^-)=−344.6 *13*; S(n)=7492.7 *18*; S(p)=8836 *3*; Q(α)=−514 *21* 2012Wa38
Note: Current evaluation has used the following Q record −344.3 13 *7492.4 17* 8836 3 −512 *20* 2003Au03.

^{204}Hg Levels

Cross Reference (XREF) Flags

A	^{204}Au β^- decay	F	^{204}Hg(d,pnγ)	K	^{205}Tl(e,e′p)
B	^{204}Tl ε decay	G	^{204}Hg(d,d′)	L	^{205}Tl(μ^-,nγ)
C	^{204}Hg(e,e′)	H	^{204}Hg(α,α′)	M	^{205}Tl(d,^{3}He)
D	^{204}Hg(n,n′γ)	I	^{204}Hg(^{9}Be,^{9}Be′γ)	N	^{208}Pb(d,^{6}Li)
E	^{204}Hg(p,p′)	J	Coulomb excitation		

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0	0$^+$	stable	ABCDEFGHIJKLMN	Charge distribution studied: Δ<r^2>(^{204}Hg,^{198}Hg)=0.333 *11* (1989BuZP), Δ<r^2>(^{204}Hg,^{A}Hg)=0.298 *28*, 0.271 *26*, 0.194 *19*, 0.182 *23*, 0.099 *28* for A=198-202, respectively (1978Le09), Δ<r^2>(^{204}Hg,^{206}Hg)=−0.107 *5* (1999GaZX). Other: 1979Ha08. Isotope shifts: 1977Du03, 1975Ro10, 1972Bo09. Additional information 1.
436.552 *8*	2$^+$	40.3 ps *3*	A CDEFGHIJ LMN	Q=0.40 *20*; μ=0.67 *9* XREF: G(443)N(430). J$^\pi$: 436.551γ E2 to 0$^+$; L(d,^{3}He)=2, vector analyzing power. B(E2)↑: 0.427 *3*, weighted average of 0.429 *4* in (e,e′) (1989BuZP) and 0.427 *6* (1979Bo16) and 0.423 *5* (1981Es03) in Coul. ex. T$_{1/2}$: From B(E2)↑=0.427 *3*. Additional information 2. Q: From Coul. ex., assuming negligible contributions from low-lying unobserved states (1981Es03). Other: 0.39 *20* or 0.24 *20*, depending on positive or negative interference of the E2 matrix elements (1979Bo16). μ: This value is deduced by the evaluators from μ(^{198}Hg)=0.75 *5* (average of 1995Br34 and 1990Ba40) and μ(^{204}Hg)/μ(^{198}Hg)=0.89 *10*. Note that g(^{204}Hg)/g(^{198}Hg)=0.95 *11* in 1974Do01, but $\omega^2\tau_c$ is changed by evaluators from 4.6 ns^{-1} 8 (1974Do01) to 4.1 ns^{-1} 7, due to change in T$_{1/2}$(437-keV level) from 36 ps *2* to 40.3 ps *3*. Others (renormalized to the same μ(^{198}Hg) value): 0.55 *10* (1970Ka09) by IMPAC method and 0.62 *18* (1986Ko02) by TF method. β_2=0.061 from optical model in (α,α′), −0.069 from coupled-channels analysis in (p,p′). The sign convention in (α,α′) is not explained; in (p,p′) it is based on the sign for ^{198}Hg.
1128.23 *11*	4$^+$	2.91 ps *21*	A CDEFGHIJ LMN	XREF: G(1140)N(1085). J$^\pi$: 691.74γ E2 to 2$^+$; population in Coul. ex., (e,e′), and (p,p′). B(E2)↑=0.218 *16* (1985Ag01). Other: 0.34 *11* (1981Es03). Both values were deduced by the evaluators from B(E2)(4$^+$ to 2$^+$)=0.121 *9* (1985Ag01) and 0.19 *6* (1981Es03). T$_{1/2}$: From B(E2)(4$^+$ to 2$^+$)=0.121 *9* (1985Ag01). B(E4)↑=0.045 *6* from (e,e′).
1635.76 *10*	0$^+$		CDE K M	XREF: E(1632)K(1640)M(1630). J$^\pi$: 1199.2γ (E2) to 2$^+$; L(d,^{3}He)=0; no γ to 0$^+$ g.s. is observed. M(E0)[e(fm)^2]=1.1 *7*.
1716.76 *10*	(2$^+$)		DE	XREF: E(1714).

