Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109,1103 (2008)	1-Mar-2008

Q(β^-)=−1.208×10^4 *syst*; S(n)=1.171×10^4 *syst*; S(p)=2.08×10^3 *3*; Q(α)=6139 *5* 2012Wa38
Note: Current evaluation has used the following Q record −12.23E+3 SY11.86E+3syst 2070 30 *6139* 4 2003Au03.
Uncertainty in Q(β^-) and S(n) is 200 and 200, respectively (2003Au03).
Assignment: ^{106}Cd(^{63}Cu,p2n), ^{107}Ag(^{63}Cu,4n) E=400 MeV, excit (1978Ca11,1977Ca23).

^{166}Os Levels

Cross Reference (XREF) Flags

A	^{170}Pt α decay	D	^{167}Ir p decay (30.0 ms)
B	^{106}Cd(^{63}Cu,p2nγ),	E	^{106}Cd(^{64}Zn,2p2nγ)
C	^{167}Ir p decay (35.2 ms)		

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0@	0$^+$#	213 ms *5*	ABCDE	%α=72 *13* (1981Ho10); %ε+%β^+=28 *13* Jπ: even-even nucleus ground state. $T_{1/2}$: weighted average of 210 ms *6* (2015Li24), 220 ms *7* (1996Pa01; 6000α(t)), 194 ms *17* (1991Se01) and 181 ms *38* (1981Ho10). Other: 0.3 s *1* (1978Ca11).
432.0@ *3*	2$^+$#		B E	Jπ: stretched E2 γ to 0$^+$.
1021.0@ *5*	4$^+$#		B E	Jπ: stretched intraband Q γ to 2$^+$; continuation of g.s. band.
1562.3& *7*	(3$^-$)		E	
1725.0@ *7*	6$^+$#		B E	Jπ: stretched intraband Q γ to 4$^+$; continuation of g.s. band.
1931.3& *7*	(5$^-$)		E	
2351.3@ *9*	8$^+$#		B E	Jπ: stretched intraband Q γ to 6$^+$; continuation of g.s. band.
2426.0?a *11*	(6$^-$)		E	
2452.4& *9*	(7$^-$)		E	
3009.4@ *12*	10$^+$#		E	
3025.5?a *11*	(8$^-$)		E	
3520.7@ *13*	(12$^+$)#		E	
3910.8?@ *16*	(14$^+$)#		E	

† From least-squares fit to adopted Eγ.
‡ Values given without comment are based on band structure deduced in ^{106}Cd(^{64}Zn,2p2nγ), similarities of band structure to that in ^{168}Os and on measured γ asymmetry.
# Definite J^π assigned for J≤10 g.s. band members based on J^π=0$^+$ for even-even nucleus g.s., mult=E2 for the J=2 to 0 432γ and stretched Q character for several other intraband transitions.
@ Band(A): Yrast band (2002Ap03). g.s. band crossed at $\hbar\omega$=0.30 MeV (with 11 $\hbar$ gain in alignment) by ν $i^2_{13/2}$ band (2002Ap03).
& Band(B): K$^\pi$=(3$^-$), α=1 band (2002Ap03). Bandhead deexcites to J=2 and 4 members of g.s. band; structure of band appears to Be similar to that of a 3$^-$ band in ^{168}Os. Possible configuration: ν ($i_{13/2}$)($h_{9/2}$,$f_{7/2}$).
a Band(C): π=(−), α=0 band (2002Ap03). Very weak band decaying through the (3$^-$) band, analogous to a side band known in ^{168}Os; on this basis, authors tentatively assign π=− and even spin. Possible configuration: ν ($i_{13/2}$)($h_{9/2}$,$f_{7/2}$).

Adopted Levels, Gammas (continued)

$\gamma(^{166}Os)$

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
432.0	2^+	432.0 *3*	100	0	0^+	E2	0.0330	Mult.: Q from γ asymmetry, not M2 from intensity balance in (^{64}Zn,2p2nγ).
1021.0	4^+	589.2 *4*	100	432.0	2^+	(E2)	0.01539	
1562.3	(3^-)	541.6 *7*	68 *24*	1021.0	4^+	D		
		1129.2 *9*	100 *24*	432.0	2^+			
1725.0	6^+	704.0 *5*	100	1021.0	4^+	(E2)	0.01031	
1931.3	(5^-)	368.8 *5*	100 *29*	1562.3	(3^-)	(E2)	0.0505	
		910.9 *9*	71 *43*	1021.0	4^+	D		
2351.3	8^+	626.3 *5*	100	1725.0	6^+	(E2)	0.01337	
2426.0?	(6^-)	494.8[@] *9*	100	1931.3	(5^-)			
2452.4	(7^-)	521.1 *6*	100	1931.3	(5^-)			
3009.4	10^+	658.1 *8*	100	2351.3	8^+			
3025.5?	(8^-)	573.0[@] *9*	33 *83*	2452.4	(7^-)			
		599.6[@] *9*	100 *83*	2426.0?	(6^-)			
3520.7	(12^+)	511.3 *5*	100	3009.4	10^+			
3910.8?	(14^+)	390.1[@] *9*	100	3520.7	(12^+)			

[†] From ^{106}Cd(^{64}Zn,2p2nγ). Note that Eγ data from ^{106}Cd(^{63}Cu,p2nγ) (uncertainty 0.2 or 0.3 keV) are consistently lower than these data by 1.2 to 2.2 keV.

[‡] From angular correlation data in ^{106}Cd(^{64}Zn,2p2nγ), assigning $\Delta\pi$=(no) for intraband stretched Q transitions.

[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[@] Placement of transition in the level scheme is uncertain.

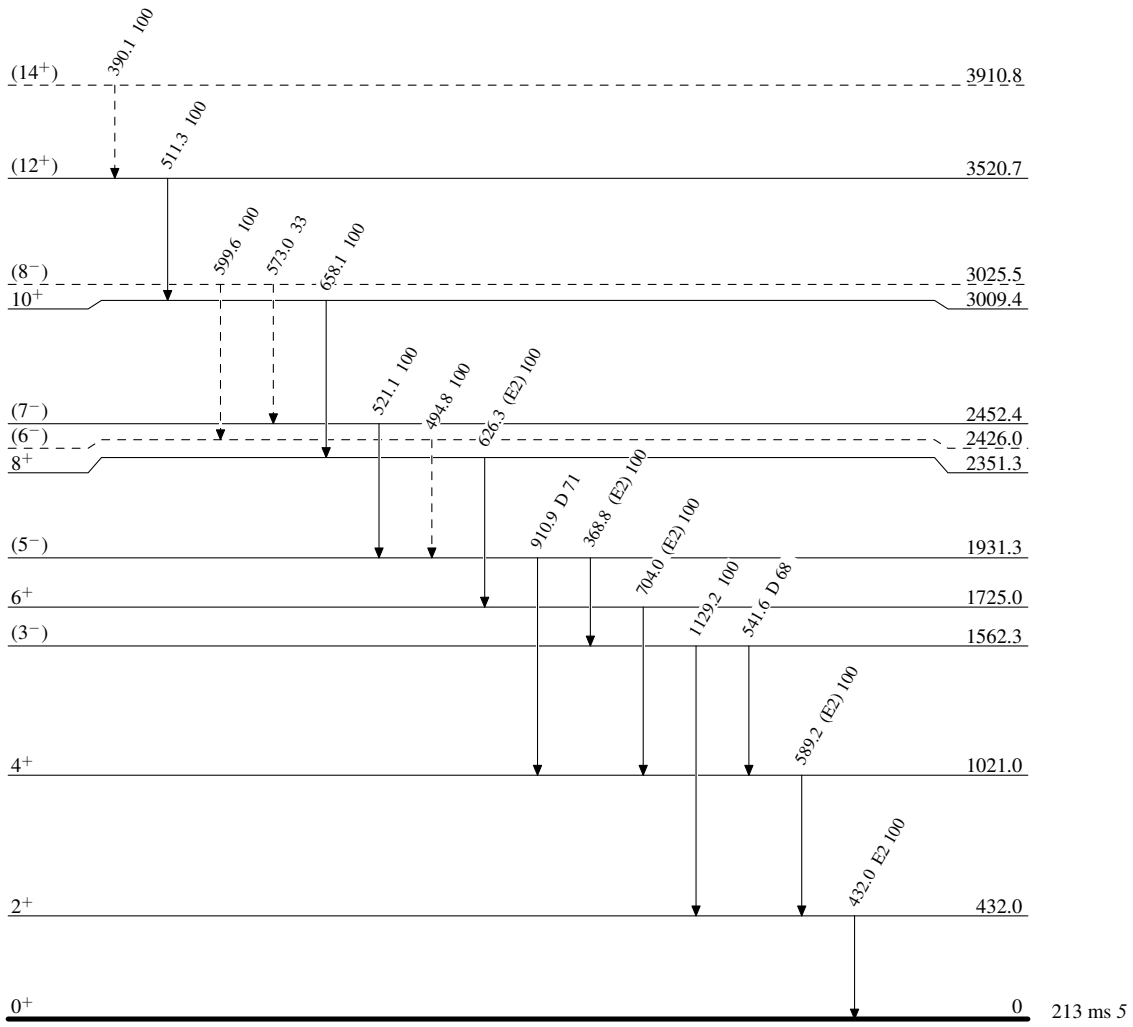
Adopted Levels, Gammas

Legend

Level Scheme

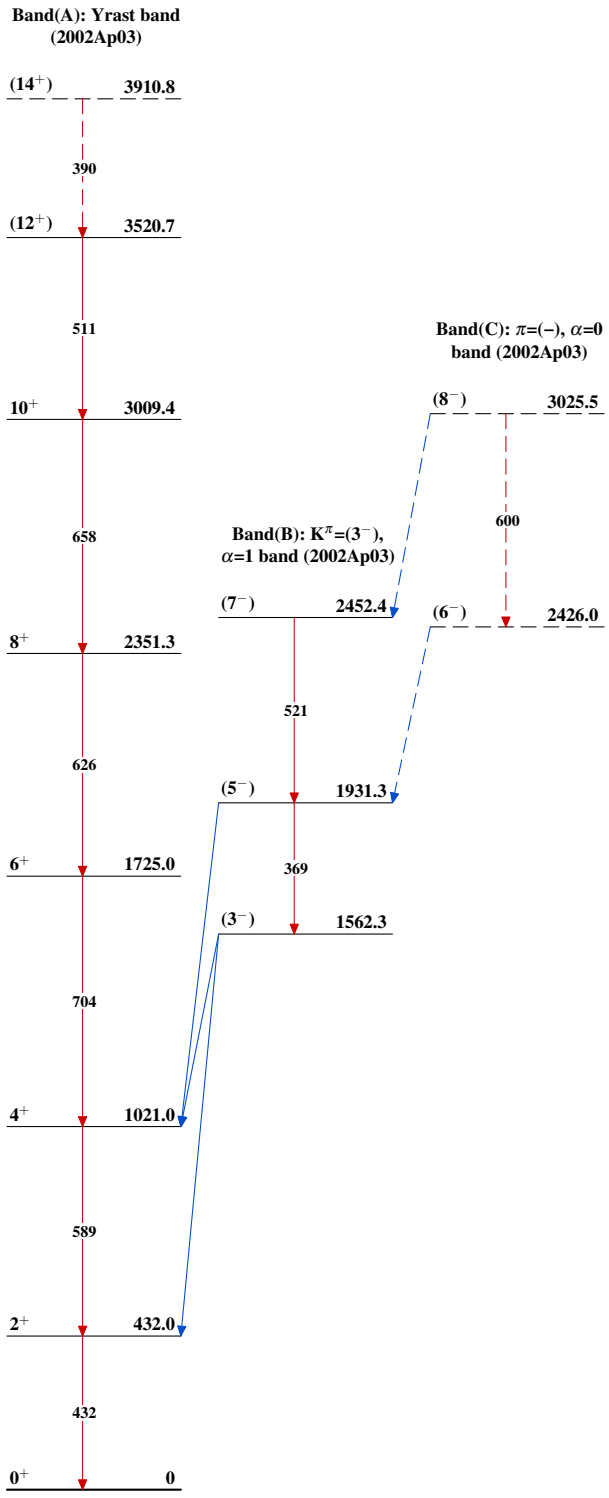
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{166}_{76}Os_{90}$

Adopted Levels, Gammas



$^{166}_{76}Os_{90}$

Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,1807 (2010)	15-Jun-2010

Q(β^-)=−1.127×10^4 *8*; S(n)=1.156×10^4 *8*; S(p)=2.43×10^3 *syst*; Q(α)=5816 *3* 2012Wa38

Note: Current evaluation has used the following Q record −11250 SY11560 70 *2440* syst 5818 3 2003Au03,2009AuZZ.

Q(α): Consistent with new Eα=5681 *5* datum (2004GoZZ) which implies Q(α)=5816 *5*.

ΔQ(β)=150, ΔS(p)=50 (2003Au03, 2009AuZZ).

Identification: 1982En03 observed ^{168}Os as the α daughter of ^{172}Pt; this assignment was confirmed through cross-bombardments, excitation functions and α-energy systematics (1978Ca11,1978Sc26,1982De11,1984Sc06).

See 1983Al09, 1984Al36, and 1984HaZD for analyses of mass and proton-stability data for ^{168}Os.

^{168}Os Levels

Cross Reference (XREF) Flags

A ^{172}Pt α decay
B ^{112}Sn(^{58}Ni,2pγ),

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[#]	0$^+$	2.1 s *1*	AB	%ε+%β^+=57 *4*; %α=43 *4* J$^\pi$: even-even nucleus ground state. T$_{1/2}$: from α decay. Weighted average of 1.9 s *1* (1978Ca11), 2.0 s and 2.4 s *2* (1978Sc26), 2.2 s *1* (1982En03), 2.0 s *2* (1984Sc06), 2.1 s *6* (1995Hi02), 2.1 s *1* (1996Pa01), 2.6 s *2* (2004GoZZ). %α: weighted average of 49 *3* from matching of ^{172}Pt-^{168}Os velocity distributions following recoil-mass selection of the evaporation residues formed by neutron emission from ^{176}Pt (4n) (1982En03), 40 *3* from (1996Pa01) and 36 *4* (2004GoZZ).
341.20[#] *20*	2$^+$		B	
857.3[#] *3*	4$^+$		B	
1469.6[@] *4*	(3$^-$)		B	
1499.1[#] *4*	6$^+$		B	
1736.8[@] *4*	(5$^-$)		B	J$^\pi$: D 880γ to 4$^+$ 857; 238γ to 6$^+$ 1499; band assignment.
2154.1[@] *4*	(7$^-$)		B	
2222.7[#] *4*	8$^+$		B	
2298.6[&] *9*	(8$^-$)		B	
2589.4[@] *5*	(9$^-$)		B	
2730.5[&] *6*	(10$^-$)		B	
2937.8[@] *5*	(11$^-$)		B	
2982.7[#] *5*	10$^+$		B	
3128.8[&] *6*	(12$^-$)		B	
3363.7[@] *5*	(13$^-$)		B	
3365.1[#] *5*	(12$^+$)		B	
3693.9[&] *6*	(14$^-$)		B	
3730.5[#] *5*	(14$^+$)		B	
3942.6[@] *6*	(15$^-$)		B	
4261.4[#] *6*	(16$^+$)		B	
4382.1[&] *8*	(16$^-$)		B	
4633.5[@] *8*	(17$^-$)		B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{168}Os Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF
4886.7[#] *6*	(18$^+$)	B
5158.4[&] *13*	(18$^-$)	B

† From least-squares fit to Eγ.
‡ From ^{112}Sn(^{58}Ni,2pγ), based on observed band structure and configuration assignments deduced from comparison of experimental Routhians and alignments with cranked shell-model calculations, except as noted.
# Band(A): g.s. band. Becomes AB band (aligned ν $i^2_{13/2}$) for $J^{\pi}\geq 12^+$. Alignment gain=11.8$\hbar$ at $\hbar\omega$=0.28 MeV.
@ Band(B): AE, α=1 band. Orbital A is (ν $i_{13/2}$), α=+1/2; orbital E is (ν $h_{9/2}$ or $f_{7/2}$), α=+1/2. Alignment=9.9$\hbar$ at $\hbar\omega$=0.28 MeV.
& Band(C): AF, α=0 band. Orbital A is (ν $i_{13/2}$), α=+1/2; orbital F is (ν $h_{9/2}$ or $f_{7/2}$), α=−1/2. Alignment=9.1$\hbar$ at $\hbar\omega$=0.28 MeV.

γ(^{168}Os)

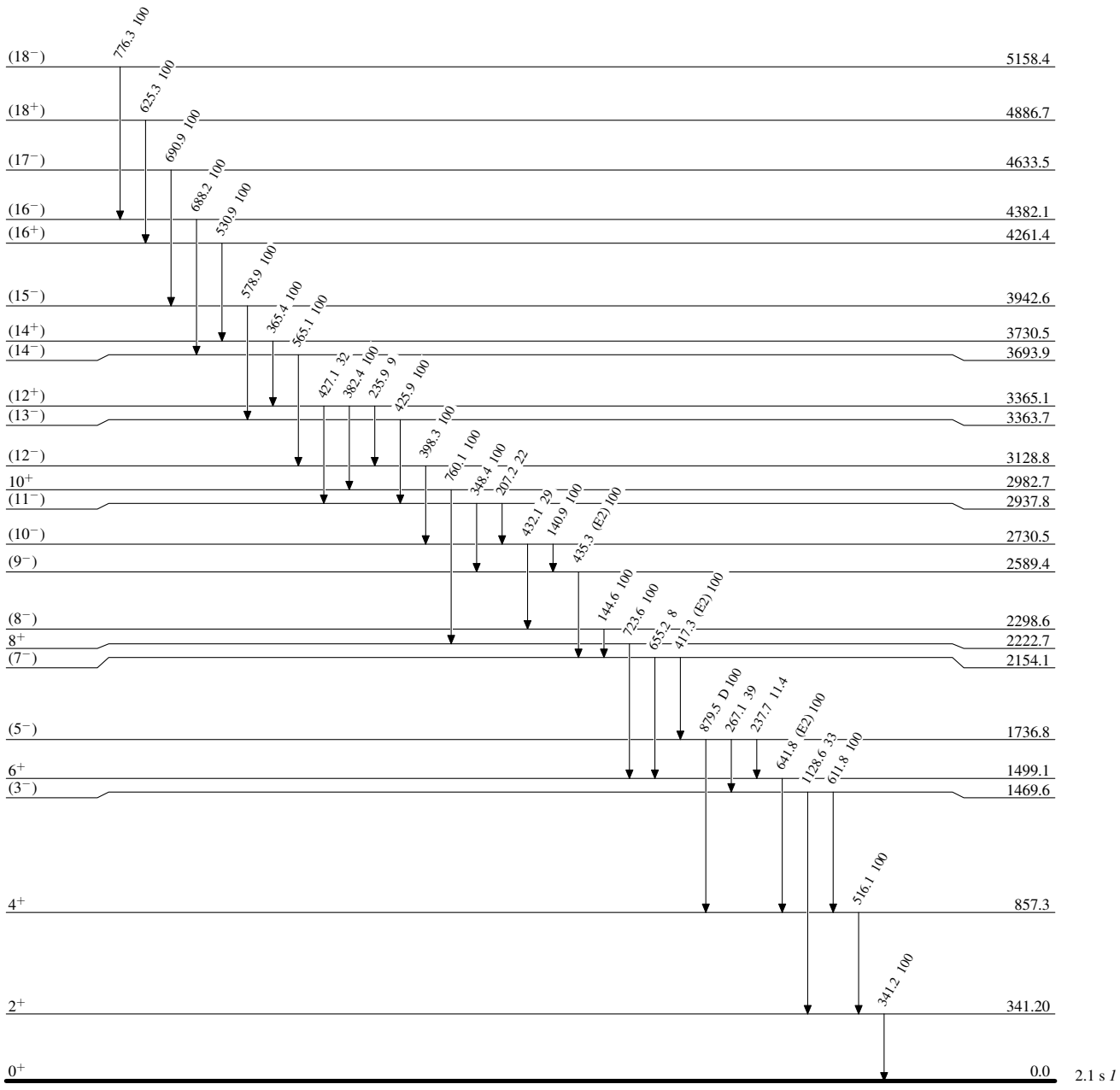
E$_i$(level)	J$_i^{\pi}$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$_f^{\pi}$	Mult.[‡]	α[#]
341.20	2$^+$	341.2 *2*	100	0.0	0$^+$		
857.3	4$^+$	516.1 *2*	100	341.20	2$^+$		
1469.6	(3$^-$)	611.8 *5*	100 *22*	857.3	4$^+$		
		1128.6 *10*	33 *4*	341.20	2$^+$		
1499.1	6$^+$	641.8 *2*	100 *3*	857.3	4$^+$	(E2)	0.01265
1736.8	(5$^-$)	237.7 *10*	11.4 *18*	1499.1	6$^+$		
		267.1 *2*	39 *9*	1469.6	(3$^-$)		
		879.5 *2*	100 *11*	857.3	4$^+$	D	
2154.1	(7$^-$)	417.3 *2*	100 *8*	1736.8	(5$^-$)	(E2)	0.0361
		655.2 *10*	8 *3*	1499.1	6$^+$		
2222.7	8$^+$	723.6 *2*	100	1499.1	6$^+$		
2298.6	(8$^-$)	144.6 *10*	100	2154.1	(7$^-$)		
2589.4	(9$^-$)	435.3 *2*	100	2154.1	(7$^-$)	(E2)	0.0324
2730.5	(10$^-$)	140.9 *5*	100 *12*	2589.4	(9$^-$)		
		432.1 *10*	29 *13*	2298.6	(8$^-$)		
2937.8	(11$^-$)	207.2 *10*	22 *9*	2730.5	(10$^-$)		
		348.4 *2*	100 *11*	2589.4	(9$^-$)		
2982.7	10$^+$	760.1 *2*	100	2222.7	8$^+$		
3128.8	(12$^-$)	398.3 *2*	100	2730.5	(10$^-$)		
3363.7	(13$^-$)	425.9 *2*	100	2937.8	(11$^-$)		
3365.1	(12$^+$)	235.9 *10*	9 *3*	3128.8	(12$^-$)		
		382.4 *2*	100 *12*	2982.7	10$^+$		
		427.1 *10*	32 *12*	2937.8	(11$^-$)		
3693.9	(14$^-$)	565.1 *2*	100	3128.8	(12$^-$)		
3730.5	(14$^+$)	365.4 *2*	100	3365.1	(12$^+$)		
3942.6	(15$^-$)	578.9 *2*	100	3363.7	(13$^-$)		
4261.4	(16$^+$)	530.9 *2*	100	3730.5	(14$^+$)		
4382.1	(16$^-$)	688.2 *5*	100	3693.9	(14$^-$)		
4633.5	(17$^-$)	690.9 *5*	100	3942.6	(15$^-$)		
4886.7	(18$^+$)	625.3 *2*	100	4261.4	(16$^+$)		
5158.4	(18$^-$)	776.3 *10*	100	4382.1	(16$^-$)		

† From ^{112}Sn(^{58}Ni,2pγ).
‡ From γ asymmetry ratio in ^{112}Sn(^{58}Ni,2pγ), assigning $\Delta\pi$=(no) to intraband transitions.
# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

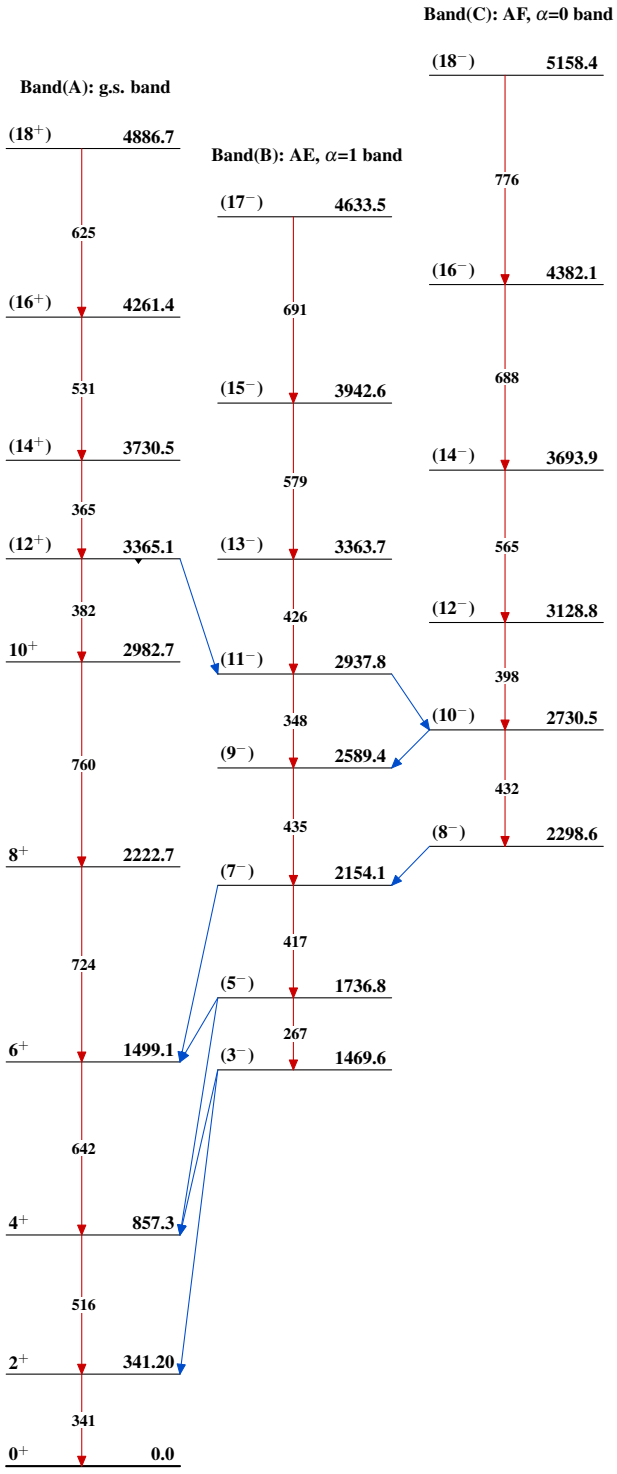
Level Scheme

Intensities: Relative photon branching from each level



$^{168}_{76}Os_{92}$

Adopted Levels, Gammas



$^{168}_{76}Os_{92}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 75,199 (1995)	31-May-1995

Q(β^-)=−9.86×10^3 *4*; S(n)=11012 *22*; S(p)=3.28×10^3 *3*; Q(α)=5224 *7* 2012Wa38
Note: Current evaluation has used the following Q record −9840 syst 10830 syst 2990 syst 5227 10 1993Au05,1993Au07.
Uncertainties: 450 (Q(β^-)), 370 (S(n)), 400 (S(p)) (1993Au05, 1993Au07).
Q(εp)=2690 *340* (syst 1993Au07).
Nuclear structure calculations (levels, moments etc.): 1995Ch01, 1994Dr04, 1993Ch09, 1991Ba31, 1991Ba04, 1990Ka24, 1988Pa02, 1988Hs01.
Additional information 1.

^{172}Os Levels

Cross Reference (XREF) Flags

- A ^{172}Ir ε decay (4.4 s)
- B ^{172}Ir ε decay (2.0 s)
- C ^{176}Pt α decay (6.33 s)
- D (HI,xnγ)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[@]	0$^+$	19.2 s *9*	ABCD	%ε+%β^+=99.8 (1971Bo06); %α=0.2 T$_{1/2}$: from γ(t) (1995Hi02). Other: 19 s *2* (α(t) 1971Bo06).
227.77[@] *9*	2$^+$	116 ps *7*	ABCD	J$^\pi$: E2 γ to 0$^+$.
606.17[@] *11*	4$^+$	7.1 ps *7*	AB D	J$^\pi$: ΔJ=2, E2 γ to 2$^+$.
702.8? *2*	(2$^+$)		A	
758.27[a] *14*	0$^+$		B	J$^\pi$: (530γ)(228γ)(θ) gives 0-2-0 cascade.
810.01[a] *11*	2$^+$		B	J$^\pi$: E0+E2 γ to 2$^+$.
918.79[b] *14*	2$^+$		B	J$^\pi$: E0+E2 γ to 2$^+$.
1054.47[@] *12*	6$^+$	1.8 ps *2*	B D	J$^\pi$: ΔJ=2, E2 γ to 4$^+$ and (448γ)(378γ)(θ) consistent with 6-4-2 cascade.
1107.95[b] *12*	(3$^+$)		B	J$^\pi$: γ's to 2$^+$ and 4$^+$.
1137.88[a] *12*	4$^+$		B D	J$^\pi$: E0+E2 γ to 4$^+$.
1339.53[b] *13*	(4$^+$)		B	
1468.8[c] *2*	(3$^-$)		B	J$^\pi$: from J(J+1) interval rule, the level energy fits well in the (odd J) negative parity band.
1524.95[@] *14*	8$^+$	1.1 ps *+3−2*	B D	J$^\pi$: ΔJ=2, E2 γ to 6$^+$.
1551.25[a] *12*	6$^+$		B D	J$^\pi$: E0+E2 γ to 6$^+$.
1604.50[b] *13*	(5$^+$)		B	
1656.43[c] *15*	5$^{(-)}$		B D	J$^\pi$: ΔJ=(1), dipole γ's to 4$^+$ and 6$^+$. ΔJ=2, E2 γ from 7$^{(-)}$.
1678.6? *4*			B	
1727.64[d] *16*	(4$^-$)		B D	
1806.71? *15*			B	
1873.4 *4*			D	
1884.90[b] *14*	(6$^+$)		B	
1918.9? *5*			B	
1978.45[c] *14*	7$^{(-)}$	6.4 ps *12*	B D	J$^\pi$: ΔJ=1 γ's to 6$^+$ and (8$^+$); probable band member.
2023.87[@] *16*	10$^+$	1.2 ps *+2−3*	B D	J$^\pi$: ΔJ=2, E2 γ to 8$^+$.
2061.33[d] *14*	(6$^-$)		B D	
2093.63[a] *13*	(8$^+$)		B	
2140.8 *4*			B	
2257.6 *3*			B	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{172}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2288.1 *2*			B	
2374.6[c] *2*	$9^{(-)}$	4.1 ps *+29−20*	B D	Jπ: ΔJ=2, (E2) γ to $7^{(-)}$; γ to 10^+.
2415.1[d] *2*	(8^-)		B D	
2429.9 *3*			B	
2439.1 *2*			B	
2508.3 *3*			B	
2564.5[@] *2*	12^+	0.76 ps *+14−21*	D	Jπ: ΔJ=2, E2 γ to 10^+.
2635.4[d] *2*	(10^-)		D	
2765.8[c] *2*	$11^{(-)}$	6.9 ps *6*	D	Jπ: ΔJ=2, E2 γ to $9^{(-)}$.
2840.6? *3*			D	
2846.0[e] *2*	(10^-)		D	
3004.7[d] *2*	(12^-)		D	Jπ: ΔJ=2, (E2) γ to (10^-), γ to 12^+.
3098.5 *3*			B	
3101.2[&] *2*	14^+	0.76 ps *28*	D	Jπ: ΔJ=2, E2 γ to 12^+.
3194.4[c] *2*	$13^{(-)}$	3.4 ps *+6−5*	D	Jπ: ΔJ=2, E2 γ to $11^{(-)}$.
3199.4[@] *2*	(14^+)		D	Jπ: ΔJ=2 γ to 12^+.
3322.1[e] *2*	(12^-)		D	Jπ: ΔJ=(2) γ to (10^-); γ to $13^{(-)}$.
3513.0[d] *2*	(14^-)		D	
3589.7[&] *2*	16^+	2.5 ps *+4−5*	D	Jπ: ΔJ=2, E2 γ to 14^+.
3711.3[c] *2*	(15^-)	1.2 ps *+6−7*	D	Jπ: ΔJ=2, E2 γ to $13^{(-)}$.
3823.3[@] *2*	(16^+)		D	Jπ: ΔJ=(2) γ to 14^+.
3847.5[e] *3*	(14^-)		D	
4068.1[d] *3*	(16^-)		D	
4176.5[&] *3*	(18^+)	1.1 ps *+8−4*	D	Jπ: ΔJ=(2) γ to (16^+).
4276.9[c] *3*	(17^-)		D	Jπ: ΔJ=(2) γ to (15^-).
4412.4[e] *4*	(16^-)		D	
4510.7[@] *3*	(18^+)		D	
4640.1[d] *3*	(18^-)		D	
4831.6[&] *3*	(20^+)	<0.9 ps	D	Jπ: ΔJ=(2) γ to (18^+).
4872.5[c] *3*	(19^-)		D	Jπ: ΔJ=(2) γ to (17^-).
5003.9[e] *5*	(18^-)		D	
5234.6?[@] *4*	(20^+)		D	
5245.1[d] *3*	(20^-)		D	
5490.6[c] *3*	(21^-)		D	
5528.2[&] *3*	(22^+)		D	Jπ: ΔJ=(2) γ to (20^+).
5633.9[e] *6*	(20^-)		D	
5892.5[d] *3*	(22^-)		D	
5985.6?[@] *11*	(22^+)		D	
6103.3 *4*			D	
6135.1[c] *4*	(23^-)		D	
6258.5[&] *3*	(24^+)		D	
6298.5[e] *7*	(22^-)		D	
6584.8[d] *3*	(24^-)		D	
6812.4 *4*			D	
6819.3[c] *4*	(25^-)		D	
7028.0[&] *4*	(26^+)		D	
7326.7[d] *5*	(26^-)		D	
7554.9 *5*			D	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{172}Os Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF
7842.6[&] *4*	(28$^+$)	D
8119.2?[d] *6*	(28$^-$)	D
8690.1?[&] *5*	(30$^+$)	D

† From least-squares fit to Eγ's.
‡ For levels populated in (HI,xnγ), it is assumed that the spins increase as the excitation energy increases. ΔJ=2 transitions are assumed as E2 (from RUL for E2 and M2 transitions). When no detailed arguments for J^{π} are given, it is based on the assignment of a level as a probable band member.
# From RDDS in (HI,xnγ) (1994ViZY).
@ Band(A): g.s. band (α=0,π=+).
& Band(B): (α=0,π=+). Yrast states.
a Band(C): K$^{\pi}$=0$^+$ β band.
b Band(D): K$^{\pi}$=2$^+$ γ band.
c Band(E): (α=1,π=−).
d Band(F): (α=0,π=−).
e Band(G): band 1, ΔJ=2.

γ(^{172}Os)

E$_i$(level)	J$_i^{\pi}$	Eγ	Iγ[†]	E$_f$	J$_f^{\pi}$	Mult.[‡]	α[@]	I$_{(\gamma+ce)}$	Comments
227.77	2$^+$	227.8 *1*	100	0.0	0$^+$	E2	0.218		B(E2)(W.u.)=115 *7*
606.17	4$^+$	378.4 *1*	100	227.77	2$^+$	E2	0.047		B(E2)(W.u.)=173 *17*
702.8?	(2$^+$)	475.0 *2*	100	227.77	2$^+$				
758.27	0$^+$	530.5 *1*	100 *17*	227.77	2$^+$				
		758.3		0.0	0$^+$	(E0)		2.2 *3*	Mult.: no γ-ray observed, α(K)exp>0.04 (1994Da02). X(E0/E2)=0.010 *3*.
810.01	2$^+$	582.3 *1*	100 *4*	227.77	2$^+$	E0+E2(+M1)	0.06 *1*		X(E0/E2)=0.04 *1*.
		809.9 *2*	31 *13*	0.0	0$^+$				
918.79	2$^+$	312.7 *1*	60 *20*	606.17	4$^+$	[E2]	0.082		
		690.7 *2*	100 *40*	227.77	2$^+$	E0+E2(+M1)	0.17 *5*		X(E0/E2)=0.28 *9*.
1054.47	6$^+$	448.4 *1*	100	606.17	4$^+$	E2	0.030		B(E2)(W.u.)=300 *40*
1107.95	(3$^+$)	501.7 *1*	14 *6*	606.17	4$^+$	[M1,E2]	0.05 *2*		
		880.1 *1*	100 *11*	227.77	2$^+$				
1137.88	4$^+$	327.9 *1*	23 *7*	810.01	2$^+$	[E2]	0.071		
		531.7 *1*	100 *9*	606.17	4$^+$	E0+E2(+M1)	0.17 *3*		X(E0/E2)=0.09 *1*.
1339.53	(4$^+$)	733.3 *1*	100 *20*	606.17	4$^+$				
		1112.1 *2*	17 *4*	227.77	2$^+$				
1468.8	(3$^-$)	862.4 *2*	100 *10*	606.17	4$^+$				
		1241.4 *3*	70 *20*	227.77	2$^+$				
1524.95	8$^+$	470.5 *1*	100	1054.47	6$^+$	E2[#]	0.027		B(E2)(W.u.)=380 *110*
1551.25	6$^+$	413.4 *1*	100 *22*	1137.88	4$^+$				
		496.8 *1*	30 *6*	1054.47	6$^+$	E0+E2(+M1)	0.16 *4*		X(E0/E2)=0.06 *1*.
		945.1 *1*	63 *13*	606.17	4$^+$				
1604.50	(5$^+$)	496.4 *1*	100 *50*	1107.95	(3$^+$)				
		550.3 *1*	25 *10*	1054.47	6$^+$				
		998.2 *1*	100 *10*	606.17	4$^+$				
1656.43	5$^{(-)}$	601.9 *2*	100 *6*	1054.47	6$^+$				
		1050.2 *2*	71 *5*	606.17	4$^+$				Iγ(1050γ)/Iγ(602γ)=1.86 from (HI,xnγ) is not used in averaging.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

γ(^{172}Os) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
1678.6?		868.6[&] *3*	100	810.01	2^+			
1727.64	(4^-)	1121.9 *2*	100	606.17	4^+			
1806.71?		996.7[&] *1*	100	810.01	2^+			
1873.4		1267.2	100	606.17	4^+			
1884.90	(6^+)	545.4 *1*	100 *67*	1339.53	(4^+)			
		830.4 *1*	27 *7*	1054.47	6^+			
1918.9?		1108.9[&] *4*	100	810.01	2^+			
1978.45	$7^{(-)}$	322.0 *1*	100 *3*	1656.43	$5^{(-)}$	E2[#]	0.075	B(E2)(W.u.)=190 *40*
		427.6[&]	18 *5*	1551.25	6^+	[E1]		B(E1)(W.u.)=3.4×10^{-5} *12*
		453.5 *1*	73 *10*	1524.95	8^+	[E1]		B(E1)(W.u.)=1.2×10^{-4} *3* I_γ: value from ^{172}Ir ε decay is not used since it seems large by a factor of ≈3.
		924.1 *2*	34 *2*	1054.47	6^+	[E1]		B(E1)(W.u.)=6.3×10^{-6} *13*
2023.87	10^+	498.9 *1*	100	1524.95	8^+	E2[#]	0.023	B(E2)(W.u.)=260 *50*
2061.33	(6^-)	333.8 *1*	23 *11*	1727.64	(4^-)	[E2]	0.067	I_γ: from (HI,xnγ). Iγ=59 *30* in ^{172}Ir ε decay (2.0 s).
		405.0[&] *3*		1656.43	$5^{(-)}$			E_γ,I_γ: reported in (HI,xnγ) only (Iγ=67 *14*).
		1006.7 *1*	100 *2*	1054.47	6^+			
2093.63	(8^+)	542.4 *1*	100 *12*	1551.25	6^+			
		568.7 *1*	38 *12*	1524.95	8^+			
		1039.1 *1*	56 *12*	1054.47	6^+			
2140.8		1086.3 *3*	100	1054.47	6^+			
2257.6		1203.1 *2*	100	1054.47	6^+			
2288.1		1233.6 *1*	100	1054.47	6^+			
2374.6	$9^{(-)}$	350.8 *2*	6.3 *25*	2023.87	10^+	[E1]		B(E1)(W.u.)=7.0×10^{-5} *+65−30*
		396.2 *1*	100 *3*	1978.45	$7^{(-)}$	(E2)[#]	0.042	B(E2)(W.u.)=230 *+220−95*
2415.1	(8^-)	353.7 *1*	100 *11*	2061.33	(6^-)	[E2]	0.057	
		890.2 *2*	31 *11*	1524.95	8^+			
2429.9		1375.4 *2*	100	1054.47	6^+			
2439.1		1384.6 *1*	100	1054.47	6^+			
2508.3		983.4 *2*	100	1524.95	8^+			
2564.5	12^+	540.6 *1*	100	2023.87	10^+	E2[#]	0.019	B(E2)(W.u.)=280 *+105−45*
2635.4	(10^-)	220.3 *1*	100 *3*	2415.1	(8^-)			
		261.2 *3*	47 *10*	2374.6	$9^{(-)}$			
		611.6 *3*	53 *16*	2023.87	10^+			
2765.8	$11^{(-)}$	391.2 *1*	100	2374.6	$9^{(-)}$	E2[#]	0.043	B(E2)(W.u.)=151 *14*
2840.6?		276.0[&]	43 *11*	2564.5	12^+			
		816.8[&]	100 *18*	2023.87	10^+			
2846.0	(10^-)	471.2 *2*	100	2374.6	$9^{(-)}$			
3004.7	(12^-)	369.4 *1*	100 *6*	2635.4	(10^-)	(E2)[#]		
		439.8 *3*	11 *6*	2564.5	12^+			
3098.5		1074.6 *2*	100	2023.87	10^+			
3101.2	14^+	536.7 *1*	100	2564.5	12^+	E2[#]	0.019	B(E2)(W.u.)=290 *+170−80*
3194.4	$13^{(-)}$	428.7 *1*	100	2765.8	$11^{(-)}$	E2[#]	0.034	B(E2)(W.u.)=200 *40*
3199.4	(14^+)	634.9 *1*	100	2564.5	12^+			
3322.1	(12^-)	128.0 *3*	29 *15*	3194.4	$13^{(-)}$			
		476.1 *1*	100 *12*	2846.0	(10^-)			
		556.3 *3*	47 *13*	2765.8	$11^{(-)}$			
3513.0	(14^-)	508.3 *1*	100	3004.7	(12^-)			
3589.7	16^+	488.5 *1*	100	3101.2	14^+	E2[#]	0.024	B(E2)(W.u.)=140 *23*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{172}Os)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[@]	Comments
3711.3	(15^-)	516.9 *1*	100	3194.4	$13^{(-)}$	E2[#]	0.021	B(E2)(W.u.)=220 *+325−70*
3823.3	(16^+)	623.9 *1*	100	3199.4	(14^+)			
3847.5	(14^-)	525.4 *1*	100	3322.1	(12^-)			
4068.1	(16^-)	555.1 *1*	100	3513.0	(14^-)			
4176.5	(18^+)	586.8 *1*	100	3589.7	16^+	[E2]	0.016	B(E2)(W.u.)=130 *+75−55*
4276.9	(17^-)	565.6 *1*	100	3711.3	(15^-)			
4412.4	(16^-)	564.9 *2*	100	3847.5	(14^-)			
4510.7	(18^+)	687.4 *1*	100	3823.3	(16^+)			
4640.1	(18^-)	572.0 *1*	100	4068.1	(16^-)			
4831.6	(20^+)	655.1 *1*	100	4176.5	(18^+)	[E2]	0.012	B(E2)(W.u.)>91
4872.5	(19^-)	595.6 *1*	100	4276.9	(17^-)			
5003.9	(18^-)	591.5 *3*	100	4412.4	(16^-)			
5234.6?	(20^+)	723.9[&] *3*	100	4510.7	(18^+)			
5245.1	(20^-)	605.0 *1*	100	4640.1	(18^-)			
5490.6	(21^-)	618.1 *1*	100	4872.5	(19^-)			
5528.2	(22^+)	696.6 *1*	100	4831.6	(20^+)			
5633.9	(20^-)	630.0 *3*	100	5003.9	(18^-)			
5892.5	(22^-)	647.4 *1*	100	5245.1	(20^-)			
5985.6?	(22^+)	751.0[&] *10*	100	5234.6?	(20^+)			
6103.3		612.6 *2*	100	5490.6	(21^-)			
6135.1	(23^-)	644.4 *2*	100	5490.6	(21^-)			
6258.5	(24^+)	730.3 *1*	100	5528.2	(22^+)			
6298.5	(22^-)	664.6 *3*	100	5633.9	(20^-)			
6584.8	(24^-)	692.3 *1*	100	5892.5	(22^-)			
6812.4		709.1 *2*	100	6103.3				
6819.3	(25^-)	684.2 *2*	100	6135.1	(23^-)			
7028.0	(26^+)	769.5 *1*	100	6258.5	(24^+)			
7326.7	(26^-)	741.8 *3*	100	6584.8	(24^-)			
7554.9		742.5 *3*	100	6812.4				
7842.6	(28^+)	814.6 *2*	100	7028.0	(26^+)			
8119.2?	(28^-)	792.5[&] *3*	100	7326.7	(26^-)			
8690.1?	(30^+)	847.5 *3*	100	7842.6	(28^+)			

[†] Weighted averages taken when values are available from more than one type of study.
[‡] From ce data in ^{172}Ir ε decay, unless otherwise stated.
[#] $\gamma(\theta)$ and/or $\gamma\gamma(\theta)$ (DCO) gives $\Delta J=2$. Observation in prompt $\gamma\gamma$ spectrum gives E2 from RUL (for E2 and M2).
[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[&] Placement of transition in the level scheme is uncertain.

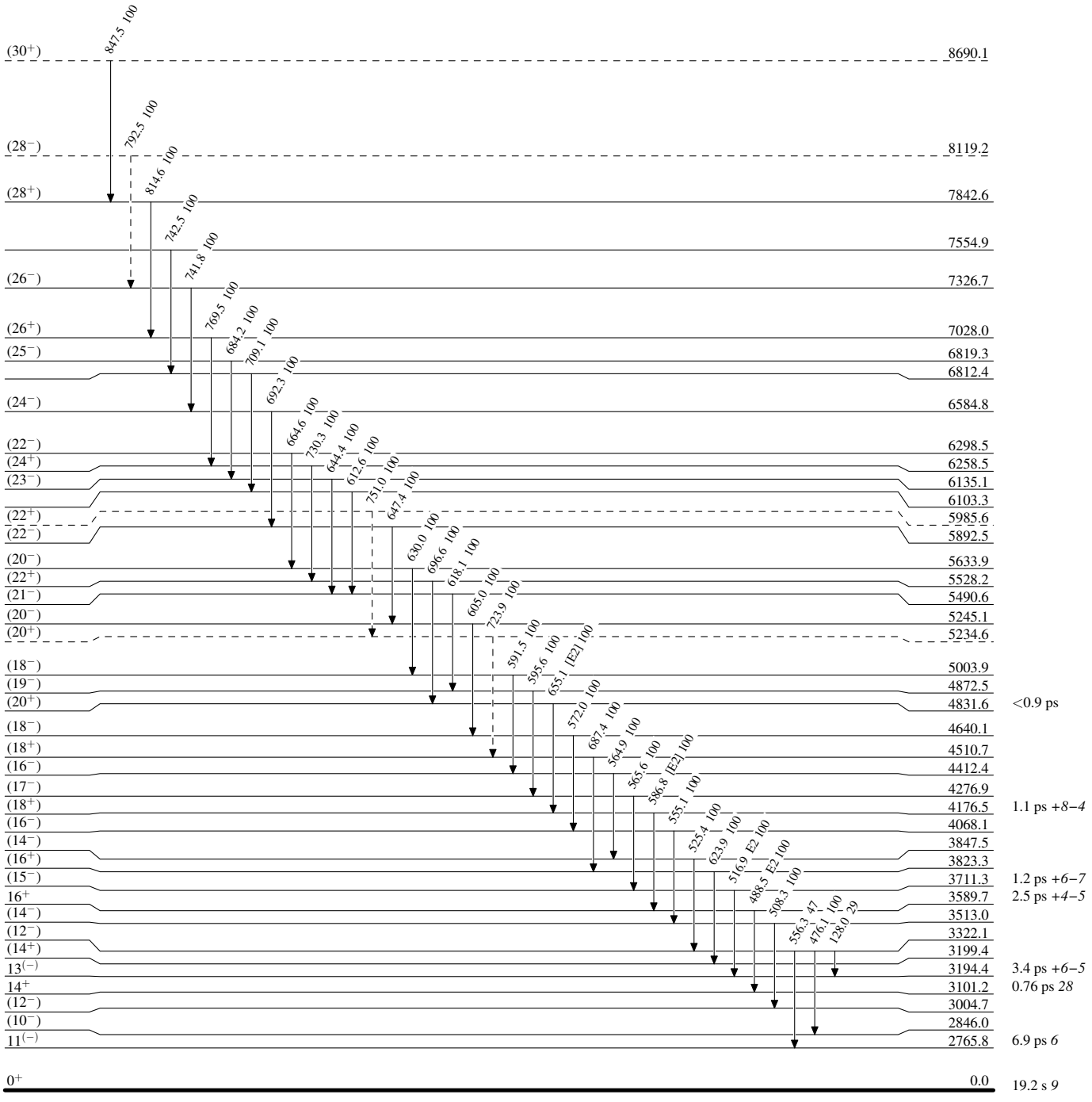
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{172}_{76}Os_{96}$

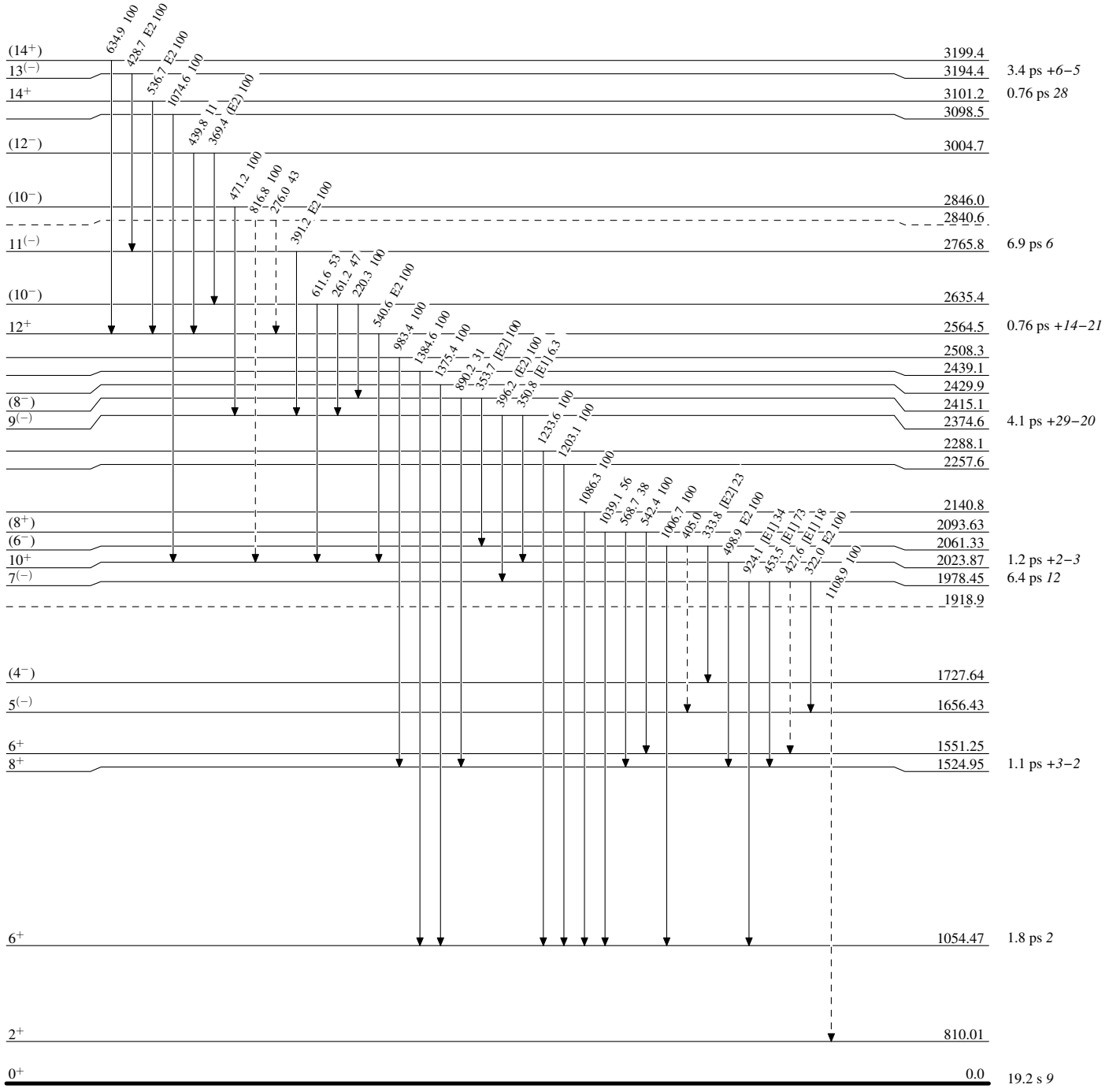
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{172}_{76}Os_{96}$

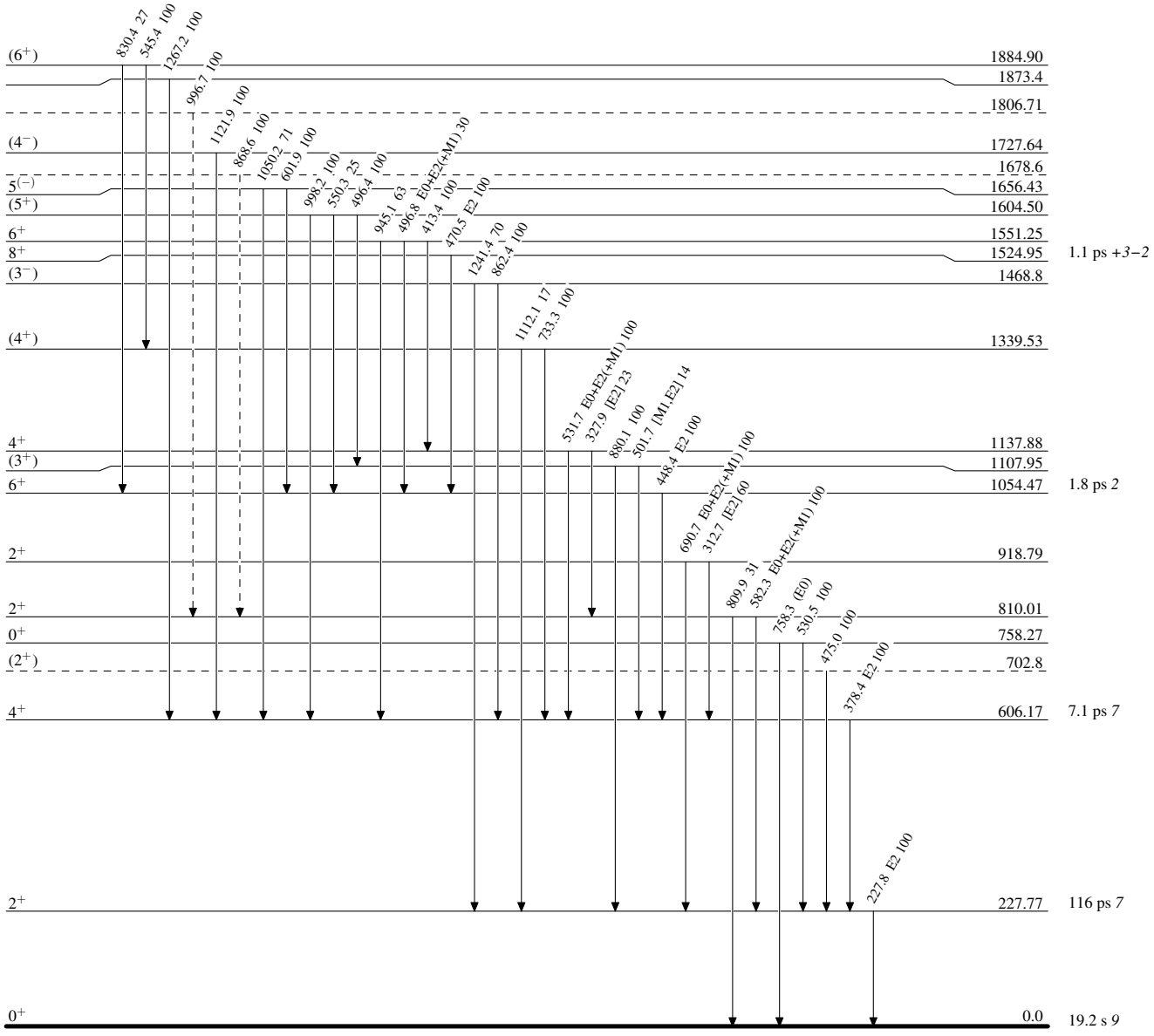
Adopted Levels, Gammas

Legend

Level Scheme (continued)

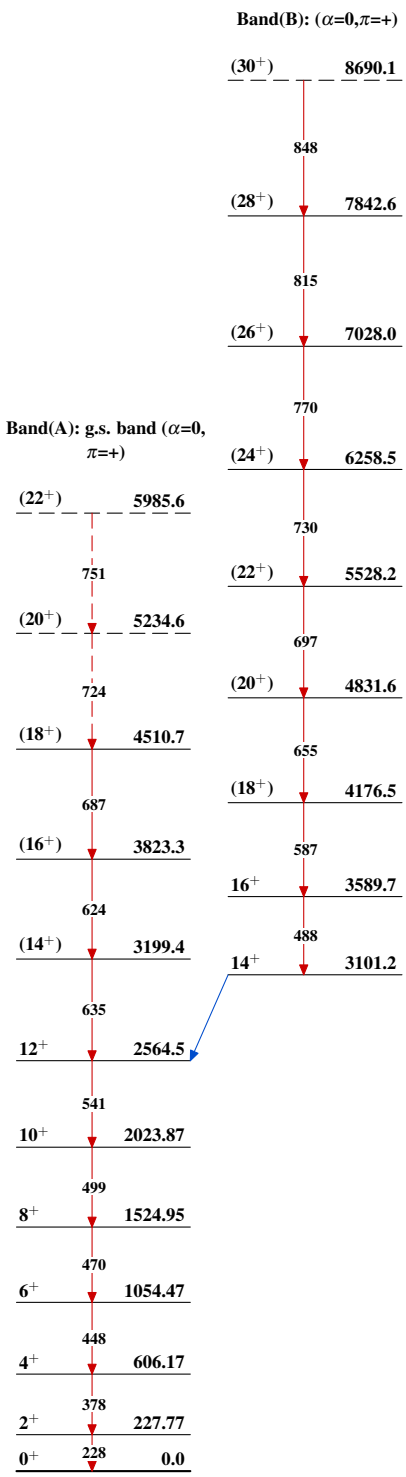
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



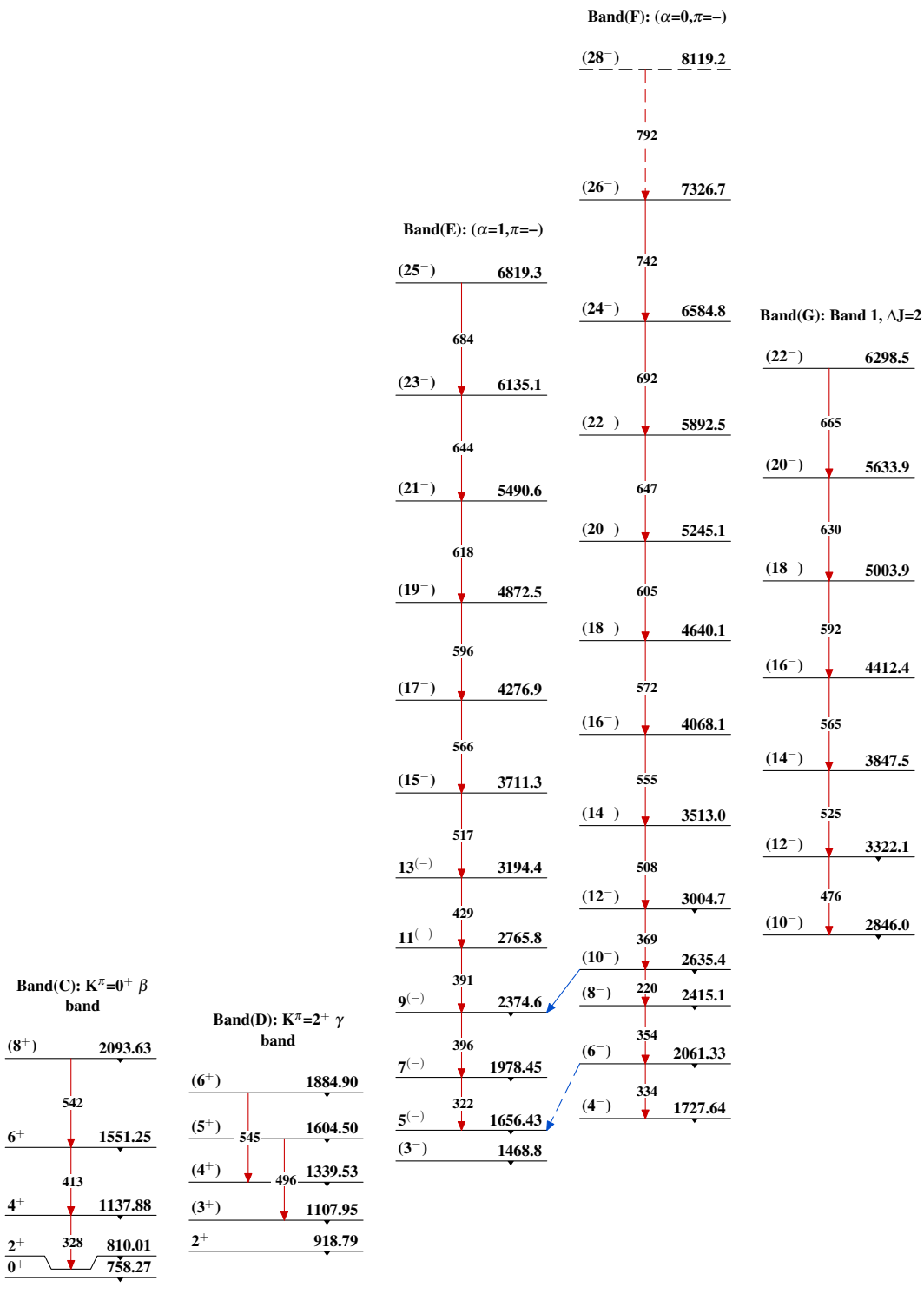
$^{172}_{76}Os_{96}$

Adopted Levels, Gammas



$^{172}_{76}Os_{96}$

Adopted Levels, Gammas (continued)



$^{172}_{76}Os_{96}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde	NDS 87,15 (1999)	1-Nov-1998

Q(β^-)=−9.13×10^3 *3*; S(n)=10628 *19*; S(p)=3.73×10^3 *3*; Q(α)=4870 *10* 2012Wa38
Note: Current evaluation has used the following Q record −9.0E3 SY1.06E4 SY3.5E3 SY4872 10 1995Au04.
Other reactions: ^{120}Sn(^{58}Ni,a) (1987Da15); ^{89}Y(^{90}Zr,pα) (1988Go03).

^{174}Os Levels

Cross Reference (XREF) Flags

A	^{51}V(^{127}I,4nγ)	D	^{174}Ir ε decay (7.9 s+4.9 s)
B	^{146}Nd(^{32}S,4nγ)	E	^{178}Pt α decay
C	^{150}Sm(^{28}Si,4nγ),(^{29}Si,5nγ)		

E(level)	J$^\pi$[†]	T$_{1/2}$[‡]	XREF	Comments
0.0[@]	0$^+$	44 s *4*	ABCDE	T$_{1/2}$: weighted average of 45 s *5* (1973Be67) and 42 s *6* (1972Be89). %ε=99.98 *1*; %α=0.02 *1*. %α: From 1971Bo06.
158.60[@] *10*	2$^+$	0.35 ns *4*	ABCDE	
435.00[@] *15*	4$^+$	18.2 ps *8*	ABCD	
545.3[c] *6*	0$^+$		D	
690.9[&] *3*	2$^+$		D	
777.63[@] *22*	6$^+$	5.8 ps *6*	ABCD	
846.2[d] *7*	2$^+$		D	
989.4[c] *5*	4$^+$		D	
1054.0[d] *4*	3$^+$		D	
1171.93[@] *23*	8$^+$	2.7 ps *6*	ABCD	
1240.0 *6*			C	
1254.1[d] *8*	4$^+$		D	
1417.6 *5*			C	
1420.1[&] *5*	(3$^-$)		D	
1424.9[c] *7*	6$^+$		D	
1453.28[d] *22*	5$^+$		BCD	
1549.75[&] *25*	4$^-$	35[#] ps *21*	ABCD	
1596.45[&] *23*	5$^{(-)}$	35[#] ps *21*	ABCD	J$^\pi$: may not be a band head (1990Fa02). It has been assigned as the J=5 member of a K^π=3$^-$ band in ^{174}Ir ε decay.
1617.5[@] *3*	10$^+$	2.1 ps *2*	ABCD	
1790.37[&] *22*	6$^{(-)}$	8 ps *4*	ABCD	
1860.51[&] *25*	7$^{(-)}$	7.8 ps *16*	ABCD	
2102.8[&] *3*	8$^-$	9.7 ps *18*	ABC	
2113.8[@] *3*	12$^+$	0.97 ps *14*	ABC	
2149.4?[b] *4*			C	
2205.66[a] *25*	9$^-$	5.3 ps *8*	ABC	
2271.9 *6*			C	
2410.1[b] *3*	(9)		BC	
2476.7[&] *4*	10$^{(-)}$	3.9 ps *7*	ABC	
2613.8[a] *3*	11$^-$	2.4 ps *3*	ABC	
2622.5 *6*			C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{174}Os Levels (continued)

E(level)	Jπ†	$T_{1/2}$‡	XREF	E(level)	Jπ†	$T_{1/2}$‡	XREF
2656.3[@] *4*	14^+	0.49 ps *14*	ABC	5262.1[a] *6*	21^-	0.62 ps *17*	ABC
2706.5 *6*			C	5430.3[b] *13*	(21)		B
2749.9[b] *3*	(11)		BC	5741.1[&] *8*	22^-		BC
2905.8 *6*			C	5870.1[a] *8*	23^-		BC
2906.7[&] *4*	12^-	3.4 ps *6*	ABC	5987.1[@] *8*	24^+		BC
3074.1[a] *3*	13^-	1.3 ps *2*	ABC	6060.7[b] *14*	(23)		B
3163.3[b] *4*	(13)		BC	6428.0[&] *9*	24^-		B
3239.8[@] *4*	16^+	0.42 ps *7*	ABC	6512.1[a] *9*	25^-		BC
3389.1[&] *5*	14^-	1.9 ps *3*	ABC	6760.7?[b] *14*	(25)		B
3577.6[a] *4*	15^-	0.35 ps *21*	ABC	6786.1[@] *9*	26^+		BC
3663.5[b] *4*	(15)		BC	7190.0[&] *10*	26^-		B
3861.8[@] *5*	18^+	0.14 ps *7*	ABC	7199.0[a] *10*	27^-		B
3924.9[&] *5*	$16^{(-)}$	0.8 ps *6*	ABC	7628.4[@] *11*	28^+		B
4114.7[a] *4*	17^-	0.25 ps *15*	ABC	7943.4[a] *11*	29^-		B
4225.5[b] *7*	(17)		BC	8018.8[&] *11*	28^-		B
4505.6[&] *6*	18^-		BC	8511.6[@] *12*	30^+		B
4524.9[@] *5*	20^+	0.28 ps *14*	ABC	8749.7[a] *12*	31^-		B
4676.9[a] *5*	19^-	0.76 ps *21*	ABC	9429.7[@] *13*	32^+		B
4825.3[b] *8*	(19)		BC	9618.3[a] *13*	33^-		B
5112.1[&] *6*	20^-		BC	10545.5?[a] *14*	(35^-)		B
5233.0[@] *6*	22^+		ABC				

† Spin/parity values are evaluator′s assignments based on rotational structure, $\gamma(\theta)$, and γ-ray decay patterns in ^{150}Sm(^{28}Si,4nγ) (^{29}Si,5nγ) and ^{146}Nd(^{32}S,4nγ).

‡ Measured with the recoil-distance technique in ^{51}V(^{127}I,4nγ) (1987Ga12).

Combined $T_{1/2}$ for the 1551 and 1598 levels.

@ Band(A): $K^\pi=0^+$ g.s. rotational band.

& Band(B): $K^\pi=(3^-)$ rotational band.

a Band(C): $K^\pi=(5^-)$ rotational band.

b Band(D): rotational band.

c Band(E): $K^\pi=0^+$ β-vibrational band.

d Band(F): $K^\pi=2^+$ γ-vibrational band.

Adopted Levels, Gammas (continued)

γ(^{174}Os)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[†@]	δ	α[e]	Comments
158.60	2+	158.6[&] *1*	100 *15*	0.0	0+				
435.00	4+	276.4[&] *1*	100.0 *9*	158.60	2+	(E2)			
545.3	0+	386.8[c]	43[c] *4*	158.60	2+	E2		0.0439	Mult.: from conversion-electron and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
		545.5[c]	[c]	0.0	0+	E0			
690.9	2+	145.8[c]	7.8[c] *3*	545.3	0+				
		256.2	30 *7*	435.00	4+				
		532.4[c] *2*	100[c] *11*	158.60	2+	E0+E2+M1	−10 *+3−5*		Mult.: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
777.63	6+	342.8[a] *2*	100 *1*	435.00	4+	(E2)			
846.2	2+	687.9[c]	12[c] *2*	158.60	2+	E0+E2+M1	8 *3*		Mult.,δ: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
		846.4[c]	60[c] *7*	0.0	0+				
989.4	4+	298.4[c]	100[c] *11*	690.9	2+				
		554.5[c] *5*	93[c] *9*	435.00	4+	E0+E2+M1	−2.8 *+7−12*		Mult.,δ: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
		830.9	29 *7*	158.60	2+				
1054.0	3+	618.9[c]	7[c] *2*	435.00	4+				
		895.6[c] *4*	25[c] *3*	158.60	2+	E2+M1	8 *+5−2*	0.00641	Mult.,δ: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
1171.93	8+	394.4[&] *1*	100.0 *13*	777.63	6+	(E2)			Ratio(DCO)=1.09 *7*.
1240.0		805.0[#] *5*	100[#] *33*	435.00	4+				
1254.1	4+	819.1[c]	100[c] *30*	435.00	4+				
		1095.6[c]	43[c] *9*	158.60	2+				
1417.6		1259.0[#] *5*	100[#] *35*	158.60	2+				
1420.1	(3−)	574.2[c]	4.9[c] *14*	846.2	2+				
		1261.5[c] *5*	12[c] *4*	158.60	2+	E1(+M2)	+0.7 *+3−2*	0.0059 *24*	Mult.,δ: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
1424.9	6+	435.5[c]	17[c] *3*	989.4	4+	E2		0.0321	Mult.: from conversion-electron data in ^{174}Ir ε decay (1994Ki01).
		647.6[c]	36[c] *4*	777.63	6+	E0+E2(+M1)	≤−3		Mult.,δ: from conversion-electron data and γγ(θ) in ^{174}Ir ε decay (1994Ki01).
		989.8	27 *4*	435.00	4+				
1453.28	5+	675.1[c]	45[c] *15*	777.63	6+				
		1018.2[b] *2*	100 *10*	435.00	4+				
1549.75	4−	495.1[c]	24[c] *7*	1054.0	3+				
		559.7[c]	12[c] *2*	989.4	4+				
		1114.7[&] *3*	100 *7*	435.00	4+				

$^{174}_{76}Os_{98}$-3

Adopted Levels, Gammas (continued)

γ(^{174}Os) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[†@]
1596.45	5$^{(-)}$	606.7[c]	17[c] 4	989.4	4$^+$	
		818.6[a] 2	100 7	777.63	6$^+$	
		1161.0[#] 5	4[#] 2	435.00	4$^+$	
1617.5	10$^+$	445.7[a] 2	100.0 12	1171.93	8$^+$	(E2)
1790.37	6$^{(-)}$	193.8[bcd] 2	10[cd] 2	1596.45	5$^{(-)}$	
		240.6[acd] 2	47[cd] 7	1549.75	4$^-$	
		337.0[bc] 2	31[c] 5	1453.28	5$^+$	
		1012.6[&c] 3	100[c] 7	777.63	6$^+$	
1860.51	7$^{(-)}$	263.9[acd] 2	21[cd] 3	1596.45	5$^{(-)}$	
		688.5[ac] 2	100[c] 5	1171.93	8$^+$	D
		1083.4[c] 5	10[c] 3	777.63	6$^+$	
2102.8	8$^-$	312.1[a] 2	100.0 24	1790.37	6$^{(-)}$	(E2)
		932.6 5	9.8 16	1171.93	8$^+$	
2113.8	12$^+$	496.3[&] 1	100.0 25	1617.5	10$^+$	(E2)
2205.66	9$^-$	345.1[&] 1	100 5	1860.51	7$^{(-)}$	(E2)
		588.3[&] 2	27 3	1617.5	10$^+$	
		1033.7[b] 2	12.4 12	1171.93	8$^+$	
2271.9		1100.0[#] 5	100[#] 33	1171.93	8$^+$	
2410.1	(9)	260.7[#] 2	50[#] 11	2149.4?		
		792.6[b] 2	100 20	1617.5	10$^+$	
		1238.3[b] 2	80 7	1171.93	8$^+$	
2476.7	10$^{(-)}$	373.9[a] 2	100 2	2102.8	8$^-$	(E2)
2613.8	11$^-$	408.1[&] 1	100 2	2205.66	9$^-$	(E2)
2622.5		1005.0[#] 5	100[#] 33	1617.5	10$^+$	
2656.3	14$^+$	542.5[a] 2	100.0 18	2113.8	12$^+$	(E2)
2706.5		1089.0[#] 5	100[#] 33	1617.5	10$^+$	
2749.9	(11)	339.9[b] 2	100 17	2410.1	(9)	
		1132.3[b] 2	46 4	1617.5	10$^+$	
2905.8		792.0[#] 5	100[#] 46	2113.8	12$^+$	
2906.7	12$^-$	430.0[a] 2	100 7	2476.7	10$^{(-)}$	(E2)
3074.1	13$^-$	460.3[&] 1	100 3	2613.8	11$^-$	(E2)
3163.3	(13)	413.4[#] 2	100[#] 11	2749.9	(11)	
3239.8	16$^+$	583.5[a] 2	100 8	2656.3	14$^+$	(E2)
3389.1	14$^-$	482.4[&] 2	100 4	2906.7	12$^-$	(E2)
3577.6	15$^-$	503.5[a] 2	100 5	3074.1	13$^-$	(E2)
3663.5	(15)	500.2[#] 2	100[#] 8	3163.3	(13)	
3861.8	18$^+$	622.0[a] 2	100 3	3239.8	16$^+$	(E2)
3924.9	16$^{(-)}$	535.8[a] 2	≈100	3389.1	14$^-$	(E2)
4114.7	17$^-$	537.1[a] 2	≈100	3577.6	15$^-$	(E2)
4225.5	(17)	562.0[#] 5	≈100[#]	3663.5	(15)	
4505.6	18$^-$	580.7[b] 2	100 5	3924.9	16$^{(-)}$	
4524.9	20$^+$	663.1[a] 2	100 2	3861.8	18$^+$	(E2)
4676.9	19$^-$	562.2[a] 2	100 5	4114.7	17$^-$	(E2)
4825.3	(19)	599.8 4	100 3	4225.5	(17)	
5112.1	20$^-$	606.5[b] 2	100 4	4505.6	18$^-$	
5233.0	22$^+$	708.1[&] 3	100 3	4524.9	20$^+$	(E2)
5262.1	21$^-$	585.2[&] 3	100 18	4676.9	19$^-$	(E2)
5430.3	(21)	605.0		4825.3	(19)	
5741.1	22$^-$	629.0 5	100 8	5112.1	20$^-$	
5870.1	23$^-$	608.0[#] 5	100[#] 4	5262.1	21$^-$	
5987.1	24$^+$	754.0[b] 5	100 3	5233.0	22$^+$	
6060.7	(23)	630.4 4	100 8	5430.3	(21)	
6428.0	24$^-$	686.9 4	100 5	5741.1	22$^-$	
6512.1	25$^-$	642.0[#] 5	≈100[#]	5870.1	23$^-$	
6760.7?	(25)	699.9 5	100 7	6060.7	(23)	
6786.1	26$^+$	799.0[b] 5	100 7	5987.1	24$^+$	
7190.0	26$^-$	762.0 5	100 12	6428.0	24$^-$	
7199.0	27$^-$	686.9 4	<100	6512.1	25$^-$	
7628.4	28$^+$	842.3 5	100 7	6786.1	26$^+$	
7943.4	29$^-$	744.4 4	100 4	7199.0	27$^-$	
8018.8	28$^-$	828.8 5	100 18	7190.0	26$^-$	
8511.6	30$^+$	883.2 5	100 13	7628.4	28$^+$	
8749.7	31$^-$	806.3 5	100 12	7943.4	29$^-$	
9429.7	32$^+$	918.1 5	100 20	8511.6	30$^+$	
9618.3	33$^-$	868.6 5	100 18	8749.7	31$^-$	
10545.5?	(35$^-$)	927.2 5	100 11	9618.3	33$^-$	

$^{174}_{76}Os_{98}$-4

Adopted Levels, Gammas (continued)

$\gamma(^{174}Os)$ (continued)

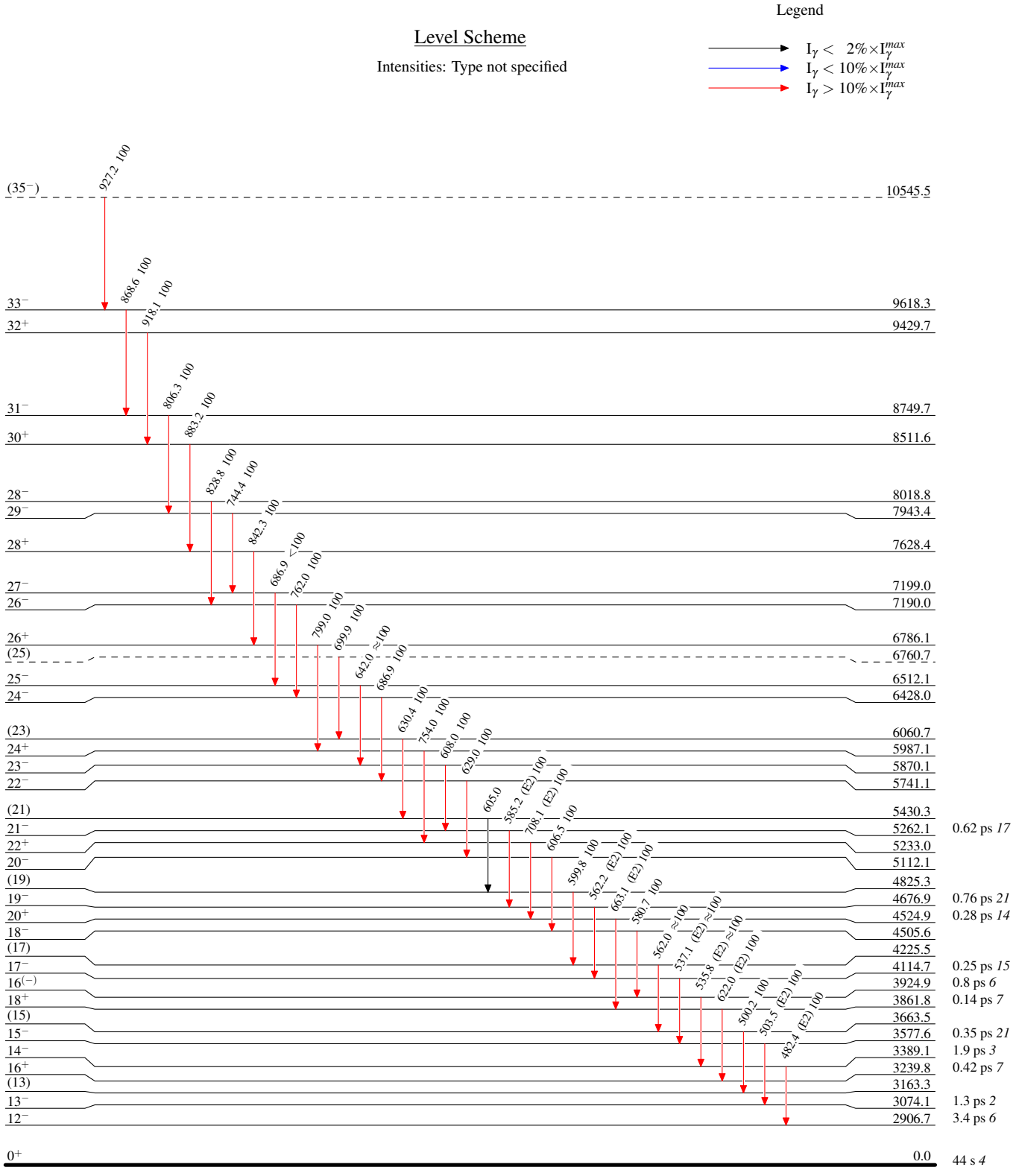
† From $\gamma(\theta)$ in $^{150}Sm(^{28}Si,4n\gamma)$, $(^{29}Si,5n\gamma)$, and $^{146}Nd(^{32}S, 4n\gamma)$. Stretched-quadrupole transitions are assigned by the evaluator as E2, based on RUL.
‡ From 1992Hi09, except as noted.
# From 1990Fa02.
@ From $\gamma(\theta)$. Quadrupole transitions are assumed to be stretched E2 (1990Fa02,1992Hi09).
& Weighted averaged values from 1992Hi09, 1990Fa02 and 1987Ga12.
[a] Weighted averaged values from 1990Fa02 and 1987Ga12.
[b] Weighted averaged values from 1990Fa02 and 1992Hi09.
[c] From ^{174}Ir ε decay.
[d] Contaminated in $^{146}Nd(^{32}S,4n\gamma)$.
[e] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{174}_{76}Os_{98}$-5

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

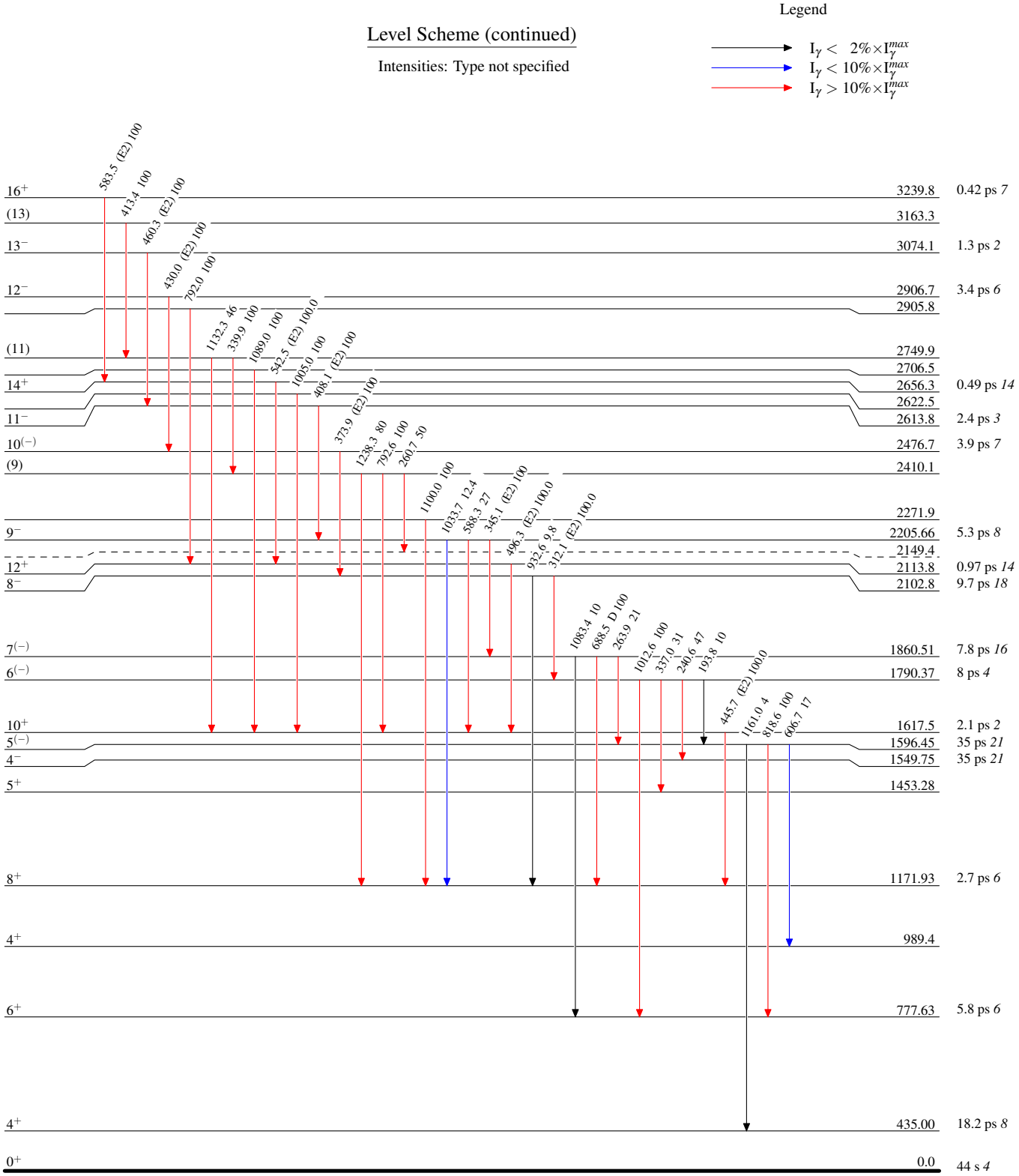


$^{174}_{76}Os_{98}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

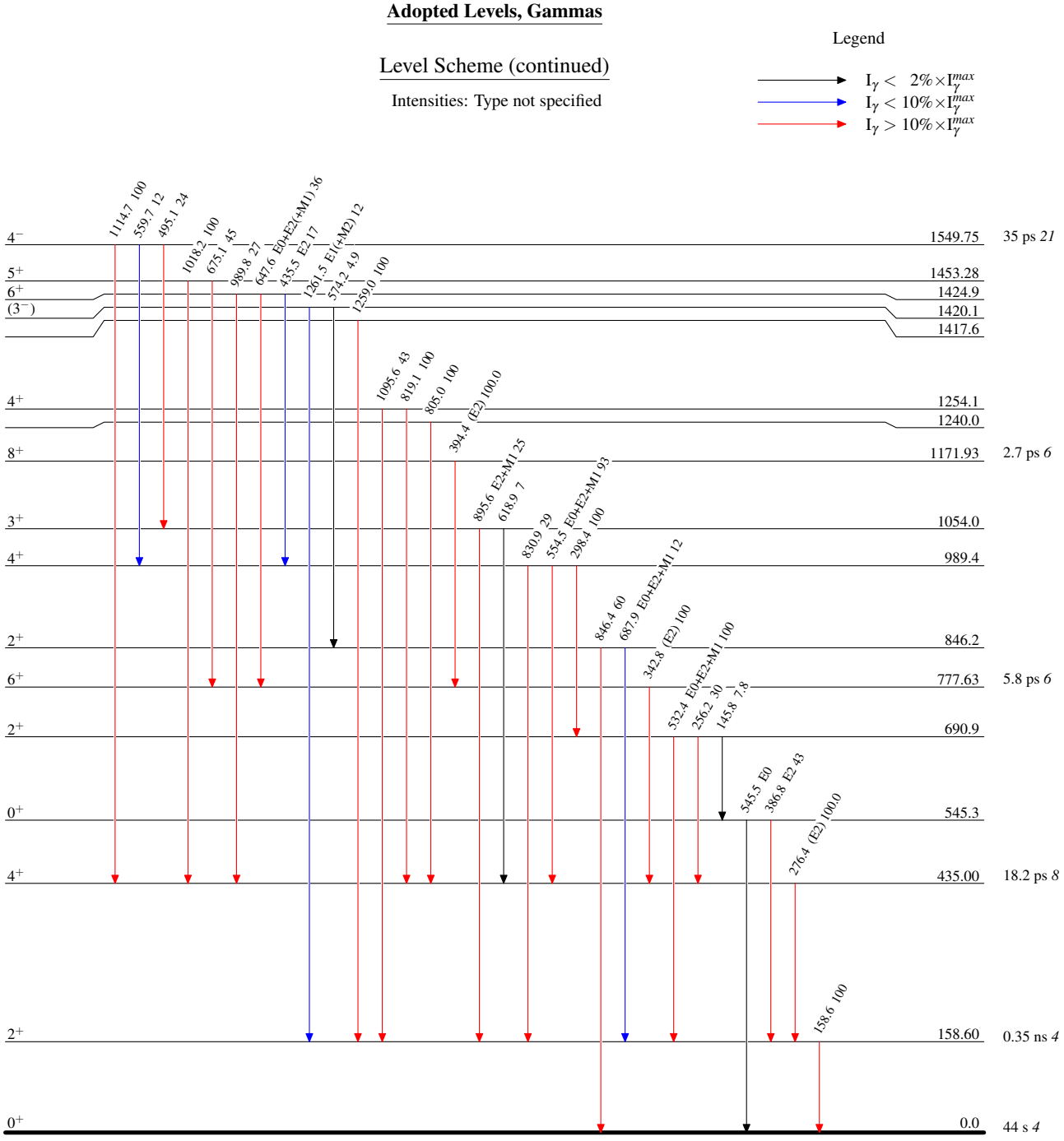


$^{174}_{76}Os_{98}$

Adopted Levels, Gammas

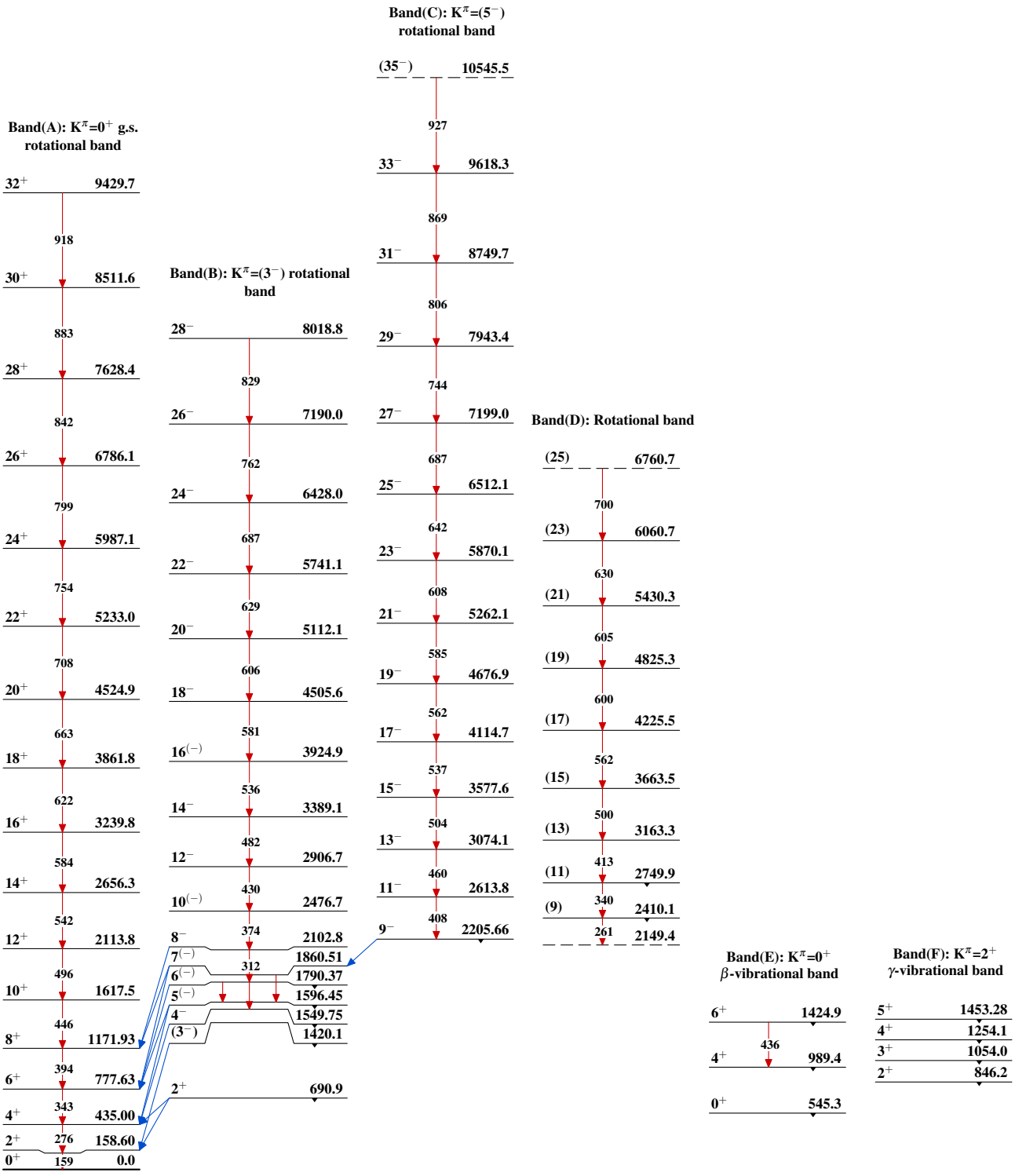
Level Scheme (continued)

Intensities: Type not specified



$^{174}_{76}Os_{98}$

Adopted Levels, Gammas



Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107,791 (2006)	15-Sep-2005

Q(β^-)=−8.24×10^3 *4*; S(n)=1.006×10^4 *3*; S(p)=4.10×10^3 *4*; Q(α)=4.57×10^3 *4* 2012Wa38
Note: Current evaluation has used the following Q record −8240 3010060 304100 404570 40 2003Au03.

^{176}Os Levels

Cross Reference (XREF) Flags

A ^{176}Ir ε decay
B ^{180}Pt α decay
C ^{164}Er(^{16}O,4nγ)
D ^{152}Sm(^{28}Si,4nγ)
E ^{162}Dy(^{20}Ne,6nγ)

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[#]	0$^+$	3.6 min *5*	ABCDE	%ε+%β^+=100 $T_{1/2}$: from 1970DeZF. Other value: 3.0 min *7* (1970Ar15). Other: 1972Be89.
135.1[#] *7*	2$^+$		A CDE	J$^\pi$: 135.1γ E2 to 0$^+$.
395.5[#] *8*	4$^+$		A CDE	J$^\pi$: 260.3γ E2 to 2$^+$, member of g.s. rotational band.
601.2[b] *8*	0$^+$		A	J$^\pi$: 601.3γ E0 to 0$^+$.
742.4[b] *8*	2$^+$		A	J$^\pi$: 607.2γ E0+E2+M1 to 2$^+$.
742.5[#] *9*	6$^+$		A CDE	J$^\pi$: 347.0γ E2 to 4$^+$, member of g.s. rotational band.
863.6[c] *7*	2$^+$		A	J$^\pi$: 728.5γ E0+E2+M1 to 2$^+$.
1025.6[b] *8*	4$^+$		A	J$^\pi$: 629.8γ E0 to 4$^+$.
1037.8[c] *9*	3$^+$		A	J$^\pi$: 642.2γ M1+E2 to 4$^+$, 902.6γ M1+E2 to 2$^+$.
1157.7[#] *11*	8$^+$		A CDE	J$^\pi$: 415.0γ E2 to 6$^+$, member of g.s. rotational band.
1224.0[c] *9*	4$^+$		A	J$^\pi$: 828.4γ M1+E2 to 4$^+$.
1349.7[&] *9*	(3)$^-$		A	J$^\pi$: 1214.6γ E1+M2 to 2$^+$.
1409.5[c] *10*	5$^+$		A	J$^\pi$: 1014.0γ M1+E2 to 4$^+$, 667.2γ M1+E2 to 6$^+$.
1431.9[b] *9*	6$^+$		A	J$^\pi$: 689.4γ E0+E2+M1 to 6$^+$.
1475.1[&] *10*	(4)$^-$		A C	J$^\pi$: 1079.6γ E1+M2 to 4$^+$, 437.4γ to 3$^+$.
1516.6[@] *12*	(5)$^-$		A C	J$^\pi$: 774.0γ E1+M2 to 6$^+$, 1120.6γ to 4$^+$.
1634.1[#] *13*	10$^+$		CDE	J$^\pi$: 476.3γ E2 to 8$^+$ state. Band member.
1708.0[&] *11*	(6$^-$)		A C	J$^\pi$: Band member.
1753.8[@] *11*	(7$^-$)		A C	J$^\pi$: Band member.
1929.7 *10*			A	
1978.8[a] *14*	(7)		C	J$^\pi$: Band assignment.
2021.0[&] *12*	(8$^-$)		C	J$^\pi$: 313.2γ E2 to (6$^-$) state. Band member.
2076.1[@] *12*	(9$^-$)		C	J$^\pi$: 322.4γ E2 to (7$^-$) state. Band member.
2103.4 *9*			A	
2138.6 *9*			A	
2167.9[#] *15*	12$^+$		CDE	J$^\pi$: 533.8γ E2 to 10$^+$ state. Band member.
2265.3[a] *14*	(9)		C	J$^\pi$: 286.4γ E2 to (7) state. Band member.
2395.0[&] *16*	(10$^-$)		C	J$^\pi$: 374.0γ (E2) to (8$^-$) state. Band member.
2474.0[@] *14*	(11$^-$)		C	J$^\pi$: 398.3γ E2 to (9$^-$) state. Band member.
2571.2 *16*	(12$^+$)		C	J$^\pi$: 937.1γ (E2) to 10$^+$ state.
2621.7[a] *18*	(11)		C	J$^\pi$: 356.4γ E2 to (9) state. Band member.
2754.8[#] *18*	14$^+$		C E	J$^\pi$: 586.8γ E2 to 12$^+$ state. Band member.
2817.9[&] *19*	(12$^-$)		C	J$^\pi$: 422.9γ E2 to (10$^-$) state. Band member.
2937.8[@] *17*	(13$^-$)		C	J$^\pi$: 463.8γ E2 to (11$^-$) state. Band member.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{176}Os Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
3050.8[a] *20*	(13)	C	J$^{\pi}$: 429.1γ E2 to (11) state. Band member.
3294.8[&] *21*	(14$^-$)	C	
3381.5[#] *20*	16$^+$	C E	J$^{\pi}$: 626.8γ E2 to 14$^+$ state. Band member.
3456.9[@] *20*	(15$^-$)	C	J$^{\pi}$: 519.1γ E2 to (13$^-$) state. Band member.
3547.4[a] *23*	(15)	C	J$^{\pi}$: 496.6γ E2 to (13) state. Band member.
3566.9 *20*	(16$^+$)	C	J$^{\pi}$: 812.1γ (E2) to 14$^+$ state.
3829.5[&] *24*	(16$^-$)	C	J$^{\pi}$: Band member.
4019.2[#] *22*	18$^+$	C	J$^{\pi}$: 637.7γ E2 to 16$^+$ state. Band member.
4023.8[@] *22*	(17$^-$)	C	J$^{\pi}$: 566.9γ E2 to (15$^-$) state. Band member.
4100.0[a] *25*	(17)	C	J$^{\pi}$: 552.6γ (E2) to (15) state. Band member.
4176.8 *20*	(18$^+$)	C	J$^{\pi}$: 795.3γ (E2) to 16$^+$ state.
4420[&] *3*	(18$^-$)	C	J$^{\pi}$: 590.9γ (E2) to (16$^-$) state. Band member.
4634.7[@] *24*	(19$^-$)	C	J$^{\pi}$: 610.9γ E2 to (17$^-$) state. Band member.
4683.3[#] *24*	(20$^+$)	C	J$^{\pi}$: 664.1γ (E2) to 18$^+$ state. Band member.
4699[a] *3*	(19)	C	
5043?[&] *1*	(20$^-$)	C	
5287[@] *3*	(21$^-$)	C	J$^{\pi}$: 652.1γ (E2) to (19$^-$) state. Band member.
5349[a] *3*	(21)	C	J$^{\pi}$: 649.9γ (E2) to (19) state. Band member.
5399[#] *3*	(22$^+$)	C	J$^{\pi}$: 715.6γ (E2) to (20$^+$) state. Band member.
5976[@] *3*	(23$^-$)	C	
6057[a] *3*	(23)	C	
6147[#] *3*	(24$^+$)	C	J$^{\pi}$: 748.5γ (E2) to (22$^+$) state. Band member.
6683[@] *3*	(25$^-$)	C	

[†] Deduced by evaluator from a least squares fit to the γ-ray energies assuming ΔE=1 keV for all γ-ray energies.
[‡] Assignments are based on rotational band structure, γ-ray angular distributions, and level deexcitation patterns.
[#] Band(A): K$^{\pi}$=0$^+$ g.s. rotational band.
[@] Band(B): rotational band 1.
[&] Band(C): rotational band 2.
[a] Band(D): rotational band 3.
[b] Band(E): K$^{\pi}$=0$^+$ β vibrational band.
[c] Band(F): K$^{\pi}$=2$^+$ γ vibrational band.

Adopted Levels, Gammas (continued)

$\gamma(^{176}Os)$

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[@]	δ	α[b]	Comments
135.1	2^+	135.1	100	0.0	0^+	E2			
395.5	4^+	260.3	100	135.1	2^+	E2			
601.2	0^+	466.1[‡]	100[‡]	135.1	2^+	E2[&]		0.0271	
		601.3[‡]	[‡]	0.0	0^+	E0[&]			
742.4	2^+	141.2[‡]	≈0.07[‡]	601.2	0^+				
		346.9[‡]	100[‡] *3*	395.5	4^+	E2[&]			
		607.2[‡]	5.0[‡] *5*	135.1	2^+	E0+E2+M1[&]	−4.2 *+5−6*	0.139 *7*	
742.5	6^+	347.0	100	395.5	4^+	E2			
863.6	2^+	467.9[‡]	9.0[‡] *25*	395.5	4^+				
		728.5[‡]	100[‡] *8*	135.1	2^+	E0+E2+M1[&]	11 *+0−5*	0.018 *3*	
		863.6[‡]	63[‡] *8*	0.0	0^+	E2[&]		0.00676	
1025.6	4^+	282.9[‡]	19[‡] *3*	742.4	2^+	E2[&]		0.110	
		283.1[‡]	10[‡] *3*	742.5	6^+				
		629.8[‡]	100[‡] *5*	395.5	4^+	E0+E2+M1[&]	−2.8 *+2−3*	0.092 *5*	
		890.6[‡]	0.8[‡] *2*	135.1	2^+				
1037.8	3^+	642.2[‡]	18.0[‡] *24*	395.5	4^+	M1+E2[&]	−2.9 *+5−7*	0.0152 *15*	
		902.6[‡]	100[‡] *8*	135.1	2^+	M1+E2[&]	−9 *+3−5*	0.0063 *4*	
1157.7	8^+	415.0	100	742.5	6^+	E2			
1224.0	4^+	360.3[‡]	34[‡] *11*	863.6	2^+				
		481.6[‡]	25[‡] *5*	742.5	6^+				
		828.4[‡]	100[‡] *10*	395.5	4^+	M1+E2[&]	+6 *+0−4*	0.0077 *20*	
		1088.8[‡]	41[‡] *5*	135.1	2^+	E2[&]		0.00422	
1349.7	$(3)^-$	312.0[‡]	20[‡] *10*	1037.8	3^+				
		485.9[‡]	23[‡] *7*	863.6	2^+				
		1214.6[‡]	100[‡] *25*	135.1	2^+	E1+M2[&]	+0.3 *2*		
1409.5	5^+	371.6[‡]	34[‡] *8*	1037.8	3^+				
		667.2[‡]	88[‡] *12*	742.5	6^+	M1+E2[&]	−2.4 *+10−14*	0.015 *7*	
		1014.0[‡]	100[‡] *7*	395.5	4^+	M1+E2[&]	−22 *+10−0*	0.00486	
1431.9	6^+	406.3[‡]	47[‡] *3*	1025.6	4^+				
		689.4[‡]	100[‡] *5*	742.5	6^+	E0+E2+M1[&]	−2.0 *+2−3*	0.053 *8*	α: experimental value.
		1036.4[‡]	39[‡] *5*	395.5	4^+	E2[&]		0.00464	
1475.1	$(4)^-$	437.4	26 *4*	1037.8	3^+				
		1079.6	100 *10*	395.5	4^+	E1+M2[&]	+0.1 *+1−2*	0.0019 *6*	α: experimental value.

Adopted Levels, Gammas (continued)

γ(^{176}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[@]	δ	α[b]	Comments
1516.6	(5)$^-$	774.0	100 *4*	742.5	6$^+$	E1+M2[&]	+0.13 *+10−9*	0.0041 *19*	α: experimental value.
		1120.6[c]	34 *4*	395.5	4$^+$				
1634.1	10$^+$	476.3	100	1157.7	8$^+$	E2			
1708.0	(6$^-$)	233.0	22 *5*	1475.1	(4)$^-$				
		965.7	100 *5*	742.5	6$^+$	(D)[a]			
1753.8	(7$^-$)	237.1	19 *4*	1516.6	(5)$^-$				
		596.2	100 *9*	1157.7	8$^+$	D[a]			
		1011.4	9 *1*	742.5	6$^+$	D[a]			
1929.7		1534.2[#]		395.5	4$^+$				
		1794.5[#]		135.1	2$^+$				
1978.8	(7)	225.0[c]	≤25	1753.8	(7$^-$)				
		821.1	100 *8*	1157.7	8$^+$	(D)[a]			
2021.0	(8$^-$)	313.2	100 *3*	1708.0	(6$^-$)	E2			
		863.1	≈33	1157.7	8$^+$				
2076.1	(9$^-$)	322.4	100 *3*	1753.8	(7$^-$)	E2			
		442.2	31 *5*	1634.1	10$^+$				
		918.4	30 *3*	1157.7	8$^+$	(D)[a]			
2103.4		671.5[#]		1431.9	6$^+$				
		1077.5[#]		1025.6	4$^+$				
		1361.5[#]		742.5	6$^+$				
		1707.5[#]		395.5	4$^+$				
2138.6		706.5[#]		1431.9	6$^+$				
		1112.8[#]		1025.6	4$^+$				
		1396.0[#]		742.5	6$^+$				
		1743.5[#]		395.5	4$^+$				
2167.9	12$^+$	533.8	100	1634.1	10$^+$	E2			
2265.3	(9)	286.4	100 *7*	1978.8	(7)	E2			
		631.3	100 *14*	1634.1	10$^+$	(D)[a]			
2395.0	(10$^-$)	374.0	100	2021.0	(8$^-$)	(E2)			
2474.0	(11$^-$)	306	6.4 *13*	2167.9	12$^+$				
		398.3	100 *4*	2076.1	(9$^-$)	E2			
		839.7	7.0 *13*	1634.1	10$^+$				
2571.2	(12$^+$)	937.1	100	1634.1	10$^+$	(E2)			
2621.7	(11)	356.4	100	2265.3	(9)	E2			
2754.8	14$^+$	586.8	100	2167.9	12$^+$	E2			
2817.9	(12$^-$)	422.9	100	2395.0	(10$^-$)	E2			
2937.8	(13$^-$)	463.8	100 *4*	2474.0	(11$^-$)	E2			
		768.9[c]	≤14	2167.9	12$^+$				

$^{176}_{76}Os_{100}$-4

Adopted Levels, Gammas (continued)

γ(^{176}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[@]
3050.8	(13)	429.1	100	2621.7	(11)	E2
3294.8	(14$^-$)	476.9	100	2817.9	(12$^-$)	
3381.5	16$^+$	626.8	100	2754.8	14$^+$	E2
3456.9	(15$^-$)	519.1	100	2937.8	(13$^-$)	E2
3547.4	(15)	496.6	100	3050.8	(13)	E2
3566.9	(16$^+$)	812.1	100	2754.8	14$^+$	(E2)
3829.5	(16$^-$)	534.7	100	3294.8	(14$^-$)	
4019.2	18$^+$	637.7	100	3381.5	16$^+$	E2
4023.8	(17$^-$)	566.9	100	3456.9	(15$^-$)	E2
4100.0	(17)	552.6	100	3547.4	(15)	(E2)
4176.8	(18$^+$)	609.8	≈69	3566.9	(16$^+$)	
		795.3	100 *10*	3381.5	16$^+$	(E2)
4420	(18$^-$)	590.9	100	3829.5	(16$^-$)	(E2)
4634.7	(19$^-$)	610.9	100	4023.8	(17$^-$)	E2
4683.3	(20$^+$)	664.1	100	4019.2	18$^+$	(E2)
4699	(19)	599.0	100	4100.0	(17)	
5043?	(20$^-$)	623[c]	100	4420	(18$^-$)	
5287	(21$^-$)	652.1	100	4634.7	(19$^-$)	(E2)
5349	(21)	649.9	100	4699	(19)	(E2)
5399	(22$^+$)	715.6	100	4683.3	(20$^+$)	(E2)
5976	(23$^-$)	688.8	100	5287	(21$^-$)	
6057	(23)	708.3	100	5349	(21)	
6147	(24$^+$)	748.5	100	5399	(22$^+$)	(E2)
6683	(25$^-$)	707.0	100	5976	(23$^-$)	

† From ^{164}Er(^{16}O,4nγ) (1982Dr03), unless otherwise specified.
‡ From ^{176}Ir ε decay.
# From ^{176}Ir ε decay.
@ Transitions from ^{164}Er(^{16}O,4nγ), deduced to be quadrupole from their angular distribution coefficients, were assumed by 1990Br07 to be stretched E2.
& From measured conversion coefficients and angular correlation coefficients in ^{176}Ir ε decay.
[a] From γ(θ) in ^{164}Er(^{16}O,4nγ).
[b] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[c] Placement of transition in the level scheme is uncertain.

$^{176}_{76}Os_{100}$-5

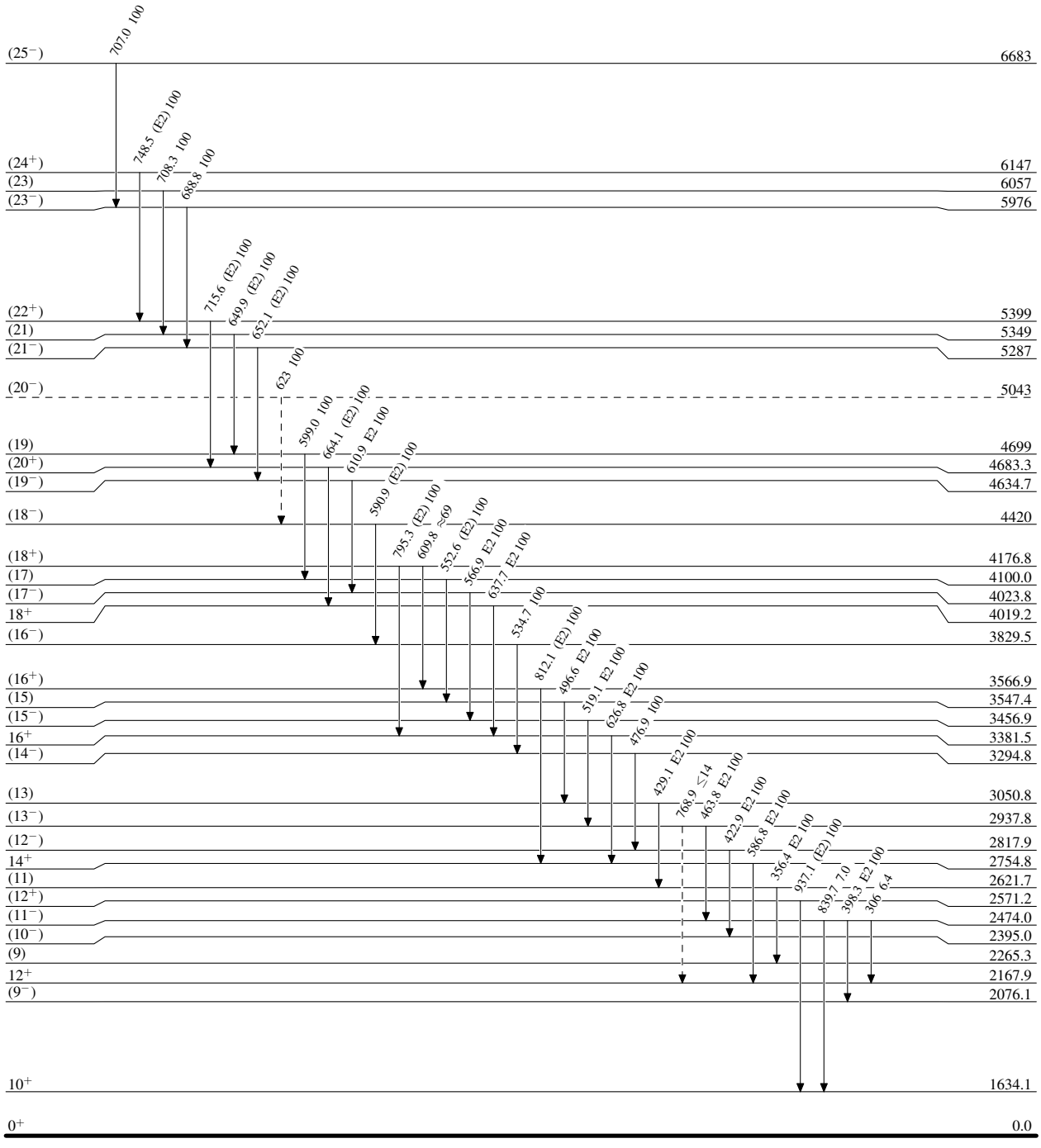
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{176}_{76}Os_{100}$

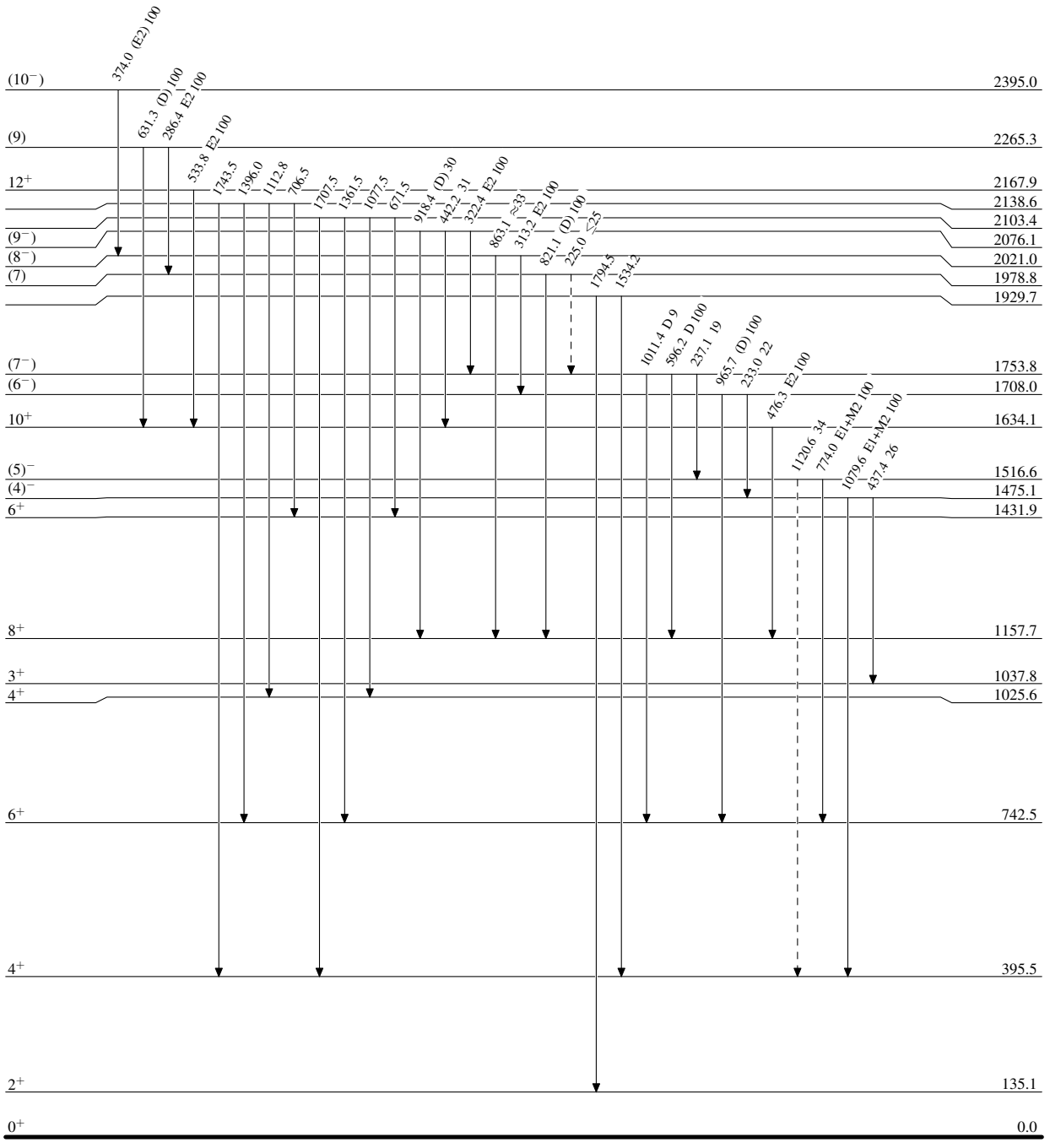
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)

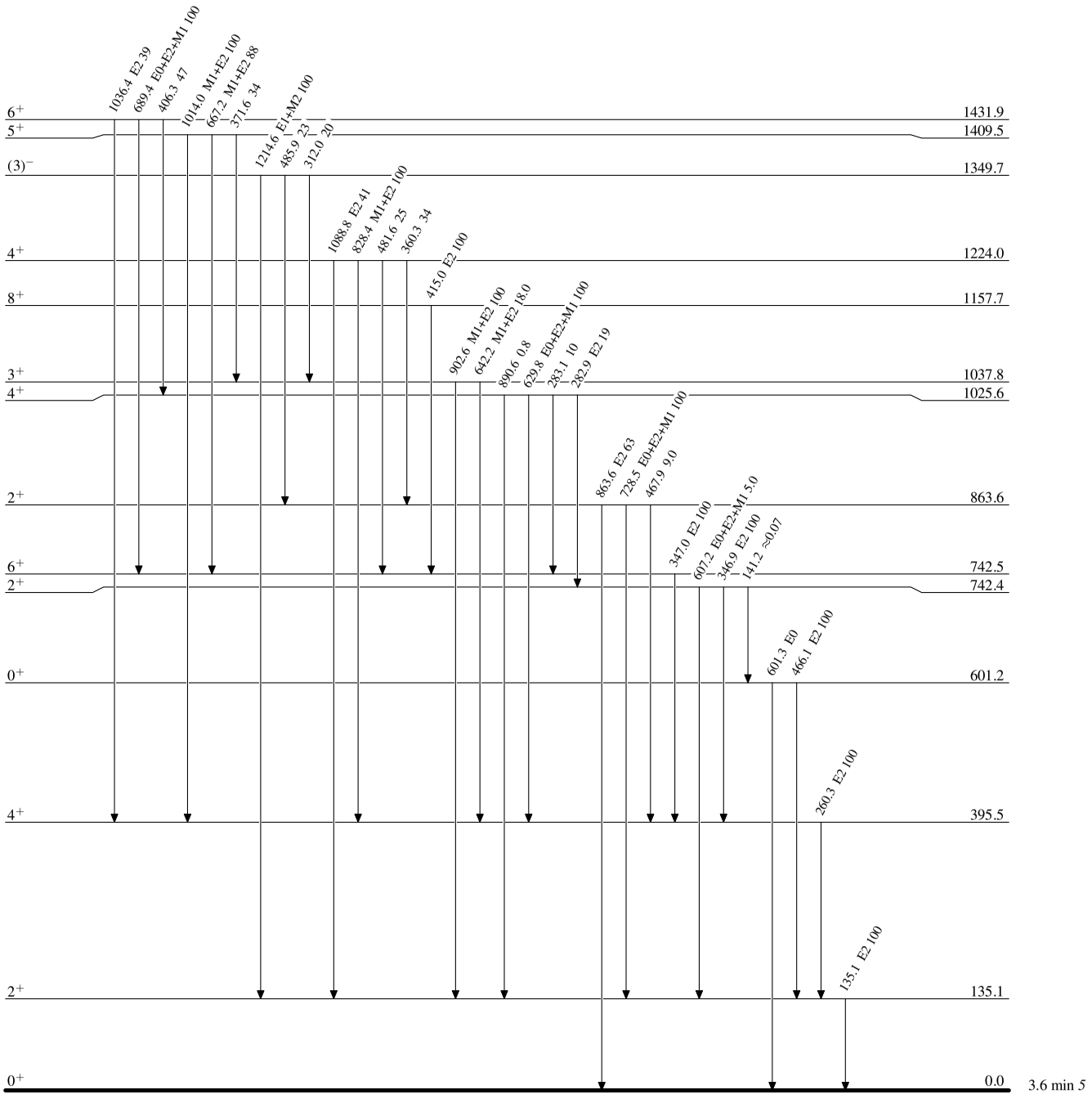


$^{176}_{76}Os_{100}$

Adopted Levels, Gammas

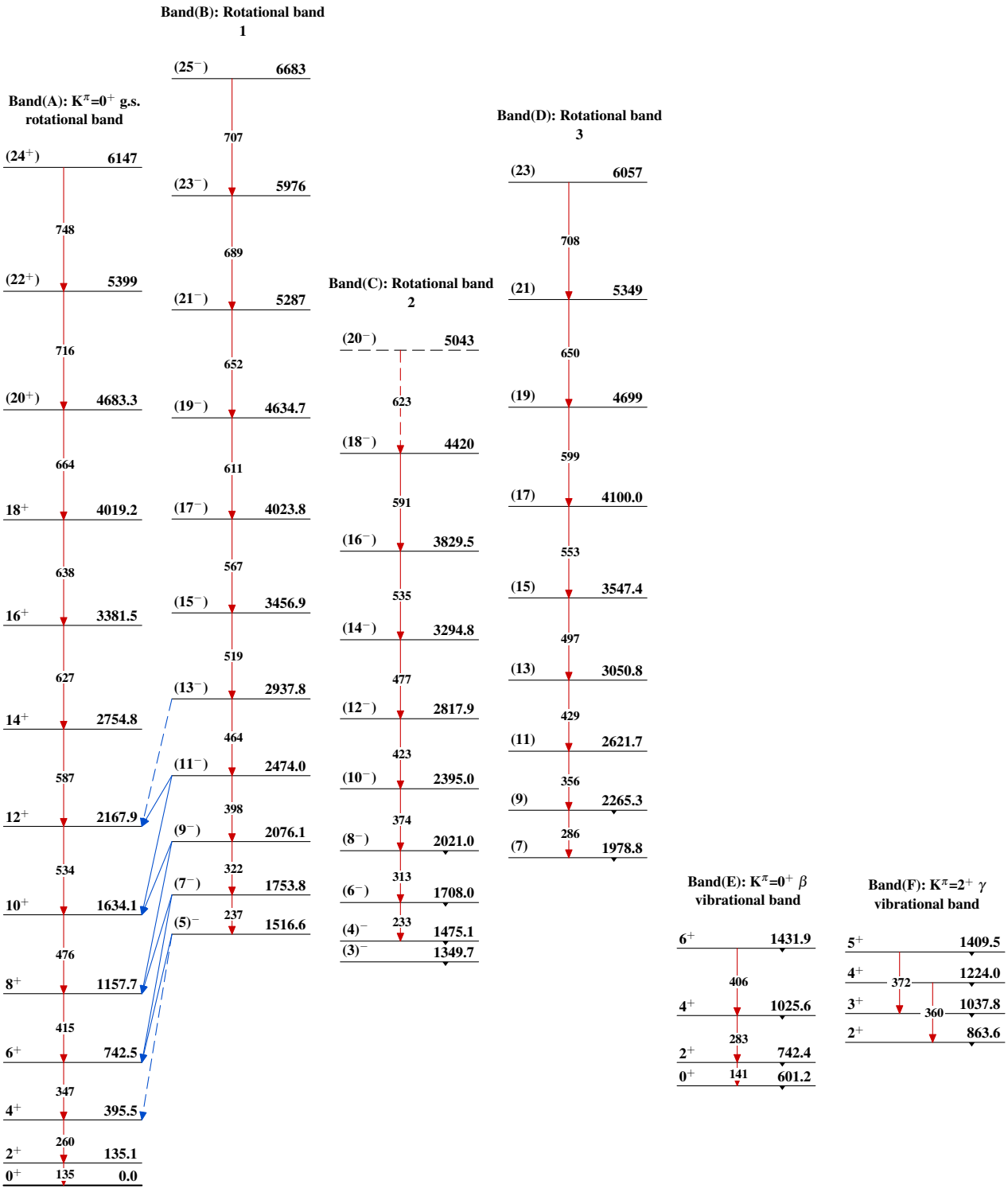
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{176}_{76}Os_{100}$

Adopted Levels, Gammas



Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti	NDS 110,1473 (2009)	31-May-2008

Q(β^-)=−7292 *24*; S(n)=9666 *21*; S(p)=4.56×10^3 *4*; Q(α)=4.26×10^3 *4* 2012Wa38
Note: Current evaluation has used the following Q record −7294 26 *9668* 23 *4570* 30 *4260* 30 2003Au03.
Q(β^+)=2110 *30* keV (2003Au03).
Theoretical references: 2005Mc08, 1997Es01, 1997De21, 1995Ch01, 1991Ba31.

