Adopted Levels, Gammas

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

Q(β^-)=−5909 *25*; S(n)=7930 *30*; S(p)=4180 *30*; Q(α)=4350 *30* 2017Wa10

^{177}Os Levels

Cross Reference (XREF) Flags

- A ^{177}Ir ε decay
- B ^{181}Pt α decay
- C ^{164}Er(^{17}O,4nγ), ^{166}Er(^{16}O,5nγ)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0#	1/2$^-$	3.0 min *2*	ABC	%ε+%β^+=100. J$^\pi$: Favored α-decay from the ^{181}Pt g.s. (J^π=1/2$^-$); strong ε+β^+ feeding to the 1/2$^-$ and 3/2$^-$ levels in ^{177}Re; J^π systematics; configuration assignment. $T_{1/2}$: Weighted average of 2.8 min *3* (1976Be62), 3.1 min *2* (weighted average of 3.0 min *5* (157γ), 3.1 min *2* (196γ), 3.5 min *5* (300γ) and 3.0 min *7* (457γ) from 1972Be89) and 3.5 min *8* (1970Ar15). Other: 3.8 min *5* (84γ) in 1972Be89, but this value was excluded since Eγ overlaps with 81.5γ following decay of ^{176}Os ($T_{1/2}$=3.6 min *5*). configuration: ν1/2[521] ($p_{3/2}$) Nilsson configuration. Based on the measured J^π, the favored α-decay from the J^π=1/2$^-$ g.s. (ν1/2[521]) of ^{181}Pt, the observed in band properties, such as large signature splitting and rotational alignment, and configuration systematics.
75.6# *3*	(3/2$^-$)		AbC	XREF: b(88). J$^\pi$: 75.6γ to 1/2$^-$; band assignment.
90.60# *22*	5/2$^-$		AbC	XREF: b(88). J$^\pi$: 90.6γ to 1/2$^-$; band assignment.
152.30@ *24*	5/2$^-$	40 ns *3*	A C	J$^\pi$: 152.3γ to 1/2$^-$; J^π systematics; band assignment. $T_{1/2}$: From $\gamma\gamma$(t) by gating on γ rays below and above the isomer in ^{164}Er(^{17}O,4nγ), ^{166}Er(^{16}O,5nγ) (1983Dr05). configuration: ν5/2[512] ($h_{9/2}$) Nilsson configuration. Supported by the observed in-band properties, such as alignment and g_K-g_R values.
240.4@ *4*	7/2$^-$		A C	J$^\pi$: 88.1γ (M1+E2) to 5/2$^-$; band assignment.
259.2# *4*	(7/2$^-$)		A C	J$^\pi$: 183.6γ to (3/2$^-$); band assignment.
285.1# *4*	9/2$^-$		A C	J$^\pi$: 194.5γ E2 to 5/2$^-$; band assignment.
300.6& *4*	7/2$^+$	46.3 ns *3*	A C	J$^\pi$: 60.2γ to 7/2$^-$, 148.3γ (E1) to 5/2$^-$; band assignment. $T_{1/2}$: From nγ(t) by gating on the 148.3γ in ^{164}Er(^{17}O,4nγ), ^{166}Er(^{16}O,5nγ) (1983Dr05). configuration: ν7/2[633] Coriolis-mixed ($i_{13/2}$) Nilsson configuration. Supported by the observed in-band properties, such as alignment and g_K-g_R values. The assignment is consistent with the measured E1 transition strength for 60.2γ and 148.3γ, and systematics of similar transitions in neighboring nuclei.
318.9& *5*	9/2$^+$		C	J$^\pi$: (18.3)γ to 7/2$^+$; band assignment.
355.3@ *5*	9/2$^-$		A C	J$^\pi$: 114.9γ to 7/2$^-$, 203γ to 5/2$^-$; band assignment.
375.7& *5*	11/2$^+$		C	J$^\pi$: 56.8γ to 9/2$^+$; 75.1γ to 7/2$^+$; band assignment.
433.5& *5*	13/2$^+$		C	J$^\pi$: 57.8γ to 11/2$^+$; 114.6γ to 9/2$^+$; band assignment.
494.5@ *5*	11/2$^-$		C	J$^\pi$: 139.2γ M1+E2 to 9/2$^-$, 254.1γ (E2) to 7/2$^-$; band assignment.
534.0# *5*	(11/2$^-$)		C	J$^\pi$: 274.8γ (E2) to (7/2$^-$); band assignment.
567.5# *5*	13/2$^-$		C	J$^\pi$: 282.4γ E2 to 9/2$^-$; band assignment.

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Adopted Levels, Gammas (continued)

