Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

Q(β^-)=−9440 *80*; S(n)=9070 *80*; S(p)=1550 *80*; Q(α)=6740 *50* 2017Wa10

^{177}Hg Levels

Cross Reference (XREF) Flags

A ^{181}Pb α decay
B ^{144}Sm(^{36}Ar,3nγ)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
0[#]	7/2$^-$	117 ms *7*	AB	%α=100 μ=−1.025 *48*; Q=0.57 *83* %α: 100 *5* in 2009An20 from comparison of the number of α_1(6990-7100 keV,^{181}Pb) decays and the number of α_1(6990-7100 keV,^{181}Pb)-α_2(6582 keV,^{177}Hg) correlated decays. Other: %α=85, an estimate from 1979Ha10, but the %ε+β^+ decay has not been observed. Eα=6582 keV *15* (2009An20), 6580 keV *5* (2004GoZZ), 6580 keV *8* (1979Ha10), 6577 keV *9* (1996Pa01) and 6580 keV (1991Se01). J$^\pi$: From hyperfine splitting measurements in 2019Se04; favored α decay to the J^π=(7/2$^-$) state in ^{173}Pt; similarity with the neighboring ^{179}Hg isotope. T$_{1/2}$: Weighted average of 114 ms *15* (1996Pa01) and 118 ms *8* (2009An20). Others: 127 ms *2* (2002Ro17), 170 ms *50* (1979Ha10), and 130 ms *5* (1991Se01). μ,Q: From the laser-induced, resonance-ionization spectroscopy technique in 2019Se04. δ<r^2>^{198,177}=1.067 *8* (statistical) *78* (systematics) in 2019Se04. configuration: Weakly-deformed $\nu f_{7/2}/h_{9/2}$ orbital or spherical $\nu(f^{-1}_{7/2})$ assignment (2019Se04).
77.2[#] *5*	9/2$^-$		AB	J$^\pi$: 77.2γ M1 to 7/2$^-$. configuration: Weakly-deformed state associated with the $\nu f_{7/2}/h_{9/2}$ orbital or spherical $\nu(h^{-1}_{9/2})$ assignment (2019Se04).
323.2[‡] *12*	13/2$^+$	1.50 μs *15*	B	%IT=100 J$^\pi$: 246γ M2 to 9/2$^-$; systematics of similar isomers in neighboring odd-mass nuclei. T$_{1/2}$: From recoil-246γ(t) in 2003Me20 (^{144}Sm(^{36}Ar,3nγ)). configuration: Weakly-deformed $\nu i_{13/2}$ orbital.
698.2[#] *12*	(13/2$^-$)		B	J$^\pi$: 621γ to 9/2$^-$.
961.2[‡] *15*	(17/2$^+$)		B	J$^\pi$: 638γ to (13/2$^+$).
1162.2[#] *15*	(17/2$^-$)		B	J$^\pi$: 464γ to (13/2$^-$).
1496.2[‡] *18*	(21/2$^+$)		B	J$^\pi$: 535γ to (17/2$^+$).
1631?[#]	(21/2$^-$)		B	J$^\pi$: 469γ to (17/2$^-$).
1946.2[‡] *21*	(25/2$^+$)		B	J$^\pi$: 450γ to (21/2$^+$).
2441.2[‡] *23*	(29/2$^+$)		B	J$^\pi$: 495γ to (25/2$^+$).
2990.2[‡] *25*	(33/2$^+$)		B	J$^\pi$: 549γ to (29/2$^+$).
3588?[‡]	(37/2$^+$)		B	J$^\pi$: 598γ to (33/2$^+$).

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Adopted Levels, Gammas (continued)

^{177}Hg Levels (continued)

† From a least-squares fit to Eγ.
‡ Seq.(A): Weakly-deformed structures built on the $\nu i_{13/2}$ orbital.
# Seq.(B): Weakly-deformed structures built on the $\nu f_{7/2}/h_{9/2}$ orbital.

γ(^{177}Hg)

E_i(level)	J_i^π	E_γ †	I_γ	E_f	J_f^π	Mult.	α‡	Comments
77.2	$9/2^-$	77.2 *5*	100	0	$7/2^-$	M1	3.04 *8*	α(L)=2.33 *6*; α(M)=0.543 *13* α(N)=0.136 *4*; α(O)=0.0258 *7*; α(P)=0.00197 *5* E_γ: From 2009An20 in ^{181}Pb α decay. Other: 77 keV in 2003Me20 and 78 keV in 2005CaZV. Mult.: From α(exp)=2.7 *9* using the intensities of the (6990-7060)-keV α group and 77.2-keV γ-ray in ^{181}Pb α decay (2009An20).
323.2	$13/2^+$	246 *1*	100	77.2	$9/2^-$	M2	2.67 *6*	α(K)=2.00 *4*; α(L)=0.506 *11*; α(M)=0.124 *3* α(N)=0.0314 *7*; α(O)=0.00587 *13*; α(P)=0.000407 *9* B(M2)(W.u.)=0.198 *21* Mult.: From α(exp)=2.4 *4*, from intensities of Kα, Kβ x rays of Hg and 246γ in ^{144}Sm(^{36}Ar,3nγ) (2003Me20).
698.2	$(13/2^-)$	621 *1*	100	77.2	$9/2^-$	[E2]	0.01628	α(K)=0.01233 *18*; α(L)=0.00300 *5*; α(M)=0.000726 *11* α(N)=0.000181 *3*; α(O)=3.28×10^{-5} *5*; α(P)=1.637×10^{-6} *24*
961.2	$(17/2^+)$	638 *1*	100	323.2	$13/2^+$	[E2]	0.01533	α(K)=0.01167 *17*; α(L)=0.00278 *4*; α(M)=0.000673 *10* α(N)=0.0001681 *25*; α(O)=3.04×10^{-5} *5*; α(P)=1.548×10^{-6} *23*
1162.2	$(17/2^-)$	464 *1*	100	698.2	$(13/2^-)$	[E2]	0.0324	α(K)=0.0229 *4*; α(L)=0.00715 *12*; α(M)=0.00176 *3* α(N)=0.000440 *7*; α(O)=7.80×10^{-5} *13*; α(P)=3.04×10^{-6} *5*
1496.2	$(21/2^+)$	535 *1*	100	961.2	$(17/2^+)$	[E2]	0.0229	α(K)=0.01685 *25*; α(L)=0.00461 *7*; α(M)=0.001127 *17* α(N)=0.000281 *5*; α(O)=5.04×10^{-5} *8*; α(P)=2.24×10^{-6} *4*
1631?	$(21/2^-)$	469# *1*	100	1162.2	$(17/2^-)$	[E2]	0.0315	α(K)=0.0224 *4*; α(L)=0.00691 *11*; α(M)=0.00170 *3* α(N)=0.000425 *7*; α(O)=7.54×10^{-5} *12*; α(P)=2.97×10^{-6} *5*
1946.2	$(25/2^+)$	450 *1*	100	1496.2	$(21/2^+)$	[E2]	0.0350 *6*	α(K)=0.0245 *4*; α(L)=0.00788 *13*; α(M)=0.00195 *3* α(N)=0.000486 *8*; α(O)=8.61×10^{-5} *14*; α(P)=3.25×10^{-6} *5*
2441.2	$(29/2^+)$	495 *1*	100	1946.2	$(25/2^+)$	[E2]	0.0276	α(K)=0.0199 *3*; α(L)=0.00583 *9*; α(M)=0.001434 *22* α(N)=0.000358 *6*; α(O)=6.37×10^{-5} *10*; α(P)=2.64×10^{-6} *4*
2990.2	$(33/2^+)$	549 *1*	100	2441.2	$(29/2^+)$	[E2]	0.0216	α(K)=0.01595 *24*; α(L)=0.00427 *7*; α(M)=0.001042 *16* α(N)=0.000260 *4*; α(O)=4.66×10^{-5} *7*; α(P)=2.12×10^{-6} *3*
3588?	$(37/2^+)$	598# *1*	100	2990.2	$(33/2^+)$	[E2]	0.0177	α(K)=0.01333 *20*; α(L)=0.00333 *5*; α(M)=0.000810 *12* α(N)=0.000202 *3*; α(O)=3.64×10^{-5} *6*; α(P)=1.77×10^{-6} *3*

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Adopted Levels, Gammas (continued)

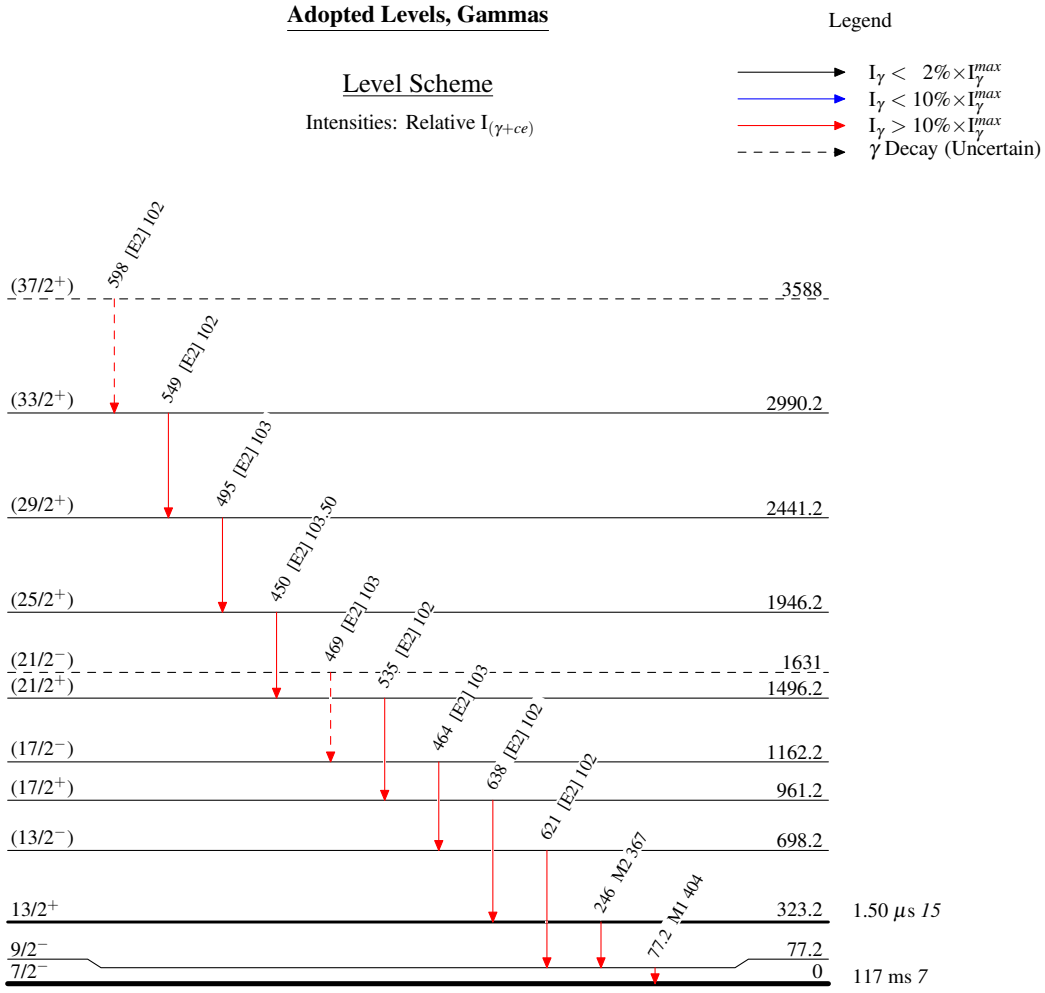
$\gamma(^{177}Hg)$ (continued)

† Energies and placement from $^{144}Sm(^{36}Ar,3n\gamma)$ (2003Me20), unless otherwise stated. $\Delta E\gamma$ were estimated by the evaluator, except for the 77.2-keV γ ray.
‡ Additional information 1.
# Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

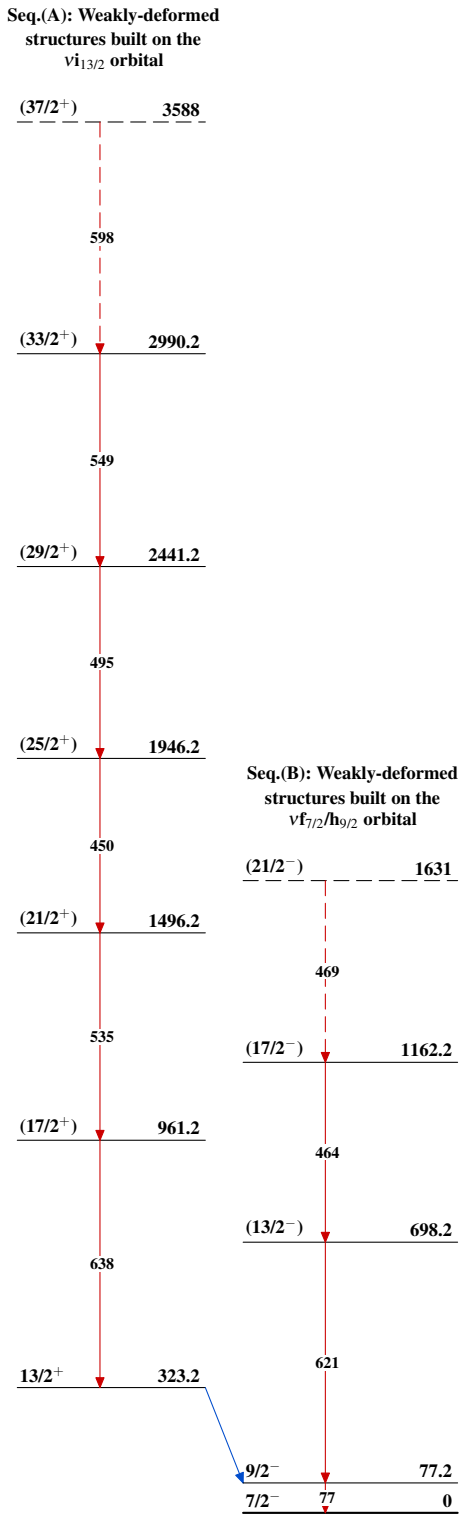
Level Scheme

Intensities: Relative $I_{(\gamma+ce)}$



$^{177}_{80}Hg_{97}$

Adopted Levels, Gammas



$^{177}_{80}Hg_{97}$