^{178}Os Levels

Levels established from (HI,xnγ) and ^{178}Ir ε decay studies. For discussions regarding band assignments and structures see the individual datasets.

Cross Reference (XREF) Flags

A ^{178}Ir ε decay
B ^{182}Pt α decay
C (HI,xnγ)

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0#	0$^+$	5.0 min *4*	ABC	%ε+%β^+=100 %$\alpha\approx$0 T$_{1/2}$: from 1972Be89. %ε+%β adopted from 2003Au02. Quadrupole deformation β_2=0.209 *7* (2005Mo33).
132.20# *17*	2$^+$	0.69 ns *5*	A C	J$^\pi$: E2 132.2 keV γ ray to the 0$^+$ g.s., and E0 component in the 732.2 keV transition from the 2$^+$ 864 keV level. T$_{1/2}$: Average from two methods: a) electronic timing using a pulsed ^{16}O beam on ^{166}Er at 80 MeV, with an 2.6 ns FWHM pulse; b) recoil distance Doppler shift (2005Mo33,2005De48).
398.79# *21*	4$^+$		A C	J$^\pi$: E2 266.6-keV γ ray to the 2$^+$ 132 keV level, and E2 372.1 keV γ ray from the 2$^+$ 772 keV level. Rotational g.s. band level sequence indicates J^π=4$^+$.
650.5e *4*	0$^+$		A	This level proposed as bandhead for a K^π=0$^+$ β rotational band from ^{178}Ir ε decay studies (1994Ki01) (see dataset). J$^\pi$: E2 518.0-keV γ ray to the 2$^+$ 132 keV level. Band-head of the β band suggests J^π=0$^+$.
761.57# *24*	6$^+$		A C	J$^\pi$: E2 362.8 keV γ to the 4$^+$ 399 keV level; rotational band level sequence supports J^π=6$^+$.
770.99e *22*	2$^+$		A	J$^\pi$: E0 component in the 638.8 keV transition to the 2$^+$ 132-keV.
864.35d *21*	2$^+$		A	J$^\pi$: E2 864.4 keV γ ray to the 0$^+$ g.s., and E0 component in the 732.2 keV transition to the 2$^+$ 132 keV level.
1023.17e *25*	4$^+$		A	J$^\pi$: E0 component in the 624.4 keV transition to the 4$^+$ 399 keV level. Agreement with level sequence in β band.
1031.9d *3*	3$^+$		A	J$^\pi$: M1+E2 multipolarities of the 633.0 keV transition to the 4$^+$ 399 keV level, and of the 899.7 keV transition to the 2$^+$ 132 keV level, establish the J^π=3$^+$ value uniquely.
1194.0# *4*	(8$^+$)		A C	J$^\pi$: suggested from g.s. rotational band level membership.
1212.94d *25*	4$^+$		A	J$^\pi$: M1+E2 814.2−keV transition to the 4$^+$ 399 keV level, E2 1080.7 keV transition to the 2$^+$ 132 keV level.
1301.9a *4*	(3$^-$)		A	J$^\pi$: Suggested as band head of a negative parity band (1994Ki01).
1395.7e *4*	6$^+$		A	J$^\pi$: E0 component in 634.4 keV transition to the 6$^+$ 762 keV level, E2 372.6 keV

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{178}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			transition to the 4^+ 1023 keV level.
1416.4[d] 4	$(5^+,6^+)$	A	Jπ: M1+E2 654.8−keV transition to the 6^+ 762 keV level, and E2 1017.7 keV transition to the 4^+ 399 keV level.
1469.5[b] 4	(4^-)	A C	
1538.8[a] 3	(5^-)	A C	
1682.0[#] 4	(10^+)	C	
1707.0[b] 4	(6^-)	A C	
1781.2[a] 4	(7^-)	A C	
2018.4[b] 5	(8^-)	C	
2096.8[c] 5	(7)	C	
2098.4[a] 4	(9^-)	C	
2219.9[#] 4	(12^+)	C	
2384.4[b] 5	(10^-)	C	
2464.6[c] 6	(9)	C	
2489.0[a] 4	(11^-)	C	
2804.8[#] 5	(14^+)	C	
2817.3[b] 6	(12^-)	C	
2905.9[c] 6	(11)	C	
2950.9[a] 4	(13^-)	C	
3314.8[b] 6	(14^-)	C	
3402.7[c] 7	(13)	C	
3429.4[#] 6	(16^+)	C	
3474.1[a] 5	(15^-)	C	
3506.7[&] 6	(16^+)	C	
3873.2[b] 8	(16^-)	C	
3949.2[c] 8	(15)	C	
4020.1[#] 6	(18^+)	C	
4040.3[a] 6	(17^-)	C	
4140.6[&] 6	(18^+)	C	
4482.9[b] 9	(18^-)	C	
4545.0[c] 9	(17)	C	
4640.8[a] 7	(19^-)	C	
4663.0[#] 7	(20^+)	C	
4862.6[&] 7	(20^+)	C	
5130.0[b] 9	(20^-)	C	
5188.4[c] 10	(19)	C	
5291.1[a] 9	(21^-)	C	
5382.2[#] 8	(22^+)	C	
5584.6[&] 8	(22^+)	C	
5877.4[c] 11	(21)	C	
6154.5[#] 9	(24^+)	C	
6958.0[@] 10	(26^+)	C	
7788.0[@] 10	(28^+)	C	
8651.8[@] 10	(30^+)	C	
9552.3[@] 11	(32^+)	C	
10489.1[@] 12	(34^+)	C	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{178}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
11461.9[@] *13*	(36$^+$)	C	
12470.9[@] *14*	(38$^+$)	C	
13517.9[@] *17*	(40$^+$)	C	
0.0+x[f]	(4$^+$)	C	Additional information 1. See Comment for this level and band in the (HI,xnγ) dataset.
282.7+x[f] *4*	(6$^+$)	C	
646.2+x[f] *5*	(8$^+$)	C	
1081.6+x[f] *6*	(10$^+$)	C	
1585.2+x[f] *7*	(12$^+$)	C	
2153.4+x[f] *9*	(14$^+$)	C	
2775.1+x[f] *9*	(16$^+$)	C	

[†] From least-squares fit to adopted γ-ray energies.
[‡] Assignments are from (HI,xnγ) based mostly on band structure, γ-ray multipolarities, angular distributions, and γ-ray decay patterns, and on ^{178}Ir ε decay.
[#] Band(A): $K^\pi=0^+$ gs. (yrast) Rotational band.
[@] Band(B): Band on 6958. Rotational band (1988Bu19).
[&] Band(C): "Yrare" sideband. Sideband of the g.s. rotational band (1980Dr10).
[a] Band(D): π=−. Rotational band (Band I, 1982Dr03).
[b] Band(E): π=−. Rotational band (Band II, 1982Dr03).
[c] Band(F): Band on 2097. Rotational band (Band III, 1982Dr03).
[d] Band(G): $K^\pi=2^+$. Quasi γ rotational band (1994Ki01).
[e] Band(H): $K^\pi=0^+$. Quasi β rotational band (1994Ki01) This band established only from ^{178}Ir ε decay (1994Ki01).
[f] Band(I): Tentative β band (1982Dr03).

Adopted Levels, Gammas (continued)

$\gamma(^{178}Os)$

Q_t values for several transitions have been read by evaluators from the plot in Fig. 5, 2005De48.
See Comments column for data and references justifying the adopted multipolarities.

E_i(level)	J_i^π	E_γ †	I_γ @	E_f	J_f^π	Mult.	δ	α &	Comments
132.20	2^+	132.1 *2*	100	0.0	0^+	E2		1.464	B(E2)(W.u.)=139 *11* From the half-life measurements for the 132-keV level 2005Mo33 estimate a B(E2)=0.82 *6* e^2b^2. $Q_t(2^+)$=6.4 *3* eb (2005De48). Mult.: A_2=0.18 *4*, A_4=−0.05 *6* (1982Dr03). α_L(exp)=0.72 *5*, α_M(exp)=0.18 *1* (1994Ki01), theory: α_L(E2)=0.746 *11*, α_M(E2)=0.190 *3*.
398.79	4^+	266.5 *2*	100	132.20	2^+	E2		0.1309	Mult.: A_2=0.222 *7*, A_4=−0.09 *1* (1982Dr03). α_K(exp)=0.079 *3*, α_L(exp)=0.037 *3*, α_M(exp)=0.0094 *9* (1994Ki01). 1982Dr03 report α_L(exp)≈0.029, theory: α_K=0.0801 *12*, α_L=0.0385 *6*, α_M=0.00958 *14*. $Q_t(4^+)$=6.9 *2* eb (2005De48).
650.5	0^+	518.0‡ *5*	100	132.20	2^+	(E2)		0.0209	Mult.: A_2=+0.2 *1*, A_4=+0.85 *18* (1994Ki01).
		(650.4‡ *10*)		0.0	0^+	(E0)			No γ ray reported. See Comment in ^{178}Ir ε decay dataset.
761.57	6^+	362.8 *2*	100	398.79	4^+	E2		0.0528	Mult.: Values for the (362.7γ+363.5γ) combination: A_2=0.242 *7*, A_4=−0.08 *1* (1982Dr03). α_K(exp)=0.036 *2*, α_L(exp)=0.014 *2* (1994Ki01). 1982Dr03 report α_K(exp)=0.040 *7*, α_L(exp)=0.019 *5*, theory: α_K=0.0366 *6*, α_L=0.01234 *18*. $Q_t(6^+)$=7.4 *3* eb (2005De48).
770.99	2^+	120.3‡ *4*	6 *2*	650.5	0^+				
		372.1‡ *4*	14 *2*	398.79	4^+	E2		0.0493	Unresolved doublet. Other component is 372.6 kev deexciting the 1396 keV level. Mult.: Values for combined 372.1 and 372.6 γ rays (1994Ki01): A_2=+0.23 *11*, A_4=+0.13 *11*; α_K(exp)(372.1γ + 372.6γ)=0.036 *5*, theory (average): α_K(E2)=0.0344 *5*.
		638.8‡ *3*	100 *4*	132.20	2^+	E0+M1+E2	−6.8 *+11−16*	0.0133 *3*	Mult.,δ: A_2=+0.04 *6*, A_4=+0.29 *9* (1994Ki01). α_K(exp)=0.082 *3*, α_L(exp)=0.0128 *11*, α_M(exp)=0.036 *6* (1994Ki01), theory: α_K=0.01041 *23*, α_L=0.00219 *4*, α_M=0.000517 *9*.
		771.3‡ *4*	10 *4*	0.0	0^+	E2		0.00847	Mult.: transition to the 0^+ g.s.
864.35	2^+	465.4‡ *4*	4.5 *14*	398.79	4^+	(E2)		0.0273	Mult.: transition to the 399 keV 4^+ level.
		732.2‡ *3*	78 *7*	132.20	2^+	E0+M1+E2	+10 *+6−3*	0.00961 *21*	Mult.,δ: A_2=−0.16 *8*, A_4=+0.37 *9* (1994Ki01); α_K(exp)=0.0130 *19* (1994Ki01), theory: α_K=0.00765 *17*.
		864.4‡ *3*	100 *5*	0.0	0^+	E2		0.00667	Mult.: α_K(exp)=0.0061 *8* (1994Ki01), theory: α_K=0.00538 *8*.
1023.17	4^+	252.2‡ *4*	9.2 *18*	770.99	2^+	(E2)		0.1556	Mult.: transition to the 771 keV 2^+ level.

$^{178}_{76}Os_{102}$-4

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	δ	α[&]	Comments
1023.17	4+	261.4[‡] *4*	5.5 *18*	761.57	6+	(E2)		0.139	Mult.: transition to the 762 keV 6+ level.
		624.5 *3*	100 *4*	398.79	4+	E0+M1+E2	−3.1 *+3−3*	0.0157 *5*	This transition observed as member of an unresolved doublet in (HI,xnγ) (1982Dr03). The other component assigned as deexciting the 3429 keV level. Mult.,δ: A_2=+0.00 *4*, A_4=+0.14 *7* (1994Ki01). α_K(exp)=0.097 *4*, α_L(exp)=0.020 *2*, α_M(exp)=0.0053 *9* (1994Ki01), theory: α_K=0.0124 *5*, α_L=0.00252 *6*, α_M=0.000592 *14*. E0 component inferred by 1994Ki01 from their conversion coefficient values. For the unresolved doublet 1982Dr03 obtain A_2=0.18 *2*, A_4=−0.10 *3*, and α_{tot}(exp)=0.017 *2*, theory: α_{tot}(M1+E2)=0.0157.
		891.0[‡] *4*	9.2 *12*	132.20	2+	(E2)		0.00627	Mult.: A_2=+0.10 *12* (1994Ki01). Agreement with transition to the 2+ 132 keV level.
1031.9	3+	633.0[‡] *4*	18 *4*	398.79	4+	M1+E2	−3.5 *+6−7*	0.0148 *8*	Mult.,δ: A_2=+0.23 *12*, A_4=−0.19 *14* (1994Ki01).
		899.7[‡] *3*	100 *2*	132.20	2+	M1+E2	+9.0 *+16−11*	0.00625 *10*	Mult.,δ: A_2=−0.11 *6*, A_4=−0.09 *7* (1994Ki01). α_K(exp)=0.0049 *9* (1994Ki01), theory: a_K=0.00506 *8*.
1194.0	(8+)	432.4 *3*	100	761.57	6+	(E2)		0.0329	Unresolved doublet in singles spectra; the other component has 432.9 keV. Mult.: For the (432.3γ+432.9γ) combination 1982Dr03 quote: A_2=0.28 *1*, A_4=−0.11 *1*; α_K(exp)=0.037 *7*, α_L(exp)=0.007 *3*, theory: α_K(E2)=0.024, α_L(E2)=0.00682. Support from g.s. band membership (1994Ki01); agrees with J^π=6+ for the 762 keV final level. Q_t(8+)=7.8 *3* eb (2005De48).
1212.94	4+	348.6[‡] *3*	14 *4*	864.35	2+	(E2)		0.0591	Mult.: transition to the 864 keV 2+ level.
		451.5[‡] *5*	10 *3*	761.57	6+	(E2)		0.0294	Mult.: transition to the 762 keV 6+ level.
		814.2[‡] *4*	100 *7*	398.79	4+	M1+E2	+2.4 *+0−12*	0.009 *3*	Mult.,δ: A_2=−0.34 *19*, A_4=+0.18 *20* (1994Ki01). α_K(exp)=0.0052 *18* (1994Ki01), theory: α_K(M1+E2)=0.0075 *25*.
		1080.7[‡] *4*	86 *9*	132.20	2+	(E2)		0.00426	Mult.: A_2=+0.11 *16* (1994Ki01).
1301.9	(3−)	270.1[‡] *4*	100 *33*	1031.9	3+				
		903.1[‡] *5*	9.3 *32*	398.79	4+				
1395.7	6+	372.6[‡] *4*	30 *4*	1023.17	4+	E2		0.0491	Mult.: Unresolved doublet. See discussion and data in comments for the 372.1 keV γ ray from the 771 keV level.
		634.4[‡] *4*	100 *8*	761.57	6+	E0+M1+E2	−2.2 *+3−4*	0.0169 *11*	Mult.,δ: A_2=+0.00 *5*, A_4=+0.12 *6* (1994Ki01). α_K(exp)=0.045 *6* (1994Ki01), theory: α_K=0.0135 *10*. Additional information 2.
		996.5[‡] *5*	4.1 *13*	398.79	4+	(E2)		0.00500	Mult.: transition to the 399 keV 4+ level.

$^{178}_{76}Os_{102}$-5

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	δ	α[&]	Comments
1416.4	(5$^+$,6$^+$)	384.5[‡] *5*	7.7 *15*	1031.9	3$^+$				
		654.8[‡] *4*	43 *4*	761.57	6$^+$	M1+E2	−2.3 *+3−3*	0.0154 *9*	Mult.,δ: A_2=+0.23 *9*, A_4=−0.06 *11* (1994Ki01).
		1017.7[‡] *4*	100 *5*	398.79	4$^+$	(E2)		0.00480	Mult.: α_K(exp)=0.004 *1* (1994Ki01), theory: α_K=0.00392 *6*.
1469.5	(4$^-$)	437.6[‡] *4*	47 *12*	1031.9	3$^+$				
		1070.6 *4*	100 *18*	398.79	4$^+$				Mult.: A_2=+0.25 *5*, A_4=−0.02 *5* (1982Dr03).
1538.8	(5$^-$)	237.0 *4*	100 *6*	1301.9	(3$^-$)				
		326.0 *4*	45 *2*	1212.94	4$^+$				
		777.2 *4*	48 *8*	761.57	6$^+$	(E1)		0.00312	Mult.: A_2=−0.17 *8*, A_4=+0.08 *9* (1982Dr03).
		1139.9[a] *4*	4 *2*	398.79	4$^+$				
1682.0	(10$^+$)	488.1 *2*	100	1194.0	(8$^+$)	E2		0.0242	Mult.: A_2=0.264 *8*, A_4=−0.11 *1* (1982Dr03). α_K(exp)=0.020 *3*, α_L(exp)=0.005 *2* (1982Dr03), theory: α_K=0.0181, α_L=0.00466. Q_t(10$^+$)=8.2 *6* eb (2005De48).
1707.0	(6$^-$)	237.2 *4*	70 *11*	1469.5	(4$^-$)				
		945.6 *4*	100 *8*	761.57	6$^+$	(E1)		0.00216	Mult.: A_2=+0.31 *2*, A_4=−0.01 *3* (1982Dr03). α_{tot}(exp)=0.002 *3* (1982Dr03). theory: α_{tot}(E1)=0.0022. See also note for this transition in the (HI,xnγ) dataset.
1781.2	(7$^-$)	242.5 *3*	43 *5*	1538.8	(5$^-$)				
		587.2 *3*	100 *8*	1194.0	(8$^+$)	(E1)		0.00547	Mult.: A_2=−0.32 *4*, A_4=+0.00 *4* (1982Dr03). See also comment for the 584.9 keV γ regarding α values.
		1019.5 *4*	24.7 *22*	761.57	6$^+$	(E1)		0.00188	Mult.: A_2=−0.10 *8* (1982Dr03).
2018.4	(8$^-$)	311.5 *2*	100	1707.0	(6$^-$)				
2096.8	(7)	389.8 *4*	100	1707.0	(6$^-$)				
2098.4	(9$^-$)	317.1 *2*	100 *5*	1781.2	(7$^-$)	(E2)		0.0776	Mult.: A_2=0.31 *2*, A_4=−0.11 *2* (1982Dr03).
		416.4 *4*	11 *4*	1682.0	(10$^+$)	(E1)		0.01144	Mult.: A_2=−0.12 *9* (1982Dr03).
		904.4 *4*	39 *6*	1194.0	(8$^+$)	(E1)		0.00234	Mult.: A_2=−0.23 *4*, A_4=−0.03 *4* (1982Dr03). Angular correlation parameter R=1.6 *1* (1988Bu19).
2219.9	(12$^+$)	537.8 *2*	100	1682.0	(10$^+$)	E2		0.0191	Mult.: A_2=0.273 *9*, A_4=−0.112 *11* (1982Dr03). α_K(exp)=0.0135 *15*, α_L(exp)=0.0024 *12* (1982Dr03). theory: α_K(E2)=0.0145, α_L(E2)=0.0035.
2384.4	(10$^-$)	366.0 *2*	100	2018.4	(8$^-$)	E2		0.0516	Mult.: A_2=0.32 *3*, A_4=−0.10 *3* (1982Dr03).
2464.6	(9)	367.8 *4*	100 *50*	2096.8	(7)	E2		0.0509	Mult.: A_2=0.29 *4*, A_4=−0.09 *5* (1982Dr03).
		446.2 *4*	76 *14*	2018.4	(8$^-$)				
2489.0	(11$^-$)	390.6 *2*	100 *5*	2098.4	(9$^-$)	(E2)		0.0431	Mult.: A_2=0.29 *2*, A_4=−0.13 *2* (1982Dr03).
		807.0 *4*	10.5 *20*	1682.0	(10$^+$)	(E1)		0.00291	Mult.: A_2=−0.27 *10* (1982Dr03).
2804.8	(14$^+$)	584.9 *2*	100	2219.9	(12$^+$)	E2		0.01565	Mult.: A_2=0.30 *2*, A_4=−0.14 *3* (1982Dr03). Experimental α values for the unresolved (584.9γ+587.0γ) combination: α_K(exp)=0.0120 *2*, α_L(exp)=0.0023 *12* (1982Dr03), theory: α_K(E2)=0.0121, α_L(E2)=0.00273.
2817.3	(12$^-$)	432.9 *3*	100	2384.4	(10$^-$)	(E2)		0.0328	Unresolved doublet in singles spectra: the other component is Eγ=432.3 keV. See Comment for the 432.3 keV γ deexciting the 1193 keV level for angular distribution and α data.

$^{178}_{76}Os_{102}$-6

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	α[&]	Comments
2905.9	(11)	441.3 *3*	100	2464.6	(9)			
2950.9	(13$^-$)	462.0 *2*	100 *7*	2489.0	(11$^-$)	(E2)	0.0278	Mult.: A_2=0.27 *2*, A_4=−0.11 *2* (1982Dr03).
		731.0 *4*	17 *4*	2219.9	(12$^+$)			
3314.8	(14$^-$)	497.5 *2*	100	2817.3	(12$^-$)	(E2)	0.0231	Mult.: A_2=0.22 *3*, A_4=−0.12 *3* (1982Dr03).
3402.7	(13)	496.8 *3*	100	2905.9	(11)			
3429.4	(16$^+$)	624.6 *3*	100	2804.8	(14$^+$)	(M1+E2)	0.025 *12*	Unresolved doublet, second component not placed in the level scheme. Mult.: For this unresolved doublet 1982Dr03 quote: A_2=0.18 *2*, A_4=−0.10 *3*; α_K(exp)=0.017 *2*, theory: α_K(E2)=0.0105, α_K(M1)=0.0299.
3474.1	(15$^-$)	523.2 *3*	100	2950.9	(13$^-$)	E2	0.0204	Mult.: A_2=0.29 *3*, A_4=−0.11 *3* (1982Dr03).
3506.7	(16$^+$)	701.9 *4*	100	2804.8	(14$^+$)	E2	0.01037	Mult.: A_2=0.33 *7*, A_4=−0.15 *8* (1982Dr03).
3873.2	(16$^-$)	558.4 *4*	100	3314.8	(14$^-$)	E2	0.01745	Mult.: A_2=0.30 *5*, A_4=−0.14 *6* (1982Dr03).
3949.2	(15)	546.5 *4*	100	3402.7	(13)	(E2)	0.0184	Mult.: A_2=0.21 *6*, A_4=−0.08 *7* (1982Dr03).
4020.1	(18$^+$)	513.4 *4*	58 *11*	3506.7	(16$^+$)			
		590.8 *4*	100 *7*	3429.4	(16$^+$)	(E2)	0.01529	Mult.: A_2=0.22 *6*, A_4=−0.12 *7* (1982Dr03). α_{tot}(exp)<0.015 (1982Dr03), theory: α_{tot}(E2)=0.0153.
4040.3	(17$^-$)	566.2 *3*	100	3474.1	(15$^-$)	(E2)	0.01689	Mult.: A_2=0.22 *3*, A_4=−0.08 *3* (1982Dr03).
4140.6	(18$^+$)	633.9 *4*	35 *10*	3506.7	(16$^+$)			
		711.2 *4*	100 *10*	3429.4	(16$^+$)	(E2)	0.01008	Mult.: A_2=0.39 *7*, A_4=−0.10 *8* (1982Dr03).
4482.9	(18$^-$)	609.7 *4*	100	3873.2	(16$^-$)	(E2)	0.01422	Mult.: A_2=0.25 *5*, A_4=−0.11 *6* (1982Dr03).
4545.0	(17)	595.8 *4*	100	3949.2	(15)			
4640.8	(19$^-$)	600.5 *4*	100	4040.3	(17$^-$)	(E2)	0.01472	Mult.: A_2=0.24 *4*, A_4=−0.08 *5* (1982Dr03).
4663.0	(20$^+$)	642.9 *4*	100	4020.1	(18$^+$)	(E2)	0.01260	Mult.: A_2=0.19 *5*, A_4=−0.12 *6* (1982Dr03).
4862.6	(20$^+$)	722.0 *4*	100	4140.6	(18$^+$)			
5130.0	(20$^-$)	647.0 *4*	100	4482.9	(18$^-$)	(E2)	0.01243	Mult.: A_2=0.21 *13* (1982Dr03).
5188.4	(19)	643.4 *4*	100	4545.0	(17)			
5291.1	(21$^-$)	650.3 *4*	100	4640.8	(19$^-$)			
5382.2	(22$^+$)	719.2 *4*	100	4663.0	(20$^+$)	(E2)	0.00984	Mult.: Angular correlation parameter R=1.0 *1* (1988Bu19).
5584.6	(22$^+$)	722.0 *4*	100	4862.6	(20$^+$)			
5877.4	(21)	689.0 *4*	100	5188.4	(19)			Mult.: α_{tot}(exp)>0.09 (1982Dr03), theory: α_{tot}(M1)=0.0289, α_{tot}(E2)=0.0108. See note for this transition in the (HI,xnγ) dataset.
6154.5	(24$^+$)	772.3 *4*	100	5382.2	(22$^+$)	(E2)	0.00844	Mult.: Angular correlation parameter R=0.9 *1* (1988Bu19).
6958.0	(26$^+$)	803.5[#] *2*	100	6154.5	(24$^+$)	(E2)	0.00776	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
7788.0	(28$^+$)	830.0[#] *2*	100	6958.0	(26$^+$)	(E2)	0.00725	Mult.: Angular correlation parameter R=1.0 *1* (1988Bu19).
8651.8	(30$^+$)	863.8[#] *3*	100	7788.0	(28$^+$)	(E2)	0.00668	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
9552.3	(32$^+$)	900.5[#] *4*	100	8651.8	(30$^+$)	(E2)	0.00613	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
10489.1	(34$^+$)	936.8[#] *4*	100	9552.3	(32$^+$)	(E2)	0.00566	Mult.: Angular correlation parameter R=0.8 *2* (1988Bu19).
11461.9	(36$^+$)	972.8[#] *5*	100	10489.1	(34$^+$)	(E2)	0.00525	Mult.: Angular correlation parameter R=0.9 *2* (1988Bu19).
12470.9	(38$^+$)	1009.0[#] *6*	100	11461.9	(36$^+$)			
13517.9	(40$^+$)	1047.0[#] *10*	100	12470.9	(38$^+$)			
282.7+x	(6$^+$)	282.7 *4*	100	0.0+x	(4$^+$)			

$^{178}_{76}Os_{102}$-7

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	α[&]	Comments
646.2+x	(8$^+$)	363.5 *3*	100	282.7+x	(6$^+$)	(E2)	0.0525	Mult.: See Comment for the 362.7-keV γ ray for justification of the suggested multipolarity.
1081.6+x	(10$^+$)	435.4 *3*	100	646.2+x	(8$^+$)	(E2)	0.0323	Mult.: A_2=0.43 *10*, A_4=−0.09 *11* (1982Dr03).
1585.2+x	(12$^+$)	503.6 *4*	100	1081.6+x	(10$^+$)	(E2)	0.0224	Mult.: A_2=0.35 *4*, A_4=−0.13 *5* (1982Dr03).
2153.4+x	(14$^+$)	568.2 *4*	100	1585.2+x	(12$^+$)	(E2)	0.01675	Mult.: A_2=0.35 *6*, A_4=−0.24 *8* (1982Dr03).
2775.1+x	(16$^+$)	621.7 *4*	100	2153.4+x	(14$^+$)			

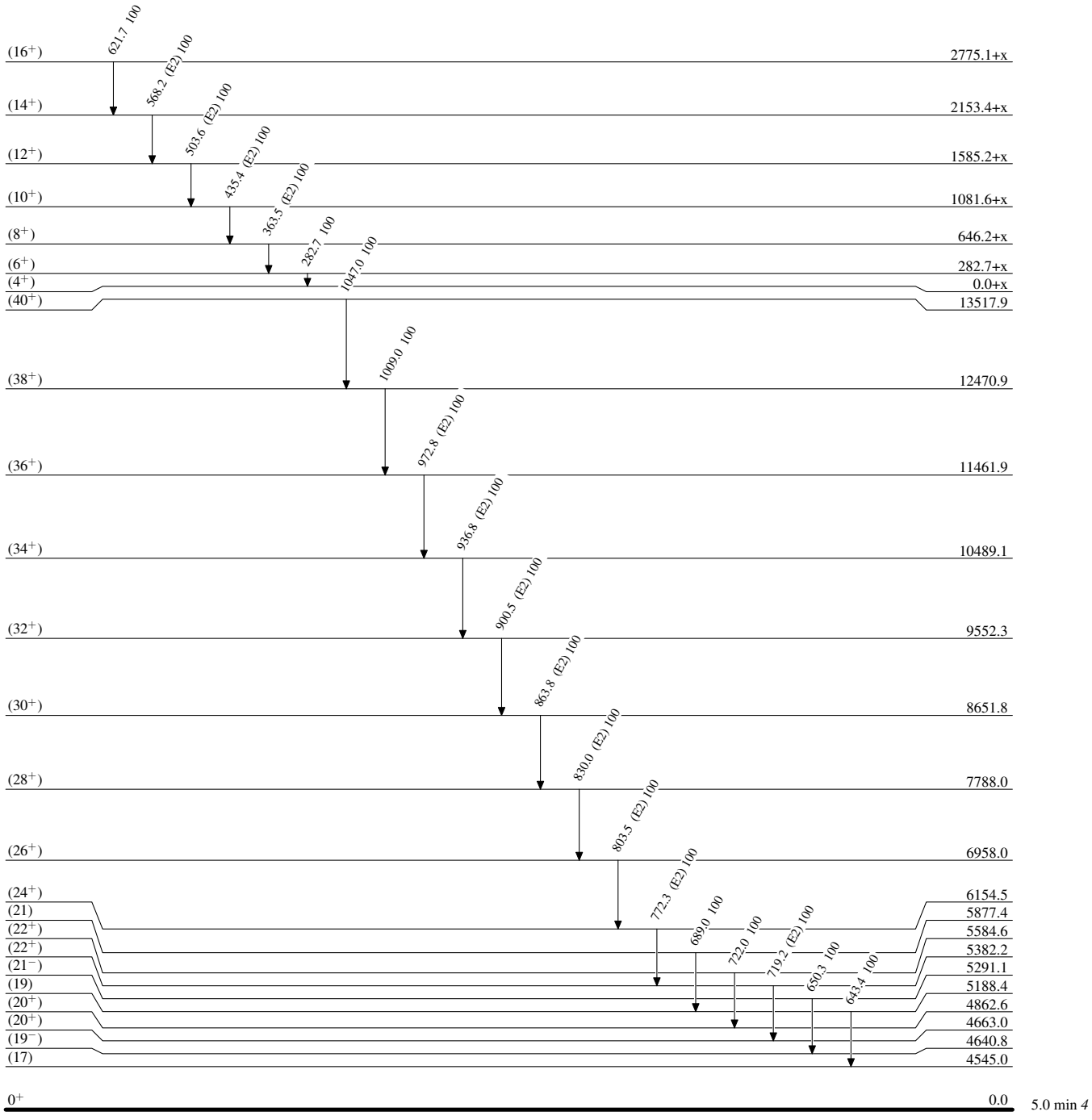
[†] From average of (HI,xnγ) and ^{178}Ir ε decay data, when both available; else 1982Dr03 HI reaction data, unless otherwise specified.
[‡] From ^{178}Ir ε decay (1994Ki01).
[#] From ^{154}Sm(^{29}Si,5nγ) (1988Bu19).
[@] From (HI,xnγ), or from ^{178}Ir ε decay study, when the former did not provide values.
[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[a] Placement of transition in the level scheme is uncertain.

$^{178}_{76}Os_{102}$-8

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

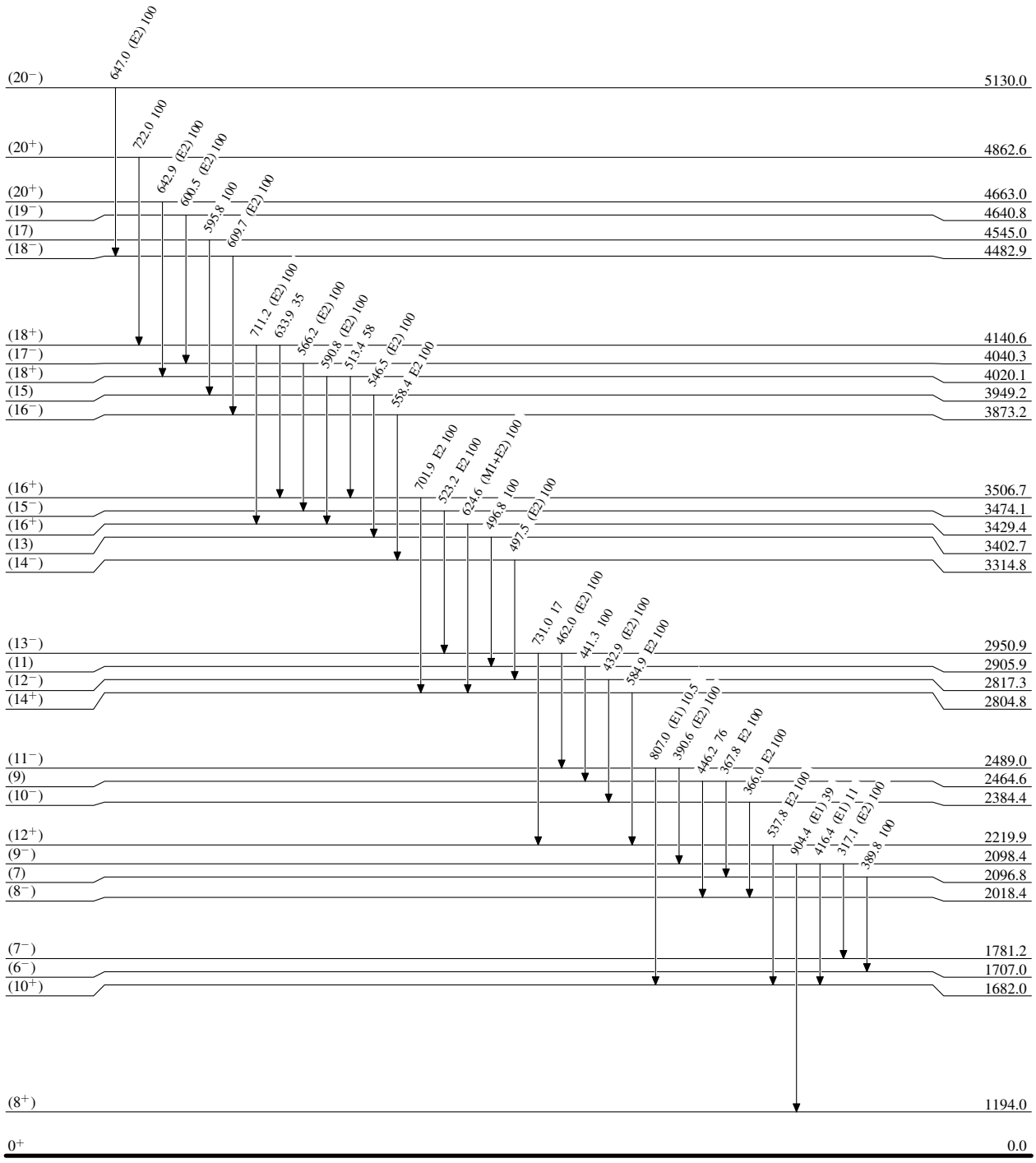


$^{178}_{76}Os_{102}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{178}_{76}Os_{102}$

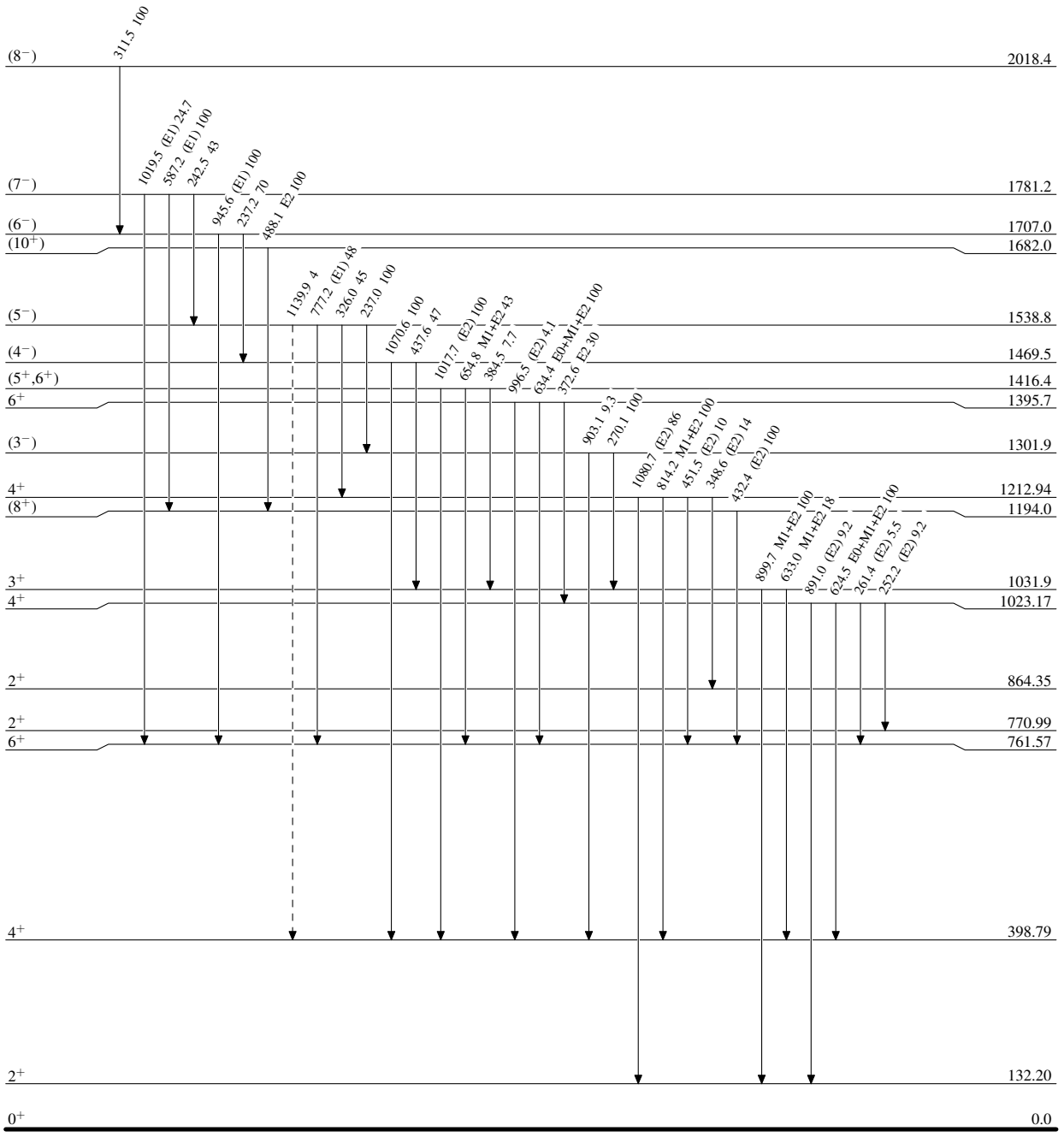
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{178}_{76}Os_{102}$

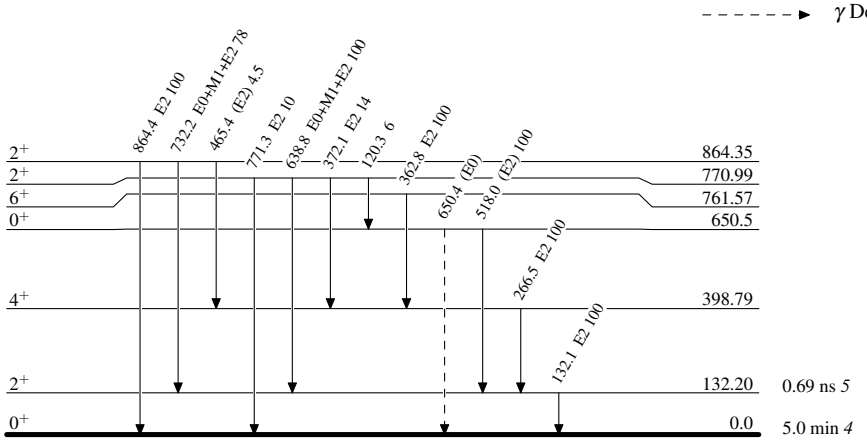
Adopted Levels, Gammas

Legend

Level Scheme (continued)

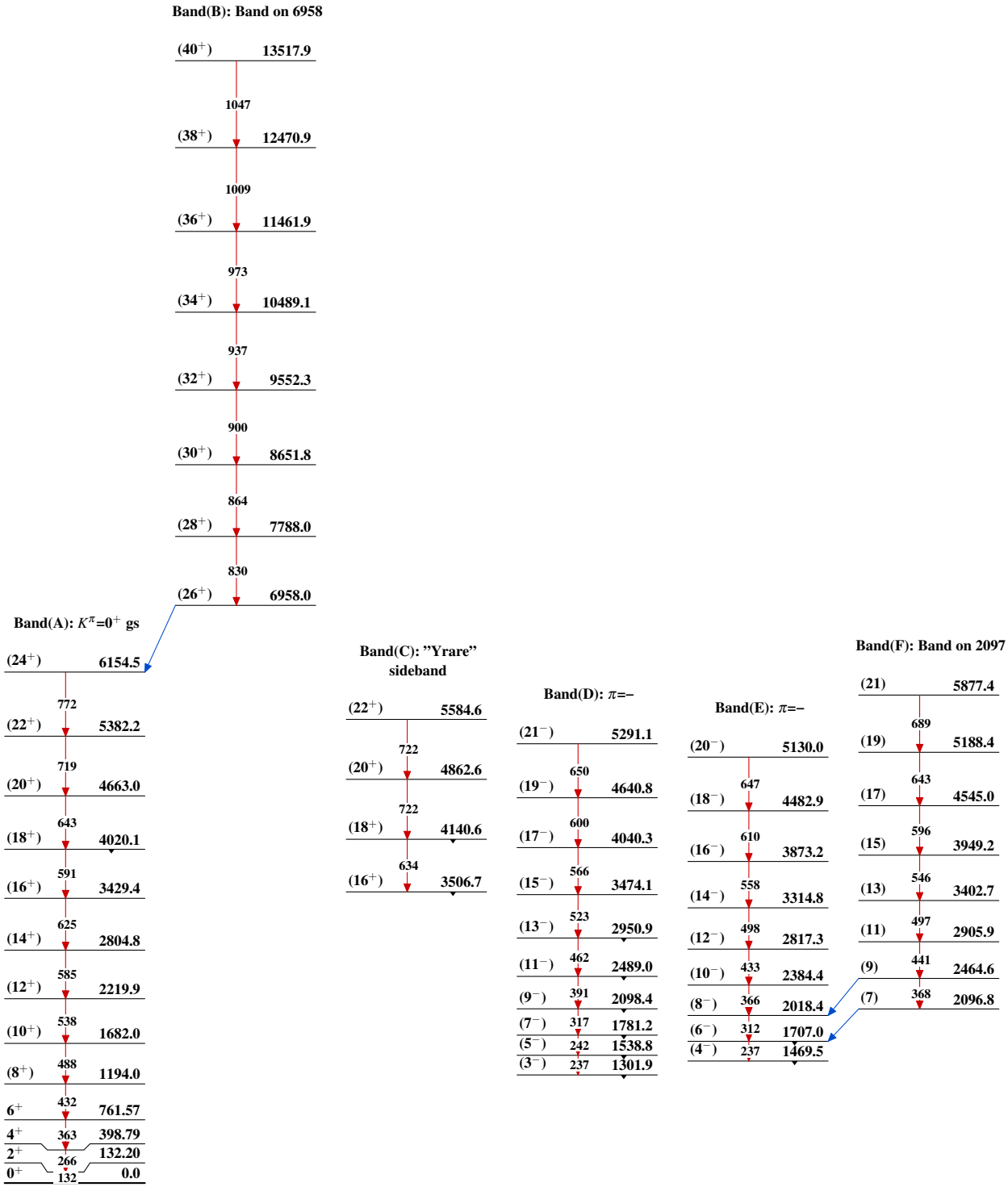
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



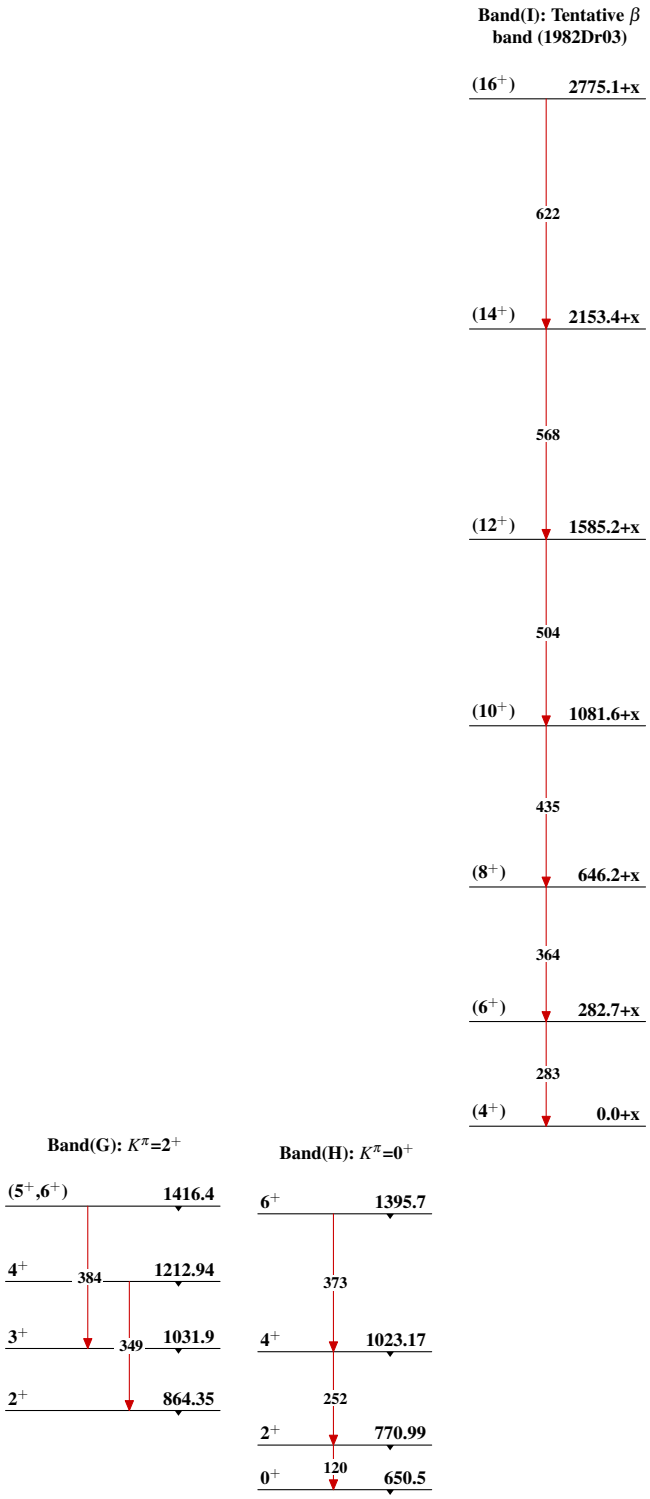
$^{178}_{76}Os_{102}$

Adopted Levels, Gammas



$^{178}_{76}Os_{102}$

Adopted Levels, Gammas (continued)



$^{178}_{76}Os_{102}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

Q(β^-)=−6384 *27*; S(n)=9414 *23*; S(p)=5066 *30*; Q(α)=3850 *30* 2012Wa38
S(2n)=16961 *21*; S(2p)=8531 *22* (2012Wa38).
α: Additional information 1.

^{180}Os Levels

Cross Reference (XREF) Flags

A	^{180}Ir ε decay	E	^{150}Nd(^{36}S,6nγ): delayed
B	^{184}Pt α decay	F	^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ)
C	^{48}Ti(^{136}Xe,4nγ)	G	^{169}Tm(^{14}N,3nγ)
D	^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[@]	0$^+$	21.5 min *4*	ABCDEFG	%ε+%β^+=100 T$_{1/2}$: weighted average of 23 min *3* (1965Be32), 21 min *2* (1966Be41), 21.7 min *6* (1966Ho16), 23 min *2* (1968Ko10) following the decay of 20γ, 19.8 min *10* (1969Hu03), and 22.0 min *8* (1970Ar15). T$_{1/2}$=25.5 min *4* also obtained by 1968Ko10 from a $\gamma\gamma$-coin measurement disagrees with all the other values and may be affected by a systematic uncertainty. The 0.4-min uncertainty reported by 1968Ko10 may represent only the deviation of the experimental points in the decay curve.
132.11[@] *10*	2$^+$	0.67 ns *7*	A CDEFG	J$^\pi$: E2 132γ to 0$^+$. T$_{1/2}$: from centroid shift method in ^{168}Er(^{16}O,4nγ). Other: 0.80 ns *+21−14* from RDM in ^{150}Nd(^{34}S,4nγ).
408.63[@] *13*	4$^+$	27.0 ps *35*	A CDEFG	J$^\pi$: E2 276.5γ to 2$^+$.
736.4[k] *6*	0$^+$		A	J$^\pi$: E0 736 transition to 0$^+$.
795.07[@] *15*	6$^+$	6.7 ps *17*	A CDEFG	J$^\pi$: E2 386γ to 4$^+$.
831.09[k] *19*	2$^+$		A DEF	J$^\pi$: E0+M1+E2 699γ to 2$^+$.
870.44[&] *18*	2$^+$		A EF	J$^\pi$: E2 870γ to 0$^+$.
1022.85[&] *17*	3$^+$		A EF	J$^\pi$: M1+E2 891γ to 2$^+$, E2 614γ to 4$^+$, $\gamma\gamma(\theta)$ in ^{180}Ir ε decay.
1052.66[k] *20*	4$^+$		A EF	J$^\pi$: E0+M1+E2 644γ to 4$^+$.
1196.83[&] *17*	4$^+$		A EF	J$^\pi$: E0+M1+E2 788γ to 4$^+$.
1257.45[@] *20*	8$^+$	6.9 ps *14*	CDEFG	J$^\pi$: E2 462γ to 6$^+$.
1375.4 *5*	3$^-$		A	J$^\pi$: E1 505γ to 2$^+$, 967γ to 4$^+$.
1378.95[k] *19*	6$^+$		A EF	J$^\pi$: E0+M1+E2 584γ to 6$^+$.
1405.55[&] *18*	5$^+$		A EF	J$^\pi$: M1+E2 610γ to 6$^+$, M1+E2 997γ to 4$^+$.
1514.63[d] *22*	4$^-$		A D F	J$^\pi$: E1+M2 492γ to 3$^+$, E1+M2 1106γ to 4$^+$; band member. E(level): there are discrepancies in some depopulating transitions from the closely spaced 1514.6-keV and 1515.56-keV levels. ^{150}Nd(^{36}S,6nγ):Delayed reports only the 1515.6-keV, 4$^+$ level and places all transitions from this level, whereas, other studies resolve the two levels and their depopulating transitions. See Adopted Gammas for further information.
1515.67 *19*	4$^+$		A DEF	J$^\pi$: E2 645γ to 2$^+$.
1604.44[e] *19*	5$^-$		A DEF	J$^\pi$: E1 408γ to to 4$^+$, E1+M2 809γ to 6$^+$.
1627.33[&] *22*	6$^+$		EF	J$^\pi$: E2 1219γ to 4$^+$, 832γ to 6$^+$.
1761.43[d] *21*	6$^-$		D F	J$^\pi$: E2 247γ to 4$^-$, E1+M2 966γ to 6$^+$.
1767.63[@] *23*	10$^+$		CDEFG	J$^\pi$: 510γ E2 to 8$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{180}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
1862.54[e] *19*	7^-	<0.21 ns	CDEF	Jπ: E2 258γ to 5^-, E1(+M2) 605γ to 8^+. $T_{1/2}$: from centroid shift in ^{168}Er(^{16}O,4nγ). Other: 17 ns *3* from γ(t) in ^{150}Nd(^{36}S,6nγ):Delayed.
1877.12 *17*	6^+		DEF	Jπ: E2 362γ to 4^+, M1+E2 1082γ to 6^+.
1881.1[&] *3*	7^+		F	Jπ: (E2) 475.5γ to 5^+, M1+E2 1086γ to 6^+.
1928.76[a] *20*	7^-	15.2 ns *12*	DEF	Jπ: E1 52γ to 6^+, (E1) 671γ to 8^+, $T_{1/2}$: from γ(t) in ^{168}Er(^{16}O,4nγ). Others: 15.9 ns *21* from γγ(t) in ^{168}Er(^{16}O,4nγ), 17 ns *3* from ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), and 26 ns *3* from γ(t) in ^{150}Nd(^{36}S,6nγ):Delayed. configuration=ν7/2[514]ν7/2[633].
1987.0[b] *4*	8^-		D	E(level),Jπ: observation of a 184γ populating the 7-, 1929-keV level in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ) results in an energy shift and change of J^π to the band members observed in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ). See the latter dataset for additional comments.
2086.2[d] *3*	8^-		D F	Jπ: E2 325γ to 6^-.
2113.1[a] *4*	9^-		D F	Jπ: M1+E2 126γ to 8^-, 184γ to 7^-.
2175.69[e] *21*	9^-		CDEF	Jπ: E2 313γ to 7^-, E1 408γ to 10^+.
2275.9[b] *4*	10^-		D F	Jπ: E2 289γ to 8^-, M1+E2 163γ to 9^-.
2286.06[c] *24*	$(7^-,8^-)$		D F	Jπ: M1+E2 423γ to 7^-, 110.5γ to 9^-.
2308.9[@] *3*	12^+		CDEFG	Jπ: E2 541γ to 10^+.
2410.8[&] *3*	9^+		F	Jπ: E2 530γ to 7^+.
2429.1[h] *5*			D F	
2463.0[d] *3*	10^-		D F	Jπ: E2 377γ to 8^-, M1(+E2) 287γ to 9^-.
2467.1[a] *4*	11^-		D F	Jπ: E2 354γ to 9^-, M1+E2 191γ to 10^-.
2544.32[e] *24*	11^-		CDEF	Jπ: E2 369γ to 9^-, E1(+M2) 777γ to 10^+.
2599.1[h] *4*			D F	
2635.7[l] *3*			F	
2675.41[c] *25*	$(9^-,10^-)$		D F	Jπ: E2 398γ to $(7^-,8^-)$, D(+Q) 908γ to 10^+.
2683.4[b] *4*	12^-		D F	Jπ: E2 407γ to 10^-, M1+E2 216γ to 11^-.
2695.3[i] *3*	12^+		DEF	Jπ: E2 312γ from 14^+, 387γ to 12^+.
2875.3[@] *3*	14^+		CDEFG	Jπ: E2 566γ to 12^+.
2915.5[h] *3*			D F	
2918.8[a] *4*	13^-		D F	Jπ: E2 451.5γ to 11^-, M1+E2 236γ to 12^-.
2919.6[d] *3*	12^-		D F	Jπ: E2 456.5γ to 10^-, M1+E2 375γ to 11^-.
2925.4[l] *3*			F	
2982.0[e] *3*	13^-		CDEF	Jπ: E2 438γ to 11^-, E1 673γ to 12^+.
3007.9[i] *3*	14^+		DEF	Jπ: E2 699γ to 12^+.
3139.3[c] *3*	$(11^-,12^-)$		D F	Jπ: 464γ to $(9^-,10^-)$, band assignment.
3176.3[b] *4*	14^-		D F	Jπ: E2 493γ to 12^-.
3246.3[l] *3*			F	
3342.8[h] *4*			D F	
3402.7[i] *3*	16^+		DEF	Jπ: E2 395γ to 14^+, E2 527γ to 14^+.
3442.7[a] *4*	15^-		D F	Jπ: E2 524γ to 13^-, M1+E2 266.4γ to 14^-.
3452.1[d] *4*	14^-		D F	Jπ: E2 532γ to 12^-, M1+E2 468γ to 13^-.
3476.4[e] *3*	15^-		CDEF	Jπ: E2 494γ to 13^-, E1 601γ 14^+.
3494.8[j] *4*	16^+		CDEF	Jπ: E2 620γ to 14^+.
3629.2[l] *3*			F	
3656.7[c] *3*	$(13^-,14^-)$		D F	Jπ: E2 517γ to $(11^-,12^-)$.
3703.8[g] *5*	(11,12)	≤5 ns	D	$T_{1/2}$: from γγ(t) in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{180}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			Jπ: D(+Q) 1020γ to 12⁻, D(+Q) 1237γ to 11⁻.
3735.3[b] 4	16⁻	D F	Jπ: E2 559γ to 14⁻.
3855.7[f] 7	(12,13)	D	Jπ: (D+Q) 152γ (11,12).
3886.5[h] 5		D F	
3925.9[i] 4	18⁺	DEF	Jπ: E2 523γ to 16⁺.
3981.7[e] 3	17⁻	DEF	Jπ: E2 505γ to 15⁻.
4027.6[d] 5	16⁻	D F	Jπ: E2 576γ to 14⁻.
4031.3[a] 4	17⁻	D F	Jπ: E2 589γ to 15⁻.
4037.5[g] 7	(13,14)	D	Jπ: 182γ to (12,13), 334γ to (11,12).
4067.5[l] 6		F	
4134.6[j] 4	18⁺	CDEF	Jπ: E2 640γ to 16⁺.
4200.8[c] 4	(15⁻,16⁻)	D F	Jπ: E2 544γ to (13⁻,14).
4248.5[f] 7	(14,15)	D	Jπ: 211γ to (13,14), 393γ to (12,13).
4342.4[b] 5	18⁻	D F	Jπ: E2 607γ to 16⁻.
4486.6[g] 7	(15,16)	D	Jπ: 238γ to (14,15), 449γ to (13,14).
4497.0[e] 4	19⁻	DEF	Jπ: E2 515γ to 17⁻.
4531.8[h] 6		D F	Jπ: E2 645γ to (16⁺).
4542.7[i] 4	20⁺	DEF	Jπ: E2 617γ to 18⁺.
4581.0[l] 7		F	
4599.6[d] 6	18⁻	D F	Jπ: E2 572γ to 16⁻.
4651.4[a] 5	19⁻	D F	Jπ: E2 620γ to 17⁻.
4750.7[f] 8	(16,17)	D	Jπ: 264γ to (15,16), 502γ to (14,15).
4770.2[c] 6	(17⁻,18⁻)	D F	Jπ: E2 569γ E2 (15⁻,16⁻).
4821.4[j] 5	20⁺	D F	Jπ: E2 687γ to 18⁺.
4978.2[b] 5	20⁻	D F	Jπ: E2 636γ to 18⁻.
5037.2[g] 8	(17,18)	D	Jπ: 287γ to (16,17), 551γ to (15,16).
5045.0[e] 4	21⁻	D F	Jπ: E2 548γ to 19⁻.
5136.2[l] 7		F	
5164.6[d] 7	(20⁻)	D F	Jπ: 565γ to 18⁻, band assignment.
5236.5[i] 5	22⁺	D F	Jπ: E2 694γ to 20⁺.
5255.0[h] 7		D F	
5293.8[a] 6	21⁻	D F	Jπ: E2 642γ to 19⁻.
5348.0[f] 8	(18,19)	D	Jπ: 311γ to (17,18), 597γ to (16,17).
5387.4[c] 7	(19⁻,20⁻)	D F	Jπ: E2 617γ to (17⁻,18⁻).
5550.9[j] 6	22⁺	D F	Jπ: E2 730γ to 20⁺.
5561.6 11		E	Jπ: J≥19, tentative assignment with dipole transition assumed (1993Ve01).
5625.7[b] 6	22⁻	D F	Jπ: E2 648γ to 20⁻.
5666.5[e] 5	23⁻	D F	Jπ: E2 622γ to 21⁻.
5731.5[l] 11		F	
5787.7[d] 8	(22⁻)	D F	Jπ: E2 623γ to (20⁻).
5951.5[a] 7	23⁻	D F	Jπ: E2 658γ to 21⁻.
5981.3[i] 6	24⁺	D F	Jπ: E2 745γ to 22⁺.
6024.8[h] 8		D F	
6055.5[c] 7	(21⁻,22⁻)	D F	Jπ: E2 668γ to (19⁻,20⁻).
6298.1[b] 7	(24⁻)	D F	Jπ: 672γ to 22⁻, band assignment.
6323.6[j] 8	(24⁺)	D F	Jπ: (E2) 773γ to 22⁺.
6373.3[l] 15		F	
6378.0[e] 6	25⁻	D F	Jπ: E2 712γ to 23⁻.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{180}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
6496.3[d] 8	(24⁻)	D F	Jπ: 709γ to (22⁻), band assignment.
6653.0[a] 10	(25⁻)	D F	Jπ: 702γ to 23⁻, band assignment.
6766.5[i] 6	26⁺	D F	Jπ: E2 785γ to 24⁺.
6772.5[c] 12	(23⁻,24⁻)	D F	Jπ: 717γ to (21⁻,22⁻).
6823.9[h] 10		D	
7030.8[b] 8	(26⁻)	D F	Jπ: (E2) 733γ to 24⁻.
7144.9[j] 13	(26⁺)	D	Jπ: 821γ to (24⁺), band assignment.
7179.7[e] 8	(27⁻)	D	Jπ: 802γ to 25⁺, band assignment.
7290.4[d] 10	(26⁻)	D	Jπ: 794γ to (24⁻), band assignment.
7431.1[a] 11	(27⁻)	D	Jπ: 778γ to (25⁻), band assignment.
7535.4[c] 13	(25⁻,26⁻)	D	Jπ: 763γ to (23⁻,24⁻).
7614.7[i] 8	(28⁺)	D	Jπ: 848γ to 26⁺, band assignment.
7664.8[h] 11		D	
7842.5[b] 10	(28⁻)	D	Jπ: 812γ to (26⁻), band assignment.
8014.6[j] 14	(28⁺)	D	Jπ: 870γ to (26⁺), band assignment.
8063.6[e] 9	(29⁻)	D	Jπ: 884γ to (27⁻), band assignment.
8303.2[a] 12	(29⁻)	D	Jπ: 872γ to (27⁻), band assignment.
8348.5[c] 14	(27⁻,28⁻)	D	Jπ: 813γ to (25⁻,26⁻).
8554.0[i] 9	(30⁺)	D	Jπ: 939γ to (28⁺), band assignment.
8573.0[h] 12		D	
8739.8[b] 11	(30⁻)	D	Jπ: 897γ to (28⁻), band assignment.
8918.3[j] 15	(30⁺)	D	Jπ: 904γ to (28⁺).
9021.9[e] 11	(31⁻)	D	Jπ: 958γ to (29⁻).
9220.3[c] 15	(29⁻,30⁻)	D	Jπ: 872γ to (27⁻,28⁻).
9276.7[a] 13	(31⁻)	D	Jπ: 974γ to (29⁻), band assignment.
9595.4[i] 11	(32⁺)	D	Jπ: 1041γ to (30⁺), band assignment.
9717.3[b] 12	(32⁻)	D	Jπ: 978γ to (30⁻), band assignment.
9845.6[j] 15	(32⁺)	D	Jπ: 927γ to (30⁺), band assignment.
10049.7[e] 12	(33⁻)	D	Jπ: 1028γ to (31⁻), band assignment.
10152.1[c] 16	(31⁻,32⁻)	D	Jπ: 932γ to (29⁻,30⁻), band assignment.
10737.1?[i] 12	(34⁺)	D	Jπ: 1142γ to (32⁺), band assignment.
11146.9?[c] 17	(33⁻,34⁻)	D	Jπ: 995γ to (31⁻,32⁻), band assignment.

[†] From a least-squares fit to Eγ by evaluator.

[‡] Spin and parity assignments are based on measured γ-ray multipolarities, decay patterns, angular distributions, assumed rotational structure and on deduced gyromagnetic ratios and angular momentum alignment for the various rotational bands in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ) and ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).

[#] From RDM in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), except where noted.

[@] Band(A): Kπ=0⁺ g.s. rotational band.

[&] Band(B): Kπ=2⁺ γ-vibrational band.

[a] Band(C): Kπ=7⁻ rotational band, α=1.

[b] Band(D): Kπ=7⁻ rotational band, α=0.

[c] Band(E): Kπ=(7⁻,8⁻) rotational band.

[d] Band(F): Low K rotational band (K=1-3) with configuration ν9/2[624]ν7/2[514] and strong mixing with either π5/2[402]π9/2[514] or π5/2[402]π1/2[541]. α=0.

[e] Band(G): Low K rotational band (K=1-3) with configuration ν9/2[624]ν7/2[514] and strong mixing with either

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{180}Os Levels (continued)

$\pi 5/2[402]\pi 9/2[514]$ or $\pi 5/2[402]\pi 1/2[541]$. α=1.

[f] Band(H): rotational band.

[g] Band(I): rotational band.

[h] Band(J): Rotational Band. $K^{\pi}=(7^{+})$ suggested for the bandhead at 2429 keV in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ).

[i] Band(K): $K^{\pi}=14^{+}$ rotational band.

[j] Band(L): $K^{\pi}=16^{+}$ rotational band.

[k] Band(M): $K^{\pi}=0^{+}$ β-vibrational band.

[l] Band(N): Rotational band. $K^{\pi}=(8^{-})$ suggested for the bandhead at 2636 keV in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ).

Adopted Levels, Gammas (continued)

γ(^{180}Os)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
132.11	2+	132.1 *1*	100	0.0	0+	E2[@]		1.464	α(K)=0.472 *7*; α(L)=0.748 *11*; α(M)=0.191 *3*; α(N)=0.0458 *7*; α(O)=0.00680 *10* α(P)=4.34×10^{-5} *7* B(E2)(W.u.)=141 *15*
408.63	4+	276.5 *1*	100	132.11	2+	E2[@]		0.1169	α(K)=0.0728 *11*; α(L)=0.0334 *5*; α(M)=0.00831 *12*; α(N)=0.00200 *3*; α(O)=0.000309 *5* α(P)=7.22×10^{-6} *11* B(E2)(W.u.)=192 *25*
736.4	0+	604.1		132.11	2+	E2		0.01452	α(K)=0.01127 *16*; α(L)=0.00249 *4*; α(M)=0.000592 *9*; α(N)=0.0001434 *20*; α(O)=2.35×10^{-5} *4* α(P)=1.206×10^{-6} *17* Mult.: Q from γγ(θ) in ^{180}Ir ε decay; Δπ=no from level scheme.
		736.3		0.0	0+	E0[@]			
795.07	6+	386.4 *1*	100	408.63	4+	E2		0.0444	α(K)=0.0314 *5*; α(L)=0.00993 *14*; α(M)=0.00242 *4*; α(N)=0.000585 *9*; α(O)=9.27×10^{-5} *13* α(P)=3.26×10^{-6} *5* B(E2)(W.u.)=1.6×10^{2} *4*
831.09	2+	94.5[&]	≈2[&]	736.4	0+	[E2]		5.49	α(K)=0.856 *12*; α(L)=3.50 *5*; α(M)=0.894 *13*; α(N)=0.214 *3*; α(O)=0.0316 *5*; α(P)=9.62×10^{-5} *14*
		422.3[&]	4.1[&] *14*	408.63	4+	E2[@]		0.0350	α(K)=0.0254 *4*; α(L)=0.00738 *11*; α(M)=0.00179 *3*; α(N)=0.000433 *6*; α(O)=6.91×10^{-5} *10* α(P)=2.66×10^{-6} *4*
		699.0 *2*	100[&] *5*	132.11	2+	E0+M1+E2[@]	<−9	0.0498[a] *22*	α(K)=0.016 *8*; α(L)=0.0027 *10*; α(M)=0.00061 *22*; α(N)=0.00015 *6*; α(O)=2.5×10^{-5} *10* α(P)=1.8×10^{-6} *9* δ: from γγ(θ) in ^{180}Ir ε decay.
		831.5[&]	3.6[&] *14*	0.0	0+	[E2]		0.00723	α(K)=0.00582 *9*; α(L)=0.001085 *16*; α(M)=0.000253 *4*; α(N)=6.15×10^{-5} *9*; α(O)=1.030×10^{-5} *15* α(P)=6.24×10^{-7} *9*
870.44	2+	461.8[&] *5*	6.3[&] *11*	408.63	4+	E2[@]		0.0278	α(K)=0.0206 *3*; α(L)=0.00554 *8*; α(M)=0.001335 *20*; α(N)=0.000323 *5*; α(O)=5.19×10^{-5} *8* α(P)=2.17×10^{-6} *3* E_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. I_γ: other: 32 *16* in ^{150}Nd(^{36}S,6nγ):Delayed.
		738.0 *3*	25.6[&] *23*	132.11	2+	E0+M1+E2[@]	+5.4 *+36−17*	0.0463[a] *42*	α(K)=0.0078 *5*; α(L)=0.00152 *7*; α(M)=0.000355 *14*; α(N)=8.6×10^{-5} *4*; α(O)=1.44×10^{-5} *6* α(P)=8.4×10^{-7} *6* δ: from γγ(θ) in ^{180}Ir ε decay. Other: >6 from γ(θ)

$^{180}_{76}Os_{104}$-6

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
									I_γ: other: 42 *9* in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
870.44	2$^+$	870.5 *3*	100.0[&] *23*	0.0	0$^+$	E2[@]		0.00657	α(K)=0.00531 *8*; α(L)=0.000972 *14*; α(M)=0.000226 *4*; α(N)=5.50×10^{-5} *8*; α(O)=9.23×10^{-6} *13* α(P)=5.70×10^{-7} *8*
1022.85	3$^+$	614.1[&] *3*	18.6[&] *24*	408.63	4$^+$	E2[@]		0.01399	α(K)=0.01088 *16*; α(L)=0.00238 *4*; α(M)=0.000565 *8*; α(N)=0.0001369 *20*; α(O)=2.25×10^{-5} *4* α(P)=1.165×10^{-6} *17*
		890.8 *2*	100[&] *8*	132.11	2$^+$	M1+E2[@]	+8.8 *+27−17*	0.00638 *11*	I_γ: other: 41 *17* in ^{150}Nd(^{36}S,6nγ):Delayed. α(K)=0.00517 *9*; α(L)=0.000933 *15*; α(M)=0.000217 *4*; α(N)=5.28×10^{-5} *9*; α(O)=8.87×10^{-6} *14* α(P)=5.56×10^{-7} *10* δ: from γγ(θ) in ^{180}Ir ε decay. Other: −7 *3* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
1052.66	4$^+$	222.0[&]	9.3[&] *17*	831.09	2$^+$	[E2]		0.235	α(K)=0.1292 *18*; α(L)=0.0798 *12*; α(M)=0.0200 *3*; α(N)=0.00482 *7*; α(O)=0.000733 *11* α(P)=1.232×10^{-5} *18*
		257.9[&]	2.5[&] *9*	795.07	6$^+$	[E2]		0.1450	α(K)=0.0873 *13*; α(L)=0.0438 *7*; α(M)=0.01092 *16*; α(N)=0.00263 *4*; α(O)=0.000404 *6* α(P)=8.55×10^{-6} *12*
		644.1 *3*	100[&] *6*	408.63	4$^+$	E0+M1+E2[@]	−3.5 *+5−7*	0.120[a] *5*	α(K)=0.0112 *5*; α(L)=0.00227 *7*; α(M)=0.000534 *15*; α(N)=0.000130 *4*; α(O)=2.15×10^{-5} *7* α(P)=1.22×10^{-6} *6* δ: from γγ(θ) in ^{180}Ir ε decay.
		920.9[&]	17.4[&] *12*	132.11	2$^+$	[E2]		0.00586	α(K)=0.00475 *7*; α(L)=0.000851 *12*; α(M)=0.000198 *3*; α(N)=4.81×10^{-5} *7*; α(O)=8.09×10^{-6} *12* α(P)=5.10×10^{-7} *8*
1196.83	4$^+$	327.0[&]	6.5[&] *24*	870.44	2$^+$	[E2]		0.0709	α(K)=0.0474 *7*; α(L)=0.0179 *3*; α(M)=0.00440 *7*; α(N)=0.001061 *15*; α(O)=0.0001659 *24* α(P)=4.82×10^{-6} *7*
		401.9[&]	5.9[&] *12*	795.07	6$^+$	[E2]		0.0399	α(K)=0.0285 *4*; α(L)=0.00870 *13*; α(M)=0.00212 *3*; α(N)=0.000511 *8*; α(O)=8.13×10^{-5} *12* α(P)=2.98×10^{-6} *5*
		788.2 *2*	100[&] *18*	408.63	4$^+$	E0+M1+E2[@]	+1.3 *1*	0.0154[a] *13*	α(K)=0.0104 *5*; α(L)=0.00176 *6*; α(M)=0.000407 *14*; α(N)=9.9×10^{-5} *4*; α(O)=1.69×10^{-5} *6* α(P)=1.16×10^{-6} *5* δ: from γγ(θ) in ^{180}Ir ε decay. Other: +1.8 *4* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
		1064.7 *3*	44[&] *3*	132.11	2$^+$	E2[@]		0.00439	α(K)=0.00359 *5*; α(L)=0.000612 *9*; α(M)=0.0001414 *20*;

$^{180}_{76}Os_{104}$-7

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α	Comments
									α(N)=3.44×10^{-5} *5*; α(O)=5.83×10^{-6} *9* α(P)=3.85×10^{-7} *6*
1257.45	8$^+$	462.3 *2*	100	795.07	6$^+$	E2		0.0277	I$_\gamma$: other: 97 *18* in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ). α(K)=0.0205 *3*; α(L)=0.00552 *8*; α(M)=0.001331 *19*; α(N)=0.000322 *5*; α(O)=5.17×10^{-5} *8* α(P)=2.16×10^{-6} *3* B(E2)(W.u.)=63 *13*
1375.4	3$^-$	352.3&	94& *6*	1022.85	3$^+$	[E1]		0.01675	α(K)=0.01394 *20*; α(L)=0.00217 *3*; α(M)=0.000494 *7*; α(N)=0.0001197 *17*; α(O)=2.02×10^{-5} *3* α(P)=1.330×10^{-6} *19*
		505.0&	100& *6*	870.44	2$^+$	E1@		0.00750	α(K)=0.00628 *9*; α(L)=0.000948 *14*; α(M)=0.000216 *3*; α(N)=5.23×10^{-5} *8*; α(O)=8.89×10^{-6} *13* α(P)=6.15×10^{-7} *9*
		544.3&	79& *6*	831.09	2$^+$	E1@		0.00640	α(K)=0.00536 *8*; α(L)=0.000805 *12*; α(M)=0.000183 *3*; α(N)=4.44×10^{-5} *7*; α(O)=7.56×10^{-6} *11* α(P)=5.27×10^{-7} *8*
		967.1&	13& *3*	408.63	4$^+$	[E1]		0.00207	α(K)=0.001744 *25*; α(L)=0.000252 *4*; α(M)=5.70×10^{-5} *8*; α(N)=1.387×10^{-5} *20*; α(O)=2.38×10^{-6} *4* α(P)=1.753×10^{-7} *25*
		1243.0&	53& *3*	132.11	2$^+$	[E1]		1.35×10^{-3}	α(K)=0.001113 *16*; α(L)=0.0001589 *23*; α(M)=3.59×10^{-5} *5*; α(N)=8.73×10^{-6} *13* α(O)=1.505×10^{-6} *21*; α(P)=1.126×10^{-7} *16*
1378.95	6$^+$	326.3& *2*	61 *15*	1052.66	4$^+$	[E2]		0.0714	α(K)=0.0477 *7*; α(L)=0.0180 *3*; α(M)=0.00443 *7*; α(N)=0.001070 *16*; α(O)=0.0001672 *24* α(P)=4.85×10^{-6} *7* I$_\gamma$: weighted average of 58 *21* from ^{180}Ir ε decay, 59 *18* from ^{150}Nd(^{36}S,6nγ):Delayed, and 64 *15* from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
		583.8 *3*	100 *18*	795.07	6$^+$	E0+M1+E2@	−1.6 *+3−4*	0.059[a] *10*	α(K)=0.0191 *23*; α(L)=0.0036 *3*; α(M)=0.00084 *7*; α(N)=0.000204 *16*; α(O)=3.4×10^{-5} *3* α(P)=2.1×10^{-6} *3* δ: from γγ(θ) in ^{180}Ir ε decay. Other: −0.20 *20* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
		969.9&	13& *6*	408.63	4$^+$	[E2]		0.00528	α(K)=0.00430 *6*; α(L)=0.000755 *11*; α(M)=0.0001751 *25*; α(N)=4.26×10^{-5} *6* α(O)=7.18×10^{-6} *10*; α(P)=4.61×10^{-7} *7*
1405.55	5$^+$	382.5 *3*	7.4 *19*	1022.85	3$^+$	[E2]		0.0457	α(K)=0.0322 *5*; α(L)=0.01028 *15*; α(M)=0.00251 *4*; α(N)=0.000606 *9*; α(O)=9.59×10^{-5} *14* α(P)=3.34×10^{-6} *5*

$^{180}_{76}Os_{104}$-8

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α	Comments
									I_γ: from ^{180}Ir ε decay. Others: 40 *12* from ^{150}Nd(^{36}S,6nγ):Delayed and 38 *16* from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
1405.55	5+	610.3 *3*	39 *11*	795.07	6+	M1+E2@	+4 *1*	0.0157 *11*	α(K)=0.0123 *10*; α(L)=0.00258 *12*; α(M)=0.00061 *3*; α(N)=0.000148 *7*; α(O)=2.44×10^{-5} *12* α(P)=1.33×10^{-6} *11* δ: from γγ(θ) in ^{180}Ir ε decay.
									I_γ: weighted average of 26 *11* from ^{180}Ir EC ε decay and 55 *12* from ^{150}Nd(^{36}S,6nγ):Delayed.
		996.94 *24*	100 *14*	408.63	4+	M1+E2@	−2.4 *4*	0.0059 *4*	α(K)=0.0049 *3*; α(L)=0.00082 *4*; α(M)=0.000189 *9*; α(N)=4.60×10^{-5} *23*; α(O)=7.8×10^{-6} *4* α(P)=5.3×10^{-7} *4*
									I_γ: weighted average of ^{180}Ir ε decay, ^{150}Nd(^{36}S,6nγ):Delayed, and ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
									δ: from γγ(θ) in ^{180}Ir ε decay. Other: −12 *4* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
1514.63	4−	318.1&	17& *3*	1196.83	4+				E_γ: placed from 1515.6-keV, 4+ level in ^{150}Nd(^{36}S,6nγ):Delayed.
		492.0 *3*	100& *6*	1022.85	3+	E1+M2@	+0.23 *+10−9*	0.018 *10*	α(K)=0.015 *8*; α(L)=0.0026 *16*; α(M)=0.0006 *4*; α(N)=0.00015 *9*; α(O)=2.5×10^{-5} *15* α(P)=1.8×10^{-6} *11* δ: from γγ(θ) in ^{180}Ir ε decay.
									E_γ: placed from 1515.6-keV, 4+ level in ^{150}Nd(^{36}S,6nγ):Delayed.
		1106.0 *3*	71& *6*	408.63	4+	E1+M2@	+0.17 *+4−0*	0.0022 *3*	α(K)=0.00182 *23*; α(L)=0.00027 *4*; α(M)=6.2×10^{-5} *9*; α(N)=1.51×10^{-5} *22*; α(O)=2.6×10^{-6} *4* α(P)=1.9×10^{-7} *3* δ: from γγ(θ) in ^{180}Ir ε decay. Other: −0.8 *7* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
									E_γ: placed from 1515.6-keV, 4+ level in ^{150}Nd(^{36}S,6nγ):Delayed.
1515.67	4+	644.9 *3*	100& *30*	870.44	2+	E2		0.01252	α(K)=0.00980 *14*; α(L)=0.00208 *3*; α(M)=0.000492 *7*; α(N)=0.0001194 *17*; α(O)=1.97×10^{-5} *3* α(P)=1.050×10^{-6} *15*
		684.6 *3*	76& *7*	831.09	2+	(E2)		0.01096	α(K)=0.00865 *13*; α(L)=0.001775 *25*; α(M)=0.000418 *6*; α(N)=0.0001015 *15* α(O)=1.680×10^{-5} *24*; α(P)=9.27×10^{-7} *13*
		1383.8 *3*	58 *30*	132.11	2+				E_γ,I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed.
1604.44	5−	90.3 *10*	6 *4*	1514.63	4−				
		225.3 *3*	10 *4*	1378.95	6+				
		407.6 *3*	45 *4*	1196.83	4+	E1@		0.01201	α(K)=0.01002 *15*; α(L)=0.001538 *22*; α(M)=0.000350 *5*; α(N)=8.49×10^{-5} *12* α(O)=1.437×10^{-5} *21*; α(P)=9.66×10^{-7} *14*

$^{180}_{76}Os_{104}$-9

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α	Comments
1604.44	5⁻	809.3 *3*	100 *14*	795.07	6⁺	E1+M2	+0.10 *4*	0.0034 *5*	α(K)=0.0028 *4*; α(L)=0.00042 *7*; α(M)=9.6×10^{-5} *15*; α(N)=2.3×10^{-5} *4*; α(O)=4.0×10^{-6} *7* α(P)=2.9×10^{-7} *5* δ: from γγ(θ) in ^{180}Ir ε decay. Other: +0.02 *5* from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
		1195.9 *3*	19 *4*	408.63	4⁺	E1+M2	+0.1 *3*	0.0016 *21*	α(K)=0.0013 *17*; α(L)=0.0002 *3*; α(M)=4.E−5 *7*; α(N)=1.1×10^{-5} *16*; α(O)=2.E−6 *3* α(P)=1.4×10^{-7} *21* Mult.: D(+Q) from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
1627.33	6⁺	430.6 *3*	43 *13*	1196.83	4⁺	[E2]		0.0333	α(K)=0.0242 *4*; α(L)=0.00693 *10*; α(M)=0.001678 *24*; α(N)=0.000406 *6*; α(O)=6.48×10^{-5} *10* α(P)=2.54×10^{-6} *4*
		832.4 *5*	100 *30*	795.07	6⁺				
		1218.7 *5*	90 *30*	408.63	4⁺	E2		0.00338	α(K)=0.00278 *4*; α(L)=0.000457 *7*; α(M)=0.0001050 *15*; α(N)=2.56×10^{-5} *4*; α(O)=4.35×10^{-6} *7* α(P)=2.97×10^{-7} *5*
1761.43	6⁻	157.1 *5*	18 *11*	1604.44	5⁻	M1+E2	+0.25 *12*	1.51 *6*	α(K)=1.23 *7*; α(L)=0.216 *10*; α(M)=0.050 *3*; α(N)=0.0122 *7*; α(O)=0.00208 *8* α(P)=0.000142 *8* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		247.0 *3*	93 *25*	1514.63	4⁻	E2		0.1662	α(K)=0.0977 *14*; α(L)=0.0519 *8*; α(M)=0.01297 *20*; α(N)=0.00312 *5*; α(O)=0.000479 *7* α(P)=9.49×10^{-6} *14*
		355.9 *3*	100 *25*	1405.55	5⁺	E1		0.01636	α(K)=0.01362 *20*; α(L)=0.00211 *3*; α(M)=0.000482 *7*; α(N)=0.0001168 *17*; α(O)=1.97×10^{-5} *3* α(P)=1.300×10^{-6} *19* Mult.: D from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
		966.3 *3*	89 *18*	795.07	6⁺	E1+M2	−0.35 *30*	0.005 *6*	α(K)=0.004 *5*; α(L)=0.0007 *8*; α(M)=0.00016 *18*; α(N)=4.E−5 *5*; α(O)=7.E−6 *8*; α(P)=5.E−7 *6*
1767.63	10⁺	510.1 *2*	100	1257.45	8⁺	E2		0.0217	α(K)=0.01637 *23*; α(L)=0.00407 *6*; α(M)=0.000976 *14*; α(N)=0.000236 *4*; α(O)=3.83×10^{-5} *6* α(P)=1.739×10^{-6} *25*
1862.54	7⁻	101.4 *7*	1.6 *16*	1761.43	6⁻				
		235.3 *3*	14 *8*	1627.33	6⁺	[E1]		0.0442	α(K)=0.0366 *6*; α(L)=0.00588 *9*; α(M)=0.001345 *20*; α(N)=0.000325 *5*; α(O)=5.42×10^{-5} *8* α(P)=3.34×10^{-6} *5* B(E1)(W.u.)>4.5×10^{-6} I_γ: other: 50 *17* from ^{150}Nd(^{36}S,6nγ):Delayed.
		258.0 *3*	74 *14*	1604.44	5⁻	E2		0.1449	α(K)=0.0872 *13*; α(L)=0.0437 *7*; α(M)=0.01090 *16*; α(N)=0.00263 *4*;

$^{180}_{76}Os_{104}$-10

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									α(O)=0.000403 *6* α(P)=8.54×10^{-6} *13* B(E2)(W.u.)>12
1862.54	7$^-$	483.4 *3*	33 *6*	1378.95	6$^+$	E1+M2	+0.09 *8*	0.010 *5*	α(K)=0.008 *4*; α(L)=0.0013 *7*; α(M)=0.00030 *16*; α(N)=7.E−5 *4*; α(O)=1.2×10^{-5} *7*; α(P)=9.E−7 *5* B(E1)(W.u.)>1.2×10^{-6} Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme. I_γ: 0ther: ≤14 from ^{150}Nd(^{36}S,6nγ):Delayed.
		604.8 *3*	100 *17*	1257.45	8$^+$	E1(+M2)	+0.05 *5*	0.0054 *9*	α(K)=0.0045 *7*; α(L)=0.00068 *13*; α(M)=0.00016 *3*; α(N)=3.8×10^{-5} *7*; α(O)=6.4×10^{-6} *12* α(P)=4.6×10^{-7} *9* B(E1)(W.u.)>1.9×10^{-6}
		1067.5 *3*	5 *3*	795.07	6$^+$	[E1]		1.73×10^{-3}	α(K)=0.001458 *21*; α(L)=0.000210 *3*; α(M)=4.74×10^{-5} *7*; α(N)=1.152×10^{-5} *17*; α(O)=1.98×10^{-6} *3* α(P)=1.469×10^{-7} *21* B(E1)(W.u.)>1.7×10^{-8}
1877.12	6$^+$	361.4 *3*	100 *17*	1515.67	4$^+$	E2		0.0534	α(K)=0.0370 *6*; α(L)=0.01251 *18*; α(M)=0.00306 *5*; α(N)=0.000740 *11*; α(O)=0.0001165 *17* α(P)=3.81×10^{-6} *6* E_γ: from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ). Other: 363.2 *5* in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ).
		471.3 *3*	34 *8*	1405.55	5$^+$				
		498.4 *5*	14 *12*	1378.95	6$^+$				E_γ,I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed.
		680.2[c] *5*	≤8	1196.83	4$^+$	[E2]		0.01112	α(K)=0.00876 *13*; α(L)=0.00181 *3*; α(M)=0.000426 *6*; α(N)=0.0001033 *15* α(O)=1.708×10^{-5} *25*; α(P)=9.40×10^{-7} *14*
		824.6 *3*	12 *7*	1052.66	4$^+$	[E2]		0.00735	E_γ,I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. α(K)=0.00591 *9*; α(L)=0.001108 *16*; α(M)=0.000259 *4*; α(N)=6.28×10^{-5} *9*; α(O)=1.051×10^{-5} *15* α(P)=6.35×10^{-7} *9*
		1082.1 *3*	51 *8*	795.07	6$^+$	M1+E2	−0.6 *3*	0.0079 *10*	E_γ,I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. α(K)=0.0066 *8*; α(L)=0.00102 *11*; α(M)=0.000234 *25*; α(N)=5.7×10^{-5} *6*; α(O)=9.9×10^{-6} *11* α(P)=7.4×10^{-7} *9*
		1468.5 *3*	45 *9*	408.63	4$^+$	E2		0.00243	I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. Others: 15 *8* from ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ) and 62 *12* from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ). α(K)=0.00197 *3*; α(L)=0.000310 *5*; α(M)=7.10×10^{-5} *10*; α(N)=1.728×10^{-5} *25*; α(O)=2.96×10^{-6} *5* α(P)=2.10×10^{-7} *3*

$^{180}_{76}Os_{104}$-11

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. Others: 8 *8* from ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ) and 42 *8* from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
1881.1	7$^+$	475.5 *3*	100 *33*	1405.55	5$^+$	(E2)		0.0258	α(K)=0.0192 *3*; α(L)=0.00505 *8*; α(M)=0.001216 *18*; α(N)=0.000294 *5*; α(O)=4.74×10^{-5} *7* α(P)=2.03×10^{-6} *3*
		1086.2 *4*	53 *20*	795.07	6$^+$	M1+E2	<−8	0.0067 *25*	α(K)=0.0056 *21*; α(L)=0.0009 *3*; α(M)=0.00020 *7*; α(N)=4.9×10^{-5} *16*; α(O)=8.E−6 *3* α(P)=6.2×10^{-7} *24* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
1928.76	7$^-$	51.6 *2*	100 *25*	1877.12	6$^+$	E1		0.456 *8*	α(L)=0.352 *7*; α(M)=0.0816 *15*; α(N)=0.0193 *4*; α(O)=0.00298 *6*; α(P)=0.0001206 *20* B(E1)(W.u.)=3.8×10^{-5} *12*
		301.6 *5*		1627.33	6$^+$	[E1]		0.0241	α(K)=0.0201 *3*; α(L)=0.00316 *5*; α(M)=0.000721 *11*; α(N)=0.000174 *3*; α(O)=2.93×10^{-5} *5* α(P)=1.88×10^{-6} *3*
		324.0 *7*	35 *7*	1604.44	5$^-$	(E2)		0.0729 *12*	E_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. α(K)=0.0486 *8*; α(L)=0.0185 *3*; α(M)=0.00455 *8*; α(N)=0.001098 *18*; α(O)=0.000172 *3* α(P)=4.93×10^{-6} *8* B(E2)(W.u.)=0.023 *6* Mult.: (Q) from R(DCO) in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), Δπ=no from level scheme.
		550.0 *3*		1378.95	6$^+$	[E1]		0.00626	α(K)=0.00525 *8*; α(L)=0.000787 *11*; α(M)=0.000179 *3*; α(N)=4.34×10^{-5} *6*; α(O)=7.39×10^{-6} *11* α(P)=5.16×10^{-7} *8*
		670.9 *4*	33 *8*	1257.45	8$^+$	(E1)		0.00417	E_γ: from ^{150}Nd(^{36}S,6nγ):Delayed. α(K)=0.00350 *5*; α(L)=0.000518 *8*; α(M)=0.0001175 *17*; α(N)=2.85×10^{-5} *4*; α(O)=4.88×10^{-6} *7* α(P)=3.48×10^{-7} *5* B(E1)(W.u.)=5.7×10^{-9} *17*
		1133.8 *4*	49 *10*	795.07	6$^+$	E1(+M2)	+0.02 *6*	0.00156 *12*	α(K)=0.00132 *10*; α(L)=0.000189 *16*; α(M)=4.3×10^{-5} *4*; α(N)=1.04×10^{-5} *9*; α(O)=1.79×10^{-6} *15* α(P)=1.33×10^{-7} *12* B(E1)(W.u.)=1.8×10^{-9} *5*
1987.0	8$^-$	(59)		1928.76	7$^-$				
2086.2	8$^-$	223.3 *4*	14 *4*	1862.54	7$^-$	M1+E2	+0.28 *5*	0.555 *13*	α(K)=0.455 *12*; α(L)=0.0773 *12*; α(M)=0.0178 *3*; α(N)=0.00435 *7*; α(O)=0.000745 *12* α(P)=5.26×10^{-5} *14* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.

$^{180}_{76}Os_{104}$-12

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
2086.2	8⁻	324.9 *3*	100 *14*	1761.43	6⁻	E2		0.0723	α(K)=0.0482 *7*; α(L)=0.0183 *3*; α(M)=0.00451 *7*; α(N)=0.001087 *16*; α(O)=0.0001698 *25* α(P)=4.90×10^{-6} *7*
2113.1	9⁻	126.2 *3*	92 *25*	1987.0	8⁻	M1+E2	−1.4 *3*	2.13 *14*	α(K)=1.15 *22*; α(L)=0.74 *7*; α(M)=0.185 *17*; α(N)=0.045 *4*; α(O)=0.0068 *6*; α(P)=0.00013 *3* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), large value of δ favors M1+E2 assignment.
		184.0 *5*	100 *33*	1928.76	7⁻				E_γ: observed only in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ).
2175.69	9⁻	313.1 *2*	100 *8*	1862.54	7⁻	E2		0.0805	α(K)=0.0530 *8*; α(L)=0.0209 *3*; α(M)=0.00517 *8*; α(N)=0.001247 *18*; α(O)=0.000194 *3* α(P)=5.35×10^{-6} *8*
		408.2 *3*	22 *4*	1767.63	10⁺	E1		0.01197	α(K)=0.00998 *14*; α(L)=0.001533 *22*; α(M)=0.000349 *5*; α(N)=8.46×10^{-5} *12* α(O)=1.432×10^{-5} *21*; α(P)=9.63×10^{-7} *14* Mult.: D from γ(θ) in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), Δπ=yes from level scheme.
		918.6 *3*	11 *4*	1257.45	8⁺	E1(+M2)	−0.01 *11*	0.0023 *5*	α(K)=0.0019 *4*; α(L)=0.00028 *7*; α(M)=6.3×10^{-5} *16*; α(N)=1.5×10^{-5} *4*; α(O)=2.6×10^{-6} *7* α(P)=1.9×10^{-7} *5* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
2275.9	10⁻	162.9 *3*	48 *8*	2113.1	9⁻	M1+E2	−0.94 *16*	1.06 *7*	α(K)=0.75 *8*; α(L)=0.238 *11*; α(M)=0.058 *3*; α(N)=0.0140 *8*; α(O)=0.00223 *9*; α(P)=8.4×10^{-5} *10* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		289.0 *3*	100 *16*	1987.0	8⁻	E2		0.1022	α(K)=0.0650 *10*; α(L)=0.0282 *5*; α(M)=0.00700 *11*; α(N)=0.001688 *25*; α(O)=0.000261 *4* α(P)=6.49×10^{-6} *10*
2286.06	(7⁻,8⁻)	110.5 *3*	23 *8*	2175.69	9⁻	E2		2.92 *6*	α(K)=0.680 *10*; α(L)=1.69 *4*; α(M)=0.432 *9*; α(N)=0.1035 *20*; α(O)=0.0153 *3* α(P)=6.63×10^{-5} *11*
		423.4 *3*	100 *14*	1862.54	7⁻	M1+E2	−0.40 *20*	0.093 *9*	α(K)=0.077 *8*; α(L)=0.0126 *8*; α(M)=0.00291 *18*; α(N)=0.00071 *5*; α(O)=0.000122 *8* α(P)=8.8×10^{-6} *10*
		1028.7 *3*	45 *9*	1257.45	8⁺	E1(+M2)	+0.02 *24*	0.0019 *15*	α(K)=0.0016 *13*; α(L)=0.00023 *21*; α(M)=5.E−5 *5*; α(N)=1.2×10^{-5} *12*; α(O)=2.1×10^{-6} *21* α(P)=1.6×10^{-7} *16* Mult.: D(+Q) from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
2308.9	12⁺	541.2 *2*	100	1767.63	10⁺	E2		0.0188	α(K)=0.01434 *21*; α(L)=0.00341 *5*; α(M)=0.000816 *12*; α(N)=0.000198 *3*; α(O)=3.22×10^{-5} *5* α(P)=1.528×10^{-6} *22*

$^{180}_{76}Os_{104}$-13

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
2410.8	9$^+$	529.7 *3*	100 *31*	1881.1	7$^+$	E2		0.0198	α(K)=0.01504 *22*; α(L)=0.00364 *6*; α(M)=0.000870 *13*; α(N)=0.000211 *3*; α(O)=3.42×10^{-5} *5* α(P)=1.601×10^{-6} *23*
		1153.4 *3*	44 *19*	1257.45	8$^+$				
2463.0	10$^-$	287.4 *3*	14 *4*	2175.69	9$^-$	M1(+E2)	−0.07 *20*	0.290 *13*	α(K)=0.240 *12*; α(L)=0.0384 *9*; α(M)=0.00881 *17*; α(N)=0.00215 *4*; α(O)=0.000372 *9* α(P)=2.77×10^{-5} *14* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		376.7 *3*	100 *13*	2086.2	8$^-$	E2		0.0476	α(K)=0.0334 *5*; α(L)=0.01084 *16*; α(M)=0.00265 *4*; α(N)=0.000639 *10*; α(O)=0.0001011 *15* α(P)=3.46×10^{-6} *5*
2467.1	11$^-$	191.3 *4*	24 *5*	2275.9	10$^-$	M1+E2	−1.8 *3*	0.51 *4*	α(K)=0.32 *4*; α(L)=0.141 *4*; α(M)=0.0350 *10*; α(N)=0.00844 *22*; α(O)=0.00131 *3* α(P)=3.4×10^{-5} *5*
		353.9 *3*	100 *15*	2113.1	9$^-$	E2		0.0566	α(K)=0.0389 *6*; α(L)=0.01347 *20*; α(M)=0.00330 *5*; α(N)=0.000797 *12*; α(O)=0.0001254 *18* α(P)=4.00×10^{-6} *6*
2544.32	11$^-$	368.6 *2*	100 *10*	2175.69	9$^-$	E2		0.0506	α(K)=0.0352 *5*; α(L)=0.01168 *17*; α(M)=0.00286 *4*; α(N)=0.000690 *10*; α(O)=0.0001089 *16* α(P)=3.64×10^{-6} *6*
		776.7 *3*	3.9 *13*	1767.63	10$^+$	E1(+M2)	−0.01 *25*	0.003 *4*	α(K)=0.003 *3*; α(L)=0.0004 *5*; α(M)=9.E−5 *12*; α(N)=2.E−5 *3*; α(O)=4.E−6 *5*; α(P)=3.E−7 *4* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme. E_γ: from ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
2599.1		170.0 *3*	100 *43*	2429.1					
		321.9 *5*	85 *57*	2275.9	10$^-$				
2635.7		172.9 *3*	17 *17*	2463.0	10$^-$				
		460.0 *3*	50 *17*	2175.69	9$^-$				
		549.7 *3*	100 *90*	2086.2	8$^-$	D+Q			
2675.41	(9$^-$,10$^-$)	389.4 *2*	100 *10*	2286.06	(7$^-$,8$^-$)	E2		0.0435	α(K)=0.0308 *5*; α(L)=0.00968 *14*; α(M)=0.00236 *4*; α(N)=0.000570 *8*; α(O)=9.03×10^{-5} *13* α(P)=3.20×10^{-6} *5*
		500.0 *3*	5.9 *20*	2175.69	9$^-$	D(+Q)	+0.10 *20*	0.0229	I_γ: from ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ). Other: 51 *14* in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ).
		907.8 *3*	47 *9*	1767.63	10$^+$	D(+Q)	−0.05 *12*	0.00234	
2683.4	12$^-$	216.4 *4*	22 *5*	2467.1	11$^-$	M1+E2	−2.5 *5*	0.307 *24*	α(K)=0.191 *25*; α(L)=0.0880 *15*; α(M)=0.0219 *4*; α(N)=0.00527 *10*; α(O)=0.000814 *13* α(P)=2.0×10^{-5} *3* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.

$^{180}_{76}Os_{104}$-14

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	δ ‡	α	Comments
2683.4	12⁻	407.4 *3*	100 *14*	2275.9	10⁻	E2		0.0385	α(K)=0.0276 *4*; α(L)=0.00831 *12*; α(M)=0.00202 *3*; α(N)=0.000488 *7*; α(O)=7.77×10^{-5} *11* α(P)=2.88×10^{-6} *4*
2695.3	12⁺	387.2 *5*	100	2308.9	12⁺				
2875.3	14⁺	566.1 *2*	100	2308.9	12⁺	E2		0.01690	α(K)=0.01298 *19*; α(L)=0.00300 *5*; α(M)=0.000714 *10*; α(N)=0.0001730 *25* α(O)=2.82×10^{-5} *4*; α(P)=1.386×10^{-6} *20*
2915.5		220.7[c] *3*	8 *4*	2695.3	12⁺				
		316.1 *3*	100 *17*	2599.1		E2		0.0783	α(K)=0.0517 *8*; α(L)=0.0202 *3*; α(M)=0.00499 *8*; α(N)=0.001203 *18*; α(O)=0.000188 *3* α(P)=5.23×10^{-6} *8*
		1147.5 *3*	33 *13*	1767.63	10⁺	(E2)		0.00379	α(K)=0.00312 *5*; α(L)=0.000520 *8*; α(M)=0.0001197 *17*; α(N)=2.91×10^{-5} *4*; α(O)=4.95×10^{-6} *7* α(P)=3.33×10^{-7} *5*
2918.8	13⁻	235.6 *3*	11 *3*	2683.4	12⁻	M1+E2	−1.8 *5*	0.27 *5*	α(K)=0.18 *5*; α(L)=0.0636 *11*; α(M)=0.01560 *24*; α(N)=0.00377 *6*; α(O)=0.000593 *13* α(P)=1.9×10^{-5} *5* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		451.5 *3*	100 *15*	2467.1	11⁻	E2		0.0294	α(K)=0.0217 *3*; α(L)=0.00595 *9*; α(M)=0.001436 *21*; α(N)=0.000348 *5*; α(O)=5.57×10^{-5} *8* α(P)=2.28×10^{-6} *4*
2919.6	12⁻	374.7 *6*	18 *4*	2544.32	11⁻	M1+E2		0.10 *5*	α(K)=0.08 *5*; α(L)=0.015 *4*; α(M)=0.0035 *8*; α(N)=0.00085 *20*; α(O)=0.00014 *4*; α(P)=9.E−6 *5* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		456.5 *3*	100 *12*	2463.0	10⁻	E2		0.0286	α(K)=0.0211 *3*; α(L)=0.00574 *9*; α(M)=0.001386 *20*; α(N)=0.000335 *5*; α(O)=5.38×10^{-5} *8* α(P)=2.23×10^{-6} *4*
2925.4		289.9 *3*	100 *40*	2635.7					
		380.9 *3*	20 *10*	2544.32	11⁻				
		462.0[c] *10*	30 *20*	2463.0	10⁻				
2982.0	13⁻	437.8 *2*	100 *19*	2544.32	11⁻	E2		0.0319	α(K)=0.0233 *4*; α(L)=0.00657 *10*; α(M)=0.001589 *23*; α(N)=0.000384 *6*; α(O)=6.15×10^{-5} *9* α(P)=2.45×10^{-6} *4*
		673.2 *3*	5 *4*	2308.9	12⁺	E1		0.00414	α(K)=0.00348 *5*; α(L)=0.000514 *8*; α(M)=0.0001167 *17*; α(N)=2.83×10^{-5} *4*; α(O)=4.85×10^{-6} *7* α(P)=3.45×10^{-7} *5* Mult.: D from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
3007.9	14⁺	312.0 *3*	18 *5*	2695.3	12⁺	(E2)		0.0814	α(K)=0.0534 *8*; α(L)=0.0212 *3*; α(M)=0.00524 *8*; α(N)=0.001263 *19*; α(O)=0.000197 *3* α(P)=5.40×10^{-6} *8*

$^{180}_{76}Os_{104}$-15

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
3007.9	14^+	699.3 *2*	100 *10*	2308.9	12^+	E2		0.01046	α(K)=0.00827 *12*; α(L)=0.001678 *24*; α(M)=0.000395 *6*; α(N)=9.59×10^{-5} *14* α(O)=1.589×10^{-5} *23*; α(P)=8.88×10^{-7} *13*
3139.3	$(11^-,12^-)$	464.1 *2*	100 *10*	2675.41	$(9^-,10^-)$				
		593.3 *15*	5.7 *20*	2544.32	11^-				
		830.1 *3*	18 *7*	2308.9	12^+				
3176.3	14^-	257.3 *4*	10 *3*	2918.8	13^-	M1		0.393	α(K)=0.326 *5*; α(L)=0.0522 *8*; α(M)=0.01196 *18*; α(N)=0.00292 *5*; α(O)=0.000504 *8* α(P)=3.77×10^{-5} *6* Mult.: D from R(DCO) in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), Δπ=no from level scheme.
		493.0 *3*	100 *18*	2683.4	12^-	E2		0.0236	α(K)=0.01768 *25*; α(L)=0.00452 *7*; α(M)=0.001085 *16*; α(N)=0.000263 *4*; α(O)=4.24×10^{-5} *6* α(P)=1.87×10^{-6} *3*
3246.3		264.4 *3*	<44	2982.0	13^-				
		321.0 *3*	100 *33*	2925.4		E2		0.0749	α(K)=0.0497 *7*; α(L)=0.0191 *3*; α(M)=0.00471 *7*; α(N)=0.001137 *17*; α(O)=0.000177 *3* α(P)=5.04×10^{-6} *8*
		326.8[b] *5*	44 *22*	2919.6	12^-				
		702.3 *5*	22 *11*	2544.32	11^-				
		782.9 *5*	33 *22*	2463.0	10^-				
3342.8		427.3 *3*	100	2915.5		E2		0.0340	α(K)=0.0247 *4*; α(L)=0.00710 *10*; α(M)=0.001721 *25*; α(N)=0.000416 *6*; α(O)=6.65×10^{-5} *10* α(P)=2.59×10^{-6} *4*
3402.7	16^+	394.9 *3*	48 *5*	3007.9	14^+	E2		0.0419	α(K)=0.0298 *5*; α(L)=0.00923 *14*; α(M)=0.00225 *4*; α(N)=0.000543 *8*; α(O)=8.62×10^{-5} *13* α(P)=3.10×10^{-6} *5*
		527.3 *2*	100 *8*	2875.3	14^+	E2		0.0200	α(K)=0.01519 *22*; α(L)=0.00369 *6*; α(M)=0.000882 *13*; α(N)=0.000214 *3*; α(O)=3.47×10^{-5} *5* α(P)=1.617×10^{-6} *23*
3442.7	15^-	266.4 *3*	8 *2*	3176.3	14^-	M1+E2	−0.98 *21*	0.25 *3*	α(K)=0.19 *3*; α(L)=0.0431 *12*; α(M)=0.01025 *21*; α(N)=0.00249 *6*; α(O)=0.000408 *14* α(P)=2.1×10^{-5} *4* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		523.8 *2*	100 *10*	2918.8	13^-	E2		0.0203	α(K)=0.01542 *22*; α(L)=0.00376 *6*; α(M)=0.000900 *13*; α(N)=0.000218 *3*; α(O)=3.54×10^{-5} *5* α(P)=1.641×10^{-6} *23*
3452.1	14^-	467.6 *14*	18 *5*	2982.0	13^-	M1+E2	+0.41 *7*	0.072 *3*	α(K)=0.0591 *22*; α(L)=0.0096 *3*; α(M)=0.00221 *6*; α(N)=0.000540 *15*; α(O)=9.3×10^{-5} *3*

$^{180}_{76}Os_{104}$-16

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									α(P)=6.7×10^{-6} *3* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
3452.1	14$^-$	532.3 *3*	100 *18*	2919.6	12$^-$	E2		0.0196	α(K)=0.01488 *21*; α(L)=0.00359 *5*; α(M)=0.000857 *12*; α(N)=0.000208 *3*; α(O)=3.38×10^{-5} *5* α(P)=1.584×10^{-6} *23*
3476.4	15$^-$	494.4 *2*	100 *13*	2982.0	13$^-$	E2		0.0234	α(K)=0.01757 *25*; α(L)=0.00448 *7*; α(M)=0.001076 *16*; α(N)=0.000260 *4*; α(O)=4.21×10^{-5} *6* α(P)=1.86×10^{-6} *3*
		601.1 *5*	9 *4*	2875.3	14$^+$	E1		0.00521	α(K)=0.00437 *7*; α(L)=0.000651 *10*; α(M)=0.0001479 *21*; α(N)=3.59×10^{-5} *5*; α(O)=6.13×10^{-6} *9* α(P)=4.32×10^{-7} *6* Mult.: D from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=yes from level scheme.
3494.8	16$^+$	619.5 *2*	100	2875.3	14$^+$	E2		0.01371	α(K)=0.01068 *15*; α(L)=0.00232 *4*; α(M)=0.000551 *8*; α(N)=0.0001336 *19*; α(O)=2.20×10^{-5} *3* α(P)=1.143×10^{-6} *16*
3629.2		153.1 *5*	<18	3476.4	15$^-$	D+Q			
		176.2 *5*	18 *9*	3452.1	14$^-$				
		383.1 *3*	100 *27*	3246.3					
		647.6 *5*	18 *9*	2982.0	13$^-$				
		709.5 *3*	18 *9*	2919.6	12$^-$				
3656.7	(13$^-$,14$^-$)	517.4 *2*	100	3139.3	(11$^-$,12$^-$)	E2		0.0210	α(K)=0.01585 *23*; α(L)=0.00390 *6*; α(M)=0.000935 *14*; α(N)=0.000226 *4*; α(O)=3.67×10^{-5} *6* α(P)=1.685×10^{-6} *24*
3703.8	(11,12)	1020.2 *5*	100 *30*	2683.4	12$^-$	D(+Q)	−0.5 *+2−20*		
		1236.9 *5*	55 *18*	2467.1	11$^-$	D(+Q)			
3735.3	16$^-$	291.9 *10*	8 *3*	3442.7	15$^-$	M1+E2	−10 *41*	0.1009 *25*	α(K)=0.0650 *20*; α(L)=0.0273 *6*; α(M)=0.00676 *13*; α(N)=0.00163 *4*; α(O)=0.000253 *5* α(P)=6.53×10^{-6} *22* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		559.0 *3*	100 *10*	3176.3	14$^-$	E2		0.01741	α(K)=0.01335 *19*; α(L)=0.00311 *5*; α(M)=0.000741 *11*; α(N)=0.000180 *3*; α(O)=2.93×10^{-5} *5* α(P)=1.424×10^{-6} *20*
3855.7	(12,13)	151.9 *5*	100	3703.8	(11,12)	(D+Q)			
3886.5		543.7 *3*	100	3342.8		E2		0.0186	α(K)=0.01419 *20*; α(L)=0.00337 *5*; α(M)=0.000805 *12*; α(N)=0.000195 *3*; α(O)=3.17×10^{-5} *5* α(P)=1.512×10^{-6} *22*
3925.9	18$^+$	523.2 *2*	100	3402.7	16$^+$	E2		0.0204	α(K)=0.01546 *22*; α(L)=0.00377 *6*; α(M)=0.000903 *13*;

$^{180}_{76}Os_{104}$-17

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								α(N)=0.000219 *3*; α(O)=3.55×10^{-5} *5* α(P)=1.645×10^{-6} *23*
3981.7	17$^-$	505.4 *2*	100 *10*	3476.4	15$^-$	E2	0.0222	α(K)=0.01671 *24*; α(L)=0.00419 *6*; α(M)=0.001005 *15*; α(N)=0.000243 *4*; α(O)=3.94×10^{-5} *6* α(P)=1.775×10^{-6} *25*
		538.9 *5*	42 *13*	3442.7	15$^-$	E2[#]	0.0190	α(K)=0.01447 *21*; α(L)=0.00346 *5*; α(M)=0.000826 *12*; α(N)=0.000200 *3*; α(O)=3.26×10^{-5} *5* α(P)=1.542×10^{-6} *22*
4027.6	16$^-$	575.5 *3*	100	3452.1	14$^-$	E2	0.01625	α(K)=0.01252 *18*; α(L)=0.00286 *4*; α(M)=0.000680 *10*; α(N)=0.0001649 *24* α(O)=2.70×10^{-5} *4*; α(P)=1.338×10^{-6} *19*
4031.3	17$^-$	295.8 *3*	10 *3*	3735.3	16$^-$	M1+E2	0.18 *9*	α(K)=0.14 *8*; α(L)=0.031 *5*; α(M)=0.0073 *9*; α(N)=0.00177 *23*; α(O)=0.00029 *6* α(P)=1.6×10^{-5} *10* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		554.9 *5*	38 *11*	3476.4	15$^-$	E2[#]	0.0177	α(K)=0.01357 *20*; α(L)=0.00317 *5*; α(M)=0.000757 *11*; α(N)=0.000183 *3*; α(O)=2.99×10^{-5} *5* α(P)=1.447×10^{-6} *21*
		588.7 *3*	100 *12*	3442.7	15$^-$	E2	0.01542	α(K)=0.01192 *17*; α(L)=0.00268 *4*; α(M)=0.000637 *9*; α(N)=0.0001544 *22*; α(O)=2.53×10^{-5} *4* α(P)=1.274×10^{-6} *18*
4037.5	(13,14)	181.5 *5*	100	3855.7	(12,13)			
		333.7 *5*	93	3703.8	(11,12)			
4067.5		438.3 *5*	100	3629.2				
4134.6	18$^+$	639.8 *2*	100	3494.8	16$^+$	E2	0.01274	α(K)=0.00997 *14*; α(L)=0.00213 *3*; α(M)=0.000503 *7*; α(N)=0.0001221 *18*; α(O)=2.01×10^{-5} *3* α(P)=1.068×10^{-6} *15*
4200.8	(15$^-$,16$^-$)	544.1 *2*	100	3656.7	(13$^-$,14$^-$)	E2[#]	0.0186	α(K)=0.01417 *20*; α(L)=0.00336 *5*; α(M)=0.000803 *12*; α(N)=0.000195 *3*; α(O)=3.17×10^{-5} *5* α(P)=1.510×10^{-6} *22*
4248.5	(14,15)	210.6 *5*	100 *40*	4037.5	(13,14)			
		393.2 *5*	75 *25*	3855.7	(12,13)			
4342.4	18$^-$	311.1 *3*	<6	4031.3	17$^-$			
		607.2 *3*	100 *20*	3735.3	16$^-$	E2	0.01435	α(K)=0.01115 *16*; α(L)=0.00246 *4*; α(M)=0.000583 *9*; α(N)=0.0001414 *20*; α(O)=2.32×10^{-5} *4* α(P)=1.193×10^{-6} *17*
4486.6	(15,16)	238.2 *5*	75 *25*	4248.5	(14,15)			
		449.1 *5*	100 *40*	4037.5	(13,14)			
4497.0	19$^-$	515.3 *2*	100	3981.7	17$^-$	E2	0.0212	α(K)=0.01600 *23*; α(L)=0.00395 *6*; α(M)=0.000946 *14*; α(N)=0.000229 *4*; α(O)=3.72×10^{-5} *6* α(P)=1.701×10^{-6} *24*

$^{180}_{76}Os_{104}$-18

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
4531.8		645.3 *3*	100	3886.5		E2[#]		0.01250	α(K)=0.00979 *14*; α(L)=0.00208 *3*; α(M)=0.000492 *7*; α(N)=0.0001192 *17*; α(O)=1.96×10^{-5} *3* α(P)=1.049×10^{-6} *15*
4542.7	20$^+$	616.8 *2*	100	3925.9	18$^+$	E2		0.01385	α(K)=0.01078 *16*; α(L)=0.00235 *4*; α(M)=0.000558 *8*; α(N)=0.0001352 *19*; α(O)=2.22×10^{-5} *4* α(P)=1.154×10^{-6} *17*
4581.0		513.5 *3*	100	4067.5		E2[#]		0.0213	α(K)=0.01612 *23*; α(L)=0.00399 *6*; α(M)=0.000957 *14*; α(N)=0.000232 *4*; α(O)=3.75×10^{-5} *6* α(P)=1.714×10^{-6} *24*
4599.6	18$^-$	572.0 *3*	100	4027.6	16$^-$	E2		0.01649	α(K)=0.01269 *18*; α(L)=0.00291 *4*; α(M)=0.000692 *10*; α(N)=0.0001679 *24* α(O)=2.74×10^{-5} *4*; α(P)=1.355×10^{-6} *19*
4651.4	19$^-$	309.3 *8*	<6	4342.4	18$^-$	M1+E2	−5.5 *23*	0.088 *9*	α(K)=0.059 *9*; α(L)=0.0222 *7*; α(M)=0.00547 *14*; α(N)=0.00132 *4*; α(O)=0.000206 *7* α(P)=6.1×10^{-6} *10* Mult.: D+Q from γ(θ) in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), Δπ=no from level scheme.
		620.0 *3*	100 *15*	4031.3	17$^-$	E2[#]		0.01369	α(K)=0.01066 *15*; α(L)=0.00232 *4*; α(M)=0.000550 *8*; α(N)=0.0001333 *19*; α(O)=2.19×10^{-5} *3* α(P)=1.141×10^{-6} *16*
4750.7	(16,17)	263.8 *5*	45 *15*	4486.6	(15,16)				
		502.2 *5*	100 *30*	4248.5	(14,15)				
4770.2	(17$^-$,18$^-$)	569.4 *5*	100	4200.8	(15$^-$,16$^-$)	E2		0.01667	α(K)=0.01282 *19*; α(L)=0.00295 *5*; α(M)=0.000702 *10*; α(N)=0.0001701 *25* α(O)=2.78×10^{-5} *4*; α(P)=1.369×10^{-6} *20*
4821.4	20$^+$	686.8 *2*	100	4134.6	18$^+$	E2		0.01088	α(K)=0.00859 *12*; α(L)=0.001760 *25*; α(M)=0.000415 *6*; α(N)=0.0001006 *15* α(O)=1.665×10^{-5} *24*; α(P)=9.21×10^{-7} *13*
4978.2	20$^-$	326.8[b] *8*	6 *6*	4651.4	19$^-$				
		635.9 *3*	100 *24*	4342.4	18$^-$	E2		0.01292	α(K)=0.01010 *15*; α(L)=0.00216 *3*; α(M)=0.000512 *8*; α(N)=0.0001242 *18*; α(O)=2.04×10^{-5} *3* α(P)=1.082×10^{-6} *16*
5037.2	(17,18)	286.8 *5*	100 *30*	4750.7	(16,17)				
		550.8 *5*	22 *11*	4486.6	(15,16)				
5045.0	21$^-$	548.0 *2*	100	4497.0	19$^-$	E2		0.0182	α(K)=0.01395 *20*; α(L)=0.00329 *5*; α(M)=0.000786 *11*; α(N)=0.000190 *3*; α(O)=3.10×10^{-5} *5* α(P)=1.487×10^{-6} *21*
5136.2		555.2 *3*	100	4581.0		E2		0.01769	α(K)=0.01355 *19*; α(L)=0.00317 *5*; α(M)=0.000756 *11*; α(N)=0.000183 *3*; α(O)=2.99×10^{-5} *5* α(P)=1.445×10^{-6} *21*
5164.6	(20$^-$)	565.0 *4*	100	4599.6	18$^-$				

$^{180}_{76}Os_{104}$-19

Adopted Levels, Gammas (continued)

γ(^{180}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
5236.5	22$^+$	693.8 *2*	100	4542.7	20$^+$	E2	0.01064	α(K)=0.00841 *12*; α(L)=0.001713 *24*; α(M)=0.000404 *6*; α(N)=9.80×10^{-5} *14* α(O)=1.622×10^{-5} *23*; α(P)=9.02×10^{-7} *13*
5255.0		723.2 *3*	100	4531.8		(E2)[#]	0.00972	α(K)=0.00772 *11*; α(L)=0.001538 *22*; α(M)=0.000362 *5*; α(N)=8.78×10^{-5} *13* α(O)=1.457×10^{-5} *21*; α(P)=8.28×10^{-7} *12*
5293.8	21$^-$	316.0 *8*	10 *10*	4978.2	20$^-$			
		642.3 *5*	100 *30*	4651.4	19$^-$	E2[#]	0.01263	α(K)=0.00989 *14*; α(L)=0.00211 *3*; α(M)=0.000498 *7*; α(N)=0.0001208 *18*; α(O)=1.99×10^{-5} *3* α(P)=1.059×10^{-6} *15*
5348.0	(18,19)	311.3 *5*	20 *6*	5037.2	(17,18)			
		596.8 *5*	100 *30*	4750.7	(16,17)			
5387.4	(19$^-$,20$^-$)	617.2 *2*	100	4770.2	(17$^-$,18$^-$)	E2[#]	0.01383	α(K)=0.01076 *15*; α(L)=0.00235 *4*; α(M)=0.000557 *8*; α(N)=0.0001350 *19*; α(O)=2.22×10^{-5} *4* α(P)=1.152×10^{-6} *17*
5550.9	22$^+$	729.5 *4*	100	4821.4	20$^+$	E2[#]	0.00954	α(K)=0.00758 *11*; α(L)=0.001504 *22*; α(M)=0.000353 *5*; α(N)=8.58×10^{-5} *12* α(O)=1.425×10^{-5} *20*; α(P)=8.14×10^{-7} *12*
5561.6		1427.0	100	4134.6	18$^+$			E_γ,I_γ: from ^{150}Nd(^{36}S,6nγ):Delayed.
5625.7	22$^-$	647.5 *3*	100	4978.2	20$^-$	E2	0.01241	α(K)=0.00972 *14*; α(L)=0.00206 *3*; α(M)=0.000487 *7*; α(N)=0.0001181 *17*; α(O)=1.95×10^{-5} *3* α(P)=1.042×10^{-6} *15*
5666.5	23$^-$	621.5 *2*	100	5045.0	21$^-$	E2	0.01361	α(K)=0.01061 *15*; α(L)=0.00230 *4*; α(M)=0.000546 *8*; α(N)=0.0001324 *19*; α(O)=2.18×10^{-5} *3* α(P)=1.135×10^{-6} *16*
5731.5		595.3 *8*	100	5136.2				
5787.7	(22$^-$)	623.1 *3*	100	5164.6	(20$^-$)	E2	0.01353	α(K)=0.01055 *15*; α(L)=0.00229 *4*; α(M)=0.000542 *8*; α(N)=0.0001314 *19*; α(O)=2.16×10^{-5} *3* α(P)=1.129×10^{-6} *16*
5951.5	23$^-$	657.7 *4*	100	5293.8	21$^-$	E2	0.01198	α(K)=0.00940 *14*; α(L)=0.00197 *3*; α(M)=0.000466 *7*; α(N)=0.0001132 *16*; α(O)=1.87×10^{-5} *3* α(P)=1.008×10^{-6} *15*
5981.3	24$^+$	744.8 *3*	100	5236.5	22$^+$	E2	0.00912	α(K)=0.00727 *11*; α(L)=0.001427 *20*; α(M)=0.000335 *5*; α(N)=8.13×10^{-5} *12* α(O)=1.352×10^{-5} *19*; α(P)=7.80×10^{-7} *11*
6024.8		769.8 *5*	100	5255.0		[#]		
6055.5	(21$^-$,22$^-$)	668.1 *3*	100	5387.4	(19$^-$,20$^-$)	E2[#]	0.01157	α(K)=0.00910 *13*; α(L)=0.00189 *3*; α(M)=0.000447 *7*; α(N)=0.0001084 *16*; α(O)=1.79×10^{-5} *3* α(P)=9.76×10^{-7} *14*
6298.1	(24$^-$)	672.4 *4*	100	5625.7	22$^-$			
6323.6	(24$^+$)	772.7 *5*	100	5550.9	22$^+$	(E2)	0.00843	α(K)=0.00674 *10*; α(L)=0.001300 *19*; α(M)=0.000305 *5*; α(N)=7.40×10^{-5} *11* α(O)=1.233×10^{-5} *18*; α(P)=7.24×10^{-7} *11*

$^{180}_{76}Os_{104}$-20

Adopted Levels, Gammas (continued)

$\gamma(^{180}Os)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
6373.3		641.8 *10*	100	5731.5		(E2)	0.01265	α(K)=0.00990 *15*; α(L)=0.00211 *3*; α(M)=0.000499 *8*; α(N)=0.0001210 *18*; α(O)=1.99×10^{-5} *3* α(P)=1.061×10^{-6} *16*
6378.0	25$^-$	711.5 *4*	100	5666.5	23$^-$	E2[#]	0.01007	α(K)=0.00798 *12*; α(L)=0.001605 *23*; α(M)=0.000377 *6*; α(N)=9.16×10^{-5} *13* α(O)=1.519×10^{-5} *22*; α(P)=8.56×10^{-7} *12*
6496.3	(24$^-$)	708.6 *3*	100	5787.7	(22$^-$)			
6653.0	(25$^-$)	701.5 *6*	100	5951.5	23$^-$			
6766.5	26$^+$	785.2 *3*	100	5981.3	24$^+$	E2[#]	0.00815	α(K)=0.00653 *10*; α(L)=0.001249 *18*; α(M)=0.000292 *5*; α(N)=7.10×10^{-5} *10* α(O)=1.185×10^{-5} *17*; α(P)=7.01×10^{-7} *10*
6772.5	(23$^-$,24$^-$)	717.0	100	6055.5	(21$^-$,22$^-$)			
6823.9		799.1 *5*	100	6024.8				
7030.8	(26$^-$)	732.7 *4*	100	6298.1	(24$^-$)	(E2)	0.00945	α(K)=0.00751 *11*; α(L)=0.001488 *21*; α(M)=0.000349 *5*; α(N)=8.48×10^{-5} *12* α(O)=1.409×10^{-5} *20*; α(P)=8.06×10^{-7} *12*
7144.9	(26$^+$)	821.3	100	6323.6	(24$^+$)			
7179.7	(27$^-$)	801.7 *5*	100	6378.0	25$^-$			
7290.4	(26$^-$)	794.1 *5*	100	6496.3	(24$^-$)			
7431.1	(27$^-$)	778.1 *5*	100	6653.0	(25$^-$)			
7535.4	(25$^-$,26$^-$)	762.9 *5*	100	6772.5	(23$^-$,24$^-$)			
7614.7	(28$^+$)	848.2 *5*	100	6766.5	26$^+$			
7664.8		840.9 *5*	100	6823.9				
7842.5	(28$^-$)	811.7 *5*	100	7030.8	(26$^-$)			
8014.6	(28$^+$)	869.7 *5*	100	7144.9	(26$^+$)			
8063.6	(29$^-$)	883.9 *5*	100	7179.7	(27$^-$)			
8303.2	(29$^-$)	872.1 *5*	100	7431.1	(27$^-$)			
8348.5	(27$^-$,28$^-$)	813.1 *5*	100	7535.4	(25$^-$,26$^-$)			
8554.0	(30$^+$)	939.3 *5*	100	7614.7	(28$^+$)			
8573.0		908.2 *5*	100	7664.8				
8739.8	(30$^-$)	897.3 *5*	100	7842.5	(28$^-$)			
8918.3	(30$^+$)	903.7 *5*	100	8014.6	(28$^+$)			
9021.9	(31$^-$)	958.3 *5*	100	8063.6	(29$^-$)			
9220.3	(29$^-$,30$^-$)	871.8 *5*	100	8348.5	(27$^-$,28$^-$)			
9276.7	(31$^-$)	973.5 *5*	100	8303.2	(29$^-$)			
9595.4	(32$^+$)	1041.4 *5*	100	8554.0	(30$^+$)			
9717.3	(32$^-$)	977.5 *5*	100	8739.8	(30$^-$)			
9845.6	(32$^+$)	927.3 *5*	100	8918.3	(30$^+$)			
10049.7	(33$^-$)	1027.8 *5*	100	9021.9	(31$^-$)			
10152.1	(31$^-$,32$^-$)	931.8 *5*	100	9220.3	(29$^-$,30$^-$)			
10737.1?	(34$^+$)	1141.7[c] *5*	100	9595.4	(32$^+$)			
11146.9?	(33$^-$,34$^-$)	994.8[c] *5*	100	10152.1	(31$^-$,32$^-$)			

$^{180}_{76}Os_{104}$-21

Adopted Levels, Gammas (continued)

$\gamma(^{180}Os)$ (continued)

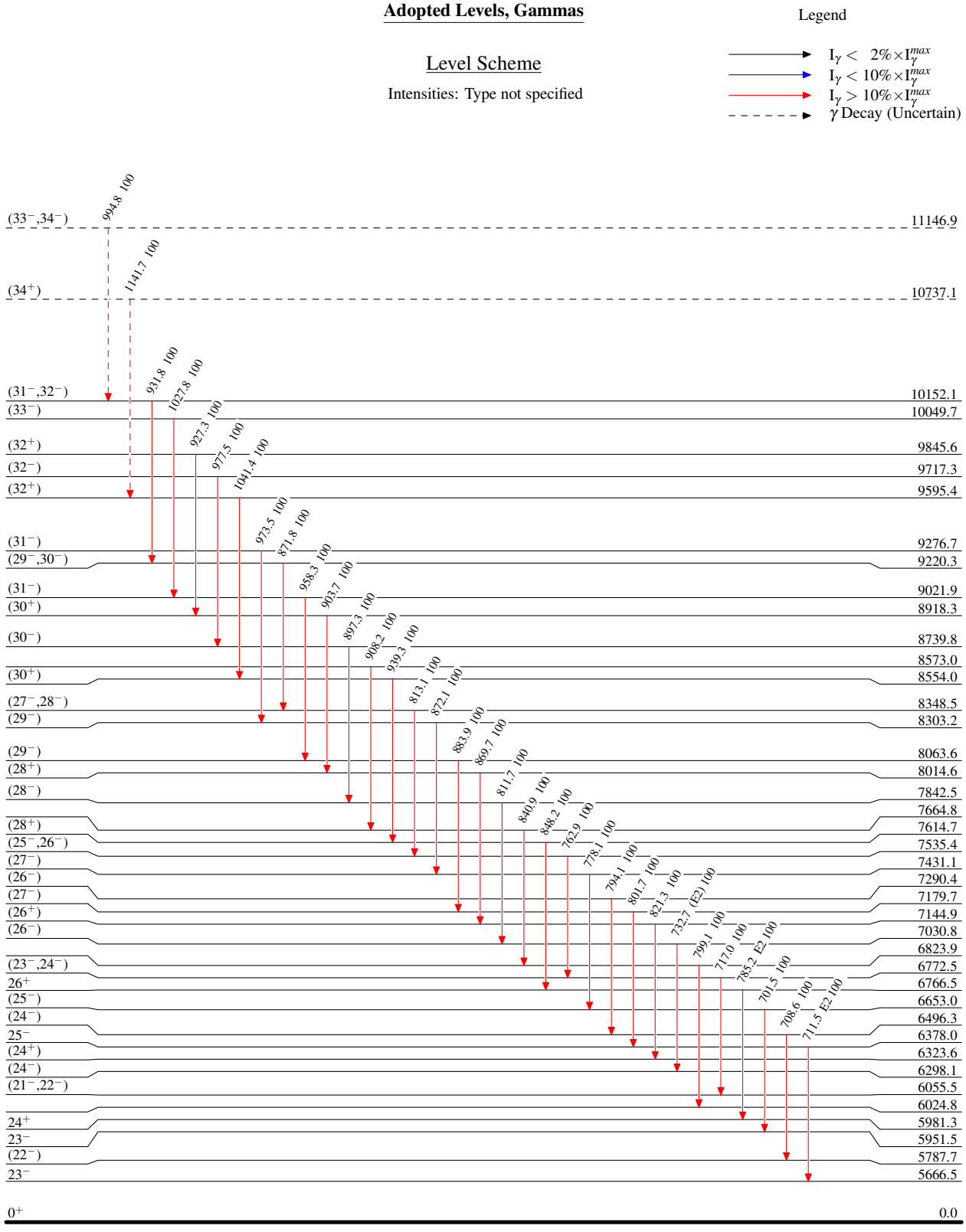
† From weighted average of ^{180}Ir ε decay, ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ), and ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), except where noted.
‡ From $\gamma(\theta)$ and conversion electron data in ^{166}Er(^{18}O,4nγ),^{168}Er(^{16}O,4nγ), except as noted. Stretched Q transitions from $\gamma(\theta)$ are assumed to be E2 in character.
# From R(DCO) in ^{150}Nd(^{36}S,6nγ),^{150}Nd(^{34}S,4nγ). Stretched Q transitions are assumed to be E2 in character.
@ From conversion electron data in ^{180}Ir ε decay.
& From ^{180}Ir ε decay.
a From sum of α(K)exp, α(L)exp, and α(M)exp from ^{180}Ir ε decay.
b Multiply placed.
c Placement of transition in the level scheme is uncertain.

$^{180}_{76}Os_{104}$-22

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

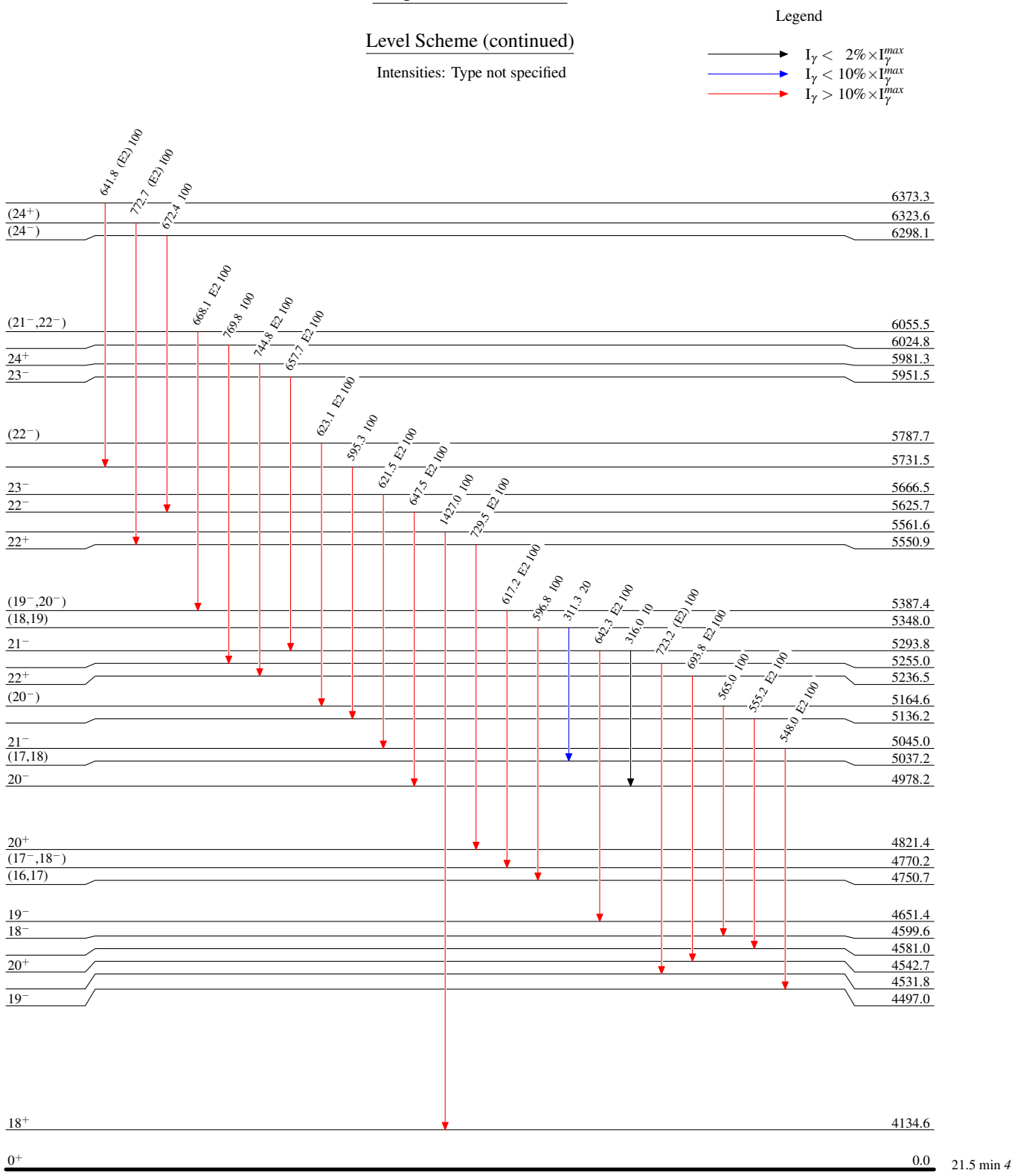


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

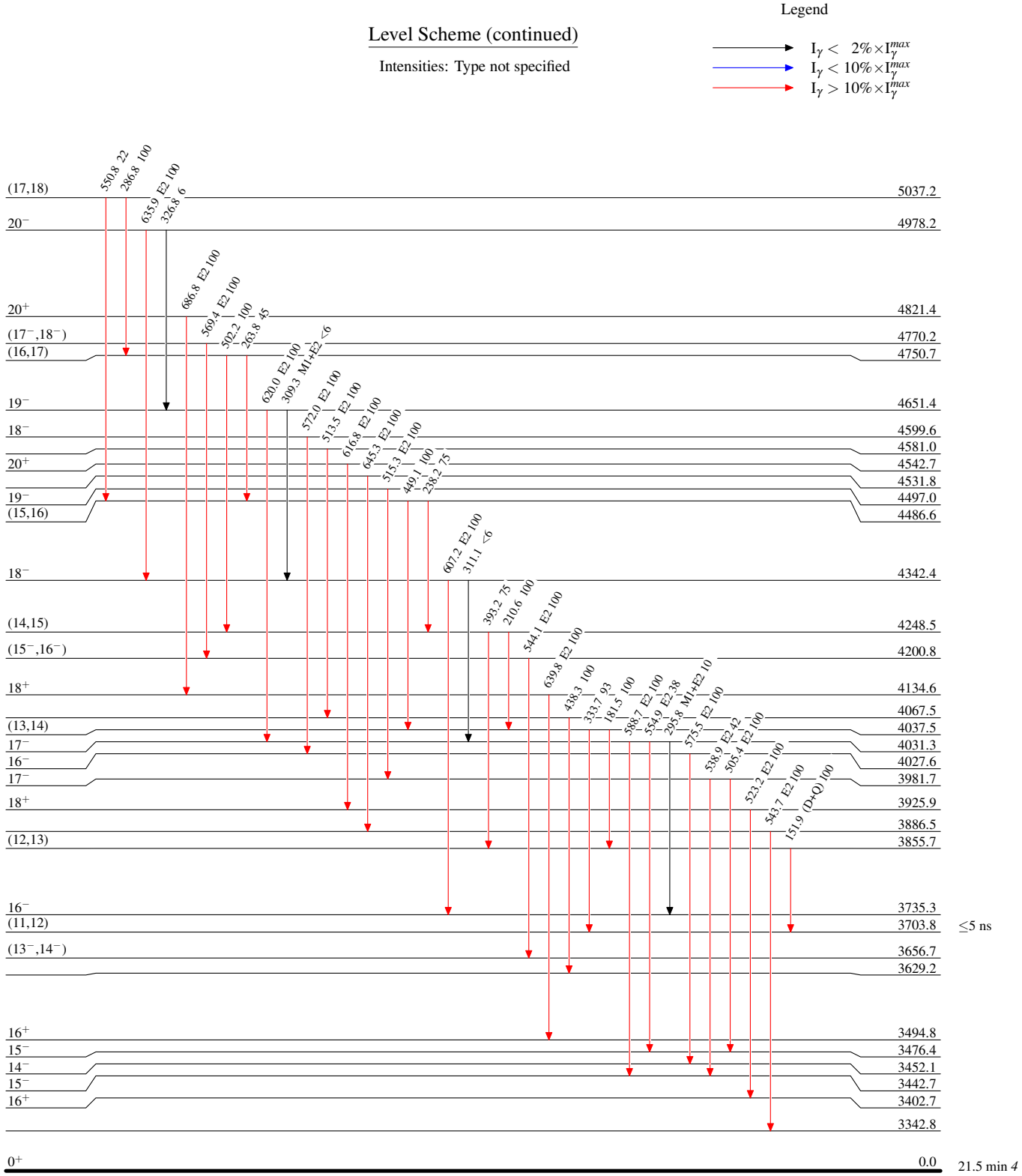


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

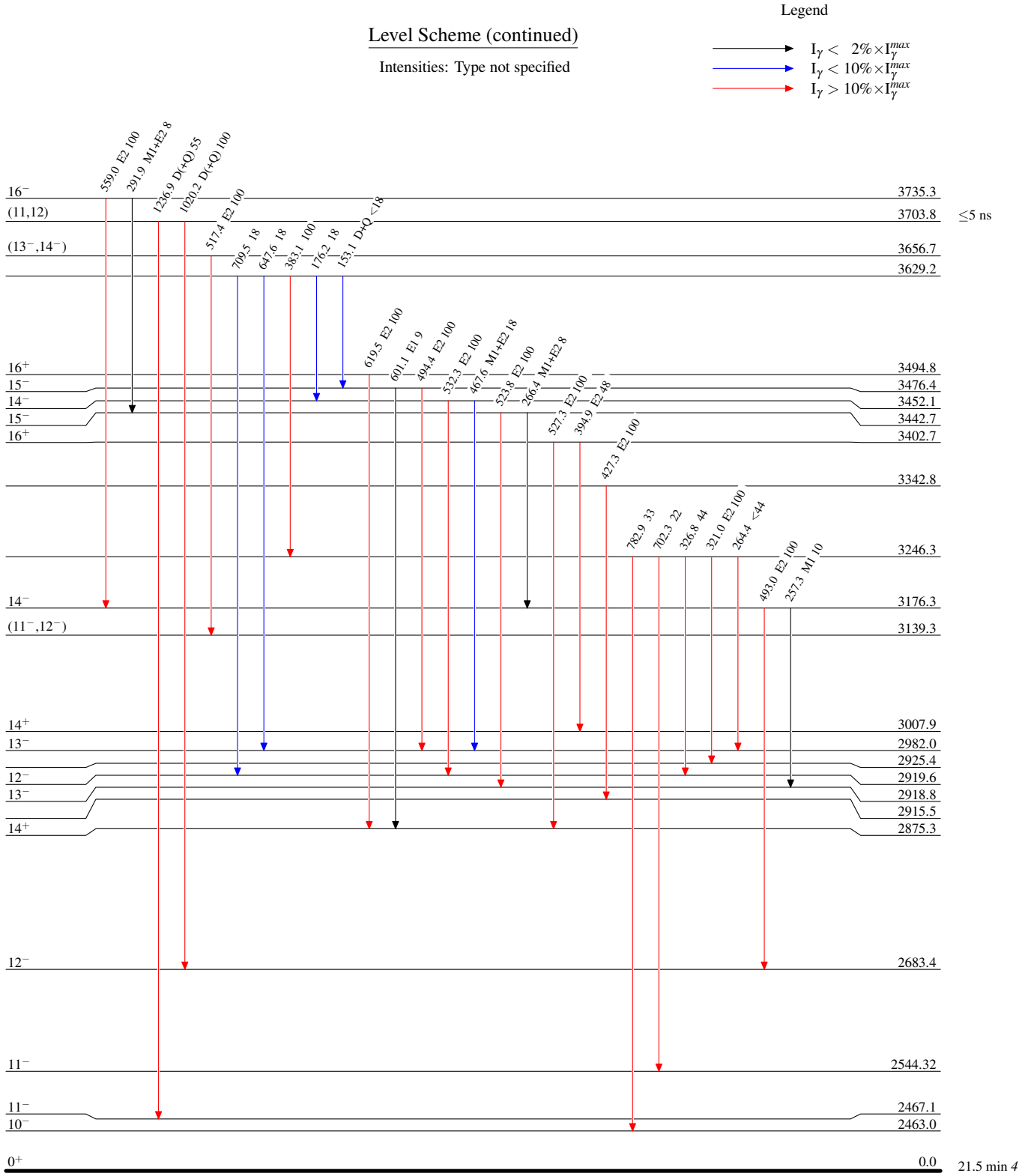


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

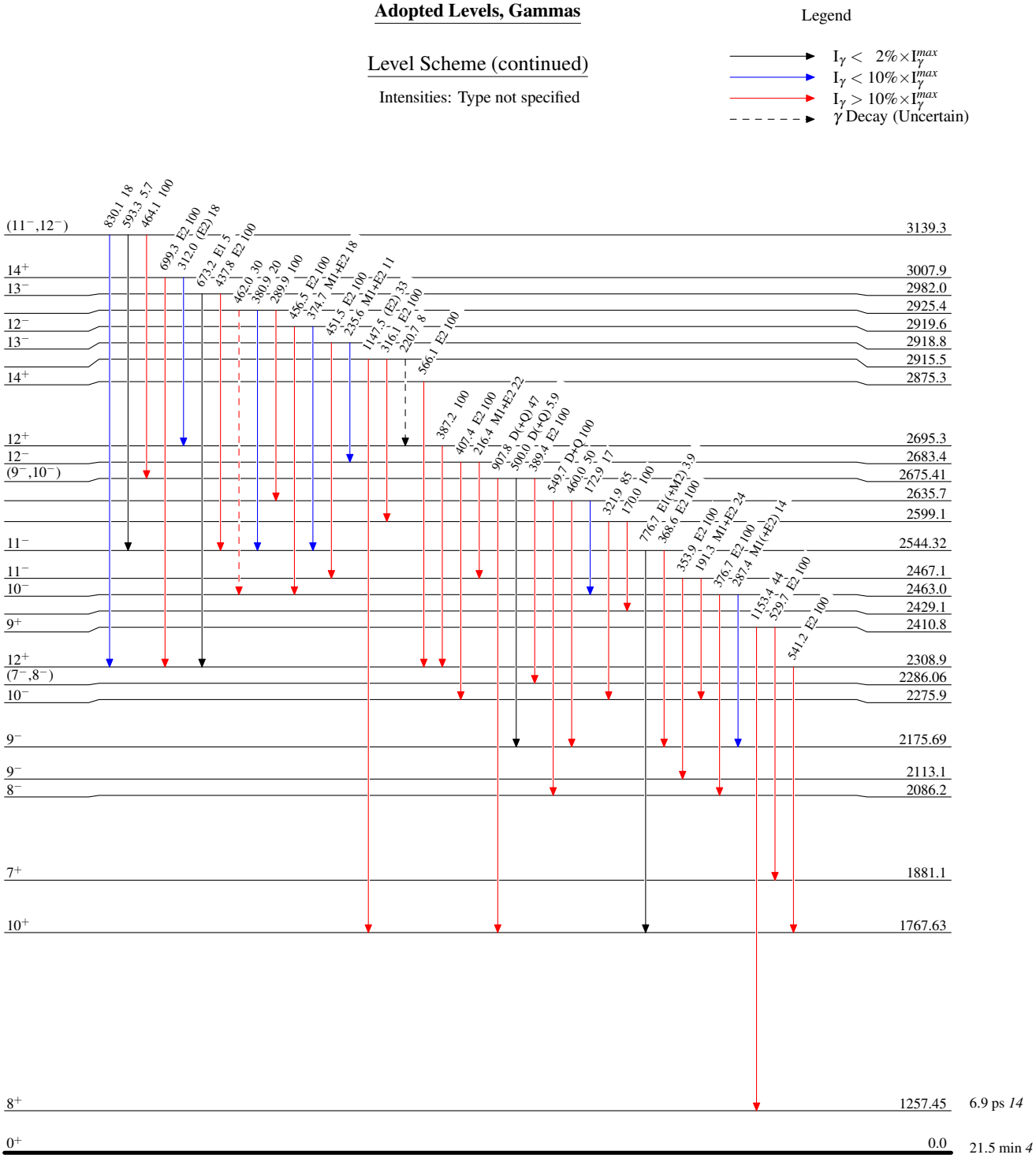


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

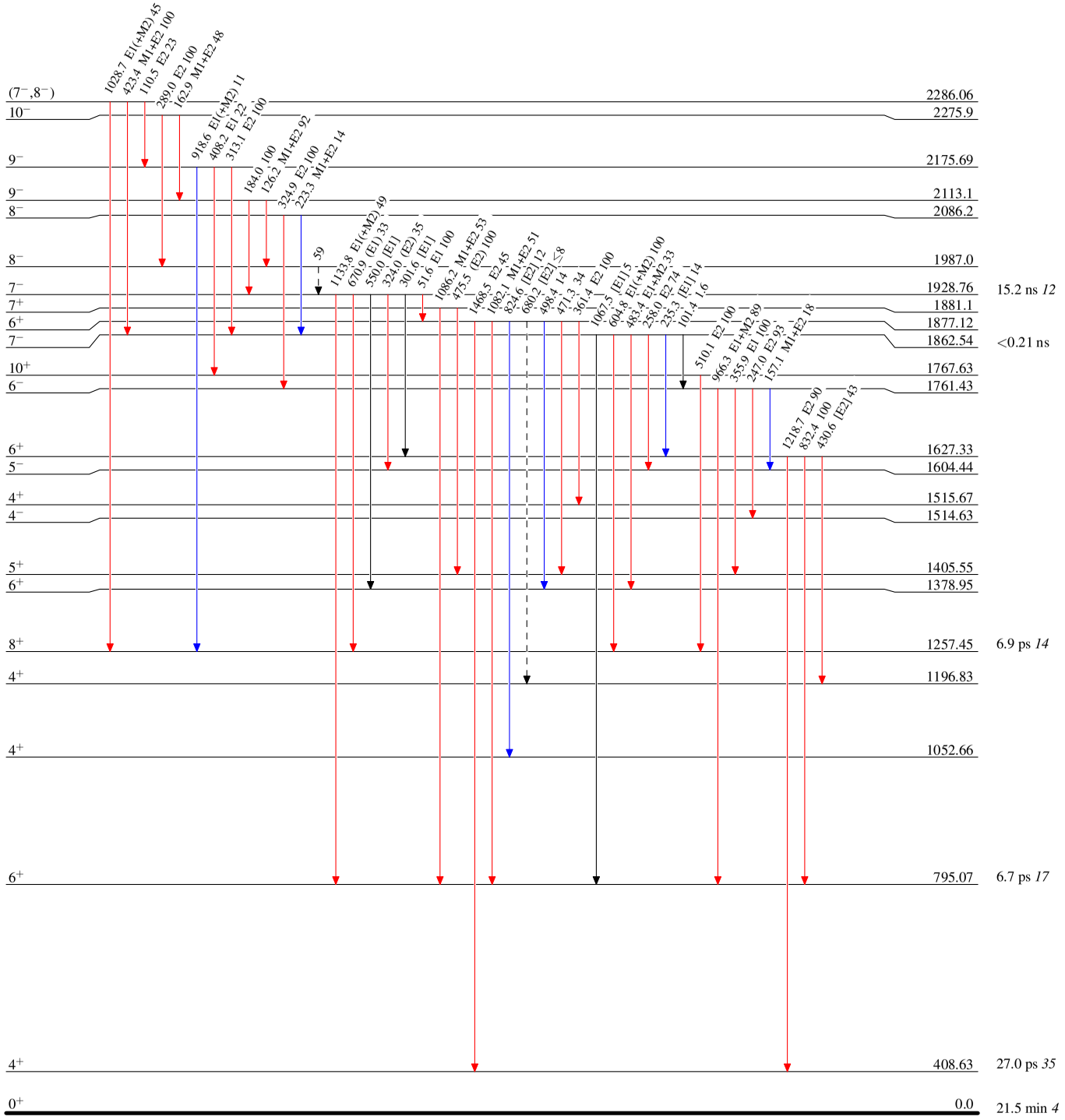
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

γ Decay (Uncertain)

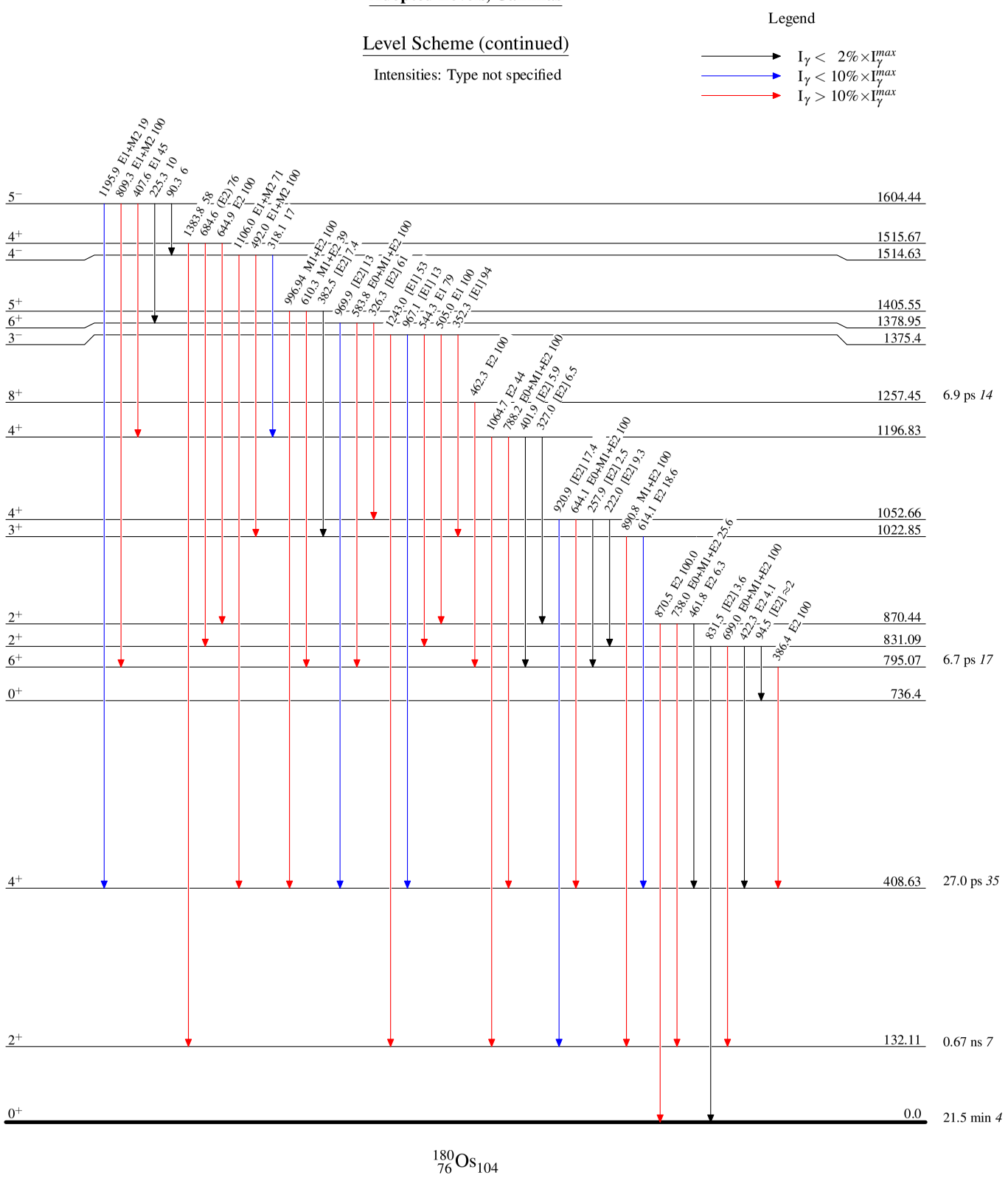


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

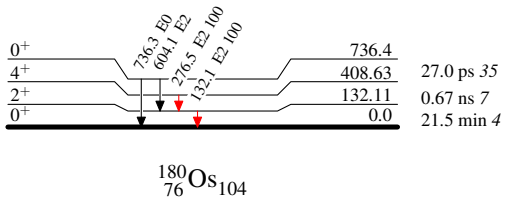


$^{180}_{76}Os_{104}$

Adopted Levels, Gammas

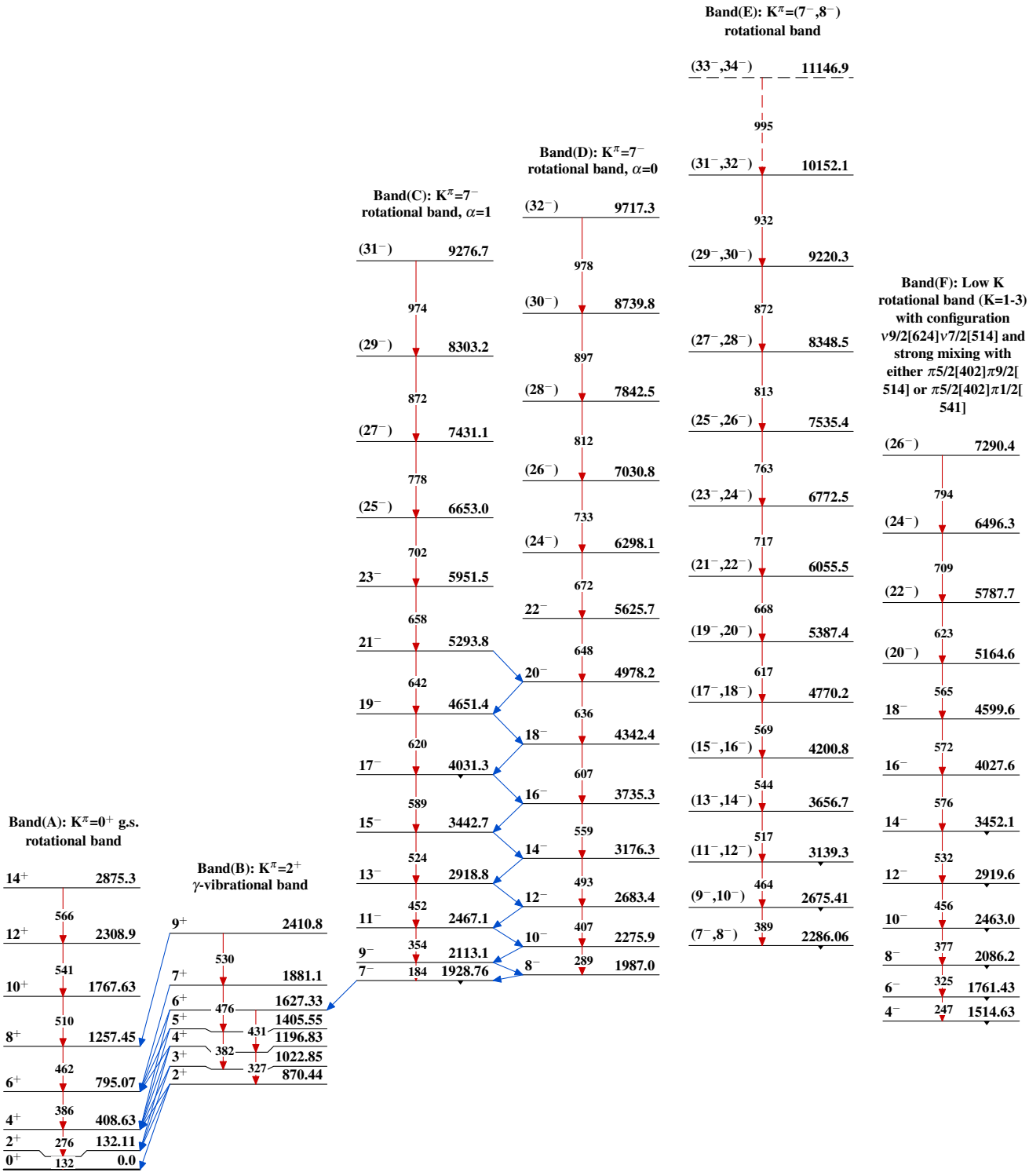
Level Scheme (continued)

Intensities: Type not specified

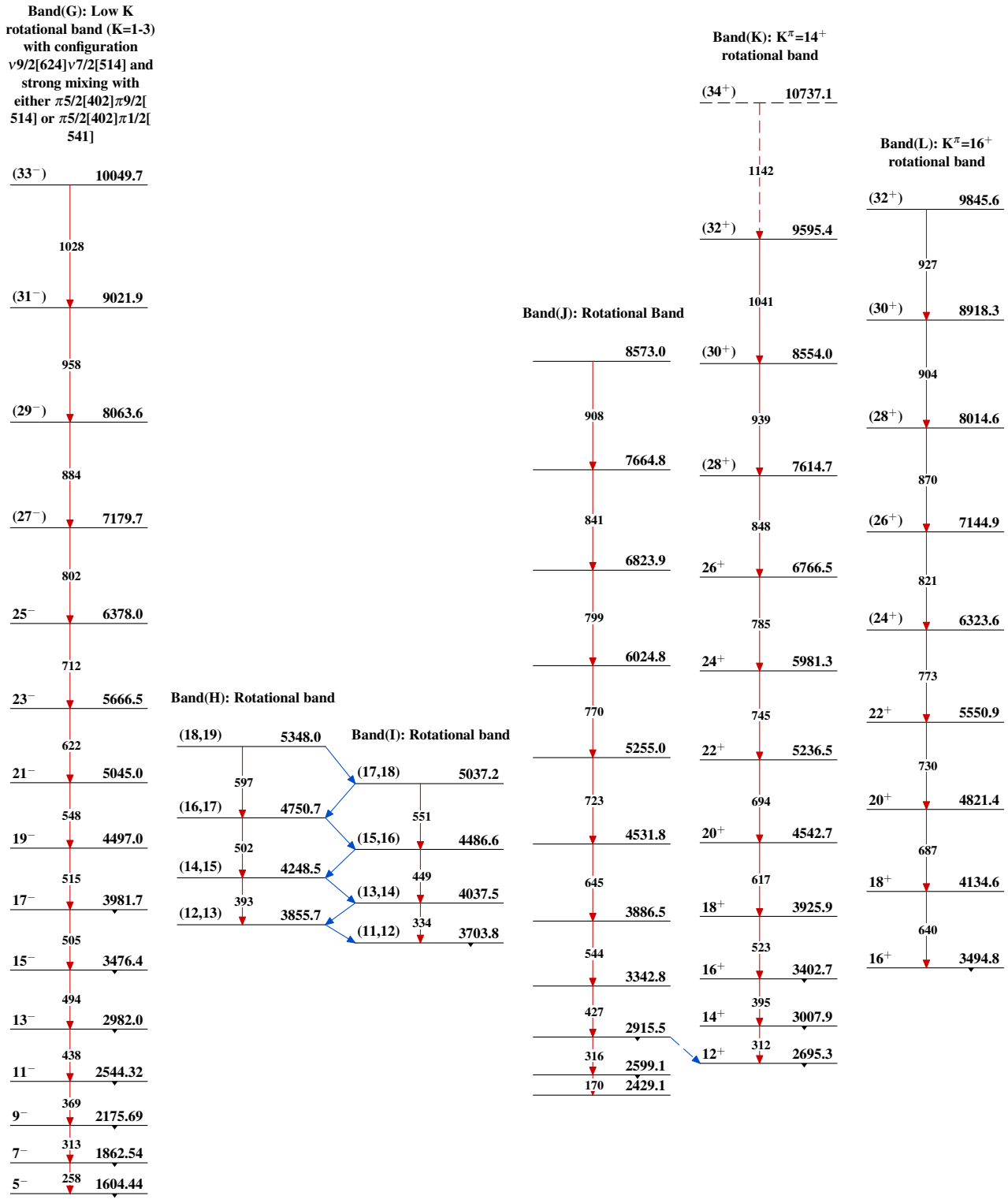


$^{180}_{76}Os_{104}$

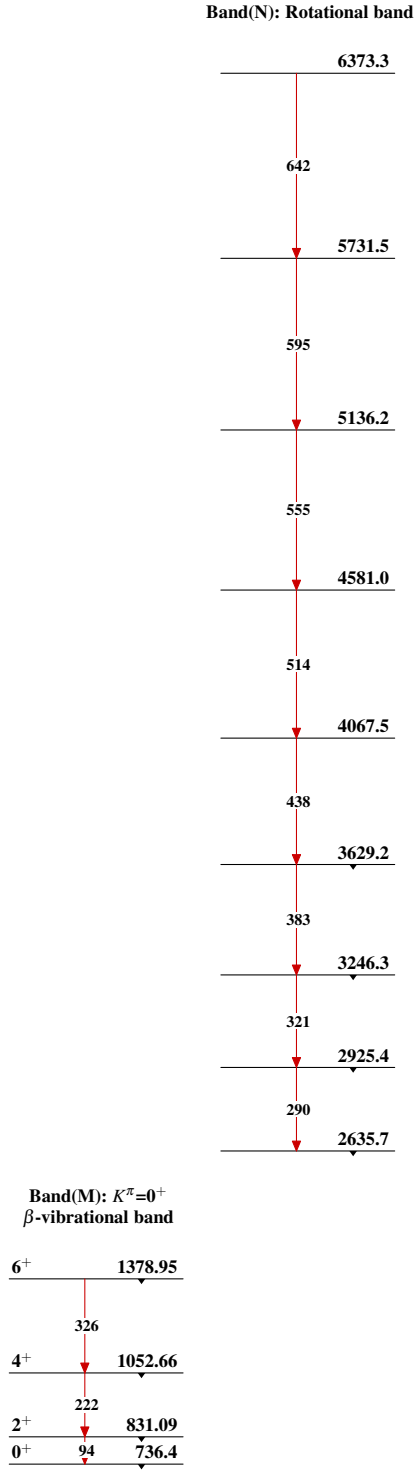
Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



$^{180}_{76}Os_{104}$

Nuclear Data Sheets for ^{182}Os

Balraj Singh

Department of Physics and Astronomy,
McMaster University, Hamilton, Ontario,
Canada, L8S 4M1

Abstract: The 2015 version of ^{182}Os in the ENSDF database has been updated.

Cutoff Date: Literature available up to July 11, 2022 has been consulted.

General Policies and Organization of Material: See the January issue of the *Nuclear Data Sheets* or http://www.nndc.bnl.gov/nds/NDSPolicies.pdf.

Citations: ENSDF

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111,275 (2010)	1-Oct-2009

Q(β^-)=−4.65×10^3 *3*; S(n)=8.66×10^3 *5*; S(p)=5734 *8*; Q(α)=2957.0 *23* 2012Wa38
Note: Current evaluation has used the following Q record −4645 28 *8660* 50 *5734* 8 *2956.8 26* 2003Au03,2009AuZZ.
Q(α): From 2009AuZZ; Q(α)=2963 *4* in 2003Au03.
Other reaction:
^{184}W(^{7}Li,X), E=70 MeV (2005Cl07); observed three known transitions.

For atomic isotope shift data, relative to ^{192}Os, see 2006Av09.

^{184}Os Levels

Cross Reference (XREF) Flags

A	^{184}Ir ε decay	E	^{185}Re(p,2nγ)	I	^{184}Os IT decay (23.6 ns)
B	^{182}W(α,2nγ)	F	^{187}Re(p,4nγ)	J	^{176}Yb(^{13}C,5nγ)
C	^{184}W(α,4nγ)	G	^{186}Os(p,t)	K	^{170}Er(^{18}O,4nγ)
D	^{186}W(α,6nγ)	H	^{188}Pt α decay		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[b]	0$^+$	>5.6×10^{13} y	ABCDEFGHIJK	%α=?; %2β+=? <r^2>$^{1/2}$(charge)=5.3820 *23* (2004An14). T$_{1/2}$: from 1976Sp04, proportional counter measurement, 95% confidence level. Other: 1956Po16, T$_{1/2}$>2×10^{13} y, nuclear emulsion, corrected by evaluator assuming natural abundance in the source. Note that, using the equation of 1961Ta22, the predicted half-life is 2×10^{13} y; a similar prediction of T$_{1/2}$=1.3×10^{15} y for ^{186}Os agrees within the experimental uncertainty.
119.77[b] *9*	2$^+$	1.184 ns *13*	ABCDEFG IJK	Q=−2.4 *11* (1972La16) Q: from Coulomb excitation reorientation (1972La16). J$^\pi$: E2 120γ to 0$^+$ g.s.. T$_{1/2}$: from ^{184}Ir ε decay. Other data: <2.2 ns from (α,6nγ).
383.68[b] *11*	4$^+$	46 ps *13*	ABCDEFG IJK	J$^\pi$: stretched E2 264γ to 2$^+$ 120. T$_{1/2}$: from ^{184}Ir ε decay.
774.08[b] *12*	6$^+$	<2.2[r] ns	ABCDEFG IJK	J$^\pi$: stretched E2 390γ to 4$^+$ 384.
942.87[d] *11*	2$^+$		AB EFG JK	J$^\pi$: M1+E2 823γ to 2$^+$ 120 level; E2 943γ to 0$^+$ g.s..
1042[c] *7*	0$^+$		G	J$^\pi$,E(level): from (p,t). L(p,t)=0.
1080.97[d] *12*	3$^+$		AB EF IJK	J$^\pi$: M1+E2 961γ to 2$^+$ 120; M1+E2 697γ to 4$^+$ 384.
1204.71[c] *21*	2$^+$		A E G J	J$^\pi$: J=2 member of β band for which J^π of J=0 and 4 members is independently established.
1224.99[d] *12*	4$^+$		AB EFG IJK	J$^\pi$: stretched E2 1105γ to 2$^+$ 120, M1+E2 842γ to 4$^+$ 374.
1274.75[b] *16*	8$^+$	<2.2[r] ns	ABCDEFG IJK	J$^\pi$: stretched E2 501γ to 6$^+$ 774.
1406.99 *22*	(4$^+$,5,6$^+$)		I	J$^\pi$: gammas to 4$^+$ and 6$^+$.
1428.15[d] *12*	5$^+$		AB EF IJK	J$^\pi$: M1+E2 1044γ to 6$^+$ 774; M1+E2 1045γ to 4$^+$ 384.
1445.72 *12*	(3,4)$^+$		A E G	J$^\pi$: M1+E2 365γ to 3$^+$ 1081, E2 503γ to 2$^+$ 943; log *ft*=8.0 from 5$^-$ in ε decay.
1500.57[c] *14*	4$^+$		A E G J	J$^\pi$: M1+E2+E0 1117γ to 4$^+$ 384.
1543.70[i] *13*	(3)$^-$		A E G IJK	J$^\pi$: E1+M2 1160γ to 4$^+$ 384; E2 174γ from 5$^-$ 1718, 1424γ to 2$^+$ 120.
1613.15[d] *14*	6$^+$		A E IJK	J$^\pi$: stretched E2 1229γ to 4$^+$ 384, M1+E2 839γ to 6$^+$ 774.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{184}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
1620.67[i] *12*	4^-		A E I K	Jπ: E1 540γ to 3^+ 1081, M1+E2 97γ from 5^- 1718.
1631.51 *12*	$(4,5)^+$		A E	Jπ: M1+E2 203γ to 5^+ 1428; E2 551 to 3^+ 1081.
1637.8? *3*			I	
1697.95 *18*	$(3^+,4^+)$		A E	Jπ: M1+E2(+E0) 1314γ to 4^+ 384, E1,E2 1579γ to 2^+ 120. However, 1698γ to 0^+ g.s. is inconsistent with this Jπ.
1707.50 *13*	$(4)^-$		A E	Jπ: E1 627γ to 3^+ 1081; E1 692γ from $(5)^+$ 2399.
1718.07[i] *12*	5^-		A E G IJK	Jπ: E1+M2 1334γ to 4^+ 384, D+Q 944γ to 6^+ 774.
1832.76[i] *13*	6^-		A E IJK	Jπ: D+Q 115γ to 5^- 1718, stretched E2 212γ to 4^- 1621.
1836.27 *13*	5^-		A E G J	Jπ: E1 1453γ to 4^+ 384; D 1062γ to 6^+ 774.
1840.13[h] *13*	$(6)^-$		A E J	Jπ: D 1066γ to 6^+ 774, E1 412γ to 5^+ 1429, (E2) 220γ to 4^- 1621.
1840.50 *15*	$(4,5,6)^+$		A I	Jπ: M1 209γ to $(4,5)^+$ 1632; 1067γ to 6^+ 774.
1841.62 *21*			A	Jπ: 761γ to 3^+ 1081, 1458γ to 4^+ 384, so J=(2 to 5).
1871.19[b] *19*	10^+	<2.2[r] ns	BCD F IJK	Jπ: stretched E2 597γ to 8^+ 1275; continuation of g.s. band.
1877.51[c] *16*	6^+		A E G J	Jπ: M1+E2+E0 1104γ to 6^+ 774.
1892.60 *16*	$(3^+,4,5^-)$		A	Jπ: 349γ to $(3)^-$ 1544, 464γ to 5^+ 1428.
1898.81 *19*			A E	Jπ: E2,E1 1515γ to 4^+ 384.
1916.38[m] *16*	(6^-)		A E IJK	Jπ: gammas to 5^- and 5^+ and 6^+ imply $J^\pi=(4^+,5,6)$; band assignment.
1928.37 *19*	$(4^+,5,6^+)$		A E	Jπ: 1154γ to 6^+ 774, 1545γ to 4^+ 384.
1934.48 *20*			A E	
1958.43[i] *14*	$7^{(-)}$		A E IJK	Jπ: D+Q 126γ to 6^- 1832, intraband 240γ to 5^- 1718, D+Q 684γ to 8^+ 1275.
1982? *7*	0^+		G	Jπ: L(p,t)=0. E(level): from (p,t); may possibly belong to ^{186}Os, ^{188}Os or ^{190}Os.
1991.35 *22*	6^+		A E	Jπ: M1(+E2+E0) 1217γ to 6^+ 774.
2000.11[m] *15*	(7^-)		A JK	Jπ: M1,E2 84γ to (6^-) 1916, D 725γ to 8^+ 1275, 164γ to 5^- 1836.
2046.71[g] *19*	(8^-)	<1.4 ns	IJK	Jπ: M1 88γ to $7^{(-)}$ 1958, band assignment.
2055.83 *24*	$(4,5,6)^-$		A E	Jπ: M1 338γ to 5^- 1718.
2075.57 *23*			A	Jπ: 1302γ to 6^+ 774, 444γ to $(4,5)^+$ 1632, so $J^\pi=(4^+,5,6,7^+)$.
2085.98 *18*	$(4^+,5,6^-)$		A	Jπ: 1312γ to 6^+ 774; 379γ to $(3,4)^-$ 1708.
2106.41[k] *16*	(8^-)		JK	Jπ: D+Q 148γ to $7^{(-)}$ 1958, band assignment.
2128.03 *20*	$(4,5)^-$		A	Jπ: M1 410γ to 5^- 1718, 584γ to $(3)^-$ 1544.
2135.8 *4*			A E	Jπ: 1362γ to 6^+ 774.
2136.77[m] *17*	$(8)^-$		JK	Jπ: M1 137γ to (7^-) 2000, 220γ to (6^-) 1916, band assignment.
2148.43[h] *24*	(8^-)		J	Jπ: 308γ to $(6)^-$ 1840.1; band assignment.
2170.7 *4*			A	Jπ: 896γ to $(6)^-$ 1840.1.
2201.47 *17*	$(4)^+$		A	Jπ: M1+E2 197γ from $(5)^+$ 2399, 658γ to $(3)^-$ 1544.
2221.77[g] *18*	$(9)^-$		IJK	Jπ: E1 145γ from 10^+ 2367; D+Q 175γ to (8^-) 2047.
2221.83 *15*	$(5,6)^-$		A	Jπ: M1 382γ to $(6)^-$ 1840, 601γ to 4^- 1620.
2266.42[l] *17*	(9^-)		JK	Jπ: D 130γ to $(8)^-$ 2137; band assignment.
2268? *7*	0^+		G	Jπ: L(p,t)=0. E(level): from (p,t); may possibly belong to ^{186}Os, ^{188}Os or ^{190}Os.
2278.76 *14*	$(5,6)^+$		A	Jπ: M1 168γ from $(4,5)^+$ 2446; 438γ to $(6)^-$ 1840; 1505γ to 6^+ 774.
2300.81[f] *17*	(9^-)		K	Jπ: M1+E2 194γ to (8^-) 2107; band assignment.
2330.19 *19*			A E	Jπ: 1105γ to 4^+ 1225.
2366.81[&] *19*	10^+[a]	23.6 ns *14*	IJK	Jπ: M1(+E2) 496γ to 10^+ 1871; stretched E2 1092γ to 8^+ 1275. $T_{1/2}$: from (^{13}C,5nγ). Other: 20 ns *5* from γγ(t) in IT decay (1988Ch27).
2398.98 *13*	$(5)^+$		A E	Jπ: E1 778γ to 4^- 1621; M1+E2 767γ to $(4,5)^+$ 1632; 566γ to 6^- 1833.
2400.17 *14*	$5^+,6^+$		A E	Jπ: E1 682γ to 5^- 1718, M1+E2 787γ to 6^+ 1613.
2431.34[g] *19*	(10^-)		JK	Jπ: D 210γ to $(9)^-$ 2222; 385γ to (8^-) 2047; band assignment.
2446.62 *13*	$(4,5)^+$		A E	Jπ: E1 826γ to 4^- 1621; 1672γ to 6^+ 774.
2457.14[k] *17*	(10^-)		JK	Jπ: D intraband 191γ to (9^-) 2266; intraband 321γ to $(8)^-$ 3127.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{184}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2463.57 *21*	$(4^+,5,6^+)$		A	Jπ: 1690γ to 6^+ 774; 2080γ to 4^+ 384.
2472.29 *24*	$(4^+,5,6^+)$		A	Jπ: 1698γ to 6^+ 774; 2088γ to 4^+ 384.
2493.59 *24*			A	
2502.66[e] *18*	(10^-)		K	Jπ: D+Q 236γ to (9^-) 2266; stretched Q 366γ to $(8)^-$ 2137.
2517.99 *19*			A	Jπ: 2134γ to 4^+ 384 and 1437γ to 3^+ 1081, so $J^\pi=(2^+,3,4,5^+)$.
2547.61[b] *21*	12^+	<2.2[r] ns	CD J	Jπ: E2 intraband 676γ to 10^+ 1871.
2549.16 *24*	$(5,6)^-$		A	Jπ: M1 716γ to 6^- 1833; 1121γ to 5^+ 1428.
2596.75[p] *22*	(10^+)		J	Jπ: intraband 1322γ to 8^+ 1275.
2609.74[@] *21*	11^+[a]		JK	Jπ: intraband D+Q 243γ to 10^+ 2367.
2625.5[h] *4*	(10^-)		J	Jπ: intraband 477γ to (8^-) 2148; band assignment.
2661.50[l] *18*	(11^-)		JK	Jπ: intraband D 204γ (10^-) 2457; stretched Q 395γ to (9^-) 2266.
2672.87[g] *18*	(11^-)		JK	Jπ: intraband D+Q 242γ to (10^-) 2431; intraband 451γ to $(9)^-$ 2222.
2694.17[q] *21*	(10^+)		J	Jπ: (Q) 1419γ to 8^+ 1275; 823γ to 10^+ 1871.
2719.84 *17*	$(5,6^+)$		A	Jπ: 2336γ to 4^+ 384; 1945γ to 6^+ 774; 887γ to 6^- 1833.
2721.49[f] *19*	(11^-)		K	Jπ: stretched Q intraband 421γ to (9^-) 2301.
2862.70[&] *20*	12^+[a]		JK	Jπ: intraband D+Q 253γ to (11^+) 2610; band assignment.
2901.20[k] *18*	(12^-)		JK	Jπ: stretched Q intraband 444γ to (10^-) 2457.
2903.9[n] *3*	(12^-)		J	Jπ: D 231γ to (11^-) 2673; band assignment.
2930.36[g] *19*	(12^-)		JK	Jπ: D intraband 257γ to (11^-) 2673.
2957.78[e] *19*	(12^-)		K	Jπ: D 296γ to (11^-) 2662; intraband 455γ to (10^-) 2503.
2999.25[p] *22*	(12^+)		J	Jπ: stretched Q 1128γ to 10^+ 1871.
3083.5[n] *4*	(13^-)		J	Jπ: D intraband 180γ to (12^-) 2904.
3088.88[q] *22*	(12^+)		J	Jπ: Q intraband 395γ to (10^+) 2694.
3126.8 *3*	(13)		J	Jπ: 579γ to (12^+) 2548.
3130.25[@] *22*	13^+[a]		JK	Jπ: intraband D+Q 268γ to (12^+) 2863.
3166.88[l] *19*	(13^-)		JK	Jπ: intraband stretched Q 505γ to (11^-) 2662.
3199.5[h] *4*	(12^-)		J	Jπ: intraband 574γ to (10^-) 2626; band assignment.
3210.07[g] *21*	(13^-)		JK	Jπ: D intraband 280γ to (12^-) 2930.
3226.36[f] *21*	(13^-)		K	Jπ: stretched Q intraband 505γ to (11^-) 2722.
3228.3 *3*	(11^-)		K	Jπ: 1007γ to $(9)^-$ 2222; possible 500γ from (13^-) 3728.
3261.38[b] *24*	14^+	<2.2[r] ns	CD J	
3359.37[&] *23*	14^+[a]	<2.2[r] ns	D J	
3392.02 *22*	(12^+)		K	
3423.40[k] *22*	(14^-)		JK	
3489.67[e] *24*	(14^-)		K	
3496.50[p] *21*	(14^+)		J	
3510.03[g] *20*	(14^-)		K	
3550.03[q] *23*	(14^+)		J	
3679.74[@] *23*	15^+[a]		J	
3728.19[o] *23*	(13^-)		K	
3747.0 *3*	(15^-)		J	
3760.91[l] *24*	(15^-)		JK	
3777.8 *3*	(15)		J	
3790.96[&] *24*	16^+[a]	<2.2[r] ns	CD J	
3792.4[o] *4*	(14^-)	≤3[s] ns	K	
3806.60[f] *22*	(15^-)		K	
3820.52[g] *23*	(15^-)		K	
3860.4[h] *5*	(14^-)		J	
3972.0[o] *4*	(15^-)		K	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{184}Os Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	XREF	Comments
3998.03[k] 25	(16$^-$)		JK	
4046.50[b] 23	16$^+$	<2.2[r] ns	D J	
4091.92[q] 24	(16$^+$)		J	
4122.55[e] 22	(16$^-$)		K	
4157.75[g] 25	(16$^-$)		JK	
4167.7 4	(16$^-$)		J	
4173.2[p] 3	(16$^+$)		JK	Band assignment from (^{18}O,4nγ) considered uncertain because J=16 to 14 transition was not verified in the (^{13}C,5nγ) study.
4202.7[o] 3	(16$^-$)		K	
4281.12[@] 25	17$^+$[a]		J	
4349.3[&] 3	18$^+$[a]	<2.2[r] ns	D J	
4407.7 4	(17$^-$)		J	
4416.0 4	(17$^-$)		J	
4418.4[l] 3	(17$^-$)		JK	
4467.46[f] 23	(17$^-$)		K	
4475.74 25	(17$^-$)		K	
4494.4[g] 3	(17$^-$)		K	
4597.0[h] 5	(16$^-$)		J	
4635.6[k] 4	(18$^-$)		JK	
4728.7[q] 3	(18$^+$)		J	
4756.71 24	(18$^-$)	48 ns 5	K	T$_{1/2}$: from $\gamma\gamma$(t) in (^{18}O,4nγ). Configuration=ν(9/2[624]+11/2[615])+π(5/2[402]+11/2[505]), K^{π}=18$^-$.
4770.5 3			K	
4800.54[b] 24	18$^+$	<2.2[r] ns	D J	
4826.8[e] 3	(18$^-$)		K	
4879.5[g] 4	(18$^-$)		K	
4912.1 4	(18)		J	
4963.8[@] 3	19$^+$[a]		J	
5000.9[&] 4	20$^+$[a]	<2.2[r] ns	D J	
5100.0 4			K	
5106.7 4	(19)		J	
5126.5[l] 4	(19$^-$)		JK	
5192.9[f] 3	(19$^-$)		K	
5200.3 3	(20$^-$)	≤3[s] ns	K	
5207.9 4	(19$^-$)		K	
5230.6 3	(20$^-$)	≤3[s] ns	K	
5230.61[g] 40	(19$^-$)		K	
5329.4[k] 4	(20$^-$)		JK	
5374.7[h] 5	(18$^-$)		J	
5456.4 4			K	
5459.9[q] 4	(20$^+$)		J	
5565.7 3	(20$^+$)	<1.4 ns	JK	Possible configuration: (ν 11/2[615])+(ν 9/2[624])+(π 11/2[505])+(π 9/2[514])), K^{π}=20$^+$ (2002Wh01).
5570.1[b] 3	(20$^+$)		J	
5573.0[e] 4	(20$^-$)		K	
5670.5 4	(21)	≤3[s] ns	K	
5670.51[g] 40	(20$^-$)		K	
5726.3[@] 4	21$^+$[a]		J	
5742.5[&] 4	22$^+$[a]	<2.2[r] ns	D J	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{184}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
5743.3 *4*	(21$^+$)	1.04 ns *21*	J	Possible configuration=ν(11/2[615],9/2[624],7/2[503],7/2[514])+π(5/2[402],3/2[402]), K^π=21$^+$.
5868.9[l] *5*	(21$^-$)		JK	
6007.7[g] *5*	(21$^-$)		K	
6050.9[k] *5*	(22$^-$)		J	
6186.5 *4*	(22$^+$)	0.35 ns *14*	J	
6215.8[h] *6*	(20$^-$)		J	
6236.3 *4*			K	
6277.3[q] *5*	(22$^+$)		J	
6340.0 *3*	(22$^-$)	≤3[s] ns	K	Configuration=ν(1/2[521]7/2[503]9/2[624]11/2[615])⊗π(5/2[402]11/2[505]), K^π=22$^-$ (?).
6378.0[e] *5*	(22$^-$)		K	
6542.5[@] *4*	23$^+$[a]		J	
6562.6[&] *5*	24$^+$[a]		J	
6598.7 *4*	(23$^+$)	0.42 ns *14*	J	
6610.9[l] *5*	(23$^-$)		K	
6687.2 *4*	(23$^+$)		J	
6694.2 *5*	(24$^+$)		J	
6790.2[k] *5*	(24$^-$)		JK	
6797.7 *3*	(23)	≤3[s] ns	K	Configuration=ν(3/2[512]+7/2[514]+9/2[624]+11/2[615])+π(5/2[402]+11/2[505]), K^π=23$^-$ (?).
6888.5 *5*	(24$^+$)		J	
6912.9 *4*		≤3[s] ns	K	
7004.2 *4*	(24$^+$)		J	
7083.6 *5*			K	
7087.4 *5*	(24$^+$)		J	
7283.8 *4*		≤3[s] ns	K	
7311.1 *4*	(25$^+$)	0.90 ns *21*	J	
7395.5?[@] *5*	(25$^+$)[a]		K	
7406.6[l] *6*	(25$^-$)		K	
7446.9[&] *5*	26$^+$[a]		J	
7500.8 *5*	(26$^+$)		JK	
7590.2[k] *6*	(26$^-$)		K	
7592.1[j] *4*	(26$^+$)		J	
7786.4 *5*	(26$^+$)		J	
7815.9[j] *5*	(27$^+$)		J	
8043.2 *4*	(27$^+$)		J	
8152.7[j] *5*	(28$^+$)		J	
8244.2 *5*	(26)		J	
8474.2[k] *6*	(28$^-$)		K	
8580.2[j] *5*	(29$^+$)		J	
8590.1 *5*	(29$^+$)		J	
8649.3 *5*	(29)		J	
8784.9 *5*	(29$^+$)		J	
9375.01 *5*	(31$^+$)		J	
9539.4 *5*	(31)		J	
9545.7 *5*	(31$^+$)		J	
9867.1 *6*	(32)		J	
10671.4 *6*	(34)		J	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{184}Os Levels (continued)

† From least-squares fit to adopted Eγ.
‡ Values given without further comment are based on deduced band structure.
# From gated time spectra in ^{176}Yb(^{13}C,5nγ), except as noted.
@ Band(a): $K^\pi=10^+$, ν11/2[615] +ν9/2[624], α=1 band (2002Wh01).
& Band(A): $K^\pi=10^+$, ν11/2[615]+ν9/2[624], α=0 band (2002Wh01). Note that some levels assigned to this band in (^{18}O,4nγ) and (α,6nγ) differ from those adopted here.
[a] Definite J^π assigned to J≤24 and to J=26 band members based on smooth progression of level energies, on established $J^\pi=10^+$ for bandhead and multipolarity=E2 for J=16 to J=14 432γ.
[b] Band(B): $K^\pi=0^+$ ground state band (2002Wh01). Band parameters: A=19.3, B=−23 (J=2,4,6,8 levels).
[c] Band(C): $K^\pi=0^+$ β band. Band parameters: A=24.0, B=−111 (J=2,4,6 levels).
[d] Band(D): $K^\pi=2^+$ γ band.
[e] Band(E): $K^\pi=9^-$, (ν 7/2[514])+(ν 11/2[615]), α=0 band.
[f] Band(e): $K^\pi=9^-$, α=1, (ν 7/2[514])+(ν 11/2[615]) band.
[g] Band(F): $K^\pi=8^-$ (ν 9/2[624])+(ν 7/2[503]) band.
[h] Band(G): Band based on 6^- 1840 level. Possible configuration=(ν 9/2[624])+(ν 3/2[512]).
[i] Band(H): $K^\pi=3^-$ Octupole band. Possible dominant configuration=(π 5/2[402])+(π 1/2[541]).
[j] Band(I): $K^\pi=26^+$ (?) 6-quasiparticle band. Possible configuration=ν (11/2[615]+9/2[624]+7/2[503]+5/2[512])+ π (11/2[505]+9/2[514]).
[k] Band(J): $K^\pi=8^-$, α=0, (ν 9/2[624])+(ν 7/2[514]) band.
[l] Band(j): $K^\pi=8^-$, α=1, (ν 9/2[624])+(ν 7/2[514]) band.
[m] Band(K): $K^\pi=6^-$, (ν 1/2[521])+(ν 11/2[615]) band.
[n] Band(L): $K^\pi=12-$(?) band (2002Wh01). Possible configuration=ν 9/2[624]+ν 7/2[503]+ν 7/2[514]+ν 1/2[510].
[o] Band(M): $K^\pi=13^-$ band. Configuration: (ν 9/2[624])+(ν 11/2[615])+(π 1/2[541])+(π 5/2[402]).
[p] Band(N): Band based on (10^+) 2597 level. Low-K $i^2_{13/2}$ s-band.
[q] Band(O): Band based on 10^+ 2694 level. Mixture of low-K $i^2_{13/2}$ s-band built on β and γ vibrations.
[r] $T_{1/2}$<2.2 ns from γγ(t) in (α,6nγ).
[s] From γγ(t) detection limit in ^{170}Er(^{18}O,4nγ).

Adopted Levels, Gammas (continued)

γ(^{184}Os)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[‡]	α[c]	Comments
119.77	2^+	119.79 *10*	100	0.0	0^+	E2		2.13	B(E2)(W.u.)=99.6 *15*
383.68	4^+	263.98 *10*	100	119.77	2^+	E2		0.1349	B(E2)(W.u.)=140 *40*
774.08	6^+	390.36 *10*	100	383.68	4^+	E2		0.0432	B(E2)(W.u.)>0.44
942.87	2^+	559.6[e] *3*	4.6[e] *11*	383.68	4^+				
		822.97 *13*	100.0 *25*	119.77	2^+	E2+M1	−12 *+2−3*	0.00746	
		942.87 *20*	91 *3*	0.0	0^+	E2		0.00559	Other Eγ: 943.5 *2* in (^{13}C,5nγ). Other Iγ: 133 *10* from (p,4nγ), 112 *9* from (α,3nγ).
1080.97	3^+	697.26 *12*	14.7 *6*	383.68	4^+	E2+M1	−10 *+2−4*	0.01070 *18*	Other Iγ: 20.3 *15* from (^{18}O,4nγ), 9 *4* from (p,2nγ).
		961.26 *15*	100.0 *25*	119.77	2^+	E2+M1	+9.3 *+20−14*	0.00545 *9*	
1204.71	2^+	821.6	94 *19*	383.68	4^+				
		1084.9 *2*	100 *31*	119.77	2^+				Eγ: from (^{13}C.5nγ).
		1204.9[f]	103 *19*	0.0	0^+				
1224.99	4^+	282.38 *20*	1.96 *14*	942.87	2^+	E2		0.1096	Other Iγ:I(842γ)=3.2 *9*:100 *43* from (p,2nγ).
		841.5[b] *2*	100[b] *4*	383.68	4^+	E2+M1	−10 *+2−4*	0.00715 *12*	
		1105.2[b] *2*	48.2[b] *25*	119.77	2^+	E2		0.00407	Eγ=1105.28 *20* for doublet. Other Iγ: 68 *3* (suitably divided) from ε decay, 45 *4* from (^{13}C,5nγ), 68 *6* from (p,4nγ), 85 *7* from (α,2nγ).
1274.75	8^+	500.73 *15*	100	774.08	6^+	E2		0.0227	B(E2)(W.u.)>0.13
1406.99	$(4^+,5,6^+)$	632.8 *2*		774.08	6^+				
		1024.0 *5*		383.68	4^+				
1428.15	5^+	347.32 *20*	4.8 *4*	1080.97	3^+				Other Eγ: 346.6 *2* in (^{13}C,5nγ). Other Iγ: 1.7 *9* in (^{13}C,5nγ), 5.4 *14* in (^{18}O,4nγ).
		653.98 *11*	11.7 *7*	774.08	6^+	E2+M1	+8 *+5−2*	0.0125 *3*	Other Eγ: 654.2 *2* in (^{13}C,5nγ). Other Iγ: 25.2 *17* in (^{13}C,5nγ), 29.7 *14* in (^{18}O,4nγ), 5.9 *21* in (p,2nγ).
		1044.55 *14*	100.0 *22*	383.68	4^+	E2+M1	+24 *8*	0.00456	Other Eγ(Iγ): 1044.6 *2* (100 *4*) in (^{13}C,5nγ).
1445.72	$(3,4)^+$	220.8 *2*	5.5 *14*	1224.99	4^+				
		364.72 *10*	38 *3*	1080.97	3^+	M1+E2		0.10 *5*	
		502.95 *15*	100 *7*	942.87	2^+	E2		0.0225	
		1062.2 *3*	41 *11*	383.68	4^+				
		1325.73 *25*	28.7 *25*	119.77	2^+				
1500.57	4^+	295.6	12.0 *21*	1204.71	2^+				Other Eγ: 297.6 *2* from (^{13}C,5nγ). Other Iγ: <8 from (^{13}C,5nγ).
		419.3 *4*	7.0 *21*	1080.97	3^+				
		558.0 *4*	29 *8*	942.87	2^+				
		726.6	40 *3*	774.08	6^+				
		1116.91 *14*	100 *8*	383.68	4^+	M1+E2+E0			Other Eγ: 1119.3 *2* from (^{13}C,5nγ). δ(M1,E2)=−21 *8* from ε decay.

$^{184}_{76}Os_{108}$-7

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[‡]	α[c]	Comments
1500.57	4^+	1380.9 *3*	58 *11*	119.77	2^+				
1543.70	$(3)^-$	600.2 *2*	100 *3*	942.87	2^+	[E1]		0.00523	E_γ: from (^{13}C,5nγ). Eγ=601.16 *11* in ε decay for doubly-placed γ. I_γ: from ε decay. Iγ for doubly-placed line suitably divided.
		1160.29 *17*	6.2 *16*	383.68	4^+	E1+M2	+0.08 *5*	0.00161 *18*	Other Iγ:I(600γ)=19 *6*:100 *29* in (p,2nγ).
		1424.1 *3*	7.5 *7*	119.77	2^+				Other Eγ: 1424.9 *2* from (^{13}C,5nγ).
1613.15	6^+	388.3[a] *2*	65[a] *7*	1224.99	4^+				Other Iγ: 19.8 *22* in ε decay.
		839.0[a] *2*	100[a] *5*	774.08	6^+	E2+M1	+8 *4*	0.0073 *5*	
		1229.40 *12*	66.7 *26*	383.68	4^+	E2		0.00333	I_γ: from (^{18}O,4nγ). Other Iγ: 77 *9* in ε decay, 69 *5* in (^{13}C,5nγ), 82 *29* in (p,2nγ).
1620.67	4^-	76.9 *3*	1.2 *4*	1543.70	$(3)^-$	[M1,E2]		12.5 *7*	
		539.69 *10*	100.0 *19*	1080.97	3^+	E1		0.00652	
		1236.93 *12*	32.2 *15*	383.68	4^+	E1+M2	+0.15 *2*	0.00168 *10*	Other Iγ: 44 *3* in (^{13}C,5nγ), 26 *9* in (p,2nγ), 37.1 *14* in (^{18}O,4nγ).
1631.51	$(4,5)^+$	185.76 *10*	39 *7*	1445.72	$(3,4)^+$	M1+E2		0.7 *3*	
		203.31 *25*	8.4 *8*	1428.15	5^+	M1+E2		0.53 *22*	
		406.60 *15*	33.7 *23*	1224.99	4^+				
		550.53 *20*	27 *5*	1080.97	3^+	E2		0.0180	
		857.5 *3*	17.9 *15*	774.08	6^+				
		1247.81 *12*	100 *7*	383.68	4^+	M1,E2		0.0049 *17*	
1637.8?		230.8 *2*		1406.99	$(4^+,5,6^+)$				
1697.95	$(3^+,4^+)$	1314.4 *3*	48 *10*	383.68	4^+	M1+E2(+E0)			α(K)exp implies mult=M1+E2+E0 or anomalous M1+E2.
		1578.17 *25*	100 *8*	119.77	2^+	(E2)		0.00217	
		1697.8 *3*	82 *7*	0.0	0^+				
1707.50	$(4)^-$	163.63 *20*	7.8 *8*	1543.70	$(3)^-$	M1		1.384	
		482.5 *3*	5.5 *19*	1224.99	4^+				
		626.59 *11*	100 *7*	1080.97	3^+	E1		0.00479	
		1323.77 *25*	29 *3*	383.68	4^+				
1718.07	5^-	97.40 *20*	3.0 *3*	1620.67	4^-	M1+E2		5.5 *7*	Other Iγ: 6.1 *19* from (p,2nγ).
		174.32 *20*	2.73 *20*	1543.70	$(3)^-$	E2		0.533	
		493.2 *2*	100 *3*	1224.99	4^+	E1		0.00789	E_γ: from (^{13}C,5nγ).
		944.14 *20*	46.1 *23*	774.08	6^+	(E1+M2)	−0.09 *2*	0.00241 *13*	Other Iγ: 64 *3* in (^{13}C,5nγ), 58.0 *23* in (^{18}O,4nγ), 30 *12* in (p,2nγ).
		1334.30 *12*	39.2 *23*	383.68	4^+	E1+M2	+0.12 *+6−5*	0.00141 *21*	Other Iγ: 40.5 *23* in (^{13}C,5nγ), 37.5 *11* in (^{18}O,4nγ), 53 *11* in (p,2nγ).
1832.76	6^-	114.67 *20*	23.5 *20*	1718.07	5^-	(M1+E2)		3.2 *7*	Mult.: D+Q from (^{18}O,4nγ), Δπ from level scheme. I_γ: from (^{18}O,4nγ). Other Iγ: 38.6 *23* in (^{13}C,5nγ), 38 *4* in ε decay.

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
1832.76	6⁻	212.02 *10*	100 *4*	1620.67	4⁻	E2	0.273	I_γ: from (^{18}O,4nγ).
		219.8	3.0 *10*	1613.15	6⁺			
		404.51 *20*	31.4 *20*	1428.15	5⁺			I_γ: from (^{18}O,4nγ). Other Iγ: 34.1 *23* in (^{13}C,5nγ), 24 *5* in ε decay.
		1058.69 *26*	5.7 *13*	774.08	6⁺			Other Iγ: 13.7 *20* in (^{18}O,4nγ).
1836.27	5⁻	408.1[b] *2*	4[b] *2*	1428.15	5⁺			
		611.26 *11*	41 *3*	1224.99	4⁺			Other Iγ: 68 *5* in (^{13}C,5nγ), 94 *4* in (^{18}O,4nγ), 110 *36* in (p,2nγ).
		1062.4[b] *2*	100[b] *4*	774.08	6⁺	D[@]		
		1452.50 *15*	43 *3*	383.68	4⁺	E1		Other Iγ: 42 *4* in (^{13}C,5nγ), 30.6 *20* in (^{18}O,4nγ). Mult.: E1,E2 from α(K)exp in ε decay; D from DCO in (^{18}O,4nγ).
1840.13	(6)⁻	219.5[a] *2*	52[a] *5*	1620.67	4⁻	(E2)	0.243	Other Iγ: 88 *9* in ε decay, 68 *23* from (p,2nγ).
		411.95 *10*	70 *5*	1428.15	5⁺	E1	0.01172	I_γ: from (^{13}C,5nγ). Other Iγ: 90 *6* from ε decay, 50 *14* from (p,2nγ).
		615.0 *3*	12 *3*	1224.99	4⁺			
		1066.0[a] *2*	100[a] *5*	774.08	6⁺	D[@]		
1840.50	(4,5,6)⁺	209.08 *20*	52 *4*	1631.51	(4,5)⁺	M1	0.697	
		394.88 *20*	59 *6*	1445.72	(3,4)⁺	E2	0.0419	
		1066.5 *3*	100 *23*	774.08	6⁺			
		1456.9 *3*	38 *10*	383.68	4⁺			
1841.62		760.7 *3*	9.9 *25*	1080.97	3⁺			
		1458.1 *3*	100 *7*	383.68	4⁺			
1871.19	10⁺	596.6[a] *2*	100[a]	1274.75	8⁺	E2[&]	0.01495	B(E2)(W.u.)>0.054
1877.51	6⁺	376.91 *20*	16.6 *22*	1500.57	4⁺			Other Eγ: 375.8 *2* in (^{13}C,5nγ). Other Iγ: <6 in (^{13}C,5nγ), 57 *17* from (p,2nγ).
		449.2 *3*	3.5 *9*	1428.15	5⁺			
		602.6	29 *7*	1274.75	8⁺			
		1103.5 *3*	100 *13*	774.08	6⁺	M1+E2+E0		Other Eγ: 1105.6 *2* in (^{13}C,5nγ). δ(M1,E2)=−7 *3* from ε decay.
		1493.89 *19*	55 *3*	383.68	4⁺			
1892.60	(3⁺,4,5⁻)	348.93 *20*	71 *6*	1543.70	(3)⁻			
		464.42[d] *20*	60[d] *14*	1428.15	5⁺			
		667.60 *20*	100 *11*	1224.99	4⁺			
1898.81		1514.93 *20*	100	383.68	4⁺	E2,E1		
1916.38	(6⁻)	80.5[af] *10*	12[a] *6*	1836.27	5⁻			
		488.2[a] *2*	69[a] *4*	1428.15	5⁺			Other Iγ: 81 *3* from (^{18}O,4nγ), 75 *19* in ε decay. Mult.: DCO=1.0 *1* in (^{13}C,5nγ) not consistent with mult=E1 required by level scheme; α(K)exp for doublet in ε decay rules out M1.
		1142.2[a] *2*	100[a] *5*	774.08	6⁺	(E1)		Mult.: from ε decay. α(K)exp consistent with E1 or E2; level scheme requires Δπ=yes. DCO in (^{18}O,4nγ) consistent with D, ΔJ=0.
1928.37	(4⁺,5,6⁺)	1154.31 *17*	100 *7*	774.08	6⁺	E2,E1		

$^{184}_{76}Os_{108}$-9

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.†	α c	Comments
1928.37	(4+,5,6+)	1544.6 *3*	64 *5*	383.68	4+			
1934.48		1550.66 *25*	100	383.68	4+	E2,E1		
1958.43	7(−)	118.5 a f *10*	22 a *11*	1840.13	(6)−			
		125.6 a *2*	92 a *5*	1832.76	6−	(M1+E2)	2.4 *6*	Mult.: D+Q from (^{18}O,4nγ); Δπ=no from level scheme. Other Iγ: 95.6 *22* in (^{18}O,4nγ).
		240.3 a *2*	40.5 a *27*	1718.07	5−			Other Iγ: 78 *4* in (^{18}O,4nγ).
		345.2 a *2*	29.7 a *27*	1613.15	6+			Other Iγ: 40.0 *22* in (^{18}O,4nγ).
		683.8 a *2*	100 a *5*	1274.75	8+	(E1+M2)	0.04 *4*	Other Eγ: 684.3 *3* in ε decay, 683.2 *2* in IT decay. Mult.: D+Q from (^{18}O,4nγ); Δπ=yes from level scheme.
		1184.6 a *2*	8.1 a *27*	774.08	6+			Other Iγ: 11.1 *22* in (^{18}O,4nγ).
1991.35	6+	1217.2 *3*	53 *5*	774.08	6+	M1(+E2+E0)		
		1607.70 *25*	100 *8*	383.68	4+	E2,E1		
2000.11	(7−)	83.7 a *2*	22 a *4*	1916.38	(6−)	M1,E2	9.25 *20*	Mult.: from α(exp) in (^{13}C,5nγ).
		163.9 a *2*	20 a *4*	1836.27	5−			
		725.3 a *2*	100 a *10*	1274.75	8+	D @		
		1225.5 a *10*	50 a *26*	774.08	6+			
2046.71	(8−)	88.3 a *2*	100 a	1958.43	7(−)	M1	8.04 *13*	B(M1)(W.u.)>0.0025 Mult.: from α(exp) in (^{13}C,5nγ).
2055.83	(4,5,6)−	337.76 *20*	100	1718.07	5−	M1	0.188	
2075.57		444.0 *3*	56 *14*	1631.51	(4,5)+			
		1301.53 *25*	100 *11*	774.08	6+			
2085.98	(4+,5,6−)	378.65 *25*	39 *4*	1707.50	(4)−			
		657.88 e *20*	84 e *20*	1428.15	5+			
		1311.65 *25*	100 *14*	774.08	6+			
2106.41	(8−)	106.3 b *2*	38 b *25*	2000.11	(7−)	(M1)	4.72	Mult.: D from (^{18}O,4nγ); Δπ=no from level scheme.
		148.1 b *2*	25 b *13*	1958.43	7(−)	D+Q #		
		273.6 *2*	100 *13*	1832.76	6−			
2128.03	(4,5)−	410.21 *25*	91 *9*	1718.07	5−	M1	0.1117	
		584.2 *3*	44 *12*	1543.70	(3)−			
		1744.1 *3*	100 *26*	383.68	4+			
2135.8		522.6 *3*	32 *5*	1613.15	6+			
		1361.7 *21*	100 *11*	774.08	6+			
2136.77	(8)−	136.7 a *2*	100 a *9*	2000.11	(7−)	M1	2.30	Mult.: from α(exp) in (^{13}C,5nγ).
		220.3 a *2*	83 a *9*	1916.38	(6−)			Other Iγ: 50 *6* from (^{18}O,4nγ).
2148.43	(8−)	308.3 a *2*	100 a	1840.13	(6)−			
2170.7		895.9 *3*	100	1274.75	8+			
2201.47	(4)+	493.6 *3*	100 *26*	1707.50	(4)−			
		657.88 e *20*	41 e *10*	1543.70	(3)−			
2221.77	(9)−	175.1 a *2*	100 a	2046.71	(8−)	(M1+E2) @	0.8 *3*	

$^{184}_{76}Os_{108}$-10

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[‡]	α[c]	Comments
2221.83	(5,6)$^-$	381.70 *15*	83 *6*	1840.13	(6)$^-$	M1		0.1353	
		601.16 *11*	100 *25*	1620.67	4$^-$				Eγ is for doubly-placed line. Intensity has been suitably divided.
2266.42	(9$^-$)	129.6[a] *2*	100[a] *5*	2136.77	(8)$^-$	D[@]			
		160.0[a] *2*	24[a] *5*	2106.41	(8$^-$)	(M1+E2)[#]		1.1 *4*	Other Iγ: 50 *6* from (^{18}O,4nγ) for Eγ=159.4 *2*.
		266.4[a] *2*	43[a] *5*	2000.11	(7$^-$)				
2278.76	(5,6)$^+$	438.2 *3*	27 *7*	1840.13	(6)$^-$				
		571.19 *20*	100 *9*	1707.50	(4)$^-$				
		778.25[e] *13*	44[e] *11*	1500.57	4$^+$				
		832.96 *24*	58 *13*	1445.72	(3,4)$^+$				
		1504.72 *25*	98 *9*	774.08	6$^+$				
		1895.3 *3*	64 *5*	383.68	4$^+$				
2300.81	(9$^-$)	164.3[b] *2*	33[b] *7*	2136.77	(8)$^-$				
		194.4[b] *2*	100[b] *7*	2106.41	(8$^-$)	M1+E2		0.61 *25*	Mult.: from α(exp) and DCO in (^{18}O,4nγ).
		300.5[b] *2*	67[b] *7*	2000.11	(7$^-$)				
2330.19		431.19 *20*	96 *6*	1898.81					
		488.8 *3*	30 *8*	1841.62					
		1105.28 *20*	100 *26*	1224.99	4$^+$				Eγ is for doubly-placed line; intensity suitably divided.
2366.81	10$^+$	145.0[a] *2*	100[a] *4*	2221.77	(9)$^-$	E1		0.1506	B(E1)(W.u.)=1.17×10^{-6} *9* Mult.: from α(exp) in (^{13}C,5nγ).
		495.8[a] *2*	40.4[a] *21*	1871.19	10$^+$	M1(+E2)	<0.65	0.061 *7*	B(M1)(W.u.)>6.3×10^{-7}; B(E2)(W.u.)<0.0014 Other Eγ: 494.9 *2* from IT decay. Other Iγ: 27 from IT decay, 35.2 *14* from (^{18}O,4nγ). Mult.,δ: from α(K)exp=0.052 *7* in (α,2nγ).
		1092.1[a] *2*	36.1[a] *21*	1274.75	8$^+$	E2		0.00417 *6*	B(E2)(W.u.)=3.6×10^{-5} *4* Other Iγ: 55 from IT decay and 53.5 *14* from (^{18}O,4nγ). Mult.: stretched Q from (^{18}O,4nγ); E2 from α(K)exp in (α,2nγ).
2398.98	(5)$^+$	197.46 *20*	37 *3*	2201.47	(4)$^+$	M1+E2		0.58 *24*	
		464.42[d] *20*	8.8[d] *24*	1934.48					
		562.5 *3*	14 *4*	1836.27	5$^-$				
		566.3 *3*	20 *5*	1832.76	6$^-$				
		691.58 *20*	72 *5*	1707.50	(4)$^-$	E1		0.00393	
		767.49 *13*	100 *10*	1631.51	(4,5)$^+$	M1+E2		0.015 *7*	
		778.25[e] *13*	88[e] *24*	1620.67	4$^-$	E1		0.0031	
		953.45 *16*	66 *7*	1445.72	(3,4)$^+$	M1		0.01267	
		970.6 *4*	25.3 *24*	1428.15	5$^+$				
		2014.8 *6*	14.7 *18*	383.68	4$^+$				
2400.17	5$^+$,6$^+$	559.6[e] *3*	66[e] *16*	1840.50	(4,5,6)$^+$	M1,E2		0.033 *16*	

$^{184}_{76}Os_{108}$-11

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
2400.17	5$^+$,6$^+$	563.9 *3*	47 *12*	1836.27	5$^-$	[E1]	0.0060	Mult.: α(K)exp for doublet dominated by this transition implies E2,M1.
		567.5 *3*	12 *3*	1832.76	6$^-$			
		682.14 *10*	73 *5*	1718.07	5$^-$	E1	0.00404	
		786.96 *25*	62 *5*	1613.15	6$^+$	M1+E2	0.014 *7*	
		1625.95 *20*	100 *7*	774.08	6$^+$	M1,E2	0.0028 *8*	
2431.34	(10$^-$)	209.6[a] *2*	100[a] *4*	2221.77	(9)$^-$	(M1)[@]	0.692	
		384.6[a] *2*	16.2[a] *14*	2046.71	(8$^-$)			
2446.62	(4,5)$^+$	167.81 *20*	6.0 *5*	2278.76	(5,6)$^+$	M1	1.289	
		606.41 *20*	11.2 *9*	1840.50	(4,5,6)$^+$			
		613.82 *11*	29.3 *21*	1832.76	6$^-$			
		728.40 *20*	4.2 *6*	1718.07	5$^-$			
		815.03 *14*	16.1 *13*	1631.51	(4,5)$^+$	M1,E2	0.013 *6*	
		826.05 *14*	28.2 *22*	1620.67	4$^-$	E1	0.00278	
		1672.4 *3*	82 *6*	774.08	6$^+$	M1,E2	0.0027 *7*	
		2063.0 *3*	100 *7*	383.68	4$^+$	M1,E2	0.0019 *4*	
2457.14	(10$^-$)	156.3[b] *2*	4.3[b] *21*	2300.81	(9$^-$)			
		190.7[b] *2*	63.8[b] *21*	2266.42	(9$^-$)	(M1)[@]	0.901	Other Iγ: 86 *3* from (^{13}C,5nγ).
		320.2[b] *2*	34.0[b] *21*	2136.77	(8)$^-$			
		350.8[b] *2*	100[b] *4*	2106.41	(8$^-$)			
2463.57	(4$^+$,5,6$^+$)	1017.3 *3*	30 *8*	1445.72	(3,4)$^+$			
		1689.5 *3*	100 *26*	774.08	6$^+$			
		2080.4 *3*	66 *8*	383.68	4$^+$			
2472.29	(4$^+$,5,6$^+$)	1698.4 *3*	79 *20*	774.08	6$^+$			
		2088.4 *3*	100 *26*	383.68	4$^+$			
2493.59		1412.7 *3*	68 *10*	1080.97	3$^+$			
		2109.8 *3*	100 *26*	383.68	4$^+$			
2502.66	(10$^-$)	201.8[b] *2*	<6[b]	2300.81	(9$^-$)			
		236.4[b] *2*	100[b] *6*	2266.42	(9$^-$)	D+Q[#]		
		365.8[b] *2*	69[b] *6*	2136.77	(8)$^-$	Q[#]		
2517.99		1072.6 *3*	34 *3*	1445.72	(3,4)$^+$			
		1436.72 *24*	23 *3*	1080.97	3$^+$			
		2134.4 *3*	100 *8*	383.68	4$^+$			
2547.61	12$^+$	676.3[a] *2*	100[a]	1871.19	10$^+$	E2[&]	0.01126	B(E2)(W.u.)>0.029
2549.16	(5,6)$^-$	716.3 *3*	63 *7*	1832.76	6$^-$	M1	0.0262	
		1121.1 *3*	100 *24*	1428.15	5$^+$			
2596.75	(10$^+$)	1322.0[a] *2*	100[a]	1274.75	8$^+$			
2609.74	11$^+$	243.1[a] *2*	100[a]	2366.81	10$^+$	(M1+E2)[@]	0.32 *15*	
2625.5	(10$^-$)	477.1[a] *2*	100[a]	2148.43	(8$^-$)			

$^{184}_{76}Os_{108}$-12

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
2661.50	(11⁻)	158.8[b] *2*	<2.6[b]	2502.66	(10⁻)			
		204.3[a] *2*	63[a] *4*	2457.14	(10⁻)	(M1)[#]	0.743	Other Iγ: 46 *3* from (^{18}O,4nγ).
		230.2[a] *2*	37.0[a] *22*	2431.34	(10⁻)			Other Iγ: 44 *3* from (^{18}O,4nγ).
		395.0[a] *2*	100[a] *4*	2266.42	(9⁻)	(E2)[#]	0.0419	
		439.9[a] *2*	30.4[a] *22*	2221.77	(9)⁻			
2672.87	(11⁻)	241.5[a] *2*	100[a] *4*	2431.34	(10⁻)	(M1+E2)[#]	0.32 *15*	
		406.4[a] *2*	50[a] *4*	2266.42	(9⁻)			Other Iγ: 74 *4* from (^{18}O,4nγ).
		451.0[a] *2*	23[a] *4*	2221.77	(9)⁻			
2694.17	(10⁺)	823.2[a] *2*	31[a] *4*	1871.19	10⁺			
		1419.3[a] *2*	100[a] *8*	1274.75	8⁺	(Q)[@]		
2719.84	(5,6⁺)	886.7 *3*	100 *9*	1832.76	6⁻			
		1001.63 *24*	72 *7*	1718.07	5⁻			
		1292.7 *3*	79 *21*	1428.15	5⁺			
		1945.4 *3*	84 *7*	774.08	6⁺			
		2336.1 *3*	30 *5*	383.68	4⁺			
2721.49	(11⁻)	218.8[b] *2*	<4[b]	2502.66	(10⁻)			
		264[f]		2457.14	(10⁻)			Eγ: from (^{18}O,4nγ).
		420.8[b] *2*	100[b] *4*	2300.81	(9⁻)	(E2)[#]	0.0354	
2862.70	12⁺	252.9[a] *2*	100[a] *3*	2609.74	11⁺	(M1+E2)[@]	0.28 *13*	δ: 1.22 *8* implied by branching in (^{18}O,4nγ).
		495.8[a] *2*	22[a] *4*	2366.81	10⁺			
		991.6[a] *2*	12.5[a] *14*	1871.19	10⁺			
2901.20	(12⁻)	179.7[b] *2*	<2.1[b]	2721.49	(11⁻)	[M1]	1.064	
		228.5[a] *2*	24.7[a] *12*	2672.87	(11⁻)			
		239.7[a] *2*	21.2[a] *12*	2661.50	(11⁻)			
		444.0[a] *2*	100[a] *4*	2457.14	(10⁻)	(E2)[@]	0.0307	
2903.9	(12⁻)	231.0[a] *2*	100[a]	2672.87	(11⁻)	D[@]		
2930.36	(12⁻)	257.4[a] *2*	63[a] *3*	2672.87	(11⁻)	(M1)[@]	0.393	
		499.0[a] *2*	100[a] *7*	2431.34	(10⁻)			
2957.78	(12⁻)	236.3[b] *2*	<6[b]	2721.49	(11⁻)			
		284.9[b] *2*	29[b] *6*	2672.87	(11⁻)			
		296.4[b] *2*	82[b] *6*	2661.50	(11⁻)	D[#]		
		455.2[b] *2*	100[b] *6*	2502.66	(10⁻)			
2999.25	(12⁺)	402.5[a] *2*	18[a] *4*	2596.75	(10⁺)			
		1128.0[a] *2*	100[a] *4*	1871.19	10⁺	Q[@]		
3083.5	(13⁻)	179.6 *2*	100	2903.9	(12⁻)	(M1)[@]	1.065	

$^{184}_{76}Os_{108}$-13

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
3088.88	(12$^+$)	394.8[a] *2*	100[a] *4*	2694.17	(10$^+$)	(E2)[@]	0.0419	
		541.5[a] *2*	68[a] *4*	2547.61	12$^+$			
		1217.5[a] *2*	20[a] *4*	1871.19	10$^+$			
3126.8	(13)	579.2[a] *2*	100[a]	2547.61	12$^+$			
3130.25	13$^+$	267.5[a] *2*	100[a] *4*	2862.70	12$^+$	(M1+E2)[@]	0.24 *12*	δ: 1.0 *1* based on branching from (^{18}O,4nγ).
		520.8[a] *2*	47[a] *3*	2609.74	11$^+$			
3166.88	(13$^-$)	209.2[b] *2*	<2.0[b]	2957.78	(12$^-$)			
		236.4[a] *2*	13.0[a] *10*	2930.36	(12$^-$)			
		265.8[b] *2*	52.0[b] *20*	2901.20	(12$^-$)			Reported in (^{18}O,4nγ) only; should have been seen in (^{13}C,5nγ) also.
		493.9[b] *2*	26.0[b] *20*	2672.87	(11$^-$)			Reported in (^{18}O,4nγ) only; should have been seen in (^{13}C,5nγ) also.
		505.3[a] *2*	100[a] *4*	2661.50	(11$^-$)	(E2)[@]	0.0222	
3199.5	(12$^-$)	574.0[a] *2*	100[a]	2625.5	(10$^-$)			
3210.07	(13$^-$)	279.9[a] *2*	100[a] *8*	2930.36	(12$^-$)	(M1)[@]	0.312	
		537.1[a] *2*	92[a] *8*	2672.87	(11$^-$)			Other Iγ: 112 *7* from (^{18}O,4nγ).
3226.36	(13$^-$)	325.1[b] *2*	23[b] *3*	2901.20	(12$^-$)			
		505.0[b] *2*	100[b] *3*	2721.49	(11$^-$)	(E2)[#]	0.0222	
3228.3	(11$^-$)	1006.5[b] *2*	100[b]	2221.77	(9)$^-$			
3261.38	14$^+$	713.6[a] *2*	100[a]	2547.61	12$^+$	E2[&]	0.01001	B(E2)(W.u.)>0.00024
3359.37	14$^+$	229.2 *2*	7.6 *10*	3130.25	13$^+$			
		496.5[af] *10*	10[a] *5*	2862.70	12$^+$			
		811.7[a] *2*	100[a] *4*	2547.61	12$^+$	E2[&]	0.00760	
3392.02	(12$^+$)	782.2[b] *2*	31[b] *8*	2609.74	11$^+$			
		1025.3[b] *2*	100[b] *8*	2366.81	10$^+$	Q[#]		
3423.40	(14$^-$)	256.4 *2*	11.8 *20*	3166.88	(13$^-$)			
		522.2[a] *2*	100[a] *4*	2901.20	(12$^-$)	(E2)[@]	0.0205	
3489.67	(14$^-$)	323[f]		3166.88	(13$^-$)			E_γ: from (^{18}O,4nγ).
		532.0[b] *2*	100[b] *5*	2957.78	(12$^-$)	(E2)[#]	0.0196	
3496.50	(14$^+$)	366.5[a] *2*	38.2[a] *18*	3130.25	13$^+$			
		497.2[a] *2*	47[a] *4*	2999.25	(12$^+$)			
		633.8[a] *2*	29[a] *4*	2862.70	12$^+$			
		948.7[a] *2*	100[a] *4*	2547.61	12$^+$			
3510.03	(14$^-$)	299.8[b] *2*	47[b] *6*	3210.07	(13$^-$)			
		552.2[b] *2*	<6[b]	2957.78	(12$^-$)			
		579.5[b] *2*	100[b] *6*	2930.36	(12$^-$)			
3550.03	(14$^+$)	461.3[a] *2*	100[a] *4*	3088.88	(12$^+$)			

$^{184}_{76}Os_{108}$-14

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
3550.03	(14$^+$)	1002.5[a] 2	11.1[a] 14	2547.61	12$^+$			
3679.74	15$^+$	183.3[a] 2	15[a] 3	3496.50	(14$^+$)			
		320.5[a] 2	47.8[a] 15	3359.37	14$^+$			
		549.4[a] 2	100[a] 4	3130.25	13$^+$	(E2)[@]	0.0181	
3728.19	(13$^-$)	336.2[b] 2	100[b] 7	3392.02	(12$^+$)	D[#]		
		500[bf]	[b]	3228.3	(11$^-$)			
		797.8[b] 2	92[b] 7	2930.36	(12$^-$)	D+Q[#]		
3747.0	(15$^-$)	580.1[a] 2	100[a]	3166.88	(13$^-$)	Q[@]		
3760.91	(15$^-$)	594.1[a] 2	100[a]	3166.88	(13$^-$)	(E2)[#]	0.0181	
3777.8	(15)	647.5[a] 2	100[a]	3130.25	13$^+$			
3790.96	16$^+$	111.5[af] 10	1.1[a] 6	3679.74	15$^+$	[M1]	4.12 13	
		431.6[a] 2	32.0[a] 11	3359.37	14$^+$	E2[&]	0.0331	B(E2)(W.u.)>0.064 Other Iγ: 80 20 in (α,6nγ).
		529.7[a] 2	100[a] 3	3261.38	14$^+$	E2[&]	0.0198	B(E2)(W.u.)>0.072
3792.4	(14$^-$)	(63[b])	100[b]	3728.19	(13$^-$)	[M1]	3.76	
3806.60	(15$^-$)	296.5[b] 2	3[b] 3	3510.03	(14$^-$)			
		384[f]		3423.40	(14$^-$)			E_γ: from (^{18}O,4nγ).
		580.3[b] 2	100[b] 3	3226.36	(13$^-$)	(E2)[#]	0.01594	
3820.52	(15$^-$)	310.3[b] 2	29[b] 4	3510.03	(14$^-$)			
		610.7[b] 2	100[b] 4	3210.07	(13$^-$)			
3860.4	(14$^-$)	660.9[a] 2	100[a]	3199.5	(12$^-$)			
3972.0	(15$^-$)	179.7[eb] 2	100[eb]	3792.4	(14$^-$)	M1	1.064	Mult.: from α(exp) and DCO in (^{18}O,4nγ).
3998.03	(16$^-$)	574.5[a] 2	100[a]	3423.40	(14$^-$)	(E2)[@]	0.01632	
4046.50	16$^+$	496.6[a] 2	5.6[a] 10	3550.03	(14$^+$)			
		550.1 2		3496.50	(14$^+$)			E_γ: from (^{18}O,4nγ) only.
		687.0[a] 2	35.9[a] 15	3359.37	14$^+$	E2[&]	0.01087	
		785.1[a] 2	100[a] 4	3261.38	14$^+$	E2[&]	0.00815	
4091.92	(16$^+$)	542.0[a] 2	100[a] 5	3550.03	(14$^+$)			
		595.0[a] 2	100[a] 5	3496.50	(14$^+$)			
4122.55	(16$^-$)	302.1[b] 2	13[b] 3	3820.52	(15$^-$)			
		361.7[b] 2	16[b] 3	3760.91	(15$^-$)			
		633.0[b] 2	100[b] 3	3489.67	(14$^-$)			
4157.75	(16$^-$)	647.6[b] 2	100[b]	3510.03	(14$^-$)			Observed in (^{13}C,5nγ) but placed instead from J=15 band member.
4167.7	(16$^-$)	420.7[a] 2	100[a]	3747.0	(15$^-$)			

$^{184}_{76}Os_{108}$-15

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
4173.2	(16$^+$)	677.0 *2*		3496.50	(14$^+$)			E_γ: from (^{18}O,4nγ). Transition absent in (^{13}C,5nγ).
		911.6[a] *2*	100[a]	3261.38	14$^+$			
4202.7	(16$^-$)	230.8[b] *2*	100[b] *5*	3972.0	(15$^-$)	M1	0.530	Mult.: from α(exp) and DCO in (^{18}O,4nγ).
		410.1[b] *2*	36[b] *12*	3792.4	(14$^-$)			
4281.12	17$^+$	490.5[a] *2*	21[a] *4*	3790.96	16$^+$			
		601.5[a] *2*	100[a] *4*	3679.74	15$^+$	(E2)[@]	0.01467	
4349.3	18$^+$	558.2[a] *2*	100[a]	3790.96	16$^+$	E2[&]	0.01746	B(E2)(W.u.)>0.076
4407.7	(17$^-$)	660.7[a] *2*	100[a]	3747.0	(15$^-$)			
4416.0	(17$^-$)	669.0[a] *2*	100[a]	3747.0	(15$^-$)			
4418.4	(17$^-$)	657.5[a] *2*	100[a]	3760.91	(15$^-$)	(E2)[#]	0.01199	
4467.46	(17$^-$)	309.6[b] *2*	21[b] *5*	4157.75	(16$^-$)			
		469.3[b] *2*	21[b] *5*	3998.03	(16$^-$)			
		660.8[b] *2*	100[b] *5*	3806.60	(15$^-$)	(E2)[#]	0.01185	
4475.74	(17$^-$)	669.2[b] *2*	100[b]	3806.60	(15$^-$)	Q[#]		
4494.4	(17$^-$)	673.8[b] *2*	100[b]	3820.52	(15$^-$)			
4597.0	(16$^-$)	736.6[a] *2*	100[a]	3860.4	(14$^-$)			
4635.6	(18$^-$)	637.6[a] *2*	100[a]	3998.03	(16$^-$)	(E2)[@]	0.01284	
4728.7	(18$^+$)	636.8[a] *2*	100[a]	4091.92	(16$^+$)			
4756.71	(18$^-$)	280.9[b] *2*	15[b] *5*	4475.74	(17$^-$)			
		289.1[b] *2*	50[b] *5*	4467.46	(17$^-$)			
		554.0[b] *2*	100[b] *5*	4202.7	(16$^-$)	Q[#]		
		634.4[b] *2*	10[b] *5*	4122.55	(16$^-$)			
4770.5		294.9[b] *2*	21[b] *7*	4475.74	(17$^-$)			
		302.9[b] *2*	64[b] *7*	4467.46	(17$^-$)			
		567.9[b] *2*	100[b] *7*	4202.7	(16$^-$)			
4800.54	18$^+$	451.3[a] *2*	5.8[a] *5*	4349.3	18$^+$			
		519.7[a] *2*	14.9[a] *5*	4281.12	17$^+$			
		708.3[a] *2*	32.7[a] *14*	4091.92	(16$^+$)	Q[@]		
		754.1[a] *2*	100[a] *3*	4046.50	16$^+$	E2[&]	0.00888	
		1009.5[a] *2*	10.1[a] *10*	3790.96	16$^+$			
4826.8	(18$^-$)	704.2[b] *2*	100[b]	4122.55	(16$^-$)			
4879.5	(18$^-$)	721.8[b] *2*	100[b]	4157.75	(16$^-$)			
4912.1	(18)	738.9[a] *2*	100[a]	4173.2	(16$^+$)	Q[@]		
4963.8	19$^+$	682.9[a] *2*	100[a]	4281.12	17$^+$	(E2)[@]	0.01102	

$^{184}_{76}Os_{108}$-16

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
5000.9	20+	651.6[a] 2	100[a]	4349.3	18+	E2[&]	0.01223	B(E2)(W.u.)>0.035
5100.0		329.5[b] 2	100[b]	4770.5				
5106.7	(19)	194.6[a] 2	100[a]	4912.1	(18)			
5126.5	(19−)	708.1[a] 2	100[a]	4418.4	(17−)	(E2)[#]	0.01018	
5192.9	(19−)	725.4[b] 2	100[b]	4467.46	(17−)			
5200.3	(20−)	443.6[b] 1	100[b]	4756.71	(18−)	Q[#]		
5207.9	(19−)	732.2[b] 2	100[b]	4475.74	(17−)			
5230.6	(20−)	473.9[b] 1	100[b]	4756.71	(18−)	Q[#]		
5230.61	(19−)	736.3[b] 2	100[b]	4494.4	(17−)			
5329.4	(20−)	693.8[a] 2	100[a]	4635.6	(18−)	(E2)[@]	0.01064	
5374.7	(18−)	777.7[a] 2	100[a]	4597.0	(16−)			
5456.4		685.9[b] 2	100[b]	4770.5				
5459.9	(20+)	731.2[a] 2	100[a]	4728.7	(18+)			
5565.7	(20+)	602.0[b] 2	[b]	4963.8	19+			
		765.1[b] 2	[b]	4800.54	18+	(E2)[@]	0.00862 *12*	
		1216.2[b] 2	[b]	4349.3	18+			
5570.1	(20+)	769.6[a] 2	100[a]	4800.54	18+			
5573.0	(20−)	746.2[b] 2	100[b]	4826.8	(18−)			
5670.5	(21)	470.2[b] 1	100[b]	5200.3	(20−)	D+Q[#]		
5670.51	(20−)	791.0[b] 2	100[b]	4879.5	(18−)			
5726.3	21+	762.5[a] 2	100[a]	4963.8	19+			
5742.5	22+	741.6[a] 2	100[a]	5000.9	20+	E2[&]	0.00921 *13*	B(E2)(W.u.)>0.018
5743.3	(21+)	177.8[a] 2	100[a]	5565.7	(20+)	M1	1.096	B(M1)(W.u.)=0.0018 *4* Mult.: from α(exp) in (^{13}C,5nγ).
5868.9	(21−)	742.4[a] 2	100[a]	5126.5	(19−)			
6007.7	(21−)	777.1[b] 2	100[b]	5230.61	(19−)			
6050.9	(22−)	721.5[a] 2	100[a]	5329.4	(20−)	(E2)[#]		
6186.5	(22+)	443.2[a] 2	100[a]	5743.3	(21+)	D+Q[@]		
6215.8	(20−)	841.1[a] 2	100[a]	5374.7	(18−)			
6236.3		779.9[b] 2	100[b]	5456.4				
6277.3	(22+)	817.4 *2*	100	5459.9	(20+)			
6340.0	(22−)	669.7[b] 2	22[b] *4*	5670.5	(21)	D+Q[#]		
		1109.3[b] 2	100[b] *4*	5230.6	(20−)	Q[#]		
6378.0	(22−)	805.0[b] 2	100[b]	5573.0	(20−)			

$^{184}_{76}Os_{108}$-17

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]	Comments
6542.5	23^+	816.2[a] 2	100[a]	5726.3	21^+			
6562.6	24^+	820.1[a] 2	100[a]	5742.5	22^+			
6598.7	(23^+)	412.1[a] 2	100[a] 4	6186.5	(22^+)	D+Q[@]		
		855.4[a] 2	50.0[a] 18	5743.3	(21^+)			
6610.9	(23^-)	742.0[b] 2	100[b]	5868.9	(21^-)			
6687.2	(23^+)	500.7[a] 2	100[a] 8	6186.5	(22^+)			
		943.8[a] 2	17[a] 8	5743.3	(21^+)			
6694.2	(24^+)	507.6[a] 2	100[a]	6186.5	(22^+)	Q[@]		
6790.2	(24^-)	739.3[a] 2	100[a]	6050.9	(22^-)			
6797.7	(23)	457.7[b] 1	100[b]	6340.0	(22^-)	D		Mult.: from DCO in (^{18}O,4nγ).
6888.5	(24^+)	194.5[af]	19[a] 10	6694.2	(24^+)			
		289.8[a] 2	100[a] 10	6598.7	(23^+)	D(+Q)[@]		
6912.9		572.9[b] 2	100[b]	6340.0	(22^-)			
7004.2	(24^+)	405.7[a] 2	100[a] 3	6598.7	(23^+)	D+Q[@]		
		817.8[a] 2	40[a] 3	6186.5	(22^+)			
7083.6		847.3[b] 2	100[b]	6236.3				
7087.4	(24^+)	488.7[a] 2	100[a]	6598.7	(23^+)			
7283.8		486.1[b] 2	100[b]	6797.7	(23)			
7311.1	(25^+)	307.0[a] 2	100[a] 3	7004.2	(24^+)	D+Q[@]		
		422.7[a] 2	37[a] 3	6888.5	(24^+)			
		616.9[a] 2	54[a] 3	6694.2	(24^+)			
		624.0[a] 2	36[a] 4	6687.2	(23^+)			
		712.1[a] 2	41[a] 4	6598.7	(23^+)			
7395.5?	(25^+)	853.0[bf] 2	100[b]	6542.5	23^+			
7406.6	(25^-)	795.7[b] 2	100[b]	6610.9	(23^-)			
7446.9	26^+	884.3[a] 2	100[a]	6562.6	24^+			
7500.8	(26^+)	938.2[a] 2	100[a]	6562.6	24^+			E_γ: placement in (^{18}O,4nγ) differs; there, a 938.7γ feeds the J=26 member of the yrast band, not the J=24 member.
7590.2	(26^-)	800.0[b] 2	100[b]	6790.2	(24^-)			
7592.1	(26^+)	280.7[a] 2	100[a] 4	7311.1	(25^+)	D[@]		
		587.9[a] 2	30[a] 4	7004.2	(24^+)			
7786.4	(26^+)	475.2[a] 2	100[a]	7311.1	(25^+)	(M1)[@]	0.0758	
7815.9	(27^+)	223.9[a] 2	100[a]	7592.1	(26^+)			
8043.2	(27^+)	256.7[a] 2	100[a] 3	7786.4	(26^+)	D[@]		
		732.0[a] 2	45[a] 6	7311.1	(25^+)			

$^{184}_{76}Os_{108}$-18

Adopted Levels, Gammas (continued)

γ(^{184}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[c]
8152.7	(28$^+$)	336.7[a] 2	25[a] 6	7815.9	(27$^+$)		
		560.6[a] 2	100[a] 4	7592.1	(26$^+$)	(E2)[@]	0.01729
8244.2	(26)	933.1[a] 2	100[a]	7311.1	(25$^+$)	D[@]	
8474.2	(28$^-$)	884.0[b] 2	100[b]	7590.2	(26$^-$)		
8580.2	(29$^+$)	427.5[a] 2	100[a]	8152.7	(28$^+$)		
8590.1	(29$^+$)	546.9[a] 2	100[a]	8043.2	(27$^+$)		
8649.3	(29)	496.6[a] 2	100[a]	8152.7	(28$^+$)		
8784.9	(29$^+$)	741.7[a] 2	100[a]	8043.2	(27$^+$)		
9375.01	(31$^+$)	794.9[a] 2	100[a]	8580.2	(29$^+$)		
9539.4	(31)	890.1[a] 2	100[a]	8649.3	(29)		
9545.7	(31$^+$)	760.8[a] 2	100[a]	8784.9	(29$^+$)		
9867.1	(32)	492.0[a] 2	100[a]	9375.01	(31$^+$)		
10671.4	(34)	804.3[a] 2	100[a]	9867.1	(32)		

† From ^{184}Ir ε decay, except as noted.
‡ From γ(θ) in ε decay, except as noted.
# From DCO ratio in (180,4nγ), assigning Δπ=(no) for intraband transitions.
@ From DCO ratio in (^{13}C,5nγ), assigning Δπ=(no) for intraband transitions.
& Q from γ(θ); not M2 from RUL assuming $T_{1/2}$≤2.2 ns based on γγ coin timing in (α,6nγ).
[a] From ^{176}Yb(^{13}C,5nγ).
[b] From (^{18}O,4nγ).
[c] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[d] Multiply placed with undivided intensity.
[e] Multiply placed with intensity suitably divided.
[f] Placement of transition in the level scheme is uncertain.

$^{184}_{76}Os_{108}$-19

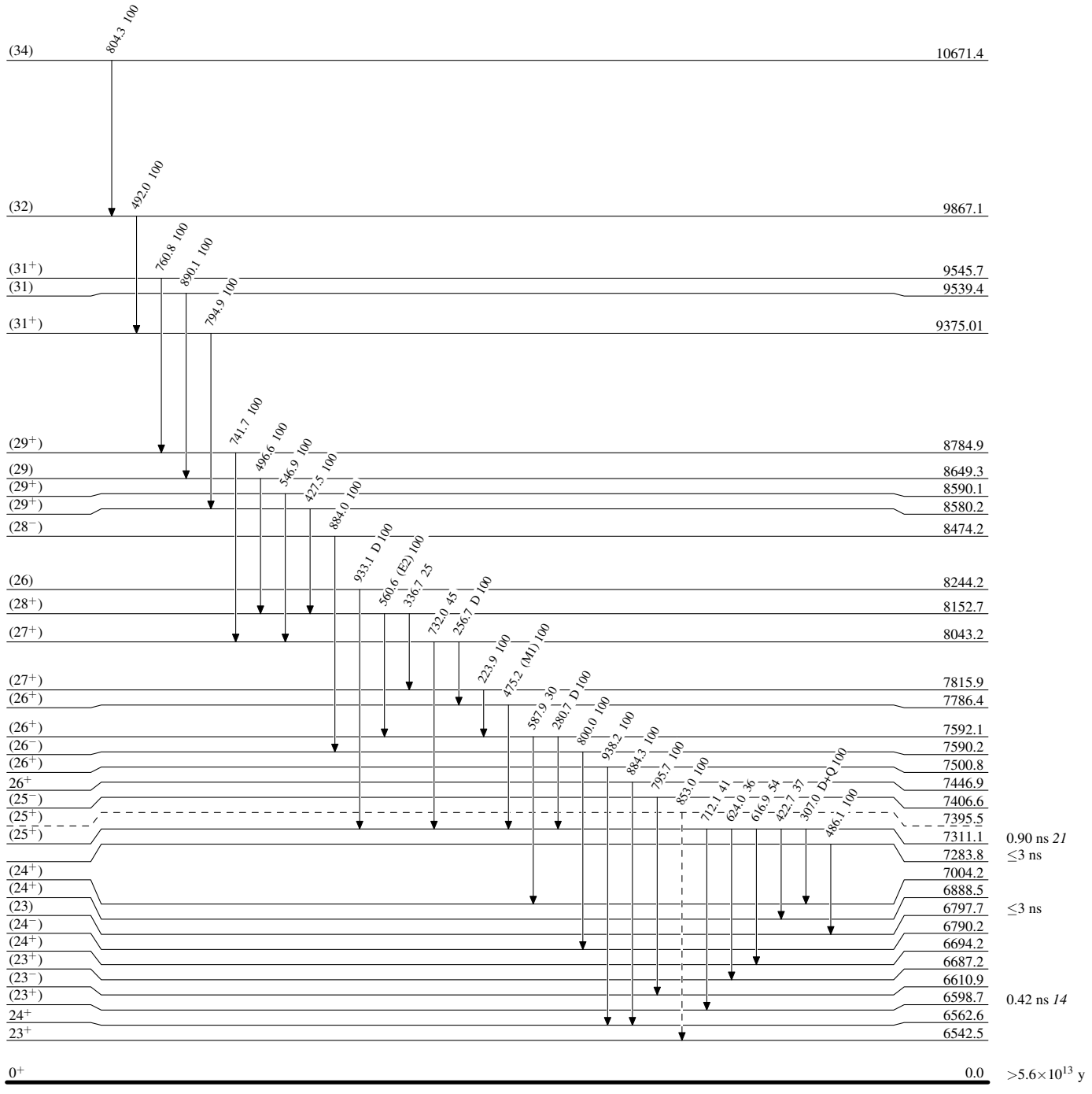
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{184}_{76}Os_{108}$

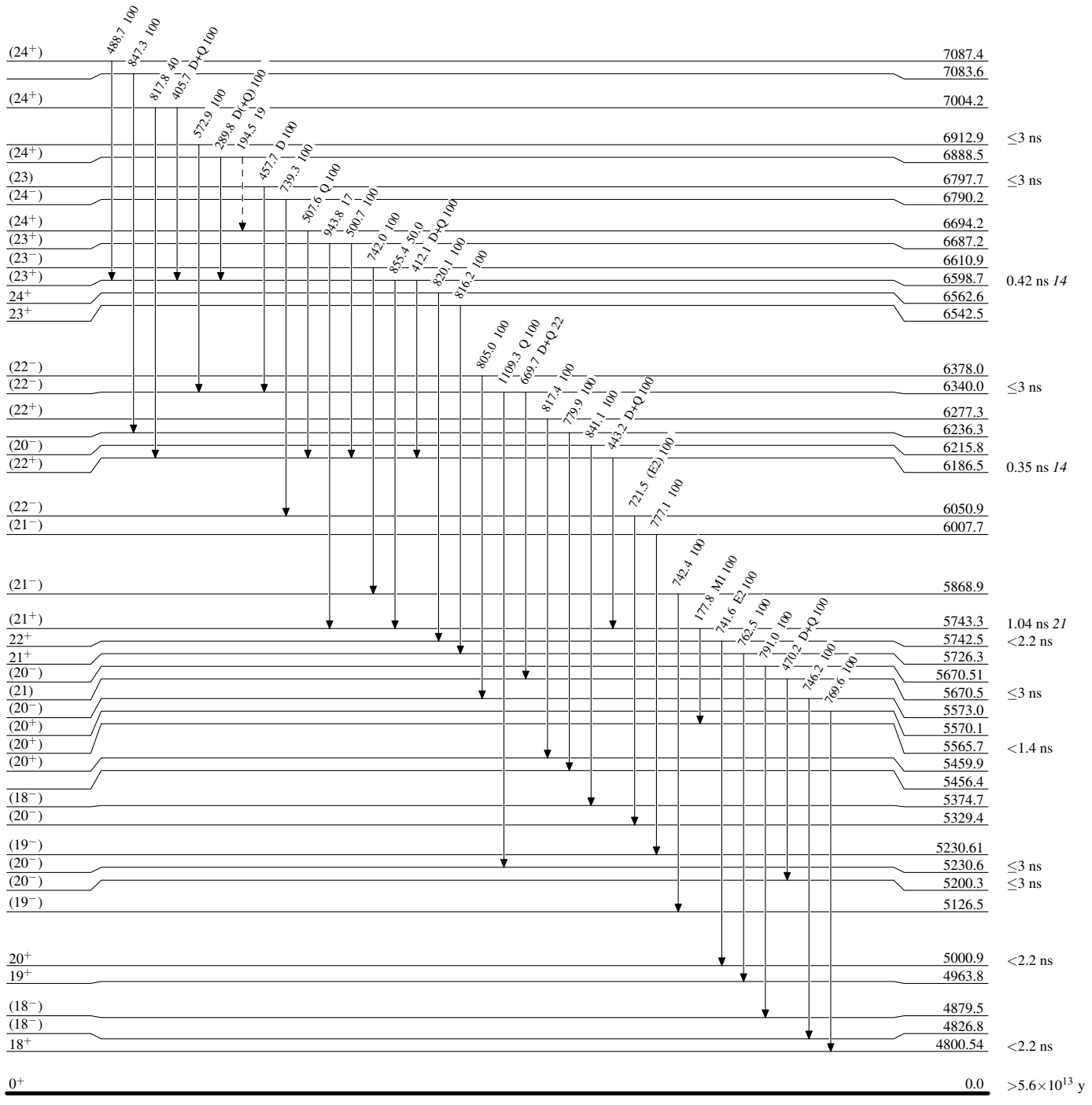
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

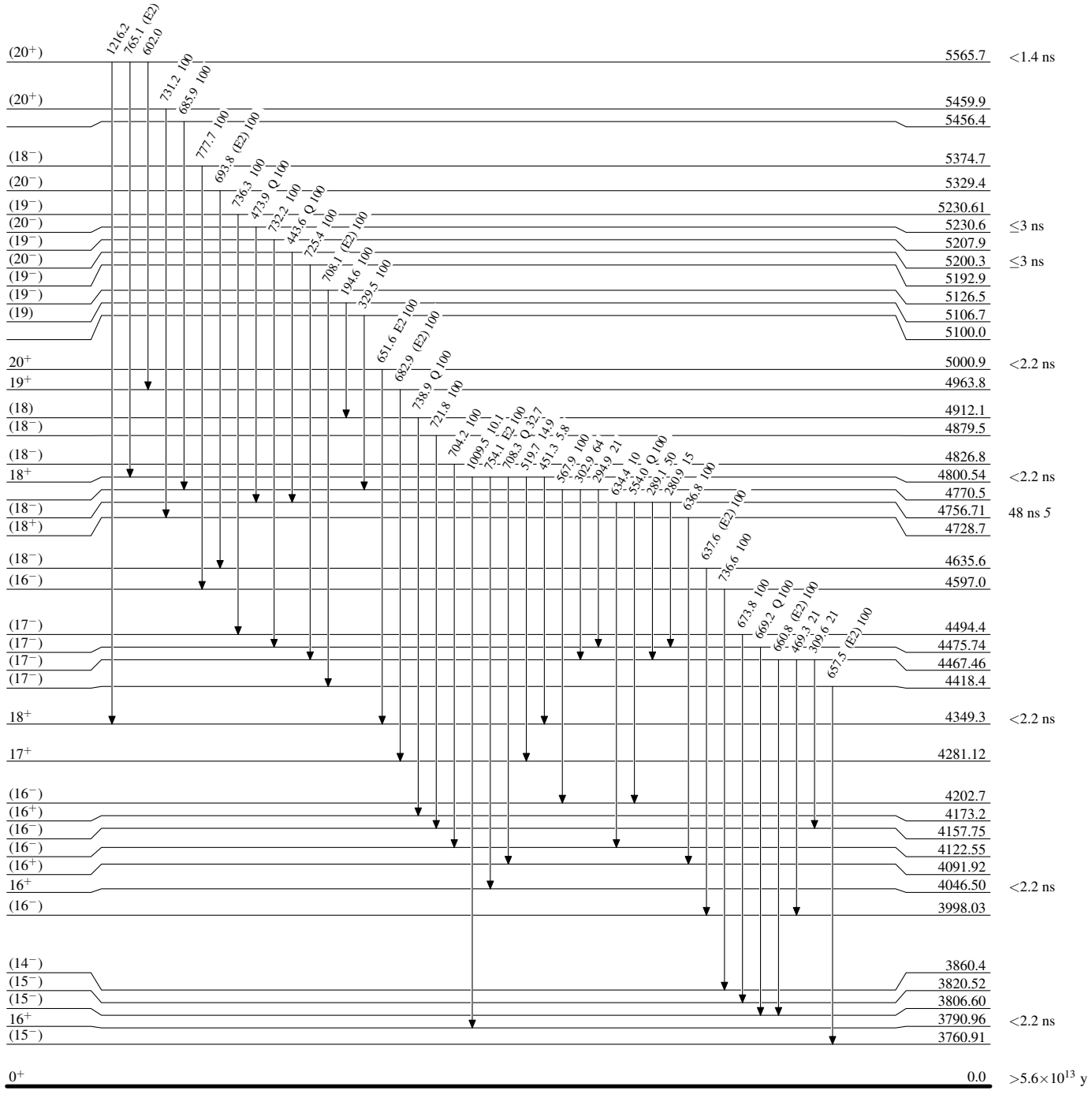


$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{184}_{76}Os_{108}$

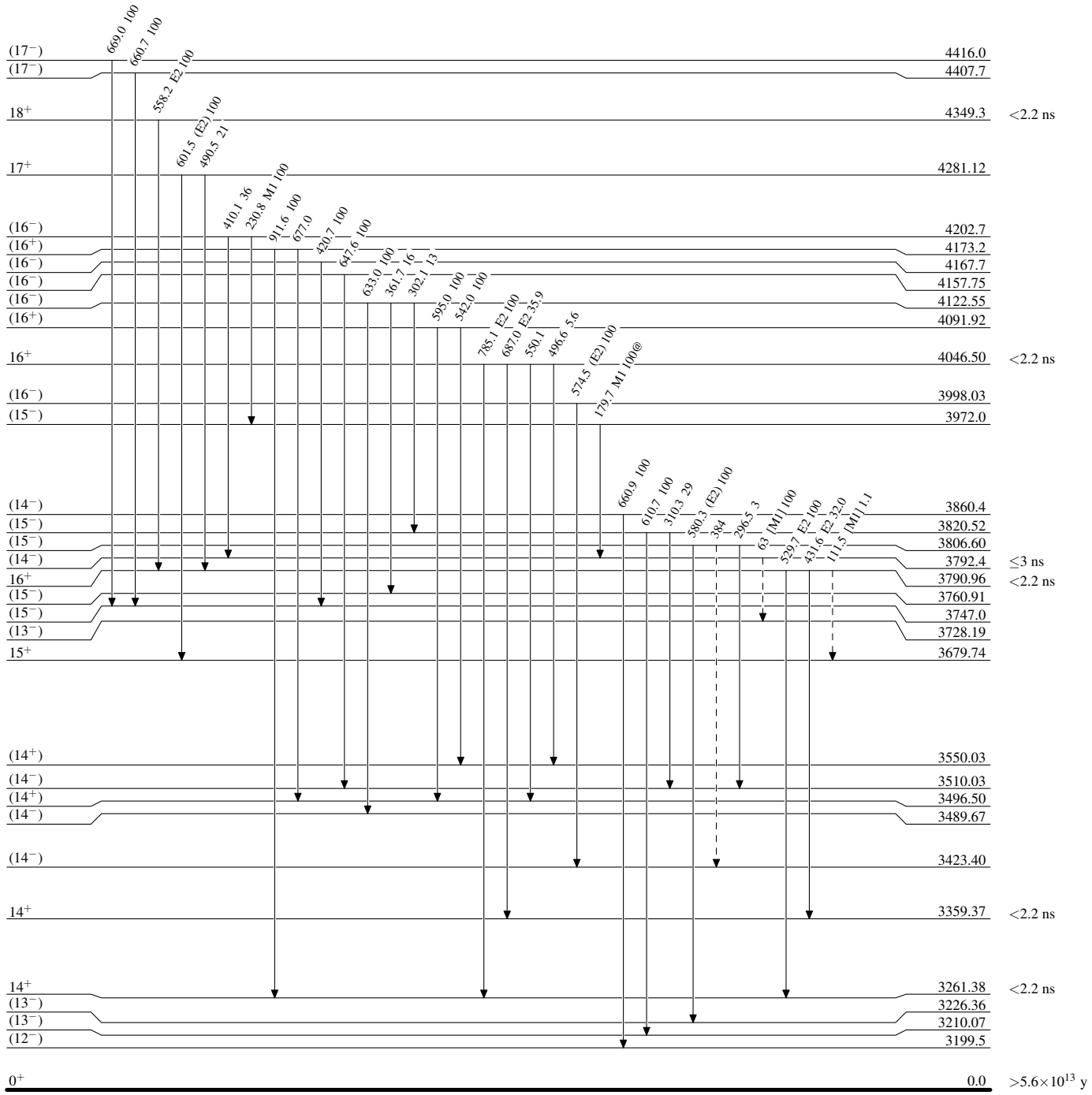
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



$^{184}_{76}Os_{108}$

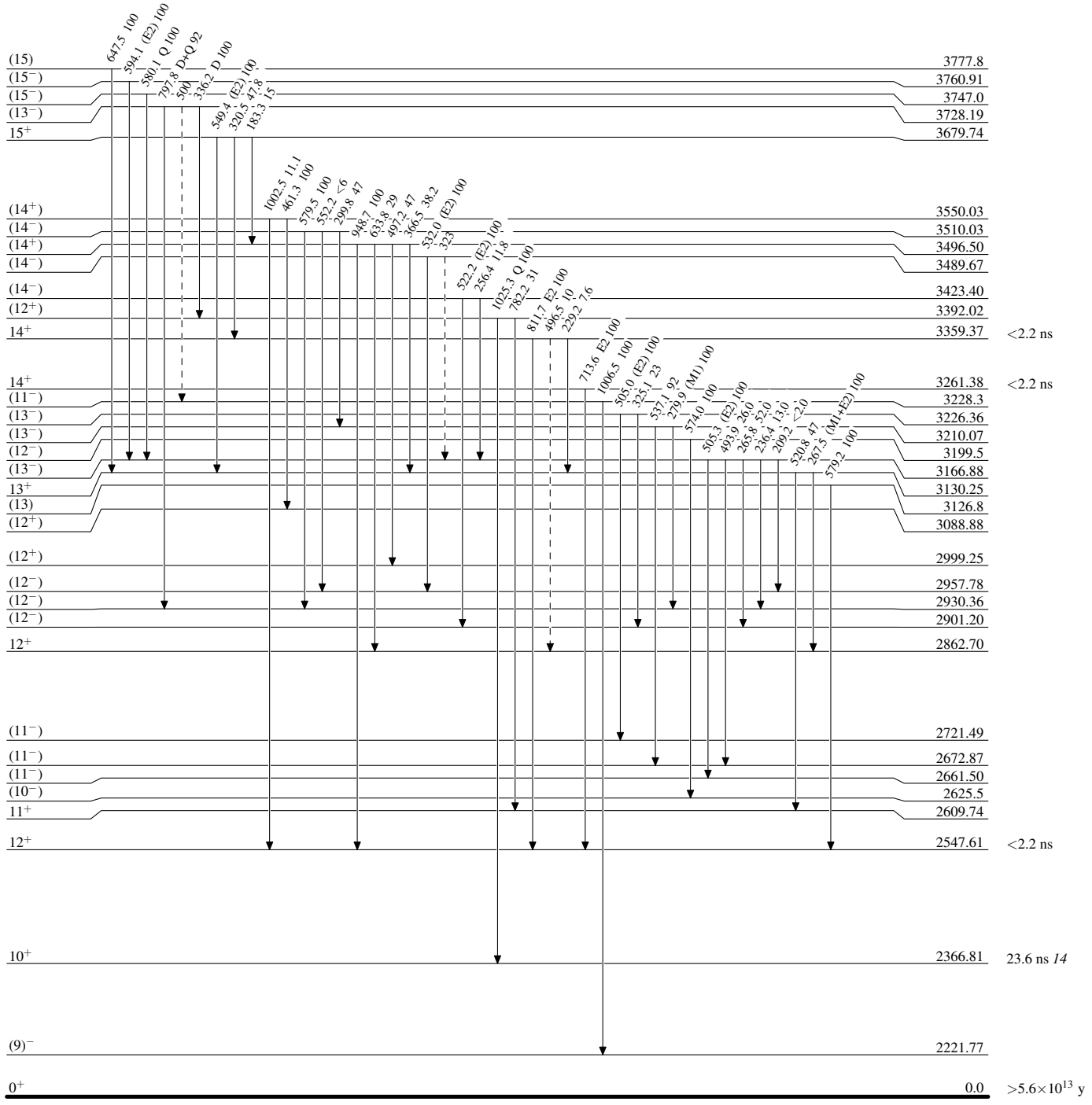
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{184}_{76}Os_{108}$

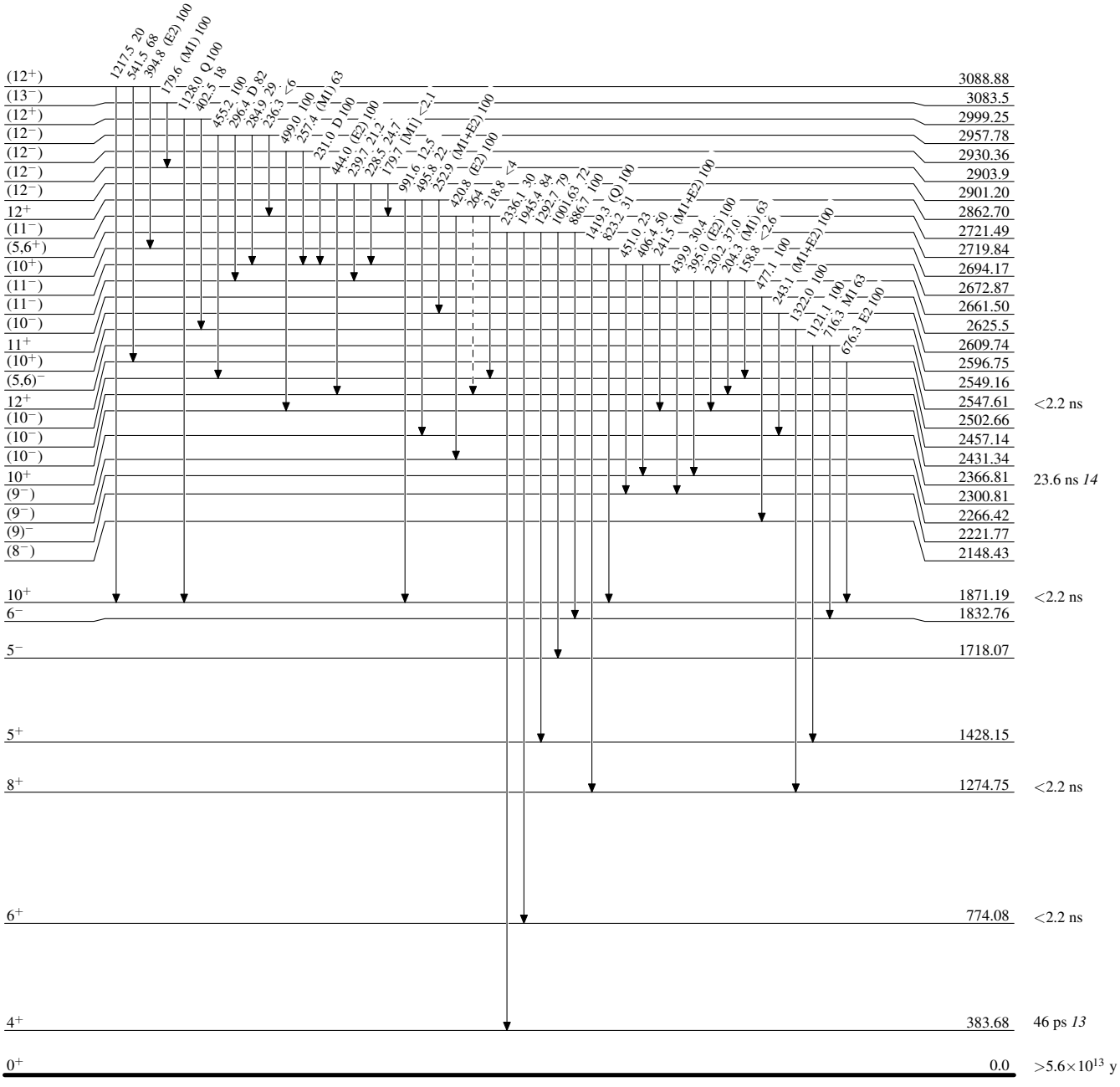
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

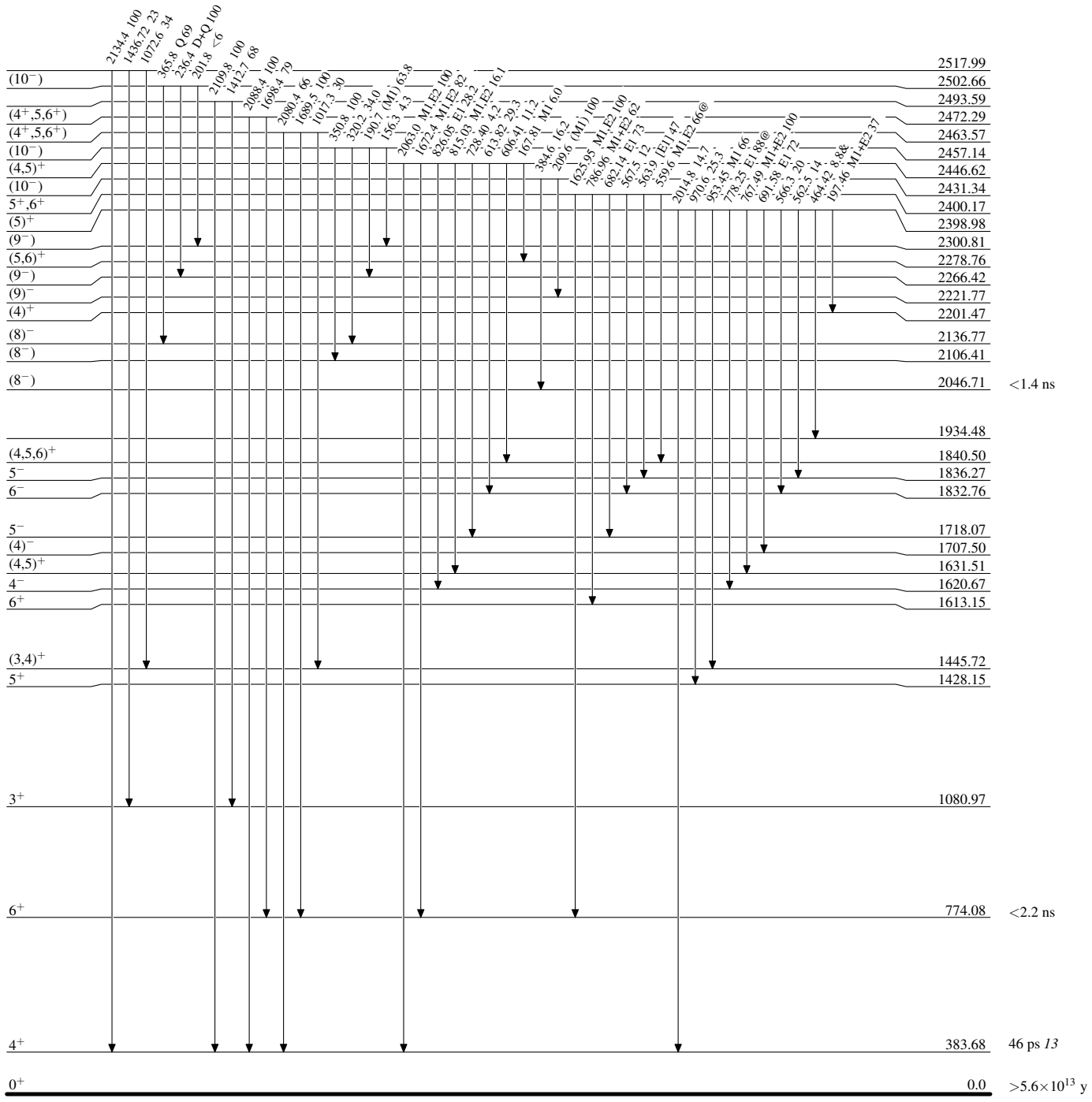


$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

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

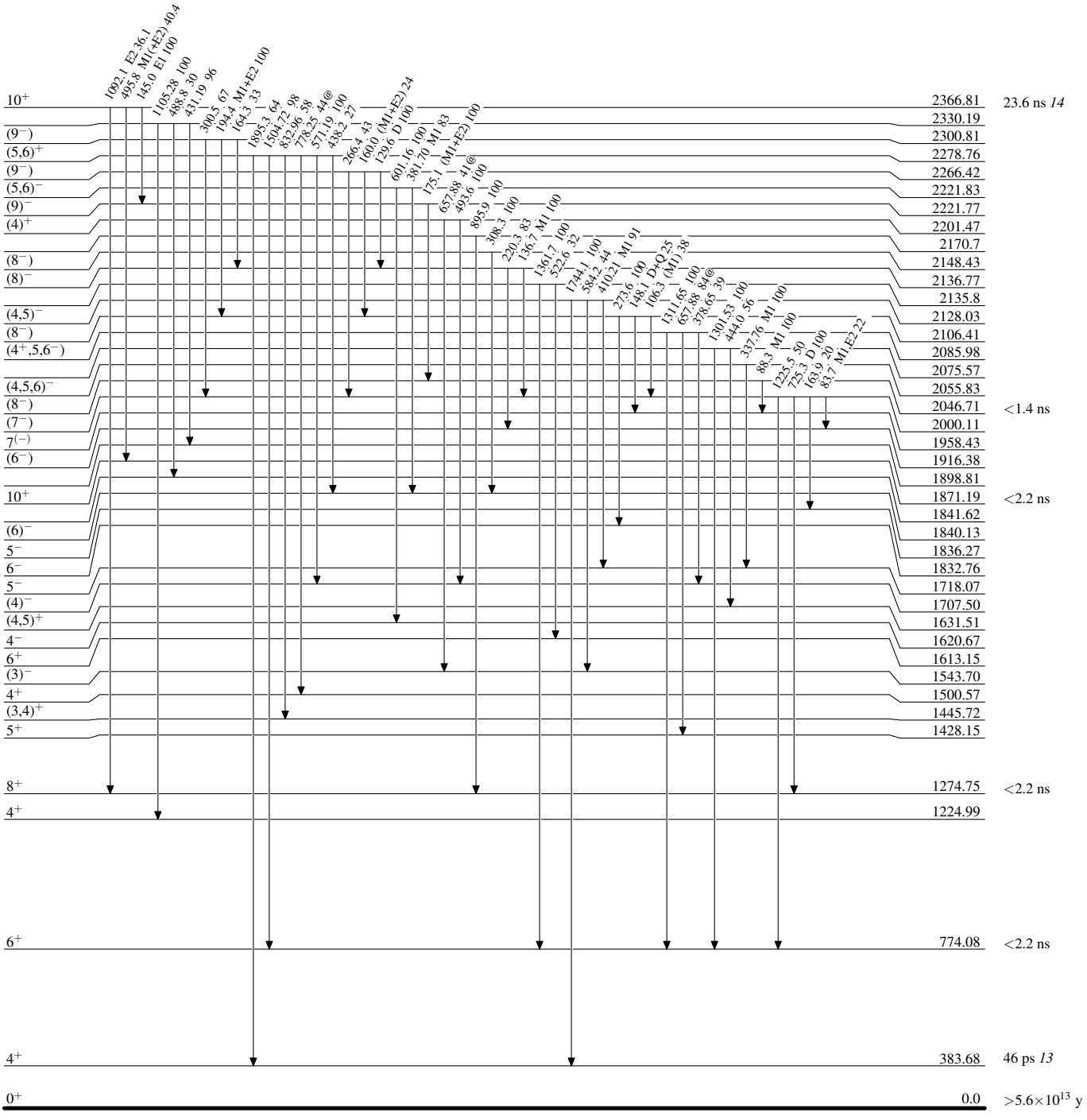


$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

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



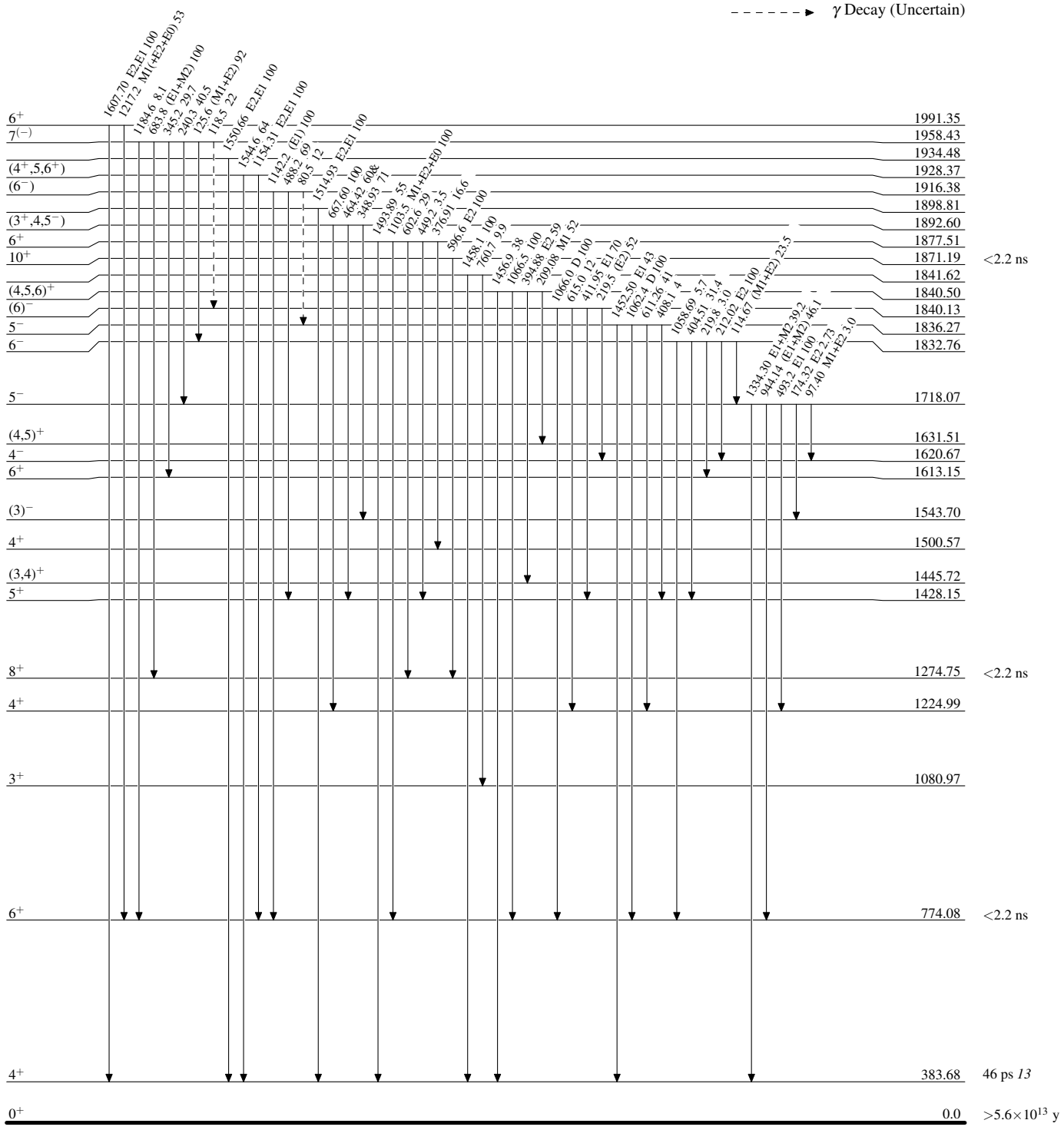
$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

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

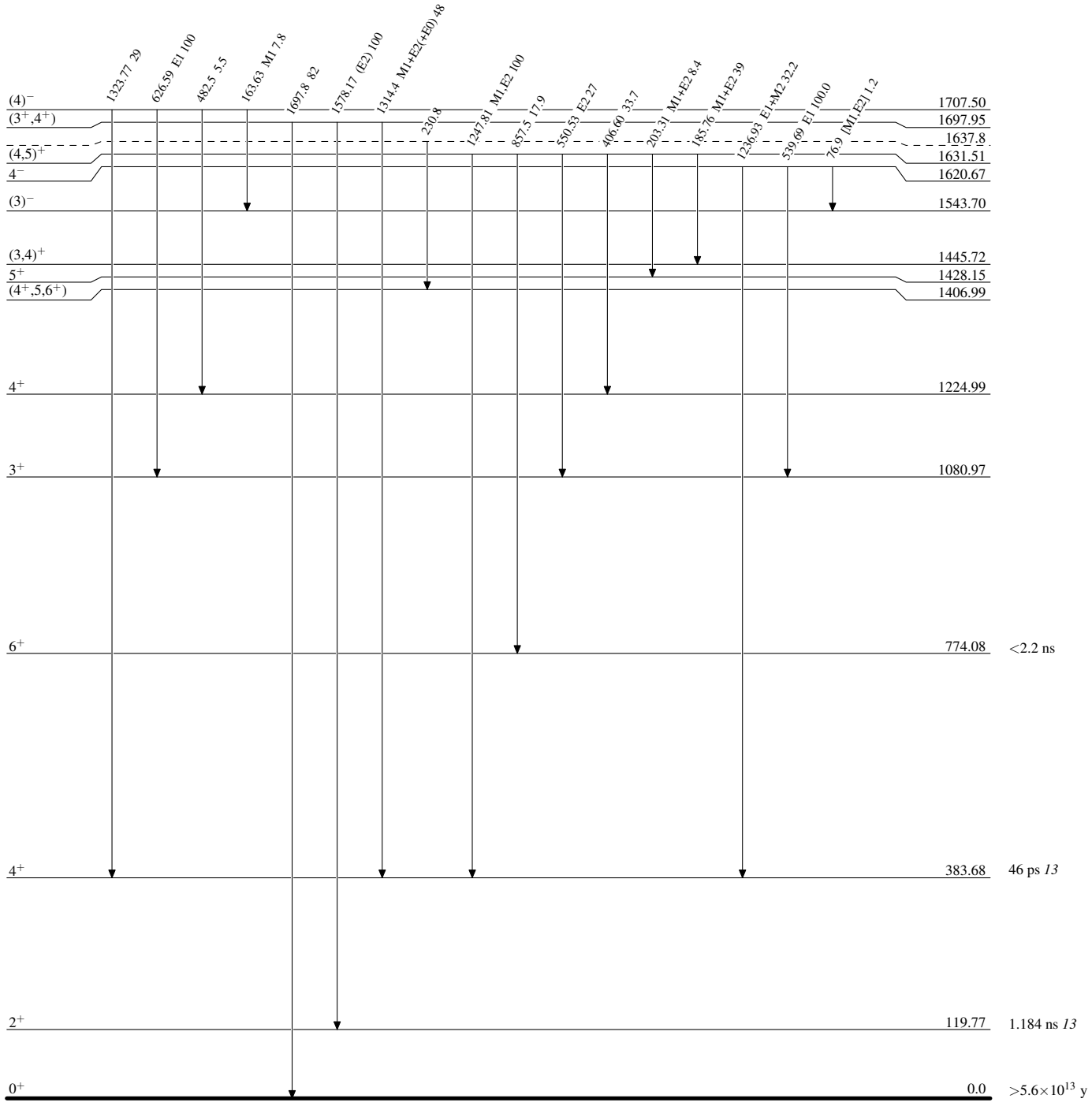
Legend: ------► γ Decay (Uncertain)



Adopted Levels, Gammas

Level Scheme (continued)

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



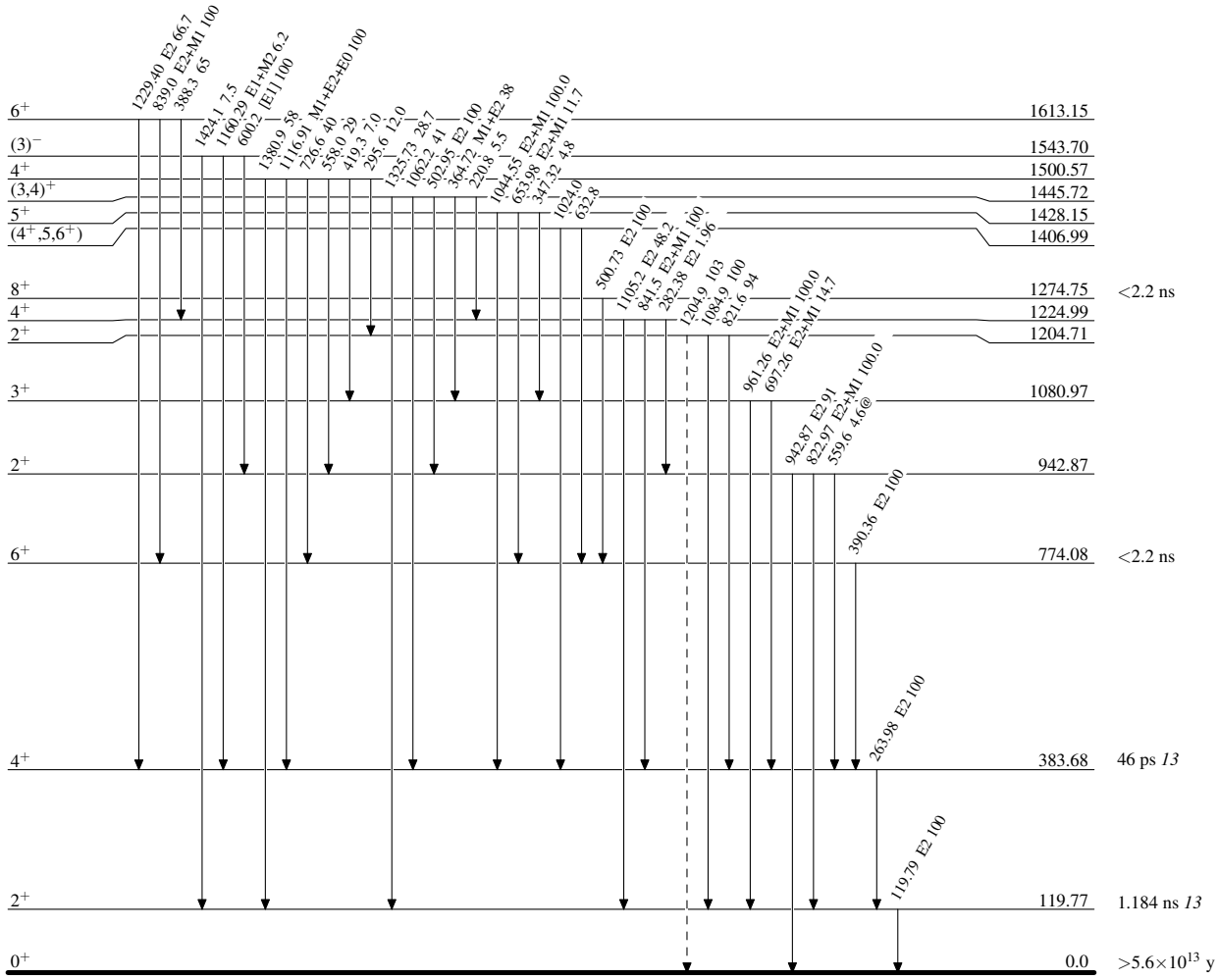
$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

Level Scheme (continued)

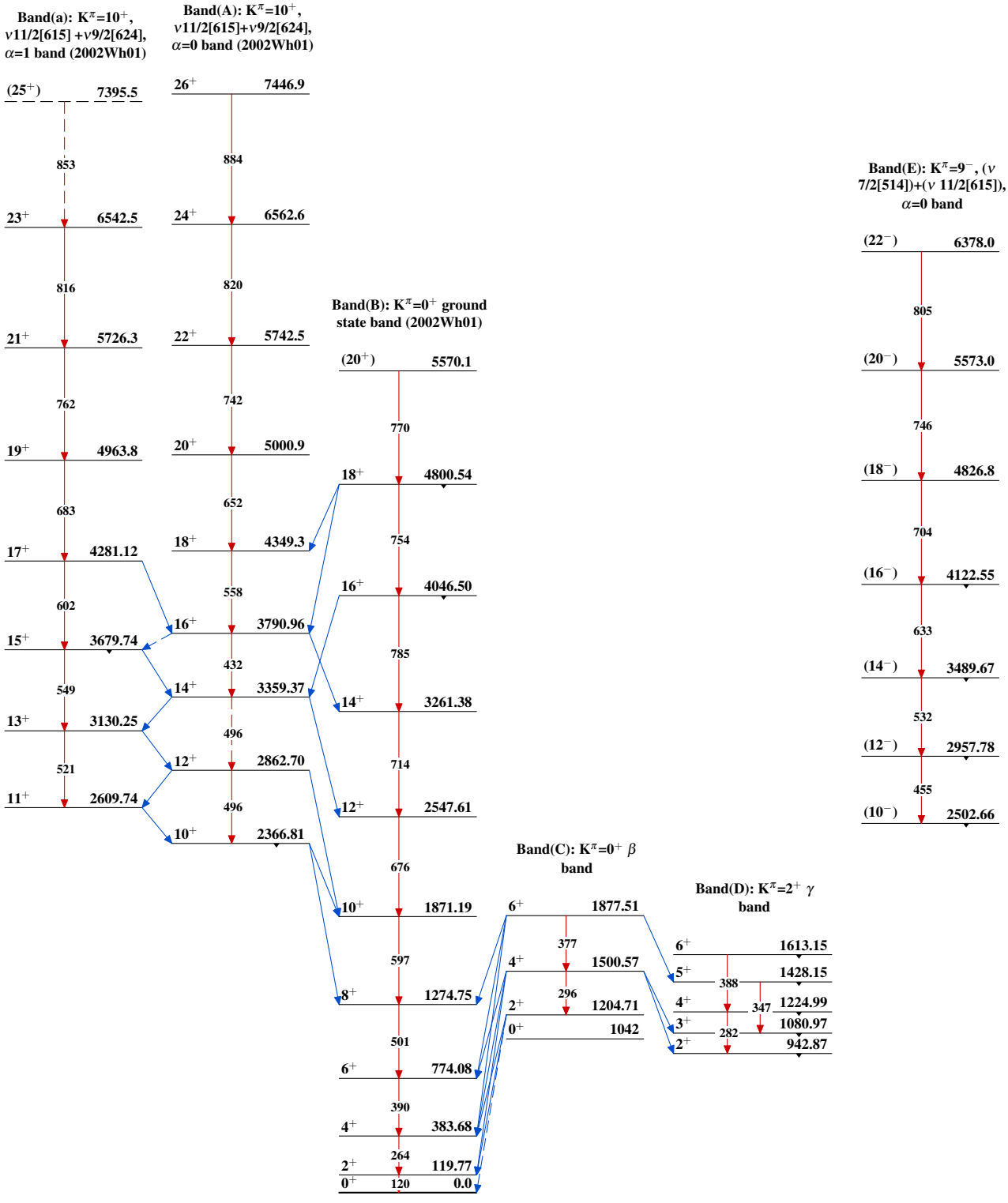
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

Legend: ------► γ Decay (Uncertain)



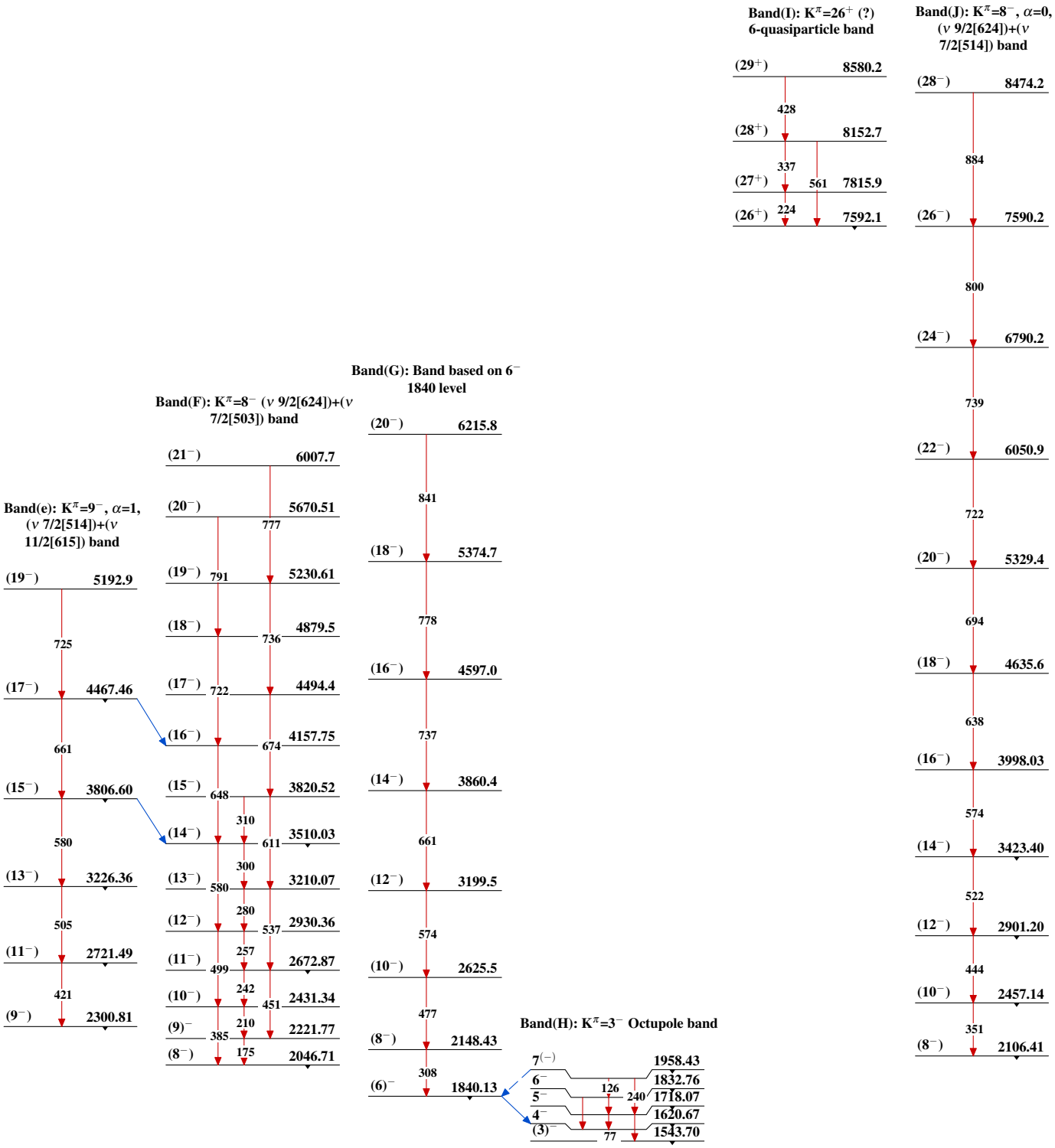
$^{184}_{76}Os_{108}$

Adopted Levels, Gammas

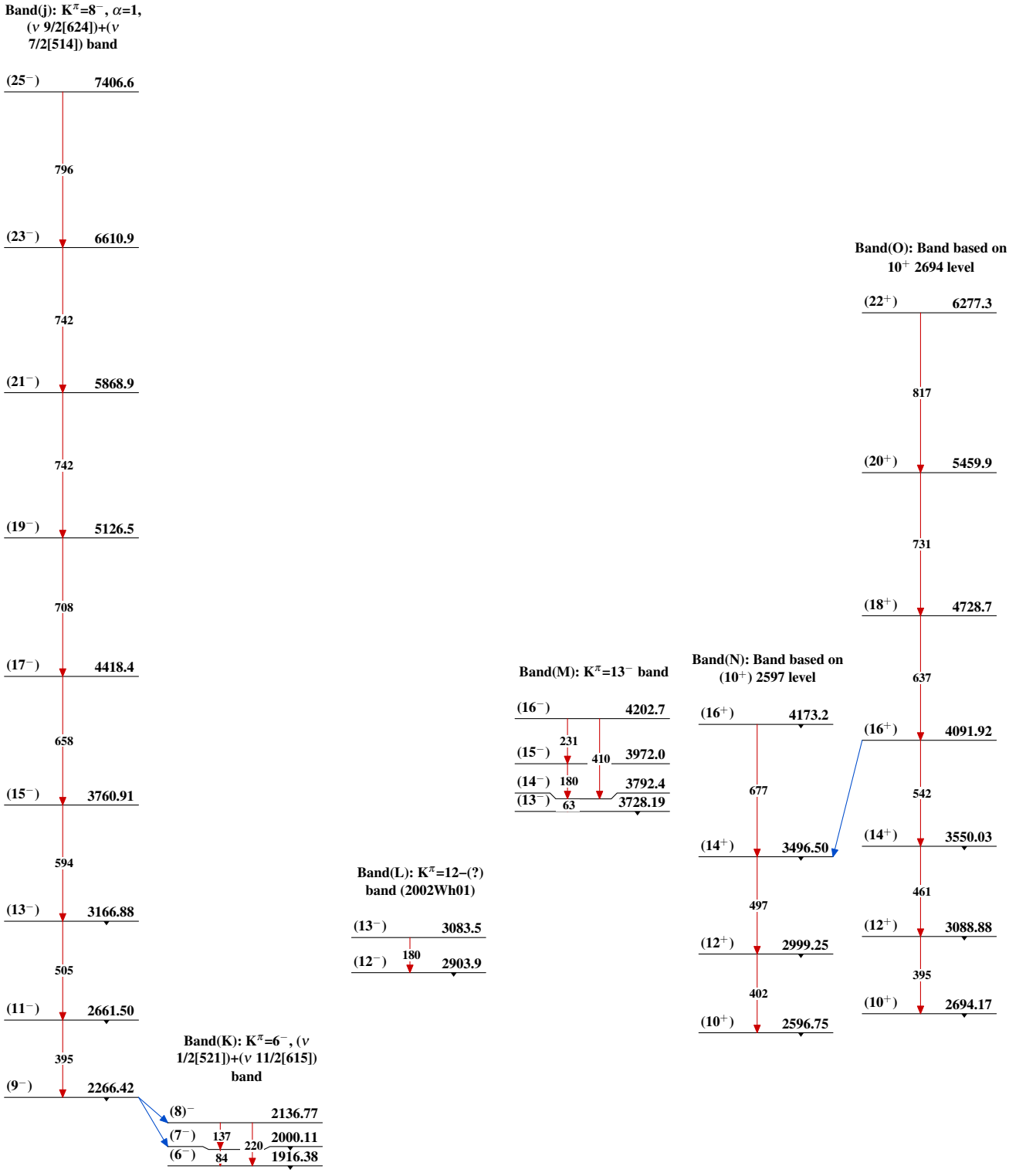


$^{184}_{76}Os_{108}$

Adopted Levels, Gammas (continued)



Adopted Levels, Gammas (continued)



Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia	NDS 183, 1 (2022)	1-Mar-2022

Q(β^-)=−3828 *17*; S(n)=8265.4 *9*; S(p)=6470.0 *8*; Q(α)=2821.2 *9* 2021Wa16
Other Reactions: ^{186}W(^{16}O,X), E=110 MeV (1997Ka34): measured Doppler shift and FWHM for 713γ from 12$^+$ 2781 level.

For isotope shift data, see 2006Av09.

^{186}Os Levels

Cross Reference (XREF) Flags

A	^{186}Re β^- decay (3.7185 d)	F	^{184}W(α,2nγ)	K	^{186}Os(γ,xn)
B	^{186}Ir ε decay (16.64 h)	G	^{187}Re(p,2nγ)	L	^{188}Os(p,t)
C	^{186}Ir ε decay (1.90 h)	H	^{185}Re(^{3}He,d)	M	Muonic atom
D	^{190}Pt α decay	I	Coulomb excitation		
E	^{176}Yb(^{14}C,4nγ)	J	^{186}W(α,4nγ)		

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0[a]	0$^+$	2.0×10^{15} y *11*	ABCDEFGHIJ LM	%α=100 T$_{1/2}$: From 1975Vi01. Others: ≥ 3.3 × 10^{17} y for decay to the 2$^+$, 100.1-keV level in ^{182}W and ≥ 6.0 × 10^{18} y for decay to the 4$^+$, 329.4-keV level in ^{182}W (2020Be23 − from a 15,851 h measurement).
137.15[a] *3*	2$^+$	868 ps *12*	ABCDEFGHIJ LM	μ=+0.58 *3* Q=−1.63 *4* μ: From 2020StZV (based on 1976St23 − Mossbauer). Additional value: +0.524 *30* (2016St14, from 1982Le02), transient integral PAC assuming T$_{1/2}$=0.83 ns. Q: From muonic x ray hyperfine structure (2021StZZ, from 1981Ho22). Others: −1.61 *5* (2014StZZ, from 1972Wa24), −1.18 *16* (1989Ra17). J$^\pi$: E2 137γ to 0$^+$ g.s. T$_{1/2}$: weighted average of 842 ps *12* from ^{186}Re β decay, 923 ps *18* and 840 ps *50* from ^{186}Ir ε decay (16.64 h). Uncertainty the lowest input value.
434.088[a] *23*	4$^+$	26.4 ps *12*	ABC EFGHIJ L	J$^\pi$: E2 297γ to 2$^+$; Coulomb excited member of g.s. band.
767.477[d] *18*	2$^+$	1.88 ps *14*	ABC EFGHIJ L	J$^\pi$: E2 767γ to 0$^+$ g.s.
868.94[a] *4*	6$^+$	3.03 ps *+8−12*	B EFG IJ L	J$^\pi$: E2 435γ to 4$^+$; Coulomb excited member of g.s. band.
910.473[d] *22*	3$^+$		ABC EFGHIJ	J$^\pi$: M1+E2 773γ to 2$^+$ 137; M1+E2 476γ to 4$^+$ 434.
1061.0[e] *10*	0$^+$	148 ps *+83−57*	HI L	J$^\pi$: L=0 in (p,t).
1070.48[d] *3*	4$^+$	1.83 ps *+31−23*	BC EFGHIJ	J$^\pi$: stretched E2 933γ to 2$^+$ in Coulomb excitation; M1+E2 636γ to 4$^+$ 434.
1208.29[e] *20*	2$^+$		B EF H L	J$^\pi$: M1 1071γ to 2$^+$; γ to 0$^+$; E2(+M1) 252γ from 4$^+$ 1460 level.
1275.61[d] *3*	5$^+$		B EFG J	J$^\pi$: E2 365γ to 3$^+$ 910; E2 407γ to 6$^+$ 869; E consistent with that expected for J=5 member of γ band.
1351.94[f] *7*	4$^+$	3.2 ps *+10−7*	BC EFGHIJ L	J$^\pi$: E2 584γ to 2$^+$ 768; log *ft*=8.4 from 5$^+$.
1420.94[a] *6*	8$^+$	1.30 ps *6*	B EFG IJ	J$^\pi$: E2 552γ to 6$^+$; Coulomb excited member of g.s. band.
1452.3 *4*	(3$^+$)		B F	J$^\pi$: 685γ to 2$^+$ 767 is M1; absence of γ to g.s.
1456 *2*	0$^+$		L	J$^\pi$: L(p,t)=0.
1460.74[e] *17*	4$^+$		B EF	J$^\pi$: E2 1324γ to 2$^+$; E2 591γ to 6$^+$.
1480.09 *8*	(3)$^-$		BC F H L	J$^\pi$: log *ft*=10.0 from 5$^+$; E1 570γ to 3$^+$ 910 level; strong 713γ to 2$^+$ 767 level.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
1491.28[d] *4*	6^+	1.77 ps *+63–43*	B EFG IJ	Jπ: M1+E2 622γ to 6^+; E2 1057γ to 4^+; E consistent with expectations for J=6 γ-band member.
1559.8[f] *3*	$(5)^+$		B EFGH J	Jπ: E2 649γ to 3^+; E2 284γ to 5^+ 1276; band assignment.
1571 *2*			L	
1623.2? *4*			B	Jπ: γ to 3^+ and possibly to 4^+.
1628.53[g] *13*	5^-	<1 ns	B EFG J L	Jπ: E1 558γ to 4^+; J=5 from γ(θ) for oriented nuclei in 16.64 h ε decay. $T_{1/2}$: from (^{14}C,4nγ).
1640.81 *11*			C L	Jπ: log *ft*=7.8 from 2^-, 730γ to 3^+, so $J^\pi=1^+,2,3,4^+$.
1653.58 *11*	$2^+,3,4^+$		C L	Jπ: strong 302γ to 4^+; log *ft*=7.7 from 2^-.
1704.6 *6*	(4^+)		B	Jπ: log *ft*=8.9 from 5^+; strong 1567γ to 2^+; 352γ from $5^+,6^+$.
1750.93[d] *10*	7^+		B E J	Jπ: Gammas to 5^+ and 6^+; Band assignment.
1754.50 *7*	$2^{(+)}$		C	Jπ: 2 from 1754γ(θ,H,T); 1754γ to 0^+.
1771.9[g] *6*	(6^-)		E	Jπ: D 143 γ to 5^- at 1628.
1774.69[h] *22*	(7^-)	8.36 ns *30*	B EFG J	μ=−0.27 *17* μ: −0.22 *14* from DPAD (2020StZV, from 1984Go06) if $T_{1/2}$=10.4 ns; adjusted by evaluators to be consistent with adopted half-life. Jπ: possible stretched (E2) 146γ to 5^- 1629. $T_{1/2}$: weighted average of 8.5 ns *3* from (^{14}C,4nγ) and 8.1 ns *4* from (α,4nγ). Other values: 10-15 ns (1973Ya05) from (p,2nγ); 10.5 ns *10* and 10.4 ns *8* from (α,2nγ). The latter data from (α,2nγ) were not adopted because probable feeding from the 2165 level (5.7 ns *4*) would result in an apparently longer half-life.
1775.8 *4*	$4^+,5^+$		B F I L	Jπ: E2(+M1) 705γ to 4^+ 1070; 907γ to 6^+; anisotropy 705γ in ^{186}Ir ε decay (16.64 h) inconsistent with J=6. However, suggested as J=6 member of K=4 band in Coulomb excitation.
1812.47[e] *19*	$(6)^+$		B E	Jπ: E2 1378γ to 4^+; M1(+E2) 944γ to 6^+; band assignment.
1848.42 *8*	$2^+,3$		C	Jπ: 778γ to 4^+; log *ft*=7.1 (log $f^{1u}t$=8.5) from 2^-.
1916.1 *6*	$4^+,5,6^+$		B L	Jπ: gammas to 4^+ and 6^+.
1937 *2*			L	
1939.0[g] *6*	(7^-)		E	Jπ: 310γ Q to 5^-.
1953 *2*	(0^+)		L	Jπ: L=(0) in (p,t).
1968.4[h] *3*	(8^-)		EF J	Jπ: ΔJ=1 (M1+E2) 194γ to (7^-); no transition to J<7.
1976.0? *10*			B	Jπ: γ to 5^+.
1990 *2*	0^+		L	Jπ: L(p,t)=0.
2015.5[d] *7*	8^+	1.8 ps *3*	E IJ	Jπ: γ to 6^+ 1491; γ-band member excited in multiple Coulomb excitation. $T_{1/2}$: from Coulomb excitation.
2031.3 *4*	4^+		B	Jπ: log *ft*=8.2 from 5^+; E2 1265γ to 2^+.
2056.65 *23*	$5^+,6^+$		B L	Jπ: E2 to 1622γ to 4^+; M1+E2 565γ to 6^+.
2068.4[a] *5*	10^+	0.41 ps *12*	EF IJ	Jπ: E2 647γ to 8^+; Coulomb excited member of g.s. band. $T_{1/2}$: from Coulomb excitation.
2081.57 *21*	4^+		B	Jπ: M1+E2 1172γ to 3^+; M1+E2 806γ to 5^+.
2119.9? *10*			B	Jπ: γ to 6^+.
2133.8[g] *8*	(8^-)		E	Jπ: Q 362 γ to (6^-).
2135.1? *7*	$3^+,4^+,5^+$		B	Jπ: M1(+E2) 1701γ to 4^+.
2165.6[i] *3*	(9^-)	5.7 ns *4*	E J	Jπ: M1 γ to (8^-). $T_{1/2}$: Unweighted average of 5.3 ns *2* from (α,4nγ) and 6.1 ns *2* from (^{14}C,4nγ).
2188.1[h] *4*	(9^-)		E J	Jπ: (M1) to (8^-); γ to (7^-); absence of γ to J<7.
2222.8? *7*	4^+		B	Jπ: E0+M1+E2 1789γ to 4^+ 434 level.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
2234? *3*			B	
2257.8[e] *11*	(8+)		E	Jπ: γ to (6)+.
2302.9? *10*			B	
2319.1[d] *10*	9+		E J	Jπ: Q 567 γ to (7+) 1751; band assignment.
2350.0[g] *9*	(9−)		E	Jπ: Q 410 γ to (7−).
2377.1 *6*	5+,6+		B	Jπ: M1 1508γ to 6+; 1943γ to 4+.
2431.2[i] *3*	(10−)		E J	Jπ: D+Q 266γ to (10−); γ to (8−).
2435.2[h] *5*	(10−)		E	Jπ: Q 467 γ to 8−.
2559.7? *19*			B	
2562.9[b] *4*	(10+)	<1 ns	E J	Jπ: D 397γ to (9−); 1142γ to 8+; 132γ to (10−). $T_{1/2}$: from (^{14}C,4nγ).
2587.6[g] *11*	(10−)		E	Jπ: Q γ to (8−), band assignment.
2599.2 *5*	4(+),5,6(+)		B	Jπ: gammas to 4+ and 6+.
2606.3? *5*	(5+,6+)		B	Jπ: (M1+E2) 1737γ to 6+; 2172γ to 4+.
2620.0 *5*	5+,6+		B	Jπ: M1 1751γ to 6+; γ to 4+.
2624.9[d] *13*	(10+)	1.17 ps *+33−43*	E IJ	Jπ: γ to (8+); γ-band member excited in multiple Coulomb excitation.
2666.5 *9*	(6)+		B	Jπ: E2 1107γ to (5)+; γ to 4+; log *ft*≈8.0 from 5+; anisotropy of 1107γ excludes J=4 and 5 in ^{186}Ir ε decay (16.40 h).
2698.6[h] *6*	(11−)		E	Jπ: Band assignment, 510.6γ Q to (9−).
2714.3[i] *6*	(11−)		E	Jπ: Band assignment, 283.0γ D to (10−).
2771.8? *11*	(4+)		B	Jπ: possible (E0+M1+E2) 2340γ to 4+.
2781.7[a] *5*	12+	0.29 ps *+23−4*	E IJ	Jπ: E2 713γ to 10+; Coulomb excited member of g.s. band.
2787.9[e] *15*	(10+)#		E	
2805.9[c] *4*	(11+)		E J	Jπ: (M1+E2) 243γ to (10+) in (α,4nγ).
2852.2[g] *12*	(11−)#		E	
2919.89 *15*	1,2+		C	Jπ: 2920γ to 0+; log *ft*=6.9 from 2−.
2958.1[d] *15*	(11+)		E J	Jπ: 639 γ to 9+; band assignment.
2958.4? *18*	+		B	Jπ: E2 1467γ to 6+ 1491 level.
2977.2[h] *7*	(12−)#		E	
2978.4? *5*			B	Jπ: γ to 4+.
3007.0[i] *7*	(12−)#		E	
3039.0[b] *4*	(12+)		E J	Jπ: intraband gammas to (12+) and (11+).
3110.1? *10*			B	
3123.2[g] *15*	(12−)#		E	
3185.1? *10*			B	
3186.4[j] *7*	(12+)		E	Jπ: ΔJ=2 1118 keV γ to (10+).
3214.5? *5*			B	
3221.4 *9*	(12+)		E	Jπ: 1151 Q γ to 10+.
3226.3? *5*			B	
3252.7? *5*	(6+)		B	Jπ: possible E0+M1+E2 2383.7γ to 6+.
3268.9? *3*			B	Jπ: possible E0+M1+E2 2399γ to 6+; however, possible 3132γ to 2+. One of these gammas may be misplaced.
3288.8[h] *9*	(13−)#		E	
3293.7[c] *7*	(13+)#		E	
3296.2[d] *16*	(12+)#		E J	
3309.1[i] *8*	(13−)#		E	
3414.3? *4*	(4+)		B	Jπ: possible γ to 4+ and 6+; possible E0+M1+E2 1334γ to 4+.
3425.5[g] *16*	(13−)#		E	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF		Comments
3431.9[j] 7	(13+)[#]		E		
3440.4[b] 6	(14+)	≥0.92 ps	E	IJ	Jπ: (E2) 659γ to 12+; excited in multiple Coulomb excitation.
3506.2 12	(13)		E		Jπ: γ to (12+).
3557.4[h] 12	(14−)[#]		E		
3558.4[a] 8	14+		E	IJ	Jπ: 580 Q γ to 12+; excited in multiple Coulomb excitation. Band assignment.
3623.8[i] 9	(14−)[#]		E		
3630.2[d] 18	(13+)[#]			J	
3731.0[k] 10	(15+)		E		Jπ: Q 299 keV γ to (13+).
3760.8?[g] 18	(14−)[#]		E		
3816.5[c] 7	(15+)[#]		E		
3935.2[b] 7	(16+)[#]		E	J	
3940.6[h] 10	(15−)[#]		E		
3946.2[i] 9	(15−)[#]		E		
4062.4[g] 19	(15−)[#]		E		
4100.0[k] 10	(16+)[#]		E		
4169.8[h] 16	(16−)[#]		E		
4242.2[l] 13	(16+)		E		Jπ: Q 684 keV γ to 14+.
4283.1[i] 11	(16−)[#]		E		
4351.3 10	(16+)		E		Jπ: γ to 14+.
4414.2[c] 10	(17+)[#]		E		
4483.4[k] 11	(17+)[#]		E		
4487.0[g] 21	(16−)[#]		E		
4494.7 8	(18+)[@]	<0.5 ns	E	J	Jπ: (E2) 559 keV γ to (16+). $T_{1/2}$: from (^{14}C,4nγ).
4505.1[b] 7	(18+)[#]		E	J	
4624.4[i] 9	(17−)[#]		E		
4637.1?[h] 10	(17−)[#]		E		
4760.2[g] 21	(17−)[#]		E		
4818.7[h] 19	(18−)[#]		E		
4869.6[k] 12	(18+)[#]		E		
4957.4 8	(19+)[#]		E	J	Jπ: ΔJ=1 to (18+).
4963.5[l] 16	(18+)[#]		E		
5025.7[m] 8	(18−)	<2 ns	E	J	$T_{1/2}$: from (^{14}C,4nγ). Jπ: Q 531 keV γ to (18−).
5107.1[c] 14	(19+)[#]		E		
5167.8[b] 7	(20+)[#]		E	J	
5243.9[m] 13	(19−)[#]		E		
5331.9[n] 8	(19−)	<1 ns	E	J	$T_{1/2}$: from (^{14}C,4nγ). Jπ: Q 708 keV γ to (17−).
5374.3 8	(20+)[#]		E	J	
5489.9[h] 21	(20−)[#]		E		
5496.4 9	(20+)[#]		E		
5501.0 8	(20+)[#]		E	J	
5560.4[n] 11	(20−)[#]		E		
5564.8 8	(20−)			J	Jπ: possibly Q intraband γ to (18−) 5025.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[‡]	XREF	Comments
5670.5[k] *16*	(20+)[#]		E	
5701.9 *8*	(21+)		E J	Jπ: 201 D γ to (20+).
5781.7[l] *19*	(20+)[#]		E	
5832.9 *8*	(21−)		J	Jπ: ΔJ=2 γ to (19−) assumed in (α,4nγ).
5888.8[c] *17*	(21+)[#]		E	
5902.1[n] *11*	(21−)[#]		E	
5915.3[b] *7*	(22+)[#]		E J	
5922.8 *13*	(21+)		E	Jπ: 422 γ to (20+).
5923.1 *14*	(21+)		E	Jπ: 427 γ to (20+).
6026.9 *10*	(22+)		E J	Jπ: 653 Q γ to (20+).
6031.0 *10*	(22+)		E	Jπ: 656.6 Q γ to (20+).
6064.3 *13*	(22+)		E	Jπ: 362.4γ to (21+).
6151.9 *14*	(24+)		E	Jπ: 120.9 γ (Q) to (22+).
6185.4?[h] *24*	(22−)[#]		E	
6446.4? *15*	(22+)		E	Jπ: 525 γ to (20+).
6473.4 *17*	(25+)		E	Jπ: 322 D γ to (24+).
6487.9 *12*	(24+)		E	Jπ: 457 Q γ to (22+).
6727.9[b] *12*	(24+)[#]		E	
6946.6? *19*	(26+)		E	Jπ: 474.2 γ to (25+).
6989.1 *15*	(26+)		E	Jπ: 501 Q γ to (24+).
6993.0 *15*	(25+)		E	Jπ: 505 D γ to (24+).
7142.9 *18*	(28+)[&]	<2 ns	E	
7477.4 *18*	(26+)		E	Jπ: 484.4 γ to (25+).
7583.2[b] *16*	(26+)[#]		E	
7710.3 *21*	(30+)		E	Jπ: 567 γ to (28+).
7749.7 *21*	(30+)		E	Jπ: 607 Q γ to (28+).
7778.4 *21*	(30+)		E	Jπ: 636 γ to (28+).
13.03×10^3 *9*	1−	3.13 MeV *24*	K	Component of GDR; J^π=1−.
15.26×10^3 *9*	1−	3.38 MeV *21*	K	Component of GDR; J^π=1−.

[†] From least-squares adjustment of Eγ allowing ΔE_γ=1 keV for missing uncertainty.

[‡] From measured E2 matrix elements in Coulomb excitation and adopted γ-ray properties, unless noted otherwise.

[#] From band member.

[@] Probably a four-quasineutron intrinsic triaxial (γ=23°) state; blocked BCS calculations predict a low-lying 18+ state with configuration=((11/2[615])+(9/2[624])+(9/2[505])+(7/2[503])). The short $T_{1/2}$, despite predominantly ΔK=8 deexcitation, for this yrast state is consistent with the onset of triaxiality.

[&] Probably a six-quasiparticle intrinsic triaxial (γ=26°) state; blocked BCS calculations predict a low-lying 28+ state with configuration=((18+ 4495 level)⊗((π 11/2[505])+(π 9/2[514]))). The short $T_{1/2}$ for this yrast state may result from the onset of triaxiality.

[a] Band(A): $K^\pi=0^+$ g.s. band. Rotational parameters: A=20.8, B=−0.019 (based on J=0 to 14 members). Yrast for J≤12.

[b] Band(B): $K^\pi=10^+$, α=0 tilted-axis band. Likely configuration=((ν 11/2[615])+(ν 9/2[624])), consistent with the relatively large alignment and the intraband E2-to-M1 branching ratios observed. Crosses g.s. band; yrast for J=14-16.

[c] Band(b): $K^\pi=10^+$, α=1 tilted-axis band. Signature partner of $K^\pi=10^+$, α=0 band, exhibiting pronounced signature splitting.

[d] Band(C): $K^\pi=2^+$ γ band. Rotational parameters: A=20.4, B=−0.024 (based on all even J members).

[e] Band(D): $K^\pi=0^+$ β band.

[f] Band(E): Possible $K^\pi=4^+$ hexadecapole band. Rotational parameter: A=20.8. Could alternatively be interpreted as a two γ phonon excitation.

[g] Band(F): $K^\pi=5^-$ band. Similarity of alignment curve to that for the 11/2+ band in ^{185}Os favors configuration=((ν

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{186}Os Levels (continued)

11/2[615])-(ν 1/2[510])), analogous to the 8.3 μs, 5^- isomer with this configuration in ^{184}W.

[h] Band(G): $K^\pi=7^-$ band. Likely configuration=((ν 11/2[615])+(ν 3/2[512])); alignment is consistent with that for other (ν $i_{13/2}$) bands. Analogous to band with same configuration built on 7^-, 2.4 ns isomer in ^{184}W isotone.

[i] Band(H): $K^\pi=9^-$ band. Likely configuration=((ν 11/2[615])+(ν 7/2[503])), supported by similarity of alignment curve to that for other (ν 11/2[615]) bands.

[j] Band(I): $K^\pi=(12^+)$ four-quasineutron band. Possible configuration=((11/2[615])+(9/2[624])+(3/2[512])+(1/2[510])) supported by BCS calculations.

[k] Band(J): $K^\pi=(15^+)$ four-quasineutron band. Possible configuration=((11/2[615])+(9/2[624])+(7/2[503])+(3/2[512])).

[l] Band(K): π=+, α=0 band. Possible rotational aligned low-K s-band; alignment much larger than that of g.s. band.

[m] Band(L): $K^\pi=(18^-)$ four-quasiparticle band. Possible configuration=((ν 11/2[615])+(ν 9/2[624])+(π 5/2[402])+(π 11/2[505])) supported by blocked BCS calculations.

[n] Band(M): $K^\pi=(19^-)$ four-quasiparticle band. Possible configuration=((ν 11/2[615])+(ν 7/2[503])+(π 9/2[514])+(π 11/2[505])) based on comparisons with blocked BCS calculations.

Adopted Levels, Gammas (continued)

γ(^{186}Os)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
137.15	2+	137.15 *5*	100	0.0	0+	E2		1.271	α(K)=0.434 *6*; α(L)=0.632 *9*; α(M)=0.1610 *23* α(N)=0.0386 *6*; α(O)=0.00575 *8*; α(P)=3.96×10^{-5} *6* B(E2)(W.u.)=93.6 *21* E_γ,I_γ: from ^{186}Re β^- decay.
434.088	4+	296.90 *3*	100	137.15	2+	E2		0.0942	α(K)=0.0606 *9*; α(L)=0.0255 *4*; α(M)=0.00632 *9* α(N)=0.001523 *22*; α(O)=0.000236 *4*; α(P)=6.08×10^{-6} *9* B(E2)(W.u.)=135 *7*
767.477	2+	333.4 *4*	0.19 *5*	434.088	4+	[E2]		0.0671	B(E2)(W.u.)=1.2 *4* α(K)=0.0452 *7*; α(L)=0.01666 *25*; α(M)=0.00410 *6* α(N)=0.000989 *15*; α(O)=0.0001548 *23*; α(P)=4.61×10^{-6} *7* E_γ,I_γ: from ^{186}Re β^- decay.
		630.34[#] *4*	88.8[#] *15*	137.15	2+	M1+E2	−13.7 *+17−23*	0.01330	α(K)=0.01040 *15*; α(L)=0.00223 *4*; α(M)=0.000528 *8* α(N)=0.0001280 *18*; α(O)=2.11×10^{-5} *3*; α(P)=1.115×10^{-6} *16* B(M1)(W.u.)=0.00012 *3*; B(E2)(W.u.)=22.1 *17* δ: Others: +14 *+7−3* from γγ(θ) in ^{186}Re β^- decay, −16 *+3−5* from Coulomb excitation.
		767.50[#] *3*	100.0[#] *15*	0.0	0+	E2		0.00856	α(K)=0.00683 *10*; α(L)=0.001323 *19*; α(M)=0.000310 *5* α(N)=7.53×10^{-5} *11*; α(O)=1.254×10^{-5} *18*; α(P)=7.34×10^{-7} *11* B(E2)(W.u.)=9.4 *8*
868.94	6+	434.84 *3*	100	434.088	4+	E2		0.0324	α(K)=0.0237 *4*; α(L)=0.00671 *10*; α(M)=0.001625 *23* α(N)=0.000393 *6*; α(O)=6.28×10^{-5} *9*; α(P)=2.49×10^{-6} *4* B(E2)(W.u.)=185 *+8−5*
910.473	3+	143.17 *5*	3.49[#] *31*	767.477	2+	M1+E2	0.7	≈1.82	α(K)≈1.331; α(L)≈0.337; α(M)≈0.0807 α(N)≈0.0196; α(O)≈0.00318; α(P)≈0.0001525 I_γ: from ^{186}Ir ε decay Others: 34 *4* (^{14}C,4nγ), 14 *4* in (α,2nγ), 39 *8* in (α,4nγ).
		476.40[#] *5*	7.5[#] *3*	434.088	4+	E2+M1	−22 *10*	0.0258 *5*	α(K)=0.0192 *4*; α(L)=0.00503 *8*; α(M)=0.001211 *18* α(N)=0.000293 *5*; α(O)=4.72×10^{-5} *7*; α(P)=2.03×10^{-6} *4* I_γ: Weighted average of data from (^{14}C,4nγ), (α,4nγ) and ^{186}Ir (16h) decays Other Iγ: 11 *3* in (α,2nγ), 19.8 *15* in (p,2nγ).
		773.28 *3*	100[‡] *3*	137.15	2+	M1+E2	−60 *+12−20*	0.00842	α(K)=0.00673 *10*; α(L)=0.001298 *19*; α(M)=0.000304 *5* α(N)=7.39×10^{-5} *11*; α(O)=1.231×10^{-5} *18*; α(P)=7.23×10^{-7} *11*
1061.0	0+	923.8	100	137.15	2+	[E2]		0.00582	α(K)=0.00473 *7*; α(L)=0.000845 *12*; α(M)=0.000196 *3* α(N)=4.77×10^{-5} *7*; α(O)=8.03×10^{-6} *12*; α(P)=5.07×10^{-7} *7* B(E2)(W.u.)=0.066 E_γ: From Coulomb excitation.
1070.48	4+	160.11 *10*	0.98 *9*	910.473	3+	[M1,E2]		1.10 *38*	α(K)=0.76 *46*; α(L)=0.26 *6*; α(M)=0.063 *18* α(N)=0.0152 *42*; α(O)=0.0024 *5*; α(P)=8.4×10^{-5} *58* I_γ: Others: 4.77 *23* (^{14}C,4nγ), <9.5 (α,4nγ).

$^{186}_{76}Os_{110}$-7

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
1070.48	4+	302.89 *8*	6.2[#] *3*	767.477	2+	E2		0.0888	B(E2)(W.u.)=69 *+11−13* α(K)=0.0576 *8*; α(L)=0.0237 *4*; α(M)=0.00586 *9* α(N)=0.001412 *20*; α(O)=0.000219 *3*; α(P)=5.79×10^{-6} *9* I_γ: Others: 6.3 *13* (α,2nγ), 6.4 *6* (Coulomb excitation).
		636.38 *4*	100 *3*	434.088	4+	M1+E2	+24 *+26−8*	0.01294	B(M1)(W.u.)=4.E−5 *+9−4*; B(E2)(W.u.)=24 *+4−5* α(K)=0.01012 *15*; α(L)=0.00216 *3*; α(M)=0.000512 *8* α(N)=0.0001242 *18*; α(O)=2.04×10^{-5} *3*; α(P)=1.084×10^{-6} *16* δ: Other: +15 *+30−8* (Coulomb excitation).
		933.34 *4*	67[#] *2*	137.15	2+	E2		0.00570	B(E2)(W.u.)=3.0 *+5−6* α(K)=0.00463 *7*; α(L)=0.000825 *12*; α(M)=0.000192 *3* α(N)=4.66×10^{-5} *7*; α(O)=7.84×10^{-6} *11*; α(P)=4.97×10^{-7} *7* Others: 100 *13* (1.90 h ε decay), 77 *15* (α,2nγ), 74 *6* (p,2nγ), 44 *9* (α,4nγ), 80 *+14−9* (Coulomb excitation).
1208.29	2+	1071.0 *4*	100 *23*	137.15	2+	M1		0.00947	α(K)=0.00790 *11*; α(L)=0.001212 *17*; α(M)=0.000276 *4* α(N)=6.75×10^{-5} *10*; α(O)=1.169×10^{-5} *17*; α(P)=8.89×10^{-7} *13* E_γ: From (α,2nγ).
		1209		0.0	0+				
1275.61	5+	365.16 *3*	15.3[#] *6*	910.473	3+	E2		0.0519	α(K)=0.0360 *5*; α(L)=0.01207 *17*; α(M)=0.00295 *5* α(N)=0.000713 *10*; α(O)=0.0001124 *16*; α(P)=3.72×10^{-6} *6*
		406.63 *7*	4.6 *3*	868.94	6+	(E2)		0.0387	α(K)=0.0277 *4*; α(L)=0.00837 *12*; α(M)=0.00203 *3* α(N)=0.000492 *7*; α(O)=7.82×10^{-5} *11*; α(P)=2.90×10^{-6} *4* Other Iγ: 9.2 *23* from (α,2nγ).
		841.50 *3*	100 *5*	434.088	4+	E2(+M1)	<−16	0.0122 *52*	α(K)=0.0101 *44*; α(L)=0.00165 *59*; α(M)=3.8×10^{-4} *14* α(N)=9.2×10^{-5} *33*; α(O)=1.58×10^{-5} *58*; α(P)=1.12×10^{-6} *52*
1351.94	4+	281.3	1.6 *6*	1070.48	4+	(E2)		0.1109	α(K)=0.0697 *10*; α(L)=0.0313 *5*; α(M)=0.00777 *11* α(N)=0.00187 *3*; α(O)=0.000289 *4*; α(P)=6.92×10^{-6} *10* B(E2)(W.u.)=17 *+8−9* I_γ: weighted average from ε decays. Others: 6.1 *23* (Coulomb excitation) and 7.7 *3* (^{14}C,4nγ).
		441.48 *11*	40.8[#] *17*	910.473	3+	M1+E2	+13.3 *+22−17*	0.0315	α(K)=0.0231 *4*; α(L)=0.00642 *9*; α(M)=0.001552 *22* α(N)=0.000376 *6*; α(O)=6.02×10^{-5} *9*; α(P)=2.44×10^{-6} *4* B(M1)(W.u.)=0.00012 *+5−6*; B(E2)(W.u.)=45 *+10−15* E_γ: from ^{186}Ir ε decay (1.90 h).
		584.42 *19*	100[#] *3*	767.477	2+	E2		0.01568	α(K)=0.01211 *17*; α(L)=0.00274 *4*; α(M)=0.000650 *10* α(N)=0.0001577 *22*; α(O)=2.58×10^{-5} *4*; α(P)=1.294×10^{-6} *19* B(E2)(W.u.)=0.11
		919[‡]	2.60[‡] *12*	434.088	4+				
		1215.1[‡]	3.41[‡] *14*	137.15	2+				

$^{186}_{76}Os_{110}$-8

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
1420.94	8+	552.00 *5*	100	868.94	6+	E2		0.0179	B(E2)(W.u.)=132 *7* α(K)=0.01372 *20*; α(L)=0.00322 *5*; α(M)=0.000769 *11* α(N)=0.000186 *3*; α(O)=3.04×10^{-5} *5*; α(P)=1.464×10^{-6} *21* Mult.: Q from γ(θ) in (α,4nγ); not M2 from α(K)exp in 16.64 h ^{186}Ir ε decay.
1452.3	(3+)	542.2[i] *4*		910.473	3+				
		684.8 *4*	100 *49*	767.477	2+	M1		0.0294	α(K)=0.0244 *4*; α(L)=0.00381 *6*; α(M)=0.000869 *13* α(N)=0.000212 *3*; α(O)=3.67×10^{-5} *6*; α(P)=2.77×10^{-6} *4*
1460.74	4+	252.45 *15*	23 *7*	1208.29	2+	(E2)		0.1551	α(K)=0.0923 *13*; α(L)=0.0476 *7*; α(M)=0.01189 *17* α(N)=0.00286 *4*; α(O)=0.000439 *7*; α(P)=9.00×10^{-6} *13* I_γ: from ^{186}Ir ε decay (16.64 h); Iγ=100 *23* in (α,2nγ). Mult.: E2(+M1) from α(K)exp in ^{186}Ir ε decay (16.64 h); ΔJ=2 from level scheme.
		592.4 *9*	26 *8*	868.94	6+	E2		0.01520	α(K)=0.01176 *17*; α(L)=0.00263 *4*; α(M)=0.000626 *10* α(N)=0.0001517 *23*; α(O)=2.48×10^{-5} *4*; α(P)=1.257×10^{-6} *18*
		1026.5 *3*	100 *4*	434.088	4+	M1(+E2)	≤+0.8	0.0094 *12*	α(K)=0.0078 *10*; α(L)=0.00122 *14*; α(M)=0.00028 *3* α(N)=6.8×10^{-5} *8*; α(O)=1.17×10^{-5} *14*; α(P)=8.8×10^{-7} *12*
		1323.7 *3*	97 *9*	137.15	2+	E2		0.00290	α(K)=0.00238 *4*; α(L)=0.000384 *6*; α(M)=8.80×10^{-5} *13* α(N)=2.14×10^{-5} *3*; α(O)=3.66×10^{-6} *6*; α(P)=2.55×10^{-7} *4*; α(IPF)=2.12×10^{-5} *3* I_γ: from ^{186}Ir ε decay (16.64 h); Iγ=77 *29* in (α,2nγ).
1480.09	(3)−	409.60[&] *22*	22.4[&] *21*	1070.48	4+	[E1]		0.01187	α(K)=0.00991 *14*; α(L)=0.001521 *22*; α(M)=0.000346 *5* α(N)=8.40×10^{-5} *12*; α(O)=1.421×10^{-5} *20*; α(P)=9.56×10^{-7} *14*
		569.70[a] *13*	45 *20*	910.473	3+	E1		0.00582	α(K)=0.00488 *7*; α(L)=0.000730 *11*; α(M)=0.0001658 *24* α(N)=4.02×10^{-5} *6*; α(O)=6.86×10^{-6} *10*; α(P)=4.81×10^{-7} *7*
		712.57[&] *10*	100 *20*	767.477	2+	[E1]		0.00370	α(K)=0.00311 *5*; α(L)=0.000458 *7*; α(M)=0.0001039 *15* α(N)=2.52×10^{-5} *4*; α(O)=4.32×10^{-6} *6*; α(P)=3.10×10^{-7} *5* I_γ: From (α,2nγ).
		1046.26[&ci] *16*	32[&] *3*	434.088	4+				
		1343.1[g] *11*	≈30[g]	137.15	2+				
1491.28	6+	215.51 *20*	3.7[#] *3*	1275.61	5+	[M1,E2]		0.45 *20*	α(K)=0.33 *20*; α(L)=0.088 *3*; α(M)=0.0211 *16* α(N)=0.0051 *4*; α(O)=0.000826 *12*; α(P)=3.7×10^{-5} *25* I_γ: Other: 20 *7* in (α,2nγ).
		420.81 *3*	82[#] *4*	1070.48	4+	E2		0.0354	B(E2)(W.u.)=1.2×10^2 *+3−5* α(K)=0.0256 *4*; α(L)=0.00747 *11*; α(M)=0.00181 *3* α(N)=0.000438 *7*; α(O)=6.99×10^{-5} *10*; α(P)=2.68×10^{-6} *4* I_γ: Other: 70 *13* in (α,2nγ), 59 *+8−5* in Coulomb excitation.

$^{186}_{76}Os_{110}$-9

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
1491.28	6^+	622.33 *4*	100 *5*	868.94	6^+	M1+E2	+10.0 *+20−12*	0.01381 *21*	α(K)=0.01078 *17*; α(L)=0.00232 *4*; α(M)=0.000549 *8* α(N)=0.0001333 *20*; α(O)=2.19×10^{-5} *4*; α(P)=1.156×10^{-6} *18* B(M1)(W.u.)=0.011; B(E2)(W.u.)=7.2
		1057.25 *8*	94[#] *4*	434.088	4^+	E2		0.00445	B(E2)(W.u.)=1.2 *+4−5* α(K)=0.00364 *5*; α(L)=0.000622 *9*; α(M)=0.0001437 *21* α(N)=3.49×10^{-5} *5*; α(O)=5.92×10^{-6} *9*; α(P)=3.90×10^{-7} *6* Other Iγ: 65 *13* in (α,2nγ), 80 *+10−12* in Coulomb excitation.
1559.8	$(5)^+$	208.0 *6*	37.3 *27*	1351.94	4^+	E2		0.291 *5*	α(K)=0.1532 *25*; α(L)=0.1043 *20*; α(M)=0.0262 *5* α(N)=0.00631 *12*; α(O)=0.000957 *18*; α(P)=1.445×10^{-5} *23* I_γ: Wt. ave. of data from ^{186}Ir ε decay (16.64 h), (α,2nγ), and (^{14}C,4nγ).
		284.26[i] *15*	5 *3*	1275.61	5^+	E2		0.1074	α(K)=0.0678 *10*; α(L)=0.0301 *5*; α(M)=0.00746 *11* α(N)=0.00180 *3*; α(O)=0.000278 *4*; α(P)=6.75×10^{-6} *10*
		489.5 *4*	86 *6*	1070.48	4^+	E2(+M1)	>+42	0.0240	α(K)=0.0180 *3*; α(L)=0.00462 *7*; α(M)=0.001110 *16* α(N)=0.000269 *4*; α(O)=4.34×10^{-5} *7*; α(P)=1.91×10^{-6} *3* E_γ: Weighted ave. of data from (α,2nγ), (p,2nγ), and ^{186}Ir ε decay (16.64 h). I_γ: Other: 100 *21* (α,2nγ); 70 *5* (p,2nγ); 90 *18* (α,4nγ); 85 *5* (^{14}C,4nγ).
		649.1 *5*	100 *5*	910.473	3^+	E2		0.01234	α(K)=0.00967 *14*; α(L)=0.00205 *3*; α(M)=0.000484 *7* α(N)=0.0001173 *17*; α(O)=1.93×10^{-5} *3*; α(P)=1.036×10^{-6} *15* E_γ: Weighted ave. of data from (α,2nγ), (p,2nγ), and ^{186}Ir ε decay (16.64 h). I_γ: From (^{14}C,4nγ).
1623.2?		712.7[i] *4*	100 *31*	910.473	3^+				Eγ is for doubly placed γ; intensity suitably divided.
		1187.9[gi] *4*	<357[g]	434.088	4^+				
1628.53	5^-	276.54 *14*	100 *3*	1351.94	4^+	E1		0.0297	B(E1)(W.u.)>5.3×10^{-6} α(K)=0.0247 *4*; α(L)=0.00391 *6*; α(M)=0.000894 *13* α(N)=0.000216 *3*; α(O)=3.62×10^{-5} *5*; α(P)=2.30×10^{-6} *4* I_γ: from (^{14}C,4nγ).
		353.1[&] *5*	19.4 *6*	1275.61	5^+	[E1]		0.01666	B(E1)(W.u.)>4.9×10^{-7} α(K)=0.01387 *20*; α(L)=0.00215 *4*; α(M)=0.000491 *7* α(N)=0.0001190 *18*; α(O)=2.01×10^{-5} *3*; α(P)=1.323×10^{-6} *19*

$^{186}_{76}Os_{110}$-10

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
									E_γ: Wt. ave. of data from (α,2nγ), (α,4nγ), and (p,2nγ). I_γ: from (^{14}C,4nγ). Others: 12.5 *38* (16.64 h ε decay), 26.7 *53* (α,4nγ), 26.4 *24* (p,2nγ), and 16.1 *50* (α,2nγ). Unweighted average: 20 *3*.
1628.53	5$^-$	557.8[b] *4*	29.8 *9*	1070.48	4$^+$	E1		0.00608	α(K)=0.00510 *8*; α(L)=0.000764 *11*; α(M)=0.0001735 *25* α(N)=4.21×10^{-5} *6*; α(O)=7.17×10^{-6} *11*; α(P)=5.01×10^{-7} *7* I_γ: From (^{14}C,4nγ).
		759.9[b] *4*	33.4 *9*	868.94	6$^+$	(E1)		0.00326	B(E1)(W.u.)>8.5×10^{-8} α(K)=0.00274 *4*; α(L)=0.000403 *6*; α(M)=9.12×10^{-5} *13* α(N)=2.22×10^{-5} *4*; α(O)=3.80×10^{-6} *6*; α(P)=2.74×10^{-7} *4* I_γ: from (^{14}C,4nγ).
1640.81		730.35[&] *17*	82[&] *11*	910.473	3$^+$				
		873.32[&] *14*	100[&] *7*	767.477	2$^+$				
1653.58	2$^+$,3,4$^+$	301.87[&] *20*	100[&] *19*	1351.94	4$^+$				
		742.99[&] *14*	98[&] *20*	910.473	3$^+$				
		886.1[&] *3*	65[&] *22*	767.477	2$^+$				
1704.6	(4$^+$)	1271	100 *31*	434.088	4$^+$				
		1567	75 *25*	137.15	2$^+$				
1750.93	7$^+$	475[@] *1*	83 *3*	1275.61	5$^+$	Q			I_γ: from (^{14}C,4nγ). Other Iγ: ≈164 in (α,4nγ). Mult.: from (^{14}C,4nγ).
		882[@] *1*	100 *4*	868.94	6$^+$				I_γ: from (^{14}C,4nγ).
1754.50	2$^{(+)}$	844.08[&] *11*	21.6[&] *12*	910.473	3$^+$				
		987.03[&] *10*	100[&]	767.477	2$^+$				
		1617.21[&] *15*	38[&] *4*	137.15	2$^+$				
		1754.4[&] *3*	42[&] *4*	0.0	0$^+$				
1771.9	(6$^-$)	143.3[‡]	100[‡] *3*	1628.53	5$^-$	D[‡]		2.01	
		903.2[‡]	17.5[‡] *9*	868.94	6$^+$				
1774.69	(7$^-$)	146.1[@] *2*	100 *3*	1628.53	5$^-$	(E2)[d]		1.006	B(E2)(W.u.)=7.9 *5* α(K)=0.374 *6*; α(L)=0.477 *8*; α(M)=0.1213 *19* α(N)=0.0291 *5*; α(O)=0.00434 *7*; α(P)=3.41×10^{-5} *5* I_γ: from (^{14}C,4nγ).
		906.4[‡]	2.30[‡] *12*	868.94	6$^+$	[E1]		0.00233	B(E1)(W.u.)=3.8×10^{-10} *3* α(K)=0.00197 *3*; α(L)=0.000285 *4*; α(M)=6.45×10^{-5} *9* α(N)=1.569×10^{-5} *22*; α(O)=2.70×10^{-6} *4*; α(P)=1.97×10^{-7} *3*
1775.8	4$^+$,5$^+$	423.6		1351.94	4$^+$				E_γ: from Coulomb excitation; γ unreported in other studies.
		705.1 *4*	100 *22*	1070.48	4$^+$	E2(+M1)	<−3	0.0196 *77*	α(K)=0.0161 *66*; α(L)=0.00268 *85*; α(M)=6.2×10^{-4} *19* α(N)=1.50×10^{-4} *47*; α(O)=2.57×10^{-5} *84*; α(P)=1.81×10^{-6} *77* E_γ: weighted average from ^{186}Ir ε decay (16.64 h) and (α,2nγ).

$^{186}_{76}Os_{110}$-11

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
1775.8	4+,5+	907	65 *22*	868.94	6+				
		1343.1[g] *11*	26[g] *3*	434.088	4+				
1812.47	(6)+	351.73 *13*	100[‡] *8*	1460.74	4+	(E2)		0.0576	α(K)=0.0395 *6*; α(L)=0.01376 *20*; α(M)=0.00337 *5* α(N)=0.000815 *12*; α(O)=0.0001281 *18*; α(P)=4.06×10^{-6} *6* E_γ: for triplet in which this transition is the major component.
		943.6 *4*	79[‡] *11*	868.94	6+	M1(+E2)	+0.4 *5*	0.0120 *23*	α(K)=0.0100 *20*; α(L)=0.0016 *3*; α(M)=0.00035 *6* α(N)=8.6×10^{-5} *15*; α(O)=1.5×10^{-5} *3*; α(P)=1.12×10^{-6} *23*
		1378.1 *6*	53 *13*	434.088	4+	E2		0.00270	α(K)=0.00221 *4*; α(L)=0.000353 *5*; α(M)=8.09×10^{-5} *12* α(N)=1.97×10^{-5} *3*; α(O)=3.37×10^{-6} *5*; α(P)=2.36×10^{-7} *4*; α(IPF)=3.30×10^{-5} *5*
1848.42	2+,3	777.85[&] *22*	37[&] *4*	1070.48	4+				
		938.00[&] *12*	100[&] *6*	910.473	3+				
		1081.26[&] *24*	44[&] *4*	767.477	2+				
		1414.06[&] *22*	30[&] *4*	434.088	4+				
		1711.13[&] *18*	90[&] *11*	137.15	2+				
1916.1	4+,5,6+	847	100 *31*	1070.48	4+				
		1046.6[c] *6*	63 *8*	868.94	6+				
1939.0	(7−)	167.3[‡]	82[‡] *3*	1771.9	(6−)	D[‡]			
		310.4[‡]	100[‡] *3*	1628.53	5−	Q[‡]			
1968.4	(8−)	193.7[‡] *2*	100[‡]	1774.69	(7−)	(M1+E2)[d]		0.62 *25*	α(K)=0.45 *27*; α(L)=0.128 *13*; α(M)=0.031 *5* α(N)=0.0075 *11*; α(O)=0.00120 *9*; α(P)=5.0×10^{-5} *33*
1976.0?		700.37[i]	100	1275.61	5+				
2015.5	8+	524.0[‡]	100[‡] *4*	1491.28	6+	(E2)		0.0203	α(K)=0.01541 *22*; α(L)=0.00376 *6*; α(M)=0.000899 *13* α(N)=0.000218 *3*; α(O)=3.54×10^{-5} *5*; α(P)=1.639×10^{-6} *23* B(E2)(W.u.)=99 *18* I_γ: from (^{14}C,4nγ). Mult.: Q from (^{14}C,4nγ).
		1146.8[‡]	25.4[‡] *13*	868.94	6+	[E2]			B(E2)(W.u.)=6 *2*
2031.3	4+	679.5[i] *5*	21 *10*	1351.94	4+	M1		0.0300	α(K)=0.0249 *4*; α(L)=0.00388 *6*; α(M)=0.000887 *13* α(N)=0.000217 *3*; α(O)=3.75×10^{-5} *6*; α(P)=2.83×10^{-6} *4*
		1121.1 *6*	57 *10*	910.473	3+				
		1264.7 *8*	91 *9*	767.477	2+	E2		0.00315	α(K)=0.00260 *4*; α(L)=0.000422 *6*; α(M)=9.70×10^{-5} *14* α(N)=2.36×10^{-5} *4*; α(O)=4.02×10^{-6} *6*; α(P)=2.77×10^{-7} *4*; α(IPF)=1.183×10^{-5} *20*
		1597.1 *8*	100 *9*	434.088	4+	M1		0.00366	α(K)=0.00294 *5*; α(L)=0.000445 *7*; α(M)=0.0001014 *15* α(N)=2.48×10^{-5} *4*; α(O)=4.29×10^{-6} *6*; α(P)=3.29×10^{-7} *5*; α(IPF)=0.0001466 *21*
		1893.7 *5*	27 *7*	137.15	2+				

$^{186}_{76}Os_{110}$-12

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[†f]	α[e]	Comments
2056.65	5$^+$,6$^+$	352	39 *13*	1704.6	(4$^+$)				
		565.4 *4*	43 *13*	1491.28	6$^+$	M1+E2		0.033 *16*	α(K)=0.027 *14*; α(L)=0.0046 *17*; α(M)=0.00108 *36* α(N)=2.62×10^{-4} *89*; α(O)=4.4×10^{-5} *17*; α(P)=3.0×10^{-6} *16* Eγ is for doublet; divided Iγ given.
		780.8 *4*	57 *17*	1275.61	5$^+$				
		1187.9[g] *4*	222[g] *26*	868.94	6$^+$				
		1621.7 *20*	100 *9*	434.088	4$^+$	(E2)		0.00208	α(K)=0.001642 *24*; α(L)=0.000254 *4*; α(M)=5.80×10^{-5} *9* α(N)=1.413×10^{-5} *20*; α(O)=2.43×10^{-6} *4*; α(P)=1.748×10^{-7} *25*; α(IPF)=0.0001099 *18* Mult.: E1,E2 from α(K)exp; Δπ=no from level scheme.
2068.4	10$^+$	647.7 *7*	100	1420.94	8$^+$	E2[d]		0.01240	B(E2)(W.u.)=1.9×10^2 *6* α(K)=0.00971 *14*; α(L)=0.00206 *3*; α(M)=0.000486 *7* α(N)=0.0001180 *17*; α(O)=1.95×10^{-5} *3*; α(P)=1.041×10^{-6} *15* Eγ: Wt. ave. of data from (α,2nγ) and (α,4nγ).
2081.57	4$^+$	729.5 *4*	12.4 *25*	1351.94	4$^+$	M1+E2		0.0173 *78*	α(K)=0.0142 *67*; α(L)=0.00237 *87*; α(M)=5.5×10^{-4} *20* α(N)=1.33×10^{-4} *48*; α(O)=2.27×10^{-5} *85*; α(P)=1.59×10^{-6} *78*
		805.5 *5*	24.8 *17*	1275.61	5$^+$	M1+E2		0.0136 *59*	α(K)=0.0112 *50*; α(L)=0.00184 *67*; α(M)=4.2×10^{-4} *15* α(N)=1.03×10^{-4} *37*; α(O)=1.76×10^{-5} *66*; α(P)=1.25×10^{-6} *59*
		1011.1 *5*	15.7 *17*	1070.48	4$^+$	M1		0.01094	α(K)=0.00912 *13*; α(L)=0.001402 *20*; α(M)=0.000320 *5* α(N)=7.81×10^{-5} *11*; α(O)=1.352×10^{-5} *19*; α(P)=1.027×10^{-6} *15*
		1171.5 *5*	31 *5*	910.473	3$^+$	M1+E2	+2.0 *4*	0.0044 *4*	α(K)=0.0037 *3*; α(L)=0.00059 *4*; α(M)=0.000136 *9* α(N)=3.30×10^{-5} *22*; α(O)=5.7×10^{-6} *4*; α(P)=4.0×10^{-7} *4*; α(IPF)=2.46×10^{-6} *11*
		1213	8.3 *25*	868.94	6$^+$				
		1314.4[h] *6*	35[h] *11*	767.477	2$^+$	(E2)		0.00294	α(K)=0.00242 *4*; α(L)=0.000389 *6*; α(M)=8.94×10^{-5} *13* α(N)=2.18×10^{-5} *3*; α(O)=3.71×10^{-6} *6*; α(P)=2.58×10^{-7} *4*; α(IPF)=1.95×10^{-5} *3*
		1647.4 *6*	100 *5*	434.088	4$^+$	E2+M1	+0.073 *10*	0.00342	α(K)=0.00272 *4*; α(L)=0.000411 *6*; α(M)=9.37×10^{-5} *14* α(N)=2.29×10^{-5} *4*; α(O)=3.97×10^{-6} *6*; α(P)=3.04×10^{-7} *5*; α(IPF)=0.0001732 *25*
2119.9?		1251[i]	100	868.94	6$^+$				
2133.8	(8$^-$)	195.0‡	34.1‡ *14*	1939.0	(7$^-$)			0.846	
		361.9‡	100‡ *3*	1771.9	(6$^-$)	Q‡			
2135.1?	3$^+$,4$^+$,5$^+$	1701.0[i] *7*	100	434.088	4$^+$	M1(+E2)		0.0026 *7*	α(K)=0.00201 *51*; α(L)=0.00031 *8*; α(M)=7.0×10^{-5} *17* α(N)=1.7×10^{-5} *5*; α(O)=2.9×10^{-6} *8*; α(P)=2.21×10^{-7} *61*; α(IPF)=0.00017 *4* δ(D,Q)=−0.044 *15*, −0.67, +0.45, respectively, for J(2135 level)=4, 3, 5 (from γ(θ,H,T), 1982Al11).

$^{186}_{76}Os_{110}$-13

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[e]	Comments
2165.6	(9⁻)	197.2[‡] *2*	100[‡] *3*	1968.4	(8⁻)	M1	0.820	B(M1)(W.u.)=0.000273 *23* α(K)=0.679 *10*; α(L)=0.1093 *16*; α(M)=0.0251 *4* α(N)=0.00612 *9*; α(O)=0.001057 *16*; α(P)=7.88×10^{-5} *12* I_γ,Mult.: from (^{14}C,4nγ).
		226.7[‡]	1.93[‡] *9*	1939.0	(7⁻)	[E2]	0.219	B(E2)(W.u.)=0.028 *3* α(K)=0.1223 *18*; α(L)=0.0733 *11*; α(M)=0.0184 *3* α(N)=0.00442 *7*; α(O)=0.000674 *10*; α(P)=1.170×10^{-5} *17*
2188.1	(9⁻)	220.0[@] *5*	100 *3*	1968.4	(8⁻)	(M1)	0.605 *10*	α(K)=0.501 *8*; α(L)=0.0805 *13*; α(M)=0.0185 *3* α(N)=0.00451 *7*; α(O)=0.000779 *12*; α(P)=5.81×10^{-5} *9* I_γ: from (^{14}C,4nγ). Mult.: from (α,4nγ). Mult=D from γ(θ) for contaminated line.
		413.3[@] *3*	87 *3*	1774.69	(7⁻)	Q		I_γ,Mult.: from (^{14}C,4nγ).
2222.8?	4⁺	447.0[i] *6*	100 *50*	1775.8	4⁺,5⁺			
		1789.0[i] *20*	56 *6*	434.088	4⁺	E0+M1+E2		
2234?		1800.1[i] *25*	100	434.088	4⁺			
2257.8	(8⁺)	445.3[‡]	100[‡]	1812.47	(6)⁺			
2302.9?		1434[i]	100	868.94	6⁺			
2319.1	9⁺	566.6[‡]	100[‡]	1750.93	7⁺	Q[‡]		
2350.0	(9⁻)	216.5[‡]	24.8[‡] *10*	2133.8	(8⁻)	D[‡]		
		410.7[‡]	100[‡] *3*	1939.0	(7⁻)	Q[‡]		
2377.1	5⁺,6⁺	1508.1 *7*	100 *8*	868.94	6⁺	M1	0.00415	α(K)=0.00338 *5*; α(L)=0.000514 *8*; α(M)=0.0001169 *17* α(N)=2.85×10^{-5} *4*; α(O)=4.95×10^{-6} *7*; α(P)=3.79×10^{-7} *6*; α(IPF)=0.0001017 *15* δ(D,Q)=−0.07 *3* if J(2377 level)=6; from γ(θ,H,T) in ^{186}Ir ε decay (16.40 h).
		1943	67 *21*	434.088	4⁺			
2431.2	(10⁻)	243.3[‡]	16.6[‡] *7*	2188.1	(9⁻)	D[‡]		
		265.7[@] *2*	100[‡] *3*	2165.6	(9⁻)	D+Q[‡]		
		462.8[@] *2*	64.6 *22*	1968.4	(8⁻)			I_γ: from (^{14}C,4nγ).
2435.2	(10⁻)	247.2[‡]	43.5[‡] *15*	2188.1	(9⁻)	D[‡]		
		269.5[‡]	100[‡] *3*	2165.6	(9⁻)	D[‡]		
		466.8[‡]	59.3[‡] *19*	1968.4	(8⁻)	Q[‡]		
2559.7?		1690.8[i] *19*	100	868.94	6⁺			
2562.9	(10⁺)	132.3[‡]	2.05[‡] *13*	2431.2	(10⁻)			
		397.2[‡] *2*	100[‡] *3*	2165.6	(9⁻)	D[‡]		
		1142.1[‡]	2.45[‡] *13*	1420.94	8⁺			
2587.6	(10⁻)	237.6[‡]	21.3[‡] *8*	2350.0	(9⁻)	D[‡]		
		453.9[‡]	100[‡] *3*	2133.8	(8⁻)	Q[‡]		

$^{186}_{76}Os_{110}$-14

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.†	α e	Comments
2599.2	4(+),5,6(+)	1730		868.94	6+			
		2165.2 *5*		434.088	4+			
2606.3?	(5+,6+)	1737.8 *20*	100 *9*	868.94	6+	(M1+E2)	0.0025 *6*	α(K)=0.0019 *5*; α(L)=0.00029 *7*; α(M)=6.6×10^{-5} *16* α(N)=1.6×10^{-5} *4*; α(O)=2.8×10^{-6} *7*; α(P)=2.10×10^{-7} *57*; α(IPF)=0.00019 *4*
		2172.2 *5*	29 *6*	434.088	4+			
2620.0	5+,6+	1751.4 *9*	100 *5*	868.94	6+	M1	0.00303	α(K)=0.00234 *4*; α(L)=0.000354 *5*; α(M)=8.06×10^{-5} *12* α(N)=1.97×10^{-5} *3*; α(O)=3.41×10^{-6} *5*; α(P)=2.62×10^{-7} *4*; α(IPF)=0.000233 *4*
		2185.8 *5*	75 *9*	434.088	4+			
2624.9	(10+)	609.4‡	100‡	2015.5	8+	(E2)‡	0.01424	α(K)=0.01106 *16*; α(L)=0.00243 *4*; α(M)=0.000577 *8* α(N)=0.0001399 *20*; α(O)=2.30×10^{-5} *4*; α(P)=1.184×10^{-6} *17* B(E2)(W.u.)=9.E+1 *+4−3*
2666.5	(6)+	1107.1 *15*	97 *12*	1559.8	(5)+	(E2)	0.00406	α(K)=0.00333 *5*; α(L)=0.000562 *8*; α(M)=0.0001296 *19* α(N)=3.15×10^{-5} *5*; α(O)=5.35×10^{-6} *8*; α(P)=3.57×10^{-7} *5*; α(IPF)=2.50×10^{-7} *17*
		1314.4[h]	100[h] *30*	1351.94	4+			
2698.6	(11−)	263.6‡	7.8‡ *4*	2435.2	(10−)			
		267.3‡	17.1‡ *7*	2431.2	(10−)	D‡		
		510.6‡	100‡ *3*	2188.1	(9−)	Q‡		
2714.3	(11−)	279.1‡	100‡ *3*	2435.2	(10−)	D‡		
		283.0‡	48.0‡ *16*	2431.2	(10−)	D‡		
		549.2‡	20.2‡ *7*	2165.6	(9−)			
2771.8?	(4+)	2339.7[i] *5*	100	434.088	4+	E0+M1+E2		α(K)exp=0.0019
2781.7	12+	713.3[@] *5*	100	2068.4	10+	E2[d]	0.01002	B(E2)(W.u.)=166 *+23−132* α(K)=0.00794 *12*; α(L)=0.001594 *23*; α(M)=0.000375 *6* α(N)=9.10×10^{-5} *13*; α(O)=1.510×10^{-5} *22*; α(P)=8.52×10^{-7} *12*
2787.9	(10+)	530.1‡	100‡	2257.8	(8+)			
2805.9	(11+)	243.0[@] *2*	100	2562.9	(10+)	(M1+E2)[d]	0.32 *15*	α(K)=0.24 *14*; α(L)=0.058 *3*; α(M)=0.01393 *22* α(N)=0.00338 *7*; α(O)=0.00055 *4*; α(P)=2.7×10^{-5} *18*
2852.2	(11−)	264.5‡	19.4‡ *8*	2587.6	(10−)			
		502.2‡	100‡ *3*	2350.0	(9−)	Q‡		
2919.89	1,2+	1071.40[&] *17*	100[&] *9*	1848.42	2+,3			
		1165.4[&] *3*	43[&] *11*	1754.50	2(+)			
		2920.2[&] *4*	27[&] *5*	0.0	0+			
2958.1	(11+)	639.0‡	100‡	2319.1	9+	Q‡		
2958.4?	+	1467.1[i] *18*	100	1491.28	6+	E2	0.00243	α(K)=0.00197 *3*; α(L)=0.000311 *5*; α(M)=7.11×10^{-5} *11* α(N)=1.731×10^{-5} *25*; α(O)=2.96×10^{-6} *5*; α(P)=2.10×10^{-7} *3*; α(IPF)=5.73×10^{-5} *10*

$^{186}_{76}Os_{110}$-15

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]
2977.2	(12⁻)	278.5[‡]	48.4[‡] *20*	2698.6	(11⁻)	
		542.0[‡]	75.3[‡] *25*	2435.2	(10⁻)	Q[‡]
		545.9[‡]	100[‡] *4*	2431.2	(10⁻)	Q[‡]
2978.4?		2544.3[i] *5*	100	434.088	4⁺	
3007.0	(12⁻)	292.4[‡]	100[‡] *3*	2714.3	(11⁻)	D[‡]
		571.6[‡]	37.2[‡] *14*	2435.2	(10⁻)	Q[‡]
		575.8[‡]	29.9[‡] *11*	2431.2	(10⁻)	
3039.0	(12⁺)	233.1[@] *2*	100[‡] *3*	2805.9	(11⁺)	D[‡]
		476.1[‡]	46.3[‡] *17*	2562.9	(10⁺)	
		971.1[‡]	65.9[‡] *20*	2068.4	10⁺	Q[‡]
3110.1?		2676[i]	100	434.088	4⁺	
3123.2	(12⁻)	535.6[‡]	100[‡]	2587.6	(10⁻)	Q[‡]
3185.1?		2751[i]	100	434.088	4⁺	
3186.4	(12⁺)	380.2[‡]	28.2[‡] *12*	2805.9	(11⁺)	
		623.6[‡]	100[‡] *3*	2562.9	(10⁺)	Q[‡]
		1118.3[‡]	82[‡] *3*	2068.4	10⁺	Q[‡]
3214.5?		2780.4 *5*	100	434.088	4⁺	
3221.4	(12⁺)	1153.3[‡]	100[‡]	2068.4	10⁺	Q[‡]
3226.3?		2357.3 *5*	100	868.94	6⁺	
3252.7?	(6⁺)	2383.7[i] *5*	100	868.94	6⁺	E0+M1+E2
3268.9?		2399.1[i] *5*	52 *7*	868.94	6⁺	E0+M1+E2
		2835.2[i] *5*	100 *10*	434.088	4⁺	
		3132.2[i] *5*	6.0 *10*	137.15	2⁺	
3288.8	(13⁻)	311.5[‡]	8.9[‡] *5*	2977.2	(12⁻)	
		590.5[‡]	100[‡] *3*	2698.6	(11⁻)	Q[‡]
3293.7	(13⁺)	254.6[‡]	93[‡] *3*	3039.0	(12⁺)	D[‡]
		488.0[‡]	100[‡] *3*	2805.9	(11⁺)	Q[‡]
3296.2	(12⁺)	671.3[‡]	100[‡]	2624.9	(10⁺)	Q[‡]
3309.1	(13⁻)	302.1[‡]	75.9[‡] *24*	3007.0	(12⁻)	D[‡]
		595.3[‡]	100[‡] *3*	2714.3	(11⁻)	Q[‡]
3414.3?	(4⁺)	1334.0[i] *15*	100 *23*	2081.57	4⁺	E0+M1+E2
		2138.6[i] *5*	54 *10*	1275.61	5⁺	
		2980.1[i] *5*	49 *10*	434.088	4⁺	
3425.5	(13⁻)	573.3[‡]	100[‡]	2852.2	(11⁻)	Q[‡]
3431.9	(13⁺)	210.7[‡]	7.0[‡] *3*	3221.4	(12⁺)	
		245.5[‡]	100[‡] *3*	3186.4	(12⁺)	D[‡]

$^{186}_{76}Os_{110}$-16

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[e]	Comments
3431.9	(13$^+$)	392.3[‡]	40.5[‡] *12*	3039.0	(12$^+$)	D[‡]		
		626.2[‡]	66.8[‡] *21*	2805.9	(11$^+$)	Q[‡]		
3440.4	(14$^+$)	148.5[‡i]	0.83[‡] *3*	3293.7	(13$^+$)			
		401.1[‡]	3.1[‡] *2*	3039.0	(12$^+$)	(E2)[‡]	0.0402	B(E2)(W.u.)<28 α(K)=0.0287 *4*; α(L)=0.00876 *13*; α(M)=0.00213 *3* α(N)=0.000515 *8*; α(O)=8.18×10^{-5} *12*; α(P)=2.99×10^{-6} *5*
		658.5[@] *5*	100[‡] *3*	2781.7	12$^+$	(E2)[‡d]	0.01195	α(K)=0.00938 *14*; α(L)=0.00197 *3*; α(M)=0.000465 *7* α(N)=0.0001128 *16*; α(O)=1.86×10^{-5} *3*; α(P)=1.006×10^{-6} *15* B(E2)(W.u.)<75
3506.2	(13)	319.8[‡]	100[‡]	3186.4	(12$^+$)			
3557.4	(14$^-$)	268.2[‡i]	6.1[‡] *6*	3288.8	(13$^-$)			
		580.2[‡]	100[‡] *3*	2977.2	(12$^-$)	Q[‡]		
3558.4	14$^+$	777[‡]	100[‡]	2781.7	12$^+$	Q[‡]		
3623.8	(14$^-$)	314.7[‡]	42.1[‡] *13*	3309.1	(13$^-$)	D[‡]		
		616.6[‡]	100[‡] *3*	3007.0	(12$^-$)	(Q)[‡]		
3630.2	(13$^+$)	672.1[@]	100	2958.1	(11$^+$)			
3731.0	(15$^+$)	299.1[‡]	100[‡]	3431.9	(13$^+$)	Q[‡]		
3760.8?	(14$^-$)	637.6[‡]	100[‡]	3123.2	(12$^-$)			
3816.5	(15$^+$)	258.4[‡]	14.8[‡] *5*	3558.4	14$^+$	D[‡]		
		376.5[‡]	13.2[‡] *8*	3440.4	(14$^+$)			
		523.1[‡]	100[‡] *3*	3293.7	(13$^+$)	Q[‡]		
3935.2	(16$^+$)	118.9[‡]	1.32[‡] *5*	3816.5	(15$^+$)			
		376.8[‡]	1.45[‡] *7*	3558.4	14$^+$	Q[‡]		
		494.5[@] *5*	100[‡] *3*	3440.4	(14$^+$)	Q[‡]		
3940.6	(15$^-$)	652.1[‡]	100[‡]	3288.8	(13$^-$)	Q[‡]		
3946.2	(15$^-$)	322.2[‡]	22.2[‡] *9*	3623.8	(14$^-$)	D[‡]		
		637.4[‡]	100[‡] *4*	3309.1	(13$^-$)	Q[‡]		
4062.4	(15$^-$)	636.9[‡]	100[‡]	3425.5	(13$^-$)			
4100.0	(16$^+$)	368.9[‡]	100[‡]	3731.0	(15$^+$)	D[‡]		
4169.8	(16$^-$)	612.4[‡]	100[‡]	3557.4	(14$^-$)	Q[‡]		
4242.2	(16$^+$)	683.8[‡]	100[‡]	3558.4	14$^+$	Q[‡]		
4283.1	(16$^-$)	336.9[‡]	9.8[‡] *6*	3946.2	(15$^-$)			
		659.3[‡]	100[‡] *3*	3623.8	(14$^-$)			
4351.3	(16$^+$)	793.0[‡]	78[‡] *6*	3558.4	14$^+$			
		910.9[‡]	100[‡] *6*	3440.4	(14$^+$)			

$^{186}_{76}Os_{110}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{186}Os)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[e]	Comments
4414.2	(17$^+$)	478.5[‡]	23.9[‡] *9*	3935.2	(16$^+$)	D[‡]		
		598.2[‡]	100[‡] *3*	3816.5	(15$^+$)	Q[‡]		
4483.4	(17$^+$)	383.2[‡]	100[‡] *3*	4100.0	(16$^+$)	D[‡]		
		752.4[‡]	39.7[‡] *14*	3731.0	(15$^+$)			
4487.0	(16$^-$)	726.2[‡]	100[‡]	3760.8?	(14$^-$)			
4494.7	(18$^+$)	394.6[‡]	1.90[‡] *6*	4100.0	(16$^+$)	[E2]		B(E2)(W.u.)>2.7
		559.4[@] *5*	100 *3*	3935.2	(16$^+$)	(E2)	0.01738	α(K)=0.01333 *19*; α(L)=0.00310 *5*; α(M)=0.000739 *11* α(N)=0.000179 *3*; α(O)=2.92×10^{-5} *5*; α(P)=1.422×10^{-6} *20* B(E2)(W.u.)>0.31 I_γ: From (^{14}C,4nγ). Mult.: Q from DCO ratio for cascade γ in (α,4nγ).
4505.1	(18$^+$)	569.9[@] *1*	100[‡]	3935.2	(16$^+$)	Q[‡]		
4624.4	(17$^-$)	678.4[‡]	100[‡] *3*	3946.2	(15$^-$)	Q[‡]		
		684.0[‡]	45.6[‡] *16*	3940.6	(15$^-$)			
4637.1?	(17$^-$)	691.3[‡i]	56.8[‡] *18*	3946.2	(15$^-$)			
		696.8[‡i]	100[‡] *3*	3940.6	(15$^-$)	Q[‡]		
4760.2	(17$^-$)	697.8[‡]	100[‡]	4062.4	(15$^-$)	Q[‡]		
4818.7	(18$^-$)	648.9[‡]	100[‡]	4169.8	(16$^-$)	Q[‡]		
4869.6	(18$^+$)	386.0[‡]	100[‡] *4*	4483.4	(17$^+$)			
		769.8[‡]	86[‡] *4*	4100.0	(16$^+$)			
4957.4	(19$^+$)	462.8[@] *1*	100	4494.7	(18$^+$)	D+Q		Mult.,δ: From DCO ratio in (α,4nγ); mult=D+Q and δ=−1.5 *+5−13* or −0.62 *+18−38*.
4963.5	(18$^+$)	721.3[‡]	100[‡]	4242.2	(16$^+$)	Q[‡]		
5025.7	(18$^-$)	531.0[@] *1*	100	4494.7	(18$^+$)	Q+D		Mult.: from DCO ratio in (α,4nγ) E=50,55 MeV. Likely M2(+E1) The lifetime of the state limits the M2 component to < 9%.
5107.1	(19$^+$)	692.9[‡]	100[‡]	4414.2	(17$^+$)	Q[‡]		
5167.8	(20$^+$)	662.7[@] *1*	100	4505.1	(18$^+$)	Q[‡]		
5243.9	(19$^-$)	218.2[‡]	100[‡]	5025.7	(18$^-$)	D[‡]		
5331.9	(19$^-$)	306.2[@] *1*	99[‡] *3*	5025.7	(18$^-$)			
		707.9[‡]	100[‡] *3*	4624.4	(17$^-$)	(E2)[‡]		B(E2)(W.u.)>0.1 Mult.: Q from (^{14}C,4nγ), M2 is excluded by RUL.
5374.3	(20$^+$)	416.9[@] *1*	25.3[‡] *8*	4957.4	(19$^+$)	D[‡]		
		879.6[@] *1*	100[‡] *3*	4494.7	(18$^+$)	Q[‡]		
5489.9	(20$^-$)	671.2[‡]	100[‡]	4818.7	(18$^-$)			
5496.4	(20$^+$)	539.5[‡]	100[‡] *3*	4957.4	(19$^+$)	D[‡]		
		1002.1[‡]	35.3[‡] *12*	4494.7	(18$^+$)	Q[‡]		

$^{186}_{76}Os_{110}$-18

Adopted Levels, Gammas (continued)

γ(^{186}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[e]	Comments
5501.0	(20$^+$)	543.5[@] *1*	100[‡] *3*	4957.4	(19$^+$)	D[‡]		
		1006.8[‡]	36.7[‡] *12*	4494.7	(18$^+$)	Q[‡]		
5560.4	(20$^-$)	228.6[‡]	100[‡]	5331.9	(19$^-$)	[‡]		
5564.8	(20$^-$)	539.1[@] *1*	100	5025.7	(18$^-$)	(Q)		Mult.: from DCO ratio in (α,4nγ).
5670.5	(20$^+$)	800.9[‡]	100[‡]	4869.6	(18$^+$)			
5701.9	(21$^+$)	200.9[@] *1*	42.8[‡] *14*	5501.0	(20$^+$)	D[‡]		
		206.0[‡]	17.3[‡] *7*	5496.4	(20$^+$)			
		327.5[@] *1*	100[‡] *3*	5374.3	(20$^+$)	D[‡]		
5781.7	(20$^+$)	818.2[‡]	100[‡]	4963.5	(18$^+$)	(Q)[‡]		
5832.9	(21$^-$)	501.0[@] *1*	100	5331.9	(19$^-$)			E_γ: for doublet.
5888.8	(21$^+$)	781.7[‡]	100[‡]	5107.1	(19$^+$)	(Q)[‡]		
5902.1	(21$^-$)	341.7[‡]	100[‡] *3*	5560.4	(20$^-$)			
		570.2[‡]	80[‡] *4*	5331.9	(19$^-$)			
5915.3	(22$^+$)	747.5[@] *1*	100	5167.8	(20$^+$)	Q[‡]		
5922.8	(21$^+$)	421.8[‡]	100[‡]	5501.0	(20$^+$)			
5923.1	(21$^+$)	426.7[‡]	100[‡]	5496.4	(20$^+$)			
6026.9	(22$^+$)	530.7[‡]	46.6[‡] *17*	5496.4	(20$^+$)	Q[‡]		
		652.4[‡]	100[‡] *3*	5374.3	(20$^+$)	Q[‡]		
6031.0	(22$^+$)	530.1[‡]	100[‡] *3*	5501.0	(20$^+$)			
		534.6[‡]	41.6[‡] *13*	5496.4	(20$^+$)			
		656.6[‡]	84.3[‡] *26*	5374.3	(20$^+$)	Q[‡]		
6064.3	(22$^+$)	362.4[‡]	100[‡]	5701.9	(21$^+$)			
6151.9	(24$^+$)	120.9[‡]	100[‡]	6031.0	(22$^+$)	(Q)[‡]		
6185.4?	(22$^-$)	695.7[‡i]	100[‡]	5489.9	(20$^-$)	(Q)[‡]		
6446.4?	(22$^+$)	524.6[‡i]	100[‡]	5922.8	(21$^+$)			
6473.4	(25$^+$)	321.5[‡]	100[‡]	6151.9	(24$^+$)	D[‡]		
6487.9	(24$^+$)	456.9[‡]	100[‡] *3*	6031.0	(22$^+$)	Q[‡]		
		460.9[‡]	41.5[‡] *13*	6026.9	(22$^+$)			
6727.9	(24$^+$)	812.6[‡]	100[‡]	5915.3	(22$^+$)	Q[‡]		
6946.6?	(26$^+$)	474.2[‡i]	100[‡]	6473.4	(25$^+$)			
6989.1	(26$^+$)	501.2[‡]	100[‡]	6487.9	(24$^+$)	Q[‡]		
6993.0	(25$^+$)	505.1[‡]	100[‡]	6487.9	(24$^+$)	D[‡]		
7142.9	(28$^+$)	153.8[‡]	100[‡]	6989.1	(26$^+$)	(E2)[‡]	0.834	B(E2)(W.u.)>75.2 Mult.: Q from (^{14}C,4nγ), M2 is excluded by RUL.
7477.4	(26$^+$)	484.4[‡]	100[‡]	6993.0	(25$^+$)			

$^{186}_{76}Os_{110}$-19

Adopted Levels, Gammas (continued)

$\gamma(^{186}Os)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]
7583.2	(26^+)	855.3[‡]	100[‡]	6727.9	(24^+)	(Q)[‡]
7710.3	(30^+)	567.4[‡]	100[‡]	7142.9	(28^+)	
7749.7	(30^+)	606.8[‡]	100[‡]	7142.9	(28^+)	Q[‡]
7778.4	(30^+)	635.5[‡]	100[‡]	7142.9	(28^+)	

† From ^{186}Ir ε decay (16.64 h), unless noted otherwise.
‡ From (^{14}C,4nγ).
# Weighted average of γ data from source datasets. Exceptions are noted.
@ From (α,4nγ).
& From ^{186}Ir ε decay (1.90 h).
a Wt. ave. of data from ^{186}Ir ε decay (1.90 h), (α,2nγ), and ^{186}Ir ε decay (16.64 h).
b Wt. ave. of data from (α,2nγ), (p,2nγ), and ^{186}Ir ε decay (16.64 h).
c Different placements are required for the 1047 gammas reported in ^{186}Ir ε decay (16.64 h) and in ^{186}Ir ε decay (1.90 h). In the former decay, $\gamma\gamma$ coin establishes a 1915 level deexcited by a 1047γ and a 847γ of comparable strength, whereas in the latter decay the 847γ is absent, as is the level which the 1047γ would feed. Placement of the 1047γ in ^{186}Ir ε decay (1.90 h) from the 1480 level is questioned by the evaluator, however, due to lack of expected corroborative evidence from (α,2nγ) or ^{186}Ir ε decay (16.64 h).
d From $\gamma(\theta)$ in (α,4nγ), assuming that Q transitions are E2 and that D intraband transitions are M1.
e Additional information 1.
f If no value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.
g Multiply placed with undivided intensity.
h Multiply placed with intensity suitably divided.
i Placement of transition in the level scheme is uncertain.

$^{186}_{76}Os_{110}$-20

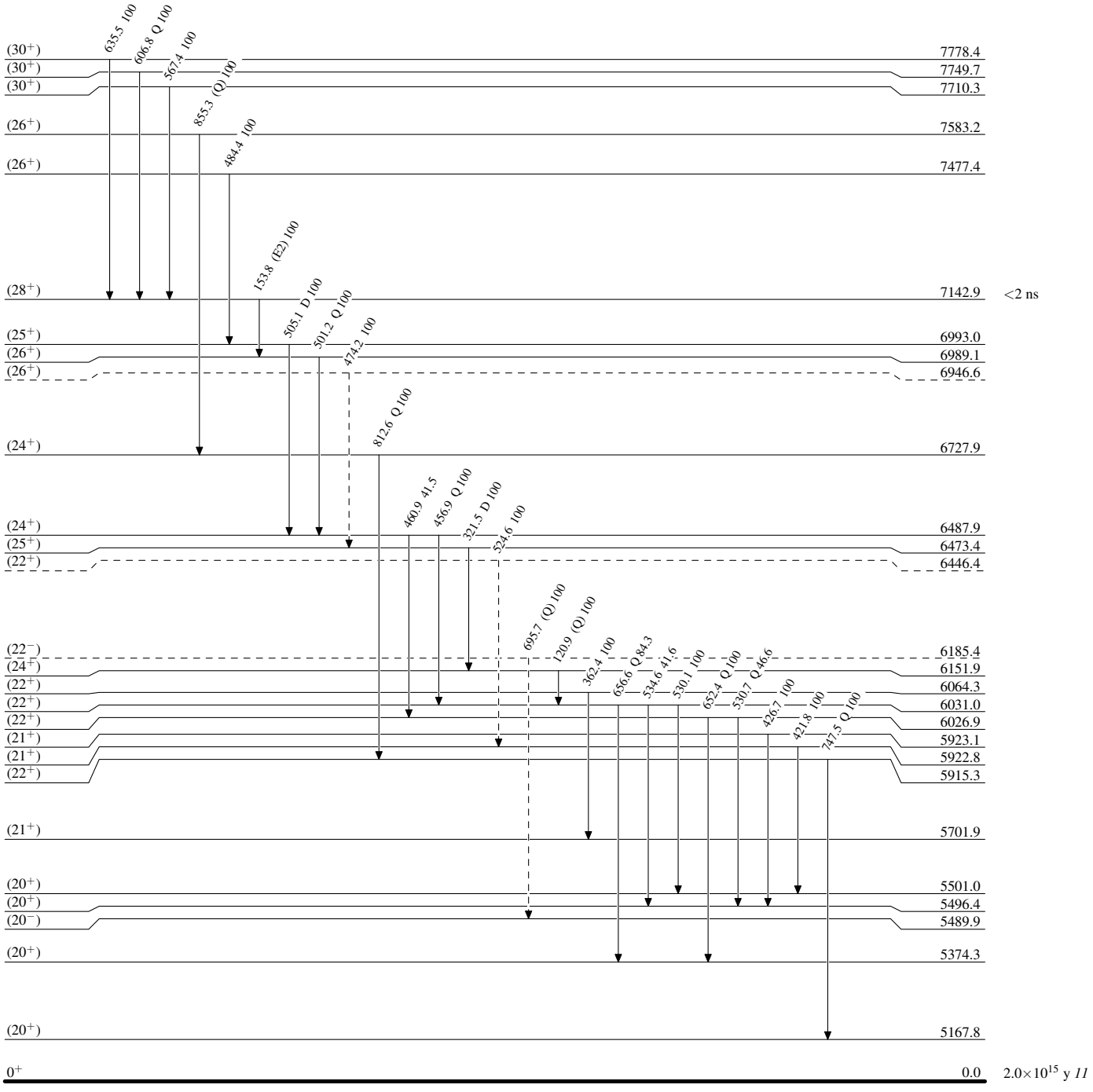
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{76}Os_{110}$

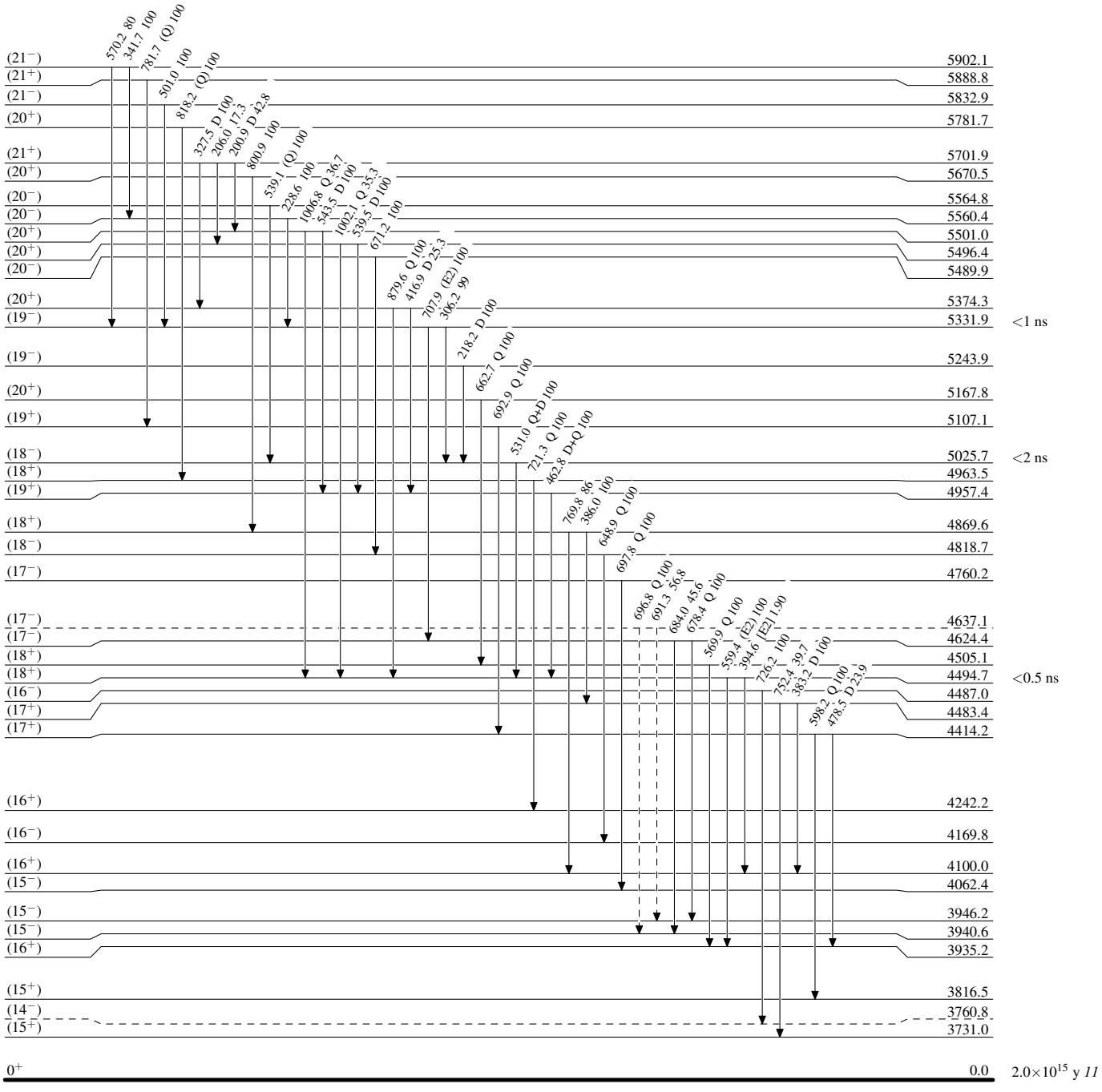
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{76}Os_{110}$

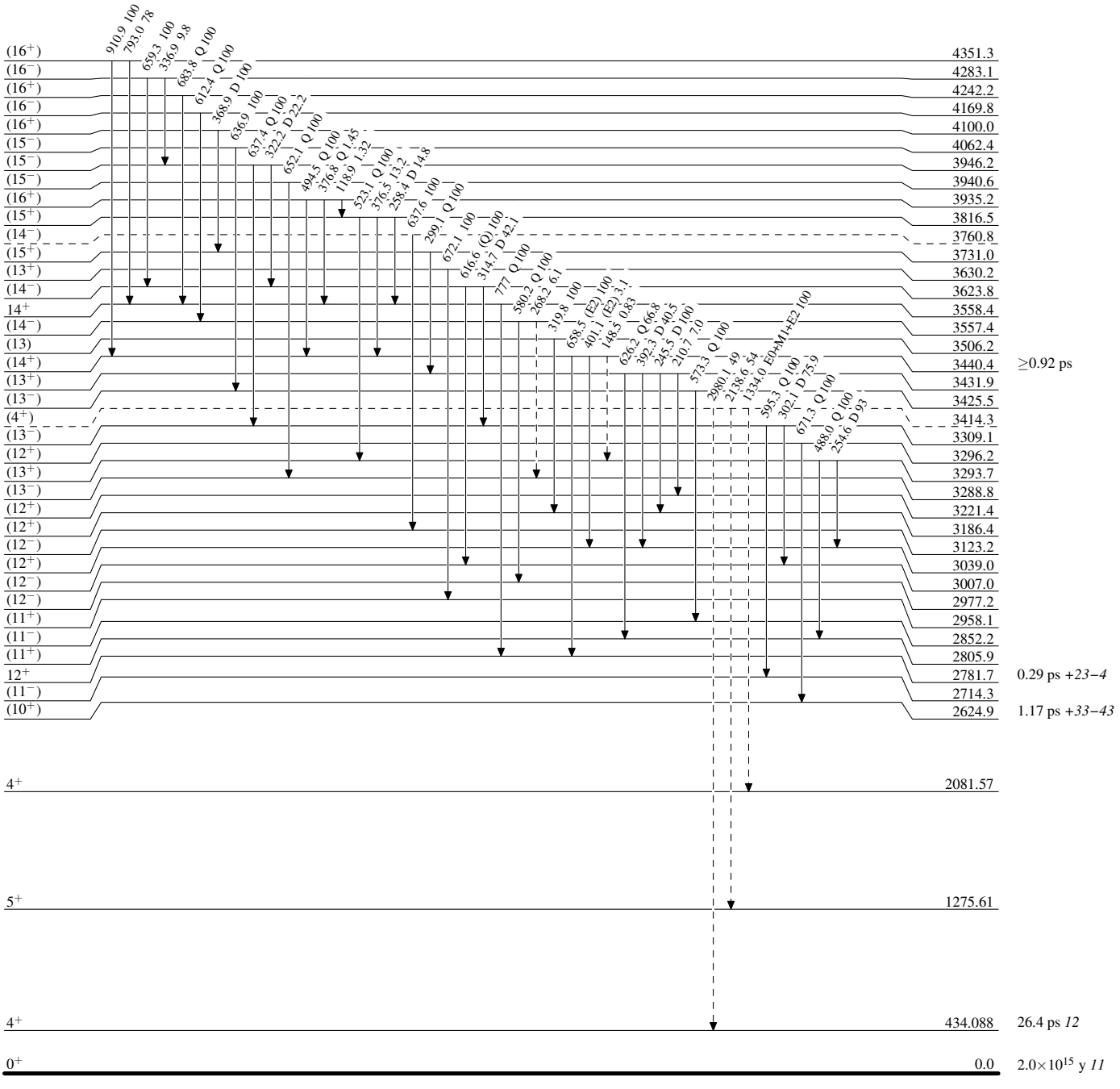
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{76}Os_{110}$

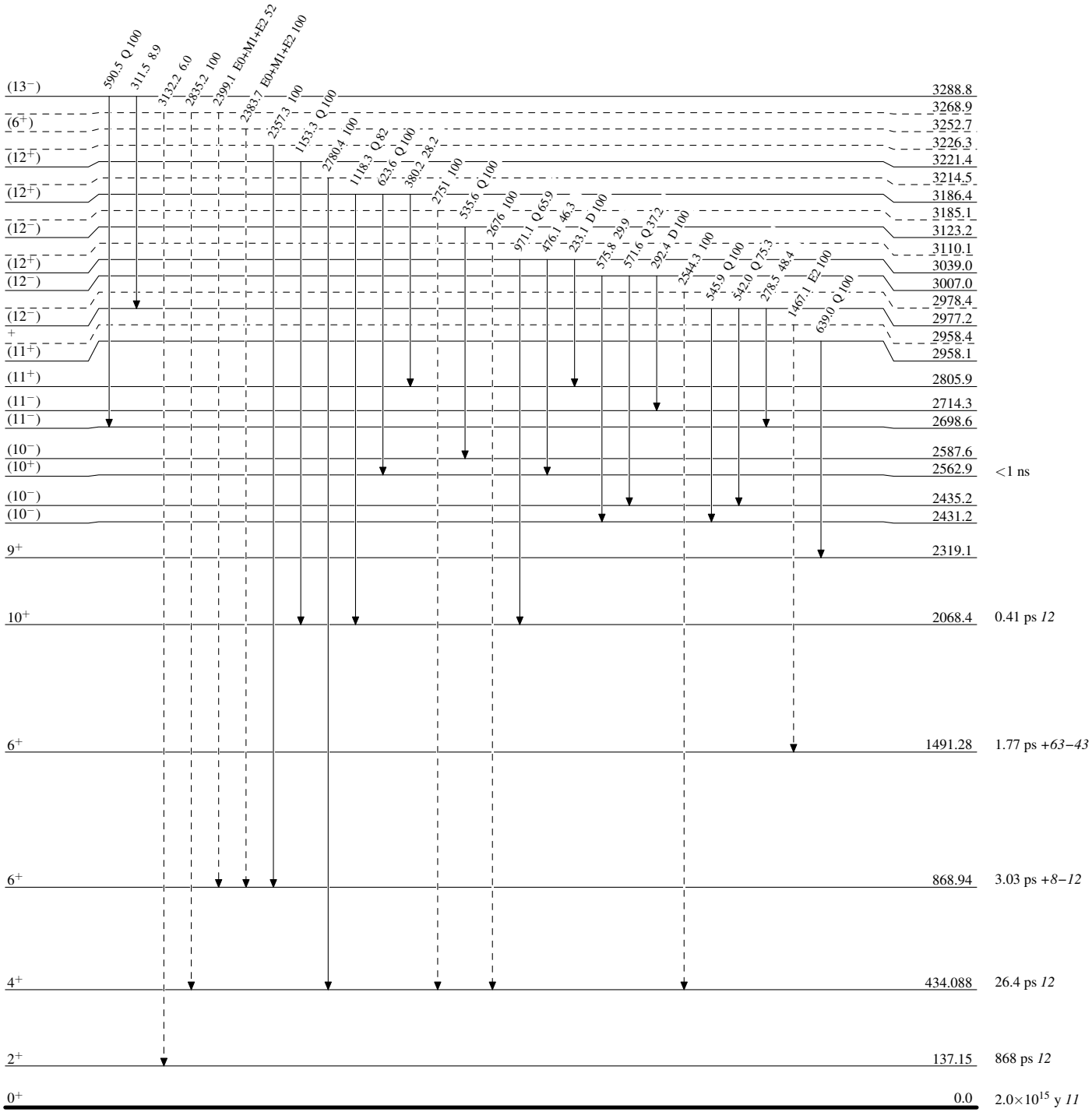
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{186}_{76}Os_{110}$

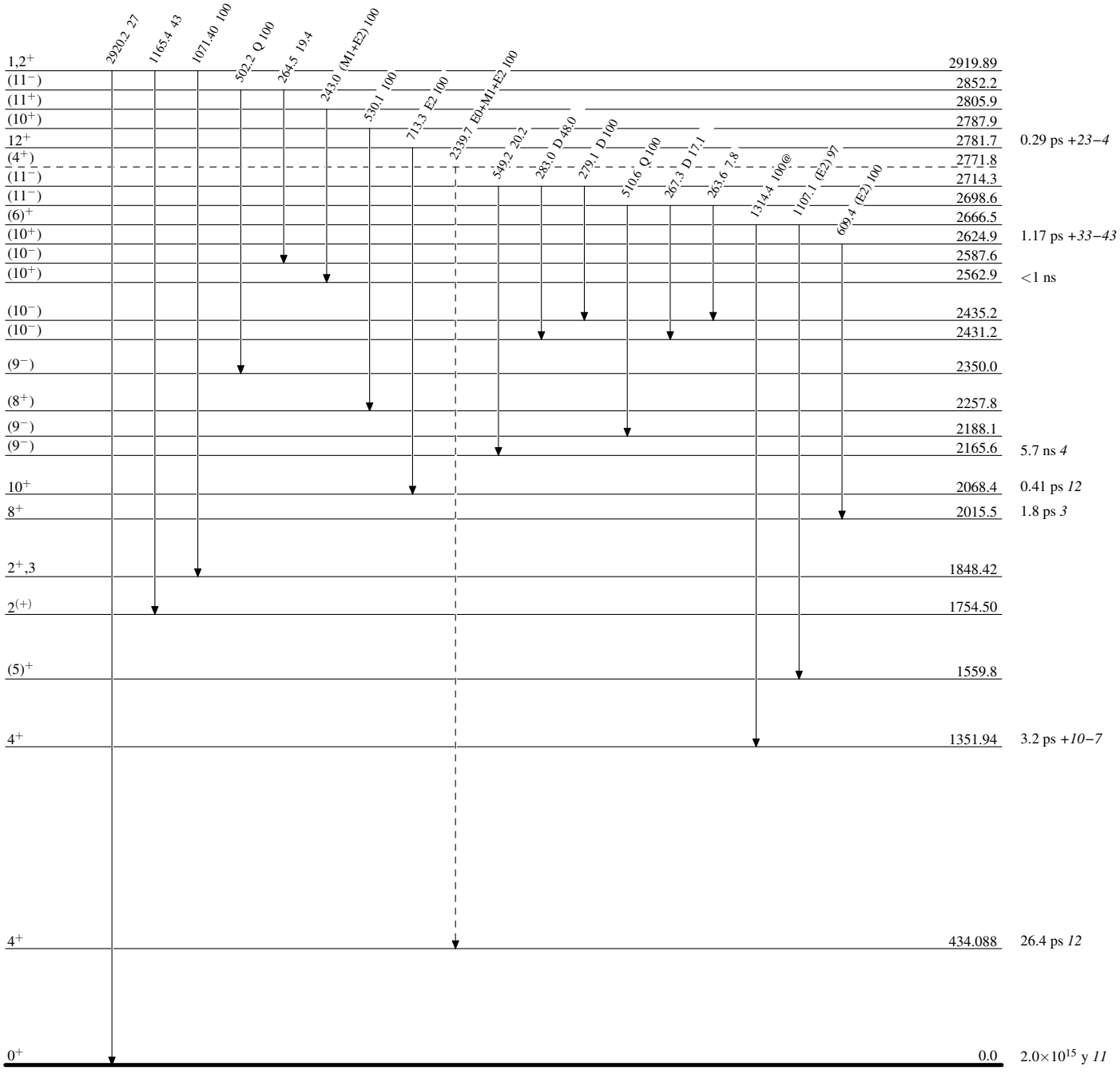
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)



$^{186}_{76}Os_{110}$

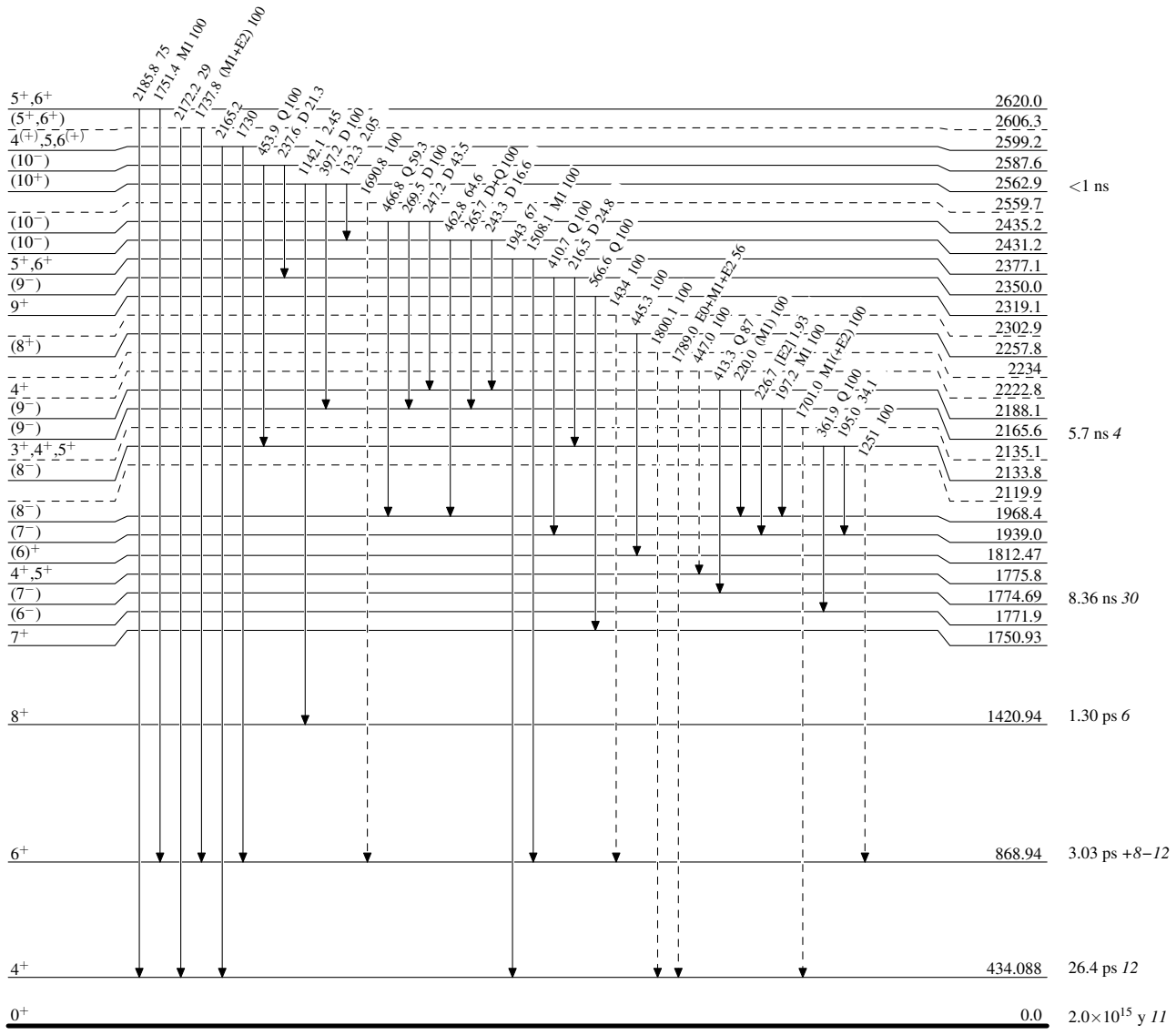
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

γ Decay (Uncertain)

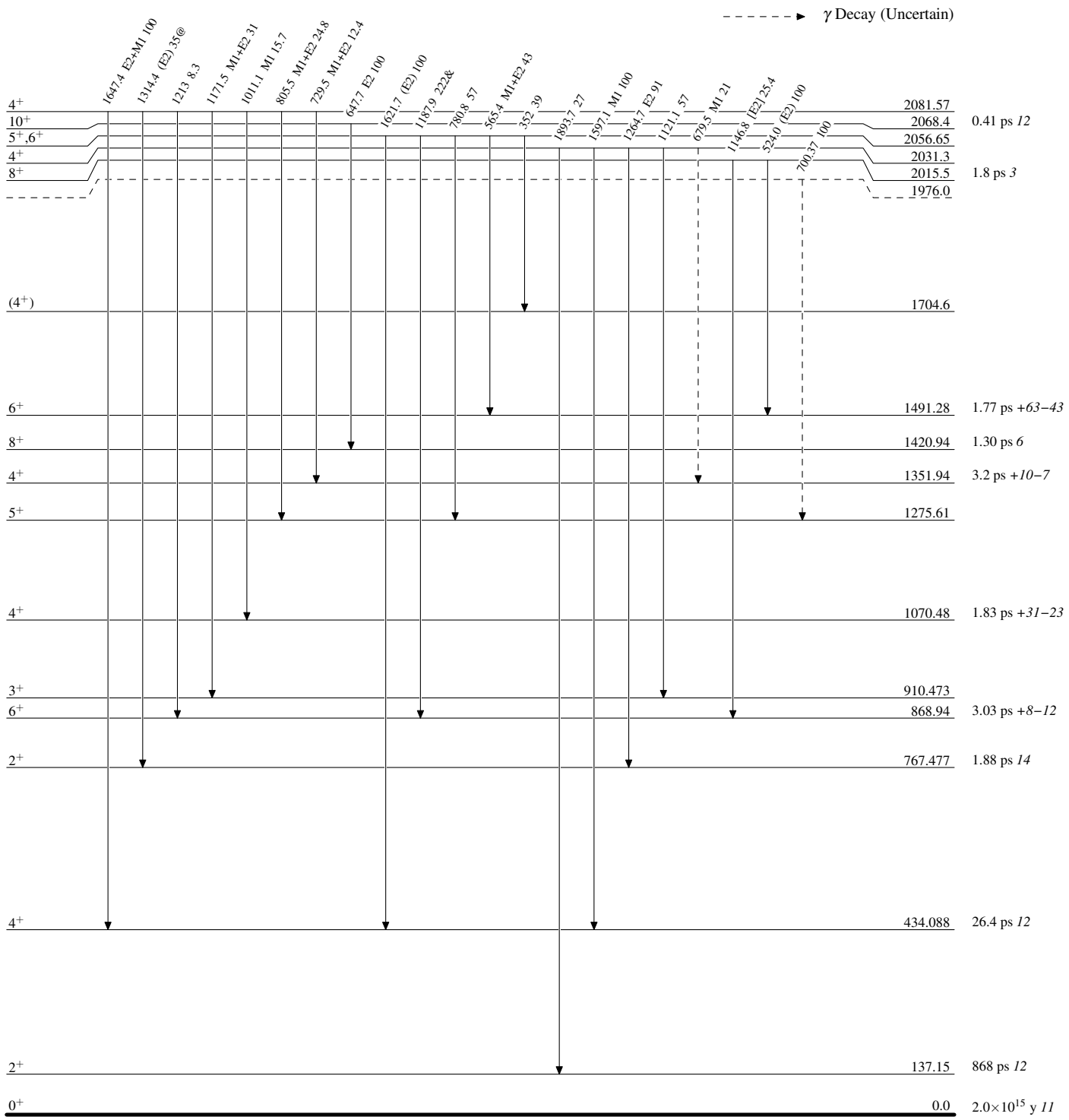


$^{186}_{76}Os_{110}$

Adopted Levels, Gammas

Level Scheme (continued)

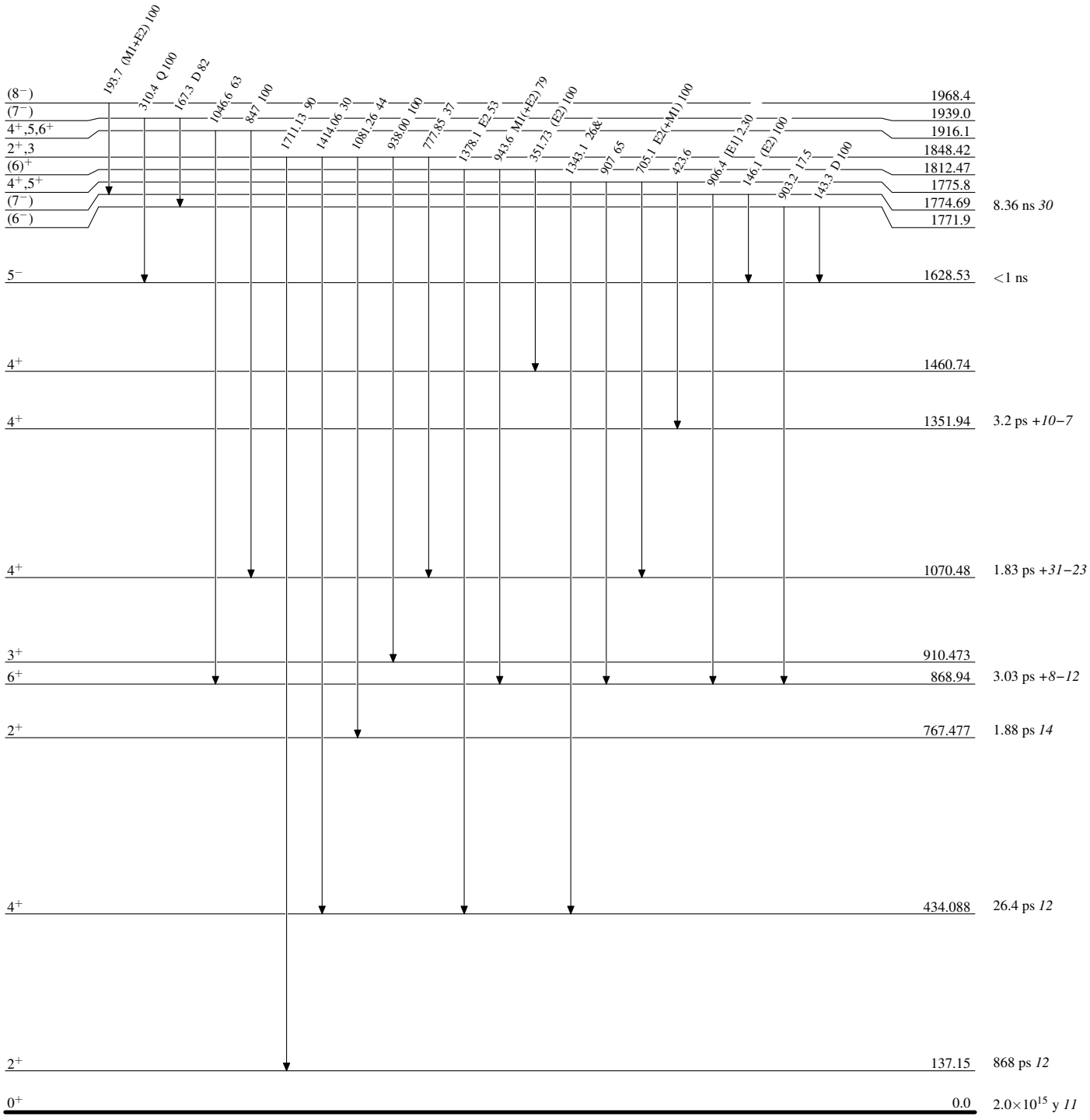
Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



Adopted Levels, Gammas

Level Scheme (continued)

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



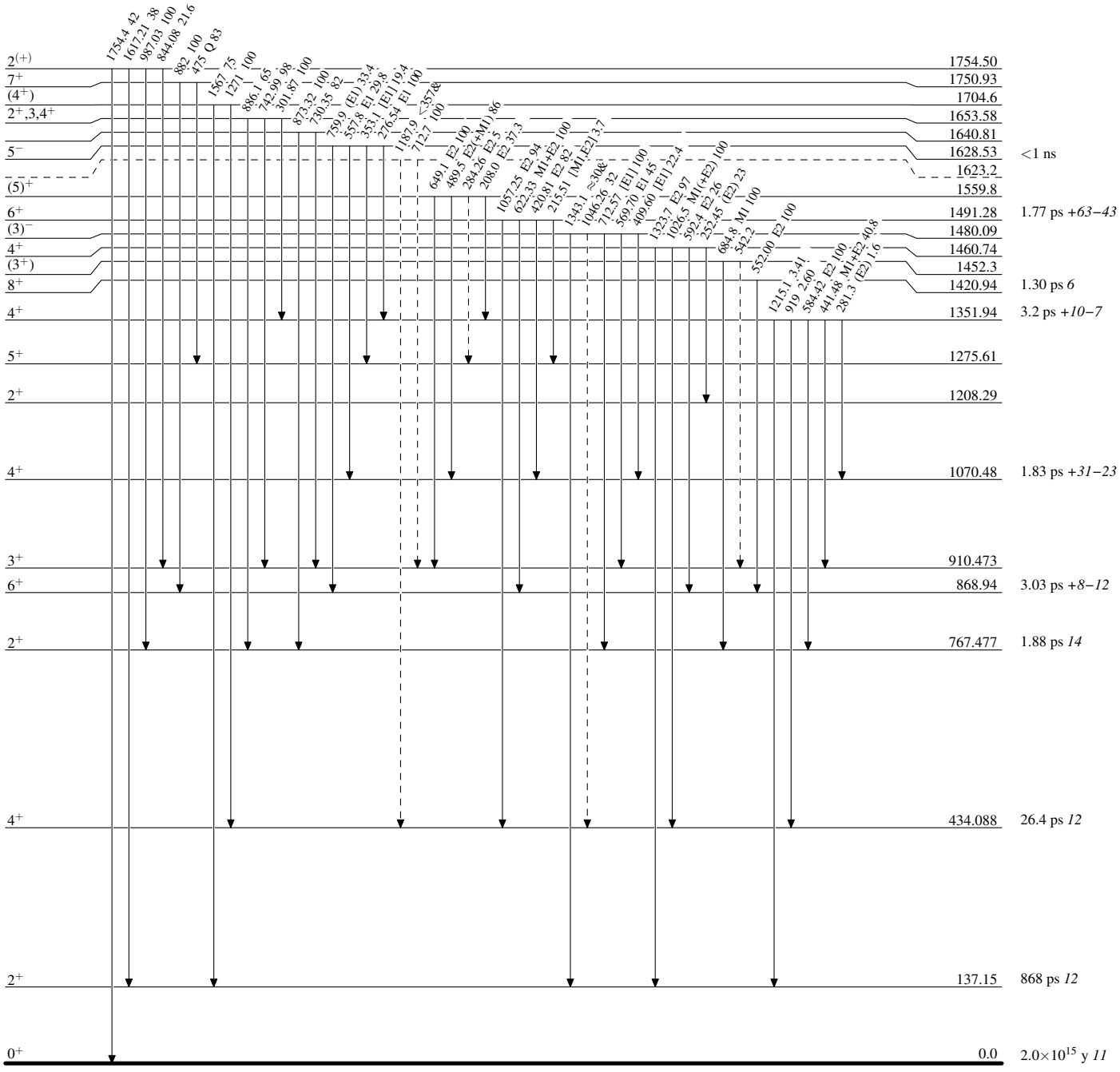
$^{186}_{76}Os_{110}$

Adopted Levels, Gammas

Level Scheme (continued)

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

Legend
- - - - - - ► γ Decay (Uncertain)

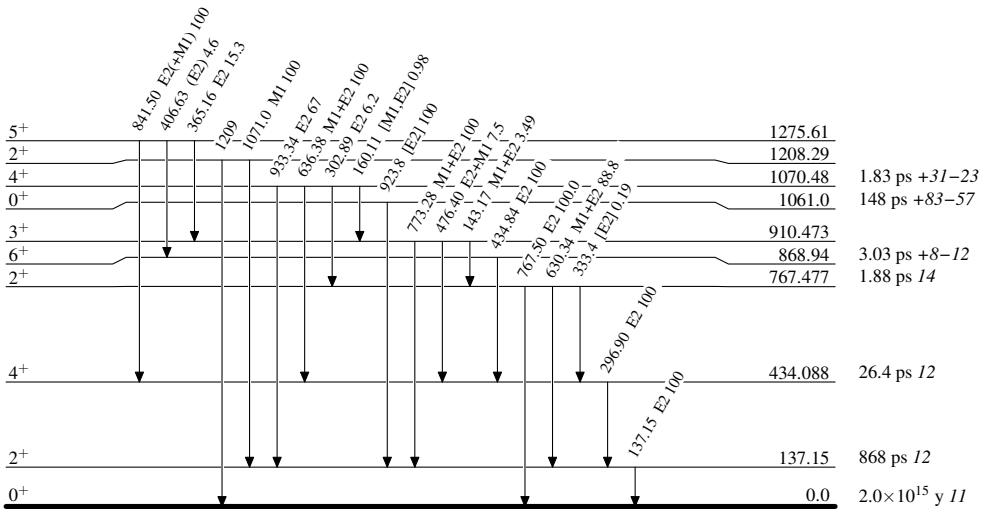


$^{186}_{76}Os_{110}$

Adopted Levels, Gammas

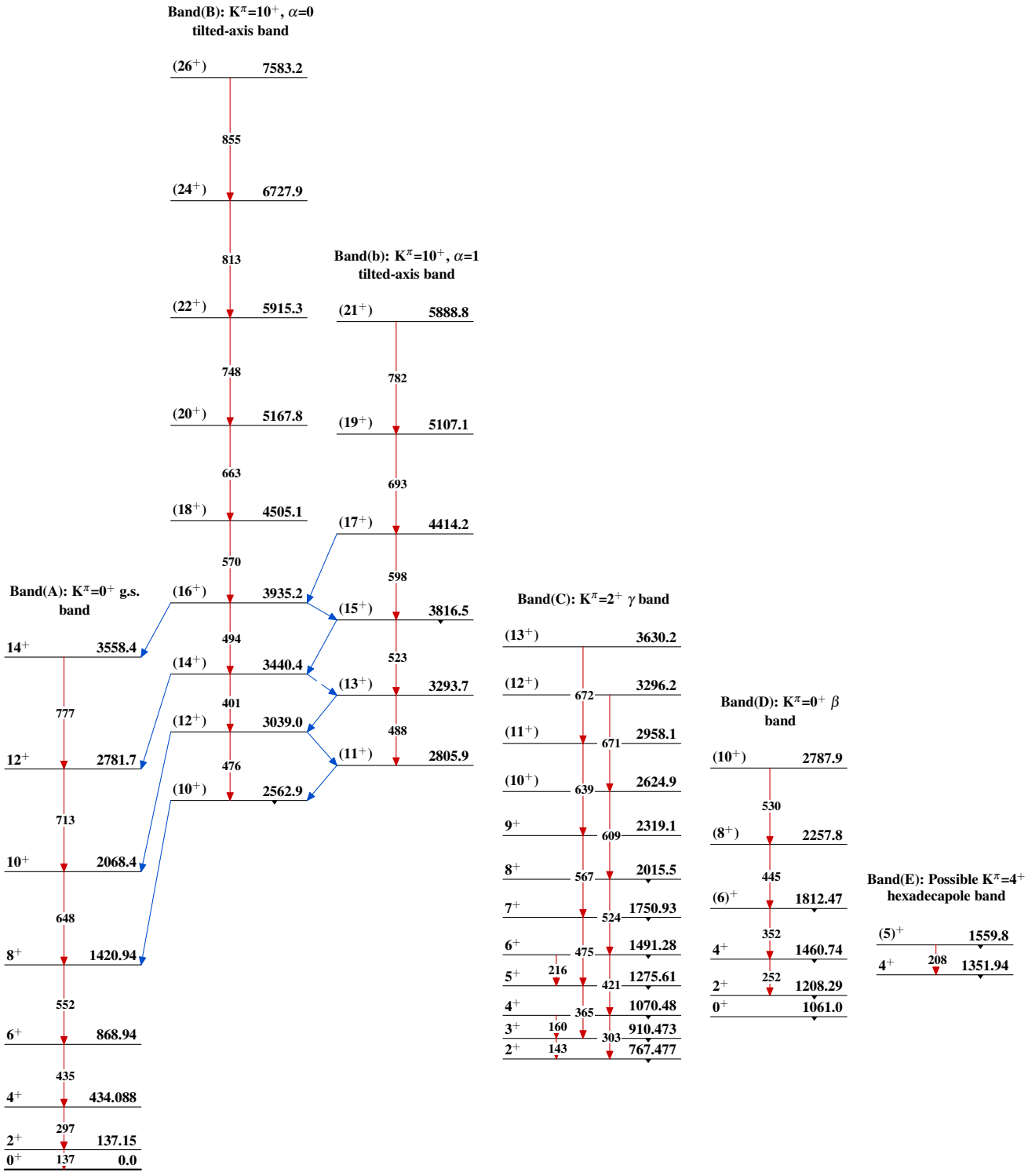
Level Scheme (continued)

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



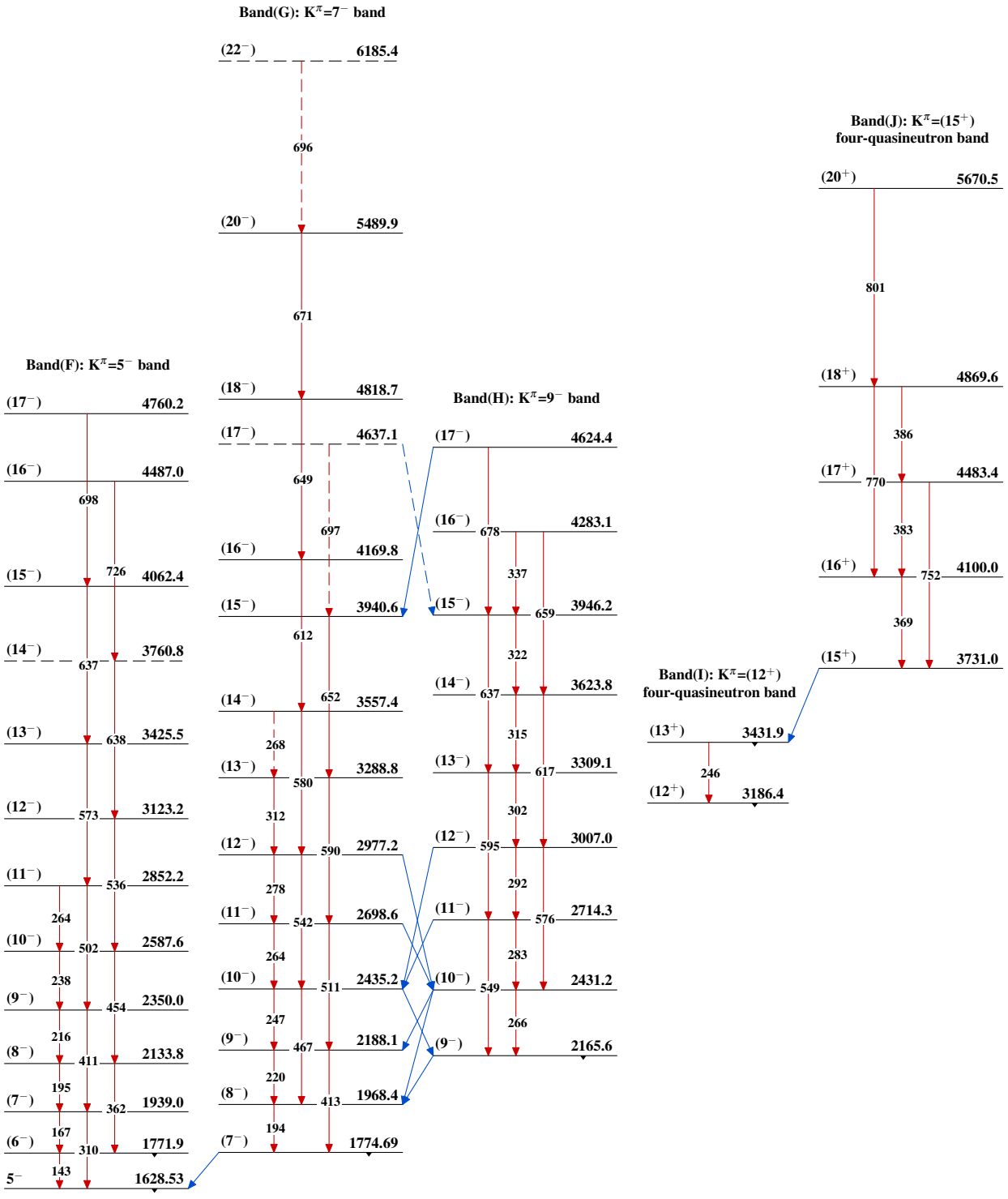
$^{186}_{76}Os_{110}$

Adopted Levels, Gammas



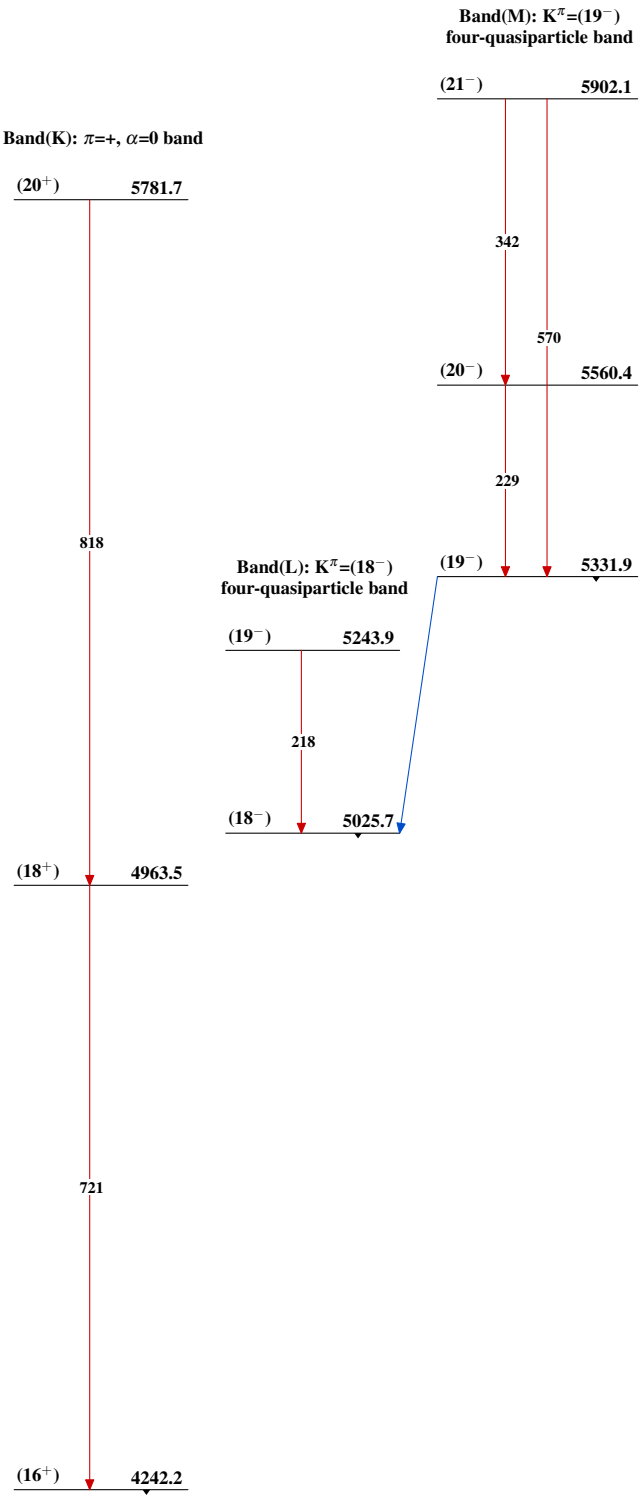
$^{186}_{76}Os_{110}$

Adopted Levels, Gammas (continued)



$^{186}_{76}Os_{110}$

Adopted Levels, Gammas (continued)



$^{186}_{76}Os_{110}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Juutinen, D. J. Hartley	NDS 150, 1 (2018)	1-Feb-2018

Q(β^-)=−2792 *9*; S(n)=7989.61 *15*; S(p)=7209.73 *15*; Q(α)=2143.2 *9* 2017Wa10
Additional information 1.

^{188}Os Levels

Cross Reference (XREF) Flags

A	^{188}Re β^- decay (17.005 h)	H	^{187}Os(n,γ):resonances	O	^{189}Os(d,t)
B	^{188}Ir ε decay (41.5 h)	I	^{187}Os(n,α):resonances	P	^{187}Re(^{3}He,d)
C	^{186}W(α,2nγ)	J	^{188}Os(n,n′γ)	Q	^{188}Os(α,α'),(p,p′)
D	^{187}Os(n,γ) E=th	K	Coulomb excitation	R	^{190}Os(p,t)
E	^{187}Os(n,γ) E=res	L	^{188}Os(γ,γ):Mossbauer	S	^{186}Os(t,p)
F	^{187}Os(n,γ) E=2 keV	M	^{188}Os(e,e′)	T	Muonic atom
G	^{187}Os(n,γ) E=24 keV	N	^{187}Os(d,p)	U	(HI,xnγ)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0@	0$^+$	stable	ABCDEFG JKLMNOPQRSTU	Δ<r^2>(^{188}Os,^{186}Os)=0.104 fm^2 *4* (1981Ho22). Δ<r^2>(^{190}Os,^{188}Os)=0.090 fm^2 *4* (1981Ho22). isotope shifts, $\delta\nu$=ν(^{188}Os) − ν(^{192}Os))= +4227 *2* (MHz) (atom) and 4261.9 *34* (MHz) (ion) (2006Av09).
155.043@ *4*	2$^+$	0.704 ns *7*	ABCDEFG JKLMNOPQR TU	B(E2)↑=2.512 *32* (1996Wu07) μ=+0.596 *22* (1992St06) Q=−1.46 *4* (1981Ho22,1977Ho23,2016St14) B(E2)↑: Others: 2.635 *30* (1988Bo08), 2.82 *3* (1981Ho22), 2.52 *13* (1976Ba06), 2.69 *27* (1972Ca16), 2.78 *15* (1971Mi08), 2.90 *8* (1970Pr09), 2.7 *4* (1967Ca08), 3.7 *5* (1961Re02), 3.17 *33* (1961Mc18), 2.80 *31* (1961Mc01,1958Mc02), and 3.5 *10* (1957Ba11). μ: From IMPAC (weighted average adopted by 1992St06). Others: +0.584 *20* (1985St05,adopted weighted average), +0.51 *5* (1984St11), +0.60 *3* (1982Le02), +0.58 *6* (1972Si03,1972Si43,1972SiYG), 0.51 *5* (1971SiYO), 1970Be36, 0.61 *3* (1970Wa06), 1967Gi02, 1966Go06, 0.62 *5* (1965Ch14), 1964Sp02, 1963Go05. Q: From muonic-x ray. Others: Q=−1.15 *25* (1980Ba42,Coul. ex.), −1.33 *10* (Coul. ex. quoted by 1989Ra17 from Annual Report Rochester (1978),p.9), −1.36 *9* (1972Wa24,Mossbauer), −1.81 *24* (1970Wa06,Mossbauer), 1972La16, 1970Pr09. J$^\pi$: 155.044γ E2 to 0$^+$; band member. T$_{1/2}$: Weighted average of 0.711 ns *9*, weighted average of values directly measured in Coul. ex., β^- and ε decay of 0.645 ns *97* (2001Wu03), 0.714 ns *35* (1997Bb08), 0.718 ns *17* (1971Bb09), 0.714 ns *21* (1971Bo13), 0.710 ns *30* (1970Be18), 0.680 ns *30* (1968Ma14), 0.707 ns *35* (1966As03), 0.710 ns *20* (1963Fo02), 0.728 ns *69* (1963Go05) and 0.730 ns *60* (1962Ba14) and 0.695 ns *10* from B(E2)=2.512 *32* (1996Wu07) in Coul. ex. Others (directly measured): 0.65 ns *15* (1955Su64) and 1.7 ns *4* (1953Mc39)).
477.959@ *17*	4$^+$	17.7 ps *10*	ABCDE JK MNOPQR TU	B(E2)↑=1.40 *+3−2* (1996Wu07) B(E4)↑=0.047 *5* (1988Bo08) μ=+1.43 *14* (1985St05)

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)†	Jπ	T1/2	XREF	Comments
				Jπ: 322.92γ E2 to 2+; band member. T1/2: From 2001Wu03 using the recoil-distance method in Coulomb excitation. Other: 19.3 ps *+3−4* from B(E2)(from 155, 2+) (1996Wu07). B(E2)↑: Others: 1.47 *15* (1971Mi08), 1.41 *11* (1969Ca19), and 1.36 *20* (1967Ca08). B(E4)↑: From ^{188}Os(e,e′). μ: from g=+0.358 *35*, using transient-field integral PAC in Coulomb excitation (1985St05). Other: g(478)/g(155)=1.32 *17* (1984St11).
633.037& *14*	2+	9.4 ps *10*	ABCDE JK MNOPQR TU	B(E2)↑=0.233 *+2−9* (1996Wu07) μ=+0.78 *7* (1985St05) Q=+1.00 *25* (1980Ba42) Jπ: 633.03γ E2 to 0+. T1/2: From 2001Wu03 using the recoil-distance method in Coulomb excitation. Other: 6.46 ps *+26−9* from B(E2)(from 0, 0+) (1996Wu07). μ: from g=+0.392 *35*, using transient-field integral PAC in Coulomb excitation (1985St05). Other: +0.86 *16* (1967Mu05). Q: from reorientation method in Coulomb excitation (1980Ba42,1978BaYK). Note, that Q=+1.0 *3* is recommended in 2016St14. B(E2)↑: from the ground state (0.0,0+). Others: 0.247 *15* (1971Mi08), 0.250 *22* (1969Ca19), 0.211 *30* (1967Ca08), 0.20 *6* (1961Mc01); 0.241 *9* from ^{188}Os(e,e′). B(E2)(from 155,2+)=0.150 *4* (1996Wu07), 0.156 *11* (1971Mi08), 0.146 *13* (1969Ca19), 0.164 *24* (1967Ca08). B(E2)(from 478,4+)=0.016 *+4−5* (1996Wu07). B(E2)(633,2+ to 155,2+)/B(E2)(633,2+ to g.s.)=3.5 *2* (1980Ba42).
789.961& *19*	3+		ABCDE JK OP TU	Jπ: 312.00γ E2(+M1) to 4+, 634.97γ E2+M1 to 2+; γγ(θ); band assignment.
940.34@ *6*	6+	2.95 ps *17*	BC JK QR U	B(E2)↑=1.217 *21* (1996Wu07) μ=+2.5 *4* (1985St05) Jπ: 462.38γ E2 to 4+; band assignment. T1/2: From 2001Wu03 using the recoil-distance method in Coulomb excitation. Other: 3.09 ps *5* from B(E2)(from 633, 4+) (1996Wu07). μ: from g=+0.41 *6*, using the transient-fields in integral PAC in Coulomb excitation (1985St05). B(E2)↑: from 633,4+. Other: 1.68 *26* (1969Ca19).
965.66& *3*	4+	6.0 ps *5*	ABCDE JK OPQR U	B(E2)↑=0.0160 *9* (1996Wu07) μ=+1.6 *5* (1985St05) Jπ: 332.62γ E2 to 2+, 810.60γ E2 to 4+; band assignment. T1/2: From 2001Wu03 using the recoil-distance method in Coulomb excitation. Other: 5.7 ps *6* from B(E2)(from 155, 2+) (1996Wu07). B(E2)↑: from 155,2+; Other: 0.020 *4* (1969Ca19). B(E2)(from 478,4+)=0.135 *7* (1996Wu07); Other: 0.159 *32* (1969Ca19). B(E2)(from 633,2+)=0.63 *+5−4* (1996Wu07); Other: 1.05 *35* (1969Ca19). B(E2)(from 940,6+)=0.025 *+6−11* (1996Wu07). μ: from g=+0.40 *12*, using the transient-fields in integral PAC in Coulomb excitation (1985St05).
1042? *7*			N	E(level): From ^{187}Os(d,p).
1086.390 *24*	0+	11.5 ps *6*	AB DEFG JK P R	B(E2)↑=0.00122 *6* (1996Wu07) B(E2)↑: from 155, 2+. Other: 0.0061 *15* (1969Ca19).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
				B(E2)(from 633,2^+)=0.0055 *+4−3* (1996Wu07).
				Jπ: L(p,t)=0; 931.34γ E2 from γγ(θ) to 2^+.
				$T_{1/2}$: From B(E2)↑ and the corresponding branching ratios.
1180.79& *20*	5^+		CDE O U	Jπ: 390.6γ E2 to 3^+, 703.0γ M1 to 4^+; band assignment.
1278.99 *16*	4^+	3.9 ps *8*	CDE JK PQR U	B(E2)↑=0.138 *+13−10* (1996Wu07)
				B(E2)↑: from 633, 2^+. Others: B(E2)(from 155,2^+)=0.0030 *11* (1996Wu07) and B(E2)(from 965,4^+)=0.299 *26* (1996Wu07), assuming pure E2.
				Jπ: L(^{3}He,d)=2. 645.9γ (E2) to 2^+.
				$T_{1/2}$: From 2001Wu03 using the recoil-distance method in Coulomb excitation.
				configuration: dominant π(3/2[402],5/2[402]) assignment (see 2010Ph01 and references therein). However, 2001Wu03, 1974Ya03, 1973Ya05 interpret this state as a dominant two-phonon γ-vibrational configuration.
1304.84 *3*	2^+		AB DEFG J NOP R	XREF: N(1320).
				Jπ: 827.2γ to 4^+, 1304.6γ (E2) to 0^+; (673γ)(633γ)(θ).
1413.89 *17*	(3^-)		A CDE G J M PQR U	XREF: M(1425).
				Jπ: L(p,t)=(3); 448.1γ to 2^+, 780.8γ to 4^+. Absence of a transition to g.s. ($J^\pi=0^+$), would argue against J=1 and 2^+.
				B(E3)=0.147 *8* (1988Bo08) from (e,e′).
1425.0& *3*	6^+	4.0 ps *4*	C K U	B(E2)↑=0.67 *6* (1996Wu07)
				Jπ: 459.4γ to 4^+,484.7γ to 6^+; excitation in Coul. excit. from 4^+; band assignment.
				$T_{1/2}$: from B(E2)(from 965,4^+).
				B(E2)(from 940,6^+)=0.164 *+21−40* (1996Wu07).
				B(E2)(from 478,4^+)=0.00179 *+24−12* (1996Wu07).
1443.5? *2*			A	
1457.50 *3*	2^+		AB DEFG J O R	Jπ: 1457.49γ E2 to 0^+, 979.35γ to 4^+.
1462.50 *3*	2^-		AB DE J	Jπ: 672.5γ E1 to 3^+; direct feeding in ^{188}Re β⁻ decay ($J^\pi=1^-$) and ^{188}Ir ε decay ($J^\pi=1^-$).
1478.08 *4*	0^+		AB DEFG N R	Jπ: L(p,t)=0; 1323.04γ (E2) to 2^+.
1514.8@ *3*	8^+	0.96 ps *6*	C K U	B(E2)↑=1.21 *7* (1996Wu07)
				Jπ: 574.4γ E2 to 6^+; band assignment.
				$T_{1/2}$: From 2001Wu03 using the recoil-distance method in Coulomb excitation. Other: 0.96 ps *6* from B(E2)(940, 6^+) (1996Wu07).
				B(E2)↑: From 940,6^+ (1996Wu07).
1515.6 *3*	5^+		C OP U	Jπ: 725.8γ E2 to 3^+.
1566.7 *3*			D	
1577.6? *5*			D R	XREF: R(1574).
1598.6?			FG	
1620.47 *5*	2^+		AB DEFG O R	XREF: O(1621)R(1622).
				Jπ: 1619.1γ to 0^+, 1142.53γ (E2) to 4^+.
1668.67 *19*	(5^-)		C E N R U	XREF: N(1658).
				Jπ: 254.5γ to (3^-), 728.5γ (E1) to 6^+.
				configuration: $K^\pi=5^-$,ν(1/2⁻[510],11/2⁺[615]).
1685.29 *5*	(3^+)		AB DE NO U	Jπ: 719.55γ to 4^+, 1530.06γ to 2^+ would be consistent with $J^\pi=2^+$,3,4^+. However, a possible direct population of this level in ^{188}Ir ε decay (41.5 h) and ^{188}Re β⁻ decay (17.005 h) would be consistent with $J^\pi=2^+$ or 3^+. The absence of γ to 0^+ would argue against 2^+.
1685.3& *5*	7^+		C U	Jπ: 504.6γ to 5^+, 744.5γ to 6^+; band member.
1704.30 *8*	0^+		AB DEFG N R	Jπ: L(p,t)=0; 1549.25γ to 2^+.
1729.38 *4*	2^+		AB DEFG R	XREF: R(1732).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
				Jπ: 763.90γ to 4^+, 1574.52 M1+E2 to 2^+; 1575γ(θ,T) in ^{188}Ir ε decay excludes J=3.
1746.7[#] *10*			E R	
1765.40 *3*	0^+		AB DEFG O R	Jπ: L(p,t)=0; 1132.32γ (E2) from γγ(θ) in ^{188}Re β⁻ decay to 2^+.
1771.0[a] *4*	7^-	14.00 ns *21*	C U	μ=−0.18 *11* (1984Go06) μ: from g=−0.025 *15* using differential PAD method in 1984Go06. Jπ: 102.3γ E2 to (5^-); proposed configuration based on μ. $T_{1/2}$: From 390γ(t)+729γ(t) in 2009Mo05, by taking into account the decay of the 10^- isomer. Others (from γ(t)): 13.9 ns *8* (1984Go06), 14.0 ns *10* using 155γ(t) and 102.2 γ(t) in 1978Sh21 and 14 ns in 1979WiZS. configuration: $K^\pi=7^-,\nu(3/2^-[512],11/2^+[615])$.
1807.60 *3*	2^+		AB DEFG NO R	XREF: N(1799). Jπ: 1807.36γ to 0^+, 1329.1γ to 4^+, 1017.68γ M1(+E2) to 3^+.
1824.92 *6*	0^+		A DEFG R	Jπ: L(p,t)=0; 1191.83 to 2^+; 1825.2 E0 to 0^+.
1842.88 *3*	$(2)^+$		AB DEFG O	XREF: O(1847). Jπ: 1209.80γ M1(+E2) to 2^+, 1843.0γ to 0^+. Since Iγ(1843γ)< Iγ(1688γ), $J^\pi=2^+$ is more likely than 1^+.
1855[‡] *5*			N R	XREF: N(1865).
1878.2[#] *10*			E N R	XREF: N(1885).
1893?[‡]			N R	XREF: N(1921).
1921 *7*			N	E(level): From ^{187}Os(d,p).
1936.9 *3*	$(1,2^+)$		A R	XREF: R(1938). Jπ: 1936.9γ to 0^+.
1941.04 *6*	$(2)^+$		A DEFG O	Jπ: 1150.5γ to 3^+, 1940.91γ (E2) to 0^+; (1308γ)(633γ)(θ) in ^{188}Re β⁻ decay.
1948.59 *3*	1,2		A N R	Jπ: 486.087γ to 2^-; direct population in ^{188}Re β⁻ decay ($J^\pi=1^-$).
1957.13 *5*	$(1^+,2^+)$		AB DE N	XREF: N(1962). Jπ: 1957.10γ to 0^+. α(pair) for 1802γ and 1957γ support positive parity, but α(K)exp for 1802γ gives negative parity.
1965.00 *6*	$(2)^+$		AB DEfg R	Jπ: 1487.01γ to 4^+, 1809.85γ E0+M1+E2 to 2^+.
1966.1 *10*	0^+		D fg	Jπ: 1966.1 E0 to 0^+.
1972[‡] *5*			NO R	
1980.0 *6*	8^+	2.8 ps *+15−5*	K	B(E2)↑=0.50 *+9−27* (1996Wu07) B(E2)↑: from 1424, 6^+ in Coul. ex. Jπ: excitation through E2 transition from (6^+) in Coul. ex. $T_{1/2}$: from B(E2) in Coul. ex.
1989 *5*			FG N	XREF: F(1982.5)G(1982.5). E(level): From ^{187}Os(d,p).
1994.0[a] *5*	8^-		C U	Jπ: 223.0γ M1 to 7^-; band assignment.
1996.1[&] *6*	8^+		U	Jπ: 571.1γ E2 to 6^+; band assignment.
2020.02 *8*	$(1,2)^+$		A E O	XREF: O(2015). Jπ: 557.71γ to 2^-, 1864.69γ E2,M1 to 2^+; direct population in ^{188}Re β⁻ decay ($J^\pi=1^-$).
2022.45 *13*	$(1,2)^+$		A DEFG R	Jπ: 1867.20γ to 2^+, 2022.53γ E2,M1 to 0^+; direct population in ^{188}Re β⁻ decay ($J^\pi=1^-$).
2031.4[#] *10*			EFG R	XREF: F(2036)G(2036).
2054.9 *7*	9^-		C U	Jπ: 284.1γ E2 to 7^-.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$	XREF	Comments
				configuration: possible $\nu(7/2^-[503],11/2^+[615])$.
2068.56 *8*	$(2)^+$		B DEFG O	XREF: O(2066). Jπ: 1435.42γ M1+E2 to 2^+, 2068.9γ to 0^+. Since Iγ(2068.9γ) < Iγ(1435.42γ), one may expect $J^\pi=2^+$ to be favored compared to 1^+.
2085.41 *8*	$(1,2,3)^+$		B D F R	XREF: R(2088). Jπ: 1452.28γ M1(+E2) to 2^+, 1295.44γ to 3^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2099.04 *4*	$(1)^+$		B DEF O	XREF: O(2100). Jπ: 2099.1γ to 0^+, 1012.54γ (M1) to 0^+, 641.59γ M1(+E2) to 2^+.
2121.20 *17*	(3^-)		D R T	Q=1.69 *9* (1979Ho23,2016St14) XREF: R(2124). Q: from muon-x ray method (1979Ho23). E(level): from (μ^-,γ). Uncorrected for isomer shift. Jπ: 1643.1γ to 4^+, 1966.2γ to 2^+. Parity from requirement that product of this state and muonic $2p_{3/2}$ state mix with product of 0^+ and muonic $2d_{3/2}$ state. B(E3)=0.005 *5* in 1979Ho23 (μ^-,γ).
2124.3 *3*	$(1^+,2^+)$		D R	XREF: R(2124). Jπ: 646.2γ to 0^+, 1332.3γ to 3^+.
2144.2[b] *7*	(10^-)	12.27 ns *14*	U	Jπ: 89.2γ (M1) to 9^-; systematics of similar structures in neighboring nuclei. $T_{1/2}$: From 284γ(t) (2009Mo05) in (HI,xnγ). configuration: $\nu(9/2^-[505],11/2^+[615])$.
2166.03 *10*	$(2)^+$		B DE	Jπ: 2011.39γ (E2) to 2^+, 703.38γ to 2^-, 1688.04γ to 4^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2170.1[@] *5*	10^+	0.39 ps *+3−5*	C K U	B(E2)↑=1.47 *+20−12* (1996Wu07) B(E2)↑: from 1515, 8^+. $T_{1/2}$: from B(E2) in Coul. ex. Jπ: 655.3γ E2 to 8^+; band assignment.
2193.1 *7*			E N P	XREF: E(2195)N(2180).
2204.74 *8*	2^+		B D O R	XREF: O(2208)R(2206). Jπ: 2049.78γ M1+E2 to 2^+, 1726.9γ to 4^+; γ(θ,T) in ^{188}Ir ε decay; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2214.62 *5*	$(1)^+$		B DE	Jπ: 2214γ(θ,T) (M1) to 0^+, 2059.65γ M1+E2 to 2^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2228[‡] *10*			R	
2242.5[a] *5*	9^-		U	Jπ: 248.5γ to 8^-, 471.5γ to 7^-; band assignment.
2251.92 *5*	2^+		B P R	Jπ: 2252.09γ to 0^+, 1286.35γ to 4^+; 1618.8γ M1(+E2) to 2^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2264 *3*			N O	XREF: N(2267). E(level): From ^{189}Os(d,t).
2279.4[&] *7*	9^+		U	Jπ: 594.1γ E2 to 7^+; band assignment.
2286.24 *15*	$(1^+,2^+)$		B DE N R	XREF: N(2288)R(2288). Jπ: 2286.2γ to 0^+, 601.09γ to $(2^+,3^+)$; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2299.87 *23*	1,2		B N R	XREF: N(2302)R(2302). Jπ: 2299.7γ to 0^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2308 *3*			O	E(level): From ^{189}Os(d,t).
2325.99 *12*	1,2		B R	XREF: R(2333). Jπ: 2326.22γ to 0^+; direct feeding in ^{188}Ir ε decay ($J^\pi=1^-$).
2347.47 *14*	$(1)^+$		B De O	XREF: O(2353).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)[†]	Jπ	XREF	Comments
			Jπ: 2347γ (M1) to 0+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2348.70 *6*	(2)−	B De	Jπ: 1558.66γ E1 to 3+, 2193.7γ E1 to 2+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2365.3 *3*	1,2	DE	Jπ: 2365.3γ to 0+.
2374.2 *4*	1,2	B	Jπ: 2374.2γ to 0+, 2219.1γ to 2+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2376.94 *14*	(2−)	B R	Jπ: 2220.0γ to 2+; absence of γ to 0+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2415.90 *10*	(2+)	B DE	Jπ: 1782.8γ to 2+, 1939.0γ to 4+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2432[‡] *10*		R	
2451.6[#] *10*		E O R	XREF: O(2446)R(2457).
2458.4[b] *8*	(11−)	U	Jπ: 314.2γ M1 to (10−); band assignment.
2460.50 *18*	1,2	B DE	Jπ: 2460.51γ to 0+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2491.1 *3*	(2−)	B D R	XREF: R(2497).
			Jπ: 2336.3γ to 2+; absence of γ to 0+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2500.4 *7*	11−	U	Jπ: 356.1γ M1 to 10−.
2505.23 *23*		D O	XREF: O(2503).
2520.46 *22*	1,2	B D	Jπ: 2520.1γ to 0+, 1887.8γ to 2+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2522.3[a] *6*	10−	U	Jπ: 279.8γ to 9−, 528.3γ to 8−; band assignment.
2549.49 *12*	(2−)	B D N R	XREF: N(2544)R(2540).
			Jπ: 2394.35γ to 2+; absence of γ′s to 0+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2558.0[c] *7*	(10+)	U	Jπ: 503.2γ (E1) to 9−; systematics of similar structures in neighboring nuclei.
2567 *3*		O R	XREF: R(2556).
			E(level): From ^{189}Os(d,t).
2581.81 *24*	1,2	B	Jπ: 2581.7γ to 0+ , 2426.9γ to 2+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2605[‡] *10*		R	
2622.71 *20*	(2+)	B D NO R	XREF: N(2632)O(2626)R(2628).
			Jπ: 2622.45γ to 0+, 2145.8γ to 4+; direct feeding in ^{188}Ir ε decay (Jπ=1−).
2628.9 *5*		D	
2655.2[&] *8*	10+	U	Jπ: 659.1γ E2 to 8+; band assignment.
2658.6 *3*		D	
2666 *3*		NO	XREF: N(2670).
			E(level): From ^{189}Os(d,t).
2704.06 *25*		D O	XREF: O(2699).
2733.5[b] *8*	(12−)	U	Jπ: 275.1γ to (11−), 589.3γ E2 to (10−); band assignment.
2740.13 *25*		D R	XREF: R(2743).
2766.4 *4*		D N	
2779.2 *8*		D N	XREF: N(2793).
2813.2[c] *7*	(11+)	U	Jπ: 254.9γ (M1) to (10+); band assignment.
2816.4[a] *6*	11−	U	Jπ: 294.1γ to 10−, 573.9γ (E2) to 9−; band assignment.
2817.4 *3*	(2+)	D O	Jπ: 1853.6γ to 4+, 2817.0γ to 0+.
2856.3[@] *6*	12+	C U	Jπ: 686.1γ E2 to 10+; band assignment.
2865.7 *3*		D N	XREF: N(2865).
2868.8[d] *9*	(12−)	U	Jπ: 410.4γ to (11−); band assignment.
2879.4 *3*		D	
2891.5 *4*		D R	XREF: R(2891).
2923[‡] *10*		R	
2933.4[&] *13*	11+	U	Jπ: 654.0γ E2 to 9+; band assignment.
2945[‡] *10*		O R	XREF: O(2938).
2969.8 *7*		D N R	XREF: N(2964).
2980.9[c] *6*	(12+)	U	Jπ: 423.1γ to (11+), 810.7γ to (10+); band assignment.
3002.4 *5*		D	
3012.2 *9*		D N	XREF: N(3021).
3029.70 *20*		D N R	XREF: N(3038).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)[†]	Jπ	XREF	Comments
3059.7[b] *8*	(13⁻)	U	Jπ: 326.2γ to (12⁻), 601.3γ E2 to (11⁻); band assignment.
3071.5 *3*		D	
3083.4 *6*	11,12⁺	U	Jπ: 913.3γ to 10⁺.
3093.1 *8*	(13⁻)	U	Jπ: 359.5γ M1 to (12⁻), 634.6γ E2 to (11⁻). configuration: possible ν(1/2⁻[510],7/2⁻[503],9/2⁻[505],11/2⁺[615]).
3110.2 *3*		D N	
3141.0 *4*		D N	XREF: N(3137).
3143.5[a] *8*	(12⁻)	U	Jπ: 621.2γ to 10⁻; band assignment.
3168.3 *5*		D N	XREF: N(3160).
3177.37 *23*		D	
3205.1 *8*		U	
3223.5 *7*		D	
3239.6 *3*		D N	
3255.3[c] *7*	(13⁺)	U	Jπ: 274.4γ M1 to (12⁺), 442.0γ to (11⁺); band assignment.
3275.2 *3*		D N R	XREF: N(3267)R(3272).
3289.5[d] *14*		U	
3337 *10*		R	
3352.5[b] *8*	(14⁻)	U	Jπ: 282.8γ to (13⁻), 619.0γ E2 to (12⁻); band assignment.
3362 *10*		R	
3369.6[&] *9*	12⁺	U	Jπ: 714.4γ E2 to 10⁺; band assignment.
3412 *7*		N	
3413.6 *8*	(15⁻)	U	Jπ: 353.8γ E2 to (13⁻). configuration: possible ν(3/2⁻[512],7/2⁻[503],9/2⁻[505],11/2⁺[615]) or ν(1/2⁻[510],11/2⁺[615])⊗π(9/2⁻[514],11/2⁻[505]).
3417.1 *8*		U	
3434 *10*		R	
3438.7[c] *7*	(14⁺)	U	Jπ: 582.4γ E2 to (12⁺); band assignment.
3441.0 *13*		U	
3471.7 *7*	(14⁺)	U	Jπ: 378.6γ E1 to (13⁻), 615.5γ E2 to 12⁺. configuration: possible ν(1/2⁻[510],9/2⁻[505],9/2⁺[624],11/2⁺[615]).
3479 *10*		R	
3562.6[@] *8*	14⁺	U	Jπ: 706.3γ to 12⁺; band assignment.
3567 *10*		N R	XREF: N(3552).
3600 *10*		R	
3601.4[&] *14*	13⁺	U	Jπ: 3668.0γ E2 to 11⁺; band assignment.
3621.1 *6*		U	
3622 *10*		R	
3640.2 *8*		U	
3644 *10*		R	
3688 *8*		N	
3722.0[d] *15*		U	
3730.5[b] *9*	(15⁻)	U	Jπ: 670.8γ (E2) to (13⁻); band assignment.
3730.8 *5*		D	
3734.0 *8*	(16⁺)	U	Jπ: 262.3γ E2 to (14⁺).
3766.7 *8*		U	
3795.5[c] *7*	(15⁺)	U	Jπ: 540.2γ to (13⁺); band assignment.
3810 *10*		R	
3825.2[a] *9*	(14⁻)	U	Jπ: 681.7γ to (12⁻); band assignment.
3826.3 *9*		U	
3837 *10*		R	
3900 *10*		R	
3911.0 *9*		U	
3964.5[c] *8*	(16⁺)	U	Jπ: 525.8γ E2 to (14⁺); band assignment.
3984 *10*		R	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{188}Os Levels (continued)

E(level)[†]	Jπ	XREF	Comments
4106.8[b] *10*	(16⁻)	U	Jπ: 754.3γ E2 to (14⁻); band assignment.
4149.3 *10*	17	U	Jπ: 415.3γ D to (16⁺).
4184.7[d] *15*		U	
4193.0 *10*		U	
4236.5[@] *10*	(16⁺)	U	Jπ: 673.9γ to 14⁺; band assignment.
4257.8[e] *9*	18⁺	U	Jπ: 523.8γ E2 to 16⁺; band assignment.
4285.5 *10*		U	
4390.5 *9*	(17⁻)	U	Jπ: 976.9γ E2 to (15⁻).
4414.0[c] *12*	(17⁺)	U	Jπ: 618γ to (15⁺); band assignment.
4428.4 *10*		U	
4484.1[b] *11*	(17⁻)	U	Jπ: 753.6γ to (15⁻); band assignment.
4507.6 *7*		D	
4508.7 *9*	(17⁻)	U	Jπ: 1095.1γ (E2) to (15⁻).
4520.6[a] *11*	(16⁻)	U	Jπ: 695.4γ to (14⁻); band assignment.
4563.4 *11*		U	
4571.8[c] *10*	(18⁺)	U	Jπ: 607.3γ (E2) to (16⁺); band assignment.
4649.4 *9*		U	
4729.4[e] *10*	(19)	U	Jπ: 471.6γ D to (18⁺).
4846.6[b] *11*	(18⁻)	U	Jπ: 739.8τ to (16⁻); band assignment.
4887.0 *10*		U	
5033.2 *9*	(19⁻)	U	Jπ: 642.7γ E2 to (17⁻).
5124.8[e] *11*		U	
5177.1[b] *12*	(19⁻)	U	Jπ: 693.0γ to (17⁻); band assignment.
5267.5[c] *11*	(20⁺)	U	Jπ: 695.7γ to (18⁺); band assignment.
5620.1[e] *12*		U	
6032.0[c] *12*	(22⁺)	U	Jπ: 764.4γ to (20⁺); band assignment.
6117.6[e] *13*		U	
6607.1[e] *14*		U	
6911.1[c] *9*	(24⁺)	U	Jπ: 878.6γ to (22⁺); band assignment.

[†] From a least-squares fit to Eγ, unless otherwise stated.
[‡] From ^{190}Os(p,t).
[#] From ^{187}Os(n,γ) E=res.
[@] Band(A): $K^\pi=0^+$, g.s. band.
[&] Band(B): $K^\pi=2^+$ γ-band.
[a] Band(C): $K^\pi=7^-$ band, configuration=ν(3/2⁻[512],11/2⁺[615]).
[b] Band(D): $K^\pi=10^-$ band, configuration=ν(9/2⁻[505],11/2⁺[615]).
[c] Band(E): $K^\pi=10^+$ band, configuration=ν(9/2⁺[624],11/2⁺[615]).
[d] Band(F): Band based on 12^- level at 2869 keV.
[e] Band(G): Band based on 18^+ level at 4258 keV.

Adopted Levels, Gammas (continued)

γ(^{188}Os)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
155.043	2+	155.044 *4*	100	0.0	0+	E2		0.810	α(K)=0.324 *5*; α(L)=0.367 *6*; α(M)=0.0931 *13* α(N)=0.0224 *4*; α(O)=0.00334 *5*; α(P)=2.95×10^{-5} *5* B(E2)(W.u.)=77.5 *10* E_γ: Weighted average of 155.032 *12* (1963Ma08) and 155.045 *4* (1972Sh13), using curved-crystal spectrometer data.
477.959	4+	322.92 *2*	100	155.043	2+	E2		0.0736	B(E2)(W.u.)=133 *8* α(K)=0.0490 *7*; α(L)=0.0187 *3*; α(M)=0.00461 *7* α(N)=0.001112 *16*; α(O)=0.0001736 *25*; α(P)=4.97×10^{-6} *7* Mult.: α(K)exp=0.040 *9*, K/M=10 *2* in ^{188}Ir ε decay (41.5 h). 323γ(θ): A_2=−0.08 *7* (1985Ed02) (323ce)(155γ)(θ) gives A_2=0.085 *37*,A_4=0.059 *52* (1963Ya01).
633.037	2+	478.00 *2*	80.2 *18*	155.043	2+	E2+M1+E0	−12 *3*	0.031 *4*	α(K)=0.0193 *4*; α(L)=0.00500 *8*; α(M)=0.001203 *18* α(N)=0.000291 *5*; α(O)=4.70×10^{-5} *7*; α(P)=2.04×10^{-6} *4* B(E2)(W.u.)=16.2 *18* I_γ: Unweighted average of 78.49 in ^{188}Re β^- decay (17.005 h) and 81.98 in ^{188}Ir ε decay (41.5 h). Mult.: α(K)exp=0.023 3 (1959Ki44), 0.021 (1958Ni04) and 0.034 (1956Jo05); 478γ(θ): A_2=0.06 *1* (1985Ed02). A_2=−0.015 *14*, A_4=0.288 *21* (1971Kr01). (478γ)(155ce)(θ): A_2=−0.018 *11*, A_4=−0.186 *17* (1963Ya01). (478ce)(155γ)(θ): A_2=0.033 *11*, A_4=0.000 *14* (1963Ya01). K/L/M=1/0.26/0.08 (1964Ha06). α(K)exp=0.011 *3*. L1/L2=2.4 *4* (1962Gr02). γce(θ) gives E0 strength parameter=2.2×10^{-2} *+8−14* and ce(K)(E0)/ce(K)(E2)=0.10 *9* (1963Ya01,1965Ya01). δ: E2/M1 value is from (478γ)(155γ)(θ) in 1971Kr01. Others: −15.9 *+14−25* from M1 and E2 matrix elements given by 1996Wu07; >30 (1969Ca19) and >17 (1971Mi08) from γ(θ) in Coul. excit. α: 0.031 *4*, deduced from α(K)exp=0.023 *3* (1959Ki44) and T/K=1.34 *3* from BrICC.
		633.03 *3*	100.0 *8*	0.0	0+	E2		0.01305	α(K)=0.01020 *15*; α(L)=0.00219 *3*; α(M)=0.000518 *8* α(N)=0.0001258 *18*; α(O)=2.07×10^{-5} *3*; α(P)=1.092×10^{-6} *16* B(E2)(W.u.)=5.0 *6*
789.961	3+	157.0[d]		633.037	2+				E_γ: From ^{188}Ir ε decay.
		312.00 *2*	3.49 *13*	477.959	4+	E2(+M1)		0.233	α(K)=0.193 *3*; α(L)=0.0307 *5*; α(M)=0.00704 *10* α(N)=0.001720 *24*; α(O)=0.000297 *5*; α(P)=2.22×10^{-5} *4* Mult.: α(K)exp=0.055 *14*, K/L3=13.3 in ^{188}Ir ε decay (41.5 h).
		634.97 *4*	100.0 *13*	155.043	2+	E2+M1	−7 *3*	0.0134 *9*	α(K)=0.0105 *8*; α(L)=0.00222 *10*; α(M)=0.000525 *23* α(N)=0.000127 *6*; α(O)=2.10×10^{-5} *10*; α(P)=1.13×10^{-6} *9* Mult.: ce(K)(635)/ce(K)(633)=3.55 *10* (1962Gr02). 635γ(θ): A_2=0.12 *6* (1985Ed02); α(K)exp=0.011 *3*. L1/L2=2.4 *4* (1962Gr02). δ: from (635γ)(155γ)(θ): A_2=−0.312 *30*, A_4=−0.003 *19* (1971Kr01).
940.34	6+	462.38 *7*	100	477.959	4+	E2		0.0277	B(E2)(W.u.)=138 *8*

$^{188}_{76}Os_{112}$-9

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
									α(K)=0.0205 *3*; α(L)=0.00551 *8*; α(M)=0.001330 *19* α(N)=0.000322 *5*; α(O)=5.17×10^{-5} *8*; α(P)=2.16×10^{-6} *3* E_γ,I_γ: From ^{188}Os(n,n′γ). Mult.: From DCO=0.99 5 in (HI,xnγ) and the apparent band structure.
965.66	4$^+$	(25.32 *8*)	2.7×10^{-5} *9*	940.34	6$^+$	[E2]		2.81×10^3 *6*	α(L)=2.13×10^3 *5*; α(M)=537 *12* α(N)=128 *3*; α(O)=18.7 *4*; α(P)=0.0148 *4* B(E2)(W.u.)=15 *6* E_γ: From level energy differences. I_γ: From Iγ(24.9)/Iγ(487)=2.7×10^{-7} *9* from B(E2)′s in Coulomb excitation (1996Wu07).
		175.0[&] *3*	18.5[&] *11*	789.961	3$^+$	[M1+E2]		1.146 *17*	α(K)=0.948 *14*; α(L)=0.1530 *23*; α(M)=0.0351 *6* α(N)=0.00857 *13*; α(O)=0.001480 *22*; α(P)=0.0001102 *17*
		332.62[@] *5*	34[@] *4*	633.037	2$^+$	E2		0.0675	α(K)=0.0455 *7*; α(L)=0.01680 *24*; α(M)=0.00413 *6* α(N)=0.000997 *14*; α(O)=0.0001561 *22*; α(P)=4.63×10^{-6} *7* B(E2)(W.u.)=47 *8* Mult.: α(K)exp=0.066 *22* in ^{188}Ir ε decay (41.5 h); DCO=1.4 *3* in (HI,xnγ).
		487.70[@] *6*	100[@] *10*	477.959	4$^+$	E2+M1	+3.2 *+13−3*	0.0284 *20*	α(K)=0.0217 *18*; α(L)=0.00508 *21*; α(M)=0.00121 *5* α(N)=0.000294 *11*; α(O)=4.79×10^{-5} *21*; α(P)=2.35×10^{-6} *21* B(M1)(W.u.)=0.0011 *9*; B(E2)(W.u.)=19 *3* Mult.: α(K)exp=0.020 *5* in ^{188}Ir ε decay (41.5 h); DCO=0.63 *12* in (HI,xnγ). δ: From Coulomb excitation.
		810.60[@] *8*	81[@] *8*	155.043	2$^+$	E2		0.00762	α(K)=0.00612 *9*; α(L)=0.001155 *17*; α(M)=0.000270 *4* α(N)=6.56×10^{-5} *10*; α(O)=1.096×10^{-5} *16*; α(P)=6.57×10^{-7} *10* B(E2)(W.u.)=1.31 *19* Mult.: α(K)exp=0.0082 *20* in ^{188}Ir ε decay (41.5 h); DCO=1.3 *3* in (HI,xnγ).
1086.390	0$^+$	453.34 *4*	13.83 *14*	633.037	2$^+$	(E2)		0.0291	α(K)=0.0215 *3*; α(L)=0.00587 *9*; α(M)=0.001418 *20* α(N)=0.000343 *5*; α(O)=5.50×10^{-5} *8*; α(P)=2.26×10^{-6} *4* B(E2)(W.u.)=4.8 *3* Mult.: α(K)exp≈0.045 in ^{188}Ir ε decay (41.5 h).
		931.34 *3*	100.0 *7*	155.043	2$^+$	E2		0.00573	α(K)=0.00465 *7*; α(L)=0.000829 *12*; α(M)=0.000193 *3* α(N)=4.68×10^{-5} *7*; α(O)=7.88×10^{-6} *11*; α(P)=4.99×10^{-7} *7* B(E2)(W.u.)=0.96 *5* Mult.: α(K)expC=0.0047 *5* (1966Ba29).

$^{188}_{76}Os_{112}$-10

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	$I_{(\gamma+ce)}$	Comments
										(931γ)(155γ)(θ): A_2=+0.276 *12*, A_4=+0.93 *3* (1960Ma19).
1086.390	0^+	1086.5		0.0	0^+	E0			0.0082 *4*	$I_{(\gamma+ce)}$: From %E0(K)=0.0062 (1982Ka28), assuming 5% uncertainty, and K/T=0.8632 from BrIcc.
1180.79	5^+	390.6[&] *3*	94[&] *4*	789.961	3^+	E2		0.0431		α(K)=0.0306 *5*; α(L)=0.00958 *14*; α(M)=0.00233 *4* α(N)=0.000564 *8*; α(O)=8.94×10^{-5} *13*; α(P)=3.18×10^{-6} *5* Mult.: DCO=1.25 *15* in (HI,xnγ).
		703.0[&] *3*	100[&] *9*	477.959	4^+	M1		0.0275		α(K)=0.0229 *4*; α(L)=0.00356 *5*; α(M)=0.000812 *12* α(N)=0.000198 *3*; α(O)=3.43×10^{-5} *5*; α(P)=2.59×10^{-6} *4* Mult.: DCO=0.78 *14* in (HI,xnγ).
1278.99	4^+	312.0[d] *10*	11 *4*	965.66	4^+	[E2+M1]		0.233		α(K)=0.193 *4*; α(L)=0.0307 *5*; α(M)=0.00704 *12* α(N)=0.00172 *3*; α(O)=0.000297 *5*; α(P)=2.22×10^{-5} *4* E_γ,I_γ: From ^{186}W(α,2nγ).
		489.0 *4*	44.5 *12*	789.961	3^+	[E2+M1]		0.0703		α(K)=0.0584 *9*; α(L)=0.00919 *13*; α(M)=0.00210 *3* α(N)=0.000513 *8*; α(O)=8.88×10^{-5} *13*; α(P)=6.67×10^{-6} *10* E_γ: From ^{186}W(α,2nγ). I_γ: From (HI,xnγ).
		645.9 *2*	100.0 *24*	633.037	2^+	(E2)		0.01247		α(K)=0.00977 *14*; α(L)=0.00207 *3*; α(M)=0.000490 *7* α(N)=0.0001189 *17*; α(O)=1.96×10^{-5} *3*; α(P)=1.047×10^{-6} *15* B(E2)(W.u.)=10.2 *23* E_γ: From ^{186}W(α,2nγ). I_γ,Mult.: From (HI,xnγ).
		1124.0 *5*	35 *13*	155.043	2^+	[E2]		0.00395		α(N)=3.05×10^{-5} *5*; α(O)=5.18×10^{-6} *8*; α(P)=3.47×10^{-7} *5*; α(IPF)=4.89×10^{-7} *12* α(K)=0.00324 *5*; α(L)=0.000543 *8*; α(M)=0.0001253 *18* B(E2)(W.u.)=0.22 *10* E_γ,I_γ: From Coulomb excitation. ΔEγ estimated by evaluators.
1304.84	2^+	218.5[&] *5*	1.92[&] *8*	1086.390	0^+					
		514.88 *4*	33.3 *12*	789.961	3^+	E2(+M1)	≥3.3	0.0229 *18*		α(K)=0.0175 *15*; α(L)=0.00413 *18*; α(M)=0.00099 *4* α(N)=0.000239 *10*; α(O)=3.89×10^{-5} *18*; α(P)=1.88×10^{-6} *18* Mult.,δ: α(K)exp=0.0058 *20* in ^{188}Ir ε decay (41.5 h).
		672.6[d] *2*	≤7.7	633.037	2^+					E_γ,I_γ: From ^{187}Os(n,γ) E=res.
		827.0[&] *3*	31[&] *3*	477.959	4^+					
		1149.80 *9*	100.0 *16*	155.043	2^+	E2(+M1)	≤2.1	0.0062 *17*		α(K)=0.0052 *15*; α(L)=0.00081 *21*; α(M)=0.00019 *5* α(N)=4.5×10^{-5} *12*; α(O)=7.8×10^{-6} *20*; α(P)=5.8×10^{-7} *17*; α(IPF)=1.55×10^{-6} *25* Mult.,δ: From ^{188}Ir ε decay (41.5 h).
		1304.8 *2*	25 *8*	0.0	0^+	(E2)		0.00298		α(K)=0.00245 *4*; α(L)=0.000395 *6*; α(M)=9.08×10^{-5} *13*

$^{188}_{76}Os_{112}$-11

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
									α(N)=2.21×10^{-5} *3*; α(O)=3.77×10^{-6} *6*; α(P)=2.62×10^{-7} *4*; α(IPF)=1.78×10^{-5} *3*
1413.89	(3$^-$)	448.1[&] *3*	31.4[&] *20*	965.66	4$^+$				
		623.9[&] *3*	100[&] *7*	789.961	3$^+$				
		780.9[&] *3*	15.7[&] *13*	633.037	2$^+$				
		936.4[a] *5*	21.5[a] *11*	477.959	4$^+$				
1425.0	6$^+$	459.4[a] *5*	100[a] *4*	965.66	4$^+$	[E2]		0.0282	α(K)=0.0208 *3*; α(L)=0.00563 *9*; α(M)=0.001358 *20* α(N)=0.000329 *5*; α(O)=5.28×10^{-5} *8*; α(P)=2.19×10^{-6} *4* B(E2)(W.u.)=73 *9* Mult.: Note that DCO=0.47 *15* in (HI,xnγ) is not consistent with the assignment from the level scheme.
		484.7[a] *5*	32.2[a] *9*	940.34	6$^+$	[M1+E2]		0.0719 *11*	α(K)=0.0598 *9*; α(L)=0.00941 *14*; α(M)=0.00215 *3* α(N)=0.000525 *8*; α(O)=9.09×10^{-5} *13*; α(P)=6.83×10^{-6} *10*
		947.1[a] *5*	10.4[a] *9*	477.959	4$^+$	[E2]		0.00554	α(K)=0.00450 *7*; α(L)=0.000798 *12*; α(M)=0.000185 *3* α(N)=4.50×10^{-5} *7*; α(O)=7.58×10^{-6} *11*; α(P)=4.83×10^{-7} *7* B(E2)(W.u.)=0.20 *3*
1443.5?		810.49[d] *5*	100	633.037	2$^+$				
1457.50	2$^+$	491.64[@] *8*	2.9[@] *5*	965.66	4$^+$	[E2]		0.0238	α(K)=0.01779 *25*; α(L)=0.00456 *7*; α(M)=0.001095 *16* α(N)=0.000265 *4*; α(O)=4.28×10^{-5} *6*; α(P)=1.89×10^{-6} *3*
		667.44 *17*	2.7 *6*	789.961	3$^+$	[M1]		0.0314	α(K)=0.0261 *4*; α(L)=0.00407 *6*; α(M)=0.000929 *13* α(N)=0.000227 *4*; α(O)=3.93×10^{-5} *6*; α(P)=2.96×10^{-6} *5* I_γ: From From ^{188}Ir ε decay (41.5 h). Other: 5.9 *6* in ^{187}Os(n,γ) E=th.
		824.39 *8*	94 *6*	633.037	2$^+$	M1(+E2)	≤1.2	0.015 *4*	α(K)=0.012 *3*; α(L)=0.0020 *4*; α(M)=0.00046 *9* α(N)=0.000111 *21*; α(O)=1.9×10^{-5} *4*; α(P)=1.4×10^{-6} *4* I_γ: Others: 59 *5* in 1975Th06 (^{188}Ir ε decay (41.5 h)) and 82 *7* in ^{187}Os(n,γ) E=th. Mult.,δ: α(K)exp=0.014 *4*. Other: 824γ(θ): A_2=0.2 *3* (1985Ed02) in ^{188}Ir ε decay (41.5 h).
		979.35 *13*	5.4 *9*	477.959	4$^+$	[E2]		0.00518	α(K)=0.00422 *6*; α(L)=0.000739 *11*; α(M)=0.0001712 *24* α(N)=4.16×10^{-5} *6*; α(O)=7.03×10^{-6} *10*; α(P)=4.52×10^{-7} *7* I_γ: Others: 3.7 *7* in 1975Th06 (^{188}Ir ε decay (41.5 h)) and 3.3 *5* in ^{187}Os(n,γ) E=Th.
		1302.31 *13*	30 *4*	155.043	2$^+$	[E2+M1]		0.00584	α(K)=0.00486 *7*; α(L)=0.000741 *11*; α(M)=0.0001688 *24* α(N)=4.12×10^{-5} *6*; α(O)=7.14×10^{-6} *10*; α(P)=5.45×10^{-7} *8*; α(IPF)=2.56×10^{-5} *4* I_γ: Others: 18.7 *17* in 1975Th06 (^{188}Ir ε decay (41.5 h)) and 16.3 *13* in ^{187}Os(n,γ) E=Th and 42 *15* in ^{188}Os(n,n′γ).
		1457.49 *9*	100.0 *13*	0.0	0$^+$	E2		0.00246	α(K)=0.00200 *3*; α(L)=0.000315 *5*; α(M)=7.21×10^{-5} *10* α(N)=1.755×10^{-5} *25*; α(O)=3.00×10^{-6} *5*; α(P)=2.13×10^{-7} *3*;

$^{188}_{76}Os_{112}$-12

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	$I_{(\gamma+ce)}$	Comments
									α(IPF)=5.44×10^{-5} *8* Mult.: α(K)exp=0.0018 *4*; 1457γ(θ): A_2=−0.17 *9* (1985Ed02) in ^{188}Ir ε decay (41.5 h).
1462.50	2$^-$	672.535 *16*	26.97 *24*	789.961	3$^+$	E1	0.00415		α(K)=0.00349 *5*; α(L)=0.000515 *8*; α(M)=0.0001169 *17* α(N)=2.84×10^{-5} *4*; α(O)=4.86×10^{-6} *7*; α(P)=3.46×10^{-7} *5* Mult.: α(K)exp=0.0037 4 (1966Ba29) and (673γ)(635γ)(θ): A_2=+0.068 *8*,A_4=+0.017 *18* (1960Ma19) in ^{188}Re β$^-$ decay (17.005 h). α(K)exp=0.0023 *6* in ^{188}Ir ε decay (41.5 h).
		829.47 *4*	100.0 *7*	633.037	2$^+$	E1	0.00276		α(K)=0.00232 *4*; α(L)=0.000339 *5*; α(M)=7.67×10^{-5} *11* α(N)=1.86×10^{-5} *3*; α(O)=3.20×10^{-6} *5*; α(P)=2.32×10^{-7} *4* Mult.: α(K)exp=0.0025 3 (1966Ba29) and (829γ)(633γ)(θ): A_2=+0.295 *9*, A_4=+0.15 *20* (1960Ma19) in ^{188}Re β$^-$ decay (17.005 h). α(K)exp=0.0029 *7*, α(L)exp=0.00044 *22*; (829γ+824γ)(633γ)(θ): A_2=0.21 *2*, A_4=0.00 *2*, 829γ(θ): A_2=−0.44 *5* (1985Ed02) in ^{188}Ir ε decay (41.5 h).
		984.1 *5*	0.080 *5*	477.959	4$^+$	[M2]	0.0291		α(K)=0.0238 *4*; α(L)=0.00405 *6*; α(M)=0.000937 *14* α(N)=0.000229 *4*; α(O)=3.95×10^{-5} *6*; α(P)=2.91×10^{-6} *4* E_γ,I_γ: From ^{188}Re β$^-$ decay.
		1307.64[@] *15*	2.9[@] *4*	155.043	2$^+$	(E1)	1.27×10^{-3}		α(K)=0.001019 *15*; α(L)=0.0001452 *21*; α(M)=3.28×10^{-5} *5* α(N)=7.97×10^{-6} *12*; α(O)=1.376×10^{-6} *20*; α(P)=1.032×10^{-7} *15*; α(IPF)=6.22×10^{-5} *9* Mult.: α(K)exp≈0.0019 in ^{188}Ir ε decay (41.5 h).
		1463.0[d] *6*	0.19 *7*	0.0	0$^+$	[M2]	0.01031		α(K)=0.00850 *12*; α(L)=0.001375 *20*; α(M)=0.000316 *5* α(N)=7.73×10^{-5} *11*; α(O)=1.336×10^{-5} *19*; α(P)=1.001×10^{-6} *14*; α(IPF)=2.79×10^{-5} *4*
1478.08	0$^+$	845.05 *4*	52.7 *8*	633.037	2$^+$				
		1323.04 *7*	100.0 *14*	155.043	2$^+$	(E2)	0.00291		α(K)=0.00239 *4*; α(L)=0.000384 *6*; α(M)=8.81×10^{-5} *13* α(N)=2.15×10^{-5} *3*; α(O)=3.66×10^{-6} *6*; α(P)=2.55×10^{-7} *4*; α(IPF)=2.11×10^{-5} *3* Mult.: α(K)exp≈0.0017 in ^{188}Ir ε decay (41.5 h).
		1478.0		0.0	0$^+$	E0		0.0265 *14*	$I_{(\gamma+ce)}$: From %E0(K)=0.015 (1982Ka28), assuming 5% uncertainty and K/T=0.8642 from BrIcc.
1514.8	8$^+$	574.4[b] *3*	100[b]	940.34	6$^+$	E2	0.01633		α(K)=0.01258 *18*; α(L)=0.00287 *4*; α(M)=0.000684 *10* α(N)=0.0001658 *24*; α(O)=2.71×10^{-5} *4*; α(P)=1.343×10^{-6} *19* B(E2)(W.u.)=145 *9* Mult.: From DCO=1.16 *7* in (HI,xnγ).
1515.6	5$^+$	236.4[a] *5*	50[a] *4*	1278.99	4$^+$				
		550.0[a] *5*	57[a] *4*	965.66	4$^+$				
		725.8[a] *5*	100[a] *4*	789.961	3$^+$	E2	0.00965		α(K)=0.00766 *11*; α(L)=0.001524 *22*; α(M)=0.000358 *5*

$^{188}_{76}Os_{112}$-13

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	δ#	α c	Comments
									α(N)=8.70×10^{-5} *13*; α(O)=1.444×10^{-5} *21*; α(P)=8.22×10^{-7} *12* Mult.: From DCO=0.9 *2* in (HI,xnγ).
1566.7		776.7& *3*	100&	789.961	3$^+$				
1577.6?		946.3 *6*		633.037	2$^+$				E_γ: From ^{187}Os(n,γ) E=th.
		1420.9 *12*		155.043	2$^+$				E_γ: From ^{187}Os(n,γ) E=th.
		1573.2 *11*		0.0	0$^+$				E_γ: From ^{187}Os(n,γ) E=th.
1620.47	2$^+$	162.2[d]		1457.50	2$^+$				E_γ: From ^{188}Ir ε decay.
		987.43@ *6*	69@ *7*	633.037	2$^+$	M1(+E2)	≤0.7	0.0105 *11*	α(K)=0.0088 *10*; α(L)=0.00136 *13*; α(M)=0.00031 *3* α(N)=7.6×10^{-5} *7*; α(O)=1.31×10^{-5} *13*; α(P)=9.8×10^{-7} *11* Mult.: From α(K)exp=0.0103 *25*, α(L)exp=0.0022 *10* in ^{188}Ir ε decay (41.5 h).
		1142.53@ *10*	27@ *5*	477.959	4$^+$	(E2)		0.00382	α(K)=0.00314 *5*; α(L)=0.000524 *8*; α(M)=0.0001209 *17* α(N)=2.94×10^{-5} *5*; α(O)=5.00×10^{-6} *7*; α(P)=3.36×10^{-7} *5*; α(IPF)=9.43×10^{-7} *14* Mult.: From α(K)exp≈0.0046 in ^{188}Ir ε decay (41.5 h).
		1465.24@ *15*	100@ *10*	155.043	2$^+$	M1+E2	0.9 *+16−8*	0.0035 *9*	α(K)=0.00289 *73*; α(L)=0.00044 *11*; α(M)=0.000101 *24* α(N)=2.5×10^{-5} *6*; α(O)=4.3×10^{-6} *11*; α(P)=3.19×10^{-7} *86*; α(IPF)=7.1×10^{-5} *12* Mult.,δ: From α(K)exp=0.0029 *7* and 1465γ(θ): A_2=0.2 *4* (1985Ed02) in ^{188}Ir ε decay (41.5 h).
		1619.1@ *7*	17@ *3*	0.0	0$^+$				
1668.67	(5$^-$)	243.8[a] *5*	12.6[a] *4*	1425.0	6$^+$	(E1)		0.0405	α(K)=0.0335 *5*; α(L)=0.00537 *8*; α(M)=0.001229 *19* α(N)=0.000297 *5*; α(O)=4.96×10^{-5} *8*; α(P)=3.08×10^{-6} *5* Mult.: DCO=2 *1* in (HI,xnγ) is inconsistent with such an assignment.
		254.5[a] *5*	37.2[a] *15*	1413.89	(3$^-$)				
		389.6[a] *5*	100[a] *3*	1278.99	4$^+$	(E1)		0.01329	α(K)=0.01109 *16*; α(L)=0.001708 *25*; α(M)=0.000389 *6* α(N)=9.43×10^{-5} *14*; α(O)=1.595×10^{-5} *23*; α(P)=1.066×10^{-6} *16* Mult.: From DCO=0.51 *8* in (HI,xnγ).
		487.6[a] *5*	80.6[a] *17*	1180.79	5$^+$				
		703.2[a] *5*	68.6[a] *17*	965.66	4$^+$	(E1)		0.00380	α(K)=0.00319 *5*; α(L)=0.000471 *7*; α(M)=0.0001067 *15* α(N)=2.59×10^{-5} *4*; α(O)=4.44×10^{-6} *7*; α(P)=3.17×10^{-7} *5* Mult.: From DCO=0.48 *14* in (HI,xnγ).
		728.5[a] *5*	44.4[a] *9*	940.34	6$^+$	(E1)		0.00354	α(K)=0.00298 *5*; α(L)=0.000438 *7*; α(M)=9.93×10^{-5} *14* α(N)=2.41×10^{-5} *4*; α(O)=4.13×10^{-6} *6*; α(P)=2.97×10^{-7} *5* Mult.: From DCO=0.8 *2* in (HI,xnγ).
		1190.9[a] *5*	9.4[a] *4*	477.959	4$^+$				
1685.29	(3$^+$)	719.58@ *15*	10@ *3*	965.66	4$^+$				

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	$I_{(\gamma+ce)}$	Comments
1685.29	(3$^+$)	895.33[@] *8*	61[@] *7*	789.961	3$^+$					
		1052.11[@] *20*	15[@] *5*	633.037	2$^+$					
		1530.06[@] *15*	100[@] *12*	155.043	2$^+$					
1685.3	7$^+$	503.5 *5*		1180.79	5$^+$					E_γ: From (HI,xnγ).
		745.0[a] *5*	100[a]	940.34	6$^+$					
1704.30	0$^+$	617.7		1086.390	0$^+$	E0			0.034 *6*	$I_{(\gamma+ce)}$: From %E0(K)=0.023 (1982Ka28), assuming 5% uncertainty and K/T=0.8614 from BrIcc.
		1071.28 *19*	26 *5*	633.037	2$^+$					I_γ: Other: (n,γ) E=th gives 75 *8*.
		1549.25 *9*	100 *20*	155.043	2$^+$					
		1704.2		0.0	0$^+$	E0			2.8 *5*	E_γ: From ^{187}Os(n,γ) E=th. $I_{(\gamma+ce)}$: From %E0(K)=1.91 (1982Ka28), assuming 5% uncertainty and K/T=0.8647 from BrIcc.
1729.38	2$^+$	271.56 *5*	1.01 *17*	1457.50	2$^+$					E_γ: From ^{187}Os(n,γ) E=th. I_γ: from ^{188}Ir ε decay. Other: (n,γ) E=th gives 5.06 *25*.
		424.71 *15*	1.28 *22*	1304.84	2$^+$	M1(+E2)	≤1.2	0.082 *20*		α(K)=0.067 *18*; α(L)=0.0116 *19*; α(M)=0.0027 *4* α(N)=0.00065 *10*; α(O)=0.000111 *19*; α(P)=7.6×10^{-6} *21* E_γ: From ^{187}Os(n,γ) E=th. I_γ: from ^{188}Ir ε decay. Mult.,δ: α(K)exp=0.08 *3* in ^{188}Ir ε decay.
		763.90 *14*	1.2 *3*	965.66	4$^+$					E_γ: From ^{187}Os(n,γ) E=th. I_γ: from ^{188}Ir ε decay.
		939.57 *6*	25.1 *22*	789.961	3$^+$	M1(+E2)	<0.8	0.0117 *15*		α(K)=0.0097 *13*; α(L)=0.00152 *18*; α(M)=0.00035 *4* α(N)=8.5×10^{-5} *10*; α(O)=1.46×10^{-5} *17*; α(P)=1.09×10^{-6} *15* E_γ: From ^{187}Os(n,γ) E=th. I_γ: from ^{188}Ir ε decay. Mult.,δ: α(K)exp=0.0102 *25*, α(L)exp=0.0024 *8* in ^{188}Ir ε decay.
		1096.54 *6*	55 *5*	633.037	2$^+$	M1(+E2)	<0.7	0.0081 *8*		α(K)=0.0068 *7*; α(L)=0.00105 *10*; α(M)=0.000239 *22* α(N)=5.8×10^{-5} *6*; α(O)=1.01×10^{-5} *10*; α(P)=7.6×10^{-7} *8* E_γ: From ^{187}Os(n,γ) E=th. I_γ: from ^{188}Ir ε decay. Unresolved in (n,γ) E=th. Mult.,δ: α(K)exp=0.0078 *20*, α(L)exp=0.0012 *4*. 1097$\gamma(\theta)$: A_2=−0.25 *15* (1985Ed02) in ^{188}Ir ε decay.
		1251.64 *20*	1.0 *3*	477.959	4$^+$					E_γ,I_γ: from ^{188}Ir ε decay.
		1574.52 *12*	100 *8*	155.043	2$^+$	M1+E2	+0.65 *8*	0.00330 *10*		α(K)=0.00265 *8*; α(L)=0.000404 *12*; α(M)=9.2×10^{-5} *3*

$^{188}_{76}Os_{112}$-15

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	$I_{(\gamma+ce)}$	Comments
										α(N)=2.25×10^{-5} *7*; α(O)=3.89×10^{-6} *12*; α(P)=2.94×10^{-7} *9*; α(IPF)=0.000122 *3*
										Mult.: α(K)exp=0.0023 *6*, α(L)exp=0.00043 *22*. 1574γ(θ): A_2=0.75 *15* (1985Ed02) in ^{188}Ir ε decay.
										δ: from γ(θ): A_2U_2=−0.58 *3* (1992Ka49,1992Ka48).
1765.40	0$^+$	1132.310 *20*	87.6 *9*	633.037	2$^+$	(E2)		0.00389		α(K)=0.00320 *5*; α(L)=0.000535 *8*; α(M)=0.0001233 *18*
										α(N)=3.00×10^{-5} *5*; α(O)=5.09×10^{-6} *8*; α(P)=3.42×10^{-7} *5*; α(IPF)=6.64×10^{-7} *10*
										Mult.: (1132γ)(633γ)(θ): A_2=+0.37 *3*, A_4=+0.92 *7* (1960Ma19) in ^{188}Re β$^-$ decay (17.005 h).
		1610.40 *5*	100.0 *9*	155.043	2$^+$					
		1765.3		0.0	0$^+$	E0			0.117 *6*	E_γ: From ^{187}Os(n,γ) E=th.
										$I_{(\gamma+ce)}$: From %E0(K)=0.054 (1982Ka28), assuming 5% uncertainty and K/T=0.8648 from BrIcc.
1771.0	7$^-$	102.4[a] *5*	100.0[a] *24*	1668.67	(5$^-$)	E2		3.96 *10*		α(K)=0.771 *13*; α(L)=2.40 *7*; α(M)=0.615 *17*
										α(N)=0.147 *4*; α(O)=0.0217 *6*; α(P)=7.94×10^{-5} *15*
										B(E2)(W.u.)=11.1 *7*
										Mult.: A_2=0.23 *9* (1978Sh21).
		830.7[a] *5*	11.5[a] *12*	940.34	6$^+$	[E1]		0.00275		α(K)=0.00231 *4*; α(L)=0.000338 *5*; α(M)=7.65×10^{-5} *11*
										α(N)=1.86×10^{-5} *3*; α(O)=3.19×10^{-6} *5*; α(P)=2.32×10^{-7} *4*
										B(E1)(W.u.)=5.8×10^{-10} *7*
1807.60	2$^+$	350.0[@]	18[@] *3*	1457.50	2$^+$	E2		0.0584		α(K)=0.0400 *6*; α(L)=0.01401 *20*; α(M)=0.00343 *5*
										α(N)=0.000829 *12*; α(O)=0.0001303 *19*; α(P)=4.11×10^{-6} *6*
										Mult.: α(K)exp=0.035 *9* in ^{188}Ir ε decay.
		1017.68 *5*	82.5 *12*	789.961	3$^+$	M1(+E2)	<0.6	0.0100 *8*		α(K)=0.0083 *7*; α(L)=0.00129 *10*; α(M)=0.000294 *22*
										α(N)=7.2×10^{-5} *6*; α(O)=1.24×10^{-5} *10*; α(P)=9.3×10^{-7} *8*
										I_γ: Other: 58 *5* in (n,γ) E=th.
										Mult.,δ: α(K)exp=0.0087 *20*, α(L)exp=0.0016 *4* in ^{188}Ir ε decay.
		1174.57 *3*	100.0 *17*	633.037	2$^+$	M1(+E2)	<0.8	0.0068 *8*		α(K)=0.0056 *7*; α(L)=0.00087 *10*; α(M)=0.000198 *21*
										α(N)=4.8×10^{-5} *5*; α(O)=8.4×10^{-6} *9*; α(P)=6.3×10^{-7} *8*; α(IPF)=3.40×10^{-6} *24*
										Mult.,δ: α(K)exp=0.0063 *16*, α(L)exp=0.0011 *4* in ^{188}Ir ε decay.
		1329.1[@]	17[@] *6*	477.959	4$^+$					
		1652.42 *8*	17.1 *4*	155.043	2$^+$	M1(+E2)	≤0.9	0.0031 *4*		α(K)=0.0025 *3*; α(L)=0.00037 *4*; α(M)=8.5×10^{-5} *9*
										α(N)=2.07×10^{-5} *21*; α(O)=3.6×10^{-6} *4*; α(P)=2.7×10^{-7} *3*; α(IPF)=0.000164 *13*
										Mult.: α(K)exp=0.0031 *8* in ^{188}Ir ε decay.
		1807.36 *12*	4.8 *2*	0.0	0$^+$					I_γ: Others: 8.8 *17* in ^{188}Ir ε decay.
1824.92	0$^+$	347.2		1478.08	0$^+$	E0			0.260 *13*	$I_{(\gamma+ce)}$: From %E0(K)=0.13 (1982Ka28), assuming 5% uncertainty and K/T=0.8597 from BrIcc.

$^{188}_{76}Os_{112}$-16

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	$I_{(\gamma+ce)}$	Comments
1824.92	0^+	1191.83 *10*	100.0 *12*	633.037	2^+					I_γ: Other: 30.5 *16* from (n,γ) E=th.
		1669.89 *6*	75.2 *10*	155.043	2^+					
		1825.2		0.0	0^+	E0			0.104 *5*	E_γ: From ^{187}Os(n,γ) E=th. $I_{(\gamma+ce)}$: From %E0(K)=0.052 (1982Ka28), assuming 5% uncertainty and K/T=0.8649 from BrIcc.
1842.88	$(2)^+$	222.3[d]		1620.47	2^+					E_γ: From ^{188}Ir ε decay.
		385.46[@] *5*	3.4[@] *3*	1457.50	2^+	M1+E2	1.2 *+7−5*	0.080 *23*		α(K)=0.063 *21*; α(L)=0.0130 *20*; α(M)=0.0031 *4* α(N)=0.00075 *10*; α(O)=0.000124 *20*; α(P)=7.1×10^{-6} *25* Mult.,δ: α(K)exp=0.088 *20*, L1/M=2.8 *6*, α(L1)exp=0.0175, α(M)exp=0.0063 in ^{188}Ir ε decay.
		538.06[@] *8*	2.8[@] *3*	1304.84	2^+					
		1209.80 *3*	100 *4*	633.037	2^+	M1(+E2)	≤0.7	0.0064 *6*		α(K)=0.0053 *5*; α(L)=0.00082 *8*; α(M)=0.000187 *16* α(N)=4.6×10^{-5} *4*; α(O)=7.9×10^{-6} *7*; α(P)=6.0×10^{-7} *6*; α(IPF)=7.5×10^{-6} *5* Mult.,δ: α(K)exp=0.0057 *14*, α(L)exp=0.00097 *25*. (1210γ)(633γ)(θ): A_2=−0.22 *2*, A_4=0.05 *2* (1969Ya02), 1210γ(θ): A_2=−0.06 *2* (1985Ed02) in ^{188}Ir ε decay.
		1688.04[@] *15*	10.6[@] *9*	155.043	2^+	M1+E2	1.1 *9*	0.00255 *67*		α(K)=0.00200 *53*; α(L)=3.04×10^{-4} *79*; α(M)=6.9×10^{-5} *18* α(N)=1.69×10^{-5} *44*; α(O)=2.92×10^{-6} *77*; α(P)=2.19×10^{-7} *64*; α(IPF)=0.00016 *3* Mult.,δ: α(K)exp=0.0020 *5*. 1688γ(θ): A_2=0.15 *25* (1985Ed02) in ^{188}Ir ε decay.
		1843.0[@] *4*	2.3[@] *4*	0.0	0^+					
1936.9	$(1,2^+)$	1936.9 *3*	100	0.0	0^+					
1941.04	$(2)^+$	1150.5 *4*	23.1 *8*	789.961	3^+					
		1308.03 *6*	100.0 *10*	633.037	2^+					δ: <0.2 for J(1941)=2 from (1308γ)(633γ)(θ): A_2=+0.31 *7*, A_4=+0.04 *9* (1960Ar01) in ^{188}Re β^- decay.
		1785.95 *12*	29.4 *3*	155.043	2^+	M1,E2		0.00292		α(K)=0.00223 *4*; α(L)=0.000337 *5*; α(M)=7.68×10^{-5} *11* α(N)=1.87×10^{-5} *3*; α(O)=3.25×10^{-6} *5*; α(P)=2.49×10^{-7} *4*; α(IPF)=0.000254 *4* Mult.: E2,M1 from α(pair)=1.6×10^{-4} *3* (1974Be75) in ^{188}Re β^- decay.
		1940.91 *23*	2.79 *6*	0.0	0^+	(E2)		1.66×10^{-3}		α(K)=0.001184 *17*; α(L)=0.000179 *3*; α(M)=4.07×10^{-5} *6* α(N)=9.91×10^{-6} *14*; α(O)=1.707×10^{-6} *24*;

$^{188}_{76}Os_{112}$-17

Adopted Levels, Gammas (continued)

$\gamma(^{188}\mathrm{Os})$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ‡	E_f	J_f^π	Mult.#	δ#	αc	$I_{(\gamma+ce)}$	Comments
										α(P)=1.258×10^{-7} *18*; α(IPF)=0.000245 *4*

$^{188}_{76}\mathrm{Os}_{112}$-18

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	δ#	α[c]	Comments
									Mult.: E2,M1 from α(pair)=3.1×10^{-4} *4* (1974Be75) in ^{188}Re β^- decay.
1948.59	1,2	486.087 *11*	100	1462.50	2$^-$				
1957.13	(1$^+$,2$^+$)	652.58[@] *15*	2.2[@] *8*	1304.84	2$^+$				
		1802.05 *5*	100.0 *11*	155.043	2$^+$				Mult.: E2,M1 from α(pair)=1.8×10^{-4} *2* (1974Be75) in ^{188}Re β^- decay, but α(K)exp in ^{188}Ir ε decay suggests (E1).
		1957.10 *17*	40.1 *5*	0.0	0$^+$				I_γ: From (n,γ), Iγ=92 *5*. Mult.: E2,M1 from α(pair)=2.6×10^{-4} *2* (1974Be75) in ^{188}Re β^-.
1965.00	(2)$^+$	279.6[d]		1685.29	(3$^+$)				E_γ: From ^{188}Ir ε decay.
		999.38[@] *15*	15.1[@] *25*	965.66	4$^+$				
		1174.59[d] *10*		789.961	3$^+$				E_γ: From ^{188}Ir ε decay.
		1331.94 *7*	100 *6*	633.037	2$^+$	M1(+E2)	≤1.4	0.0047 *9*	α(K)=0.0039 *8*; α(L)=0.00059 *11*; α(M)=0.000135 *25* α(N)=3.3×10^{-5} *6*; α(O)=5.7×10^{-6} *11*; α(P)=4.3×10^{-7} *9*; α(IPF)=3.0×10^{-5} *4* Mult.,δ: α(K)exp=0.0042 *10* in ^{188}Ir ε decay.
		1487.01[@] *25*	16.0[@] *22*	477.959	4$^+$				
		1809.85 *26*	24 *6*	155.043	2$^+$	M1+E2+E0		0.00285	α(K)=0.00216 *3*; α(L)=0.000327 *5*; α(M)=7.43×10^{-5} *11* α(N)=1.81×10^{-5} *3*; α(O)=3.15×10^{-6} *5*; α(P)=2.41×10^{-7} *4*; α(IPF)=0.000269 *4* I_γ: Other: 73 *7* in ^{188}Ir ε decay. Mult.: α(K)exp=0.0101 *25*. 1810γ(θ): A_2=0.05 *20* (1985Ed02). α: 0.013 3 from α(K)exp and K/T=0.78. Other: α(K)exp=0.109 *10* (1982Ka28) in (n,γ) E=th.
1966.1	0$^+$	1966.1		0.0	0$^+$	E0			%E0(K)=2.67 (1982Ka28).
1980.0	8$^+$	555.0 *5*	100	1425.0	6$^+$	[E2]		0.0177	α(K)=0.01356 *20*; α(L)=0.00317 *5*; α(M)=0.000757 *11* α(N)=0.000183 *3*; α(O)=2.99×10^{-5} *5*; α(P)=1.446×10^{-6} *21* B(E2)(W.u.)=59 *+11−32*
1994.0	8$^-$	223.0 *5*	100	1771.0	7$^-$	M1		0.583	α(K)=0.483 *8*; α(L)=0.0776 *12*; α(M)=0.0178 *3* α(N)=0.00434 *7*; α(O)=0.000750 *12*; α(P)=5.59×10^{-5} *9* Mult.: DCO=0.41 *5* in (HI,xnγ); A_2=−0.71 *17* (1978Sh21) in (α,2nγ).
1996.1	8$^+$	571.1 *5*	100	1425.0	6$^+$	E2		0.01655	α(K)=0.01273 *18*; α(L)=0.00292 *5*; α(M)=0.000696 *10* α(N)=0.0001686 *24*; α(O)=2.75×10^{-5} *4*; α(P)=1.360×10^{-6} *20* Mult.: DCO=0.9 *2* in (HI,xnγ).
2020.02	(1,2)$^+$	557.71 *10*	18 *3*	1462.50	2$^-$				
		1864.69 *12*	100.0 *16*	155.043	2$^+$	E2,M1		0.00270	α(K)=0.00201 *3*; α(L)=0.000303 *5*; α(M)=6.90×10^{-5} *10* α(N)=1.685×10^{-5} *24*; α(O)=2.92×10^{-6} *4*; α(P)=2.24×10^{-7} *4*; α(IPF)=0.000303 *5* Mult.: E2,M1 from α(pair)=3.4×10^{-4} *5* (1974Be75). Other: I(e$^+$)/I(e$^+$,1610γ)= 0.13 *4*; α(pair)=2.1×10^{-4} *6* (1985AlZJ).
2022.45	(1,2)$^+$	1867.20 *22*	30 *5*	155.043	2$^+$				
		2022.53 *16*	100.0 *20*	0.0	0$^+$	E2,M1		0.00237	α(K)=0.001648 *23*; α(L)=0.000248 *4*; α(M)=5.65×10^{-5} *8*

$^{188}_{76}Os_{112}$-19

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	$I_{(\gamma+ce)}$	Comments
										α(N)=1.378×10^{-5} *20*; α(O)=2.39×10^{-6} *4*; α(P)=1.84×10^{-7} *3*; α(IPF)=0.000403 *6*
										Mult.: E2,M1 from α(pair)=2.8×10^{-4} *3* (1974Be75).
2054.9	9$^-$	284.1[a] *5*	100[a]	1771.0	7$^-$	E2		0.1076		α(K)=0.0679 *10*; α(L)=0.0301 *5*; α(M)=0.00748 *11*
										α(N)=0.00180 *3*; α(O)=0.000279 *4*; α(P)=6.76×10^{-6} *10*
										Mult.: DCO=0.85 *6* in (HI,xnγ).
2068.56	(2)$^+$	448.10[@] *8*	5.0[@] *10*	1620.47	2$^+$	E2		0.0300		α(K)=0.0220 *3*; α(L)=0.00609 *9*; α(M)=0.001472 *21*
										α(N)=0.000356 *5*; α(O)=5.71×10^{-5} *8*; α(P)=2.32×10^{-6} *4*
										Mult.: α(K)exp=0.019 *6* in ^{188}Ir ε decay.
		1435.42[@] *15*	100[@] *8*	633.037	2$^+$	M1+E2	1.2 *+49−7*	0.0034 *9*		α(K)=0.0028 *7*; α(L)=0.00043 *10*; α(M)=9.8×10^{-5} *23*
										α(N)=2.4×10^{-5} *6*; α(O)=4.1×10^{-6} *10*; α(P)=3.04×10^{-7} *82*; α(IPF)=5.7×10^{-5} *9*
										Mult.,δ: α(K)exp=0.0028 *7* in ^{188}Ir ε decay.
		2068.9[@] *5*	3.9[@] *6*	0.0	0$^+$					
2085.41	(1,2,3)$^+$	1295.44[@] *10*	12.6[@] *13*	789.961	3$^+$	(M1,E2)		0.00592		α(K)=0.00492 *7*; α(L)=0.000751 *11*; α(M)=0.0001710 *24*
										α(N)=4.17×10^{-5} *6*; α(O)=7.24×10^{-6} *11*; α(P)=5.52×10^{-7} *8*; α(IPF)=2.40×10^{-5} *4*
										Mult.: α(K)exp≈0.0073 in ^{188}Ir ε decay.
		1452.28[@] *15*	100[@] *8*	633.037	2$^+$	M1(+E2)	≤0.9	0.0041 *5*		α(K)=0.0033 *4*; α(L)=0.00051 *6*; α(M)=0.000116 *13*
										α(N)=2.8×10^{-5} *3*; α(O)=4.9×10^{-6} *6*; α(P)=3.7×10^{-7} *5*; α(IPF)=7.2×10^{-5} *6*
										Mult.,δ: α(K)exp=0.0039 *9*. 1452γ(θ): A_2=−0.15 *15* (1985Ed02).
		1930.65[@] *25*	27.1[@] *25*	155.043	2$^+$					
2099.04	(1)$^+$	413.73[@] *8*	0.75[@] *12*	1685.29	(3$^+$)					
		641.59[@] *5*	8.1[@] *9*	1457.50	2$^+$	M1(+E2)	≤0.8	0.030 *5*		α(K)=0.025 *4*; α(L)=0.0040 *5*; α(M)=0.00093 *11*
										α(N)=0.00023 *3*; α(O)=3.9×10^{-5} *5*; α(P)=2.8×10^{-6} *5*
										Mult.,δ: α(K)exp=0.029 *7* in ^{188}Ir ε decay.
		794.17[@] *15*	0.78[@] *16*	1304.84	2$^+$					
		1012.54[@] *8*	2.6[@] *4*	1086.390	0$^+$	(M1)		0.01090		α(K)=0.00909 *13*; α(L)=0.001397 *20*;

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
									α(M)=0.000319 *5* α(N)=7.78×10^{-5} *11*; α(O)=1.347×10^{-5} *19*; α(P)=1.024×10^{-6} *15* Mult.: α(K)exp≈0.0139 in ^{188}Ir ε decay.
2099.04	(1)$^+$	1307.9[&d] *5*	<16.3[&]	789.961	3$^+$				
		1944.08[@] *20*	83[@] *6*	155.043	2$^+$	(E2)		1.66×10^{-3}	α(K)=0.001181 *17*; α(L)=0.0001782 *25*; α(M)=4.05×10^{-5} *6* α(N)=9.88×10^{-6} *14*; α(O)=1.701×10^{-6} *24*; α(P)=1.254×10^{-7} *18*; α(IPF)=0.000247 *4* Mult.: α(K)exp=0.00092 *25*, α(L)exp=0.00014 *7*. Mult=E1 not completely excluded. 1944γ(θ): A$_2$=−0.11 *7* (1985Ed02) in ^{188}Ir ε decay.
		2099.1[@] *4*	100[@] *13*	0.0	0$^+$				
2121.20	(3$^-$)	1643.1 *3*		477.959	4$^+$				E$_\gamma$: from muonic atom (1979Ho23). Uncorrected for isomer shift.
		1966.2 *2*		155.043	2$^+$				E$_\gamma$: from muonic atom (1979Ho23). Uncorrected for isomer shift.
2124.3	(1$^+$,2$^+$)	646.2[&] *3*	100[&] *7*	1478.08	0$^+$				
		1332.3[d] *3*		789.961	3$^+$				E$_\gamma$: From ^{187}Os(n,γ) E=th.
2144.2	(10$^-$)	89.2[a] *5*	100[a]	2054.9	9$^-$	(M1)		7.81 *17*	α(K)=6.44 *14*; α(L)=1.053 *23*; α(M)=0.242 *6* α(N)=0.0590 *13*; α(O)=0.01019 *22*; α(P)=0.000757 *17* B(M1)(W.u.)=0.000287 *8* Mult.: α(exp)=13 *1* in (HI,xnγ), from the intensity balance, but it exceeds that expected for Mult.=M1 and E2.
2166.03	(2)$^+$	703.38[@] *18*	4.1[@] *14*	1462.50	2$^-$				
		1688.04 *15*	54 *4*	477.959	4$^+$				E$_\gamma$: From ^{188}Ir ε decay. I$_\gamma$: From (n,γ) E=th. Unresolved doublet in ^{188}Ir ε decay.
		2011.39 *25*	100 *7*	155.043	2$^+$	(E2)		1.60×10^{-3}	α(K)=0.001110 *16*; α(L)=0.0001669 *24*; α(M)=3.80×10^{-5} *6* α(N)=9.24×10^{-6} *13*; α(O)=1.593×10^{-6} *23*; α(P)=1.179×10^{-7} *17*; α(IPF)=0.000278 *4* E$_\gamma$: From ^{188}Ir ε decay. I$_\gamma$: From (n,γ) E=th. Mult.: α(K)exp=0.0011 *3* in ^{188}Ir ε decay.
2170.1	10$^+$	655.3[a] *5*	100[a]	1514.8	8$^+$	E2		0.01208	α(K)=0.00948 *14*; α(L)=0.00199 *3*; α(M)=0.000471 *7* α(N)=0.0001143 *17*; α(O)=1.89×10^{-5} *3*; α(P)=1.016×10^{-6} *15* B(E2)(W.u.)=185 *+24−15* Mult.: DCO=1.03 *8* in (HI,xnγ).
2193.1		1559.5 *7*		633.037	2$^+$				E$_\gamma$: From ^{187}Os(n,γ) E=th.
		2040.1 *14*		155.043	2$^+$				E$_\gamma$: From ^{187}Os(n,γ) E=th.
2204.74	2$^+$	399.0[d]		1807.60	2$^+$				E$_\gamma$: From ^{188}Ir ε decay.

$^{188}_{76}Os_{112}$-21

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
2204.74	2+	747.31[@] *15*	0.97[@] *18*	1457.50	2+	M1(+E2)	≤0.7	0.0211 *24*	α(K)=0.0175 *21*; α(L)=0.0028 *3*; α(M)=0.00063 *6* α(N)=0.000155 *15*; α(O)=2.7×10^{-5} *3*; α(P)=1.98×10^{-6} *24* Mult.,δ: α(K)exp=0.029 *9* in ^{188}Ir ε decay.
		899.90[@] *10*	2.18[@] *24*	1304.84	2+				
		1414.57[@] *20*	1.53[@] *15*	789.961	3+				
		1571.6[@] *4*	2.3[@] *3*	633.037	2+				
		1726.9[@] *5*	2.36[@] *24*	477.959	4+				
		2049.78[@] *20*	100[@] *7*	155.043	2+	M1+E2	+0.117 *+26−22*	0.00232	α(K)=0.001589 *23*; α(L)=0.000239 *4*; α(M)=5.44×10^{-5} *8* α(N)=1.327×10^{-5} *19*; α(O)=2.30×10^{-6} *4*; α(P)=1.77×10^{-7} *3*; α(IPF)=0.000419 *6* Mult.: α(K)exp=0.0012 *3*, α(L)exp=0.00018 *4*; γ(θ): A_2U_2=−0.327 *15* (1992Ka49,1992Ka48) and 2050γ(θ): A_2=−0.26 *4* (1985Ed02) in ^{188}Ir ε decay. δ: from γ(θ): A_2U_2=−0.327 *15* (1992Ka49,1992Ka48) in ^{188}Ir ε decay.
2214.62	(1)+	115.7[d]		2099.04	(1)+				E_γ: From ^{188}Ir ε decay.
		371.4[d]		1842.88	(2)+				E_γ: From ^{188}Ir ε decay.
		594.06[@] *8*	0.51[@] *6*	1620.47	2+	M1(+E2)	<1	0.036 *7*	α(K)=0.029 *6*; α(L)=0.0048 *8*; α(M)=0.00110 *16* α(N)=0.00027 *4*; α(O)=4.6×10^{-5} *8*; α(P)=3.3×10^{-6} *7*
		736.56[@] *8*	1.54[@] *16*	1478.08	0+	(M1)		0.0244	α(K)=0.0203 *3*; α(L)=0.00315 *5*; α(M)=0.000720 *10* α(N)=0.0001757 *25*; α(O)=3.04×10^{-5} *5*; α(P)=2.30×10^{-6} *4* Mult.: α(K)exp=0.022 *5* in ^{188}Ir ε decay.
		752.09[@] *10*	0.40[@] *6*	1462.50	2−				
		757.21[@] *8*	2.08[@] *20*	1457.50	2+	M1(+E2)	<0.8	0.020 *3*	α(K)=0.0166 *24*; α(L)=0.0026 *3*; α(M)=0.00060 *7* α(N)=0.000147 *17*; α(O)=2.5×10^{-5} *3*; α(P)=1.9×10^{-6} *3* Mult.,δ: α(K)exp=0.020 *5*. Other: 757γ(θ): A_2=0.15 *15* (1985Ed02), deduced δ=−0.2 to +0.4 or <−1.5 (^{188}Ir ε decay).
		909.68[@] *15*	0.18[@] *5*	1304.84	2+				
		1128.33[@] *15*	0.34[@] *4*	1086.390	0+				
		2059.65[@] *20*	37.8[@] *24*	155.043	2+	M1+E2		0.00228	α(K)=0.00156 *3*; α(L)=0.000234 *4*; α(M)=5.33×10^{-5} *10* α(N)=1.301×10^{-5} *23*; α(O)=2.26×10^{-6} *4*; α(P)=1.73×10^{-7} *3*; α(IPF)=0.000422 *7* δ: =−0.20 *7* from γ(θ,H,T) measurement (1980Be27), but J^π(^{188}Ir g.s.)=2− was assumed, instead of 1−.

$^{188}_{76}Os_{112}$-22

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ ‡	E_f	J_f^π	Mult.#	δ#	α c	Comments
									Other: δ(E2/M1)=−0.2 to +0.1 or −5 to −2 (1985Ed02). Mult.: γ(θ,H,T) in 1980Be27 and 2060γ(θ): A_2=0.01 *5* (1985Ed02). α(K)exp=0.0011 *2* and α(L)exp=0.00011 *5* suggest Mult=E2, in conflict with the γ(θ,H,T) data.
2214.62	(1)$^+$	2214.59@ *20*	100@ *7*	0.0	0$^+$	(M1)		0.00211	α(K)=0.001322 *19*; α(L)=0.000199 *3*; α(M)=4.52×10^{-5} *7* α(N)=1.102×10^{-5} *16*; α(O)=1.91×10^{-6} *3*; α(P)=1.471×10^{-7} *21*; α(IPF)=0.000527 *8* Mult.: γ(θ,H,T) in 1980Be27 and 2215γ(θ): A_2=0.67 *2* (1985Ed02).
2242.5	9$^-$	248.5a *5*	100.0a *17*	1994.0	8$^-$				
		471.5a *5*	88a *4*	1771.0	7$^-$				
2251.92	2$^+$	522.68@ *10*	0.36@ *10*	1729.38	2$^+$				
		566.59@ *8*	3.7@ *4*	1685.29	(3$^+$)	M1(+E2)	0.5 *5*	0.042 *10*	α(K)=0.034 *8*; α(L)=0.0056 *10*; α(M)=0.00128 *22* α(N)=0.00031 *6*; α(O)=5.4×10^{-5} *10*; α(P)=3.9×10^{-6} *10* Mult.,δ: α(K)exp=0.034 *8*.
		946.98@ *8*	2.26@ *23*	1304.84	2$^+$	(M1,E2)		0.01289	α(K)=0.01075 *15*; α(L)=0.001656 *24*; α(M)=0.000378 *6* α(N)=9.22×10^{-5} *13*; α(O)=1.597×10^{-5} *23*; α(P)=1.212×10^{-6} *17* Mult.: α(K)exp<0.015.
		1286.35@ *20*	0.56@ *21*	965.66	4$^+$				
		1462.7@d	7.2@ *8*	789.961	3$^+$				
		1618.8@ *4*	8.5@ *8*	633.037	2$^+$	M1(+E2)	0.5 *5*	0.0032 *4*	α(K)=0.0025 *3*; α(L)=0.00039 *5*; α(M)=8.8×10^{-5} *10* α(N)=2.15×10^{-5} *25*; α(O)=3.7×10^{-6} *5*; α(P)=2.8×10^{-7} *4*; α(IPF)=0.000146 *13* Mult.,δ: α(K)exp=0.0031 *8*.
		1774.2@ *4*	1.05@ *13*	477.959	4$^+$				
		2096.9@ *4*	100@ *13*	155.043	2$^+$				
		2252.09@ *25*	6.0@ *5*	0.0	0$^+$				
2279.4	9$^+$	594.1a *5*	100a	1685.3	7$^+$	E2		0.01509	α(K)=0.01169 *17*; α(L)=0.00261 *4*; α(M)=0.000620 *9* α(N)=0.0001504 *22*; α(O)=2.46×10^{-5} *4*; α(P)=1.250×10^{-6} *18* Mult.: DCO=1.06 *2* in (HI,xnγ).
2286.24	(1$^+$,2$^+$)	581.9& *4*	3.6& *6*	1704.30	0$^+$				
		601.09@ *20*	10@ *3*	1685.29	(3$^+$)				
		828.6d		1457.50	2$^+$				Eγ: From ^{188}Ir ε decay.
		1651.2d *7*		633.037	2$^+$				Eγ: From ^{187}Os(n,γ) E=th.
		2130.9@ *3*	100@ *12*	155.043	2$^+$				
		2286.2@ *4*	28@ *4*	0.0	0$^+$				
2299.87	1,2	821.2d		1478.08	0$^+$				Eγ: From ^{188}Ir ε decay.
		2144.85@ *25*	100@ *10*	155.043	2$^+$				

$^{188}_{76}Os_{112}$-23

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[c]	Comments
2299.87	1,2	2299.7[@] *5*	8[@] *4*	0.0	0^+				
2325.99	1,2	596.41[@] *15*	31[@] *7*	1729.38	2^+				
		2171.4[@] *3*	85[@] *10*	155.043	2^+				
		2326.22[@] *25*	100[@] *12*	0.0	0^+				
2347.47	$(1)^+$	581.9[&] *4*	4.2[&] *7*	1765.40	0^+				
		2192.3[@] *4*	55[@] *9*	155.043	2^+				
		2347.50[@] *15*	100[@] *11*	0.0	0^+	(M1)		0.00198	α(K)=0.001148 *16*; α(L)=0.0001721 *24*; α(M)=3.91×10^{-5} *6* α(N)=9.55×10^{-6} *14*; α(O)=1.658×10^{-6} *24*; α(P)=1.276×10^{-7} *18*; α(IPF)=0.000613 *9* Mult.: α(K)exp=0.0007 *3* gives mult=M1,E2. A_2=+0.60 *12* in γ(θ,H,T) (1980Be27). The analysis assumed $J^\pi=2^-$ for ^{188}Ir g.s.
2348.70	$(2)^-$	663.40[@] *10*	1.02[@] *17*	1685.29	(3^+)				
		886.20[@] *8*	4.1[@] *4*	1462.50	2^-				
		1558.66[@] *15*	14.1[@] *12*	789.961	3^+	E1		1.12×10^{-3}	α(K)=0.000756 *11*; α(L)=0.0001069 *15*; α(M)=2.41×10^{-5} *4* α(N)=5.87×10^{-6} *9*; α(O)=1.014×10^{-6} *15*; α(P)=7.67×10^{-8} *11*; α(IPF)=0.000223 *4* Mult.: α(K)exp=0.0008 *2*.
		1715.67[@] *10*	100[@] *7*	633.037	2^+	E1(+M2)	+0.071 *+24−36*	0.00113 *3*	α(K)=0.000670 *22*; α(L)=9.5×10^{-5} *4*; α(M)=2.14×10^{-5} *8* α(N)=5.21×10^{-6} *20*; α(O)=9.0×10^{-7} *4*; α(P)=6.8×10^{-8} *3*; α(IPF)=0.000337 *5* Mult.: α(K)exp=0.0005 *1*. δ: from γ(θ): A_2U_2=−0.297 *19* (1992Ka49,1992Ka48). Other: −0.06 *7* from γ(θ,H,T) study (1980Be27). (1716γ)(633γ)(θ): A_2=+0.20 *2*, A_4=0.00 *2* (from a graph shown by 1969Ya02), deduced δ≈+0.07. 1716γ(θ): A_2=−0.26 *8* (1985Ed02), deduced δ(M2/E1)= −0.2 to +0.4 or +1 to +5.
		2193.7[@] *4*	33[@] *6*	155.043	2^+	E1		1.19×10^{-3}	α(K)=0.000432 *6*; α(L)=6.04×10^{-5} *9*; α(M)=1.359×10^{-5} *19* α(N)=3.31×10^{-6} *5*; α(O)=5.73×10^{-7} *8*; α(P)=4.40×10^{-8} *7*; α(IPF)=0.000679 *10* Mult.: α(K)exp(2193.67γ+2192.3γ)=0.00071 *18* consistent with E1 for 2193.7γ and M1,E2

$^{188}_{76}Os_{112}$-24

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								for 2192.3γ. 2194γ(θ): A_2=−0.4 *2* (1985Ed02).
2365.3	1,2	746.9[&d] *8*	39[&] *5*	1620.47	2^+			
		2210.1 *13*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2365.3[&] *3*	100[&] *5*	0.0	0^+			
2374.2	1,2	2219.1[@] *5*	100[@] *10*	155.043	2^+			
		2374.2[@] *4*	16[@] *4*	0.0	0^+			
2376.94	(2^-)	411.77[@] *20*	5.2[@] *19*	1965.00	$(2)^+$			
		534.21[@] *20*	6[@] *3*	1842.88	$(2)^+$			
		2222.0[@] *5*	100[@] *10*	155.043	2^+			
2415.90	(2^+)	730.52[@] *10*	93[@] *14*	1685.29	(3^+)			
		1782.8[@] *5*	82[@] *9*	633.037	2^+			Mult.: α(K)exp≈0.012 implies E0 component.
		1939.0[&] *5*	13.0[&] *10*	477.959	4^+			
		2261.3[@] *3*	100[@] *13*	155.043	2^+			
2458.4	(11^-)	314.2[a] *5*	100[a]	2144.2	(10^-)	M1	0.228	α(K)=0.189 *3*; α(L)=0.0302 *5*; α(M)=0.00691 *11* α(N)=0.001687 *25*; α(O)=0.000292 *5*; α(P)=2.18×10^{-5} *4* Mult.: DCO=0.28 *2* in (HI,xnγ).
2460.50	1,2	1823.6 *11*		633.037	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2305.61[@] *25*	60[@] *8*	155.043	2^+			
		2460.51[@] *25*	100[@] *12*	0.0	0^+			
2491.1	(2^-)	2336.0[@] *3*	100[@]	155.043	2^+			
2500.4	11^-	356.1[a]	100[a]	2144.2	(10^-)	M1	0.1629	α(K)=0.1351 *19*; α(L)=0.0215 *3*; α(M)=0.00492 *7* α(N)=0.001201 *17*; α(O)=0.000208 *3*; α(P)=1.554×10^{-5} *22* Mult.: DCO=0.40 *6* in (HI,xnγ).
2505.23		801.2[&] *5*	7.3[&] *7*	1704.30	0^+			
		2350.0 *3*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2505.4[&] *5*	100[&] *4*	0.0	0^+			
2520.46	1,2	268.3[@d]	[@]	2251.92	2^+			
		1887.9[@] *4*	100[@] *15*	633.037	2^+			
		2365.3[@] *3*	91[@] *16*	155.043	2^+			
		2520.1[@] *5*	15[@] *7*	0.0	0^+			
2522.3	10^-	279.8[a] *5*	28[a] *2*	2242.5	9^-			
		528.3[a] *5*	100.0[a] *25*	1994.0	8^-			
2549.49	(2^-)	383.47[@] *8*	21[@] *4*	2166.03	$(2)^+$			
		1760.2[d]		789.961	3^+			E_γ: From ^{188}Ir ε decay.
		2394.35[@] *25*	100[@] *15*	155.043	2^+			
2558.0	(10^+)	503.2[a] *5*	100[a]	2054.9	9^-	(E1)	0.00756	α(K)=0.00633 *9*; α(L)=0.000956 *14*; α(M)=0.000217 *3* α(N)=5.27×10^{-5} *8*; α(O)=8.96×10^{-6} *13*; α(P)=6.19×10^{-7} *9* Mult.: DCO=0.60 *11* in (HI,xnγ).

$^{188}_{76}Os_{112}$-25

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
2581.81	1,2	2426.9[@] *4*	50[@] *14*	155.043	2^+			
		2581.7[@] *3*	100[@] *25*	0.0	0^+			
2622.71	(2^+)	2145.8[&] *5*	16[&] *2*	477.959	4^+			
		2467.6[@] *4*	9[@] *5*	155.043	2^+			
		2622.45[@] *25*	100[@] *15*	0.0	0^+			
2628.9		1990.0 *13*		633.037	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2474.9 *5*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2626.1 *20*		0.0	0^+			E_γ: From ^{187}Os(n,γ) E=th.
2655.2	10^+	659.1[a] *5*	100[a]	1996.1	8^+	E2	0.01192	α(K)=0.00936 *14*; α(L)=0.00196 *3*; α(M)=0.000464 *7* α(N)=0.0001125 *16*; α(O)=1.86×10^{-5} *3*; α(P)=1.004×10^{-6} *15* Mult.: DCO=1.4 *7* in (HI,xnγ).
2658.6		2026.3 *10*		633.037	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2504.1 *4*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2657.4[&] *5*	100[&]	0.0	0^+			
2704.06		1241.3[&] *3*	100[&] *10*	1462.50	2^-			
		2551.4 *8*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2703.8[&] *5*	85[&] *10*	0.0	0^+			
2733.5	(12^-)	275.1[a] *5*	9.1[a] *6*	2458.4	(11^-)			
		589.3[a] *5*	100.0[a] *23*	2144.2	(10^-)	E2	0.01538	α(K)=0.01189 *17*; α(L)=0.00267 *4*; α(M)=0.000635 *9* α(N)=0.0001540 *22*; α(O)=2.52×10^{-5} *4*; α(P)=1.271×10^{-6} *18* Mult.: DCO=1.02 *9* in (HI,xnγ).
2740.13		2108.0[&] *3*	39[&] *4*	633.037	2^+			
		2582.1[&] *10*	16.1[&] *8*	155.043	2^+			
		2738.3[&] *5*	100[&] *6*	0.0	0^+			
2766.4		801.2[&] *5*	13.0[&] *13*	1965.00	$(2)^+$			
		1302.4[d] *3*		1462.50	2^-			E_γ: From ^{187}Os(n,γ) E=th.
		2133.4[&] *5*	100[&] *8*	633.037	2^+			
		2766.9 *13*		0.0	0^+			E_γ: From ^{187}Os(n,γ) E=th.
2779.2		2147.8 *17*		633.037	2^+			E_γ: From ^{187}Os(n,γ) E=th.
		2623.7 *9*		155.043	2^+			E_γ: From ^{187}Os(n,γ) E=th.
2813.2	(11^+)	254.9[a] *5*	100[a]	2558.0	(10^+)	(M1)	0.403	α(K)=0.334 *5*; α(L)=0.0535 *8*; α(M)=0.01227 *18* α(N)=0.00300 *5*; α(O)=0.000518 *8*; α(P)=3.87×10^{-5} *6* Mult.: DCO=0.9 *2* in (HI,xnγ).
2816.4	11^-	294.1[a] *5*	6.5[a] *11*	2522.3	10^-			
		316.0[a] *5*	100[a] *7*	2500.4	11^-	D		Mult.: DCO=0.25 *4*.
		573.9 *5*		2242.5	9^-	(E2)	0.01636	α(K)=0.01260 *18*; α(L)=0.00288 *4*; α(M)=0.000686 *10* α(N)=0.0001662 *24*; α(O)=2.72×10^{-5} *4*; α(P)=1.346×10^{-6} *19* E_γ: From (HI,xnγ). Mult.: DCO=0.7 *2* in (HI,xnγ).

$^{188}_{76}Os_{112}$-26

Adopted Levels, Gammas (continued)

$\gamma(^{188}Os)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
2817.4	(2$^+$)	1853.6[&] *5*	39[&] *3*	965.66	4$^+$			
		2657.4 *11*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		2817.0[&] *3*	100[&] *7*	0.0	0$^+$			
2856.3	12$^+$	686.1[a] *5*	100[a]	2170.1	10$^+$	E2	0.01091	α(K)=0.00861 *13*; α(L)=0.001765 *25*; α(M)=0.000416 *6* α(N)=0.0001009 *15*; α(O)=1.670×10^{-5} *24*; α(P)=9.23×10^{-7} *13* Mult.: DCO=1.01 *7* in (HI,xnγ).
2865.7		1042.0[&d] *3*	76[&] *6*	1824.92	0$^+$			
		1402.9[&] *3*	100[&] *9*	1462.50	2$^-$			
		1561.6[&] *5*	62[&] *6*	1304.84	2$^+$			
2868.8	(12$^-$)	410.4[a] *5*	100[a]	2458.4	(11$^-$)	M1	0.1116	α(K)=0.0926 *14*; α(L)=0.01465 *21*; α(M)=0.00335 *5* α(N)=0.000819 *12*; α(O)=0.0001416 *21*; α(P)=1.062×10^{-5} *16* Mult.: DCO=0.34 *9* in (HI,xnγ).
2879.4		2246.9[&] *5*	100[&] *8*	633.037	2$^+$			
		2723.5 *6*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		2879.3[&] *5*	100[&] *12*	0.0	0$^+$			
2891.5		2261.5 *8*		633.037	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		2734.1[&] *5*	72[&] *9*	155.043	2$^+$			
		2892.7[&] *5*	100[&] *6*	0.0	0$^+$			
2933.4	11$^+$	654.0[a]	100[a]	2279.4	9$^+$	E2	0.01213	α(K)=0.00952 *14*; α(L)=0.00200 *3*; α(M)=0.000474 *7* α(N)=0.0001149 *16*; α(O)=1.90×10^{-5} *3*; α(P)=1.020×10^{-6} *15* Mult.: DCO=1.0 *4* in (HI,xnγ).
2969.8		2816.1 *11*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		2968.9 *9*		0.0	0$^+$			E_γ: From ^{187}Os(n,γ) E=th.
2980.9	(12$^+$)	423.1[a] *5*	20.7[a] *14*	2558.0	(10$^+$)			
		810.7[a] *5*	100.0[a] *21*	2170.1	10$^+$			
3002.4		1435.7[&] *3*	100[&]	1566.7				
3012.2		2379.7 *14*		633.037	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		3011.9 *11*		0.0	0$^+$			E_γ: From ^{187}Os(n,γ) E=th.
3029.70		2553.7[&] *5*	100[&]	477.959	4$^+$			
		2874.3 *3*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		3029.3 *3*		0.0	0$^+$			E_γ: From ^{187}Os(n,γ) E=th.
3059.7	(13$^-$)	326.2[a] *5*	51.6[a] *11*	2733.5	(12$^-$)			
		601.3[a] *5*	100[a] *3*	2458.4	(11$^-$)	E2	0.01468	α(K)=0.01139 *16*; α(L)=0.00252 *4*; α(M)=0.000599 *9* α(N)=0.0001453 *21*; α(O)=2.38×10^{-5} *4*; α(P)=1.218×10^{-6} *18* Mult.: DCO=0.9 *1* in (HI,xnγ).
3071.5		2918.5[&] *5*	20.8[&] *12*	155.043	2$^+$			
		3070.7[&] *3*	100[&] *4*	0.0	0$^+$			
3083.4	11,12$^+$	267.0[a] *5*	64[a] *3*	2816.4	11$^-$			
		270.2[a] *5*	22.1[a] *13*	2813.2	(11$^+$)			

$^{188}_{76}Os_{112}$-27

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
3083.4	11,12$^+$	583.0[a] *5*	100[a] *5*	2500.4	11$^-$	D,E2		Mult.: DCO=1.3 *3* in (HI,xnγ).
		913.3[a] *5*	33.8[a] *13*	2170.1	10$^+$			
3093.1	(13$^-$)	359.5[a] *5*	12.1[a] *3*	2733.5	(12$^-$)	M1	0.1588	α(K)=0.1317 *19*; α(L)=0.0209 *3*; α(M)=0.00479 *7* α(N)=0.001170 *17*; α(O)=0.000202 *3*; α(P)=1.515×10^{-5} *22* Mult.: DCO=0.29 *6* in (HI,xnγ).
		634.6[a] *5*	100[a] *3*	2458.4	(11$^-$)	E2	0.01298	α(K)=0.01014 *15*; α(L)=0.00218 *3*; α(M)=0.000515 *8* α(N)=0.0001249 *18*; α(O)=2.06×10^{-5} *3*; α(P)=1.087×10^{-6} *16* Mult.: DCO=0.81 *14* in (HI,xnγ).
3110.2		3110.2[&] *3*	100[&]	0.0	0$^+$			
3141.0		2986.6 *5*		155.043	2$^+$			Eγ: From ^{187}Os(n,γ) E=th.
		3139.7 *7*		0.0	0$^+$			Eγ: From ^{187}Os(n,γ) E=th.
3143.5	(12$^-$)	621.2[a] *5*	100[a]	2522.3	10$^-$			
3168.3		3012.0 *10*		155.043	2$^+$			Eγ: From ^{187}Os(n,γ) E=th.
		3168.6 *5*		0.0	0$^+$			Eγ: From ^{187}Os(n,γ) E=th.
3177.37		2544.8[&] *3*	60[&] *4*	633.037	2$^+$			
		3021.7[&] *5*	100[&] *8*	155.043	2$^+$			
		3176.6[&] *5*	87[&] *7*	0.0	0$^+$			
3205.1		388.7[a] *5*	100[a]	2816.4	11$^-$			
3223.5		2591.4 *10*		633.037	2$^+$			Eγ: From ^{187}Os(n,γ) E=th.
		3067.5 *10*		155.043	2$^+$			Eγ: From ^{187}Os(n,γ) E=th.
3239.6		2606.5[&] *3*	100[&] *5*	633.037	2$^+$			
		3084.6[&] *10*	16.2[&] *14*	155.043	2$^+$			
3255.3	(13$^+$)	274.4[a] *5*	100.0[a] *23*	2980.9	(12$^+$)	M1	0.330	α(K)=0.273 *4*; α(L)=0.0437 *7*; α(M)=0.01001 *15* α(N)=0.00245 *4*; α(O)=0.000422 *7*; α(P)=3.16×10^{-5} *5* Mult.: DCO=0.5 *2* in (HI,xnγ).
		442.0[a] *5*	51.2[a] *12*	2813.2	(11$^+$)			
3275.2		3120.1[&] *3*	100[&] *5*	155.043	2$^+$			
		3275.2[&] *5*	63[&] *5*	0.0	0$^+$			
3289.5		420.7[a]	100[a]	2868.8	(12$^-$)			
3352.5	(14$^-$)	292.8[a] *5*	5.7[a] *19*	3059.7	(13$^-$)			
		619.0[a] *5*	100[a] *6*	2733.5	(12$^-$)	E2	0.01374	α(K)=0.01070 *15*; α(L)=0.00233 *4*; α(M)=0.000552 *8* α(N)=0.0001339 *19*; α(O)=2.20×10^{-5} *4*; α(P)=1.145×10^{-6} *17* Mult.: DCO=1.1 *3* in (HI,xnγ).
3369.6	12$^+$	714.4[a] *5*	100[a]	2655.2	10$^+$	E2	0.00998	α(K)=0.00792 *12*; α(L)=0.001588 *23*; α(M)=0.000373 *6* α(N)=9.06×10^{-5} *13*; α(O)=1.504×10^{-5} *22*; α(P)=8.49×10^{-7} *12* Mult.: DCO=1.2 *4* in (HI,xnγ).
3413.6	(15$^-$)	320.5 *5*		3093.1	(13$^-$)	E2	0.0752	α(K)=0.0499 *8*; α(L)=0.0192 *3*; α(M)=0.00474 *8* α(N)=0.001143 *18*; α(O)=0.000178 *3*; α(P)=5.06×10^{-6} *8* Eγ: From (HI,xnγ). Mult.: DCO=0.94 *9* in (HI,xnγ).

$^{188}_{76}Os_{112}$-28

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ [†]	I_γ [‡]	E_f	J_f^π	Mult. [#]	α [c]	Comments
3413.6	(15$^-$)	353.8 [a] *5*	100 [a]	3059.7	(13$^-$)	E2	0.0567	α(K)=0.0390 *6*; α(L)=0.01348 *20*; α(M)=0.00330 *5* α(N)=0.000798 *12*; α(O)=0.0001255 *19*; α(P)=4.00×10^{-6} *6* Mult.: DCO=0.9 *2* in (HI,xnγ).
3417.1		333.7 [a] *5*	100 [a]	3083.4	11,12$^+$			
3438.7	(14$^+$)	458.0 *5*		2980.9	(12$^+$)			E_γ: From (HI,xnγ).
		582.4 [a] *5*	100 [a]	2856.3	12$^+$	E2	0.01581	α(K)=0.01220 *18*; α(L)=0.00276 *4*; α(M)=0.000657 *10* α(N)=0.0001593 *23*; α(O)=2.61×10^{-5} *4*; α(P)=1.304×10^{-6} *19* Mult.: DCO=1.21 *6* in (HI,xnγ).
3441.0		707.5 [a]	100 [a]	2733.5	(12$^-$)	E2	0.01020	α(K)=0.00808 *12*; α(L)=0.001628 *23*; α(M)=0.000383 *6* α(N)=9.30×10^{-5} *13*; α(O)=1.542×10^{-5} *22*; α(P)=8.66×10^{-7} *13* Mult.: DCO=1.1 *2*.
3471.7	(14$^+$)	378.6 [a] *5*	62.6 [a] *17*	3093.1	(13$^-$)	E1	0.01419	α(K)=0.01183 *17*; α(L)=0.00183 *3*; α(M)=0.000416 *6* α(N)=0.0001009 *15*; α(O)=1.705×10^{-5} *25*; α(P)=1.135×10^{-6} *17* Mult.: DCO=0.62 *5* in (HI,xnγ).
		615.5 [a] *5*	100.0 [a] *22*	2856.3	12$^+$	E2	0.01392	α(K)=0.01083 *16*; α(L)=0.00237 *4*; α(M)=0.000561 *8* α(N)=0.0001360 *20*; α(O)=2.23×10^{-5} *4*; α(P)=1.159×10^{-6} *17* Mult.: DCO=1.05 *9* in (HI,xnγ).
3562.6	14$^+$	706.3 [a] *5*	100 [a]	2856.3	12$^+$			
3601.4	13$^+$	668.0 [a] *5*	100 [a]	2933.4	11$^+$	E2	0.01157	α(K)=0.00910 *13*; α(L)=0.00189 *3*; α(M)=0.000447 *7* α(N)=0.0001085 *16*; α(O)=1.79×10^{-5} *3*; α(P)=9.76×10^{-7} *14* Mult.: DCO=1.0 *5* in (HI,xnγ).
3621.1		415.5 [ad] *5*	100 [a]	3205.1				
3640.2		783.9 [a] *5*	100 [a]	2856.3	12$^+$	D,E2		Mult.: DCO=0.8 *2* in (HI,xnγ).
3722.0		432.5 [a] *5*	100 [a]	3289.5				
3730.5	(15$^-$)	670.8 [a] *5*	100 [a]	3059.7	(13$^-$)	(E2)		Mult.: DCO=1.6 *4* in (HI,xnγ).
3730.8		3098.7 *12*		633.037	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		3575.5 *5*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
3734.0	(16$^+$)	262.3 [a] *5*	92.0 [a] *25*	3471.7	(14$^+$)	E2	0.1376 *21*	α(K)=0.0835 *13*; α(L)=0.0410 *7*; α(M)=0.01021 *17* α(N)=0.00246 *4*; α(O)=0.000378 *6*; α(P)=8.20×10^{-6} *12* Mult.: DCO=1.00 *12* in (HI,xnγ).
		320.4 [a] *5*	100 [a] *4*	3413.6	(15$^-$)			
3766.7		910.4 [a] *5*	100 [a]	2856.3	12$^+$			
3795.5	(15$^+$)	356.8 *5*		3438.7	(14$^+$)			E_γ: From (HI,xnγ).
		540.2 [a] *5*	100 [a]	3255.3	(13$^+$)			
3825.2	(14$^-$)	681.7 [a] *5*	100 [a]	3143.5	(12$^-$)			
3826.3		354.6 [a] *5*	100 [a]	3471.7	(14$^+$)			
3911.0		497.4 [a] *5*	100 [a]	3413.6	(15$^-$)			
3964.5	(16$^+$)	525.8 [a] *5*	100 [a]	3438.7	(14$^+$)	E2	0.0202	α(K)=0.01529 *22*; α(L)=0.00372 *6*; α(M)=0.000890 *13* α(N)=0.000216 *3*; α(O)=3.50×10^{-5} *5*; α(P)=1.627×10^{-6} *23* Mult.: DCO=1.0 *3* in (HI,xnγ).
4106.8	(16$^-$)	754.3 [a] *5*	100 [a]	3352.5	(14$^-$)	E2	0.00888	α(K)=0.00708 *10*; α(L)=0.001382 *20*; α(M)=0.000324 *5*

$^{188}_{76}Os_{112}$-29

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
								α(N)=7.87×10^{-5} *11*; α(O)=1.310×10^{-5} *19*; α(P)=7.60×10^{-7} *11* Mult.: DCO=0.8 *2* in (HI,xnγ).
4149.3	17	415.3[a] *5*	100[a]	3734.0	(16$^+$)	D		Mult.: DCO=0.21 *3* in (HI,xnγ).
4184.7		462.7[a] *5*	100[a]	3722.0				
4193.0		366.7[a] *5*	100[a]	3826.3				
4236.5	(16$^+$)	673.9[a] *5*	100[a]	3562.6	14$^+$			
4257.8	18$^+$	523.8[a] *5*	100[a]	3734.0	(16$^+$)	E2	0.0203	α(K)=0.01542 *22*; α(L)=0.00376 *6*; α(M)=0.000900 *13* α(N)=0.000218 *4*; α(O)=3.54×10^{-5} *5*; α(P)=1.641×10^{-6} *24* Mult.: DCO=0.96 *12* in (HI,xnγ).
4285.5		933.0[a] *5*	100[a]	3352.5	(14$^-$)			
4390.5	(17$^-$)	479.5[a] *5*	100[a] *4*	3911.0		D		Mult.: DCO=0.26 *8* in (HI,xnγ).
		976.9[a] *5*	28.9[a] *22*	3413.6	(15$^-$)	E2	0.00520	α(K)=0.00424 *6*; α(L)=0.000743 *11*; α(M)=0.0001722 *25* α(N)=4.19×10^{-5} *6*; α(O)=7.07×10^{-6} *10*; α(P)=4.54×10^{-7} *7* Mult.: DCO=1.0 *4* in (HI,xnγ).
4414.0	(17$^+$)	618[ad] *1*	100[a]	3795.5	(15$^+$)			
4428.4		694.4[a] *5*	100[a]	3734.0	(16$^+$)	D,E2		Mult.: DCO=1.1 *2* in (HI,xnγ).
4484.1	(17$^-$)	753.6[a] *5*	100[a]	3730.5	(15$^-$)			
4507.6		4350.2 *12*		155.043	2$^+$			E_γ: From ^{187}Os(n,γ) E=th.
		4508.6[&] *8*	100[&]	0.0	0$^+$			
4508.7	(17$^-$)	1095.1[a] *5*	100[a]	3413.6	(15$^-$)	(E2)	0.00415	α(K)=0.00340 *5*; α(L)=0.000575 *8*; α(M)=0.0001328 *19* α(N)=3.23×10^{-5} *5*; α(O)=5.48×10^{-6} *8*; α(P)=3.65×10^{-7} *6* Mult.: DCO=1.1 *2* in (HI,xnγ).
4520.6	(16$^-$)	695.4[a] *5*	100[a]	3825.2	(14$^-$)			
4563.4		414.1[a] *5*	100[a]	4149.3	17			
4571.8	(18$^+$)	607.3[a] *5*	100[a]	3964.5	(16$^+$)	(E2)	0.01435	α(K)=0.01114 *16*; α(L)=0.00246 *4*; α(M)=0.000583 *9* α(N)=0.0001413 *20*; α(O)=2.32×10^{-5} *4*; α(P)=1.192×10^{-6} *17* Mult.: DCO=0.6 *2* in (HI,xnγ).
4649.4		391.6[a] *5*	100[a]	4257.8	18$^+$			
4729.4	(19)	471.6[a] *5*	100[a]	4257.8	18$^+$	D		Mult.: DCO=0.34 *7* in (HI,xnγ).
4846.6	(18$^-$)	739.8[a] *5*	100[a]	4106.8	(16$^-$)			
4887.0		629.2[a] *5*	100[a]	4257.8	18$^+$	D,E2		Mult.: DCO=1.2 *3* in (HI,xnγ).
5033.2	(19$^-$)	383.8[a] *5*	[a]	4649.4				
		524.5[a] *5*	[a]	4508.7	(17$^-$)	E2	0.0203	α(K)=0.01537 *22*; α(L)=0.00375 *6*; α(M)=0.000897 *13* α(N)=0.000217 *4*; α(O)=3.53×10^{-5} *5*; α(P)=1.636×10^{-6} *24* Mult.: DCO=0.99 *15* in (HI,xnγ).
		642.7[a] *5*	100[a] *6*	4390.5	(17$^-$)	E2	0.01261	α(K)=0.00987 *14*; α(L)=0.00210 *3*; α(M)=0.000497 *7* α(N)=0.0001206 *17*; α(O)=1.99×10^{-5} *3*; α(P)=1.058×10^{-6} *15* Mult.: DCO=0.9 *3* in (HI,xnγ).
		775.4[a] *5*	46[a] *3*	4257.8	18$^+$	(E1)	0.00314	α(K)=0.00264 *4*; α(L)=0.000387 *6*; α(M)=8.76×10^{-5} *13* α(N)=2.13×10^{-5} *3*; α(O)=3.65×10^{-6} *6*; α(P)=2.64×10^{-7} *4* Mult.: DCO=0.85 *15* in (HI,xnγ).

$^{188}_{76}Os_{112}$-30

Adopted Levels, Gammas (continued)

γ(^{188}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
5124.8		395.4[a] *5*	100[a]	4729.4	(19)	M1,E2	0.1232	α(K)=0.1022 *15*; α(L)=0.01619 *24*; α(M)=0.00371 *6* α(N)=0.000905 *13*; α(O)=0.0001565 *23*; α(P)=1.173×10^{-5} *17* Mult.: DCO=0.86 *13* in (HI,xnγ).
5177.1	(19$^-$)	693.0[a] *5*	100[a]	4484.1	(17$^-$)			
5267.5	(20$^+$)	695.7[a] *5*	100[a]	4571.8	(18$^+$)			
5620.1		495.3[a] *5*	100[a]	5124.8				
6032.0	(22$^+$)	764.4[a] *5*	100[a]	5267.5	(20$^+$)			
6117.6		497.5[a] *5*	100[a]	5620.1				
6607.1		489.5[a] *5*	100[a]	6117.6		(E2)	0.0240	α(K)=0.0180 *3*; α(L)=0.00462 *7*; α(M)=0.001110 *16* α(N)=0.000269 *4*; α(O)=4.34×10^{-5} *7*; α(P)=1.90×10^{-6} *3* Mult.: DCO=1.06 *15* in (HI,xnγ).
6911.1	(24$^+$)	878.6[ad] *5*	100[a]	6032.0	(22$^+$)			

† Weighted average of 1984Zh08 and 1975Sv01 (^{188}Re β^- decay), 1975Th06 and 1962Gr02 (^{188}Ir ε decay (41.5 h)), 1983Fe06 (^{187}Os(n,γ) E=Th) and 1978AhZX (^{188}Os(n,n′γ)), unless otherwise stated.
‡ From ^{188}Re β^- decay, unless otherwise stated.
# From ce measurements in ^{188}Ir ε decay and/or ^{188}Re β^- decay or DCO ratio in (HI,xnγ), unless otherwise stated.
@ From ^{188}Ir ε decay.
& From ^{187}Os(n,γ) E=th.
a From (HI,xnγ). Uncertainties in Eγ were estimated by the evaluators.
b From ^{186}W(α,2nγ).
c Additional information 2.
d Placement of transition in the level scheme is uncertain.

$^{188}_{76}Os_{112}$-31

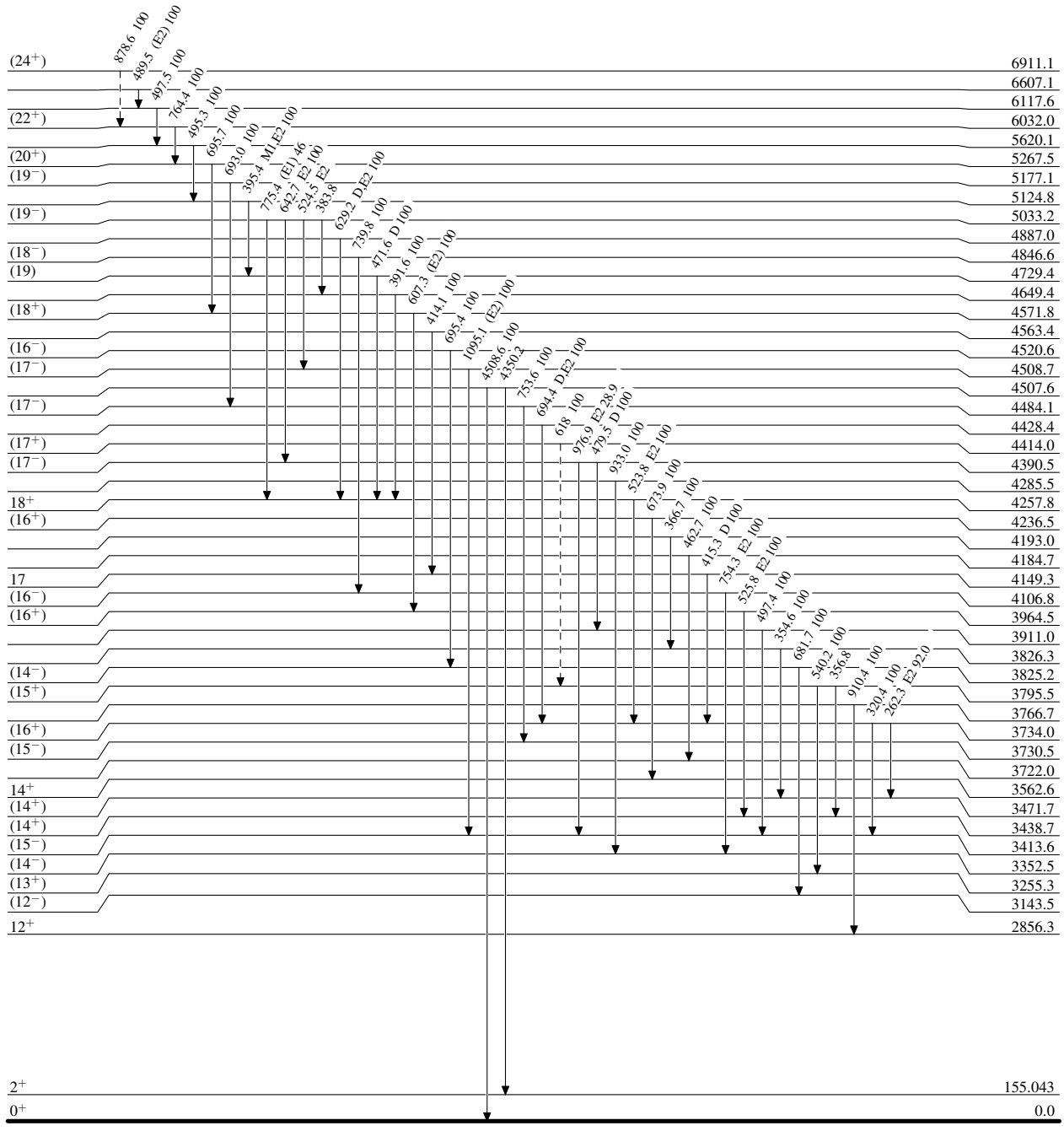
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{188}_{76}Os_{112}$

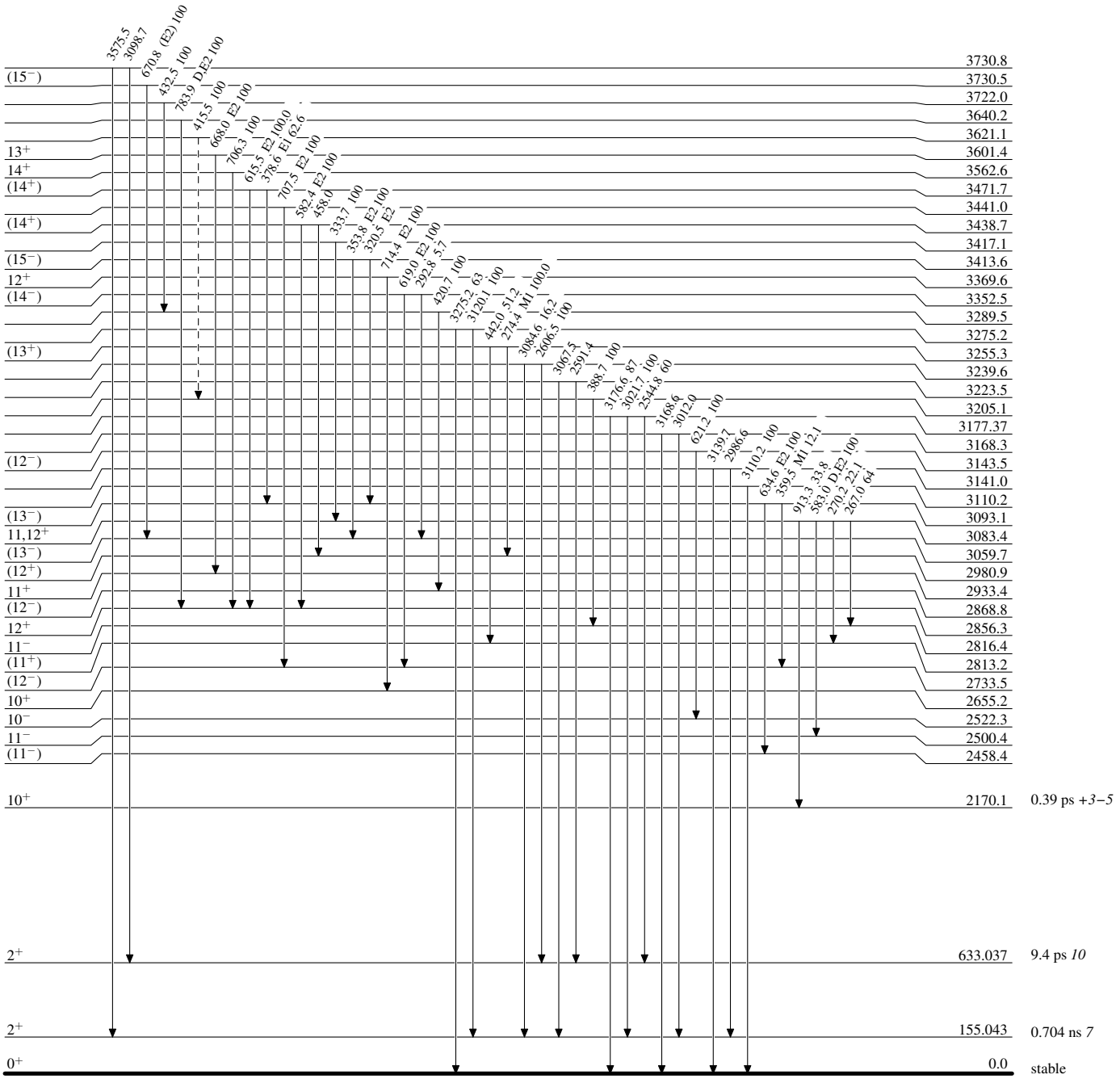
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

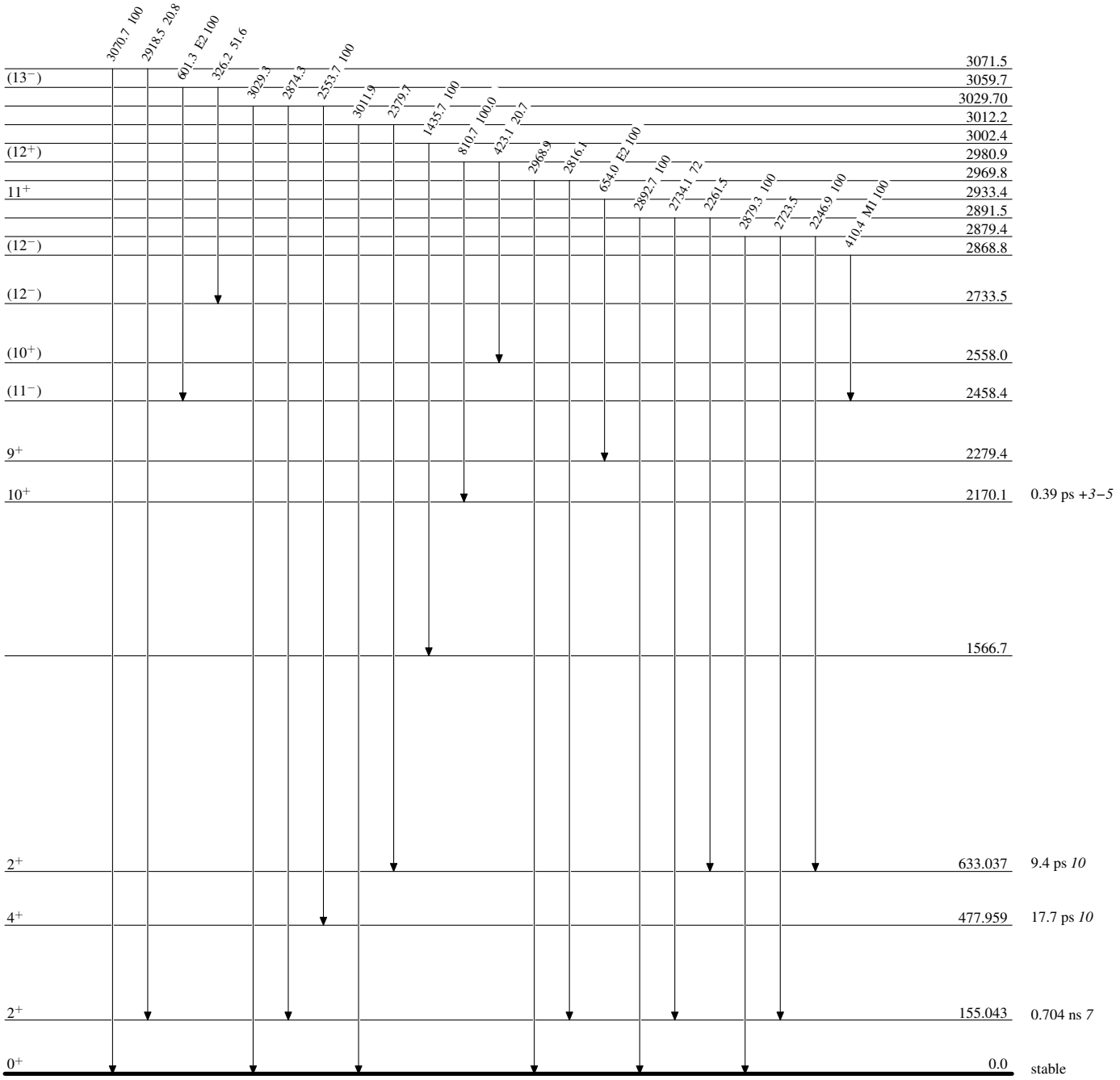


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{188}_{76}Os_{112}$

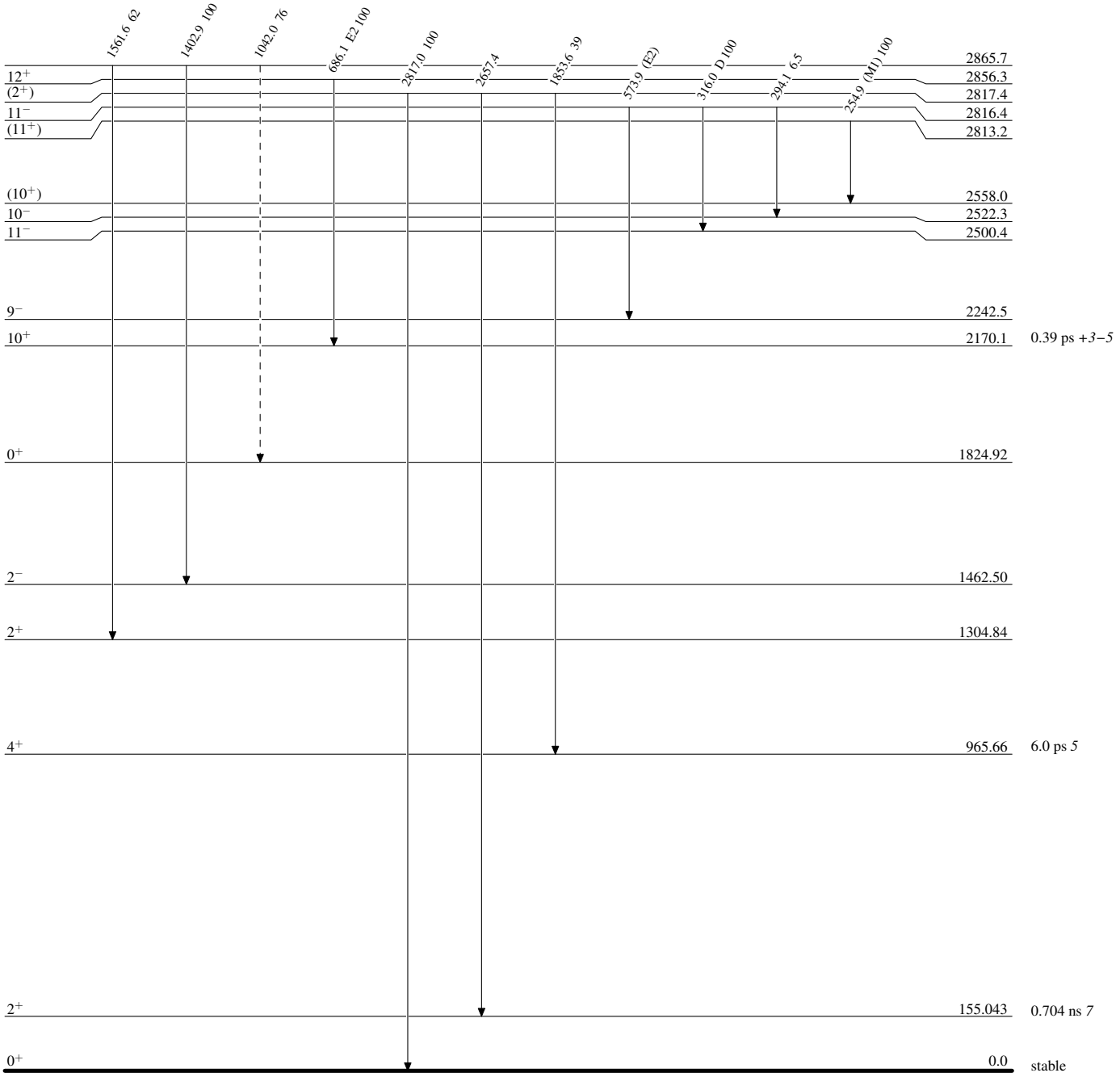
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{188}_{76}Os_{112}$

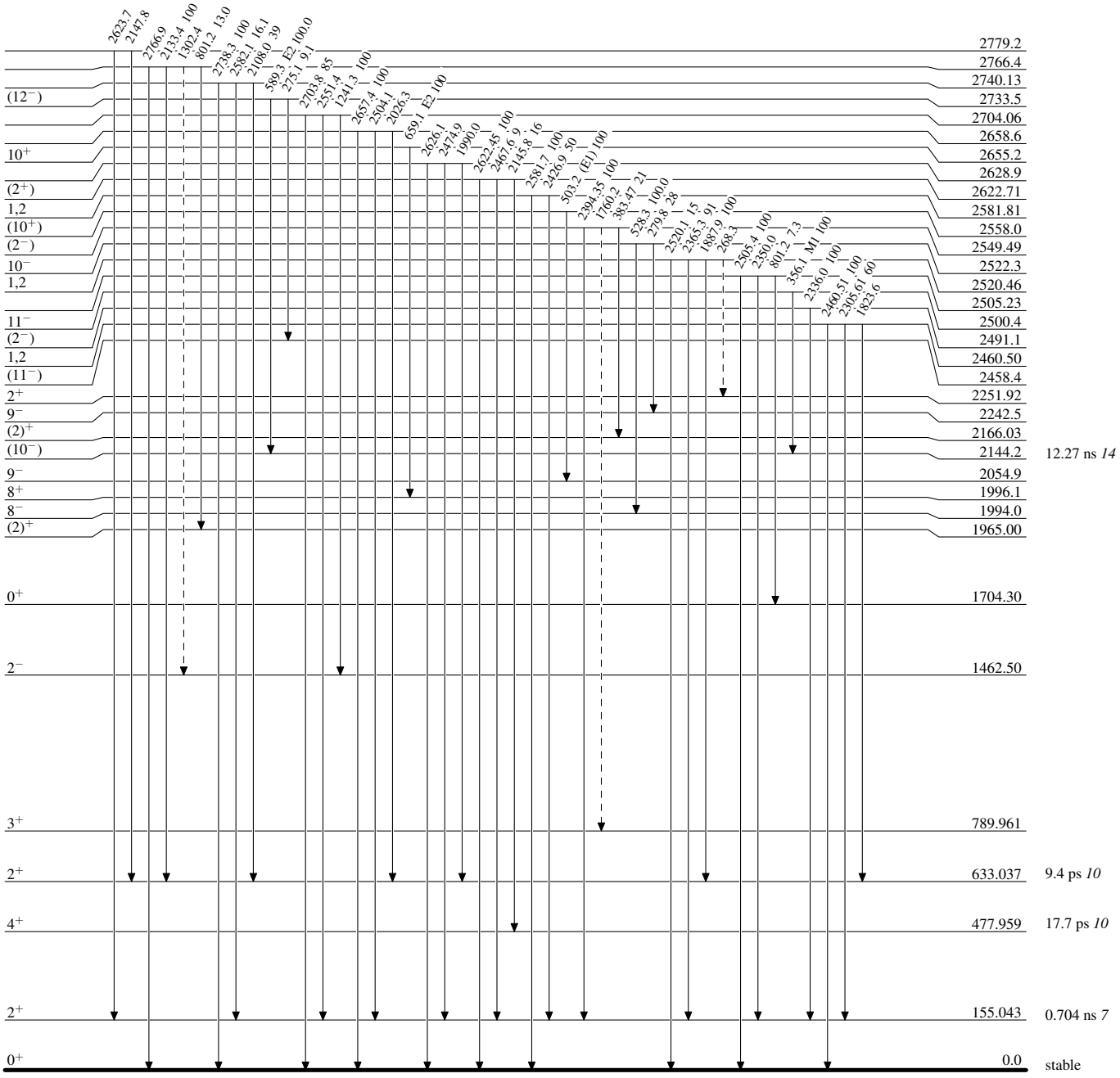
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



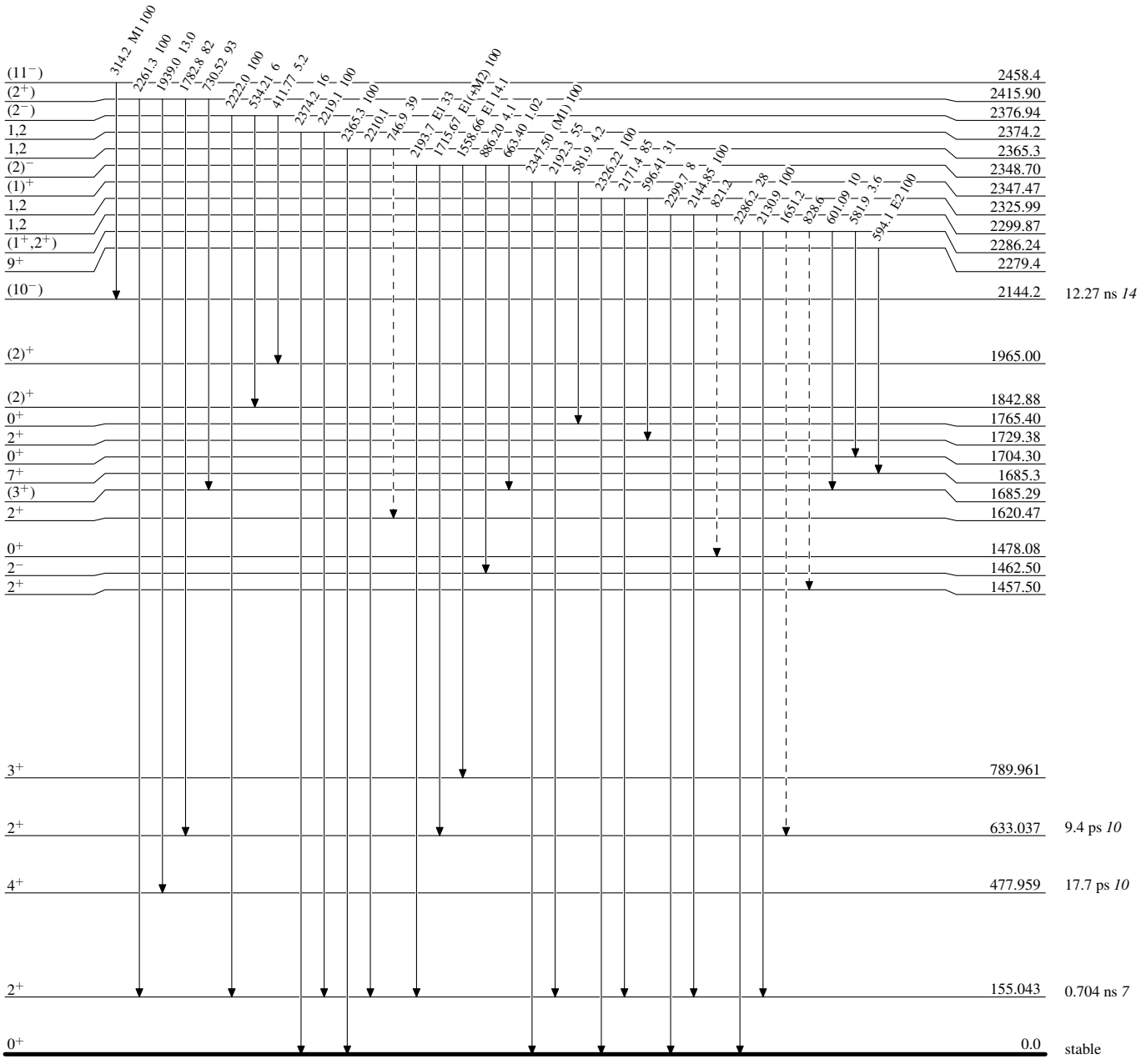
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



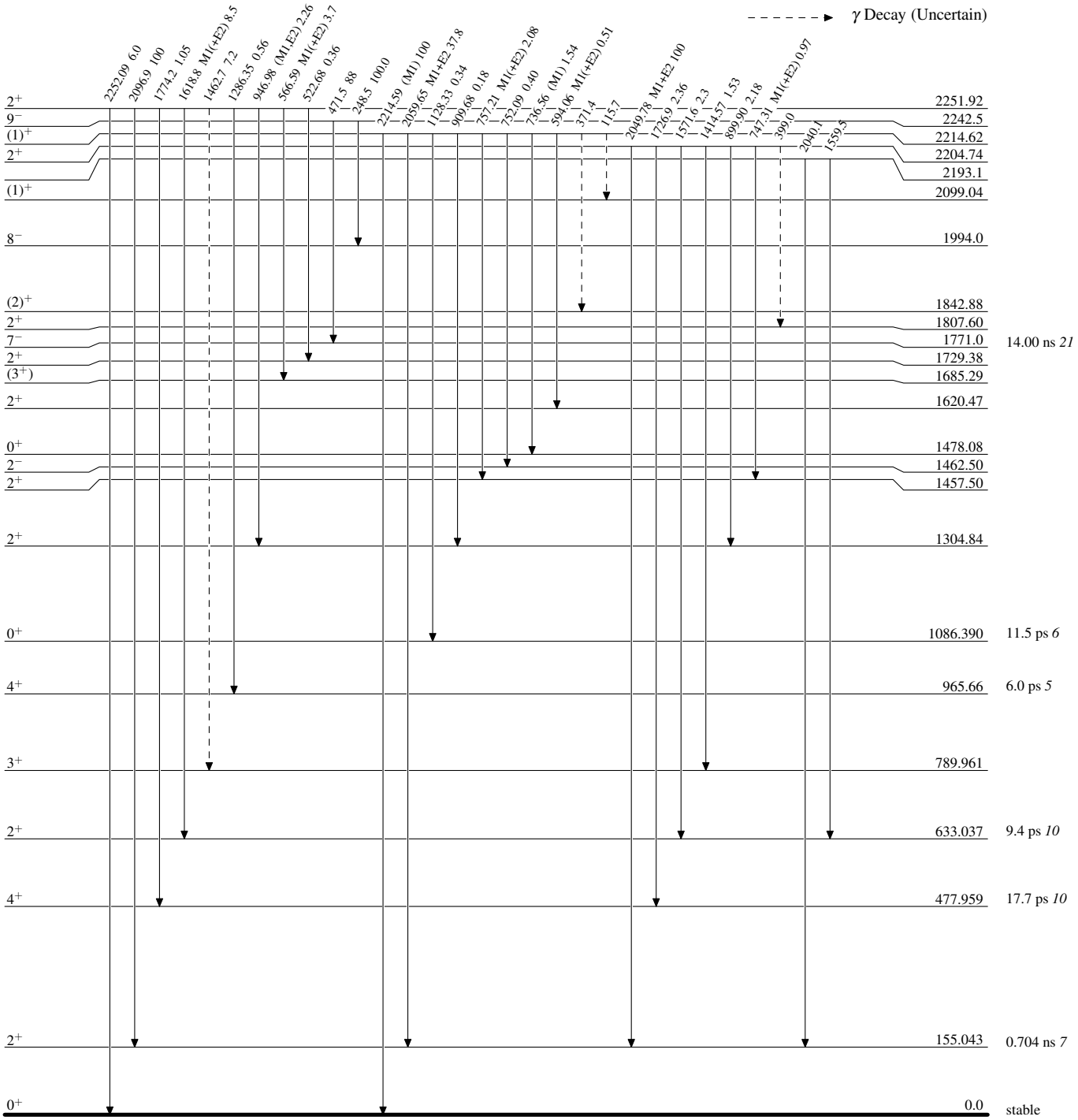
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Legend

Intensities: Relative photon branching from each level



$^{188}_{76}Os_{112}$

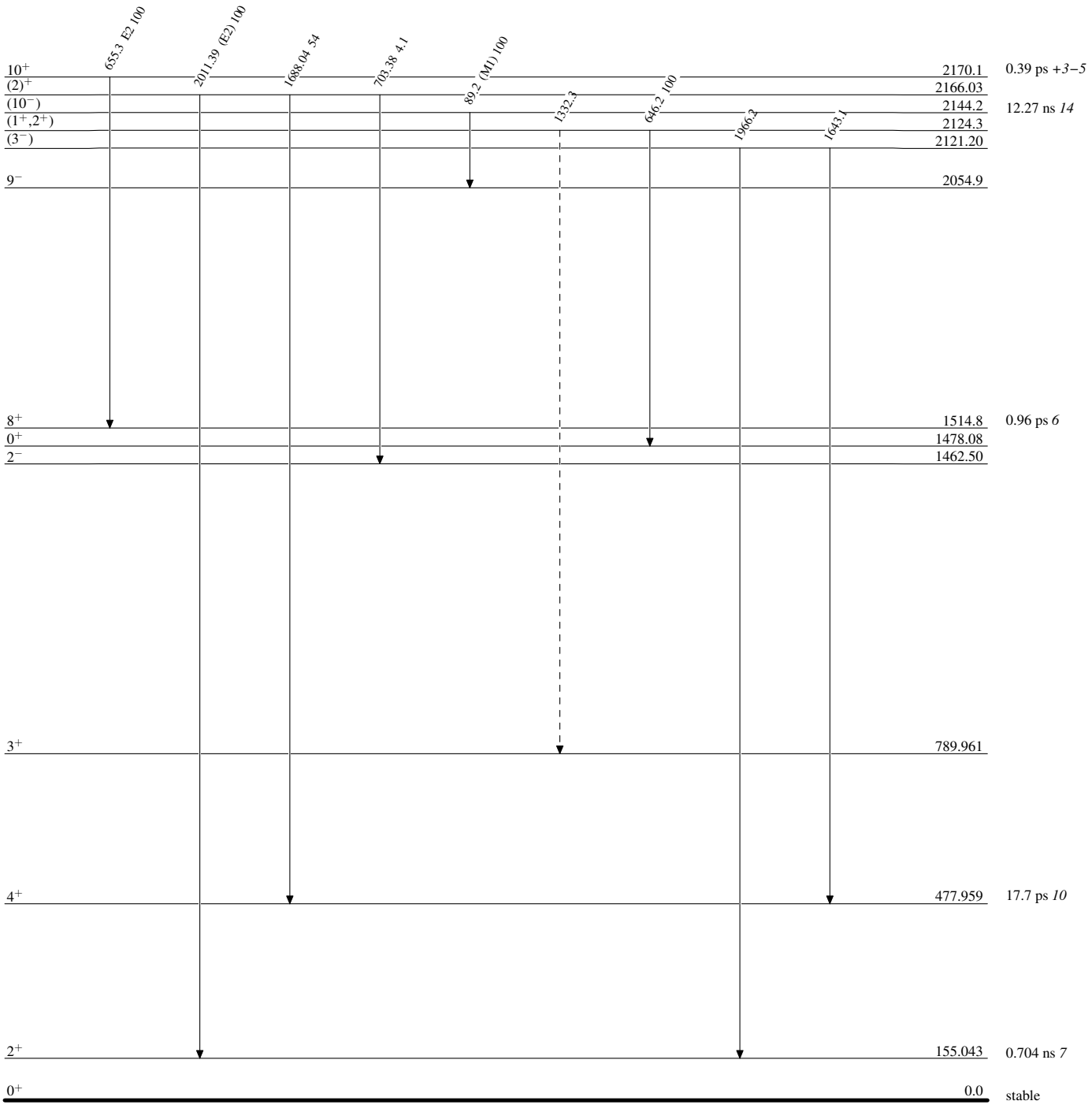
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



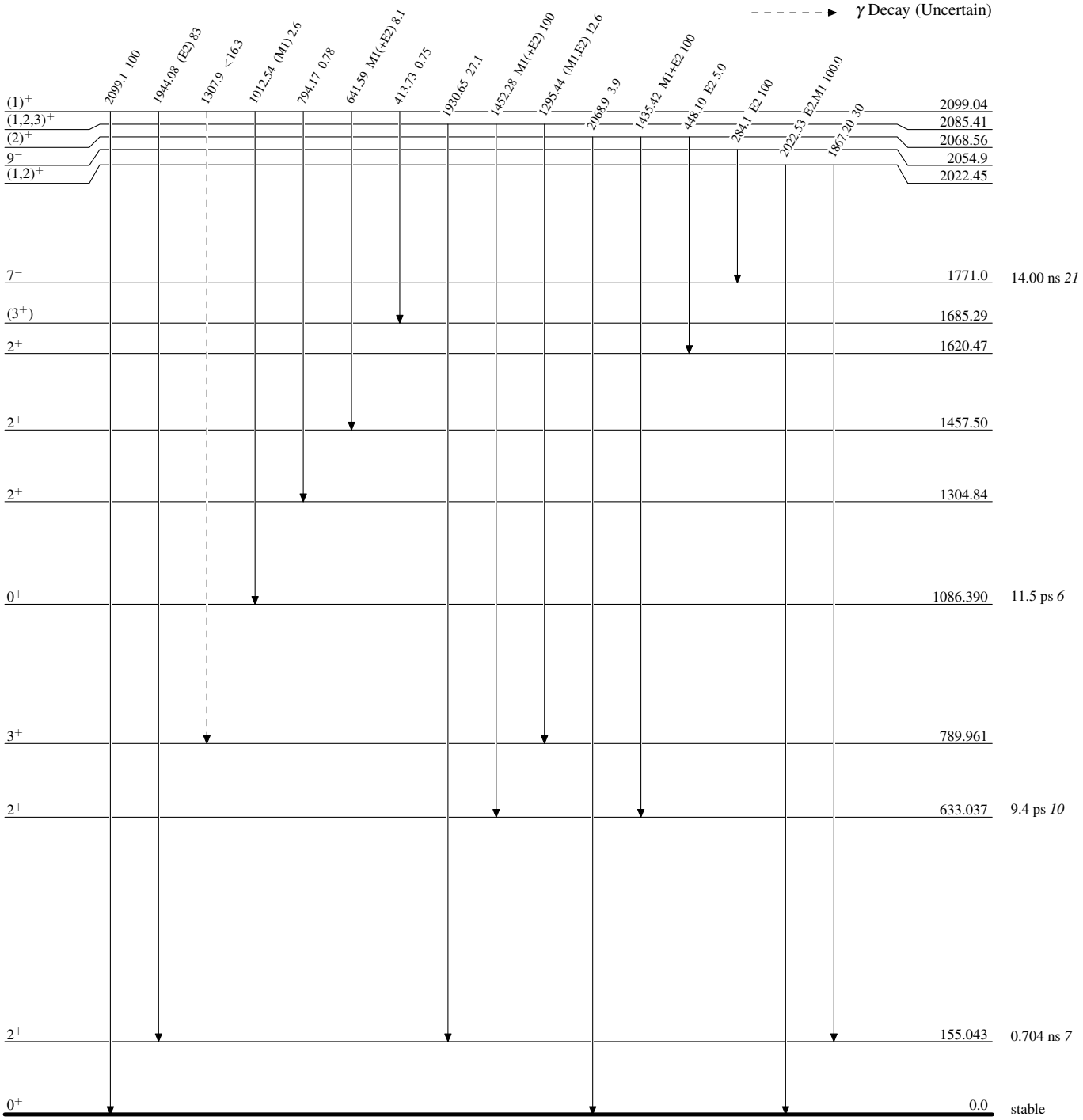
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

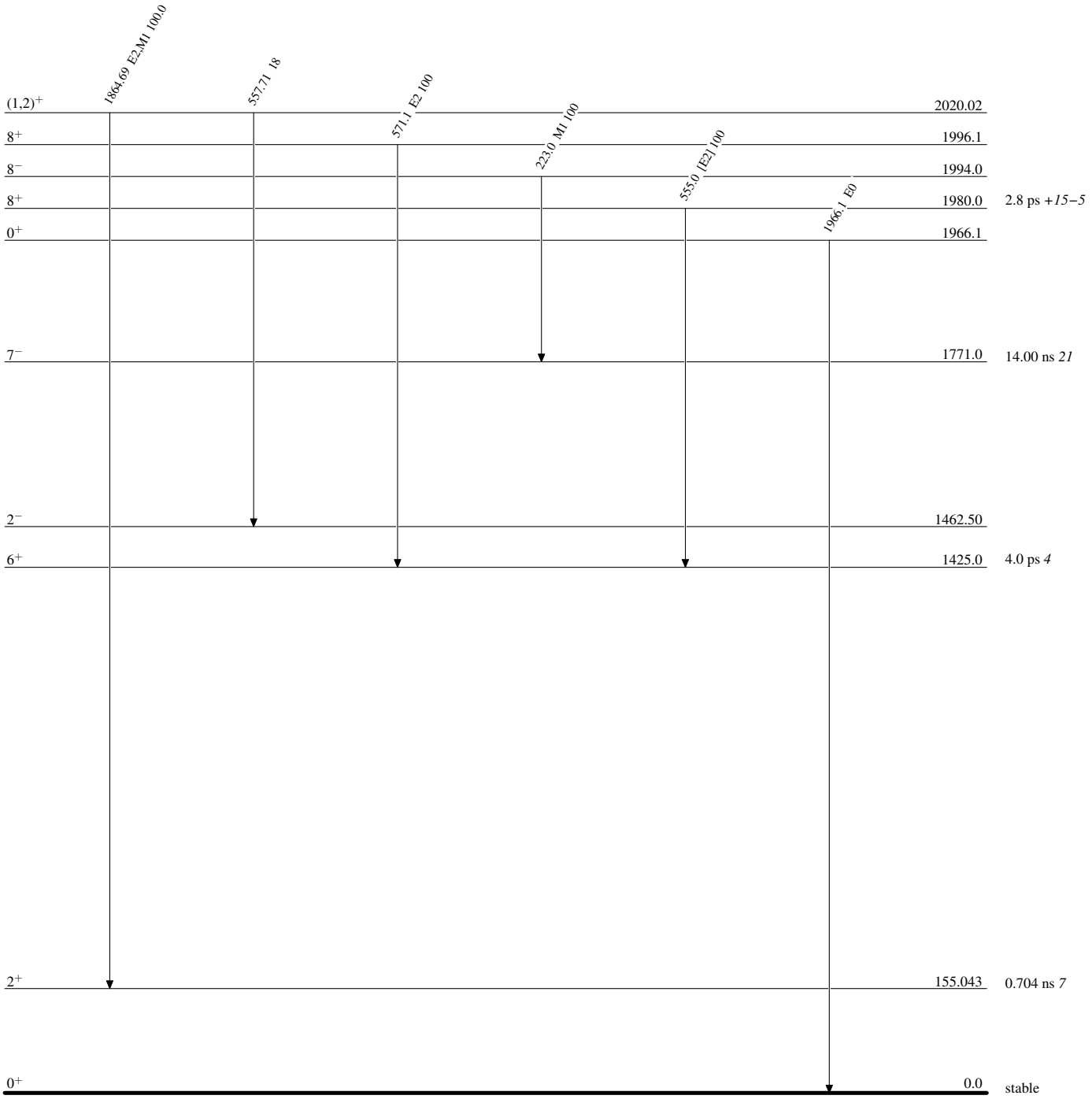


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

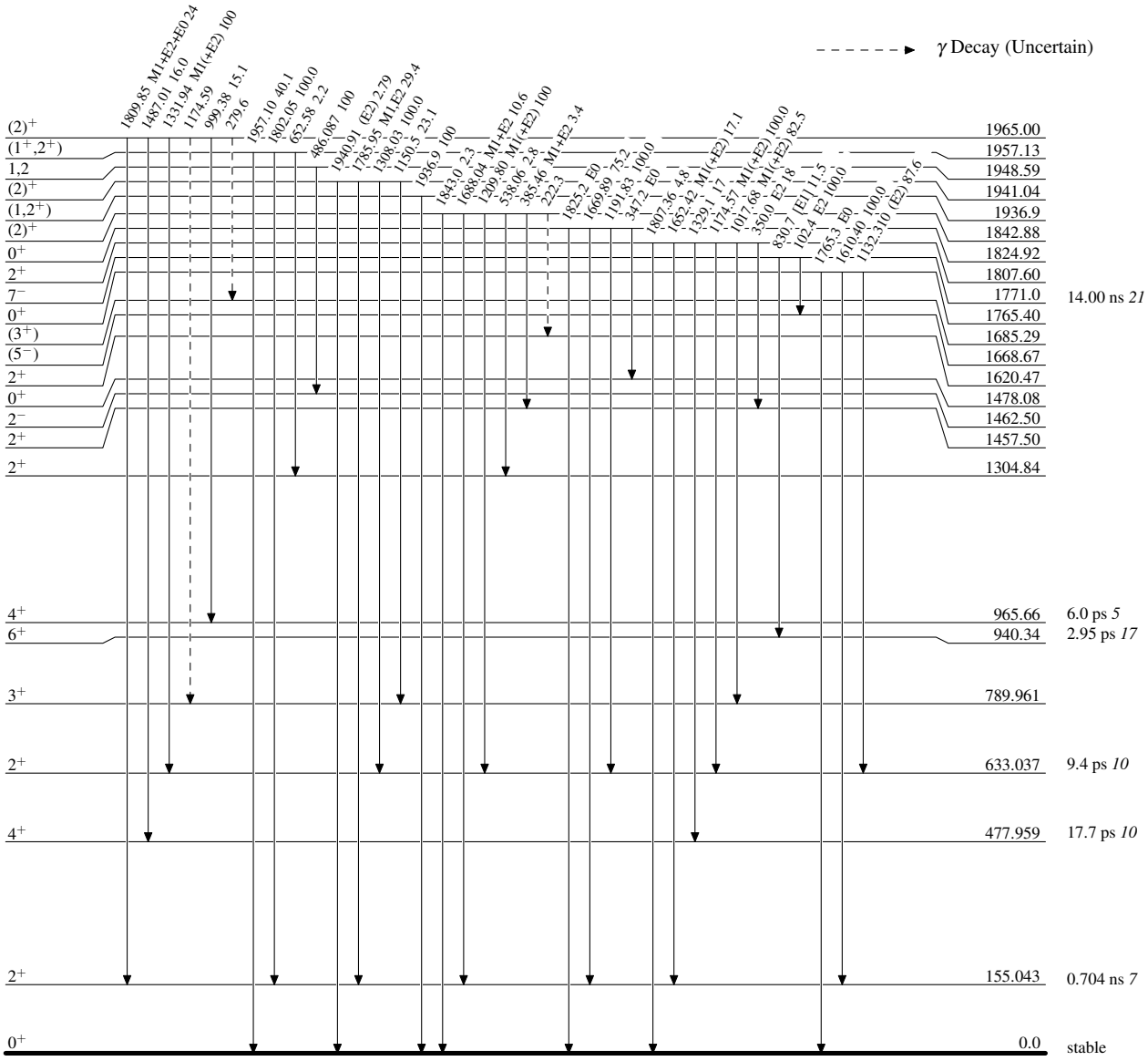


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

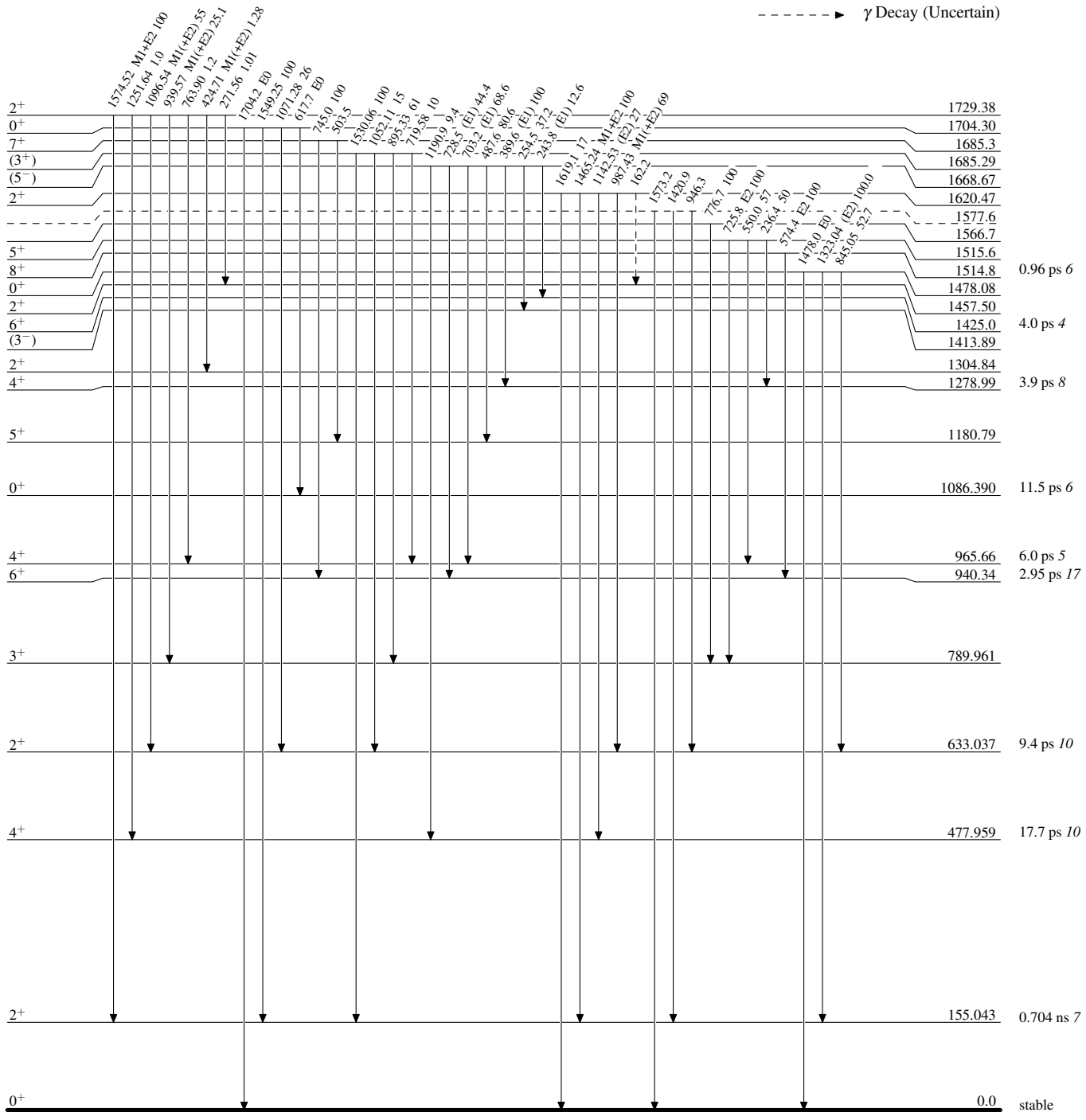


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



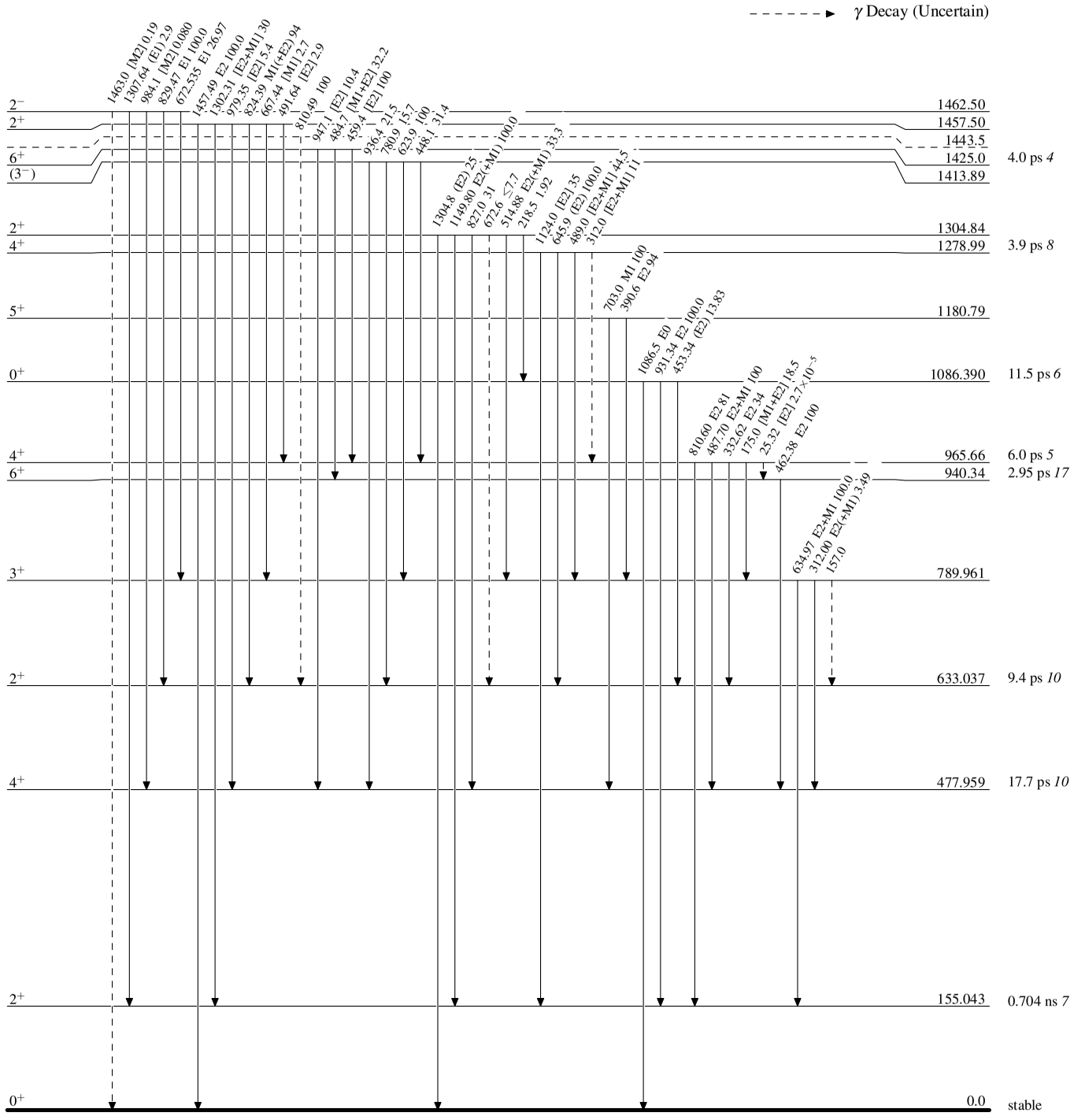
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

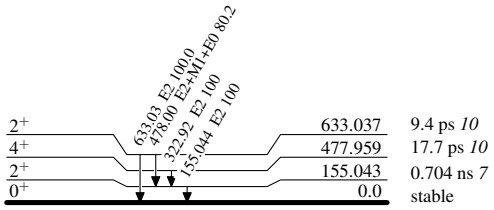


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

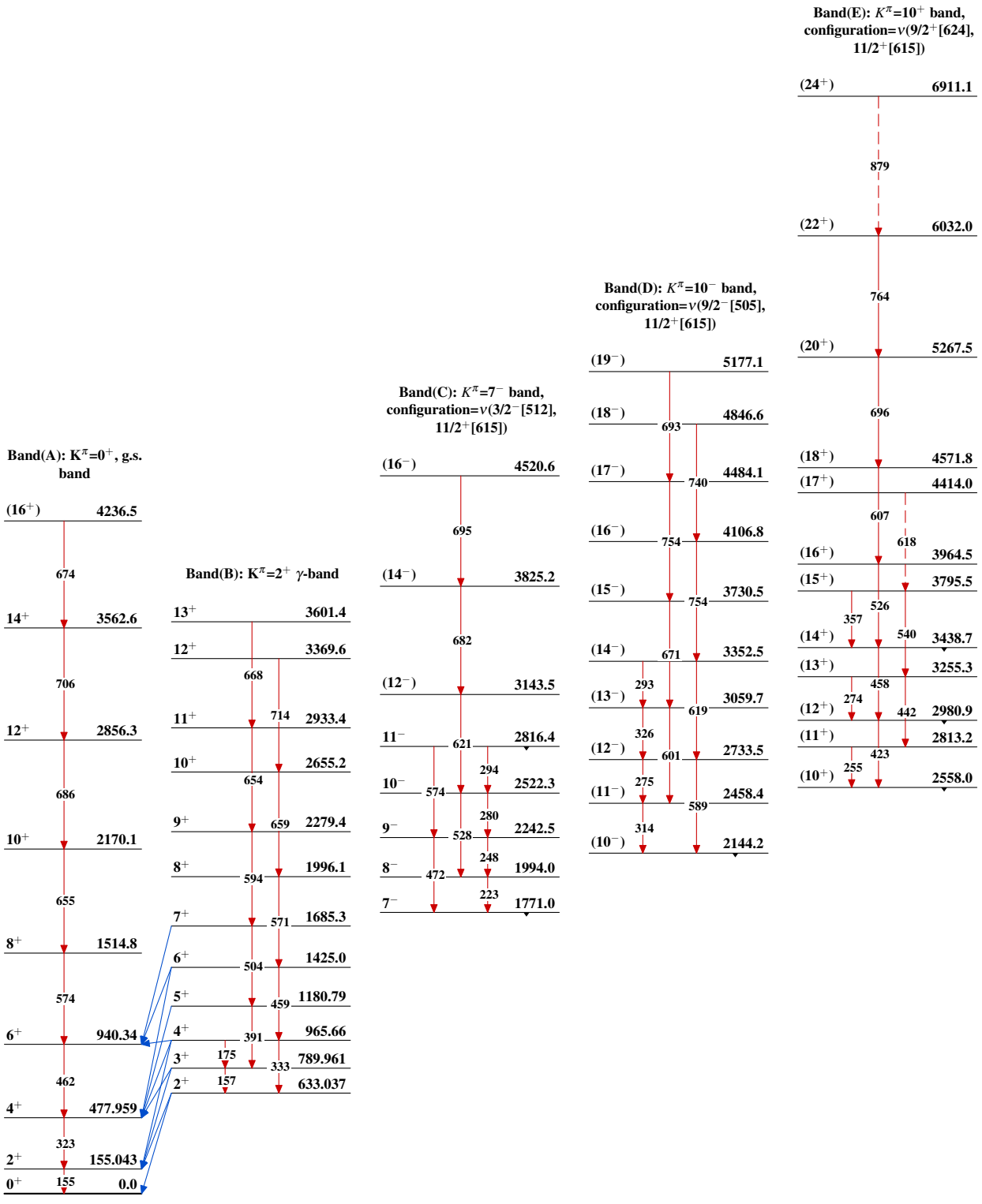
Level Scheme (continued)

Intensities: Relative photon branching from each level

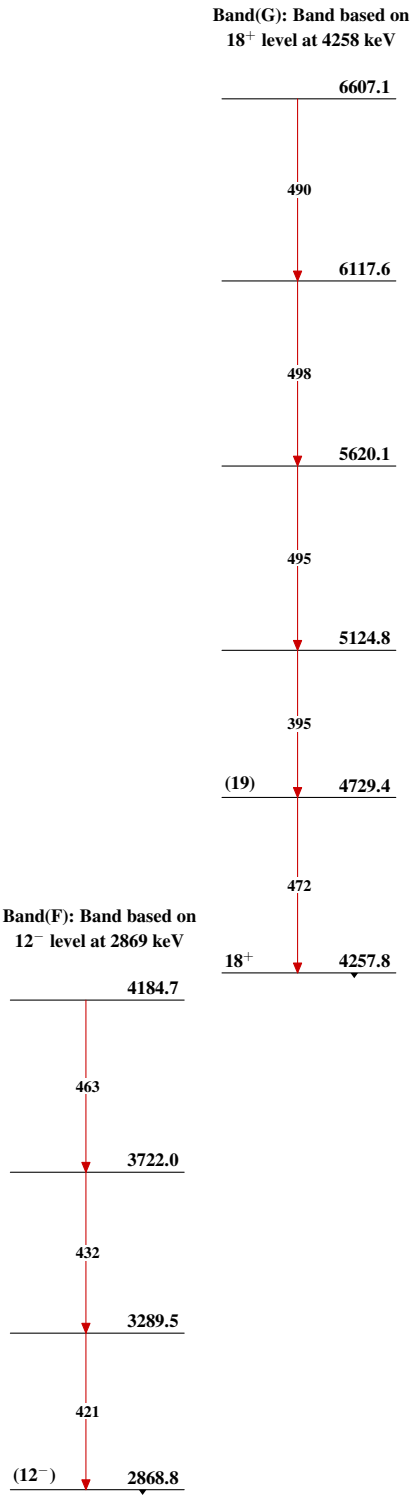


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, [1] and Jun Chen[2]	NDS 169,1 (2020)	15-Oct-2020

Q(β^-)=−1954.2 *12*; S(n)=7792.34 *19*; S(p)=8018 *8*; Q(α)=1375.8 *12* 2017Wa10
S(2n)=13713.2 *5*, S(2p)=14618 *3* (2017Wa10).
Mass measurements: 2016Ei01, 1979Ha32, 1970Mc03, 1960Bh02, 1959De36, 1957Jo08.
2011Be08: search for α decay of ^{194}Pt to ^{190}Os using a low-background HPGe detector in the underground Gran Sasso National Laboratories (LNGS) of the INFN (Italy) over 1815.4 hours. Deduced lower limits of half-lives for α decays to the low-lying excited states in ^{190}Os, with no evidence for α decay of ^{194}Pt nuclide.
2011Be32: search for $2\beta^+$, 2ε decay of ^{190}Pt to ^{190}Os at the Laboratori Nazionali del Gran Sasso, INFN-Italy. No evidence was found for this decay, and a lower limit of $T_{1/2}$ was determined. No peaks in the accumulated spectrum indicate double-β activity.
Additional information 1.
See (n,γ):resonances for neutron resonance data of 199 resonances.
Other measurements:
2014DrZZ: ^{186}W, ^{187}Re or ^{192}Os beams incident on ^{186}Re target. Measured Eγ, Iγ, $\gamma\gamma$-coin.
2006Av09: measured hyperfine structure, isotope shift.
1978Ba69: ^{189}Os(n,α): resonances. Measured resonances, deduced widths. Other: 1961Cr02.
Theory references: consult the NSR database (www.nndc.bnl.gov/nsr/) for about 170 primary references dealing with nuclear structure and other calculations.

^{190}Os Levels

Cross Reference (XREF) Flags

A	^{190}Re β^- decay (3.0 min)	J	^{189}Os(n,γ) E=6.71 eV	S	^{190}Os(n,n′γ),(n,n′)
B	^{190}Re β^- decay (3.1 h)	K	^{189}Os(n,γ) E=8.96 eV	T	^{190}Os(p,p′)
C	^{190}Os IT decay (9.86 min)	L	^{189}Os(n,γ) E=10.31 eV	U	^{190}Os(α,α′)
D	^{190}Ir ε decay (11.78 d)	M	^{189}Os(n,n),(n,γ):resonances	V	Coulomb excitation
E	^{190}Ir ε decay (3.087 h)	N	^{189}Os(d,p)	W	^{191}Ir(t,α),(pol t,α)
F	Muonic atom	O	^{190}Os(γ,γ):Mossbauer	X	^{192}Os(p,t)
G	^{186}W(^{7}Li,2npγ)	P	^{190}Os(γ,γ′)	Y	^{192}Os(^{12}C,^{14}C)
H	^{188}Os(t,p)	Q	^{190}Os(γ,xn)	Z	^{192}Os(^{82}Se,Xγ)
I	^{189}Os(n,γ) E=th	R	^{190}Os(e,e′)		

E(level)[†]	J$^\pi$	$T_{1/2}$[#]	XREF	Comments
0.0[@]	0$^+$	stable	ABCDEFGHIJKL OPQRSTUVWXYZ	
186.718[@] *2*	2$^+$	371 ps *8*	ABCDEFGHIJKL NOPQRSTUVWXYZ	μ=+0.692 *30* (1992St06,2014StZZ) Q=−1.18 *3* (1981Ho22,2016St14) J$^\pi$: 186.7γ E2 to 0$^+$. $T_{1/2}$: from B(E2)=2.364 *50*, weighted average of the following values: B(E2)=2.34 *13* (2012MaZP, from $T_{1/2}$=375 ps *20*, $\gamma\gamma$(t) in (^{7}Li,2npγ); 2.35 *16* (2001Wu03, from mean lifetime τ=540 ps *36*, RDDS in Coul. ex.); 2.341 *+62−34* (1996Wu07, Coul. ex.); 2.315 *60* (1988Bo08, from (e,e′), uncertainty of 0.027 in 1988Bo08 increased to 0.060 by evaluators); 2.46 *8* (1981Ho22, from muonic x-ray, uncertainty of 0.02 in 1981Ho22 increased to 0.06 by evaluators); 2.14 *11* (1976Ba06, Coul. ex., uncertainty of 5% assigned by evaluators); 2.48 *25* (1972La16, Coul. ex.); 2.37 *13* (1971Mi08, Coul. ex.); 2.39 *6* (1970Pr09, Coul. ex.); 2.55 *25* (1969Ca19, Coul. ex., earlier value was 2.50 *37* in 1967Ca08); 2.15 *23* (1966Go06, from mean lifetime τ=0.58

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF		Comments
					ns *6*, RDDS in Coul. ex.); 2.70 *27* (1961Mc18, Coul. ex., previous values were 2.53 *25* in 1961Mc01 and 2.55 *26* in 1958Mc02); 2.51 *36* (1958Su54, from $T_{1/2}$=0.35 ns *5* from γγ(t) in IT decay). Others: 1.86 *8* (1967As03, from mean lifetime τ=680 ps *30*, RDDS in Coul. ex.); 3.38 *40* (1961Re02, Coul. ex.); 1.8 *+12−5* (1958Be72, from $T_{1/2}$=0.5 ns *2* in ε decay); 2.5 *7* (1957Ba11, Coul. ex.). 2016Pr01 evaluation gives B(E2)=2.354 *90* and corresponding $T_{1/2}$=373 ps *15*. Additional information 2. μ: transient fields in Coulomb excitation (1992St06). Others: μ=+0.700 *22* (1985St05) is reevaluated by 1987St14; 0.662 *32* (1973BaUA; meson hyperfine structure), +0.66 *6* (1972Si43,1972Si03; Coul. ex.), +0.62 *3* (1970Be36,1967Gi02,1966Go06; Coul. ex.), 0.54 *6* (1970Le04; IPAC in ^{190}Ir ε decay using $T_{1/2}$=240 ps for 187 level). Q: muonic x-ray method (1981Ho22). Others: in Coulomb excitation, −0.99 *13* (1970Pr03), −0.99 *19* (1977RuZY), −0.95 *21* (1972La16), −0.95 *30* (1980Ba42, relative to Q=−1.47 for first 2^+ state in ^{188}Os), −0.8 *3* (1980Ba42, relative to Q=−1.33 for first 2^+ state in ^{188}Os), 1.08 *10* (1975Ro24, relative to 1.0 for first 2^+ state in ^{188}Os), 1.03 *30* (1964Sp09, relative to 1.0 for the first 2^+ state in ^{192}Os); in ^{190}Os(γ,γ):Mossbauer, 0.86 *5* (1972Wa24, relative to 1.0 for 155, 2^+ state in ^{188}Os). $β_2$=0.225 from (p,p′), 0.181 from (α,α′), 0.168 from (n,n′).
547.854[@] *7*	4^+	13.6 ps *+4−7*	ABCDE GHIJKL	RS UVwXYZ	B(E2)↑=1.11 *+8−3* μ=+1.56 *20* (1985St05,2014StZZ) Jπ: 361.1γ E2, ΔJ=2 to 2^+ gives 0^+ or 4^+; spin=4 from γ(θ) in ^{190}Ir ε decay (11.78 d); 447.8γ(E2)−207.9γ(E2(+M1)) cascade and 656.0γ(E2+M1) both from 1204 level to 548 level require J(548)≥2. $T_{1/2}$: weighted average of 12.8 ps *7* by recoil distance and 14.2 ps *+4−10* from B(E2)(from 187,2^+)=1.11 *+8−3* in Coulomb excitation. Others: 40 ps *20* from γγ(t) in ^{190}Os IT decay (1958Su57). B(E2)↑: from Coul. ex for transition from 187,2^+. μ: transient fields in Coul. ex. (1985St05). Value of 1.58 given by 1985St05 relative to μ(187)=+0.700 *22* is adjusted (by evaluators) for adopted μ(187)=0.692 (1992St06,2014StZZ). Other: 0.88 *48* (1970Le04, IPAC in ^{190}Ir ε decay). $β_4$=−0.03 *1* from (n,n′). B(E4)=0.045 *5* from (e,e′).
557.978[&] *5*	2^+	15.2 ps *14*	AB D FGHIJKL N	S UVwXY	μ=+0.69 *9* (1985St05,2014StZZ) Jπ: E2 γ to 0^+. $T_{1/2}$: from recoil distance in Coul. ex. Others: 14.8 ps *+7−8* from B(E2)(from g.s.)=0.205 *+8−6* in Coul. ex. (weighted average is 14.9 ps *+7−8* if averaged with the RDM result); 7.9 ps *+15−11* from B(E2)(from 187,2^+)=0.42 *6* in muonic atom with adopted branching ratios seems discrepant. μ: transient fields in Coul. ex. (1985St05). Value of 0.69 given by 1985St05 adjusted (evaluators) for adopted

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
				μ(187)=0.692 (1992St06,2014StZZ). Q=+0.9 *4* or 0.55 *30* from 1980Ba42 in Coul. ex., using Q=−0.8 for 187 level.
756.016[&] *13*	3+		AB D IJKL N S VW	Jπ: E2+M1 γs to 2+; γγ(θ) in ^{190}Ir ε decay.
911.80[a] *5*	0+	14 ps *+4−3*	HIJKL S V X	Jπ: L(t,p)=L(p,t)=0; spin=0 from γγ(θ) in (n,γ) E=th. $T_{1/2}$: B(E2)(from 558,2+)=0.030 *5* in Coul. ex. and adopted branching.
955.375[&] *14*	4+	7.7 ps *6*	AB D HIJKL S UVWX	Jπ: 768.6γ and 397.4γ E2 to 2+; 407.5γ E2+M1 to 4+; spin=4 from γγ(θ) in ^{190}Ir ε decay (11.78 d). $T_{1/2}$: others: 6.7 ps *4* from B(E2)(from 558,2+)=0.70 *3* and 7.5 ps *6* from B(E2)(from 187,2+)=0.0082 *+6−5* in Coul. ex. together with adopted branching.
1050.433[@] *12*	6+	2.36 ps *14*	BCDE IJKL S V X Z	Jπ: 502.6γ E2 to 4+; spin=(6) from γγ(θ) in ^{190}Ir ε decay (11.78 d); band member; possible 631γ from 5−. $T_{1/2}$: other: 2.60 ps *11* from B(E2)(from 548,4+)=0.98 *+4−3* in Coul. ex.
1114.69[a] *4*	2+		HIJKL N S X	Jπ: 1114.7γ E2 to 0+.
1115.5 *10*	1[‡]		P	
1163.182[b] *20*	4+	8.6 ps *16*	AB D HIJKL S UVWX	Jπ: 605.2γ E2 to 2+; 207.9γ to 4+; 407.2γ E2+M1 to 3+; E4 excitation in (α,α′). $T_{1/2}$: other: 6.2 ps *+11−8* from B(E2)(from 558,2+)=0.119 *15* and adopted branching.
1203.83[&] *5*	5+		B D IJKL N S	Jπ: 447.8γ E2 to 3+; 656.0γ E2+M1 to 4+; spin=5 from γ(θ) in (n,n′γ) and ^{190}Ir ε decay (11.78 d).
1326.9 *10*	1,2[‡]		P	
1382.42 *20*	0+		hIJKL S X	XREF: h(1388). Jπ: 1195.7γ E2 to 2+; L(p,t)=0.
1386.992[c] *21*	3−	61 ps *+11−9*	AB D hIJKL RS U W	Jπ: 828.96γ E1 to 2+, 223.8γ E1 to 4+; spin=3 from γ(θ) and γγ(θ) in ^{190}Ir ε decay (11.78 d). $T_{1/2}$: from B(E3)(from g.s.)=0.154 *13* in (e,e′) and adopted branchings. β_3=0.06 (from (n,n′)).
1436.39 *4*	2+		HIJKL N S X	Jπ: 877.7γ E2(+M1) to 2+; 481.0γ and 887.9γ to 4+, 524.0γ to 0+; spin=2 from 680γ(θ) in (n,n′γ).
1446.24[b] *3*	(5)+		B D IJKL S	Jπ: 690.0γ (E2) to 3+, 490.7γ (E2) to 4+, 282.9γ E2(+M1) to 4+; spin=(5) from 690γ(θ) and excitation function in (n,n′γ).
1474.2[&] *6*	(6+)	2.78 ps *25*	V	Jπ: 518.8γ to 4+, 423.8γ to 6+; probable band member. $T_{1/2}$: other: 2.3 ps *+6−4* from B(E2)(from 955,4+)=0.75 *+7−10* and adopted branching.
1482.0 *10*	1[‡]		P	
1514.1? *5*	(6+,5+)		B	Jπ: 558.7γ to 4+; log *ft*=8.3 from (6−).
1545.30 *16*	0+		IJKL S X	Jπ: L(p,t)=0.
1547.2 *10*	1[‡]		P	
1568.98 *13*	(3)+		IJKL n S w	E(level): in (d,p) and (t,α) the groups correspond to 1569 and/or 1570.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
				Jπ: 1011.0γ E2(+M1) to 2^+, 1021.9γ to 4^+; spin=(3) from 1011γ(θ) and excitation function in (n,n′γ).
1570.3 *3*	(1,2)		IJKL n S w	Jπ: excitation function and γ(θ) in (n,n′γ). Uncertain in (n,γ).
1583.91[c] *5*	4^-		B D IJKL S	Jπ: 196.9γ E2+M1 to 3^-, 380.0γ E1 to 5^+, 1036.1γ E1 to 4^+. Excitation considered uncertain in ^{190}Re β^- decay (3.1 h).
1615.97 *13*	$(2)^+$		IJKL S X	Jπ: 1429.4γ E2+M1 to 2^+, 1616.1γ to 0^+ and 1067.9γ to 4^+.
1666.776[@] *19*	8^+	0.71 ps *10*	BC E V Z	Jπ: 616.3γ E2 to 6^+; band member. $T_{1/2}$: other: 0.78 ps *4* from B(E2)(from 1050,6^+)=1.06 *+6−5*.
1675.69 *10*	$(2)^+$		hIJKL S wx	XREF: h(1676)w(1684)x(1679). Jπ: 1117.7γ M1(+E2) to 2^+, 919.6γ E2(+M1) to 3^+; spin=(2) from excitation function and 920γ(θ) in (n,n′γ).
1679.5 *3*	(3)		h S wx	XREF: h(1676)w(1684)x(1679). Jπ: from excitation function and γ(θ) in (n,n′γ).
1680.6 *3*	(1)		hIJKL n S wx	XREF: h(1676)n(1685)w(1684)x(1679). Jπ: from γ(θ) in (n,n′γ).
1681.70 *4*	5^-		B D hIJKL n S wx	XREF: h(1676)n(1685)w(1684)x(1679). Jπ: E1 γ to 4^+; 726γ(θ,t) in ^{190}Ir ε.
1689.08 *12*	(2^+)		IJKL n S w	XREF: n(1685)w(1684). Jπ: γs to 4^+ and 0^+; γ(θ) of γ to 2^+ in (n,n′γ). On the basis of excitation function data in (n,n′γ), two separate levels are reported, at 1688.9 (deexcited by 1131γ and 1142γ) and 1689.2 (deexcited by 933γ and 1502γ); however, the relative intensities of all the four γ rays agree well in both reactions: (n,γ) (E=th and E=res) and (n,n′γ).
1705.7 *1*	10^-	9.86 min *3*	C E	%IT=100 μ=−0.56 *+8−12* (1987Be54,2014StZZ) Jπ: 38.9γ M2+E3 to 8^+. $T_{1/2}$: from γ(t) in 2012Kr05. Others: 9.9 min *1* (1958Sc30), 9.85 min *14* (1964Ti01), 11 min (1962Ma24), 1961Ma31, 10 min *2* (1955At32), 9.5 min (1950Ch11). μ: from γ(θ,t,H) (1987Be54). Configuration=ν9/2[505]+ν11/2[615].
1708.25 *20*	$(2^+,3,4^+)$		B D HIJ S X	Jπ: 753.2γ to 4^+, 1150.7γ to 2^+. 952γ(θ) in (n,n′γ) disfavors 3^-. Possible population in (d,d′) (priv. comm., cited by 1984KlZY) makes 3^+ unlikely.
1724.8 *10*	1[‡]		P	
1732.89 *17*	0^+		HIJKL S X	Jπ: L(t,p)=L(p,t)=0.
1777 *6*			H W	E(level): weighted average of 1776 *8* from (t,p) and 1778 *6* from (t,α).
1802.74 *24*	$(1,2^+)$		S	Jπ: excitation function and 1616γ(θ). $J^\pi=1^+$ less likely if possible population in (d,d′) (priv. comm., cited by 1984KlZY).
1813.50 *22*	$(1^+,2,3^+)$		IJKL S	Jπ: 1255γ(θ) (to 2^+) implying D+Q suggests

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	XREF	Comments
			J≠0,1⁻,3⁻ and excitation function favors low spin (≤3). Uncertain in (n,γ).
1823.65 *18*	(1,2)⁺	IJKL N S W	XREF: I(?). Jπ: 1265.7γ E2 to 2⁺. In (n,n′γ), excitation function favors J<3 and J≠0 from 1266γ(θ).
1836.39[b] *6*	(6⁺)	B V	Jπ: log *ft*=7.4 from (6⁻); 673.1γ to 4⁺. Because of direct multi-step excitation in Coul. ex., J=5⁺ less likely.
1859.11 *16*	(2⁺)	hIJKL S	XREF: h(1868). Jπ: 1311.2γ to 4⁺, possible 1858.8γ to 0⁺.
1872.23[c] *8*	(5)⁻	B D hI K N S WX	XREF: h(1868). Jπ: 485.2γ E2 to 3⁻, 190.5γ M1 to 5⁻, 1324.3γ E1 to 4⁺.
1884.45 *22*	(1,2,3)	I K S	Jπ: excitation function and γ(θ) in (n,n′γ). Uncertain in (n,γ).
1902.0 *3*	(1,2,3)	IJKL S	Jπ: excitation function and γ(θ) in (n,n′γ). Uncertain in (n,γ).
1903.33 *11*	(3⁺,4⁻)	D IJKL S	E(level): in (n,n′γ), on the basis of excitation functions, two levels are suggested: at 1902.9 (decaying through 1147γ) and 1903.3 (decaying through 740γ). However, branching ratios of both transitions agree well in ^{190}Ir ε, (n,γ) and (n,n′γ). Jπ: log *ft*=6.2 from 4⁻; 1147γ(θ) (to 3⁺) in (n,n′γ) implying D+Q suggests J≠5, 3⁻.
1910.58 *15*	(2)⁺	hIJKL n S wx	XREF: h(1926)n(1912)w(1910)x(1916). Jπ: 1154.4γ E2(+M1) to 3⁺, 955.7γ to 4⁺; primary 5881.2γ from 1⁻ and 2⁻ resonances in (n,γ) E=res. Possible population in (d,d′) (priv. comm., cited by 1984KlZY) makes 3⁺ unlikely.
1918.4 *4*	(1,2)	hIJKL n S wx	XREF: h(1926)n(1912)w(1910)x(1916). Jπ: primary 5873.8γ from 1⁻ and 2⁻ resonances in (n,γ) E=res; 1731.6γ to 2⁺.
1935.33 *19*	(2⁺,3⁺,4)	S	Jπ: from γ(θ) in (n,n′γ). Possible population in (d,d′) (priv. comm., cited by 1984KlZY) makes 3⁺ unlikely.
1943.5 *4*	(2⁺)	IJKL S WX	Jπ: 1942.6γ to 0⁺ and 1395.9γ to 4⁺.
1956.6 *4*	0⁺	X	Jπ: L(p,t)=0.
1958.1 *3*	(1,2⁺)	IJKL n S	XREF: n(1965). Uncertain in (n,γ). Jπ: γ to 0⁺.
1970.50 *22*	(1⁺,2)	IJKL n S W	XREF: n(1965)W(1980). Jπ: primary 5821.4γ from 1⁻ and 2⁻ resonances in (n,γ) E=res; 1214.3γ to 3⁺.
1992.4 *3*	(2,3)	IJKL n S x	XREF: n(1994)x(1990). Jπ: excitation function gives J≤3; 1236γ(θ) (to 3⁺) suggests J≠1. Uncertain in (n,γ).
1995.22 *18*	(2)⁺	A hIJKL n S x	XREF: h(2006)n(1994)x(1990). Jπ: 1437.0γ E2(+M1) to 2⁺, 1447.7γ to 4⁺; primary 5797γ from 1⁻ and 2⁻ resonances in (n,γ) E=res.
2009.8 *5*	1(+)‡	hIJKL P wx	XREF: h(2006)w(2015)x(2018). Jπ: parity from 1253.0γ to 3⁺.
2025.5 *3*	(1,2)	IJKL S wx	XREF: w(2015)x(2018). Jπ: excitation function and γ(θ) in (n,n′γ). Uncertain in (n,γ).
2042.4 *16*	(1,2)	hIJKL x	XREF: h(2054)J(?)K(?)L(?)x(2054). E(level): from (n,γ). This level is uncertain in (n,γ). Jπ: possible primary 5749.7γ from 1⁻ and 2⁻ in (n,γ) E=res.
2047.8 *8*	(1,2)	hIJKL x	XREF: h(2054)I(?)x(2054). Jπ: primary 5744.8γ from 1⁻ and 2⁻ in (n,γ) E=res.
2061.2? *2*	(6⁺,7⁻)	B	Jπ: possible 394.6γ to 8⁺ and 379.4γ to 5⁻.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
2068.87 *8*	(5$^+$)		B n wx	XREF: n(2068)w(2071)x(2083). Jπ: 387.1γ to 5$^-$, 864.9γ to 5$^+$, 1313.1γ to 3$^+$; log *ft*=7.7 from (6$^-$).
2070.2 *3*	(1$^+$,2)		IJKL n S wx	XREF: n(2068)w(2071)x(2083). Jπ: excitation function in (n,n′γ); primary 5720.7γ from 1$^-$ and 2$^-$ in (n,γ) E=res; 1312.9γ to 3$^+$.
2089.0 *5*	(1$^+$,2$^+$)		I	Jπ: 2090.8γ to 0$^+$ and 1333.2γ to 3$^+$.
2090.2[&] *12*	(8$^+$)	1.6 ps *+3−4*	V	Jπ: Coul. ex. from (6$^+$) and band member. $T_{1/2}$: from B(E2)(from 1474,6$^+$)=0.52 *+15−7* in Coul. ex.
2111.8 *4*	(1,2$^+$)		hIJKL N S wx	XREF: h(2113)w(2120)x(2130). Jπ: primary 5680.9γ from 1$^-$ and 2$^-$ in (n,γ) E=res; 2111.5γ to 0$^+$.
2118.51 *20*	(1$^+$,2)		hIJKL N S wx	XREF: h(2113)w(2120)x(2130). Jπ: excitation function and γ(θ) in (n,n′γ).
2121.39 *12*	(5,6$^+$)		B	Jπ: log *ft*=7.7 from (6$^-$); 1166.1γ to 4$^+$, 284.9γ to (6$^+$).
2124.67 *17*	(2,3$^+$,4$^+$)		hIJKL S wx	XREF: h(2113)w(2120)x(2130). Jπ: excitation function and γ(θ) in (n,n′γ). Uncertain in (n,γ).
2135.5 *3*	(0$^+$,1,2)		IJKL S	Jπ: excitation function in (n,n′γ); 1949.2γ to 2$^+$. Uncertain in (n,γ).
2150.6 *9*	(1,2$^+$)		IJKL N wx	XREF: w(2163)x(2161). Jπ: 2150.6γ to 0$^+$.
2175.5 *10*	(0$^+$,1,2)		HIJKL N S wx	XREF: I(?)J(?)K(?)w(2163)x(2161). Jπ: primary 5616.7γ from 1$^-$ and 2$^-$ in (n,γ) E=res; 1988.8γ to 2$^+$.
2191.4 *4*	(1,2$^+$)		IJKL	Jπ: 2191.4γ to 0$^+$.
2198.5 *6*	(1,2)		iJKL X	XREF: i(2211). Jπ: primary 5593.7γ from 1$^-$ and 2$^-$ in (n,γ) E=res.
2210.1 *4*	(1,2)		IJKL N wx	XREF: w(2219)x(2211). Jπ: primary 5580.9γ from 1$^-$ and 2$^-$ in (n,γ) E=res.
2224 *2*	(1,2)		IJKL wx	XREF: w(2219)x(2211). Jπ: primary 5568.5γ from 1$^-$ and 2$^-$ in (n,γ) E=res.
2263.5 *5*	(1,2$^+$)		IJKL N WX	Jπ: primary 5529.0γ from 1$^-$ and 2$^-$ in (n,γ) E=res; possible 2261.5γ to 0$^+$.
2288.8 *6*	(1,2)		HIJKL N X	XREF: H(2299)N(2298)X(2286). Jπ: primary γs from 1$^-$ and 2$^-$ in (n,γ) E=res; 2287.4γ to 0$^+$.
2296.5 *7*	1[‡]		P	
2307 *2*	(1,2)		IJKL	XREF: I(?)J(?)L(?). Jπ: primary 5486.1γ from 1$^-$ and 2$^-$ in (n,γ) E=res.
2315 *2*	(1,2)		IJKL	XREF: I(?)J(?)L(?). Jπ: primary 5478.2γ from 1$^-$ and 2$^-$ in (n,γ) E=res.
2328.2 *10*	1[‡]		N P Wx	XREF: x(2339).
2350.7 *10*	(1,2$^+$)		hIJKL wx	XREF: h(2358)w(2354)x(2339). Jπ: primary 5444.8γ from 1$^-$ and 2$^-$ in (n,γ) E=res; 2352.3γ to 0$^+$.
2352.45 *21*	(2$^+$,3)		A h w	XREF: h(2358)w(2354). Jπ: log *ft*=5.8 *2* from (2)$^-$; 1397.1γ to 4$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
2357.7[@] *10*	(10+)	0.48 ps *+11−9*	V Z	Jπ: populated in Coul. ex.; 690.9γ to (8+). $T_{1/2}$: from B(E2)(from 1667,8+)=0.93 *+22−17* in Coul. ex.
2366 *6*			N	
2381 *2*	(1,2)		IJKL	XREF: J(?)L(?). Jπ: primary 5409.5γ from 1− and 2− in (n,γ) E=res.
2393.5 *10*	1[‡]		h P	XREF: h(2400).
2408.0 *7*	1[‡]		h N P WX	XREF: h(2400)N(2417)X(2412).
2446 *5*	(0+)		H N WX	E(level): weighted average of 2451 *10* from (t,p), 2450 *5* from (d,p), 2437 *8* from (t,α), and 2440 *10* from (p,t). Jπ: L(t,p)=(0).
2457.7 *6*	(1,2+)		I w	XREF: w(2463). Jπ: 2460.5γ to 0+.
2468 *2*	(1,2)		IJKL n w	XREF: I(?)L(?)n(2476)w(2463). Jπ: primary 5324.7γ from 1− and 2− in (n,γ) E=res.
2474.4 *10*	(0+ to 3)		hI n	XREF: h(2484)n(2476). Jπ: primary 5318.1γ from 1−,2− in (n,γ) E=th; 1917.2γ to 2+.
2477.0 *5*	(1+,2+)		hIJKL n	XREF: h(2484)n(2476). Jπ: 2477.0γ to 0+ and 1720.9γ to 3+.
2483.5 *5*	0+		X	Jπ: L(p,t)=0.
2502.7 *7*	(1+,2+)		I	Jπ: 2502.8γ to 0+ and 1746.6γ to 3+.
2511 *6*			h N	XREF: h(2526). E(level): from (d,p).
2539 *6*			h N WX	XREF: h(2526)N(2541)W(2535)X(2538). E(level): weighted average of 2541 *6* from (d,p), 2535 *8* from (t,α), and 2538 *10* from (p,t).
2551.8 *5*	(1+,2+)		I	Jπ: 2551.4γ to 0+ and 1795.5γ to 3+.
2563.3 *7*	(0+ to 3)		HI W	XREF: H(2574)W(2568). Jπ: primary 5229.7γ from 1−,2− in (n,γ) E=th; 2003.4γ to 2+.
2591.6 *5*	1(+)[‡]		I P x	XREF: x(2603). Jπ: parity from 1835.5γ to 3+.
2622.5 *5*	1(+)[‡]		I N P Wx	XREF: x(2603). Jπ: parity from 1864.7γ to 3+.
2643.7 *7*	1[‡]		P x	XREF: x(2645).
2655 *7*			N Wx	XREF: x(2645). E(level): weighted average of 2655 *7* from (d,p) and 2655 *8* from (t,α).
2663.0 *7*	(1+,2,3)		I	Jπ: primary 5129.6γ from 1−,2− in (n,γ) E=th; 2476.8γ to 2+ and 1904.8γ to 3+.
2685 *7*			N WX	E(level): weighted average of 2686 *7* from (d,p), 2690 *8* from (t,α), and 2674 *10* from (p,t).
2704.2 *6*	1(+)[‡]		I P	Jπ: parity from 1949.9γ to 3+.
2714.1 *7*	1[‡]		N P WX	
2737.7 *7*	1[‡]		I P WX	
2757.7[e] *15*	(12+)		Z	Jπ: band assignment in (^{82}Se,Xγ).
2772.2[&] *16*	(10+)		V	Jπ: populated in Coul. ex. and 682γ to (8+).
2774.0 *5*	1[‡]		I N P WX	XREF: X(2755).
2791 *8*			W	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
2816.0 *9*	1[‡]		I N P W	
2820.6 *4*	(0$^+$ to 3)		I	Jπ: primary 4971.7γ from 1$^-$,2$^-$ in (n,γ) E=th; 2262.6γ to 2$^+$.
2877.0 *10*	(1,2$^+$)		I W	Jπ: 2878.0γ to 0$^+$.
2914 *8*			WX	E(level): weighted average of 2914 *8* from (t,α) and 2915 *10* from (p,t).
2944.7 *8*	(1,2$^+$)		I N X	Jπ: 2945.1γ to 0$^+$.
2963 *8*			W	
2975.0 *5*	(2$^+$)		I	Jπ: 2980.0γ to 0$^+$, 2425.3γ to 4$^+$.
2992 *10*			N	
3011.7 *15*	(12$^+$)	<1.9 ps	V	Jπ: populated in Coul. ex.; 654γ to (10$^+$). $T_{1/2}$: 0.7 ps to 1.9 ps from B(E2)(from 2357,10$^+$)=0.32 to 0.76 in Coul. ex. Either of the 3011 or 3126 levels may be member of g.s. band.
3015.7 *7*	1[‡]		P x	XREF: x(3023).
3023.0 *7*	1[‡]		n P x	XREF: n(3045)x(3023).
3045.4 *6*	1[‡]		I n P	XREF: n(3045).
3076 *8*			W	
3117.1 *10*	1[‡]		P	
3126.1 *7*	1[‡]		P	
3126.7 *15*	(12$^+$)	<4.8 ps	V	Jπ: populated in Coul. ex.; 769γ to (10$^+$). $T_{1/2}$: 0.4 ps to 4.8 ps from B(E2)(from 10$^+$ level)=0.048 to 0.55 in Coul. ex.
3142.0 *10*	1[‡]		P	
3189.3 *10*	1[‡]		P	
3244.6 *10*	1[‡]		P	
3278 *10*			X	
3346.7[e] *18*	(14$^+$)		Z	Jπ: band assignment in (^{82}Se,Xγ).
3348.3 *10*	1[‡]		P X	XREF: X(3336).
3414.8 *10*	1[‡]		P x	XREF: x(3430).
3445.9 *7*	1[‡]		P Wx	XREF: W(3455)x(3430).
3467.4 *10*	1[‡]		P	
3516.6 *10*	1[‡]		P X	XREF: X(3525).
3577 *10*			X	
3595 *10*			X	
3628 *10*			X	
3724 *10*			X	
3748.9 *10*	1[‡]		P	
3781 *10*			X	
3798.7 *10*	1[‡]		P	
3869.9 *10*	1[‡]		P	
3900 *10*			X	
3924.8 *10*	1[‡]		P	
3981.9 *10*	1[‡]		P X	XREF: X(3978).
4012.7[e] *20*	(16$^+$)		Z	Jπ: band assignment in (^{82}Se,Xγ).
4015 *10*			X	
4497.7[d] *23*	(18$^+$)		Z	Jπ: band assignment in (^{82}Se,Xγ).
4809.7[d] *25*	(19$^+$)		Z	Jπ: band assignment in (^{82}Se,Xγ).
5130.6? *8*	(0$^+$ to 3)		I	Jπ: primary 2662.0γ from 1$^-$,2$^-$ in (n,γ) E=th; 4573.0γ

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{190}Os Levels (continued)

E(level)[†]	Jπ	XREF	Comments
			to 2^+.
5248[d] *3*	(20^+)	Z	Jπ: band assignment in (^{82}Se,Xγ).
5834[d] *3*	(21^+)	Z	Jπ: band assignment in (^{82}Se,Xγ).
(7792.2 *2*)	$1^-,2^-$	I	Jπ: s-wave neutron capture in ^{189}Os (J^π(g.s.)=$3/2^-$). E(level): S(n)=7792.34 *19* (2017Wa10).
S(n)+0.00671	1^-	J	Additional information 3. E(level): S(n)+E(n), where S(n)=7792.34 *19* (2017Wa10), E(n)=6.71 eV *1* (2018MuZZ). Jπ: s-wave neutron capture in ^{189}Os (g.s. $J^\pi=3/2^-$) and γ-ray intensity ratios (1976St14,1975Na02), same J^π in 2018MuZZ.
S(n)+0.00896	2^-	K	Additional information 4. E(level): S(n)+E(n), where S(n)=7792.34 *19* (2017Wa10), E(n)=8.96 eV *2* (2018MuZZ). Jπ: s-wave neutron capture in ^{189}Os (g.s. $J^\pi=3/2^-$) and γ-ray intensity ratios (1976St14,1975Na02), same J^π in 2018MuZZ.
S(n)+0.01031	1^-	L	Additional information 5. E(level): S(n)+E(n), where S(n)=7792.34 *19* (2017Wa10), E(n)=10.31 eV *3* (2018MuZZ). Jπ: s-wave neutron capture in ^{189}Os (g.s. $J^\pi=3/2^-$) and γ-ray intensity ratios (1976St14,1975Na02), same J^π in 2018MuZZ.
12680		Q	
14400		Q	
23800		Q	Giant-quadrupole resonance.

[†] From a least-squares fit to γ-ray energies; for levels with no known deexciting transitions, weighted averages of available level energies are taken.
[‡] Dipole (scissors mode) excitation and $\gamma\gamma(\theta)$ in (γ,γ').
[#] From recoil-distance method in Coulomb excitation, unless otherwise stated.
[@] Band(A): $K^\pi=0^+$, g.s. band.
[&] Band(B): $K^\pi=2^+$ γ band.
[a] Band(C): $K^\pi=0^+$ β band.
[b] Band(D): $K^\pi=4^+$ band. Based on B(E2) values in Coulomb excitation, 2001Wu03 interpret the bandhead as a dominant two-phonon γ-vibrational excitation, but B(E4) strength (β_4=0.019) in (α,α') (1978Bu21) and 2-quasiparticle ($\pi5/2[402]+\pi3/2[402]$) strength (≈54%) in (t,α) (2000BuZU, also comments in Phys. Rev. C66, 038901, 039802 (2002) on 2001Wu03) are in conflict, and reveal that a dominant g-boson or hexadecapole contribution is more likely, together with the presence of smaller components of two-phonon γ-vibrations. See also 1997Bu10 and 1994Bu16 for discussion of the lowest $K^\pi=4^+$ bands in even-even nuclides in this mass region.
[c] Band(E): $K^\pi=3^-$ octupole band.
[d] Band(F): ΔJ=1 band based on (18^+).
[e] Band(G): t-band.

Adopted Levels, Gammas (continued)

$\gamma(^{190}Os)$

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
186.718	2^+	186.718 *2*	100	0.0	0^+	E2		0.420	B(E2)(W.u.)=72.9 *16* E_γ: other precise values: 186.718 *2* from (n,n′γ), 186.720 *10* from ^{190}Os IT decay. Mult.: also from ce data in (n,γ) E=th and Coulomb excitation.
547.854	4^+	361.136 *6*	100	186.718	2^+	E2		0.0535	B(E2)(W.u.)=99 *+5−3* E_γ: other precise values: 361.139 *9* from (n,n′γ), 361.121 *14* from ^{190}Os IT decay. Mult.: also from ce data in (n,γ) E=th; ΔJ=2 from $\gamma(\theta)$ in ^{190}Ir ε decay (11.78 d).
557.978	2^+	371.260 *5*	72.5 *11*	186.718	2^+	E2+M1	−8.1 *8*	0.0510	B(M1)(W.u.)=1.73×10^{-4} *38*; B(E2)(W.u.)=32.6 *34* E_γ: other precise values: 371.257 *6* from (n,n′γ). 372.93 *12* from Muonic atom is discrepant. I_γ: from (n,n′γ). Others: 74 from ^{190}Re β^- decay (3.0-min and 3.1-h combined), 76 from ^{190}Ir ε decay (11.78 d), 67 from (n,γ) (E=th and E=res). δ: others (Coul. ex.): −8.5 *+3−2* (1971Mi08), −11 *+6−4* (1969Ca19), from $\gamma(\theta)$.
		557.965 *14*	100 *8*	0.0	0^+	E2		0.01748	B(E2)(W.u.)=6.0 *6* E_γ: weighted average of 557.972 *14* from (n,γ) E=th and 557.956 *16* from (n,n′γ). 559.32 *12* from Muonic atom is discrepant. I_γ: from (n,n′γ). Others: 100 *6* from ^{190}Re β^- decay (3.0-min and 3.1-h combined), 100 *3* from ^{190}Ir ε decay (11.78 d), 100 *7* from (n,γ) (E=th and E=res). Mult.: also from ce data in (n,γ) E=th.
756.016	3^+	197.89 *20*	6.7 *7*	557.978	2^+	E2+M1	−9 *+2−5*	0.350 *7*	α(K)=0.180 *5*; α(L)=0.1282 *19*; α(M)=0.0323 *5* α(N)=0.00776 *12*; α(O)=0.001175 *18*; α(P)=1.71×10^{-5} *6* E_γ: weighted average of 198.08 *20* from ^{190}Re β^- decay (3.0 min) and 197.7 *2* from (n,γ) E=th. I_γ: weighted average of 6.8 *8* from ^{190}Ir ε decay (11.78 d), 4.6 *7* from (n,γ) E=6.7 eV, 6.1 *8* from (n,γ) E=9.0 eV, 5.8 *10* from (n,γ) E=10.3 eV, 8.0 *10* from (n,γ) E=th, and 7.0 *10* from ^{190}Re β^- decay (3.0-m and 3.1-h combined).
		207.96[d] *8*	3.9[d] *6*	547.854	4^+	E2(+M1)	−16 *+5−20*	0.293 *5*	E_γ: weighted average of 207.91 *6* from ^{190}Re β^- decay (3.0 min) and 208.1 *1* from (n,γ) E=th. I_γ: weighted average of 4.2 *6* from ^{190}Ir ε decay (11.78 d) 3.4 *7* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Others: 1.14 *10*, 1.14 *8*, 1.23 *10*, 1.22 *8* from (n,γ) (E=th and E=res) are discrepant.
		569.304 *14*	100 *3*	186.718	2^+	E2+M1	−9.8 *10*	0.01699 *25*	E_γ: weighted average of 569.310 *14* from (n,γ) E=th and 569.291 *20* from (n,n′γ).

$^{190}_{76}Os_{114}$-10

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									I_γ: from ^{190}Ir ε decay (11.78 d). δ: other: δ(E2/M1)>4 from γ(θ) in (n,γ) E=th.
911.80	0$^+$	353.86 *7*	28.3 *19*	557.978	2$^+$	(E2)		0.0567	B(E2)(W.u.)=24 *+10−7* E_γ: other: 353.84 *7* from (n,n′γ). I_γ: weighted average of 27.7 *19* from (n,γ) E=6.7 eV, 25 *5* from (n,γ) E=9.0 eV, 31 *3* from (n,γ) E=10.3 eV, 31 *3* from (n,γ) E=th, and 18 *6* from (n,n′γ). Mult.: from ce data in (n,γ) E=th.
		725.07 *8*	100 *7*	186.718	2$^+$	E2		0.00967	B(E2)(W.u.)=2.4 *+8−6* E_γ: other: 725.0 *2* from (n,n′γ). I_γ: from (n,n′γ). Other: 100 *8* from (n,γ) E=th. Mult.: from ce and γγ(θ) data in (n,γ) E=th.
955.375	4$^+$	199.3 *3*	3.3 *9*	756.016	3$^+$	E2		0.336	B(E2)(W.u.)=54 *+24−19* α(K)=0.1712 *25*; α(L)=0.1246 *20*; α(M)=0.0314 *5* α(N)=0.00755 *12*; α(O)=0.001143 *18*; α(P)=1.604×10^{-5} *24* E_γ: from ^{190}Re β^- decay and ^{190}Ir ε decay. Other: 197.7 *2* is discrepant and inconsistent with level-energy difference. I_γ: weighted average of 3.5 *11* from ^{190}Ir ε decay (11.78 d), 2.1 *11* from (n,γ) E=6.7 eV, 3.3 *9* from (n,γ) E=9.0 eV, 2.8 *9* from (n,γ) E=10.3 eV, 4.1 *12* from (n,γ) E=th, and 4.1 *10* from ^{190}Re β^- decay (3.0-m and 3.1-h combined).
		397.388 *17*	100 *3*	557.978	2$^+$	E2		0.0412	B(E2)(W.u.)=52.3 *43* I_γ: from ^{190}Ir ε decay (11.78 d). Others: 100 *7* from (n,γ) E=th, 100 *4* from Coul. ex., 100 *9* from (n,n′γ), 100 *6* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Mult.: also from ce data in (n,γ) E=th.
		407.543 *25*	71 *4*	547.854	4$^+$	E2+M1	−3.4 *+6−9*	0.044 *3*	B(M1)(W.u.)=0.0011 *+7−5*; B(E2)(W.u.)=31 *5* E_γ: others: 407.22 *6* from ^{190}Re β^- decay and ^{190}Ir ε decay, 407.33 *10* are discrepant. Unweighted average of the three values is 407.36 *10*. I_γ: weighted average of 70 *11* from ^{190}Ir ε decay (11.78 d), 69 *10* from (n,γ) E=6.7 eV, 68 *9* from (n,γ) E=9.0 eV, 68 *9* from (n,γ) E=10.3 eV, 66 *10* from (n,γ) E=th, 78 *11* from (n,n′γ), 72 *4* from Coulomb excitation, and 70 *10* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). δ: other: −3.5 *+7−19* from E2 and M1 matrix elements in Coul. ex.; >3.5 from ce data in (n,γ) E=th.
		768.61 *8*	35.6 *14*	186.718	2$^+$	E2		0.00853	B(E2)(W.u.)=0.69 *6* E_γ: weighted average of 768.57 *8* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), 768.68 *10* from (n,γ) E=th, and 768.6 *2* from (n,n′γ). I_γ: weighted average of 33.8 *14* from ^{190}Ir ε decay (11.78 d), 43 *3* from (n,γ) E=6.7 eV, 38 *3* from (n,γ) E=9.0 eV, 44 *4* from (n,γ) E=10.3

$^{190}_{76}Os_{114}$-11

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									eV, 38 *3* from (n,γ) E=th, 38 *3* from (n,n′γ), 31.0 *20* from Coulomb excitation, and 35.1 *21* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Mult.: also from ce data in (n,γ) E=th.
1050.433	6^+	(95.0)	0.0012 *7*	955.375	4^+	[E2]		5.37	B(E2)(W.u.)=5.6 *+45−36* E_γ,I_γ: from Coulomb excitation.
		502.578 *10*	100 *4*	547.854	4^+	E2		0.0225	B(E2)(W.u.)=113 *7* E_γ: from ^{190}Ir IT decay. Others: 502.55 *8* from ^{190}Re β^- and ^{190}Ir ε decay (11.78 d), 502.5 *1* from ^{190}Ir ε decay (3.087 h), 502.6 *3* from (n,γ) E=th, 502.4 *3* from (n,n′γ). I_γ: from Coulomb excitation.
1114.69	2^+	203.1[#] *1*	5.8[#] *6*	911.80	0^+	[E2]		0.315	I_γ: weighted average of 6.0 *6* from (n,γ) E=6.7 eV, 5.6 *6* from (n,γ) E=9.0 eV, 5.5 *10* from (n,γ) E=10.3 eV, and 6.0 *6* from (n,γ) E=th.
		358.69[#] *4*	37[#] *3*	756.016	3^+	E2+M1	1.9 *4*	0.077 *10*	I_γ: weighted average of 36 *3* from (n,γ) E=6.7 eV, 39 *4* from (n,γ) E=9.0 eV, 38 *4* from (n,γ) E=10.3 eV, and 35 *4* from (n,γ) E=th. Mult.,δ: from ce data in (n,γ) E=th.
		927.92 *12*	100 *5*	186.718	2^+	E2+M1	1.5 *+10−4*	0.0082 *14*	I_γ: from (n,n′γ). Other: 100 *7* from (n,γ) E=th. Mult.,δ: from ce data in (n,γ) E=th.
		1114.7 *2*	57 *4*	0.0	0^+	E2		0.00401	Mult.: from ce data in (n,γ) E=th.
1115.5	1	1115.5		0.0	0^+				
1163.182	4^+	207.96[d] *8*	2.1[d] *3*	955.375	4^+	(E2)		0.291	B(E2)(W.u.)=32 *+15−10* α(K)=0.1532 *22*; α(L)=0.1044 *15*; α(M)=0.0263 *4* α(N)=0.00632 *9*; α(O)=0.000958 *14*; α(P)=1.445×10^{-5} *21* E_γ: weighted average of 207.91 *6* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), 208.1 *1* from (n,γ) E=th. I_γ: unweighted average of 0.9 *3* from ^{190}Ir ε decay (11.78 d), 2.4 *8* from (n,γ) E=6.7 eV, 2.5 *4* from (n,γ) E=9.0 eV, 3.1 *8* from (n,γ) E=10.3 eV, 2.7 *5* from (n,γ) E=th, 2.0 *4* from Coulomb excitation, and 0.9 *3* from ^{190}Re β^- decay (3.0-m and 3.1-h combined).
		407.183 *25*	58 *3*	756.016	3^+	E2+M1	−2.6 *+8−14*	0.048 *8*	B(M1)(W.u.)=0.0017 *+23−11*; B(E2)(W.u.)=27 *+11−8* E_γ: weighted average of 407.22 *6* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), and 407.176 *25* from (n,γ) E=th. Other: 407.33 *10* from (n,n′γ). I_γ: weighted average of 60 *3* from ^{190}Ir ε decay (11.78 d), 57 *6* from (n,γ) E=6.7 eV, 57 *5* from (n,γ) E=9.0 eV, 57 *6* from (n,γ) E=10.3 eV, 56 *5* from (n,γ) E=th, 50 *8* from (n,n′γ), 60 *15* from Coulomb excitation, and 57 *6* from ^{190}Re β^- decay

$^{190}_{76}Os_{114}$-12

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									(3.0-m and 3.1-h combined). δ: other: >3.5 from ce data in (n,γ) E=th.
1163.182	4+	605.20 *7*	100 *4*	557.978	2+	E2		0.01446	B(E2)(W.u.)=7.3 *+21−14* E_γ: weighted average of 605.14 *7* from ^{190}Re β⁻ decay and ^{190}Ir ε decay (11.78 d), 605.26 *7* from (n,γ) E=th, and 605.2 *1* from (n,n′γ). I_γ: from ^{190}Ir ε decay (11.78 d). Others: 100 *5* from ^{190}Re β⁻ decay (3.0-m and 3.1-h combined), 100 *7* from (n,γ) (E=th and E=res), 100 *8* from (n,n′γ), 100 *13* from Coul. ex. Mult.: also from ce data in (n,γ) E=th.
		615.42 *15*	1.9 *7*	547.854	4+	[E2]		0.01392	B(E2)(W.u.)=0.13 *+10−6* E_γ: weighted average of 615.39 *15* from ^{190}Ir ε decay (11.78 d) and 615.6 *4* from (n,n′γ). I_γ: unweighted average of 1.18 *7* from ^{190}Ir ε decay (11.78 d) and 2.6 *6* from (n,n′γ).
		976.4 *3*	4.6 *5*	186.718	2+	[E2]		0.00521	B(E2)(W.u.)=0.031 *+13−9* I_γ: weighted average of 8.1 *16* from (n,γ) E=6.7 eV, 2.9 *7* from (n,γ) E=9.0 eV, 4.8 *11* from (n,γ) E=10.3 eV, 4.8 *5* from (n,γ) E=th, 5.4 *8* from (n,n′γ), and 5.0 *11* from Coulomb excitation. Others: 0.14 *4* from ^{190}Ir ε decay (11.78 d).
1203.83	5+	447.81 *8*	100 *5*	756.016	3+	E2		0.0301	E_γ,I_γ: from ^{190}Ir ε decay (11.78 d). Other: Eγ=447.8 *1*, Iγ=100 *8* from (n,γ) E=th; Iγ=100 *9* from (n,n′γ).
		655.99 *8*	44 *3*	547.854	4+	E2+M1	−1.7 *14*	0.017 *14*	E_γ: weighted average of 656.02 *8* from ^{190}Re β⁻ decay (3.1 h) and ^{190}Ir ε decay (11.78 d), 655.8 *3* from (n,γ) E=th, and 655.9 *2* from (n,n′γ). I_γ: weighted average of 37 *3* from ^{190}Re β⁻ decay (3.1 h), 46 *3* from ^{190}Ir ε decay (11.78 d), 48 *7* from (n,γ) E=6.7 eV, 44 *4* from (n,γ) E=9.0 eV, 46 *6* from (n,γ) E=th, and 53 *4* from (n,n′γ).
1326.9	1,2	1326.9		0.0	0+				
1382.42	0+	1195.7 *2*	100	186.718	2+	E2		0.00350	E_γ: weighted average of 1195.8 *2* from (n,γ) E=th and 1195.6 *3* from (n,n′γ). Mult.: from ce data in (n,γ) E=th.
1386.992	3−	223.811 *7*	100 *4*	1163.182	4+	E1		0.0500	B(E1)(W.u.)=7.4×10^{-5} *+21−17* I_γ: from ^{190}Re β⁻ decay (3.0-m and 3.1-h combined). Others: 100 *5* from ^{190}Ir ε decay (11.78 d), 100 *7* from (n,γ) (E=th and E=res), 100 *8* from (n,n′γ).
		431.62 *7*	76 *4*	955.375	4+	[E1]		0.01056	B(E1)(W.u.)=7.9×10^{-6} *+23−19* E_γ: from ^{190}Re β⁻ decay and ^{190}Ir ε decay (11.78 d). Other: 431.6 *1* from (n,γ) E=th. I_γ: weighted average of 73 *4* from ^{190}Ir ε decay (11.78 d), 86 *6* from (n,γ) E=9.0 eV, 82 *7* from (n,γ) E=10.3 eV, 88 *7* from (n,γ) E=th, 89 *7* from (n,γ) E=6.7 eV, 73 *6* from (n,n′γ), and 65 *4* from ^{190}Re β⁻ decay (3.0-m and 3.1-h combined).

$^{190}_{76}Os_{114}$-13

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[c]	Comments
1386.992	3⁻	630.91 *13*	80 *9*	756.016	3⁺	[E1]	0.00472	B(E1)(W.u.)=2.7×10^{-6} *+9−7* E_γ: from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d). Other: 630.9 *2* from (n,γ) E=th. I_γ: weighted average of 79 *9* from ^{190}Ir ε decay (11.78 d), 91 *9* from (n,γ) E=6.7 eV, and 68 *10* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Others: 69 *5* from (n,n′γ) for a doublet; 137 *10* from (n,γ) E=9.0 eV, 133 *10* from (n,γ) E=10.3 eV, and 151 *11* from (n,γ) E=th are discrepant.
		828.96 *7*	91 *7*	557.978	2⁺	E1	0.00276	B(E1)(W.u.)=1.33×10^{-6} *+41−32* E_γ: weighted average of 828.99 *7* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), 828.89 *11* from (n,γ) E=th, and 828.9 *2* from (n,n′γ). I_γ: weighted average of 93 *7* from ^{190}Ir ε decay (11.78 d) and 89 *8* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Others: 130 *9* from (n,γ) E=9.0 eV, 121 *8* from (n,γ) E=10.3 eV, 135 *10* from (n,γ) E=th, 135 *11* from (n,γ) E=6.7 eV, and 135 *8* from (n,n′γ). δ(M2/E1)=−0.01 *5* from γγ(θ) in ^{190}Ir ε decay (11.78 d), 0.19 *3* from ce data in (n,γ) E=th.
		839.12 *12*	32.1 *12*	547.854	4⁺	(E1)	0.00270	B(E1)(W.u.)=4.5×10^{-7} *+14−11* E_γ: weighted average of 839.14 *12* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), 839.0 *3* from (n,γ) E=th, and 839.1 *2* from (n,n′γ). I_γ: weighted average of 30.5 *12* from ^{190}Ir ε decay (11.78 d), 34 *3* from (n,γ) E=9.0 eV, 34 *3* from (n,γ) E=10.3 eV, 36 *3* from (n,γ) E=th, 40 *4* from (n,γ) E=6.7 eV, 38 *4* from (n,n′γ), and 30.7 *15* from ^{190}Re β^- decay (3.0-m and 3.1-h combined).
		1200.12 *20*	12.4 *9*	186.718	2⁺	(E1)	1.42×10^{-3}	B(E1)(W.u.)=6.0×10^{-8} *+21−16* E_γ: weighted average of 1200.24 *12* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d), 1200.0 *5* from (n,γ) E=th, and 1199.4 *3* from (n,n′γ). I_γ: weighted average of 11.8 *6* from ^{190}Ir ε decay (11.78 d), 22 *4* from (n,γ) E=9.0 eV, 13 *5* from (n,γ) E=10.3 eV, 21 *7* from (n,γ) E=6.7 eV, 19.0 *24* from (n,n′γ), and 12.1 *13* from ^{190}Re β^- decay (3.0-m and 3.1-h combined).
		1386.97 *12*	4.2 *3*	0.0	0⁺	(E3)	0.00542	B(E3)(W.u.)=9.8 *+34−26* E_γ: weighted average of 1386.95 *12* from ^{190}Re β^- decay and ^{190}Ir ε decay (11.78 d) and 1387.4 *6* from (n,γ) E=th. I_γ: weighted average of 4.1 *3* from ^{190}Ir ε decay (11.78 d) and 5.0 *7* from ^{190}Re β^- decay (3.0-m and 3.1-h combined). Others: 28 *4* from (n,γ) E=9.0 eV, 30 *5* from (n,γ) E=10.3 eV, 17 *4* from (n,γ) E=th, 25 *4* from (n,γ) E=6.7 eV are discrepant.
1436.39	2⁺	321.701 *15*	43 *8*	1114.69	2⁺			E_γ: from (n,n′γ). Other: 321.2 *2* from (n,γ).

$^{190}_{76}Os_{114}$-14

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									I_γ: unweighted average of 59 *4* from (n,γ) E=9.0 eV, 37 *3* from (n,γ) E=10.3 eV, 63 *5* from (n,γ) E=th, 38 *4* from (n,γ) E=6.7 eV, and 18 *8* from (n,n′γ).
1436.39	2+	481.0 *9*	13.3 *13*	955.375	4+				I_γ: weighted average of 13.8 *13* from (n,γ) E=9.0 eV, 10 *3* from (n,γ) E=th, and 13.8 *22* from (n,γ) E=6.7 eV.
		524.0 *2*	28 *4*	911.80	0+				E_γ: weighted average of 524.0 *2* from (n,γ) E=th and 524.1 *5* from (n,n′γ).
									I_γ: unweighted average of 26.3 *25* from (n,γ) E=9.0 eV, 34 *3* from (n,γ) E=10.3 eV, 33 *3* from (n,γ) E=th, 35 *4* from (n,γ) E=6.7 eV, and 14 *6* from (n,n′γ).
		679.75 *9*	55 *4*	756.016	3+	E2(+M1)	2.3 *+19−6*	0.0141 *20*	E_γ: poor-fit, level-energy difference=680.37.
									I_γ: unweighted average of 50 *4* from (n,γ) E=9.0 eV, 63 *5* from (n,γ) E=10.3 eV, 55 *5* from (n,γ) E=th, 62 *6* from (n,γ) E=6.7 eV, and 45 *3* from (n,n′γ).
		877.73 *12*	69 *5*	557.978	2+	E2(+M1)	>1	0.0088 *23*	E_γ: poor-fit, level-energy difference=878.41.
									I_γ: unweighted average of 65 *5* from (n,γ) E=9.0 eV, 81 *7* from (n,γ) E=10.3 eV, 72 *7* from (n,γ) E=th, 73 *6* from (n,γ) E=6.7 eV, and 53 *4* from (n,n′γ).
		888.3 *2*	51 *4*	547.854	4+				E_γ: weighted average of 887.9 *3* from (n,γ) E=th and 888.4 *2* from (n,n′γ).
									I_γ: from (n,n′γ), Iγ<50 in (n,γ).
		1249.1 *3*	100 *6*	186.718	2+				E_γ: weighted average of 1249.2 *3* from (n,γ) E=th and 1249.0 *3* from (n,n′γ).
									I_γ: from (n,n′γ). Other: 100 *8* from (n,γ) E=th.
1446.24	(5)+	242.3 *3*	4.1 *4*	1203.83	5+	[M1,E2]		0.32 *15*	E_γ,I_γ: seen only in ^{190}Re β^- decay (3.1 h).
		283.07 *2*	67 *5*	1163.182	4+	E2(+M1)	>2.5	0.122 *14*	E_γ: weighted average of 282.93 *6* from ^{190}Ir ε decay (11.78 d), 282.9 *2* from (n,γ) E=th, and 283.080 *16* from (n,n′γ).
									I_γ: weighted average of 64 *5* from ^{190}Re β^- decay (3.1 h), 61 *12* from ^{190}Ir ε decay (11.78 d), 68 *5* from (n,γ) E=9.0 eV, and 72 *6* from (n,γ) E=th. Others: 30 *5* from (n,γ) E=10.3 eV, 103 *12* from (n,n′γ) are discrepant.
		490.71 *10*	100 *5*	955.375	4+	(E2)		0.0239	E_γ: weighted average of 490.76 *7* from ^{190}Ir ε decay (11.78 d), 490.7 *3* from (n,γ) E=th, and 490.3 *2* from (n,n′γ).
									I_γ: from ^{190}Ir ε decay (11.78 d). Other: 100 *8* from (n,γ) E=th.
		690.08 *12*	42 *4*	756.016	3+	(E2)		0.01077	E_γ: weighted average of 690.04 *8* from ^{190}Ir ε decay (11.78 d), 691.0 *4* from (n,γ) E=th, and 690.1 *2* from (n,n′γ).
									I_γ: weighted average of 40 *4* from ^{190}Re β^- decay (3.1 h), 36 *4* from ^{190}Ir ε decay (11.78 d), 59 *9* from (n,γ) E=9.0 eV, 60 *7* from (n,γ) E=10.3 eV, and 38 *6* from (n,n′γ). Others: 103 *8* from (n,γ) E=th, 280 *40* from (n,γ)=6.7 eV are discrepant.
1474.2	(6+)	423.8	17 *3*	1050.433	6+	[E2]		0.0347	B(E2)(W.u.)=30 *+16−11*

$^{190}_{76}Os_{114}$-15

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
1474.2	(6$^+$)	518.8	100 *12*	955.375	4$^+$	[E2]		0.0208	B(E2)(W.u.)=64 *+16−13*
		926.3	<20	547.854	4$^+$	[E2]		0.00579	B(E2)(W.u.)<0.8
1482.0	1	1482.0		0.0	0$^+$				
1514.1?	(6$^+$,5$^+$)	558.7[e] *5*	100	955.375	4$^+$				E_γ: from ^{190}Re β^- decay (3.1 h).
1545.30	0$^+$	987.26 *16*	100 *8*	557.978	2$^+$	E2		0.00509	E_γ: weighted average of 987.33 *13* from (n,γ) E=th and 986.9 *3* from (n,n′γ).
		1360.3 *9*		186.718	2$^+$				A complex γ reported in (n,γ) (E=th and E=res) only, with Iγ=33-152.
1547.2	1	1547.2		0.0	0$^+$				
1568.98	(3)$^+$	182.0[#] *2*	120[#] *10*	1386.992	3$^-$				
		812.7[#] *4*	21[#] *2*	756.016	3$^+$				
		1011.0 *2*	100 *6*	557.978	2$^+$	E2(+M1)	>1.2	0.0061 *13*	I_γ: from (n,n′γ). Other: 100 *8* from (n,γ) E=th. Mult.,δ: from ce data in (n,γ) E=th.
		1021.5 *5*	21 *4*	547.854	4$^+$				E_γ: weighted average of 1021.0 *4* from (n,γ) E=th and 1021.9 *4* from (n,n′γ). I_γ: weighted average of 26 *5* from (n,γ) E=9.0 eV and 18 *4* from (n,n′γ).
1570.3	(1,2)	1383.6 *3*	100	186.718	2$^+$				E_γ: in (n,γ), the placements from 1383 and 1942 levels (1979Ca02) are considered incorrect on the basis of excitation function data in (n,n′γ) (1984KlZY).
1583.91	4$^-$	197.3 *4*	100 *10*	1386.992	3$^-$	E2+M1	+1.0 *5*	0.58 *15*	α(K)=0.43 *15*; α(L)=0.120 *7*; α(M)=0.0289 *24* α(N)=0.0070 *6*; α(O)=0.00112 *5*; α(P)=4.8×10^{-5} *19* E_γ: unweighted average of 196.85 *15* from ^{190}Ir ε decay (11.78 d) and 197.7 *2* from (n,γ) E=th. I_γ: from ^{190}Ir ε decay (11.78 d). Others: 100 *11* from ^{190}Re β^- decay (3.1 h), 100 *11* from (n,γ) E=th.
		380.11 *4*	77 *8*	1203.83	5$^+$	E1		0.01406	E_γ: weighted average of 380.03 *12* from ^{190}Ir ε decay (11.78 d), 380.1 *3* from (n,γ) E=th, and 380.12 *4* from (n,n′γ). I_γ: unweighted average of 59 *3* from ^{190}Ir ε decay (11.78 d), 80 *11* from (n,γ) E=10.3 eV, 100 *15* from (n,γ) E=6.7 eV, 75 *5* from (n,γ) E=9.0 eV, 53 *5* from (n,γ) E=th, and 95 *18* from (n,n′γ).
		420.66 *12*	46.3 *24*	1163.182	4$^+$	[E1]		0.01119	E_γ: weighted average of 420.63 *12* from ^{190}Ir ε decay (11.78 d), 420.8 *4* from (n,γ) E=th, and 420.71 *18* from (n,n′γ). I_γ: weighted average of 48.0 *20* from ^{190}Ir ε decay (11.78 d), 49 *10* from (n,γ) E=10.3 eV, 70 *15* from (n,γ) E=6.7 eV, 47 *5* from (n,γ) E=9.0 eV, 36 *4* from (n,γ) E=th, and 59 *14* from (n,n′γ).
		628.4[@] *3*	22[@] *3*	955.375	4$^+$				
		≈828[@]	17[@] *4*	756.016	3$^+$				

$^{190}_{76}Os_{114}$-16

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
1583.91	4⁻	1036.00 *20*	85 *7*	547.854	4⁺	E1		0.00182	E_γ: weighted average of 1036.05 *20* from ^{190}Ir ε decay (11.78 d), 1036.0 *3* from (n,γ) E=th, and 1035.9 *3* from (n,n′γ). I_γ: unweighted average of 71 *7* from ^{190}Re β^- decay (3.1 h), 71 *4* from ^{190}Ir ε decay (11.78 d), 105 *10* from (n,γ) E=9.0 eV, 79 *11* from (n,γ) E=th, and 100 *9* from (n,n′γ). Other: 180 *30* from (n,γ) E=6.7 eV,
		1397.24[@] *14*	4.4[@] *3*	186.718	2⁺	(M2)		0.01158	
1615.97	(2)⁺	859.8 *4*	18.6 *18*	756.016	3⁺				E_γ: weighted average of 859.9 *4* from (n,γ) E=th and 859.6 *6* from (n,n′γ). I_γ: weighted average of 20 *3* from (n,γ) E=10.3 eV, 21.1 *18* from (n,γ) E=6.7 eV, 18 *3* from (n,γ) E=9.0 eV, 16.1 *18* from (n,γ) E=th, and 17 *5* from (n,n′γ).
		1057.8 *3*	53 *3*	557.978	2⁺				I_γ: weighted average of 50 *5* from (n,γ) E=10.3 eV, 44 *4* from (n,γ) E=6.7 eV, 38.8 *25* from (n,γ) E=9.0 eV, and 42 *3* from (n,γ) E=th. Other: 79 *5* from (n,n′γ) is discrepant.
		1067.9 *3*	34 *3*	547.854	4⁺				E_γ,I_γ: from (n,n′γ). Uncertain in (n,γ); Iγ<40 in (n,γ) E=th.
		1429.4 *2*	100 *7*	186.718	2⁺	E2+M1	1.2 *4*	0.0034 *5*	I_γ: from (n,γ) E=9.0 eV. Others: 100 *9* from (n,γ) E=th, 100 *12* from (n,n′γ). Mult.,δ: from ce data in (n,γ) E=th.
		1616.1[d] *3*	73[d] *12*	0.0	0⁺				I_γ: from (n,n′γ); intensity split for doublet. Others: 108-128 in (n,γ) (E=th and E=res) are probably not divided for possible doublet.
1666.776	8⁺	616.342 *15*	100	1050.433	6⁺	E2		0.01387	B(E2)(W.u.)=136 *+22−17* E_γ: from ^{190}Os IT decay (9.86 min). Other: 616.08 *14* from ^{190}Re β^- decay (3.1 h). Mult.: from ce data in ^{190}Os IT decay (9.86 min).
1675.69	(2)⁺	919.56 *14*	44 *3*	756.016	3⁺	E2(+M1)	>0.8	0.0083 *25*	α(K)=0.0068 *21*; α(L)=0.0011 *3*; α(M)=0.00026 *7* α(N)=6.4×10^{-5} *16*; α(O)=1.1×10^{-5} *3*; α(P)=7.5×10^{-7} *25* E_γ: weighted average of 919.64 *14* from (n,γ) E=th and 919.4 *2* from (n,n′γ). I_γ: weighted average of 44 *3* from (n,γ) E=6.7 eV, 44 *4* from (n,γ) E=9.0 eV, 47 *5* from (n,γ) E=10.3 eV, 42 *3* from (n,γ) E=th, and 46 *5* from (n,n′γ). Mult.,δ: from ce data in (n,γ) E=th.
		1117.7 *2*	100 *5*	557.978	2⁺	M1(+E2)	<0.35	0.0083 *3*	α(K)=0.00689 *23*; α(L)=0.00106 *4*; α(M)=0.000241 *8* α(N)=5.89×10^{-5} *19*; α(O)=1.02×10^{-5} *4*; α(P)=7.7×10^{-7} *3*; α(IPF)=5.72×10^{-7} *15* I_γ: from (n,n′γ). Other: 100 *7* from (n,γ) E=th. Mult.,δ: from ce data in (n,γ) E=th.
		1489.2 *2*	87 *5*	186.718	2⁺	E2(+M1)	>0.6	0.0031 *7*	α(K)=0.0025 *6*; α(L)=0.00039 *9*; α(M)=8.8×10^{-5} *19*

$^{190}_{76}Os_{114}$-17

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									α(N)=2.1×10^{-5} *5*; α(O)=3.7×10^{-6} *9*; α(P)=2.7×10^{-7} *7*; α(IPF)=7.5×10^{-5} *11* I_γ: weighted average of 81 *6* from (n,γ) E=th and 91 *5* from (n,n′γ). Others: 175 *14* from (n,γ) E=6.7 eV, 109 *8* from (n,γ) E=9.0 eV, and 177 *14* from (n,γ) E=10.3 eV seem discrepant. Mult.,δ: from ce data in (n,γ) E=th.
1679.5	(3)	1492.8 *3*	100	186.718	2$^+$				E_γ: from (n,n′γ).
1680.6	(1)	1680.6 *3*	100	0.0	0$^+$				E_γ: from (n,n′γ).
1681.70	5$^-$	97.93[@] *15*	0.28[@] *4*	1583.91	4$^-$	M1+E2	0.40 *12*	5.80 *13*	α(K)=4.4 *4*; α(L)=1.10 *17*; α(M)=0.26 *5* α(N)=0.064 *11*; α(O)=0.0104 *15*; α(P)=0.00051 *4*
		235.50[@] *12*	1.25[@] *10*	1446.24	(5)$^+$	E1		0.0441	
		294.74 *12*	19.6 *18*	1386.992	3$^-$	(E2)		0.0963	E_γ: weighted average of 294.75 *12* from ^{190}Ir ε decay (11.78 d) and 294.7 *2* from (n,n′γ). I_γ: weighted average of 19.3 *18* from ^{190}Re β$^-$ decay (3.1 h), 19.5 *20* from ^{190}Ir ε decay (11.78 d), and 32 *10* from (n,n′γ).
		477.7 *2*	5.4 *6*	1203.83	5$^+$				E_γ: weighted average of 477.8 *3* from ^{190}Ir ε decay (11.78 d) and 477.7 *2* from (n,n′γ). I_γ: weighted average of 6 *3* from ^{190}Re β$^-$ decay (3.1 h) and 5.4 *6* from ^{190}Ir ε decay (11.78 d). Others: 23 *4* in (n,n′γ) seems discrepant.
		518.55 *7*	100 *3*	1163.182	4$^+$	E1(+M2)	+0.010 *15*	0.00711 *14*	I_γ: from ^{190}Ir ε decay (11.78 d). Others: 100 *7* from ^{190}Re β$^-$ decay (3.1 h), 100 *8* from (n,n′γ).
		≈631	2.5 *7*	1050.433	6$^+$				E_γ,I_γ: from ^{190}Ir ε decay (11.78 d). Other: Iγ=109 *8* for a doublet at 630.9 in (n,n′γ).
		726.22 *8*	8.9 *22*	955.375	4$^+$	E1		0.00357	E_γ: from ^{190}Ir ε decay (11.78 d). I_γ: unweighted average of 6.7 *4* from ^{190}Re β$^-$ decay (3.1 h) and 11.1 *3* from ^{190}Ir ε decay (11.78 d).
		1123.8[@] *3*	0.094[@] *20*	557.978	2$^+$	[E3]		0.00856	
		1133.77[@] *20*	1.26[@] *7*	547.854	4$^+$	E1		1.55×10^{-3}	
		1494.9[@] *3*	0.18[@] *3*	186.718	2$^+$	[E3]		0.00464	
1689.08	(2$^+$)	574.6[#e] *5*	61[#] *11*	1114.69	2$^+$				I_γ: unweighted average of 48 *4* from (n,γ) E=6.7 eV, 73 *9* from (n,γ) E=9.0 eV, 84 *11* from (n,γ) E=10.3 eV, and 39 *8* from (n,γ) E=th.
		933.1 *2*	43 *4*	756.016	3$^+$				E_γ: weighted average of 932.9 *4* from (n,γ) E=th and 933.2 *2* from (n,n′γ).

$^{190}_{76}Os_{114}$-18

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
									I_γ: weighted average of 37 *4* from (n,γ) E=6.7 eV, 41 *5* from (n,γ) E=9.0 eV, 53 *11* from (n,γ) E=10.3 eV, 62 *10* from (n,γ) E=th, and 56 *8* from (n,n′γ).
1689.08	(2$^+$)	1131.1 *2*	80 *8*	557.978	2$^+$				E_γ: weighted average of 1131.2 *4* from (n,γ) E=th and 1131.0 *2* from (n,n′γ).
									I_γ: weighted average of 56 *11* from (n,γ) E=6.7 eV, 91 *9* from (n,γ) E=9.0 eV, 68 *11* from (n,γ) E=10.3 eV, 90 *10* from (n,γ) E=th, and 84 *8* from (n,n′γ).
		1141.2 *3*	52 *5*	547.854	4$^+$				E_γ: weighted average of 1141.8 *4* from (n,γ) E=th and 1141.0 *2* from (n,n′γ).
									I_γ: weighted average of 41 *8* from (n,γ) E=6.7 eV, 59 *9* from (n,γ) E=9.0 eV, 53 *11* from (n,γ) E=10.3 eV, 52 *5* from (n,γ) E=th, and 56 *8* from (n,n′γ).
		1502.4 *3*	100 *10*	186.718	2$^+$				E_γ: weighted average of 1502.1 *4* from (n,γ) E=th and 1502.5 *3* from (n,n′γ).
		1687.6[#] *10*		0.0	0$^+$				
1705.7	10$^-$	38.9 *1*	100	1666.776	8$^+$	M2+E3	0.10 *2*	1.23×10^3 *11*	B(M2)(W.u.)=1.43×10^{-8} *+23−19*; B(E3)(W.u.)=5.7×10^{-5} *+40−26*
									α(L)=9.1×10^2 *8*; α(M)=247 *23*
									α(N)=61 *6*; α(O)=9.8 *8*; α(P)=0.452 *7*
									E_γ: from energy of conversion line, seen in ce data only and no uncertainty given, 0.1 keV estimated by evaluators.
									Mult.,δ: from ce data in ^{190}Ir ε decay (3.087 h).
1708.25	(2$^+$,3,4$^+$)	753.2 *4*	34 *7*	955.375	4$^+$				E_γ: weighted average of 753.0 *4* from ^{190}Ir ε decay (11.78 d) and 753.6 *6* from (n,γ) E=th.
									I_γ: weighted average of 26 *7* from ^{190}Ir ε decay (11.78 d) and 40 *6* from (n,γ) E=th.
		951.9 *3*	100 *8*	756.016	3$^+$	(M1)			E_γ: weighted average of 952.3 *3* from ^{190}Ir ε decay (11.78 d), 951.8 *5* from (n,γ) E=th, and 951.6 *3* from (n,n′γ).
		1150.7 *5*	35 *9*	557.978	2$^+$				I_γ: from ^{190}Ir ε. Not reported in (n,γ). Probably contributed by an impurity in (n,n′γ) since Iγ=124 *12*.
		1160.4[@] *5*	30[@] *9*	547.854	4$^+$				
1724.8	1	1724.8		0.0	0$^+$				
1732.89	0$^+$	1174.6 *3*	64 *4*	557.978	2$^+$				I_γ: unweighted average of 63 *5* from (n,γ) E=6.7 eV, 64 *5* from (n,γ) E=9.0 eV, 69 *9* from (n,γ) E=10.3 eV, 74 *6* from (n,γ) E=th, and 51 *3* from (n,n′γ).
		1546.3 *2*	100 *5*	186.718	2$^+$				I_γ: from (n,n′γ). Other: 100 *8* from (n,γ) E=th.
1802.74	(1,2$^+$)	1244.6[a] *4*	15[a] *3*	557.978	2$^+$				
		1616.1[da] *3*	100[da] *12*	186.718	2$^+$				
1813.50	(1$^+$,2,3$^+$)	1255.4 *3*	100 *12*	557.978	2$^+$				E_γ,I_γ: from (n,n′γ).
		1626.9 *3*	32 *3*	186.718	2$^+$				I_γ: from (n,n′γ).

$^{190}_{76}Os_{114}$-19

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[c]	Comments
1823.65	(1,2)$^+$	1067.9[de] *3*	<6[d]	756.016	3$^+$				I_γ: from (n,n′γ). Other: <29 for possible doublet in (n,γ).
		1265.7 *2*	100 *5*	557.978	2$^+$	E2(+M1)	>0.6	0.0043 *12*	I_γ: from (n,n′γ). Other: 100 *8* from (n,γ).
		1636.8 *4*	22 *3*	186.718	2$^+$				E_γ: weighted average of 1637.2 *6* from (n,γ) E=th and 1636.6 *4* from (n,n′γ). I_γ: weighted average of 23 *4* from (n,γ) E=9.0 eV, 16 *3* from (n,γ) E=th, and 24.8 *24* from (n,n′γ).
1836.39	(6$^+$)	321.81[&e] *8*	8.1[&] *9*	1514.1?	(6$^+$,5$^+$)	[M1,E2]		0.14 *7*	
		390.17[&] *6*	51[&] *3*	1446.24	(5)$^+$	[M1,E2]		0.09 *5*	
		≈633[&]	11[&] *7*	1203.83	5$^+$	[M1,E2]		≈0.025	
		673.10 *10*	100 *5*	1163.182	4$^+$	[E2]		0.01138	E_γ: other: 673.2 from Coul. ex.
		881.10[&] *14*	8.3[&] *9*	955.375	4$^+$				
1859.11	(2$^+$)	903.6[#e] *4*	15[#] *5*	955.375	4$^+$				I_γ: unweighted average of 20 *3* from (n,γ) E=6.7 eV and 10.0 *10* from (n,γ) E=th.
		1103.4 *3*	51 *4*	756.016	3$^+$				E_γ: weighted average of 1103.1 *3* from (n,γ) E=th and 1103.6 *3* from (n,n′γ). I_γ: weighted average of 47 *5* from (n,γ) E=6.7 eV, 50 *4* from (n,γ) E=10.3 eV, 50 *4* from (n,γ) E=th, and 65 *7* from (n,n′γ). Other: 97 *8* from (n,γ) E=9.0 eV.
		1300.7 *3*	58 *5*	557.978	2$^+$				E_γ: weighted average of 1301.0 *3* from (n,γ) E=th and 1300.4 *3* from (n,n′γ). I_γ: weighted average of 60 *5* from (n,γ) E=6.7 eV, 54 *6* from (n,γ) E=10.3 eV, and 60 *5* from (n,γ) E=th. Others: 111 *11* from (n,γ) E=9.0 eV, 113 *10* in (n,n′γ).
		1311.2 *4*	52 *9*	547.854	4$^+$				E_γ: weighted average of 1311.5 *3* from (n,γ) E=th and 1310.6 *4* from (n,n′γ). I_γ: unweighted average of 47 *5* from (n,γ) E=6.7 eV, 75 *8* from (n,γ) E=10.3 eV, 54 *4* from (n,γ) E=th, and 32 *10* from (n,n′γ).
		1672.6 *3*	100 *7*	186.718	2$^+$				E_γ: weighted average of 1672.5 *3* from (n,γ) E=th and 1672.7 *3* from (n,n′γ). I_γ: other: 100 *10* from (n,n′γ).
		1858.8[#] *6*		0.0	0$^+$				
1872.23	(5)$^-$	190.52[@] *20*	8.2[@] *15*	1681.70	5$^-$	M1		0.903	α(K)=0.747 *11*; α(L)=0.1204 *18*; α(M)=0.0276 *4* α(N)=0.00675 *10*; α(O)=0.001165 *17*; α(P)=8.68×10^{-5} *13*
		288.49 *14*	100 *6*	1583.91	4$^-$	E2+M1	2.2 *+11−5*	0.134 *17*	E_γ: unweighted average of 288.22 *10* from ^{190}Ir ε decay (11.78 d), 288.6 *4* from (n,γ) E=th, and

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	δ‡	α[c]	Comments
									288.66 *4* from (n,n′γ). I_γ: from ^{190}Re β^- decay (3.1 h).
1872.23	(5)$^-$	426.2@ *4*	1.5@ *6*	1446.24	(5)$^+$				
		484.9 *4*	30 *3*	1386.992	3$^-$	E2		0.0246	E_γ: unweighted average of 485.23 *20* from ^{190}Ir ε decay (11.78 d) and 484.5 *3* from (n,n′γ). I_γ: weighted average of 29 *3* from ^{190}Re β^- decay (3.1 h) and 44 *10* from ^{190}Ir ε decay (11.78 d). Other: 100 *17* from (n,n′γ).
		668.1@ *3*	3.2@ *8*	1203.83	5$^+$				
		709.1@ *3*	4.4@ *7*	1163.182	4$^+$				
		821.78@ *14*	19.7@ *13*	1050.433	6$^+$				
		916.75@ *25*	7.6@ *8*	955.375	4$^+$				
		1324.30 *18*	32 *6*	547.854	4$^+$	E1		1.25×10^{-3}	I_γ: weighted average of 46 *9* from ^{190}Re β^- decay (3.1 h) and 29 *4* from ^{190}Ir ε decay (11.78 d).
1884.45	(1,2,3)	1127.9[a] *3*	28[a] *7*	756.016	3$^+$				
		1327.0 *3*	100 *10*	557.978	2$^+$				E_γ: weighted average of 1327.1 *5* from (n,γ) E=th and 1326.9 *3* from (n,n′γ). I_γ: from (n,n′γ).
1902.0	(1,2,3)	1715.3 *3*	100	186.718	2$^+$				E_γ: weighted average of 1715.2 *3* from (n,γ) E=th and 1715.4 *4* from (n,n′γ).
1903.33	(3$^+$,4$^-$)	740.18 *14*	100 *8*	1163.182	4$^+$				E_γ: weighted average of 740.19 *14* from ^{190}Ir ε decay (11.78 d), 740.3 *3* from (n,γ) E=10.3 eV, and 740.1 *2* from (n,n′γ). I_γ: from ^{190}Ir ε decay (11.78 d).
		948.1 *3*	35 *6*	955.375	4$^+$				E_γ: weighted average of 948.0 *3* from ^{190}Ir ε decay (11.78 d) and 948.9 *7* from (n,γ) E=9.0 eV. I_γ: from ^{190}Ir ε decay (11.78 d). Other: 135 *15* in (n,γ).
		1147.1 *2*	74 *5*	756.016	3$^+$				E_γ: weighted average of 1147.3 *3* from ^{190}Ir ε decay (11.78 d), 1147.3 *4* from (n,γ) E=9.0 eV, and 1146.9 *2* from (n,n′γ).
		1355.6@ *3*	35@ *4*	547.854	4$^+$				
1910.58	(2)$^+$	955.5 *3*	25 *3*	955.375	4$^+$				E_γ: weighted average of 955.1 *5* from (n,γ) E=th and 955.7 *3* from (n,n′γ). I_γ: unweighted average of 26 *6* from (n,γ) E=6.7 eV, 17.0 *21* from (n,γ) E=9.0 eV, 33 *8* from (n,γ) E=10.3 eV, 27.5 *20* from (n,γ) E=th, and 20 *3* from (n,n′γ).
		1154.4 *2*	100 *5*	756.016	3$^+$	E2(+M1)	>1.4	0.0044 *7*	I_γ: from (n,n′γ). Other: 100 *8* from (n,γ) E=th.
		1352.6 *4*	20 *5*	557.978	2$^+$				E_γ: weighted average of 1353.0 *9* from (n,γ) E=th and

$^{190}_{76}Os_{114}$-21

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	Comments
								1352.5 *4* from (n,n′γ).
								I_γ: from (n,n′γ).
1910.58	(2)$^+$	1362.8[a] *4*	32[a] *5*	547.854	4$^+$			
1918.4	(1,2)	1360.7[#] *8*		557.978	2$^+$			
		1731.6 *4*	100	186.718	2$^+$			
1935.33	(2$^+$,3$^+$,4)	979.6[a] *3*	32[a] *6*	955.375	4$^+$			
		1179.7[a] *4*	32[a] *6*	756.016	3$^+$			
		1387.6[a] *3*	100[a] *9*	547.854	4$^+$			
1943.5	(2$^+$)	1395.9[a] *4*	57[a] *13*	547.854	4$^+$			Placement of a 1383γ with 1943 level (in (n,γ)) not supported by excitation function data in (n,n′γ).
		1942.6 *7*	100 *13*	0.0	0$^+$			E_γ: weighted average of 1942.5 *7* from (n,γ) E=th and 1942.8 *8* from (n,n′γ).
								I_γ: from (n,n′γ).
1958.1	(1,2$^+$)	1046.3[a] *3*	55[a] *9*	911.80	0$^+$			
		1771.5 *5*	100 *9*	186.718	2$^+$			E_γ,I_γ: from (n,n′γ).
1970.50	(1$^+$,2)	1214.3 *3*	82 *9*	756.016	3$^+$			E_γ: weighted average of 1214.7 *4* from (n,γ) E=th and 1214.0 *3* from (n,n′γ).
								I_γ: weighted average of 86 *7* from (n,γ) E=6.7 eV, 70 *9* from (n,γ) E=9.0 eV, 100 *17* from (n,γ) E=10.3 eV, 77 *9* from (n,γ) E=th, and 87 *10* from (n,n′γ).
		1412.7 *3*	100 *9*	557.978	2$^+$			I_γ: weighted average of 100 *9* from (n,γ) E=th and 100 *10* from (n,n′γ).
								I_γ: other: 100 *10* from (n,n′γ).
1992.4	(2,3)	1236.4 *3*	100	756.016	3$^+$			
		1804.7[#] *11*		186.718	2$^+$			
1995.22	(2)$^+$	1437.1 *2*	100 *7*	557.978	2$^+$	E2(+M1)	>2	E_γ: weighted average of 1437.5 *3* from ^{190}Re β^- decay (3.0 min), 1437.0 *2* from (n,γ) E=th, and 1436.7 *3* from (n,n′γ).
								I_γ: from (n,γ) E=6.7 eV. Others: 100 *20* from ^{190}Re β^- decay (3.0 min).
		1447.7 *5*	35 *11*	547.854	4$^+$			E_γ,I_γ: γ reported in ^{190}Re β^- (3.0 min) only.
		1809.2 *6*	17 *3*	186.718	2$^+$			E_γ: weighted average of 1807.7 *6* from (n,γ) E=th and 1808.9 *7* from (n,n′γ).
								I_γ: weighted average of 27 *8* from ^{190}Re β^- decay (3.0 min), 17 *3* from (n,γ) E=6.7 eV, 19 *4* from (n,γ) E=th, and 13 *4* from (n,n′γ).
2009.8	1$^{(+)}$	1253.0[#] *6*		756.016	3$^+$			
		2011.3 *8*		0.0	0$^+$			E_γ: other: 2011.0 in (γ,γ′).
2025.5	(1,2)	1467.5 *3*	69 *6*	557.978	2$^+$			E_γ,I_γ: from (n,n′γ). Other: 1467.5 *9* from (n,γ) E=th.
		1838.8 *7*	100 *8*	186.718	2$^+$			I_γ: from (n,n′γ).
2047.8	(1,2)	1490.3[e] *11*		557.978	2$^+$			
2061.2?	(6$^+$,7$^-$)	379.4[&e] *3*	100[&] *8*	1681.70	5$^-$			
		394.6[&e] *4*	64[&] *11*	1666.776	8$^+$			
		1010.9[&e] *3*	83[&] *11*	1050.433	6$^+$			
2068.87	(5$^+$)	387.10[&] *12*	66[&] *6*	1681.70	5$^-$			
		864.85[&] *20*	48[&] *3*	1203.83	5$^+$			

$^{190}_{76}Os_{114}$-22

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[c]	Comments
2068.87	(5$^+$)	905.75[&] *16*	100[&] *11*	1163.182	4$^+$			
		1113.6[&] *4*	31[&] *3*	955.375	4$^+$			
		1313.1[&] *2*	49[&] *8*	756.016	3$^+$			
		1521.1[&] *4*	6.3[&] *19*	547.854	4$^+$			
2070.2	(1$^+$,2)	1312.9[#] *13*		756.016	3$^+$			
		1512.1 *3*	100 *8*	557.978	2$^+$			E_γ,I_γ: from (n,n′γ).
		1883.9 *5*	60 *6*	186.718	2$^+$			I_γ: from (n,n′γ). Other: 110 *9* from (n,γ) E=th.
2089.0	(1$^+$,2$^+$)	1333.2 *6*		756.016	3$^+$			
		1900.4 *8*		186.718	2$^+$			
		2090.8 *9*		0.0	0$^+$			
2090.2	(8$^+$)	616		1474.2	(6$^+$)	[E2]	0.01389	B(E2)(W.u.)=61 +*21*−*10*
2111.8	(1,2$^+$)	1925.4 *5*	100	186.718	2$^+$			
		2111.5[#] *4*		0.0	0$^+$			
2118.51	(1$^+$,2)	1560.5 *2*	61 *6*	557.978	2$^+$			E_γ,I_γ: from (n,n′γ).
		1932.1 *7*	100 *6*	186.718	2$^+$			E_γ,I_γ: from (n,n′γ).
2121.39	(5,6$^+$)	284.9[&] *3*	22[&] *3*	1836.39	(6$^+$)			
		675.2[&] *6*	27[&] *10*	1446.24	(5)$^+$			
		958.20[&] *14*	100[&] *6*	1163.182	4$^+$			
		1166.1[&] *3*	21[&] *2*	955.375	4$^+$			
2124.67	(2,3$^+$,4$^+$)	1368.6 *3*	58 *15*	756.016	3$^+$			E_γ,I_γ: from (n,n′γ).
		1566.7 *2*	100 *8*	557.978	2$^+$			E_γ,I_γ: from (n,n′γ).
2135.5	(0$^+$,1,2)	1577.5 *3*	42 *11*	557.978	2$^+$			E_γ,I_γ: from (n,n′γ).
		1949.2 *8*	100 *16*	186.718	2$^+$			E_γ,I_γ: from (n,n′γ).
2150.6	(1,2$^+$)	1963.9 *15*		186.718	2$^+$			
		2150.6 *11*		0.0	0$^+$			
2175.5	(0$^+$,1,2)	1622.0[#e] *11*		557.978	2$^+$			E_γ: poor-fit, level-energy difference=1617.5.
		1988.8 *10*	100	186.718	2$^+$			E_γ: from (n,n′γ). Other: 1988.6 *4*, uncertain γ in (n,γ) E=res.
2191.4	(1,2$^+$)	2191.4 *4*		0.0	0$^+$			
2198.5	(1,2)	1640.5[e] *6*	100	557.978	2$^+$			
2210.1	(1,2)	2023.3[e] *4*	100	186.718	2$^+$			
2263.5	(1,2$^+$)	1705.5 *10*		557.978	2$^+$			
		2076.8 *5*		186.718	2$^+$			
		2261.5[e] *5*	100	0.0	0$^+$			
2288.8	(1,2)	1732.6 *8*		557.978	2$^+$			
		2287.4 *7*		0.0	0$^+$			
2296.5	1	2109.8	98 *41*	186.718	2$^+$			E_γ,I_γ: from (γ,γ′).
		2296.5	100	0.0	0$^+$			E_γ,I_γ: from (γ,γ′).
2328.2	1	2328.2		0.0	0$^+$			

$^{190}_{76}Os_{114}$-23

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[c]	Comments
2350.7	(1,2$^+$)	2161.8 *15*		186.718	2$^+$			
		2352.3 *13*		0.0	0$^+$			
2352.45	(2$^+$,3)	1397.1[b] *4*	29[b] *10*	955.375	4$^+$			
		1596.4[b] *5*	28[b] *8*	756.016	3$^+$			
		1794.5[b] *3*	100[b] *25*	557.978	2$^+$			
		2165.5[b] *7*	11[b] *5*	186.718	2$^+$			
2357.7	(10$^+$)	690.9		1666.776	8$^+$	[E2]	0.01074	B(E2)(W.u.)=114 *+27−22*
2381	(1,2)	2192.1[e] *4*	100	186.718	2$^+$			
2393.5	1	2393.5		0.0	0$^+$			E_γ: from (γ,γ′).
2408.0	1	2221.3	64 *16*	186.718	2$^+$			E_γ,I_γ: from (γ,γ′).
		2408.0	100	0.0	0$^+$			E_γ,I_γ: from (γ,γ′).
2457.7	(1,2$^+$)	1899.1 *10*		557.978	2$^+$			
		2267.7 *12*		186.718	2$^+$			E_γ: level-energy difference=2270.9.
		2460.5 *10*		0.0	0$^+$			E_γ: level-energy difference=2457.7.
2474.4	(0$^+$ to 3)	1917.2 *12*		557.978	2$^+$			
		2286.5 *14*		186.718	2$^+$			
2477.0	(1$^+$,2$^+$)	1720.9 *6*		756.016	3$^+$			
		2290.8 *27*		186.718	2$^+$			
		2477.0 *6*		0.0	0$^+$			
2502.7	(1$^+$,2$^+$)	1746.6 *9*		756.016	3$^+$			
		2502.8 *10*		0.0	0$^+$			
2551.8	(1$^+$,2$^+$)	1795.5 *6*		756.016	3$^+$			
		1995.5 *12*		557.978	2$^+$			
		2551.4 *9*		0.0	0$^+$			
2563.3	(0$^+$ to 3)	2003.4 *14*		557.978	2$^+$			
		2377.1 *7*		186.718	2$^+$			
2591.6	1$^{(+)}$	1835.5[#] *8*		756.016	3$^+$			
		2404.7 *7*	42 *9*	186.718	2$^+$			E_γ: other: 2403.9 in (γ,γ′). I_γ: from (γ,γ′).
		2592.6 *13*	100	0.0	0$^+$			E_γ: other: 2590.6 in (γ,γ′). I_γ: from (γ,γ′).
2622.5	1$^{(+)}$	1864.7[#] *8*		756.016	3$^+$			
		2437.7[#] *8*		186.718	2$^+$			
		2622.3 *7*		0.0	0$^+$			
2643.7	1	2457.0	20 *3*	186.718	2$^+$			E_γ,I_γ: from (γ,γ′).
		2643.7	100	0.0	0$^+$			E_γ,I_γ: from (γ,γ′).
2663.0	(1$^+$,2,3)	1904.8 *13*		756.016	3$^+$			
		2106.4 *14*		557.978	2$^+$			
		2476.6 *8*		186.718	2$^+$			

$^{190}_{76}Os_{114}$-24

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[c]	Comments
2704.2	$1^{(+)}$	1949.9[#] *10*		756.016	3^+			
		2144.1[#] *11*		557.978	2^+			
		2517.4	60 *36*	186.718	2^+			E_γ,I_γ: from (γ,γ′). Other: 2512.2 *14* in (n,γ) E=th is poor-fit.
		2704.1	100	0.0	0^+			E_γ,I_γ: from (γ,γ′). Other: 2701.7 *11* in (n,γ) E=th is poor-fit.
2714.1	1	2527.4	76 *12*	186.718	2^+			E_γ,I_γ: from (γ,γ′).
		2714.1	100	0.0	0^+			E_γ,I_γ: from (γ,γ′).
2737.7	1	2179.1[#] *13*		557.978	2^+			
		2551.2	100 *70*	186.718	2^+			E_γ,I_γ: from (γ,γ′). Other: 2553.6 *8* in (n,γ) E=th is poor-fit.
		2737.9	88	0.0	0^+			E_γ,I_γ: from (γ,γ′). Other: 2539.3 *9* in (n,γ) E=th is poor-fit.
2757.7	(12^+)	400		2357.7	(10^+)			E_γ: from (^{82}Se,Xγ).
2772.2	(10^+)	682		2090.2	(8^+)			
2774.0	1	2216.5[#] *7*		557.978	2^+			
		2586.8	24 *9*	186.718	2^+			E_γ,I_γ: from (γ,γ′). Other: Eγ=2589.1 *8* in (n,γ) E=th.
		2773.5	100	0.0	0^+			E_γ: from (γ,γ′) only.
2816.0	1	2626.0[#] *16*		186.718	2^+			
		2817.2		0.0	0^+			E_γ: from (γ,γ′). Other: 2815.1 *14* in (n,γ) E=th.
2820.6	$(0^+$ to 3)	2262.6 *4*		557.978	2^+			
		2634.1 *12*		186.718	2^+			
2877.0	$(1,2^+)$	2317.8 *14*		557.978	2^+			
		2878.0 *13*		0.0	0^+			
2944.7	$(1,2^+)$	2386.4 *10*		557.978	2^+			
		2945.1 *13*		0.0	0^+			
2975.0	(2^+)	2425.3 *12*		547.854	4^+			
		2788.6 *5*		186.718	2^+			
		2975.0		0.0	0^+			E_γ: from level-energy difference. 2980.0 *9* from (n,γ) is poor-fit.
3011.7	(12^+)	654		2357.7	(10^+)	[E2]	0.01213	B(E2)(W.u.)>38
3015.7	1	2829.0	100 *60*	186.718	2^+			E_γ,I_γ: from (γ,γ′).
		3015.7	68	0.0	0^+			E_γ,I_γ: from (γ,γ′).
3023.0	1	2836.3	42 *6*	186.718	2^+			E_γ,I_γ: from (γ,γ′).
		3023.0	100	0.0	0^+			E_γ,I_γ: from (γ,γ′).
3045.4	1	2489.0[#] *9*		557.978	2^+			
		2857.2 *11*	92 *19*	186.718	2^+			I_γ: from (γ,γ′).
		3044.5	100	0.0	0^+			E_γ,I_γ: from (γ,γ′).
3117.1	1	3117.1		0.0	0^+			E_γ: from (γ,γ′).
3126.1	1	2939.4	10 *3*	186.718	2^+			E_γ,I_γ: from (γ,γ′).
		3126.1	100	0.0	0^+			E_γ,I_γ: from (γ,γ′).
3126.7	(12^+)	769		2357.7	(10^+)	[E2]	0.00852	B(E2)(W.u.)>6.7 E_γ: from Coul. ex.
3142.0	1	3142.0		0.0	0^+			E_γ: from (γ,γ′).
3189.3	1	3189.3		0.0	0^+			E_γ: from (γ,γ′).

$^{190}_{76}Os_{114}$-25

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Comments
3244.6	1	3244.6		0.0	0^+	E_γ: from (γ,γ′).
3346.7	(14^+)	589		2757.7	(12^+)	E_γ: from (^{82}Se,Xγ).
3348.3	1	3348.3		0.0	0^+	E_γ: from (γ,γ′).
3414.8	1	3414.8		0.0	0^+	E_γ: from (γ,γ′).
3445.9	1	3259.2	74 *47*	186.718	2^+	E_γ,I_γ: from (γ,γ′).
		3445.9	100	0.0	0^+	E_γ,I_γ: from (γ,γ′).
3467.4	1	3467.4		0.0	0^+	E_γ: from (γ,γ′).
3516.6	1	3516.6		0.0	0^+	E_γ: from (γ,γ′).
3748.9	1	3748.9		0.0	0^+	E_γ: from (γ,γ′).
3798.7	1	3798.7		0.0	0^+	E_γ: from (γ,γ′).
3869.9	1	3869.9		0.0	0^+	E_γ: from (γ,γ′).
3924.8	1	3924.8		0.0	0^+	E_γ: from (γ,γ′).
3981.9	1	3981.9		0.0	0^+	E_γ: from (γ,γ′).
4012.7	(16^+)	666		3346.7	(14^+)	E_γ: from (^{82}Se,Xγ).
4497.7	(18^+)	485		4012.7	(16^+)	E_γ: from (^{82}Se,Xγ).
4809.7	(19^+)	312		4497.7	(18^+)	E_γ: from (^{82}Se,Xγ).
5130.6?	$(0^+$ to 3)	4573.0 *10*		557.978	2^+	
		4943.1 *12*		186.718	2^+	
5248	(20^+)	438		4809.7	(19^+)	E_γ: from (^{82}Se,Xγ).
5834	(21^+)	586		5248	(20^+)	E_γ: from (^{82}Se,Xγ).
(7792.2)	1^-,2^-	2662.0 *10*		5130.6?	$(0^+$ to 3)	
		4746.8 *12*		3045.4	1	
		4812.9 *35*		2975.0	(2^+)	
		4848.0 *10*		2944.7	$(1,2^+)$	
		4915.9 *13*		2877.0	$(1,2^+)$	
		4971.7 *6*		2820.6	$(0^+$ to 3)	
		4978.6 *14*		2816.0	1	
		5017.2 *10*		2774.0	1	
		5053.6 *20*		2737.7	1	
		5090.4 *25*		2704.2	$1^{(+)}$	
		5129.6 *10*		2663.0	$(1^+,2,3)$	
		5170.0 *20*		2622.5	$1^{(+)}$	
		5200.6 *7*		2591.6	$1^{(+)}$	
		5229.7 *14*		2563.3	$(0^+$ to 3)	
		5240.6 *10*		2551.8	$(1^+,2^+)$	
		5290.1 *10*		2502.7	$(1^+,2^+)$	
		5315.5 *10*	6.2 *6*	2477.0	$(1^+,2^+)$	
		5318.1 *12*		2474.4	$(0^+$ to 3)	
		5324.7[e] *10*	<3.4	2468	(1,2)	
		5335.1 *25*		2457.7	$(1,2^+)$	
		5412.0 *9*	10 *4*	2381	(1,2)	

$^{190}_{76}Os_{114}$-26

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π
(7792.2)	1⁻,2⁻	5444.8 *10*	10.6 *17*	2350.7	(1,2⁺)
		5478.2[e] *15*	<5.1	2315	(1,2)
		5486.1[e] *15*	<5.1	2307	(1,2)
		5502.0 *10*	11.9 *17*	2288.8	(1,2)
		5529.0 *10*	34 *4*	2263.5	(1,2⁺)
		5568.5[e] *15*	<3.8	2224	(1,2)
		5580.9 *15*	<7.6	2210.1	(1,2)
		5593.7 *10*	<7.6	2198.5	(1,2)
		5599.6 *10*	17.4 *25*	2191.4	(1,2⁺)
		5616.7 *15*	<3.4	2175.5	(0⁺,1,2)
		5642.3 *11*	<3.4	2150.6	(1,2⁺)
		5680.9 *10*	33 *5*	2111.8	(1,2⁺)
		5703.5 *14*		2089.0	(1⁺,2⁺)
		5720.7 *10*	22 *3*	2070.2	(1⁺,2)
		5744.8 *10*	<6.8	2047.8	(1,2)
		5749.7 *15*	19 *3*	2042.4	(1,2)
		5781.9 *10*	17.8 *25*	2009.8	1⁽⁺⁾
		5797.2 *10*	14.0 *21*	1995.22	(2)⁺
		5821.4[e] *15*	<3.4	1970.50	(1⁺,2)
		5850.2 *10*	7.6 *25*	1943.5	(2⁺)
		5873.8 *10*	22 *3*	1918.4	(1,2)
		5881.2 *10*	26 *3*	1910.58	(2)⁺
		5932.2 *10*	23.6 *19*	1859.11	(2⁺)
		5968.8 *10*	8.1 *13*	1823.65	(1,2)⁺
		6058.5 *10*	16.1 *17*	1732.89	0⁺
		6106.6 *10*		1689.08	(2⁺)
		6112.3 *15*	14.0 *17*	1680.6	(1)
		6222.7[e] *15*	<6.8	1568.98	(3)⁺
		6246.5 *10*	100 *8*	1545.30	0⁺
		6356.6 *10*	18.2 *21*	1436.39	2⁺
		6408.7 *10*	27.5 *25*	1382.42	0⁺
		6677.4 *10*	5.1 *17*	1114.69	2⁺
		6878.5 *8*		911.80	0⁺
		7035.6 *15*	9.3 *17*	756.016	3⁺
		7234.3 *10*	52 *5*	557.978	2⁺
		7605.9 *10*	14.8 *13*	186.718	2⁺
		7792.8 *10*	40 *3*	0.0	0⁺
S(n)+0.00671	1⁻	5315.5 *10*	85 *17*	2477.0	(1⁺,2⁺)
		5324.7 *10*	54 *10*	2468	(1,2)
		5409.5[e] *10*	<8.8	2381	(1,2)
		5444.8[e] *10*	<8.8	2350.7	(1,2⁺)
S(n)+0.00671	1⁻	5478.2[e] *15*	<8.8	2315	(1,2)
		5486.1[e] *15*	<8.8	2307	(1,2)
		5502.0 *10*	34 *5*	2288.8	(1,2)
		5529.0[e] *10*	<8.8	2263.5	(1,2⁺)
		5568.5[e] *15*	<8.8	2224	(1,2)
		5580.9 *15*	12 *6*	2210.1	(1,2)
		5593.7[e] *10*	<9.5	2198.5	(1,2)
		5599.6[e] *15*	<9.5	2191.4	(1,2⁺)
		5616.7[e] *20*	<9.5	2175.5	(0⁺,1,2)
		5638.4 *10*	9.7 *9*	2150.6	(1,2⁺)
		5680.9 *10*	58 *7*	2111.8	(1,2⁺)
		5720.7[e] *10*	<9.5	2070.2	(1⁺,2)
		5744.8 *10*	47 *9*	2047.8	(1,2)
		5749.7[e] *15*	<15	2042.4	(1,2)
		5781.9 *10*	45 *4*	2009.8	1⁽⁺⁾
		5797.2 *10*	55 *5*	1995.22	(2)⁺
		5821.4 *10*	37 *4*	1970.50	(1⁺,2)
		5850.2[e] *10*	<6.6	1943.5	(2⁺)
		5873.8 *10*	15 *3*	1918.4	(1,2)
		5881.2[e] *10*	<6.6	1910.58	(2)⁺
		5932.2 *10*	71 *7*	1859.11	(2⁺)
		5968.8[e] *15*	<6.6	1823.65	(1,2)⁺
		6058.5 *10*	100 *9*	1732.89	0⁺
		6112.3 *15*	22 *3*	1680.6	(1)
		6222.7[e] *15*	<6.6	1570.3	(1,2)
		6246.5[e] *10*	<6.6	1545.30	0⁺
		6356.6[e] *10*	<6.6	1436.39	2⁺
		6408.7 *10*	75 *7*	1382.42	0⁺
		6677.4 *10*	14 *3*	1114.69	2⁺
		7035.6[e] *15*	<5.1	756.016	3⁺
		7234.3 *10*	28 *3*	557.978	2⁺
		7605.9 *10*	53 *4*	186.718	2⁺
		7792.8 *10*	42 *4*	0.0	0⁺
S(n)+0.00896	2⁻	5315.5 *10*	44 *7*	2477.0	(1⁺,2⁺)
		5324.7 *10*	25 *6*	2468	(1,2)
		5409.5 *10*	44 *5*	2381	(1,2)
		5444.8[e] *10*	<3.8	2350.7	(1,2⁺)
		5478.2 *15*	35 *5*	2315	(1,2)
		5486.1 *15*	33 *5*	2307	(1,2)
		5502.0 *10*	14 *3*	2288.8	(1,2)
		5529.0 *10*	43 *6*	2263.5	(1,2⁺)

$^{190}_{76}Os_{114}$-27

Adopted Levels, Gammas (continued)

γ(^{190}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
S(n)+0.00896	2⁻	5568.5 *15*	35 *5*	2224	(1,2)
		5580.9[e] *15*	<3.8	2210.1	(1,2)
		5593.7 *10*	73 *8*	2198.5	(1,2)
		5599.6 *15*	32 *5*	2191.4	(1,2⁺)
		5616.7[e] *20*	<3.8	2175.5	(0⁺,1,2)
		5638.4 *10*	11 *3*	2150.6	(1,2⁺)
		5680.9[e] *10*	<3.8	2111.8	(1,2⁺)
		5720.7 *10*	35 *6*	2070.2	(1⁺,2)
		5744.8 *10*	21 *3*	2047.8	(1,2)
		5749.7[e] *15*	<9.0	2042.4	(1,2)
		5781.9 *10*	7.5 *23*	2009.8	1⁽⁺⁾
		5797.2 *10*	10.5 *23*	1995.22	(2)⁺
		5821.4[e] *10*	<3.8	1970.50	(1⁺,2)
		5850.2 *10*	62 *8*	1943.5	(2⁺)
		5873.8[e] *10*	<7.5	1918.4	(1,2)
		5881.2 *10*	85 *7*	1910.58	(2)⁺
		5932.2 *10*	46 *4*	1859.11	(2⁺)
		5968.8 *15*	28 *3*	1823.65	(1,2)⁺
		6058.5[e] *10*	<4.5	1732.89	0⁺
		6112.3[e] *15*	<4.5	1680.6	(1)
		6222.7 *15*	20 *4*	1570.3	(1,2)
		6246.5[e] *10*	<4.5	1545.30	0⁺
		6356.6 *10*	100 *8*	1436.39	2⁺
		6408.7[e] *10*	<4.5	1382.42	0⁺
		6677.4 *10*	28 *3*	1114.69	2⁺
		7035.6[e] *15*	<4.5	756.016	3⁺
		7234.3 *10*	94 *7*	557.978	2⁺
		7605.9 *10*	9.0 *15*	186.718	2⁺
		7792.8 *10*	<4.5	0.0	0⁺
S(n)+0.01031	1⁻	5315.5 *10*	24 *4*	2477.0	(1⁺,2⁺)
		5324.7[e] *10*	<9.9	2468	(1,2)
		5409.5[e] *10*	<6.3	2381	(1,2)
		5444.8 *10*	29 *5*	2350.7	(1,2⁺)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π
S(n)+0.01031	1⁻	5478.2[e] *15*	<6.3	2315	(1,2)
		5486.1[e] *15*	<6.3	2307	(1,2)
		5502.0 *10*	36 *6*	2288.8	(1,2)
		5529.0 *10*	18 *3*	2263.5	(1,2⁺)
		5568.5[e] *15*	<5.2	2224	(1,2)
		5580.9 *15*	22 *5*	2210.1	(1,2)
		5593.7 *10*	23 *4*	2198.5	(1,2)
		5599.6[e] *15*	<14	2191.4	(1,2⁺)
		5616.7 *20*	19 *5*	2175.5	(0⁺,1,2)
		5638.4 *10*	58 *6*	2150.6	(1,2⁺)
		5680.9[e] *10*	<5.2	2111.8	(1,2⁺)
		5720.7[e] *10*	<14	2070.2	(1⁺,2)
		5744.8 *10*	35 *5*	2047.8	(1,2)
		5749.7[e] *15*	<7.1	2042.4	(1,2)
		5781.9[e] *10*	<5.2	2009.8	1⁽⁺⁾
		5797.2[e] *10*	<5.2	1995.22	(2)⁺
		5821.4[e] *10*	<5.2	1970.50	(1⁺,2)
		5850.2[e] *10*	<5.2	1943.5	(2⁺)
		5873.8 *10*	26.6 *10*	1918.4	(1,2)
		5881.2[e] *10*	<5.2	1910.58	(2)⁺
		5932.2 *10*	90 *8*	1859.11	(2⁺)
		5968.8[e] *15*	<5.2	1823.65	(1,2)⁺
		6058.5[e] *10*	<5.2	1732.89	0⁺
		6112.3 *15*	19 *3*	1680.6	(1)
		6222.7[e] *15*	<5.2	1570.3	(1,2)
		6246.5 *10*	65 *7*	1545.30	0⁺
		6356.6 *10*	29 *6*	1436.39	2⁺
		6408.7 *10*	100 *13*	1382.42	0⁺
		6677.4 *10*	43 *4*	1114.69	2⁺
		7035.6[e] *15*	<5.2	756.016	3⁺
		7234.3 *10*	25 *3*	557.978	2⁺
		7605.9 *10*	38 *3*	186.718	2⁺
		7792.8 *10*	57 *4*	0.0	0⁺

[†] From (n,γ) (E=th and E=res), unless otherwise noted. Note that almost all data of (n,γ) E=th and E=res are from 1979Ca02. Eγ values reported in 1979Ca02 are from weighted averages of all those measurements and thus the same set of Eγ values are used in those datasets, while different set of values are reported for γ-ray intensities for each (n,γ) measurement and weighted average are taken where applicable.

[‡] From γγ(θ), γ(θ) and ce data in ^{190}Ir ε decay (11.78 d), unless otherwise noted.

[#] This γ from (n,γ) (E=th and E=res) only.

$^{190}_{76}Os_{114}$-28

$\gamma(^{190}Os)$ (continued)

@ γ from ^{190}Ir ε decay (11.78 d) only.
& γ from ^{190}Re β^- decay (3.1 h) only.
[a] γ from (n,n′γ) only.
[b] γ from ^{190}Re β^- decay (3.0 min) only.
[c] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[d] Multiply placed with intensity suitably divided.
[e] Placement of transition in the level scheme is uncertain.

$^{190}_{76}Os_{114}$-29

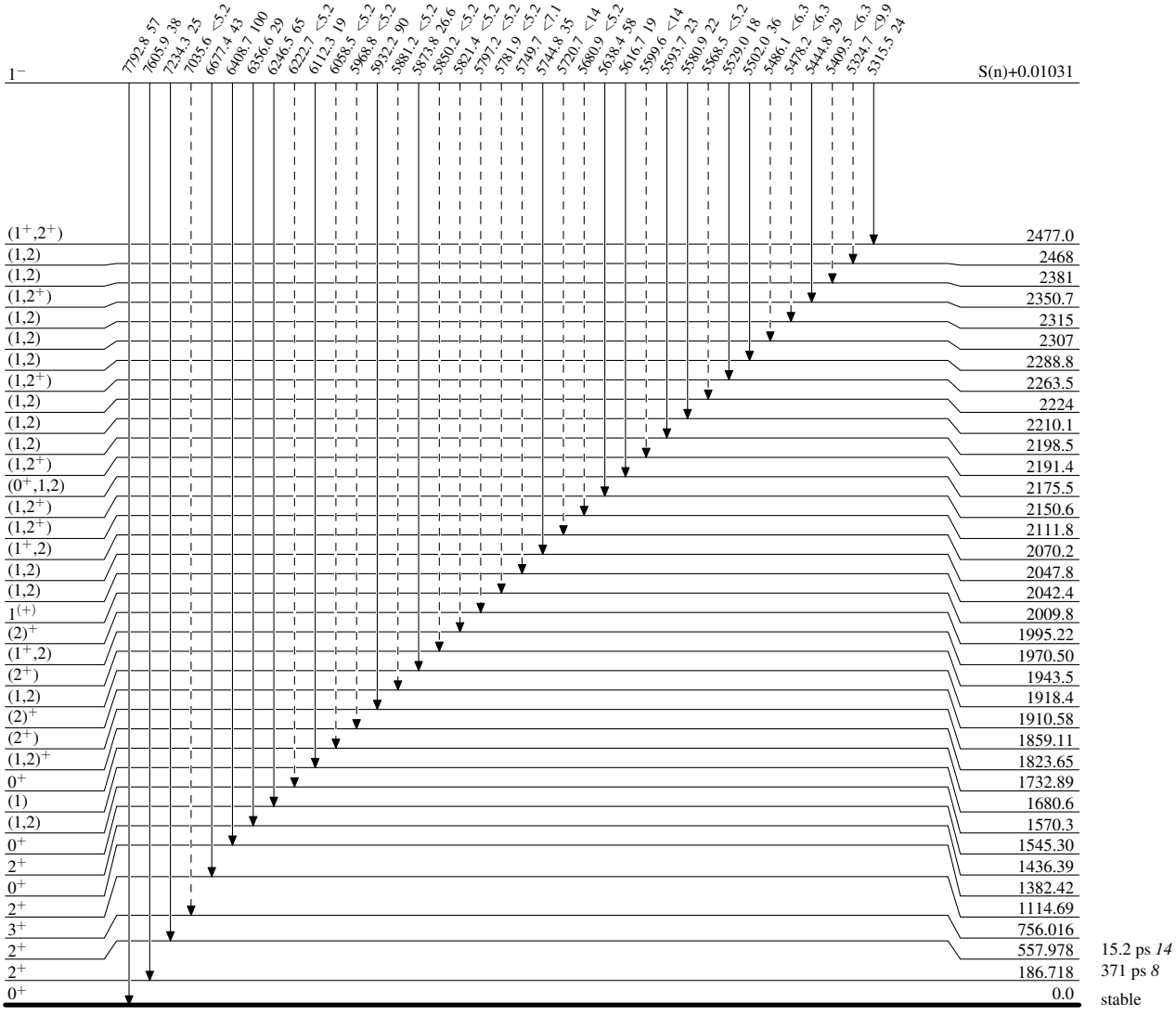
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{190}_{76}Os_{114}$

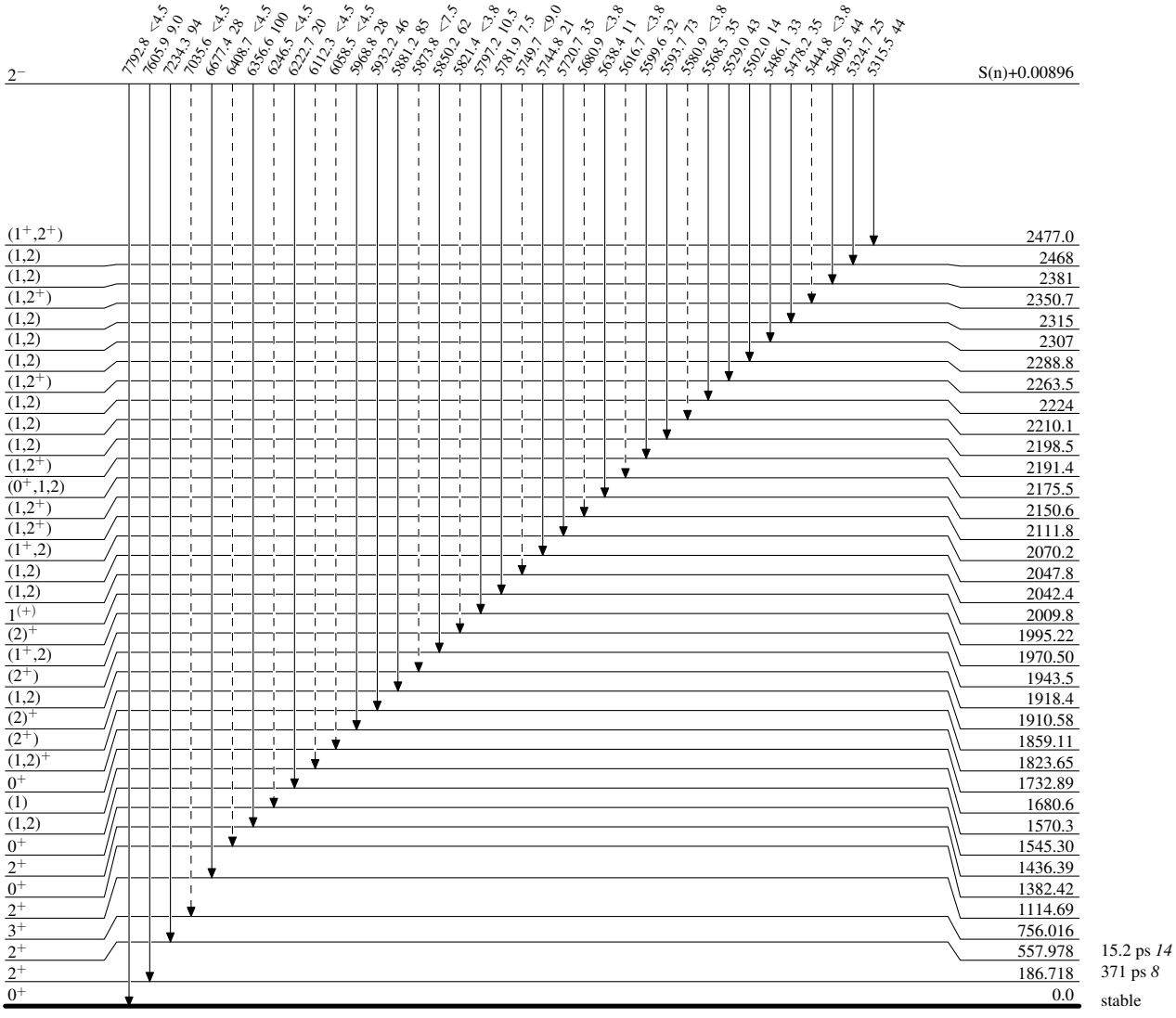
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{190}_{76}Os_{114}$

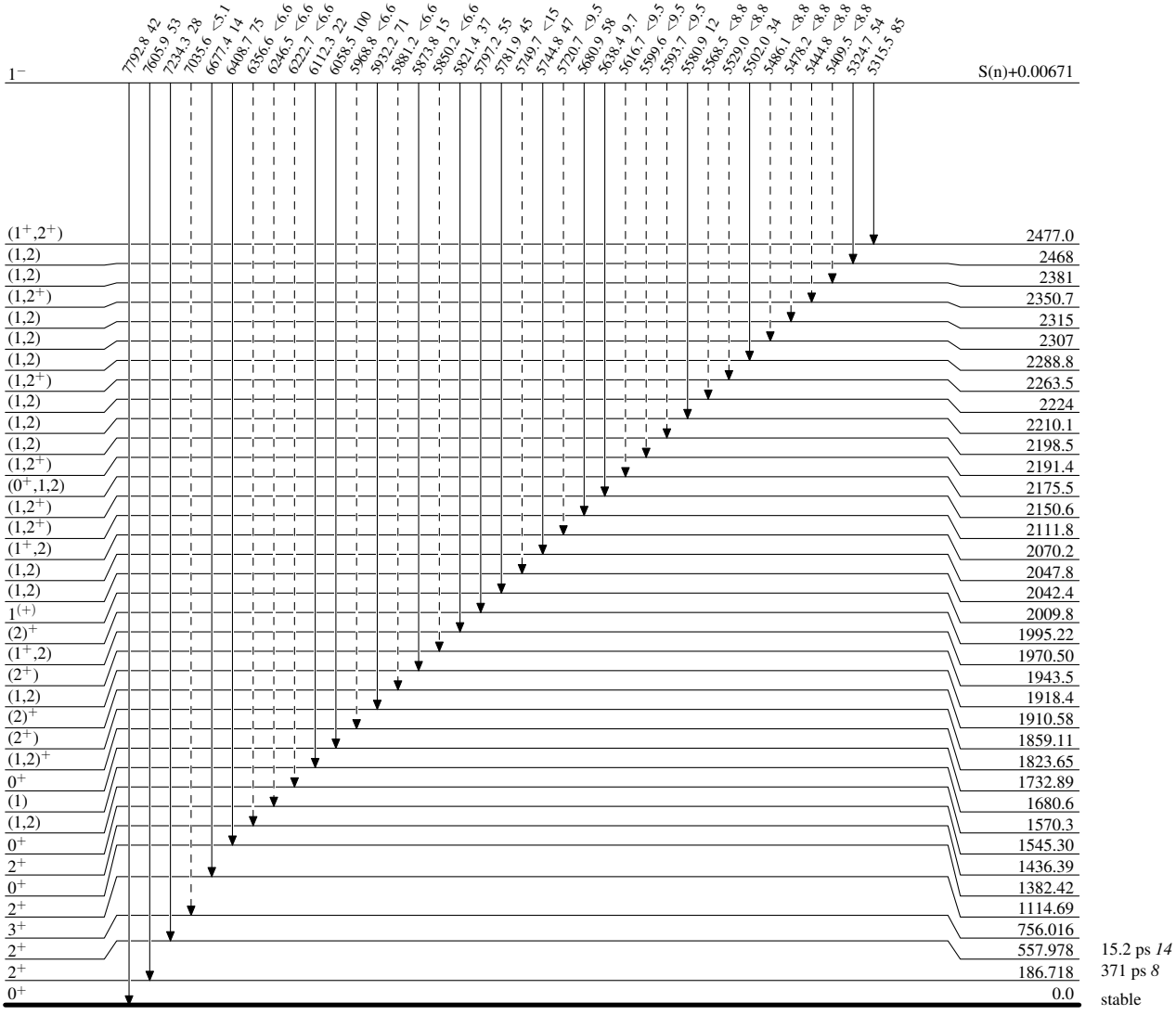
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{190}_{76}Os_{114}$

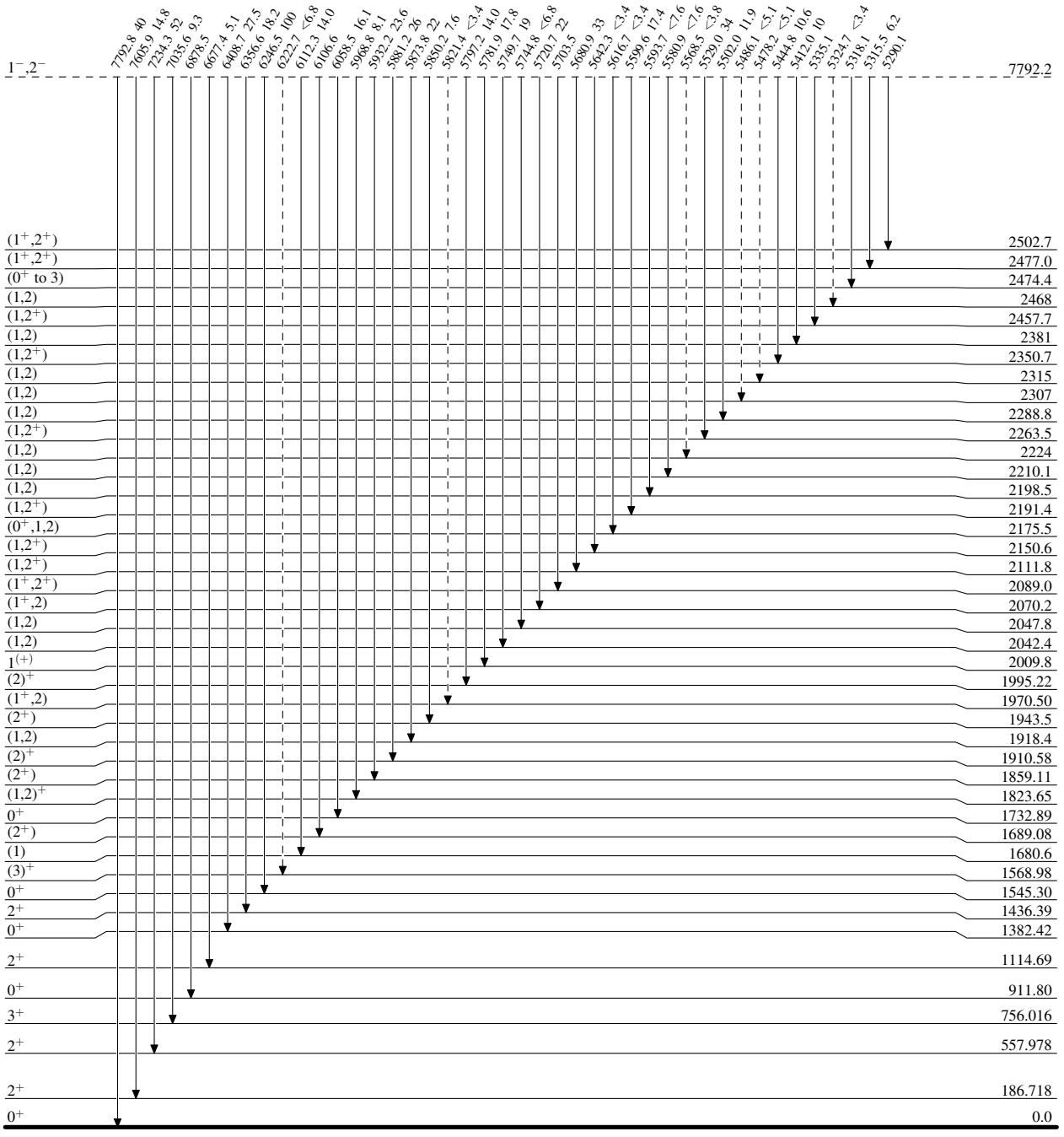
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

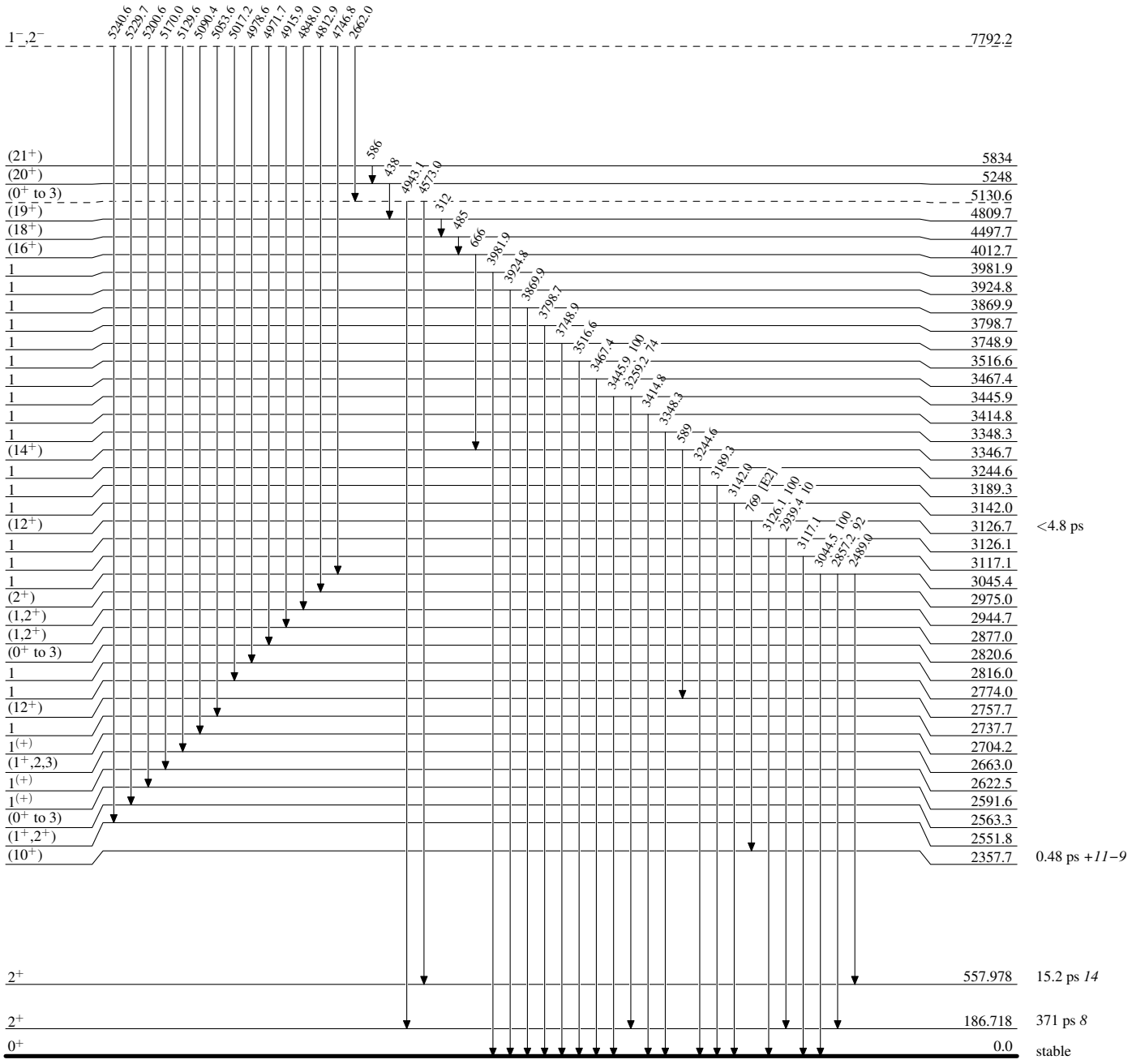


$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

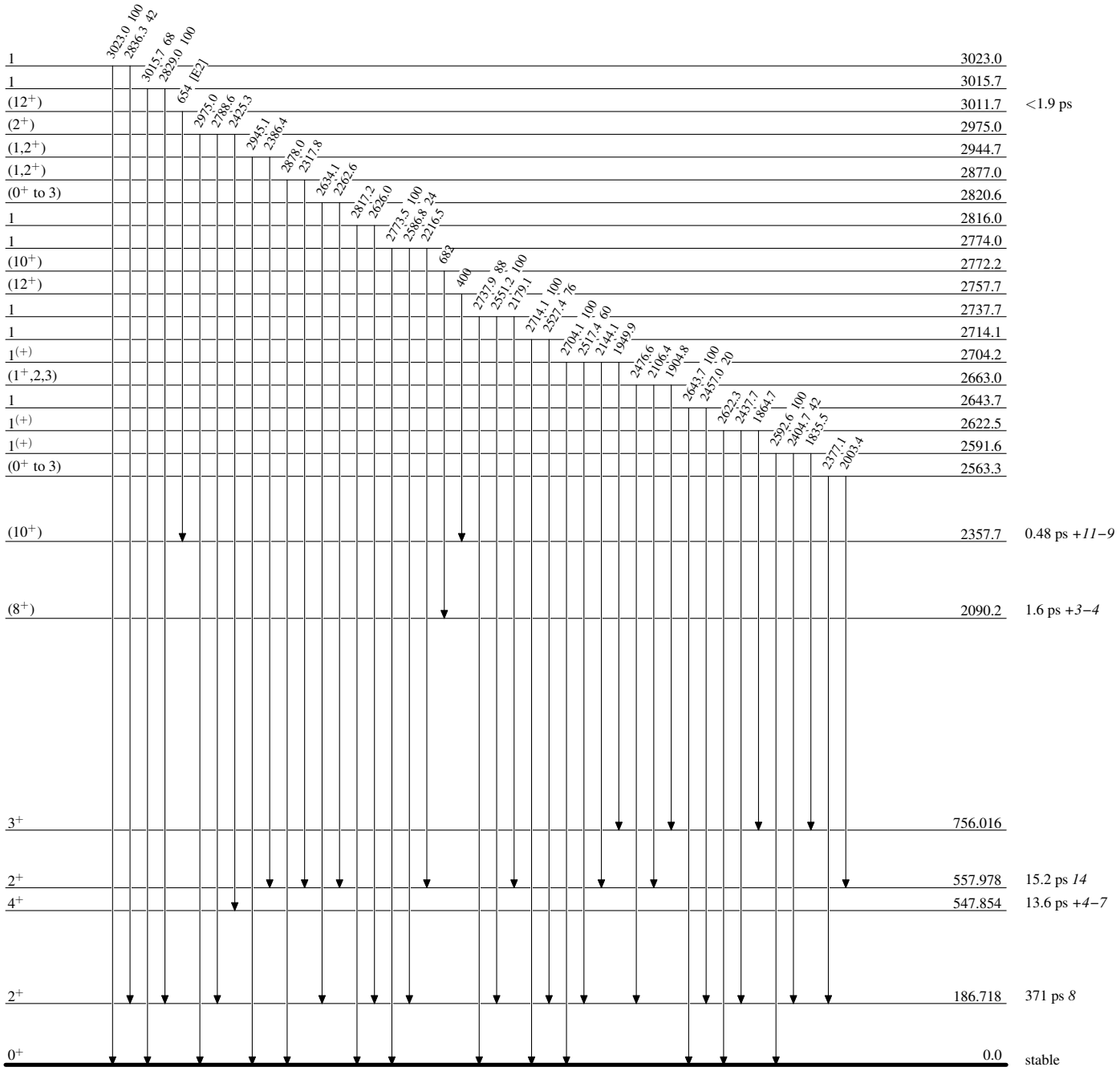


$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{190}_{76}Os_{114}$

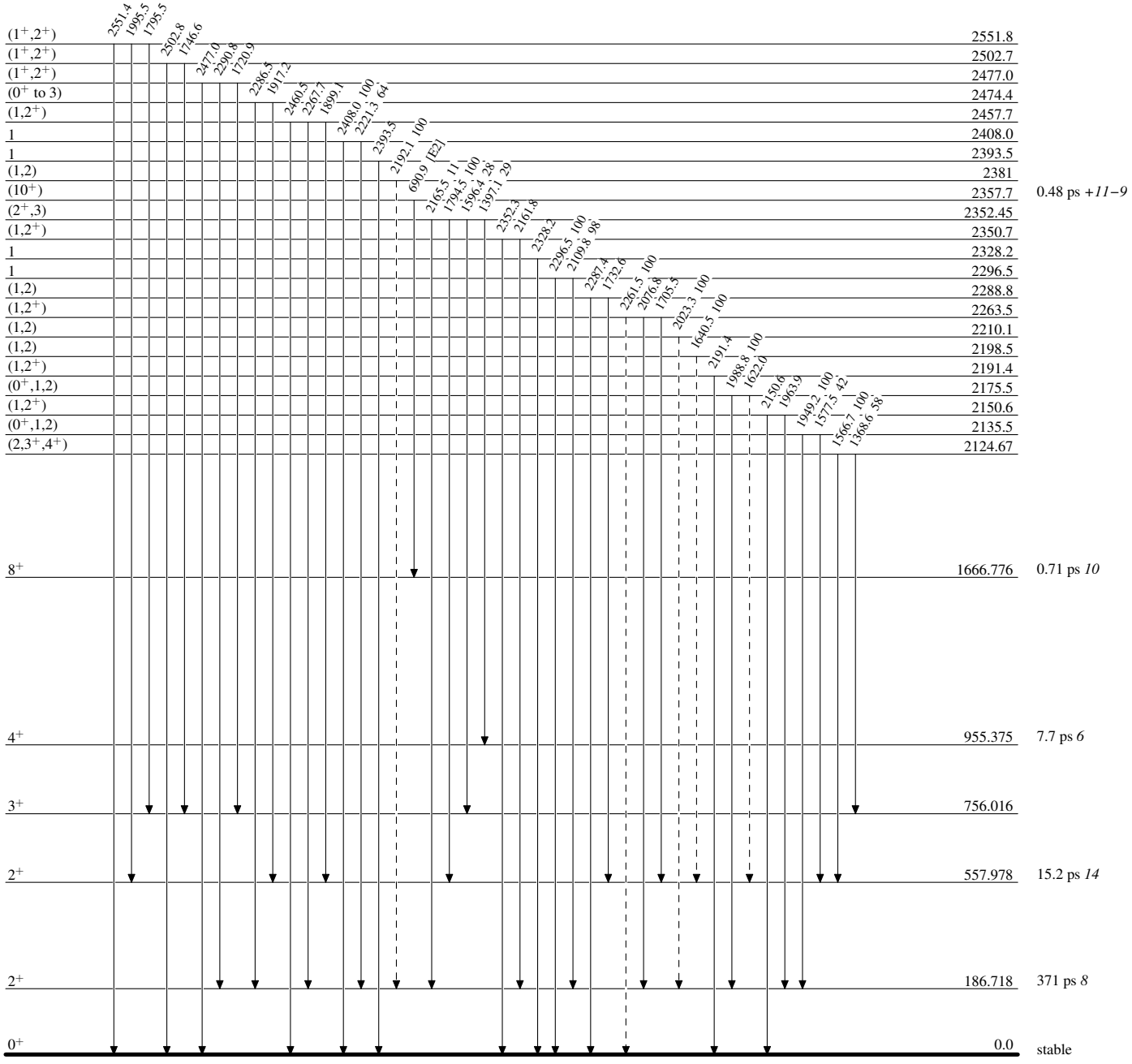
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

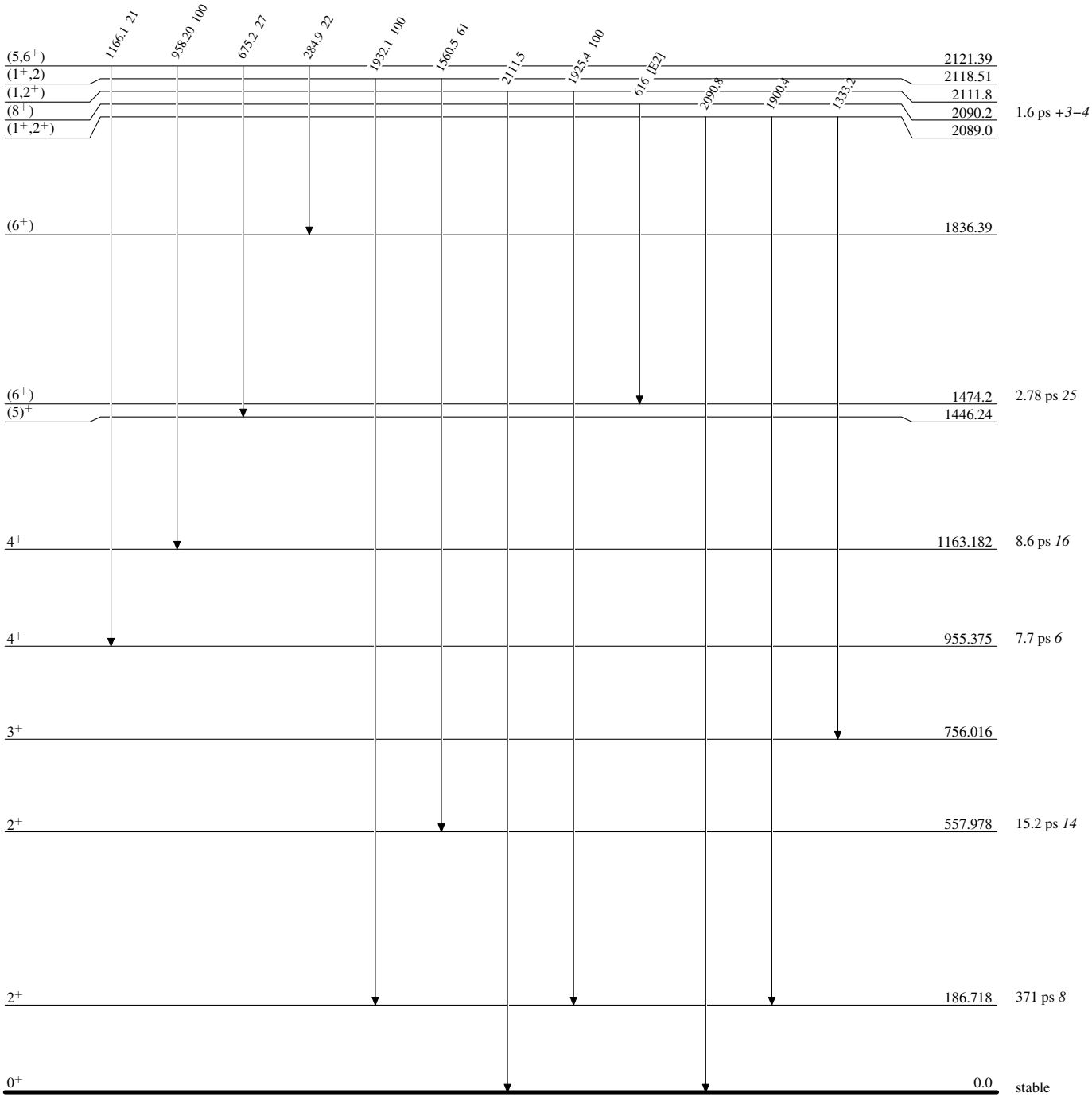


$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{190}_{76}Os_{114}$

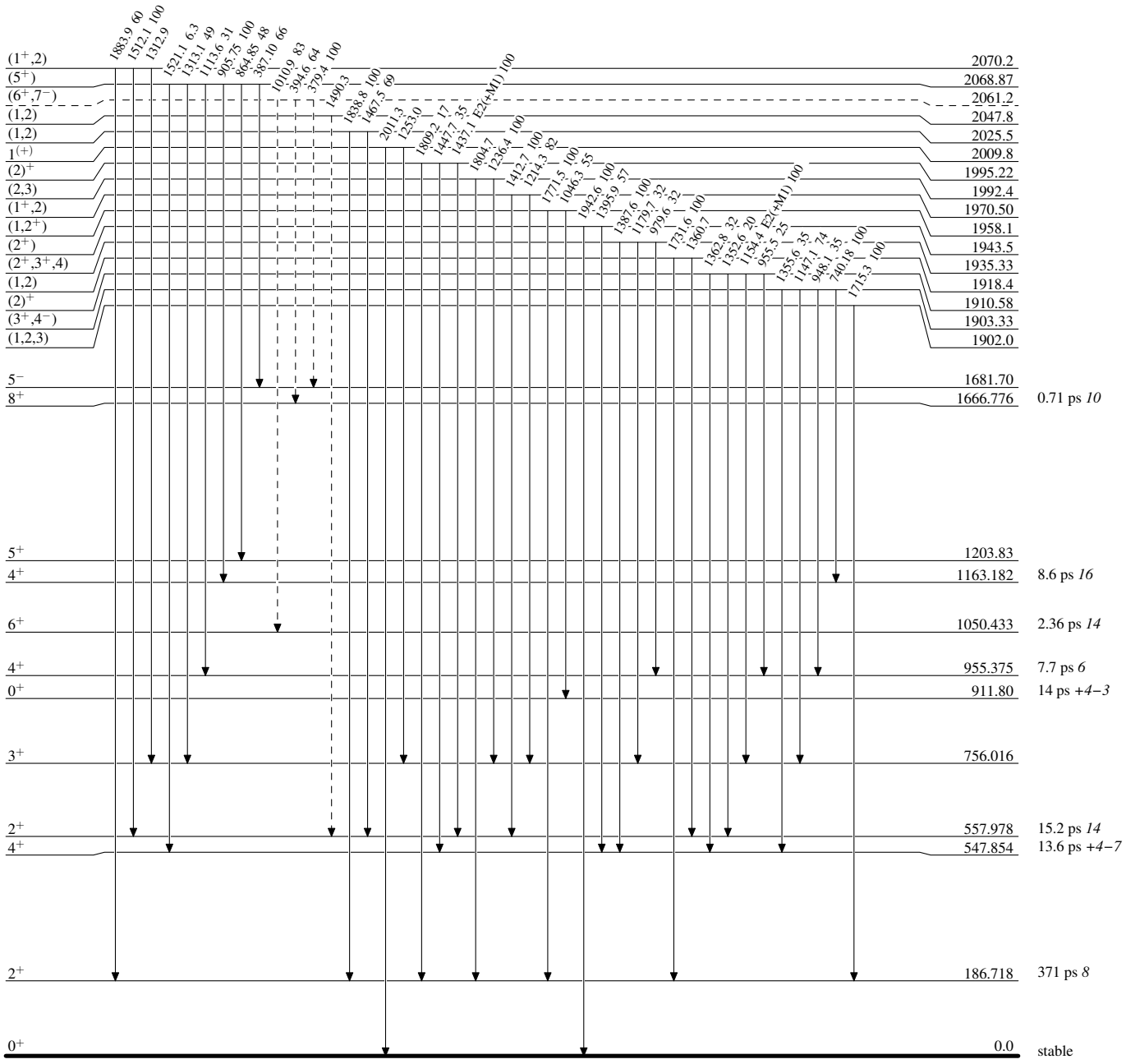
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



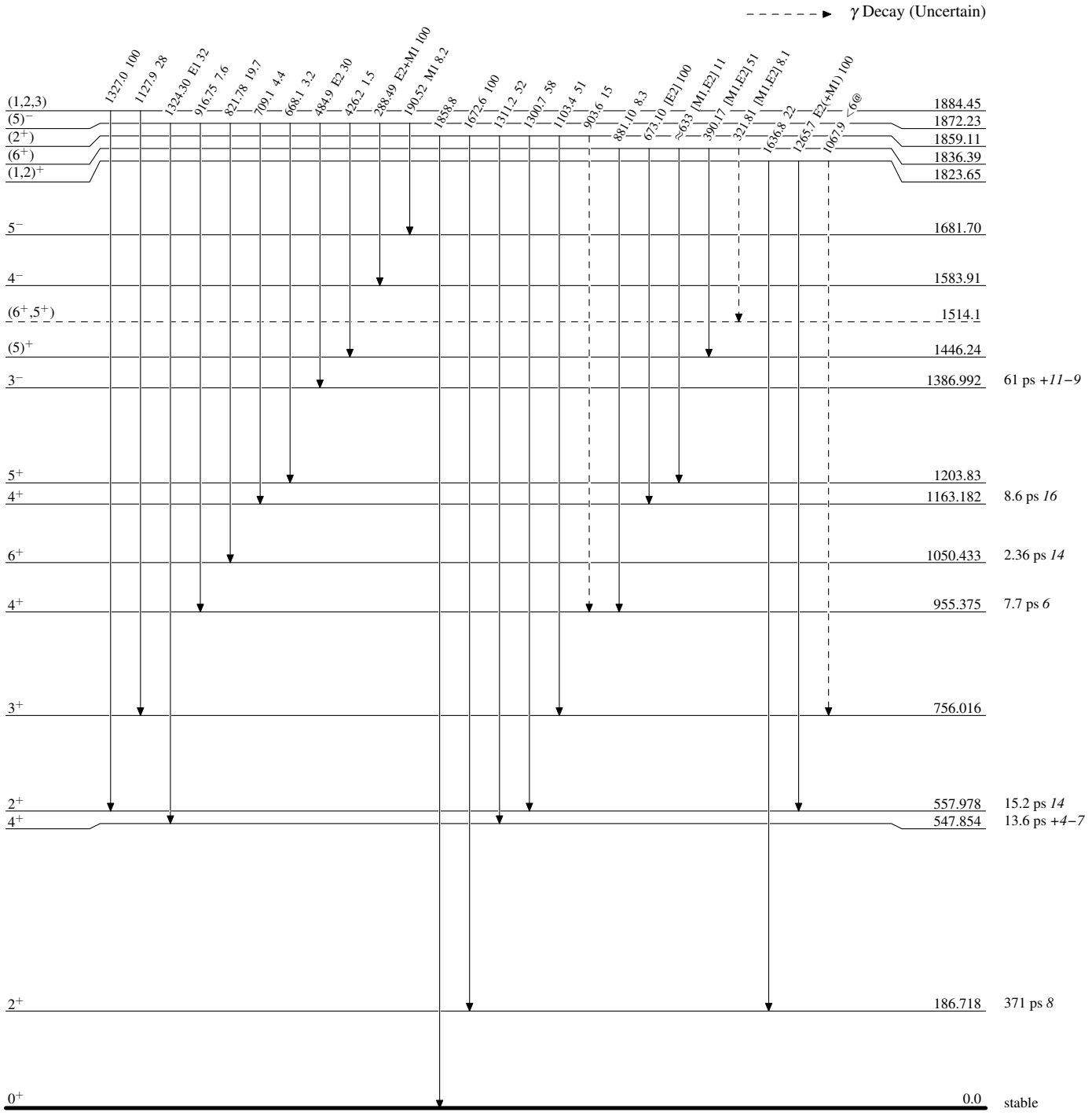
$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Level Scheme (continued)

Legend

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



$^{190}_{76}Os_{114}$

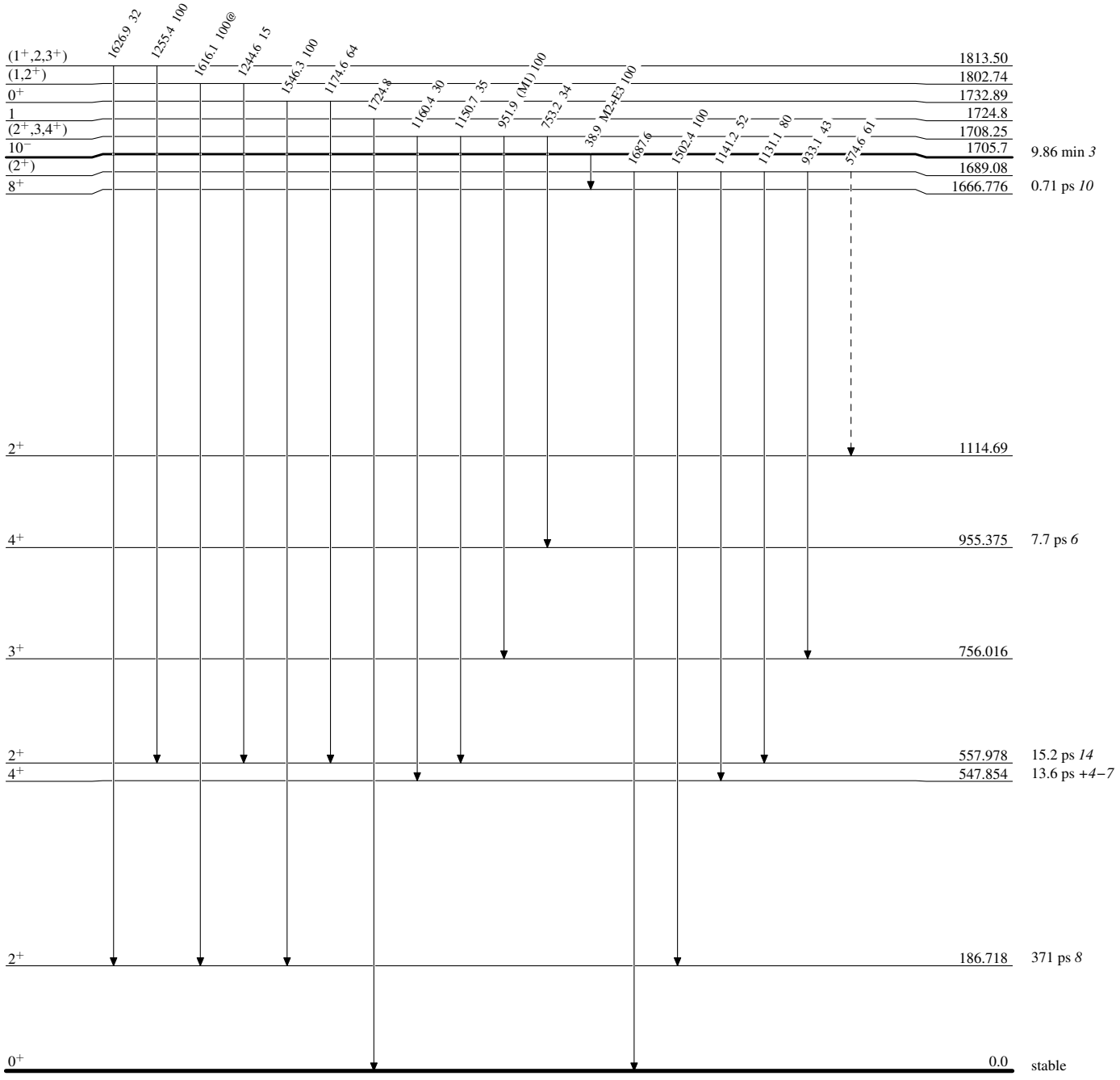
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

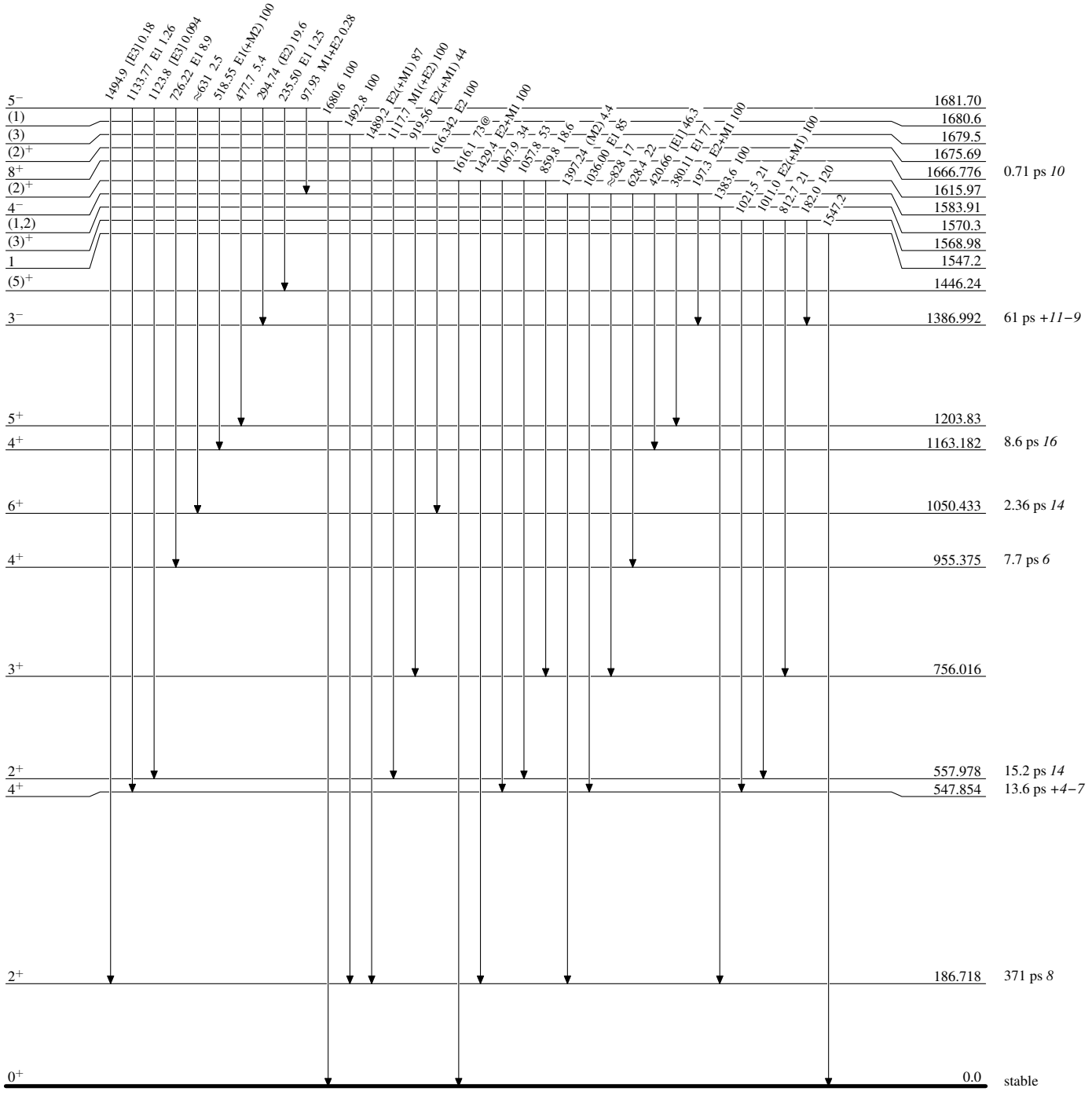


$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Level Scheme (continued)

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



$^{190}_{76}Os_{114}$

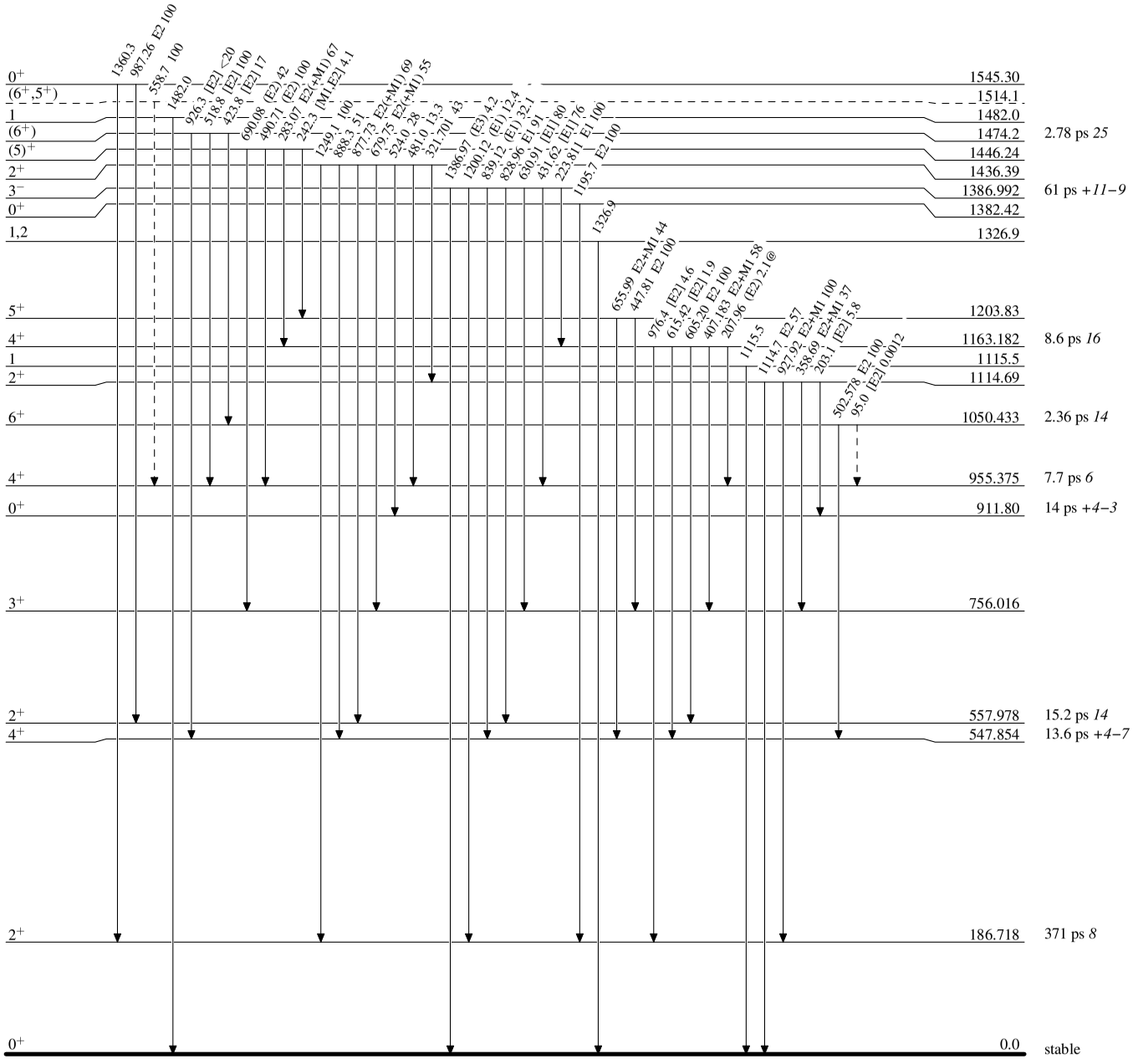
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)

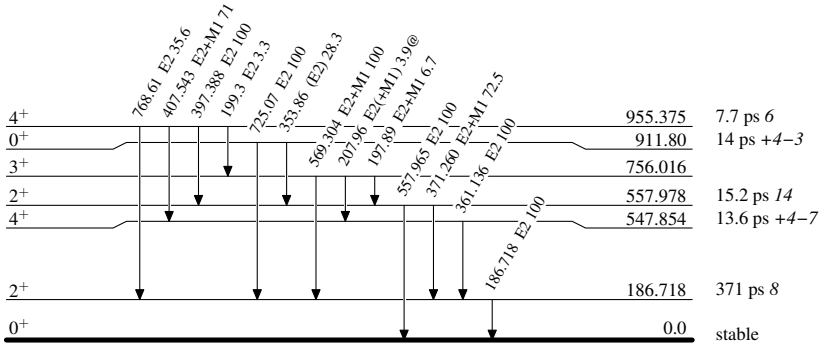


$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

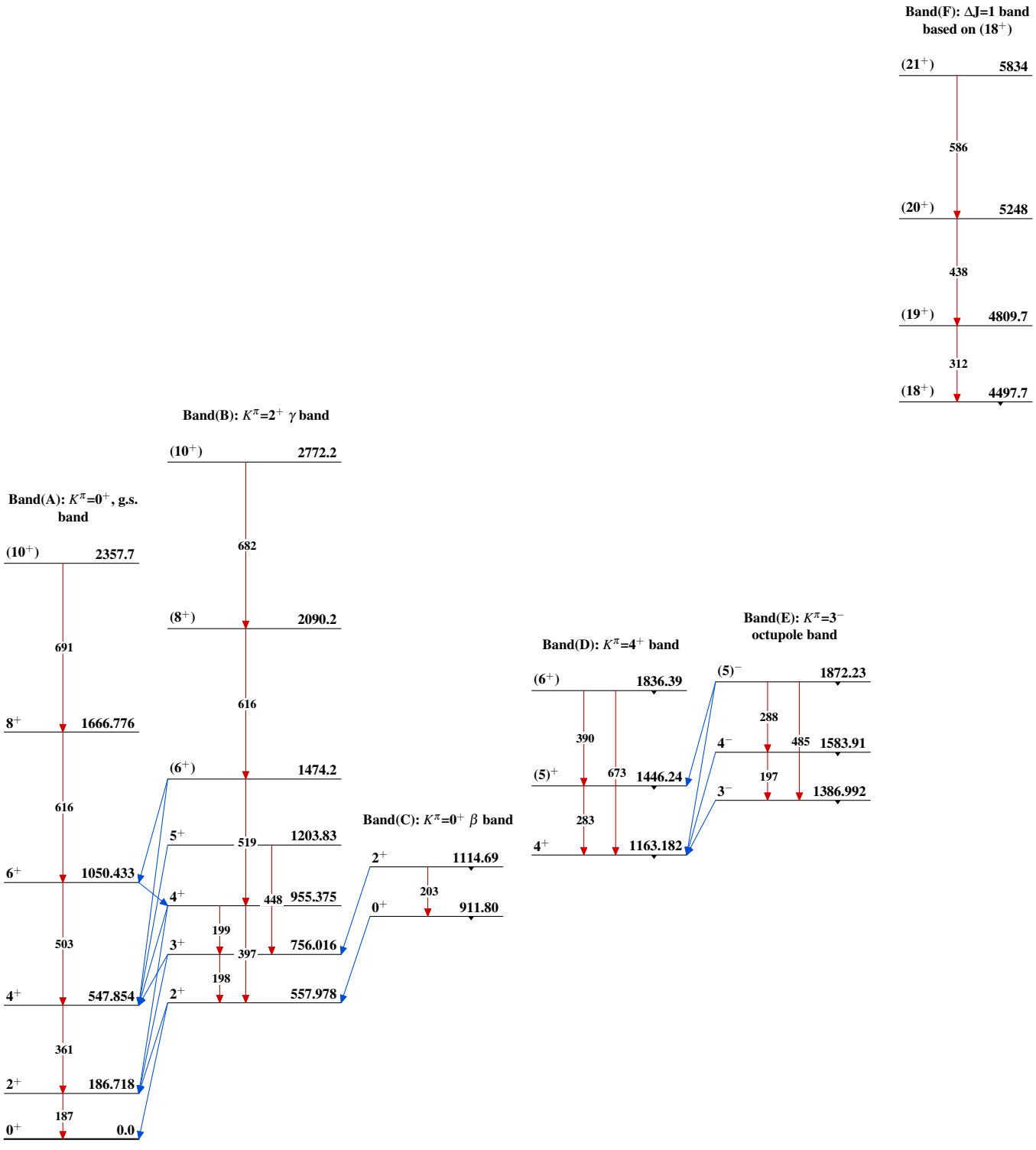
Level Scheme (continued)

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



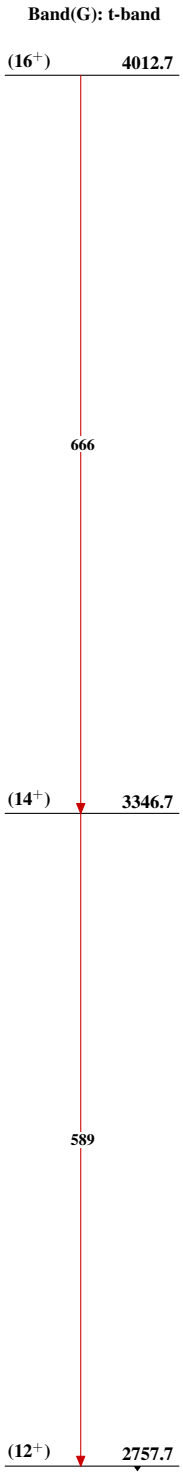
$^{190}_{76}Os_{114}$

Adopted Levels, Gammas



$^{190}_{76}Os_{114}$

Adopted Levels, Gammas (continued)



$^{190}_{76}Os_{114}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113,1871 (2012)	15-Jun-2012

Q(β^-)=−1046.3 *24*; S(n)=7558.4 *23*; S(p)=8821 *10*; Q(α)=361 *4* 2012Wa38
Note: Current evaluation has used the following Q record −1046.3 24 *7558.4 22* 8821 10 *361* 4 2003Au03,2011AuZZ.
Q(β), S(n), Q(α) from 2011AuZZ (Q(β)=−1047.3 *23*, S(n)=7558.1 *21*, Q(α)=362 *4*, respectively, in 2003Au03).
For isotopes and/or isotope shift data, see, e.g., 1974Ba77, 1981Ho22, 1985Au04, 2006Av09.
Theory (partial list only):
2011Ra05 (level energies, B(E2) and staggering calculated for g.s., β and γ bands).
Interacting-boson-model calculation of collective structural evolution: 2011No15.

^{192}Os Levels

Band(Be) K=2 quasi-γ band (1993Os05,1996Wu07).
Band(Cf) K=4 band (1993Os05).

Cross Reference (XREF) Flags

A	^{192}Re β^- decay	H	^{192}Os(p,p′γ), (d,d′γ)	O	^{192}Os(γ,xn)
B	^{192}Os IT decay (5.9 s)	I	^{192}Os(n,n′γ)	P	Muonic atom
C	^{192}Ir ε decay (73.829 d)	J	^{192}Os(d,d′)	Q	^{192}Os(^{12}C,^{12}C′)
D	^{190}Os(t,p)	K	^{192}Os(α,α′)	R	^{192}Os(n,n′)
E	^{191}Os(n,γ) E=thermal	L	Coulomb excitation	S	^{198}Pt(^{136}Xe,Xγ)
F	^{192}Os(e,e′)	M	^{193}Ir(d,^{3}He)	T	^{192}Os(γ,γ′)
G	^{192}Os(p,p′), (pol p,p′)	N	^{193}Ir(t,α), (pol t,α)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
0.0[a]	0$^+$[b]	stable	ABCDEFGHIJKLMNOPQRST	T$_{1/2}$(2β^-)>9.8×10^{12} y (specific activity measurements, 1952Fr23, as reassessed by 1995Tr07 assuming Q(2β^-)=413 *3*). <r^2>$^{1/2}$(charge)=5.4127 *11* (2004An14).
205.79442[a] *9*	2$^+$[b]	288 ps *4*	ABCDEFGHIJKLMN PQRST	μ=+0.792 *20*; Q=−0.96 *3* μ: IMPAC (1989Ra17; from 1985St05, 1973BaUA, 1972Si43, 1971Ki13, if T$_{1/2}$=289 ps *7*). See 1987St14, 1992St06, 2011StZZ for further evaluation/compilation of μ data. Q: Hyperfine structure of muonic x rays (1989Ra17 from 1981Ho22). Other values: −0.80 *18* and −0.86 *20* (Coulomb excitation reorientation; 1989Ra17, from 1983Ch35 and 1988Li22, respectively). β_2(nuclear)=0.14, β_2(Coulomb)=0.164 from (α,α′). J$^\pi$: E2 206γ to 0$^+$ g.s. T$_{1/2}$: other value: 300 ps *20* (Xγ(t) in ^{192}Ir ε decay (73.829 d), 1973Ch26).
489.0601 *6*	2$^+$[c]	32.6 ps *+9−10*	ABCDEFGHIJKLMN PQR T	μ=+0.58 *4*; Q=−0.8 *3* μ: Transient field IPAC (1989Ra17, from 1985St05 and 1983Bo13); value relative to +0.792 *20* for ^{192}Os(205.8 level). Q: Coulomb excitation reorientation (1989Ra17, from 1980Ba42); value relative to −1.46 *4* for ^{188}Os(155 level). J$^\pi$: E2 489γ to 0$^+$ g.s.
580.2800[a] *8*	4$^+$[b]	14.7 ps *4*	BCDEFGHIJKL N RS	μ=+1.56 *12*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{192}Os Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
				B(E4)↑=0.043 *6* μ: transient field IPAC (1989Ra17, from 1985St05 and 1983Bo13); value relative to +0.792 *20* for ^{192}Os(205.8 level). B(E4): weighted average of 0.037 *4* and 0.048 *4* from (e,e′). β_4(nuclear)=−0.026 from (α,α′); E4 matrix element is −1960 e×fm^4 *110* from (pol p,p′). Jπ: E4 excitation in (e,e′); E2 374γ to 2$^+$ 206.
690.3705 *4*	3$^+$[c]		BC E HI L N P	Jπ: M1+E2 110γ to 4$^+$ 580; M1+E2 485γ to 2$^+$ 206.
909.592 *7*	4$^+$[c]	9.8 ps *4*	BC E GHIJKLMN	μ=+1.72 *36* μ: Transient field IPAC (1989Ra17, from 1985St05); value relative to +0.792 *20* for ^{192}Os(205.8 level). β_4(nuclear)=+0.005 from (α,α′); E4 matrix element is 1160 e×fm^4 *290* from (pol p,p′). Jπ: analyzing powers in ^{193}Ir(t,α), (pol t,α); evidence for 4$^+$ excitation in ^{192}Os(p,p′), (pol p,p′) and ^{192}Os(α,α′).
956.54[d] *3*	0$^+$	10.3 ps *+10−11*	A D IJ L	Jπ: L=0 in ^{190}Os(t,p).
1069.541 *9*	4$^+$	6.5 ps *+11−9*	B E GHIJKLMN	β_4(nuclear)=−0.010 from (α,α′); E4 matrix element is 1080 e×fm^4 *270* from (pol p,p′). Jπ: M1+E2 379γ to 3$^+$ 690; E4 excitation in ^{192}Os(p,p′), (pol p,p′) and ^{192}Os(α,α′).
1089.23[a] *7*	6$^+$[b]	2.47 ps *+8−13*	B HIJ L S	Jπ: E2 509γ to 4$^+$; g.s. band member.
1127.51[d] *6*	(2$^+$)		I L	Jπ: 1128γ to 0$^+$ g.s.; D+Q 639γ to 2$^+$ 489; D 437γ to 3$^+$ 690; band assignment.
1143.519 *15*	5$^+$[c]		B E HI L	Jπ: γ's to 3$^+$ and 4$^+$; band assignment.
1206.29 *20*	0$^+$	35 ps *13*	D I L	Jπ: L=0 in ^{190}Os(t,p).
1341.162 *13*	3$^-$	78 ps *10*	DEFGHIJKL N R	Jπ: E3 excitation in (e,e′) and Coulomb excitation. γ-ray branchings to 2$^+$, 3$^+$, and 4$^+$ levels in ^{192}Os(p,p′γ), (d,d′γ) fit Alaga rule for E1. $T_{1/2}$: from measured B(E3)↑=0.131 *9* from (e,e′) assuming 1341.4γ in (n,n′γ) deexcites this level. Note, however, that $T_{1/2}$=28 ps *4* if B(E3)↑=0.37 *4* (from Coulomb excitation) is assumed.
1362.016 *12*	(5$^+$)		B E I L	Jπ: D+Q ΔJ=1 intraband 292γ to 4$^+$; band assignment.
1409.86 *6*	(2$^+$)		I	Jπ: 1410γ to 0$^+$ g.s.; Q 830γ to 4$^+$ 580; D 719γ to 3$^+$ 690.
1450.31 *5*	(2$^+$)		d I	Jπ: γ to 0$^+$; 870γ to 4$^+$ 580.
1456.6 *3*	(4$^+$)		d I	Jπ: 968γ to 2$^+$ 490; 4$^+$ favored by γ(θ) and/or excit in (n,n′γ).
1465.34 *9*	6$^+$[c]	2.73 ps *+36−21*	B E I L	Jπ: (E2) 556γ to 4$^+$; band assignment.
1560.6? *7*	(4$^-$)		H	Jπ: possible gammas to 5$^+$ and 3$^-$; level systematics in neighboring even-even Os nuclei.
1591.75 *4*	(3)		I	
1612.87 *10*	(2$^+$)		I N	Jπ: 1613γ to 0$^+$ g.s.; γ to 2$^+$; 2$^+$ favored in (n,n′γ).
1645.2 *6*	(6$^+$)[@]		B L	Jπ: gammas to 6$^+$ and (5$^+$); band assignment.
1665.09 *9*	(1$^+$,2$^+$)		D I N	Jπ: 459γ to 0$^+$; 974γ to 3$^+$.
1708.39[a] *13*	8$^+$[b]	0.81 ps *4*	B L S	Jπ: E2 619γ to 6$^+$; g.s. band member.
1712.91 *9*	7$^+$[@]		B	Jπ: 624γ to 6$^+$; 569γ to (5$^+$); (E3) 302γ from (10$^-$) 2015.
1733.79 *12*	(2$^+$)		I	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{192}Os Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
1780.34 *11*	$(2^+,3,4^+)$		D I N	
1807.71 *11*	$2^{(+)}$		I N	Jπ: stretched Q 1227γ to 4^+ 580; D+Q 1602γ to 2^+ 206; D(+Q) 1117γ to 3^+ 690.
1826.51 *6*	1		d I	XREF: d(1833). Jπ: D 1826γ to 0^+ g.s.
1837.40 *11*	$(1,2)^+$		d I	XREF: d(1833). Jπ: D(+Q) 1349γ to 2^+ 489; 1837γ to 0^+ g.s.
1857.97 *8*	$(2,3)^+$		I	
1867.87 *12*	(2^+)		d I	XREF: d(1870). Jπ: D+Q 958γ to 2^+ 489; 958γ to 4^+ 910.
1868.70 *9*	(2,3)		d I	XREF: d(1870). Jπ: D+Q 741γ to (2^+) 1128.
1878.79 *8*	(2^+)		d I N	XREF: d(1870)N(1883).
1894.93 *17*	(3^+)		d I n	XREF: d(1897)n(1903).
1902.68 *9*	$(1,2)^+$		d I n	XREF: d(1897)n(1903).
1921.68 *15*	1,3		I	Jπ: D+Q ΔJ=1 1715γ to 2^+.
1924	0^+		D	Jπ: L=0 in ^{190}Os(t,p).
1936.9 *4*	(2^+)		I	
1940	(4^+)		d F n	B(E4)↑=1.6×10^{-3} *13* XREF: d(1945)n(1945). B(E4): from (e,e′). Jπ: from behavior of form factor at low momentum transfer in ^{192}Os(e,e′).
1940.80 *16*	$(0^+,1,2)$		d I n	XREF: d(1945)n(1945).
1947.77 *8*	(2)		d I n	XREF: d(1945)n(1945). Jπ: D+Q 257γ to 3^+ 690.
1951.54 *7*	$(1,2^+)$		d I n	XREF: d(1945)n(1945).
1960 *20*			M	
1968.01 *20*	(7^+)@		B L	Jπ: 606γ to (5^+) 1362; γ′s to (6^+); γ from (10^-) not M4.
1984.5 *4*	$(1,2^+)$		I	
1996.93 *10*	1		I	
2015.40 *11*	(10^-)	5.9 s *1*	B	%IT>87; %β⁻<13 Identification: excitation functions for neutrons on ^{192}Os and absence of β^- activity (1973Pa21, 1979KaYT); decay to known levels in ^{192}Os (1965Bl12, 1973Pa21, 1979KaYT). %IT: only IT decay observed. %β⁻<13 was deduced from Iβ/Iγ(205.8γ)<0.2 (1973Pa21). 1965Bl12 reported β^- activity with Eβ≈2.5 MeV, but results were never confirmed and are not consistent with Q(β^-). Jπ: (M2) 307γ to 8^+ 1708; level is most likely a 2-quasiparticle state with neutron configuration (9/2[505]+11/2[615]) (analogous to ^{190}Os (9.9 min) which has a similarly-hindered M2 transition to the J=8 member of the g.s. band). $T_{1/2}$: from IT decay (5.9 s) (1979KaYT). Other values: 6.2 s *8* (1965Bl12), 6.1 s *2* (1973Pa21).
2016 *8*			N	
2030 *20*			M	
2043.26 *19*			I	
2047.40 *6*	$(1^+,2)$		I	
2051.83 *11*	(2,3)		I N	Jπ: D+Q 1362γ to 3^+ 690.
2081.17 *12*	$(1,2^+)$		I	
2099.00 *10*	(2^+)		D I N	Jπ: D 1893γ to 2^+ 206.
2127.92 *17*			D I	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{192}Os Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2133.9 *10*	8+[@]	1.34 ps *+16–20*	L	Jπ: (E2) 669γ to 1465 (6+); band assignment.
2147.15 *9*	(0+,1,2)		I	
2173.02 *11*	(1,2+)		I N	
2187.26 *8*	(2+,3)		I	
2208.36 *14*	(≤4)		I N	Jπ: 2003γ to 2+ 206.
2223.48 *9*			I	Jπ: 2018γ to 2+ 206, 1533γ to 3+ 690 so Jπ=(1+,2,3,4+).
2258.18 *20*			I N	Jπ: 1568γ to 3+ 690.
2275.32 *8*	(3,4+)		I N	Jπ: from excit in (n,n′γ); consistent with 1585γ to 3+ 690 and 2069γ to 2+ 206 which limit Jπ to (1+,2,3,4+).
2308.6 *20*	(2+,3,4)		I N	
2337.32 *8*	(1,2)		I N	Jπ: D+Q 2132γ to 2+ 206.
2358.88 *20*			I N	1669γ to 3+ 690.
2391.2[&] *10*	1[&]	104[&] fs *9*	N T	
2418.8[a] *10*	10+[b]	0.45 ps *+11–4*	L S	Jπ: E2 710γ to 1708 *8*+; g.s. band member.
2423 *8*			N	
2466 *8*			N	
2478.3 *7*	1	35 fs *13*	T	
2489 *8*			N	
2508 *8*			N	
2619 *8*			N	
2643 *8*			N	
2694.2[&] *7*	1[&]	31[&] fs *8*	N T	XREF: N(2686).
2748.3[&] *7*	1[&]	57[&] fs *14*	N T	XREF: N(2756).
2788 *8*			N	
2804.9[&] *10*	1[&]	66[&] fs *5*	T	
2814.3[&] *7*	1[&]	22[&] fs *4*	T	
2820.0[&] *10*	1[&]	123[&] fs *13*	T	
2864.5[&] *10*	1[&]	84[&] fs *6*	T	
2887 *8*			N	
2894.2 *15*	10+[@]		L	Jπ: (E2) 760γ to 2134 (8+); band assignment.
2903.5[&] *7*	1[&]	23.2[&] fs *16*	T	
2915.2[&] *7*	1[&]	10.4[&] fs *15*	N T	
2941.3[&] *10*	1[&]	91[&] fs *7*	n T	XREF: n(2947).
2948.0[&] *6*	1[&]	7.8[&] fs *5*	n T	XREF: n(2947).
2965.6[&] *10*	1[&]	95[&] fs *8*	T	
2978 *8*			N	
2986.8 *15*	(12+)		S	Jπ: tentative value suggested in ^{198}Pt(^{136}Xe,Xγ); 568γ to 10+ 2419.
3046.4[&] *6*	1[&]	11.3[&] fs *12*	T	
3088 *10*			N	
3103.8 *15*	(12+)	≥2.1 ps	L	Jπ: (E2) 685γ to 10+ 2419.
3148.9[&] *10*	1[&]	127[&] fs *14*	T	
3196.3[&] *10*	1[&]	62[&] fs *4*	T	
3207.0[&] *10*	1[&]	109[&] fs *13*	T	
3210.8[a] *15*	12+[b]		L	Jπ: 792γ to 2419 *10*+; band assignment.
3217.1[&] *10*	1[&]	69[&] fs *5*	T	
3239.9[&] *7*	1[&]	29[&] fs *5*	T	
3257.6[&] *10*	1[&]	123[&] fs *13*	T	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{192}Os Levels (continued)

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	XREF	Comments
3273.3[&] *10*	1[&]	39.7[&] fs *24*	T	
3281.0[&] *10*	1[&]	72[&] fs *7*	T	
3289.5[&] *7*	1[&]	6.0[&] fs *7*	T	
3428.9[&] *7*	1[&]	28[&] fs *4*	T	
3536.4[&] *7*	1[&]	9.8[&] fs *25*	T	
3667.8 *18*	(14$^+$)		S	J$^\pi$: tentative value suggested in ^{198}Pt(^{136}Xe,Xγ); 681γ feeds (12$^+$) 2987.
3756.8[&] *10*	1[&]	38[&] fs *4*	T	
3836.5[&] *10*	1[&]	29[&] fs *3*	T	
3864.7[&] *10*	1[&]	71[&] fs *14*	T	
3890.5 *10*			T	
4113.8 *20*	(16$^+$)	0.19 μs *10*	S	%IT=100 E(level): assuming that the isomer decays directly by 446γ, but the possibility of a low-energy transition preceding the 446γ cannot be ruled out. J$^\pi$: tentative value suggested in ^{198}Pt(^{136}Xe,Xγ); 446γ feeds (14$^+$) 2987. T$_{1/2}$: (target-like recoil fragments)-γ(t) (2004Va03,2004Re11); 446γ-375γ pair and 681γ-568γ pair used as double γ gates.
12.68×10^3 *6*	1$^-$	2.49 MeV *23*	0	Component of GDR; J^π=1$^-$.
14.35×10^3 *12*	1$^-$	4.41 MeV *13*	0	Component of GDR; J^π=1$^-$.

[†] From least-squares fit to Eγ, omitting the 760.85γ, except where cross references clearly indicate other source.
[‡] Values given without comment are based on excitation-function shapes and $\gamma(\theta)$ for set of π=+ states in ^{192}Os(n,n$'\gamma$) (1983Kl06); authors incorporated (t,α), (t,p), and (d,d$'$) information in finalizing J^π values.
[#] Deduced from measured B(E2) (adopted values, as reported in Coulomb excitation) and adopted γ-ray properties, except where noted.
[@] Continuing J^π pattern established by band structure and coincidence data.
[&] From (γ,γ').
[a] Band(A): K=0 g.s. band (1996Wu07).
[b] Based on smooth progression of level energies and independently established J^π(g.s.) and mult(374γ), definite J^π has been assigned to all members of the g.s. band.
[c] Based on smooth progression of level energies and independently established J^π(489) and mult(201γ), definite J^π has been assigned to all members of the γ band.
[d] Band(B): possible K=0 band (1993Os05).

Adopted Levels, Gammas (continued)

γ(^{192}Os)

E_i(level)	J_i^π	E_γ [†]	I_γ [#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[h]	Comments
205.79442	2+	205.79430[c] *9*	100[c]	0.0	0+	E2		0.302	B(E2)(W.u.)=62.1 *7* B(E2)(W.u.): from measured B(E2)=2.043 *22*.
489.0601	2+	283.2668[c] *8*	60.7[c] *6*	205.79442	2+	M1+E2	−3.8 *7*	0.121 *6*	B(M1)(W.u.)=6.9×10^{-4} *24*; B(E2)(W.u.)=46.0 *+26−12* I_γ: from ε decay; consistent with 59 *4* from IT decay, 54 *6* from (n,γ) E=thermal and 63 *8* from (n,n′γ) but not with 49 *3* from Coulomb excitation or 94 from muonic atom. B(E2)(W.u.): from measured B(E2) (cf. 48.2 *+22−21* assuming adopted $T_{1/2}$). Other δ: −3.2 *+9−3* from Coulomb excitation.
		489.038[b] *13*	100 *3*	0.0	0+	E2		0.0241	B(E2)(W.u.)=5.62 *+21−12* E_γ: weighted average of 489.032 *15* from (n,n′γ), 489.04 *4* from (n,γ) E=thermal) and 489.06 *3* from ε decay. B(E2)(W.u.): from measured B(E2). I_γ: from ^{192}Ir ε decay (73.829 d).
580.2800	4+	374.4852[c] *8*	100[c]	205.79442	2+	E2		0.0484	B(E2)(W.u.)=75.6 *20* B(E2)(W.u.): from measured B(E2).
690.3705	3+	110.33[c] *17*	0.40[c] *2*	580.2800	4+	M1+E2	0.52 *+22−24*	3.96 *20*	
		201.3112[c] *7*	14.74[c] *16*	489.0601	2+	M1+E2	−2.7 *3*	0.379 *14*	Other Iγ: 15.2 *9* from IT decay, 15.3 *22* from (n,n′γ), 17.2 *17* from (n,γ) E=thermal.
		484.5751[c] *4*	100.0[c] *3*	205.79442	2+	M1+E2	−5.9 *2*	0.0259	
909.592	4+	219.24[a] *6*	3.3 *8*	690.3705	3+	[M1,E2]		0.43 *19*	I_γ: weighted average of 3.2 *16* from (n,γ) and 3.3 *9* (n,n′γ).
		329.310[a] *9*	28.6 *17*	580.2800	4+	M1+E2	−1.51 *+13−22*	0.110 *8*	B(M1)(W.u.)=0.0037 *6*; B(E2)(W.u.)=30.9 *+36−18* Other Eγ: 329.09 *15* from ε decay. I_γ: unweighted average of 25.2 *8* from ε decay, 32 *3* from (n,γ) E=thermal, 31 *4* from (n,n′γ), 26 *6* from IT decay (5.9 s). Other Iγ: 13.9 *16* from Coulomb excitation. Mult.: D+Q from γγ(θ) in ε decay; not E1+M2 from RUL. δ: from Coulomb excitation. B(E2)(W.u.): from measured B(E2) in Coulomb excitation.
		420.530[a] *10*	100[e] *5*	489.0601	2+	E2		0.0354	B(E2)(W.u.)=45.2 *+14−18* Mult.: from γ(θ) in (n,n′γ) and RUL. B(E2)(W.u.): from measured B(E2) in Coulomb excitation.
		703.94 *12*	7.7 *7*	205.79442	2+	E2		0.01031	B(E2)(W.u.)=0.29 *3* E_γ: weighted average of 703.78 *19* from ε decay, 704.03 *14* from (n,n′γ), 703.96 *10* from IT decay (5.9 s). I_γ: unweighted average of 7.7 *10* from ε decay, 8.3 *10*

$^{192}_{76}Os_{116}$-6

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	δ[‡]	α[h]	Comments
									from Coulomb excitation, 9 *3* from IT decay (59 s) and 5.7 *7* from (n,n′γ) (the weighted average is 6.9 *7*). Mult.: from γ(θ) in (n,n′γ) and RUL. B(E2)(W.u.): from measured B(E2); 0.26 *3* based on adopted $T_{1/2}$.
956.54	0+	467.47 *3*	100 *9*	489.0601	2+	[E2]		0.0270	B(E2)(W.u.)=30.4 *+30−23* B(E2)(W.u.): from measured B(E2) in Coulomb excitation.
		750.96 *15*	20 *3*	205.79442	2+	[E2]		0.00896	B(E2)(W.u.)=0.57 *12*
1069.541	4+	(159.9[d])	0.36 *6*	909.592	4+	[E2]		0.724	B(E2)(W.u.)=24 *+6−7* B(E2)(W.u.): if this ΔJ=0 transition is purely E2. I_γ: from Coulomb excitation.
		379.154[a] *10*	69[@] *11*	690.3705	3+	M1+E2	+3.3 *+15−12*	0.054 *10*	B(M1)(W.u.)=0.0019 *17*; B(E2)(W.u.)=56 *+14−15* δ: +0.15 *+4−6* or +3.3 *+15−12* from γ(θ) in (n,n′γ) (1983Kl06); the first option is inconsistent with measured B(E2) from Coulomb excitation. Mult.: D+Q from γ(θ) in (n,n′γ); not E1+M2 from RUL. B(E2)(W.u.) from adopted transition properties; B(E2)(W.u.)=58 *+8−16* from measured B(E2) in Coulomb excitation.
		580.43 *7*	100[@]	489.0601	2+	(E2)		0.01593	B(E2)(W.u.)=10.6 *+18−21* E_γ: weighted average of 580.39 *10* from (n,γ) E=thermal, 580.46 *13* from IT decay (5.9 s) and 580.48 *13* from (n,n′γ). Mult.: from γ(θ) in (n,n′γ) and RUL.
		863.7[d]	15 *14*	205.79442	2+	[E2]			B(E2)(W.u.)=0.22 *+21−10* I_γ: 15 *+14−7* from Coulomb excitation.
1089.23	6+	508.97 *7*	100	580.2800	4+	E2		0.0218	B(E2)(W.u.)=100 *+5−3* B(E2)(W.u.): from measured B(E2). Mult.: from Coulomb excitation.
1127.51	(2+)	437.13 *9*	100 *9*	690.3705	3+	(M1+E2)			B(E2)(W.u.)=1.10 *10* B(E2)(W.u.): from measured B(E2). Mult.: D+Q from γ(θ) in (n,n′γ); Δπ=(no) from level scheme.
		638.50 *14*	89 *6*	489.0601	2+	(M1+E2)			B(E2)(W.u.)=0.41 *4* B(E2)(W.u.): from measured B(E2). Mult.: D+Q from γ(θ) in (n,n′γ); Δπ=(no) from level scheme.
		921.5 *3*	51 *6*	205.79442	2+				
		1127.6 *3*	13.1 *10*	0.0	0+	[E2]			
1143.519	5+	233.92[&] *7*	3.3 *7*	909.592	4+	[M1,E2]		0.35 *16*	I_γ: from IT decay (5.9 s). Other Iγ: 6 *3* from (n,γ) E=thermal.

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	α[h]	Comments
1143.519	5^+	453.10[&] *3*	100 *6*	690.3705	3^+	[E2]	0.0292	I_γ: from IT decay (5.9 s).
		563.27[f] *7*	19.0 *26*	580.2800	4^+	[M1,E2]	0.033 *16*	I_γ: unweighted average of 16.4 *11* from IT decay (5.9 s) and 21.6 *25* from (n,n′γ).
1206.29	0^+	1000.1 *4*	100	205.79442	2^+	[E2]		B(E2)(W.u.)=0.24 *9* B(E2)(W.u.): from measured B(E2).
1341.162	3^-	271.584 *13*	98 *10*	1069.541	4^+	(E1+M2)		E_γ: weighted average of 271.584 *13* from (n,n′γ) and 271.60 *10* from (n,γ) E=thermal. Other Iγ: 58 *4* and 47 *8* from (p,p′γ), (d,d′γ). Mult.: D+Q from γ(θ) in (n,n′γ); Δπ=yes from level scheme.
		431.4 *4*	34 *3*	909.592	4^+	[E1]		B(E1)(W.u.)=4.0×10^{-6} *7*
		650.81 *15*	12.8 *11*	690.3705	3^+	[E1]		B(E1)(W.u.)=4.4×10^{-7} *7* Other Iγ: 26 *4* from (p,p′γ), (d,d′γ).
		852.19 *2*	100 *5*	489.0601	2^+	(E1)		B(E1)(W.u.)=1.53×10^{-6} *22* E_γ: fits placement poorly. Mult.: D from γ(θ) in (n,n′γ); Δπ=yes from level scheme.
		1135.5 *3*	28.2 *15*	205.79442	2^+	(E1)		B(E1)(W.u.)=1.8×10^{-7} *3* Other Iγ: 26 *4* from (p,p′γ), (d,d′γ). Mult.: D from γ(θ) in (n,n′γ); Δπ=yes from level scheme.
		1341.4[i] *3*	2.6 *5*	0.0	0^+	(E3)	0.00582	B(E3)(W.u.)=8.6 *6* E_γ: γ expected based on direct excitation of parent level in (e,e′) and Coulomb excitation. Eγ=1341.4 *3* in (n,n′γ) presumed to be this transition. Mult.: E3 excitation of 1351 level in (e,e′) and 1341 level in Coulomb excitation. B(E3)(W.u.): from measured B(E3)↑=0.131 *9* (1988Bo08) from (e,e′). Other B(E3)↑: 0.37 *4* from Coulomb excitation (implying B(E3)(W.u.)=24.1 *26*).
1362.016	(5^+)	218.488[a] *14*	9.0 *23*	1143.519	5^+	[M1,E2]	0.43 *19*	Other Iγ: 7.1 from IT decay (5.9 s), 10 *4* from (n,γ) E=thermal.
		292.478[a] *8*	60 *10*	1069.541	4^+	(M1+E2)	0.19 *9*	Other Iγ: 111 *9* in ^{192}Ir ε decay (73.829 d). Mult.: D+Q from γ(θ) in (n,n′γ) for intraband γ.
		452.2 *10*	100 *17*	909.592	4^+	[M1,E2]	0.06 *3*	E_γ: from IT decay (5.9 s). Other Eγ: 452.42 *12* from (n,γ) E=thermal. Other Iγ: 100 *57* from IT decay (5.9 s).
		671.54[f] *16*	15.4 *21*	690.3705	3^+	[E2]	0.01144	Other Iγ: 33 *9* from IT decay (5.9 s).
1409.86	(2^+)	719.25 *17*	55 *4*	690.3705	3^+	D		Mult.: from γ(θ) in (n,n′γ).
		829.63 *8*	34 *3*	580.2800	4^+	Q		Mult.: from γ(θ) in (n,n′γ).
		920.9 *3*	14 *8*	489.0601	2^+			
		1204.3 *2*	100 *8*	205.79442	2^+			
		1409.5 *2*	19 *3*	0.0	0^+			
1450.31	(2^+)	540.63 *7*	75 *7*	909.592	4^+			
		760.85 *10*	31 *4*	690.3705	3^+			E_γ: fits placement poorly; γ omitted from least-squares fit.
		870.10 *8*	100 *5*	580.2800	4^+			

$^{192}_{76}Os_{116}$-8

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	α[h]	Comments
1450.31	(2$^+$)	1244.8 *3*	98 *8*	205.79442	2$^+$			
		1450.40 *16*	32 *5*	0.0	0$^+$			
1456.6	(4$^+$)	967.5 *3*	100	489.0601	2$^+$			
1465.34	6$^+$	376.1[di]	7.1 *15*	1089.23	6$^+$	[E2]	0.0478	B(E2)(W.u.)=26.0 *+55−21* I_γ: 7.1 *+15−6* from Coulomb excitation. B(E2)(W.u.): from measured B(E2).
		555.75 *9*	100 *12*	909.592	4$^+$	(E2)	0.01765	B(E2)(W.u.)=52 *+3−6* E_γ: unweighted average of 555.75 *16* from ^{192}Os IT decay, 555.59 *10* from (n,γ) and 555.90 *10* from (n,n′γ). I_γ: 100 *+6−12* from Coulomb excitation. Mult.: from γ(θ) in (n,n′γ) and RUL. B(E2)(W.u.): from measured B(E2).
		884.8[d]	≤11	580.2800	4$^+$			I_γ: 1 *+10−1* from Coulomb excitation.
1560.6?	(4$^-$)	219.6[i]		1341.162	3$^-$			
		417[i]		1143.519	5$^+$			E_γ: possibly the unplaced 416.85 *13* transition seen in (n,n′γ).
1591.75	(3)	250.59 *3*	100 *15*	1341.162	3$^-$			
		901.31 *15*	65 *4*	690.3705	3$^+$			
		1011.1 *4*	13.2 *17*	580.2800	4$^+$			
		1102.7 *3*	51 *4*	489.0601	2$^+$			
1612.87	(2$^+$)	1124.1 *3*	100 *5*	489.0601	2$^+$			
		1406.92 *12*	50 *4*	205.79442	2$^+$			
		1613.0 *2*	13.4 *22*	0.0	0$^+$			
1645.2	(6$^+$)	283.2[d]		1362.016	(5$^+$)			
		575.5[&]		1069.541	4$^+$	[E2]	0.01625	
		735.6[di]		909.592	4$^+$			
1665.09	(1$^+$,2$^+$)	458.7 *2*	16 *5*	1206.29	0$^+$			
		708.2 *3*	10 *3*	956.54	0$^+$			
		974.1 *5*	19 *4*	690.3705	3$^+$			
		1176.4 *3*	100 *10*	489.0601	2$^+$			
		1459.33 *10*	82 *6*	205.79442	2$^+$	D		Mult.: from γ(θ) in (n,n′γ).
1708.39	8$^+$	619.3[&] *3*	100[&]	1089.23	6$^+$	E2	0.01372	B(E2)(W.u.)=115 *6* Mult.: from Coulomb excitation.
1712.91	7$^+$	247.5[&]	0.75[&]	1465.34	6$^+$	[M1,E2]	0.30 *14*	
		569.36[&] *9*	100[&] *9*	1143.519	5$^+$	[E2]	0.01667	
		624.0[&] *4*	1.9[&] *4*	1089.23	6$^+$	[M1,E2]	0.025 *12*	
1733.79	(2$^+$)	824.23 *16*	15 *3*	909.592	4$^+$			
		1043.7 *4*	100 *7*	690.3705	3$^+$			
		1153.8 *5*	19 *4*	580.2800	4$^+$			
		1527.84 *18*	32 *5*	205.79442	2$^+$			

$^{192}_{76}Os_{116}$-9

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	α[h]	Comments
1780.34	(2$^+$,3,4$^+$)	370.46 *18*	100 *41*	1409.86	(2$^+$)			
		1089.9 *4*	19 *3*	690.3705	3$^+$	D(+Q)		Mult.: from γ(θ) in (n,n′γ).
		1200.1 *2*	16 *6*	580.2800	4$^+$			
		1291.4 *2*	48 *4*	489.0601	2$^+$			
		1574.3 *3*	11 *3*	205.79442	2$^+$			
1807.71	2$^{(+)}$	1117.2 *3*	45 *4*	690.3705	3$^+$	D(+Q)		Mult.: from γ(θ) in (n,n′γ).
		1227.4 *2*	26.5 *25*	580.2800	4$^+$	Q		Mult.: from γ(θ) in (n,n′γ).
		1318.70 *16*	100 *6*	489.0601	2$^+$			
		1601.9 *3*	14.1 *18*	205.79442	2$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
1826.51	1	1337.77 *16*	28 *4*	489.0601	2$^+$	D		
		1620.95 *12*	55 *6*	205.79442	2$^+$	D		Mult.: from γ(θ) in (n,n′γ).
		1826.36 *7*	100 *6*	0.0	0$^+$	D		Mult.: from γ(θ) in (n,n′γ).
1837.40	(1,2)$^+$	1146.7 *5*	33 *7*	690.3705	3$^+$			
		1348.59 *17*	100 *11*	489.0601	2$^+$	D(+Q)		Mult.: from γ(θ) in (n,n′γ).
		1837.22 *15*	66 *9*	0.0	0$^+$			
1857.97	(2,3)$^+$	788.42 *8*	100 *6*	1069.541	4$^+$			
		948.2 *3*	24 *3*	909.592	4$^+$			
		1167.9 *3*	27 *3*	690.3705	3$^+$			
1867.87	(2$^+$)	958.3 *4*	22 *5*	909.592	4$^+$			
		1378.80 *12*	100 *8*	489.0601	2$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
1868.70	(2,3)	741.04 *12*	100 *7*	1127.51	(2$^+$)	D+Q		Mult.: from γ(θ) in (n,n′γ).
		1663.05 *12*	41 *4*	205.79442	2$^+$			
1878.79	(2$^+$)	809.28 *10*	21 *3*	1069.541	4$^+$			
		1389.68 *11*	100 *6*	489.0601	2$^+$			
1894.93	(3$^+$)	986.0 *4*	84 *5*	909.592	4$^+$	D		Mult.: from γ(θ) in (n,n′γ).
		1314.51 *18*	100 *11*	580.2800	4$^+$			
1902.68	(1,2)$^+$	1413.75 *15*	100 *9*	489.0601	2$^+$			
		1697.46 *16*	93 *16*	205.79442	2$^+$			E_γ: fits placement poorly.
		1902.02 *15*	69 *9*	0.0	0$^+$			E_γ: fits placement poorly.
1921.68	1,3	1432.5 *3*	56 *10*	489.0601	2$^+$			
		1715.92 *17*	100 *12*	205.79442	2$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
1936.9	(2$^+$)	980.4 *4*	100	956.54	0$^+$			
1940.80	(0$^+$,1,2)	1735.00 *16*	100	205.79442	2$^+$			
1947.77	(2)	334.6 *3*	33 *10*	1612.87	(2$^+$)			
		820.32 *17*	8.7 *20*	1127.51	(2$^+$)			
		1257.3 *2*	38 *3*	690.3705	3$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
		1742.00 *10*	100 *7*	205.79442	2$^+$			
1951.54	(1,2$^+$)	1746.08 *15*	66 *9*	205.79442	2$^+$			
		1951.43 *8*	100 *21*	0.0	0$^+$			
1968.01	(7$^+$)	322.7[&]	13.3[&]	1645.2	(6$^+$)	[M1,E2]	0.14 *7*	
		502.5[&]	9.3[&]	1465.34	6$^+$	[M1,E2]	0.044 *22*	

$^{192}_{76}Os_{116}$-10

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	α[h]	Comments
1968.01	(7$^+$)	606.0[&] *2*	100[&] *27*	1362.016	(5$^+$)	[E2]	0.01442	
1984.5	(1,2$^+$)	1028.0 *4*	100	956.54	0$^+$			
1996.93	1	1040.5 *4*	30 *3*	956.54	0$^+$			
		1996.91 *10*	100 *7*	0.0	0$^+$	D		Mult.: from γ(θ) in (n,n′γ).
2015.40	(10$^-$)	(47.4[&] *2*)	0.0031[&] *6*	1968.01	(7$^+$)	[E3]	7.56×10^3 *22*	B(E3)(W.u.)=0.0026 *6* Mult.: not M4 from RUL.
		302.48[&] *6*	100[&] *6*	1712.91	7$^+$	(E3)[&]	0.426	B(E3)(W.u.)=1.98×10^{-4} *22*
		307.02[&] *9*	13.3[&] *10*	1708.39	8$^+$	(M2)[&]	0.941	B(M2)(W.u.)=3.8×10^{-9} *5*
2043.26		916.0 *2*	100 *11*	1127.51	(2$^+$)			
		1553.2 *4*	44 *6*	489.0601	2$^+$			
2047.40	(1$^+$,2)	1357.4 *2*	21 *4*	690.3705	3$^+$			
		1558.16 *9*	100 *6*	489.0601	2$^+$			
		1841.66 *7*	58 *6*	205.79442	2$^+$			
2051.83	(2,3)	1361.51 *14*	100 *8*	690.3705	3$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
		1562.68 *18*	85 *11*	489.0601	2$^+$			
2081.17	(1,2$^+$)	1875.52 *15*	100 *11*	205.79442	2$^+$			
		2080.91 *19*	69 *5*	0.0	0$^+$			
2099.00	(2$^+$)	1893.20 *10*	100	205.79442	2$^+$	D		Mult.: from γ(θ) in (n,n′γ).
2127.92		1922.12 *17*	100	205.79442	2$^+$			
2133.9	8$^+$	668.6[d]	100	1465.34	6$^+$	(E2)	0.01155	B(E2)(W.u.)=47 *+7−6* Mult.: from Coulomb excitation.
2147.15	(0$^+$,1,2)	1020.2 *4*	66 *6*	1127.51	(2$^+$)			
		1941.32 *9*	100 *6*	205.79442	2$^+$			
2173.02	(1,2$^+$)	1967.26 *13*	100 *9*	205.79442	2$^+$			
		2172.9 *2*	44 *5*	0.0	0$^+$			
2187.26	(2$^+$,3)	1607.00 *9*	100 *15*	580.2800	4$^+$			
		1981.38 *16*	24 *3*	205.79442	2$^+$			
2208.36	(≤4)	2002.55 *14*	100	205.79442	2$^+$			
2223.48		1532.9 *12*	4.4 *22*	690.3705	3$^+$			
		2017.68 *9*	100 *3*	205.79442	2$^+$			
2258.18		1567.8 *2*	100	690.3705	3$^+$			
2275.32	(3,4$^+$)	1584.95 *9*	100 *4*	690.3705	3$^+$			
		2069.48 *14*	57 *7*	205.79442	2$^+$			
2308.6	(2$^+$,3,4)	1399 *2*	100	909.592	4$^+$			
2337.32	(1,2)	2131.51 *8*	100	205.79442	2$^+$	D+Q		Mult.: from γ(θ) in (n,n′γ).
2358.88		1668.5 *2*	100	690.3705	3$^+$			
2391.2	1	2391.2[g]	100[g]	0.0	0$^+$	D		If M1, B(M1)(W.u.)=0.0155 *14*; if E1, B(E1)(W.u.)=0.000143 *13*.
2418.8	10$^+$	710.4[d]	100	1708.39	8$^+$	E2	0.01011	B(E2)(W.u.)=105 *+10−26* Mult.: from Coulomb excitation.
2478.3	1	2272.5[g]	100[g] *24*	205.79442	2$^+$			

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[#]	E_f	J_f^π	Mult.[‡]	α[h]	Comments
2478.3	1	2478.3[g]	56[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.015 *6*; if E1, B(E1)(W.u.)=0.00014 *6*.
2694.2	1	2488.4[g]	100[g] *18*	205.79442	2^+			
		2694.2[g]	66[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.014 *4*; if E1, B(E1)(W.u.)=0.00013 *4*.
2748.3	1	2542.5[g]	75[g] *18*	205.79442	2^+			
		2748.3[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.011 *3*; if E1, B(E1)(W.u.)=0.00010 *3*.
2804.9	1	2804.9[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0151 *12*; if E1, B(E1)(W.u.)=0.000140 *11*.
2814.3	1	2608.5[g]	143[g] *20*	205.79442	2^+			
		2814.3[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.018 *4*; if E1, B(E1)(W.u.)=0.00017 *4*.
2820.0	1	2820.0[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0080 *9*; if E1, B(E1)(W.u.)=7.4×10^{-5} *8*.
2864.5	1	2864.5[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0112 *8*; if E1, B(E1)(W.u.)=0.000103 *8*.
2894.2	10^+	760.3[d]	100	2133.9	8^+	(E2)		Mult.: from Coulomb excitation.
2903.5	1	2414.4[g]	12[g] *3*	489.0601	2^+			
		2903.5[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.035 *3*; if E1, B(E1)(W.u.)=0.000320 *24*.
2915.2	1	2709.4[g]	100[g] *9*	205.79442	2^+			
		2915.2[g]	47[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.027 *5*; if E1, B(E1)(W.u.)=0.00025 *4*.
2941.3	1	2941.3[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0095 *8*; if E1, B(E1)(W.u.)=8.8×10^{-5} *7*.
2948.0	1	2458.9[g]	11.6[g] *25*	489.0601	2^+			
		2742.2[g]	47.0[g] *23*	205.79442	2^+			
		2948.0[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.069 *5*; if E1, B(E1)(W.u.)=0.00064 *5*.
2965.6	1	2965.6[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0089 *8*; if E1, B(E1)(W.u.)=8.2×10^{-5} *7*.
2986.8	(12^+)	568	100	2418.8	10^+			E_γ: from ^{198}Pt(^{136}Xe,Xγ).
3046.4	1	2557.3[g]	26[g] *7*	489.0601	2^+			
		2840.6[g]	79[g] *6*	205.79442	2^+			
		3046.4[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.034 *4*; if E1, B(E1)(W.u.)=0.00031 *4*.
3103.8	(12^+)	685[d]	100	2418.8	10^+	(E2)	0.01094	B(E2)(W.u.)<27 Mult.: from Coulomb excitation.
3148.9	1	3148.9[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0056 *7*; if E1, B(E1)(W.u.)=5.1×10^{-5} *6*.
3196.3	1	3196.3[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0109 *7*; if E1, B(E1)(W.u.)=0.000100 *7*.
3207.0	1	3207.0[g]	100[g]	0.0	0^+			
3210.8	12^+	792[d]	100	2418.8	10^+			
3217.1	1	3217.1[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0096 *7*; if E1, B(E1)(W.u.)=8.8×10^{-5} *7*.
3239.9	1	3034.1[g]	77[g] *11*	205.79442	2^+			
		3239.9[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0126 *24*; if E1, B(E1)(W.u.)=0.000116 *22*.
3257.6	1	3257.6[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0052 *6*; if E1, B(E1)(W.u.)=4.8×10^{-5} *5*.
3273.3	1	3273.3[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0158 *10*; if E1, B(E1)(W.u.)=0.000146 *9*.
3281.0	1	3281.0[g]	100[g]	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0087 *9*; if E1, B(E1)(W.u.)=8.0×10^{-5} *8*.

$^{192}_{76}Os_{116}$-12

Adopted Levels, Gammas (continued)

γ(^{192}Os) (continued)

E_i(level)	J_i^π	E_γ †	I_γ #	E_f	J_f^π	Mult. ‡	α h	Comments
3289.5	1	3083.7 g	100 g *7*	205.79442	2^+			
		3289.5 g	51 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.035 *5*; if E1, B(E1)(W.u.)=0.00032 *4*.
3428.9	1	3223.1 g	44 g *8*	205.79442	2^+			
		3428.9 g	100 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0135 *20*; if E1, B(E1)(W.u.)=0.000125 *18*.
3536.4	1	3330.6 g	100 g *16*	205.79442	2^+			
		3536.4 g	41 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.015 *4*; if E1, B(E1)(W.u.)=0.00014 *4*.
3667.8	(14^+)	681	100	2986.8	(12^+)			E_γ: from ^{198}Pt(^{136}Xe,Xγ).
3756.8	1	3756.8 g	100 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0109 *12*; if E1, B(E1)(W.u.)=0.000101 *11*.
3836.5	1	3836.5 g	100 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0134 *14*; if E1, B(E1)(W.u.)=0.000124 *13*.
3864.7	1	3864.7 g	100 g	0.0	0^+	D		If M1, B(M1)(W.u.)=0.0054 *11*; if E1, B(E1)(W.u.)=5.0×10^{-5} *10*.
3890.5		3890.5 g	100 g	0.0	0^+			
4113.8	(16^+)	446	100	3667.8	(14^+)	[E2]	0.0304	B(E2)(W.u.)=0.0025 *14* E_γ: from ^{198}Pt(^{136}Xe,Xγ).

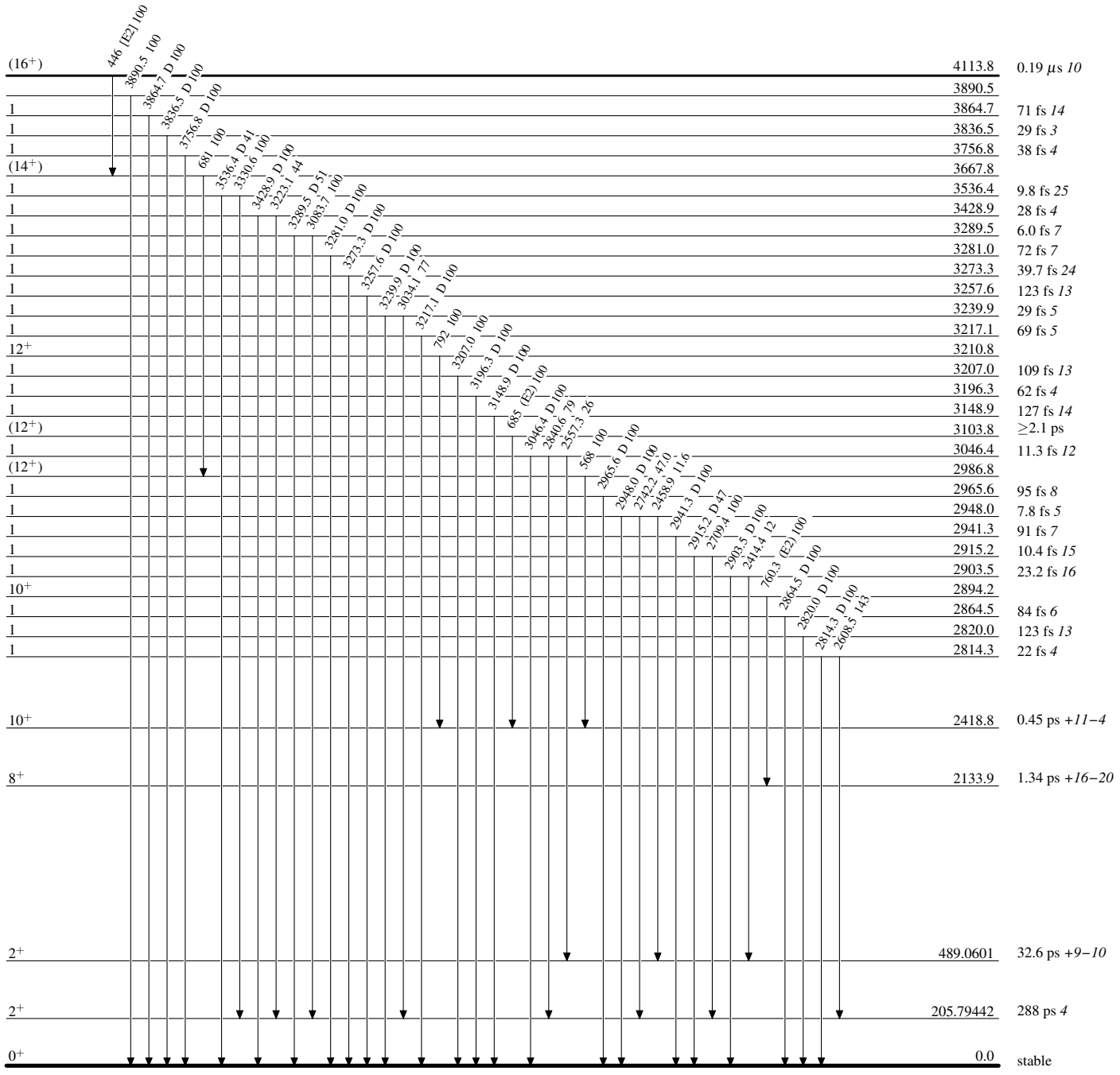
† From (n,n′γ), except as noted.
‡ From ^{192}Ir ε decay (73.827 d), except where noted.
# Relative photon branching from each level; values are from ^{192}Os(n,n′γ), unless noted to the contrary.
@ Iγ(379)/Iγ(580)=0.50 *15*, 0.73 *18*, 0.89 *12*, 1.10 *18*, 0.42 *12* and 0.51 *17*, respectively, from IT decay, (n,γ), (n,n′γ), (d,d′γ), (p,p′γ) and Coulomb excitation. The unweighted average of all data (viz., 0.69 *11*) is adopted; the weighted average is 0.67 *11*.
& From ^{192}Os IT decay (5.9 s).
a From ^{191}Os(n,γ) E=thermal.
b Weighted average from ^{192}Ir ε decay (73.827 d), (n,n′γ) and (n,γ).
c From ^{192}Ir ε decay (73.827 d).
d From Coulomb excitation.
e Weighted average from ^{192}Ir ε decay (73.827 d), ^{192}Os IT decay (5.9 s), ^{191}Os(n,γ) E=thermal, ^{192}Os(n,n′γ).
f Weighted average from ^{192}Os IT decay and (n,n′γ).
g From (γ,γ′). Eγ is from level energy difference.
h Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
i Placement of transition in the level scheme is uncertain.

$^{192}_{76}Os_{116}$-13

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

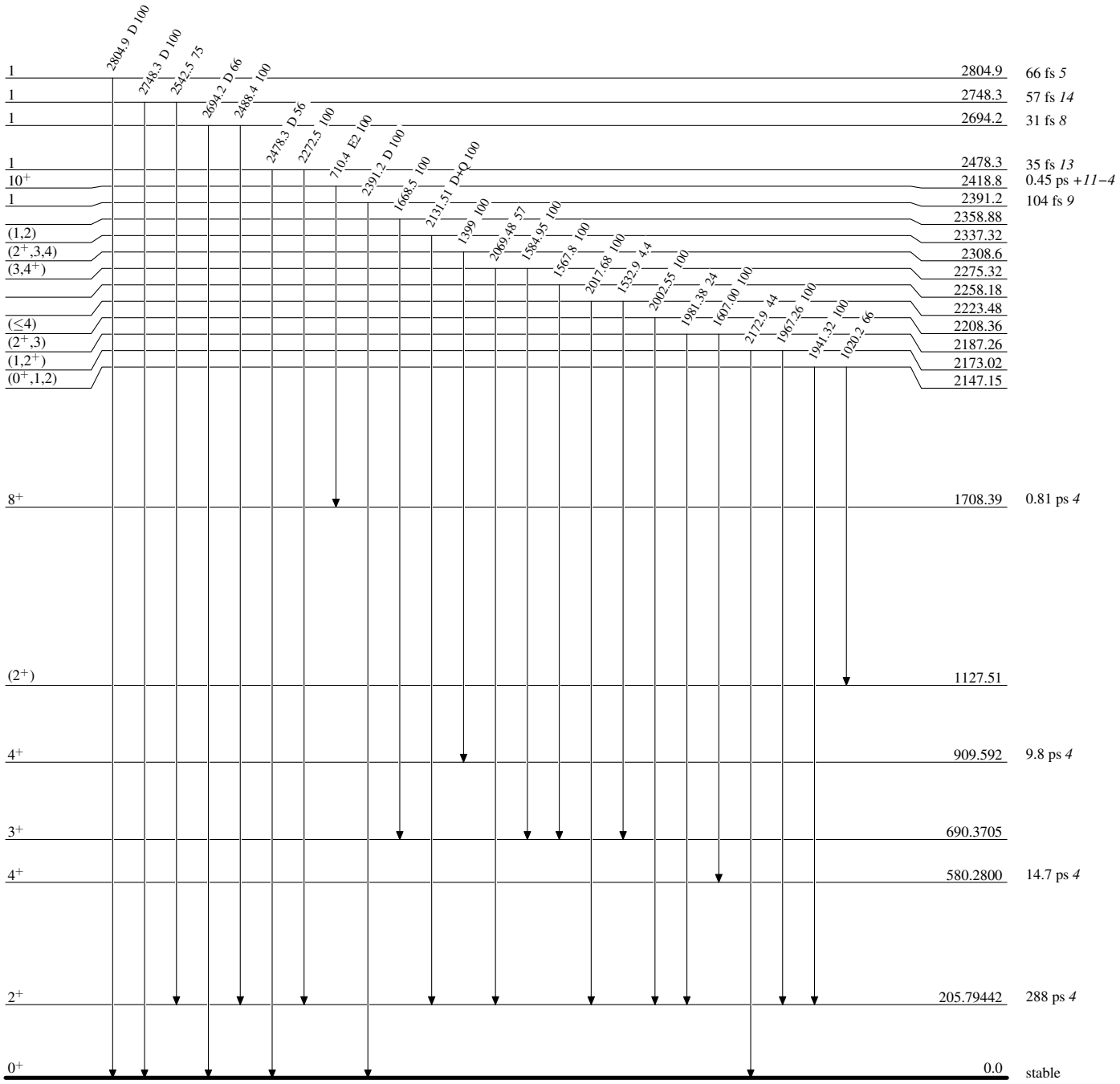


$^{192}_{76}Os_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

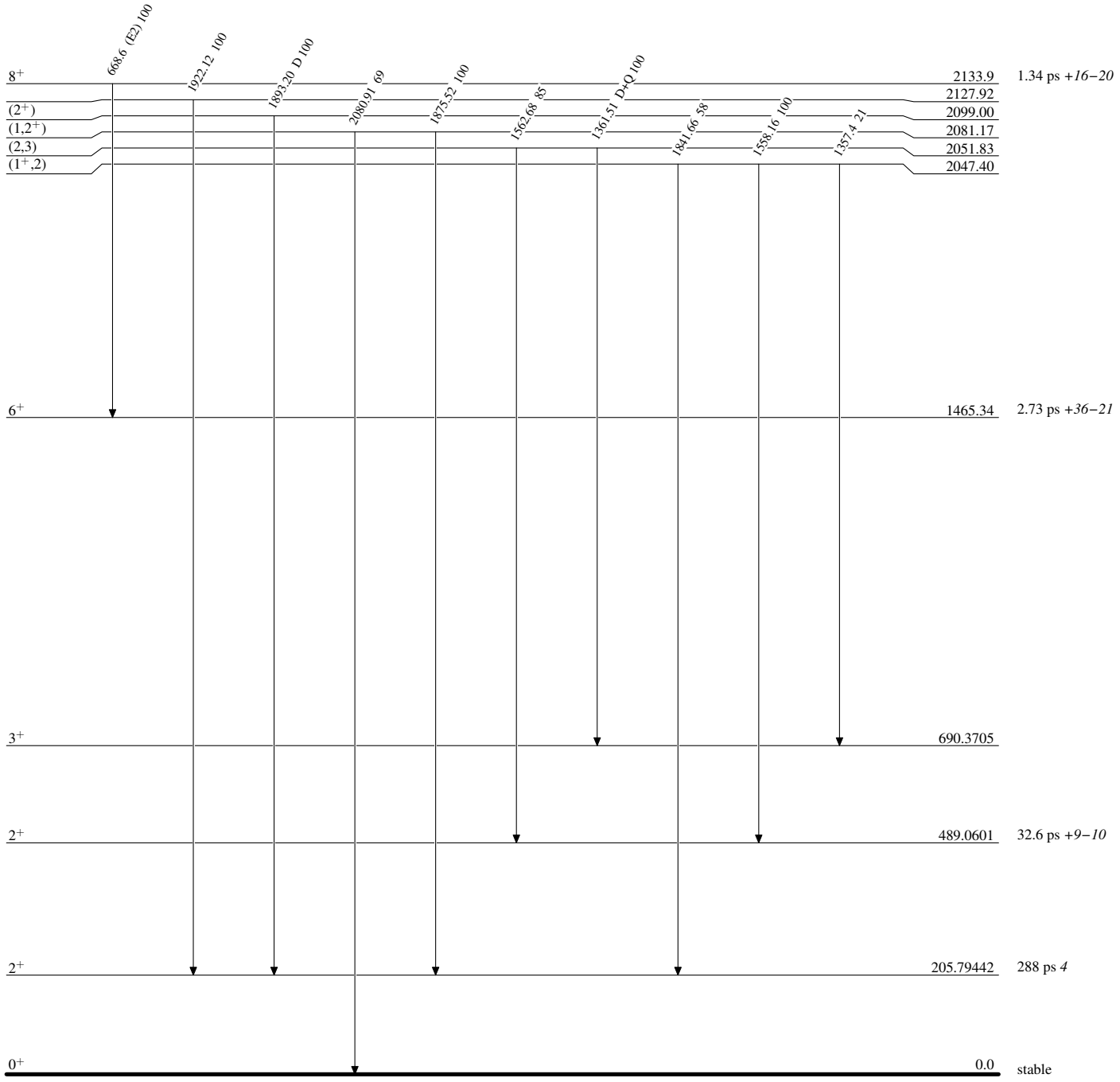


$^{192}_{76}Os_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



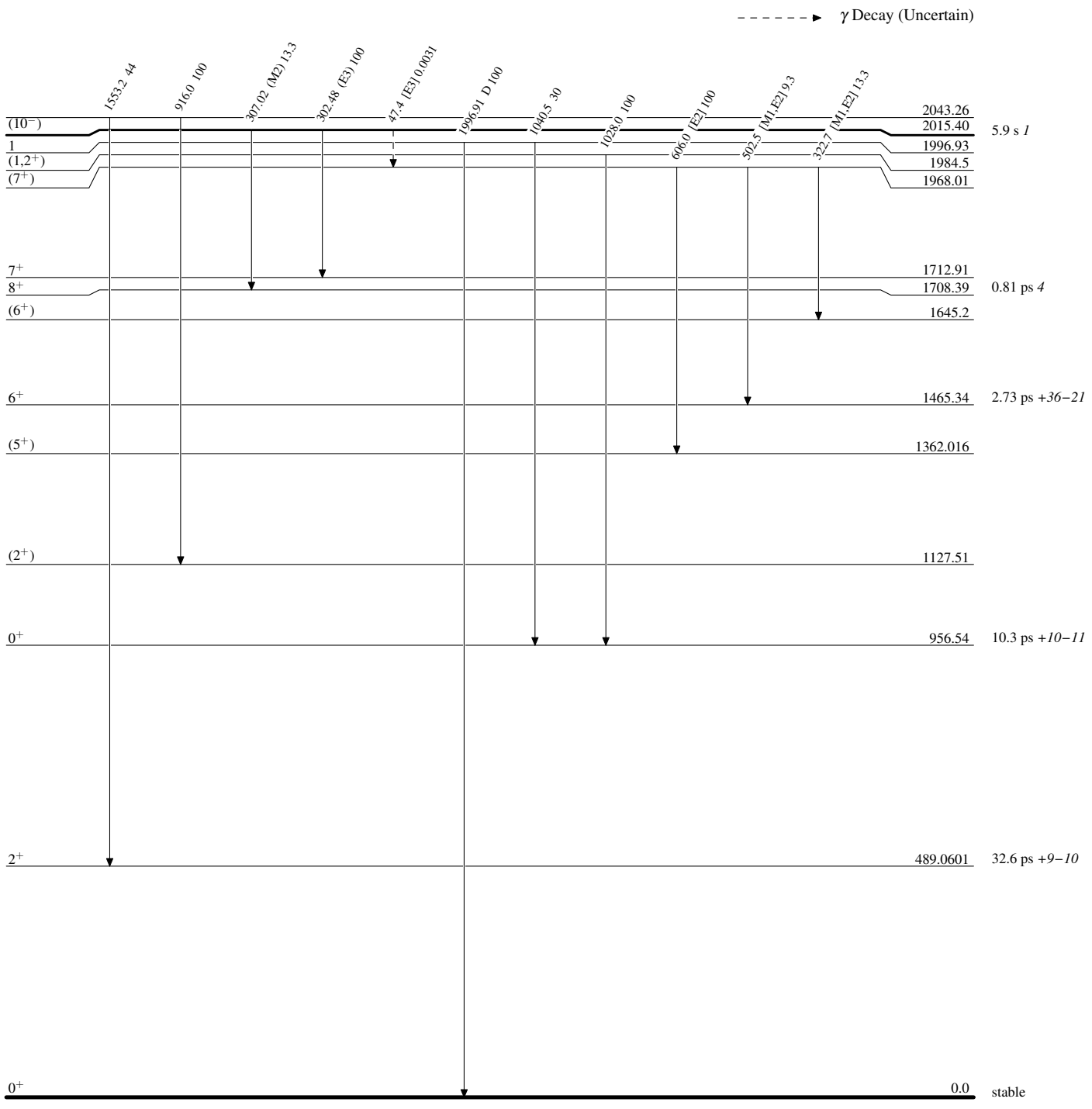
$^{192}_{76}Os_{116}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

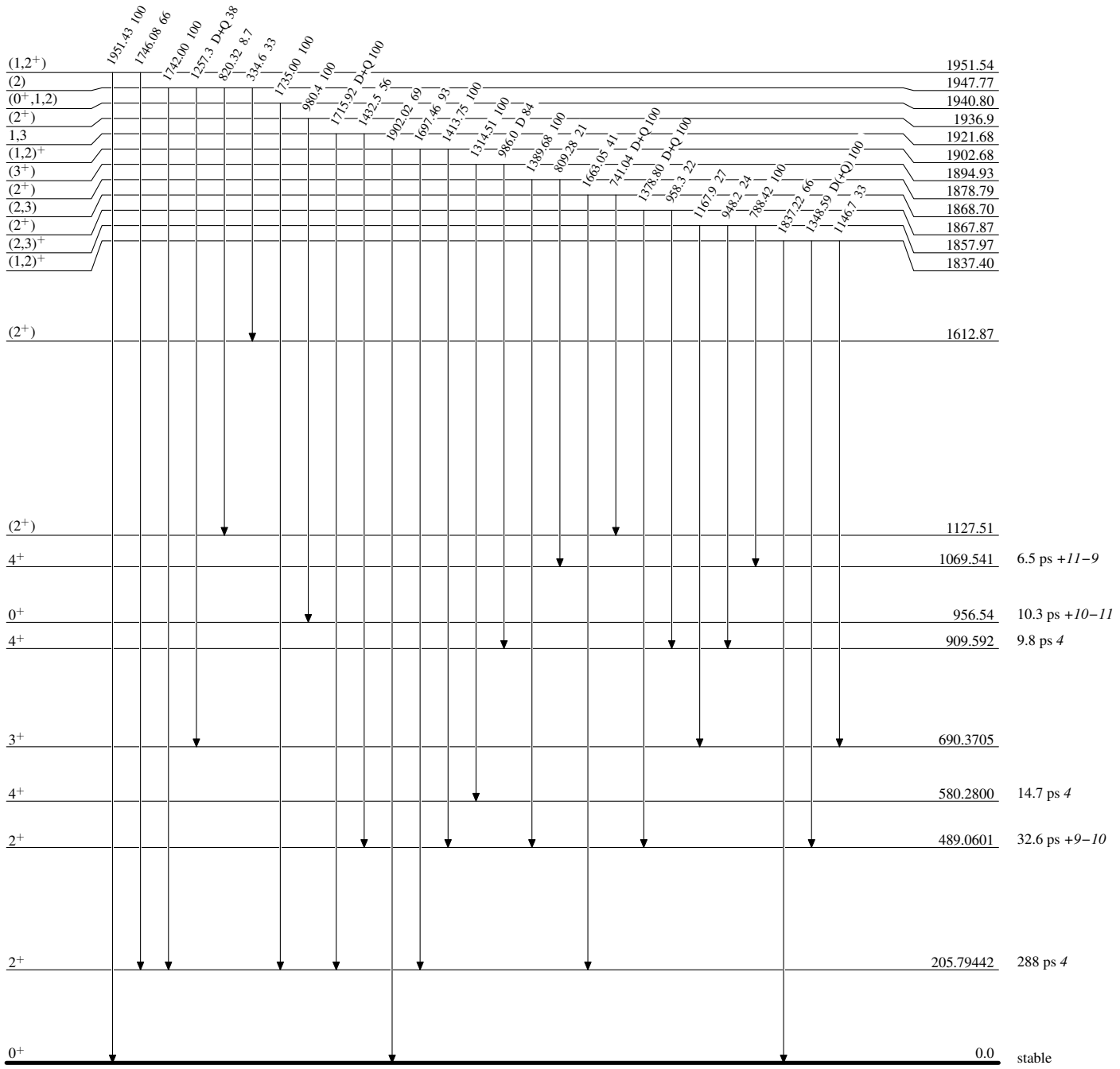


$^{192}_{76}Os_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

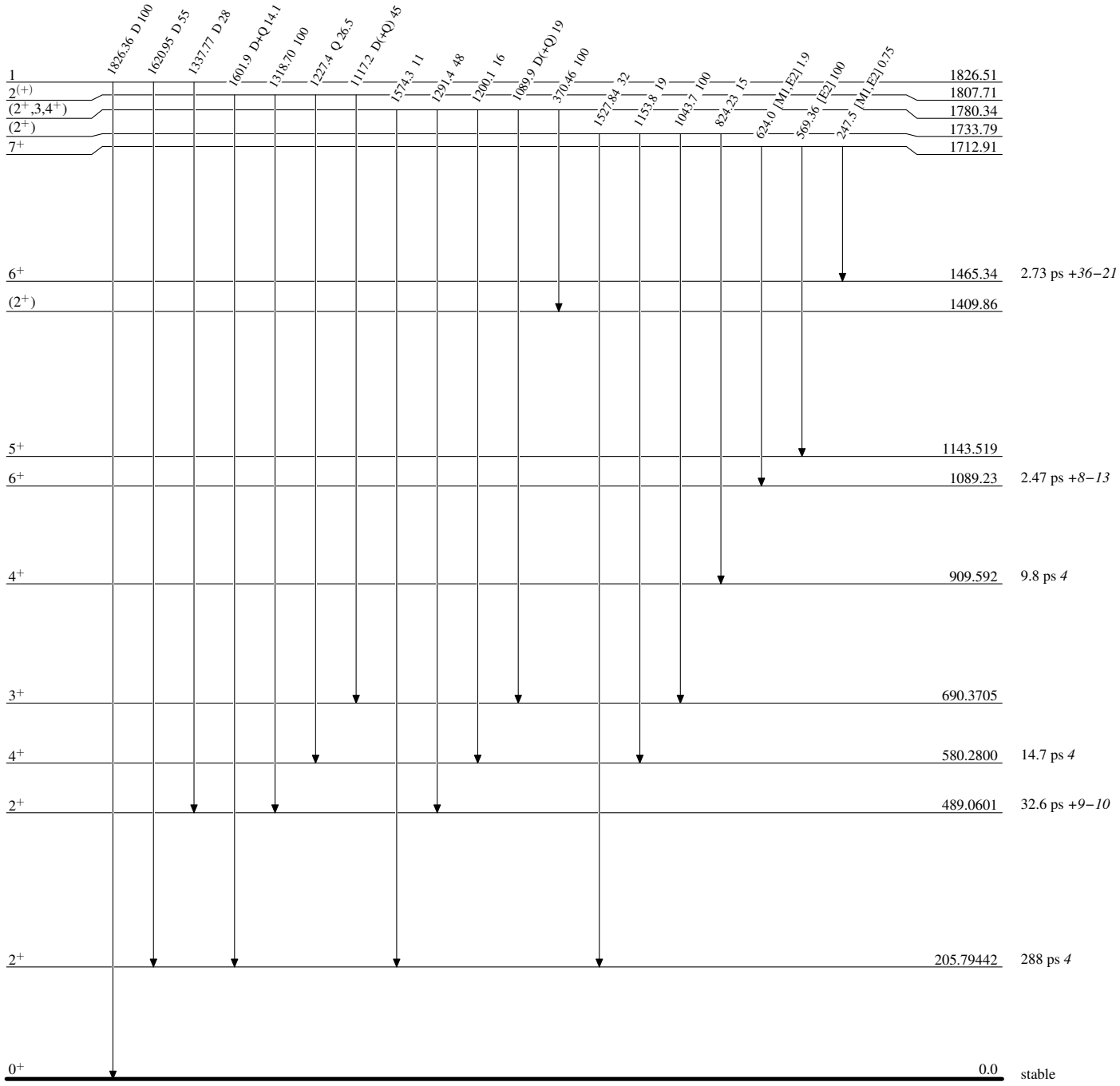


$^{192}_{76}Os_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{192}_{76}Os_{116}$

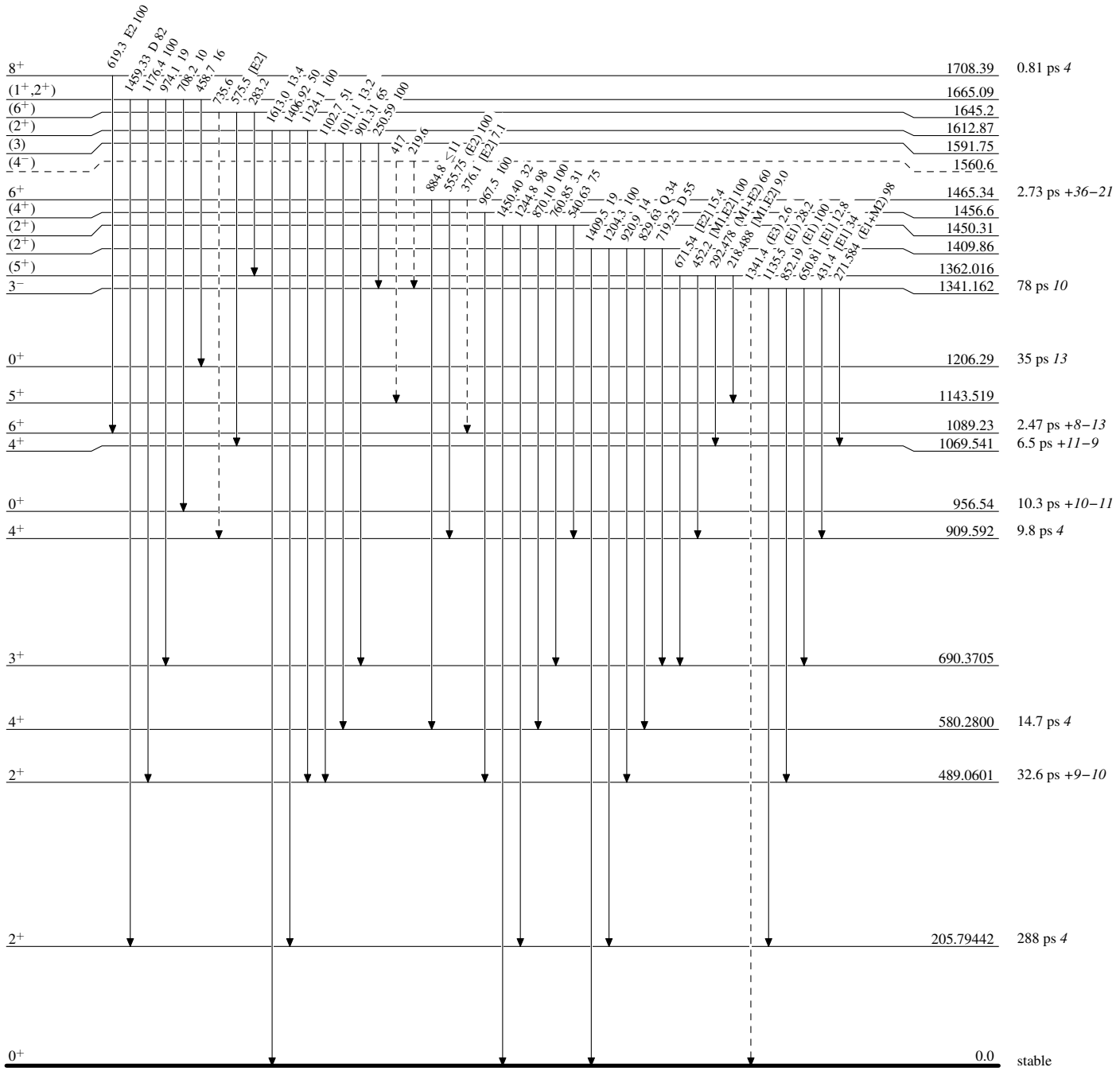
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{192}_{76}Os_{116}$

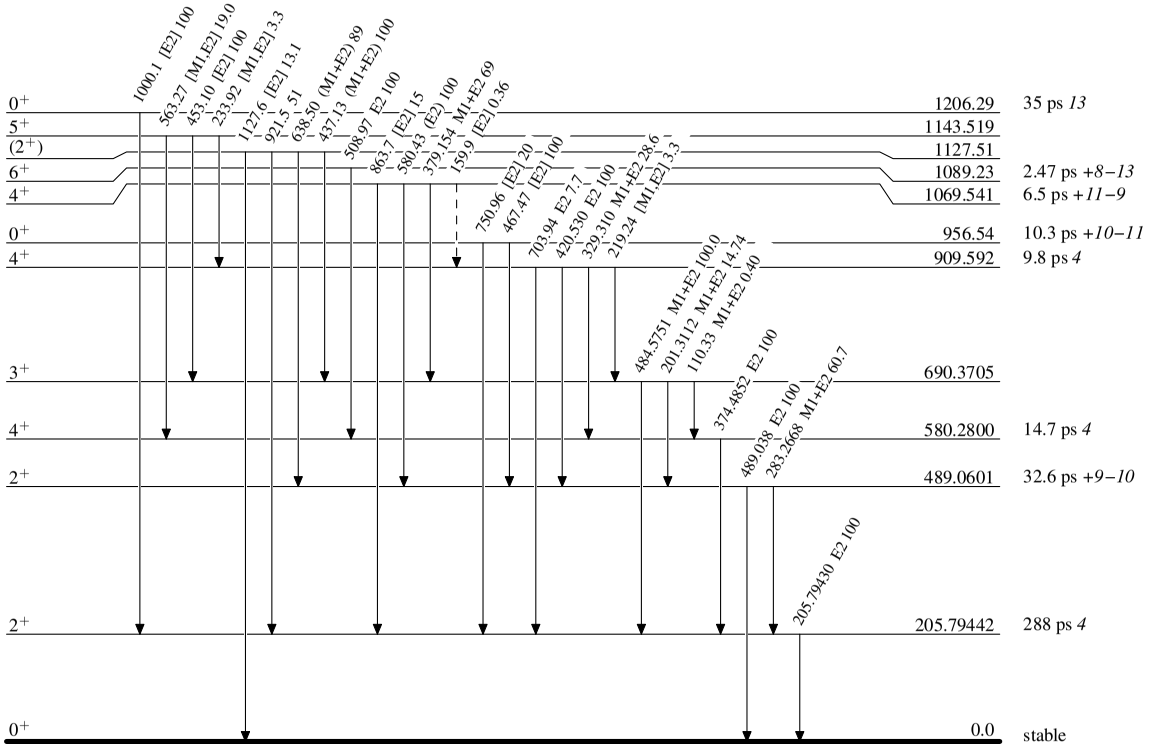
Adopted Levels, Gammas

Legend

Level Scheme (continued)

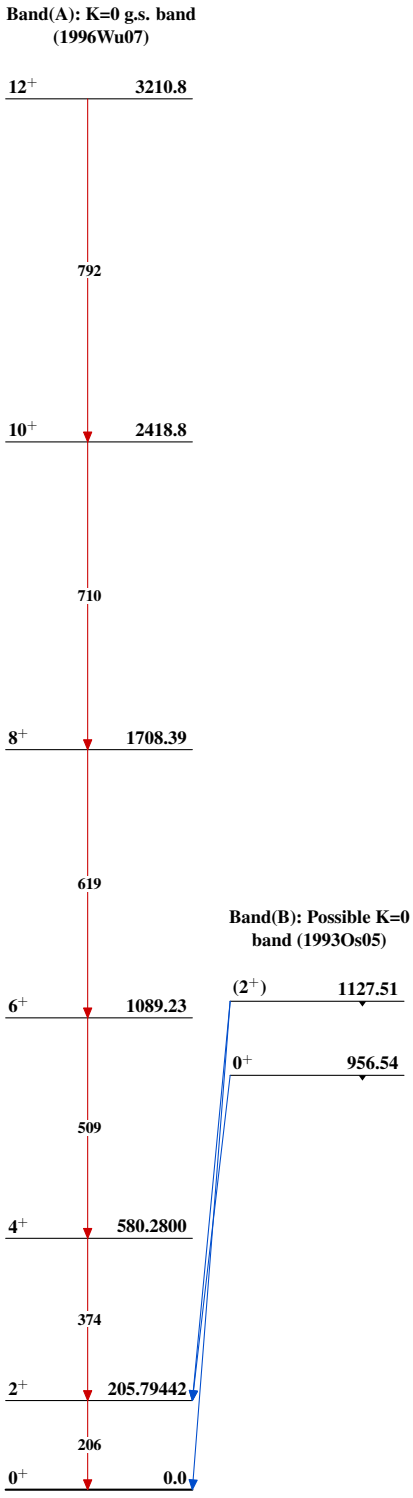
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{192}_{76}Os_{116}$

Adopted Levels, Gammas



$^{192}_{76}Os_{116}$