^{177}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
595.2[&] *5*	15/2+	C	Jπ: 161.6γ M1+E2 to 13/2+, 219.5γ (E2) to 11/2+; band assignment.
655.9[@] *5*	13/2−	C	Jπ: 161.4γ M1+E2 to 11/2−, 300.6γ to 9/2−; band assignment.
678.7[&] *5*	17/2+	C	Jπ: 83.5γ M1+E2 to 15/2+, 245.2γ E2 to 13/2+; band assignment.
837.0[@] *5*	15/2−	C	Jπ: 181.1γ M1+E2 to 13/2−, 342.5γ (E2) to 11/2−; band assignment.
885.5[#] *6*	(15/2−)	C	Jπ: 351.5γ (E2) to (11/2−); band assignment.
924.9[#] *6*	17/2−	C	Jπ: 357.4γ E2 to 13/2−; band assignment.
946.7[&] *6*	19/2+	C	Jπ: 268.2γ M1+E2 to 17/2+, 351.5γ (E2) to 15/2+; band assignment.
1036.7[@] *5*	17/2−	C	Jπ: 199.7γ to 15/2−, 380.7γ E2 to 13/2−; band assignment.
1047.3[&] *6*	21/2+	C	Jπ: 100.6γ to 19/2+, 368.5γ E2 to 17/2+; band assignment.
1252.3[@] *5*	19/2−	C	Jπ: 215.8γ (M1+E2) to 17/2−, 415.4γ (E2) to 15/2−; band assignment.
1305.3[#] *7*	(19/2−)	C	Jπ: 419.8γ to (15/2−); band assignment.
1348.5[#] *7*	21/2−	C	Jπ: 423.6γ E2 to 17/2−; band assignment.
1395.0[&] *6*	23/2+	C	Jπ: 347.7γ to 21/2+, 448.3γ (E2) to 19/2+; band assignment.
1484.0[@] *6*	21/2−	C	Jπ: 231.3γ (M1+E2) to 19/2−, 447.1γ (E2) to 17/2−; band assignment.
1519.1[&] *6*	25/2+	C	Jπ: 124.3γ to 23/2+, 471.8γ E2 to 21/2+; band assignment.
1727.4[@] *6*	(23/2−)	C	Jπ: 243.0γ to 21/2−; 475.6γ to 19/2−; band assignment.
1788.3[#] *8*	(23/2−)	C	Jπ: 483.0γ (E2) to (19/2−); band assignment.
1831.2[#] *7*	25/2−	C	Jπ: 482.7γ (E2) to 21/2−; band assignment.
1913.2[&] *6*	27/2+	C	Jπ: 394.4γ M1+E2 to 25/2+, 518.1γ E2 to 23/2+; band assignment.
1987.7[@] *6*	(25/2−)	C	Jπ: 259.5γ to (23/2−); 503.7γ to 21/2−; band assignment.
2069.8[&] *7*	29/2+	C	Jπ: 550.6γ (E2) to 25/2+; band assignment.
2255.2[@] *7*	(27/2−)	C	Jπ: 527.8γ to (23/2−); band assignment.
2327.3[#] *8*	(27/2−)	C	Jπ: 539.0γ (E2) to (23/2−); band assignment.
2362.6[#] *8*	29/2−	C	Jπ: 531.4γ E2 to 25/2−; band assignment.
2486.6[&] *7*	31/2+	C	Jπ: 416.7γ to 29/2+, 573.4γ E2 to 27/2+; band assignment.
2540.7[@] *7*	(29/2−)	C	Jπ: 553.0γ (E2) to (25/2−); band assignment.
2679.4[&] *7*	33/2+	C	Jπ: 609.6γ E2 to 29/2+; band assignment.
2766.8 *12*		C	
2826.8[@] *7*	(31/2−)	C	Jπ: 571.6γ to (27/2−); band assignment.
2910.3[#] *13*	(31/2−)	C	Jπ: 583γ to (27/2−); band assignment.
2911.9[#] *9*	33/2−	C	Jπ: 549.3γ (E2) to 29/2−; band assignment.
3038.7 *9*	(33/2−)	C	Jπ: 676.1γ to 29/2−; band assignment.
3108.2[&] *7*	35/2+	C	Jπ: 621.6γ (E2) to 31/2+; band assignment.
3135.7[@] *12*	(33/2−)	C	Jπ: 595γ to (29/2−); band assignment.
3338.5[&] *8*	37/2+	C	Jπ: 659.1γ (E2) to 33/2+; band assignment.
3477.6[#] *9*	37/2−	C	Jπ: 565.7γ (E2) to 33/2−; band assignment.
3779.2[&] *8*	39/2+	C	Jπ: 671.0γ (E2) to 35/2+; band assignment.
4044.5[&] *8*	41/2+	C	Jπ: 706.0γ to 37/2+; band assignment.
4102.8[#] *10*	41/2−	C	Jπ: 625.2γ to (37/2−); band assignment.
4501.2[&] *13*	(43/2+)	C	Jπ: 722γ to 39/2+; band assignment.
4787.8[#] *10*	(45/2−)	C	Jπ: 685.0γ to (41/2−); band assignment.
4806.0[&] *9*	(45/2+)	C	Jπ: 761.5γ to (41/2+); band assignment.
4811.5 *10*		C	
5612.0[&] *14*	(49/2+)	C	Jπ: 806γ to (45/2+); band assignment.

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Adopted Levels, Gammas (continued)

^{177}Os Levels (continued)

† From a least-squares fit to Eγ.
‡ From ^{164}Er(^{17}O,4nγ), ^{166}Er(^{16}O,5nγ) (1983Dr05), unless otherwise stated.
# Band(A): $K^\pi=1/2^-$, ν1/2[521] ($p_{3/2}$) band.
@ Band(B): $K^\pi=5/2^-$, ν5/2[512] ($h_{9/2}$) band.
& Band(C): $K^\pi=7/2^+$, ν7/2[633] Coriolis-mixed ($i_{13/2}$) band.

γ(^{177}Os)

Mixing ratios values are deduced from the branching ratios and the rotational model, and by assuming pure K. The sign of δ is determined from γ(θ). It is assumed that the sign of δ does not change within a given band.

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α#	Comments
75.6	(3/2$^-$)	75.6 *3*	100	0.0	1/2$^-$	[M1+E2]	12.43 *22*	α(K)=10.22 *18*; α(L)=1.70 *4*; α(M)=0.391 *8* α(N)=0.0955 *18*; α(O)=0.0165 *3*; α(P)=0.001225 *23*
90.60	5/2$^-$	(15.0 *4*)		75.6	(3/2$^-$)			E_γ: From level energy differences. Not observed directly, but required from the γγ coincidence relationship.
		90.6 *3*	100	0.0	1/2$^-$	[E2]	6.54 *13*	α(K)=0.890 *13*; α(L)=4.26 *9*; α(M)=1.090 *23* α(N)=0.261 *6*; α(O)=0.0385 *8*; α(P)=0.0001065 *18*
152.30	5/2$^-$	61.7@ *3*	100	90.60	5/2$^-$	[M1]	4.00 *8*	α(L)=3.08 *7*; α(M)=0.708 *15* α(N)=0.173 *4*; α(O)=0.0298 *6*; α(P)=0.00222 *5* B(M1)(W.u.)=0.00037 *4*
		152.3@ *3*	75 *13*	0.0	1/2$^-$	[E2]	0.864 *14*	α(K)=0.339 *5*; α(L)=0.397 *7*; α(M)=0.1008 *17* α(N)=0.0242 *4*; α(O)=0.00362 *6*; α(P)=3.08×10^{-5} *5* B(E2)(W.u.)=0.34 *6*
240.4	7/2$^-$	88.1 *3*	100	152.30	5/2$^-$	(M1+E2)	8.09 *14*	α(K)=6.67 *12*; α(L)=1.092 *19*; α(M)=0.251 *5* α(N)=0.0612 *11*; α(O)=0.01056 *19*; α(P)=0.000785 *14* Mult.: A_2=−0.31 *7*.
259.2	(7/2$^-$)	183.6 *3*	100	75.6	(3/2$^-$)	[E2]	0.445	α(K)=0.212 *3*; α(L)=0.176 *3*; α(M)=0.0446 *7* α(N)=0.01071 *17*; α(O)=0.00161 *3*; α(P)=1.96×10^{-5} *3*
285.1	9/2$^-$	194.5 *3*	100	90.60	5/2$^-$	E2	0.365	α(K)=0.182 *3*; α(L)=0.1381 *22*; α(M)=0.0348 *6* α(N)=0.00837 *13*; α(O)=0.001265 *20*; α(P)=1.702×10^{-5} *25* Mult.: A_2=+0.34 *3*, A_4=−0.08 *4*.
300.6	7/2$^+$	60.2 *3*	28.4 *8*	240.4	7/2$^-$	[E1]	0.298 *6*	α(L)=0.230 *5*; α(M)=0.0533 *11* α(N)=0.01267 *25*; α(O)=0.00198 *4*; α(P)=8.48×10^{-5} *16* B(E1)(W.u.)=3.99×10^{-6} *11*
		148.3 *3*	100.0 *6*	152.30	5/2$^-$	(E1)	0.1422 *22*	α(K)=0.1166 *18*; α(L)=0.0197 *3*; α(M)=0.00453 *7* α(N)=0.001090 *17*; α(O)=0.000179 *3*; α(P)=1.003×10^{-5} *15*

