^{198}Pt(^{9}Be,5nγ) 2000Go47

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

2000Go47: E=60 MeV beam provided by the 88-inch Cyclotron, LBNL. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO) using the 8π array comprising of 20 Compton-suppressed HPGe detectors and an inner ball of 71 BGO scintillators. Deduced J^{π} and ^{202}Pb level scheme.

^{202}Pb Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[#]	Comments
2169.83 *7*	9$^-$	3.54 h *2*	Additional information 1. E(level),J$^{\pi}$,T$_{1/2}$: From Adopted Levels.
3058.0 *5*	11$^-$		
3191.3 *5*	10$^+$		
3237.7 *7*	12$^+$	24.2 ns *3*	
3329.2 *7*	12		
3507.3 *9*	(13)		
3955.9 *8*	13$^+$		
4022.8 *10*	(14)		
4023.1 *9*	(12)		
4068.3 *9*	13		
4091.3 *9*	14$^+$		
4091.3+x	16$^+$	106 ns *3*	Additional information 2.
4170.8 *8*	14$^+$		
4445.7+x *4*	16$^+$		
4513.1 *11*	(15)		
5059.0 *12*	(16)		
5059.0+y[@]			Additional information 3. E(level): This level decays to the 5059−keV, (16) and 5242.6+x−keV, 17$^-$ levels, but the de-exciting transitions are not known.
5059.0+z[&]			Additional information 4. E(level): This level decays to the 5059-keV, (16) level, but the de-exciting transition is not known.
5189.0+z[&] *5*			
5220.3+y[@] *5*			
5242.6+x *4*	17$^-$		
5251.6+x *5*	18$^+$		
5251.6+u	19$^-$	108 ns *3*	Additional information 5.
5380.7+z[&] *7*			
5463.5+y[@] *7*			
5650.5+z[&] *9*			
5796.4+y[@] *9*			
5940.9+u *4*	(20$^-$)		
5999.9+z[&] *10*			
6092.3+u *4*	21$^-$		
6204.0+y[@] *10*			
6324.1+u *6*	(22)		
6416.3+z[&] *11*			
6670.5+y[@] *11*			
6800.4+u *4*	(21)		
6894.2+z[&] *12*			
7188.2+y[@] *12*			
7302.2+u *4*	(21)		

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^{198}Pt(^{9}Be,5nγ) 2000Go47 (continued)

^{202}Pb Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
7406.6+u *7*	(23)	7709.2+u *6*	23	8646.7+u *8*	(24)
7417.6+z& *13*		8306.2+u *7*	(24)	8787.4+u *7*	(25)
7555.2+u *5*	22	8361.8+u *7*	(24)	9206.2+u *9*	(26)

† From a least-squares fit to Eγ by assuming ΔEγ=0.5 keV.
‡ From 2000Go47.
# From Adopted Levels.
@ Band(A): Magnetic-Rotation Band 1.
& Band(B): Magnetic-Rotation Band 2.

γ(^{202}Pb)

