Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 130, 21 (2015)	15-Jul-2015

Q(β^-)=−280×10^1 *10*; S(n)=8066 *5*; S(p)=7095.1 *17*; Q(α)=1765.0 *19* 2012Wa38
S(2n)=14751.8 *20*, S(2p)=13043.9 *10* (2012Wa38).
First identification of ^{182}W isotope by Aston: Nature 126, 913 (1930).
Other reactions:
^{9}Be(^{208}Pb,X) E=1 GeV/nucleon: 2002Pf01: Measured fragment yield, (fragment)γ coin, deduced isomer (at 2230 keV) half-life and isomer production ratio of 10% *2*.
Additional information 1.
Mass measurements: 2012Li52, 1977Sh04, 1970Mc03, 1961De21, 1960Bh02.
Structure calculations (levels, moments, transition probabilities, high-K isomers, etc.): 2013Zh43, 2012Bu01, 2012Ze02, 2012Zh23, 2011Er04, 2008Sa21, 2003Jo10, 1998Sh01, 1996Na08, 1996Na12, 1994Be21, 1994Mo07, 1993Be25, 1991Gr14, 1990Ch50, 1990Ve01, 1989Sa19, 1989Ta06. Only selected references are given here, consult NSR database at www.nndc.bnl.gov website for more detailed bibliography for theoretical studies on ^{182}W nuclide.

^{182}W Levels

Details of the measurements of Half-life (in ns) of the 100.1, 2$^+$ state:

1. Deduced from B(E2) values in Coulomb excitation: 1.44 *7* (1961Ha21), 1.26 *11* (1963Gr04), 1.340 *30* (1968St13), 1.368 *29* (1973Be40, earlier value from the same lab is 1.31 *15*, 1958Mc02), 1.15 *12* (1989Ku04), 1.53 *7* (1991Wu05, earlier value is 1.41 *9* in 1989Wu04).
2. Delayed coincidence method in Coulomb excitation: 1.366 *14* (1961Ke07), 1.43 *4* (1962Bi05, earlier value from the same group is 1.55 *14*,1959Bi10).
3. Pulsed beam: (p,p′γ): 1.372 *14* (1964Sc21).
4. Deduced from B(E2) in Muonic atom: 1.343 *40* (1970Hi03).
5. Deduced from B(E2) in (e,e′): 1.391 *21* (1987PeZV,1988PeZW).
6. Delayed coincidence in ^{182}Ta β^- decay: 1.27 *10* (1955Su64,1954Su10), 1.55 *11* (1963Ba24), 1.26 *4* (1963Fo02), 1.41 *6* (1963Ko02), 1.47 *9* (1964Ro19), 1.4 *1* (1964Be36), 1.39 *3* (1965Do02), 1.37 *3* (1965Me08), 1.45 *4* (1966Bl08), 1.35 *7* (1966Fu03), 1.43 *5* (1966Ra04), 1.48 *3* (1970Ab14), 1.380 *20* (1971Ho14), 1.55 *5* (1973GrXX), 1.380 *30* (1983El02),

Cross Reference (XREF) Flags

A	^{182}Ta β^- decay (114.74 d)	H	^{180}Hf(α,2nγ)	O	^{182}W(p,p′),(pol p,p′),(α,α′)
B	Muonic atom	I	^{180}W(t,p)	P	^{182}W(d,d′)
C	^{182}Re ε decay (64.2 h)	J	^{182}W(γ,γ):Mossbauer	Q	Coulomb excitation
D	^{182}Re ε decay (14.14 h)	K	^{182}W(γ,γ′)	R	^{183}W(d,t)
E	^{186}Os α decay	L	^{182}W(e,e′)	S	^{183}W(^{3}He,α)
F	^{176}Yb(^{9}Be,3nγ)	M	^{182}W(n,n′γ)	T	^{184}W(p,t)
G	^{176}Yb(^{13}C,α3nγ)	N	^{182}W(n,n′)	U	^{186}W(n,5nγ)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0&	0$^+$	stable	ABCDEFGHIJKLMNOPQR TU	$T_{1/2}$: $T_{1/2}$(α decay) measured limits: ≥7.7×10^{21} y (2004Co26) with 90% confidence limit. Others: ≥1.7×10^{20} y (2003Da05,2003Bi13,1997Ge15, 1995Ge17), ≥2.5×10^{19} y (2003Ce01), 1960Be13. (<r^2>)$^{1/2}$(rms charge radius)=5.3559 fm *17* (2013An02,evaluation). Δ<r^2>(^{182}W−^{180}W)=0.068 fm^2 *4* (1994Ji02). Δ<r^2>(^{183}W−^{182}W)=0.052 fm^2 *3* (1994Ji02). Δ<r^2>(^{184}W−^{182}W)=0.099 fm^2 *5* (1994Ji02).

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
100.10598[&] *7*	2^+	1.381 ns *10*	ABCD FGHIJKLMNOPQRSTU	μ=+0.521 *16* (1968Pe06,2014StZZ) Q=−2.13 *35* (1977RuZV,2014StZZ,2013StZZ) B(E2)↑=4.17 *6* μ: Mossbauer effect (1968Pe06). Other: +0.528 *12* (CEAD,1972Ca12). Q: reorientation method in Coul. Ex. (1977RuZV). B(E2) from Coul. Ex. $T_{1/2}$: from several weighted averaging methods (weighted average, limitation of statistical weights method (LWM), normalized residuals method (NRM) and Rajeval′s technique (RT)) using 26 independent measurements (from 1954 to 1991) of lifetimes from Coulomb excitation, delayed coincidence methods, pulsed beam, (e,e′) and muonic atom. The value of χ^2 is ≈2.1 for different methods as compared to critical χ^2 of 1.7. All the values used in the averaging procedure are listed above in the header comments of this table 2001Ra27 evaluation (of 27 measurements from 1954 to 1988) gives nearly the same adopted B(E2)(↑)=4.20 *8* and mean lifetime (τ)=1990 ps *20* ($T_{1/2}$=1.379 ns *14*). J^{π}: E2 γ to 0^+.
329.4268[&] *6*	4^+	62 ps *3*	A CD FGHI LMNOPQRSTU	μ=+0.88 *17* (1972Be94,2014StZZ) B(E4)=0.077 *16* (1987PeZV) from (e,e′). μ: IPAC (1972Be94). $T_{1/2}$: from RDM in Coul. ex. J^{π}: ΔJ=2, E2 γ to 2^+.
680.42[&] *5*	6^+	8.2 ps *9*	A C FGH LMNOPQR TU	B(E6)=0.012 *5* (1987PeZV) from (e,e′). $T_{1/2}$: from RDM in Coul. ex. J^{π}: stretched E2 γ to 4^+.
1135.82[a] *10*	0^+		A I MN P R T	J^{π}: L(p,t)=0. Also L(t,p)=0 and E0 transition to 0^+.
1144.32[&] *12*	8^+	2.01 ps *17*	FGH LM Q U	B(E8)=0.00029 *17* (1987PeZV) from (e,e′). $T_{1/2}$: from RDM in Coulomb excitation. J^{π}: ΔJ=2, E2 γ to 6^+; band assignment.
1221.4001[b] *10*	2^+	0.434 ps *11*	A CD HI MNOPQR T	J^{π}: E2 γ to 0^+. $T_{1/2}$: from B(E2) in Coulomb excitation. B(E2)(IS)(↑)=0.146 *11* ((pol p,p′) 1987Ic04). This gives B(E2)(W.u.)=4.8 *4* compared to 3.4 from Coul. ex.
1257.4121[a] *11*	2^+	1.71 ps *13*	A CD HI MN PQR T	J^{π}: E2 γ to 0^+. $T_{1/2}$: from B(E2) in Coulomb excitation and adopted branching ratios.
1289.1498[c] *10*	2^-	1.12 ns *4*	A CD GH M QR	μ=+1.74 *24* (1973Se14,2014StZZ) μ: IPAC (1973Se14). J^{π}: M2 γ to 0^+. $T_{1/2}$: from (β)(ce)(t) and $\beta\gamma$(t) in ^{182}Ta β^- decay. Weighted averaging method (normalized residuals) used.
1331.1153[b] *10*	3^+	<0.6 ns	A CD H MN QRS	XREF: N(1309). J^{π}: M1+E2 γs to 2^+ and 4^+. $T_{1/2}$: from $\gamma\gamma$(t) in ^{182}Ta β^- decay.
1373.8301[c] *10*	3^-	78 ps *10*	A CD GH MNOPQ T	μ=0.96 *27* (1972He10,2014StZZ) XREF: N(1357). μ: IPAC (1972He10). Other: 2.21 *34* (IPAC,1973Se14). J^{π}: E3 γ to 0^+. $T_{1/2}$: from (ce)(ce)(t) in ^{182}Ta β^- decay.
1442.835[b] *9*	4^+	0.32 ps *3*	A CD HI MNOPQR T	J^{π}: M1+E2 γ to 4^+; E2 γ to 2^+; (E1) γ from 5^-; band

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				assignment. $T_{1/2}$: from B(E2) in Coul. ex. B(E4)(IS)(↑)=0.0122 *25* ((pol p,p′) 1987Ic04) which gives B(E4)(W.u.)=2.0 *4*.
1487.5018[c] *10*	4⁻	<49 ps	A CD GH MN	XREF: N(1492). Jπ: M2+E3 γ to 2⁺; M1+E2 γ from 5⁻. $T_{1/2}$: from (ce)(ce)(t) in ^{182}Ta β^- decay.
1510.22[a] *4*	4⁺		A C H M R	Jπ: E2 γ to 2⁺; E2+M1 γ to 4⁺; γ from 5⁻.
1553.2240[g] *10*	4⁻	1.27 ns *4*	A CD GH MN R	$T_{1/2}$: from γγ(t) in ^{182}Ta β^- decay. Jπ: M2+E3 γ to 2⁺; M1+E2 γ from 5⁻.
1621.284[c] *21*	5⁻		C GH Mn p t	Jπ: M1 γ from 6⁻; E1 γ to 4⁺.
1623.51[b] *4*	(5)⁺		C H Mn pQR t	Jπ: E1 γ from 6⁻; band assignment.
1660.383[g] *21*	5⁻		C GH MN P R T	XREF: N(1678). Jπ: E1+M2 γ to 4⁺; M1+E2 γ to 5⁻; M1 γ from 6⁻.
1711.99[&] *14*	10⁺	0.76 ps *7*	FGH Q U	$T_{1/2}$: from RDM in Coulomb excitation. Jπ: ΔJ=2, E2 γ to 8⁺; band assignment.
1756.75[h] *4*	6⁺		C GH MN	XREF: N(1745). Jπ: log *ft*=7.4 from 7⁺, E2 γ to 4⁺.
1765.53 *12*			M P T	
1768.943[g] *23*	6⁻		C GH M RS	Jπ: E1+M2 γ to 6⁺; E2 γs to 4⁻; band assignment.
1769.5?[b] *7*	(6⁺)		Q	E(level): level is suspect since the two γ rays at 1089 and 1440 are associated with the decay of 1769, (6)⁻ level. Jπ: γ to 6⁺; possible band assignment.
1809.64[i] *7*	5⁻		C GH n R t	XREF: n(1792). Jπ: M1 γ to 4⁻; M1 γ from 6⁻.
1810.85[c] *4*	(6)⁻		C GH n t	XREF: n(1792). Jπ: log *ft*=8.7 from 7⁺; M1+E2 γ to 5⁻; band assignment.
1813.4 *3*			Mn r t	XREF: n(1792).
1829.53[j] *3*	6⁻		C GH RST	Jπ: log *ft*=7.4 from 7⁺; E2 γ to 4⁻.
1833.1? *6*			M	
1855.98 *5*	(2⁺)		D Mn p r t	XREF: M(1856.2). Jπ: γs to 0⁺ and 4⁺.
1856.9 *5*	1		Mn p r t	XREF: M(1856.9). Jπ: γs to 0⁺ and 2⁺; γ(θ) in (n,n′γ).
1871.17 *15*	1⁻		D M	Jπ: E1 γ to 0⁺.
1887.84 *21*			M P T	
1917.05[g] *5*	7⁻		C GH RS	XREF: R(1916). Jπ: ΔJ=2, E2 γ to 5⁻; γ to (6)⁻; band assignment.
1918.6 *4*	(2⁺ to 4⁺)		MN R	XREF: R(1923). Jπ: γ to 2⁺; not 0 or 1 from γ(θ) in (n,n′γ).
1959.35 *16*	(2⁺)		M P R T	XREF: T(1961). Jπ: ΔJ=(2) γ to 4⁺; γ to 0⁺.
1960.30[j] *3*	(7)⁻		C GH	Jπ: log *ft*=7.1 from 7⁺; ΔJ=2, E2 γs to 5⁻.
1960.78[i] *7*	6⁻		C G M RS	Jπ: M1 γ to 5⁻; log *ft*=8.0 from 7⁺; possible band assignment.
1971.05[h] *7*	(7)⁺		C GH R	XREF: R(1966). Jπ: log *ft*=8.2 from 7⁺; M1+E2 γ to 6⁺; band assignment.
1978.36[k] *4*	(7)⁻		C GH	Jπ: log *ft*=7.0 from 7⁺; M1+E2 γ to (6)⁻; band assignment.
1981.82 *25*			MN R	XREF: R(1985).

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
1993.68[c] 10	(7⁻)		GH	Jπ: ΔJ=2 γ to 5⁻; band assignment.
2016.8 8	(2,3,4)⁺		M R	Jπ: L(d,t)=1,3 from 1/2⁻; possible γs to 2⁺ and 4⁺. E(level): 2023 7 level in (d,t) is probably not 2023.57, 3⁻ level.
2023.57 3	3⁻		D Mn	Jπ: M1+E2 γs to 2⁻ and 4⁻.
2057.39 5	1⁺		D Mn R	Jπ: ΔJ=1 γ to 0⁺; L(d,t)=1,3 from 1/2⁻ target.
2071			R	
2087.43[g] 7	8⁻		GH	Jπ: ΔJ=2 γ to (6⁻); band assignment.
2094 10			R T	
2109.96 20	(2⁻,3⁻)		D Mn R t	XREF: t(2117). Jπ: (E2) γ to 4⁻; (E1+M2) γ to 2⁺.
2114.35[j] 5	(8)⁻		C GH	Jπ: E2 γ to (6)⁻; log *ft*=8.2 from 7⁺; band assignment.
2116.4 3			D Mn t	XREF: t(2117). Jπ: 0⁺ to 4⁺ from γ to 2⁺.
2120.25[l] 7	(8⁻)		C GH	Jπ: (M1) γ to (7)⁻; probable bandhead of a 2-qp band.
2131.3[i] 3	(7⁻)		GH RS	Jπ: γ to (6)⁻; possible band assignment.
2143.0 10			M p R t	
2147.95 17	(3⁻)		D Mn p R t	Jπ: (E1) γ to 4⁺; (E1+M2) γ to 2⁺.
2173.5 3	(0⁺ to 4⁺)		D Mn P R t	XREF: t(2175). Jπ: γ to 2⁺. If 2174γ to 0⁺ exists, then Jπ=1,2⁺.
2180.4[b] 8	(8⁺)		Q	Jπ: γs to 8⁺ and 6⁺; band assignment.
2184.04 4	(2⁻,3⁻)		D Mn p t	XREF: t(2175). Jπ: (M1) γs to 2⁻ and 3⁻.
2204.54[k] 6	(8)⁻		C GH	Jπ: M1+E2 γ to (7)⁻, log *ft*=7.5 from 7⁺.
2207.21 16	(3⁻)		D Mn p R t	Jπ: (E3) γ to 0⁺ and (E1+M2) γ to 4⁺.
2209.07 17	3⁻		D Mn p R t	XREF: R(2217). Jπ: E1 γ to 4⁺, log *ft*=8.3 from 2⁺.
2212.50[h] 11	(8⁺)		GH	Jπ: ΔJ=1 γ to (7)⁺; band assignment.
2225.35[c] 11	(8⁻)		GH	Jπ: ΔJ=2 γ to (6)⁻, band assignment.
2230.65[d] 14	(10⁺)	1.3 μs 1	FGH	%IT=100 Jπ: (M1) γ to 10⁺; γ to 8⁺; probable bandhead of a 2-qp band. $T_{1/2}$: from γ(t); average of 1.2 μs 1 in ^{9}Be(^{208}Pb,X) and 1.4 μs 1 in (α,2nγ).
2240.83 15	(3⁺)		D MN R T	Jπ: (M1) γs to 2⁺ and 4⁺.
2273.87[g] 8	9⁻		GH	Jπ: ΔJ=2 γ to (7)⁻; γ to (8⁻); band assignment.
2274.63 4	(3)⁻		D Mn R t	XREF: R(2270). Jπ: E1 γ to 2⁺; (M1) γ to 4⁻.
2283.5 6	1		Mn R t	XREF: R(2284). Jπ: 2283γ(θ) in (n,n′γ).
2301.56[j] 8	(9⁻)		G	Jπ: γs to (7)⁻ and (8)⁻; band assignment.
2316.1 22	(1,2⁺)		D n T	XREF: T(2311). Jπ: γ to 0⁺.
2323.85[i] 21	(8⁻)		GH	Jπ: γ to (7)⁻; possible band assignment.
2327.91[l] 10	(9⁻)		H	Jπ: ΔJ=1, (M1+E2) γ to (8⁻); band assignment.
2328			P	
2331 10			P R T	
2334.26 21			H	Jπ: (7,8,9) from γ to (7)⁻.
2360 8			R T	
2372.59[&] 17	12⁺	0.38 ps 2	FGH Q U	Jπ: ΔJ=2, E2 γ to 10⁺; band assignment. $T_{1/2}$: from B(E2) in Coulomb excitation from 10⁺ level.
2376			R	
2382.1 7	1	7.9[#] fs 11	K N R	Jπ: from γγ(θ).