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Adopted Levels, Gammas (continued)

^{204}Hg Levels (continued)

E(level)†	J^{π}‡	$T_{1/2}$	XREF	Comments
				J^{π}: From excitation function in (n,n′γ); 1280.2γ (M1+E2) to 2^+. Additional information 3.
1828.71 *11*	(2^-)		A D F I L n	XREF: n(1810). J^{π}: 1392.15γ (E1) to 2^+; intense feeding of this level in ^{204}Au β^- decay ($J^{\pi}=2^-$) favors $J^{\pi}=(1^-,2,3^-)$; absence of observed γ to 0^+ g.s. and the lack of population in (e,e′) and (p,p′) favor 2^-; excit. function in (n,n′γ) indicates J=(2).
1841.38 *11*	1^+		A DE I LMn	XREF: E(1836)M(1840)n(1810). J^{π}: 1404.82γ M1+E2 to 2^+; 1841.38γ M1 to 0^+; L(d,^{3}He)=2. Additional information 4.
1851.26 *10*	$(2,3)^+$		A D FG I n	XREF: n(1810). J^{π}: 723.0γ M1+E2 to 4^+ and 1414.9γ M1+E2 to 2^+ indicate $J^{\pi}=3^+$. However, their corresponding excit. functions in (n,n′γ) suggest J=2 for the 1851 keV level; 1851.7γ to 0^+ g.s. is observed tentatively only in ^{204}Au β^- decay. If this is confirmed, 3^+ can be ruled out. Additional information 5.
1947.69 *11*	2^+		A CD F IJ LM	XREF: C(1944)M(1950). J^{π}: 1511.10γ to 2^+, 1947.76γ to 0^+; L(d,^{3}He)=2; population in Coul. ex. and (e,e′) favor 2^+. Additional information 6.
1989.36 *10*	(2^+)		A CDEF IJ L	XREF: C(1974)E(1985). J^{π}: 1552.8γ to 2^+; population in Coul. ex., (e,e′), and (p,p′) favors natural-parity levels; direct population in ^{204}Au β^- decay ($J^{\pi}=(2^-)$) rules out 4^+. Additional information 7.
2088.51 *10*	2^+		A cD m	XREF: c(2047,2090)m(2060). J^{π}: 2088.5γ E2 to 0^+.
2094.46 *20*	$(3)^+$		cDE m	XREF: c(2047,2090)E(2099)m(2060). J^{π}: 1657.9γ M1+E2 to 2^+; excit. functions in (n,n′γ) favor J>3. Additional information 8.
2117.47 *9*	2^+		A cD I m	XREF: c(2090,2124)m(2120). J^{π}: 2117.5γ E2 to 0^+, 1680.9γ M1+E2 to 2^+.
2131.26 *20*	$(1^+,2^+)$		cDe m	XREF: c(2124)e(2137)m(2120). J^{π}: 1694.7γ to 2^+; L(d,^{3}He)=2, but it is an unresolved doublet. Additional information 9.
2140.86 *10*	$(1^+,2^+,3^+)$		A cDe L	XREF: c(2124,2200)e(2137). J^{π}: 1704.3γ (M1+E2) to 2^+; direct population in ^{204}Au β^- decay ($J^{\pi}=(2^-)$). Additional information 10.
2191.01 *15*	6^+	0.30 ps *4*	cDEF IJ L	XREF: c(2200)E(2183). J^{π}: 1062.8γ E2 to 4^+; L(p,p′)=6. Additional information 11. $T_{1/2}$: From B(E2)(6^+ to 4^+)=0.139 *17* (1985Ag01).
2235.94 *15*	3,4,5		cD F I n	XREF: c(2200)n(2240). J^{π}: 1107.7γ D to 4^+; Additional information 12.
2262.97 *15*	5^-		CDEF hI LMn	XREF: C(2262)E(2257)h(2272)M(2250)n(2240). J^{π}: 1134.7γ E1 to 4^+; population in (e,e′) and (p,p′). Additional information 13. B(E5)↑: 0.041 *9* from (e,e′) (1989BuZP). Possible configuration= $\pi[(s_{1/2})^{-1}(h_{11/2})^{-1}]\nu[(p_{1/2})^{-2}]_{0+}$.
2264.36 *18*	(1,2,3)		A D h LMn	XREF: h(2272)M(2250)n(2240). J^{π}: 1827.80γ to 2^+; excit. function in (n,n′γ); direct population in ^{204}Au β^- decay ($J^{\pi}=(2^-)$) makes 0^+ and 4^+ unlikely.
2295.66 *10*			D	

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Adopted Levels, Gammas (continued)