E_γ†	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.@	α&	Comments
130.0	1.0# *2*	5189.0+z		5059.0+z		M1	4.42 *6*	α(K)=3.61 *5*; α(L)=0.625 *9*; α(M)=0.1465 *21* α(N)=0.0372 *5*; α(O)=0.00742 *10*; α(P)=0.000793 *11* Mult.: From DCO=0.62 *11*.
140.8	2.7 *4*	8787.4+u	(25)	8646.7+u	(24)	D		Mult.: From DCO=0.61 *10*.
151.4	1.6 *4*	6092.3+u	21^-	5940.9+u	(20^-)	D		Mult.: From DCO=0.54 *9*.
154.3	6.2 *7*	7709.2+u	23	7555.2+u	22	D		Mult.: From DCO=0.49 *8*.
161.3	3.8# *3*	5220.3+y		5059.0+y		M1	2.398 *34*	α(K)=1.956 *27*; α(L)=0.338 *5*; α(M)=0.0791 *11* α(N)=0.02012 *28*; α(O)=0.00401 *6*; α(P)=0.000428 *6* Mult.: From DCO=0.53 *6*.
179.7	88 *7*	3237.7	12^+	3058.0	11^-	D		Mult.: From DCO=0.63 *6*.
191.7	2.2# *2*	5380.7+z		5189.0+z		M1	1.474 *21*	α(K)=1.204 *17*; α(L)=0.2072 *29*; α(M)=0.0486 *7* α(N)=0.01234 *17*; α(O)=0.002460 *34*; α(P)=0.000263 *4* Mult.: From DCO=0.62 *7*.
214.9	4.0 *4*	4170.8	14^+	3955.9	13^+	D		Mult.: From DCO=0.55 *7*.
231.5	6.9 *7*	6324.1+u	(22)	6092.3+u	21^-	D		Mult.: From DCO=0.62 *7*.
243.2	7.8# *6*	5463.5+y		5220.3+y		M1	0.760 *11*	α(K)=0.621 *9*; α(L)=0.1064 *15*; α(M)=0.02492 *35* α(N)=0.00633 *9*; α(O)=0.001263 *18*; α(P)=0.0001350 *19* Mult.: From DCO=0.56 *6*.
253.0	1.3 *3*	7555.2+u	22	7302.2+u	(21)			
269.6	5.3 *6*	3507.3	(13)	3237.7	12^+	D		Mult.: From DCO=0.76 *14*.
269.8	3.5# *3*	5650.5+z		5380.7+z		M1	0.570 *8*	α(K)=0.466 *7*; α(L)=0.0798 *11*; α(M)=0.01868 *26* α(N)=0.00475 *7*; α(O)=0.000947 *13*; α(P)=0.0001012 *14* Mult.: From DCO=0.58 *6*.
271.2	8.6 *7*	3329.2	12	3058.0	11^-	D		Mult.: From DCO=0.51 *6*.
332.9	8.2# *6*	5796.4+y		5463.5+y		M1	0.321 *4*	α(K)=0.263 *4*; α(L)=0.0448 *6*; α(M)=0.01047 *15* α(N)=0.00266 *4*; α(O)=0.000531 *7*; α(P)=5.68×10^{-5} *8* Mult.: From DCO=0.57 *8*.
340.6	4.2 *4*	8646.7+u	(24)	8306.2+u	(24)			Mult.: From DCO=0.92 *13*.
349.4	3.0# *3*	5999.9+z		5650.5+z		M1	0.282 *4*	α(K)=0.2305 *32*; α(L)=0.0392 *5*; α(M)=0.00918 *13* α(N)=0.002332 *33*; α(O)=0.000465 *7*; α(P)=4.98×10^{-5} *7* Mult.: From DCO=0.61 *7*.

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^{198}Pt(^{9}Be,5nγ) 2000Go47 (continued)