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	XREF	Comments
				B(M1)(↑)=0.46 *6*. B(E1)(↑)=5.0×10^{-5} *7*.
2395 *8*			R	
2427 *8*			R	E(level): multiplet.
2445.98[c] *15*	(9^{-})		GH	J$^{\pi}$: ΔJ=2 γ to (7^{-}), band assignment.
2452.7 *20*			R	
2455.74[k] *12*	(9^{-})		GH	J$^{\pi}$: ΔJ=1 γ to (8)$^{-}$; γ to (7)$^{-}$; band assignment.
2474.1 *7*	1[@]	15[#] fs *2*	K N R	J$^{\pi}$: from γγ(θ). B(M1)(↑)=0.31 *5*. B(E1)(↑)=3.5×10^{-5} *5*.
2479.83[h] *13*	(9^{+})		GH	J$^{\pi}$: ΔJ=1 γ to (8^{+}); γ to (7)$^{+}$; band assignment.
2486.89[g] *10*	10^{-}		GH	J$^{\pi}$: ΔJ=2 γ to (8^{-}); γ to (9^{-}); band assignment.
2492 *8*			R	
2492.78[d] *17*	(11^{+})		FGH	J$^{\pi}$: ΔJ=1 γ to (10^{+}); band assignment.
2507.48[j] *9*	(10^{-})		G	J$^{\pi}$: γs to (8)$^{-}$ and (9^{-}); band assignment.
2520 *10*	0^{+}		n T	J$^{\pi}$: L(p,t)=0.
2552 *10*	0^{+}		n T	J$^{\pi}$: L(p,t)=0.
2563.94[l] *12*	(10^{-})		GH	J$^{\pi}$: γ to (9^{-}); band assignment.
2610 *10*			N P T	XREF: T(2625).
2689 *10*			T	
2710.93[g] *11*	11^{-}		GH	J$^{\pi}$: ΔJ=2 γ to (9^{-}); γ to (10^{-}); band assignment.
2725 *10*	0^{+}		N P T	XREF: N(2690). J$^{\pi}$: L(p,t)=0.
2730.84[k] *16*	(10^{-})		GH	J$^{\pi}$: ΔJ=1 γ to (9^{-}); band assignment.
2739.15[c] *15*	(10^{-})		GH	J$^{\pi}$: ΔJ=2 γ to (8^{-}); band assignment.
2741.66[j] *12*	(11^{-})		G	J$^{\pi}$: ΔJ=2 γ to (9^{-}); band assignment.
2769.27[h] *16*	(10^{+})		GH	J$^{\pi}$: ΔJ=1 γ to (11^{+}); γ to (10^{+}); band assignment.
2775 *10*			N T	
2775.65[d] *18*	(12^{+})		FGH	J$^{\pi}$: ΔJ=2 γ to (10^{+}); ΔJ=1 γ to (11^{+}); band assignment.
2815 *10*			T	
2823.93[l] *16*	(11^{-})		GH	J$^{\pi}$: ΔJ=1 γ to (10^{-}); γ to (9^{-}); band assignment.
2884.1 *7*	1[@]	16[#] fs *2*	K	J$^{\pi}$: from γγ(θ). B(M1)(↑)=0.22 *3*. B(E1)(↑)=2.4×10^{-5} *3*.
2892.1 *7*	(1)	27[#] fs *17*	K	J$^{\pi}$: from γγ(θ). B(M1)(↑)=0.07 *4*. B(E1)(↑)=0.8×10^{-5} *5*.
2941.0 *20*	(1,2^{+})		K	J$^{\pi}$: γ to 0^{+}.
2972.49[g] *13*	12^{-}		G	J$^{\pi}$: ΔJ=2 γ to (10^{-}); γ to (11^{-}); band assignment.
2980.58[c] *18*	(11^{-})		GH	J$^{\pi}$: ΔJ=2 γ to (9^{-}); band assignment.
2981.33[j] *12*	(12^{-})		G	J$^{\pi}$: γ to (10^{-}); band assignment.
2996.1 *7*	1	6.7[#] fs *13*	K	J$^{\pi}$: from γγ(θ). Possible K=(0) assigned by 1993He15. B(M1)(↑)=0.25 *5*. B(E1)(↑)=2.7×10^{-5} *5*.
3027.94[k] *19*	(11^{-})		GH	J$^{\pi}$: ΔJ=(1) γ to (10^{-}); γ to (9^{-}); band assignment.
3078.25[d] *19*	(13^{+})		FGH	J$^{\pi}$: ΔJ=1 γ to (12^{+}); ΔJ=2 γ to (11^{+}); band assignment.
3080.1 *7*	1[@]	17[#] fs *3*	K	J$^{\pi}$: from γγ(θ). B(M1)(↑)=0.15 *3*. B(E1)(↑)=1.6×10^{-5} *3*.
3106.72[l] *18*	(12^{-})		GH	J$^{\pi}$: ΔJ=(1) γ to (11^{-}); γ to (10^{-}); band assignment.
3112.89[&] *20*	14^{+}	0.24 ps *4*	FGH Q	J$^{\pi}$: ΔJ=2, (E2) γ to 12^{+}; band assignment. $T_{1/2}$: from B(E2) in Coul. ex. from 12^{+}.
3163.1 *7*	1[@]	10.3[#] fs *14*	K	J$^{\pi}$: from γγ(θ). B(M1)(↑)=0.24 *3*. B(E1)(↑)=2.6×10^{-5} *4*.
3198.1 *7*	(1,2^{+})[@]	16[#] fs *3*	K	J$^{\pi}$: (γ,γ′) excitation from 0^{+}. B(M1)(↑)=0.14 *3*. B(E1)(↑)=1.5×10^{-5} *3*.

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
3224.53[g] *15*	13⁻		G	Jπ: ΔJ=2 γ to (11⁻); band assignment.
3269.56[j] *16*	(13⁻)		G	Jπ: ΔJ=2 γ to (11⁻); band assignment.
3319.7[c] *5*	(12⁻)		G	Jπ: γ to (10⁻); band assignment.
3343.05[k] *21*	(12⁻)		G	Jπ: ΔJ=(1) γ to (11⁻); γ to (10⁻); band assignment.
3365.1 *7*	1[@]	11.1[#] fs *23*	K	Jπ: from γγ(θ). B(M1)(↑)=0.17 *4*. B(E1)(↑)=1.9×10^{-5} *4*.
3398.35[d] *19*	(14⁺)		FGH	Jπ: ΔJ=2 γ to (12⁺); ΔJ=1 γ to (13⁺); band assignment.
3410.54[l] *20*	(13⁻)		G	Jπ: γs to (11⁻) and (12⁻); band assignment.
3415.92[o] *19*	(12)		G	Jπ: ΔJ=1 γ to (11⁺); band assignment.
3422.1 *7*	(1,2⁺)[@]	10.3[#] fs *20*	K	Jπ: (γ,γ′) excitation from 0⁺. B(M1)(↑)=0.19 *3*. B(E1)(↑)=2.1×10^{-5} *4*.
3518.04[j] *15*	(14⁻)		G	Jπ: γ to (12⁻); band assignment.
3549.99[g] *17*	14⁻		G	Jπ: ΔJ=2 γ to (12⁻); band assignment.
3567.8[c] *4*	(13⁻)		G	Jπ: ΔJ=(2) γ to (11⁻); band assignment.
3601.1 *7*	1[@]	6.2[#] fs *12*	K	Jπ: from γγ(θ). B(M1)(↑)=0.23 *4*. B(E1)(↑)=2.5×10^{-5} *5*.
3640.0 *20*	(1,2⁺)		K	Jπ: γ to 0⁺.
3677.15[o] *21*	(13)		G	Jπ: γ to (12⁺); band assignment.
3727.1 *15*	(1,2⁺)		K	Jπ: γ to 0⁺.
3733.85[l] *23*	(14⁻)		G	Jπ: γs to (12⁻) and (13⁻); band assignment.
3736.40[d] *20*	(15⁺)		FGH	Jπ: γs to (13⁺) and (14⁺); band assignment.
3754.89[m] *21*	(15⁺)	37 ns *2*	FG	Jπ: ΔJ=2, (E2) γ to (13⁺); ΔJ=1 γ to (14⁺); bandhead of configuration=((ν 9/2⁺[624])(ν 7/2⁻[503])8⁻)+((π 9/2⁻[514])(π 5/2⁺[402])7⁻). Other possible configuration from coupling of K^π=10⁺ neutrons to K^π=5⁺ protons: π9/2[514]+π1/2[541] is less likely. $T_{1/2}$: from γγ(t) in (^{13}C,α3nγ). Other: 54 ns 10 in (^{9}Be,3nγ).
3807.63[g] *18*	15⁻		G	Jπ: ΔJ=2 γ to (13⁻); band assignment.
3880.06[j] *19*	(15⁻)		G	Jπ: ΔJ=2 γ to (13⁻); band assignment.
3882.0 *20*	(1,2⁺)		K	Jπ: γ to 0⁺.
3893.69[e] *23*	(16⁺)	≤7 ns	FG	Jπ: (M1) γ to (15⁺); probable bandhead of a 4-qp band. $T_{1/2}$: from γγ(t) in (^{9}Be,3nγ).
3910.09[&] *22*	16⁺	0.14 ps *3*	FG Q	$T_{1/2}$: from B(E2) in Coul. ex. from 14⁺. Jπ: ΔJ=2, E2 γ to 14⁺; band assignment.
3920.0 *20*	1		K	Jπ: from γγ(θ).
3966.25[o] *23*	(14)		G	Jπ: γs to (12) and (13); band assignment.
4040.6[f] *3*	(17⁻)	20 ns *1*	FG	Jπ: (E1) γ to (16⁺); probable bandhead of a 4-qp band. $T_{1/2}$: from γγ(t) in (^{13}C,α3nγ). Other: 17 ns 7 in (^{9}Be,3nγ).
4074.8[l] *3*	(15⁻)		G	Jπ: γs to (13⁻) and (14⁻); band assignment.
4078.89[m] *23*	(16⁺)		G	Jπ: γ to (15⁺); band assignment.
4081.5[d] *3*	(16⁺)		G	Jπ: γs to (14⁺) and (15⁺); band assignment.
4116.9[j] *3*	(16⁻)		G	Jπ: γ to (14⁻); band assignment.
4197.1[c] *4*	(15⁻)		G	Jπ: γs to (13⁻); band assignment.
4211.1[g] *3*	16⁻		G	Jπ: ΔJ=2 γ to (14⁻); band assignment.
4218.1 *5*	(17⁺)		F	Jπ: γ to (16⁺).
4280.2[o] *3*	(15)		G	Jπ: γs to (13) and (14); band assignment.
4293.1[e] *3*	(17⁺)		G	Jπ: γ to (16⁺); band assignment.
4421.5[f] *3*	(18⁻)		FG	Jπ: γ to (17⁻); band assignment.
4430.5[m] *3*	(17⁺)		G	Jπ: γs to (15⁺) and (16⁺); band assignment.

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
4453.3[d] *8*	(17^+)		G	J^{π}: γs to (15^+) and (16^+); band assignment.
4456.2[g] *3*	17^-		G	J^{π}: $\Delta J=2$ γ to (15^-); band assignment.
4569.7 *6*	(18^+)		F	J^{π}: γs to (16^+) and (17^+); band assignment.
4570.9[j] *4*	(17^-)		G	J^{π}: γ to (15^-); band assignment.
4690.89[&] *25*	18^+		G	J^{π}: $\Delta J=2$ γ to 16^+; band assignment.
4711.9[e] *3*	(18^+)		G	J^{π}: γs to (16^+) and (17^+); band assignment.
4748.0 *10*	(18^+)	0.088 ps +*22*−*17*	F Q	E(level): this level also seems connected with g.s. band. $T_{1/2}$: from B(E2) in Coul. ex. J^{π}: γ to (16^+); Coulomb excited.
4779.6[j] *4*	(18^-)		G	J^{π}: γ to (16^-); band assignment.
4780.4[n] *4*	(18)		FG	J^{π}: γ to (17^-); possible configuration=((ν 9/2$^+$[624])(ν 11/2$^+$[615])10$^+$)+ ((π 9/2$^-$[514])(π 7/2$^+$[404]))8$^-$.
4804.9[m] *3*	(18^+)		G	J^{π}: γs to (16^+) and (17^+); band assignment.
4820.1[f] *3*	(19^-)		FG	J^{π}: γs to (17^-) and (18^-); band assignment.
4847.4[d] *8*	(18^+)		G	J^{π}: γ to 16^+; band assignment.
4954.8[g] *11*	18^-		G	J^{π}: γ to (16^-); band assignment.
5148.6[e] *5*	(19^+)		G	J^{π}: γs to (17^+) and (18^+); band assignment.
5170.8 *4*	19^-		G P	J^{π}: γ to (17^-); band assignment.
5191.8[n] *4*	(19)		G	J^{π}: γ to (18); band assignment.
5199.6[m] *4*	(19^+)		G	J^{π}: γ to (18^+); band assignment.
5225.4[d] *13*	(19^+)		G	J^{π}: γ to (17^+); band assignment.
5235.8[f] *4*	(20^-)		FG	J^{π}: γs to (18^-) and (19^-); band assignment.
5338.6[j] *11*	(19^-)		G	J^{π}: γ to (17^-); band assignment.
5428.6[&] *4*	20^+		G	J^{π}: γ to 18^+; band assignment.
5618.6[n] *4*	(20)		G	J^{π}: γs to (18) and (19); band assignment.
5666.9[f] *8*	(21^-)		G	J^{π}: γs to (19^-) and (20^-); band assignment.

[†] From least-squares fit to Eγ data; normalized χ^2=0.68.

[‡] For high-spin (J>6) states, ascending spins are assumed with the rise in excitation energy, as expected from yrast type of population of levels in in-beam, heavy-ion γ-ray studies. The transitions involving $\Delta J=2$ from angular distributions are generally treated as E2 from RUL and those with $\Delta J=1$ and significant D+Q admixtures as M1+E2.

[#] Deduced from $\Gamma_{\gamma 0}$ and branching ratio given by 1993He15.

[@] K=1 assigned by 1993He15 from comparison of reduced transition probabilities with Alaga′s rules.

[&] Band(A): $K^{\pi}=0^+$, g.s. band. Backbending at $\hbar\omega\approx0.38$ MeV.

[a] Band(B): $K^{\pi}=0^+$ band. 2001Ga02, in analysis of β vibration and second 0^+ states, suggest that excited 0^+ band in ^{182}W is not a β-vibration.

[b] Band(C): $K^{\pi}=2^+$, γ band.

[c] Band(D): $K^{\pi}=2^-$, octupole band.

[d] Band(E): $K^{\pi}=10^+$,ν9/2[624]$\otimes\nu$11/2[615]. (g_K-g_R)=0.34 *4* (1994Re03), g_K(exp)=−0.15 *2*.

[e] Band(F): $K^{\pi}=(16^+)$,4−qp band. $\nu^2(8^-)$: ν9/2[624]$\otimes\nu$7/2[503]; $\pi^2(8^-)$: π9/2[514]$\otimes\pi$7/2[404]. (g_K-g_R)=0.21 *19* (1994Re03), g_K(exp)=+0.36 *6*. Configuration=(ν9/2$^+$[624])(ν11/2$^+$[615])10$^+$)+(π7/2$^+$[404]) (π5/2$^+$[402])6$^+$ is also proposed by 1994Re03. For $K^{\pi}=8^-$ neutron configuration, 7/2[514] orbital is excluded by the comparison of experimental g_K and corresponding theoretical value.

[f] Band(G): $K^{\pi}=(17^-)$,4−qp band. $\nu^2(10^+)$:ν9/2[624]$\otimes\nu$11/2[615]; $\pi^2(7^-)$:π9/2[514]$\otimes\pi$5/2[402]. (g_K-g_R)=0.30 *7*, 0.18 *7* (1994Re03), g_K(exp)=+0.46 *3*.

[g] Band(H): $K^{\pi}=4^-$,ν9/2[624]$\otimes\nu$1/2[510]. g_K(exp)=+0.05 *4*.

[h] Band(I): $K^{\pi}=6^+$,π5/2[402]$\otimes\pi$7/2[404]. g_K(exp)=+1.11 *5*.

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Adopted Levels, Gammas (continued)

^{182}W Levels (continued)

[i] Band(J): K^{π}=5$^-$,ν9/2[624]⊗ν1/2[510].
[j] Band(K): K^{π}=6$^-$,ν9/2[624]⊗ν3/2[512]. g_K(exp)=+0.01 *1*.
[k] Band(L): K^{π}=7$^-$,π9/2[514]⊗π5/2[402]. g_K(exp)=+1.17 *7*.
[l] Band(M): K^{π}=8$^-$,ν9/2[624]⊗ν7/2[503]. g_K(exp)=−0.21 *5* excludes 7/2[514] neutron orbital when compared with theoretical value.
[m] Band(N): K^{π}=15$^+$,4−qp band. ν^2(8$^-$): ν9/2[624]⊗ν7/2[503]; π^2(7$^-$): π9/2[514]⊗π5/2[402]. g_K(exp)=+0.52 *4*. For K^{π}=8$^-$ neutron configuration, 7/2[514] orbital is excluded by the comparison of experimental g_K and corresponding theoretical value.
[n] Band(O): K^{π}=18$^-$,$\nu^2_{(10^+)}\otimes\pi^2_{(8^-)}$. ν^2(10$^+$):ν9/2[624]⊗ν11/2[615]; π^2(8$^-$):π9/2[514]⊗π7/2[404]. g_K(exp)≈+0.32.
[o] Band(P): K=(12) band.

Adopted Levels, Gammas (continued)

$\gamma(^{182}W)$

q_K(E0/E2)=ratios of K-conversion intensities of E0 and E2 transitions.

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[‡]	α[@]	$I_{(\gamma+ce)}$	Comments
100.10598	2^+	100.10595[#] *7*	100	0.0	0^+	E2		3.89		B(E2)(W.u.)=136.1 *18* α(K)=0.878 *13*; α(L)=2.28 *4*; α(M)=0.576 *8* α(N)=0.1358 *19*; α(O)=0.0186 *3*; α(P)=7.08×10^{-5} *10*
329.4268	4^+	229.3207[#] *6*	100	100.10598	2^+	E2		0.196		B(E2)(W.u.)=196 *10* α(K)=0.1167 *17*; α(L)=0.0605 *9*; α(M)=0.01497 *21* α(N)=0.00354 *5*; α(O)=0.000505 *7*; α(P)=9.50×10^{-6} *14*
680.42	6^+	351.02 *6*	100	329.4268	4^+	E2		0.0538		B(E2)(W.u.)=201 *22* α(K)=0.0380 *6*; α(L)=0.01210 *17*; α(M)=0.00293 *5* α(N)=0.000696 *10*; α(O)=0.0001027 *15*; α(P)=3.34×10^{-6} *5*
1135.82	0^+	1035.65 *12*	100 *33*	100.10598	2^+	[E2]		0.00420		α(K)=0.00346 *5*; α(L)=0.000575 *8*; α(M)=0.0001317 *19* α(N)=3.16×10^{-5} *5*; α(O)=5.05×10^{-6} *7*; α(P)=3.21×10^{-7} *5*
		1135.9 *2*		0.0	0^+	E0			0.84 *21*	q^2_K(E0/E2)=1.8 *7*, X(E0/E2)=0.09 *4* (2005Ki02 evaluation).
1144.32	8^+	463.9 *1*	100	680.42	6^+	E2		0.0254		B(E2)(W.u.)=209 *18* α(K)=0.0191 *3*; α(L)=0.00479 *7*; α(M)=0.001140 *16* α(N)=0.000272 *4*; α(O)=4.11×10^{-5} *6*; α(P)=1.735×10^{-6} *25*
1221.4001	2^+	891.77 *10*	0.163 *7*	329.4268	4^+	E2		0.00569		B(E2)(W.u.)=0.0346 *18* α(K)=0.00464 *7*; α(L)=0.000810 *12*; α(M)=0.000187 *3* α(N)=4.47×10^{-5} *7*; α(O)=7.09×10^{-6} *10*; α(P)=4.31×10^{-7} *6*
		1121.290 *3*	100.0	100.10598	2^+	E2+M1+E0	+30 *+6−4*			B(E2)(W.u.)=6.74 *17* Mult.: E0 component suggested by ce data in ^{182}Ta β^- (1990Ka35) and q_K(E0/E2)=0.19 *6* (1975We22). δ: 17 *+4−3* (1990Ka35).
		1221.395 *3*	77.27 *22*	0.0	0^+	E2		0.00305		B(E2)(W.u.)=3.40 *9* α(K)=0.00252 *4*; α(L)=0.000402 *6*; α(M)=9.15×10^{-5} *13*

Adopted Levels, Gammas (continued)

