$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 108, 79 (2007)	15-Oct-2006

Includes $^{192}Os(^{13}C,6n\gamma)$ and $^{192}Os(^{12}C,5n\gamma)$.

1994Ba43 (also 1993Ba01,1992Ba13,1997Hu12,1997Fa15,1997Di03): E=94 MeV. $^{192}Os(^{12}C,5n\gamma)$ E=82 MeV; $^{192}Os(^{13}C,6n\gamma)$ E=81 MeV; , measured Eγ, Iγ, γγ, DCO ratio; OSIRIS spectrometer array.

1999Po13 (also 1994Du19,1996Bu26,1997Jo15): E=94, 97 MeV; measured prompt and delayed ce, ce-ce coin, ce-γ coin.

1988Pa12: E=81 MeV; measured Eγ, Iγ, I(ce), γγ, γ(ce), γγ(t), γ(ce)(t); γ: intrinsic Ge detectors; ce: magnetic lens, cooled Si(Li) detectors.

1997Cl03: E=99, 104 MeV. Measured lifetimes for members of magnetic-rotational bands using GAMMASPHERE array with 60 Ge detectors.

1995Ne09: E=92 MeV. Measured lifetimes for members of magnetic-rotational bands using an 11 Ge detector array.

1989Su12: E=85 MeV. Measured ce, (ce)(ce), γ(ce), Ce(t).

Theoretical description of magnetic-rotational bands: 2001Cl02, 1999Cl04, 1998Ma43, 1998Ma09.

Level scheme is that proposed by 1994Ba43 with some of the higher levels from 1999Po13. Tentative levels of 1261+x and 1266+x decaying by 837.4γ and 841.7γ, respectively (1988Pa12) are omitted for lack of confirmation.

^{199}Pb Levels

E(level)[‡]	J^{π}[†]	$T_{1/2}$[#]	Comments
0+x	5/2⁻		E(level): x<9.3 keV (1962Ju05,1957An53) in ^{199}Pb IT decay.
424.8+x *2*	13/2⁺	12.2 min *3*	E(level): others: 429.5 *27* (2003Au02) based on x<9.3 (1962Ju05), 444 (1994Ba43,1999Po13) based on a proposed 19.6 level by 1978Ri04. But the existence of 19.6 level is considered as suspect since the γγ coin evidence presented by 1978Ri04 is very tentative. $T_{1/2}$: from 'Adopted Levels'.
1351.4+x *3*	13/2⁺		
1402.5+x *3*	17/2⁺		
1437.5+x *3*	15/2⁺		
1677.8+x *4*			E(level): level proposed by 1988Pa12 only.
1803.3+x *3*	17/2⁺		
1826.0+x *3*	19/2⁺		
1842.1+x *3*	21/2⁺		
1904.8+x *3*	17/2⁺		
1971.8+x *3*	19/2⁺		
2082.1+x *3*	21/2⁺		
2127.5+x *3*	21/2⁻	3.85[@] ns *16*	
2129.4+x *3*	19/2		
2306.2+x *3*	21/2⁺		
2451.6+x *4*	(23/2⁻)		
2499.9+x *4*	25/2⁻	9.3[@] ns *6*	
2501.7+x *3*	21/2⁺		
2559.1+x *4*	29/2⁻	10.6[&] μs *5*	
2560.2+x *4*	25/2		
2571.1+x *4*	27/2⁻		
2748.0+x *4*	25/2⁺		
2841.2+x *4*	25/2		
2921.1+x *3*	21/2⁺		
2982.9+x *4*	25/2⁺		
2984.2+x *4*	(23/2⁺)		
3134.1+x *4*	(25/2⁺)		
3210.3+x *4*	29/2		
3359.0+x *4*	29/2		
3386.2+x *4*	27/2⁺		

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$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12 (continued)

^{199}Pb Levels (continued)

E(level)[‡]	Jπ[†]	$T_{1/2}$[#]	Comments
3401.3+x *4*	29/2+		
3490.1+x *4*	33/2+	63[&] ns *4*	$T_{1/2}$: Other: 71 ns *4* (1988Pa12).
3530.0+x *4*	33/2		
3584.9+x[c] *4*	(25/2−)		
3603.7+x *5*			
3657.5+x *4*	29/2+		
3674.8+x[c] *5*	(27/2−)		
3742.6+x *5*			
3745.7+x *4*	29/2+		
3791.9+x *4*	33/2		
3848.7+x[c] *6*	(29/2−)		
3850.9+x *4*	31/2		
3859.3+x *5*			
3876.5+x *4*	33/2		
3966.7+x *5*			
4006.3+x *4*	29/2+		
4086.0+x *4*	31/2+		
4108.1+x *4*			
4124.1+x[c] *7*	(31/2−)		
4143.3+x *5*			
4228.3+x *5*	35/2		
4257.5+x *5*	37/2+		
4292.6+x *4*			
4339.4+x *5*	37/2		
4348.8+x *4*	31/2		
4363.6+x *4*	31/2		
4367.6+x *5*	37/2		
4474.7+x *5*	41/2+	40[@] ns *10*	
4483.5+x[c] *7*	(33/2−)		
4543.3+x *4*	37/2		
4769.0+x *4*	33/2+		
4770.0+x *4*	33/2+		
4777.2+x *5*	41/2		
4778.6+x *4*			
4884.8+x[c] *7*	(35/2−)		
5067.1+x *5*	41/2		
5129.4+x *5*	41/2		
5222.6+x *5*	41/2		
5282.4+x *5*	43/2		
5305.6+x[c] *7*	(37/2−)		
5314.9+x *5*	41/2		
5338.9+x *5*	41/2		
5478.7+x *4*	43/2		
5495.4+x *6*			
5554.2+x *6*			
5727.2+x[c] *7*	(39/2−)		
6055.7+x[c] *7*	(41/2−)		
6290.3+x[c] *8*	(43/2−)	0.26[a] ps *+35−20*	
6530.4+x[c] *8*	(45/2−)	0.21[a] ps *+21−17*	
6804.2+x[c] *9*	(47/2−)	0.118[a] ps *+42−28*	
6986.7+x *6*			
7120.5+x[c] *9*	(49/2−)	0.090[a] ps *+28−21*	
7483.7+x[c] *9*	(51/2−)	0.139[b] ps *35*	$T_{1/2}$: other: 0.111 ps *+21−14* (1995Ne09).
7895.1+x[c] *9*	(53/2−)	0.111[b] ps *+35−28*	$T_{1/2}$: other: 0.090 ps *+35−21* (1995Ne09).

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$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12 (continued)

^{199}Pb Levels (continued)

E(level)[‡]	Jπ[†]	$T_{1/2}$[#]	Comments
8354.5+x[c] 9	(55/2−)	0.104[b] ps +35−28	$T_{1/2}$: other: 0.069 ps +21−14 (1995Ne09).
8862.8+x[c] 9	(57/2−)	0.146[b] ps +42−35	
9417.5+x[c] 9	(59/2−)		
10022.4+x[c] 9	(61/2−)		
10659.5+x[c] 9	(63/2−)		
y[d]	(35/2+)		E(level): y>4784+x since the level decays to triplet of states at 4775+x, 4776+x and 4784+x.
98.2+y[d] 3	(37/2+)		
223.2+y[d] 4	(39/2+)		
388.8+y[d] 5	(41/2+)		
589.2+y[e] 4	(39/2+)		
603.3+y[d] 5	(43/2+)		
726.8+y[e] 5	(41/2+)		
871.1+y[d] 6	(45/2+)		
891.4+y[e] 5	(43/2+)		
1099.8+y[e] 5	(45/2+)		
1194.2+y[d] 6	(47/2+)	0.13[a] ps +10−6	
1370.7+y[e] 6	(47/2+)		
1571.2+y[d] 6	(49/2+)	0.097[a] ps +42−28	
1712.7+y[e] 6	(49/2+)		
2001.4+y[d] 6	(51/2+)	0.146[b] ps +28−21	$T_{1/2}$: other: 0.069 ps +21−14 (1995Ne09).
2129.8+y[e] 6	(51/2+)		
2483.5+y[d] 7	(53/2+)	0.111[b] ps +35−21	$T_{1/2}$: other: 0.042 ps 14 (1995Ne09).
2612.6+y[e] 6	(53/2+)		
3015.5+y[d] 7	(55/2+)	0.090[b] ps +28−21	$T_{1/2}$: other: 0.076 ps 14 (1995Ne09).
3149.4+y[e] 7	(55/2+)		
3164.8+y 7			
3589.1+y[d] 7	(57/2+)	0.097[b] ps +21−14	
3608.4+y 7	(57/2+)		
3734.6+y[e] 8	(57/2+)		
3967.6+y 8	(59/2+)		
4197.5+y 7	(59/2+)		
4207.5+y[d] 7	(59/2+)		
4546.7+y[d] 7	(61/2+)		
4932.6+y[d] 8	(63/2+)		
5353.6+y[d] 8	(65/2+)		
5807.0+y[d] 9	(67/2+)		
6303.5+y[d] 9	(69/2+)		
6846.0+y[d] 10	(71/2+)		
7433.7+y[d] 10	(73/2+)		
z[f]	J≈(37/2)		E(level): z>5135, since the level decays into states between 4234 and 5135. Jπ: possibly 37/2, since the bandhead feeds levels near 33/2.
97.7+z[f] 3	J+1		
232.9+z[f] 5	J+2		
426.1+z[f] 6	J+3		
673.5+z[f] 6	J+4		
967.5+z[f] 6	J+5		

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$^{186}W(^{18}O,5n\gamma)$ **1994Ba43,1999Po13,1988Pa12 (continued)**

^{199}Pb Levels (continued)

E(level)‡	Jπ†	Comments
1349.7+z[f] *6*	J+6	
1743.8+z[f] *6*	J+7	
2227.4+z[f] *7*	J+8	
2738.0+z[f] *7*	J+9	
3256.8+z[f] *7*	J+10	
3595.0+z[f] *8*	J+11	
u[g]	J1≈(45/2)	E(level): u>4149+x, since the level decays into states between 3216+x and 4149+x. Jπ: possibly 45/2, since the bandhead feeds levels near 41/2.
242.9+u[g] *3*	J1+1	
550.3+u[g] *4*	J1+2	
863.3+u[g] *4*	J1+3	
1247.9+u[g] *5*	J1+4	
1662.0+u[g] *5*	J1+5	
2149.2+u[g] *5*	J1+6	
2620.9+u[g] *6*	J1+7	
v		E(level): v>5484+x from possible decay to 5484+x.
602.6+v *3*		
938.8+v *4*		
1088.6+v *4*		
1336.1+v *3*		
1795.8+v *5*		
1813.0+v *5*		
2157.2+v *5*		
2171.5+v *5*		

† From 1994Ba43 and 1999Po13 based on $\gamma\gamma(\theta)$(DCO) and ce data. The assignments are the same in 'Adopted Levels', except that parentheses are added on all the Jπ's since the spins of the lower states in bands cannot be established by strong arguments.
‡ From least-squares fit to Eγ's, assuming Δ(Eγ)=0.3 keV, when not given.
# From γ(t) and/or Ce(t) for lifetimes in the nanosecond region (1988Pa12,1989Su12), from Doppler shift attenuation methods for lifetimes in the picosecond region (1997Cl03,1995Ne09).
@ From 1988Pa12.
& From 1989Su12.
[a] From 1995Ne09.
[b] From 1997Cl03.
[c] Band(A): magnetic-dipole rotational band #1. Band based on 25/2⁻. Configuration=$\pi(h_{9/2}i_{13/2})\ \nu(i_{13/2})^{-1}$ below the band crossing and $\pi(h_{9/2}i_{13/2})\nu(i_{13/2})^{-3}$ above the crossing near 41/2.
[d] Band(B): magnetic-dipole rotational band #2. Band based on 35/2⁺. Configuration=$\pi(h_{9/2}i_{13/2})\nu(i_{13/2}^{-2}\ f_{5/2}^{-1})$ below the band crossing and $\pi(h_{9/2}i_{13/2})\ \nu(i_{13/2}^{-4}f_{5/2}^{-1})$ above the crossing near 61/2.
[e] Band(C): magnetic-dipole rotational band #3. Band based on 39/2⁺. Configuration=$\pi(h_{9/2}i_{13/2})\nu(i_{13/2}^{-2}\ f_{5/2}^{-1})$.
[f] Band(D): magnetic-dipole rotational band #4. Band probably based on 37/2. Tentative configuration=$\pi(h_{9/2})^2\ \nu(i_{13/2})^{-3}$.
[g] Band(E): magnetic-dipole rotational band #5. Band probably based on 45/2. Tentative configuration=$\pi(h_{9/2})^2\ \nu(i_{13/2}^{-4}p_{3/2}^{-1})$.