^{204}Hg Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
2300.20 *14*	(2$^+$,3)		A D F I	J^{π}: 1172.0γ to 4$^+$, 1863.3γ to 2$^+$; J≤2 from excit. function in (n,n′γ).
2300.65 *19*	7$^-$	6.8 ns *3*	C EF I L	XREF: C(2299)E(2293). J^{π}: 109.6γ E1 to 6$^+$; population in (e,e′) and (p,p′). $T_{1/2}$: Weighted average of 6.7 ns *5* from (d,pnγ) (1984Sc19) and 6.9 ns *3* from (^{9}Be,^{9}Be′γ) (1994Po21). B(E7)↑: 32×10^{-4} *13* from (e,e′). Additional information 14. Possible configuration: admixture of $\pi[(s_{1/2})^{-2}]_{0+}\nu[(p_{1/2})^{-1}(i_{13/2})^{-1}]$ and $\pi[(d_{3/2})^{-1}(h_{11/2})^{-1}]\nu[(p_{1/2})^{-2}]_{0+}$.
2359[#] *5*	(0$^+$)		C K	XREF: K(2370). J^{π}: L(e,e′p)=(0).
2385.9 *4*	1$^+$,2$^+$		A cD M	XREF: c(2397)M(2380). J^{π}: 2385.9γ to 0$^+$; L(d,^{3}He)=0+2. Additional information 15.
2395.6 *4*	1,2,3		A c E	XREF: c(2397)E(2398). J^{π}: 1959.0γ to 2$^+$; direct population in ^{204}Au β^- decay (J^{π}=(2$^-$)) rules out 0$^+$ and 4$^+$. Additional information 16.
2465.46 *20*	(2)$^+$		A CDE M	XREF: C(2462)E(2463)M(2470). J^{π}: 2028.9γ to 2$^+$; L(d,^{3}He)=2 and population in (e,e′) and (p,p′) favor 2$^+$.
2514.44 *23*	(2$^+$,4$^+$,6$^+$)		CDE IJ	XREF: C(2507)E(2509). J^{π}: 1386.2γ M1,E2 to 4$^+$; population in (e,e′) and (p,p′) rules out 3$^+$ and 5$^+$. Additional information 17.
2568.84 *15*	3$^+$,5$^+$		CD	XREF: C(2570). J^{π}: 1440.6γ M1+E2 to 4$^+$; A_2<0 for 1440.6γ rules out ΔJ=0 transition.
2628.26 *10*	(1$^+$)		cD K	XREF: c(2590)K(2620). J^{π}: 2191.7γ D to 2$^+$; L(e,e′p)=(0).
2657.3 *6*	(2)$^+$		c I M	XREF: c(2590)M(2650). J^{π}: 1529.1γ to 4$^+$; L(d,^{3}He)=0+2.
2675.25 *19*	3$^-$		CDE HIJ	B(E3)↑=0.40 *3* XREF: C(2673)E(2672)H(2674). J^{π}: Population in (e,e′), (α,α′), (p,p′), and Coul. ex. Collective octupole vibration. Additional information 18. B(E3)↑: Weighted average of 0.42 *4* in (e,e′) (1989BuZP) and 0.37 *4* in Coul. ex. (1991Li03). β_3=0.076 from optical model in (α,α′), 0.089 from coupled-channels analysis in (p,p′).
2710[@] *4*			E	
2724.1 *6*	(≥5)		c F I n	XREF: c(2719,2730)n(2740). J^{π}: 423.5γ to 7$^-$.
2726.6 *3*	(2$^+$,3)		A c L n	XREF: c(2719,2730)n(2740). J^{π}: 1598.4γ to 4$^+$, 897.9γ to (2$^-$); direct population in ^{204}Au β^- decay (J^{π}=(2$^-$)) makes 4$^-$ assignment unlikely.
2761.2 *4*	(5)$^-$		C EF I LMn	XREF: E(2759)M(2770)n(2740,2800). J^{π}: 461.0γ to 7$^-$, 497.7γ to 5$^-$; L(d,^{3}He)=2+5; population in (p,p′) and (e,e′) favors 5$^-$.
2812.83 *24*	3$^-$		A C E n	B(E3)↑=0.139 *16* XREF: n(2800).

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Adopted Levels, Gammas (continued)

^{204}Hg Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
			J^{π}: From L=3 in (p,p′), (e,e′); 2376.26γ to 2^+. B(E3)↑: From (e,e′). β_3=0.046 from coupled-channels analysis in (p,p′).
2866[@] *4*		c E m	XREF: c(2883)m(2890).
2908.6 *6*	(≥2)	c I m	XREF: c(2883,2925)m(2890). J^{π}: 1780.4γ to 4^+.
2914.3 *6*	(≥3)	c I	XREF: c(2883,2925). J^{π}: 651.3γ to 5^-.
3021[@] *4*	4^+[&]	C E n	B(E4)↑=0.040 *13* XREF: C(3017)n(3040). B(E4)↑: From (e,e′). Additional information 19.
3033.2 *6*	$(4,5,6)^-$	I Mn	XREF: M(3050)n(3040). J^{π}: 770.2γ to 5^-; L(d,^{3}He)=2+5. Additional information 20.
3112[@] *4*	(4^+)	C E	XREF: C(3096). J^{π}: From (p,p′).
3174.0 *6*		I	
3190 *15*	$(2)^+$	C M	XREF: C(3187). E(level): From (d,^{3}He). J^{π}: L(d,^{3}He)=2; population in (e,e′) favors 2^+.
3227[@] *4*	(5^-)	C E	XREF: C(3222). J^{π}: From (p,p′).
3315[@] *4*	(3^-)[&]	C E	B(E3)↑=0.109 *13* XREF: C(3316). E(level): a multiplet 3320 keV *15* level is observed in (d,^{3}He) with L=2+5, neither component of which is consistent with $J^{\pi}=3^-$ deduced in (e,e′) and (p,p′) for this level. B(E3)↑: From (e,e′). Additional information 21. β_3=0.048 from coupled-channels analysis in (p,p′).
3364[@] *4*	5^-[&]	C E	B(E5)↑=0.036 *5* XREF: C(3361). B(E5)↑: From (e,e′). Additional information 22.
3417[@] *4*		c E	XREF: c(3426).
3439[@] *4*		c E	XREF: c(3426).
3468 *10*	$(2)^+$	C M	E(level): Weighted average of 3475 *14* in (e,e′) and 3460 *15* in (d,^{3}He). J^{π}: L(d,^{3}He)=2; population in (e,e′) favors 2^+.
3496[@] *5*		c E	XREF: c(3539).
3528[@] *6*		c E n	XREF: c(3539)n(3550).
3585[@] *4*		c E mn	XREF: c(3539,3594)m(3600)n(3550).
3618[@] *6*		c E m	XREF: c(3594)m(3600).
3664[@] *9*		C E	XREF: C(3670).
3689.3 *8*		I	
3697[@] *5*		E	
3712[@] *7*		C E	XREF: C(3720).
3750[@] *4*		c E	XREF: c(3750,3820).
3779[@] *4*	$(2)^+$	c E M	XREF: c(3750,3820)M(3770). J^{π}: L(d,^{3}He)=2; possible observation in (e,e′) and (p,p′) favors 2^+.
3833[@] *8*		c E	XREF: c(3820).
3869[@] *7*	$(0,2)^+$	C E M	XREF: C(3860)M(3890).

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Adopted Levels, Gammas (continued)

^{204}Hg Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			Jπ: L(d,^{3}He)=0+2; possible observation in (e,e′) and (p,p′) favors (0,2)$^+$. Additional information 23.
3923[@] *9*		C E	XREF: C(3919).
3954[@] *10*		C E	XREF: C(3968).
4033[#] *15*		C	
4113[@] *5*	4^+[&]	C E	B(E4)↑=0.054 *6* XREF: C(4100). B(E4)↑: From (e,e′). Additional information 24.
4164[@] *5*		C E	XREF: C(4147).
4225[@] *6*		C E	XREF: C(4210).
4262[@] *5*		C E	XREF: C(4245). Levels observed in (e,e′) and in (p,p′) do not overlap within uncertainties and may be two distinct states.
4321[@] *6*		E	
4356[@] *6*		C E	XREF: C(4348).
≈4380[#]		C	
4406[@] *6*		C E	XREF: C(4413).
4493[#] *9*		C	
4539[#] *7*		C	
≈4610[#]		C	
4663[#] *27*		C	
4.70×10^3[#] *10*		C	
4723[#] *7*		C	
4815[#] *13*		C	
4895[#] *24*		C	
4915[#] *26*		C	
4960[#] *60*		C	

† From a least-squares fit to Eγ, unless otherwise specified.
‡ Specific arguments are presented with each level. For J^π assignments based on (e,e′) and (p,p′) data, natural-parity states were excited preferentially.
# From (e,e′).
@ From (p,p′).
& Based on L transfer in (p,p′), and from (e,e′).

$\gamma(^{204}Hg)$

Additional information 25.