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
									α(N)=2.20×10^{-5} *3*; α(O)=3.53×10^{-6} *5*; α(P)=2.34×10^{-7} *4*; α(IPF)=6.75×10^{-6} *10*
1257.4121	2$^+$	(121.5 *2*)	0.16 *4*	1135.82	0$^+$	[E2]		1.83	B(E2)(W.u.)=1.8×10^2 *5* α(K)=0.596 *9*; α(L)=0.936 *15*; α(M)=0.236 *4* α(N)=0.0556 *9*; α(O)=0.00765 *13*; α(P)=4.50×10^{-5} *7* E_γ: B(E2)(W.u.)=200 *60* is considered as large and improbable by the evaluators in view of relatively small B(E2)(W.u.) for other transitions from the 1257 level. Thus the presence of this transition is treated as questionable.
		928.00 *3*	40.5 *6*	329.4268	4$^+$	E2		0.00524	B(E2)(W.u.)=1.73 *15* α(K)=0.00429 *6*; α(L)=0.000738 *11*; α(M)=0.0001698 *24* α(N)=4.07×10^{-5} *6*; α(O)=6.47×10^{-6} *9*; α(P)=3.98×10^{-7} *6* δ(M3/E2)=+0.04 *14* ($\gamma\gamma(\theta)$ in ^{182}Ta β^-, 1992Ch26).
		1157.3 *1*	42 *6*	100.10598	2$^+$	E2+M1+E0	−9 *+3−6*	0.0092 *5*	B(E2)(W.u.)=0.59 *10* E_γ: from ^{182}Re decay (64.0 h). In β^- decay, 1157+1158 doublet is not well resolved; with average energy of the doublet at 1157.510 *15*, it deviates from level-energy difference by 0.2 keV in β^- decay dataset. I_γ: unweighted average of 48.6 *23* (β^- decay) and 35 *4* in ε decay (64 h). Other: 72 *5* in Coul. ex. is high by ≈70%. Values from (α,2nγ) and (n,n′γ) cannot be used as these studies did not account for 1157 being a doublet with the second component from 1487 level. Mult.: E0 component is estimated as 0.5% *1* by the evaluators from comparison of γ-ray intensities and K-shell electron conversion data in 1976He18. α: based on 0.5% *1* E0 component and δ(E2/M1)=−9 *+3−6*.
		1257.407 *3*	100.00 *28*	0.0	0$^+$	E2		0.00289	B(E2)(W.u.)=0.93 *8* α(K)=0.00239 *4*; α(L)=0.000378 *6*; α(M)=8.60×10^{-5} *12* α(N)=2.06×10^{-5} *3*; α(O)=3.33×10^{-6} *5*; α(P)=2.21×10^{-7} *3*; α(IPF)=1.119×10^{-5} *16*
1289.1498	2$^-$	31.7377 *5*	5.30 *13*	1257.4121	2$^+$	E1		1.628	B(E1)(W.u.)=7.1×10^{-5} *4* α(L)=1.259 *18*; α(M)=0.293 *4* α(N)=0.0675 *10*; α(O)=0.00910 *13*; α(P)=0.000305 *5* I_γ: all branchings relative to 1189γ, since efficiency problems at low energies such as 67.7 keV can be problematic. Branching for 31.7γ is from β^- decay. Other: 2.8 *6* from ε decay is low by a factor of ≈2.
		67.74970# *10*	260.4 *21*	1221.4001	2$^+$	E1		0.202	B(E1)(W.u.)=0.000360 *14* α(L)=0.1563 *22*; α(M)=0.0358 *5* α(N)=0.00840 *12*; α(O)=0.001234 *18*; α(P)=5.51×10^{-5} *8*

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[‡]	α[@]	Comments
									Mult.,δ: RUL(M2)=1 implies δ<0.002, thus pure E1 is assigned. Experimental limit: δ<0.02.
1289.1498	2^-	959.73 *3*	2.120 *24*	329.4268	4^+	E3+M2	−5.5 *+19−10*	0.0116 *7*	B(M2)(W.u.)=0.00016 *11*; B(E3)(W.u.)=3.44 *16* α(K)=0.0090 *6*; α(L)=0.00196 *8*; α(M)=0.000463 *17* α(N)=0.000111 *4*; α(O)=1.73×10^{-5} *7*; α(P)=9.3×10^{-7} *6* δ: other: −4.6 *+36*−Inf ($\gamma\gamma(\theta)$ in ^{182}Ta β^-, 1992Ch26).
		1189.040 *3*	100.00 *24*	100.10598	2^+	E1+M2+E3		0.0047 *3*	δ(M2/E1)=+0.48 *3*; δ(E3/E1)=−0.67 *5* B(E1)(W.u.)=1.58×10^{-8} *13*; B(M2)(W.u.)=0.012 *2*; B(E3)(W.u.)=10.6 *13* δ: from weighted averages of δ(M2/E1)=+0.44 *6*, δ(E3/E1)=−0.69 *10* (1983Ri05); δ(M2/E1)=+0.49 *3*, δ(E3/E1)=−0.64 *5* (1972Kr05); δ(M2/E1)=0.49 *3*, δ(E3/E1)=0.72 *7* (1972He10). Mult.,α: 59% *4* E1, 14% *1* M2 and 27% *3* E3. Conversion coefficient deduced for this admixture from BrIcc code.
		1289.145 *3*	8.32 *4*	0.0	0^+	M2		0.01231	B(M2)(W.u.)=0.00460 *17* α(K)=0.01019 *15*; α(L)=0.001630 *23*; α(M)=0.000372 *6* α(N)=8.98×10^{-5} *13*; α(O)=1.466×10^{-5} *21*; α(P)=1.047×10^{-6} *15*; α(IPF)=5.96×10^{-6} *9*
1331.1153	3^+	1001.700 *18*	17.95 *21*	329.4268	4^+	E2+M1	−8.9 *+18−21*	0.00455 *8*	B(M1)(W.u.)>4.1×10^{-8}; B(E2)(W.u.)>0.0023 α(K)=0.00374 *6*; α(L)=0.000627 *10*; α(M)=0.0001438 *23* α(N)=3.45×10^{-5} *6*; α(O)=5.51×10^{-6} *9*; α(P)=3.48×10^{-7} *6* δ: other: −8.2 *+22−42* ($\gamma\gamma(\theta)$ in ^{182}Ta β^-, 1992Ch26).
		1231.004 *3*	100.00 *24*	100.10598	2^+	E2+M1	−33 *+6−9*	0.00301	B(M1)(W.u.)>9.7×10^{-9}; B(E2)(W.u.)>0.0046 α(K)=0.00249 *4*; α(L)=0.000395 *6*; α(M)=9.01×10^{-5} *13* α(N)=2.16×10^{-5} *3*; α(O)=3.48×10^{-6} *5*; α(P)=2.31×10^{-7} *4*; α(IPF)=7.86×10^{-6} *11* δ: others: +11 *+6−3* ($\gamma\gamma(\theta)$ in ^{182}Ta β^-, 1992Ch26); −60 *+20−100* (1972Kr05).
1373.8301	3^-	42.7148 *4*	3.82 *8*	1331.1153	3^+	E1		0.720	B(E1)(W.u.)=0.00028 *4* α(L)=0.557 *8*; α(M)=0.1286 *18* α(N)=0.0299 *5*; α(O)=0.00419 *6*; α(P)=0.0001586 *23*
		84.6802[#] *3*	37.82 *25*	1289.1498	2^-	M1+E2	+0.326 *11*	7.66	B(M1)(W.u.)=0.034 *5*; B(E2)(W.u.)=2.1×10^2 *3* α(K)=5.84 *9*; α(L)=1.40 *3*; α(M)=0.331 *8*

Adopted Levels, Gammas (continued)

$\gamma(^{182}W)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	δ‡	α@	Comments
									α(N)=0.0790 *18*; α(O)=0.0121 *3*; α(P)=0.000593 *9* δ: weighted average of +0.32 *3* (1983Ri05), +0.30 *2* (1980Sp01), +0.31 *5* (1975Qu01), +0.30 *2* (1972Kr05), 0.352 *3* (1972He10,ce data, uncertainty increased to 0.02 in averaging procedure), 0.40 *7* (1971Ga37,ce data), 0.346 *7* (1967Ni03, ce data, uncertainty increased to 0.02 in averaging procedure). Values with sign are from $\gamma(\theta)$ or $\gamma\gamma(\theta)$ data.
1373.8301	3⁻	116.4179# *6*	6.33 *5*	1257.4121	2⁺	E1		0.253	B(E1)(W.u.)=2.3×10^{-5} *3* α(K)=0.207 *3*; α(L)=0.0353 *5*; α(M)=0.00805 *12* α(N)=0.00191 *3*; α(O)=0.000290 *4*; α(P)=1.510×10^{-5} *22*
		152.42991# *26*	100.0 *5*	1221.4001	2⁺	E1		0.1258	B(E1)(W.u.)=0.000162 *21* α(K)=0.1038 *15*; α(L)=0.01703 *24*; α(M)=0.00387 *6* α(N)=0.000919 *13*; α(O)=0.0001421 *20*; α(P)=7.85×10^{-6} *11* δ: −0.22 *11* (1992Ch26), −0.023 *4* (1983Ri05), 0.035 *53* (1980Sp01 in ^{182}Re decay); +0.014 *13* (1975Qu01); all from $\gamma(\theta)$ or $\gamma\gamma(\theta)$. Subshell ratios in ce data (1967Ni03) give pure E1 consistent with RUL(M2)=1 suggests δ<0.006, thus the evaluators assign pure E1.
		1044.42 *5*	3.41 *6*	329.4268	4⁺	E1+M2(+E3)	0.46 *9*	0.0051 *12*	B(E1)(W.u.)=1.42×10^{-8} *21*; B(M2)(W.u.)=(0.013 *5*) α(K)=0.0042 *10*; α(L)=0.00067 *16*; α(M)=0.00015 *4* α(N)=3.7×10^{-5} *9*; α(O)=6.0×10^{-6} *14*; α(P)=4.2×10^{-7} *10* δ(M2/E1)=+0.4 *3*, δ(E3/E1)=−0.3 *2* (1972Kr05).
		1273.719 *3*	9.40 *5*	100.10598	2⁺	E1+M2+E3		0.0029 *5*	δ(M2/E1)=+0.36 *10*; δ(E3/E1)=−0.28 *12* B(E1)(W.u.)=1.37×10^{-8} *20*; B(M2)(W.u.)≈8×10^{-4}; B(E3)(W.u.)=9 *2* Mult.,α: 81% *5* E1, 12% *4* M2 and 7% *2* E3. Conversion coefficient deduced for this admixture from BrIcc code. Mult.,δ: from $\gamma(\theta)$ and lin pol data of 1983Ri05, agrees with ce data of 1992Ch26.
		1373.824 *3*	3.17 *3*	0.0	0⁺	E3		0.00496	B(E3)(W.u.)=5.8 *8* α(K)=0.00400 *6*; α(L)=0.000728 *11*; α(M)=0.0001685 *24* α(N)=4.05×10^{-5} *6*; α(O)=6.44×10^{-6} *9*; α(P)=3.97×10^{-7} *6*; α(IPF)=1.252×10^{-5} *18*
1442.835	4⁺	1113.410 *18*	100.0 *14*	329.4268	4⁺	E2+M1(+E0)	+5.6 *+13−10*	0.00376 *8*	B(E2)(W.u.)=10.3 *10* Mult.,δ: from ce data in ^{182}Ta β^-, 1990Ka35

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
									suggest M1+E2(+E0) with δ(E2/M1)=20 *13*. δ(E2/M1)=+1.1 *2* from $\gamma\gamma(\theta)$ in ^{182}Ta β^- (1992Ch26). E0 component is suggested by 1975We22 with q_K(E0/E2)=0.41 *9*.
1442.835	4+	1342.730 *15*	57.7 *3*	100.10598	2+	E2		0.00256	B(E2)(W.u.)=2.41 *23* α(K)=0.00211 *3*; α(L)=0.000329 *5*; α(M)=7.49×10^{-5} *11* α(N)=1.80×10^{-5} *3*; α(O)=2.90×10^{-6} *4*; α(P)=1.95×10^{-7} *3*; α(IPF)=2.56×10^{-5} *4* I_γ: 93 *7* in (α,2nγ) is high by ≈60%. δ(M3/E2)=−0.11 *+4−20* from $\gamma(\theta)$ in ^{182}Ta β^- decay is inconsistent with RUL(M3)=10, which suggests that δ should be near zero. α(K)exp in ^{182}Re ε decay is consistent with δ(M3/E2)=0 assigned by the evaluators.
1487.5018	4−	44.66& *11*	1.12 *22*	1442.835	4+	[E1]		0.637 *10*	B(E1)(W.u.)>0.00011 α(L)=0.493 *8*; α(M)=0.1136 *18* α(N)=0.0264 *5*; α(O)=0.00373 *6*; α(P)=0.0001436 *22*
		113.67170# *22*	70.0 *3*	1373.8301	3−	M1+E2	+0.36 *1*	3.18	B(M1)(W.u.)>0.038; B(E2)(W.u.)>1.5×10^2 α(K)=2.49 *4*; α(L)=0.530 *9*; α(M)=0.1242 *22* α(N)=0.0297 *5*; α(O)=0.00462 *8*; α(P)=0.000250 *4* I_γ: 122 *10* in (α,2nγ) is high by ≈75%.
		156.3864# *3*	100.0 *4*	1331.1153	3+	E1		0.1177	B(E1)(W.u.)>0.00023 α(K)=0.0972 *14*; α(L)=0.01590 *23*; α(M)=0.00362 *5* α(N)=0.000858 *12*; α(O)=0.0001328 *19*; α(P)=7.38×10^{-6} *11* δ(M2/E1)=−0.053 *4* (1983Ri05,$\gamma(\theta)$ and lin pol); −0.08 *5* (1992Ch26, $\gamma\gamma(\theta)$); +0.06 *+3−6* (1981Ka22,$\gamma\gamma(\theta)$). But RUL=1 for M2 implies δ<0.005, thus the evaluators assign E1. δ(M2/E1)=−0.08 *5* ($\gamma\gamma(\theta)$ and ce in ^{182}Ta β^-, 1992Ch26).
		198.35187# *29*	54.84 *21*	1289.1498	2−	E2		0.317	B(E2)(W.u.)>68 α(K)=0.1725 *25*; α(L)=0.1097 *16*; α(M)=0.0273 *4* α(N)=0.00646 *9*; α(O)=0.000910 *13*; α(P)=1.364×10^{-5} *19* δ(M3/E2)=+0.067 *10* from $\gamma(\theta)$ in ^{182}Ta β^-, but RUL(M3)=10 suggests δ(M3/E2) should be near zero. The evaluators assign pure E2.
		1158.1 *2*	10.8 *13*	329.4268	4+	E1		1.38×10^{-3}	B(E1)(W.u.)>6.1×10^{-8} α(K)=0.001159 *17*; α(L)=0.0001632 *23*; α(M)=3.66×10^{-5} *6*

$^{182}_{74}W_{108}$-13

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Mult. ‡	δ ‡	α @	Comments
									α(N)=8.79×10^{-6} *13*; α(O)=1.432×10^{-6} *20*; α(P)=1.021×10^{-7} *15*; α(IPF)=7.59×10^{-6} *12* δ(M2/E1)=−0.01 *+2−1* ($\gamma\gamma(\theta)$ in ^{182}Ta β^-, 1992Ch26). I_γ: from ^{182}Re decay (64.0 h).
1487.5018	4$^-$	1387.390 *3*	2.73 *4*	100.10598	2$^+$	E3+M2	2.6 *4*	0.00554 *24*	B(M2)(W.u.)>0.0020; B(E3)(W.u.)>5.9 α(K)=0.00450 *21*; α(L)=0.00079 *3*; α(M)=0.000183 *7* α(N)=4.39×10^{-5} *16*; α(O)=7.0×10^{-6} *3*; α(P)=4.50×10^{-7} *21*; α(IPF)=1.426×10^{-5} *22*
1510.22	4$^+$	830.1 *4*	17 *3*	680.42	6$^+$				E_γ,I_γ: weighted averages taken of data from β^-, ε and (n,n′γ) for all three γ rays from the 1510 level.
		1180.80 *11*	100 *3*	329.4268	4$^+$	E2+M1	−2.8 *10*	0.0036 *4*	α(K)=0.0030 *4*; α(L)=0.00047 *5*; α(M)=0.000108 *11* α(N)=2.59×10^{-5} *25*; α(O)=4.2×10^{-6} *5*; α(P)=2.8×10^{-7} *4*; α(IPF)=3.11×10^{-6} *16*
		1410.13 *5*	45.8 *10*	100.10598	2$^+$	E2		0.00235	α(K)=0.00193 *3*; α(L)=0.000298 *5*; α(M)=6.76×10^{-5} *10* α(N)=1.624×10^{-5} *23*; α(O)=2.62×10^{-6} *4*; α(P)=1.783×10^{-7} *25*; α(IPF)=4.20×10^{-5} *6*
1553.2240	4$^-$	65.72215# *15*	39.8 *4*	1487.5018	4$^-$	M1+E2	0.093 *6*	2.91 *5*	B(M1)(W.u.)=0.00624 *24*; B(E2)(W.u.)=5.2 *7* α(L)=2.25 *4*; α(M)=0.517 *9* α(N)=0.1242 *20*; α(O)=0.0200 *3*; α(P)=0.001340 *19*
		110.393 *12*	1.42 *4*	1442.835	4$^+$	[E1]		0.290	B(E1)(W.u.)=4.53×10^{-7} *20* α(K)=0.238 *4*; α(L)=0.0408 *6*; α(M)=0.00931 *13* α(N)=0.00220 *3*; α(O)=0.000335 *5*; α(P)=1.717×10^{-5} *24*
		179.39381# *25*	41.22 *19*	1373.8301	3$^-$	M1+E2	+1.3 *2*	0.62 *4*	B(M1)(W.u.)=0.000119 *24*; B(E2)(W.u.)=2.6 *4* α(K)=0.42 *5*; α(L)=0.149 *5*; α(M)=0.0363 *13* α(N)=0.0086 *3*; α(O)=0.00126 *4*; α(P)=3.9×10^{-5} *5* I_γ: 35.5 *21* from ε decay is quite in agreement. δ: unweighted average of +2.2 *2* (1992Ch26), +2.1 *+3−2* (1983Ri05), +1.3 *5* (1980Sp01), +0.9 *4* (1975Qu01), +0.92 *+13−7* (1972Kr05), +0.90m +40-23 (1972He10), 0.7 *1* (1967Ni03). Weighted average is 1.0 *2* but with reduced χ^2=10. Except for 1967Ni03, all other methods are $\gamma(\theta)$ on oriented nuclei or $\gamma\gamma(\theta)$.
		222.1085# *3*	100.0 *3*	1331.1153	3$^+$	E1		0.0480	B(E1)(W.u.)=3.92×10^{-6} *13* α(K)=0.0399 *6*; α(L)=0.00630 *9*; α(M)=0.001429 *20* α(N)=0.000340 *5*; α(O)=5.34×10^{-5} *8*; α(P)=3.17×10^{-6} *5* δ: +0.007 *5* (1972Kr05), +0.027 *7* (1992Ch26), −0.12 *18* (1975Qu01), pure E1 from subshell data (1967Ni01), as also suggested by RUL for M2.
		264.0740# *3*	47.74 *19*	1289.1498	2$^-$	E2		0.1254	B(E2)(W.u.)=0.700 *23* α(K)=0.0799 *12*; α(L)=0.0347 *5*; α(M)=0.00852 *12* α(N)=0.00202 *3*; α(O)=0.000291 *4*; α(P)=6.69×10^{-6} *10*

$^{182}_{74}W_{108}$-14

$\gamma(^{182}W)$ (continued)

