

Adopted Levels, Gammas

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

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

¹⁸⁰Os Levels

Cross Reference (XREF) Flags

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

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

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Adopted Levels, Gammas (continued)

				<u>^{180}Os Levels (continued)</u>
E(level) [†]	$J^{\pi\ddagger}$	$T_{1/2}^{\#}$	XREF	Comments
1862.54 ^e 19	7 ⁻	<0.21 ns	CDEF	J^{π} : E2 258 γ to 5 ⁻ , E1(+M2) 605 γ to 8 ⁺ . $T_{1/2}$: from centroid shift in $^{168}\text{Er}(^{16}\text{O},4n\gamma)$. Other: 17 ns 3 from $\gamma(t)$ in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed.
1877.12 17	6 ⁺		DEF	J^{π} : E2 362 γ to 4 ⁺ , M1+E2 1082 γ to 6 ⁺ .
1881.1 ^{&} 3	7 ⁺		F	J^{π} : (E2) 475.5 γ to 5 ⁺ , M1+E2 1086 γ to 6 ⁺ .
1928.76 ^a 20	7 ⁻	15.2 ns 12	DEF	J^{π} : E1 52 γ to 6 ⁺ , (E1) 671 γ to 8 ⁺ , $T_{1/2}$: from $\gamma(t)$ in $^{168}\text{Er}(^{16}\text{O},4n\gamma)$. Others: 15.9 ns 21 from $\gamma\gamma(t)$ in $^{168}\text{Er}(^{16}\text{O},4n\gamma)$, 17 ns 3 from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$, and 26 ns 3 from $\gamma(t)$ in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed. configuration= $v7/2[514]v7/2[633]$.
1987.0 ^b 4	8 ⁻		D	E(level), J^{π} : observation of a 184 γ populating the 7-, 1929-keV level in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$ results in an energy shift and change of J^{π} to the band members observed in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$. See the latter dataset for additional comments.
2086.2 ^d 3	8 ⁻		D F	J^{π} : E2 325 γ to 6 ⁻ .
2113.1 ^a 4	9 ⁻		D F	J^{π} : M1+E2 126 γ to 8 ⁻ , 184 γ to 7 ⁻ .
2175.69 ^e 21	9 ⁻		CDEF	J^{π} : E2 313 γ to 7 ⁻ , E1 408 γ to 10 ⁺ .
2275.9 ^b 4	10 ⁻		D F	J^{π} : E2 289 γ to 8 ⁻ , M1+E2 163 γ to 9 ⁻ .
2286.06 ^c 24	(7 ⁻ ,8 ⁻)		D F	J^{π} : M1+E2 423 γ to 7 ⁻ , 110.5 γ to 9 ⁻ .
2308.9 [@] 3	12 ⁺		CDEFG	J^{π} : E2 541 γ to 10 ⁺ .
2410.8 ^{&} 3	9 ⁺		F	J^{π} : E2 530 γ to 7 ⁺ .
2429.1 ^h 5			D F	
2463.0 ^d 3	10 ⁻		D F	J^{π} : E2 377 γ to 8 ⁻ , M1(+E2) 287 γ to 9 ⁻ .
2467.1 ^a 4	11 ⁻		D F	J^{π} : E2 354 γ to 9 ⁻ , M1+E2 191 γ to 10 ⁻ .
2544.32 ^e 24	11 ⁻		CDEF	J^{π} : E2 369 γ to 9 ⁻ , E1(+M2) 777 γ to 10 ⁺ .
2599.1 ^h 4			D F	
2635.7 ^l 3			F	
2675.41 ^c 25	(9 ⁻ ,10 ⁻)		D F	J^{π} : E2 398 γ to (7 ⁻ ,8 ⁻), D(+Q) 908 γ to 10 ⁺ .
2683.4 ^b 4	12 ⁻		D F	J^{π} : E2 407 γ to 10 ⁻ , M1+E2 216 γ to 11 ⁻ .
2695.3 ⁱ 3	12 ⁺		DEF	J^{π} : E2 312 γ from 14 ⁺ , 387 γ to 12 ⁺ .
2875.3 [@] 3	14 ⁺		CDEFG	J^{π} : E2 566 γ to 12 ⁺ .
2915.5 ^h 3			D F	
2918.8 ^a 4	13 ⁻		D F	J^{π} : E2 451.5 γ to 11 ⁻ , M1+E2 236 γ to 12 ⁻ .
2919.6 ^d 3	12 ⁻		D F	J^{π} : E2 456.5 γ to 10 ⁻ , M1+E2 375 γ to 11 ⁻ .
2925.4 ^l 3			F	
2982.0 ^e 3	13 ⁻		CDEF	J^{π} : E2 438 γ to 11 ⁻ , E1 673 γ to 12 ⁺ .
3007.9 ⁱ 3	14 ⁺		DEF	J^{π} : E2 699 γ to 12 ⁺ .
3139.3 ^c 3	(11 ⁻ ,12 ⁻)		D F	J^{π} : 464 γ to (9 ⁻ ,10 ⁻), band assignment.
3176.3 ^b 4	14 ⁻		D F	J^{π} : E2 493 γ to 12 ⁻ .
3246.3 ^l 3			F	
3342.8 ^h 4			D F	
3402.7 ⁱ 3	16 ⁺		DEF	J^{π} : E2 395 γ to 14 ⁺ , E2 527 γ to 14 ⁺ .
3442.7 ^a 4	15 ⁻		D F	J^{π} : E2 524 γ to 13 ⁻ , M1+E2 266.4 γ to 14 ⁻ .
3452.1 ^d 4	14 ⁻		D F	J^{π} : E2 532 γ to 12 ⁻ , M1+E2 468 γ to 13 ⁻ .
3476.4 ^e 3	15 ⁻		CDEF	J^{π} : E2 494 γ to 13 ⁻ , E1 601 γ 14 ⁺ .
3494.8 ^j 4	16 ⁺		CDEF	J^{π} : E2 620 γ to 14 ⁺ .
3629.2 ^l 3			F	
3656.7 ^c 3	(13 ⁻ ,14 ⁻)		D F	J^{π} : E2 517 γ to (11 ⁻ ,12 ⁻).
3703.8 ^g 5	(11,12)	≤ 5 ns	D	$T_{1/2}$: from $\gamma\gamma(t)$ in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$.

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Adopted Levels, Gammas (continued) ^{180}Os Levels (continued)

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

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Adopted Levels, Gammas (continued) ^{180}Os Levels (continued)

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

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

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

From RDM in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$, except where noted.

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

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

^a Band(C): $K^\pi=7^-$ rotational band, $\alpha=1$.

^b Band(D): $K^\pi=7^-$ rotational band, $\alpha=0$.

^c Band(E): $K^\pi=(7^-,8^-)$ rotational band.

^d Band(F): Low K rotational band (K=1-3) with configuration $\nu 9/2[624]\nu 7/2[514]$ and strong mixing with either $\pi 5/2[402]\pi 9/2[514]$ or $\pi 5/2[402]\pi 1/2[541]$. $\alpha=0$.

^e Band(G): Low K rotational band (K=1-3) with configuration $\nu 9/2[624]\nu 7/2[514]$ and strong mixing with either

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Adopted Levels, Gammas (continued)

 ^{180}Os Levels (continued)

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

^f Band(H): rotational band.

^g Band(I): rotational band.

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

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

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

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

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

Adopted Levels, Gammas (continued)

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

Adopted Levels, Gammas (continued)

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

Adopted Levels, Gammas (continued)

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

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Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	δ^\ddagger	α	Comments
1405.55	5 ⁺	610.3 3	39 11	795.07 6 ⁺		M1+E2 [@]	+4 1	0.0157 11	<p>I_γ: from ^{180}Ir ε decay. Others: 40 12 from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed and 38 16 from $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$.</p> <p>$\alpha(\text{K})=0.0123$ 10; $\alpha(\text{L})=0.00258$ 12; $\alpha(\text{M})=0.00061$ 3; $\alpha(\text{N})=0.000148$ 7; $\alpha(\text{O})=2.44\times 10^{-5}$ 12</p> <p>$\alpha(\text{P})=1.33\times 10^{-6}$ 11</p> <p>δ: from $\gamma\gamma(\theta)$ in ^{180}Ir ε decay.</p> <p>I_γ: weighted average of 26 11 from ^{180}Ir EC ε decay and 55 12 from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed.</p>
		996.94 24	100 14	408.63 4 ⁺		M1+E2 [@]	-2.4 4	0.0059 4	
1514.63	4 ⁻	318.1& 492.0 3	17& 3 100& 6	1196.83 4 ⁺		E1+M2 [@]	+0.23 +10-9	0.018 10	<p>I_γ: weighted average of ^{180}Ir ε decay, $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed, and $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$.</p> <p>$\delta$: from $\gamma\gamma(\theta)$ in ^{180}Ir ε decay. Other: -12 4 from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$.</p> <p>$E_\gamma$: placed from 1515.6-keV, 4⁺ level in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed.</p> <p>$\alpha(\text{K})=0.015$ 8; $\alpha(\text{L})=0.0026$ 16; $\alpha(\text{M})=0.0006$ 4; $\alpha(\text{N})=0.00015$ 9; $\alpha(\text{O})=2.5\times 10^{-5}$ 15</p> <p>$\alpha(\text{P})=1.8\times 10^{-6}$ 11</p> <p>δ: from $\gamma\gamma(\theta)$ in ^{180}Ir ε decay.</p> <p>E_γ: placed from 1515.6-keV, 4⁺ level in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed.</p>
		1106.0 3	71& 6	408.63 4 ⁺		E1+M2 [@]	+0.17 +4-0	0.0022 3	
		1515.67	4 ⁺	644.9 3	100& 30	870.44 2 ⁺		E2	
1604.44	5 ⁻	684.6 3	76& 7	831.09 2 ⁺		(E2)		0.01096	<p>$\alpha(\text{K})=0.00980$ 14; $\alpha(\text{L})=0.00208$ 3; $\alpha(\text{M})=0.000492$ 7; $\alpha(\text{N})=0.0001194$ 17; $\alpha(\text{O})=1.97\times 10^{-5}$ 3</p> <p>$\alpha(\text{P})=1.050\times 10^{-6}$ 15</p> <p>$\alpha(\text{K})=0.00865$ 13; $\alpha(\text{L})=0.001775$ 25; $\alpha(\text{M})=0.000418$ 6; $\alpha(\text{N})=0.0001015$ 15</p> <p>$\alpha(\text{O})=1.680\times 10^{-5}$ 24; $\alpha(\text{P})=9.27\times 10^{-7}$ 13</p> <p>E_γ, I_γ: from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed.</p>
		1383.8 3 90.3 10 225.3 3 407.6 3	58 30 6 4 10 4 45 4	132.11 2 ⁺ 1514.63 4 ⁻ 1378.95 6 ⁺ 1196.83 4 ⁺		E1 [@]		0.01201	

Adopted Levels, Gammas (continued)

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

Adopted Levels, Gammas (continued)

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

<u>E_i(level)</u>	<u>J_i^{π}</u>	<u>E_{γ}^{\dagger}</u>	<u>I_{γ}^{\dagger}</u>	<u>E_f</u>	<u>J_f^{π}</u>	<u>Mult.^{\ddagger}</u>	<u>δ^{\ddagger}</u>	<u>α</u>	<u>Comments</u>
1862.54	7 ⁻	483.4 3	33 6	1378.95	6 ⁺	E1+M2	+0.09 8	0.010 5	$\alpha(\text{O})=0.000403$ 6 $\alpha(\text{P})=8.54\times 10^{-6}$ 13 B(E2)(W.u.)>12 $\alpha(\text{K})=0.008$ 4; $\alpha(\text{L})=0.0013$ 7; $\alpha(\text{M})=0.00030$ 16; $\alpha(\text{N})=7.E-5$ 4; $\alpha(\text{O})=1.2\times 10^{-5}$ 7; $\alpha(\text{P})=9.E-7$ 5 B(E1)(W.u.)>1.2×10 ⁻⁶ Mult.: D+Q from $\gamma(\theta)$ in ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ), $\Delta\pi$ =yes from level scheme. I _{γ} : Other: ≤ 14 from ¹⁵⁰ Nd(³⁶ S,6n γ):Delayed. $\alpha(\text{K})=0.0045$ 7; $\alpha(\text{L})=0.00068$ 13; $\alpha(\text{M})=0.00016$ 3; $\alpha(\text{N})=3.8\times 10^{-5}$ 7; $\alpha(\text{O})=6.4\times 10^{-6}$ 12 $\alpha(\text{P})=4.6\times 10^{-7}$ 9 B(E1)(W.u.)>1.9×10 ⁻⁶ $\alpha(\text{K})=0.001458$ 21; $\alpha(\text{L})=0.000210$ 3; $\alpha(\text{M})=4.74\times 10^{-5}$ 7; $\alpha(\text{N})=1.152\times 10^{-5}$ 17; $\alpha(\text{O})=1.98\times 10^{-6}$ 3 $\alpha(\text{P})=1.469\times 10^{-7}$ 21 B(E1)(W.u.)>1.7×10 ⁻⁸ $\alpha(\text{K})=0.0370$ 6; $\alpha(\text{L})=0.01251$ 18; $\alpha(\text{M})=0.00306$ 5; $\alpha(\text{N})=0.000740$ 11; $\alpha(\text{O})=0.0001165$ 17 $\alpha(\text{P})=3.81\times 10^{-6}$ 6 E _{γ} : from ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ). Other: 363.2 5 in ¹⁵⁰ Nd(³⁶ S,6n γ), ¹⁵⁰ Nd(³⁴ S,4n γ).
		604.8 3	100 17	1257.45	8 ⁺	E1(+M2)	+0.05 5	0.0054 9	
		1067.5 3	5 3	795.07	6 ⁺	[E1]		1.73×10 ⁻³	
1877.12	6 ⁺	361.4 3	100 17	1515.67	4 ⁺	E2		0.0534	
		471.3 3	34 8	1405.55	5 ⁺				
		498.4 5	14 12	1378.95	6 ⁺				
		680.2 ^c 5	≤ 8	1196.83	4 ⁺	[E2]		0.01112	
		824.6 3	12 7	1052.66	4 ⁺	[E2]		0.00735	
		1082.1 3	51 8	795.07	6 ⁺	M1+E2	-0.6 3	0.0079 10	
		1468.5 3	45 9	408.63	4 ⁺	E2		0.00243	

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	δ^\ddagger	α	Comments
1881.1	7 ⁺	475.5 3	100 33	1405.55	5 ⁺	(E2)		0.0258	I_γ : from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed. Others: 8 8 from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$ and 42 8 from $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$. $\alpha(\text{K})=0.0192$ 3; $\alpha(\text{L})=0.00505$ 8; $\alpha(\text{M})=0.001216$ 18; $\alpha(\text{N})=0.000294$ 5; $\alpha(\text{O})=4.74\times 10^{-5}$ 7 $\alpha(\text{P})=2.03\times 10^{-6}$ 3
		1086.2 4	53 20	795.07	6 ⁺	M1+E2	<-8	0.0067 25	$\alpha(\text{K})=0.0056$ 21; $\alpha(\text{L})=0.0009$ 3; $\alpha(\text{M})=0.00020$ 7; $\alpha(\text{N})=4.9\times 10^{-5}$ 16; $\alpha(\text{O})=8.E-6$ 3 $\alpha(\text{P})=6.2\times 10^{-7}$ 24 Mult.: D+Q from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme.
1928.76	7 ⁻	51.6 2	100 25	1877.12	6 ⁺	E1		0.456 8	$\alpha(\text{L})=0.352$ 7; $\alpha(\text{M})=0.0816$ 15; $\alpha(\text{N})=0.0193$ 4; $\alpha(\text{O})=0.00298$ 6; $\alpha(\text{P})=0.0001206$ 20 B(E1)(W.u.)= 3.8×10^{-5} 12
		301.6 5		1627.33	6 ⁺	[E1]		0.0241	$\alpha(\text{K})=0.0201$ 3; $\alpha(\text{L})=0.00316$ 5; $\alpha(\text{M})=0.000721$ 11; $\alpha(\text{N})=0.000174$ 3; $\alpha(\text{O})=2.93\times 10^{-5}$ 5 $\alpha(\text{P})=1.88\times 10^{-6}$ 3
		324.0 7	35 7	1604.44	5 ⁻	(E2)		0.0729 12	E_γ : from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed. $\alpha(\text{K})=0.0486$ 8; $\alpha(\text{L})=0.0185$ 3; $\alpha(\text{M})=0.00455$ 8; $\alpha(\text{N})=0.001098$ 18; $\alpha(\text{O})=0.000172$ 3 $\alpha(\text{P})=4.93\times 10^{-6}$ 8 B(E2)(W.u.)=0.023 6
		550.0 3		1378.95	6 ⁺	[E1]		0.00626	Mult.: (Q) from R(DCO) in $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S},4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme. $\alpha(\text{K})=0.00525$ 8; $\alpha(\text{L})=0.000787$ 11; $\alpha(\text{M})=0.000179$ 3; $\alpha(\text{N})=4.34\times 10^{-5}$ 6; $\alpha(\text{O})=7.39\times 10^{-6}$ 11 $\alpha(\text{P})=5.16\times 10^{-7}$ 8
		670.9 4	33 8	1257.45	8 ⁺	(E1)		0.00417	E_γ : from $^{150}\text{Nd}(^{36}\text{S},6n\gamma)$:Delayed. $\alpha(\text{K})=0.00350$ 5; $\alpha(\text{L})=0.000518$ 8; $\alpha(\text{M})=0.0001175$ 17; $\alpha(\text{N})=2.85\times 10^{-5}$ 4; $\alpha(\text{O})=4.88\times 10^{-6}$ 7 $\alpha(\text{P})=3.48\times 10^{-7}$ 5 B(E1)(W.u.)= 5.7×10^{-9} 17
		1133.8 4	49 10	795.07	6 ⁺	E1(+M2)	+0.02 6	0.00156 12	$\alpha(\text{K})=0.00132$ 10; $\alpha(\text{L})=0.000189$ 16; $\alpha(\text{M})=4.3\times 10^{-5}$ 4; $\alpha(\text{N})=1.04\times 10^{-5}$ 9; $\alpha(\text{O})=1.79\times 10^{-6}$ 15 $\alpha(\text{P})=1.33\times 10^{-7}$ 12 B(E1)(W.u.)= 1.8×10^{-9} 5
1987.0	8 ⁻	(59)		1928.76	7 ⁻				
2086.2	8 ⁻	223.3 4	14 4	1862.54	7 ⁻	M1+E2	+0.28 5	0.555 13	$\alpha(\text{K})=0.455$ 12; $\alpha(\text{L})=0.0773$ 12; $\alpha(\text{M})=0.0178$ 3; $\alpha(\text{N})=0.00435$ 7; $\alpha(\text{O})=0.000745$ 12 $\alpha(\text{P})=5.26\times 10^{-5}$ 14 Mult.: D+Q from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme.

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult.‡	δ^\ddagger	α	Comments
2086.2	8 ⁻	324.9 3	100 14	1761.43	6 ⁻	E2		0.0723	$\alpha(\text{K})=0.0482$ 7; $\alpha(\text{L})=0.0183$ 3; $\alpha(\text{M})=0.00451$ 7; $\alpha(\text{N})=0.001087$ 16; $\alpha(\text{O})=0.0001698$ 25 $\alpha(\text{P})=4.90 \times 10^{-6}$ 7
2113.1	9 ⁻	126.2 3	92 25	1987.0	8 ⁻	M1+E2	-1.4 3	2.13 14	$\alpha(\text{K})=1.15$ 22; $\alpha(\text{L})=0.74$ 7; $\alpha(\text{M})=0.185$ 17; $\alpha(\text{N})=0.045$ 4; $\alpha(\text{O})=0.0068$ 6; $\alpha(\text{P})=0.00013$ 3 Mult.: D+Q from $\gamma(\theta)$ in ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ), large value of δ favors M1+E2 assignment.
2175.69	9 ⁻	184.0 5	100 33	1928.76	7 ⁻	E2		0.0805	E_γ : observed only in ¹⁵⁰ Nd(³⁶ S,6n γ), ¹⁵⁰ Nd(³⁴ S,4n γ). $\alpha(\text{K})=0.0530$ 8; $\alpha(\text{L})=0.0209$ 3; $\alpha(\text{M})=0.00517$ 8; $\alpha(\text{N})=0.001247$ 18; $\alpha(\text{O})=0.000194$ 3 $\alpha(\text{P})=5.35 \times 10^{-6}$ 8
		313.1 2	100 8	1862.54	7 ⁻				0.01197
2275.9	10 ⁻	408.2 3	22 4	1767.63	10 ⁺	E1		0.0023 5	$\alpha(\text{K})=0.0019$ 4; $\alpha(\text{L})=0.00028$ 7; $\alpha(\text{M})=6.3 \times 10^{-5}$ 16; $\alpha(\text{N})=1.5 \times 10^{-5}$ 4; $\alpha(\text{O})=2.6 \times 10^{-6}$ 7 $\alpha(\text{P})=1.9 \times 10^{-7}$ 5 Mult.: D+Q from $\gamma(\theta)$ in ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ), $\Delta\pi$ =yes from level scheme.
		918.6 3	11 4	1257.45	8 ⁺	E1(+M2)	-0.01 11	1.06 7	$\alpha(\text{K})=0.0650$ 10; $\alpha(\text{L})=0.0282$ 5; $\alpha(\text{M})=0.00700$ 11; $\alpha(\text{N})=0.001688$ 25; $\alpha(\text{O})=0.000261$ 4 $\alpha(\text{P})=6.49 \times 10^{-6}$ 10
2286.06	(7 ⁻ ,8 ⁻)	162.9 3	48 8	2113.1	9 ⁻	M1+E2	-0.94 16	2.92 6	$\alpha(\text{K})=0.75$ 8; $\alpha(\text{L})=0.238$ 11; $\alpha(\text{M})=0.058$ 3; $\alpha(\text{N})=0.0140$ 8; $\alpha(\text{O})=0.00223$ 9; $\alpha(\text{P})=8.4 \times 10^{-5}$ 10 Mult.: D+Q from $\gamma(\theta)$ in ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ), $\Delta\pi$ =no from level scheme.
		289.0 3	100 16	1987.0	8 ⁻	E2		0.1022	$\alpha(\text{K})=0.680$ 10; $\alpha(\text{L})=1.69$ 4; $\alpha(\text{M})=0.432$ 9; $\alpha(\text{N})=0.1035$ 20; $\alpha(\text{O})=0.0153$ 3 $\alpha(\text{P})=6.63 \times 10^{-5}$ 11
2308.9	12 ⁺	423.4 3	100 14	1862.54	7 ⁻	M1+E2	-0.40 20	0.093 9	$\alpha(\text{K})=0.077$ 8; $\alpha(\text{L})=0.0126$ 8; $\alpha(\text{M})=0.00291$ 18; $\alpha(\text{N})=0.00071$ 5; $\alpha(\text{O})=0.000122$ 8 $\alpha(\text{P})=8.8 \times 10^{-6}$ 10
		1028.7 3	45 9	1257.45	8 ⁺	E1(+M2)	+0.02 24	0.0019 15	$\alpha(\text{K})=0.0016$ 13; $\alpha(\text{L})=0.00023$ 21; $\alpha(\text{M})=5.E-5$ 5; $\alpha(\text{N})=1.2 \times 10^{-5}$ 12; $\alpha(\text{O})=2.1 \times 10^{-6}$ 21 $\alpha(\text{P})=1.6 \times 10^{-7}$ 16 Mult.: D(+Q) from $\gamma(\theta)$ in ¹⁶⁶ Er(¹⁸ O,4n γ), ¹⁶⁸ Er(¹⁶ O,4n γ), $\Delta\pi$ =yes from level scheme.
		541.2 2	100	1767.63	10 ⁺	E2		0.0188	$\alpha(\text{K})=0.01434$ 21; $\alpha(\text{L})=0.00341$ 5; $\alpha(\text{M})=0.000816$ 12; $\alpha(\text{N})=0.000198$ 3; $\alpha(\text{O})=3.22 \times 10^{-5}$ 5 $\alpha(\text{P})=1.528 \times 10^{-6}$ 22

Adopted Levels, Gammas (continued)

γ(¹⁸⁰O₈) (continued)

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

Adopted Levels, Gammas (continued)

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

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

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	δ^\ddagger	α	Comments
3007.9	14 ⁺	699.3 2	100 10	2308.9	12 ⁺	E2		0.01046	$\alpha(\text{K})=0.00827$ 12; $\alpha(\text{L})=0.001678$ 24; $\alpha(\text{M})=0.000395$ 6; $\alpha(\text{N})=9.59\times 10^{-5}$ 14 $\alpha(\text{O})=1.589\times 10^{-5}$ 23; $\alpha(\text{P})=8.88\times 10^{-7}$ 13
3139.3	(11 ⁻ , 12 ⁻)	464.1 2 593.3 15	100 10 5.7 20	2675.41 2544.32	(9 ⁻ , 10 ⁻) 11 ⁻				
3176.3	14 ⁻	830.1 3 257.3 4	18 7 10 3	2308.9 2918.8	12 ⁺ 13 ⁻	M1		0.393	$\alpha(\text{K})=0.326$ 5; $\alpha(\text{L})=0.0522$ 8; $\alpha(\text{M})=0.01196$ 18; $\alpha(\text{N})=0.00292$ 5; $\alpha(\text{O})=0.000504$ 8 $\alpha(\text{P})=3.77\times 10^{-5}$ 6 Mult.: D from R(DCO) in $^{150}\text{Nd}(^{36}\text{S}, 6n\gamma)$, $^{150}\text{Nd}(^{34}\text{S}, 4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme.
		493.0 3	100 18	2683.4	12 ⁻	E2		0.0236	$\alpha(\text{K})=0.01768$ 25; $\alpha(\text{L})=0.00452$ 7; $\alpha(\text{M})=0.001085$ 16; $\alpha(\text{N})=0.000263$ 4; $\alpha(\text{O})=4.24\times 10^{-5}$ 6 $\alpha(\text{P})=1.87\times 10^{-6}$ 3
3246.3		264.4 3 321.0 3	<44 100 33	2982.0 2925.4	13 ⁻	E2		0.0749	$\alpha(\text{K})=0.0497$ 7; $\alpha(\text{L})=0.0191$ 3; $\alpha(\text{M})=0.00471$ 7; $\alpha(\text{N})=0.001137$ 17; $\alpha(\text{O})=0.000177$ 3 $\alpha(\text{P})=5.04\times 10^{-6}$ 8
		326.8 ^b 5 702.3 5 782.9 5	44 22 22 11 33 22	2919.6 2544.32 2463.0	12 ⁻ 11 ⁻ 10 ⁻				
3342.8		427.3 3	100	2915.5		E2		0.0340	$\alpha(\text{K})=0.0247$ 4; $\alpha(\text{L})=0.00710$ 10; $\alpha(\text{M})=0.001721$ 25; $\alpha(\text{N})=0.000416$ 6; $\alpha(\text{O})=6.65\times 10^{-5}$ 10 $\alpha(\text{P})=2.59\times 10^{-6}$ 4
3402.7	16 ⁺	394.9 3	48 5	3007.9	14 ⁺	E2		0.0419	$\alpha(\text{K})=0.0298$ 5; $\alpha(\text{L})=0.00923$ 14; $\alpha(\text{M})=0.00225$ 4; $\alpha(\text{N})=0.000543$ 8; $\alpha(\text{O})=8.62\times 10^{-5}$ 13 $\alpha(\text{P})=3.10\times 10^{-6}$ 5
		527.3 2	100 8	2875.3	14 ⁺	E2		0.0200	$\alpha(\text{K})=0.01519$ 22; $\alpha(\text{L})=0.00369$ 6; $\alpha(\text{M})=0.000882$ 13; $\alpha(\text{N})=0.000214$ 3; $\alpha(\text{O})=3.47\times 10^{-5}$ 5 $\alpha(\text{P})=1.617\times 10^{-6}$ 23
3442.7	15 ⁻	266.4 3	8 2	3176.3	14 ⁻	M1+E2	-0.98 21	0.25 3	$\alpha(\text{K})=0.19$ 3; $\alpha(\text{L})=0.0431$ 12; $\alpha(\text{M})=0.01025$ 21; $\alpha(\text{N})=0.00249$ 6; $\alpha(\text{O})=0.000408$ 14 $\alpha(\text{P})=2.1\times 10^{-5}$ 4 Mult.: D+Q from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O}, 4n\gamma)$, $^{168}\text{Er}(^{16}\text{O}, 4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme.
		523.8 2	100 10	2918.8	13 ⁻	E2		0.0203	$\alpha(\text{K})=0.01542$ 22; $\alpha(\text{L})=0.00376$ 6; $\alpha(\text{M})=0.000900$ 13; $\alpha(\text{N})=0.000218$ 3; $\alpha(\text{O})=3.54\times 10^{-5}$ 5 $\alpha(\text{P})=1.641\times 10^{-6}$ 23
3452.1	14 ⁻	467.6 14	18 5	2982.0	13 ⁻	M1+E2	+0.41 7	0.072 3	$\alpha(\text{K})=0.0591$ 22; $\alpha(\text{L})=0.0096$ 3; $\alpha(\text{M})=0.00221$ 6; $\alpha(\text{N})=0.000540$ 15; $\alpha(\text{O})=9.3\times 10^{-5}$ 3

Adopted Levels, Gammas (continued)