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.	α†	Comments
436.552	2^+	436.551 *8*	100	0	0^+	E2	0.0378	α(K)=0.0263 *4*; α(L)=0.00870 *13*; α(M)=0.00216 *3*; α(N+..)=0.000636 *9* α(N)=0.000538 *8*; α(O)=9.50×10^{-5} *14*; α(P)=3.47×10^{-6} *5* B(E2)(W.u.)=11.96 *9* E_γ,I_γ: From (μ^-,nγ). Mult.: From γ(θ) in (d,pnγ) and (n,n′γ). Additional information 26.
1128.23	4^+	691.74 *15*	100	436.552	2^+	E2	0.01285	B(E2)(W.u.)=17.0 *13* α(K)=0.00991 *14*; α(L)=0.00224 *4*; α(M)=0.000538 *8*; α(N+..)=0.0001603 *23* α(N)=0.0001345 *19*; α(O)=2.45×10^{-5} *4*; α(P)=1.313×10^{-6} *19* E_γ: From ^{204}Au β^- decay. Mult.: From γ(θ) in (n,n′γ) and (^{9}Be,^{9}Be′γ). Additional information 27.
1635.76	0^+	1199.2 *1*	100	436.552	2^+	(E2)	0.00425 *6*	α(K)=0.00346 *5*; α(L)=0.000607 *9*; α(M)=0.0001422 *20*; α(N+..)=4.66×10^{-5} *7* α(N)=3.56×10^{-5} *5*; α(O)=6.63×10^{-6} *10*; α(P)=4.52×10^{-7} *7*; α(IPF)=3.95×10^{-6} *6* Mult.: Isotropic γ(θ) to 2^+ in (n,n′γ) consistent with E2 from 0^+ initial level.
1716.76	(2^+)	1280.2 *1*	100	436.552	2^+	(M1+E2)	0.0060 *22*	α(K)=0.0049 *19*; α(L)=0.0008 *3*; α(M)=0.00019 *7*; α(N+..)=7.4×10^{-5} *24* α(N)=4.7×10^{-5} *16*; α(O)=9.E−6 *3*; α(P)=7.E−7 *3*; α(IPF)=1.8×10^{-5} *5* Mult.: From γ(θ) in (n,n′γ).
1828.71	(2^-)	1392.15 *11*	100	436.552	2^+	(E1)	0.001391 *20*	α(K)=0.001080 *16*; α(L)=0.0001589 *23*; α(M)=3.63×10^{-5} *5*; α(N+..)=0.000115 α(N)=9.08×10^{-6} *13*; α(O)=1.714×10^{-6} *24*; α(P)=1.320×10^{-7} *19*; α(IPF)=0.0001042 *15* E_γ: From ^{204}Au β^- decay. Mult.: ΔJ=0 dipole from excit. function and γ(θ) in (n,n′γ), electric character inferred from likely parity deduced for initial state. In (^{9}Be,^{9}Be′γ) data, an opposite sign for A_2 is reported, and hence, ΔJ=1 dipole, which is inconsistent with (n,n′γ). The evidence more strongly supports the former assignment.
1841.38	1^+	1404.82 *12*	100 *5*	436.552	2^+	M1+E2	0.0048 *17*	α(K)=0.0040 *14*; α(L)=0.00064 *21*; α(M)=0.00015 *5*; α(N+..)=0.00010 *3* α(N)=3.7×10^{-5} *12*; α(O)=7.1×10^{-6} *23*; α(P)=5.3×10^{-7} *20*; α(IPF)=5.0×10^{-5} *12* E_γ,I_γ: From ^{204}Au β^- decay. Mult.: From γ(θ) in (n,n′γ).
		1841.38 *19*	69 *3*	0	0^+	M1	0.00357 *5*	α(K)=0.00271 *4*; α(L)=0.000429 *6*; α(M)=9.90×10^{-5} *14*; α(N+..)=0.000339 *5* α(N)=2.48×10^{-5} *4*; α(O)=4.71×10^{-6} *7*; α(P)=3.70×10^{-7} *6*; α(IPF)=0.000310 *5* E_γ,I_γ: From ^{204}Au β^- decay. Mult.: From γ(θ) in (n,n′γ).

$^{204}_{80}Hg_{124}$-6

Adopted Levels, Gammas (continued)

$\gamma(^{204}Hg)$ (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Mult.	α[†]	Comments
1851.26	$(2,3)^+$	723.00 *16*	100 *3*	1128.23	4^+	M1+E2	0.023 *12*	α(K)=0.019 *10*; α(L)=0.0033 *14*; α(M)=0.0008 *3*; α(N+..)=0.00024 *10* α(N)=0.00020 *8*; α(O)=3.7×10^{-5} *15*; α(P)=2.6×10^{-6} *14* E_γ,I_γ: From ^{204}Au β^- decay. Additional information 28. Mult.: From $\gamma(\theta)$ in (n,n′γ).
		1414.72 *11*	39.3 *12*	436.552	2^+	M1+E2	0.0048 *17*	α(K)=0.0039 *14*; α(L)=0.00063 *21*; α(M)=0.00015 *5*; α(N+..)=0.00010 *3* α(N)=3.7×10^{-5} *12*; α(O)=6.9×10^{-6} *23*; α(P)=5.3×10^{-7} *20*; α(IPF)=5.3×10^{-5} *13* E_γ,I_γ: From ^{204}Au β^- decay. Additional information 29. Mult.: From $\gamma(\theta)$ in (n,n′γ).
		1851.7[#] *4*	≤1.2	0	0^+			E_γ,I_γ: From ^{204}Au β^-.
1947.69	2^+	1511.10 *12*	100 *3*	436.552	2^+	[M1+E2]	0.0041 *14*	α(K)=0.0034 *11*; α(L)=0.00054 *17*; α(M)=0.00013 *4*; α(N+..)=0.00013 *4* α(N)=3.1×10^{-5} *10*; α(O)=5.9×10^{-6} *19*; α(P)=4.5×10^{-7} *16*; α(IPF)=8.9×10^{-5} *22* Additional information 30. E_γ,I_γ: From ^{204}Au β^- decay. Mult.: Inferred from known J^π′s of initial and final levels, consistent with $\gamma(\theta)$ in (n,n′γ).
		1947.76 *20*	5.3 *4*	0	0^+	[E2]	0.00197 *3*	α(K)=0.001432 *20*; α(L)=0.000227 *4*; α(M)=5.24×10^{-5} *8*; α(N+..)=0.000259 *4* α(N)=1.311×10^{-5} *19*; α(O)=2.47×10^{-6} *4*; α(P)=1.85×10^{-7} *3*; α(IPF)=0.000243 *4* Additional information 31. E_γ,I_γ: From ^{204}Au β^- decay.
1989.36	(2^+)	1552.8 *1*	100	436.552	2^+			Mult.: $\gamma(\theta)$ in (n,n′γ) rules out ΔJ=1 E1 assignment.
2088.51	2^+	2088.5 *1*	100	0	0^+	E2	0.00183 *3*	α(K)=0.001263 *18*; α(L)=0.000198 *3*; α(M)=4.57×10^{-5} *7*; α(N+..)=0.000322 *5* α(N)=1.144×10^{-5} *16*; α(O)=2.16×10^{-6} *3*; α(P)=1.631×10^{-7} *23*; α(IPF)=0.000308 *5* Mult.: From $\gamma(\theta)$ in (n,n′γ).
2094.46	$(3)^+$	1657.9 *2*	100	436.552	2^+	M1+E2	0.0034 *10*	α(K)=0.0027 *8*; α(L)=0.00044 *13*; α(M)=0.00010 *3*; α(N+..)=0.00019 *5* α(N)=2.5×10^{-5} *8*; α(O)=4.8×10^{-6} *14*; α(P)=3.7×10^{-7} *12*; α(IPF)=0.00016 *4* Additional information 32. Mult.: From $\gamma(\theta)$ in (n,n′γ).
2117.47	2^+	1680.9 *1*	100 *9*	436.552	2^+	M1+E2	0.0034 *10*	α(K)=0.0026 *8*; α(L)=0.00042 *12*; α(M)=0.00010 *3*; α(N+..)=0.00020 *5* α(N)=2.4×10^{-5} *7*; α(O)=4.6×10^{-6} *14*; α(P)=3.5×10^{-7} *12*; α(IPF)=0.00017 *4* Additional information 33. Mult.: From $\gamma(\theta)$ in (n,n′γ).
		2117.5 *2*	41 *9*	0	0^+	E2	0.00180 *3*	α(K)=0.001232 *18*; α(L)=0.000193 *3*; α(M)=4.45×10^{-5} *7*; α(N+..)=0.000335

