^{181}Os ε decay (105 min) 1971Ak03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 367 (2005)	31-Aug-2005

Parent: ^{181}Os: E=0.0; J$^{\pi}$=1/2^{-}; $T_{1/2}$=105 min *3*; Q(ε)=2960 *30*; %ε+%β^{+} decay=100.0

1971Ak03: ^{181}Os activity produced by proton on Au, ^{16}O on Tm, or ^{11}B on Lu; β spectrograph with a magnet, Ge(Li) detectors, NaI(Tl) detectors; measured Eγ, Iγ, I(ce), $\gamma\gamma$-coin, $\gamma\gamma$-delay, ICC; deduced log *ft*, level J^{π}, $T_{1.2}$.

Level scheme from 1971Ak03.

^{181}Re Levels

E(level)	J$^{\pi}$†	$T_{1/2}$	Comments
0.0	5/2^{+}	19.9 h *7*	$T_{1/2}$: from Adopted Levels.
118.01 *5*	7/2^{+}		
263.03 *8*	9/2^{-}		
266.41 *21*	9/2^{+}		
356.75 *10*	5/2^{-}	96 ns *4*	$T_{1/2}$: from $\gamma\gamma$(t) (1971Ak03).
390.6? *3*	9/2^{-}		
432.47 *11*	1/2^{-}		
599.67 *12*	3/2^{-}		
787.6 *4*	(1/2^{+},3/2^{+})		
826.77 *22*	(1/2,3/2)$^{+}$		
831.62 *22*	3/2^{+}		
867.20 *16*	1/2^{-},3/2^{-}		
931.5 *3*	(1/2^{+},3/2^{+})		
1000.5? *6*			
1059.9? *5*	($^{-}$)		
1060.38 *22*	3/2^{+}		
1108.03 *25*	1/2^{-},3/2^{-}		
1191.63 *22*	1/2^{-},3/2^{-}		
1385.4 *6*	(1/2^{-},3/2)		
1434.4 *3*	(3/2^{-})		
1442.66 *24*	3/2^{-}		
1924.8 *4*	(3/2)$^{-}$		
1937.6 *5*	1/2^{+},3/2^{+}		
1946.1 *5*	3/2^{-}		
1958.5 *6*	(1/2^{+},3/2^{+})		
2015.3 *5*	(1/2^{+},3/2^{+})		
2091.0 *5*	1/2^{+},3/2^{+}		
2137.9 *3*	3/2^{-}		
2172.3 *3*	3/2^{-}		
2426.0 *8*	(1/2^{-},3/2)		
2482.3 *3*	3/2^{-}		
2866.6 *4*	1/2^{-},3/2^{-}		

† From Adopted Levels.

ε,β^{+} radiations

E(decay)	E(level)	Iε†	Log *ft*	I($\varepsilon+\beta^{+}$)†	Comments
(9×10^{1} *3*)	2866.6	4.6 *6*	3.7 *6*	4.6 *6*	εK=0.2 *3*; εL=0.54 *18*; εM+=0.21 *10* Log *ft*: very low log *ft* value seems to indicate the configuration of the final level as 3 quasiparticle state with ν1/2[521]⊗ν7/2[514]⊗π9/2[514].

Continued on next page (footnotes at end of table)

^{181}Os ε decay (105 min) 1971Ak03 (continued)

ϵ,β+ radiations (continued)

