

¹⁸⁶W(¹⁸O,7nγ),¹⁸⁶W(¹⁶O,5nγ)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong, Zhou Chunmei		NDS 104, 283 (2005)	1-Jan-2002

2001Go06: ¹⁸⁶W(¹⁸O,7nγ) E=110, 115 MeV. Measured Eγ, Iγ, γγ, and γγ(θ)(DCO) using EUROGAM-II spectrometer comprised of 30 large-volume Compton-suppressed Ge detectors and 24 clover detectors, each composed of four Ge crystals in a common cryostat and surrounded by a Compton-suppression detector.
1999Po13: ¹⁸⁶W(¹⁶O,5nγ) E=97 MeV. Measured ce.
1995Ba35: ¹⁸⁶W(¹⁶O,5nγ) E=97 MeV. Measured Eγ, Iγ, γγ, γγ(θ) and DCO ratios using OSIRIS spectrometer array with 12 compton-suppressed Ge detectors and 48 BGO scintillators.
1994CI01: ¹⁸⁶W(¹⁸O,7nγ) E=113 MeV. Measured Eγ, Iγ, γγ-coin. T_{1/2} by RDM.
2001Co19: ¹⁷⁶Yb(²⁶Mg,5nγ) E=130 MeV. Measured T_{1/2} by means of the recoil distance method using GAMMASPHERE array.
1998CI06: ¹⁷⁶Yb(²⁶Mg,5nγ) E=135 MeV. Measured T_{1/2} by DSAM using GAMMASPHERE array with 97 Ge detectors.
 Level scheme is proposed by **1995Ba35** and extended by **2001Go06**.

¹⁹⁷Pb Levels

See **2001Go06** for proposed quasiparticle configurations of the magnetic-rotational bands.

E(level)&	J ^π ‡	T _{1/2} †	Comments
0.0	3/2 ⁻	8.1 min 17	
84.90 10	5/2 ⁻		
319.30 23	13/2 ⁺	42.9 min 9	
1294.8 8	13/2 ⁺ , 15/2 ⁺		J ^π : 11/2 ⁺ , 13/2 ⁺ , 15/2 ⁺ from M1+E2 975.5 γ to 13/2 ⁺ , 319. ≠ 11/2 ⁺ from 391.7 γ from 17/2 ⁺ , 1687. E0 component argument here and in adopted seems incorrect or inconsistent. Only γ with E0 in adopted are for 1430 to 319, 1525 to 1174, 1624 to 1148, 1676 to 85 and 1774 to 1174, 1946(11/2 ⁺) to 1295(11/2 ⁺), and 2201 to 319.
1324.6 6	17/2 ⁺		J ^π : DJ=2 E2 1005.3 γ to 13/2 ⁺ , 319.
1401.8 7	15/2 ⁺		J ^π : 15/2 ⁺ from γ(θ) in (³ He,4nγ). E2(+M1) γ to 13/2 ⁺ , 319.
1430.5 8	13/2 ⁺		J ^π : from 1995Ba35 , 2001Go06 give 15/2.
1686.6 6	17/2 ⁺		J ^π : From R(DCO), 362 and 1367γ's 17/2 ⁺ and 13/2 ⁺ , 319 are DJ=2 E2 or DJ=0 D. Only J(1687)=17/2 ⁺ compatible.
1770.3 8	15/2		J ^π : DJ=1 D γ to 13/2 ⁺ , 319.
1850.1 8	15/2		
1856.2 7	15/2 ⁺ , 17/2 ⁺ , 19/2 ⁺		J ^π : 19/2 ⁺ from γ(θ) in (³ He,4nγ). E2 γ to 15/2 ⁺ , 1401, and M1+E2 γ to 17/2 ⁺ , 1326.
1881.2 7	21/2 ⁺		J ^π : DJ=2 E2 γ to 17/2 ⁺ , 1325.
1913.6 7	21/2 ⁻	470 ns 70	T _{1/2} : From 1985Pa22 , 1984AIZA . J ^π : 21/- from γ(θ) in (³ He,4nγ). M2+E3 γ to 17/2 ⁺ , 1325.
2063.0 7	21/2 ⁺		J ^π : ΔJ=2 E2 γ to 17/2 ⁺ , 1325.
2297.4 8	19/2 ⁺		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 15/2 ⁺ , 1402, and ΔJ=1 d for γ 17/2 ⁺ , 1325.
2300.6 11	(23/2 ⁻)		J ^π : 19/2 ⁻ , 21/2 ⁻ , 23/2 ⁻ from M1 γ to 21/2 ⁻ , 1914. (23/2) from γ(θ) in (³ He,4nγ).
2350.9 7	19/2 ⁺		
2392.1 13	(25/2 ⁻)		J ^π : (21/2) ⁻ , (23/2) ⁻ , (25/2) ⁻ from M1 γ to (23/2) ⁻ , 2301. (25/2) ⁻ from syst of ¹⁹⁷ Pb, ¹⁹⁹ Pb and ²⁰¹ Pb and weak-coupling model.
2467.2 8	17/2 ⁺ , 21/2 ⁺		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 17/2 ⁺ , 1325 and 1687 and from 21/2 ⁺ , 2690.
2473.0 11	(27/2 ⁻)		J ^π : (23/2) ⁻ , (25/2) ⁻ , (27/2) ⁻ from M1 γ to (25/2) ⁻ , 2393. (27/2) ⁻ from syst of ¹⁹⁷ Pb, ¹⁹⁹ Pb and ²⁰¹ Pb and weak-coupling model.
2652.7 9	25/2 ⁺		J ^π : ΔJ=2 E2 γ to 21/2 ⁺ , 1881.
2689.8 7	21/2 ⁺		J ^π : From R(DCO), γ's to 17/2 ⁺ , 1325 and 1687, and 21/2 ⁺ , 1881 and 2064, are ΔJ=2 E2 or ΔJ=0 d. Feeding of 21/2 ⁺ , 2064, suggests J(2690) can not be less than 21/2.

Continued on next page (footnotes at end of table)

¹⁸⁶W(¹⁸O,7n γ), ¹⁸⁶W(¹⁶O,5n γ) (continued)

¹⁹⁷Pb Levels (continued)

E(level)&	J π^{\ddagger}	T _{1/2} [†]	Comments
2724.4 7	23/2 ⁺		J π : $\Delta J=1$ M1 from 25/2 ⁺ .
2851.2 8	25/2 ⁺		J π : From R(DCO), γ 's to 21/2 ⁺ ,1881 and 2064, and 25/2 ⁺ ,2653, are $\Delta J=2$ E2 or $\Delta J=0$ d. Feeding of 25/2 ⁺ ,2653, suggests J(2851) can not be less than 25/2.
3079.6 10	29/2 ⁺		J π : 29/2 from $\gamma(\theta)$ in (HI,xn γ).R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 25/2 ⁺ ,2652.
3097.5 9	23/2,27/2		J π : From $\Delta J=1$ d γ to 25/2 ⁺ ,2851.
3168.2 12	(33/2 ⁺)	55 ns 5	T _{1/2} : From $\gamma(t)$ measurement (1985Pa22, 1984AlZA,1978Ri01). J π : 25/2 ⁺ to 33/2 ⁺ from E2 γ to 29/2 ⁺ ,3080. (33/2 ⁺) from syst of ¹⁹⁷ Pb, ¹⁹⁹ Pb and ²⁰¹ Pb and weak-coupling model.
3266.2 11	23/2,27/2		J π : From $\Delta J=1$ d γ to 25/2 ⁺ ,2851.
3283.7 ^a 8	(27/2 ⁻) [#]		J π : 23/2 ⁻ ,27/2 ⁻ from $\Delta J=1$ E1 γ to 25/2 ⁺ ,2851. (27/2) from similarity to band 1 in ¹⁹⁹ Pb(1994Ba43).
3313.2 11	(29/2 ⁺)		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 25/2 ⁺ ,2653. (29/2 ⁺) from syst of ¹⁹⁷ Pb, ¹⁹⁹ Pb and ²⁰¹ Pb and weak-coupling model.
3426.5 11	29/2		J π : $\Delta J=1$ d γ to 27/2,3098.
3436.3 ^a 9	29/2 ⁻ [#]	0.76 ps 21	J π : From R(DCO), γ to (27/2 ⁻),3284, $\Delta J=1$ d.
3706.9 ^a 9	31/2 ⁻ [#]	0.49 ps 13	J π : From $\Delta J=1$ d γ to 29/2 ⁻ ,3436.
3756.0 11	33/2 ⁺		J π : From R(DCO), γ 's to 29/2 ⁺ ,3080 and 3313,and 33/2 ⁺ ,3168, are $\Delta J=2$ E2 or $\Delta J=1$ d.
3768.4 11	31/2		J π : From R(DCO), γ 's to 29/2,3426 and 3313,are $\Delta J=1$ d.
4024.5 13	31/2		J π : From R(DCO), γ to 27/2,3266,are $\Delta J=2$ E2 or $\Delta J=0$ d.
4058.3 15			
4066.0 ^a 9	33/2 ⁻ [#]	0.42 ps 11	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 29/2 ⁻ ,3436, and $\Delta J=1$ d for γ 31/2 ⁻ ,3707.
4081.8 11	33/2 ⁺		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 29/2 ⁻ ,3313, and $\Delta J=1$ d for γ 31/2,3768.
4182.0 12	33/2		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 29/2,3426, and $\Delta J=1$ d for γ 31/2,3768.
4435.9 ^a 9	35/2 ⁻ [#]	0.34 ps 11	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 29/2,3426, and $\Delta J=1$ d for γ 31/2,3768.
4496.9 12	35/2		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 31/2,3768, and $\Delta J=1$ d for γ 33/2,4082 and 4182.
4581.1 14	33/2		J π : R(DCO) compatible with $\Delta J=1$ d for γ to 31/2,4024,
4677.0 13	35/2		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 31/2,4025,
4794.6 ^b 11	37/2 ⁺ @		J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 33/2 ⁺ ,4082 and 3169, and $\Delta J=1$ d for γ 35/2,4677,4497.
4820.9 ^a 9	37/2 ⁻ [#]	0.69 ps 35	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 33/2 ⁻ ,4066, and $\Delta J=1$ d for γ 35/2 ⁻ ,4436.
4907.0 ^b 12	39/2 ⁺ @		J π : R(DCO) compatible with $\Delta J=1$ d for γ 37/2 ⁺ ,4795.
4911.9 12	37/2		
5058.3 ^b 12	41/2 ⁺ @		J π : R(DCO) compatible with $\Delta J=1$ d for γ 39/2 ⁺ ,4907.
5186.1 ^a 9	39/2 ⁻ [#]	0.55 ps 28	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 35/2 ⁻ ,4436, and $\Delta J=1$ d for γ 37/2 ⁻ ,4821.
5232.9 ^c 13	39/2 ⁽⁺⁾		J π : R(DCO) compatible with $\Delta J=1$ d for γ 37/2,4912.
5258.9 ^b 12	43/2 ⁺ @		J π : R(DCO) compatible with $\Delta J=1$ d for γ 41/2 ⁺ ,5058.
5395.5 ^c 13	41/2 ⁽⁺⁾		J π : R(DCO) compatible with $\Delta J=1$ d for γ 39/2 ⁽⁺⁾ ,5233.
5479.9 ^a 9	41/2 ⁻ [#]	0.48 ps 14	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 37/2 ⁻ ,4821, and $\Delta J=1$ d for γ 39/2 ⁻ ,5186.
5525.6 ^b 12	45/2 ⁺ @		J π : R(DCO) compatible with $\Delta J=1$ d for γ 43/2 ⁺ ,5259.
5614.3 ^c 13	43/2 ⁽⁺⁾		J π : R(DCO) compatible with $\Delta J=1$ d for γ 41/2 ⁽⁺⁾ ,5396.
5680.8 9	41/2		
5707.5 ^a 9	43/2 ⁻ [#]	0.55 ps 21	J π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 39/2 ⁻ ,5186, and $\Delta J=1$ d for