$^{204}_{80}Hg_{124}$-7

Adopted Levels, Gammas (continued)

$\gamma(^{204}$Hg) (continued)

E_i(level)	J_i^π	E_γ‡	I_γ‡	E_f	J_f^π	Mult.	α†	Comments
								5 α(N)=1.114×10^{-5} *16*; α(O)=2.10×10^{-6} *3*; α(P)=1.591×10^{-7} *23*; α(IPF)=0.000321 *5* Mult.: From $\gamma(\theta)$ in (n,n′γ).
2131.26	(1$^+$,2$^+$)	1694.7 *2*	100	436.552	2$^+$			
2140.86	(1$^+$,2$^+$,3$^+$)	1704.3 *1*	100	436.552	2$^+$	(M1+E2)	0.0033 *10*	α(K)=0.0026 *8*; α(L)=0.00041 *12*; α(M)=9.E−5 *3*; α(N+..)=0.00021 *5* α(N)=2.4×10^{-5} *7*; α(O)=4.5×10^{-6} *13*; α(P)=3.4×10^{-7} *11*; α(IPF)=0.00018 *5* Mult.: From $\gamma(\theta)$ in (n,n′γ).
2191.01	6$^+$	1062.8 *1*	100	1128.23	4$^+$	E2	0.00536 *8*	α(K)=0.00433 *6*; α(L)=0.000791 *11*; α(M)=0.000186 *3*; α(N+..)=5.57×10^{-5} *8* α(N)=4.65×10^{-5} *7*; α(O)=8.64×10^{-6} *12*; α(P)=5.67×10^{-7} *8* B(E2)(W.u.)=20 *3* Additional information 34. Mult.: From $\gamma(\theta)$ in (n,n′γ) and from Coul. ex.
2235.94	3,4,5	1107.7 *1*	100	1128.23	4$^+$	D		Mult.: From $\gamma(\theta)$ in (^{9}Be,^{9}Be′γ) and (n,n′γ). Additional information 35.
2262.97	5$^-$	1134.7 *1*	100	1128.23	4$^+$	E1	0.00184 *3*	α(K)=0.001540 *22*; α(L)=0.000229 *4*; α(M)=5.24×10^{-5} *8*; α(N+..)=1.87×10^{-5} *3* α(N)=1.308×10^{-5} *19*; α(O)=2.47×10^{-6} *4*; α(P)=1.87×10^{-7} *3*; α(IPF)=3.01×10^{-6} *5* Additional information 36. Mult.: From ce and $\gamma(\theta)$ in (d,pnγ), and supported by $\gamma(\theta)$ in (n,n′γ) and (^{9}Be,^{9}Be′γ).
2264.36	(1,2,3)	1827.80 *18*	100	436.552	2$^+$			E_γ: From ^{204}Au β^- decay.
2295.66		1859.1 *1*	100	436.552	2$^+$			
2300.20	(2$^+$,3)	1172.0 *1*	100 *11*	1128.23	4$^+$			
		1863.3 *3*	21.7 *22*	436.552	2$^+$			
2300.65	7$^-$	(36.7)		2262.97	5$^-$	[E2]	620	E_γ: From levels evergy difference; γ not observed, but inferred to exist in (^{9}Be,^{9}Be′γ) based on coin. relationships.
		109.68 *12*	100	2191.01	6$^+$	E1	0.335	α(K)=0.269 *4*; α(L)=0.0510 *8*; α(M)=0.01192 *17*; α(N+..)=0.00349 *5* α(N)=0.00294 *5*; α(O)=0.000523 *8*; α(P)=2.65×10^{-5} *4* B(E1)(W.u.)=1.63×10^{-5} *8* Additional information 37. E_γ,I_γ: From (μ^-,nγ). Mult.: From ce in (d,pnγ); stretched nature of transition is not confirmed in (d,pnγ), but it can be inferred from the known $J^{\pi\prime}$s of the initial and final states.
2385.9	1$^+$,2$^+$	2385.9 *4*	100	0	0$^+$			
2395.6	1,2,3	554.7# *3*	100 *17*	1841.38	1$^+$			E_γ,I_γ: From ^{204}Au β^-.