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

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

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α	Comments
3981.7	17 ⁻	505.4 2	100 10	3476.4	15 ⁻	E2	0.0222	$\alpha(\text{N})=0.000219$ 3; $\alpha(\text{O})=3.55\times 10^{-5}$ 5 $\alpha(\text{P})=1.645\times 10^{-6}$ 23 $\alpha(\text{K})=0.01671$ 24; $\alpha(\text{L})=0.00419$ 6; $\alpha(\text{M})=0.001005$ 15; $\alpha(\text{N})=0.000243$ 4; $\alpha(\text{O})=3.94\times 10^{-5}$ 6 $\alpha(\text{P})=1.775\times 10^{-6}$ 25
		538.9 5	42 13	3442.7	15 ⁻	E2 [#]	0.0190	$\alpha(\text{K})=0.01447$ 21; $\alpha(\text{L})=0.00346$ 5; $\alpha(\text{M})=0.000826$ 12; $\alpha(\text{N})=0.000200$ 3; $\alpha(\text{O})=3.26\times 10^{-5}$ 5 $\alpha(\text{P})=1.542\times 10^{-6}$ 22
4027.6	16 ⁻	575.5 3	100	3452.1	14 ⁻	E2	0.01625	$\alpha(\text{K})=0.01252$ 18; $\alpha(\text{L})=0.00286$ 4; $\alpha(\text{M})=0.000680$ 10; $\alpha(\text{N})=0.0001649$ 24 $\alpha(\text{O})=2.70\times 10^{-5}$ 4; $\alpha(\text{P})=1.338\times 10^{-6}$ 19
4031.3	17 ⁻	295.8 3	10 3	3735.3	16 ⁻	M1+E2	0.18 9	$\alpha(\text{K})=0.14$ 8; $\alpha(\text{L})=0.031$ 5; $\alpha(\text{M})=0.0073$ 9; $\alpha(\text{N})=0.00177$ 23; $\alpha(\text{O})=0.00029$ 6 $\alpha(\text{P})=1.6\times 10^{-5}$ 10 Mult.: D+Q from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$, $\Delta\pi=\text{no}$ from level scheme.
		554.9 5	38 11	3476.4	15 ⁻	E2 [#]	0.0177	$\alpha(\text{K})=0.01357$ 20; $\alpha(\text{L})=0.00317$ 5; $\alpha(\text{M})=0.000757$ 11; $\alpha(\text{N})=0.000183$ 3; $\alpha(\text{O})=2.99\times 10^{-5}$ 5 $\alpha(\text{P})=1.447\times 10^{-6}$ 21
		588.7 3	100 12	3442.7	15 ⁻	E2	0.01542	$\alpha(\text{K})=0.01192$ 17; $\alpha(\text{L})=0.00268$ 4; $\alpha(\text{M})=0.000637$ 9; $\alpha(\text{N})=0.0001544$ 22; $\alpha(\text{O})=2.53\times 10^{-5}$ 4 $\alpha(\text{P})=1.274\times 10^{-6}$ 18
4037.5	(13,14)	181.5 5	100	3855.7	(12,13)			
		333.7 5	93	3703.8	(11,12)			
4067.5		438.3 5	100	3629.2				
4134.6	18 ⁺	639.8 2	100	3494.8	16 ⁺	E2	0.01274	$\alpha(\text{K})=0.00997$ 14; $\alpha(\text{L})=0.00213$ 3; $\alpha(\text{M})=0.000503$ 7; $\alpha(\text{N})=0.0001221$ 18; $\alpha(\text{O})=2.01\times 10^{-5}$ 3 $\alpha(\text{P})=1.068\times 10^{-6}$ 15
4200.8	(15 ⁻ ,16 ⁻)	544.1 2	100	3656.7	(13 ⁻ ,14 ⁻)	E2 [#]	0.0186	$\alpha(\text{K})=0.01417$ 20; $\alpha(\text{L})=0.00336$ 5; $\alpha(\text{M})=0.000803$ 12; $\alpha(\text{N})=0.000195$ 3; $\alpha(\text{O})=3.17\times 10^{-5}$ 5 $\alpha(\text{P})=1.510\times 10^{-6}$ 22
4248.5	(14,15)	210.6 5	100 40	4037.5	(13,14)			
		393.2 5	75 25	3855.7	(12,13)			
4342.4	18 ⁻	311.1 3	<6	4031.3	17 ⁻			
		607.2 3	100 20	3735.3	16 ⁻	E2	0.01435	$\alpha(\text{K})=0.01115$ 16; $\alpha(\text{L})=0.00246$ 4; $\alpha(\text{M})=0.000583$ 9; $\alpha(\text{N})=0.0001414$ 20; $\alpha(\text{O})=2.32\times 10^{-5}$ 4 $\alpha(\text{P})=1.193\times 10^{-6}$ 17
4486.6	(15,16)	238.2 5	75 25	4248.5	(14,15)			
		449.1 5	100 40	4037.5	(13,14)			
4497.0	19 ⁻	515.3 2	100	3981.7	17 ⁻	E2	0.0212	$\alpha(\text{K})=0.01600$ 23; $\alpha(\text{L})=0.00395$ 6; $\alpha(\text{M})=0.000946$ 14; $\alpha(\text{N})=0.000229$ 4; $\alpha(\text{O})=3.72\times 10^{-5}$ 6 $\alpha(\text{P})=1.701\times 10^{-6}$ 24

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)									
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	δ^\ddagger	α	Comments
4531.8		645.3 3	100	3886.5		E2 [#]		0.01250	$\alpha(\text{K})=0.00979$ 14; $\alpha(\text{L})=0.00208$ 3; $\alpha(\text{M})=0.000492$ 7; $\alpha(\text{N})=0.0001192$ 17; $\alpha(\text{O})=1.96\times 10^{-5}$ 3 $\alpha(\text{P})=1.049\times 10^{-6}$ 15
4542.7	20 ⁺	616.8 2	100	3925.9 18 ⁺		E2		0.01385	$\alpha(\text{K})=0.01078$ 16; $\alpha(\text{L})=0.00235$ 4; $\alpha(\text{M})=0.000558$ 8; $\alpha(\text{N})=0.0001352$ 19; $\alpha(\text{O})=2.22\times 10^{-5}$ 4 $\alpha(\text{P})=1.154\times 10^{-6}$ 17
4581.0		513.5 3	100	4067.5		E2 [#]		0.0213	$\alpha(\text{K})=0.01612$ 23; $\alpha(\text{L})=0.00399$ 6; $\alpha(\text{M})=0.000957$ 14; $\alpha(\text{N})=0.000232$ 4; $\alpha(\text{O})=3.75\times 10^{-5}$ 6 $\alpha(\text{P})=1.714\times 10^{-6}$ 24
4599.6	18 ⁻	572.0 3	100	4027.6 16 ⁻		E2		0.01649	$\alpha(\text{K})=0.01269$ 18; $\alpha(\text{L})=0.00291$ 4; $\alpha(\text{M})=0.000692$ 10; $\alpha(\text{N})=0.0001679$ 24 $\alpha(\text{O})=2.74\times 10^{-5}$ 4; $\alpha(\text{P})=1.355\times 10^{-6}$ 19
4651.4	19 ⁻	309.3 8	<6	4342.4 18 ⁻		M1+E2	-5.5 23	0.088 9	$\alpha(\text{K})=0.059$ 9; $\alpha(\text{L})=0.0222$ 7; $\alpha(\text{M})=0.00547$ 14; $\alpha(\text{N})=0.00132$ 4; $\alpha(\text{O})=0.000206$ 7 $\alpha(\text{P})=6.1\times 10^{-6}$ 10 Mult.: D+Q from $\gamma(\theta)$ in $^{166}\text{Er}(^{18}\text{O},4n\gamma)$, $^{168}\text{Er}(^{16}\text{O},4n\gamma)$, $\Delta\pi$ =no from level scheme.
		620.0 3	100 15	4031.3 17 ⁻		E2 [#]		0.01369	$\alpha(\text{K})=0.01066$ 15; $\alpha(\text{L})=0.00232$ 4; $\alpha(\text{M})=0.000550$ 8; $\alpha(\text{N})=0.0001333$ 19; $\alpha(\text{O})=2.19\times 10^{-5}$ 3 $\alpha(\text{P})=1.141\times 10^{-6}$ 16
4750.7	(16,17)	263.8 5 502.2 5	45 15 100 30	4486.6 (15,16) 4248.5 (14,15)					
4770.2	(17 ⁻ ,18 ⁻)	569.4 5	100	4200.8 (15 ⁻ ,16 ⁻)		E2		0.01667	$\alpha(\text{K})=0.01282$ 19; $\alpha(\text{L})=0.00295$ 5; $\alpha(\text{M})=0.000702$ 10; $\alpha(\text{N})=0.0001701$ 25 $\alpha(\text{O})=2.78\times 10^{-5}$ 4; $\alpha(\text{P})=1.369\times 10^{-6}$ 20
4821.4	20 ⁺	686.8 2	100	4134.6 18 ⁺		E2		0.01088	$\alpha(\text{K})=0.00859$ 12; $\alpha(\text{L})=0.001760$ 25; $\alpha(\text{M})=0.000415$ 6; $\alpha(\text{N})=0.0001006$ 15 $\alpha(\text{O})=1.665\times 10^{-5}$ 24; $\alpha(\text{P})=9.21\times 10^{-7}$ 13
4978.2	20 ⁻	326.8 ^b 8 635.9 3	6 6 100 24	4651.4 19 ⁻ 4342.4 18 ⁻		E2		0.01292	$\alpha(\text{K})=0.01010$ 15; $\alpha(\text{L})=0.00216$ 3; $\alpha(\text{M})=0.000512$ 8; $\alpha(\text{N})=0.0001242$ 18; $\alpha(\text{O})=2.04\times 10^{-5}$ 3 $\alpha(\text{P})=1.082\times 10^{-6}$ 16
5037.2	(17,18)	286.8 5 550.8 5	100 30 22 11	4750.7 (16,17) 4486.6 (15,16)					
5045.0	21 ⁻	548.0 2	100	4497.0 19 ⁻		E2		0.0182	$\alpha(\text{K})=0.01395$ 20; $\alpha(\text{L})=0.00329$ 5; $\alpha(\text{M})=0.000786$ 11; $\alpha(\text{N})=0.000190$ 3; $\alpha(\text{O})=3.10\times 10^{-5}$ 5 $\alpha(\text{P})=1.487\times 10^{-6}$ 21
5136.2		555.2 3	100	4581.0		E2		0.01769	$\alpha(\text{K})=0.01355$ 19; $\alpha(\text{L})=0.00317$ 5; $\alpha(\text{M})=0.000756$ 11; $\alpha(\text{N})=0.000183$ 3; $\alpha(\text{O})=2.99\times 10^{-5}$ 5 $\alpha(\text{P})=1.445\times 10^{-6}$ 21
5164.6	(20 ⁻)	565.0 4	100	4599.6 18 ⁻					