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(4.8×10^{2} *3*)	2482.3		1.04 *18*	6.34 *11*	1.04 *18*	εK=0.782 *4*; εL=0.165 *3*; εM+=0.0531 *10*
(5.3×10^{2} *3*)	2426.0		0.38 *11*	6.89 *15*	0.38 *11*	εK=0.788 *3*; εL=0.1608 *20*; εM+=0.0516 *8*
(7.9×10^{2} *3*)	2172.3		4.9 *7*	6.15 *8*	4.9 *7*	εK=0.8014 *11*; εL=0.1508 *8*; εM+=0.0478 *3*
(8.2×10^{2} *3*)	2137.9		1.4 *5*	6.74 *17*	1.4 *5*	εK=0.8026 *10*; εL=0.1499 *8*; εM+=0.0475 *3*
(8.7×10^{2} *3*)	2091.0		2.5 *4*	6.54 *9*	2.5 *4*	εK=0.8040 *9*; εL=0.1489 *7*; εM+=0.04712 *24*
(9.4×10^{2} *3*)	2015.3		5.3 *9*	6.29 *9*	5.3 *9*	εK=0.8059 *8*; εL=0.1475 *6*; εM+=0.04658 *20*
(1.00×10^{3} *3*)	1958.5		0.73 *21*	7.20 *14*	0.73 *21*	εK=0.8072 *7*; εL=0.1466 *5*; εM+=0.04624 *18*
(1.01×10^{3} *3*)	1946.1		1.2 *5*	7.00 *19*	1.2 *5*	εK=0.8075 *7*; εL=0.1464 *5*; εM+=0.04617 *17*
(1.02×10^{3} *3*)	1937.6		2.3 *5*	6.73 *11*	2.3 *5*	εK=0.8076 *7*; εL=0.1463 *5*; εM+=0.04613 *17*
(1.04×10^{3} *3*)	1924.8		1.4 *6*	6.95 *19*	1.4 *6*	εK=0.8079 *6*; εL=0.1461 *5*; εM+=0.04606 *17*
(1.52×10^{3} *3*)	1442.66	0.0043 *14*	3.9 *7*	6.86 *9*	3.9 *7*	av Eβ=242 *14*; εK=0.8132; εL=0.14141 *23*; εM+=0.04432 *9*
(1.53×10^{3} *3*)	1434.4	0.0022 *9*	1.9 *6*	7.17 *15*	1.9 *6*	av Eβ=245 *14*; εK=0.8132; εL=0.14134 *23*; εM+=0.04430 *9*
(1.57×10^{3} *3*)	1385.4	0.0019 *8*	1.1 *4*	7.44 *17*	1.1 *4*	av Eβ=267 *14*; εK=0.8131 *1*; εL=0.14098 *23*; εM+=0.04417 *8*
(1.77×10^{3} *3*)	1191.63	0.016 *5*	3.0 *7*	7.11 *11*	3.0 *7*	av Eβ=353 *14*; εK=0.8114 *6*; εL=0.1395 *3*; εM+=0.04364 *9*
(1.85×10^{3} *3*)	1108.03	0.027 *10*	3.3 *11*	7.11 *15*	3.3 *11*	av Eβ=390 *14*; εK=0.8098 *8*; εL=0.1387 *3*; εM+=0.04339 *10*
(1.90×10^{3} *3*)	1060.38	0.034 *15*	3.4 *15*	7.12 *20*	3.4 *15*	av Eβ=411 *14*; εK=0.8085 *9*; εL=0.1383 *3*; εM+=0.04324 *10*
(1.90×10^{3} *3*)	1059.9?	0.012 *4*	1.2 *4*	7.58 *15*	1.2 *4*	av Eβ=411 *14*; εK=0.8085 *9*; εL=0.1383 *3*; εM+=0.04324 *10* Feeding from above probable because decay from 1/2⁻ must be at least second forbidden.
(1.96×10^{3} *3*)	1000.5?	0.006 *5*	0.5 *4*	8.0 *4*	0.5 *4*	av Eβ=437 *14*; εK=0.8067 *11*; εL=0.1377 *4*; εM+=0.04304 *11*
(2.03×10^{3} *3*)	931.5	0.063 *17*	3.8 *10*	7.12 *12*	3.9 *10*	av Eβ=467 *14*; εK=0.8041 *13*; εL=0.1370 *4*; εM+=0.04280 *12*
(2.09×10^{3} *3*)	867.20	<0.02	<1.0	>7.7	<1	av Eβ=495 *14*; εK=0.8013 *15*; εL=0.1362 *4*; εM+=0.04255 *12*
(2.13×10^{3} *3*)	831.62	0.08 *3*	3.4 *14*	7.22 *18*	3.5 *14*	av Eβ=511 *14*; εK=0.7995 *16*; εL=0.1358 *4*; εM+=0.04241 *13*
(2.13×10^{3} *3*)	826.77	0.30 *4*	13.0 *14*	6.64 *6*	13.3 *14*	av Eβ=513 *14*; εK=0.7993 *17*; εL=0.1357 *4*; εM+=0.04239 *13*
(2.17×10^{3} *3*)	787.6	0.13 *2*	5.2 *7*	7.06 *7*	5.3 *7*	av Eβ=530 *14*; εK=0.7972 *18*; εL=0.1352 *4*; εM+=0.04223 *13*
(2.36×10^{3} *3*)	599.67	0.29 *10*	6.7 *22*	7.02 *15*	7.0 *23*	av Eβ=613 *14*; εK=0.7845 *24*; εL=0.1325 *5*; εM+=0.04134 *16*
(2.53×10^{3} *3*)	432.47	<1.1	<17	>6.7	<18	av Eβ=686 *14*; εK=0.770 *3*; εL=0.1296 *6*; εM+=0.04041 *19*

† Absolute intensity per 100 decays.

γ(^{181}Re)

Iγ normalization: normalized assuming the sum Iγ+ce(g.s.)=100.

E_γ	I_γ[@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[&]	Comments
33.8[a] *3*	0.0055 *18*	390.6?	9/2⁻	356.75	5/2⁻	E2[#]		633	α(L)= 474; α(M)= 119.4 E_γ: transition observed by 1968Ha39 but not placed. Placement by evaluator on the basis of multipolarity, closeness in energy to calculated value of 36 keV by 1974Si14, and apparent E2 enhancement, which is consistent with this γ being the lowest member of the decoupled rotational band 1/2[541]. I_γ: calculated from ce(L23) and α(L23) (1968Ha39).
75.73 *4*	9 *3*	432.47	1/2⁻	356.75	5/2⁻	E2[#]		13.34	α(K)= 0.983; α(L)= 9.3; α(M)= 2.359; α(N+..)= 0.695 I_γ: calculated from ce data of 1968Ha39 and α. Iγ=21 *6* from 1971Ak03 is too large to be consistent with the intensity balance. Contamination from neighboring Re x rays is possible.
100.0 *5*	1.5 *5*	931.5	(1/2⁺,3/2⁺)	831.62	3/2⁺	[M1]		5.34	α(K)= 4.42; α(L)= 0.711; α(M)= 0.1621; α(N+..)= 0.0498
104.5 *5*	1.6 *5*	931.5	(1/2⁺,3/2⁺)	826.77	(1/2,3/2)⁺	[M1]		4.71	α(K)= 3.89; α(L)= 0.626; α(M)= 0.1427; α(N+..)= 0.0439
118.01 *5*	64 *7*	118.01	7/2⁺	0.0	5/2⁺	M1+E2	0.22 *+3−2*	3.266 *15*	α(K)= 2.65 *3*; α(L)= 0.475 *10*; α(M)= 0.1096 *25*; α(N+..)= 0.0336 *8*
145.02 *6*	7.0 *15*	263.03	9/2⁻	118.01	7/2⁺	E1		0.1478	α(K)= 0.1215; α(L)=0.02034; α(M)=0.00464; α(N+..)=0.00137
148.66 *8*	0.8 *3*	266.41	9/2⁺	118.01	7/2⁺	M1(+E2)	<0.13	1.724 *17*	α(K)= 1.427; α(L)= 0.2295; α(M)= 0.0523; α(N+..)=0.01599
ˣ153.4 *5*	0.3 *2*								
ˣ158.0 *5*	1.2 *5*								
167.23 *6*	15 *2*	599.67	3/2⁻	432.47	1/2⁻	M1+E2	≈1.1	0.886 *9*	α(K)= 0.611 *7*; α(L)= 0.2091 *21*; α(M)= 0.0508 *5*; α(N+..)=0.01518 *16*
ˣ210.92 *12*	0.8 *3*					(M1)		0.645	α(K)= 0.534; α(L)= 0.0852; α(M)=0.01943; α(N+..)=0.00587
ˣ223.09 *14*	1.3 *5*					(M1)		0.553	α(K)= 0.458; α(L)= 0.0728; α(M)=0.01661; α(N+..)=0.00501
228.73 *12*	8 *2*	1060.38	3/2⁺	831.62	3/2⁺	M1+E2	1.2 *+5−4*	0.33 *7*	α(K)= 0.25 *7*; α(L)= 0.0670 *3*; α(M)=0.01609 *21*; α(N+..)=0.00478 *4*
233.63 *10*	9 *3*	1060.38	3/2⁺	826.77	(1/2,3/2)⁺	M1+E2	1.3 *+3−2*	0.30 *3*	α(K)= 0.22 *3*; α(L)= 0.0621 *3*; α(M)=0.01494 *5*; α(N+..)=0.00443

From ENSDF

$^{181}_{75}$Re$_{106}$-3

γ(^{181}Re) (continued)

E_γ	I_γ[@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[&]	Comments
238.75 11	220 18	356.75	$5/2^-$	118.01	$7/2^+$	E1		0.0416	α(K)= 0.0345; α(L)=0.00546; α(M)=0.00124; α(N+..)=0.00037
242.74 12	30 7	599.67	$3/2^-$	356.75	$5/2^-$	M1+E2[#]	0.53 9	0.379 16	α(K)= 0.306 16; α(L)= 0.0564 3; α(M)= 0.0131; α(N+..)=0.00393
267.65 15	5 1	867.20	$1/2^-,3/2^-$	599.67	$3/2^-$	M1+E2	0.9 2	0.241 25	α(K)= 0.189 24; α(L)= 0.0403 10; α(M)=0.00948 15; α(N+..)=0.00282 6
310.5 5	1.8 5	2482.3	$3/2^-$	2172.3	$3/2^-$	[M1]		0.2235	α(K)= 0.1855; α(L)= 0.0293; α(M)=0.00667; α(N+..)=0.00201
324.4 2	2.4[†] 5	1191.63	$1/2^-,3/2^-$	867.20	$1/2^-,3/2^-$	(M1)		0.1986	α(K)= 0.1649; α(L)= 0.0260; α(M)=0.00592; α(N+..)=0.00178
326.4 2	1.4[†] 11	1434.4	$(3/2^-)$	1108.03	$1/2^-,3/2^-$	(M1)		0.1953	α(K)= 0.1622; α(L)= 0.0256; α(M)=0.00582; α(N+..)=0.00175
334.0 6	1.0 4	1442.66	$3/2^-$	1108.03	$1/2^-,3/2^-$	[M1]		0.1836	α(K)= 0.1525; α(L)=0.02401; α(M)=0.00547; α(N+..)=0.00165
344.2 2	1.8 3	2482.3	$3/2^-$	2137.9	$3/2^-$	M1+E2	0.7 3	0.133 21	α(K)= 0.108 19; α(L)= 0.0195 16; α(M)= 0.0045 4; α(N+..)=0.00135 10
356.7 2	8.0 15	356.75	$5/2^-$	0.0	$5/2^+$	(E1)		0.01578	α(K)=0.01317; α(L)=0.00202; α(M)=0.00046; α(N+..)=0.00014
[x]394.0 5	2.5 5					(M1)		0.1181	α(K)= 0.0982; α(L)=0.01539; α(M)=0.00350; α(N+..)=0.00105
434.5 2	9.5 19	867.20	$1/2^-,3/2^-$	432.47	$1/2^-$	M1(+E2)	<0.7	0.0912 7	α(K)= 0.0758; α(L)=0.01186; α(M)=0.00270; α(N+..)=0.00081
[x]460.5 8	1.5 10								
509.0 10	1.0 6	1108.03	$1/2^-,3/2^-$	599.67	$3/2^-$	[M1]		0.0605	α(K)= 0.0501; α(L)=0.00781
[x]533.5 7	4.6 15								
567.2 7	2.2[†] 11	1434.4	$(3/2^-)$	867.20	$1/2^-,3/2^-$	[M1]		0.0457	α(K)= 0.0379; α(L)=0.00589
[x]569.8 7	1.8[†] 16								
592.0 7	3.5 13	1191.63	$1/2^-,3/2^-$	599.67	$3/2^-$	(M1)		0.0409	α(K)= 0.0339; α(L)=0.00527
675.4 4	7.7 18	1108.03	$1/2^-,3/2^-$	432.47	$1/2^-$	(M1)		0.0292	α(K)=0.02424; α(L)=0.00375
[x]687.2 7	2.5 8								
728.6 6	5.1 12	2866.6	$1/2^-,3/2^-$	2137.9	$3/2^-$	M1		0.02410	α(K)=0.02001; α(L)=0.00308
[x]749.6 8	4[†] 4								
751.4 5	16[†] 4	1108.03	$1/2^-,3/2^-$	356.75	$5/2^-$	(E2)		0.00863	α(K)=0.00688; α(L)=0.00132
759.5 5	12.0 22	1191.63	$1/2^-,3/2^-$	432.47	$1/2^-$	M1		0.02169	α(K)=0.01801; α(L)=0.00277
786.0 6	3.8 12	1385.4	$(1/2^-,3/2)$	599.67	$3/2^-$	[M1]		0.01989	α(K)=0.01652; α(L)=0.00253
787.6 4	26 3	787.6	$(1/2^+,3/2^+)$	0.0	$5/2^+$	(E2)		0.00780	α(K)=0.00625; α(L)=0.00117
[x]792.0 10	3 1								
796.9[a] 5	6.0 15	1059.9?	$(^-)$	263.03	$9/2^-$	(E2)		0.00761	α(K)=0.00610; α(L)=0.00114
827.0 4	100	826.77	$(1/2,3/2)^+$	0.0	$5/2^+$	E2		0.00704	α(K)=0.00566; α(L)=0.00104
831.5 4	38 5	831.62	$3/2^+$	0.0	$5/2^+$	M1		0.01725	α(K)=0.01433; α(L)=0.00219
835.0 10	1.0 5	1434.4	$(3/2^-)$	599.67	$3/2^-$	[M1]		0.01707	α(K)=0.01418; α(L)=0.00217
842.5 6	4.1 8	1442.66	$3/2^-$	599.67	$3/2^-$	[M1]		0.01669	α(K)=0.01387; α(L)=0.00212

$^{181}_{75}Re_{106}$-4

γ(^{181}Re) (continued)

E_γ	I_γ[@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[&]	Comments
^{x}868.0 *5*	10.0 *15*								
^{x}872.2 *5*	12.0 *23*					M1		0.01529	α(K)=0.01271; α(L)=0.00194
^{x}908.5 *10*	2.0 *12*								
920.3 *5*	6.5 *15*	2866.6	$1/2^-,3/2^-$	1946.1	$3/2^-$	[M1]		0.01336	α(K)=0.01111; α(L)=0.00169
931.7 *5*	4.1 *11*	931.5	$(1/2^+,3/2^+)$	0.0	$5/2^+$	(E2)		0.00551	α(K)=0.00446; α(L)=0.00078
941.5 *5*	5.1 *13*	2866.6	$1/2^-,3/2^-$	1924.8	$(3/2)^-$	[M1]		0.01261	α(K)=0.01049; α(L)=0.00160
955.0 *5*	25 *4*	2015.3	$(1/2^+,3/2^+)$	1060.38	$3/2^+$	(M1)		0.01217	α(K)=0.01012; α(L)=0.00154
^{x}960.0 *10*	2.3 *10*								
^{x}971.0 *5*	6.1 *15*								
981.0 *6*	4.1 *12*	2172.3	$3/2^-$	1191.63	$1/2^-,3/2^-$	M1+E2	1.1 *+8−4*	0.0079 *16*	α(K)= 0.0065 *13*; α(L)=0.00103 *18*
^{x}990.6 *5*	7.4 *15*								
1000.5[a] *6*	2.6 *10*	1000.5?		0.0	$5/2^+$				
1009.4 *6*	4.1 *12*	1442.66	$3/2^-$	432.47	$1/2^-$	[M1]		0.01059	α(K)=0.00881; α(L)=0.00134
1027.0 *10*	1.5 *10*	1385.4	$(1/2^-,3/2)$	356.75	$5/2^-$	[M1]		0.01015	α(K)=0.00844; α(L)=0.00128
1030.5 *7*	8.2 *16*	2091.0	$1/2^+,3/2^+$	1060.38	$3/2^+$	M1		0.01006	α(K)=0.00837; α(L)=0.00127
^{x}1044.5 *10*	1.5 *10*								
^{x}1048.5 *10*	1.5 *12*								
1060.4 *4*	28.0 *38*	1060.38	$3/2^+$	0.0	$5/2^+$	M1+E2	1.3 *+6−4*	0.0062 *10*	α(K)= 0.0051 *8*; α(L)=0.00081 *11*
1064.0 *10*	1.5 *12*	2172.3	$3/2^-$	1108.03	$1/2^-,3/2^-$	[M1]		0.00929	α(K)=0.00773; α(L)=0.00117
1077.3 *6*	2.0 *15*	1434.4	$(3/2^-)$	356.75	$5/2^-$	[M1]		0.00901	α(K)=0.00750; α(L)=0.00114
1086.2 *2*	6.4 *20*	1442.66	$3/2^-$	356.75	$5/2^-$	M1+E2	1.1 *+5−3*	0.0062 *9*	α(K)= 0.0051 *7*; α(L)=0.00081 *10*
1110.9 *5*	10.5 *21*	1937.6	$1/2^+,3/2^+$	826.77	$(1/2,3/2)^+$	[M1]		0.00835	α(K)=0.00695; α(L)=0.00105
1131.7 *6*	3.6 *10*	1958.5	$(1/2^+,3/2^+)$	826.77	$(1/2,3/2)^+$	(E2)		0.00374	α(K)=0.00307; α(L)=0.00051
1159.0 *10*	2.6 *10*	2091.0	$1/2^+,3/2^+$	931.5	$(1/2^+,3/2^+)$	[M1]		0.00752	α(K)=0.00626; α(L)=0.00095
^{x}1164.5 *10*	1.8 *11*								
^{x}1176.5 *10*	1.0 *8*								
^{x}1181.5 *5*	5.1 *11*					M1		0.00717	α(K)=0.00597; α(L)=0.00090
^{x}1234.0 *10*	1.1 *9*								
^{x}1244.0 *10*	1.2 *10*								
1260.0 *10*	1.3 *7*	2091.0	$1/2^+,3/2^+$	831.62	$3/2^+$	[M1]		0.00612	α(K)=0.00510; α(L)=0.00077
1305.0 *5*	9.0 *16*	2172.3	$3/2^-$	867.20	$1/2^-,3/2^-$	(E2)		0.00284	α(K)=0.00234; α(L)=0.00037
1325.0 *6*	2.0 *7*	1924.8	$(3/2)^-$	599.67	$3/2^-$	M1		0.00541	α(K)=0.00450; α(L)=0.00068
1345.2 *6*	5.4 *3*	1946.1	$3/2^-$	599.67	$3/2^-$	M1+E2	≈1.6	0.00339 *4*	α(K)=0.00281 *3*; α(L)=0.00044
^{x}1369.0 *10*	0.7 *5*								
1385.3 *6*	6.0 *14*	1385.4	$(1/2^-,3/2)$	0.0	$5/2^+$	(E2)		0.00253	α(K)=0.00210; α(L)=0.00033
^{x}1394.2 *10*	0.3 *2*								
^{x}1405.2 *10*	0.5 *3*								
^{x}1412.7 *10*	1.0 *5*								
^{x}1419.4 *10*	0.7 *5*								
1434.3 *10*	2.6 *10*	1434.4	$(3/2^-)$	0.0	$5/2^+$	[E1]		0.00099	α(K)=0.00083; α(L)=0.00012
1442.0 *10*	3.4 *12*	1442.66	$3/2^-$	0.0	$5/2^+$	[E1]		0.00098	α(K)=0.00083; α(L)=0.00012
1491.8 *10*	5.1 *14*	1924.8	$(3/2)^-$	432.47	$1/2^-$	M1		0.00404	α(K)=0.00337; α(L)=0.00051
1514.0 *10*	0.8 *4*	1946.1	$3/2^-$	432.47	$1/2^-$	[M1]			
1537.5 *10*	1.3 *5*	2137.9	$3/2^-$	599.67	$3/2^-$	[M1]			

γ(^{181}Re) (continued)

E_γ	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	δ‡
1552.0 *10*	0.7 *4*	2482.3	3/2$^-$	931.5	(1/2$^+$,3/2$^+$)	[E1]	
1568.0 *8*	5.1 *15*	1924.8	(3/2)$^-$	356.75	5/2$^-$	(M1)	
1573.0 *8*	5.4 *15*	2172.3	3/2$^-$	599.67	3/2$^-$	(E2)	
1589.5 *10*	3.3 *10*	1946.1	3/2$^-$	356.75	5/2$^-$	M1	
^{x}1619.3 *8*	2.8 *10*					M1	
^{x}1624.4 *8*	1.8 *8*					M1+E2	0.8 *+7−5*
^{x}1653.7 *10*	0.5 *3*						
^{x}1659.0 *10*	0.3 *2*						
^{x}1667.0 *10*	0.3 *2*						
^{x}1684.6 *12*	0.3 *2*						
1704.9 *6*	7.0 *15*	2137.9	3/2$^-$	432.47	1/2$^-$	M1	
1740.6 *5*	6.2 *11*	2172.3	3/2$^-$	432.47	1/2$^-$	M1+E2	≈1
1760.7 *5*	4.4 *10*	2866.6	1/2$^-$,3/2$^-$	1108.03	1/2$^-$,3/2$^-$	M1	
1780.7 *5*	2.0 *7*	2137.9	3/2$^-$	356.75	5/2$^-$	M1	
^{x}1794.5 *12*	0.8 *4*						
^{x}1800.8 *10*	1.0 *4*						
1826.2 *10*	0.8 *3*	2426.0	(1/2$^-$,3/2)	599.67	3/2$^-$	[M1]	
^{x}1836.2 *20*	0.3 *2*						
^{x}1846.0 *20*	0.3 *2*						
^{x}1866.7 *17*	0.8 *4*						
^{x}1913.0 *20*	0.3 *2*						
^{x}1927.0 *15*	0.5 *3*						
1937.0 *12*	1.0 *4*	1937.6	1/2$^+$,3/2$^+$	0.0	5/2$^+$	E2	
1946.0 *12*	3.0 *10*	1946.1	3/2$^-$	0.0	5/2$^+$	E1	
^{x}1981.7 *10*	6.0 *18*						
1993.3 *15*	0.9 *4*	2426.0	(1/2$^-$,3/2)	432.47	1/2$^-$	[M1]	
2000.4 *15*	0.9 *5*	2866.6	1/2$^-$,3/2$^-$	867.20	1/2$^-$,3/2$^-$	[M1]	
2015.0 *15*	0.9 *5*	2015.3	(1/2$^+$,3/2$^+$)	0.0	5/2$^+$	[M1]	
2070.0 *20*	0.2 *1*	2426.0	(1/2$^-$,3/2)	356.75	5/2$^-$	[M1]	
^{x}2096.0 *20*	0.3 *2*						
^{x}2115.2 *20*	0.8 *4*						
2138.0 *13*	3.8 *10*	2137.9	3/2$^-$	0.0	5/2$^+$	E1	
^{x}2156.7 *15*	1.5 *6*					E1	
^{x}2225.0 *20*	0.8 *4*						
^{x}2257.8 *14*	1.3 *5*					E1	
2267.3 *20*	0.2 *1*	2866.6	1/2$^-$,3/2$^-$	599.67	3/2$^-$	[M1]	
^{x}2284.5 *20*	0.2 *1*						
^{x}2302.9 *14*	2.0 *7*						
^{x}2355.0 *20*	0.2 *1*						
^{x}2396.0 *20*	0.2 *1*						
2436.2 *15*	0.5 *3*	2866.6	1/2$^-$,3/2$^-$	432.47	1/2$^-$	[M1]	
^{x}2465.0 *20*	0.2 *1*						
2483.0 *20*	0.2 *1*	2482.3	3/2$^-$	0.0	5/2$^+$	[E1]	

$\gamma(^{181}Re)$ (continued)

E_γ	I_γ [@]	E_i(level)
[x]2528.2 *15*	0.7 *3*	
[x]2647.0 *20*	0.2 *1*	

† Unresolved doublet in γ data. Intensities divided by the evaluator using ce(K) data (1968Ha39) and coincidence intensities (1971Ak03).

‡ From ce subshell ratios of 1968Ha39 assuming 20% intensity uncertainty, and from ce(K) data of 1971Ak03 assuming the 827-keV γ is E2 and the uncertainty in intensity is 20% below 200 keV and 40% above 200 keV.

From conversion coefficients (1968Ha39).

@ For absolute intensity per 100 decays, multiply by 0.199 *12*.

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

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

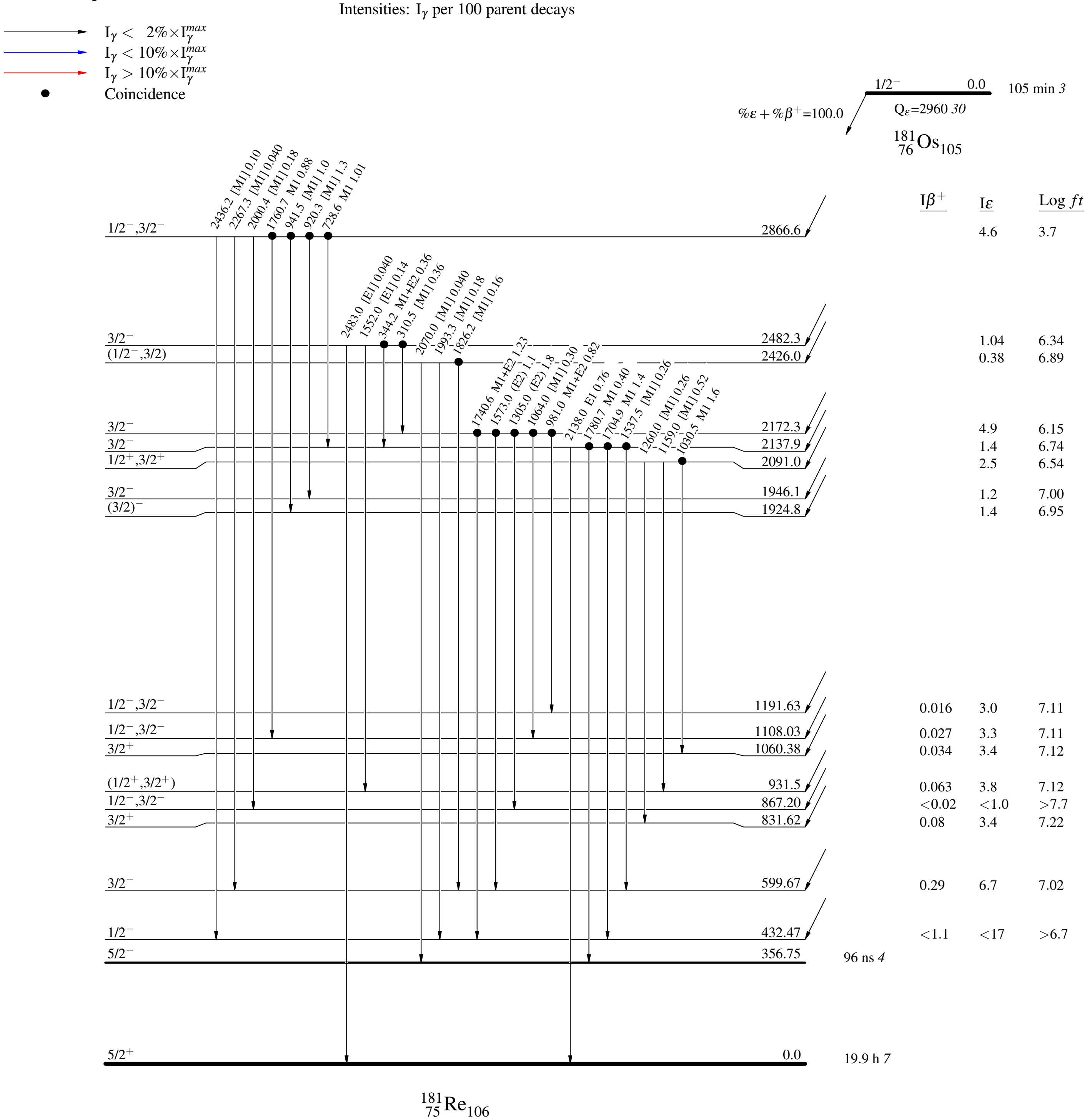
[x] γ ray not placed in level scheme.

$^{181}_{75}Re_{106}$-7

^{181}Os ε decay (105 min) 1971Ak03

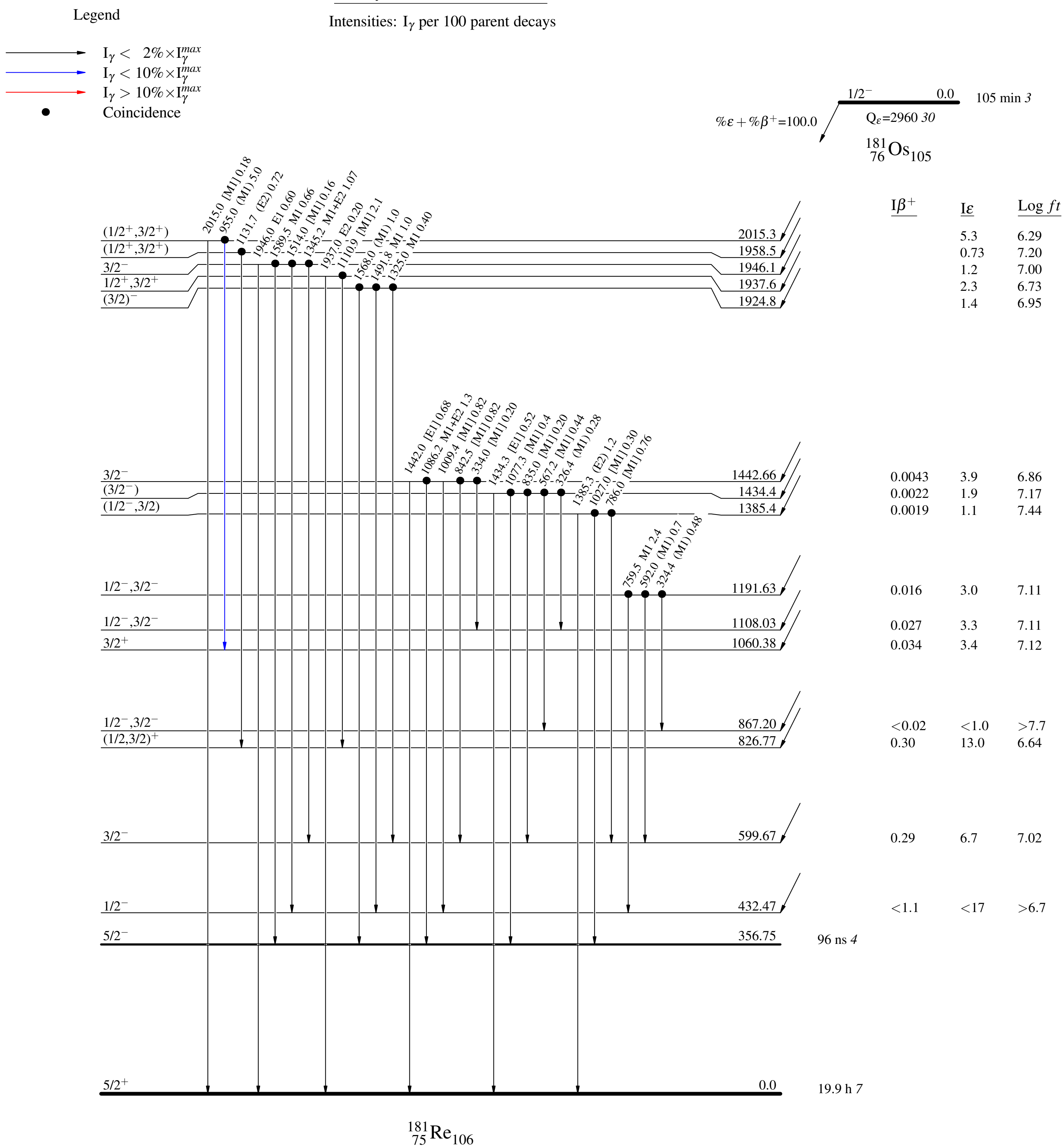
Decay Scheme

Intensities: I_γ per 100 parent decays



^{181}Os ε decay (105 min) 1971Ak03

Decay Scheme (continued)



^{181}Os ε decay (105 min) 1971Ak03

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays