^{184}Os IT decay (23.6 ns) 1988Ch27

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

Parent: ^{184}Os: E=2366.81 *19*; $J^\pi=10^+$; $T_{1/2}$=23.6 ns *14*; %IT decay=100.0

1988Ch27: isomer produced from ^{170}Er(^{18}O,4nγ), E=85 MeV, pulsed and chopped beam; Ge detector array (6 detectors with BGO escape suppression, including 2 low energy γ detectors); measured Eγ, Iγ, $\gamma\gamma$-coin (delayed-delayed, prompt-delayed and prompt-prompt; 200ns time window), $\gamma(\theta)$, $\gamma\gamma$(t).

^{184}Os Levels

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	$T_{1/2}$
0.0@	0^+	1428.6& *5*	5^+	1870.9@ *4*	10^+	
119.80@ *20*	2^+	1543.8a *11*	$(3)^-$	1916.3 *8*	(6^-)	
383.8@ *3*	4^+	1613.2& *4*	6^+	1958.1a *4*	$7^{(-)}$	
773.9@ *4*	6^+	1620.3a *4*	4^-	2045.6 *5*	(8^-)	
1081.0& *4*	3^+	1637.5? *5*		2220.9 *5*	$(9)^-$	
1224.1& *5*	4^+	1717.6a *4*	5^-	2366.0 *5*	10^+	20# ns *5*
1274.7@ *4*	8^+	1832.3a *4*	6^-			
1406.7 *4*	$(4^+,5,6^+)$	1839.9 *6*	$(4,5,6)^+$			

† From least-squares fit to Eγ, assigning 1 keV uncertainty to Eγ for which No uncertainty is indicated.
‡ From Adopted Levels.
# From $\gamma\gamma$(t).
@ Band(A): $K^\pi=0^+$ g.s. band.
& Band(B): $K^\pi=2^+$ γ band.
a Band(C): $K^\pi=3^-$ rotational band.

^{184}Os IT decay (23.6 ns) 1988Ch27 (continued)

γ(^{184}Os)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
88[a]		2045.6	(8⁻)	1958.1	7(⁻)	M1		8.12	α(K)=6.70 *10*; α(L)=1.095 *16*; α(M)=0.251 *4*; α(N+..)=0.0728 *11* α(N)=0.0614 *9*; α(O)=0.01060 *15*; α(P)=0.000788 *11*
114.7 *2*	4	1832.3	6⁻	1717.6	5⁻	(M1+E2)		3.2 *7*	α(K)=1.9 *13*; α(L)=1.0 *5*; α(M)=0.24 *13*; α(N+..)=0.07 *4* α(N)=0.06 *3*; α(O)=0.009 *4*; α(P)=0.00021 *16*
119.8 *2*	43	119.80	2⁺	0.0	0⁺	E2		2.13 *4*	α(K)=0.582 *9*; α(L)=1.166 *19*; α(M)=0.298 *5*; α(N+..)=0.0820 *13* α(N)=0.0714 *12*; α(O)=0.01058 *17*; α(P)=5.47×10⁻⁵ *8*
125.9 *2*	7	1958.1	7(⁻)	1832.3	6⁻	(M1+E2)		2.3 *6*	α(K)=1.5 *10*; α(L)=0.7 *3*; α(M)=0.16 *8*; α(N+..)=0.046 *20* α(N)=0.039 *18*; α(O)=0.0061 *24*; α(P)=0.00016 *12*
145.1[&] *2*	22	2366.0	10⁺	2220.9	(9)⁻	E1		0.1503	α(K)=0.1233 *18*; α(L)=0.0209 *3*; α(M)=0.00480 *7*; α(N+..)=0.001355 *20* α(N)=0.001155 *17*; α(O)=0.000189 *3*; α(P)=1.057×10⁻⁵ *16*
175.3[&] *2*	18	2220.9	(9)⁻	2045.6	(8⁻)	(M1+E2)		0.8 *3*	α(K)=0.6 *4*; α(L)=0.18 *4*; α(M)=0.045 *10*; α(N+..)=0.0126 *25* α(N)=0.0108 *23*; α(O)=0.00172 *25*; α(P)=7.E−5 *5*
[x]190.7 *2*	2								In Adopted Levels, Gammas, a 190.7γ deexcites a 2457 level.
[x]194.8 *2*	2								In Adopted Levels, Gammas, a 194.4γ deexcites a 2301 level.
[x]197.3 *2*									In Adopted Levels, Gammas, a 197.5γ deexcites a 2399 level.
[x]203.7 *2*	1								In Adopted Levels, Gammas, a 203.3γ deexcites a 1632 level.
[x]209.0 *5*	2								probably deexcites the 1840 level.
211.9 *2*	3	1832.3	6⁻	1620.3	4⁻	E2		0.274	α(K)=0.1459 *21*; α(L)=0.0966 *14*; α(M)=0.0243 *4*; α(N+..)=0.00674 *10* α(N)=0.00584 *9*; α(O)=0.000887 *13*; α(P)=1.380×10⁻⁵ *20*
230.8 *2*	7	1637.5?		1406.7	(4⁺,5,6⁺)				
[x]234.0 *2*	2								
240.6 *2*	5	1958.1	7(⁻)	1717.6	5⁻				
264.0 *2*	88	383.8	4⁺	119.80	2⁺	E2		0.1348	α(K)=0.0821 *12*; α(L)=0.0400 *6*; α(M)=0.00995 *15*; α(N+..)=0.00278 *4* α(N)=0.00240 *4*; α(O)=0.000369 *6*; α(P)=8.07×10⁻⁶ *12* I_γ: from I(γ+ce)=100 and α.
[x]273.4 *2*	1								
344.9 *2*	6	1958.1	7(⁻)	1613.2	6⁺				
390.1 *2*	73	773.9	6⁺	383.8	4⁺	E2		0.0433	α(K)=0.0307 *5*; α(L)=0.00962 *14*; α(M)=0.00234 *4*; α(N+..)=0.000659 *10* α(N)=0.000566 *8*; α(O)=8.98×10⁻⁵ *13*; α(P)=3.19×10⁻⁶ *5* I_γ: from I(γ+ce)=76 and α.
[x]393.8 *2*	2								
[x]395.0 *5*									probably deexcites the 1840 level.
404[a]		1832.3	6⁻	1428.6	5⁺				
[x]436.2 *2*									
[x]482.0 *5*									In Adopted Levels, Gammas, a 482.5γ deexcites a 1708 level.
488[a]		1916.3	(6⁻)	1428.6	5⁺				
493[a]		1717.6	5⁻	1224.1	4⁺	E1		0.00790 *11*	α(K)=0.00661 *10*; α(L)=0.001000 *14*; α(M)=0.000227 *4*; α(N+..)=6.52×10⁻⁵ *10* α(N)=5.52×10⁻⁵ *8*; α(O)=9.38×10⁻⁶ *14*; α(P)=6.46×10⁻⁷ *9*