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								B(E1)(W.u.)=9.40×10^{-7} *11* Mult.: A_2=+0.054 *12*, A_4=−0.004 *15*.
318.9	9/2$^+$	(18.3 *6*)	100	300.6	7/2$^+$	[M1+E2]	145 *16*	α(L)=111 *12*; α(M)=26 *3* α(N)=6.3 *7*; α(O)=1.08 *12*; α(P)=0.080 *9* E_γ: From level energy differences. Not observed directly, but required from the $\gamma\gamma$ coincidence relationship.
355.3	9/2$^-$	114.9 *3*	≈100	240.4	7/2$^-$	[M1+E2]	3.78	α(K)=3.12 *5*; α(L)=0.507 *8*; α(M)=0.1164 *19* α(N)=0.0284 *5*; α(O)=0.00490 *8*; α(P)=0.000365 *6* δ: ≈−0.20 *2*, assuming K=5/2.
		203[@] *1*	<22	152.30	5/2$^-$	[E2]	0.316 *7*	α(K)=0.163 *4*; α(L)=0.115 *3*; α(M)=0.0291 *8* α(N)=0.00699 *18*; α(O)=0.00106 *3*; α(P)=1.53×10^{-5} *3*
375.7	11/2$^+$	56.8 *3*	100 *10*	318.9	9/2$^+$	[M1+E2]	5.09 *11*	α(L)=3.93 *9*; α(M)=0.902 *19* α(N)=0.220 *5*; α(O)=0.0380 *8*; α(P)=0.00282 *6* δ: −0.55 *12*, assuming K=7/2.
		75.1 *3*	20 *8*	300.6	7/2$^+$	[E2]		
433.5	13/2$^+$	57.8 *3*	100 *12*	375.7	11/2$^+$	[M1+E2]	4.84 *10*	α(L)=3.73 *8*; α(M)=0.857 *18* α(N)=0.209 *5*; α(O)=0.0361 *8*; α(P)=0.00268 *6* δ: −0.17 *1*, assuming K=7/2.
		114.6 *3*	40.4 *23*	318.9	9/2$^+$	[E2]	2.53 *5*	α(K)=0.635 *10*; α(L)=1.43 *3*; α(M)=0.365 *7* α(N)=0.0875 *17*; α(O)=0.01295 *24*; α(P)=6.08×10^{-5} *10*
494.5	11/2$^-$	139.2 *3*	100 *8*	355.3	9/2$^-$	M1+E2	2.19 *4*	α(K)=1.81 *3*; α(L)=0.293 *5*; α(M)=0.0672 *11* α(N)=0.0164 *3*; α(O)=0.00283 *5*; α(P)=0.000211 *4* Mult.: A_2=−0.52 *8*, A_4=+0.03 *9*. δ: −0.24 *2*, assuming K=5/2.
		254.1 *3*	83 *8*	240.4	7/2$^-$	(E2)	0.1520	α(K)=0.0907 *13*; α(L)=0.0464 *7*; α(M)=0.01158 *18* α(N)=0.00279 *5*; α(O)=0.000428 *7*; α(P)=8.86×10^{-6} *13* Mult.: A_2=+0.31 *16*.
534.0	(11/2$^-$)	274.8 *3*	100	259.2	(7/2$^-$)	(E2)	0.1191	α(K)=0.0740 *11*; α(L)=0.0342 *5*; α(M)=0.00851 *13* α(N)=0.00205 *3*; α(O)=0.000316 *5*; α(P)=7.33×10^{-6} *11* Mult.: A_2=+0.29 *5*.
567.5	13/2$^-$	282.4 *3*	100	285.1	9/2$^-$	E2	0.1096	α(K)=0.0690 *10*; α(L)=0.0308 *5*; α(M)=0.00765 *12* α(N)=0.00184 *3*; α(O)=0.000285 *5*; α(P)=6.86×10^{-6} *10* Mult.: A_2=+0.262 *13*, A_4=−0.035 *15*.
595.2	15/2$^+$	161.6 *3*	79.9 *24*	433.5	13/2$^+$	M1+E2	1.434 *22*	α(K)=1.185 *18*; α(L)=0.192 *3*; α(M)=0.0440 *7* α(N)=0.01073 *16*; α(O)=0.00185 *3*; α(P)=0.0001380 *21* Mult.: From A_2=−0.81 *2*, A_4=−0.02 *3*. See

