Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

Q(β^-)=−6681 *32*; S(n)=9373 *16*; S(p)=4999 *22*; Q(α)=3709 *15* 2012Wa38

^{198}Pb Levels

For shell-model and weak-coupling theory, see 1988He13, 1988Ar12, 1987Sa51, 1986Ho03, 1986Zh10, 1985Do01, 1998Ma09, 1998Pa20 and 1997Su07.
For giant dipole resonances, see 1986ThZY and 1987Ch03.

Cross Reference (XREF) Flags

- A ^{198}Bi ε decay (11.6 min)
- B ^{202}Po α decay
- C (HI,xnγ)
- D (HI,xnγ):SD

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
0.0	0^+	2.4 h *1*	ABC	%ε+%β^+=100 $T_{1/2}$: From 1959Ju39. Other: 2.4 h *2* (1957An53). $<r^2>^{1/2}$=5.450 fm *9* (2004An14). $\Delta<r^2>$: −0.409 fm^2 *12* (1987Za02), −0.528 fm^2 *11* (1983Th03) relative to ^{206}Pb. See also 1985Ki03.
1063.50 *20*	2^+		A C	Jπ: E2 γ to 0^+.
1392.1 *10*	(0^+)		A	Jπ: (E0) to 0^+.
1625.9 *3*	4^+		A C	Jπ: E2 γ to 2^+ and proposed band structure.
1734.7 *10*	(0^+)		A	Jπ: (E0) to 0^+.
1823.5 *4*	$(5)^-$	50.4 ns *5*	A C	μ=+0.38 *3* (1985St16,2011StZZ) configuration: $\nu(i_{13/2})^{-1}\nu(p_{3/2})^{-1}$ (1996Zh23). μ from TDPAD (2015StZZ). Jπ: E1 γ to 4^+. $T_{1/2}$: From γ(t) measurement (1987Ca23). Others: 49 ns *5* (from (K x-ray)γ(t) in ^{198}Bi ε decay (1972Al44,1973Pa04)), 60 ns *15* (1972Is01), 63 ns *3* (1972Kr08).
1980.7 *3*	(4^+)		A C	
1996.4 *4*	(5)		C	
2099.4 *4*	(4,5,6)		C	
2141.4 *4*	$(7)^-$	4.19 μs *10*	A C	μ=−0.377 *6* (1987Ca23,2011StZZ). μ: TDPAD. Other: −0.376 *16* (1985St16, TDPAD). Jπ: E2 γ to $(5)^-$ and proposed band structure. $T_{1/2}$: From γ(t) measurement (1987Ca23). Others: 3.7 μs *3* (1972Is01), 4 μs (1973Dj01), ≈5.3 μs (1992Wa20).
2190.7 *4*	(6)		C	
2231.4 *5*	$(9)^-$	137 ns *10*	A C	Jπ: E2 γ to $(7)^-$ and proposed band structure. $T_{1/2}$: Other: 240 ns *15* (1989Ho06).
2257.7 *4*	(6^-)		A C	
2342.5 *11*			A	
2345.5 *11*			A	
2369.5 *11*	(6^-)		A	
2568.7 *4*	(6^+)		C	
2602.7 *11*			C	
2611.5 *11*			A	
2695.5 *11*			A	

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Adopted Levels, Gammas (continued)

^{198}Pb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
2703.5 *11*			A	
2772.3 *5*	$(10)^+$		C	E(level): For 10^+ to 9^- level spacing calculation, see 1972Al49, 1973Pa03. Jπ: E1 γ to $(9)^-$.
2821.7 *6*	$(12)^+$	212 ns *4*	C	Jπ: E2 γ to $(10)^+$. $T_{1/2}$: From γ(t) measurement (1987Ca23). Others: 221 ns *30* (1973Pa03), 240 ns *20* (1986Ho03), 211 ns *10* (1983St15). E(level): believed to decay by low energy transition with 15.9 keV<Eγ<88 keV (1979Al24). μ=−1.86 *2* (1983St15,2011StZZ). μ: TDPAD. Other: −1.73 *13* (1977Ro15, TDPAD). Q=0.75 *5* (1981Zy02,2011StZZ). Q: TDPAD; ^{206}Pb standard.
3033.3 *6*			C	
3184.6 *6*			C	
3268.5 *5*			C	
3488.9 *5*	11^-		C	Jπ: E2 γ to $(9)^-$.
3564.5 *6*			C	
3574.4 *6*	(12)		C	
3750.6 *6*	14^+		C	
3810.3 *5*	12^-		C	Jπ: M1 γ to 11^-.
3965.6 *6*			C	
4030.0 *8*			C	
4032.4 *6*	(14)		C	
4042.6 *6*	13^-		C	
4191.2 *6*	(16^+)		C	
4235.8 *6*			C	
4380.1 *6*	15^-		C	
4511.6 *6*	16^+		C	
4573.2 *6*	14^-	>2.8 ps	C	
4700.8 *6*	(17)		C	
4702.5 *6*	(16^+)	>5.5 ps	C	
4773.7 *6*	(17^-)		C	
4776.1[c] *7*	(14^+)		C	
4817.7 *8*			C	
4837.2 *6*	15^-	>2.8 ps	C	
4843.4 *6*			C	
4878.7[c] *6*	(15^+)		C	
4883.2[@] *7*	(14^+)		C	
4895.5 *7*	(19^+)	6.4 ns	C	
4976.5[@] *8*	(15^+)		C	
5003.6[c] *7*	(16^+)		C	
5015.5 *8*			C	
5018.9 *8*			C	
5065.9 *6*	17^-		C	
5071.8 *6*	18^+		C	
5093.2[@] *8*	(16^+)		C	
5203.0[c] *7*	(17^+)		C	
5209.3 *6*	18^+		C	
5249.9[@] *8*	(17^+)		C	
5304.3 *11*	(16)		C	
5379.1[a] *6*	(16^-)		C	
5451.8 *6*	19^-		C	
5467.5[c] *7*	(18^+)		C	
5477.6[@] *8*	(18^+)	3.2 ps *10*	C	

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Adopted Levels, Gammas (continued)

^{198}Pb Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
5492.7[a] *10*	17^-		C	
5523.8 *10*	(17)		C	
5544.2 *7*	19^-		C	
5648.4[a] *10*	18^-	0.44 ps *7*	C	
5778.9[c] *7*	(19^+)		C	
5813.7[@] *8*	(19^+)		C	
5821.7 *9*	(18)		C	
5843.0 *7*	(21)		C	
5863.4[a] *11*	19^-	0.49 ps *+7−14*	C	
5870.6 *6*	20^+		C	
6040.8 *7*			C	
6046.6 *7*	21^-		C	
6119.6 *9*	(19)		C	
6125.8 *7*	21^-		C	
6141.8[a] *11*	20^-	0.24 ps *+10−7*	C	
6151.7 *10*	(17^-)		C	
6166.8[c] *8*	(20^+)		C	
6242.2[@] *8*	(20^+)	2.4 ps *10*	C	
6392.6[b] *13*	(18^-)		C	
6425.4 *9*	(20)		C	
6484.0[a] *11*	21^-	0.14 ps *+14−7*	C	
6501.0 *7*	22^+		C	
6515.3[b] *15*	(19^-)		C	
6519.5[&] *14*	(20^-)		C	
6554.7[c] *8*	(21^+)		C	
6660.1 *7*	23^-		C	
6660.7[@] *8*	(21^+)		C	
6674.4[b] *17*	(20^-)		C	
6690.8 *8*	(21^+)		C	
6719.1 *7*			C	
6730.0 *7*			C	
6734.8[&] *13*	(21^-)		C	
6867.3[@] *9*	(22^+)		C	
6872.9[a] *11*	22^-	0.17 ps *3*	C	
6873.3 *7*	23^-		C	
6878.3[b] *18*	(21^-)		C	
6942.4[c] *8*	(22^+)		C	
6996.7 *11*	(22^+)		C	
7017.3[&] *13*	(22^-)		C	
7073.8[@] *9*	(23^+)	1.46 ps *28*	C	
7079.1 *8*	(22^+)		C	
7142.9[b] *18*	(22^-)		C	
7295.3[a] *11*	23^-	0.12 ps *+12−3*	C	$T_{1/2}$: From 1997Cl03. Other: 0.32 ps *7* (1994Cl01).
7311.5[@] *9*	(24^+)	0.59 ps *21*	C	$T_{1/2}$: From 1994Cl01.
7333.8[c] *8*	(23^+)		C	
7361.0[&] *13*	(23^-)		C	
7455.8 *14*	(23^+)		C	
7480.1[b] *18*	(23^-)		C	
7554.8[c] *8*	(24^+)		C	
7591.0[@] *9*	(25^+)	0.80 ps *40*	C	$T_{1/2}$: From 1994Cl01.

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Adopted Levels, Gammas (continued)

^{198}Pb Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	XREF	Comments
7739.4[a] *12*	24⁻	0.14 ps *+6−4*	C	$T_{1/2}$: From 1997Cl03. Other: 0.17 ps *3* (1994Cl01).
7747.8 *7*	25⁻		C	
7758.0 *7*	25⁻		C	
7779.5[&] *12*	(24⁻)		C	
7795.2[c] *9*	(25⁺)		C	
7835.0[b] *18*	(24⁻)		C	
7916.6[@] *10*	(26⁺)	0.40 ps *10*	C	$T_{1/2}$: From 1994Cl01.
8076.5[c] *9*	(26⁺)		C	
8210.9[a] *12*	25⁻	0.14 ps *4*	C	$T_{1/2}$: From 1997Cl03. Other: 0.15 ps *4* (1994Cl01).
8243.5[b] *19*	(25⁻)		C	
8256.1[&] *13*	(25⁻)		C	
8268.1 *7*			C	
8291.0[@] *10*	(27⁺)	0.097 ps *+21−28*	C	$T_{1/2}$: From 1997Cl03. Other: 0.25 ps *7* (1994Cl01).
8408.6[c] *9*	(27⁺)		C	
8686.1[a] *12*	26⁻	0.19 ps *5*	C	$T_{1/2}$: From 1994Cl01.
8695.0[b] *19*	(26⁻)		C	
8712.7[@] *10*	(28⁺)	0.105 ps *+21−28*	C	$T_{1/2}$: From 1997Cl03. Other: 0.14 ps *3* (1994Cl01).
8740.0[&] *14*	(26⁻)		C	
8800.1[c] *10*	(28⁺)		C	
9112.4[a] *12*	27⁻		C	
9146.5[b] *20*	(27⁻)		C	
9155.0[&] *16*	(27⁻)		C	
9176.3[@] *10*	(29⁺)	0.097 ps *+21−28*	C	$T_{1/2}$: From 1997Cl03. Other: 0.069 ps *17* (1994Cl01).
9255.2[c] *11*	(29⁺)		C	
9512.4[a] *13*	28⁻		C	
9681.6[@] *11*	(30⁺)	0.14 ps *4*	C	$T_{1/2}$: From 1997Cl03. Other: 0.036 ps *8* (1994Cl01).
9770.2[c] *12*	(30⁺)		C	
9930.6[a] *13*	29⁻		C	
10231.0[@] *11*	(31⁺)		C	
10329.2[c] *14*	(31⁺)		C	
10380.4[a] *14*	30⁻		C	
10821.3[@] *12*	(32⁺)		C	
10869.4[a] *15*	31⁻		C	
10921.4[c] *16*	(32⁺)		C	
11398.8[a] *17*	32⁻		C	
11439.0[@] *12*	(33⁺)		C	
11970.9[a] *19*	33⁻		C	
12060.0[@] *13*	(34⁺)		C	
12579.9[a] *21*	34⁻		C	
12699.5[@] *15*	(35⁺)		C	
0+x[dg]	J≈(12)		D	Additional information 1. Jπ: Spin-fit method gives J≈(12) (1994Cl02).
304.4+x[d] *5*	J+2		D	
652.1+x[d] *7*	J+4		D	
1042.4+x[d] *9*	J+6		D	
1474.8+x[d] *10*	J+8		D	
1948.6+x[d] *11*	J+10		D	
2463.2+x[d] *12*	J+12		D	

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Adopted Levels, Gammas (continued)

^{198}Pb Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
3018.0+x[d] *13*	J+14	D	
3651.4+x[d] *14*	J+16	D	
4323.2+x[d] *15*	J+18	D	
5032.6+x[d] *16*	J+20	D	
5779.3+x[d] *17*	J+22	D	
6562.0+x[d] *17*	J+24	D	
7380.5+x[d] *18*	J+26	D	
8231.7+x[d] *20*	J+28	D	
9121.7+x[d] *21*	J+30	D	
0+y[eg]	10[h]	D	Additional information 2.
281.4+y[e] *6*	12	D	
605.5+y[e] *8*	14	D	
971.1+y[e] *10*	16	D	
1377.8+y[e] *11*	18	D	
1825.7+y[e] *12*	20	D	
2313.9+y[e] *13*	22	D	
2841.8+y[e] *14*	24	D	
3409.0+y[e] *15*	26	D	
4014.4+y[e] *16*	28	D	
4656.2+y[e] *17*	30	D	
5332.5+y[e] *17*	32	D	
6038.2+y[e] *18*	34	D	
6769.9+y[e] *19*	36	D	
7529.0+y[e] *20*	38	D	
0+z[fg]	8[h]	D	Additional information 3.
215.8+z[f] *6*	10	D	
475.4+z[f] *8*	12	D	
778.0+z[f] *10*	14	D	
1122.6+z[f] *11*	16	D	
1508.9+z[f] *12*	18	D	
1937.4+z[f] *13*	20	D	
2406.2+z[f] *14*	22	D	
2914.4+z[f] *15*	24	D	
3462.2+z[f] *16*	26	D	
4048.6+z[f] *17*	28	D	
4672.4+z[f] *17*	30	D	
5332.4+z[f] *18*	32	D	
6028.2+z[f] *19*	34	D	

[†] From level scheme and Adopted Gamma radiations by using least-squares fit to Eγ data.
[‡] From γ-ray multipolarities and linear polarization, band structure analysis in ^{198}Bi ε decay (11.6 m), (HI,xnγ) and (HI,xnγ):SD, except as noted.
[#] From γ(t) or ce(t) measurements in (HI,xnγ), except as noted.
[@] Band(A): Magnetic-rotational band 1 with ΔJ=1. Members of the band: (14^+) to (35^+).
[&] Band(B): Magnetic-rotational band 2 with ΔJ=1. Members of the band: (20^-) to (27^-).

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Adopted Levels, Gammas (continued)

^{198}Pb Levels (continued)

[a] Band(C): Magnetic-rotational band 3 with ΔJ=1. Members of the band: 16^- to 34^-.
[b] Band(D): Magnetic-rotational band 4 with ΔJ=1. Members of the band: (18^-) to (27^-).
[c] Band(E): Magnetic-rotational band 5 with ΔJ=1. Members of the band: (14^+) to (32^+).
[d] Band(F): SD-1 band. Members of the band: J≈12 to J+30 (2001Pr06,1996Hi13,1994Cl02,1991Wa14).
[e] Band(G): SD-2 band (2001Pr06). Members of the band:10 to 38 (2004Re08).
[f] Band(H): SD-3 band (2001Pr06). Members of the band: 8 to 34 (2004Re08).
[g] Band head energy undetermined.
[h] From theoretical calculations and comparisons with known configurations of the neighbouring nuclei (2004Re08).

γ(^{198}Pb)

All data are from (HI,xnγ) and (HI,xnγ):SD, except as noted.

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[#]	δ	α[@]	Comments
1063.50	2^+	1063.5 *2*	100	0.0	0^+	E2		0.0059 *1*	
1392.1	(0^+)	1392.1[‡]		0.0	0^+	(E0)[‡]			
1625.9	4^+	562.4 *2*	100	1063.50	2^+	E2		0.0223	
1734.7	(0^+)	1734.7[‡]		0.0	0^+	(E0)[‡]			
1823.5	$(5)^-$	197.6 *2*	100	1625.9	4^+	E1		0.0803	B(E1)(W.u.)=4.49×10^{-7} *5*
		760[‡]	6[‡]	1063.50	2^+				
1980.7	(4^+)	917.2 *2*	100	1063.50	2^+				
1996.4	(5)	370.5 *2*	100	1625.9	4^+				
2099.4	(4,5,6)	473.5 *2*	100	1625.9	4^+				
2141.4	$(7)^-$	317.9 *2*	100	1823.5	$(5)^-$	E2		0.0974	B(E2)(W.u.)=0.000553 *14*
2190.7	(6)	367.2 *2*	100	1823.5	$(5)^-$				
2231.4	$(9)^-$	90.0 *2*	100	2141.4	$(7)^-$	E2		9.98 *17*	B(E2)(W.u.)=0.93 *7*
2257.7	(6^-)	434.2 *2*	100	1823.5	$(5)^-$	M1+E2	0.10 *7*	0.156 *3*	
2342.5		519[‡]	100[‡]	1823.5	$(5)^-$				
2345.5		522[‡]	100[‡]	1823.5	$(5)^-$				
2369.5	(6^-)	546[‡]	100[‡]	1823.5	$(5)^-$				
2568.7	(6^+)	588.0 *2*	100	1980.7	(4^+)				
2602.7		412	100	2190.7	(6)				
2611.5		788[‡]	100[‡]	1823.5	$(5)^-$				
2695.5		872[‡]	100[‡]	1823.5	$(5)^-$				
2703.5		880[‡]	100[‡]	1823.5	$(5)^-$				
2772.3	$(10)^+$	540.9 *2*	100	2231.4	$(9)^-$	E1		0.0081 *3*	
2821.7	$(12)^+$	49.2 *5*	100	2772.3	$(10)^+$	E2		173 *10*	B(E2)(W.u.)=0.78 *7*
3033.3		801.6 *5*	100 *30*	2231.4	$(9)^-$				
		891.7 *8*	20 *11*	2141.4	$(7)^-$				
3184.6		953.1 *5*	100	2231.4	$(9)^-$				
3268.5		1037.1 *2*	100	2231.4	$(9)^-$				
3488.9	11^-	220.3 *5*	7.2 *17*	3268.5					
		304.2 *5*	7.7 *22*	3184.6					
		455.3 *5*	6.6 *22*	3033.3					
		1257.6 *2*	100 *9*	2231.4	$(9)^-$	E2		0.0043	
3574.4	(12)	752.6 *2*	100 *12*	2821.7	$(12)^+$				
		802.1 *2*	81 *9*	2772.3	$(10)^+$				
3750.6	14^+	928.9 *2*	100	2821.7	$(12)^+$	E2		0.0077	
3810.3	12^-	321.4 *2*	100	3488.9	11^-	M1		0.353	
3965.6		215.0 *8*	8 *4*	3750.6	14^+				
		1143.8 *3*	100 *15*	2821.7	$(12)^+$				

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Adopted Levels, Gammas (continued)

γ(^{198}Pb) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[#]	α[@]	Comments
4030.0		455.4 *8*	100	3574.4	(12)			
4032.4	(14)	282.0 *2*	73 *9*	3750.6	14^+			
		458.1 *2*	100 *12*	3574.4	(12)			
4042.6	13^-	232.2 *3*	59 *8*	3810.3	12^-	M1	0.864	
		478.1 *2*	100 *12*	3564.5				
		553.7 *5*	16 *5*	3488.9	11^-	E2	0.0231	
4191.2	(16^+)	440.6 *2*	100	3750.6	14^+	E2	0.0401	
4235.8		967.3 *3*	100	3268.5				
4380.1	15^-	629.5 *2*	100	3750.6	14^+	E1	0.0059 *9*	
4511.6	16^+	479.4 *3*	16.8 *20*	4032.4	(14)			
		760.9 *2*	100 *10*	3750.6	14^+	E2	0.0115 *3*	
4573.2	14^-	530.5 *2*	59 *6*	4042.6	13^-	M1	0.0923	B(M1)(W.u.)<0.019
		762.9 *2*	100 *8*	3810.3	12^-	E2	0.0114 *7*	B(E2)(W.u.)<6.9
4700.8	(17)	509.6 *2*	100	4191.2	(16^+)			
4702.5	(16^+)	322.3 *2*	100	4380.1	15^-	(E1)	0.025	B(E1)(W.u.)<0.0011
4773.7	(17^-)	393.6 *2*	100	4380.1	15^-	(E2)	0.0538	
4776.1	(14^+)	743.6 *3*	100	4032.4	(14)			
4817.7		116.9 *5*	100	4700.8	(17)			
4837.2	15^-	264.0 *3*	100 *12*	4573.2	14^-	M1	0.606	B(M1)(W.u.)<0.17
		794.5 *3*	93 *14*	4042.6	13^-	E2	0.01054	B(E2)(W.u.)<3.4
4843.4		140.8 *3*	36 *7*	4702.5	(16^+)			
		463.4 *2*	100 *12*	4380.1	15^-			
4878.7	(15^+)	102.0 *8*	13 *8*	4776.1	(14^+)	M1	8.84 *24*	
		846.6 *3*	100 *13*	4032.4	(14)			
4883.2	(14^+)	852.9 *8*	<2.6	4030.0				
		917.5 *2*	100 *12*	3965.6				
4976.5	(15^+)	93.0 *5*	100	4883.2	(14^+)	M1	11.47 *24*	
5003.6	(16^+)	125.5 *5*	100 *18*	4878.7	(15^+)	M1	4.89 *9*	
		491.5 *8*	18 *12*	4511.6	16^+	(M1)	0.113	
5015.5		779.8 *8*	100	4235.8				
5018.9		783.3 *8*	100	4235.8				
5065.9	17^-	363.2 *8*	6.6 *22*	4702.5	(16^+)	(E1)	0.0191	
		685.8 *2*	100 *12*	4380.1	15^-	E2	0.0143 *5*	
5071.8	18^+	560.3 *5*	12 *4*	4511.6	16^+	E2	0.0225	
		880.5 *2*	100 *12*	4191.2	(16^+)	E2	0.0085 *6*	
5093.2	(16^+)	116.5 *3*	100	4976.5	(15^+)	M1	6.05 *10*	
5203.0	(17^+)	199.6 *3*	100 *14*	5003.6	(16^+)	M1	1.317	
		691.2 *8*	29 *10*	4511.6	16^+	(M1)	0.0462	
5209.3	18^+	697.6 *2*	100 *12*	4511.6	16^+	E2	0.0138 *4*	
		1018.3 *3*	9.8 *23*	4191.2	(16^+)	E2	0.0064 *3*	
5249.9	(17^+)	156.7 *2*	100	5093.2	(16^+)	M1	2.6	
5379.1	(16^-)	360.4 *8*	6.2 *14*	5018.9				
		363.7 *8*	4.8 *14*	5015.5				
		541.9 *2*	79 *8*	4837.2	15^-	M1	0.0873	
		805.9 *2*	100 *9*	4573.2	14^-	E2	0.0102 *4*	
5451.8	19^-	385.9 *2*	100 *16*	5065.9	17^-	E2	0.0567	
		556.3 *3*	73 *11*	4895.5	(19^+)	(E1)	0.0076 *8*	
5467.5	(18^+)	264.6[a] *3*	100[a]	5203.0	(17^+)	M1	0.602	
5477.6	(18^+)	227.6 *2*	100	5249.9	(17^+)	M1	0.913	B(M1)(W.u.)=0.31 *10*
5492.7	17^-	113.6 *8*	100	5379.1	(16^-)	M1	6.50 *16*	
5523.8	(17)	219.5 *5*	100	5304.3	(16)			
5544.2	19^-	478.3 *2*	100	5065.9	17^-	E2	0.0327	
5648.4	18^-	155.7 *3*	100	5492.7	17^-	M1	2.65	B(M1)(W.u.)=3.6 *6*
5778.9	(19^+)	311.5 *3*	100 *14*	5467.5	(18^+)	M1	0.385	
		569.6 *8*	43 *14*	5209.3	18^+	(M1)	0.0766	
5813.7	(19^+)	336.0 *2*	100	5477.6	(18^+)	M1	0.313	

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Adopted Levels, Gammas (continued)

γ(^{198}Pb) (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	Mult.#	α@	Comments
5821.7	(18)	297.9& *3*	100&	5523.8	(17)			
5843.0	(21)	947.5 *2*	100	4895.5	(19^+)	(E2)	0.0074	
5863.4	19^-	215.0 *2*	100	5648.4	18^-	M1	1.07	B(M1)(W.u.)=2.2 *+7−4*
5870.6	20^+	661.4 *2*	100 *10*	5209.3	18^+	E2	0.0155 *2*	
		798.7 *2*	23 *3*	5071.8	18^+	E2	0.0104 *3*	
		975.1 *3*	9.2 *15*	4895.5	(19^+)	(M1)	0.0190	
6040.8		197.8 *3*	100	5843.0	(21)			
6046.6	21^-	595.0 *3*	100	5451.8	19^-	E2	0.0196	
6119.6	(19)	297.9& *3*	100&	5821.7	(18)			
6125.8	21^-	581.7 *3*	62 *7*	5544.2	19^-	E2	0.0206	
		673.9 *2*	100 *13*	5451.8	19^-	E2	0.0149	
6141.8	20^-	278.4 *2*	100	5863.4	19^-	M1	0.523	B(M1)(W.u.)=2.8 *+9−12*
6151.7	(17^-)	772.6 *8*	100	5379.1	(16^-)			
6166.8	(20^+)	387.8& *3*	100& *14*	5778.9	(19^+)	M1	0.213	
		700.0 *8*	2.0 *12*	5467.5	(18^+)	E2	0.0137 *4*	
6242.2	(20^+)	428.5 *2*	100	5813.7	(19^+)	M1	0.1628	B(M1)(W.u.)=0.10 *5*
6392.6	(18^-)	240.9 *8*	100	6151.7	(17^-)			
6425.4	(20)	305.8 *2*	100	6119.6	(19)			
6484.0	21^-	342.2 *2*	100 *10*	6141.8	20^-	M1	0.298	B(M1)(W.u.)=2.9 *+16−3*
		621.0[a] *8*	4.1[a] *17*	5863.4	19^-	E2	0.0178	B(E2)(W.u.)=20 *+13−20*
6501.0	22^+	630.4 *2*	100	5870.6	20^+	E2	0.0172 *4*	
6515.3	(19^-)	122.7 *8*	100	6392.6	(18^-)	M1	5.21 *13*	
6554.7	(21^+)	387.8& *3*	100& *14*	6166.8	(20^+)	M1	0.213	
		776.6 *8*	4.9 *28*	5778.9	(19^+)	E2	0.0110 *5*	
6660.1	23^-	817.1 *3*	100	5843.0	(21)			
6660.7	(21^+)	235.5 *3*	33 *5*	6425.4	(20)			
		418.4 *2*	100 *11*	6242.2	(20^+)	M1	0.1735	
6674.4	(20^-)	159.1 *8*	100	6515.3	(19^-)	M1	2.49 *5*	
6690.8	(21^+)	264.8 *5*	25 *5*	6425.4	(20)	(M1)	0.601	
		448.7 *2*	100 *11*	6242.2	(20^+)	M1	0.1439	
6719.1		218.1 *2*	100	6501.0	22^+			
6730.0		229.0 *2*	100	6501.0	22^+			
6734.8	(21^-)	215.3 *5*	100	6519.5	(20^-)	M1	1.066 *17*	
6867.3	(22^+)	176.7 *5*	33 *7*	6690.8	(21^+)	M1	1.85	
		206.5 *3*	100 *29*	6660.7	(21^+)	M1	1.197	
6872.9	22^-	388.8 *2*	100 *10*	6484.0	21^-	M1	0.211	B(M1)(W.u.)=1.7 *4*
		731.2 *8*	6.3 *27*	6141.8	20^-	E2	0.0125 *3*	B(E2)(W.u.)=11 *6*
6873.3	23^-	747.4 *2*	100 *13*	6125.8	21^-	E2	0.0119 *7*	
		827.4 *5*	18 *5*	6046.6	21^-	E2	0.0097 *1*	
		1030.2 *5*	27 *6*	5843.0	(21)			
6878.3	(21^-)	203.9 *3*	100	6674.4	(20^-)	M1	1.241	
6942.4	(22^+)	387.8& *3*	100& *14*	6554.7	(21^+)	M1	0.213	
		776.6		6166.8	(20^+)			
6996.7	(22^+)	442.0 *8*	100	6554.7	(21^+)	M1	0.1498	
7017.3	(22^-)	282.5 *3*	100	6734.8	(21^-)	M1	0.503	
7073.8	(23^+)	206.5 *2*	100	6867.3	(22^+)	M1	1.197	B(M1)(W.u.)=0.78 *15*
7079.1	(22^+)	388.1 *3*	87 *13*	6690.8	(21^+)	M1	0.212	
		418.4 *3*	100 *17*	6660.7	(21^+)	M1	0.1735	
		836.5 *8*	27 *7*	6242.2	(20^+)	E2	0.0094 *9*	
7142.9	(22^-)	264.6[a] *3*	100[a]	6878.3	(21^-)	M1	0.602	
7295.3	23^-	422.4 *2*	100 *10*	6872.9	22^-	M1	0.1691	B(M1)(W.u.)=1.9 *+6−19*
		811.2 *8*	9 *4*	6484.0	21^-	E2	0.0101 *1*	B(E2)(W.u.)=14 *+7−14*
7311.5	(24^+)	237.7 *2*	100	7073.8	(23^+)	M1	0.809	B(M1)(W.u.)=1.5 *6*
7333.8	(23^+)	254.6 *3*	100 *13*	7079.1	(22^+)	M1	0.669	

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Adopted Levels, Gammas (continued)

γ(^{198}Pb) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[#]	α[@]	Comments
7333.8	(23$^+$)	391.5[&] *3*	83[&] *9*	6942.4	(22$^+$)	M1	0.207	
7361.0	(23$^-$)	343.7 *3*	100	7017.3	(22$^-$)	M1	0.295	
7455.8	(23$^+$)	459.1 *8*	100	6996.7	(22$^+$)	M1	0.1354	
7480.1	(23$^-$)	337.2 *2*	100	7142.9	(22$^-$)	M1	0.310	
7554.8	(24$^+$)	221.0 *2*	100	7333.8	(23$^+$)	M1	0.991	
7591.0	(25$^+$)	279.5 *2*	100	7311.5	(24$^+$)	M1	0.518	B(M1)(W.u.)=0.9 *5*
7739.4	24$^-$	444.1 *3*	100 *11*	7295.3	23$^-$	M1	0.1479	B(M1)(W.u.)=1.4 *+5−7*
		866.5 *8*	16 *5*	6872.9	22$^-$	E2	0.0088 *4*	B(E2)(W.u.)=15 *+7−15*
7747.8	25$^-$	874.4 *2*	100 *11*	6873.3	23$^-$	E2	0.0086 *8*	
		1087.7 *8*	13 *6*	6660.1	23$^-$			
7758.0	25$^-$	884.8 *3*	100	6873.3	23$^-$	E2	0.0084 *8*	
7779.5	(24$^-$)	418.5 *3*	100 *12*	7361.0	(23$^-$)	M1	0.1734	
		484.2 *5*	40 *16*	7295.3	23$^-$			
7795.2	(25$^+$)	240.4 *2*	100	7554.8	(24$^+$)	M1	0.784	
7835.0	(24$^-$)	354.9 *3*	100	7480.1	(23$^-$)	M1	0.270	
7916.6	(26$^+$)	325.6 *2*	100	7591.0	(25$^+$)	M1	0.341	B(M1)(W.u.)=1.2 *3*
8076.5	(26$^+$)	281.3 *2*	100	7795.2	(25$^+$)	M1	0.509	
8210.9	25$^-$	471.5 *3*	100 *13*	7739.4	24$^-$	M1	0.1261	B(M1)(W.u.)=1.1 *4*
		915.6 *8*	21 *6*	7295.3	23$^-$	E2	0.0079 *2*	B(E2)(W.u.)=14 *6*
8243.5	(25$^-$)	408.5 *5*	100	7835.0	(24$^-$)	M1	0.185	
8256.1	(25$^-$)	476.6 *5*	100	7779.5	(24$^-$)	M1	0.1226	
8268.1		510.4 *5*	48 *8*	7758.0	25$^-$			
		520.3 *3*	100 *12*	7747.8	25$^-$			
8291.0	(27$^+$)	374.4 *2*	100 *12*	7916.6	(26$^+$)	M1	0.234	B(M1)(W.u.)=3.4 *+12−10*
		700.2 *8*	2.9 *16*	7591.0	(25$^+$)	E2	0.0137 *3*	B(E2)(W.u.)=12 *+8−12*
8408.6	(27$^+$)	332.1 *3*	100	8076.5	(26$^+$)	M1	0.323	
8686.1	26$^-$	475.2 *3*	100 *13*	8210.9	25$^-$	M1	0.1236	B(M1)(W.u.)=0.8 *3*
		946.7 *8*	19 *7*	7739.4	24$^-$	E2	0.0074 *1*	B(E2)(W.u.)=8 *4*
8695.0	(26$^-$)	451.5[&] *5*	100[&]	8243.5	(25$^-$)	M1	0.1416	
8712.7	(28$^+$)	421.7 *3*	100 *13*	8291.0	(27$^+$)	M1	0.1699	B(M1)(W.u.)=2.4 *+8−7*
		796.1 *8*	<3.26	7916.6	(26$^+$)	E2	0.0105	B(E2)(W.u.)=3 *+4−3*
8740.0	(26$^-$)	483.9 *5*	100	8256.1	(25$^-$)	M1	0.1177	
8800.1	(28$^+$)	391.5[&] *3*	100[&]	8408.6	(27$^+$)	M1	0.207	
9112.4	27$^-$	426.3 *3*	100 *15*	8686.1	26$^-$	M1	0.165	
		901.5 *8*	16 *6*	8210.9	25$^-$	E2	0.0081 *7*	
9146.5	(27$^-$)	451.5[&] *5*	100[&] *27*	8695.0	(26$^-$)	M1	0.1416	
		903.0 *8*	<14	8243.5	(25$^-$)	E2	0.0081 *4*	
9155.0	(27$^-$)	415.0 *8*	100	8740.0	(26$^-$)	M1	0.177	
9176.3	(29$^+$)	463.6 *3*	100 *13*	8712.7	(28$^+$)	M1	0.1319	B(M1)(W.u.)=2.0 *+7−6*
		885.3 *8*	<4.8	8291.0	(27$^+$)	E2	0.0084 *7*	B(E2)(W.u.)=3 *+4−3*
9255.2	(29$^+$)	455.2 *5*	100	8800.1	(28$^+$)	M1	0.1385	
9512.4	28$^-$	400.0 *5*	100 *17*	9112.4	27$^-$	M1	0.196	
		826.3 *8*	8.3 *22*	8686.1	26$^-$	E2	0.0097 *3*	
9681.6	(30$^+$)	505.3 *3*	100 *16*	9176.3	(29$^+$)	M1	0.105	B(M1)(W.u.)=1.0 *4*
		968.9 *8*	6.8 *32*	8712.7	(28$^+$)	E2	0.0070 *8*	B(E2)(W.u.)=4.0 *23*
9770.2	(30$^+$)	515.2 *8*	100 *25*	9255.2	(29$^+$)	M1	0.0997	
		969.8 *8*	24 *14*	8800.1	(28$^+$)	E2	0.0070 *7*	
9930.6	29$^-$	418.2 *5*	100 *18*	9512.4	28$^-$	M1	0.1737	
		818.2 *8*	<8.8	9112.4	27$^-$	E2	0.0099 *3*	
10231.0	(31$^+$)	549.4 *5*	100 *27*	9681.6	(30$^+$)	M1	0.0842	
		1054.6 *8*	14 *7*	9176.3	(29$^+$)	E2	0.0060 *1*	
10329.2	(31$^+$)	559.0 *8*	100	9770.2	(30$^+$)	M1	0.0804	
10380.4	30$^-$	449.8 *5*	100	9930.6	29$^-$	M1	0.143	
10821.3	(32$^+$)	590.3 *8*	100 *38*	10231.0	(31$^+$)	M1	0.0697	
		1139.7 *8*	<19	9681.6	(30$^+$)	E2	0.0051 *8*	

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Adopted Levels, Gammas (continued)

γ(^{198}Pb) (continued)

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.[#]	α[@]
10869.4	31⁻	489.0 *5*	100	10380.4	30⁻	M1	0.1145
10921.4	(32⁺)	592.2 *8*	100	10329.2	(31⁺)	M1	0.0691
11398.8	32⁻	529.4 *8*	100	10869.4	31⁻	M1	0.0928
11439.0	(33⁺)	617.7 *8*	100 *38*	10821.3	(32⁺)	M1	0.0619
		1208.0 *8*	86 *41*	10231.0	(31⁺)	E2	0.0046 *4*
11970.9	33⁻	572.1 *8*	100	11398.8	32⁻	M1	0.0757
12060.0	(34⁺)	621.0[a] *8*	100[a] *54*	11439.0	(33⁺)	M1	0.0610
		1238.7 *8*	<62.5	10821.3	(32⁺)	E2	0.0044 *3*
12579.9	34⁻	609.0 *8*	100	11970.9	33⁻	M1	0.0642
12699.5	(35⁺)	639.5 *8*	100	12060.0	(34⁺)	M1	0.0565
304.4+x	J+2	304.4 *5*		0+x	J≈(12)		
652.1+x	J+4	347.7 *5*		304.4+x	J+2		
1042.4+x	J+6	390.3 *4*		652.1+x	J+4		
1474.8+x	J+8	432.4 *5*		1042.4+x	J+6		
1948.6+x	J+10	473.8 *5*		1474.8+x	J+8		
2463.2+x	J+12	514.6 *5*		1948.6+x	J+10		
3018.0+x	J+14	554.8 *5*		2463.2+x	J+12		
3651.4+x	J+16	633.4 *5*		3018.0+x	J+14		
4323.2+x	J+18	671.8 *5*		3651.4+x	J+16		
5032.6+x	J+20	709.4 *5*		4323.2+x	J+18		
5779.3+x	J+22	746.7 *5*		5032.6+x	J+20		
6562.0+x	J+24	782.7 *5*		5779.3+x	J+22		
7380.5+x	J+26	818.5 *6*		6562.0+x	J+24		
8231.7+x	J+28	851.2 *7*		7380.5+x	J+26		
9121.7+x	J+30	890.0 *8*		8231.7+x	J+28		
281.4+y	12	281.4 *6*		0+y	10		
605.5+y	14	324.1 *5*		281.4+y	12		
971.1+y	16	365.6 *5*		605.5+y	14		
1377.8+y	18	406.7 *5*		971.1+y	16		
1825.7+y	20	447.9 *5*		1377.8+y	18		
2313.9+y	22	488.2 *5*		1825.7+y	20		
2841.8+y	24	527.9 *5*		2313.9+y	22		
3409.0+y	26	567.2 *5*		2841.8+y	24		
4014.4+y	28	605.4 *5*		3409.0+y	26		
4656.2+y	30	641.8 *5*		4014.4+y	28		
5332.5+y	32	676.3 *5*		4656.2+y	30		
6038.2+y	34	705.7 *5*		5332.5+y	32		
6769.9+y	36	731.7 *5*		6038.2+y	34		
7529.0+y	38	759.1 *6*		6769.9+y	36		
215.8+z	10	215.8 *6*		0+z	8		
475.4+z	12	259.6 *5*		215.8+z	10		
778.0+z	14	302.6 *5*		475.4+z	12		
1122.6+z	16	344.6 *5*		778.0+z	14		
1508.9+z	18	386.3 *5*		1122.6+z	16		
1937.4+z	20	428.5 *5*		1508.9+z	18		
2406.2+z	22	468.8 *5*		1937.4+z	20		
2914.4+z	24	508.2 *5*		2406.2+z	22		
3462.2+z	26	547.8 *5*		2914.4+z	24		
4048.6+z	28	586.4 *5*		3462.2+z	26		
4672.4+z	30	623.8 *5*		4048.6+z	28		
5332.4+z	32	660.0 *5*		4672.4+z	30		
6028.2+z	34	695.8 *6*		5332.4+z	32		

[†] Relative branching for each level.

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Adopted Levels, Gammas (continued)

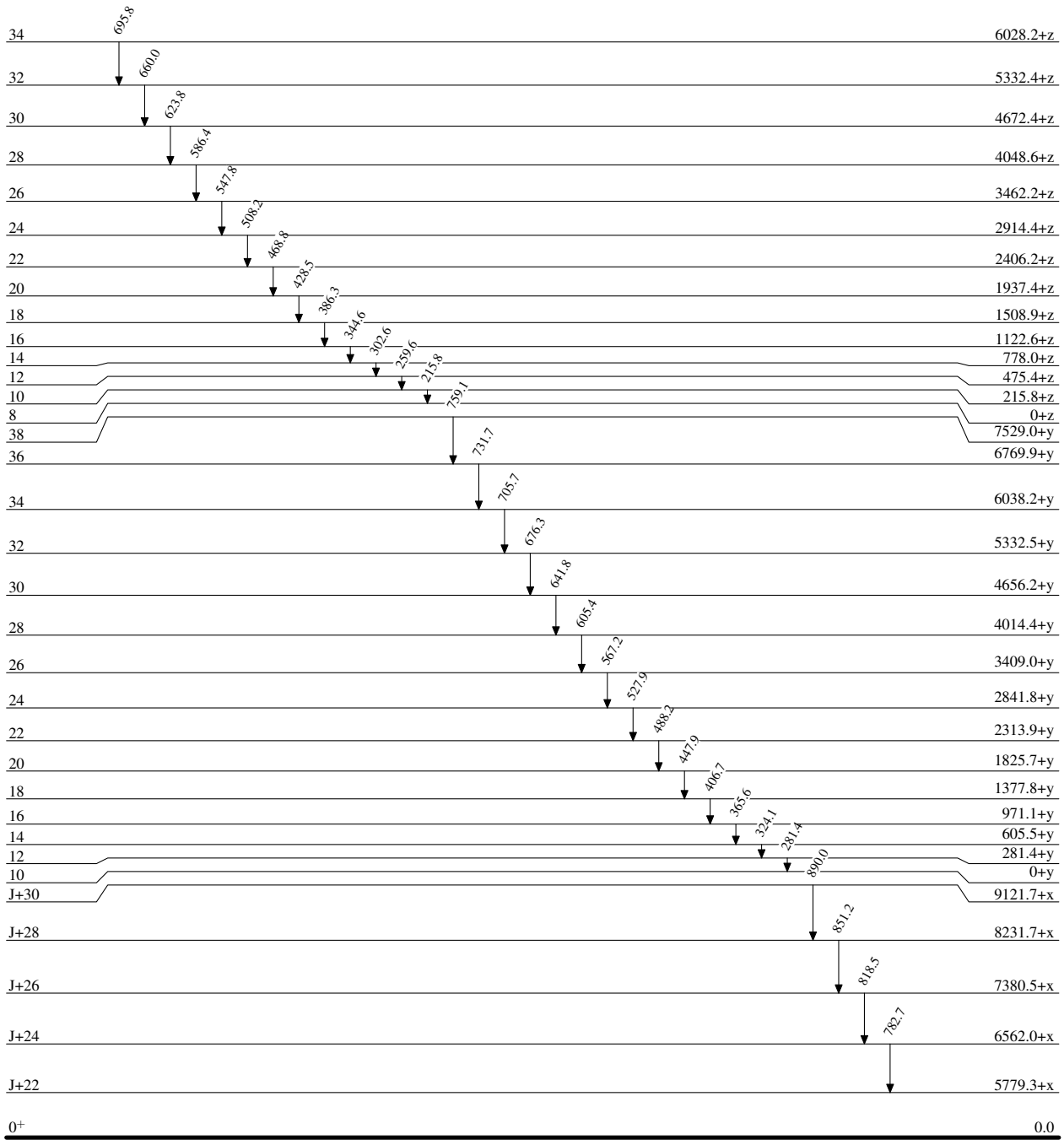
$\gamma(^{198}Pb)$ (continued)

‡ From ^{198}Bi ε decay.
# From DCO ratios with known stretched E2 or M1 transitions, and band structure in (HI,xnγ), except as noted.
@ 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.
& Multiply placed with undivided intensity.
a Multiply placed with intensity suitably divided.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

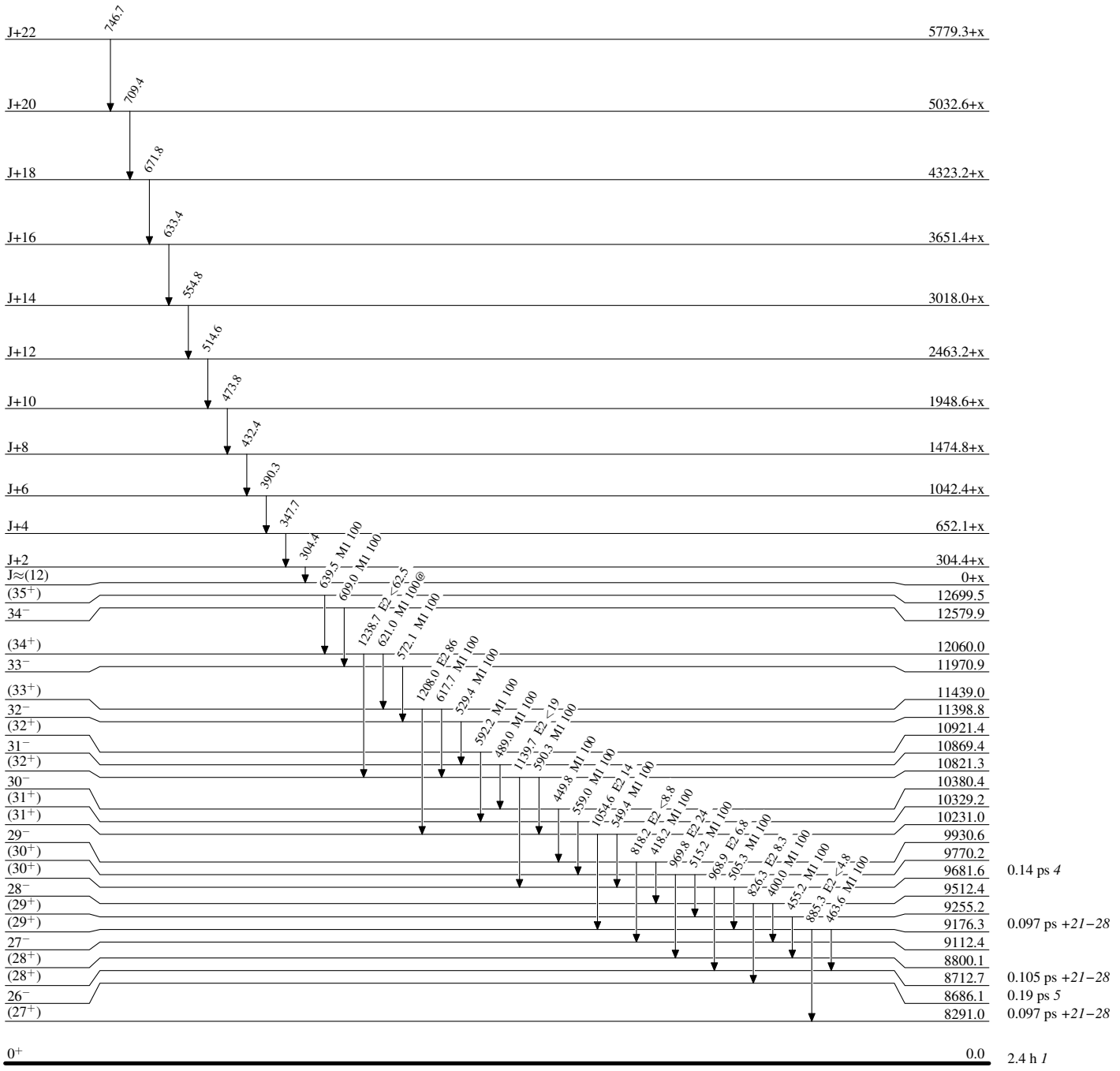


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

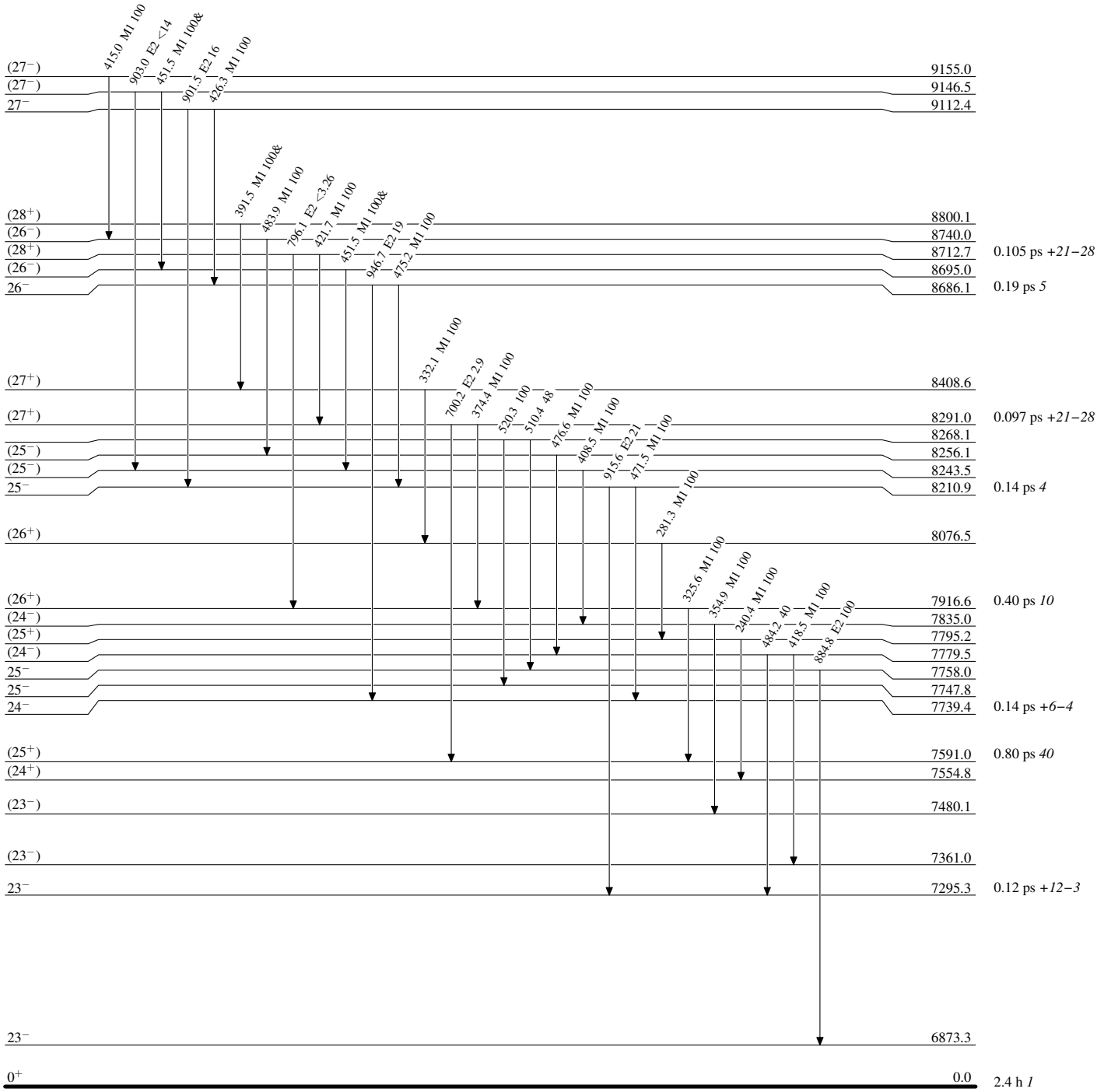


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

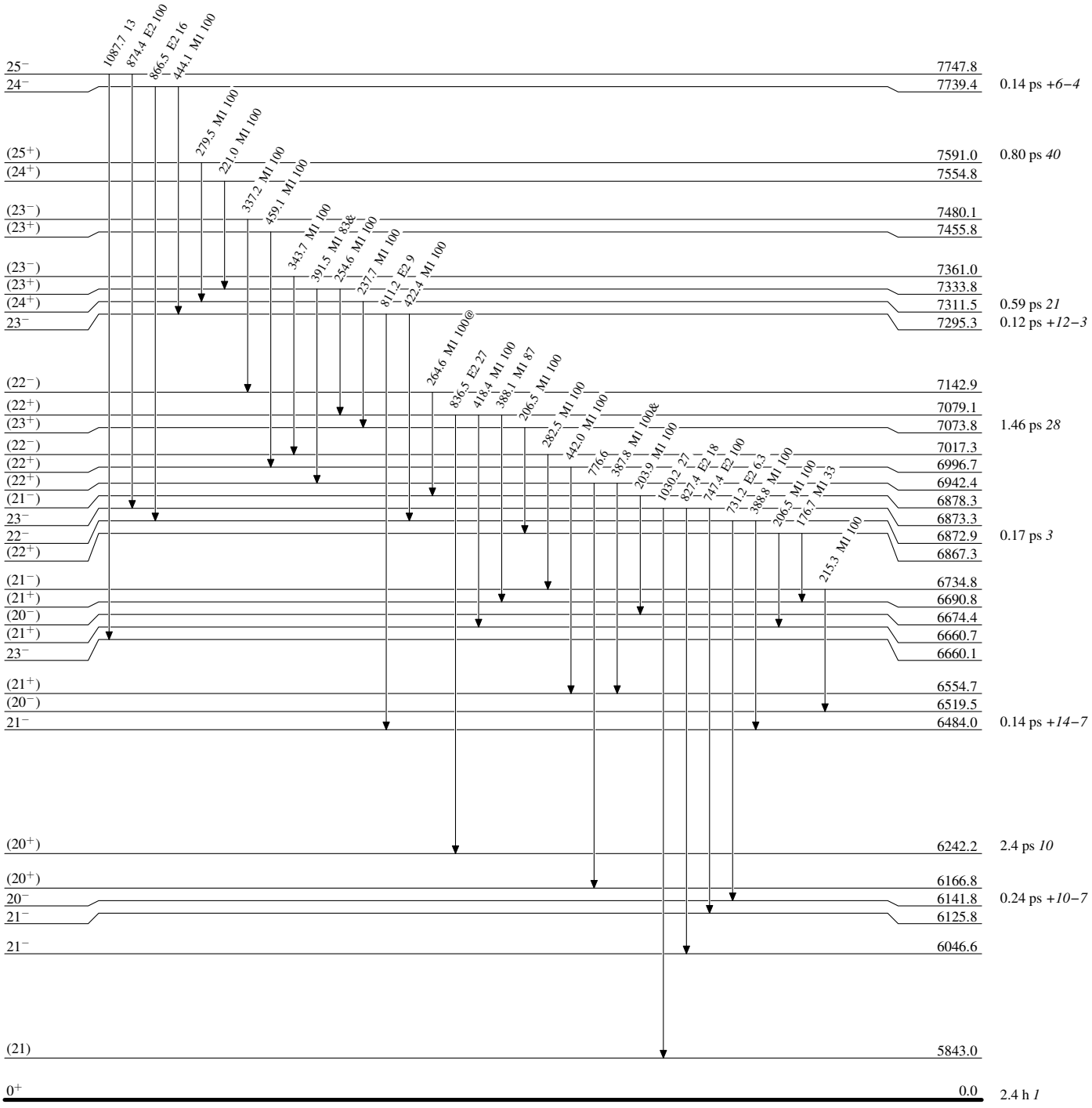


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

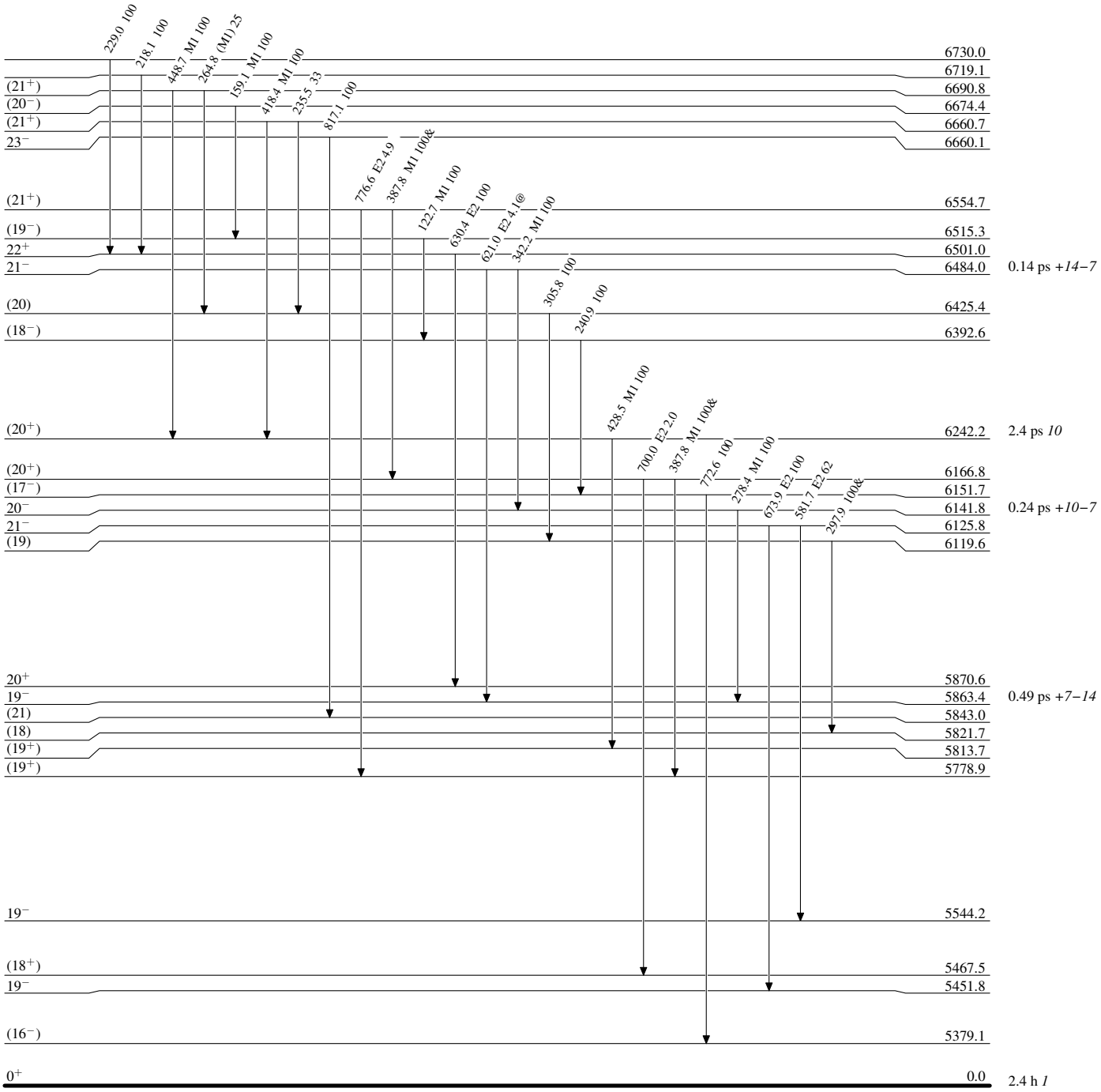


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

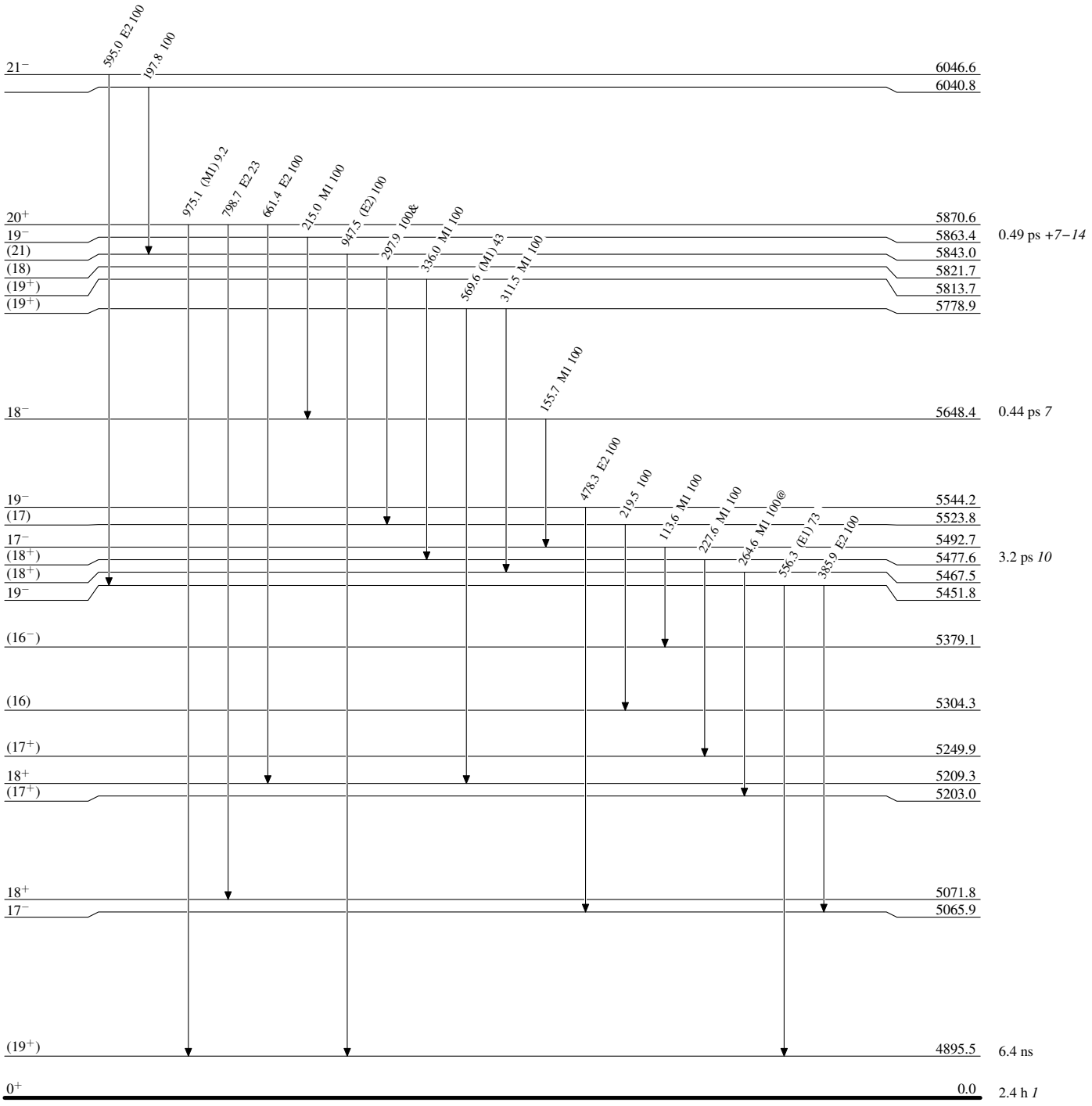


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

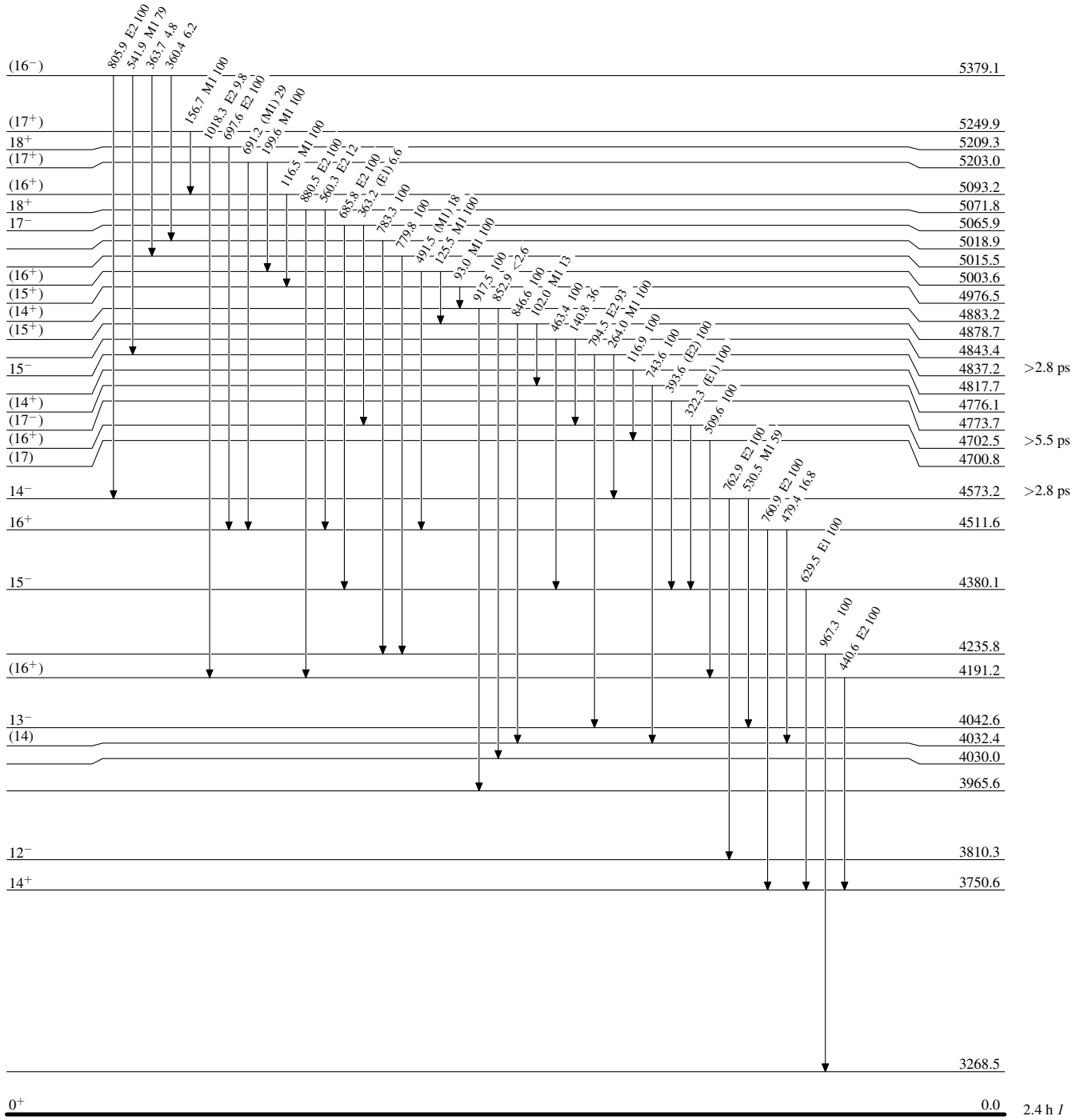


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given
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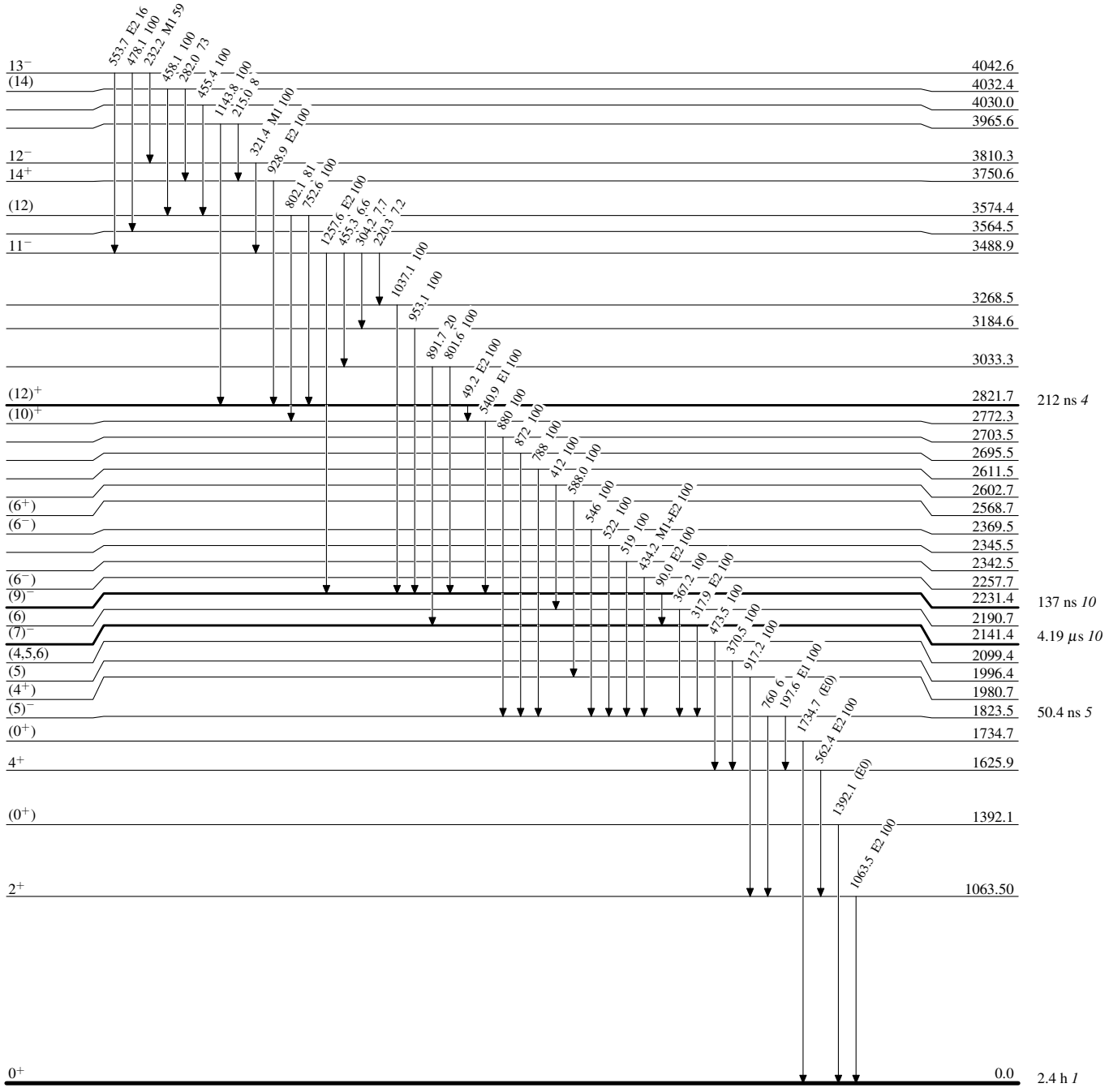
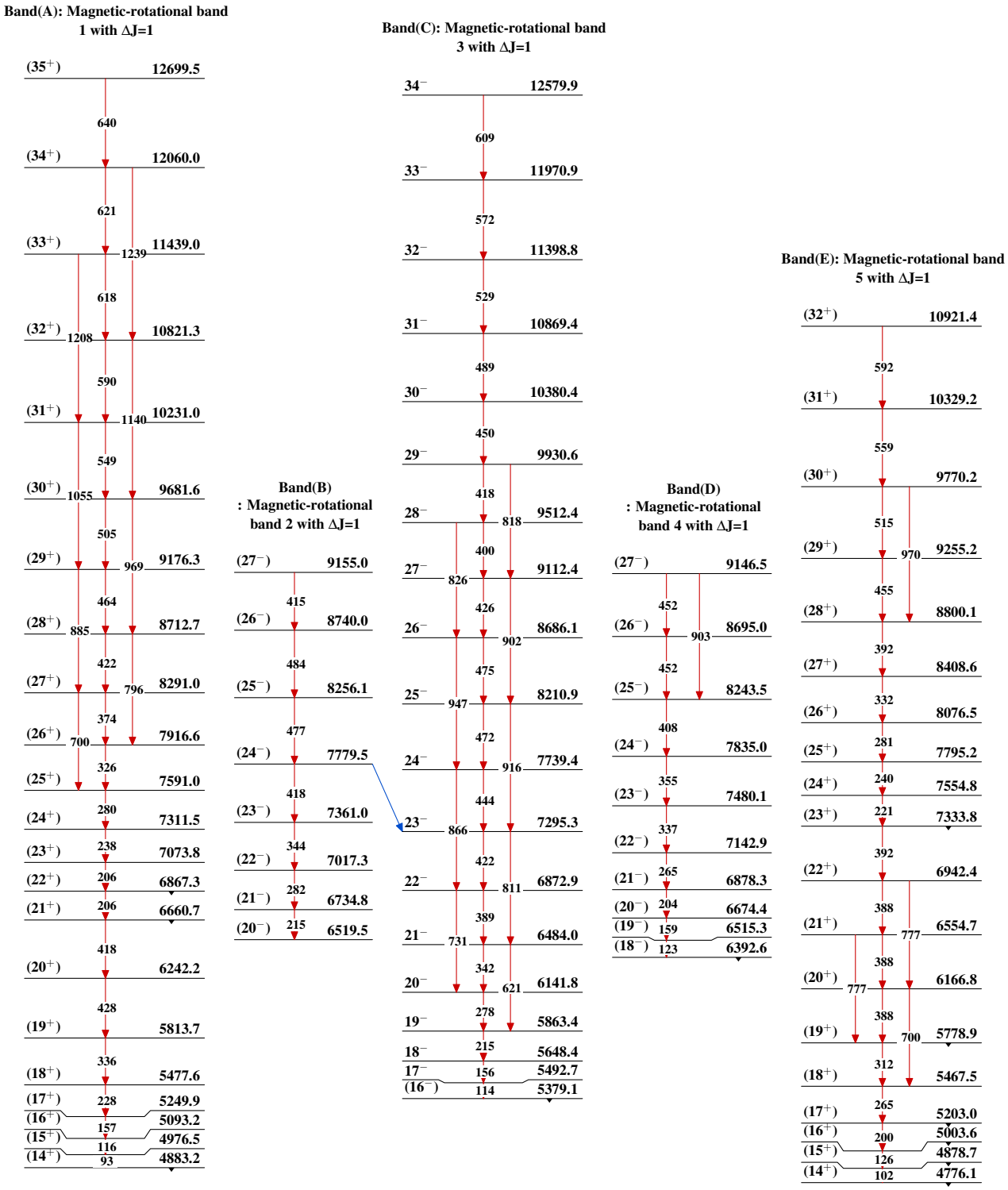
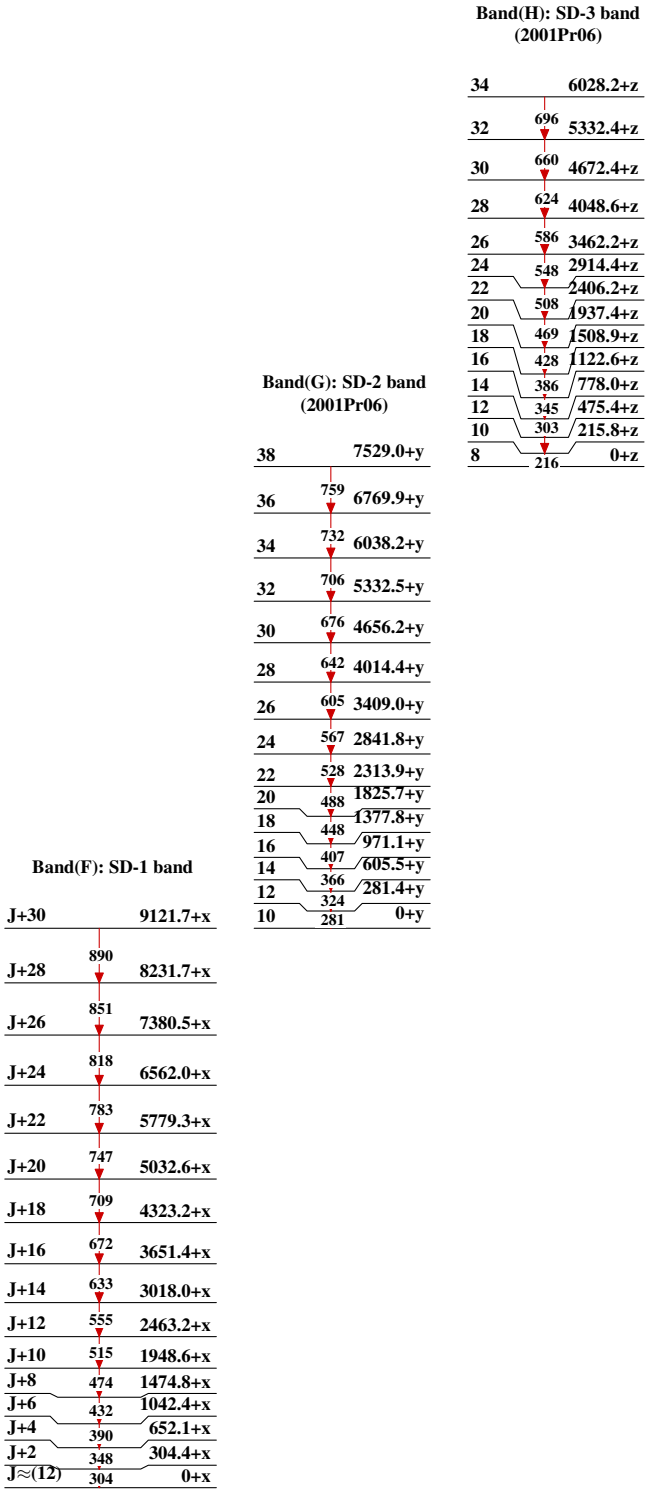


$^{198}_{82}Pb_{116}$

Adopted Levels, Gammas



Adopted Levels, Gammas (continued)



$^{198}_{82}Pb_{116}$