Continued on next page (footnotes at end of table)

¹⁸⁶W(¹⁸O,7nγ), ¹⁸⁶W(¹⁶O,5nγ) (continued)

¹⁹⁷Pb Levels (continued)

E(level)&	J ^π ‡	T _{1/2} [†]	Comments
			γ 41/2 ⁻ ,5480.
5862.3 ^b 12	47/2 ⁺ @	0.118 ps 21	J ^π : R(DCO) compatible with ΔJ=1 d for γ 45/2 ⁺ ,5526.
5879.0 ^c 13	45/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 43/2 ⁽⁺⁾ ,5614.
5952.9 ^a 10	45/2 ⁻ #		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 41/2 ⁻ ,5480, and ΔJ=1 d for γ 43/2 ⁻ ,5708.
5997.4 9	43/2 ⁻		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 39/2 ⁻ ,5186, and ΔJ=1 d for γ 41/2 ⁻ ,5681 and 5480.
6014.0 ^d 11	43/2 ⁻		J ^π : Magnetic-rotational band based on 43/2 ⁻ -(2001Go06).
6195.6 ^c 13	47/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 45/2 ⁽⁺⁾ ,5879.
6202.2 ^d 10	45/2 ⁻		J ^π : R(DCO) compatible with ΔJ=1 d for γ 43/2 ⁻ ,6014 and 5997.
6238.1 ^a 10	47/2 ⁻ #	0.277 ps 14	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 43/2 ⁻ ,5706, and ΔJ=1 d for γ 45/2 ⁻ ,5953.
6263.1 ^e 10	45/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 43/2 ⁻ ,6014 and 5997.
6266.2 ^b 12	49/2 ⁺ @	0.090 ps +21-14	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 45/2 ⁺ ,5526, and ΔJ=1 d for γ 47/2 ⁺ ,5862.
6408.1 ^d 10	47/2 ⁻		J ^π : R(DCO) compatible with ΔJ=1 d for γ 45/2 ⁻ ,6202.
6518.4 ^e 10	47/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 45/2 ⁽⁺⁾ ,6263.
6558.9 ^c 14	49/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 47/2 ⁽⁺⁾ ,6196.
6565.3 ^a 10	49/2 ⁻ #	0.201 ps +21-14	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 45/2 ⁻ ,5953, and ΔJ=1 d for γ 47/2 ⁻ ,6238.
6659.6 ^d 10	49/2 ⁻		J ^π : R(DCO) compatible with ΔJ=1 d for γ 47/2 ⁻ ,6408 and 6238.
6712.3 ^b 12	51/2 ⁺ @	0.111 ps 14	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 47/2 ⁺ ,5862, and ΔJ=1 d for γ 49/2 ⁺ ,6266.
6807.0 ^e 11	49/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 47/2 ⁽⁺⁾ ,6518.
6904.1 ^a 10	51/2 ⁻ #	0.118 ps +21-14	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 47/2 ⁻ ,6238, and ΔJ=1 d for γ 49/2 ⁻ ,6565.
6912.7 ^c 14	51/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 49/2 ⁽⁺⁾ ,6558.
6993.7 ^d 10	51/2 ⁻		J ^π : R(DCO) compatible with ΔJ=1 d for γ 49/2 ⁻ ,6659 and 6565.
7147.7 ^e 11	51/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 49/2 ⁽⁺⁾ ,6807.
7179.4 ^b 12	53/2 ⁺ @	0.19 ps 4	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 49/2 ⁺ ,6266, and ΔJ=1 d for γ 51/2 ⁺ ,6712.
7257.4 ^a 10	53/2 ⁻ #	0.118 ps +14-7	J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 49/2 ⁻ ,6565, and ΔJ=1 d for γ 51/2 ⁻ ,6904.
7286.5 ^c 13	53/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 51/2 ⁽⁺⁾ ,6912.
7407.0 ^d 10	53/2 ⁻		J ^π : R(DCO) compatible with ΔJ=1 d for γ 51/2 ⁻ ,6994 and 6904.
7551.3 ^e 12	53/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 51/2 ⁽⁺⁾ ,7147.
7613.1 ^b 12	55/2 ⁺ @		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 51/2 ⁺ ,6712, and ΔJ=1 d for γ 53/2 ⁺ ,7179.
7660.2 ^a 10	55/2 ⁻ #		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 51/2 ⁻ ,6904, and ΔJ=1 d for γ 53/2 ⁻ ,7257.
7677.5 ^c 13	55/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 53/2 ⁽⁺⁾ ,7286 and 7179.
7859.9 ^d 10	55/2 ⁻		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 51/2 ⁻ ,6993, and ΔJ=1 d for γ 53/2 ⁻ ,7407.
7984.5 ^b 13	57/2 ⁺ @		J ^π : R(DCO) compatible with ΔJ=1 d for γ 55/2 ⁺ ,7613.
8015.9 ^e 12	55/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 51/2 ⁽⁺⁾ ,7147, and ΔJ=1 d for γ 53/2 ⁽⁺⁾ ,7551.
8067.8 ^c 14	57/2 ⁽⁺⁾		J ^π : R(DCO) compatible with ΔJ=1 d for γ 55/2 ⁽⁺⁾ ,7677.
8120.5 ^a 10	57/2 ⁻ #		J ^π : R(DCO) compatible with ΔJ=2 E2 or ΔJ=0 d for γ to 53/2 ⁻ ,7257, and ΔJ=1 d for γ 55/2 ⁻ ,7660.

Continued on next page (footnotes at end of table)

$^{186}\text{W}(^{18}\text{O},7\text{n}\gamma), ^{186}\text{W}(^{16}\text{O},5\text{n}\gamma)$ (continued) ^{197}Pb Levels (continued)

E(level)&	J^π ‡	Comments
8353.1 ^d 10	57/2 ⁻	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 53/2 ⁻ ,7407, and $\Delta J=1$ d for γ 55/2 ⁻ ,7860.
8372.1 ^b 13	59/2 ⁺ @	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 57/2 ⁺ ,7985.
8438.7 ^c 16	59/2 ⁽⁺⁾	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 57/2 ⁽⁺⁾ ,8067.
8520.1 ^e 12	57/2 ⁽⁺⁾	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 53/2 ⁽⁺⁾ ,7551, and $\Delta J=1$ d for γ 55/2 ⁽⁺⁾ ,8016.
8635.5 ^a 11	59/2 ⁻ #	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 55/2 ⁻ ,7660, and $\Delta J=1$ d for γ 57/2 ⁻ ,8120.
8794.7 ^b 14	61/2 ⁺ @	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 59/2 ⁺ ,8372.
8830.5 ^c 17	61/2 ⁽⁺⁾	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 59/2 ⁽⁺⁾ ,8439.
8878.5 ^d 12	59/2 ⁻	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 57/2 ⁻ ,8353.
9041.9 ^e 15	59/2 ⁽⁺⁾	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 57/2 ⁽⁺⁾ ,8520.
9198.0 ^a 11	61/2 ⁻ #	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 57/2 ⁻ ,8121, and $\Delta J=1$ d for γ 59/2 ⁻ ,8636.
9246.4 ^b 15	63/2 ⁺ @	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 61/2 ⁺ ,8795.
9441.4 ^d 13	61/2 ⁻	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 59/2 ⁻ ,8879.
9581.8 ^e 17	61/2 ⁽⁺⁾	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 59/2 ⁽⁺⁾ ,9042.
9723.5 ^b 17	65/2 ⁺ @	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 63/2 ⁺ ,9246.
9793.9 ^a 11	63/2 ⁻ #	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 59/2 ⁻ ,8636, and $\Delta J=1$ d for γ 61/2 ⁻ ,9198.
10023.3 ^d 15	63/2 ⁻	J^π : R(DCO) compatible with $\Delta J=1$ d for γ 61/2 ⁻ ,9441.
10405.5 ^a 12	65/2 ⁻ #	J^π : R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d for γ to 61/2 ⁻ ,9198, and $\Delta J=1$ d for γ 63/2 ⁻ ,9794.

† From 2001Co19,except as noted.

‡ From Adopted Levels,except as noted.

From 2001Go06.

@ From 1995Ba35.

& From least-squares fit to $E\gamma$'s.

^a Band(A): Magnetic-rotational band 1, based on 27/2⁻(1995Ba35,2001Go06).

^b Band(B): Magnetic-rotational band 2, based on 37/2⁺(1995Ba35,2001Go06).

^c Band(C): Magnetic-rotational band 3, based on 39/2⁽⁺⁾(1995Ba35,2001Go06).

^d Band(D): Magnetic-rotational band 4, based on 43/2⁻(2001Go06).

^e Band(E): Magnetic-rotational band 5, based on 45/2⁽⁺⁾(2001Go06).

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$

Experimental conversion coefficients are from 1999Po13.

DCO from 2001Go06, R(DCO) from 1995Ba35.

E_γ [†]	I_γ ^{†&}	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
32.4 3		1913.6	21/2 ⁻	1881.2	21/2 ⁺			
34.6 3		2724.4	23/2 ⁺	2689.8	21/2 ⁺			
57.4 3		1913.6	21/2 ⁻	1856.2	15/2 ⁺ ,17/2 ⁺ ,19/2 ⁺	(E1) ^b		
80.9	21 5	2473.0	(27/2 ⁻)	2392.1	(25/2 ⁻)	D ^b		
84.9 [#] 1		84.90	5/2 ⁻	0.0	3/2 ⁻			
88.6	11 5	3168.2	(33/2 ⁺)	3079.6	29/2 ⁺	E2 ^b		
91.4	6.5 11	2392.1	(25/2 ⁻)	2300.6	(23/2 ⁻)	M1 ^b	12.7	$\alpha(\text{K})=10.4$ 4; $\alpha(\text{L})=1.80$ 6; $\alpha(\text{M})=0.422$ 13; $\alpha(\text{N+..})=0.139$ 5
95.8		4677.0	35/2	4581.1	33/2			
112.4 2	27 4	4907.0	39/2 ⁺	4794.6	37/2 ⁺	M1	7.00	$\alpha(\text{K})=5.70$ 18; $\alpha(\text{L})=0.99$ 3; $\alpha(\text{M})=0.232$ 7; $\alpha(\text{N+..})=0.0765$ 23 Mult.: R(DCO) compatible with $\Delta J=1$ d. DCO=0.63 9.
117.6	1.5 4	4794.6	37/2 ⁺	4677.0	35/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.58 28.
126.9	6.7 9	2851.2	25/2 ⁺	2724.4	23/2 ⁺	M1	4.94	$\alpha(\text{K})=4.03$ 12; $\alpha(\text{L})=0.698$ 21; $\alpha(\text{M})=0.164$ 5; $\alpha(\text{N+..})=0.0541$ 17 Mult.: From $\alpha(\text{L})$ exp. R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.49 7.
151.3 2	47 7	5058.3	41/2 ⁺	4907.0	39/2 ⁺	M1	2.99	$\alpha(\text{K})=2.44$ 8; $\alpha(\text{L})=0.422$ 13; $\alpha(\text{M})=0.099$ 3; $\alpha(\text{N+..})=0.0327$ 10 $\alpha(\text{K})$ exp=1.7 9 DCO=0.56 9. Mult.: From $\alpha(\text{K})$ exp,R(DCO) compatible with $\Delta J=1$ d.
152.6 2	105 12	3436.3	29/2 ⁻	3283.7	(27/2 ⁻)	M1	2.92	$\alpha(\text{K})=2.38$ 8; $\alpha(\text{L})=0.412$ 13; $\alpha(\text{M})=0.097$ 3; $\alpha(\text{N+..})=0.0319$ 10 $\alpha(\text{K})$ exp=2.0 8; $\alpha(\text{L})$ exp=0.56 21 DCO=0.64 9. Mult.: R(DCO) compatible with $\Delta J=1$ d,E2(+M1) from $\alpha(\text{K})$ exp, $\alpha(\text{L})$ exp.
162.7 3	12.1 25	5395.5	41/2 ⁽⁺⁾	5232.9	39/2 ⁽⁺⁾	M1	2.44	$\alpha(\text{K})=1.99$ 6; $\alpha(\text{L})=0.344$ 11; $\alpha(\text{M})=0.0805$ 25; $\alpha(\text{N+..})=0.0265$ 8 DCO=0.58 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
168.7	0.7 2	3266.2	23/2,27/2	3097.5	23/2,27/2			
172.4	8 4	2473.0	(27/2 ⁻)	2300.6	(23/2 ⁻)	Q ^b		
181.8	0.7 2	2063.0	21/2 ⁺	1881.2	21/2 ⁺			
186.2 3	2.5 7	3283.7	(27/2 ⁻)	3097.5	23/2,27/2	E1	0.094	$\alpha(\text{K})$ exp=0.24 19 $\alpha(\text{K})=0.0760$ 23; $\alpha(\text{L})=0.0136$ 4; $\alpha(\text{M})=0.00318$ 10; $\alpha(\text{N+..})=0.00101$ 3 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. E2(+M1) or E1(+M2) from $\alpha(\text{K})$ exp. R(DCO)= 1.02 27.

5

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ [†]	I_γ ^{†&}	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
188.0 5	9.7 19	6202.2	45/2 ⁻	6014.0	43/2 ⁻	M1	1.62	$\alpha(\text{K})=1.32$ 4; $\alpha(\text{L})=0.228$ 7; $\alpha(\text{M})=0.0535$ 16; $\alpha(\text{N}+..)=0.0175$ 6 DCO=0.74 11. Mult.: R(DCO) compatible with $\Delta J=1$ d.
198.5	1.0 3	2851.2	25/2 ⁺	2652.7	25/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. \neq E2 from ΔJ . R(DCO)= 1.12 39.
200.6 2	53 7	5258.9	43/2 ⁺	5058.3	41/2 ⁺	M1	1.35	$\alpha(\text{K})=1.10$ 4; $\alpha(\text{L})=0.190$ 6; $\alpha(\text{M})=0.0446$ 14; $\alpha(\text{N}+..)=0.0146$ 5 $\alpha(\text{K})_{\text{exp}}=1.4$ 4 DCO=0.57 6. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
204.7 5	7.5 19	6202.2	45/2 ⁻	5997.4	43/2 ⁻	M1	1.28	$\alpha(\text{K})=1.04$ 4; $\alpha(\text{L})=0.180$ 6; $\alpha(\text{M})=0.0421$ 13; $\alpha(\text{N}+..)=0.0138$ 5 DCO=0.49 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
205.8 3	20 4	6408.1	47/2 ⁻	6202.2	45/2 ⁻	M1	1.26	$\alpha(\text{K})=1.03$ 3; $\alpha(\text{L})=0.177$ 6; $\alpha(\text{M})=0.0415$ 13; $\alpha(\text{N}+..)=0.0136$ 4 DCO=0.68 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
218.8 3	18 3	5614.3	43/2 ⁽⁺⁾	5395.5	41/2 ⁽⁺⁾	M1	1.06	$\alpha(\text{K})=0.87$ 3; $\alpha(\text{L})=0.149$ 5; $\alpha(\text{M})=0.0350$ 11; $\alpha(\text{N}+..)=0.0114$ 4 DCO=0.63 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
222.5	3.3 16	2689.8	21/2 ⁺	2467.2	17/2 ⁺ ,21/2 ⁺			R(DCO)= 1.09 34.
227.6 2	90 11	5707.5	43/2 ⁻	5479.9	41/2 ⁻	M1	0.95	$\alpha(\text{K})=0.776$ 24; $\alpha(\text{L})=0.134$ 4; $\alpha(\text{M})=0.0313$ 10; $\alpha(\text{N}+..)=0.0102$ 3 $\alpha(\text{K})_{\text{exp}}=0.75$ 32 DCO=0.62 9. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
234.4 [#] 1		319.30	13/2 ⁺	84.90	5/2 ⁻	M4 ^b	62.2	$\alpha(\text{K})=22.7$ 7; $\alpha(\text{L})=28.4$ 9; $\alpha(\text{M})=8.3$ 3; $\alpha(\text{N}+..)=2.86$ 9 Additional information 1.
245.4 2	82 12	5952.9	45/2 ⁻	5707.5	43/2 ⁻	M1	0.772	$\alpha(\text{K})=0.630$ 19; $\alpha(\text{L})=0.108$ 4; $\alpha(\text{M})=0.0254$ 8; $\alpha(\text{N}+..)=0.00824$ 25 $\alpha(\text{K})_{\text{exp}}=0.54$ 27 DCO=0.63 8. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
246.3	5.2 28	3097.5	23/2,27/2	2851.2	25/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.63 15.
249.5 8	2.4 7	6263.1	45/2 ⁽⁺⁾	6014.0	43/2 ⁻	(E1) ^b	0.0459	$\alpha(\text{K})=0.0375$ 12; $\alpha(\text{L})=0.00647$ 20; $\alpha(\text{M})=0.00151$ 5; $\alpha(\text{N}+..)=0.00048$ 2
251.4 2	23 3	6659.6	49/2 ⁻	6408.1	47/2 ⁻	M1	0.722	$\alpha(\text{K})=0.589$ 18; $\alpha(\text{L})=0.101$ 3; $\alpha(\text{M})=0.0237$ 8; $\alpha(\text{N}+..)=0.00771$ 24 DCO=0.67 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
255.3 3	11.0 22	6518.4	47/2 ⁽⁺⁾	6263.1	45/2 ⁽⁺⁾	M1	0.692	$\alpha(\text{K})=0.565$ 17; $\alpha(\text{L})=0.097$ 3; $\alpha(\text{M})=0.0227$ 7; $\alpha(\text{N}+..)=0.00738$ 23 DCO=0.74 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
256.0	1.2 4	1686.6	17/2 ⁺	1430.5	13/2 ⁺			R(DCO)= 0.78 33.
264.7 3	19 3	5879.0	45/2 ⁽⁺⁾	5614.3	43/2 ⁽⁺⁾	M1	0.626	$\alpha(\text{K})=0.511$ 16; $\alpha(\text{L})=0.088$ 3; $\alpha(\text{M})=0.0206$ 7; $\alpha(\text{N}+..)=0.00667$ 20 DCO=0.61 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
265.6 3	12.0 23	6263.1	45/2 ⁽⁺⁾	5997.4	43/2 ⁻	(E1)	0.0395	$\alpha(\text{K})=0.0323$ 10; $\alpha(\text{L})=0.00554$ 17; $\alpha(\text{M})=0.00129$ 4; $\alpha(\text{N}+..)=0.00041$ 1

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ [†]	I_γ ^{†&}	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
266.7 2	71 9	5525.6	45/2 ⁺	5258.9	43/2 ⁺	M1	0.613	DCO=0.74 9. Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.501$ 15; $\alpha(L)=0.086$ 3; $\alpha(M)=0.0202$ 6; $\alpha(N+..)=0.00653$ 20 $\alpha(K)\text{exp}=0.45$ 11 DCO=0.53 7.
270.5 2	202 23	3706.9	31/2 ⁻	3436.3	29/2 ⁻	M1	0.590	Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.482$ 15; $\alpha(L)=0.0827$ 25; $\alpha(M)=0.0194$ 6; $\alpha(N+..)=0.00628$ 19 $\alpha(K)\text{exp}=0.42$ 10 DCO=0.62 8. Mult.: R(DCO) compatible with $\Delta J=1$ d,E2(+M1) from $\alpha(K)\text{exp}$.
^x 277.1 [‡] 285.2 2	1.5 4 80 12	6238.1	47/2 ⁻	5952.9	45/2 ⁻	M1	0.510	$\alpha(K)=0.417$ 13; $\alpha(L)=0.0714$ 22; $\alpha(M)=0.0167$ 5; $\alpha(N+..)=0.00542$ 17 $\alpha(K)\text{exp}=0.37$ 13 DCO=0.63 8. Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d.
288.6 3	14.3 24	6807.0	49/2 ⁽⁺⁾	6518.4	47/2 ⁽⁺⁾	M1	0.494	$\alpha(K)=0.403$ 13; $\alpha(L)=0.0691$ 21; $\alpha(M)=0.0162$ 5; $\alpha(N+..)=0.00525$ 16 DCO=0.86 8.
293.8 2	107 15	5479.9	41/2 ⁻	5186.1	39/2 ⁻	M1	0.470	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.384$ 12; $\alpha(L)=0.0658$ 20; $\alpha(M)=0.0154$ 5; $\alpha(N+..)=0.00499$ 15 $\alpha(K)\text{exp}=0.31$ 18 DCO=0.64 8.
297.7	4.1 10	4794.6	37/2 ⁺	4496.9	35/2	D		Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d. Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.61 22.
313.3	2.4 7	4081.8	33/2 ⁺	3768.4	31/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.57 25.
314.8	3.1 8	4496.9	35/2	4182.0	33/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.67 28.
316.5 3	16 3	5997.4	43/2 ⁻	5680.8	41/2	D		DCO=0.86 9.
316.6 3	16 3	6195.6	47/2 ⁽⁺⁾	5879.0	45/2 ⁽⁺⁾	M1	0.384	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.314$ 10; $\alpha(L)=0.0536$ 16; $\alpha(M)=0.0126$ 4; $\alpha(N+..)=0.00406$ 13 DCO=0.56 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
^x 317.0 [‡] 321.0 5	1.5 31 7 3	5232.9	39/2 ⁽⁺⁾	4911.9	37/2	D		DCO=0.61 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
327.2 2	75 11	6565.3	49/2 ⁻	6238.1	47/2 ⁻	M1	0.351	$\alpha(K)=0.287$ 9; $\alpha(L)=0.0490$ 15; $\alpha(M)=0.0115$ 4; $\alpha(N+..)=0.00371$ 12 $\alpha(K)\text{exp}=0.38$ 29 DCO=0.63 8.
329.0	6.6 11	3426.5	29/2	3097.5	23/2,27/2	D		Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d. Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.54 17.
334.1 2	24 6	6993.7	51/2 ⁻	6659.6	49/2 ⁻	M1	0.332	$\alpha(K)=0.271$ 9; $\alpha(L)=0.0462$ 14; $\alpha(M)=0.0108$ 4; $\alpha(N+..)=0.00351$ 11

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
336.7 2	76 9	5862.3	47/2 ⁺	5525.6	45/2 ⁺	M1	0.325	DCO=0.65 7. Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(\text{K})=0.266$ 8; $\alpha(\text{L})=0.0453$ 14; $\alpha(\text{M})=0.0106$ 4; $\alpha(\text{N}+..)=0.00343$ 11 $\alpha(\text{K})_{\text{exp}}=0.30$ 19 DCO=0.53 7. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
338.9 338.9 2	8.4 19 61 11	2689.8 6904.1	21/2 ⁺ 51/2 ⁻	2350.9 6565.3	19/2 ⁺ 49/2 ⁻	M1	0.319	$\alpha(\text{K})=0.261$ 8; $\alpha(\text{L})=0.0445$ 14; $\alpha(\text{M})=0.0104$ 4; $\alpha(\text{N}+..)=0.00337$ 11 $\alpha(\text{K})_{\text{exp}}=0.19$ 9 DCO=0.64 9. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
340.7 3	14.7 24	7147.7	51/2 ⁽⁺⁾	6807.0	49/2 ⁽⁺⁾	M1	0.315	$\alpha(\text{K})=0.257$ 8; $\alpha(\text{L})=0.0438$ 14; $\alpha(\text{M})=0.0103$ 3; $\alpha(\text{N}+..)=0.00332$ 10 DCO=0.63 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
342.0	7.2 17	3768.4	31/2	3426.5	29/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.57 19.
353.3 2	54 8	7257.4	53/2 ⁻	6904.1	51/2 ⁻	M1	0.285	$\alpha(\text{K})=0.233$ 7; $\alpha(\text{L})=0.0397$ 12; $\alpha(\text{M})=0.0093$ 3; $\alpha(\text{N}+..)=0.00301$ 9 $\alpha(\text{K})_{\text{exp}}=0.26$ 15 DCO=0.63 9. Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d.
353.8 5	5.2 18	6912.7	51/2 ⁽⁺⁾	6558.9	49/2 ⁽⁺⁾	M1	0.284	$\alpha(\text{K})=0.232$ 7; $\alpha(\text{L})=0.0396$ 12; $\alpha(\text{M})=0.0093$ 3; $\alpha(\text{N}+..)=0.00300$ 9 DCO=0.57 8.
359.1 2	197 22	4066.0	33/2 ⁻	3706.9	31/2 ⁻	M1	0.273	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(\text{K})=0.223$ 7; $\alpha(\text{L})=0.0380$ 12; $\alpha(\text{M})=0.0089$ 3; $\alpha(\text{N}+..)=0.00288$ 9 $\alpha(\text{K})_{\text{exp}}=0.14$ 11 DCO=0.68 9.
362.0	6.2 14	1686.6	17/2 ⁺	1324.6	17/2 ⁺	D		Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d. Mult.: R(DCO) compatible with $\Delta J=2$ or $\Delta J=0$ d; \neq E2 from ΔJ . R(DCO)= 0.92 18.
363.3 5	8.1 21	6558.9	49/2 ⁽⁺⁾	6195.6	47/2 ⁽⁺⁾	M1	0.265	$\alpha(\text{K})=0.216$ 7; $\alpha(\text{L})=0.0368$ 11; $\alpha(\text{M})=0.0086$ 3; $\alpha(\text{N}+..)=0.00279$ 9 DCO=0.57 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
365.2 2	135 16	5186.1	39/2 ⁻	4820.9	37/2 ⁻	M1	0.261	$\alpha(\text{K})=0.213$ 7; $\alpha(\text{L})=0.0363$ 11; $\alpha(\text{M})=0.0085$ 3; $\alpha(\text{N}+..)=0.00275$ 9 $\alpha(\text{K})_{\text{exp}}=0.22$ 15 DCO=0.64 8.
369.8 2	163 19	4435.9	35/2 ⁻	4066.0	33/2 ⁻	M1	0.252	Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d. $\alpha(\text{K})=0.206$ 7; $\alpha(\text{L})=0.0351$ 11; $\alpha(\text{M})=0.00821$ 25; $\alpha(\text{N}+..)=0.00266$ 8 $\alpha(\text{K})_{\text{exp}}=0.11$ 11 DCO=0.64 8.
371.0 8	1.9 8	8438.7	59/2 ⁽⁺⁾	8067.8	57/2 ⁽⁺⁾	M1	0.250	Mult.: From $\alpha(\text{K})_{\text{exp}}$,R(DCO) compatible with $\Delta J=1$ d. $\alpha(\text{K})=0.205$ 7; $\alpha(\text{L})=0.0348$ 11; $\alpha(\text{M})=0.00814$ 25; $\alpha(\text{N}+..)=0.00264$ 8 DCO=0.65 11.
371.4 2	21 5	7984.5	57/2 ⁺	7613.1	55/2 ⁺	M1	0.249	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(\text{K})=0.204$ 7; $\alpha(\text{L})=0.0347$ 11; $\alpha(\text{M})=0.00812$ 25; $\alpha(\text{N}+..)=0.00263$ 8

∞

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
373.9 8	3.4 16	7286.5	53/2 ⁽⁺⁾	6912.7	51/2 ⁽⁺⁾	M1	0.245	DCO=0.59 6. Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.200$ 6; $\alpha(L)=0.0341$ 11; $\alpha(M)=0.00797$ 24; $\alpha(N+..)=0.00258$ 8 DCO=0.52 11.
376.3	3.2 7	2063.0	21/2 ⁺	1686.6	17/2 ⁺	E2	0.0613	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.0389$ 12; $\alpha(L)=0.0168$ 5; $\alpha(M)=0.00425$ 13; $\alpha(N+..)=0.00137$ 4 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
385.0 2	147 18	4820.9	37/2 ⁻	4435.9	35/2 ⁻	M1	0.227	R(DCO)= 1.03 28. $\alpha(K)=0.185$ 6; $\alpha(L)=0.0315$ 10; $\alpha(M)=0.00736$ 22; $\alpha(N+..)=0.00239$ 8 $\alpha(K)\text{exp}=0.17$ 6 DCO=0.66 8. Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d.
387.0	100 15	2300.6	(23/2 ⁻)	1913.6	21/2 ⁻	M1 ^b	0.223	$\alpha(K)=0.183$ 6; $\alpha(L)=0.0310$ 10; $\alpha(M)=0.00726$ 22; $\alpha(N+..)=0.00235$ 7
387.6 3	20 4	8372.1	59/2 ⁺	7984.5	57/2 ⁺	M1	0.222	$\alpha(K)=0.182$ 6; $\alpha(L)=0.0309$ 10; $\alpha(M)=0.00723$ 22; $\alpha(N+..)=0.00234$ 7 DCO=0.62 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
390.2 5	9@ 3	8067.8	57/2 ⁽⁺⁾	7677.5	55/2 ⁽⁺⁾	M1	0.219	$\alpha(K)=0.179$ 6; $\alpha(L)=0.0304$ 10; $\alpha(M)=0.00710$ 22; $\alpha(N+..)=0.00230$ 7 DCO=0.59 9 for 390.2+391.1+391.8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
391.1 5	9@ 3	7677.5	55/2 ⁽⁺⁾	7286.5	53/2 ⁽⁺⁾	M1	0.217	$\alpha(K)=0.178$ 6; $\alpha(L)=0.0302$ 9; $\alpha(M)=0.00705$ 22; $\alpha(N+..)=0.00229$ 7 DCO=0.59 9 for a triplet. Mult.: R(DCO) compatible with $\Delta J=1$ d.
391.7	6.7 13	1686.6	17/2 ⁺	1294.8	13/2 ⁺ , 15/2 ⁺			R(DCO)= 0.75 19.
391.8 5	9@ 3	8830.5	61/2 ⁽⁺⁾	8438.7	59/2 ⁽⁺⁾	M1	0.216	$\alpha(K)=0.177$ 6; $\alpha(L)=0.0300$ 9; $\alpha(M)=0.00702$ 21; $\alpha(N+..)=0.00228$ 7 DCO=0.59 9 for 390.2+391.1+391.8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
392.4	2.3 5	2689.8	21/2 ⁺	2297.4	19/2 ⁺			
402.8 2	42 6	7660.2	55/2 ⁻	7257.4	53/2 ⁻	M1	0.201	$\alpha(K)=0.164$ 5; $\alpha(L)=0.0279$ 9; $\alpha(M)=0.00651$ 20; $\alpha(N+..)=0.00211$ 7 DCO=0.63 10. Mult.: R(DCO) compatible with $\Delta J=1$ d.
403.6 3	16 3	7551.3	53/2 ⁽⁺⁾	7147.7	51/2 ⁽⁺⁾	M1	0.200	$\alpha(K)=0.163$ 5; $\alpha(L)=0.0277$ 9; $\alpha(M)=0.00648$ 20; $\alpha(N+..)=0.00210$ 7 DCO=0.64 9. Mult.: R(DCO) compatible with $\Delta J=1$ d.
403.9 2	63 7	6266.2	49/2 ⁺	5862.3	47/2 ⁺	M1	0.199	$\alpha(K)=0.163$ 5; $\alpha(L)=0.0277$ 9; $\alpha(M)=0.00646$ 20; $\alpha(N+..)=0.00210$ 7 $\alpha(K)\text{exp}=0.10$ 7 DCO=0.56 7. Mult.: From $\alpha(K)\text{exp}$,R(DCO) compatible with $\Delta J=1$ d.
413.2 2	40 8	7407.0	53/2 ⁻	6993.7	51/2 ⁻	M1	0.187	$\alpha(K)=0.153$ 5; $\alpha(L)=0.0260$ 8; $\alpha(M)=0.00608$ 19; $\alpha(N+..)=0.00197$ 6 DCO=0.78 8. Mult.: R(DCO) compatible with $\Delta J=1$ d.
413.6	3.4 8	4182.0	33/2	3768.4	31/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.46 20.

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
415.0	4.6 19	3266.2	23/2,27/2	2851.2	25/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.56 16.
415.0 3		4911.9	37/2	4496.9	35/2			
415.1	3.9 15	4496.9	35/2	4081.8	33/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.45 11.
421.3 5	8.4 22	6659.6	49/2 ⁻	6238.1	47/2 ⁻	M1	0.178	$\alpha(K)=0.146$ 5; $\alpha(L)=0.0247$ 8; $\alpha(M)=0.00577$ 18; $\alpha(N+..)=0.00187$ 6 DCO=0.70 7. Mult.: R(DCO) compatible with $\Delta J=1$ d.
422.6 5	5.7 14	8794.7	61/2 ⁺	8372.1	59/2 ⁺	M1	0.177	$\alpha(K)=0.144$ 5; $\alpha(L)=0.0245$ 8; $\alpha(M)=0.00572$ 18; $\alpha(N+..)=0.00186$ 6 DCO=0.48 7.
427.0	9.8 2	3079.6	29/2 ⁺	2652.7	25/2 ⁺	E2	0.0439	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.0294$ 9; $\alpha(L)=0.0109$ 4; $\alpha(M)=0.00274$ 9; $\alpha(N+..)=0.00088$ 3 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
428.5 3	19.7 25	6993.7	51/2 ⁻	6565.3	49/2 ⁻	M1	0.170	R(DCO)= 1.03 27. $\alpha(K)=0.139$ 5; $\alpha(L)=0.0236$ 7; $\alpha(M)=0.00551$ 17; $\alpha(N+..)=0.00179$ 6 DCO=0.83 12.
432.5 2	30 4	3283.7	(27/2 ⁻)	2851.2	25/2 ⁺	E1	0.0131	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)\text{exp}=0.03$ 2 $\alpha(K)=0.0108$ 4; $\alpha(L)=0.00176$ 6; $\alpha(M)=0.00041$ 1; $\alpha(N+..)=0.00013$ Mult.: E2(+M1) or E1(+M2) from $\alpha(K)\text{exp}$; R(DCO) compatible with $\Delta J=1$ d. Electric d from linear polarization.
433.7 2	28 4	7613.1	55/2 ⁺	7179.4	53/2 ⁺	M1	0.165	R(DCO)= 0.65 10. $\alpha(K)=0.135$ 4; $\alpha(L)=0.0228$ 7; $\alpha(M)=0.00533$ 16; $\alpha(N+..)=0.00173$ 6 DCO=0.58 8.
442.9	3.8 11	3756.0	33/2 ⁺	3313.2	(29/2 ⁺)	E2	0.0400	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.0271$ 9; $\alpha(L)=0.0097$ 3; $\alpha(M)=0.00242$ 8; $\alpha(N+..)=0.00078$ 2 R(DCO)= 1.12 28.
446.1 2	47 7	6712.3	51/2 ⁺	6266.2	49/2 ⁺	M1	0.153	Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. $\alpha(K)=0.125$ 4; $\alpha(L)=0.0212$ 7; $\alpha(M)=0.00494$ 15; $\alpha(N+..)=0.00161$ 5 $\alpha(K)\text{exp}=0.12$ 7 DCO=0.54 8.
451.7 5	5.9 18	9246.4	63/2 ⁺	8794.7	61/2 ⁺	M1	0.148	Mult.: From $\alpha(K)\text{exp}$, R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.121$ 4; $\alpha(L)=0.0205$ 7; $\alpha(M)=0.00478$ 15; $\alpha(N+..)=0.00156$ 5 DCO=0.66 12.
452.9 2	36 6	7859.9	55/2 ⁻	7407.0	53/2 ⁻	M1	0.147	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.120$ 4; $\alpha(L)=0.0203$ 6; $\alpha(M)=0.00475$ 15; $\alpha(N+..)=0.00155$ 5 DCO=0.81 12.
454.4	5 5	1856.2	15/2 ⁺ , 17/2 ⁺ , 19/2 ⁺	1401.8	15/2 ⁺	E2 ^b	0.0375	Mult.: R(DCO) compatible with $\Delta J=1$ d. $\alpha(K)=0.0257$ 8; $\alpha(L)=0.0089$ 3; $\alpha(M)=0.00223$ 7; $\alpha(N+..)=0.00072$ 2
455.2	2.6 7	3768.4	31/2	3313.2	(29/2 ⁺)	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.54 17.
460.3 2	24 4	8120.5	57/2 ⁻	7660.2	55/2 ⁻	M1	0.141	$\alpha(K)=0.115$ 4; $\alpha(L)=0.0194$ 6; $\alpha(M)=0.00454$ 14; $\alpha(N+..)=0.00148$ 5

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
464.6 3	12.5 24	8015.9	55/2 ⁽⁺⁾	7551.3	53/2 ⁽⁺⁾	M1	0.137	DCO=0.65 11. Mult.: R(DCO) compatible with $\Delta J=1$ d.
467.1 2	30 5	7179.4	53/2 ⁺	6712.3	51/2 ⁺	M1	0.135	$\alpha(K)=0.112$ 4; $\alpha(L)=0.0190$ 6; $\alpha(M)=0.00443$ 14; $\alpha(N+..)=0.00144$ 5 DCO=0.64 9. Mult.: R(DCO) compatible with $\Delta J=1$ d.
473.2 8	1.6 7	5952.9	45/2 ⁻	5479.9	41/2 ⁻	E2	0.0339	$\alpha(K)=0.111$ 4; $\alpha(L)=0.0187$ 6; $\alpha(M)=0.00437$ 14; $\alpha(N+..)=0.00142$ 5 DCO=0.63 11. Mult.: R(DCO) compatible with $\Delta J=1$ d.
477.1 8	3.6 14	9723.5	65/2 ⁺	9246.4	63/2 ⁺	M1	0.128	$\alpha(K)=0.0235$ 7; $\alpha(L)=0.00782$ 24; $\alpha(M)=0.00195$ 6; $\alpha(N+..)=0.00063$ 2 R(DCO)= 0.78 19. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
493.2 3	12.0 18	8353.1	57/2 ⁻	7859.9	55/2 ⁻	M1	0.117	$\alpha(K)=0.105$ 4; $\alpha(L)=0.0177$ 6; $\alpha(M)=0.00413$ 13; $\alpha(N+..)=0.00135$ 4 DCO=0.63 12. Mult.: R(DCO) compatible with $\Delta J=1$ d.
494.7 2	21 3	5680.8	41/2	5186.1	39/2 ⁻			$\alpha(K)=0.096$ 3; $\alpha(L)=0.0162$ 5; $\alpha(M)=0.00378$ 12; $\alpha(N+..)=0.00123$ 4 DCO=0.85 12. Mult.: R(DCO) compatible with $\Delta J=1$ d.
498.1 5	7.7 25	7677.5	55/2 ⁽⁺⁾	7179.4	53/2 ⁺	(M1)	0.114	$\alpha(K)=0.093$ 3; $\alpha(L)=0.0157$ 5; $\alpha(M)=0.00368$ 11; $\alpha(N+..)=0.00120$ 4 DCO=0.49 11. Mult.: R(DCO) compatible with $\Delta J=1$ d.
500.8	1.6 3	2350.9	19/2 ⁺	1850.1	15/2			Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. R(DCO)= 1.05 23.
503.2 5	5.6 11	7407.0	53/2 ⁻	6904.1	51/2 ⁻	M1 ^b	0.111	$\alpha(K)=0.091$ 3; $\alpha(L)=0.0153$ 5
504.2 5	6.9 18	8520.1	57/2 ⁽⁺⁾	8015.9	55/2 ⁽⁺⁾	M1	0.111	$\alpha(K)=0.090$ 3; $\alpha(L)=0.0152$ 5 DCO=0.67 12. Mult.: R(DCO) compatible with $\Delta J=1$ d.
515.1 3	16 3	8635.5	59/2 ⁻	8120.5	57/2 ⁻	M1	0.105	$\alpha(K)=0.085$ 3; $\alpha(L)=0.0144$ 5 DCO=0.69 12. Mult.: R(DCO) compatible with $\Delta J=1$ d.
517.7 8	3.7 9	5997.4	43/2 ⁻	5479.9	41/2 ⁻	M1 ^b	0.103	$\alpha(K)=0.084$ 3; $\alpha(L)=0.0142$ 5
521.7 5	5.5 19	5707.5	43/2 ⁻	5186.1	39/2 ⁻	E2 ^b	0.0268	$\alpha(K)=0.0191$ 6; $\alpha(L)=0.00578$ 18
521.8 8	3.8 18	9041.9	59/2 ⁽⁺⁾	8520.1	57/2 ⁽⁺⁾	M1	0.101	$\alpha(K)=0.0826$ 25; $\alpha(L)=0.0139$ 5 DCO=0.57 13. Mult.: R(DCO) compatible with $\Delta J=1$ d.
525.4 5	8.6 18	8878.5	59/2 ⁻	8353.1	57/2 ⁻	M1	0.099	$\alpha(K)=0.0811$ 25; $\alpha(L)=0.0136$ 4 DCO=0.85 13. Mult.: R(DCO) compatible with $\Delta J=1$ d.
531.0 8	3.1 14	6238.1	47/2 ⁻	5707.5	43/2 ⁻	E2	0.0257	$\alpha(K)=0.0184$ 6; $\alpha(L)=0.00548$ 17 R(DCO)= 0.82 21. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
531.6	8.5 20	1856.2	15/2 ⁺ , 17/2 ⁺ , 19/2 ⁺	1324.6	17/2 ⁺	M1+E2 ^b	0.06 4	$\alpha(\text{K})=0.05$ 3; $\alpha(\text{L})=0.009$ 4
539.9 8	3.0 17	9581.8	61/2 ⁽⁺⁾	9041.9	59/2 ⁽⁺⁾	M1	0.092	$\alpha(\text{K})=0.0755$ 23; $\alpha(\text{L})=0.0127$ 4 DCO=0.56 13. Mult.: R(DCO) compatible with $\Delta J=1$ d.
556.6	34 4	1881.2	21/2 ⁺	1324.6	17/2 ⁺	E2	0.0230	$\alpha(\text{K})=0.0167$ 5; $\alpha(\text{L})=0.00476$ 15 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; Q from $\gamma(\theta)$ in (HI,xn γ). R(DCO)= 0.99 15.
556.6	1.0 5	4581.1	33/2	4024.5	31/2	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.67 27.
562.6 5	8.8 18	9198.0	61/2 ⁻	8635.5	59/2 ⁻	M1	0.0829	$\alpha(\text{K})=0.0677$ 21; $\alpha(\text{L})=0.0114$ 4 DCO=0.68 9. Mult.: R(DCO) compatible with $\Delta J=1$ d.
562.9 5	6.7 22	9441.4	61/2 ⁻	8878.5	59/2 ⁻	M1	0.0828	$\alpha(\text{K})=0.0676$ 21; $\alpha(\text{L})=0.0114$ 4 DCO=0.74 13. Mult.: R(DCO) compatible with $\Delta J=1$ d.
580.6	1.5 3	2350.9	19/2 ⁺	1770.3	15/2			Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. R(DCO)= 0.94 36.
581.9 8	1.8 7	10023.3	63/2 ⁻	9441.4	61/2 ⁻	M1 ^b	0.0758	$\alpha(\text{K})=0.0620$ 19; $\alpha(\text{L})=0.0104$ 4
587.8	4.4 7	3756.0	33/2 ⁺	3168.2	(33/2 ⁺)			
589.0 3		1913.6	21/2 ⁻	1324.6	17/2 ⁺	M2+E3 ^b	0.13 7	$\alpha(\text{K})=0.10$ 7; $\alpha(\text{L})=0.025$ 8 Additional information 2.
589.7	17.9 19	2652.7	25/2 ⁺	2063.0	21/2 ⁺	E2	0.0202	$\alpha(\text{K})=0.0148$ 5; $\alpha(\text{L})=0.00403$ 12 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.99 17.
596.0 3	11 3	9793.9	63/2 ⁻	9198.0	61/2 ⁻	M1 ^b	0.0712	$\alpha(\text{K})=0.0582$ 18; $\alpha(\text{L})=0.0098$ 3
606.6	46 12	3079.6	29/2 ⁺	2473.0	(27/2 ⁻)	D ^b		
611.7 5	9 3	10405.5	65/2 ⁻	9793.9	63/2 ⁻	M1 ^b	0.0666	$\alpha(\text{K})=0.0544$ 17; $\alpha(\text{L})=0.0091$ 3
612.4 5	5.2 21	6565.3	49/2 ⁻	5952.9	45/2 ⁻	E2 ^b	0.0185	$\alpha(\text{K})=0.0137$ 5; $\alpha(\text{L})=0.00362$ 11
626.8	16.4 15	2689.8	21/2 ⁺	2063.0	21/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. \neq E2 from ΔJ . R(DCO)= 0.94 14.
629.8 3	10 3	4066.0	33/2 ⁻	3436.3	29/2 ⁻	E2 ^b	0.0174	$\alpha(\text{K})=0.0130$ 4; $\alpha(\text{L})=0.00334$ 10
652.4	3.1 10	4677.0	35/2	4024.5	31/2	E2	0.0161	$\alpha(\text{K})=0.0121$ 4; $\alpha(\text{L})=0.00303$ 10 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 1.06 26.
659.2 5	6.7 23	5479.9	41/2 ⁻	4820.9	37/2 ⁻	E2 ^b	0.0158	$\alpha(\text{K})=0.0118$ 4; $\alpha(\text{L})=0.00295$ 9
660.4	8.1 19	3313.2	(29/2 ⁺)	2652.7	25/2 ⁺	(E2)	0.0157	$\alpha(\text{K})=0.0118$ 4; $\alpha(\text{L})=0.00293$ 9 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 1.01 14.

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
666.1 8	2.3 11	6904.1	51/2 ⁻	6238.1	47/2 ⁻	E2	0.0154	$\alpha(\text{K})=0.0116$ 4; $\alpha(\text{L})=0.00287$ 9 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
676.4	7.1 12	3756.0	33/2 ⁺	3079.6	29/2 ⁺	E2	0.0142	$\alpha(\text{K})=0.0108$ 4; $\alpha(\text{L})=0.00259$ 8 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
692.1 8	2.0 9	7257.4	53/2 ⁻	6565.3	49/2 ⁻			
712.6	2.1 6	4794.6	37/2 ⁺	4081.8	33/2 ⁺	E2	0.0134	$\alpha(\text{K})=0.0102$ 3; $\alpha(\text{L})=0.00239$ 8 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 1.10 30.
728.7	3.6 5	4496.9	35/2	3768.4	31/2	E2	0.0127	Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. R(DCO)= 0.73 15. $\alpha(\text{K})=0.0097$ 3; $\alpha(\text{L})=0.00226$ 7 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. DCO=1.2 3.
729.0 5	18 5	4435.9	35/2 ⁻	3706.9	31/2 ⁻			
738.4	42 6	2063.0	21/2 ⁺	1324.6	17/2 ⁺	E2	0.0124	$\alpha(\text{K})=0.0095$ 3; $\alpha(\text{L})=0.00218$ 7 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; Q from $\gamma(\theta)$ in (HI,xn γ). R(DCO)= 0.98 10.
740.7 8	1.7 9	6266.2	49/2 ⁺	5525.6	45/2 ⁺	E2	0.0123	$\alpha(\text{K})=0.0094$ 3; $\alpha(\text{L})=0.00216$ 7 R(DCO)= 1.1 5. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
750.2 2	22 5	5186.1	39/2 ⁻	4435.9	35/2 ⁻	E2	0.0120	$\alpha(\text{K})=0.0092$ 3; $\alpha(\text{L})=0.00209$ 7 DCO=1.1 3. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
754.9 2	21 5	4820.9	37/2 ⁻	4066.0	33/2 ⁻	E2	0.0118	$\alpha(\text{K})=0.0091$ 3; $\alpha(\text{L})=0.00206$ 7 DCO=1.3 3. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
755.5	2.8 4	4182.0	33/2	3426.5	29/2	E2 ^b	0.0118	$\alpha(\text{K})=0.0091$ 3; $\alpha(\text{L})=0.00205$ 7 $\alpha(\text{K})=0.0090$ 3; $\alpha(\text{L})=0.00204$ 7 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 1.19 33.
756.0 8	2.4 13	7660.2	55/2 ⁻	6904.1	51/2 ⁻			
758.3	3.4 6	4024.5	31/2	3266.2	23/2,27/2			
768.6	2.6 4	4081.8	33/2 ⁺	3313.2	(29/2 ⁺)	E2	0.0114	$\alpha(\text{K})=0.0088$ 3; $\alpha(\text{L})=0.00197$ 6 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.95 17.
771.4	10.1 15	2652.7	25/2 ⁺	1881.2	21/2 ⁺	E2	0.0113	$\alpha(\text{K})=0.0087$ 3; $\alpha(\text{L})=0.00195$ 6 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; Q from $\gamma(\theta)$ in (HI,xn γ). R(DCO)= 1.02 14.

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ †	I_γ †&	E_i (level)	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
780.6	1.6 3	2467.2	17/2 ⁺ , 21/2 ⁺	1686.6	17/2 ⁺	E2	0.0111	$\alpha(\text{K})=0.0085$ 3; $\alpha(\text{L})=0.00189$ 6 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.92 25.
788.2	1.7 3	2851.2	25/2 ⁺	2063.0	21/2 ⁺	E2	0.0108	$\alpha(\text{K})=0.0084$ 3; $\alpha(\text{L})=0.00185$ 6 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.95 17.
808.6	7.9 10	2689.8	21/2 ⁺	1881.2	21/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. \neq E2 from ΔJ . R(DCO)= 1.05 13.
811.3 5	7.3 18	5997.4	43/2 ⁻	5186.1	39/2 ⁻	E2 ^b	0.0102	$\alpha(\text{K})=0.00793$ 24; $\alpha(\text{L})=0.00172$ 6
849.9 5	5.9 18	6712.3	51/2 ⁺	5862.3	47/2 ⁺	E2	0.0093	$\alpha=0.0093$; $\alpha(\text{K})=0.00726$ 22; $\alpha(\text{L})=0.00153$ 5 DCO=1.1 0.5. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
862.8 8	2.0 9	8120.5	57/2 ⁻	7257.4	53/2 ⁻	E2 ^b	0.0090	$\alpha=0.0090$; $\alpha(\text{K})=0.00705$ 22; $\alpha(\text{L})=0.00148$ 5
866.1 8	4.8 15	7859.9	55/2 ⁻	6993.7	51/2 ⁻	E2	0.0090	$\alpha=0.0090$; $\alpha(\text{K})=0.00700$ 21; $\alpha(\text{L})=0.00146$ 5 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
868.2 8	0.8 3	8015.9	55/2 ⁽⁺⁾	7147.7	51/2 ⁽⁺⁾	E2	0.0089	$\alpha=0.0089$; $\alpha(\text{K})=0.00697$ 21; $\alpha(\text{L})=0.00146$ 5 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
890.1	25 4	4058.3		3168.2	(33/2 ⁺)			
895.7	2.2 5	2297.4	19/2 ⁺	1401.8	15/2 ⁺	E2	0.0084	$\alpha=0.0084$; $\alpha(\text{K})=0.00657$ 20; $\alpha(\text{L})=0.00135$ 4 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. R(DCO)= 1.06 20.
900.6 8	2.2 10	7613.1	55/2 ⁺	6712.3	51/2 ⁺	E2	0.00828	$\alpha=0.00828$; $\alpha(\text{K})=0.00651$ 20; $\alpha(\text{L})=0.00133$ 4 R(DCO)= 0.85 32. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
913.3 8	3.5 15	7179.4	53/2 ⁺	6266.2	49/2 ⁺	E2	0.00805	$\alpha=0.00805$; $\alpha(\text{K})=0.00634$ 19; $\alpha(\text{L})=0.00129$ 4 DCO=1.3 0.5. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
946.1 8	2.3 8	8353.1	57/2 ⁻	7407.0	53/2 ⁻	E2 ^b	0.00751	$\alpha=0.00751$; $\alpha(\text{K})=0.00593$ 18; $\alpha(\text{L})=0.00119$ 4
949.1	1.4 3	2350.9	19/2 ⁺	1401.8	15/2 ⁺	E2		Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. R(DCO)= 0.93 20.
968.8 8	1.9 7	8520.1	57/2 ⁽⁺⁾	7551.3	53/2 ⁽⁺⁾	E2 ^b	0.00717	$\alpha=0.00717$; $\alpha(\text{K})=0.00567$ 17; $\alpha(\text{L})=0.00112$ 4
970.0	1.1 2	2851.2	25/2 ⁺	1881.2	21/2 ⁺	E2	0.00715	$\alpha=0.00715$; $\alpha(\text{K})=0.00566$ 17; $\alpha(\text{L})=0.00112$ 4 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.92 16.

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

E_γ^\dagger	$I_\gamma^\dagger\&$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ^a	α^c	Comments
972.8	2.0 4	2297.4	19/2 ⁺	1324.6	17/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=1$ d. R(DCO)= 0.38 7.
975.1 8	4.5 17	8635.5	59/2 ⁻	7660.2	55/2 ⁻	E2	0.00707	$\alpha=0.00707$; $\alpha(K)=0.00560$ 17; $\alpha(L)=0.00111$ 4 DCO=0.93 18. Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme.
975.5	4.3 7	1294.8	13/2 ⁺ ,15/2 ⁺	319.30	13/2 ⁺	M1+E2 ^b	0.013 7	$\alpha(K)=0.011$ 6; $\alpha(L)=0.0019$ 8 R(DCO)= 0.56 7.
1003.2	7.8 9	2689.8	21/2 ⁺	1686.6	17/2 ⁺	E2	0.00669	$\alpha=0.00669$; $\alpha(K)=0.00531$ 16; $\alpha(L)=0.00104$ 4 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. $\Delta J \neq 0$ from level scheme. R(DCO)= 1.00 13.
1005.3	96 7	1324.6	17/2 ⁺	319.30	13/2 ⁺	E2	0.00666	$\alpha=0.00666$; $\alpha(K)=0.00529$ 16; $\alpha(L)=0.00103$ 3 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; Q from $\gamma(\theta)$ in (HI,xn γ). R(DCO)= 1.03 10.
1077.4 8	2.7 11	9198.0	61/2 ⁻	8120.5	57/2 ⁻	E2 ^b	0.00583	$\alpha=0.00583$; $\alpha(K)=0.00466$ 14; $\alpha(L)=0.00088$ 3
1082.5	9.9 7	1401.8	15/2 ⁺	319.30	13/2 ⁺	E2(+M1) ^b	0.011 5	$\alpha(K)=0.009$ 4; $\alpha(L)=0.0015$ 6 R(DCO)= 0.59 12.
1111.1	1.8 3	1430.5	13/2 ⁺	319.30	13/2 ⁺	E0+M1+E2 ^b		R(DCO)= 0.58 22.
1142.6	1.9 3	2467.2	17/2 ⁺ ,21/2 ⁺	1324.6	17/2 ⁺	E2	0.00521	$\alpha=0.00521$; $\alpha(K)=0.00418$ 13; $\alpha(L)=0.00077$ 2 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.91 13.
1158.1 8	1.3 9	9793.9	63/2 ⁻	8635.5	59/2 ⁻	E2 ^b	0.00507	$\alpha=0.00507$; $\alpha(K)=0.00408$ 13; $\alpha(L)=0.00075$ 2
1207.4 8	1.5 8	10405.5	65/2 ⁻	9198.0	61/2 ⁻	E2 ^b	0.00469	$\alpha=0.00469$; $\alpha(K)=0.00378$ 12; $\alpha(L)=0.00069$ 2
1365.2	1.5 2	2689.8	21/2 ⁺	1324.6	17/2 ⁺	E2	0.00372	$\alpha=0.00372$; $\alpha(K)=0.00302$ 9; $\alpha(L)=0.00053$ 2 Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d. $\Delta J \neq 0$ from level scheme. R(DCO)= 0.98 16.
1367.3	2.9 4	1686.6	17/2 ⁺	319.30	13/2 ⁺	E2		Mult.: R(DCO) compatible with $\Delta J=2$ E2 or $\Delta J=0$ d; $\Delta J \neq 0$ from level scheme. R(DCO)= 0.93 14.
1451.0	1.1 2	1770.3	15/2	319.30	13/2 ⁺	D		Mult.: R(DCO) compatible with $\Delta J=1$ D. R(DCO)= 0.37 13.
1530.8	1.1 2	1850.1	15/2	319.30	13/2 ⁺			R(DCO)= 0.29 12.
1626.4	0.5 2	4794.6	37/2 ⁺	3168.2	(33/2 ⁺)			

[†] From [1995Ba35,2001Go06](#). $\Delta(E\gamma)=0.2$ keV for $I_\gamma>20$ and for strong γ rays, 0.3 keV for $I_\gamma=10-20$ and for medium intensity γ rays listed only in figure 3 of [2001Go06](#), 0.5 keV for $I_\gamma=5-10$, and 0.8 keV for $I_\gamma<5$, based on a general statement by [2001Go06](#).

$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$ (continued)

$\gamma(^{197}\text{Pb})$ (continued)

‡ In group 1 of table 2 ([1995Ba35](#)) which implies its placement below ≈ 3100 .

Rounded-off value from adopted gammas.

@ Unresolved for 390.2+391.1+391.8 triplet.

& Relative intensity renormalized to $I(432.5\gamma)=300$ ([2001Go06](#)).

^a From DCO measurements([2001Go06](#)),except as noted.

^b From adopted gammas.

^c 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.

^x γ ray not placed in level scheme.

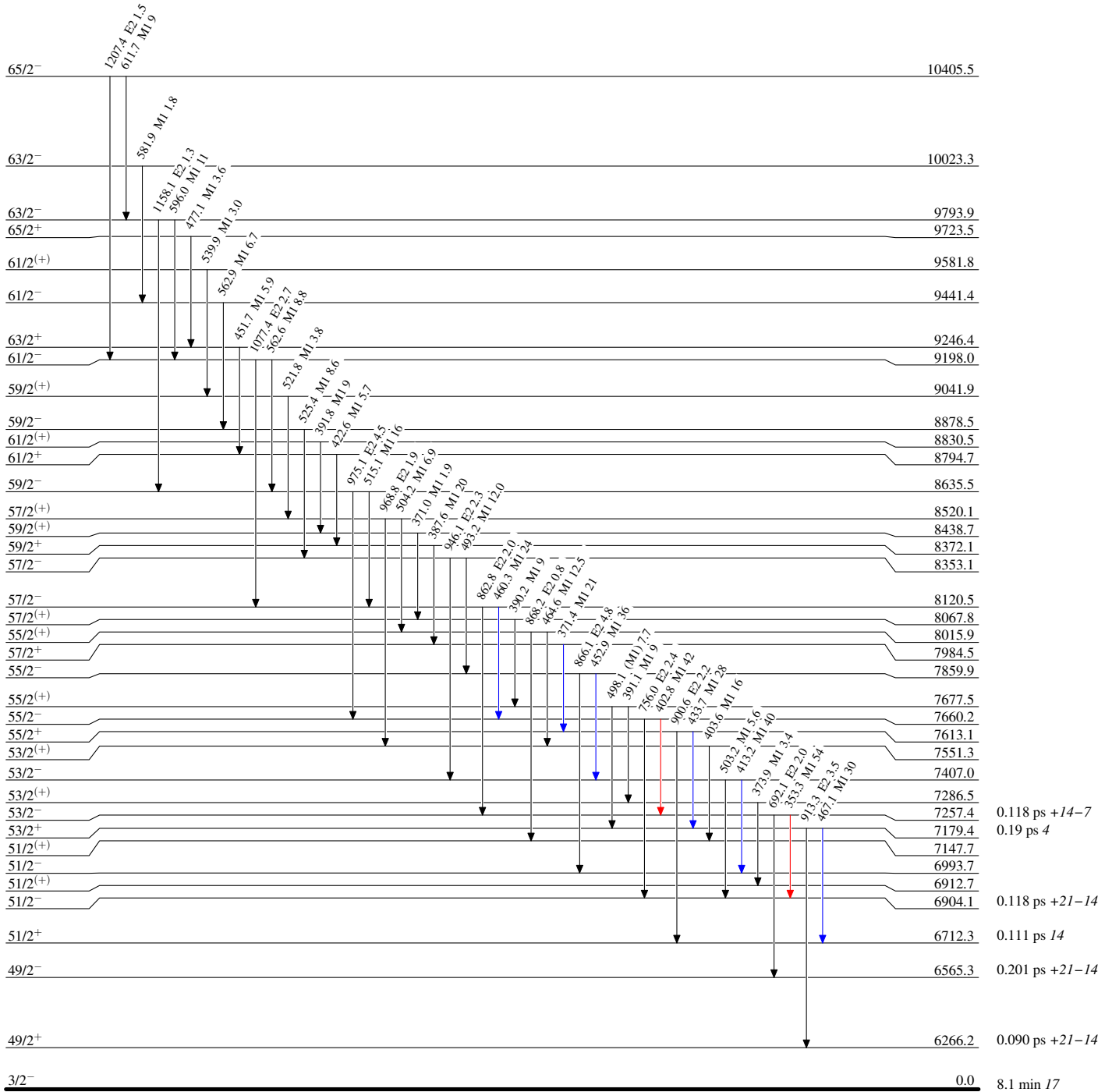
¹⁸⁶W(18O,7nγ), ¹⁸⁶W(16O,5nγ)

Level Scheme

Intensities: Relative I_γ

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}



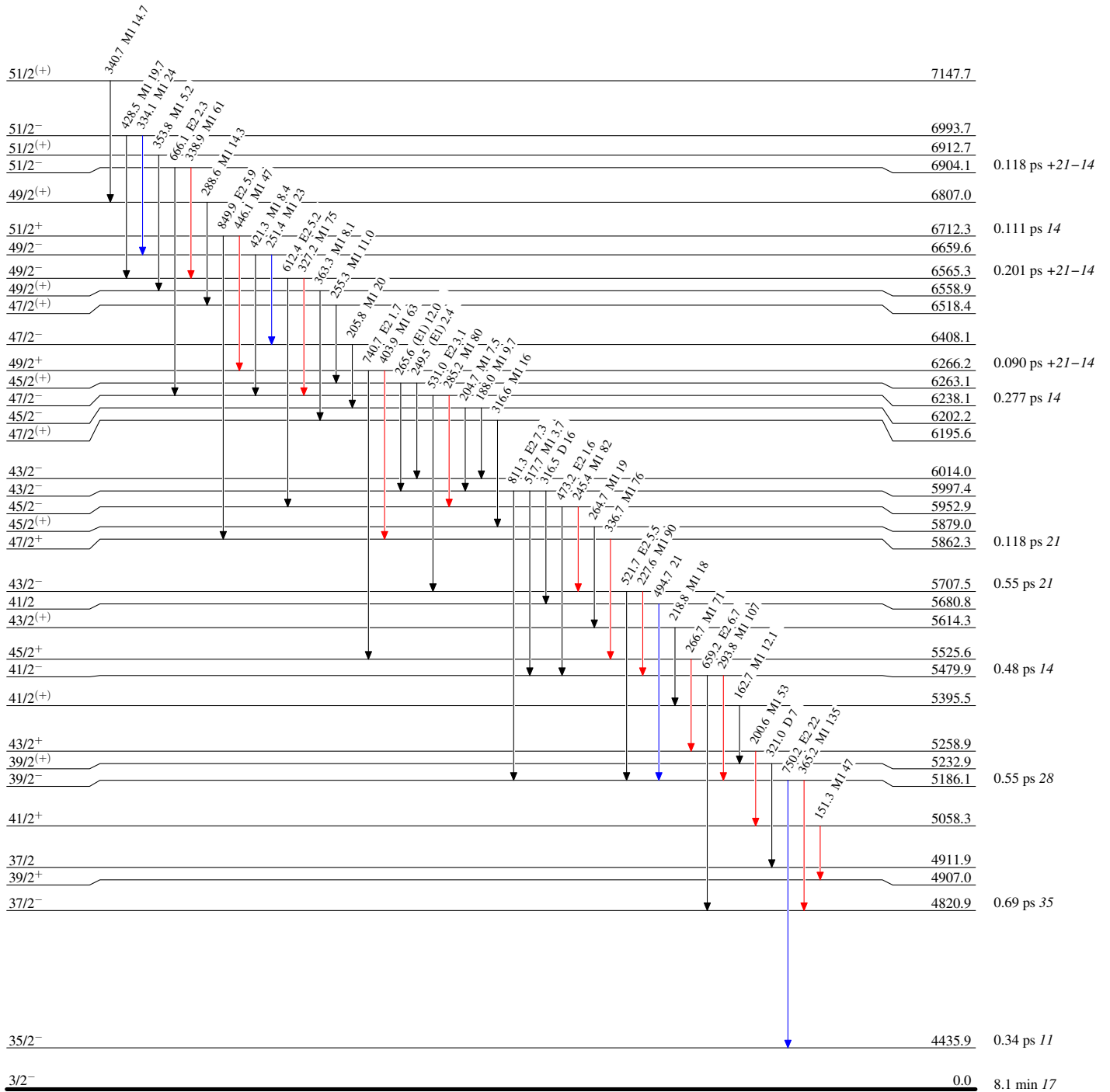
¹⁸⁶W(¹⁸O,7nγ), ¹⁸⁶W(¹⁶O,5nγ)

Level Scheme (continued)

Intensities: Relative I_γ

Legend

- I_γ < 2% × I_γ^{max}
- I_γ < 10% × I_γ^{max}
- I_γ > 10% × I_γ^{max}



¹⁹⁷Pb₈₂¹¹⁵

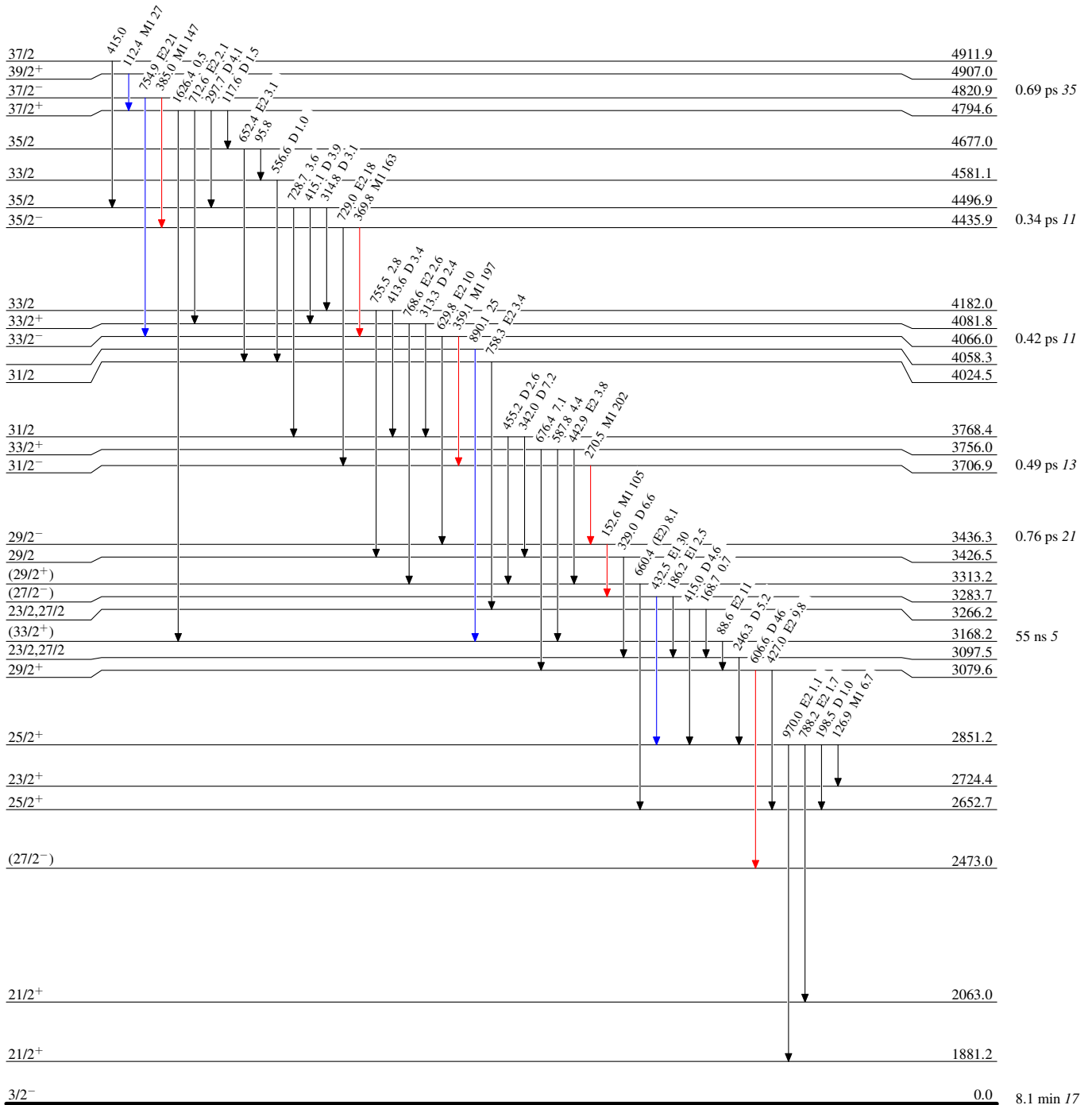
$^{186}\text{W}(^{18}\text{O},7\text{n}\gamma), ^{186}\text{W}(^{16}\text{O},5\text{n}\gamma)$

Level Scheme (continued)

Intensities: Relative I_γ

Legend

- \blackrightarrow $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $\color{blue}\blackrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $\color{red}\blackrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$



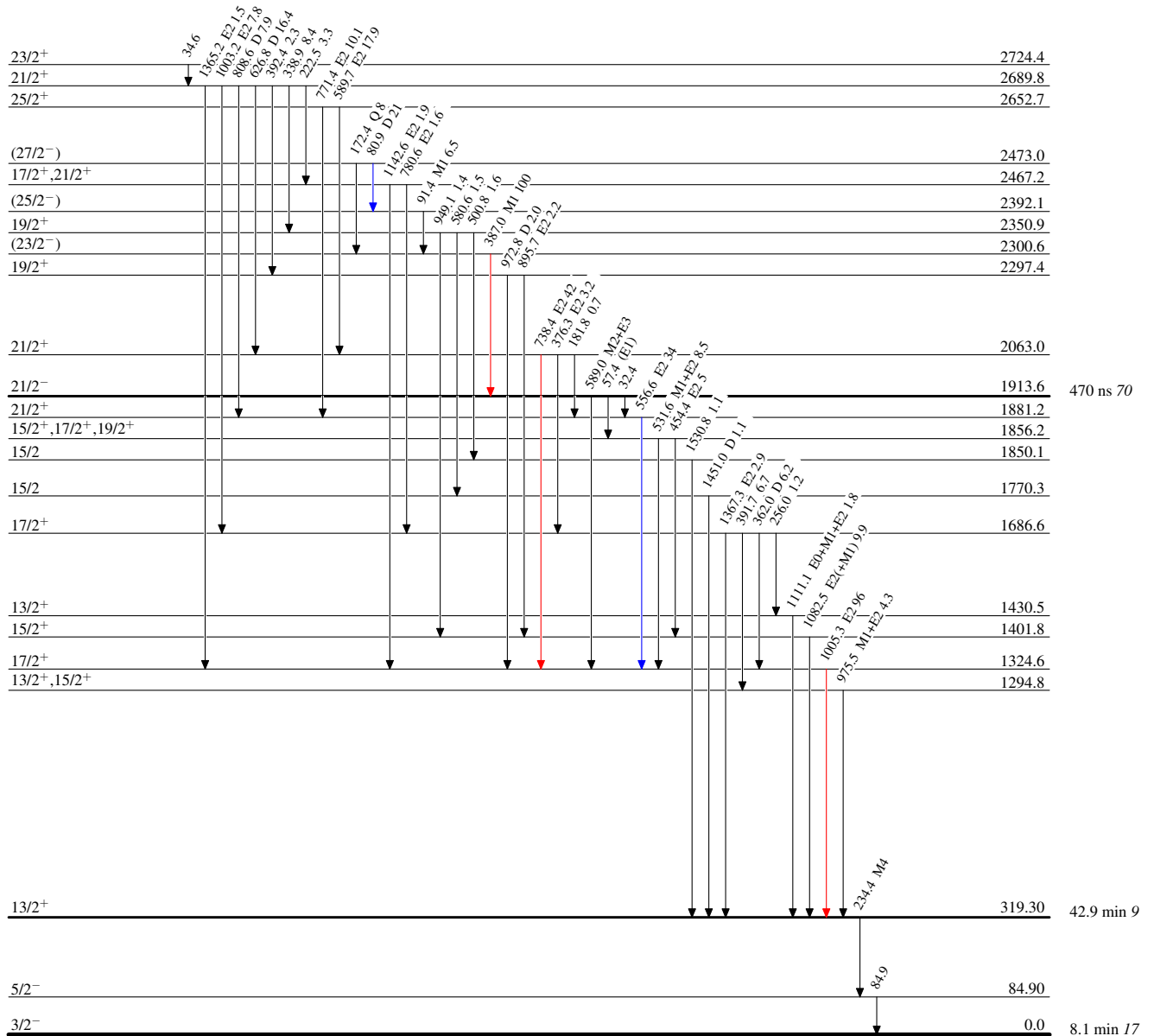
$^{186}\text{W}(^{18}\text{O},7n\gamma), ^{186}\text{W}(^{16}\text{O},5n\gamma)$

Level Scheme (continued)

Intensities: Relative I_γ

Legend

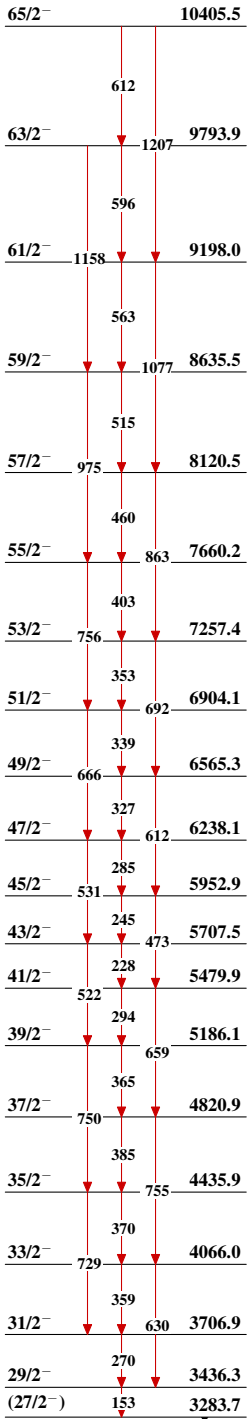
- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$



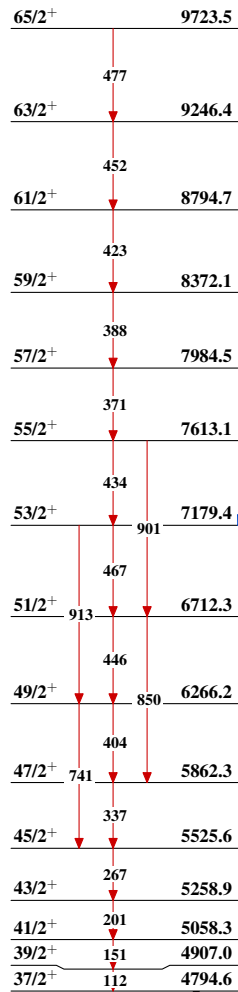
$^{197}\text{Pb}_{115}$

$^{186}\text{W}(^{18}\text{O},7\text{n}\gamma), ^{186}\text{W}(^{16}\text{O},5\text{n}\gamma)$

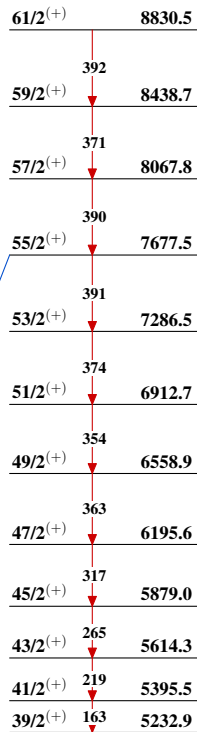
Band(A): Magnetic-rotational band 1, based on 27/2-(1995Ba35, 2001Go06)



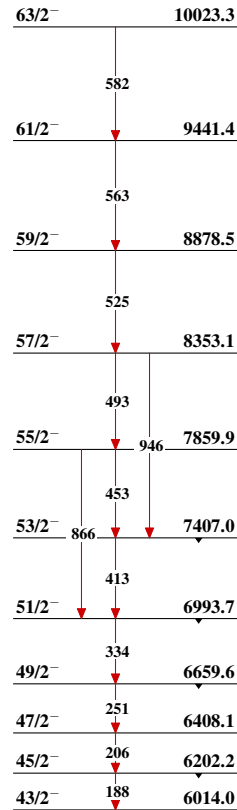
Band(B): Magnetic-rotational band 2, based on 37/2+(1995Ba35, 2001Go06)



Band(C): Magnetic-rotational band 3, based on 39/2(+)(1995Ba35, 2001Go06)



Band(D): Magnetic-rotational band 4, based on 43/2-(2001Go06)



Band(E): Magnetic-rotational band 5, based on 45/2(+)(2001Go06)