γ(^{199}Pb)

All DCO ratios are from 1994Ba43. For most transitions the the DCO values correspond to gates on ΔJ=2, quadrupole transitions. For magnetic-dipole bands, the gates were set on ΔJ=1, dipole transitions. In some other cases, the gates were set on transitions of unknown multipolarity. However, 1994Ba43 have normalized all ratios so that DCO≈1 corresponds to ΔJ=2, quadrupole (likely to be E2) transition, and 0.65 for ΔJ=1, dipole transitions. For ΔJ=1 transitions, DCO≈0.5 corresponds to δ(Q/D)=−0.14.

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
11.8[&] *3*		2571.1+x	27/2⁻	2559.1+x	29/2⁻	[D]	92 *86*	<3.5[a]	
22.7[&] *3*		1826.0+x	19/2⁺	1803.3+x	17/2⁺	[M1]	134	14[a]	
48.2[&] *4*		2499.9+x	25/2⁻	2451.6+x	(23/2⁻)	[M1]	15.3	12[a]	
59.1[&] *3*		2559.1+x	29/2⁻	2499.9+x	25/2⁻	E2	72.3	135[a] *29*	ce(L)/(γ+ce)=0.732; ce(M)/(γ+ce)=0.192; ce(N)/(γ+ce)=0.0616 E_γ: other: 56.6 *3* (1989Su12,1992Ba13). The value 56.6 was not accepted by 1993Ba01. (L1+L2)/L3=1.2 *4* (1988Pa12).
63.1	2.6 *15*	2984.2+x	(23/2⁺)	2921.1+x	21/2⁺	M1	6.95		α(L)=5.30; α(M)=1.24; α(N+..)=0.407 α(L)exp=6.9 *18* (1999Po13) DCO=0.74 *24*. Mult.: DCO ratio compatible with mixed ΔJ=0 or ΔJ=1 transition; M1+E2 inferred from intensity balance.
70.9[&] *3*		2571.1+x	27/2⁻	2499.9+x	25/2⁻	M1	4.94	46[a] *8*	ce(L)/(γ+ce)=0.634; ce(M)/(γ+ce)=0.149; ce(N)/(γ+ce)=0.0486 α(L1)exp+α(L2)exp=2.3 *8* (1988Pa12) Ce(L3) very small (1988Pa12); main contribution from L1 (1989Su12).
88.7[&] *2*		3490.1+x	33/2⁺	3401.3+x	29/2⁺	E2	10.5	82[a] *5*	Additional information 1. (L1+L2)/L3=1.12 *10*, L/M=4.1 *3* (1988Pa12).
89.9		3674.8+x	(27/2⁻)	3584.9+x	(25/2⁻)	M1	13.3	49 *26*	ce(K)/(γ+ce)=0.757; ce(L)/(γ+ce)=0.132; ce(M)/(γ+ce)=0.0309; ce(N)/(γ+ce)=0.0102 α(L)exp=2.0 *9* (1999Po13) DCO=0.62 *15*.
97.7		97.7+z	J+1	z	J≈(37/2)	(M1)	10.1	24 *9*	DCO=0.52 *23*.
98.2		98.2+y	(37/2⁺)	y	(35/2⁺)	[M1]	10.3	34 *14*	ce(K)/(γ+ce)=0.742; ce(L)/(γ+ce)=0.129; ce(M)/(γ+ce)=0.0303; ce(N)/(γ+ce)=0.0100 DCO=0.8 *4*.
108.7	0.5 *2*	2560.2+x	25/2	2451.6+x	(23/2⁻)	D			DCO=0.55 *31*.
110.3	1.4 *4*	4367.6+x	37/2	4257.5+x	37/2⁺				DCO=0.7 *3*.
125.0		223.2+y	(39/2⁺)	98.2+y	(37/2⁺)	(M1)	5.16	72 *17*	ce(K)/(γ+ce)=0.683; ce(L)/(γ+ce)=0.118; ce(M)/(γ+ce)=0.0277; ce(N)/(γ+ce)=0.0092 DCO=0.65 *14*.
129.7[&] *2*	1.6 *7*	1971.8+x	19/2⁺	1842.1+x	21/2⁺	M1	4.64		α(K)=3.78; α(L)=0.656; α(M)=0.154; α(N+..)=0.0508 α(K)exp=3.5 *3*; α(L1)exp+α(L2)exp=0.69 *12* (1988Pa12) DCO=0.8 *3*. $I_{(\gamma+ce)}$: other: 16 *3* (1988Pa12).

From ENSDF

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
135.2		232.9+z	J+2	97.7+z	J+1	(M1)	4.12	36 8	ce(K)/(γ+ce)=0.656; ce(L)/(γ+ce)=0.114; ce(M)/(γ+ce)=0.0266; ce(N)/(γ+ce)=0.0088 DCO=0.57 13.
137.7		726.8+y	(41/2$^+$)	589.2+y	(39/2$^+$)	(M1)	3.91	34 10	DCO=0.52 17.
139.4	0.5 3	4367.6+x	37/2	4228.3+x	35/2				
139.9	1.8 5	5478.7+x	43/2	5338.9+x	41/2	D			DCO=0.57 19.
148.2[&d] 4		1826.0+x	19/2$^+$	1677.8+x					E_γ: from 1988Pa12 only.
149.8	2.4 12	1088.6+v		938.8+v					DCO=0.73 18.
150.0	4.1 16	3134.1+x	(25/2$^+$)	2984.2+x	(23/2$^+$)	M1	3.07		α(K)=2.50; α(L)=0.433; α(M)=0.101; α(N+..)=0.0335 DCO=0.64 10. Mult.: from DCO ratio and intensity balance.
155.7[&] 2	9.0 18	2127.5+x	21/2$^-$	1971.8+x	19/2$^+$	E1	0.147		α(K)=0.118; α(L)=0.0216; α(M)=0.00507; α(N+..)=0.00162 α(L)exp=0.0235 12 (1988Pa12) DCO=0.65 19. $I_{(\gamma+ce)}$: other: 18.7 18 (1988Pa12).
163.8	2.4 6	5478.7+x	43/2	5314.9+x	41/2	D			DCO=0.67 19.
164.6		891.4+y	(43/2$^+$)	726.8+y	(41/2$^+$)	(M1)	2.36	42 12	DCO=0.56 17.
165.6		388.8+y	(41/2$^+$)	223.2+y	(39/2$^+$)	(M1)	2.32	95 14	ce(K)/(γ+ce)=0.570; ce(L)/(γ+ce)=0.098; ce(M)/(γ+ce)=0.0231; ce(N)/(γ+ce)=0.00759 DCO=0.71 11.
173.9		3848.7+x	(29/2$^-$)	3674.8+x	(27/2$^-$)	M1	2.02	91 13	ce(K)/(γ+ce)=0.546; ce(L)/(γ+ce)=0.094; ce(M)/(γ+ce)=0.0221; ce(N)/(γ+ce)=0.00725 DCO=0.63 9.
180.5	0.9 3	5495.4+x		5314.9+x	41/2				DCO=1.2 4.
193.2		426.1+z	J+3	232.9+z	J+2	(M1)	1.50	48 9	ce(K)/(γ+ce)=0.489; ce(L)/(γ+ce)=0.085; ce(M)/(γ+ce)=0.0198; ce(N)/(γ+ce)=0.00649 DCO=0.65 12.
196.3	1.4 8	5478.7+x	43/2	5282.4+x	43/2				DCO=1.0 4.
208.3		1099.8+y	(45/2$^+$)	891.4+y	(43/2$^+$)	(M1)	1.22	56 14	DCO=0.62 15.
212.7	3.8 8	3742.6+x		3530.0+x	33/2				DCO=0.79 18.
214.6		603.3+y	(43/2$^+$)	388.8+y	(41/2$^+$)	(M1)	1.12	100 13	ce(K)/(γ+ce)=0.431; ce(L)/(γ+ce)=0.0743; ce(M)/(γ+ce)=0.0174; ce(N)/(γ+ce)=0.00567 DCO=0.71 11.
217.2[&] 3	19 3	4474.7+x	41/2$^+$	4257.5+x	37/2$^+$	(E2)	0.30		α(K)=0.10; α(L)=0.14; α(M)=0.036; α(N+..)=0.0116 α(L)exp=0.123 20 (1988Pa12) DCO=0.99 17. $I_{(\gamma+ce)}$: other: 1.0 3 (1988Pa12).
224.1	3.5 8	3966.7+x		3742.6+x					DCO=1.3 3.
234.6		6290.3+x	(43/2$^-$)	6055.7+x	(41/2$^-$)	(M1)	0.87	60 8	ce(K)/(γ+ce)=0.381; ce(L)/(γ+ce)=0.0656; ce(M)/(γ+ce)=0.0154; ce(N)/(γ+ce)=0.00499 DCO=0.64 9.
239.9[&] 2	8 3	2082.1+x	21/2$^+$	1842.1+x	21/2$^+$	M1(+E2)	0.5 3		α(K)=0.4 3; α(L)=0.104 12; α(M)=0.0255 16; α(N+..)=0.0082 6 α(K)exp=0.56 9 (1988Pa12)

$^{199}_{82}$Pb$_{117}$-6

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
									DCO=0.77 *25*. $I_{(\gamma+ce)}$: other: 3.8 *5* (1988Pa12).
240.1		6530.4+x	(45/2$^-$)	6290.3+x	(43/2$^-$)	(M1)	0.820	57 *12*	ce(K)/(γ+ce)=0.368; ce(L)/(γ+ce)=0.0633; ce(M)/(γ+ce)=0.0148; ce(N)/(γ+ce)=0.00482 DCO=0.68 *13*.
242.9		242.9+u	J1+1	u	J1≈(45/2)	(M1)	0.77	52 *12*	DCO=0.65 *16*.
247.4		673.5+z	J+4	426.1+z	J+3	(M1)	0.755	76 *10*	ce(K)/(γ+ce)=0.351; ce(L)/(γ+ce)=0.0604; ce(M)/(γ+ce)=0.0141; ce(N)/(γ+ce)=0.00459 DCO=0.70 *12*.
252.0	4.2 *10*	3386.2+x	27/2$^+$	3134.1+x	(25/2$^+$)	M1	0.717		α(K)=0.585; α(L)=0.101; α(M)=0.0236; α(N+..)=0.00765 DCO=0.62 *11*.
256.1	1.3 *4*	5478.7+x	43/2	5222.6+x	41/2				DCO=0.79 *21*.
267.8		871.1+y	(45/2$^+$)	603.3+y	(43/2$^+$)	(M1)	0.606	82 *11*	ce(K)/(γ+ce)=0.308; ce(L)/(γ+ce)=0.0529; ce(M)/(γ+ce)=0.0124; ce(N)/(γ+ce)=0.00402 DCO=0.65 *10*.
271.0		1370.7+y	(47/2$^+$)	1099.8+y	(45/2$^+$)	[M1]	0.59	75 *15*	DCO=0.75 *27*.
271.3	1.9 *11*	3657.5+x	29/2$^+$	3386.2+x	27/2$^+$	D			DCO=0.63 *14*.
273.8		6804.2+x	(47/2$^-$)	6530.4+x	(45/2$^-$)	(M1)	0.571	51 *9*	ce(K)/(γ+ce)=0.297; ce(L)/(γ+ce)=0.0509; ce(M)/(γ+ce)=0.0119; ce(N)/(γ+ce)=0.00387 α(K)exp: for 273.8+275.4. DCO=0.66 *9*.
275.4		4124.1+x	(31/2$^-$)	3848.7+x	(29/2$^-$)	M1	0.562	98 *13*	ce(K)/(γ+ce)=0.294; ce(L)/(γ+ce)=0.0504; ce(M)/(γ+ce)=0.0118; ce(N)/(γ+ce)=0.00383 α(K)exp: for 275.4+273.8. DCO=0.62 *8*.
289.8	1.5 *6*	5067.1+x	41/2	4777.2+x	41/2				
294.1		967.5+z	J+5	673.5+z	J+4	(M1)	0.469	100 *7*	ce(K)/(γ+ce)=0.261; ce(L)/(γ+ce)=0.0447; ce(M)/(γ+ce)=0.0105; ce(N)/(γ+ce)=0.00339 DCO=0.64 *10*.
301.4[&] *2*	73 *9*	2127.5+x	21/2$^-$	1826.0+x	19/2$^+$	E1	0.0294		α(K)=0.0240; α(L)=0.00407; α(M)=0.00095; α(N+..)=0.00030 α(K)exp=0.0228 *7*; α(L)exp=0.0030 *10* (1988Pa12) DCO=0.72 *9*. $I_{(\gamma+ce)}$: other: 145 *7* (1988Pa12).
302.5	6.3 *15*	4777.2+x	41/2	4474.7+x	41/2$^+$	D			Mult.: DCO=1.09 *21* consistent with ΔJ=0, dipole.
303.4	0.1 *1*	2129.4+x	19/2	1826.0+x	19/2$^+$				
307.3		550.3+u	J1+2	242.9+u	J1+1	(M1)	0.40	75 *16*	DCO=0.58 *15*.
313.0		863.3+u	J1+3	550.3+u	J1+2	(M1)	0.396	100 *17*	DCO=0.59 *11*.
316.3		7120.5+x	(49/2$^-$)	6804.2+x	(47/2$^-$)	(M1)	0.385	41 *6*	ce(K)/(γ+ce)=0.227; ce(L)/(γ+ce)=0.0388; ce(M)/(γ+ce)=0.0091; ce(N)/(γ+ce)=0.00294 DCO=0.63 *9*.
323.1		1194.2+y	(47/2$^+$)	871.1+y	(45/2$^+$)	(M1)	0.363	70 *10*	ce(K)/(γ+ce)=0.218; ce(L)/(γ+ce)=0.0372; ce(M)/(γ+ce)=0.0087; ce(N)/(γ+ce)=0.00282 DCO=0.66 *10*.

From ENSDF

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γ(^{199}Pb) (continued)

Eγ	Iγ[†]	Ei(level)	$J^π_i$	Ef	$J^π_f$	Mult.[b]	α[c]	I(γ+ce)[‡]	Comments
324.2[&] 2	7.0 16	2451.6+x	(23/2−)	2127.5+x	21/2−	M1	0.360		α(K)=0.294; α(L)=0.0502; α(M)=0.0118; α(N+..)=0.00381 α(K)exp=0.23 3 (1988Pa12) Mult.: DCO=1.31 32 consistent with ΔJ=0, dipole. $I_{(γ+ce)}$: other: 8.8 6 (1988Pa12).
328.6		6055.7+x	(41/2−)	5727.2+x	(39/2−)	(M1)	0.347	65 8	ce(K)/(γ+ce)=0.211; ce(L)/(γ+ce)=0.0359; ce(M)/(γ+ce)=0.0084; ce(N)/(γ+ce)=0.00272 DCO=0.61 8.
336.3	5.0 9	938.8+v		602.6+v					DCO=1.04 22.
338.2[@]		3595.0+z	J+11	3256.8+z	J+10				
339.2[#]		4546.7+y	(61/2+)	4207.5+y	(59/2+)				
340.4	1.8 10	4086.0+x	31/2+	3745.7+x	29/2+	D			DCO=0.54 20.
342.0		1712.7+y	(49/2+)	1370.7+y	(47/2+)	(M1)	0.311	100 8	DCO=0.54 11.
342.4	3.3 18	4348.8+x	31/2	4006.3+x	29/2+	D			DCO=0.66 20.
349.3	11.2 17	5478.7+x	43/2	5129.4+x	41/2	D			DCO=0.66 15.
349.3[#]		4546.7+y	(61/2+)	4197.5+y	(59/2+)				
352.1	1.7 4	5129.4+x	41/2	4777.2+x	41/2	D			Mult.: DCO=1.1 3 consistent with ΔJ=0, dipole.
357.3	0.6 3	4363.6+x	31/2	4006.3+x	29/2+				
359.2[#]		3967.6+y	(59/2+)	3608.4+y	(57/2+)				
359.4		4483.5+x	(33/2−)	4124.1+x	(31/2−)	(M1)	0.272	100 12	ce(K)/(γ+ce)=0.175; ce(L)/(γ+ce)=0.0298; ce(M)/(γ+ce)=0.00698; ce(N)/(γ+ce)=0.00226 DCO=0.59 7.
359.5	2.9 8	3745.7+x	29/2+	3386.2+x	27/2+	D			DCO=0.63 14.
363.1		7483.7+x	(51/2−)	7120.5+x	(49/2−)	(M1)	0.265	32 5	ce(K)/(γ+ce)=0.171; ce(L)/(γ+ce)=0.0292; ce(M)/(γ+ce)=0.00682; ce(N)/(γ+ce)=0.00221 DCO=0.57 9.
369.2[&] 4	5.0 25	3210.3+x	29/2	2841.2+x	25/2				1988Pa12 placed this γ from 2452+x. $I_{(γ+ce)}$: other: 3.5 5 (1988Pa12). DCO=0.87 17.
369.2	0.8 4	3859.3+x		3490.1+x	33/2+				DCO=1.4 8.
372.4[&] 2	65 10	2499.9+x	25/2−	2127.5+x	21/2−	E2	0.0631		α(K)=0.0398; α(L)=0.0174; α(M)=0.00441; α(N+..)=0.00142 α(K)exp=0.0378 20; α(L1)exp=0.0063 5; α(L2)exp=0.0089 6; α(L3)exp=0.0036 4 (1988Pa12) DCO=1.04 15. $I_{(γ+ce)}$: other: 143 6 (1988Pa12).
377.1		1571.2+y	(49/2+)	1194.2+y	(47/2+)	(M1)	0.239	57 9	ce(K)/(γ+ce)=0.158; ce(L)/(γ+ce)=0.0269; ce(M)/(γ+ce)=0.00628; ce(N)/(γ+ce)=0.00204 DCO=0.57 9. Iγ: I(377.10γ)/I(700.10γ)=7.7 25 (1992Ba13).
382.1		1349.7+z	J+6	967.5+z	J+5	(M1)	0.231	55 11	DCO=0.58 9.
384.6		1247.9+u	J1+4	863.3+u	J1+3	(M1)	0.227	81 16	DCO=0.54 9.
385.9[#]		4932.6+y	(63/2+)	4546.7+y	(61/2+)				
388.5[&] 2	15 4	1826.0+x	19/2+	1437.5+x	15/2+	E2	0.0563		α(K)=0.0362; α(L)=0.0150; α(M)=0.00380; α(N+..)=0.00122

$^{199}_{82}$Pb$_{117}$-8

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
										α(K)exp=0.046 *9*; α(L1)exp+α(L2)exp=0.014 *4*; α(L3)exp=0.0042 *18* (1988Pa12) DCO=0.98 *17*. $I_{(\gamma+ce)}$: other: 33.6 *6* (1988Pa12).
389.5	1.6 *8*	2841.2+x	25/2	2451.6+x	(23/2$^-$)					
394.2		1743.8+z	J+7	1349.7+z	J+6	(M1)		0.213	33 *8*	DCO=0.55 *11*.
400.8[&] *4*	4.7 *25*	1803.3+x	17/2$^+$	1402.5+x	17/2$^+$					
401.3		4884.8+x	(35/2$^-$)	4483.5+x	(33/2$^-$)	(M1)		0.203	87 *13*	ce(K)/(γ+ce)=0.138; ce(L)/(γ+ce)=0.0234; ce(M)/(γ+ce)=0.00547; ce(N)/(γ+ce)=0.00177 DCO=0.58 *7*.
406.3	2.5 *7*	4770.0+x	33/2$^+$	4363.6+x	31/2	D				DCO=0.59 *15*.
411.3		7895.1+x	(53/2$^-$)	7483.7+x	(51/2$^-$)	(M1)		0.190	20 *4*	ce(K)/(γ+ce)=0.131; ce(L)/(γ+ce)=0.0221; ce(M)/(γ+ce)=0.00517; ce(N)/(γ+ce)=0.00168 DCO=0.53 *11*.
411.5	5.9 *24*	5478.7+x	43/2	5067.1+x	41/2	D				DCO=0.65 *19*.
414.0		1662.0+u	J1+5	1247.9+u	J1+4	(M1)		0.187	57 *13*	DCO=0.53 *12*.
417.0		2129.8+y	(51/2$^+$)	1712.7+y	(49/2$^+$)	(M1)		0.183	72 *13*	DCO=0.60 *14*.
419.4	2.9 *25*	2921.1+x	21/2$^+$	2501.7+x	21/2$^+$					Mult.: DCO=1.8 *10* (from 1993Ba01) possibly correspond to ΔJ=0, dipole.
420.7		5305.6+x	(37/2$^-$)	4884.8+x	(35/2$^-$)	(M1)		0.179	87 *18*	ce(K)/(γ+ce)=0.124; ce(L)/(γ+ce)=0.0210; ce(M)/(γ+ce)=0.00491; ce(N)/(γ+ce)=0.00160 α(K)exp: for 420.7+421.5. DCO=0.56 *12*.
421.0[#]		5353.6+y	(65/2$^+$)	4932.6+y	(63/2$^+$)					
421.2	5.2 *12*	4770.0+x	33/2$^+$	4348.8+x	31/2	D				DCO=0.56 *13*.
421.5		5727.2+x	(39/2$^-$)	5305.6+x	(37/2$^-$)	(M1)		0.178	87 *13*	ce(K)/(γ+ce)=0.124; ce(L)/(γ+ce)=0.0209; ce(M)/(γ+ce)=0.00489; ce(N)/(γ+ce)=0.00159 α(K)exp: for 420.7+421.5. DCO=0.56 *12*.
423.4[&] *2*	49 *7*	1826.0+x	19/2$^+$	1402.5+x	17/2$^+$	M1+E2	−1.0 *4*	0.11 *3*		α(K)=0.09 *3*; α(L)=0.018 *3*; α(M)=0.0043 *7*; α(N+..)=0.00138 *23* α(K)exp=0.052 *12*; α(L1)exp+α(L2)exp=0.0174 *22*; α(L3)exp=0.063 *15* (1988Pa12) DCO=0.39 *9*. $I_{(\gamma+ce)}$: other: 75 *10* (1988Pa12). δ: from (α,3nγ).
424.8[&] *2*	100	424.8+x	13/2$^+$	0+x	5/2$^-$	M4		4.0		α(K)exp=2.41 *7*; α(L1)exp+α(L2)exp=0.86 *6*; α(L3)exp=0.362 *12* (1988Pa12) α(K)=2.42; α(L)=1.24; α(M)=0.334; α(N+..)=0.112
428.5	2.8 *8*	4086.0+x	31/2$^+$	3657.5+x	29/2$^+$	D				DCO=0.58 *13*.
430.3		2001.4+y	(51/2$^+$)	1571.2+y	(49/2$^+$)	(M1)		0.168	46 *7*	ce(K)/(γ+ce)=0.118; ce(L)/(γ+ce)=0.0200; ce(M)/(γ+ce)=0.00466; ce(N)/(γ+ce)=0.00152

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γ(^{199}Pb) (continued)

E_γ	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult. b	α c	$I_{(\gamma+ce)}$ ‡	Comments
									DCO=0.57 *9*. I_γ: I(377.10γ)/I(700.10γ)=7.7 *25* (1992Ba13).
432.8	1.4 *5*	3791.9+x	33/2	3359.0+x	29/2	Q			DCO=1.1 *3*.
439.5& *2*	25 *4*	1842.1+x	21/2+	1402.5+x	17/2+	E2	0.0408		α(K)=0.0276; α(L)=0.0099; α(M)=0.00249; α(N+..)=0.00080 α(K)exp=0.0551 *18* (1988Pa12) DCO=1.04 *19*. α(K)exp: mixed with transitions from ^{199}Tl and ^{200}Hg. $I_{(\gamma+ce)}$: other: 16.8 *5* (1988Pa12).
450.8	4.6 *11*	3584.9+x	(25/2−)	3134.1+x	(25/2+)	D			Mult.: DCO=1.11 *18* consistent with ΔJ=0, dipole.
451.9& *3*	2.9 *8*	1803.3+x	17/2+	1351.4+x	13/2+				$I_{(\gamma+ce)}$: other: 2.6 *4* (1988Pa12).
453.4#		5807.0+y	(67/2+)	5353.6+y	(65/2+)				
459.3		8354.5+x	(55/2−)	7895.1+x	(53/2−)	(M1)	0.141	13 *3*	ce(K)/(γ+ce)=0.101; ce(L)/(γ+ce)=0.0171; ce(M)/(γ+ce)=0.00400; ce(N)/(γ+ce)=0.00130 DCO=0.49 *14*.
469.6	1.5 *5*	3603.7+x		3134.1+x	(25/2+)				DCO=0.69 *15*.
471.7		2620.9+u	J1+7	2149.2+u	J1+6	(M1)	0.128	12 *4*	DCO=0.43 *18*.
477.3	1.0 *3*	4770.0+x	33/2+	4292.6+x					
481.9		2483.5+y	(53/2+)	2001.4+y	(51/2+)	(M1)	0.124	37 *7*	ce(K)/(γ+ce)=0.091; ce(L)/(γ+ce)=0.0153; ce(M)/(γ+ce)=0.00357; ce(N)/(γ+ce)=0.00117 DCO=0.56 *10*. I_γ: I(377.10γ)/I(700.10γ)=7.7 *25* (1992Ba13).
482.7		2612.6+y	(53/2+)	2129.8+y	(51/2+)	(M1)	0.123	56 *11*	DCO=0.48 *14*.
483.5		2227.4+z	J+8	1743.8+z	J+7	(M1)	0.123	29 *7*	DCO=0.57 *18*.
485.9	4.6 *9*	1088.6+v		602.6+v					DCO=0.60 *17*.
486.0	1.2 *4*	4778.6+x		4292.6+x					
487.0		2149.2+u	J1+6	1662.0+u	J1+5	(M1)	0.121	27 *7*	DCO=0.48 *16*.
491.0	0.8 *3*	589.2+y	(39/2+)	98.2+y	(37/2+)				
496.5	1.0 *2*	1099.8+y	(45/2+)	603.3+y	(43/2+)	D			DCO=0.52 *19*.
496.5#		6303.5+y	(69/2+)	5807.0+y	(67/2+)				
499.6	1.2 *2*	1370.7+y	(47/2+)	871.1+y	(45/2+)				DCO=0.75 *33*.
502.2	2.1 *7*	1904.8+x	17/2+	1402.5+x	17/2+	D			Mult.: DCO=0.96 *17* consistent with ΔJ=1, dipole.
502.6	1.2 *2*	891.4+y	(43/2+)	388.8+y	(41/2+)	D			DCO=0.60 *22*.
503.7	1.0 *3*	726.8+y	(41/2+)	223.2+y	(39/2+)	D			DCO=0.54 *26*.
508.3		8862.8+x	(57/2−)	8354.5+x	(55/2−)	(M1)	0.108	8 *2*	ce(K)/(γ+ce)=0.0799; ce(L)/(γ+ce)=0.0134 DCO=0.42 *18*.
510.5		2738.0+z	J+9	2227.4+z	J+8	(M1)	0.107	23 *6*	DCO=0.68 *25*.
517.6	3.0 *12*	3876.5+x	33/2	3359.0+x	29/2	Q			DCO=0.96 *26*.
518.5	1.7 *3*	1712.7+y	(49/2+)	1194.2+y	(47/2+)	D			DCO=0.63 *31*.
518.8@		3256.8+z	J+10	2738.0+z	J+9				
519.7	1.0 *5*	4777.2+x	41/2	4257.5+x	37/2+				DCO=0.9 *4*.
532.0		3015.5+y	(55/2+)	2483.5+y	(53/2+)	(M1)	0.096	30 *5*	ce(K)/(γ+ce)=0.0716; ce(L)/(γ+ce)=0.0120 DCO=0.50 *12*. I_γ: I(531.95γ)/I(1014.00γ)=16.4 *50* (1992Ba13).

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
536.8		3149.4+y	(55/2+)	2612.6+y	(53/2+)	(M1)	0.094	16 *4*	ce(K)/(γ+ce)=0.0701; ce(L)/(γ+ce)=0.0118 DCO=0.44 *21*.
541.4		967.5+z	J+5	426.1+z	J+3			10 *3*	
542.5[#]		6846.0+y	(71/2+)	6303.5+y	(69/2+)				
552.2		3164.8+y		2612.6+y	(53/2+)			15 *4*	
553.4	1.5 *5*	1904.8+x	17/2+	1351.4+x	13/2+	Q			DCO=0.89 *19*.
554.8		9417.5+x	(59/2−)	8862.8+x	(57/2−)			3 *2*	
558.6	0.8 *2*	2129.8+y	(51/2+)	1571.2+y	(49/2+)				DCO=0.64 *29*.
569.4[&] *3*	1.7 *14*	1971.8+x	19/2+	1402.5+x	17/2+	M1+E2			α(K)exp=0.035 *7* (1988Pa12) $I_{(\gamma+ce)}$: other: 9 *2* (1988Pa12).
573.6		3589.1+y	(57/2+)	3015.5+y	(55/2+)	(M1)	0.079	15 *3*	DCO=0.54 *18*. I_γ: I(573.45γ)/I(1105.55γ)=17.8 *50* (1992Ba13).
581.6	6.4 *10*	3791.9+x	33/2	3210.3+x	29/2	Q			DCO=1.03 *19*.
585.2[@]		3734.6+y	(57/2+)	3149.4+y	(55/2+)				
587.7[#]		7433.7+y	(73/2+)	6846.0+y	(71/2+)				
590.1		7120.5+x	(49/2−)	6530.4+x	(45/2−)	[E2]	0.0201	1.3 *4*	ce(K)/(γ+ce)=0.0145; ce(L)/(γ+ce)=0.00394
592.3	2.3 *5*	5067.1+x	41/2	4474.7+x	41/2+				DCO=0.85 *19*.
593.1[#]		3608.4+y	(57/2+)	3015.5+y	(55/2+)				
596.9	2.1 *9*	2501.7+x	21/2+	1904.8+x	17/2+	Q			DCO=0.99 *25*.
600.7	17 *3*	3584.9+x	(25/2−)	2984.2+x	(23/2+)	D			DCO=0.66 *10*. Mult.: stretched D or D+Q ΔJ=0 transition from DCO ratio (1993Ba01).
602.6	20 *5*	602.6+v		v					DCO=1.00 *15*.
604.7[#]		10022.4+x	(61/2−)	9417.5+x	(59/2−)				
608.5[#]		4197.5+y	(59/2+)	3589.1+y	(57/2+)				
614.9	4.6 *14*	2921.1+x	21/2+	2306.2+x	21/2+	D			Mult.: DCO=0.93 *16* consistent with ΔJ=0, dipole.
617.9	0.9 *8*	4108.1+x		3490.1+x	33/2+				
618.2		4207.5+y	(59/2+)	3589.1+y	(57/2+)	[M1]	0.0647	9 *2*	ce(K)/(γ+ce)=0.0497; ce(L)/(γ+ce)=0.00833 I_γ: I(618.35γ)/I(1191.95γ)=15.8 *40* (1992Ba13).
620.1	1.9 *13*	4006.3+x	29/2+	3386.2+x	27/2+	D			DCO=0.40 *14*.
620.5		863.3+u	J1+3	242.9+u	J1+1			17 *5*	
634.8		4483.5+x	(33/2−)	3848.7+x	(29/2−)	[E2]	0.0171	2.0 *7*	ce(K)/(γ+ce)=0.0126; ce(L)/(γ+ce)=0.00322
636.9[#]		10659.5+x	(63/2−)	10022.4+x	(61/2−)				
639.1	2.5 *6*	3210.3+x	29/2	2571.1+x	27/2−				DCO=1.1 *5*.
651.2	9.1 *15*	3210.3+x	29/2	2559.1+x	29/2−				DCO=0.7 *3*.
654.6	3.6 *8*	5129.4+x	41/2	4474.7+x	41/2+	D			Mult.: DCO=1.07 *20* consistent with ΔJ=0, dipole.
660.8	1.6 *5*	4769.0+x	33/2+	4108.1+x					DCO=0.82 *26*.
666.1	8 *4*	3876.5+x	33/2	3210.3+x	29/2				DCO=0.9 *3*.
666.8	8 *4*	4543.3+x	37/2	3876.5+x	33/2				DCO=1.0 *3*.
670.4	0.9 *4*	4778.6+x		4108.1+x					DCO=0.5 *4*.
674.6	2.1 *6*	3657.5+x	29/2+	2982.9+x	25/2+	Q			DCO=0.97 *20*.
676.2		1349.7+z	J+6	673.5+z	J+4			6.0 *17*	

From ENSDF

$^{199}_{82}$Pb$_{117}$-11

γ(^{199}Pb) (continued)

E_γ	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [b]	α [c]	$I_{(\gamma+ce)}$ [‡]	Comments
676.9	2.8 *8*	2982.9+x	25/2$^+$	2306.2+x	21/2$^+$	Q			DCO=0.92 *17*.
679.5		7483.7+x	(51/2$^-$)	6804.2+x	(47/2$^-$)			2.0 *7*	
684.0	2.7 *7*	4770.0+x	33/2$^+$	4086.0+x	31/2$^+$	D			DCO=0.40 *10*.
697.6		1247.9+u	J1+4	550.3+u	J1+2			7.4 *24*	
699.9	0.2 *2*	4086.0+x	31/2$^+$	3386.2+x	27/2$^+$				DCO=1.0 *5*.
700.1		1571.2+y	(49/2$^+$)	871.1+y	(45/2$^+$)	[E2]	0.0139	2.3 *8*	ce(K)/(γ+ce)=0.0104; ce(L)/(γ+ce)=0.00247
701.5	3.8 *7*	5478.7+x	43/2	4777.2+x	41/2	D			DCO=0.62 *17*.
710.5	1.2 *4*	3210.3+x	29/2	2499.9+x	25/2$^-$				DCO=1.1 *3*.
713.8	2.5 *6*	2841.2+x	25/2	2127.5+x	21/2$^-$	Q			DCO=1.05 *24*.
724.4	4.6 *11*	1813.0+v		1088.6+v					DCO=0.58 *20*.
727.0	0.4 *2*	2129.4+x	19/2	1402.5+x	17/2$^+$				DCO=0.8 *4*.
738.2	7.9 *13*	4228.3+x	35/2	3490.1+x	33/2$^+$	D			DCO=0.29 *20*.
748.1	1.9 *4*	5222.6+x	41/2	4474.7+x	41/2$^+$				DCO=0.27 *17*.
750.1		6055.7+x	(41/2$^-$)	5305.6+x	(37/2$^-$)	Q		5.9 *13*	DCO=1.01 *16*.
751.4	7.6 *12*	4543.3+x	37/2	3791.9+x	33/2	Q			DCO=0.93 *16*.
760.8		4884.8+x	(35/2$^-$)	4124.1+x	(31/2$^-$)	(E2)	0.0117	8.6 *19*	ce(K)/(γ+ce)=0.0089; ce(L)/(γ+ce)=0.00200 DCO=1.06 *14*.
761.8	7.0 *13*	5129.4+x	41/2	4367.6+x	37/2	Q			DCO=1.01 *18*.
762.8	2.5 *9*	3745.7+x	29/2$^+$	2982.9+x	25/2$^+$				DCO=1.0 *6*.
763.8	0.1 *1*	4770.0+x	33/2$^+$	4006.3+x	29/2$^+$				DCO=0.8 *4*.
767.3[&] *4*	36 *5*	4257.5+x	37/2$^+$	3490.1+x	33/2$^+$	Q			DCO=0.98 *13*. $I_{(\gamma+ce)}$: other: 0.8 *3* (1988Pa12).
771.7	8.9 *14*	5314.9+x	41/2	4543.3+x	37/2	Q			DCO=1.01 *19*.
774.6		7895.1+x	(53/2$^-$)	7120.5+x	(49/2$^-$)			1.8 *6*	
776.4		1743.8+z	J+7	967.5+z	J+5			9.7 *25*	
787.8	2.6 *6*	3359.0+x	29/2	2571.1+x	27/2$^-$	D			DCO=0.37 *19*.
791.7	0.9 *4*	2921.1+x	21/2$^+$	2129.4+x	19/2	D			DCO=0.57 *14*.
795.6	7.9 *12*	5338.9+x	41/2	4543.3+x	37/2	Q			DCO=1.01 *20*.
798.7		1662.0+u	J1+5	863.3+u	J1+3			11 *3*	
799.0	1.5 *4*	3359.0+x	29/2	2560.2+x	25/2				DCO=0.9 *3*.
807.1		2001.4+y	(51/2$^+$)	1194.2+y	(47/2$^+$)	E2		3.0 *10*	DCO=1.05 *18*.
807.8	2.3 *6*	5282.4+x	43/2	4474.7+x	41/2$^+$	D			DCO=0.34 *20*.
809.4	2.8 *6*	4339.4+x	37/2	3530.0+x	33/2	Q			DCO=1.0 *3*.
822.1		5305.6+x	(37/2$^-$)	4483.5+x	(33/2$^-$)	(E2)			DCO=0.96 *11*.
828.0	1.2 *6*	3134.1+x	(25/2$^+$)	2306.2+x	21/2$^+$				α(K)exp=0.0032 *4* (1988Pa12) DCO=0.7 *3*.
830.2[&] *2*	45 *10*	3401.3+x	29/2$^+$	2571.1+x	27/2$^-$	E1	0.00353		α=0.00353; α(K)=0.00293; α(L)=0.00045 α(K)exp=0.0032 *4* (1988Pa12) DCO=0.65 *20*. $I_{(\gamma+ce)}$: other: 63 *3* (1988Pa12).
838.7	0.7 *4*	2921.1+x	21/2$^+$	2082.1+x	21/2$^+$				DCO=0.72 *26*.
842.0[&] *4*	7.5 *24*	3401.3+x	29/2$^+$	2559.1+x	29/2$^-$	(E1)	0.00344		α=0.00344; α(K)=0.00286; α(L)=0.00044

From ENSDF

$^{199}_{82}$Pb$_{117}$-12

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
									α(K)exp very small (1988Pa12). $I_{(\gamma+ce)}$: other: 8.2 *9* (1988Pa12).
842.4		5727.2+x	(39/2$^-$)	4884.8+x	(35/2$^-$)	Q		15 *4*	DCO=0.96 *12*.
870.9		8354.5+x	(55/2$^-$)	7483.7+x	(51/2$^-$)			1.1 *5*	
872.0	1.1 *4*	5129.4+x	41/2	4257.5+x	37/2$^+$				DCO=0.83 *23*.
877.4	4.9 *9*	4367.6+x	37/2	3490.1+x	33/2$^+$	Q			DCO=0.94 *22*.
877.6		2227.4+z	J+8	1349.7+z	J+6			7 *3*	
900.0		2612.6+y	(53/2$^+$)	1712.7+y	(49/2$^+$)			6.6 *28*	
901.4		2149.2+u	J1+6	1247.9+u	J1+4			6.2 *25*	
903.8	12.1 *19*	2306.2+x	21/2$^+$	1402.5+x	17/2$^+$	Q			DCO=0.98 *13*.
905.9	1.7 *7*	2748.0+x	25/2$^+$	1842.1+x	21/2$^+$	Q			DCO=1.02 *25*.
909.5	0.7 *3*	3657.5+x	29/2$^+$	2748.0+x	25/2$^+$	Q			DCO=1.2 *4*.
912.4		2483.5+y	(53/2$^+$)	1571.2+y	(49/2$^+$)	E2		2.2 *7*	DCO=1.16 *23*.
919.3	1.3 *4*	4778.6+x		3859.3+x					DCO=1.1 *4*.
926.6[&] *3*	4.9 *12*	1351.4+x	13/2$^+$	424.8+x	13/2$^+$	D+Q			Mult.: DCO=0.61 *10* consistent with ΔJ=0, D+Q. $I_{(\gamma+ce)}$: other: 2.3 *5* (1988Pa12).
927.7	1.6 *7*	4778.6+x		3850.9+x	31/2				
932.9	1.2 *4*	4143.3+x		3210.3+x	29/2				
965.0	1.1 *3*	5222.6+x	41/2	4257.5+x	37/2$^+$				DCO=0.9 *3*.
967.7		8862.8+x	(57/2$^-$)	7895.1+x	(53/2$^-$)			1.6 *6*	
970.9	14.9 *21*	3530.0+x	33/2	2559.1+x	29/2$^-$	Q			DCO=0.98 *16*.
975.6	2.9 *7*	5314.9+x	41/2	4339.4+x	37/2				DCO=0.9 *3*.
977.7[&] *2*	100 *12*	1402.5+x	17/2$^+$	424.8+x	13/2$^+$	E2	0.00704		α=0.00704; α(K)=0.00558; α(L)=0.00110 α(K)exp=0.0055 *9*; α(L1)exp+α(L2)exp=0.0018 *4*; α(L3)exp=0.00080 *30* (1988Pa12) DCO=0.98 *13*.
994.2		2738.0+z	J+9	1743.8+z	J+7			5.1 *19*	
997.6	0.6 *4*	3745.7+x	29/2$^+$	2748.0+x	25/2$^+$				DCO=0.9 *4*.
1004.1	2.0 *5*	5478.7+x	43/2	4474.7+x	41/2$^+$	D			DCO=0.63 *21*.
1012.8[&] *3*	26 *6*	1437.5+x	15/2$^+$	424.8+x	13/2$^+$	E2(+M1)			α(K)exp=0.0043 *9* (1988Pa12) $I_{(\gamma+ce)}$: other: 37.5 *15* (1988Pa12). DCO=0.65 *15*.
1013.4	3.8 *22*	4543.3+x	37/2	3530.0+x	33/2	Q			DCO=0.93 *23*.
1014.2		3015.5+y	(55/2$^+$)	2001.4+y	(51/2$^+$)	E2		5.5 *17*	DCO=0.97 *20*.
1016.3	2.7 *11*	2921.1+x	21/2$^+$	1904.8+x	17/2$^+$				DCO=0.94 *24*.
1019.6[@]		3149.4+y	(55/2$^+$)	2129.8+y	(51/2$^+$)				
1029.4[@]		3256.8+z	J+10	2227.4+z	J+8				
1063.0[#d]		9417.5+x	(59/2$^-$)	8354.5+x	(55/2$^-$)				
1068.6	1.8 *5*	2157.2+v		1088.6+v					
1079.0	1.1 *4*	2921.1+x	21/2$^+$	1842.1+x	21/2$^+$	D			Mult.: DCO=0.88 *19* consistent with ΔJ=0, dipole.
1079.5	3.4 *11*	5554.2+x		4474.7+x	41/2$^+$				DCO=1.09 *23*.
1095.1	2.2 *6*	2921.1+x	21/2$^+$	1826.0+x	19/2$^+$	D			DCO=0.54 *10*. Mult.: ΔJ=0 or 1 (1993Ba01), ΔJ=0 (1994Ba43).

From ENSDF

$^{199}_{82}$Pb$_{117}$-13

γ(^{199}Pb) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[c]	$I_{(\gamma+ce)}$[‡]	Comments
1099.2	0.8 *3*	2501.7+x	21/2$^+$	1402.5+x	17/2$^+$				DCO=0.86 *21*.
1105.7		3589.1+y	(57/2$^+$)	2483.5+y	(53/2$^+$)	(E2)	0.00554	2.9 *8*	α=0.00554; ce(K)/(γ+ce)=0.00441; ce(L)/(γ+ce)=0.00083 DCO=0.82 *21*.
1112.5	0.7 *3*	4770.0+x	33/2$^+$	3657.5+x	29/2$^+$				DCO=0.8 *4*.
1117.7	2.1 *6*	2921.1+x	21/2$^+$	1803.3+x	17/2$^+$	Q			DCO=1.06 *19*.
1122.0[@]		3734.6+y	(57/2$^+$)	2612.6+y	(53/2$^+$)				
1124.6[#]		3608.4+y	(57/2$^+$)	2483.5+y	(53/2$^+$)				
1140.8	0.8 *2*	2982.9+x	25/2$^+$	1842.1+x	21/2$^+$				DCO=0.9 *3*.
1159.6[#]		10022.4+x	(61/2$^-$)	8862.8+x	(57/2$^-$)				
1181.8[#]		4197.5+y	(59/2$^+$)	3015.5+y	(55/2$^+$)				
1192.1		4207.5+y	(59/2$^+$)	3015.5+y	(55/2$^+$)	[E2]	0.00480	1.4 *5*	α=0.00480; ce(K)/(γ+ce)=0.00385; ce(L)/(γ+ce)=0.00070
1193.2	1.9 *4*	1795.8+v		602.6+v					DCO=0.87 *22*.
1232.8	0.6 *2*	3791.9+x	33/2	2559.1+x	29/2$^-$				DCO=0.65 *27*.
1242.1[#]		10659.5+x	(63/2$^-$)	9417.5+x	(59/2$^-$)				
1253.1[&] *4*		1677.8+x		424.8+x	13/2$^+$			2.5[a] *5*	
1278.9	0.9 *2*	4769.0+x	33/2$^+$	3490.1+x	33/2$^+$				DCO=0.8 *3*.
1291.8	0.9 *2*	3850.9+x	31/2	2559.1+x	29/2$^-$				DCO=0.6 *4*.
1336.1	1.3 *3*	1336.1+v		v					
1367.7	0.3 *2*	4769.0+x	33/2$^+$	3401.3+x	29/2$^+$				DCO=1.2 *7*.
1378.5[&] *3*	11.0 *19*	1803.3+x	17/2$^+$	424.8+x	13/2$^+$	Q			$I_{(\gamma+ce)}$: other: 11.2 *16* (1988Pa12). DCO=0.93 *14*.
1432.5	1.0 *3*	6986.7+x		5554.2+x					DCO=0.75 *23*.
1480.1	0.3 *1*	1904.8+x	17/2$^+$	424.8+x	13/2$^+$				DCO=0.76 *26*.
1512.0	2.6 *5*	5478.7+x	43/2	3966.7+x					
1568.9	1.8 *6*	2171.5+v		602.6+v					
1733.5	0.6 *3*	4292.6+x		2559.1+x	29/2$^-$				
1789.7	1.0 *5*	4348.8+x	31/2	2559.1+x	29/2$^-$				
1804.3	0.9 *4*	4363.6+x	31/2	2559.1+x	29/2$^-$				

[†] Relative γ intensities (1994Ba43) within each band for transitions assigned in a band. All other intensities are relative to 100 for 977.7γ from 1402.6+x level.

[‡] From 1994Ba43. Values are relative intensities within each band, unless otherwise stated.

[#] From 1997Hu12.

[@] From 1999Po13.

[&] From 1988Pa12. Energy quoted by 1994Ba43 is in good agreement.

[a] From 1988Pa12, relative to 100 for 977.7γ.

[b] From ce and/or $\gamma\gamma(\theta)$(DCO) data supplemented by RUL when level lifetimes are available. Many assignments from $\gamma\gamma(\theta)$(DCO) are given simply in terms of D or Q, when no other supporting data are available. The mult=D or D+Q indicates ΔJ=1 or ΔJ=0 transition, and mult=Q indicates ΔJ=2 transition. It should be noted that DCO ratios are almost the same for ΔJ=2, quadrupole and for ΔJ=0, dipole transitions. Mixed transitions (D+Q) are likely to be M1+E2.

$^{199}_{82}$Pb$_{117}$-14

γ(^{199}Pb) (continued)

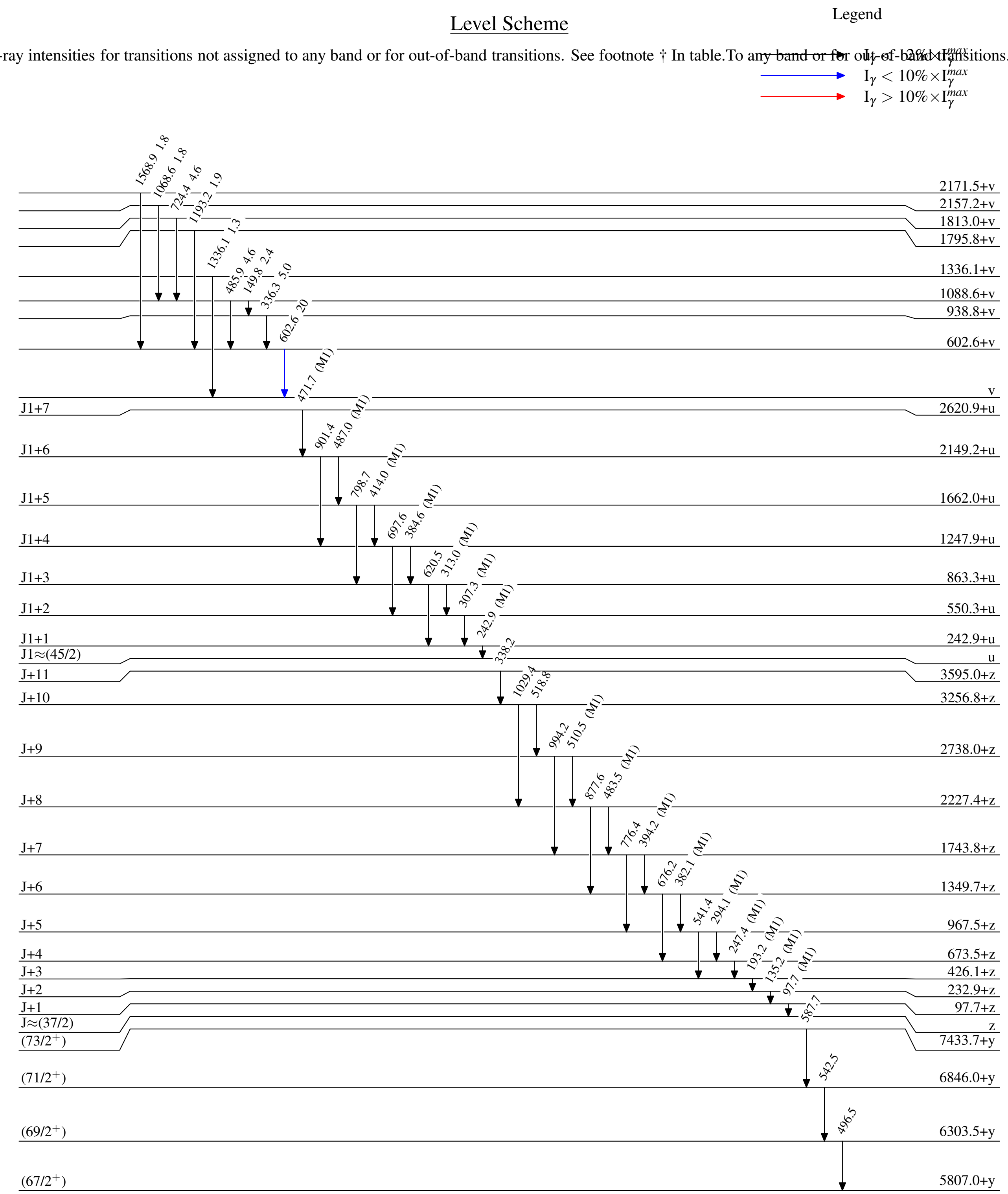
[c] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[d] Placement of transition in the level scheme is uncertain.

From ENSDF

$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Level Scheme

Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.

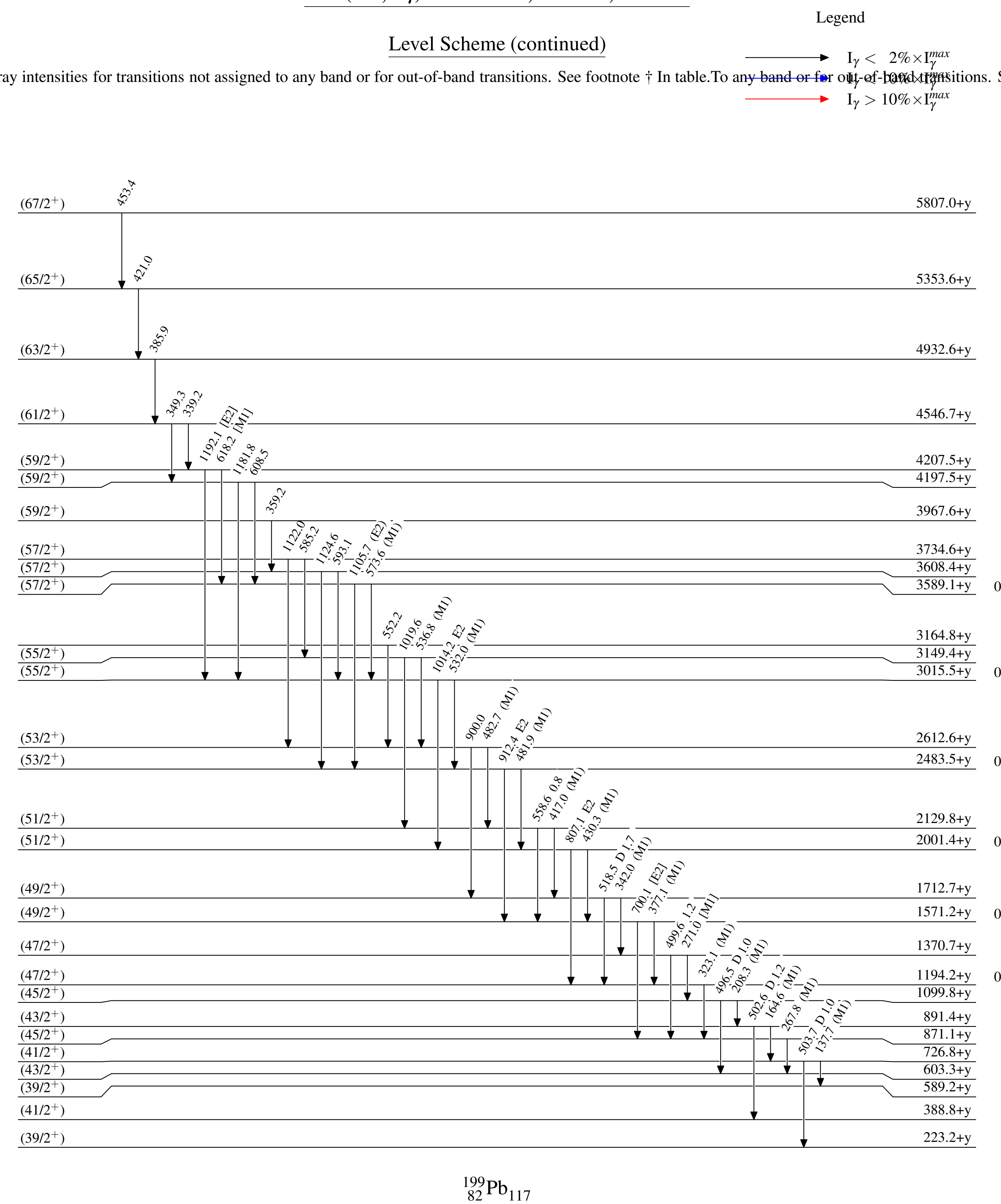


$^{199}_{82}Pb_{117}$

$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Level Scheme (continued)

Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S



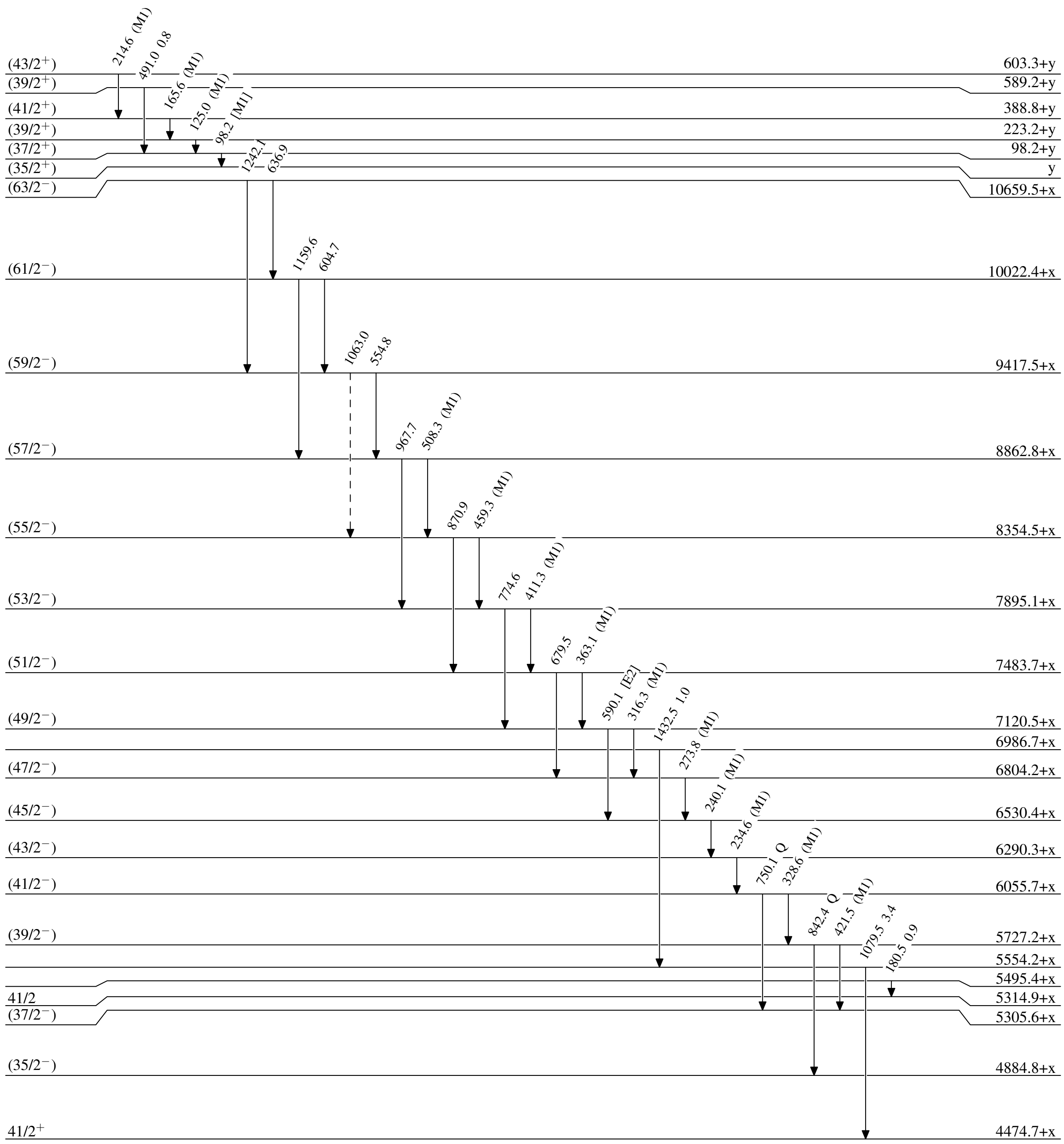
$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Level Scheme (continued)

Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S

Legend

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

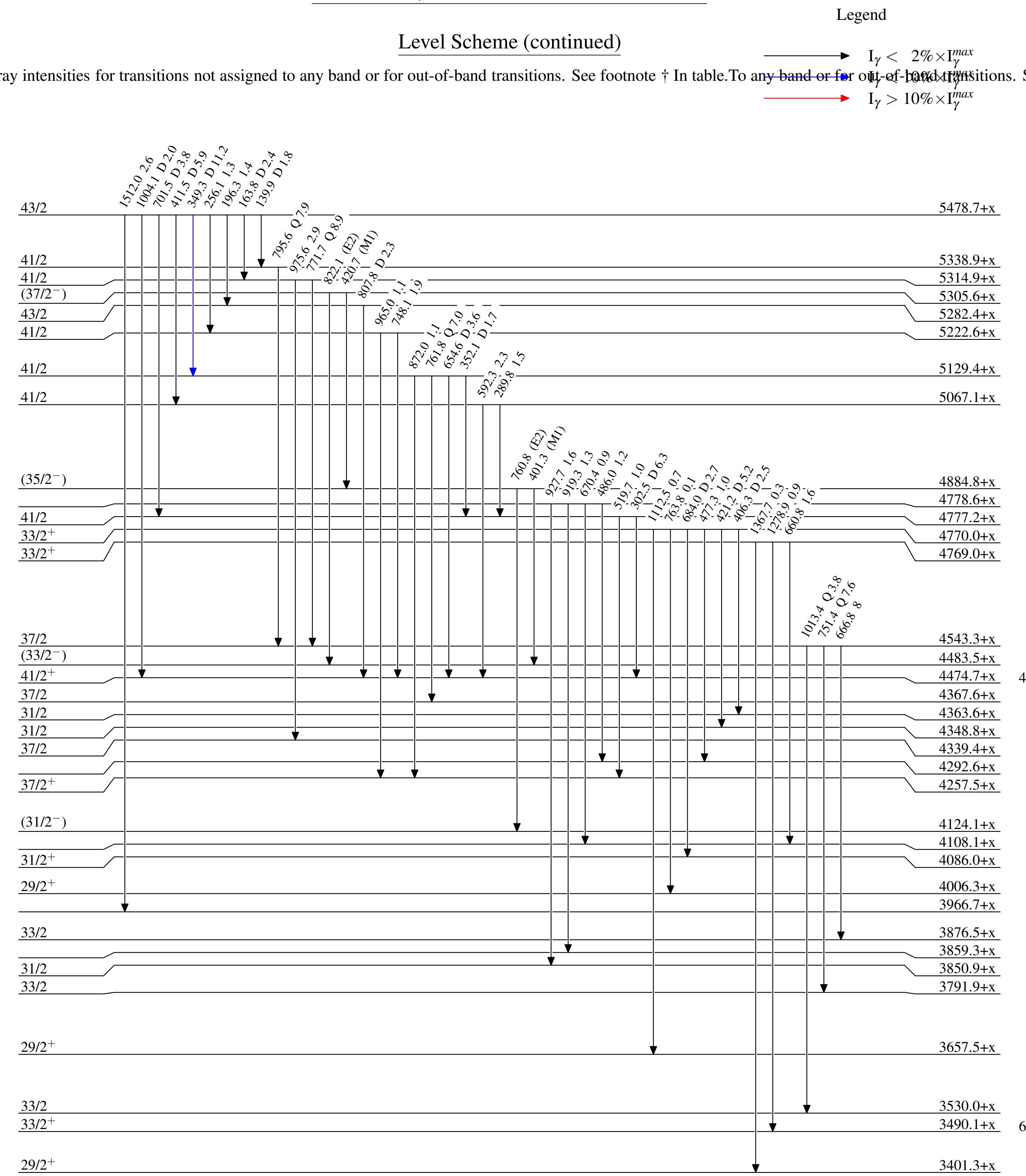


$^{199}_{82}Pb_{117}$

^{186}W(^{18}O,5nγ) 1994Ba43,1999Po13,1988Pa12

Level Scheme (continued)

Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S

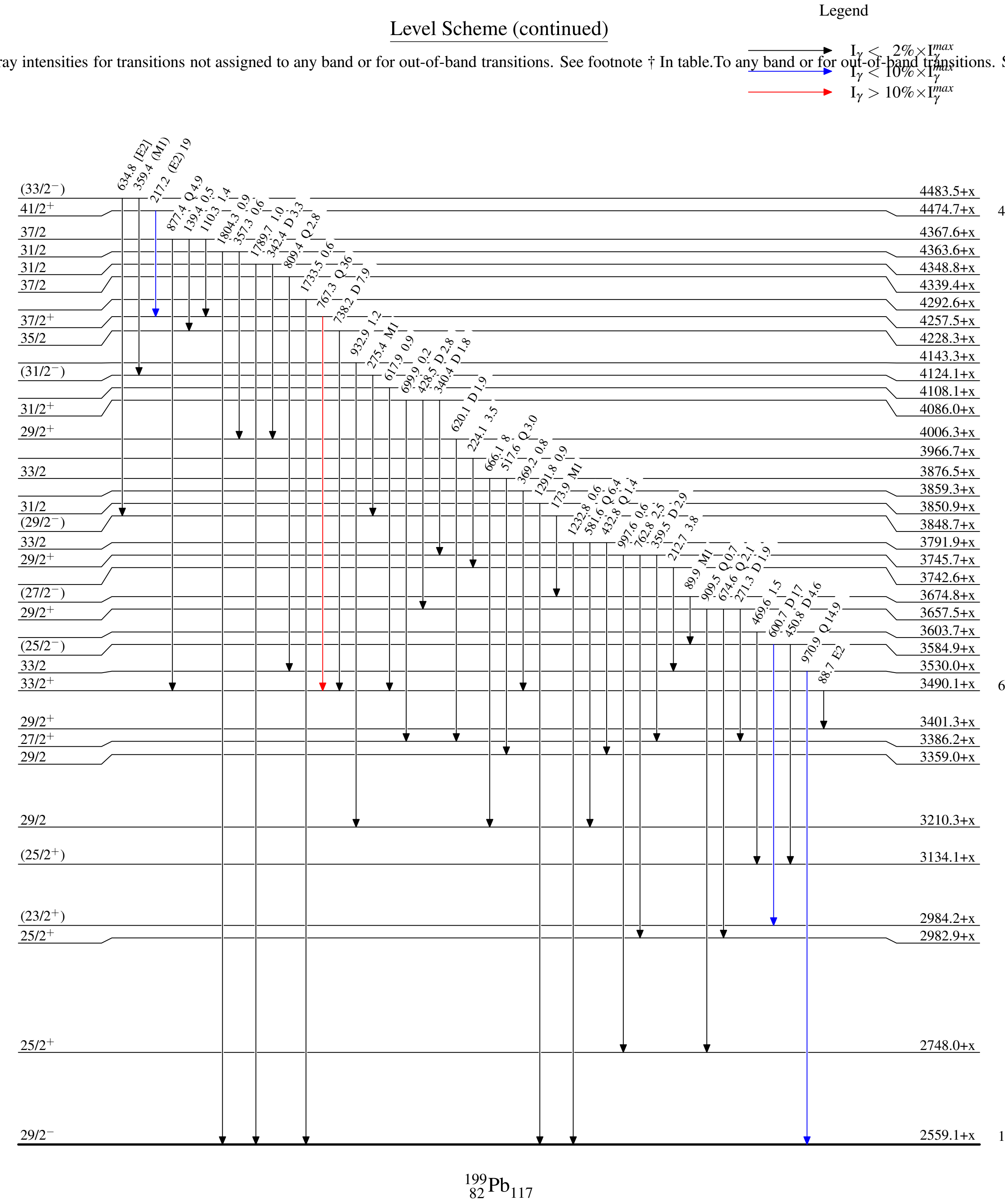


$^{199}_{82}Pb_{117}$

$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Level Scheme (continued)

Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S



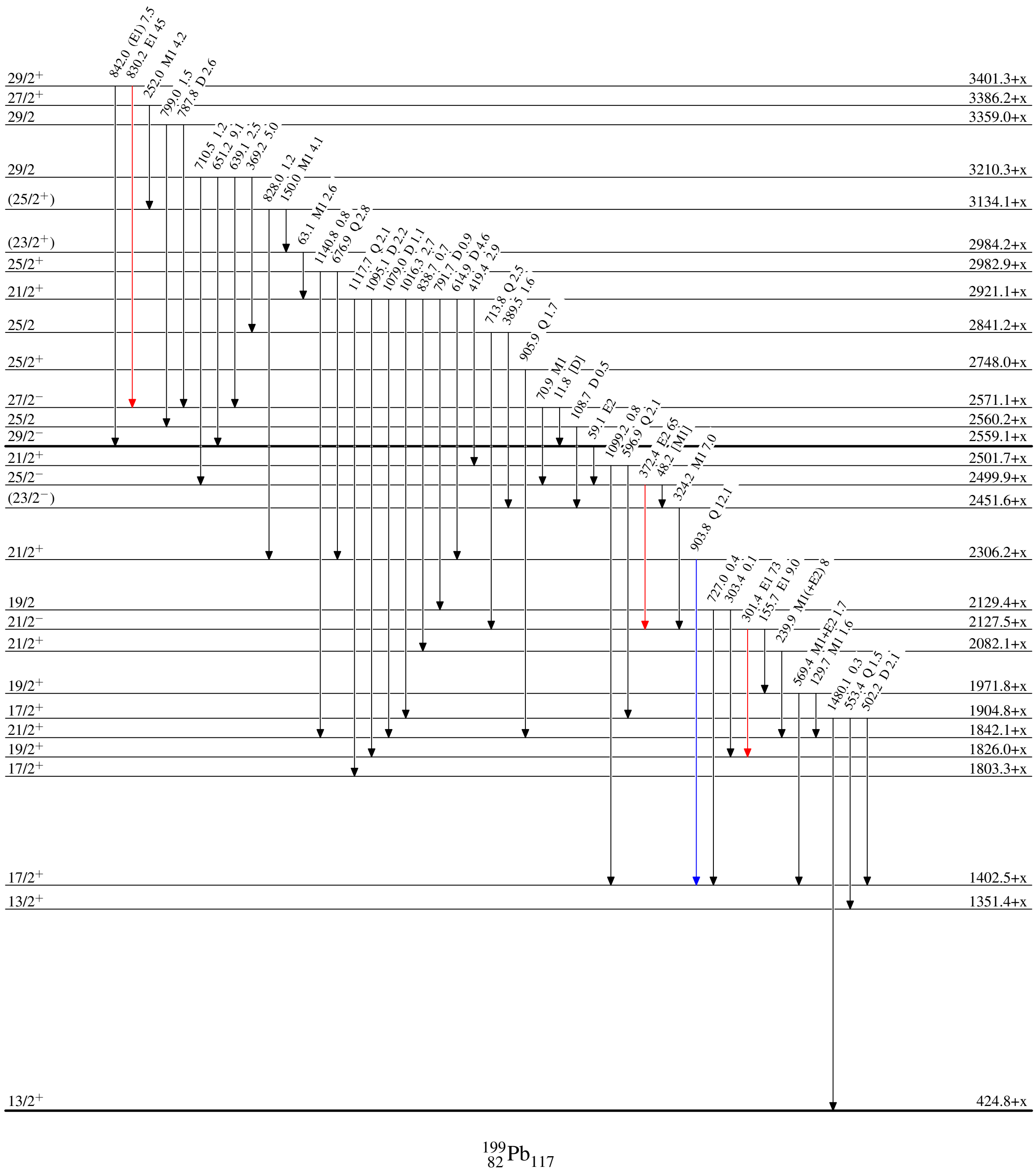
$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Legend

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

Level Scheme (continued)

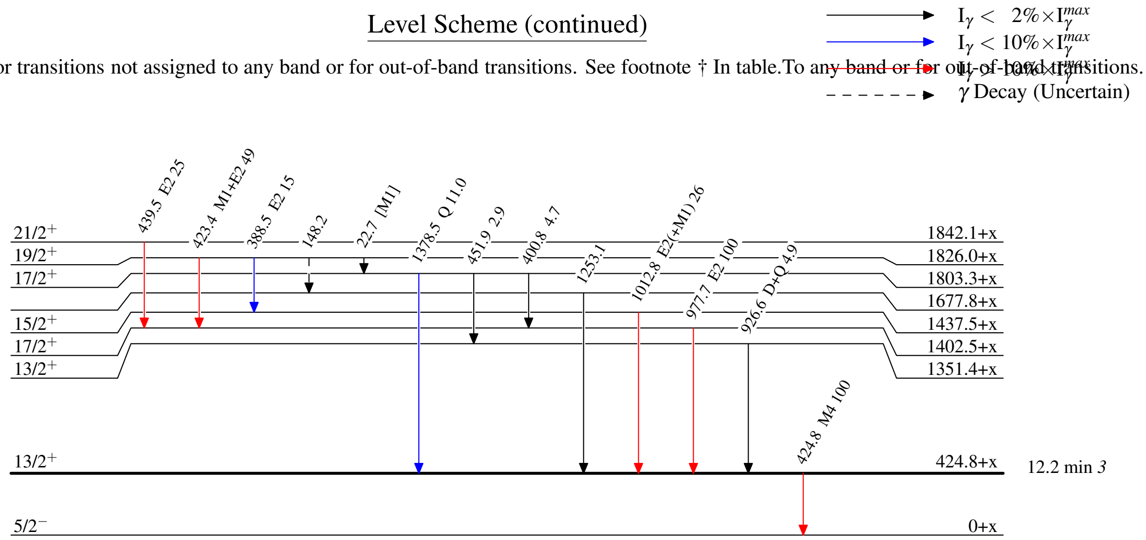
Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S



$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Level Scheme (continued)

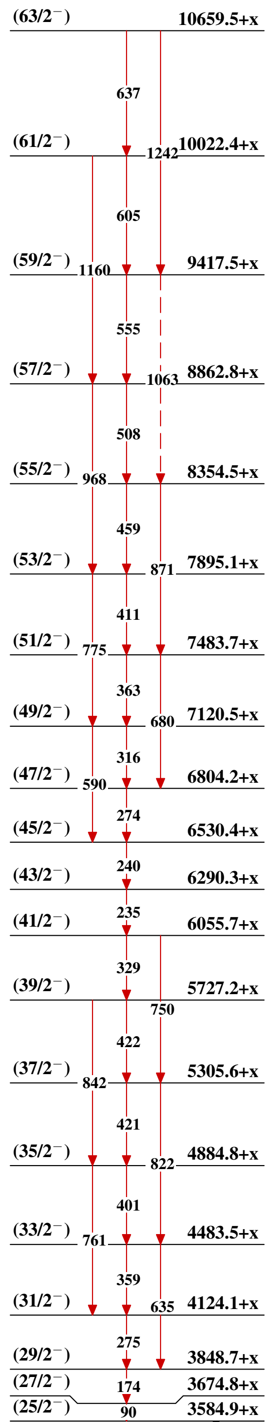
Intensities: Relative γ-ray intensities for transitions not assigned to any band or for out-of-band transitions. See footnote † In table.To any band or for out-of-band transitions. S



$^{199}_{82}Pb_{117}$

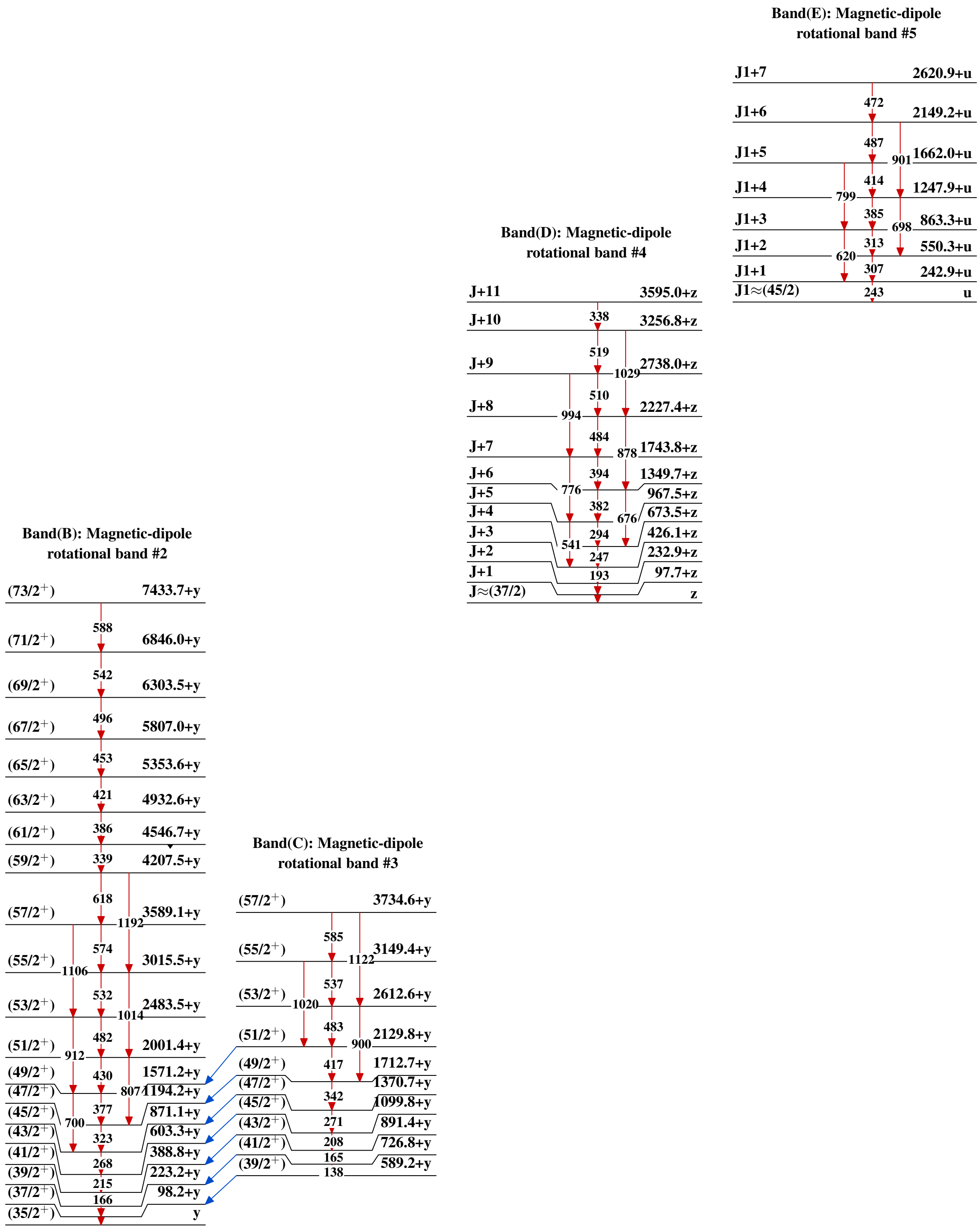
$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12

Band(A): Magnetic-dipole rotational band #1



$^{199}_{82}Pb_{117}$

$^{186}W(^{18}O,5n\gamma)$ 1994Ba43,1999Po13,1988Pa12 (continued)



$^{199}_{82}Pb_{117}$