E_i(level)	J^{π}_i	E_γ†	I_γ†	E_f	J^{π}_f	Mult.‡	δ‡	α@	Comments
1553.2240	4^-	1223.73 *11*	3.1 *4*	329.4268	4^+	E1+M2(+E3)	−0.15 *+10−25*	0.0016 *15*	B(E1)(W.u.)=7.1×10^{-10} *10*; B(M2)(W.u.)=(5.E−5 *+7−5*) α(K)=0.0013 *13*; α(L)=1.9×10^{-4} *20*; α(M)=4.2×10^{-5} *46* α(N)=1.0×10^{-5} *11*; α(O)=1.6×10^{-6} *18*; α(P)=1.2×10^{-7} *13*; α(IPF)=2.7×10^{-5} *3* E_γ: weighted average from β^- and ε decay. Mult.,δ: from ce data of 1976He18 and $\gamma\gamma(\theta)$ data of of 1992Ch26 in ^{182}Ta β^-. E3 admixture cannot be ruled out.
		1453.120 *6*	0.405 *14*	100.10598	2^+	E3(+M2)	>2.3	0.0048 *4*	B(E3)(W.u.)=0.017 *2* α(K)=0.0039 *4*; α(L)=0.00068 *5*; α(M)=0.000156 *11* α(N)=3.76×10^{-5} *25*; α(O)=6.0×10^{-6} *4*; α(P)=3.9×10^{-7} *4*; α(IPF)=2.29×10^{-5} *4* I_γ: other: 27 *3* in (α,2nγ) is much higher, most likely an impurity or incorrect assignment.
1621.284	5^-	111.07 *5*	4.1 *3*	1510.22	4^+				
		133.80 *5*	49 *3*	1487.5018	4^-	M1+E2	+0.39 *+4−3*	1.96 *4*	α(K)=1.55 *4*; α(L)=0.316 *10*; α(M)=0.0739 *24* α(N)=0.0177 *6*; α(O)=0.00277 *8*; α(P)=0.000155 *4*
		178.47 *5*	45 *3*	1442.835	4^+	E1		0.0838	α(K)=0.0693 *10*; α(L)=0.01118 *16*; α(M)=0.00254 *4* α(N)=0.000604 *9*; α(O)=9.39×10^{-5} *14*; α(P)=5.36×10^{-6} *8*
		247.46 *5*	100 *7*	1373.8301	3^-	E2		0.1538	α(K)=0.0951 *14*; α(L)=0.0447 *7*; α(M)=0.01101 *16* α(N)=0.00261 *4*; α(O)=0.000374 *6*; α(P)=7.86×10^{-6} *11*
		1291.8 *4*	4.6 *5*	329.4268	4^+	E1+M2	0.4 *2*	0.0027 *14*	α(K)=0.0022 *12*; α(L)=3.4×10^{-4} *19*; α(M)=7.7×10^{-5} *44* α(N)=1.9×10^{-5} *11*; α(O)=3.0×10^{-6} *17*; α(P)=2.2×10^{-7} *13*; α(IPF)=5.0×10^{-5} *7*
		1521.3 *4*	1.89 *20*	100.10598	2^+	(E3)		0.00402	α(K)=0.00325 *5*; α(L)=0.000568 *8*; α(M)=0.0001309 *19* α(N)=3.15×10^{-5} *5*; α(O)=5.03×10^{-6} *7*; α(P)=3.20×10^{-7} *5*; α(IPF)=3.37×10^{-5} *5*
1623.51	$(5)^+$	943.1 *3*	14.0 *22*	680.42	6^+	E2		0.00507	α(K)=0.00415 *6*; α(L)=0.000711 *10*; α(M)=0.0001634 *23* α(N)=3.92×10^{-5} *6*; α(O)=6.23×10^{-6} *9*; α(P)=3.86×10^{-7} *6* I_γ: 35 *5* in (n,n′γ) is discrepant.
		1294.0 *3*	100.0 *19*	329.4268	4^+	E2(+M1)	>30	0.00274	α(K)=0.00226 *4*; α(L)=0.000356 *5*; α(M)=8.10×10^{-5} *12*

$^{182}_{74}W_{108}$-15

$\gamma(^{182}W)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	δ‡	α@	Comments
									α(N)=1.94×10^{-5} *3*; α(O)=3.13×10^{-6} *5*; α(P)=2.10×10^{-7} *3*; α(IPF)=1.654×10^{-5} *24*
1660.383	5⁻	39.1 *1*	3.7 *7*	1621.284	5⁻	M1+E2	0.061 *7*	13.6 *4*	α(L)=10.53 *25*; α(M)=2.42 *6* α(N)=0.581 *15*; α(O)=0.0933 *21*; α(P)=0.00618 *10*
		107.13 *5*	20.1 *15*	1553.2240	4⁻	M1+E2	−0.8 *2*	3.54 *13*	α(K)=2.3 *4*; α(L)=0.96 *15*; α(M)=0.24 *4* α(N)=0.056 *9*; α(O)=0.0081 *12*; α(P)=0.00022 *4* I_γ: 55 *4* in (α,2nγ) is discrepant.
		150.25& *5*	7.3 *7*	1510.22	4⁺	(E1)		0.1305	α(K)=0.1077 *16*; α(L)=0.01770 *25*; α(M)=0.00403 *6* α(N)=0.000956 *14*; α(O)=0.0001476 *21*; α(P)=8.13×10^{-6} *12* I_γ: 51 *10* in (α,2nγ) is discrepant.
		172.87 *5*	51 *3*	1487.5018	4⁻	M1+E2	+0.26 *1*	0.971	α(K)=0.795 *12*; α(L)=0.1356 *20*; α(M)=0.0312 *5* α(N)=0.00749 *11*; α(O)=0.001205 *17*; α(P)=7.97×10^{-5} *12* I_γ: 137 *14* in (α,2nγ) is discrepant.
		217.55 *5*	46 *3*	1442.835	4⁺	(E1)		0.0506	α(K)=0.0420 *6*; α(L)=0.00664 *10*; α(M)=0.001508 *22* α(N)=0.000359 *5*; α(O)=5.63×10^{-5} *8*; α(P)=3.33×10^{-6} *5* I_γ: 93 *7* in (α,2nγ) is discrepant.
		286.56 *5*	100 *7*	1373.8301	3⁻	E2		0.0976	α(K)=0.0643 *9*; α(L)=0.0254 *4*; α(M)=0.00621 *9* α(N)=0.001472 *21*; α(O)=0.000213 *3*; α(P)=5.47×10^{-6} *8*
		1330.9 *2*	5.3 *5*	329.4268	4⁺	E1+M2	0.5 *2*	0.0032 *14*	α(K)=0.0026 *11*; α(L)=4.0×10^{-4} *18*; α(M)=9.1×10^{-5} *41* α(N)=2.19×10^{-5} *98*; α(O)=3.6×10^{-6} *16*; α(P)=2.6×10^{-7} *12*; α(IPF)=6.3×10^{-5} *9*
		1560.4 *4*	1.02 *11*	100.10598	2⁺	(E3)		0.00382	α(K)=0.00309 *5*; α(L)=0.000534 *8*; α(M)=0.0001231 *18* α(N)=2.96×10^{-5} *5*; α(O)=4.74×10^{-6} *7*; α(P)=3.03×10^{-7} *5*; α(IPF)=4.10×10^{-5} *6*
1711.99	10⁺	567.5 *1*	100	1144.32	8⁺	E2		0.01543	B(E2)(W.u.)=203 *19* α(K)=0.01202 *17*; α(L)=0.00262 *4*; α(M)=0.000616 *9* α(N)=0.0001472 *21*; α(O)=2.26×10^{-5} *4*; α(P)=1.106×10^{-6} *16*
1756.75	6⁺	313.94 *12*	7.5 *5*	1442.835	4⁺	E2		0.0743	α(K)=0.0506 *8*; α(L)=0.0181 *3*; α(M)=0.00440 *7* α(N)=0.001045 *15*; α(O)=0.0001525 *22*; α(P)=4.37×10^{-6} *7*
		1076.4 *1*	100 *3*	680.42	6⁺	E2+M1	+2.56 *+9−8*	0.00444	α(K)=0.00368 *6*; α(L)=0.000592 *9*; α(M)=0.0001351 *21* α(N)=3.24×10^{-5} *5*; α(O)=5.22×10^{-6} *8*; α(P)=3.45×10^{-7} *6* Mult.: no E0 admixture was found in γ(ce)(θ) and ce data of 1975We22.
		1427.2 *1*	92.1 *17*	329.4268	4⁺	E2		0.00231	α(K)=0.00188 *3*; α(L)=0.000291 *4*; α(M)=6.60×10^{-5} *10* α(N)=1.584×10^{-5} *23*; α(O)=2.56×10^{-6} *4*; α(P)=1.744×10^{-7} *25*; α(IPF)=4.67×10^{-5} *7*
1765.53		434.3 *2*	48 *12*	1331.1153	3⁺				
		544.20 *15*	100 *15*	1221.4001	2⁺				
1768.943	6⁻	108.58 *5*	12.6 *25*	1660.383	5⁻	M1+E2	−0.6 *2*	3.50 *13*	α(K)=2.5 *3*; α(L)=0.78 *14*; α(M)=0.19 *4* α(N)=0.045 *9*; α(O)=0.0066 *11*; α(P)=0.00025 *4* I_γ: 78 *6* in (α,2nγ) is discrepant.
		145.43 *5*	11.8 *9*	1623.51	(5)⁺	(E1)		0.1420	α(K)=0.1171 *17*; α(L)=0.0193 *3*; α(M)=0.00440 *7* α(N)=0.001043 *15*; α(O)=0.0001608 *23*; α(P)=8.80×10^{-6} *13* I_γ: 45 *10* in (α,2nγ) is discrepant.

$^{182}_{74}W_{108}$-17

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
		147.71 *5*	16.2 *14*	1621.284	5^-	M1+E2	+0.8 *2*	1.30 *9*	α(K)=0.94 *12*; α(L)=0.277 *24*; α(M)=0.067 *7* α(N)=0.0159 *15*; α(O)=0.00237 *18*; α(P)=9.1×10^{-5} *13* I_γ: 49 *10* in (α,2nγ) is discrepant.
		215.72 *5*	12.3 *24*	1553.2240	4^-	(E2)		0.240	α(K)=0.1376 *20*; α(L)=0.0776 *11*; α(M)=0.0192 *3*

From ENSDF

$^{182}_{74}W_{108}$-17

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
									α(N)=0.00455 *7*; α(O)=0.000645 *9*; α(P)=1.106×10^{-5} *16* I_γ: 65 *6* in (α,2nγ) is discrepant.
1768.943	6$^-$	281.43 *5*	100 *7*	1487.5018	4$^-$	E2		0.1031	α(K)=0.0675 *10*; α(L)=0.0272 *4*; α(M)=0.00665 *10* α(N)=0.001578 *23*; α(O)=0.000228 *4*; α(P)=5.72×10^{-6} *8*
		1088.5 *3*	3.5 *4*	680.42	6$^+$	E1+M2	0.4 *2*	0.0040 *23*	α(K)=0.0033 *19*; α(L)=5.1×10^{-4} *31*; α(M)=1.17×10^{-4} *70* α(N)=2.8×10^{-5} *17*; α(O)=4.6×10^{-6} *28*; α(P)=3.3×10^{-7} *20*
		1439.3 *3*	2.81 *18*	329.4268	4$^+$	(M2)		0.00930	α(K)=0.00770 *11*; α(L)=0.001217 *17*; α(M)=0.000277 *4* α(N)=6.69×10^{-5} *10*; α(O)=1.093×10^{-5} *16*; α(P)=7.84×10^{-7} *11*; α(IPF)=2.33×10^{-5} *4* Mult.: E1+M2 from α(K)exp but ΔJ^π requires M2.
1769.5?	(6$^+$)	1089.0		680.42	6$^+$				
		1440.1		329.4268	4$^+$				
1809.64	5$^-$	188.54& *5*	1.38 *14*	1621.284	5$^-$				
		256.42 *11*	100 *8*	1553.2240	4$^-$	M1+E2	+0.037 *+6−7*	0.336	α(K)=0.279 *4*; α(L)=0.0438 *7*; α(M)=0.00997 *14* α(N)=0.00240 *4*; α(O)=0.000392 *6*; α(P)=2.80×10^{-5} *4*
1810.85	(6)$^-$	42.0		1768.943	6$^-$				
		187.34 *5*	18.4 *18*	1623.51	(5)$^+$	E1+M2	+0.25 *+27−20*	0.33 *66*	α(K)=0.25 *50*; α(L)=0.06 *13*; α(M)=0.014 *30* α(N)=0.0033 *73*; α(O)=5.E−4 *12*; α(P)=3.3×10^{-5} *74*
		189.60 *7*	21.8 *18*	1621.284	5$^-$	M1+E2	+0.31 *+15−12*	0.74 *4*	α(K)=0.60 *4*; α(L)=0.104 *3*; α(M)=0.0240 *10* α(N)=0.00576 *22*; α(O)=0.000924 *21*; α(P)=6.0×10^{-5} *5*
		323.33 *10*	100 *7*	1487.5018	4$^-$	E2		0.0681	α(K)=0.0469 *7*; α(L)=0.01623 *23*; α(M)=0.00395 *6* α(N)=0.000937 *14*; α(O)=0.0001372 *20*; α(P)=4.07×10^{-6} *6*
1813.4		524.2 *3*	100	1289.1498	2$^-$				
1829.53	6$^-$	19.85 *10*	0.32 *11*	1809.64	5$^-$	M1+E2	0.07 *2*	1.3×10^2 *3*	α(L)=102 *20*; α(M)=24 *5* α(N)=5.7 *12*; α(O)=0.88 *15*; α(P)=0.0461 *10*
		60.65 *10*	0.91 *23*	1768.943	6$^-$				
		169.15 *10*	100 *7*	1660.383	5$^-$	M1+E2	+0.094 *6*	1.060	α(K)=0.879 *13*; α(L)=0.1405 *20*; α(M)=0.0320 *5* α(N)=0.00771 *11*; α(O)=0.001256 *18*; α(P)=8.85×10^{-5} *13*
		206.00 *5*	4.5 *5*	1623.51	(5)$^+$	E1		0.0581	α(K)=0.0482 *7*; α(L)=0.00766 *11*; α(M)=0.001739 *25* α(N)=0.000414 *6*; α(O)=6.48×10^{-5} *9*; α(P)=3.80×10^{-6} *6*
		208.26 *5*	5.5 *5*	1621.284	5$^-$	M1+E2	−1.0 *5*	0.43 *10*	α(K)=0.32 *11*; α(L)=0.084 *4*; α(M)=0.0200 *14* α(N)=0.0048 *3*; α(O)=0.000721 *18*; α(P)=3.1×10^{-5} *12*
		276.31 *5*	77 *5*	1553.2240	4$^-$	E2		0.1090	α(K)=0.0708 *10*; α(L)=0.0291 *4*; α(M)=0.00714 *10*

$^{182}_{74}W_{108}$-18

$\gamma(^{182}W)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	α@	Comments
								α(N)=0.001693 *24*; α(O)=0.000245 *4*; α(P)=5.98×10^{-6} *9*
1829.53	6^-	342.03 *10*	9.3 *7*	1487.5018	4^-	E2	0.0579	α(K)=0.0406 *6*; α(L)=0.01326 *19*; α(M)=0.00321 *5* α(N)=0.000764 *11*; α(O)=0.0001124 *16*; α(P)=3.55×10^{-6} *5* I_γ: 43 *4* in (α,2nγ) is discrepant.
1833.1?		1733.0& *6*	100	100.10598	2^+			
1855.98	(2^+)	598.56 *5*	100 *11*	1257.4121	2^+			
		1527.0& *10*	10 *5*	329.4268	4^+			E_γ: from (n,n′γ) only.
		1756.0 *2*	15 *3*	100.10598	2^+			I_γ: 167 *40* in (n,n′γ) is discrepant.
		1857.3 *2*	8.0 *6*	0.0	0^+	(E2)	1.59×10^{-3}	α(K)=0.001162 *17*; α(L)=0.0001723 *25*; α(M)=3.89×10^{-5} *6* α(N)=9.35×10^{-6} *13*; α(O)=1.522×10^{-6} *22*; α(P)=1.073×10^{-7} *15*; α(IPF)=0.000210 *3* E_γ: from ^{182}Re decay only, poor fit; γ not used in the level-scheme fitting procedure. Level-energy difference=1856.1.
1856.9	1	1757.0 *6*	35 *12*	100.10598	2^+			
		1856.7 *6*	100 *23*	0.0	0^+			
1871.17	1^-	1543 *2*	≈5	329.4268	4^+	[E3]	0.00391	α(K)=0.00316 *5*; α(L)=0.000549 *8*; α(M)=0.0001265 *19* α(N)=3.04×10^{-5} *5*; α(O)=4.86×10^{-6} *7*; α(P)=3.11×10^{-7} *5*; α(IPF)=3.77×10^{-5} *7*
		1771.0 *2*	100 *10*	100.10598	2^+	E1	1.04×10^{-3}	α(K)=0.000562 *8*; α(L)=7.77×10^{-5} *11*; α(M)=1.740×10^{-5} *25* α(N)=4.18×10^{-6} *6*; α(O)=6.84×10^{-7} *10*; α(P)=4.98×10^{-8} *7*; α(IPF)=0.000383 *6*
		1871.2 *2*	90 *7*	0.0	0^+	E1	1.06×10^{-3}	α(K)=0.000513 *8*; α(L)=7.09×10^{-5} *10*; α(M)=1.587×10^{-5} *23* α(N)=3.81×10^{-6} *6*; α(O)=6.24×10^{-7} *9*; α(P)=4.55×10^{-8} *7*; α(IPF)=0.000457 *7*
1887.84		556.7 *3*	83 *25*	1331.1153	3^+			
		666.4 *4*	46 *17*	1221.4001	2^+			
		1558.5 *4*	100 *25*	329.4268	4^+			
1917.05	7^-	106.3 *1*	8 *2*	1810.85	$(6)^-$			
		148.2 *1*	10 *2*	1768.943	6^-			
		160.20& *5*		1756.75	6^+			E_γ: from ^{182}Re decay only. This γ is considered as suspect by the evaluators since its intensity of 116 *7* relative to 100 for 295.7γ is much too high to have missed detection in in-beam γ-ray study.
		256.5 *1*	28 *4*	1660.383	5^-	Q		
		295.63 *10*	100 *14*	1621.284	5^-	E2	0.0888	α(K)=0.0592 *9*; α(L)=0.0226 *4*; α(M)=0.00551 *8* α(N)=0.001308 *19*; α(O)=0.000190 *3*; α(P)=5.06×10^{-6} *8*
1918.6	$(2^+$ to $4^+)$	1818.5 *4*	100	100.10598	2^+			
1959.35	(2^+)	449.8 *3*	21 *10*	1510.22	4^+	(Q)		
		627.5 *4*	50 *14*	1331.1153	3^+			
		1629.8 *2*	100 *14*	329.4268	4^+			
		1859.1 *8*	71 *24*	100.10598	2^+			
		1959.2& *10*	14 *5*	0.0	0^+			

$^{182}_{74}W_{108}$-19

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
1960.30	(7)⁻	130.81 *5*	100 *7*	1829.53	6⁻	M1+E2	−0.51 *+6−8*	2.03 *6*	α(K)=1.55 *8*; α(L)=0.369 *21*; α(M)=0.087 *6* α(N)=0.0208 *13*; α(O)=0.00319 *16*; α(P)=0.000154 *8*
		149.45 *5*	12.1 *10*	1810.85	(6)⁻	M1+E2	−0.15 *+15−18*	1.50 *6*	α(K)=1.23 *7*; α(L)=0.202 *14*; α(M)=0.046 *4* α(N)=0.0111 *9*; α(O)=0.00180 *10*; α(P)=0.000124 *8*
		191.39 *5*	90 *7*	1768.943	6⁻	M1+E2	−0.23 *+6−8*	0.734 *18*	α(K)=0.604 *19*; α(L)=0.1002 *18*; α(M)=0.0230 *5* α(N)=0.00552 *11*; α(O)=0.000892 *14*; α(P)=6.05×10^{-5} *20*
		203.55 *5*	6.6 *7*	1756.75	6⁺	(E1)		0.0599	α(K)=0.0497 *7*; α(L)=0.00790 *11*; α(M)=0.00179 *3* α(N)=0.000427 *6*; α(O)=6.68×10^{-5} *10*; α(P)=3.91×10^{-6} *6* From γ(θ) in ^{182}Re ε decay, 1980Sp01 give δ(Q/D)=−17 *+10−24* or +0.06 *+9−4*; favoring the former value from δ based on ce data of 1971Ga37. But 1971Ga37 assigned tentative E2 from their ce data. δ(M2/E1)=−17 *+10−24* is inconsistent with RUL(M2)=1 for $T_{1/2}$(1960.30 level)<1 ns or so. The evaluators assign tentative E1. I_γ: 52 *4* in (α,2nγ) is discrepant.
		299.90 *10*	20 *3*	1660.383	5⁻	E2		0.0851	α(K)=0.0570 *8*; α(L)=0.0214 *3*; α(M)=0.00522 *8* α(N)=0.001239 *18*; α(O)=0.000180 *3*; α(P)=4.89×10^{-6} *7* I_γ: 61 *6* in (α,2nγ) is discrepant.
		339.04 *10*	72 *10*	1621.284	5⁻	E2		0.0594	α(K)=0.0415 *6*; α(L)=0.01368 *20*; α(M)=0.00332 *5* α(N)=0.000789 *11*; α(O)=0.0001159 *17*; α(P)=3.63×10^{-6} *5*
1960.78	6⁻	151.15 *5*	26 *3*	1809.64	5⁻	M1+E2	0.8 *3*	1.21 *13*	α(K)=0.88 *17*; α(L)=0.25 *3*; α(M)=0.061 *9* α(N)=0.0146 *20*; α(O)=0.00218 *23*; α(P)=8.5×10^{-5} *19*
		300.36 *10*	100 *23*	1660.383	5⁻	M1+E2	+0.048 *26*	0.218	α(K)=0.181 *3*; α(L)=0.0284 *4*; α(M)=0.00646 *9* α(N)=0.001555 *22*; α(O)=0.000254 *4*; α(P)=1.81×10^{-5} *3*
		1279.8& *3*	3.6 *5*	680.42	6⁺				
		1631.4& *5*	0.74 *14*	329.4268	4⁺	M2+E3	≈2.5	≈0.00396	α(K)≈0.00321; α(L)≈0.000536; α(M)≈0.0001230 α(N)≈2.96×10^{-5}; α(O)≈4.77×10^{-6}; α(P)≈3.17×10^{-7}; α(IPF)≈5.70×10^{-5}
1971.05	(7)⁺	214.31 *5*	100	1756.75	6⁺	M1+E2	+0.25 *+8−7*	0.532 *15*	α(K)=0.439 *14*; α(L)=0.0725 *11*; α(M)=0.0166 *3* α(N)=0.00399 *7*; α(O)=0.000645 *9*; α(P)=4.39×10^{-5} *15*
1978.36	(7)⁻	18.05 *10*	1.9 *5*	1960.30	(7)⁻	M1+E2	0.016 *5*	128 *4*	α(L)=99 *3*; α(M)=22.7 *7* α(N)=5.45 *16*; α(O)=0.883 *24*; α(P)=0.0612 *14*
		148.86 *5*	27.2 *20*	1829.53	6⁻	M1+E2	+0.28 *+8−6*	1.48 *4*	α(K)=1.20 *5*; α(L)=0.214 *8*; α(M)=0.0493 *22* α(N)=0.0118 *5*; α(O)=0.00189 *6*; α(P)=0.000121 *5*
		209.40 *5*	7.6 *8*	1768.943	6⁻	M1+E2	−0.28 *+23−15*	0.56 *3*	α(K)=0.46 *3*; α(L)=0.0776 *15*; α(M)=0.0178 *5* α(N)=0.00428 *10*; α(O)=0.000690 *11*; α(P)=4.6×10^{-5} *4* I_γ: 33 *3* in (α,2nγ) is discrepant.
		221.59 *6*	100 *8*	1756.75	6⁺	E1		0.0483	α(K)=0.0401 *6*; α(L)=0.00633 *9*; α(M)=0.001438 *21* α(N)=0.000342 *5*; α(O)=5.37×10^{-5} *8*; α(P)=3.19×10^{-6} *5*
		357.04 *10*	8.4 *8*	1621.284	5⁻	E2		0.0513	α(K)=0.0364 *5*; α(L)=0.01140 *16*; α(M)=0.00276 *4* α(N)=0.000656 *10*; α(O)=9.68×10^{-5} *14*; α(P)=3.20×10^{-6} *5*
1981.82		650.7 *3*	59 *18*	1331.1153	3⁺				

$^{182}_{74}W_{108}$-20

Adopted Levels, Gammas (continued)

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
1981.82		723.8 *7*	26 *9*	1257.4121	2^+				
		1653.1 *8*	82 *24*	329.4268	4^+				
		1881.8 *8*	100 *18*	100.10598	2^+				
1993.68	(7^-)	182.8 *5*	<11	1810.85	$(6)^-$				
		372.4 *1*	100 *17*	1621.284	5^-	Q			
2016.8	$(2,3,4)^+$	1688.3& *10*	100 *33*	329.4268	4^+				
		1915.3& *12*	100 *33*	100.10598	2^+				
2023.57	3^-	470.26 *5*	100 *5*	1553.2240	4^-	M1+E2	0.6 *1*	0.055 *3*	α(K)=0.0455 *25*; α(L)=0.0075 *3*; α(M)=0.00171 *6* α(N)=0.000412 *15*; α(O)=6.6×10^{-5} *3*; α(P)=4.5×10^{-6} *3*
		536.04 *5*	10.3 *16*	1487.5018	4^-	M1+E2	0.7 *2*	0.037 *4*	α(K)=0.031 *4*; α(L)=0.0051 *4*; α(M)=0.00116 *9* α(N)=0.000279 *21*; α(O)=4.5×10^{-5} *4*; α(P)=3.0×10^{-6} *4*
		649.73 *5*	16.8 *24*	1373.8301	3^-	M1+E2	0.8 *2*	0.0219 *23*	α(K)=0.0181 *19*; α(L)=0.00293 *24*; α(M)=0.00067 *6* α(N)=0.000161 *13*; α(O)=2.60×10^{-5} *22*; α(P)=1.76×10^{-6} *20*
		734.53 *5*	18.7 *22*	1289.1498	2^-	M1+E2	1.0 *3*	0.0148 *22*	α(K)=0.0122 *19*; α(L)=0.00199 *24*; α(M)=0.00045 *6* α(N)=0.000109 *13*; α(O)=1.76×10^{-5} *22*; α(P)=1.18×10^{-6} *19*
2057.39	1^+	800 *1*	16 *4*	1257.4121	2^+				
		835.98 *5*	50 *5*	1221.4001	2^+	(M1+E2)	≈0.8	≈0.01177	α(K)≈0.00979; α(L)≈0.001538; α(M)≈0.000350 α(N)≈8.42×10^{-5}; α(O)≈1.366×10^{-5}; α(P)≈9.48×10^{-7}
		1957.4 *2*	49 *3*	100.10598	2^+	(M1+E2)	1.0 *+6−4*	0.00186 *17*	α(K)=0.00131 *13*; α(L)=0.000193 *18*; α(M)=4.4×10^{-5} *4* α(N)=1.05×10^{-5} *10*; α(O)=1.72×10^{-6} *17*; α(P)=1.24×10^{-7} *13*; α(IPF)=0.000303 *23*
		2057.4 *3*	100 *8*	0.0	0^+	D			
2087.43	8^-	170.4 *1*	20 *4*	1917.05	7^-				
		318.5 *1*	100 *15*	1768.943	6^-	Q		0.0716	
2109.96	$(2^-,3^-)$	556.7 *3*	100 *28*	1553.2240	4^-	(E2)		0.01615	α(K)=0.01255 *18*; α(L)=0.00276 *4*; α(M)=0.000652 *10* α(N)=0.0001556 *22*; α(O)=2.39×10^{-5} *4*; α(P)=1.154×10^{-6} *17*
		2010.1 *3*	86 *12*	100.10598	2^+	(E1+M2)	0.9 *+7−4*	0.00250 *85*	α(K)=0.00176 *80*; α(L)=2.7×10^{-4} *13*; α(M)=6.0×10^{-5} *28* α(N)=1.45×10^{-5} *68*; α(O)=2.4×10^{-6} *11*; α(P)=1.73×10^{-7} *81*; α(IPF)=3.9×10^{-4} *10*
		2109.3 *5*	<235	0.0	0^+	[M2,E3]		0.00303 *80*	α(K)=0.00235 *66*; α(L)=3.64×10^{-4} *95*; α(M)=8.3×10^{-5} *22* α(N)=1.99×10^{-5} *52*; α(O)=3.25×10^{-6} *86*; α(P)=2.31×10^{-7} *68*; α(IPF)=0.000211 *16*
2114.35	$(8)^-$	154.10 *5*	58 *13*	1960.30	$(7)^-$	M1+E2	0.6 *3*	1.22 *12*	α(K)=0.93 *15*; α(L)=0.22 *3*; α(M)=0.052 *8* α(N)=0.0124 *17*; α(O)=0.00190 *19*; α(P)=9.2×10^{-5} *17*
		197.4 *2*	23 *7*	1917.05	7^-				
		285.1 *10*	46 *8*	1829.53	6^-				
		345.29 *15*	100 *15*	1768.943	6^-	E2		0.0564	α(K)=0.0396 *6*; α(L)=0.01283 *18*; α(M)=0.00311 *5*

$^{182}_{74}W_{108}$-21

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
									α(N)=0.000739 *11*; α(O)=0.0001087 *16*; α(P)=3.47×10^{-6} *5*
2116.4		2016.3 *3*	100	100.10598	2$^+$				
2120.25	(8$^-$)	160.1 *1*	100 *18*	1960.30	(7)$^-$	(M1)		1.243	α(K)=1.032 *15*; α(L)=0.1633 *23*; α(M)=0.0372 *6* α(N)=0.00896 *13*; α(O)=0.001461 *21*; α(P)=0.0001040 *15*
		290.5 *1*	35 *6*	1829.53	6$^-$				
2131.3	(7$^-$)	362.4 *3*	100	1768.943	6$^-$				
2143.0		1813.6& *10*	100	329.4268	4$^+$				
2147.95	(3$^-$)	817.0 *10*	12 *4*	1331.1153	3$^+$				E_γ: from (n,n′γ) only.
		1818.7 *2*	92 *8*	329.4268	4$^+$	(E1)		1.05×10^{-3}	α(K)=0.000538 *8*; α(L)=7.44×10^{-5} *11*; α(M)=1.664×10^{-5} *24* α(N)=4.00×10^{-6} *6*; α(O)=6.54×10^{-7} *10*; α(P)=4.77×10^{-8} *7*; α(IPF)=0.000418 *6* I_γ: 222 *33* in (n,n′γ) is discrepant.
		2047.4 *3*	100 *8*	100.10598	2$^+$	(E1+M2)	1.0 *+10−5*	0.00258 *89*	α(K)=0.00183 *84*; α(L)=2.8×10^{-4} *13*; α(M)=6.3×10^{-5} *30* α(N)=1.51×10^{-5} *72*; α(O)=2.5×10^{-6} *12*; α(P)=1.80×10^{-7} *85*; α(IPF)=3.9×10^{-4} *12*
		2148& *3*	24 *5*	0.0	0$^+$	[E3]		0.00218	α(K)=0.001633 *24*; α(L)=0.000259 *4*; α(M)=5.90×10^{-5} *9* α(N)=1.419×10^{-5} *21*; α(O)=2.30×10^{-6} *4*; α(P)=1.573×10^{-7} *23*; α(IPF)=0.000209 *3*
2173.5	(0$^+$ to 4$^+$)	952.3 *6*	42 *12*	1221.4001	2$^+$				
		2073.3 *3*	100 *23*	100.10598	2$^+$				
		2174&	<23	0.0	0$^+$				E_γ: from (n,n′γ) only.
2180.4	(8$^+$)	1036.0		1144.32	8$^+$				
		1500.0		680.42	6$^+$				
2184.04	(2$^-$,3$^-$)	810.24 *5*	18.2 *21*	1373.8301	3$^-$	(M1)		0.01639	α(K)=0.01371 *20*; α(L)=0.00208 *3*; α(M)=0.000470 *7* α(N)=0.0001132 *16*; α(O)=1.85×10^{-5} *3*; α(P)=1.343×10^{-6} *19*
		894.85 *5*	100 *8*	1289.1498	2$^-$	(M1)		0.01276	α(K)=0.01068 *15*; α(L)=0.001613 *23*; α(M)=0.000365 *6* α(N)=8.79×10^{-5} *13*; α(O)=1.440×10^{-5} *21*; α(P)=1.045×10^{-6} *15*
		2084.0 *3*	3.1 *3*	100.10598	2$^+$				
2204.54	(8)$^-$	226.19 *5*	100	1978.36	(7)$^-$	M1+E2	+0.15 *2*	0.468	α(K)=0.388 *6*; α(L)=0.0620 *9*; α(M)=0.01414 *20* α(N)=0.00341 *5*; α(O)=0.000554 *8*; α(P)=3.89×10^{-5} *6*

$^{182}_{74}W_{108}$-22

Adopted Levels, Gammas (continued)

γ(^{182}W) (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ‡	α@	Comments
2207.21	(3⁻)	1877.6 2	58 18	329.4268	4⁺	(E1+M2)	−0.28 6	0.00134 12	α(K)=0.00076 11; α(L)=0.000110 17; α(M)=2.5×10⁻⁵ 4 α(N)=6.0×10⁻⁶ 10; α(O)=9.7×10⁻⁷ 16; α(P)=7.1×10⁻⁸ 11; α(IPF)=0.000438 12
		2106.8 5	<250	100.10598	2⁺				
		2207.7 3	100 9	0.0	0⁺	(E3)		0.00209	α(K)=0.001548 22; α(L)=0.000244 4; α(M)=5.56×10⁻⁵ 8 α(N)=1.336×10⁻⁵ 19; α(O)=2.17×10⁻⁶ 3; α(P)=1.488×10⁻⁷ 21; α(IPF)=0.000229 4
2209.07	3⁻	835.9 6	33 11	1373.8301	3⁻				E_γ: from (n,n′γ) only.
		1879.6 2	21 6	329.4268	4⁺	E1		1.06×10⁻³	α(K)=0.000509 8; α(L)=7.04×10⁻⁵ 10; α(M)=1.575×10⁻⁵ 22 α(N)=3.78×10⁻⁶ 6; α(O)=6.19×10⁻⁷ 9; α(P)=4.52×10⁻⁸ 7; α(IPF)=0.000463 7
		2108.9 4	100 17	100.10598	2⁺				
		2208.8 6	78 17	0.0	0⁺	[E3]		0.00209	α(K)=0.001546 22; α(L)=0.000244 4; α(M)=5.55×10⁻⁵ 8 α(N)=1.335×10⁻⁵ 19; α(O)=2.16×10⁻⁶ 3; α(P)=1.487×10⁻⁷ 21; α(IPF)=0.000230 4 E_γ: from (n,n′γ) only.
2212.50	(8⁺)	241.5 1	100 15	1971.05	(7)⁺	D+Q			
		454.9 4	15 5	1756.75	6⁺				
2225.35	(8⁻)	414.5 1	100	1810.85	(6)⁻	Q			
2230.65	(10⁺)	518.5 1	100 13	1711.99	10⁺	(M1)		0.0514	B(M1)(W.u.)=7.0×10⁻⁸ 13 α(K)=0.0429 6; α(L)=0.00659 10; α(M)=0.001495 21 α(N)=0.000360 5; α(O)=5.89×10⁻⁵ 9; α(P)=4.24×10⁻⁶ 6
		1086.5 1	69 7	1144.32	8⁺	[E2]		0.00382	B(E2)(W.u.)=1.9×10⁻⁶ 3 α(K)=0.00315 5; α(L)=0.000517 8; α(M)=0.0001183 17 α(N)=2.84×10⁻⁵ 4; α(O)=4.54×10⁻⁶ 7; α(P)=2.93×10⁻⁷ 4 I_γ: 116 13 in (α,2nγ) is discrepant.
2240.83	(3⁺)	1911.8 2	100 17	329.4268	4⁺	(M1)		0.00230	α(K)=0.001659 24; α(L)=0.000245 4; α(M)=5.52×10⁻⁵ 8 α(N)=1.330×10⁻⁵ 19; α(O)=2.18×10⁻⁶ 3; α(P)=1.602×10⁻⁷ 23; α(IPF)=0.000322 5
		2140.3 2	87 15	100.10598	2⁺	(M1)		0.00197	α(K)=0.001265 18; α(L)=0.000186 3; α(M)=4.19×10⁻⁵ 6 α(N)=1.010×10⁻⁵ 15; α(O)=1.658×10⁻⁶ 24; α(P)=1.219×10⁻⁷ 17; α(IPF)=0.000464 7
2273.87	9⁻	186.5 1	16.7 19	2087.43	8⁻				
		356.8 1	100 15	1917.05	7⁻	Q			

$^{182}_{74}W_{108}$-23

$\gamma(^{182}W)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.‡	δ‡	α@	Comments
2274.63	(3)⁻	787.11 *5*	86 *16*	1487.5018	4⁻	(M1)		0.01763	α(K)=0.01474 *21*; α(L)=0.00224 *4*; α(M)=0.000506 *7* α(N)=0.0001219 *17*; α(O)=2.00×10⁻⁵ *3*; α(P)=1.446×10⁻⁶ *21* I_γ: 15 *8* in (n,n′γ) is discrepant.
		900.80 *5*	100 *17*	1373.8301	3⁻	(M1+E2)	≈0.5	≈0.01116	α(K)≈0.00932; α(L)≈0.001427; α(M)≈0.000324 α(N)≈7.79×10⁻⁵; α(O)≈1.271×10⁻⁵; α(P)≈9.06×10⁻⁷
		2175.2 *3*	13.2 *19*	100.10598	2⁺	E1		1.14×10⁻³	α(K)=0.000402 *6*; α(L)=5.53×10⁻⁵ *8*; α(M)=1.238×10⁻⁵ *18* α(N)=2.97×10⁻⁶ *5*; α(O)=4.87×10⁻⁷ *7*; α(P)=3.57×10⁻⁸ *5*; α(IPF)=0.000671 *10*
2283.5	1	909.7 *6*	64 *29*	1373.8301	3⁻				
		2283.5 *10*	100 *29*	0.0	0⁺				
2301.56	(9⁻)	181.3 *10*	18 *9*	2120.25	(8⁻)				
		187.6 *3*	36 *9*	2114.35	(8)⁻				
		214.2 *10*	<27	2087.43	8⁻				
		341.3 *1*	109 *46*	1960.30	(7)⁻				
		384.4 *1*	100 *18*	1917.05	7⁻				
2316.1	(1,2⁺)	2216 *3*	≈275	100.10598	2⁺				
		2316 *3*	100 *20*	0.0	0⁺				
2323.85	(8⁻)	406.8 *2*	100	1917.05	7⁻				
2327.91	(9⁻)	207.4 *2*	73 *15*	2120.25	(8⁻)	(M1+E2)		0.44 *17*	α(K)=0.33 *18*; α(L)=0.085 *7*; α(M)=0.0203 *24* α(N)=0.0048 *6*; α(O)=0.00073 *3*; α(P)=3.1×10⁻⁵ *19*
		213.6 *1*	100 *16*	2114.35	(8)⁻				
2334.26		355.9 *2*	100	1978.36	(7)⁻				
2372.59	12⁺	660.6 *1*	100	1711.99	10⁺	E2		0.01085	B(E2)(W.u.)=191 *10* α(K)=0.00862 *12*; α(L)=0.001719 *24*; α(M)=0.000401 *6* α(N)=9.60×10⁻⁵ *14*; α(O)=1.494×10⁻⁵ *21*; α(P)=7.98×10⁻⁷ *12*
2382.1	1	2282 *1*	142 *20*	100.10598	2⁺				
		2382 *1*	100	0.0	0⁺				
2445.98	(9⁻)	452.3 *1*	100	1993.68	(7⁻)	Q			
2455.74	(9⁻)	251.2 *1*	100 *14*	2204.54	(8)⁻	(D+Q)			
		477.1 *10*	<7	1978.36	(7)⁻				
2474.1	1	2374 *1*	66 *14*	100.10598	2⁺				
		2474 *1*	100	0.0	0⁺				
2479.83	(9⁺)	267.3 *1*	100 *18*	2212.50	(8⁺)	D+Q			
		508.8 *2*	29 *6*	1971.05	(7)⁺				
2486.89	10⁻	213.0 *1*	25 *3*	2273.87	9⁻				
		399.5 *2*	100 *19*	2087.43	8⁻	Q			
2492.78	(11⁺)	262.1 *1*	100	2230.65	(10⁺)	D+Q			
2507.48	(10⁻)	205.8 *2*	30 *10*	2301.56	(9⁻)				
		233.8 *10*	<20	2273.87	9⁻				
		387.1 *2*	120 *60*	2120.25	(8⁻)				
		393.4 *2*	60 *10*	2114.35	(8)⁻				

$^{182}_{74}W_{108}$-24

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	α@	Comments
2507.48	(10^-)	420.0 *1*	100 *20*	2087.43	8^-			
2563.94	(10^-)	236.0 *1*	100 *16*	2327.91	(9^-)			
		443.8 *2*	<8	2120.25	(8^-)			
2710.93	11^-	224.0 *1*	24 *3*	2486.89	10^-			
		437.1 *1*	100 *18*	2273.87	9^-	Q		
2730.84	(10^-)	275.1 *1*	100 *14*	2455.74	(9^-)	(D+Q)		
		526.2 *10*	<14	2204.54	$(8)^-$			
2739.15	(10^-)	513.8 *1*	100	2225.35	(8^-)	Q		
2741.66	(11^-)	440.1 *1*	100 *18*	2301.56	(9^-)	Q		
		467.7 *5*	35 *6*	2273.87	9^-			
2769.27	(10^+)	289.4 *1*	100	2479.83	(9^+)	D+Q		
		557.6 *5*	39 *4*	2212.50	(8^+)			
2775.65	(12^+)	282.8 *1*	100	2492.78	(11^+)	D+Q		
		545.1 *2*	18 *3*	2230.65	(10^+)	Q		
2823.93	(11^-)	260.0 *1*	100	2563.94	(10^-)	D+Q		
		496.0 *5*	48 *5*	2327.91	(9^-)			
2884.1	1	2784 *1*	40 *11*	100.10598	2^+			
		2884 *1*	100	0.0	0^+			
2892.1	(1)	2792 *1*	150 *90*	100.10598	2^+			
		2892 *1*	100	0.0	0^+			
2941.0	$(1,2^+)$	2941 *2*	100	0.0	0^+			
2972.49	12^-	261.6 *2*	20 *5*	2710.93	11^-			
		485.6 *1*	100 *20*	2486.89	10^-	Q		
2980.58	(11^-)	534.6 *1*	100	2445.98	(9^-)	Q		
2981.33	(12^-)	473.8 *1*	100 *19*	2507.48	(10^-)			
		494.6 *2*	38 *6*	2486.89	10^-			
2996.1	1	2896 *1*	168 *35*	100.10598	2^+			
		2996 *1*	100	0.0	0^+			
3027.94	(11^-)	297.1 *1*	100	2730.84	(10^-)	(D+Q)		
		575.2 *20*	24 *11*	2455.74	(9^-)			
3078.25	(13^+)	302.5 *1*	100	2775.65	(12^+)	D+Q		$I\gamma(586\gamma)/I\gamma(302)=1.6$ *7* in $(\alpha,2n\gamma)$.
		585.8 *2*	47 *9*	2492.78	(11^+)	Q		
3080.1	1	2980 *1*	61 *18*	100.10598	2^+			
		3080 *1*	100	0.0	0^+			
3106.72	(12^-)	282.8 *1*	100	2823.93	(11^-)	(D+Q)		
		542.5 *5*	53 *6*	2563.94	(10^-)			
3112.89	14^+	740.3 *1*	100	2372.59	12^+	(E2)	0.00843	B(E2)(W.u.)=1.7×10^2 *3* α(K)=0.00678 *10*; α(L)=0.001277 *18*; α(M)=0.000297 *5* α(N)=7.10×10^{-5} *10*; α(O)=1.114×10^{-5} *16*; α(P)=6.29×10^{-7} *9*
3163.1	1	3063 *1*	54 *12*	100.10598	2^+			
		3163 *1*	100	0.0	0^+			

$^{182}_{74}W_{108}$-25

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Mult. ‡	α @	Comments
3198.1	(1,2+)	3098 *1*	59 *21*	100.10598	2+			
		3198 *1*	100	0.0	0+			If E2, B(E2)(W.u.)=0.67×10^{-5} *16*.
3224.53	13−	513.6 *1*	100	2710.93	11−	Q		
3269.56	(13−)	527.9 *1*	100	2741.66	(11−)	Q		
3319.7	(12−)	580.6 *4*	100	2739.15	(10−)			
3343.05	(12−)	315.1 *1*	100 *14*	3027.94	(11−)	(D+Q)		
		612.6 *10*	43 *29*	2730.84	(10−)			
3365.1	1	3265 *1*	63 *17*	100.10598	2+			
		3365 *1*	100	0.0	0+			
3398.35	(14+)	320.0 *1*	100	3078.25	(13+)	D+Q		
		622.7 *1*	61 *18*	2775.65	(12+)	Q		
3410.54	(13−)	303.8 *1*	100 *13*	3106.72	(12−)			
		586.8 *5*	88 *13*	2823.93	(11−)			
3415.92	(12)	923.1 *1*	100	2492.78	(11+)	D+Q		
3422.1	(1,2+)	3322 *1*	53 *15*	100.10598	2+			
		3422 *1*	100	0.0	0+			If E2, B(E2)(W.u.)=0.76×10^{-5} *17*.
3518.04	(14−)	536.7 *1*	100 *20*	2981.33	(12−)			
		545.7 *5*	40 *10*	2972.49	12−			
3549.99	14−	568.6& *10*	<22	2981.33	(12−)			
		577.5 *1*	100 *22*	2972.49	12−	Q		
3567.8	(13−)	587.2 *3*	100	2980.58	(11−)	(Q)		
3601.1	1	3501 *1*	77 *19*	100.10598	2+			
		3601 *1*	100	0.0	0+			
3640.0	(1,2+)	3640 *2*		0.0	0+			
3677.15	(13)	261.2 *1*	100 *14*	3415.92	(12)			
		901.8 *3*	21 *7*	2775.65	(12+)			
3727.1	(1,2+)	3627 *2*		100.10598	2+			
		3727 *2*		0.0	0+			
3733.85	(14−)	323.3 *1*	71 *10*	3410.54	(13−)			
		627.4 *5*	100 *14*	3106.72	(12−)			
3736.40	(15+)	338.0 *1*	100	3398.35	(14+)			
		658.2 *1*	94 *20*	3078.25	(13+)			
3754.89	(15+)	(19)	≈0.2	3736.40	(15+)	[M1]	107.1	B(M1)(W.u.)≈9.8×10^{-7} α(L)=82.8 *12*; α(M)=18.9 *3* α(N)=4.56 *7*; α(O)=0.741 *11*; α(P)=0.0526 *8* I_γ: from γγ data, I(γ+ce) branching is ≈10%.
		356.5 *1*	100 *17*	3398.35	(14+)	(M1+E2)	0.095 *44*	B(M1)(W.u.)=13.0×10^{-6} *23* α(K)=0.076 *40*; α(L)=0.015 *4*; α(M)=0.0034 *7* α(N)=0.00082 *16*; α(O)=0.00013 *4*; α(P)=7.3×10^{-6} *42*
		676.8 *2*	57 *13*	3078.25	(13+)	(E2)	0.01028	B(E2)(W.u.)=0.00053 *15* α(K)=0.00819 *12*; α(L)=0.001612 *23*; α(M)=0.000376 *6* α(N)=8.99×10^{-5} *13*; α(O)=1.402×10^{-5} *20*; α(P)=7.58×10^{-7} *11*
3807.63	15−	583.1 *1*	100	3224.53	13−	Q		

$^{182}_{74}W_{108}$-26

Adopted Levels, Gammas (continued)

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	α@	Comments
3880.06	(15^-)	610.5 *1*	100	3269.56	(13^-)	Q		
3882.0	$(1,2^+)$	3782& *2*		100.10598	2^+			
		3882 *2*		0.0	0^+			
3893.69	(16^+)	138.8 *1*	100	3754.89	(15^+)	(M1)	1.86	B(M1)(W.u.)>0.00041 α(K)=1.545 *22*; α(L)=0.245 *4*; α(M)=0.0558 *8* α(N)=0.01344 *19*; α(O)=0.00219 *4*; α(P)=0.0001559 *22*
3910.09	16^+	797.2 *1*	100	3112.89	14^+	E2	0.00719	B(E2)(W.u.)=2.0×10^2 *5* α(K)=0.00582 *9*; α(L)=0.001061 *15*; α(M)=0.000246 *4* α(N)=5.88×10^{-5} *9*; α(O)=9.27×10^{-6} *13*; α(P)=5.40×10^{-7} *8*
3920.0	1	3920 *2*	100	0.0	0^+			
3966.25	(14)	289.1 *1*	100 *50*	3677.15	(13)			
		550.3 *10*	25 *13*	3415.92	(12)			
4040.6	(17^-)	146.9 *1*	100	3893.69	(16^+)	(E1)	0.1384	B(E1)(W.u.)=2.92×10^{-6} *15* α(K)=0.1141 *16*; α(L)=0.0188 *3*; α(M)=0.00428 *6* α(N)=0.001015 *15*; α(O)=0.0001566 *23*; α(P)=8.59×10^{-6} *13*
4074.8	(15^-)	340.9 *2*	75 *25*	3733.85	(14^-)			
		664.2 *5*	100 *25*	3410.54	(13^-)			
4078.89	(16^+)	324.0 *1*	100	3754.89	(15^+)			
4081.5	(16^+)	345.1 *2*	60 *20*	3736.40	(15^+)			
		683.2 *3*	100 *40*	3398.35	(14^+)			
4116.9	(16^-)	598.9 *2*	100	3518.04	(14^-)			
4197.1	(15^-)	629.3 *2*	100	3567.8	(13^-)			
4211.1	16^-	661.1 *2*	100	3549.99	14^-	Q		
4218.1	(17^+)	324.4 *5*	100	3893.69	(16^+)			
4280.2	(15)	314.0 *1*	100 *67*	3966.25	(14)			
		603.1 *10*	33 *17*	3677.15	(13)			
4293.1	(17^+)	399.4 *1*	100	3893.69	(16^+)			
4421.5	(18^-)	380.9 *1*	100	4040.6	(17^-)			
4430.5	(17^+)	351.6 *1*	100 *18*	4078.89	(16^+)			
		675.5 *11*	18 *9*	3754.89	(15^+)			
4453.3	(17^+)	371.3 *10*	<33	4081.5	(16^+)			
		717.3 *10*	100 *33*	3736.40	(15^+)			
4456.2	17^-	648.6 *2*	100	3807.63	15^-	Q		
4569.7	(18^+)	351.6 *5*	100 *32*	4218.1	(17^+)			
		676.1 *7*	24 *8*	3893.69	(16^+)			
4570.9	(17^-)	690.8 *3*	100	3880.06	(15^-)			
4690.89	18^+	780.8 *1*	100	3910.09	16^+	Q		
4711.9	(18^+)	418.8 *1*	100 *18*	4293.1	(17^+)			
		818.1 *6*	64 *27*	3893.69	(16^+)			
4748.0	(18^+)	837.9 *9*	100	3910.09	16^+	[E2]	0.00648	B(E2)(W.u.)=2.5×10^2 *+5−7* α(K)=0.00526 *8*; α(L)=0.000940 *14*; α(M)=0.000217 *3* α(N)=5.20×10^{-5} *8*; α(O)=8.22×10^{-6} *12*; α(P)=4.88×10^{-7} *7*
4779.6	(18^-)	662.7 *2*	100	4116.9	(16^-)			

Adopted Levels, Gammas (continued)

$\gamma(^{182}W)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f
4780.4	(18)	739.8 *2*	100	4040.6	(17^-)
4804.9	(18^+)	374.5 *2*	100 *25*	4430.5	(17^+)
		725.7 *5*	50 *25*	4078.89	(16^+)
4820.1	(19^-)	398.5 *1*	100	4421.5	(18^-)
		779.9 *3*	24 *11*	4040.6	(17^-)
4847.4	(18^+)	765.9 *10*	100 *33*	4081.5	(16^+)
		937.3 *10*	67 *33*	3910.09	16^+
4954.8	18^-	743.7 *10*	100	4211.1	16^-
5148.6	(19^+)	436.6 *9*	100 *25*	4711.9	(18^+)
		855.5 *4*	<50	4293.1	(17^+)
5170.8	19^-	714.6 *3*	100	4456.2	17^-
5191.8	(19)	411.4 *2*	100	4780.4	(18)
5199.6	(19^+)	394.7 *2*	100	4804.9	(18^+)
5225.4	(19^+)	772.1 *10*	100	4453.3	(17^+)
5235.8	(20^-)	415.6 *2*	100 *25*	4820.1	(19^-)
		814.8 *4*	75 *25*	4421.5	(18^-)
5338.6	(19^-)	767.7 *10*	100	4570.9	(17^-)
5428.6	20^+	737.7 *2*	100	4690.89	18^+
5618.6	(20)	426.7 *2*	100	5191.8	(19)
		838.4 *5*	50	4780.4	(18)
5666.9	(21^-)	431.2 *10*	100	5235.8	(20^-)
		846.7 *10*	100	4820.1	(19^-)

† The adopted values represent weighted averages from different studies. The intensities are known with high precision in ^{182}Ta β^- decay, thus values from this decay are preferred when available. In cases where large discrepancies are found, those values were not considered in deducing averages. In (α,2nγ), many such cases are noted where the relative branching ratios are discrepant, generally being much higher than in other studies. For gammas from high-spin levels above 2500 keV, gamma-ray energies and intensities are almost entirely from ^{176}Yb(^{13}C,α3nγ) dataset since this dataset provides the most complete set of values.

‡ From ce and angular distribution/correlation studies in ^{182}Ta decay, ^{182}Re decay and in-beam γ-ray studies.

From evaluation by 2000He14.

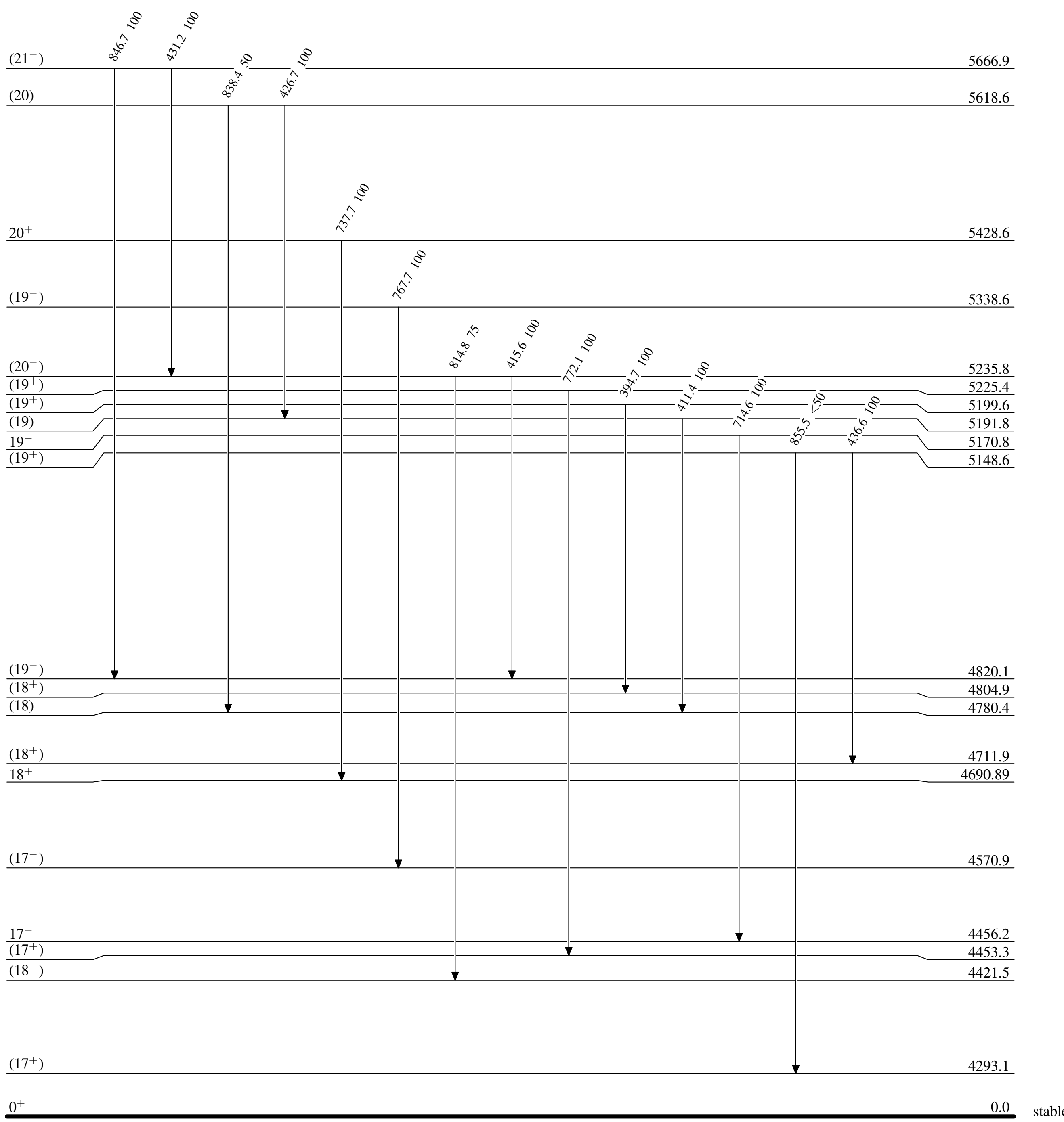
@ Theoretical values from BrIcc v2.3b (16-Dec-2014) 2008Ki07, "Frozen Orbitals" approximation. If mixing ratio δ is not given, it was assumed as 1.0 for E2/M1 and E3/M2 and 0.10 for others.

& Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{182}_{74}W_{108}$

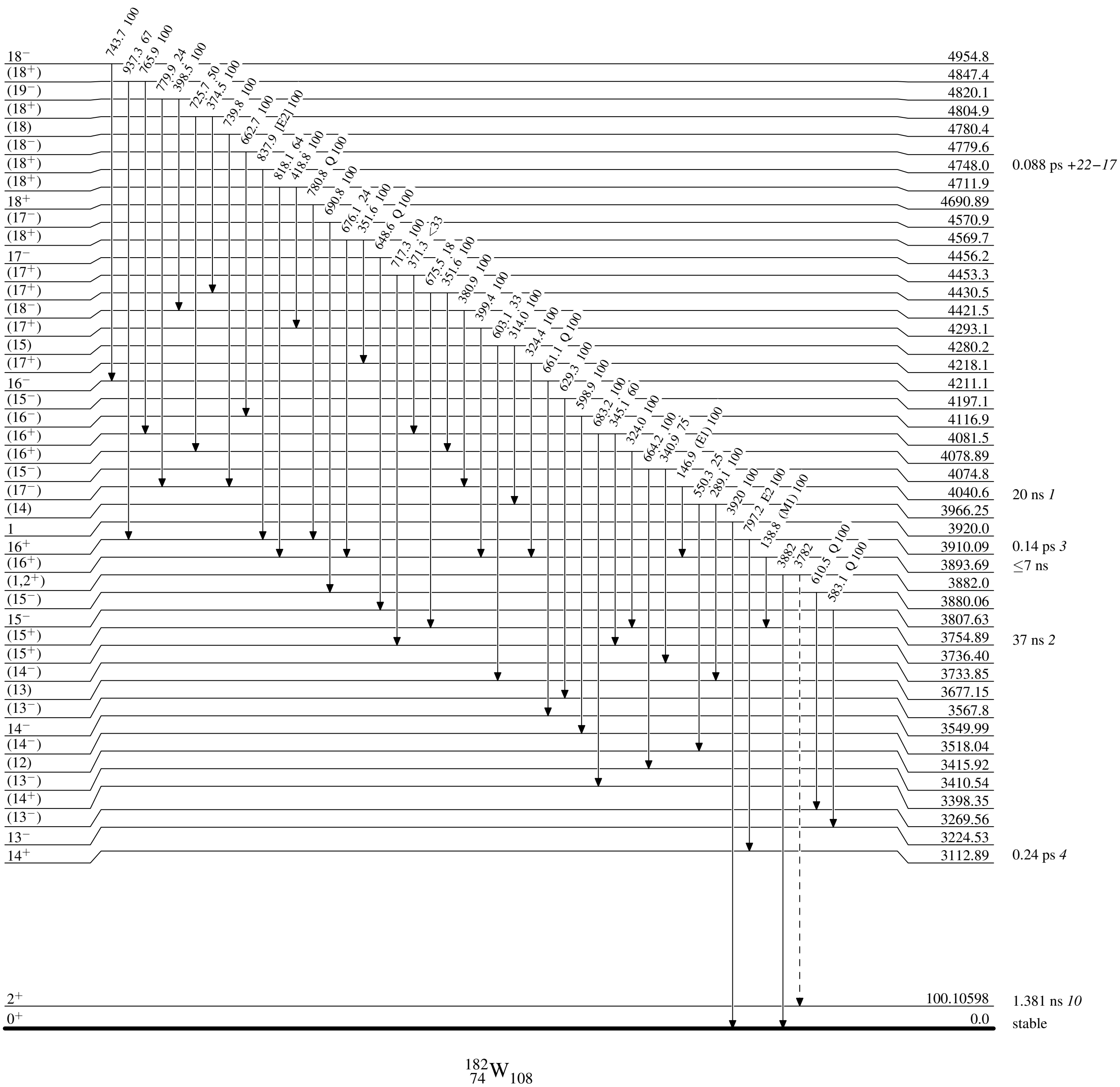
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

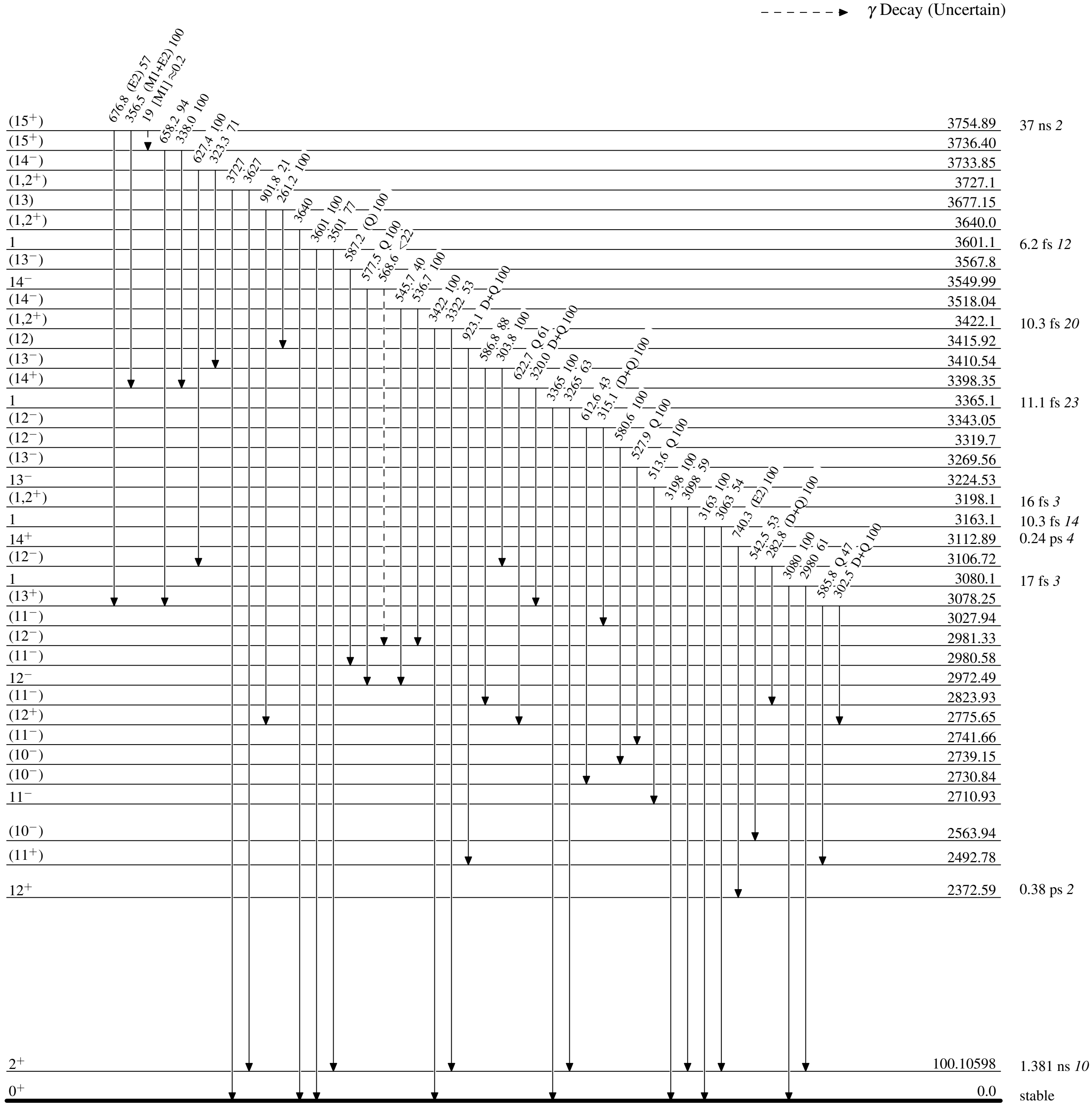
- - - - - -▶ γ Decay (Uncertain)



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

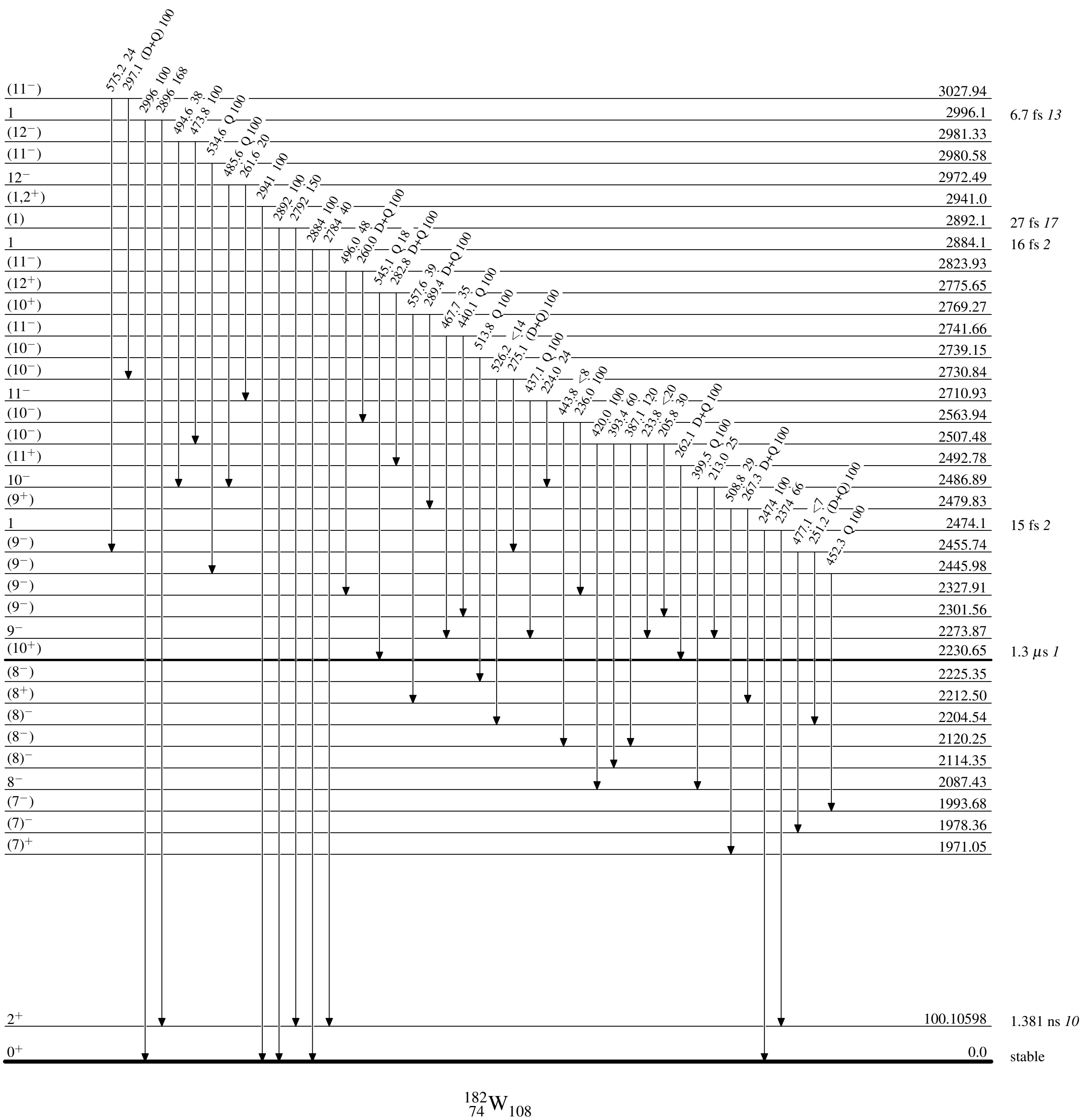


$^{182}_{74}W_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

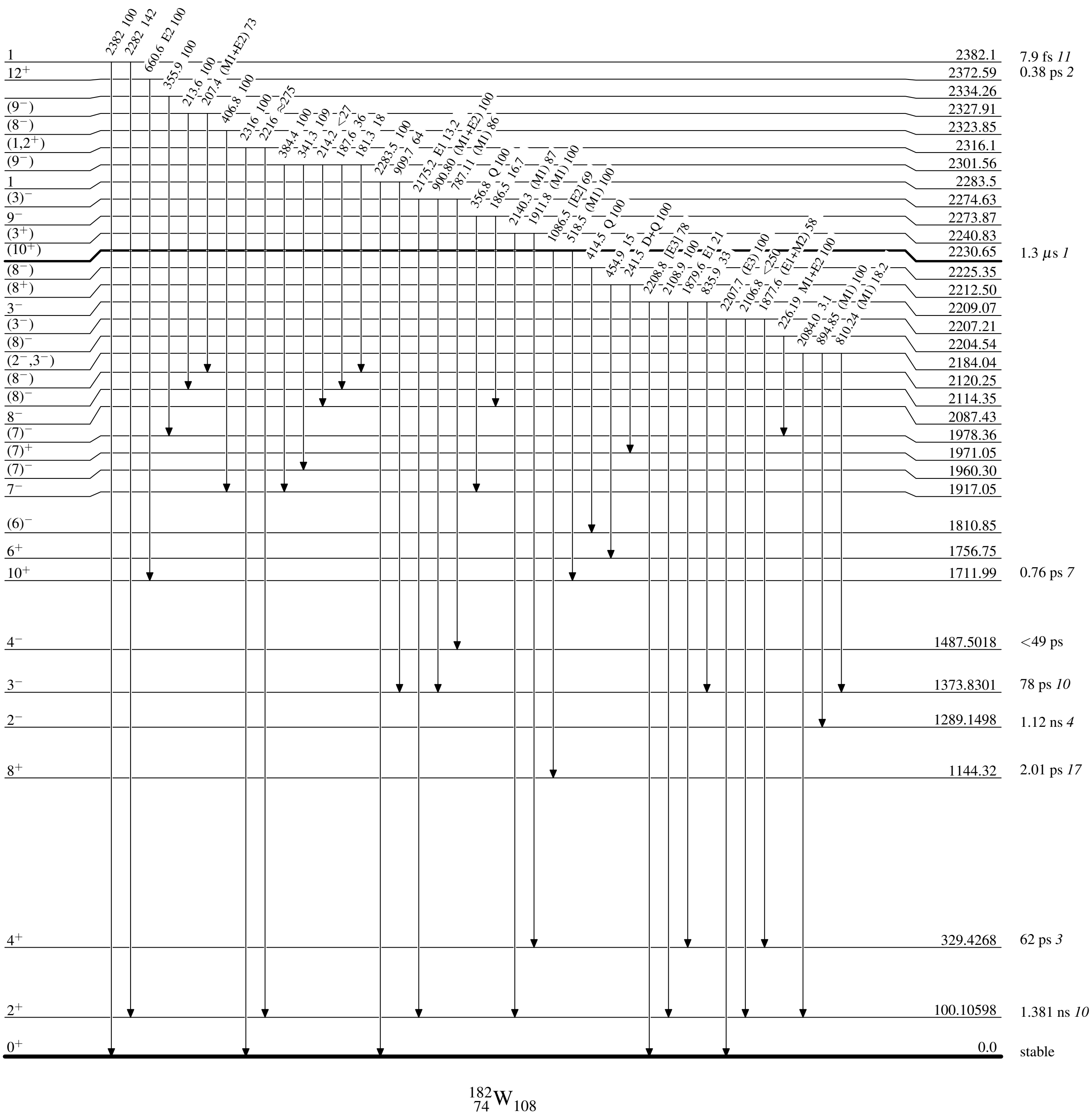
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



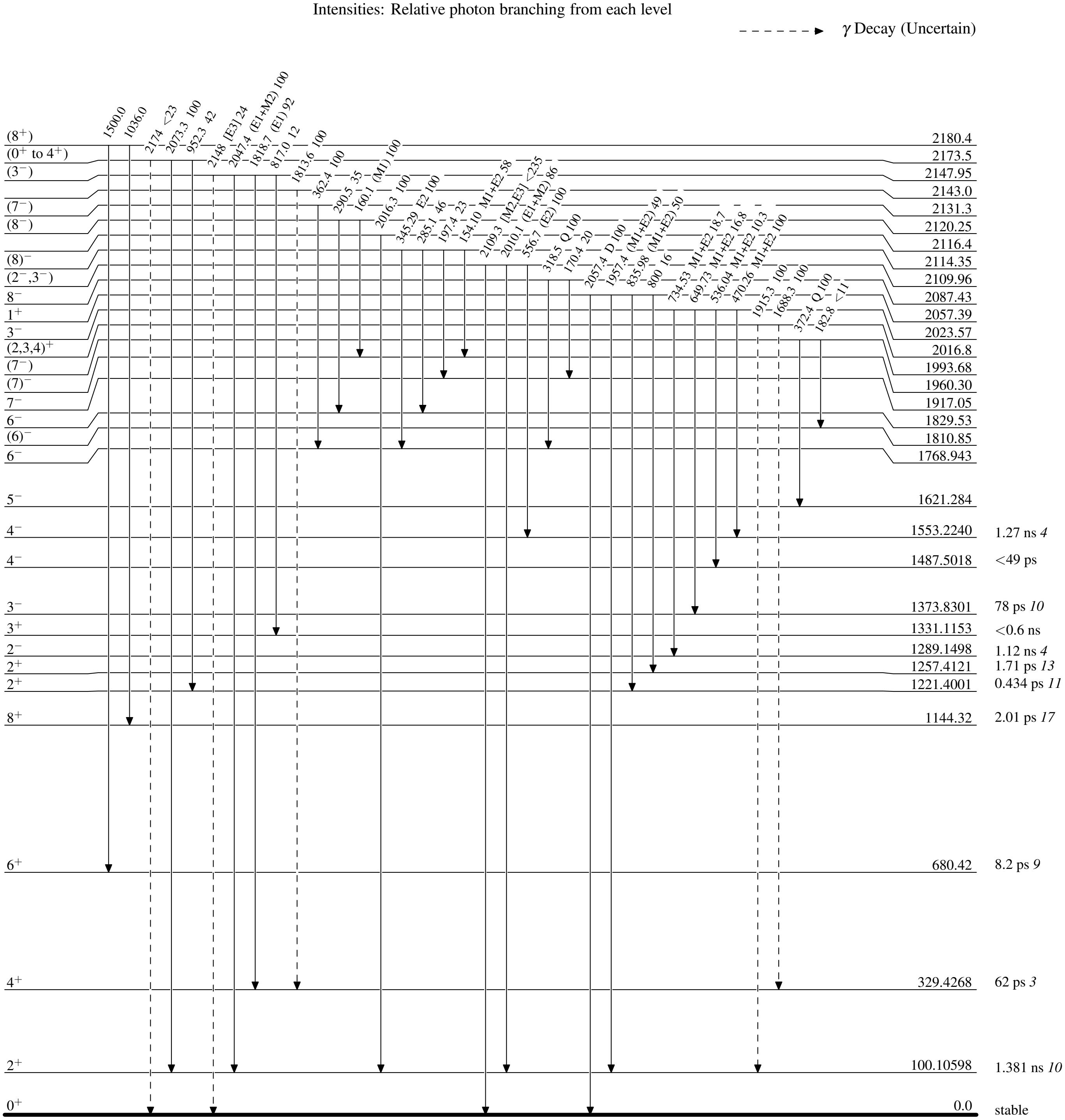
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

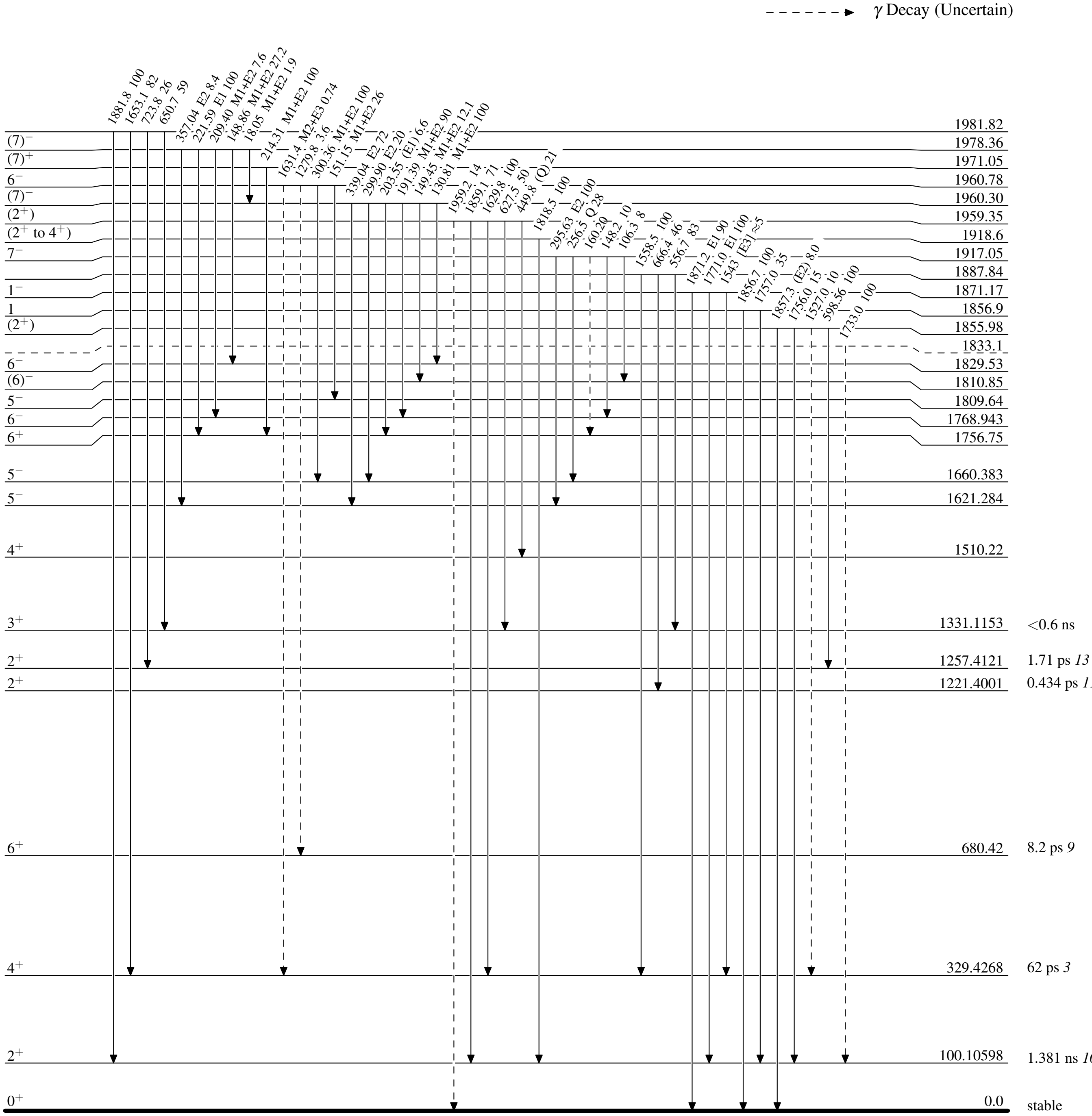


$^{182}_{74}W_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{182}_{74}W_{108}$