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								1983Dr05 for details.
								δ: −0.76 *2*, assuming K=7/2.
595.2	15/2$^+$	219.5 *3*	100 *3*	375.7	11/2$^+$	(E2)	0.243	α(K)=0.1330 *20*; α(L)=0.0836 *13*; α(M)=0.0210 *4*
								α(N)=0.00505 *8*; α(O)=0.000768 *12*; α(P)=1.266×10^{-5} *19*
								Mult.: A_2=+0.32 *5*, A_4=−0.06 *6*.
655.9	13/2$^-$	161.4 *3*	100 *18*	494.5	11/2$^-$	M1+E2	1.439 *22*	α(K)=1.190 *18*; α(L)=0.192 *3*; α(M)=0.0441 *7*
								α(N)=0.01077 *17*; α(O)=0.00186 *3*; α(P)=0.0001385 *21*
								Mult.: From A_2=−0.81 *2*, A_4=−0.02 *3*. See 1983Dr05 for details.
								δ: −0.17 *2*, assuming K=5/2.
		300.6 *3*	≈73	355.3	9/2$^-$	[E2]	0.0908	α(K)=0.0588 *9*; α(L)=0.0244 *4*; α(M)=0.00603 *9*
								α(N)=0.001453 *21*; α(O)=0.000226 *4*; α(P)=5.90×10^{-6} *9*
678.7	17/2$^+$	83.5 *3*	8.3 *7*	595.2	15/2$^+$	(M1+E2)	9.43 *17*	α(K)=7.78 *14*; α(L)=1.276 *23*; α(M)=0.293 *6*
								α(N)=0.0715 *13*; α(O)=0.01234 *22*; α(P)=0.000917 *16*
								Mult.: A_2=−0.34 *16*.
								δ: -0.23 *1*, assuming K=7/2.
		245.2 *3*	100 *5*	433.5	13/2$^+$	E2	0.1701	α(K)=0.0996 *15*; α(L)=0.0535 *8*; α(M)=0.01336 *20*
								α(N)=0.00322 *5*; α(O)=0.000493 *8*; α(P)=9.66×10^{-6} *14*
								Mult.: A_2=+0.21 *3*, A_4=−0.05 *4*.
837.0	15/2$^-$	181.1 *3*	70 *3*	655.9	13/2$^-$	M1+E2	1.041 *16*	α(K)=0.861 *13*; α(L)=0.1389 *21*; α(M)=0.0319 *5*
								α(N)=0.00778 *12*; α(O)=0.001343 *20*; α(P)=0.0001001 *15*
								Mult.: A_2=−0.37 *10*, A_4=−0.05 *13*.
								δ: -0.19 *1*, assuming K=5/2.
		342.5 *3*	100 *5*	494.5	11/2$^-$	(E2)	0.0621	α(K)=0.0422 *6*; α(L)=0.01513 *22*; α(M)=0.00371 *6*
								α(N)=0.000897 *13*; α(O)=0.0001407 *21*; α(P)=4.32×10^{-6} *7*
								Mult.: A_2=+0.51 *13*.
885.5	(15/2$^-$)	351.5 *3*	100	534.0	(11/2$^-$)	(E2)	0.0577	α(K)=0.0396 *6*; α(L)=0.01380 *20*; α(M)=0.00338 *5*
								α(N)=0.000817 *12*; α(O)=0.0001284 *19*; α(P)=4.07×10^{-6} *6*
								Mult.: From A_2=+0.2 *1*. See 1983Dr05 for details.
924.9	17/2$^-$	357.4 *3*	100	567.5	13/2$^-$	E2	0.0551	α(K)=0.0380 *6*; α(L)=0.01301 *19*; α(M)=0.00319 *5*
								α(N)=0.000770 *11*; α(O)=0.0001211 *18*; α(P)=3.91×10^{-6} *6*
								Mult.: A_2=+0.26 *2*, A_4=−0.04 *3*.
946.7	19/2$^+$	268.2 *3*	25.4 *13*	678.7	17/2$^+$	M1+E2	0.351	α(K)=0.291 *5*; α(L)=0.0465 *7*; α(M)=0.01066 *16*
								α(N)=0.00260 *4*; α(O)=0.000450 *7*; α(P)=3.36×10^{-5} *5*
								Mult.: A_2=−1.0 *2*, A_4=+0.3 *2*.
								δ: -1.58 *21*, assuming K=7/2.
		351.5 *3*	100 *5*	595.2	15/2$^+$	(E2)	0.0577	α(K)=0.0396 *6*; α(L)=0.01380 *20*;

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								α(M)=0.00338 *5* α(N)=0.000817 *12*; α(O)=0.0001284 *19*; α(P)=4.07×10^{-6} *6* Mult.: From A_2=+0.2 *1*. See 1983Dr05 for details.
1036.7	17/2$^-$	199.7 *3*	34 *10*	837.0	15/2$^-$	[M1+E2]	0.792 *12*	α(K)=0.655 *10*; α(L)=0.1055 *16*; α(M)=0.0242 *4* α(N)=0.00591 *9*; α(O)=0.001021 *15*; α(P)=7.61×10^{-5} *12* δ: −0.23 *3*, assuming K=5/2.
		380.7 *3*	100 *3*	655.9	13/2$^-$	E2	0.0463	α(K)=0.0325 *5*; α(L)=0.01045 *15*; α(M)=0.00255 *4* α(N)=0.000616 *9*; α(O)=9.75×10^{-5} *14*; α(P)=3.37×10^{-6} *5* Mult.: A_2=0.27 *3*, A_4=0.00 *4*.
1047.3	21/2$^+$	100.6 *3*	≈3.4	946.7	19/2$^+$	[M1+E2]	5.53 *9*	α(K)=4.57 *8*; α(L)=0.744 *13*; α(M)=0.171 *3* α(N)=0.0417 *7*; α(O)=0.00719 *12*; α(P)=0.000535 *9* δ: -0.16 *1*, assuming K=7/2.
		368.5 *3*	100	678.7	17/2$^+$	E2	0.0506	α(K)=0.0352 *5*; α(L)=0.01169 *17*; α(M)=0.00286 *4* α(N)=0.000691 *10*; α(O)=0.0001090 *16*; α(P)=3.64×10^{-6} *6* Mult.: A_2=+0.265 *13*, A_4=−0.09 *2*.
1252.3	19/2$^-$	215.8 *3*	28 *3*	1036.7	17/2$^-$	(M1+E2)	0.639 *10*	α(K)=0.528 *8*; α(L)=0.0850 *13*; α(M)=0.0195 *3* α(N)=0.00476 *7*; α(O)=0.000822 *12*; α(P)=6.13×10^{-5} *9* Mult.: A_2=−0.5 *3*. δ: -0.22 *2*, assuming K=5/2.
		415.4 *3*	100	837.0	15/2$^-$	(E2)	0.0366	α(K)=0.0264 *4*; α(L)=0.00779 *11*; α(M)=0.00189 *3* α(N)=0.000457 *7*; α(O)=7.29×10^{-5} *11*; α(P)=2.76×10^{-6} *4* Mult.: A_2=(0.30 *9*).
1305.3	(19/2$^-$)	419.8 *3*	100	885.5	(15/2$^-$)	[E2]	0.0356	α(K)=0.0257 *4*; α(L)=0.00753 *11*; α(M)=0.00183 *3* α(N)=0.000442 *7*; α(O)=7.04×10^{-5} *10*; α(P)=2.69×10^{-6} *4*
1348.5	21/2$^-$	423.6 *3*	100	924.9	17/2$^-$	E2	0.0347	α(K)=0.0252 *4*; α(L)=0.00731 *11*; α(M)=0.00177 *3* α(N)=0.000429 *6*; α(O)=6.84×10^{-5} *10*; α(P)=2.64×10^{-6} *4* Mult.: A_2=+0.30 *3*, A_4=0.00 *4*.
1395.0	23/2$^+$	347.7 *3*	33 *5*	1047.3	21/2$^+$	[M1+E2]	0.1737	α(K)=0.1440 *21*; α(L)=0.0229 *4*; α(M)=0.00525 *8* α(N)=0.001281 *19*; α(O)=0.000221 *4*; α(P)=1.657×10^{-5} *24* δ: -0.77 *8*, assuming K=7/2.
		448.3 *3*	100 *3*	946.7	19/2$^+$	(E2)	0.0300	α(K)=0.0220 *4*; α(L)=0.00608 *9*; α(M)=0.001470 *21* α(N)=0.000356 *5*; α(O)=5.70×10^{-5} *8*; α(P)=2.32×10^{-6} *4* Mult.: From A_2=+0.29 *3*, A_4=−0.04 *3*. See 1983Dr05 for details.

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
1484.0	21/2$^-$	231.3 *3*	11.3 *14*	1252.3	19/2$^-$	(M1+E2)	0.527	α(K)=0.436 *7*; α(L)=0.0701 *11*; α(M)=0.01606 *24* α(N)=0.00392 *6*; α(O)=0.000678 *10*; α(P)=5.06×10^{-5} *8* Mult.: A_2=−0.5 *2*. δ: -0.30 *2*, assuming K=5/2.
		447.1 *3*	100.0 *21*	1036.7	17/2$^-$	(E2)	0.0302	α(K)=0.0222 *4*; α(L)=0.00614 *9*; α(M)=0.001483 *21* α(N)=0.000359 *5*; α(O)=5.75×10^{-5} *9*; α(P)=2.33×10^{-6} *4* Mult.: From A_2=+0.29 *3*, A_4=−0.04 *3*. See 1983Dr05 for details.
1519.1	25/2$^+$	124.3 *3*	4.3 *18*	1395.0	23/2$^+$	[M1+E2]	3.02	α(K)=2.49 *4*; α(L)=0.405 *7*; α(M)=0.0929 *15* α(N)=0.0227 *4*; α(O)=0.00391 *7*; α(P)=0.000291 *5* δ: -0.10 *2*, assuming K=7/2.
		471.8 *3*	100.0 *21*	1047.3	21/2$^+$	E2	0.0263	α(K)=0.0196 *3*; α(L)=0.00518 *8*; α(M)=0.001247 *18* α(N)=0.000302 *5*; α(O)=4.86×10^{-5} *7*; α(P)=2.07×10^{-6} *3* Mult.: A_2=+0.26 *2*, A_4=−0.02 *2*.
1727.4	(23/2$^-$)	243.0 *3*	≈6.9	1484.0	21/2$^-$	[M1+E2]	0.460	α(K)=0.381 *6*; α(L)=0.0611 *9*; α(M)=0.01401 *21* α(N)=0.00342 *5*; α(O)=0.000591 *9*; α(P)=4.41×10^{-5} *7* δ: -0.52 *7*, assuming K=5/2.
		475.6 *3*	100	1252.3	19/2$^-$	[E2]	0.0258	α(K)=0.0192 *3*; α(L)=0.00505 *8*; α(M)=0.001215 *18* α(N)=0.000294 *5*; α(O)=4.74×10^{-5} *7*; α(P)=2.03×10^{-6} *3*
1788.3	(23/2$^-$)	483.0 *3*	100	1305.3	(19/2$^-$)	(E2)	0.0248	α(K)=0.0185 *3*; α(L)=0.00481 *7*; α(M)=0.001157 *17* α(N)=0.000280 *4*; α(O)=4.52×10^{-5} *7*; α(P)=1.96×10^{-6} *3* Mult.: From A_2=+0.24 *3*, A_4=−0.03 *2*. See 1983Dr05 for details.
1831.2	25/2$^-$	482.7 *3*	100	1348.5	21/2$^-$	(E2)	0.0249	α(K)=0.0186 *3*; α(L)=0.00482 *7*; α(M)=0.001160 *17* α(N)=0.000281 *4*; α(O)=4.53×10^{-5} *7*; α(P)=1.96×10^{-6} *3* Mult.: From A_2=+0.24 *3*, A_4=−0.03 *2*. See 1983Dr05 for details.
1913.2	27/2$^+$	394.4 *3*	31.3 *18*	1519.1	25/2$^+$	M1+E2	0.1240	α(K)=0.1029 *15*; α(L)=0.01630 *23*; α(M)=0.00373 *6* α(N)=0.000911 *13*; α(O)=0.0001576 *23*; α(P)=1.181×10^{-5} *17* Mult.: A_2=−0.42 *4*, A_4=+0.25 *5*. δ: -0.58 *2*, assuming K=7/2.
		518.1 *3*	100.0 *18*	1395.0	23/2$^+$	E2	0.0209	α(K)=0.01580 *23*; α(L)=0.00389 *6*; α(M)=0.000931 *14* α(N)=0.000225 *4*; α(O)=3.66×10^{-5} *6*; α(P)=1.680×10^{-6} *24* Mult.: A_2=+0.29 *2*, A_4=−0.05 *3*.
1987.7	(25/2$^-$)	261 *1*	≈3.9	1727.4	(23/2$^-$)	[M1+E2]	0.378 *7*	α(K)=0.313 *6*; α(L)=0.0501 *9*; α(M)=0.01150 *21*

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								α(N)=0.00281 *5*; α(O)=0.000485 *9*; α(P)=3.62×10^{-5} *7*
								δ: -0.45 *5*, assuming K=5/2.
1987.7	(25/2$^-$)	503.7 *3*	100 *8*	1484.0	21/2$^-$	[E2]	0.0224	α(K)=0.01684 *24*; α(L)=0.00423 *6*; α(M)=0.001015 *15*
								α(N)=0.000246 *4*; α(O)=3.98×10^{-5} *6*; α(P)=1.79×10^{-6} *3*
2069.8	29/2$^+$	550.6 *3*	100	1519.1	25/2$^+$	(E2)	0.0180	α(K)=0.01380 *20*; α(L)=0.00325 *5*; α(M)=0.000775 *11*
								α(N)=0.000188 *3*; α(O)=3.06×10^{-5} *5*; α(P)=1.472×10^{-6} *21*
								Mult.: From A_2=+0.26 *2*, A_4=−0.03 *3*. See 1983Dr05 for details.
2255.2	(27/2$^-$)	527.8 *3*	100	1727.4	(23/2$^-$)	[E2]	0.0200	α(K)=0.01516 *22*; α(L)=0.00368 *6*; α(M)=0.000880 *13*
								α(N)=0.000213 *3*; α(O)=3.46×10^{-5} *5*; α(P)=1.614×10^{-6} *23*
2327.3	(27/2$^-$)	539.0 *3*	100	1788.3	(23/2$^-$)	(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)=3.25×10^{-5} *5*; α(P)=1.541×10^{-6} *22*
								Mult.: A_2=(+0.3).
2362.6	29/2$^-$	531.4 *3*	100	1831.2	25/2$^-$	E2	0.0196	α(K)=0.01493 *21*; α(L)=0.00360 *5*; α(M)=0.000862 *13*
								α(N)=0.000209 *3*; α(O)=3.39×10^{-5} *5*; α(P)=1.590×10^{-6} *23*
								Mult.: A_2=+0.27 *2*, A_4=−0.04 *2*.
2486.6	31/2$^+$	416.7 *3*	24 *7*	2069.8	29/2$^+$	[M1+E2]	0.1072 *16*	α(K)=0.0889 *13*; α(L)=0.01407 *20*; α(M)=0.00322 *5*
								α(N)=0.000786 *12*; α(O)=0.0001360 *20*; α(P)=1.020×10^{-5} *15*
								δ: -0.48 *8*, assuming K=7/2.
		573.4 *3*	100 *7*	1913.2	27/2$^+$	E2	0.01639	α(K)=0.01262 *18*; α(L)=0.00289 *4*; α(M)=0.000688 *10*
								α(N)=0.0001667 *24*; α(O)=2.72×10^{-5} *4*; α(P)=1.348×10^{-6} *19*
								Mult.: A_2=+0.26 *3*, A_4=−0.04 *3*.
2540.7	(29/2$^-$)	553.0 *3*	100	1987.7	(25/2$^-$)	(E2)	0.0179	α(K)=0.01367 *20*; α(L)=0.00321 *5*; α(M)=0.000765 *11*
								α(N)=0.000185 *3*; α(O)=3.02×10^{-5} *5*; α(P)=1.458×10^{-6} *21*
								Mult.: A_2=+0.27 *3*.
2679.4	33/2$^+$	609.6 *3*	100	2069.8	29/2$^+$	E2	0.01423	α(K)=0.01105 *16*; α(L)=0.00243 *4*; α(M)=0.000576 *9*
								α(N)=0.0001398 *20*; α(O)=2.29×10^{-5} *4*; α(P)=1.183×10^{-6} *17*
								Mult.: A_2=+0.28 *2*, A_4=−0.05 *3*.
2766.8		697 *1*	100	2069.8	29/2$^+$			
2826.8	(31/2$^-$)	571.6 *3*	100	2255.2	(27/2$^-$)	[E2]	0.01652	α(K)=0.01271 *18*; α(L)=0.00291 *5*; α(M)=0.000694 *10*
								α(N)=0.0001682 *24*; α(O)=2.75×10^{-5} *4*; α(P)=1.357×10^{-6} *19*
2910.3	(31/2$^-$)	583[@] *1*	100	2327.3	(27/2$^-$)	(E2)	0.01577	α(K)=0.01217 *18*; α(L)=0.00275 *4*; α(M)=0.000655 *10*

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								α(N)=0.0001588 *24*; α(O)=2.60×10^{-5} *4*; α(P)=1.301×10^{-6} *19*
2911.9	33/2$^-$	549.3 *3*	100	2362.6	29/2$^-$	(E2)	0.0181	α(K)=0.01387 *20*; α(L)=0.00327 *5*; α(M)=0.000780 *11* α(N)=0.000189 *3*; α(O)=3.08×10^{-5} *5*; α(P)=1.479×10^{-6} *21* Mult.: From A_2=+0.26 *2*, A_4=−0.03 *3*. See 1983Dr05 for details.
3038.7	(33/2$^-$)	676.1 *3*	100	2362.6	29/2$^-$	[E2]	0.01127	α(K)=0.00888 *13*; α(L)=0.00183 *3*; α(M)=0.000433 *6* α(N)=0.0001050 *15*; α(O)=1.736×10^{-5} *25*; α(P)=9.52×10^{-7} *14*
3108.2	35/2$^+$	621.6 *3*	100	2486.6	31/2$^+$	(E2)	0.01361	α(K)=0.01060 *15*; α(L)=0.00230 *4*; α(M)=0.000546 *8* α(N)=0.0001323 *19*; α(O)=2.17×10^{-5} *3*; α(P)=1.135×10^{-6} *16* Mult.: A_2=+0.33 *6*.
3135.7	(33/2$^-$)	595 *1*	100	2540.7	(29/2$^-$)	[E2]	0.01504	α(K)=0.01165 *17*; α(L)=0.00260 *4*; α(M)=0.000618 *10* α(N)=0.0001498 *23*; α(O)=2.45×10^{-5} *4*; α(P)=1.246×10^{-6} *18*
3338.5	37/2$^+$	659.1 *3*	100	2679.4	33/2$^+$	(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} *14* Mult.: A_2=+0.21 *5*.
3477.6	37/2$^-$	439[@] *1*	≈12	3038.7	(33/2$^-$)	[E2]	0.0317	α(K)=0.0231 *4*; α(L)=0.00651 *11*; α(M)=0.00157 *3* α(N)=0.000381 *6*; α(O)=6.09×10^{-5} *10*; α(P)=2.43×10^{-6} *4*
		565.7 *3*	100 *3*	2911.9	33/2$^-$	(E2)	0.01692	α(K)=0.01300 *19*; α(L)=0.00300 *5*; α(M)=0.000715 *10* α(N)=0.0001734 *25*; α(O)=2.83×10^{-5} *4*; α(P)=1.388×10^{-6} *20* Mult.: A_2=+0.18 *6*.
3779.2	39/2$^+$	671.0 *3*	100	3108.2	35/2$^+$	(E2)	0.01146	α(K)=0.00902 *13*; α(L)=0.00187 *3*; α(M)=0.000442 *7* α(N)=0.0001072 *15*; α(O)=1.771×10^{-5} *25*; α(P)=9.67×10^{-7} *14* Mult.: A_2=(+0.28 *3*).
4044.5	41/2$^+$	706.0 *3*	100	3338.5	37/2$^+$	[E2]	0.01024	α(K)=0.00811 *12*; α(L)=0.001637 *23*; α(M)=0.000385 *6* α(N)=9.35×10^{-5} *14*; α(O)=1.550×10^{-5} *22*; α(P)=8.70×10^{-7} *13*
4102.8	41/2$^-$	625.2 *3*	100	3477.6	37/2$^-$	(E2)	0.01343	α(K)=0.01047 *15*; α(L)=0.00227 *4*; α(M)=0.000537 *8* α(N)=0.0001302 *19*; α(O)=2.14×10^{-5} *3*; α(P)=1.121×10^{-6} *16* Mult.: A_2=+0.30 *3*.
4501.2	(43/2$^+$)	722 *1*	100	3779.2	39/2$^+$	[E2]	0.00976	α(K)=0.00774 *11*; α(L)=0.001545 *23*; α(M)=0.000363 *6* α(N)=8.82×10^{-5} *13*; α(O)=1.463×10^{-5} *22*; α(P)=8.31×10^{-7} *12*
4787.8	(45/2$^-$)	685.0 *3*	100	4102.8	41/2$^-$	[E2]	0.01094	α(K)=0.00864 *13*; α(L)=0.001772 *25*; α(M)=0.000418 *6*

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Adopted Levels, Gammas (continued)

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

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[#]	Comments
								α(N)=0.0001014 *15*; α(O)=1.677×10^{-5} *24*; α(P)=9.26×10^{-7} *13*
4806.0	(45/2$^+$)	761.5 *3*	100	4044.5	41/2$^+$	[E2]	0.00870	α(K)=0.00694 *10*; α(L)=0.001349 *19*; α(M)=0.000316 *5* α(N)=7.68×10^{-5} *11*; α(O)=1.279×10^{-5} *18*; α(P)=7.45×10^{-7} *11*
4811.5		708.7 *3*	100	4102.8	41/2$^-$			
5612.0	(49/2$^+$)	806 *1*	100	4806.0	(45/2$^+$)	[E2]	0.00771	α(K)=0.00619 *9*; α(L)=0.001171 *17*; α(M)=0.000274 *4* α(N)=6.65×10^{-5} *10*; α(O)=1.111×10^{-5} *16*; α(P)=6.65×10^{-7} *10*

† From ^{164}Er(^{17}O,4nγ), ^{166}Er(^{17}O,5nγ) (1983Dr05), unless otherwise stated.

‡ Based on the measured angular distribution information and the apparent band structures with both cascade (ΔJ=1) and crossover (ΔJ=2) transitions in 1983Dr05, unless otherwise stated. The A_2 and A_4 values in the Comments section are from ^{164}Er(^{17}O,4nγ), ^{166}Er(^{17}O,5nγ) (1983Dr05).

Additional information 1.

@ Placement of transition in the level scheme is uncertain.

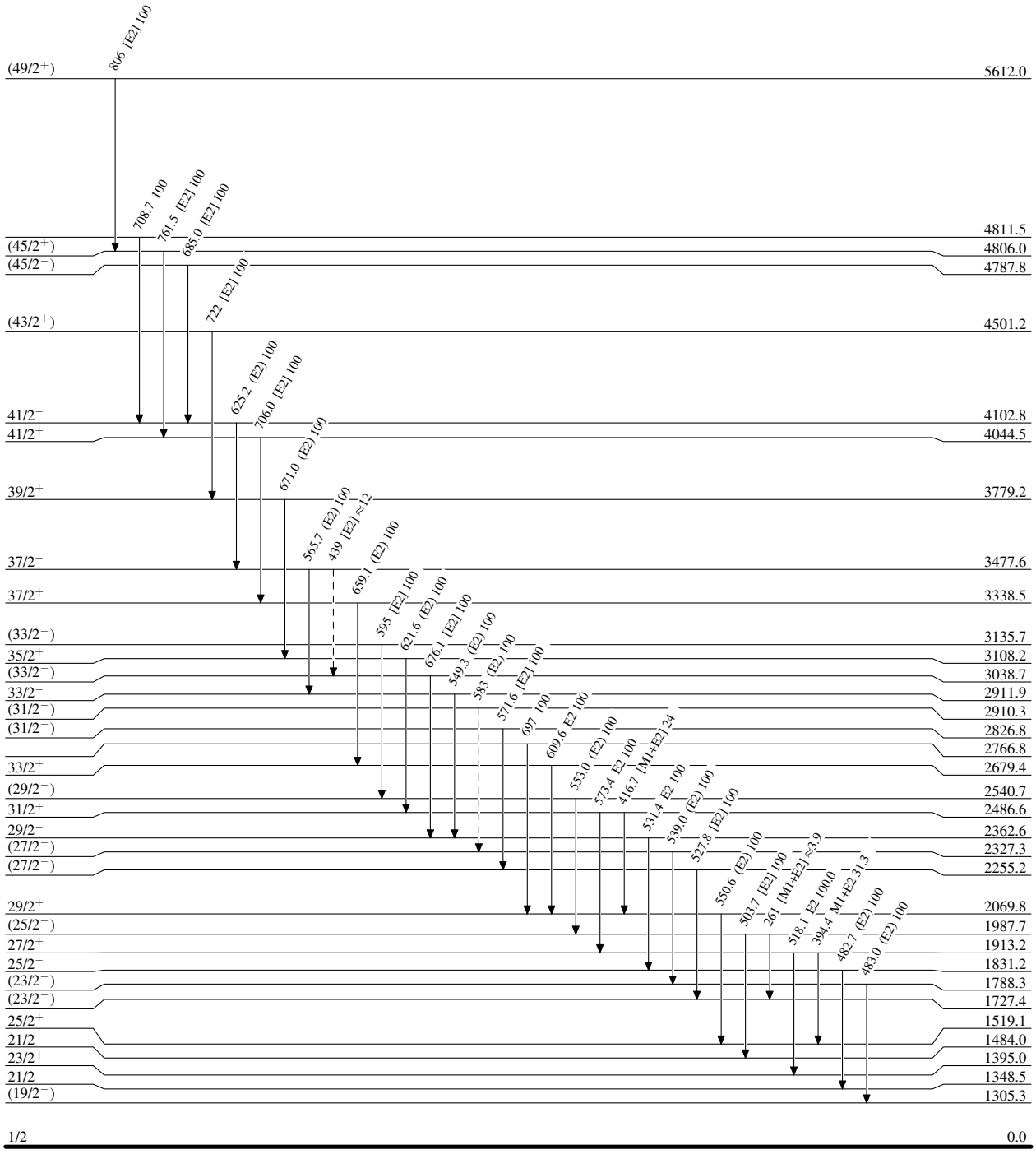
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{177}_{76}Os_{101}$

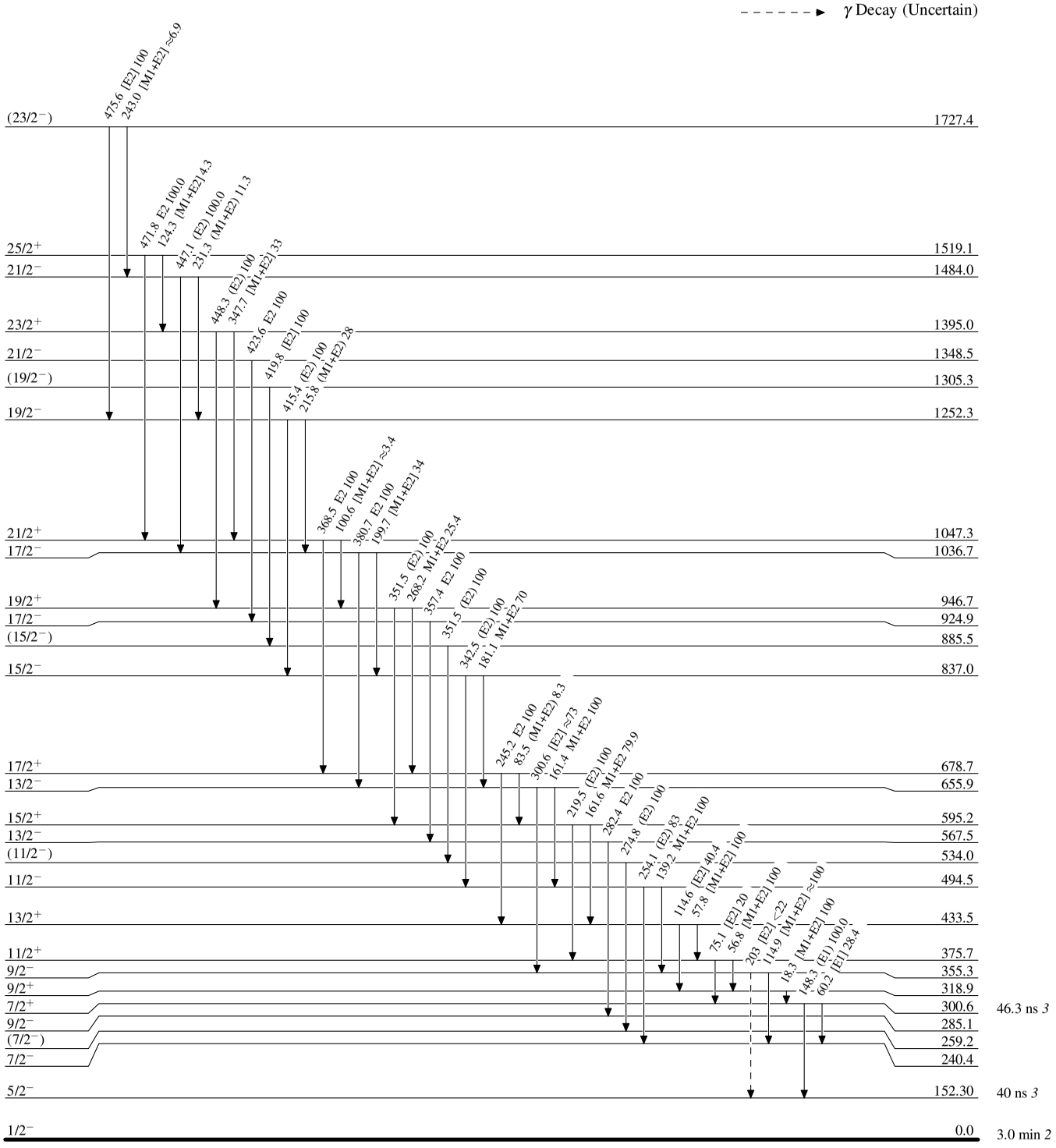
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{177}_{76}Os_{101}$

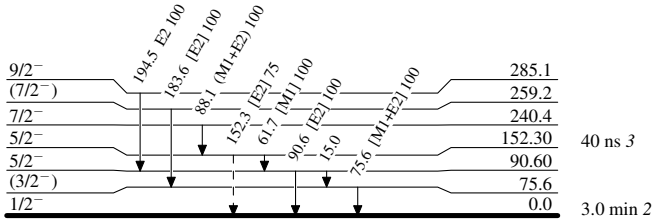
Adopted Levels, Gammas

Legend

Level Scheme (continued)

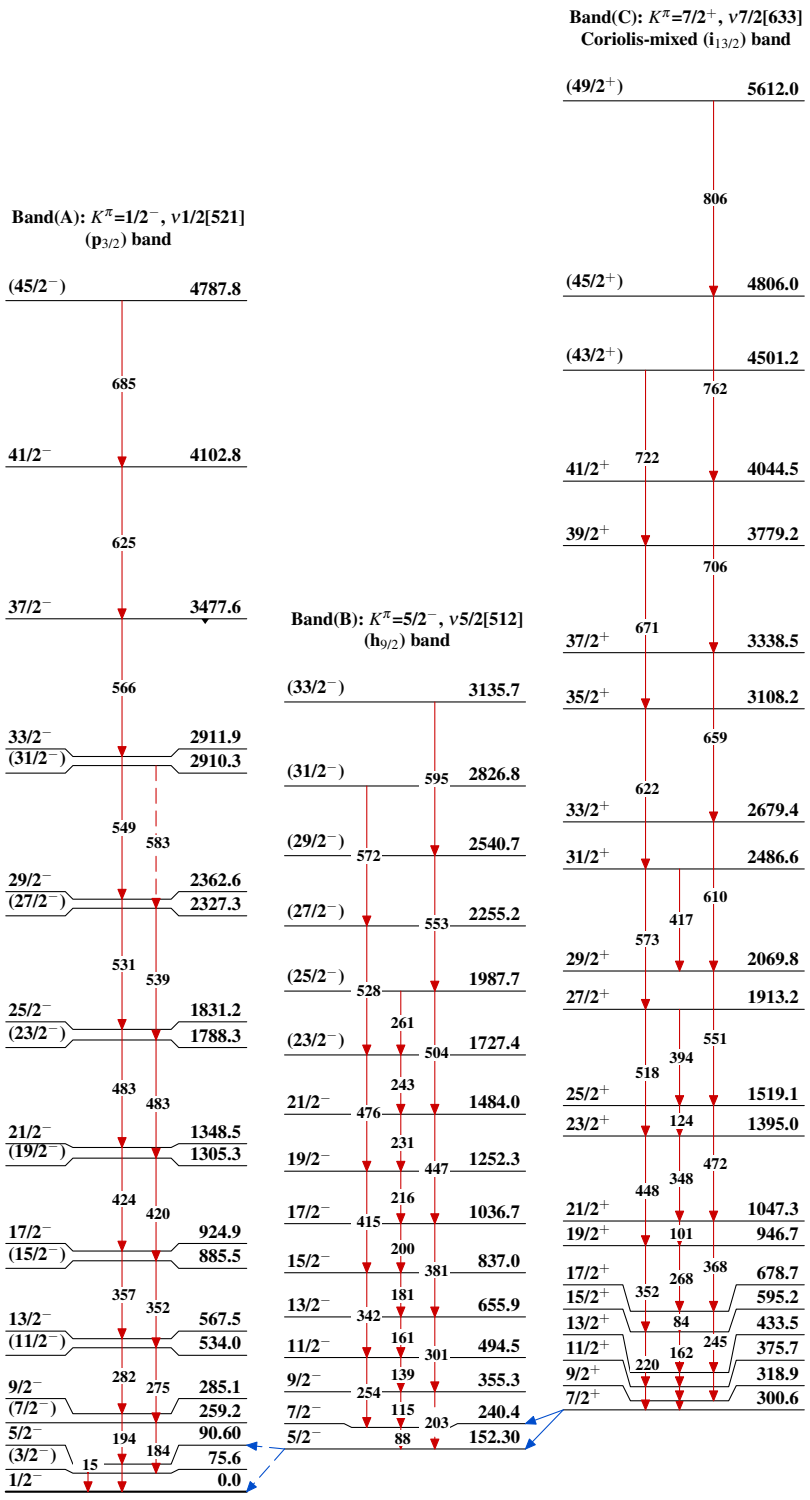
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{177}_{76}Os_{101}$

Adopted Levels, Gammas



$^{177}_{76}Os_{101}$