$\gamma(^{204}$Hg) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.	α†	Comments
2395.6	1,2,3	1959.0 *4*	≤10	436.552	2^+			E_γ,I_γ: From ^{204}Au β^-.
2465.46	$(2)^+$	2028.9 *2*	100	436.552	2^+			Additional information 38.
2514.44	$(2^+,4^+,6^+)$	1386.2 *2*	100	1128.23	4^+	M1,E2		Mult.: $\gamma(\theta)$ in (n,n′γ) rules out ΔJ=1 E1 assignment.
2568.84	$3^+,5^+$	1440.6 *1*	100	1128.23	4^+	M1+E2	0.0046 *16*	α(K)=0.0037 *13*; α(L)=0.00061 *20*; α(M)=0.00014 *5*; α(N+..)=0.00010 *3* α(N)=3.5×10^{-5} *12*; α(O)=6.6×10^{-6} *22*; α(P)=5.0×10^{-7} *19*; α(IPF)=6.2×10^{-5} *15* Mult.: From $\gamma(\theta)$ in (n,n′γ).
2628.26	(1^+)	2191.7 *1*	100	436.552	2^+	D		Mult.: From $\gamma(\theta)$ in (n,n′γ).
2657.3	$(2)^+$	1529.1 *5*	100	1128.23	4^+			E_γ,I_γ: From (^{9}Be,^{9}Be′γ).
2675.25	3^-	1547.0 *2*	79 *16*	1128.23	4^+	[E1]	0.001283 *18*	α(K)=0.000904 *13*; α(L)=0.0001324 *19*; α(M)=3.03×10^{-5} *5*; α(N+..)=0.000215 α(N)=7.56×10^{-6} *11*; α(O)=1.429×10^{-6} *20*; α(P)=1.107×10^{-7} *16*; α(IPF)=0.000206 *3* Additional information 39. Mult.: Inferred from known J^π′s of initial and final states, supported by $\gamma(\theta)$ in (n,n′γ).
		2238.7 *3*	100 *20*	436.552	2^+	[E1]	0.001284 *18*	α(K)=0.000493 *7*; α(L)=7.13×10^{-5} *10*; α(M)=1.627×10^{-5} *23*; α(N+..)=0.000704 α(N)=4.07×10^{-6} *6*; α(O)=7.70×10^{-7} *11*; α(P)=6.07×10^{-8} *9*; α(IPF)=0.000699 *10* Additional information 40. Mult.: Inferred from known J^π′s of initial and final states, supported by $\gamma(\theta)$ in (n,n′γ).
2724.1	(≥5)	423.5 *5*	100	2300.65	7^-			(d,pnγ) tentatively placed a 460.5γ from this level parallel to the 423.5γ. Evaluators have moved it to the 2761.2-keV level based on observation of 461.0γ in (^{9}Be,^{9}Be′γ).
2726.6	$(2^+,3)$	897.9 *6*	81 *51*	1828.71	(2^-)			E_γ,I_γ: From ^{204}Au β^-.
		1598.4 *3*	100 *19*	1128.23	4^+			E_γ,I_γ: From ^{204}Au β^-.
2761.2	$(5)^-$	461.0 *5*	53	2300.65	7^-			Additional information 41.
		497.7 *5*	100	2262.97	5^-			Additional information 42.
		569.5# *10*	≈30	2191.01	6^+			Observed in (d,pnγ), but placed tentatively in the level scheme. This transition was not confirmed in (^{9}Be,^{9}Be′γ), where a contaminant 570γ was identified. I_γ: Normalized to 497.7γ in (d,pnγ).
2812.83	3^-	2376.26 *24*	100	436.552	2^+	[E1]	0.001321 *19*	α(K)=0.000448 *7*; α(L)=6.47×10^{-5} *9*; α(M)=1.476×10^{-5} *21*; α(N+..)=0.000793 *1* α(N)=3.69×10^{-6} *6*; α(O)=6.99×10^{-7} *10*; α(P)=5.52×10^{-8} *8*; α(IPF)=0.000789 *11* Additional information 43. E_γ,I_γ: From ^{204}Au β^-.