$\gamma(^{202}Pb)$ (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	α [&]	Comments
354.4	16.9 *13*	4445.7+x	16^+	4091.3+x	16^+			Mult.: From DCO=0.98 *8*.
407.6	6.1 [#] *5*	6204.0+y		5796.4+y		M1	0.1861 *26*	α(K)=0.1523 *21*; α(L)=0.0258 *4*; α(M)=0.00604 *8* α(N)=0.001534 *21*; α(O)=0.000306 *4*; α(P)=3.28×10^{-5} *5* Mult.: From DCO=0.62 *9*.
416.4	2.7 [#] *2*	6416.3+z		5999.9+z		M1	0.1757 *25*	α(K)=0.1439 *20*; α(L)=0.02436 *34*; α(M)=0.00570 *8* α(N)=0.001448 *20*; α(O)=0.000289 *4*; α(P)=3.09×10^{-5} *4* Mult.: From DCO=0.57 *8*.
418.8	4.4 *5*	9206.2+u	(26)	8787.4+u	(25)	D		Mult.: From DCO=0.59 *8*.
425.7	2.4 *3*	8787.4+u	(25)	8361.8+u	(24)	D		Mult.: From DCO=0.62 *9*.
466.5	4.6 [#] *4*	6670.5+y		6204.0+y		M1	0.1298 *18*	α(K)=0.1063 *15*; α(L)=0.01795 *25*; α(M)=0.00420 *6* α(N)=0.001066 *15*; α(O)=0.0002126 *30*; α(P)=2.278×10^{-5} *32* Mult.: From DCO=0.51 *9*.
477.9	1.8 [#] *2*	6894.2+z		6416.3+z		M1	0.1217 *17*	α(K)=0.0997 *14*; α(L)=0.01682 *24*; α(M)=0.00393 *6* α(N)=0.000999 *14*; α(O)=0.0001993 *28*; α(P)=2.135×10^{-5} *30* Mult.: From DCO=0.46 *8*.
490.3	2.4 *3*	4513.1	(15)	4022.8	(14)	D		Mult.: From DCO=0.48 *14*.
501.9	2.7 *4*	7302.2+u	(21)	6800.4+u	(21)	(D)		Mult.: From DCO=0.79 *18*.
515.5	2.4 *3*	4022.8	(14)	3507.3	(13)	D		Mult.: From DCO=0.50 *14*.
517.7	3.4 [#] *3*	7188.2+y		6670.5+y		M1	0.0985 *14*	α(K)=0.0807 *11*; α(L)=0.01359 *19*; α(M)=0.00318 *4* α(N)=0.000807 *11*; α(O)=0.0001609 *23*; α(P)=1.724×10^{-5} *24* Mult.: From DCO=0.45 *8*.
523.4	1.6 [#] *2*	7417.6+z		6894.2+z		M1	0.0957 *13*	α(K)=0.0784 *11*; α(L)=0.01319 *18*; α(M)=0.00308 *4* α(N)=0.000783 *11*; α(O)=0.0001563 *22*; α(P)=1.675×10^{-5} *23* Mult.: From DCO=0.49 *10*.
545.9	1.6 *2*	5059.0	(16)	4513.1	(15)	D		Mult.: From DCO=0.51 *16*.
597.1	8.2 *6*	8306.2+u	(24)	7709.2+u	23	D		Mult.: From DCO=0.56 *8*.
652.8	7.3 *6*	8361.8+u	(24)	7709.2+u	23	D		Mult.: From DCO=0.48 *8*.
689.3	15.0 *13*	5940.9+u	(20^-)	5251.6+u	19^-	D		Mult.: From DCO=0.33 *9*.
718.2	20.9 *16*	3955.9	13^+	3237.7	12^+	D+Q		Mult.: From DCO=0.29 *5*.
785.4	23.6 *17*	4023.1	(12)	3237.7	12^+			Mult.: From DCO=1.01 *9*.
796.9	14.1 *10*	5242.6+x	17^-	4445.7+x	16^+	D		Mult.: From DCO=0.65 *15*.
830.6	10.9 *7*	4068.3	13	3237.7	12^+	D		Mult.: From DCO=0.63 *8*.
840.7	47 *3*	6092.3+u	21^-	5251.6+u	19^-	E2	0.00940 *13*	α(K)=0.00735 *10*; α(L)=0.001556 *22*; α(M)=0.000374 *5* α(N)=9.47×10^{-5} *13*; α(O)=1.838×10^{-5} *26*; α(P)=1.706×10^{-6} *24* Mult.: From DCO=1.
853.6	43 *3*	4091.3	14^+	3237.7	12^+	E2	0.00911 *13*	α(K)=0.00714 *10*; α(L)=0.001499 *21*; α(M)=0.000360 *5* α(N)=9.12×10^{-5} *13*; α(O)=1.771×10^{-5} *25*; α(P)=1.650×10^{-6} *23* Mult.: From DCO=1.06 *8*.

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^{198}Pt(^{9}Be,5nγ) 2000Go47 (continued)

$\gamma(^{202}Pb)$ (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[&]	Comments
888.2	100	3058.0	11^-	2169.83	9^-	E2	0.00841 *12*	α(K)=0.00663 *9*; α(L)=0.001362 *19*; α(M)=0.000326 *5* α(N)=8.27×10^{-5} *12*; α(O)=1.608×10^{-5} *23*; α(P)=1.513×10^{-6} *21* Mult.: From DCO=1.
933.1	8.0 *7*	4170.8	14^+	3237.7	12^+	E2	0.00763 *11*	α(K)=0.00604 *8*; α(L)=0.001212 *17*; α(M)=0.000289 *4* α(N)=7.34×10^{-5} *10*; α(O)=1.430×10^{-5} *20*; α(P)=1.360×10^{-6} *19* Mult.: From DCO=1.03 *10*.
1021.5	5.6 *5*	3191.3	10^+	2169.83	9^-	D		Mult.: From DCO=0.71 *7*.
1082.2	6.0 *7*	7406.6+u	(23)	6324.1+u	(22)	D		Mult.: From DCO=0.66 *8*.
1151.3	24.4 *14*	5242.6+x	17^-	4091.3+x	16^+	D		Mult.: From DCO=0.66 *7*.
1160.3	5.8 *4*	5251.6+x	18^+	4091.3+x	16^+	E2	0.00500 *7*	α(K)=0.00403 *6*; α(L)=0.000741 *10*; α(M)=0.0001752 *25* α(N)=4.44×10^{-5} *6*; α(O)=8.72×10^{-6} *12*; α(P)=8.63×10^{-7} *12*; α(IPF)=1.389×10^{-6} *19* Mult.: From DCO=1.08 *9*.
1361.4	0.7 *3*	7302.2+u	(21)	5940.9+u	(20^-)			
1380.5	3.1 *4*	8787.4+u	(25)	7406.6+u	(23)	(Q)		Mult.: From DCO=0.80 *20*.
1463.0	19.3 *11*	7555.2+u	22	6092.3+u	21^-	D		Mult.: From DCO=0.62 *6*.
1548.8	3.8 *5*	6800.4+u	(21)	5251.6+u	19^-	(Q)		Mult.: From DCO=0.84 *12*.

[†] From 2000Go47.
[‡] From Table 2 in 2000Go47, unless otherwise stated.
[#] From Table 1 in 2000Go47.
[@] From $\gamma\gamma(\theta)$(DCO) data in 2000Go47. E2 admixtures are possible for the band 1 and 2 in-band $\Delta J=1$ transitions. DCO are normalized to 888γ and 841γ, both E2. DCO=1 is expected for a stretched E2 transition and 0.66 for a pure stretched dipole transition.
[&] Additional information 6.

^{198}Pt(^{9}Be,5nγ) 2000Go47

Level Scheme

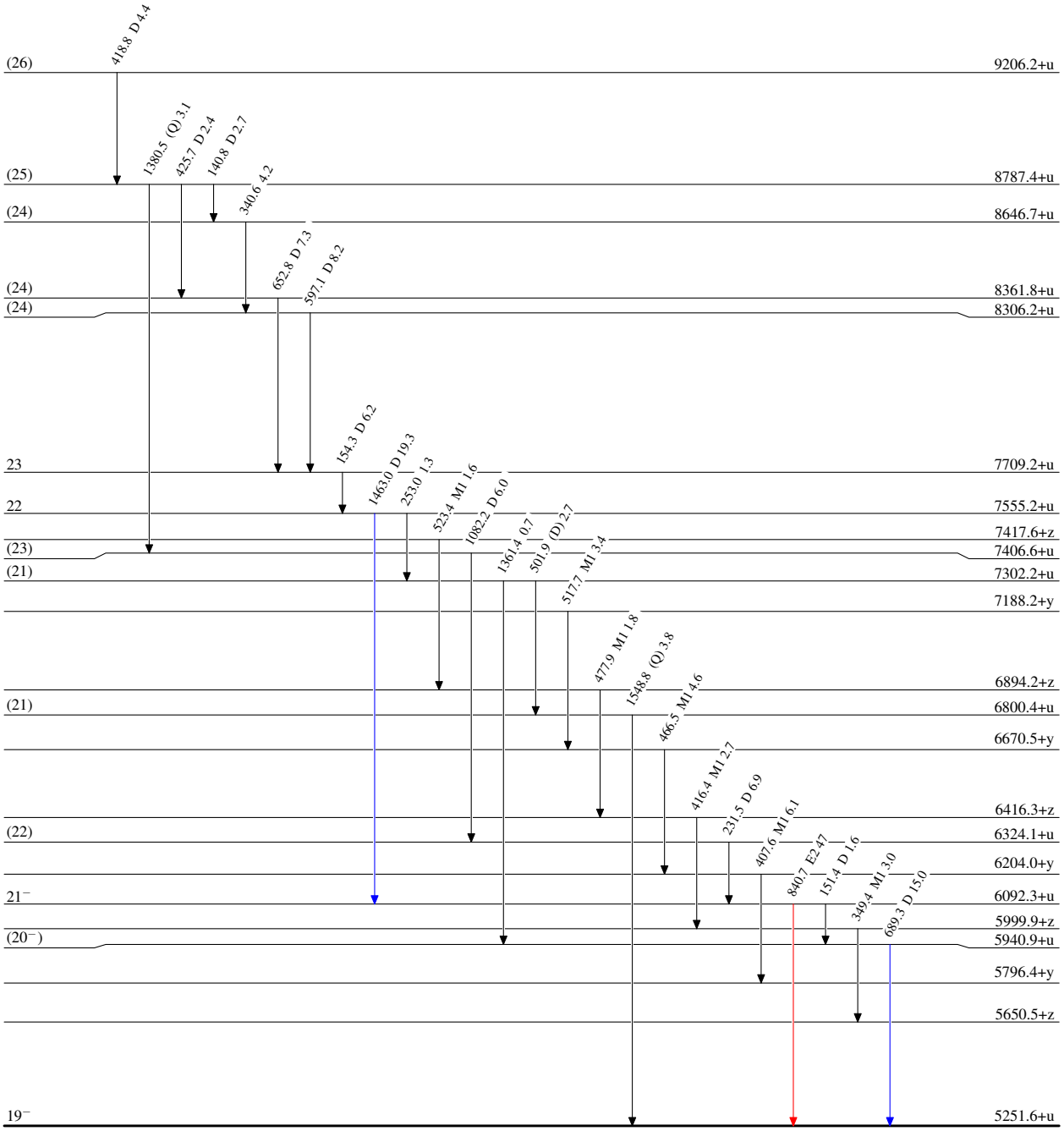
Intensities: Relative I_γ

Legend

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

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

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

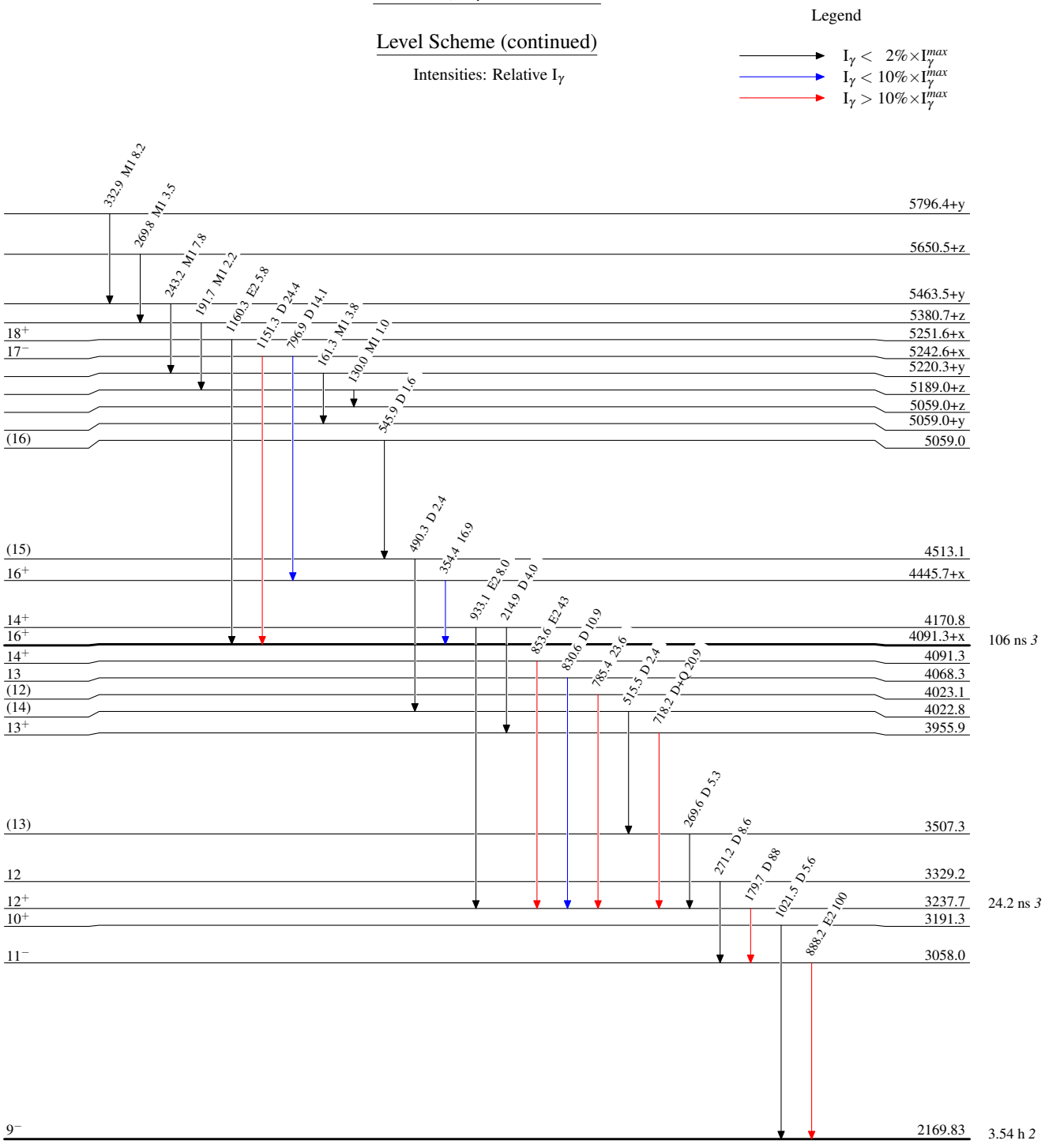


$^{202}_{82}Pb_{120}$

^{198}Pt(^{9}Be,5nγ) 2000Go47

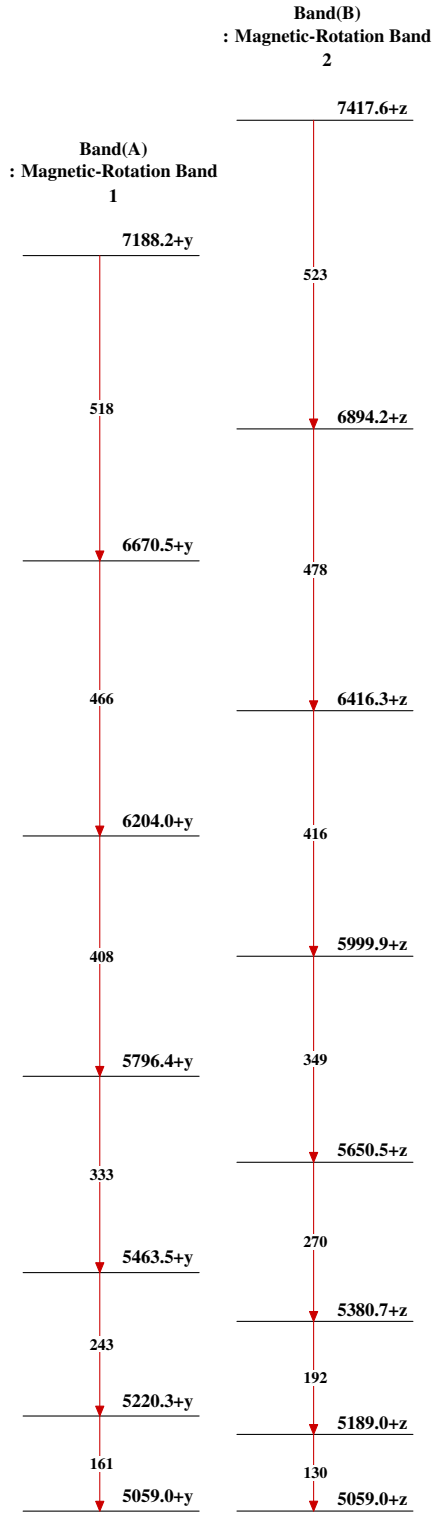
Level Scheme (continued)

Intensities: Relative I_γ



$^{202}_{82}Pb_{120}$

$^{198}Pt(^{9}Be,5n\gamma)$ 2000Go47



$^{202}_{82}Pb_{120}$