Adopted Levels, Gammas (continued)

$\gamma(^{180}\text{Os})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π	Mult. [‡]	α	Comments
5236.5	22 ⁺	693.8 2	100	4542.7	20 ⁺	E2	0.01064	$\alpha(\text{K})=0.00841$ 12; $\alpha(\text{L})=0.001713$ 24; $\alpha(\text{M})=0.000404$ 6; $\alpha(\text{N})=9.80\times 10^{-5}$ 14 $\alpha(\text{O})=1.622\times 10^{-5}$ 23; $\alpha(\text{P})=9.02\times 10^{-7}$ 13
5255.0		723.2 3	100	4531.8		(E2) [#]	0.00972	$\alpha(\text{K})=0.00772$ 11; $\alpha(\text{L})=0.001538$ 22; $\alpha(\text{M})=0.000362$ 5; $\alpha(\text{N})=8.78\times 10^{-5}$ 13 $\alpha(\text{O})=1.457\times 10^{-5}$ 21; $\alpha(\text{P})=8.28\times 10^{-7}$ 12
5293.8	21 ⁻	316.0 8 642.3 5	10 10 100 30	4978.2 20 ⁻ 4651.4 19 ⁻		E2 [#]	0.01263	$\alpha(\text{K})=0.00989$ 14; $\alpha(\text{L})=0.00211$ 3; $\alpha(\text{M})=0.000498$ 7; $\alpha(\text{N})=0.0001208$ 18; $\alpha(\text{O})=1.99\times 10^{-5}$ 3 $\alpha(\text{P})=1.059\times 10^{-6}$ 15
5348.0	(18,19)	311.3 5 596.8 5	20 6 100 30	5037.2 (17,18) 4750.7 (16,17)				
5387.4	(19 ⁻ ,20 ⁻)	617.2 2	100	4770.2 (17 ⁻ ,18 ⁻)		E2 [#]	0.01383	$\alpha(\text{K})=0.01076$ 15; $\alpha(\text{L})=0.00235$ 4; $\alpha(\text{M})=0.000557$ 8; $\alpha(\text{N})=0.0001350$ 19; $\alpha(\text{O})=2.22\times 10^{-5}$ 4 $\alpha(\text{P})=1.152\times 10^{-6}$ 17
5550.9	22 ⁺	729.5 4	100	4821.4 20 ⁺		E2 [#]	0.00954	$\alpha(\text{K})=0.00758$ 11; $\alpha(\text{L})=0.001504$ 22; $\alpha(\text{M})=0.000353$ 5; $\alpha(\text{N})=8.58\times 10^{-5}$ 12 $\alpha(\text{O})=1.425\times 10^{-5}$ 20; $\alpha(\text{P})=8.14\times 10^{-7}$ 12
5561.6		1427.0	100	4134.6 18 ⁺				E_γ, I_γ : from $^{150}\text{Nd}(^{36}\text{S},6\text{n}\gamma)$:Delayed.
5625.7	22 ⁻	647.5 3	100	4978.2 20 ⁻		E2	0.01241	$\alpha(\text{K})=0.00972$ 14; $\alpha(\text{L})=0.00206$ 3; $\alpha(\text{M})=0.000487$ 7; $\alpha(\text{N})=0.0001181$ 17; $\alpha(\text{O})=1.95\times 10^{-5}$ 3 $\alpha(\text{P})=1.042\times 10^{-6}$ 15
5666.5	23 ⁻	621.5 2	100	5045.0 21 ⁻		E2	0.01361	$\alpha(\text{K})=0.01061$ 15; $\alpha(\text{L})=0.00230$ 4; $\alpha(\text{M})=0.000546$ 8; $\alpha(\text{N})=0.0001324$ 19; $\alpha(\text{O})=2.18\times 10^{-5}$ 3 $\alpha(\text{P})=1.135\times 10^{-6}$ 16
5731.5		595.3 8	100	5136.2				
5787.7	(22 ⁻)	623.1 3	100	5164.6 (20 ⁻)		E2	0.01353	$\alpha(\text{K})=0.01055$ 15; $\alpha(\text{L})=0.00229$ 4; $\alpha(\text{M})=0.000542$ 8; $\alpha(\text{N})=0.0001314$ 19; $\alpha(\text{O})=2.16\times 10^{-5}$ 3 $\alpha(\text{P})=1.129\times 10^{-6}$ 16
5951.5	23 ⁻	657.7 4	100	5293.8 21 ⁻		E2	0.01198	$\alpha(\text{K})=0.00940$ 14; $\alpha(\text{L})=0.00197$ 3; $\alpha(\text{M})=0.000466$ 7; $\alpha(\text{N})=0.0001132$ 16; $\alpha(\text{O})=1.87\times 10^{-5}$ 3 $\alpha(\text{P})=1.008\times 10^{-6}$ 15
5981.3	24 ⁺	744.8 3	100	5236.5 22 ⁺		E2	0.00912	$\alpha(\text{K})=0.00727$ 11; $\alpha(\text{L})=0.001427$ 20; $\alpha(\text{M})=0.000335$ 5; $\alpha(\text{N})=8.13\times 10^{-5}$ 12 $\alpha(\text{O})=1.352\times 10^{-5}$ 19; $\alpha(\text{P})=7.80\times 10^{-7}$ 11
6024.8		769.8 5	100	5255.0		#		
6055.5	(21 ⁻ ,22 ⁻)	668.1 3	100	5387.4 (19 ⁻ ,20 ⁻)		E2 [#]	0.01157	$\alpha(\text{K})=0.00910$ 13; $\alpha(\text{L})=0.00189$ 3; $\alpha(\text{M})=0.000447$ 7; $\alpha(\text{N})=0.0001084$ 16; $\alpha(\text{O})=1.79\times 10^{-5}$ 3 $\alpha(\text{P})=9.76\times 10^{-7}$ 14
6298.1	(24 ⁻)	672.4 4	100	5625.7 22 ⁻				
6323.6	(24 ⁺)	772.7 5	100	5550.9 22 ⁺		(E2)	0.00843	$\alpha(\text{K})=0.00674$ 10; $\alpha(\text{L})=0.001300$ 19; $\alpha(\text{M})=0.000305$ 5; $\alpha(\text{N})=7.40\times 10^{-5}$ 11 $\alpha(\text{O})=1.233\times 10^{-5}$ 18; $\alpha(\text{P})=7.24\times 10^{-7}$ 11

Adopted Levels, Gammas (continued)

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

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

Adopted Levels, Gammas (continued)

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

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

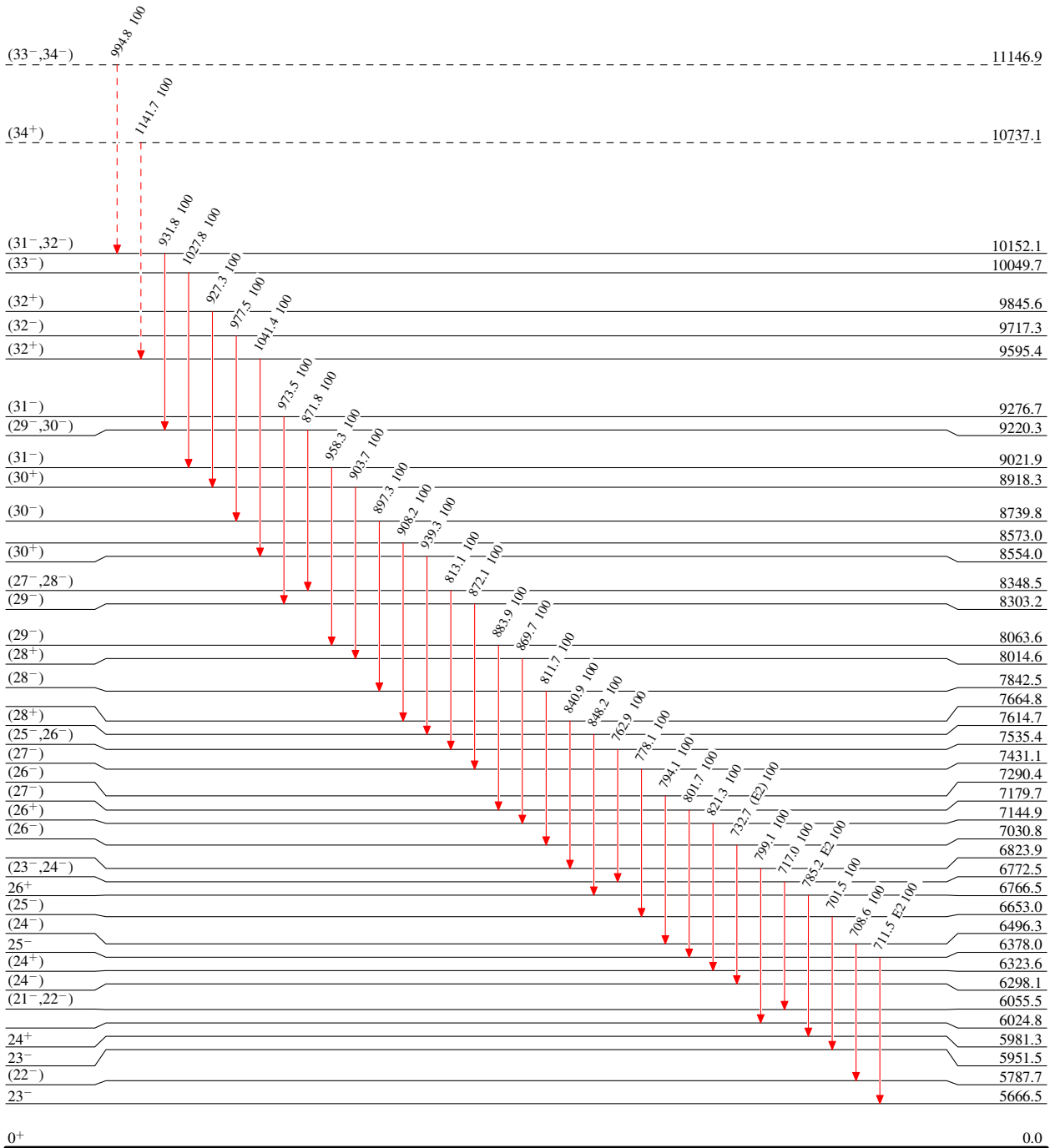
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Type not specified

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



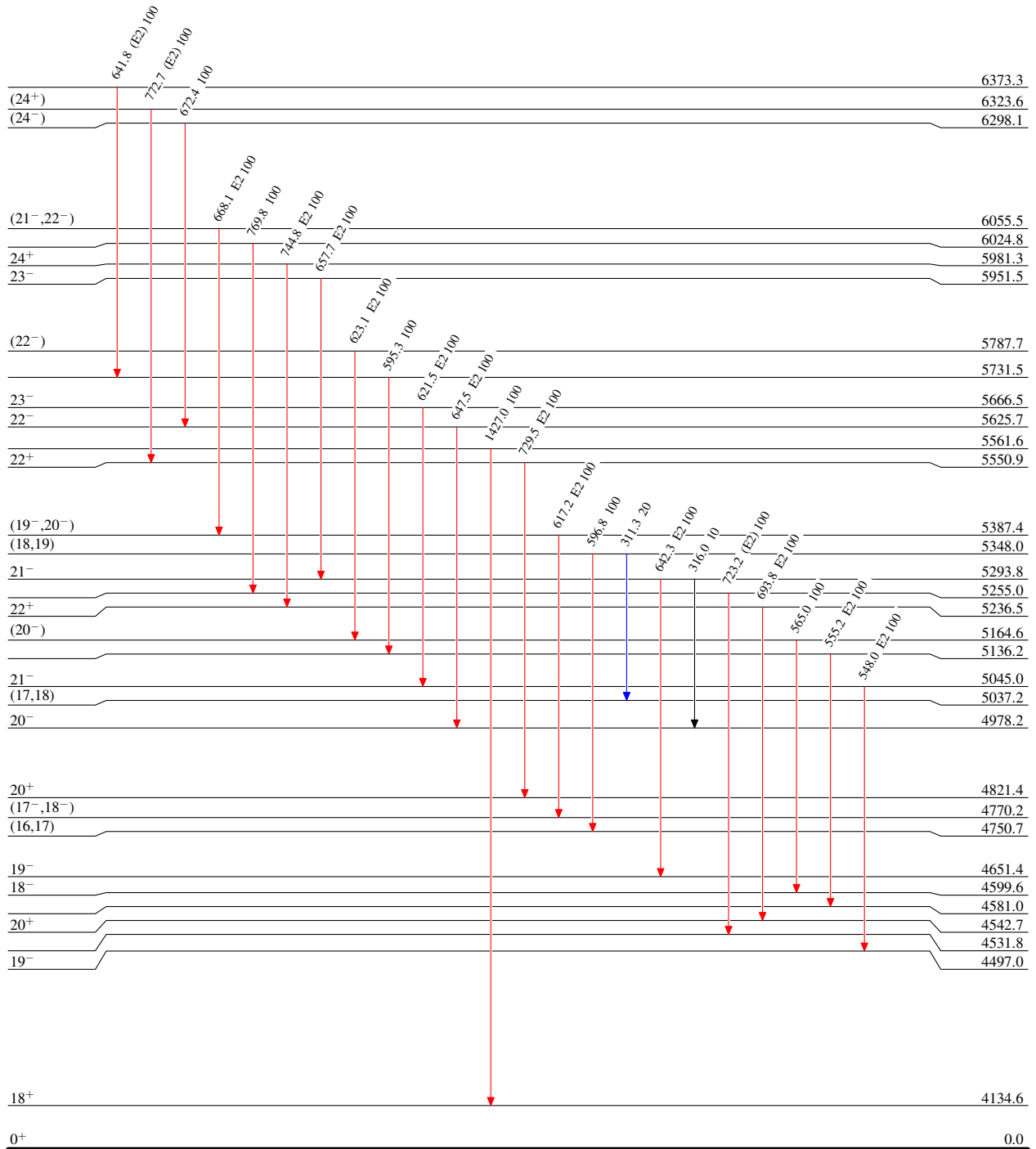
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

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



$^{180}_{76}\text{Os}_{104}$

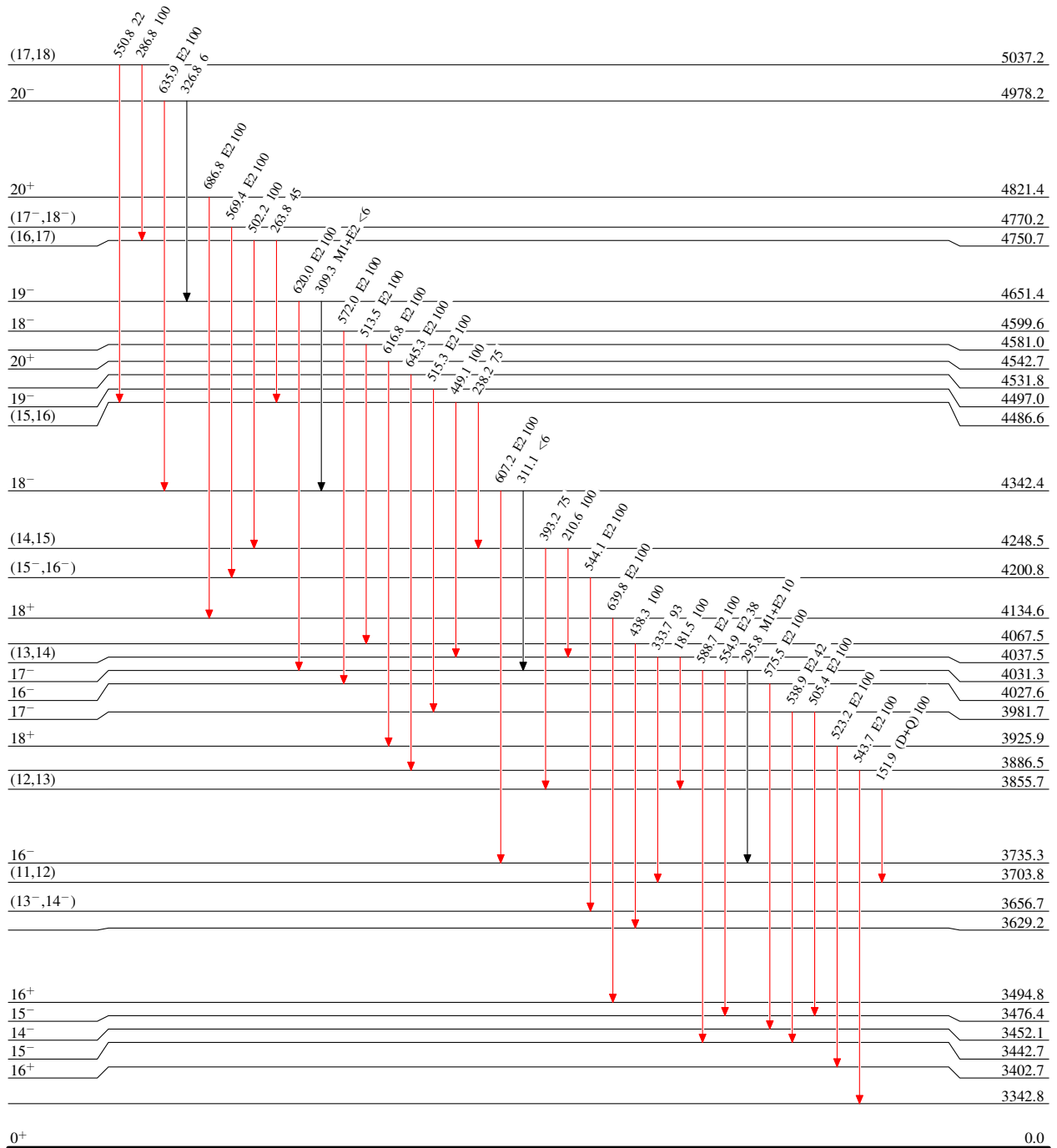
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

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



≤ ns

21.5 min 4

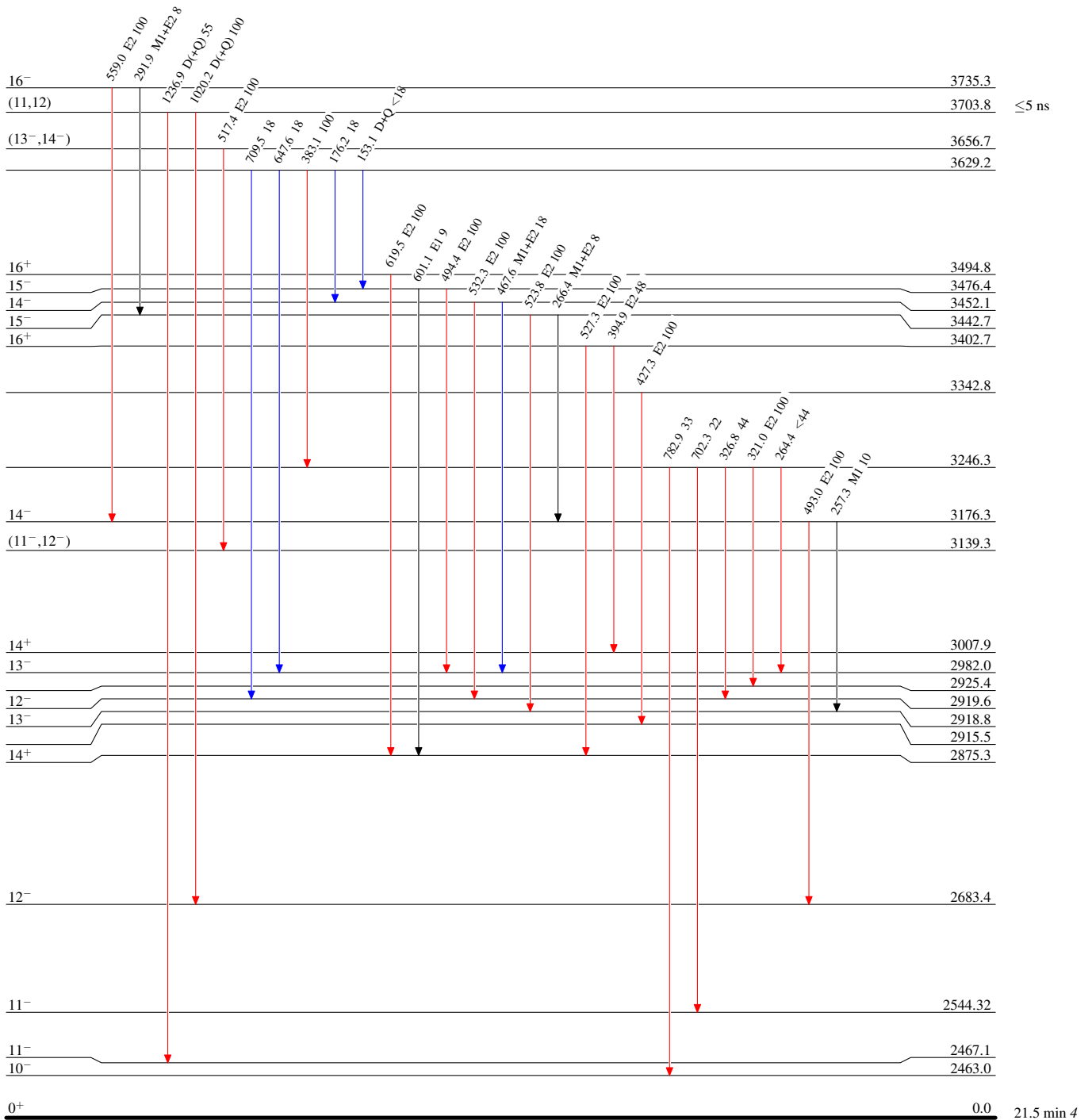
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

Legend

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



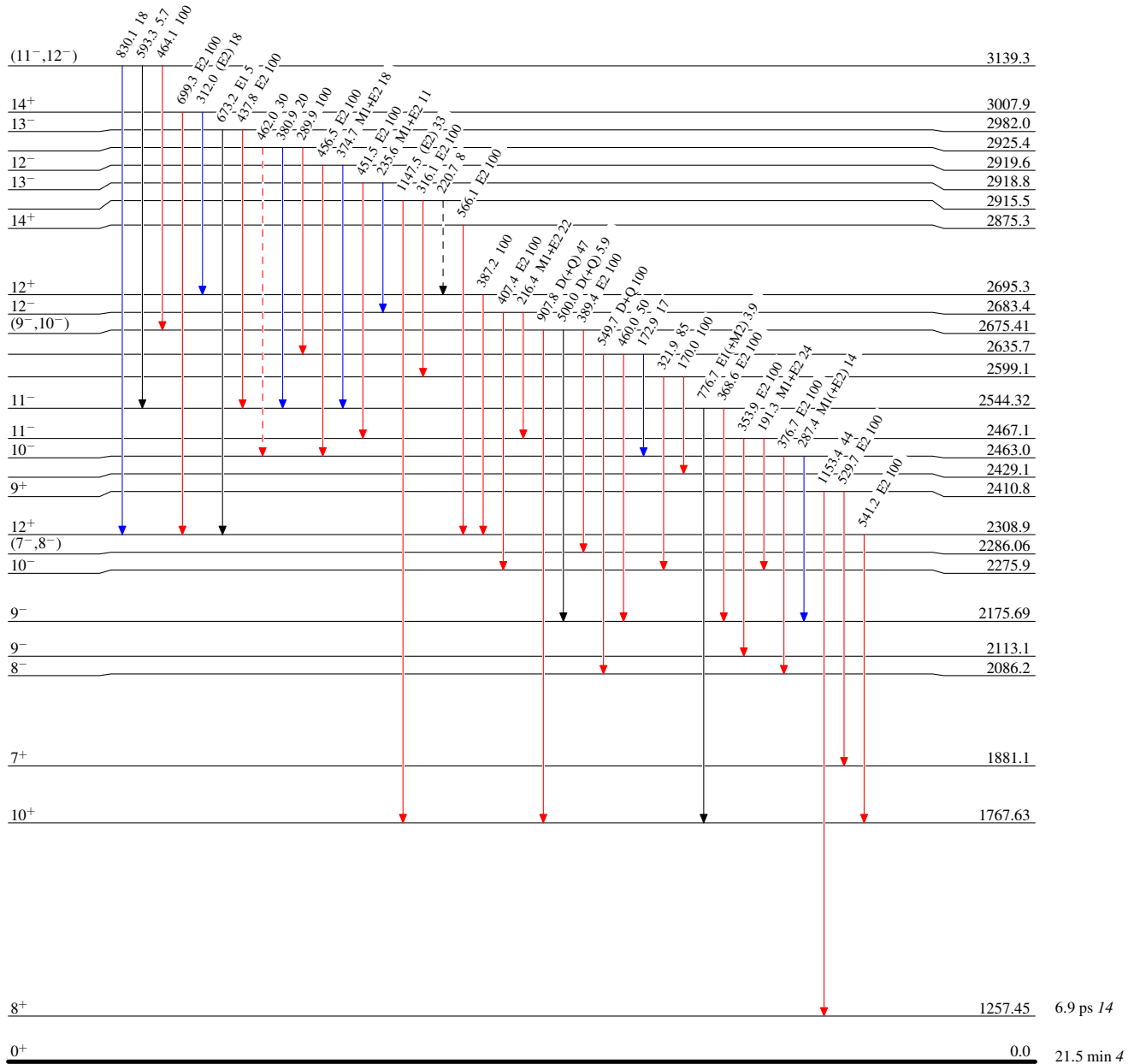
Adopted Levels, Gammas

Legend

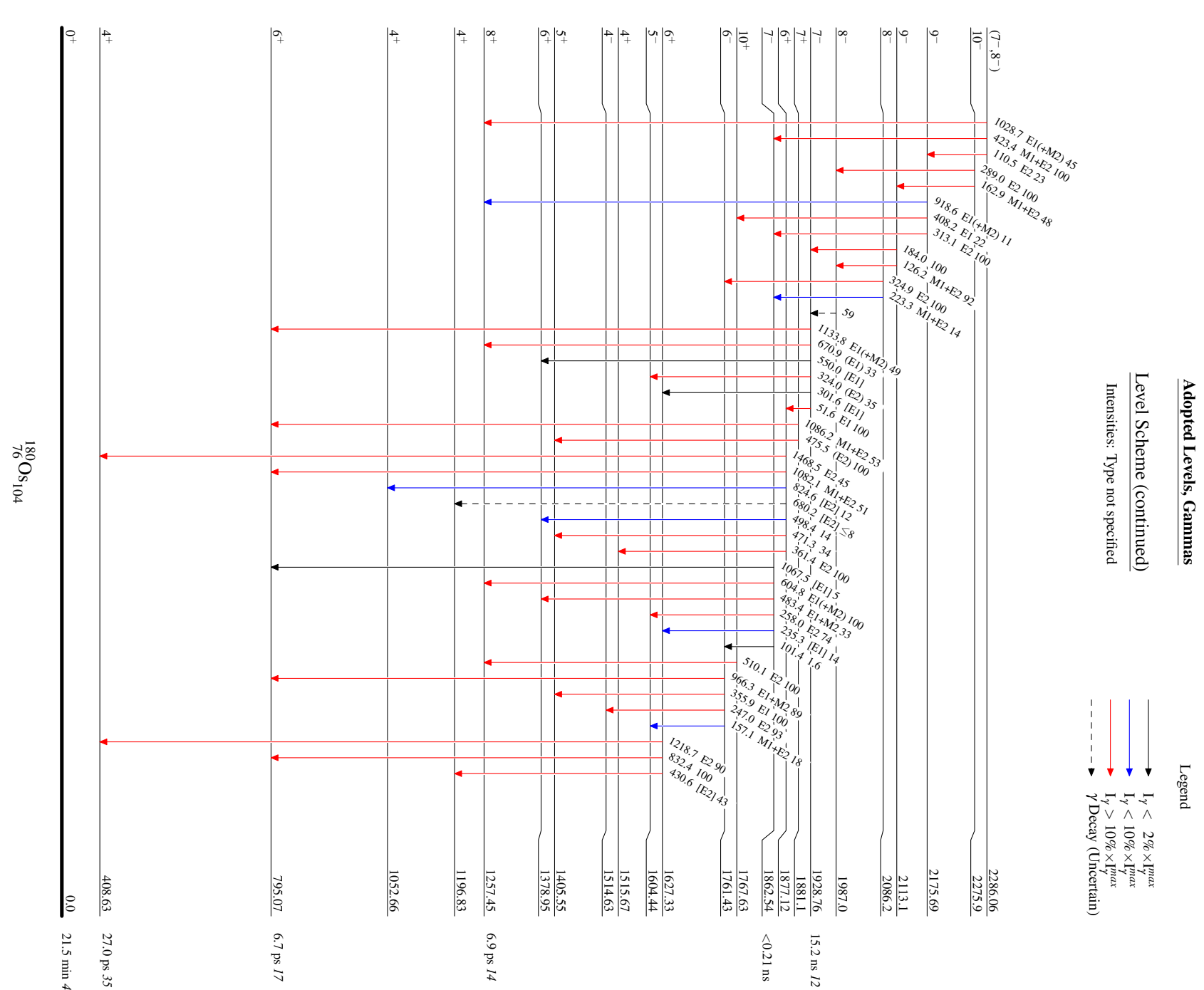
Level Scheme (continued)

Intensities: Type not specified

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



$^{180}_{76}\text{Os}_{104}$

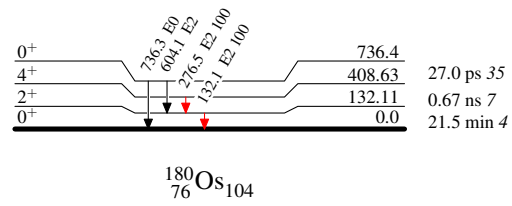


Adopted Levels, Gammas**Level Scheme (continued)**

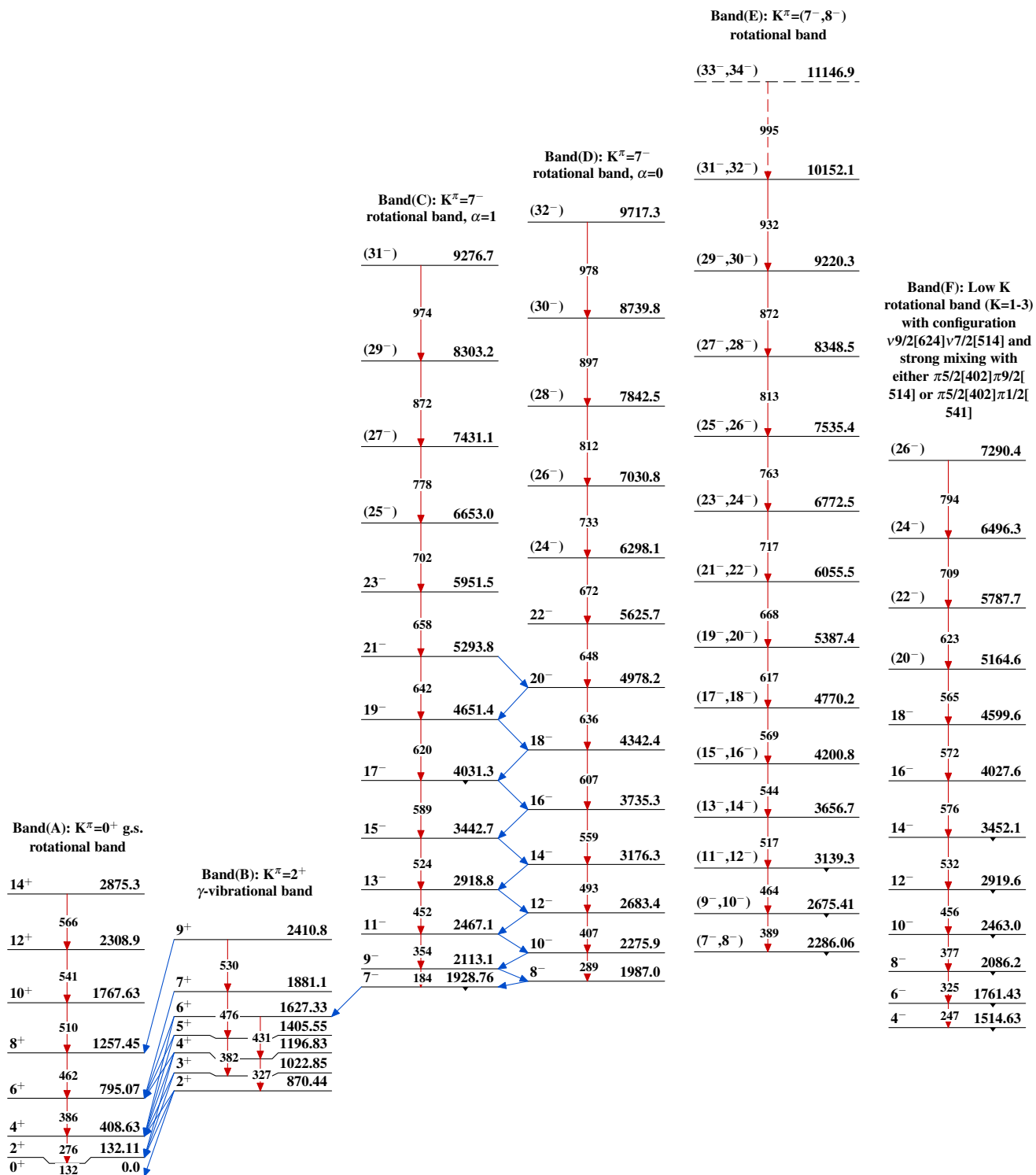
Intensities: Type not specified

Legend

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

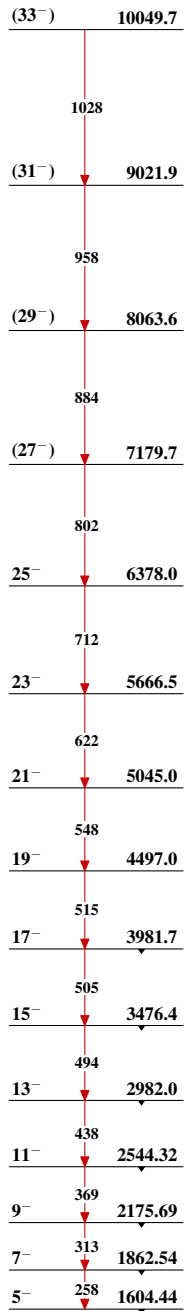
 $^{180}_{76}\text{Os}_{104}$

Adopted Levels, Gammas

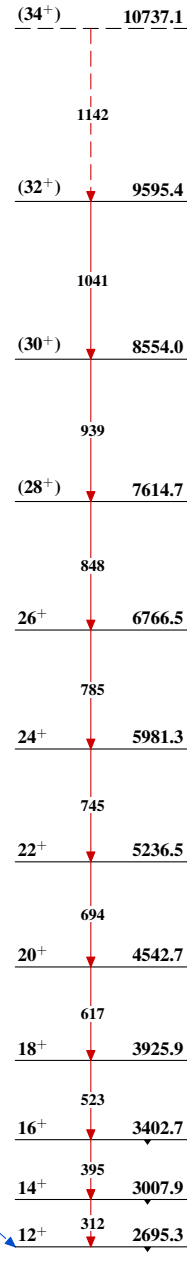


Adopted Levels, Gammas (continued)

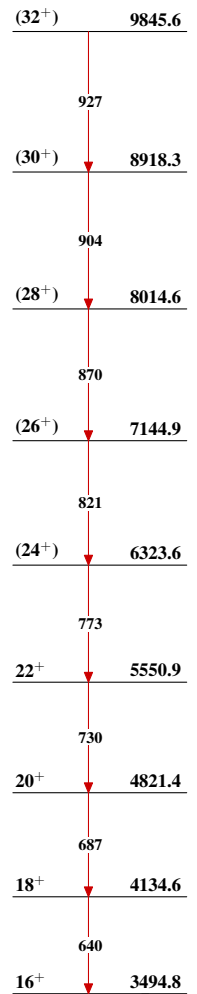
Band(G): Low K rotational band (K=1-3) with configuration $\nu 9/2[624]\nu 7/2[514]$ and strong mixing with either $\pi 5/2[402]\pi 9/2[514]$ or $\pi 5/2[402]\pi 1/2[541]$



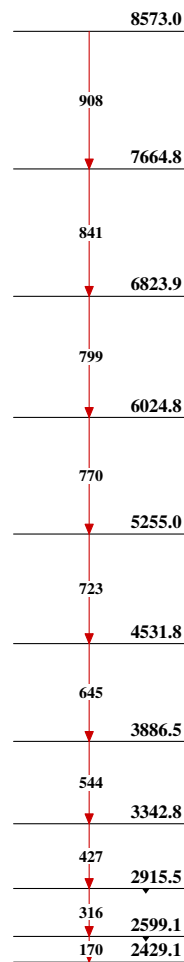
Band(K): $K^\pi=14^+$ rotational band



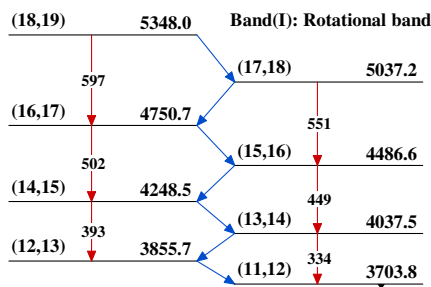
Band(L): $K^\pi=16^+$ rotational band

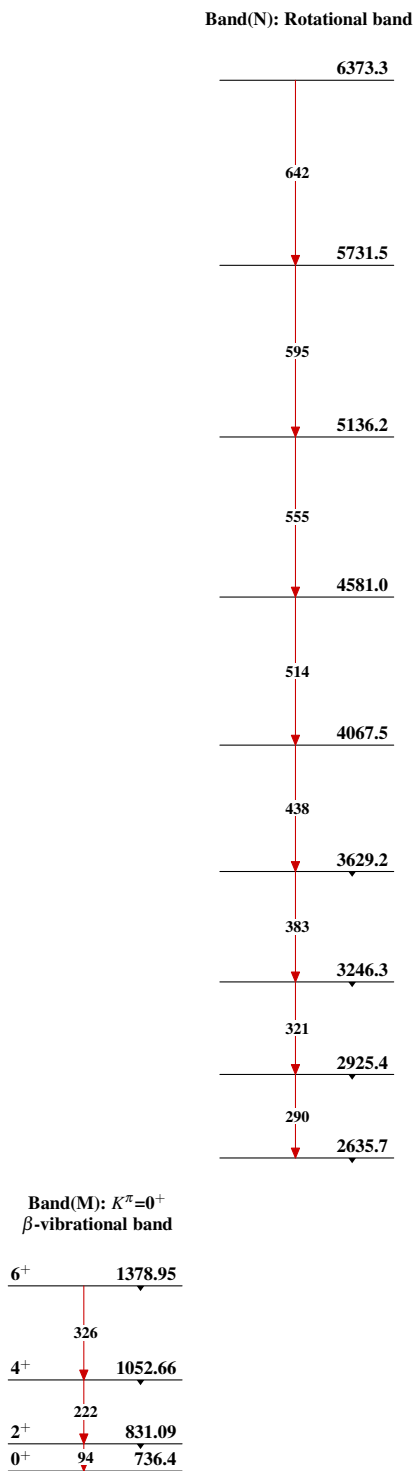


Band(J): Rotational Band



Band(H): Rotational band



Adopted Levels, Gammas (continued) $^{180}_{76}\text{Os}_{104}$