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^{184}Os IT decay (23.6 ns) 1988Ch27 (continued)

γ(^{184}Os) (continued)

E_γ[‡]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[@]	α[†]	Comments
494.9 *2*	6	2366.0	10^+	1870.9	10^+	M1(+E2)	<0.65	0.061 *7*	α(K)=0.051 *6*; α(L)=0.0083 *7*; α(M)=0.00190 *15*; α(N+..)=0.00055 *5* α(N)=0.00046 *4*; α(O)=8.0×10^{-5} *7*; α(P)=5.8×10^{-6} *7*
500.6 *2*	38	1274.7	8^+	773.9	6^+	E2		0.0227	α(K)=0.01708 *24*; α(L)=0.00431 *6*; α(M)=0.001035 *15*; α(N+..)=0.000293 *5* α(N)=0.000251 *4*; α(O)=4.05×10^{-5} *6*; α(P)=1.81×10^{-6} *3*
539.3 *2*		1620.3	4^-	1081.0	3^+	E1		0.00653 *10*	α(K)=0.00547 *8*; α(L)=0.000821 *12*; α(M)=0.000187 *3*; α(N+..)=5.35×10^{-5} *8* α(N)=4.53×10^{-5} *7*; α(O)=7.71×10^{-6} *11*; α(P)=5.37×10^{-7} *8*
[x]553.5 *2*	7								1988Ch27 placed this γ from the same level As the 145.1γ; however, the evaluator has reversed the authors′ order for the 145γ-175γ cascade so that placement is No longer tenable.
596.1 *2*	14	1870.9	10^+	1274.7	8^+	E2		0.01498	α(K)=0.01160 *17*; α(L)=0.00259 *4*; α(M)=0.000614 *9*; α(N+..)=0.0001747 *25* α(N)=0.0001490 *21*; α(O)=2.44×10^{-5} *4*; α(P)=1.241×10^{-6} *18*
632.8 *2*	3	1406.7	$(4^+,5,6^+)$	773.9	6^+				
683.2 *2*		1958.1	$7^{(-)}$	1274.7	8^+	(E1+M2)		0.04 *4*	α(K)=0.03 *3*; α(L)=0.006 *6*; α(M)=0.0014 *14*; α(N+..)=0.0004 *4* α(N)=0.0003 *4*; α(O)=6.E−5 *6*; α(P)=4.E−6 *4*
840.0[b] *5*	18[b]	1224.1	4^+	383.8	4^+	E2+M1	−10 *+2−4*	0.00718 *12*	α(K)=0.00579 *10*; α(L)=0.001071 *17*; α(M)=0.000250 *4*; α(N+..)=7.15×10^{-5} *11* α(N)=6.07×10^{-5} *10*; α(O)=1.017×10^{-5} *16*; α(P)=6.22×10^{-7} *11*
840.0[b] *5*	18[b]	1613.2	6^+	773.9	6^+	E2+M1	+8 *4*	0.0072 *5*	α(K)=0.0058 *4*; α(L)=0.00108 *6*; α(M)=0.000251 *12*; α(N+..)=7.2×10^{-5} *4* α(N)=6.1×10^{-5} *3*; α(O)=1.02×10^{-5} *6*; α(P)=6.3×10^{-7} *5*
943.9 *2*	7	1717.6	5^-	773.9	6^+	(E1+M2)	−0.09 *2*	0.00241 *13*	α=0.00241 *13*; α(K)=0.00202 *11*; α(L)=0.000298 *18*; α(M)=6.8×10^{-5} *4*; α(N+..)=1.95×10^{-5} *12* α(N)=1.65×10^{-5} *10*; α(O)=2.83×10^{-6} *17*; α(P)=2.08×10^{-7} *13*
961.0 *5*		1081.0	3^+	119.80	2^+	E2+M1	+9.3 *+20−14*	0.00546 *9*	α=0.00546 *9*; α(K)=0.00444 *7*; α(L)=0.000781 *12*; α(M)=0.000181 *3*; α(N+..)=5.19×10^{-5} *8* α(N)=4.40×10^{-5} *7*; α(O)=7.43×10^{-6} *11*; α(P)=4.77×10^{-7} *8*
1024[a]		1406.7	$(4^+,5,6^+)$	383.8	4^+				
1045.0 *5*	10	1428.6	5^+	383.8	4^+	E2+M1	+24 *8*	0.00456 *7*	α(K)=0.00373 *6*; α(L)=0.000639 *9*; α(M)=0.0001478 *21*; α(N+..)=4.24×10^{-5} *6* α(N)=3.59×10^{-5} *6*; α(O)=6.08×10^{-6} *9*; α(P)=4.00×10^{-7} *6*
[x]1062.0 *5*	3								May deexcite the 1446 and/or 1836 level, based on Adopted Levels, Gammas.
1066.0 *5*	4	1839.9	$(4,5,6)^+$	773.9	6^+				
1092.0 *5*	12	2366.0	10^+	1274.7	8^+	E2		0.00417 *6*	α(K)=0.00342 *5*; α(L)=0.000579 *9*; α(M)=0.0001336 *19*; α(N+..)=3.84×10^{-5} *6* α(N)=3.25×10^{-5} *5*; α(O)=5.51×10^{-6} *8*; α(P)=3.67×10^{-7} *6*

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^{184}Os IT decay (23.6 ns) 1988Ch27 (continued)

γ(^{184}Os) (continued)

E_γ ‡	I_γ #	E_i(level)	J_i^π	E_f	J_f^π	Mult. @	δ @	α †	Comments
1105 [a]		1224.1	4^+	119.80	2^+	E2		0.00408 *6*	α=0.00408 *6*; α(K)=0.00335 *5*; α(L)=0.000564 *8*; α(M)=0.0001301 *19*; α(N+..)=3.76×10^{-5} *6* α(N)=3.17×10^{-5} *5*; α(O)=5.37×10^{-6} *8*; α(P)=3.58×10^{-7} *5*; α(IPF)=2.29×10^{-7} *4*
1142 [a]		1916.3	(6^-)	773.9	6^+				
1184 [a]		1958.1	$7^{(-)}$	773.9	6^+				
1229.0 *5*		1613.2	6^+	383.8	4^+	E2		0.00333 *5*	α(K)=0.00274 *4*; α(L)=0.000449 *7*; α(M)=0.0001031 *15*; α(N+..)=3.70×10^{-5} *6* α(N)=2.51×10^{-5} *4*; α(O)=4.27×10^{-6} *6*; α(P)=2.93×10^{-7} *5*; α(IPF)=7.35×10^{-6} *12*
1237 [a]		1620.3	4^-	383.8	4^+	E1+M2	+0.15 *2*	0.00168 *10*	α=0.00168 *10*; α(K)=0.00139 *8*; α(L)=0.000204 *13*; α(M)=4.6×10^{-5} *3*; α(N+..)=4.45×10^{-5} *9* α(N)=1.13×10^{-5} *7*; α(O)=1.95×10^{-6} *13*; α(P)=1.45×10^{-7} *9*; α(IPF)=3.12×10^{-5} *5*
1334.0 *5*	3	1717.6	5^-	383.8	4^+	E1+M2	+0.12 *+6−5*	0.00141 *21*	α=0.00141 *21*; α(K)=0.00112 *17*; α(L)=0.00016 *3*; α(M)=3.7×10^{-5} *7*; α(N+..)=8.55×10^{-5} *15* α(N)=9.0×10^{-6} *16*; α(O)=1.6×10^{-6} *3*; α(P)=1.16×10^{-7} *21*; α(IPF)=7.48×10^{-5} *16*
1424 [a]		1543.8	$(3)^-$	119.80	2^+				

† Additional information 1.
‡ Uncertainty not stated by authors. The evaluator has assigned uncertainties of 0.5 keV to data quoted to the nearest keV and 0.2 keV otherwise, As recommended by the authors for data reported In the same paper for a different nuclide; however, these two sets of data were measured In different laboratories.
# Relative photon intensity in 20 ns delayed spectrum in coincidence with the 264γ; normalized so Σ (I(γ+ce) to 384 level)=100, after correcting I(360γ) for conversion. the authors do not report Iγ for several transitions or uncertainty for any Iγ.
@ From Adopted Gammas.
& Note that the evaluator has reversed the order of the 145.1 and 175.3 cascade transitions for consistency with Adopted Levels, Gammas.
[a] From fig. 8 of 1988Ch27; not included In table 2.
[b] Multiply placed with undivided intensity.
[x] γ ray not placed in level scheme.

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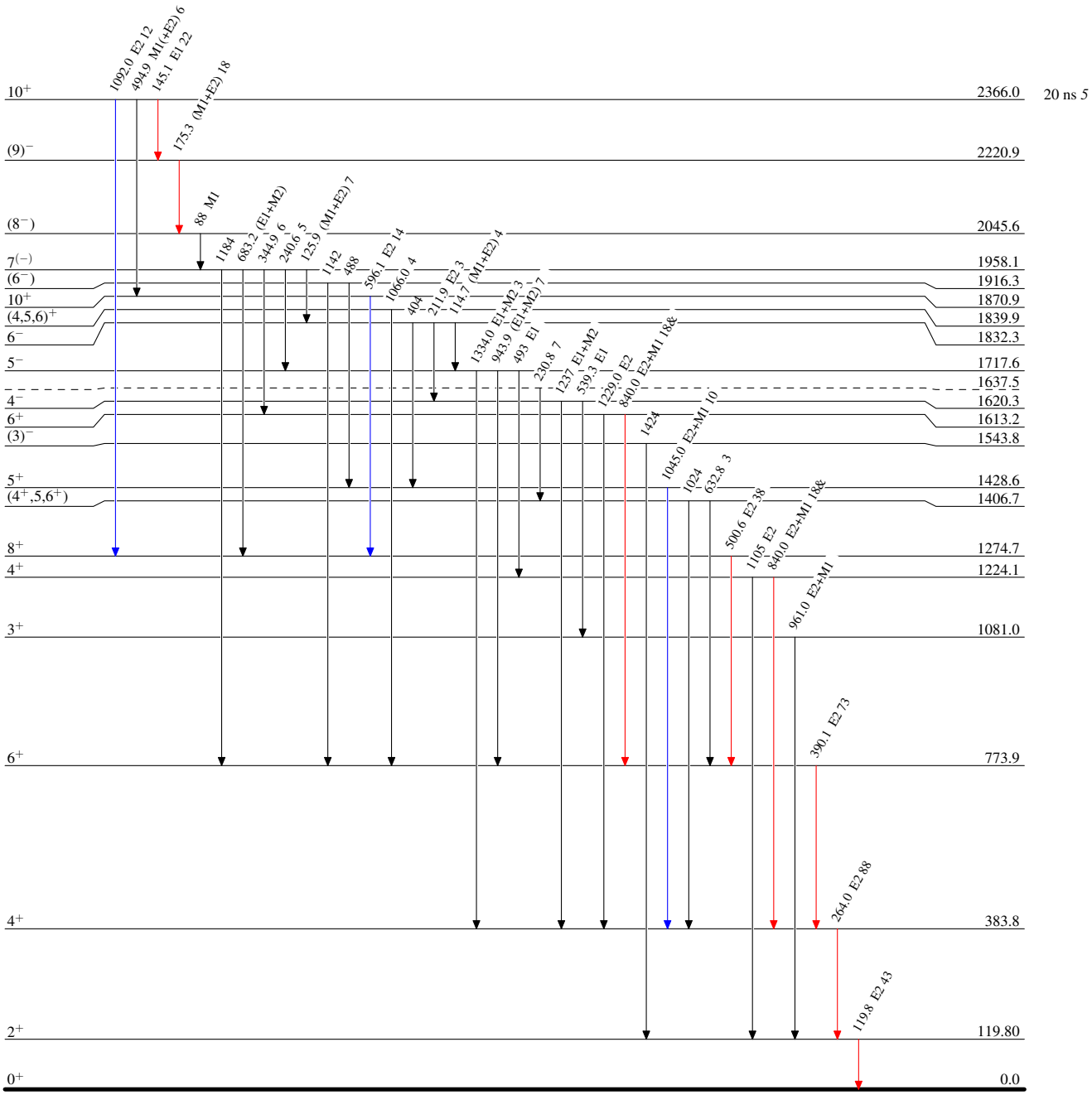
Decay Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given
%IT=100.0

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



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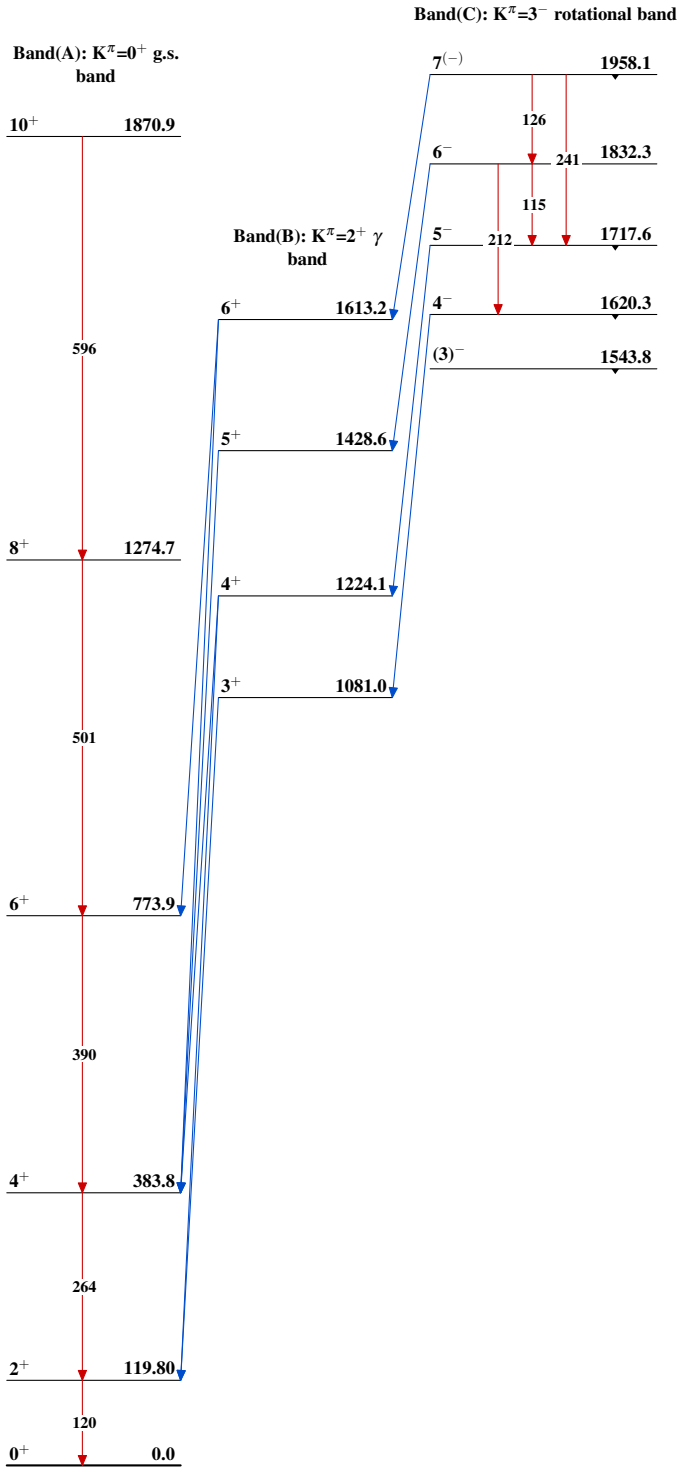
^{184}Os IT decay (23.6 ns) 1988Ch27



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