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)

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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).

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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).

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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^-.

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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).

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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)

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

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

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

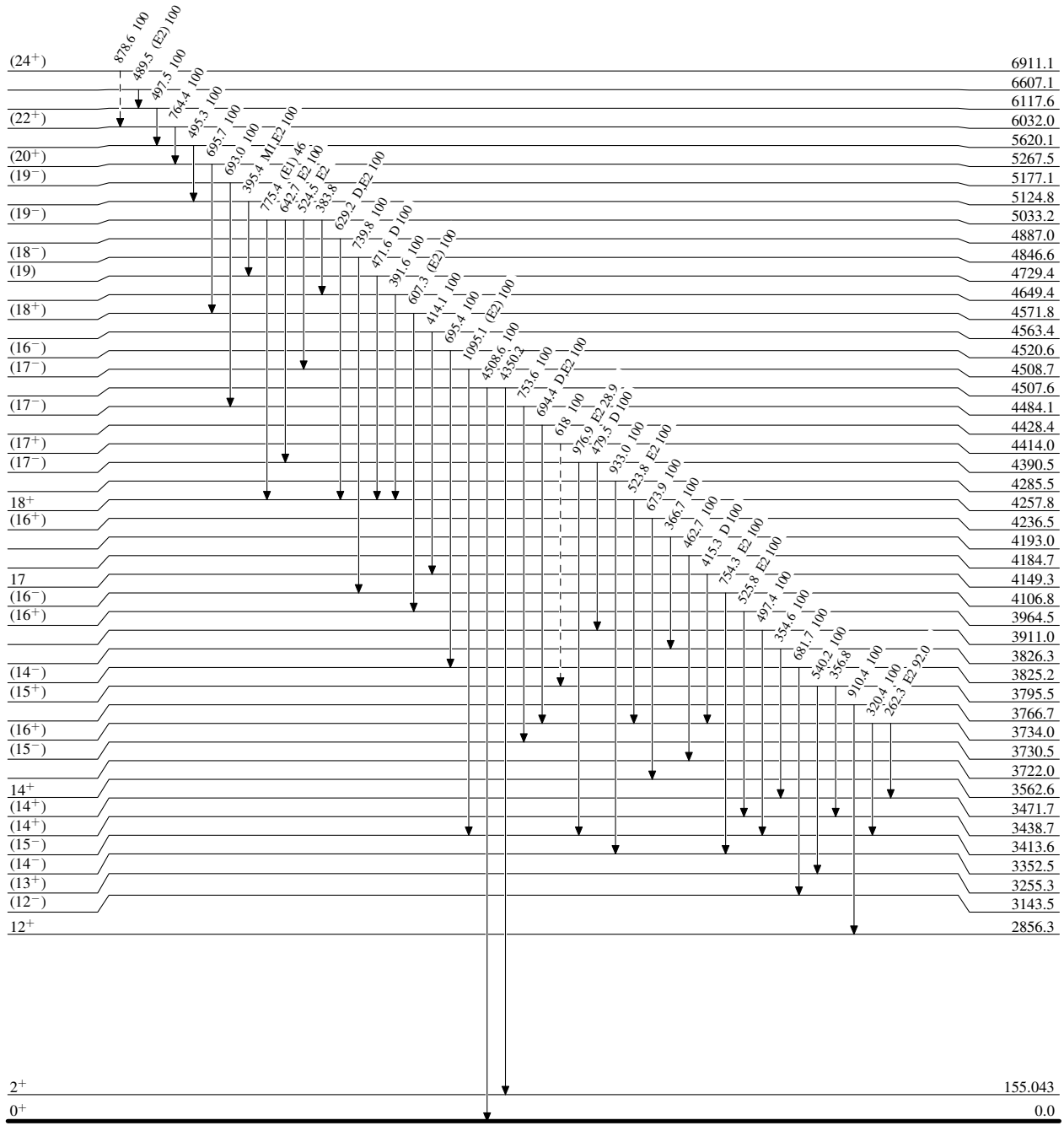
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



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

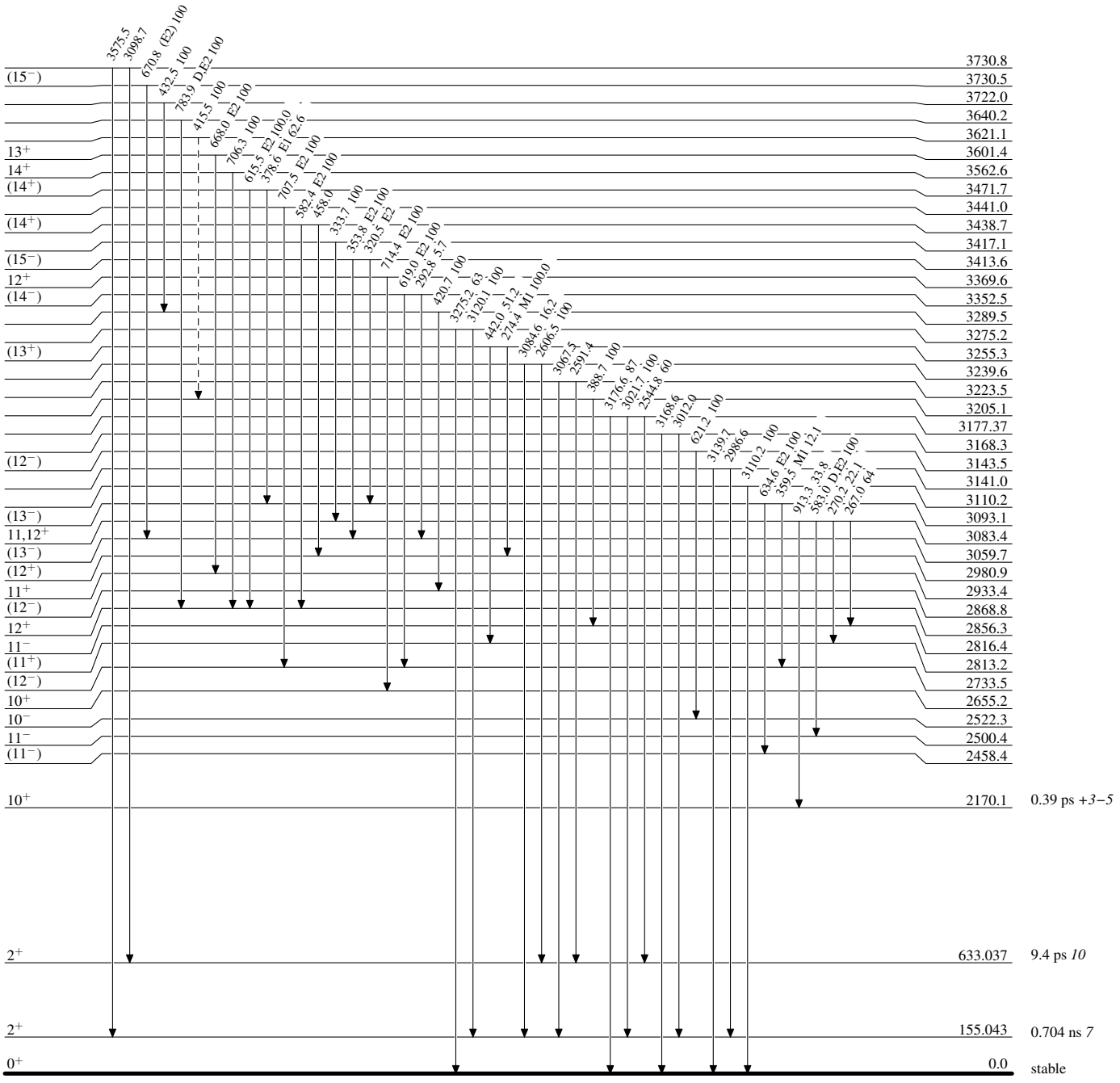
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

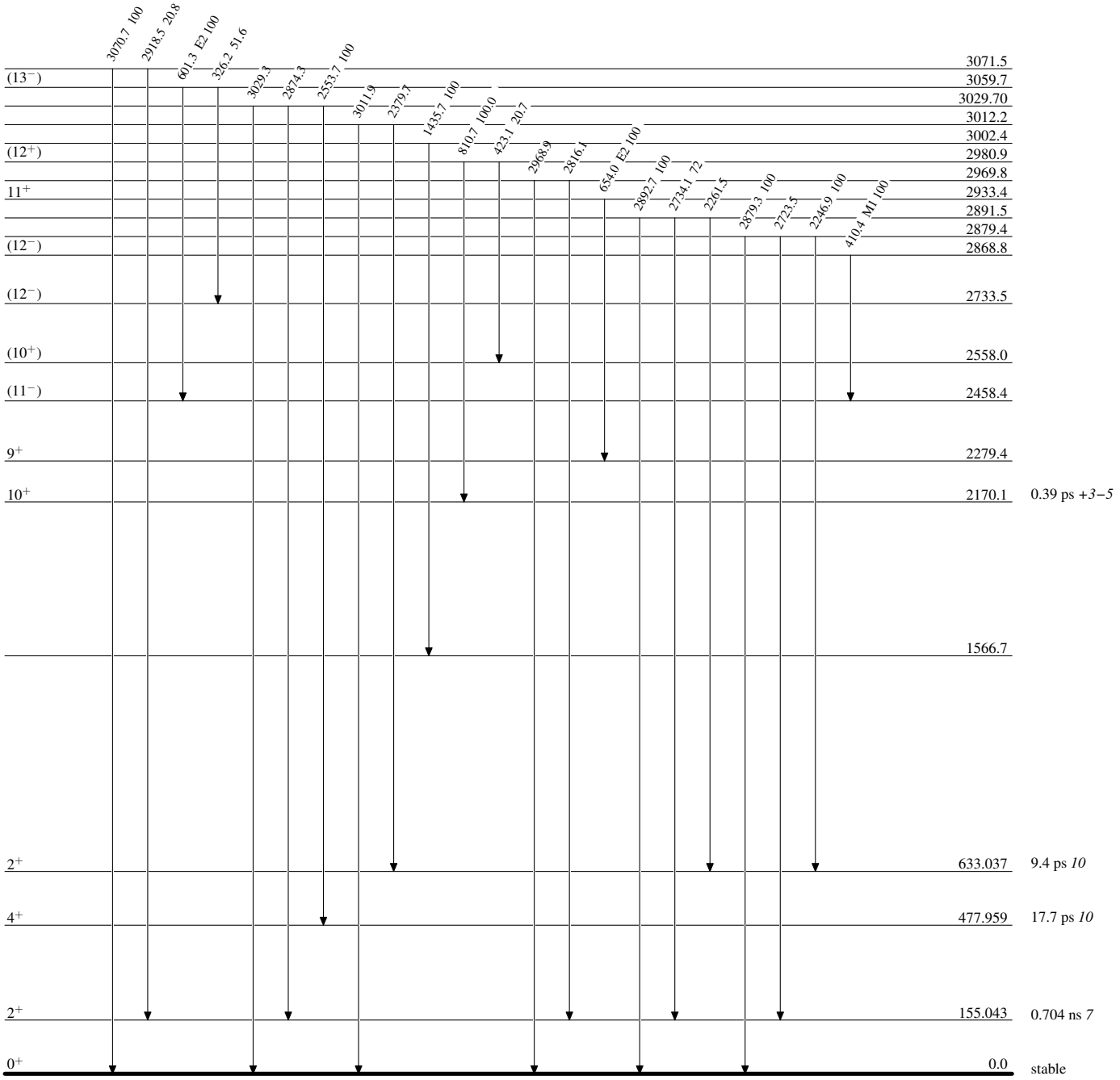


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



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

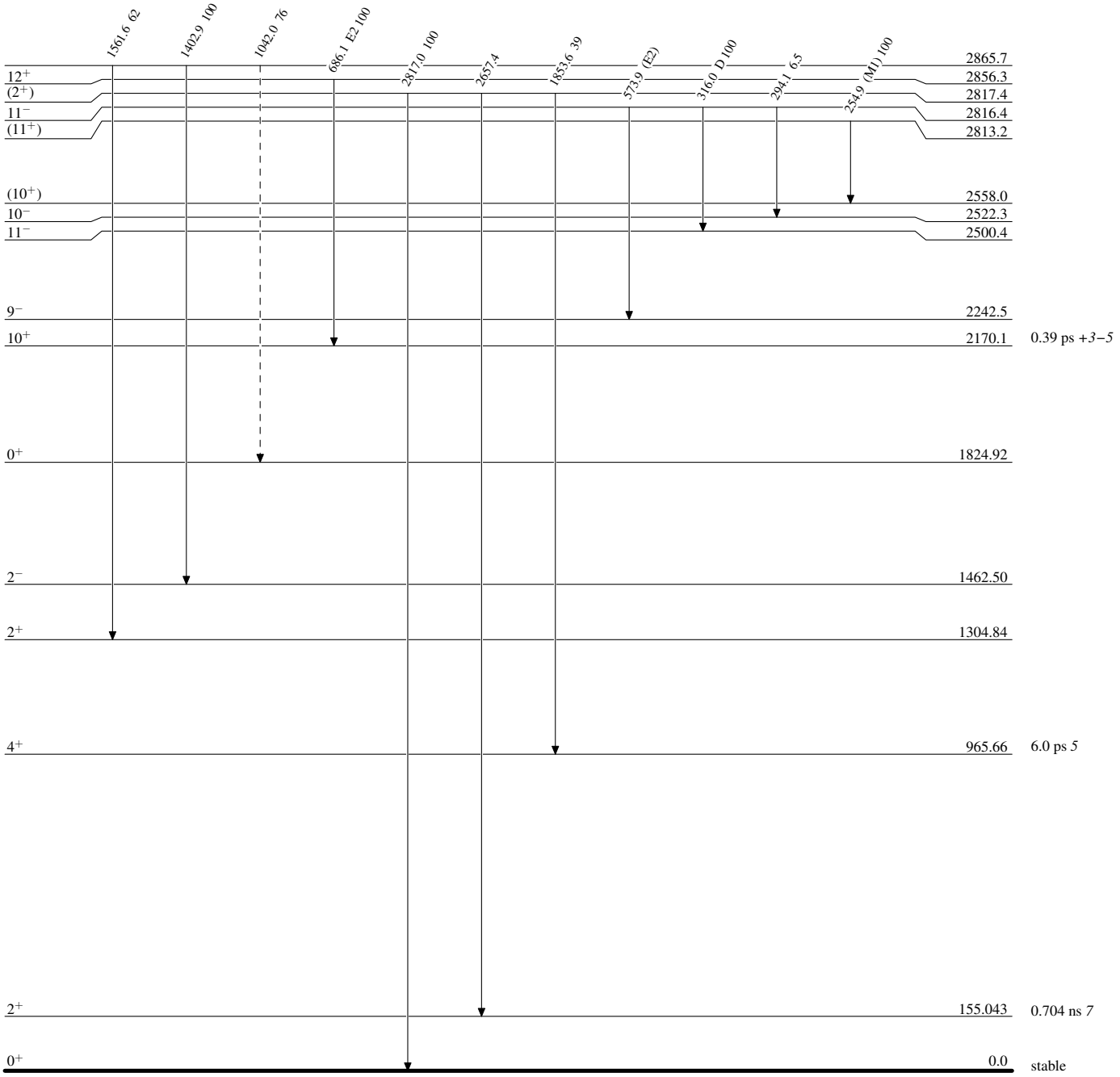
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



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

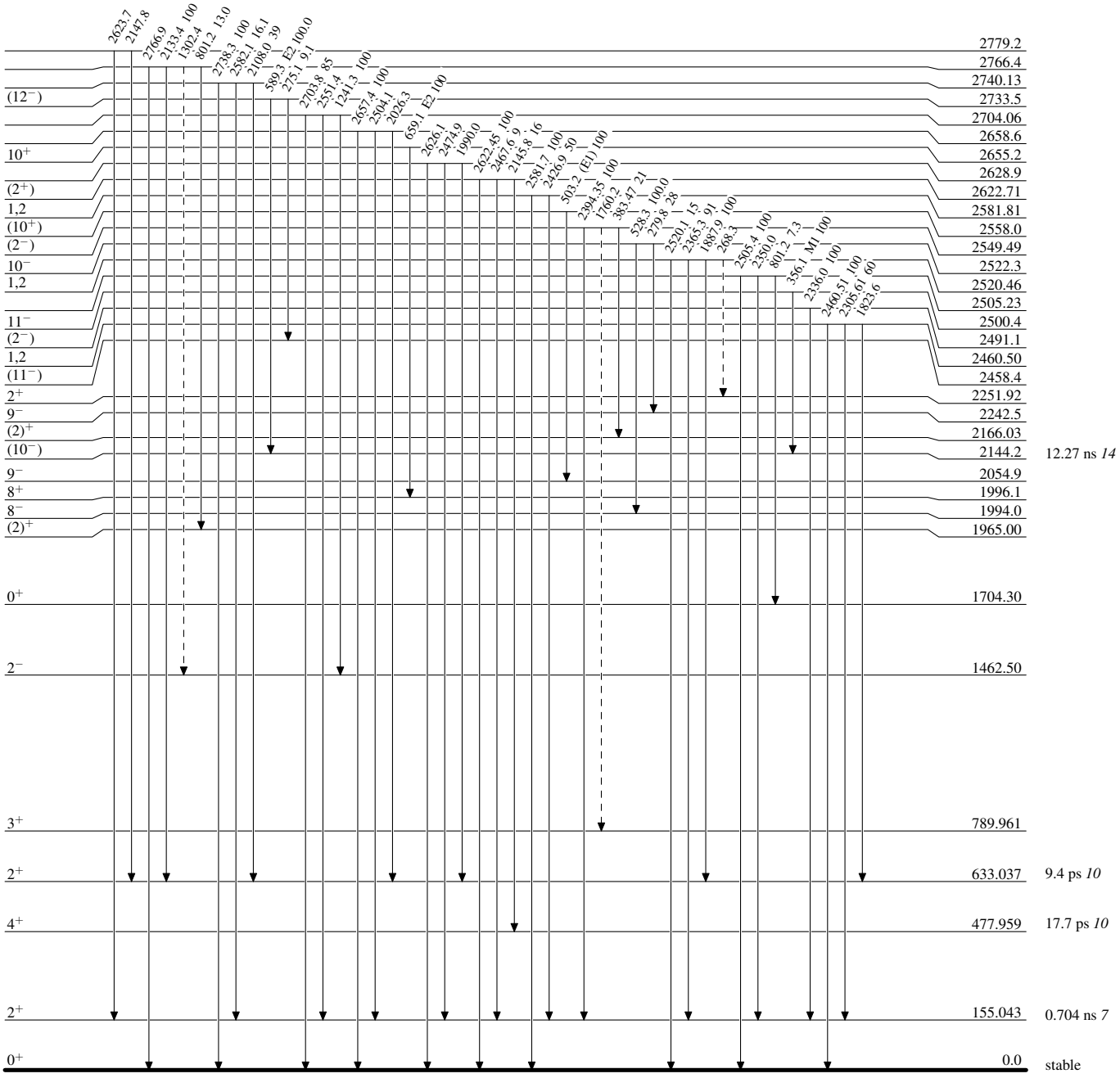
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



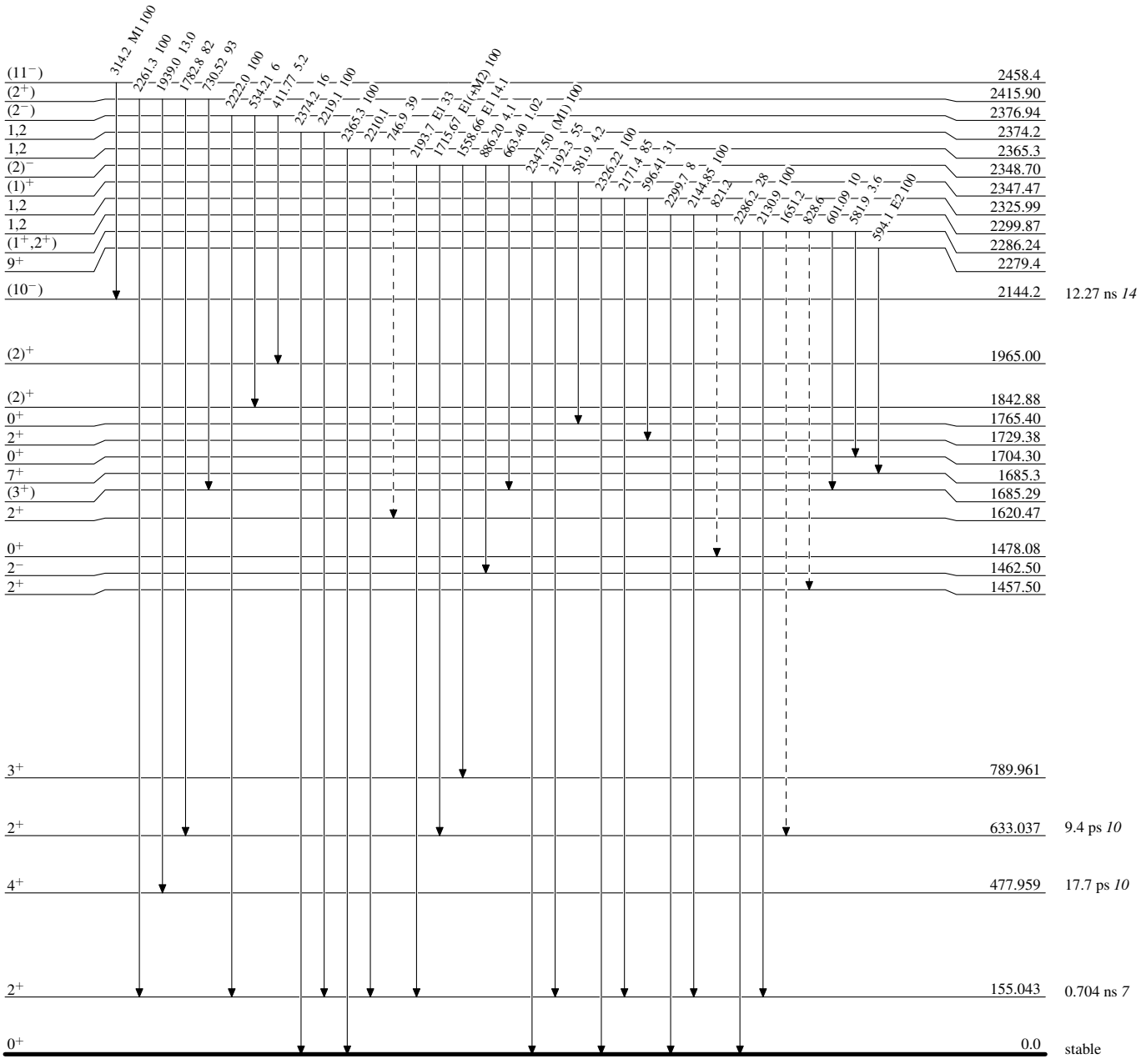
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



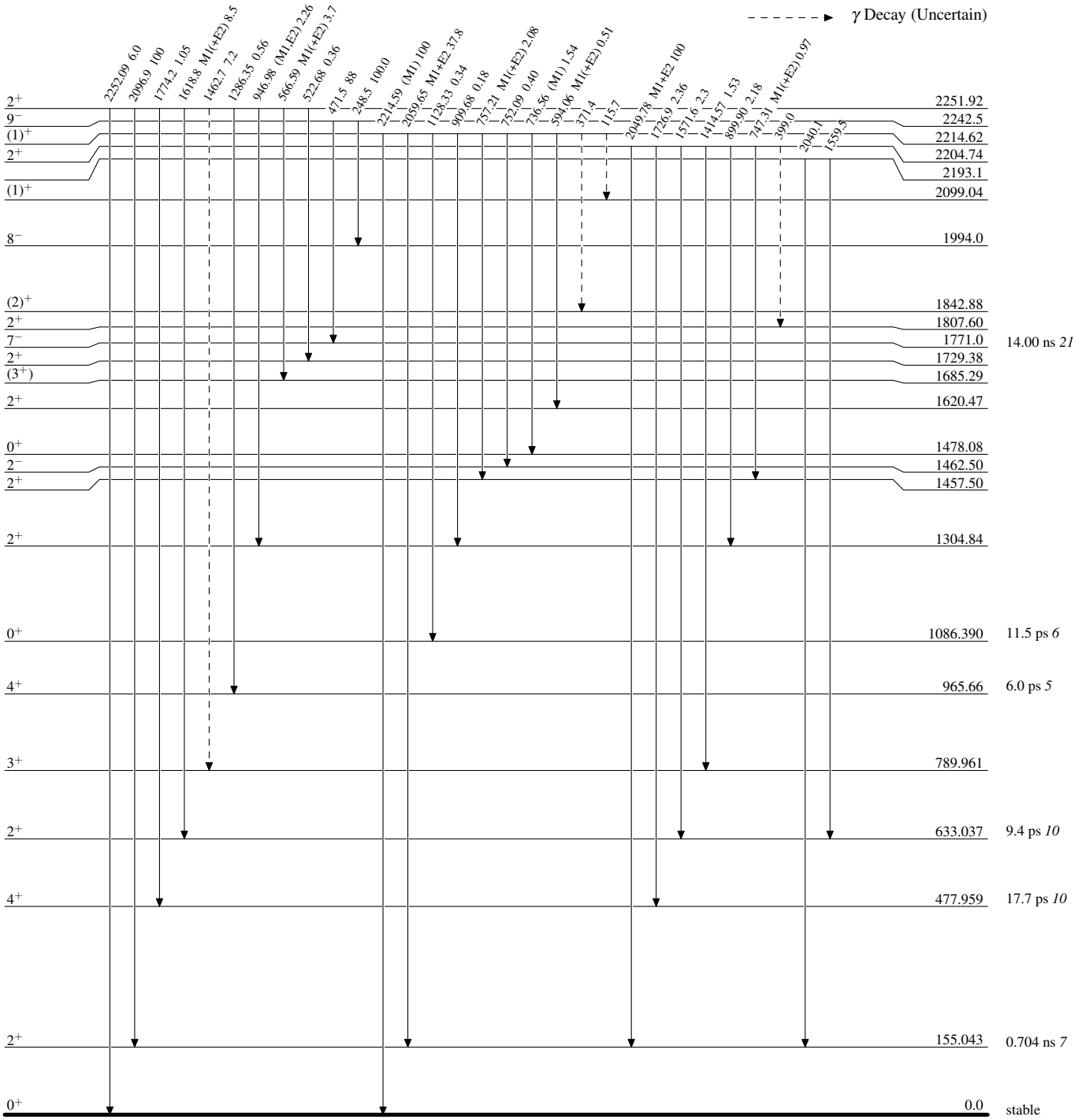
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Legend

Intensities: Relative photon branching from each level



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

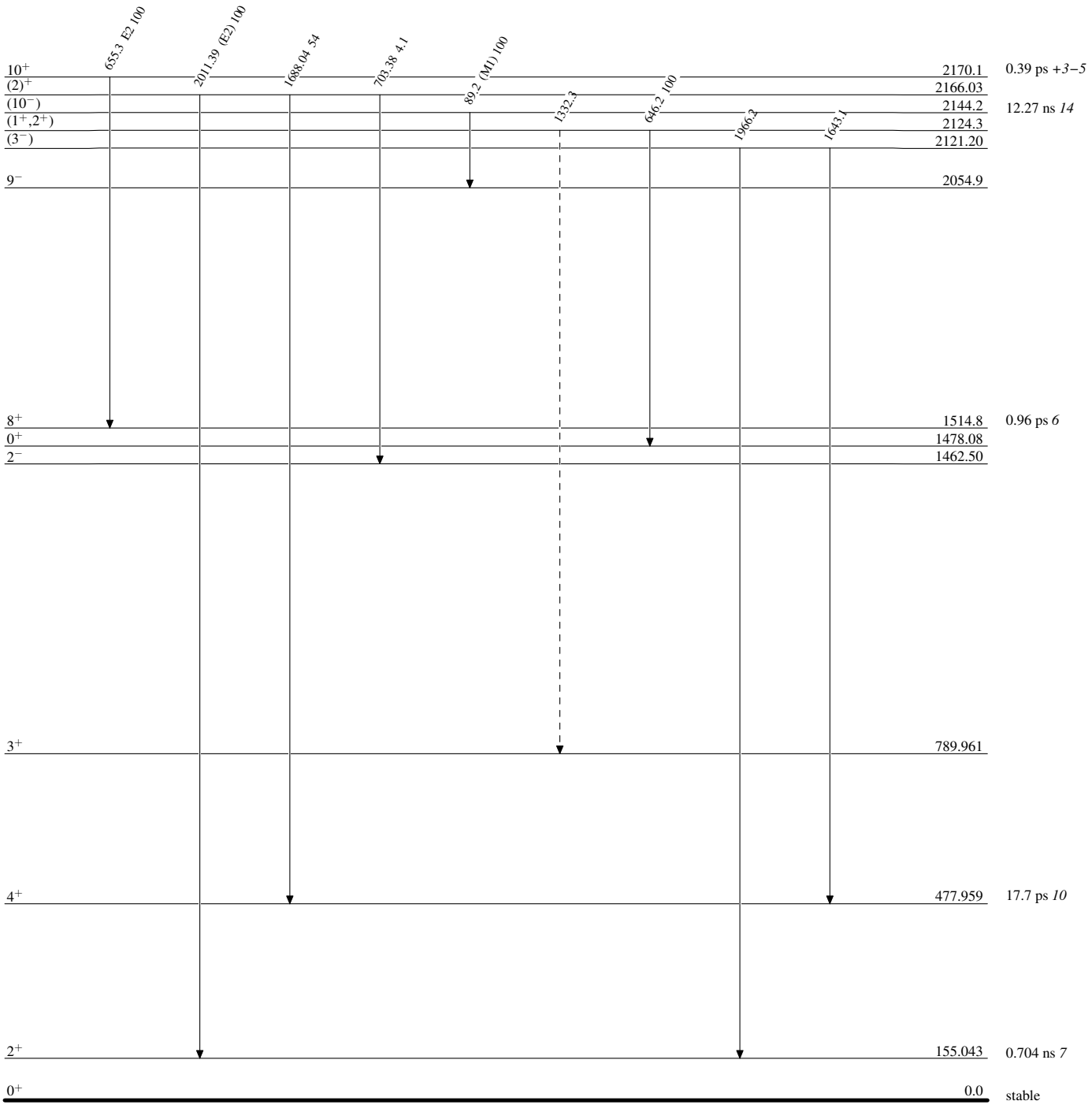
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



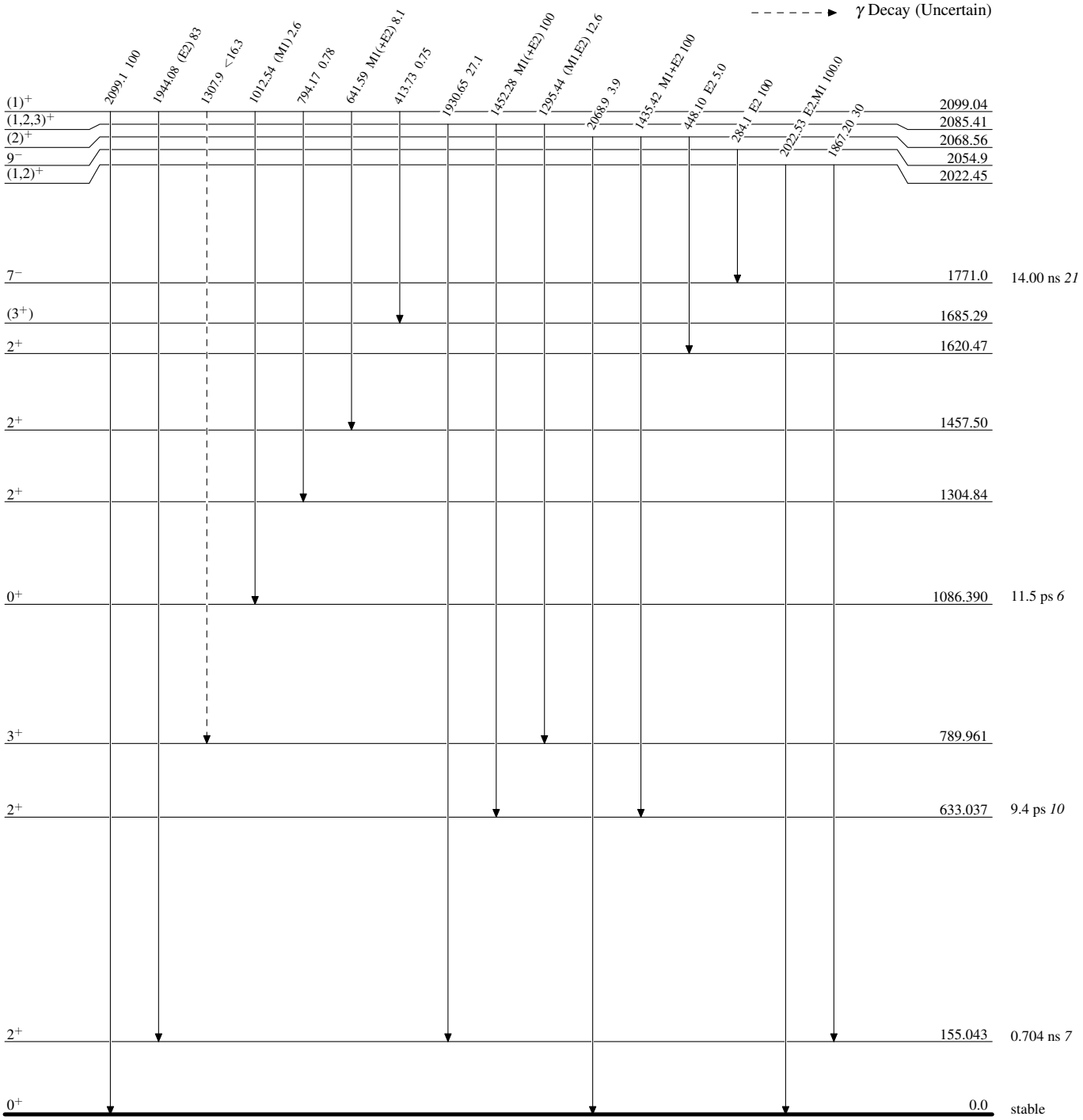
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

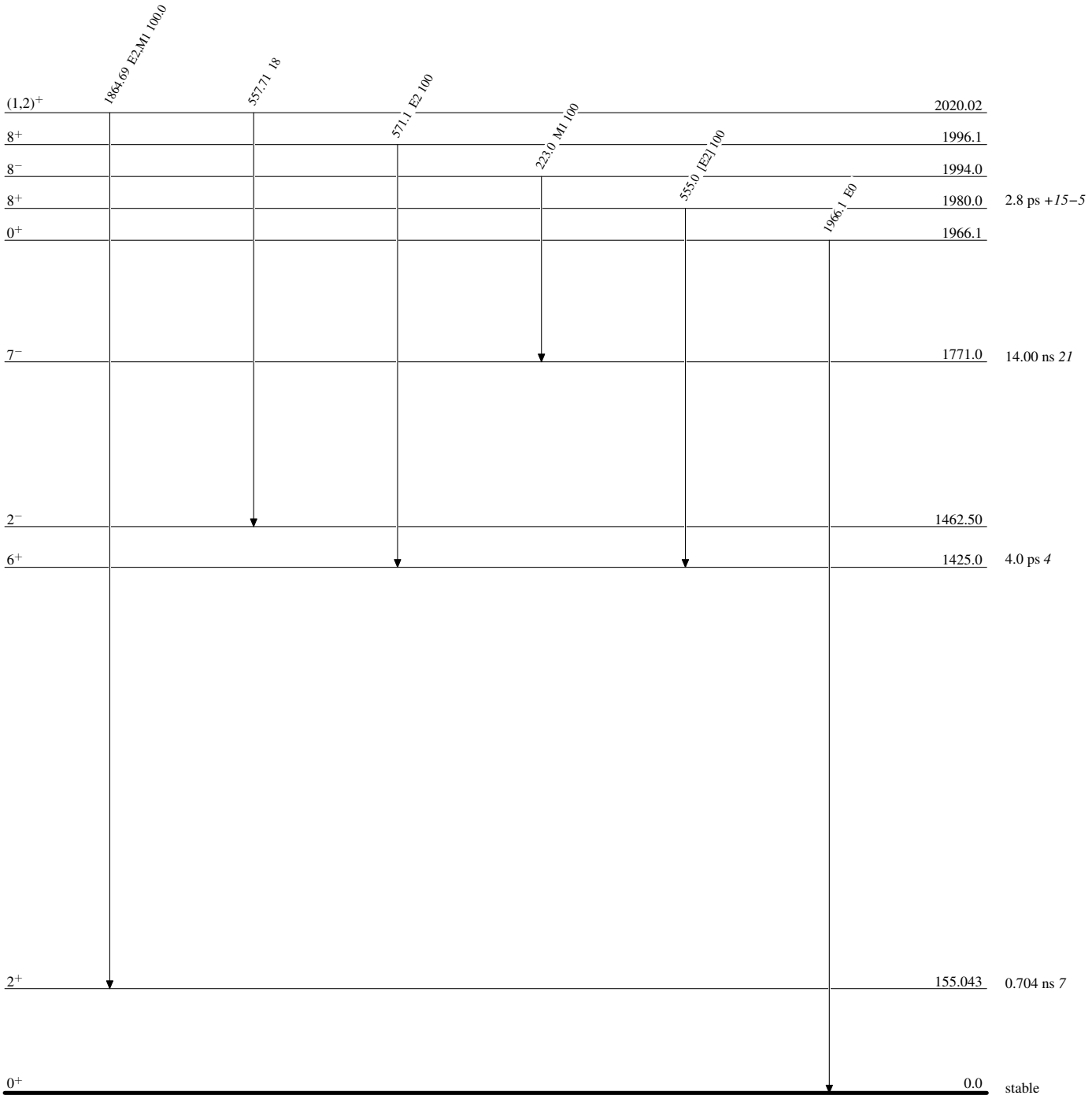


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

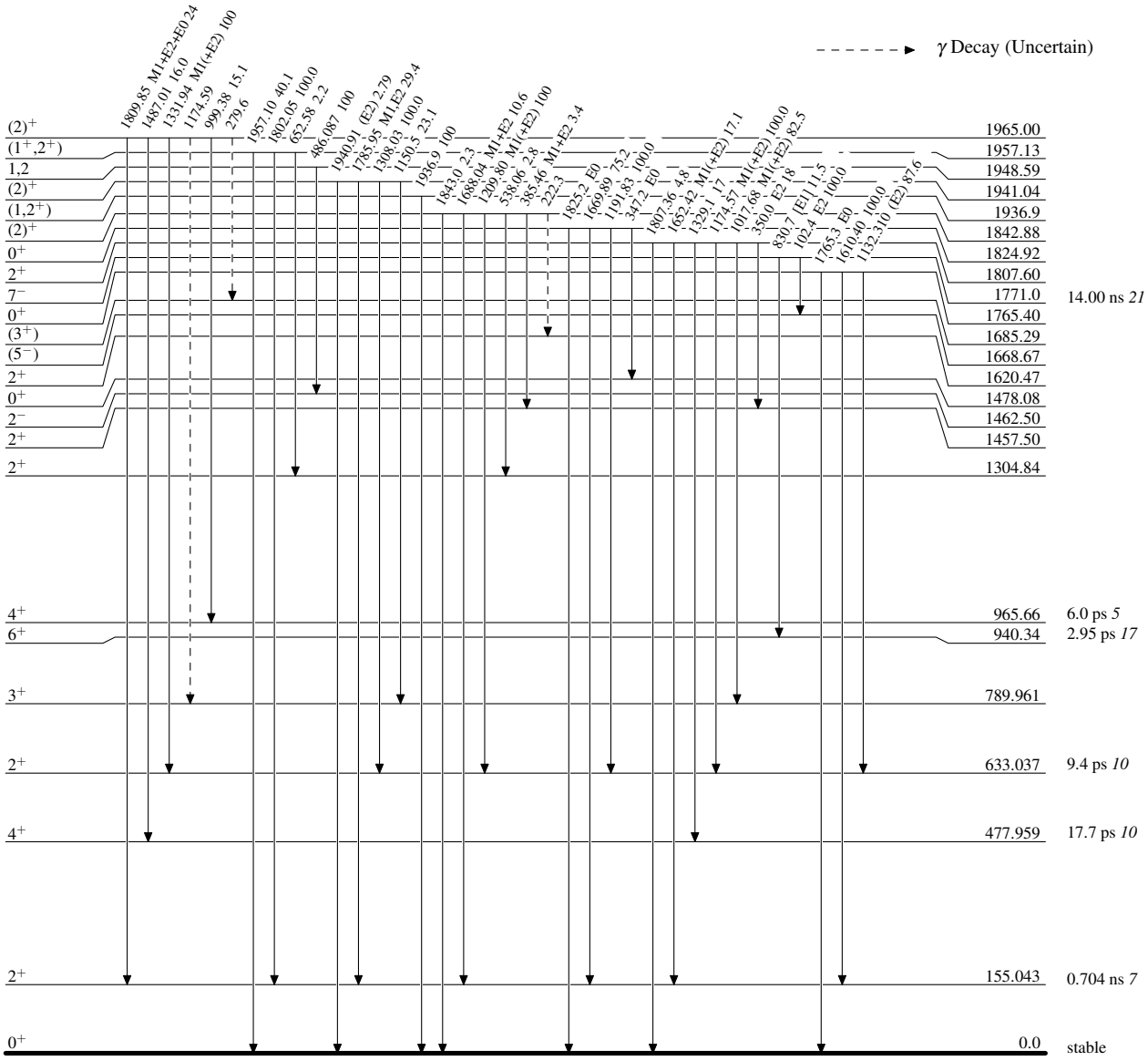


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

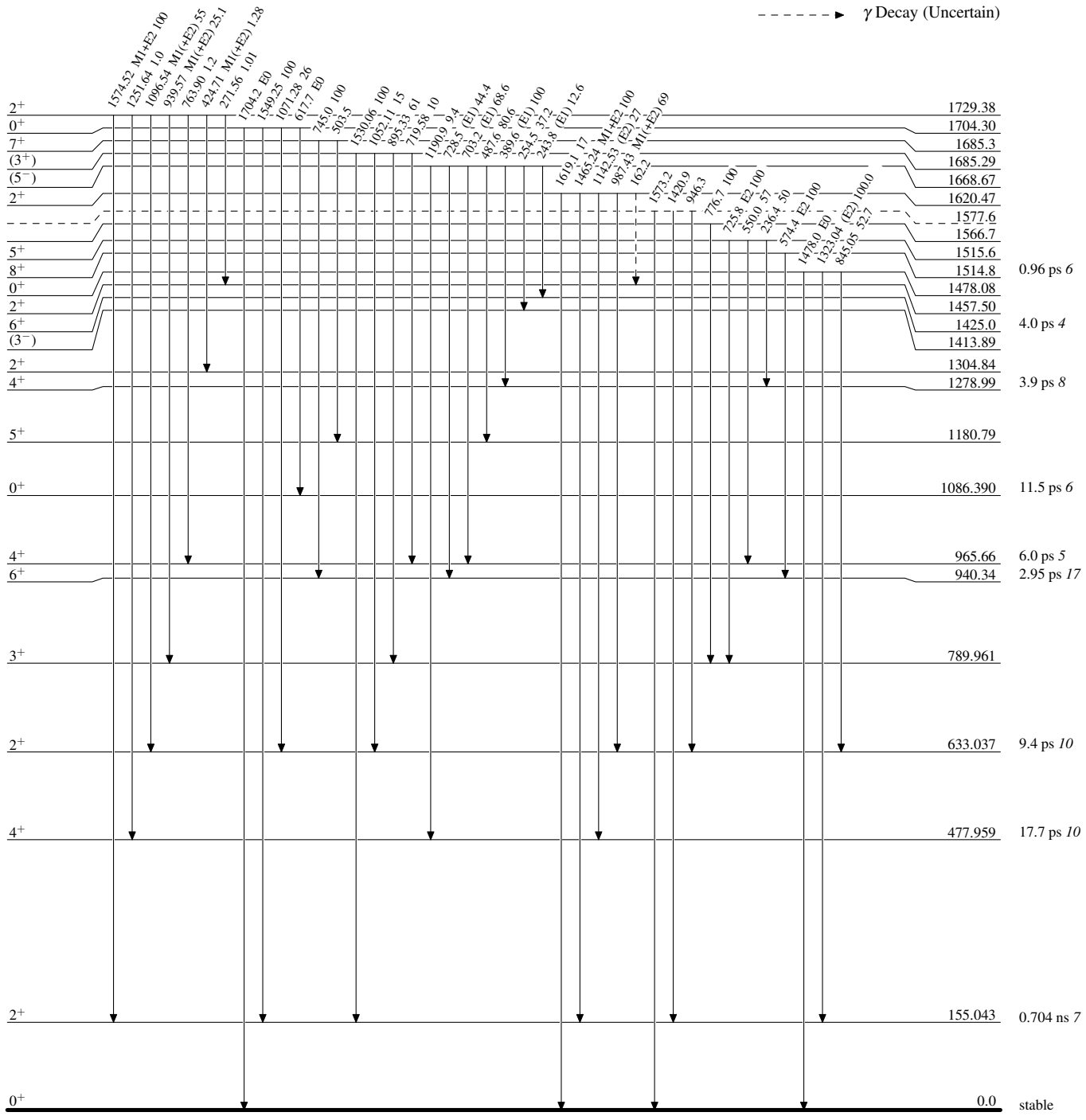


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



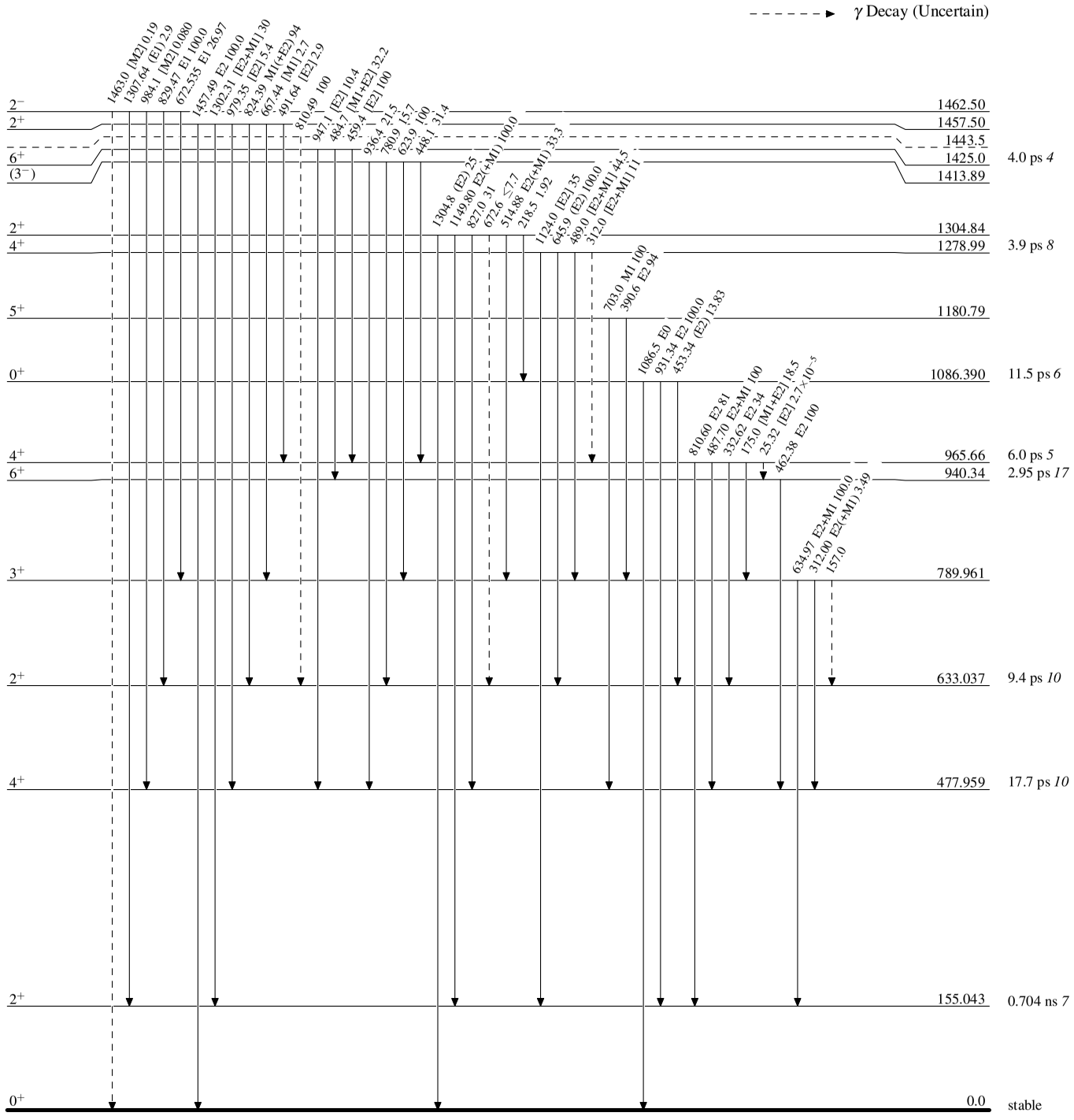
$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

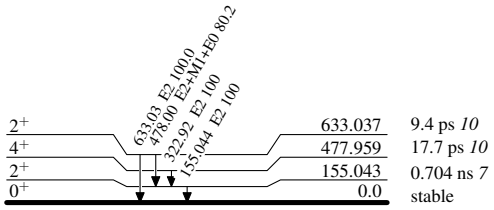


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas

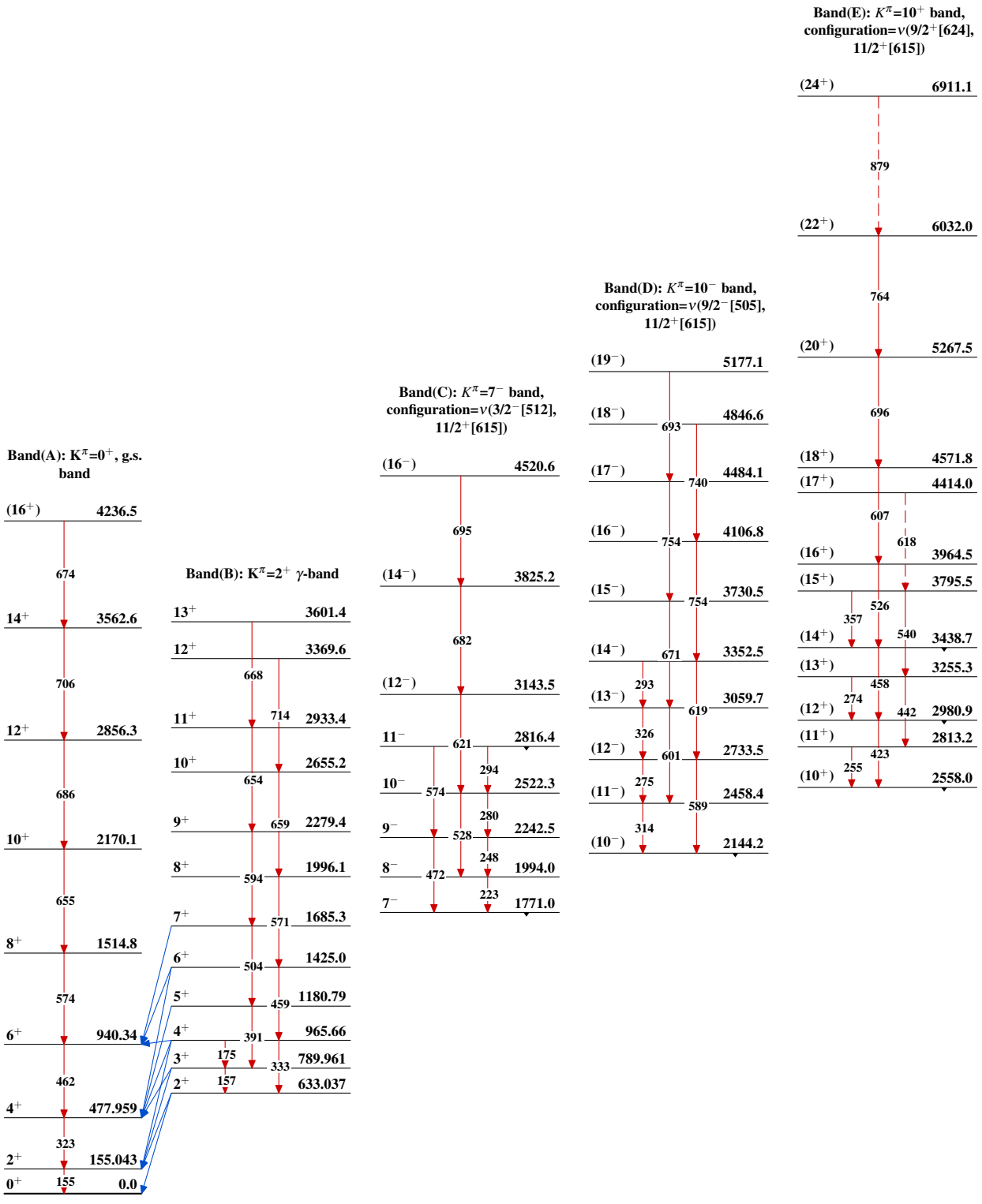
Level Scheme (continued)

Intensities: Relative photon branching from each level

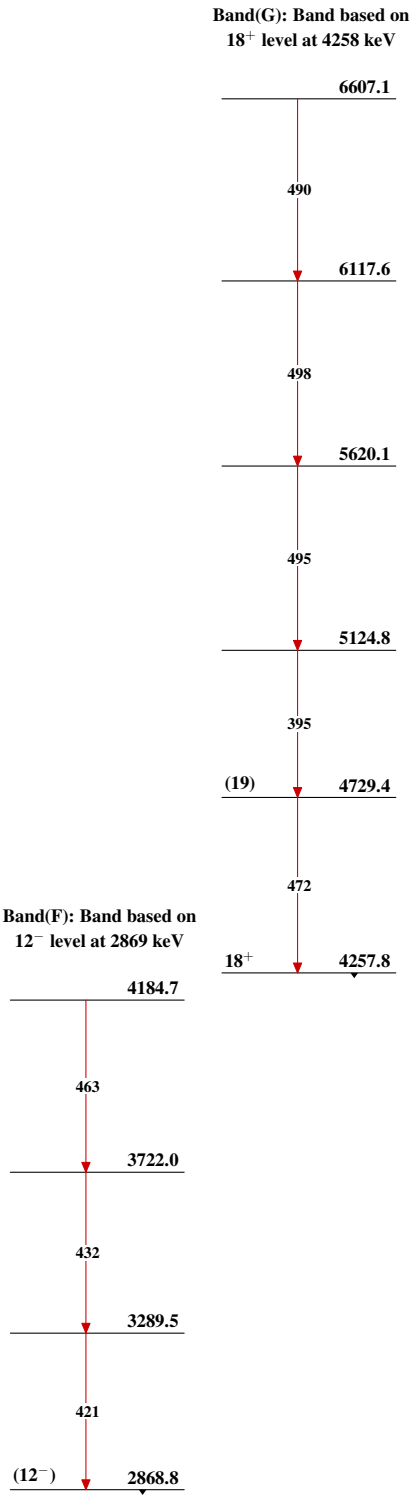


$^{188}_{76}Os_{112}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



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