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Adopted Levels, Gammas (continued)

$\gamma(^{204}Hg)$ (continued)

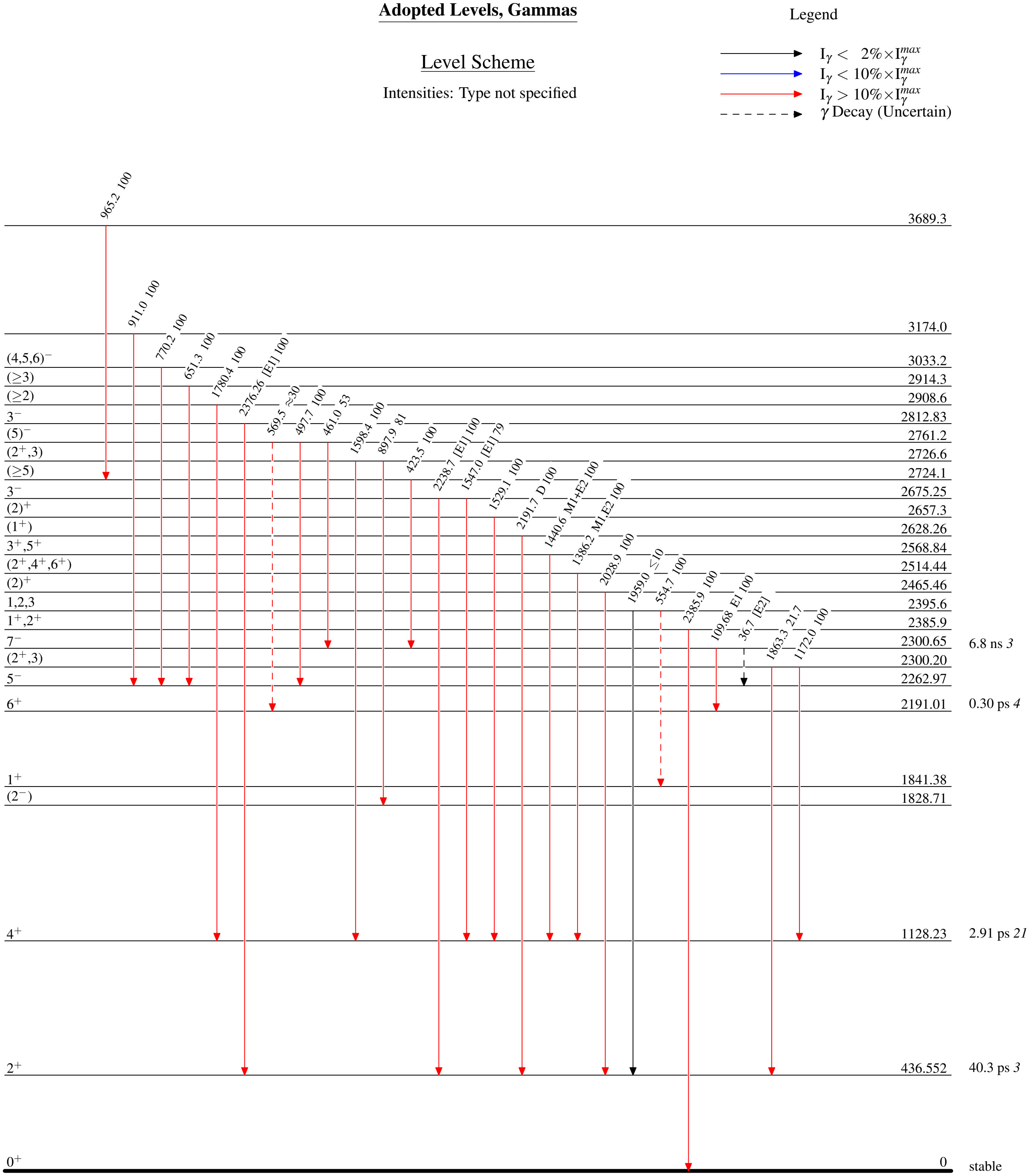
E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π
2908.6	(≥2)	1780.4 *5*	100	1128.23	4^+
2914.3	(≥3)	651.3 *5*	100	2262.97	5^-
3033.2	$(4,5,6)^-$	770.2 *5*	100	2262.97	5^-
3174.0		911.0 *5*	100	2262.97	5^-
3689.3		965.2 *5*	100	2724.1	(≥5)

† Additional information 44.
‡ From ^{204}Hg(n,n′γ) for levels below 2.7 MeV, and from ^{204}Hg(^{9}Be,^{9}Be′γ) for levels above 2.7 MeV, unless otherwise noted.
# Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified



$^{204}_{80}Hg_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified