Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 108,1583 (2007)	1-Jun-2007

Q(β^-)=−5000 *9*; S(n)=8395 *7*; S(p)=4704.0 *25*; Q(α)=5215.3 *13* 2012Wa38
Note: Current evaluation has used the following Q record −4978 26 *8395* 7 *4704.0* *25* 5215.3 *13* 2003Au03.

^{208}Po Levels

Configurations: see 1978Be39. These authors have assigned configurations to many of the levels above and including the 8^+ level at 1528.

Cross Reference (XREF) Flags

A	^{208}At ε decay	E	^{208}Pb(α,4nγ)	I	^{208}Pb(π^+,π^-)
B	^{209}Bi(p,2nγ)	F	^{204}Hg(^{9}Be,5nγ)	J	^{212}Rn α decay
C	^{208}Pb(^{3}He,3nγ)	G	^{210}Po(p,t)		
D	^{206}Pb(α,2nγ)	H	^{204}Pb(^{16}O,^{12}C)		

E(level)†	J$^\pi$	T$_{1/2}$#	XREF	Comments
0.0	0^+	2.898 y *2*	ABCDEFG J	%ε+%β^+=0.0040 *4*; %α=99.9960 *4* T$_{1/2}$: from 1970Jo19 (rounded off from 2.8976 *16*. Note: 1 year=365.242 d). Others: 1949Ke10 (3.0 y *2*), 1950Te03 (2.93 y *3*). %ε: from 1993Sa14 in ^{208}Po ε decay. Other:0.00223 (1966Ha29).
686.526 *20*	2^+		ABCDEFG J	J$^\pi$: E2 γ to 0^+.
1263.03 *11*	2^+		ABC G	J$^\pi$: L(p,t)=2.
1271.6 *7*	0^+	465 ps *20*	AB	J$^\pi$: E0 to 0^+. T$_{1/2}$: from ^{209}Bi(p,2nγ).
1346.56 *3*	4^+‡		ABCDEF	
1420.20 *6*	3^+		ABC	J$^\pi$: M1 γ to 2^+. ΔJ=0 from $\gamma(\theta)$ in (p,2nγ).
1524.17 *3*	6^+‡	4.01 ns *25*	ABCDEF	μ=+5.3 *6* (1982Ha16,1983He09,2005St24) T$_{1/2}$: weighted average of values from ^{208}At ε decay (4.0 ns *5*), ^{206}Pb(α,2nγ) (4.8 ns *5*), ^{209}Bi(p,2nγ) (4.8 ns *5*), and ^{204}Hg(^{9}Be,5nγ) (3.74 ns *21*).
1528.22 *4*	8^+	350 ns *20*	ABCDEF	μ=+7.37 *5* (1976Ha56,2005St24); Q=0.90 *4* (1987Ma65,2005St24) J$^\pi$: T$_{1/2}$. μ. Analogy with ^{204}Po, ^{206}Po, and ^{210}Po. T$_{1/2}$: from 1976Ha56 in ^{206}Pb(α,2nγ). Others: 380 ns *50* in ^{209}Bi(p,2nγ) and 380 ns in ε decay. μ: from g factor in (α,2nγ) (1976Ha56). Others: 7.36 *6* (1970Na11), 7.39 *5* (1975ReZW) in (α,2nγ) and 7.30 *7* (1973Na18) in (^{3}He,3nγ). All values are corrected for diamagnetism (−1.9% *2*) and Knight shift (1.4% *4*) (see 1976Ha56). Q: from time-dependent perturbed angular correlation.
1539.0 *10*	2^+		BC G	J$^\pi$: L(p,t)=2.
1583.21 *4*	4^+		ABCD G	J$^\pi$: L(p,t)=4.
1995.46? *16*	2^-,3^-		A	J$^\pi$: E1 γ to 2^+. γ to 3^+.
2041.23 *4*	6^+		ABC	J$^\pi$: see 2526 level.
2149.43? *10*	3^+,4^+,5^+		A	J$^\pi$: M1 γ's to 4^+.
2160.09 *5*	8^+		ABCDE	J$^\pi$: M1 γ to 8^+. ΔJ=0 from $\gamma(\theta)$ in (p,2nγ).
2240.72 *9*	9^+‡		BCDEF	
2280.62? *16*	3^+,4^+,5^+		A	J$^\pi$: M1 γ to 4^+.
2293.59 *5*	6^+		A C	J$^\pi$: M1 γ to 6^+. E2 γ to 4^+. γ to 8^+.
2335.34 *4*	7^+		ABC	J$^\pi$: M1 γ's to 6^+ and 8^+.

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Adopted Levels, Gammas (continued)

^{208}Po Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
2369.22 *4*	7^-	<1.4 ns	ABCDEF	Jπ: E1 γ's to 6^+ and 8^+.
2414.55 *6*	$7^+,8^+$		A	Jπ: M1 γ to 8^+. E1 γ from 7^-.
2507.28 *5*	$6^+,7^+$		A C	Jπ: M1 γ to 6^+. γ from 7^-.
2526.39 *12*	5^+		A	Jπ: M1 γ to 4^+, M1 γ to 2041 and M1 γ to 2041 from 7^+ establish $J^\pi(2526)=5^+$ and $J^\pi(2041)=6^+$.
2554.52 *8*	10^+‡		BCDEF	
2555.89 *4*	7^+		A C	Jπ: M1 γ's to 6^+ and 8^+.
2574.62 *4*	$6^-,7^-$		ABC	Jπ: M1 γ to 7^-. M1 γ from 6^-.
2703.03 *9*	11^-‡	8.04 ns *14*	BCDEF	μ=12.11 *14* Jπ: E3 γ to 8^+. E1 γ to 10^+. Analogy with ^{210}Po. $T_{1/2}$: from (^{9}Be,5nγ). Others:8.0 ns *1* from (α,2nγ), 8 ns *2* from (α,4nγ), and 8.0 ns *5* from (p,2nγ). μ: from g=1.101 *13* in (α,2nγ) (1985Ro07). Other: 12.3 *5* from (α,4nγ).
2800.12 *11*	9^-	<0.35 ns	BC EF	Jπ: E2 γ to 7^-, Q γ from 3524, and γ from 13^- 3545 establish $J^\pi(2800)=9^-$ and $J^\pi(3524)=11^-$.
2884.24 *5*	5^-		A	Jπ: E1 γ's to 4^+, 6^+.
2926.68 *5*	5^-		A	Jπ: E1 γ to 4^+. M1 γ from 3682, 6^-.
3112.94 *15*	7^-		A	Jπ: M1 γ to π=−. 1589γ to 6^+ and 1585γ to 8^+ must Be E1, not E2.
3144.73 *10*	$6^+,7^+,8^+$		A	Jπ: M1 γ to π=+. 1620γ to 6^+ and 1616γ to 8^+ must Be E2, not E1.
3201.61 *6*	$6^+,7^+,8^+$		A	Jπ: M1 γ to $5^+,6^+,7^+$. γ to 7^-.
3399.83 *12*	12^-‡	<1.0 ns	BC EF	
3524.90 *22*	11^-		F	Jπ: see 2800 level.
3535.28 *7*	$5^+,6^+$		A	Jπ: M1 γ's to $6^+,7^+,8^+$. γ's to 4^+.
3545.53 *12*	13^-‡	0.76 ns *14*	EF	
3553.49 *7*	5^-		A	Jπ: M1 γ to 2884, 5^-. 2029γ to 6^+ must Be E1, not E2. γ's to 4^+.
3564.53 *4*	6^-		A	Jπ: M1 γ to 7^-. 1038γ to 5^+ must Be E1, not E2.
3682.54 *6*	6^-		A	Jπ: M1 γ to 2884, 5^-. 1127γ to 7^+ must Be E1, not E2.
3808.03 *7*	$6^-,7^-$		A	Jπ: M1 γ to 7^-. γ to 5^-.
3900.63 *24*	13^-		EF	Jπ: stretched M1 γ to 12^-. No γ's to J<12.
4019.17 *9*	$(5,6,7)^-$		A	Jπ: E1 γ to π=+. 1725 and 2495γ's to 6^+ are thus probably E1.
4057.31 *15*	14^-‡	<0.7 ns	EF	
4061.85 *15*	15^-‡		EF	
4166.68 *7*	7^-		A	Jπ: M1 γ to 7^-. E1 γ to 6^+. Strong 2638.6γ to 8^+ rules out 6^-.
4177.33 *16*	13^-	<0.35 ns	F	Jπ: M1, ΔJ=0 γ to 13^-.
4251.43 *12*	$(5,6,7)^-$		A	Jπ: E2 γ to 5^-, γ's to 4^+ and 8^+.
4307.14 *18*	14^-		F	Jπ: M1 γ to 13^-. 612.6γ from 15^+ is not M2 or E3 (from $T_{1/2}$(4920 level)).
4452.19 *19*	$14^-,15^-,16^-$		F	Jπ: M1 γ to 15^-. In (^{9}Be,5nγ), 1997Po04 give ΔJ=0 for the 390γ to the 4062, 15^- level; however, they also give $J^\pi(4452)=(14^-)$.
4509.36 *11*	$(5^+,6,7^+)$		A	Jπ: γ's to 5^+ and 7^+.
4660.32 *16*	15^-‡	<0.7 ns	EF	
4804.72 *19*	15^-		F	Jπ: dipole γ to 14^-. E1 γ from 4918, 16^+.
4913.5 *3*	12,13,14		F	Jπ: dipole γ to 13^-.
4918.15 *16*	16^+‡	<0.35 ns	EF	
4919.77 *20*	$(14,15,16^-)$	<1.0 ns	F	Jπ: γ's to 14^- and 15^-. (M1) γ from 5409 (J=15,16,17).
4920.13 *17*	16^-	<0.7 ns	F	Jπ: stretched M1 γ to 15^-. No γ's to J<15.
5102.59 *22*	$15^+,16^+,17^+$	<1.4 ns	EF	Jπ: M1 γ to 16^+.
5116.96 *18*	17^+‡	<0.7 ns	EF	
5262.23 *19*	14^+ to 18^+	<1.4 ns	F	Jπ: M1 γ to level with $J^\pi=15^+$ to 17^+.

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Adopted Levels, Gammas (continued)

^{208}Po Levels (continued)

E(level)[†]	Jπ	$T_{1/2}$[#]	XREF	Comments
5327.0 *3*	14^-,15,16,17,18^-	<7 ns	F	Jπ: γ to 16^-.
5409.15 *17*	$15^{(+)}$,$16^{(+)}$,$17^{(+)}$	<0.35 ns	F	Jπ: (M1+E2) γ to 16^+. D γ to 16^-.
5465.22 *22*	15,16,17,18^-		F	Jπ: γ to 16^-. γ from 6509 rules out 14^-.
5475.28 *19*	18^+‡	<0.35 ns	EF	
5861.46 *21*	16^+,17^+,18^+	<0.7 ns	F	Jπ: M1 γ to 17^+.
5900.11 *20*	19^+‡	<0.35 ns	EF	
5921.34 *19*	15^+,16,17,18,19^+	<0.7 ns	F	Jπ: γ to 17^+.
5977.4 *3*	16^+,17,18,19,20^+	<0.35 ns	F	Jπ: γ to 18^+.
6021.30 *21*	15^+ to 19^+	<0.35 ns	F	Jπ: γ to 17^+. M1 γ to π=+.
6051.86 *24*		<0.7 ns	F	
6486.43 *25*	15,16,17	<0.7 ns	F	Jπ: γ's to 16^+ and 16^-.
6509.60 *22*	$16^{(+)}$,$17^{(+)}$,$18^{(+)}$	<0.7 ns	F	Jπ: D γ to 17^+. (M1) γ to π=+.
6521.23 *19*	17^+,18,19,20^+	<14 ns	F	Jπ: γ's to 18^+ and 19^+.
6598.30 *25*		<14 ns	F	
6620.02 *22*	(19^-)	<14 ns	F	
6641.02 *22*	19^+	<0.7 ns	F	Jπ: M1 ΔJ=0 γ to 19^+.
6647.7 *5*		<14 ns	F	
6847.63 *22*	18^-,19^-,20^-	<0.7 ns	F	Jπ: E1 γ to 19^+.
6898.20 *23*		<0.7 ns	F	
6914.6 *5*			F	
6950.8 *3*	17^+ to 21^+	<14 ns	F	Jπ: E1 γ to 6847, 18^-,19^-,20^-.
7475.50 *25*		<7 ns	F	
7653.1 *3*		<14 ns	F	
7705.3 *3*		<0.35 ns	F	
7784.7 *3*		<0.35 ns	F	
7932.5 *3*		<7 ns	F	
8023.0 *4*		<7 ns	F	
8106.5 *4*		<0.7 ns	F	
8394.8 *4*		<0.7 ns	F	
8730.8 *4*			F	
8835.5 *4*		<1.4 ns	F	
8895.1 *4*		<0.7 ns	F	
8991.9 *5*			F	
9032.8 *4*			F	
9160.6 *5*			F	
9643.7 *5*			F	
32.46×10^3 *17*	(0^+)		I	Jπ: interpreted by 1985Mo03 as the double isobaric state of the ^{208}Pb ground state. Γ=850 *400*.

[†] From a least-squares fit to the Eγ data.
‡ From 1978Be39 in ^{208}Pb(α,4nγ) based on γ mult, excitation function and γ(θ).
[#] From (^{9}Be,5nγ), except where noted otherwise.

Adopted Levels, Gammas (continued)

$\gamma(^{208}Po)$

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	$I_{(\gamma+ce)}$[†#]	Comments
686.526	2^+	686.527 *20*		0.0	0^+	E2		0.0159		
1263.03	2^+	576.50 *20*	100 *11*	686.526	2^+	M1(+E2)	≤0.48	0.085 *7*		
		1263.03 *13*	64 *7*	0.0	0^+	E2				
1271.6	0^+	585.1		686.526	2^+	[E2]			<30[e]	B(E2)(W.u.)<0.06 E_γ: transition not seen. Energy from energy level difference. $I_{(\gamma+ce)}$: I(γ+ce)(585 to 2^+)/I(γ+ce)(1272 to 0^+)≤0.30 (1985Ra21).
		1271.6[a] *8*		0.0	0^+	E0			100[e]	
1346.56	4^+	660.040 *17*		686.526	2^+	E2		0.0173		
1420.20	3^+	733.68 *5*		686.526	2^+	M1+E2	0.71 *17*	0.037 *4*		
1524.17	6^+	177.595 *17*		1346.56	4^+	E2		0.736		B(E2)(W.u.)=5.6 *4*
1528.22	8^+	4.02 *3*		1524.17	6^+	E2		3.30×10^6		B(E2)(W.u.)=6.4 *5*
1539.0	2^+	852.5[a]		686.526	2^+	M1+E2	0.70 *20*	0.026 *3*		
		1539.0[ai]		0.0	0^+					
1583.21	4^+	163.5 *4*	1.5 *5*	1420.20	3^+	[M1,E2]		1.9 *9*		
		236.66 *10*	10.2 *9*	1346.56	4^+	M1(+E2)	≤0.39	0.96 *5*		
		896.66 *4*	100 *4*	686.526	2^+	E2		0.0092		
1995.46?	$2^-,3^-$	574.5 *10*	64 *12*	1420.20	3^+					
		1308.95 *16*	100 *12*	686.526	2^+	E1				
2041.23	6^+	517.055 *20*	100 *10*	1524.17	6^+	M1+E2	0.37 *5*	0.111 *3*		
2149.43?	$3^+,4^+,5^+$	566.24 *9*	85 *9*	1583.21	4^+	M1+E2	0.7 *2*	0.073 *19*		
		802.4 *5*	100 *6*	1346.56	4^+	M1(+E2)	≤0.3	0.038 *1*		
2160.09	8^+	631.83 *4*		1528.22	8^+	M1+E2	0.42 *11*	0.064 *3*		
2240.72	9^+	712.5[b] *1*		1528.22	8^+	M1+E2	−0.29 *18*	0.049 *3*		
2280.62?	$3^+,4^+,5^+$	934.05 *15*		1346.56	4^+	M1+E2	0.6 *4*	0.022 *4*		
2293.59	6^+	252.35 *12*	38.0 *28*	2041.23	6^+					
		710.5 *6*	18.3 *24*	1583.21	4^+					
		765.5 *10*	6.1 *24*	1528.22	8^+					
		769.34 *5*	100 *6*	1524.17	6^+	M1(+E2)	≤0.6	0.039 *3*		
		947.10 *5*	83 *4*	1346.56	4^+	E2		0.0083		
2335.34	7^+	294.07 *5*	18.2 *10*	2041.23	6^+	M1		0.558		
		807.137 *25*	100 *4*	1528.22	8^+	M1(+E2)	≤0.27	0.0373 *9*		
		811.18 *9*	20.7 *25*	1524.17	6^+	M1+E2	0.90 *24*	0.026 *4*		
2369.22	7^-	327.8 *5*	1.49 *20*	2041.23	6^+					
		841.2 *3*	4.31 *25*	1528.22	8^+	E1		0.0373		
		845.044 *20*	100 *5*	1524.17	6^+	E1		0.0071		
2414.55	$7^+,8^+$	254.5 *5*	12 *4*	2160.09	8^+					
		373.20 *15*	18.4 *24*	2041.23	6^+					
		886.32 *5*	100 *6*	1528.22	8^+	M1+E2	0.6 *3*	0.023 *5*		

$^{208}_{84}Po_{124}$-4

Adopted Levels, Gammas (continued)

γ(^{208}Po) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	Comments
2507.28	6$^+$,7$^+$	172.7 *7*	2.6 *7*	2335.34	7$^+$				
		213.65 *15*	7.9 *13*	2293.59	6$^+$	M1+E2	0.6 *3*	1.09 *18*	
		983.12 *4*	100 *5*	1524.17	6$^+$	M1+E2	0.35 *15*	0.0212 *12*	
2526.39	5$^+$	485.10 *25*	47 *3*	2041.23	6$^+$	M1		0.144	
		1002.5 *7*	34 *4*	1524.17	6$^+$	E2(+M1)	>1.3	0.010 *3*	
		1180.00 *15*	100 *14*	1346.56	4$^+$	M1(+E2)	≤0.7	0.0129 *15*	
2554.52	10$^+$	313.8[b] *1*	100.0[d] *19*	2240.72	9$^+$	M1+E2	−0.09 *1*	0.465	
		1026.3[c] *1*	88.7[d] *19*	1528.22	8$^+$	E2		0.0071	
2555.89	7$^+$	262.60 *12*	2.3 *6*	2293.59	6$^+$	M1(+E2)	≤0.95	0.62 *14*	
		395.74 *5*	7.3 *5*	2160.09	8$^+$	M1+E2	0.43 *15*	0.218 *17*	
		1027.662 *24*	100 *4*	1528.22	8$^+$	M1+E2	0.42 *+20−25*	0.0185 *17*	
2574.62	6$^-$,7$^-$	205.40 *3*		2369.22	7$^-$	M1(+E2)	≤0.27	1.47 *4*	
2703.03	11$^-$	148.5[b] *1*	100[d] *3*	2554.52	10$^+$	E1		0.172	B(E1)(W.u.)=1.6×10^{-4} *4*
		1174.8[c] *1*	49[d] *3*	1528.22	8$^+$	E3		0.0119	B(E3)(W.u.)=5.5 *14* I_γ: from (^{9}Be,5nγ). Other:40 (p,2nγ), 43 (α,4nγ), (^{3}He,3nγ).
2800.12	9$^-$	430.9[c] *1*		2369.22	7$^-$	E2		0.0469	
2884.24	5$^-$	1360.12 *7*	54 *5*	1524.17	6$^+$	E1			
		1537.71 *6*	100 *5*	1346.56	4$^+$	E1			
2926.68	5$^-$	400.7 *4*	15 *6*	2526.39	5$^+$				
		1343.44 *5*	100 *4*	1583.21	4$^+$	E1			
		1402.8 *4*	5.6 *6*	1524.17	6$^+$				
3112.94	7$^-$	538.0 *3*	100 *10*	2574.62	6$^-$,7$^-$	M1+E2	1.0 *3*	0.070 *13*	
		605.0 *10*	33 *8*	2507.28	6$^+$,7$^+$				
		1071.8 *5*	77 *10*	2041.23	6$^+$				
		1584.6 *6*	67 *21*	1528.22	8$^+$	(E1)			Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		1588.6 *5*	64 *10*	1524.17	6$^+$	(E1)			Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
3144.73	6$^+$,7$^+$,8$^+$	637.46 *9*	78 *6*	2507.28	6$^+$,7$^+$	M1+E2	1.3 *+17−6*	0.030 *13*	
		729.5 *5*	28 *6*	2414.55	7$^+$,8$^+$				
		1616.4 *5*	100 *12*	1528.22	8$^+$	(E2)			Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=no.
		1620.5 *5*	32 *5*	1524.17	6$^+$	(E2)			Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=no.
3201.61	6$^+$,7$^+$,8$^+$	694.33 *4*	100 *6*	2507.28	6$^+$,7$^+$	M1+E2	1.32 *21*	0.030 *4*	
		832.8 *5*	3.8 *5*	2369.22	7$^-$				
		1160.32 *10*	6.2 *11*	2041.23	6$^+$	E2(+M1)	≥3.5	0.0059 *4*	
3399.83	12$^-$	696.8[b] *1*		2703.03	11$^-$	M1+E2	−0.21 *5*	0.0542 *8*	
3524.90	11$^-$	724.8[b] *2*		2800.12	9$^-$	Q			

$^{208}_{84}Po_{124}$-5

Adopted Levels, Gammas (continued)

γ(^{208}Po) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	$I_{(\gamma+ce)}$[†#]	Comments
3535.28	5$^+$,6$^+$	333.67 *3*	100 *6*	3201.61	6$^+$,7$^+$,8$^+$	M1(+E2)	≤0.45	0.370 *25*		
		390.3 *4*	18.1 *23*	3144.73	6$^+$,7$^+$,8$^+$	M1(+E2)	≤0.65	0.23 *3*		
		1951.0 *10*	5.1 *14*	1583.21	4$^+$					
		2011.5 *5*	5.1 *14*	1524.17	6$^+$					
3545.53	13$^-$	21.0[b@]		3524.90	11$^-$				≈5.3[f]	
		145.7[b] *1*	100.0[d] *22*	3399.83	12$^-$	M1		3.96		
		842.5[b] *1*	32[d] *5*	2703.03	11$^-$	E2		0.0104		
3553.49	5$^-$	626.63 *9*	28.3 *19*	2926.68	5$^-$	M1(+E2)	≤0.35	0.71 *3*		
		669.45 *12*	60 *16*	2884.24	5$^-$	M1(+E2)	≤0.93	0.52 *10*		
		1184.5 *5*	6 *3*	2369.22	7$^-$					
		1259.3 *7*	5.7 *19*	2293.59	6$^+$					
		1971.0 *6*	6.0 *13*	1583.21	4$^+$					
		2029.33 *10*	100 *6*	1524.17	6$^+$	(E1)				Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		2207.10 *20*	31.4 *19*	1346.56	4$^+$					
3564.53	6$^-$	451.40 *20*	5.6 *6*	3112.94	7$^-$	M1(+E2)	≤0.61	0.157 *18*		
		989.94 *3*	100 *7*	2574.62	6$^-$,7$^-$	M1+E2	≤0.38	0.0216 *10*		
		1008.60 *4*	20.9 *22*	2555.89	7$^+$	E1				
		1038.3 *3*	6.1 *5*	2526.39	5$^+$	(E1+M2)	0.27 *7*			Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		1057.0 *5*	1.05 *14*	2507.28	6$^+$,7$^+$					
		1195.31 *5*	13.7 *7*	2369.22	7$^-$	M1+E2	0.96 *20*	0.0099 *10*		
		1229.18 *3*	29.1 *22*	2335.34	7$^+$	E1				
		1270.5 *5*	0.9 *3*	2293.59	6$^+$					
		1523.37 *25*	1.72 *18*	2041.23	6$^+$					
3682.54	6$^-$	755.89 *4*	100 *6*	2926.68	5$^-$	M1(+E2)	≤0.65	0.040 *5*		
		798.68 *25*	39 *4*	2884.24	5$^-$	M1(+E2)	≤0.6	0.036 *3*		
		1107.73 *7*	37.0 *20*	2574.62	6$^-$,7$^-$	M1+E2	1.2 *5*	0.0111 *23*		
		1126.80 *25*	10.4 *20*	2555.89	7$^+$	(E1)				Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		1641.60 *25*	13.0 *20*	2041.23	6$^+$	(E1)				Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		2158.5 *5*	12.6 *13*	1524.17	6$^+$					
		2336.30 *25*	31 *3*	1346.56	4$^+$	[M2]				
3808.03	6$^-$,7$^-$	923.96 *20*	37.0 *25*	2884.24	5$^-$					
		1234.0 *6*	26 *5*	2574.62	6$^-$,7$^-$					
		1300.5 *3*	11.8 *25*	2507.28	6$^+$,7$^+$					
		1438.80 *6*	100 *5*	2369.22	7$^-$	M1+E2	0.8 *5*	0.0069 *13*		
		1472.54 *19*	16.1 *19*	2335.34	7$^+$	(E1)				Mult.: α(K)exp allows E1 or E2. Placement in the level scheme requires Δπ=yes.
		2284.0 *5*	11.1 *14*	1524.17	6$^+$					

Adopted Levels, Gammas (continued)

γ(^{208}Po) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	$I_{(\gamma+ce)}$[†#]
3900.63	13^-	500.8[b] *2*	100	3399.83	12^-	M1		0.133	
4019.17	$(5,6,7)^-$	1511.89 *8*	51 *4*	2507.28	$6^+,7^+$	E1			
		1725.2 *6*	11.6 *19*	2293.59	6^+				
		2494.8 *5*	100 *10*	1524.17	6^+				
4057.31	14^-	511.8[b] *1*		3545.53	13^-	M1(+E2)	≤0.81	0.107 *19*	
4061.85	15^-	4.5[b@]		4057.31	14^-				78[f] *4*
		516.3[b] *1*	100[d] *4*	3545.53	13^-	E2		0.030	
4166.68	7^-	1282.4 *3*	25.8 *24*	2884.24	5^-				
		1752.16 *20*	10.8 *10*	2414.55	$7^+,8^+$	E1			
		1797.42 *10*	37.6 *24*	2369.22	7^-	M1(+E2)	≤0.87		
		1831.8 *5*	5.4 *7*	2335.34	7^+				
		1872.88 *10*	25.4 *19*	2293.59	6^+	E1			
		2125.65 *12*	42 *3*	2041.23	6^+	E1			
		2638.6 *3*	100 *7*	1528.22	8^+				
		2643.3 *5*	25.4 *24*	1524.17	6^+				
4177.33	13^-	631.8[b] *1*		3545.53	13^-	M1+E2	−0.62 *15*	0.057 *5*	
4251.43	$(5,6,7)^-$	697.94 *12*	100 *6*	3553.49	5^-	E2		0.0154	
		716.7 *10*	9.4 *15*	3535.28	$5^+,6^+$				
		1049.2 *5*	4.7 *5*	3201.61	$6^+,7^+,8^+$				
		1324.6 *5*	5.8 *14*	2926.68	5^-				
		1916.5 *4*	9.6 *8*	2335.34	7^+				
		2091.3 *10*	≈7	2160.09	8^+				
		2668.2 *5*	4.1 *10*	1583.21	4^+				
4307.14	14^-	761.6[b] *2*		3545.53	13^-	M1		0.0444	
4452.19	$14^-,15^-,16^-$	390.2[b] *2*	100[d] *25*	4061.85	15^-	M1+E2		0.16 *10*	
		395.0[b] *2*	50[d]	4057.31	14^-				
4509.36	$(5^+,6,7^+)$	1983.8 *5*	25 *4*	2526.39	5^+				
		2094.75 *10*	100 *7*	2414.55	$7^+,8^+$	E1,E2			
		2174.4 *5*	20 *6*	2335.34	7^+				
		2216.4 *5*	34 *14*	2293.59	6^+				
		2467.7 *5*	50 *5*	2041.23	6^+				
4660.32	15^-	353.2 *2*	6.4 *11*	4307.14	14^-				
		603.0 *1*	100.0 *11*	4057.31	14^-	M1(+E2)	−0.03 *4*	0.0817	
4804.72	15^-	352.5 *2*	64 *33*	4452.19	$14^-,15^-,16^-$				
		747.4 *2*	100 *33*	4057.31	14^-	D			
4913.5	12,13,14	736.2 *2*		4177.33	13^-	D			
4918.15	16^+	113.4 *2*	2.4 *12*	4804.72	15^-	E1			
		257.8 *1*	18.3 *12*	4660.32	15^-	E1		0.045	
		856.3 *1*	100.0 *12*	4061.85	15^-	E1		0.0036	

$^{208}_{84}Po_{124}$-7

Adopted Levels, Gammas (continued)

γ(^{208}Po) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	$I_{(\gamma+ce)}$[†#]	Comments
4918.15	16^+	1372.6 *4*	2.4 *12*	3545.53	13^-	E3		0.0085		
4919.77	(14,15,16^-)	259.5 *2*	22 *11*	4660.32	15^-					
		612.6 *2*	100 *11*	4307.14	14^-					
4920.13	16^-	858.3 *1*		4061.85	15^-	M1(+E2)	−0.1 *1*	0.032 *1*		
5102.59	15^+,16^+,17^+	184.4 *2*		4918.15	16^+	M1				
5116.96	17^+	198.8 *1*		4918.15	16^+	M1		1.65		
5262.23	14^+ to 18^+	159.6 *2*	100 *8*	5102.59	15^+,16^+,17^+	M1		3.06		
		342.5 *2*	67 *8*	4919.77	(14,15,16^-)					
5327.0	14^-,15,16,17,18^-	406.9 *2*		4920.13	16^-					
5409.15	$15^{(+)}$,$16^{(+)}$,$17^{(+)}$	147.0		5262.23	14^+ to 18^+				17 *3*	
		489.0 *2*		4920.13	16^-	(E1)[&]			50 *8*	
		491.0 *1*		4918.15	16^+	(M1+E2)		0.09 *5*	100 *8*	
5465.22	15,16,17,18^-	203.0 *2*	≈67	5262.23	14^+ to 18^+					
		545.1 *2*	≈100	4920.13	16^-					
5475.28	18^+	358.3 *1*		5116.96	17^+	M1(+E2)	−0.03 *3*	0.326		
5861.46	16^+,17^+,18^+	744.5 *2*		5116.96	17^+	M1+E2				
5900.11	19^+	424.8 *1*	100	5475.28	18^+	M1(+E2)	−0.09 *9*	0.206		
5921.34	15^+,16,17,18,19^+	512.2 *1*	100 *7*	5409.15	$15^{(+)}$,$16^{(+)}$,$17^{(+)}$					
		804.4 *2*	28 *7*	5116.96	17^+					
5977.4	16^+,17,18,19,20^+	502.1 *2*		5475.28	18^+					
6021.30	15^+ to 19^+	759.1 *2*	100.0 *23*	5262.23	14^+ to 18^+	M1				
		904.3 *2*	16.0 *23*	5116.96	17^+					
6051.86		789.6 *2*		5262.23	14^+ to 18^+					
6486.43	15,16,17	1077.0 *4*	100 *10*	5409.15	$15^{(+)}$,$16^{(+)}$,$17^{(+)}$					Mult.: ΔJ=0 from γ(θ).
		1224.1 *4*	52 *10*	5262.23	14^+ to 18^+					
		1566.7 *4*	30 *8*	4920.13	16^-					
		1568.3 *4*	18 *4*	4918.15	16^+					
6509.60	$16^{(+)}$,$17^{(+)}$,$18^{(+)}$	457.7 *2*	100 *9*	6051.86						
		488.3 *2*	29 *5*	6021.30	15^+ to 19^+	(M1)[&]				
		648.1 *2*	10 *3*	5861.46	16^+,17^+,18^+					
		1045		5465.22	15,16,17,18^-					
		1392.8 *5*	29 *5*	5116.96	17^+	D				
6521.23	17^+,18,19,20^+	11.4[@]		6509.60	$16^{(+)}$,$17^{(+)}$,$18^{(+)}$				≈100	
		35.2[@]		6486.43	15,16,17				≈59	
		599.9 *1*		5921.34	15^+,16,17,18,19^+				≈62	
		621.1 *2*		5900.11	19^+				≈34	
		659.8 *2*		5861.46	16^+,17^+,18^+				≈31	
		1045.9 *4*		5475.28	18^+				≈25	
6598.30		77.0[@]		6521.23	17^+,18,19,20^+					
6620.02	(19^-)	98.8 *1*		6521.23	17^+,18,19,20^+	E1				

$^{208}_{84}Po_{124}$-8

Adopted Levels, Gammas (continued)

γ(^{208}Po) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†‡]	E_f	J_f^π	Mult.[g]	δ[g]	α[h]	Comments
6641.02	19$^+$	740.9 *1*	100.0 *11*	5900.11	19$^+$	M1+E2			Mult.: ΔJ=0 from γ(θ).
		1165.8 *4*	9.9 *11*	5475.28	18$^+$	D			
6647.7		27.7[@]		6620.02	(19$^-$)				
6847.63	18$^-$,19$^-$,20$^-$	206.6 *1*	100 *5*	6641.02	19$^+$	E1		0.077	
		326.4 *2*	20 *5*	6521.23	17$^+$,18,19,20$^+$	[E1]		0.026	
6898.20		278.2 *1*	100 *3*	6620.02	(19$^-$)	M1+E2	+0.07 *5*	0.647	
		299.9 *1*	61 *3*	6598.30		D			
6914.6		1014.5 *4*		5900.11	19$^+$				
6950.8	17$^+$ to 21$^+$	103.1 *2*		6847.63	18$^-$,19$^-$,20$^-$	E1			
7475.50		577.3 *1*		6898.20					
7653.1		702.3 *2*		6950.8	17$^+$ to 21$^+$				
7705.3		754.5 *2*		6950.8	17$^+$ to 21$^+$	M1			
7784.7		886.5 *1*	100 *6*	6898.20		E1			
		1137.0 *4*	49 *6*	6647.7		E1			
7932.5		227.1 *2*	64 *6*	7705.3					
		279.4 *2*	14 *5*	7653.1					
		457.0 *2*	100 *9*	7475.50					
8023.0		547.5 *2*		7475.50					
8106.5		321.8 *2*		7784.7		M1			
8394.8		462.3 *2*		7932.5		D			
8730.8		707.8 *2*		8023.0					
8835.5		903.0 *2*		7932.5					
8895.1		788.6 *2*		8106.5		D			
8991.9		261.1 *2*		8730.8					
9032.8		638.0 *2*		8394.8					
9160.6		265.5 *2*		8895.1					
9643.7		483.1 *2*		9160.6		D			

† Except where noted otherwise, values are from ε decay for levels up to and including the 4509 level. Data for higher levels are from (^{9}Be,5nγ). The (^{9}Be,5nγ) data are from table 2 of 1997Po04.

‡ Relative photon branching from the level.

Relative I(γ+ce) branching from the level.

@ Not observed directly. Existence is required by coincidence data. Eγ is deduced from the level energies, and I(γ+ce) is deduced from the coincidence data.

& From γ(θ) and γ(lin pol), the unresolved 488.3 and 489.9 are probably M1 and E1. The 489.9γ is placed from the 5409 level whose parity, based on mult(491γ) is probably +. The 489γ would then Be expected to have mult=E1, and thus mult(488.3γ) is probably M1.

a From (p,2nγ).

b From (^{9}Be,5nγ).

c From (α,4nγ).

d From (^{9}Be,5nγ). Values are from table 2 of 1997Po04.

$^{208}_{84}Po_{124}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{208}Po)$ (continued)

[e] From (p,2nγ).

[f] From (^{9}Be,5nγ). Values are from table 2 of 1997Po04.

[g] Based on all available data as given in the individual decay and in-beam data sets. α(K)exp (α(L)exp) data have been measured in ε decay, (p,2nγ), (^{3}He,3nγ), and (α,4nγ). $\gamma(\theta)$ data have been measured in (α,4nγ) and (^{9}Be,5nγ), and γ(lin pol) data have been measured in (^{9}Be,5nγ).

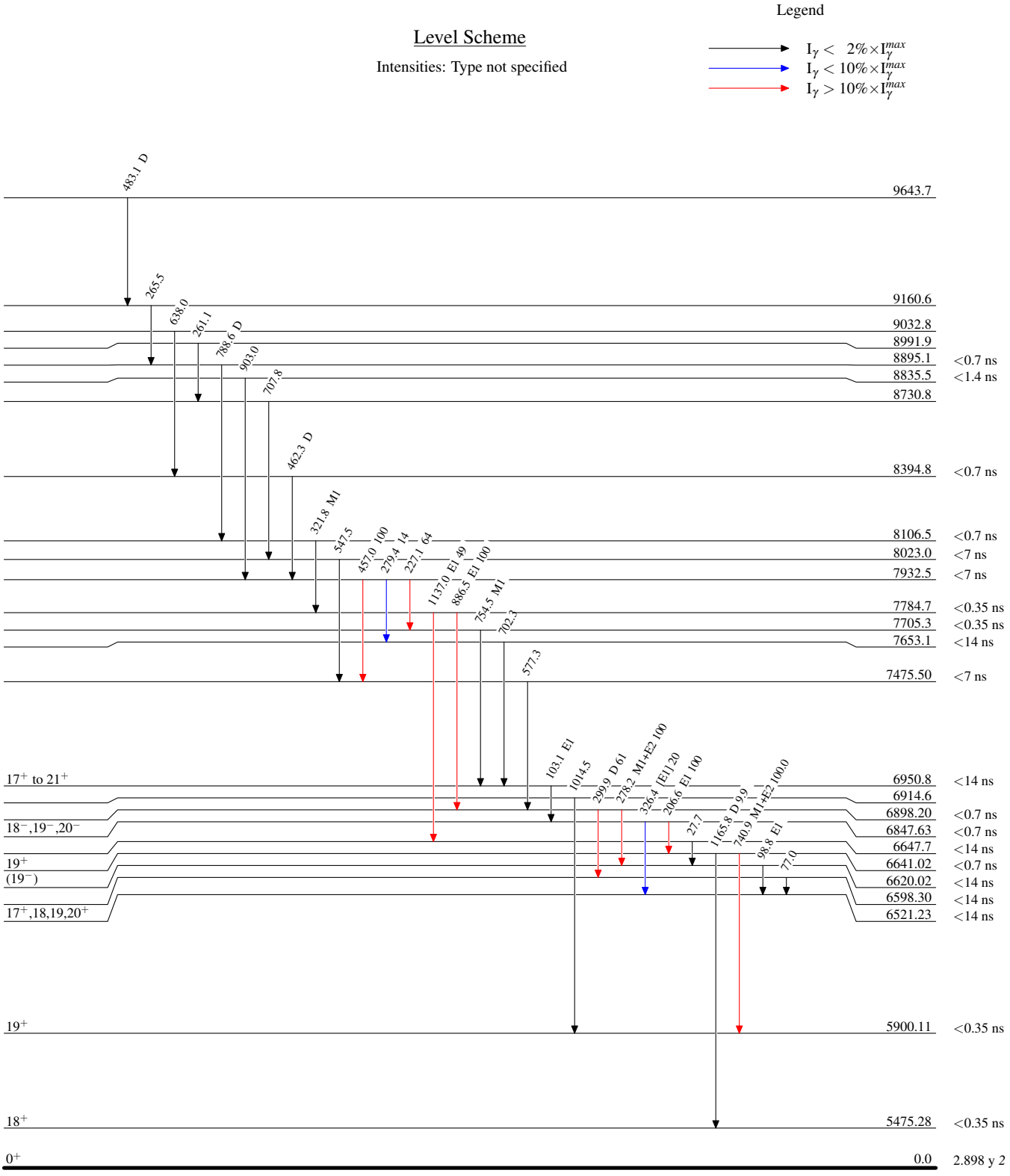
[h] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[i] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

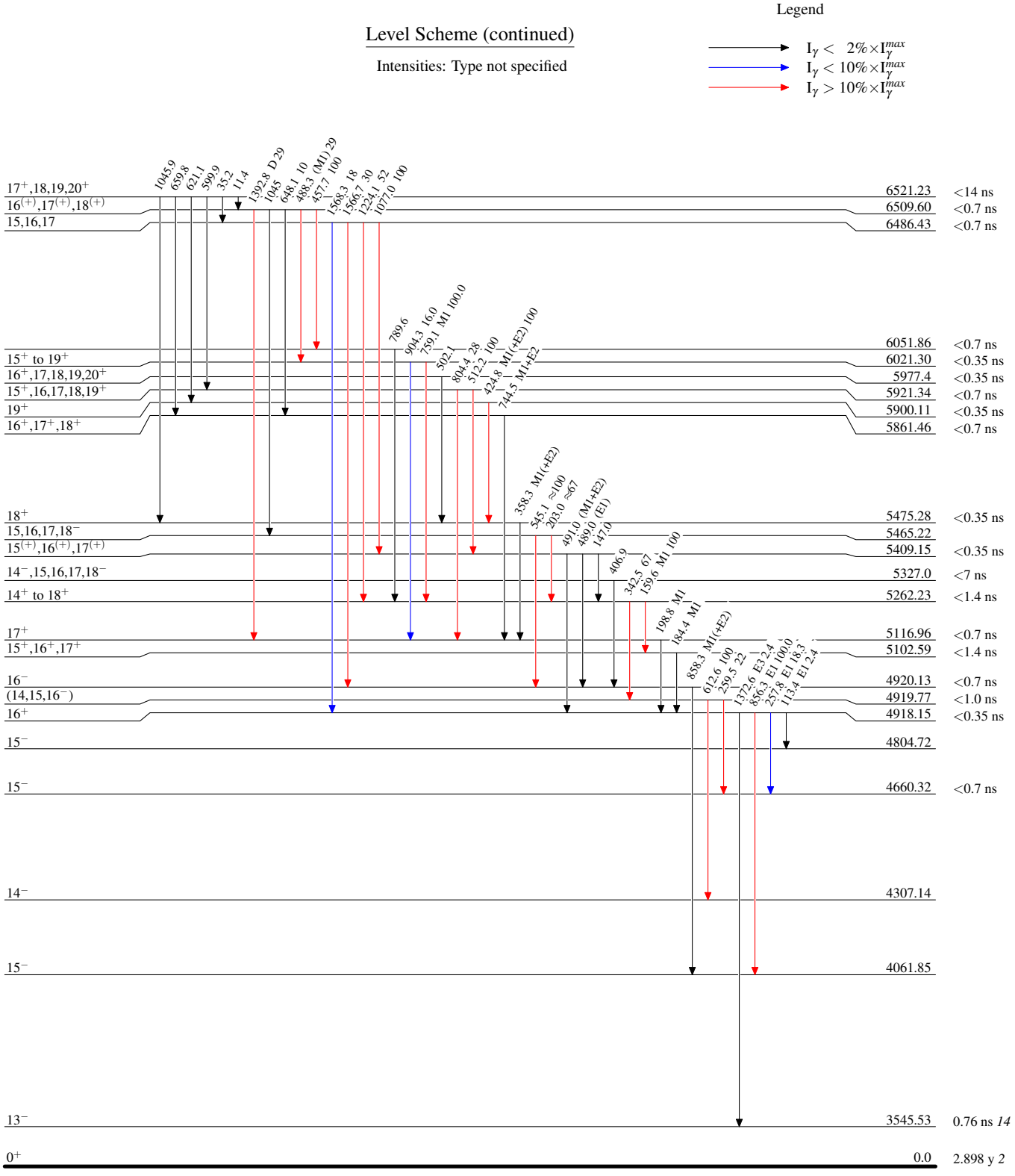


$^{208}_{84}Po_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

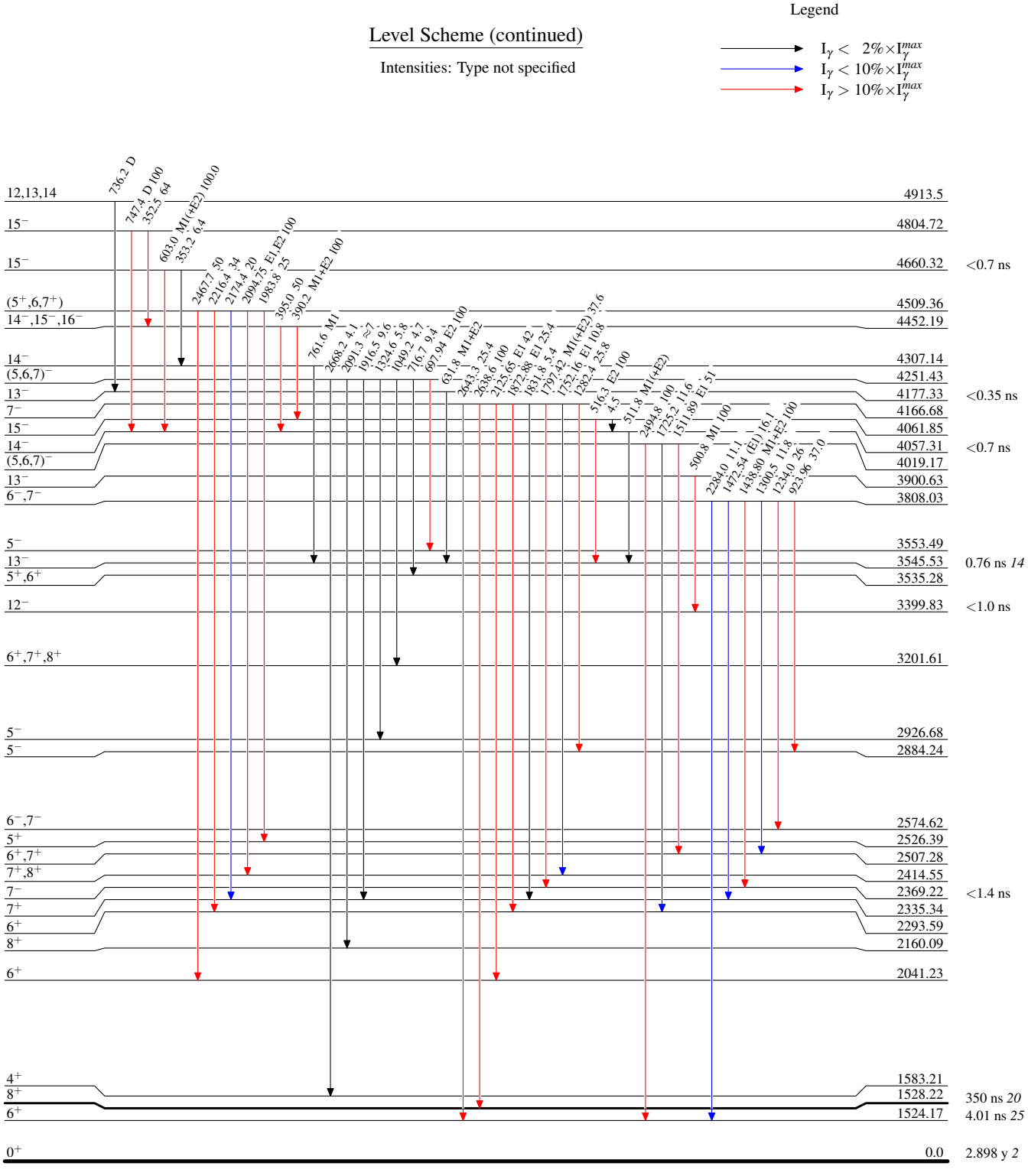


$^{208}_{84}Po_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

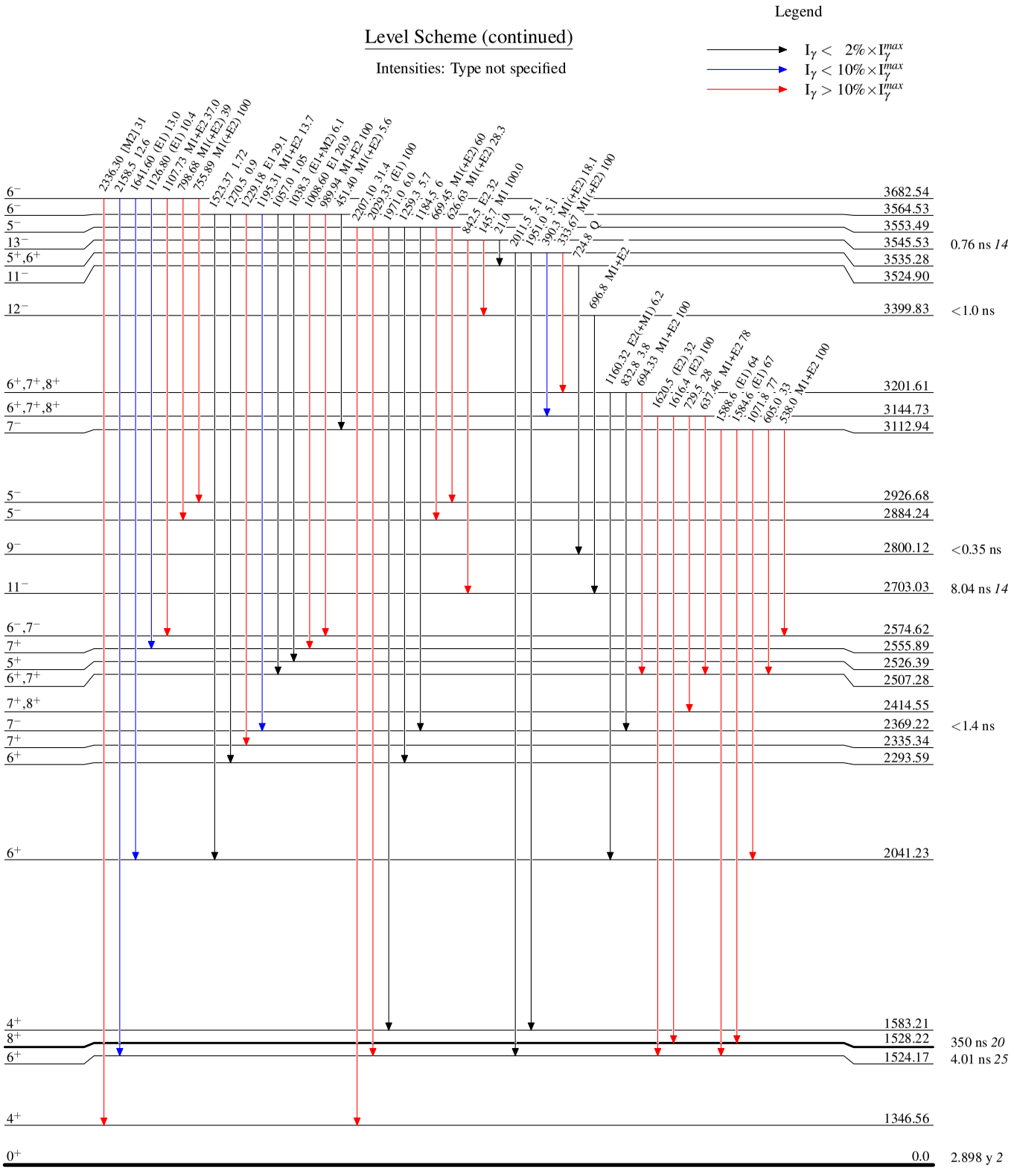


$^{208}_{84}Po_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

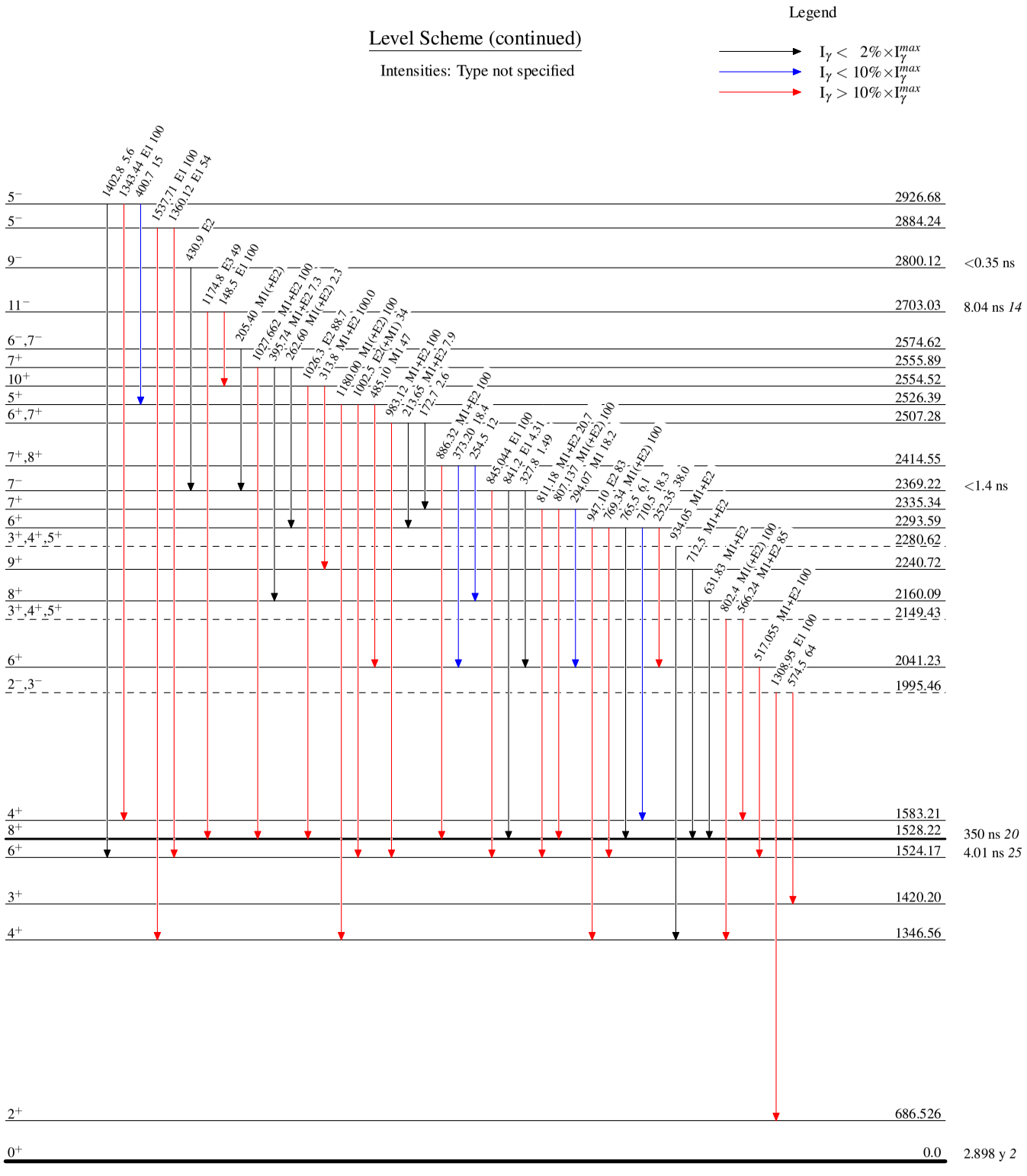


$^{208}_{84}Po_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

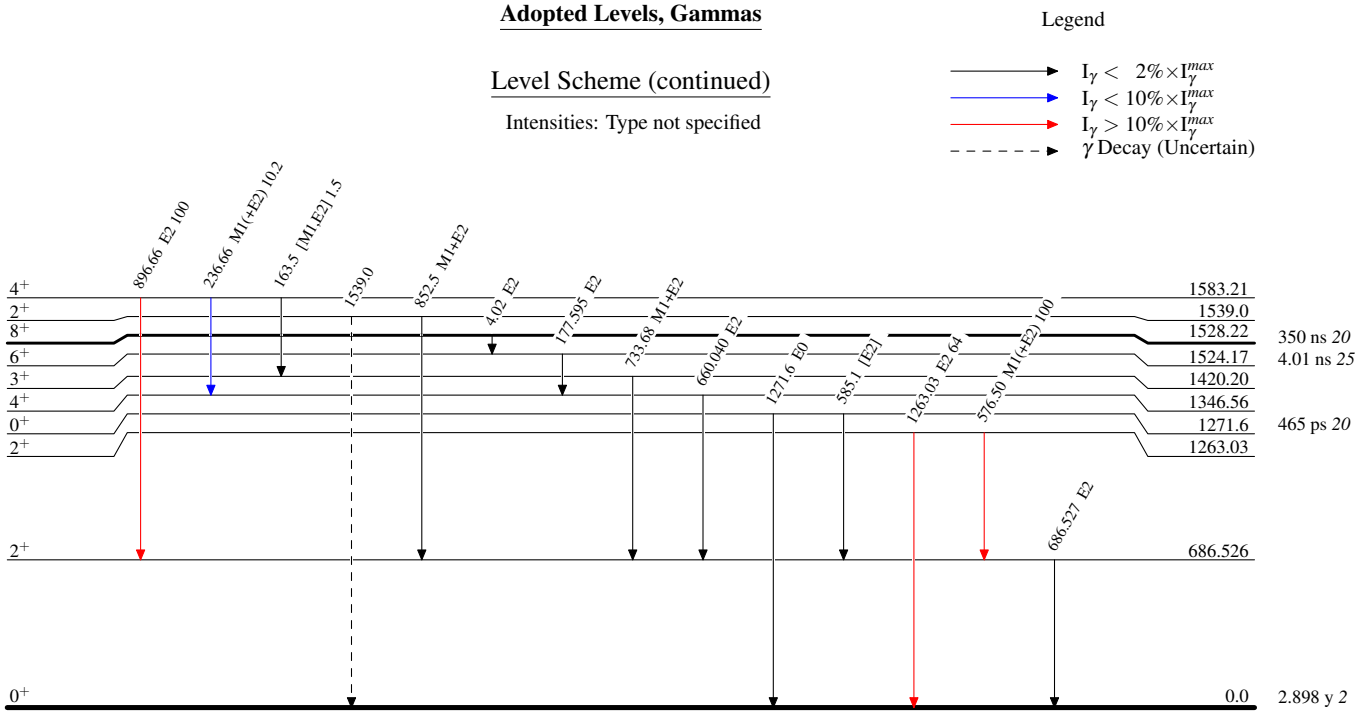


$^{208}_{84}Po_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{208}_{84}Po_{124}$