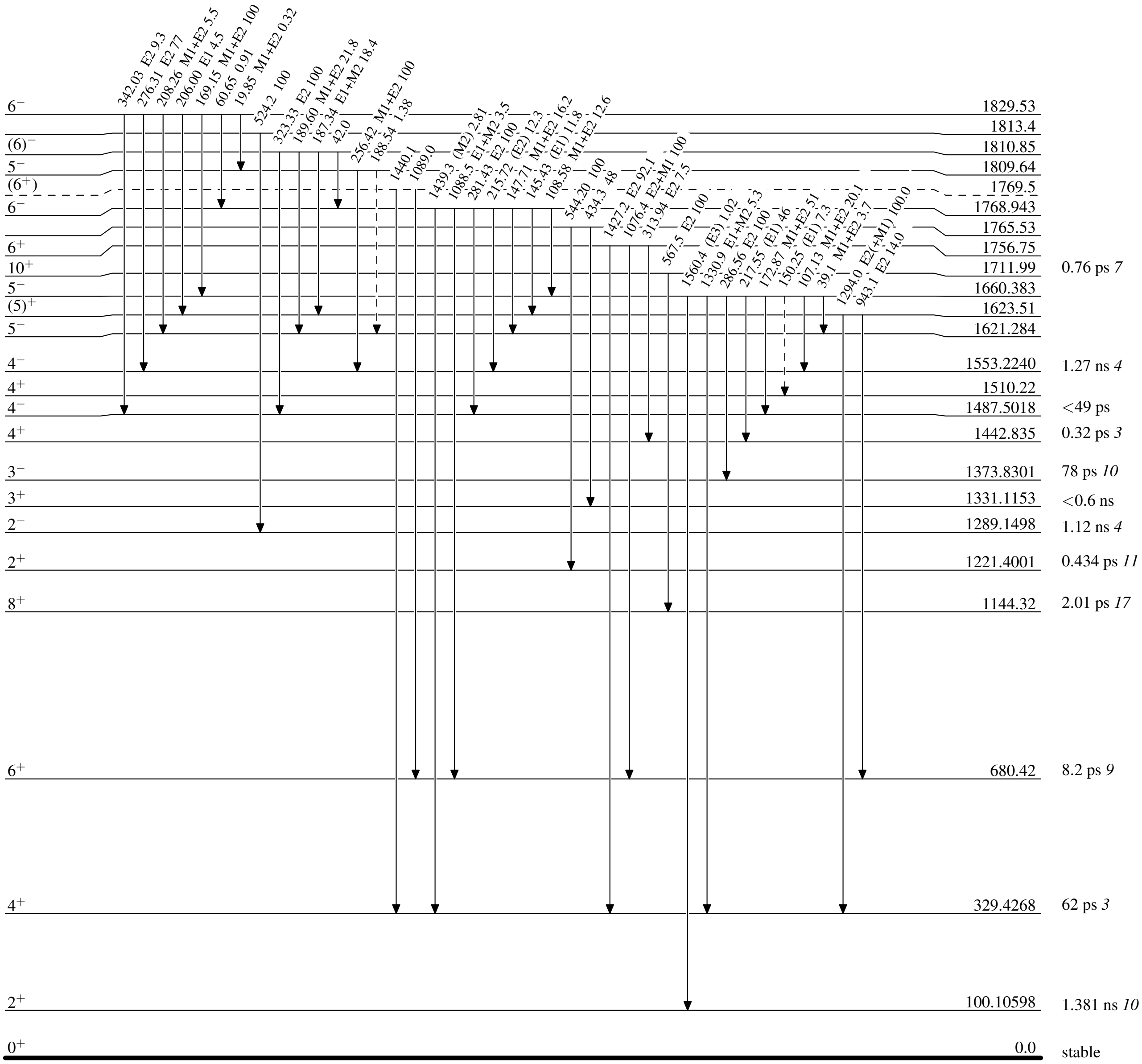
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

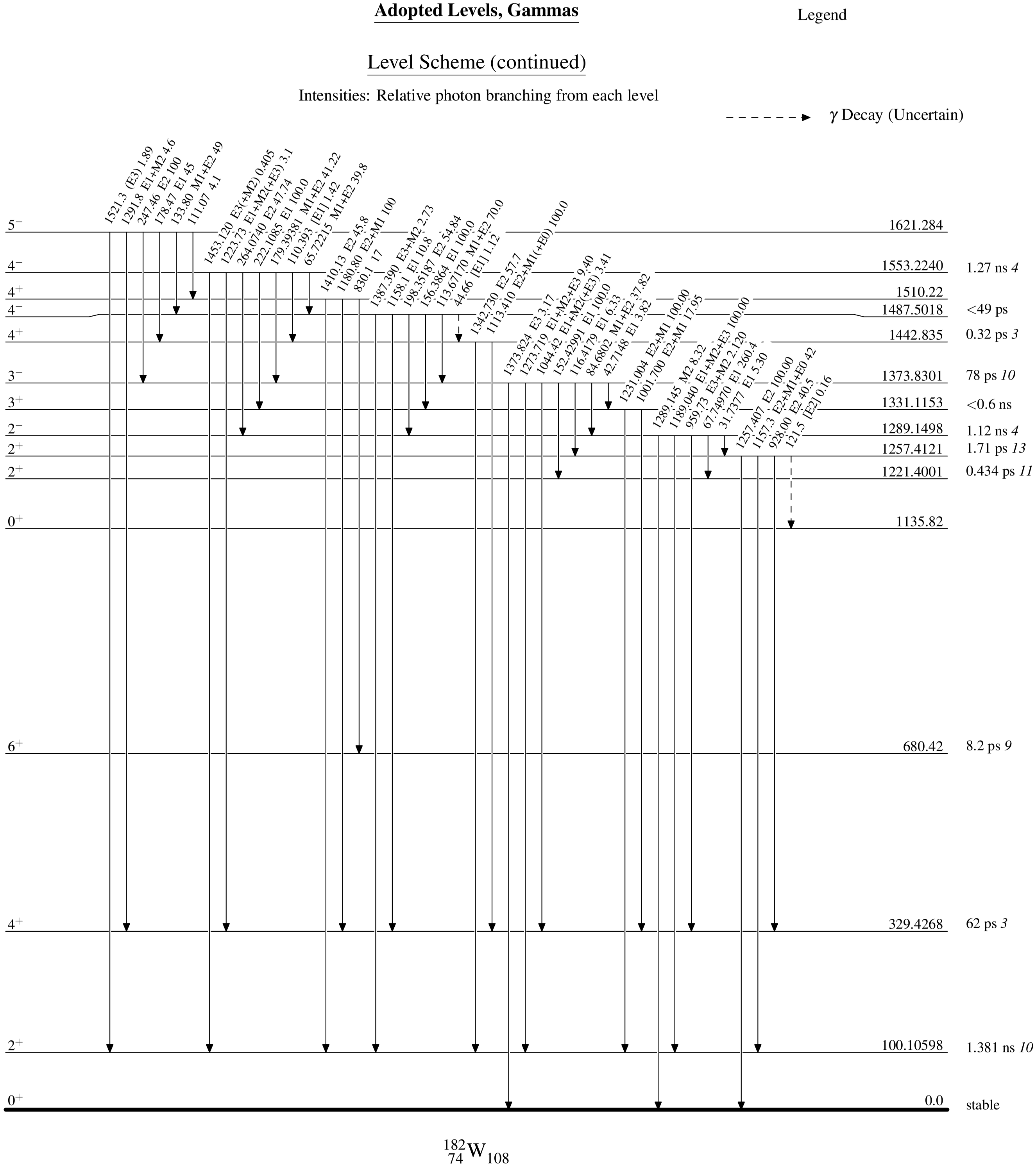


$^{182}_{74}W_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

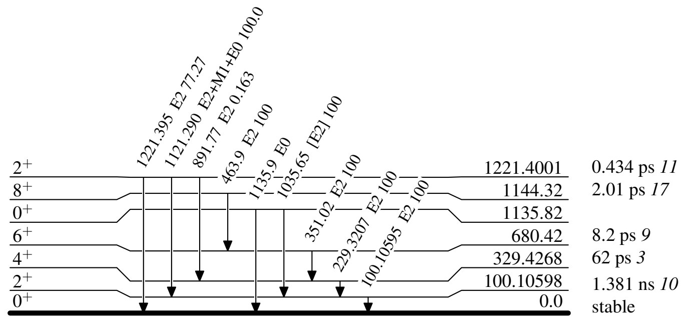
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

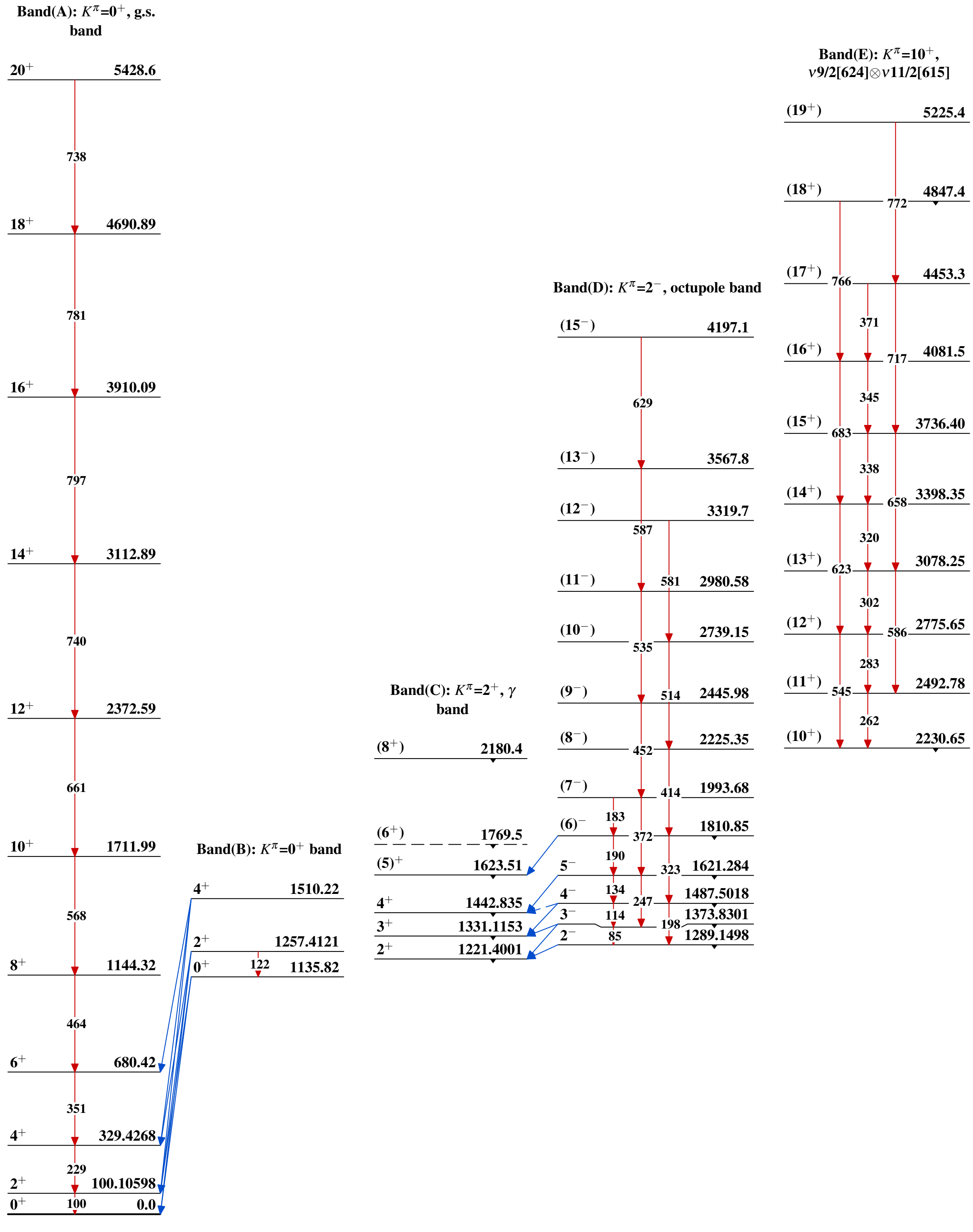
Level Scheme (continued)

Intensities: Relative photon branching from each level



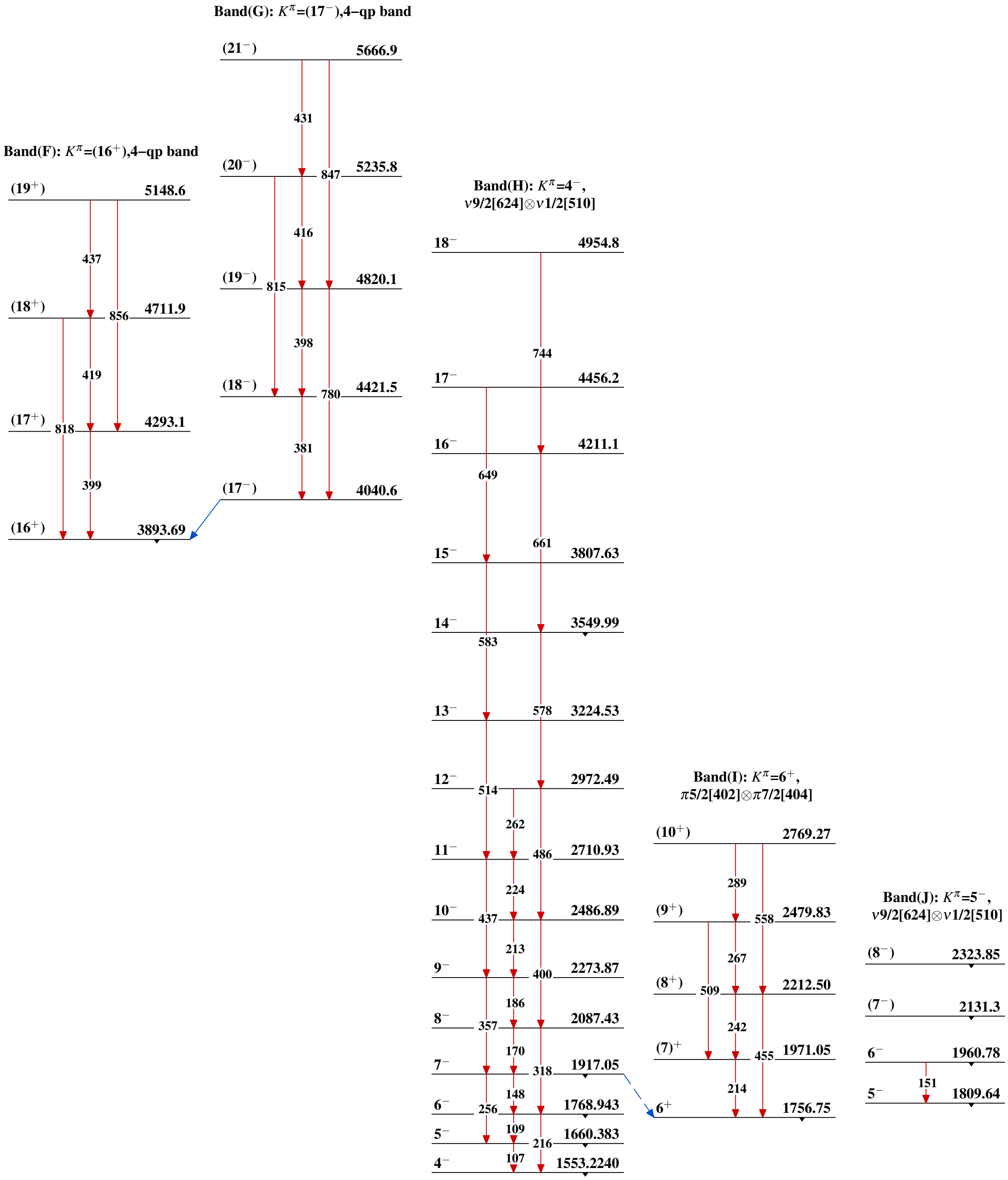
$^{182}_{74}W_{108}$

Adopted Levels, Gammas



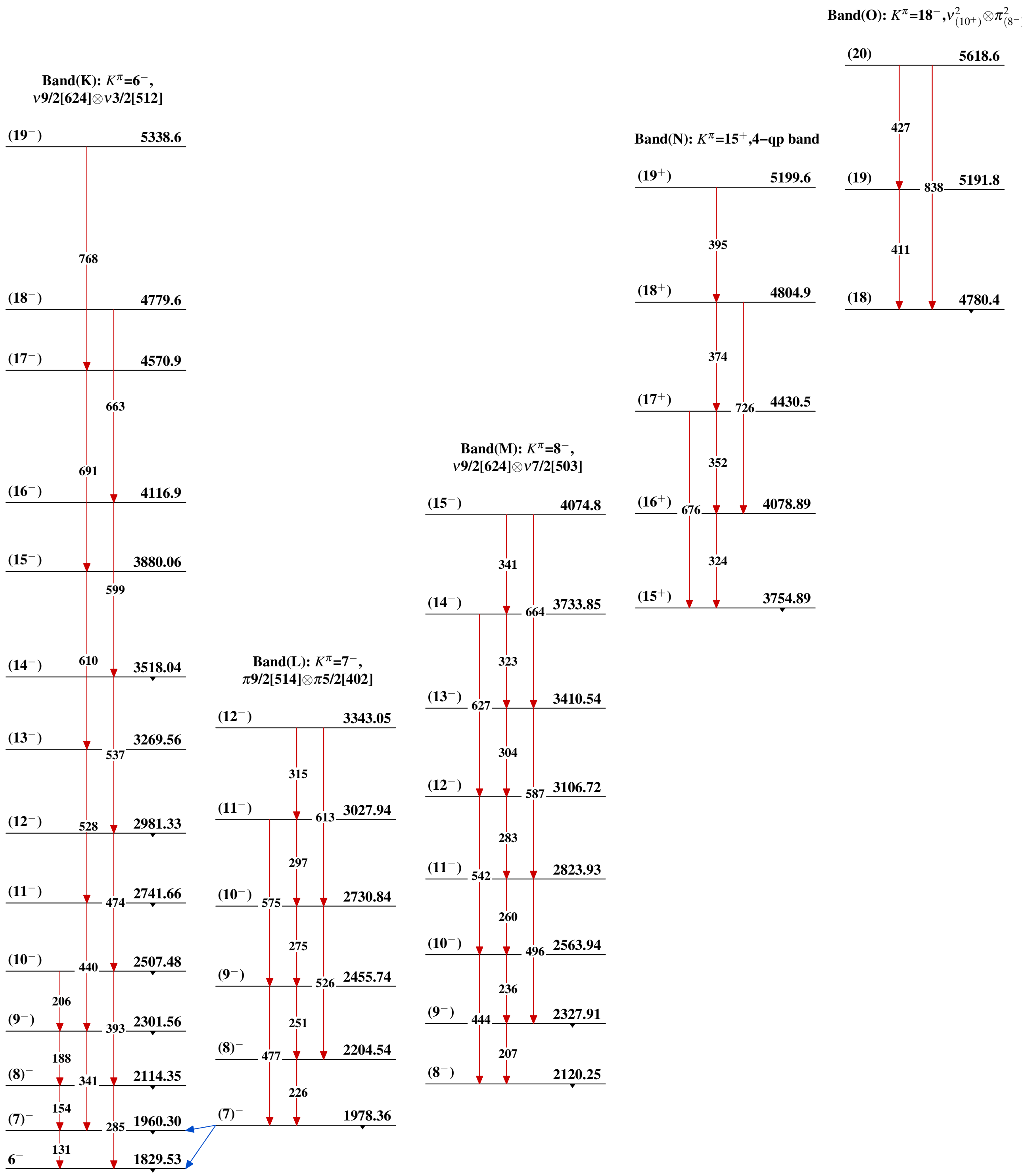
$^{182}_{74}W_{108}$

Adopted Levels, Gammas (continued)



$^{182}_{74}W_{108}$

Adopted Levels, Gammas (continued)



$^{182}_{74}W_{108}$

Adopted Levels, Gammas (continued)