Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Auranen and E. A. Mccutchan	NDS 168, 117 (2020)	1-Aug-2020

Q(β^-)=−5144 *9*; S(n)=7976 *7*; S(p)=4301 *4*; Q(α)=6385.1 *26* 2017Wa10
S(2n)=15197 *6*, S(2p)=7284.4 *29* (2017Wa10).

The adopted level scheme is mostly that proposed in 2009Dr12 and 2020Li12 with some details filled in from earlier studies as indicated. The configurations are assigned based on empirical shell model calculations in 2009Dr12. See also 2008Dr01, 1990Dr07, 1990Dr12, 1989Lo02, 1988St17, 1979Ho06, 1978Ha50, 1977Ho17, 1976Ha62, 1975Wi01, and 1971MaXH.

α: Additional information 1.

^{212}Rn Levels

Cross Reference (XREF) Flags

- A ^{212}Fr ε decay
- B ^{216}Ra α decay
- C (HI,xnγ)
- D ^{209}Bi(^{6}Li,3nγ)

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0	0$^+$	23.9 min *12*	ABCD	%α=100 Configuration=$\pi h^4_{9/2}$. T$_{1/2}$: weighted average of 22.0 min *10* (1971Go35), 25.5 min *10* (1968Cr02), and 25 min *2* (1959Ka15). Other: 23 min (1950Hy27). Isotope shift (2000Ga58).
1273.70 *10*	2$^+$		A CD	Configuration=$\pi h^4_{9/2}$. J$^\pi$: E2 1273.7γ to 0$^+$ level.
1501.42 *14*	4$^+$	8.80 ns *35*	A CD	μ=4.0 *2* T$_{1/2}$: from (1988St17) in (HI,xnγ) dataset. μ: from g-factor=1.01 *6* from TDPAD (1988St17). configuration=$\pi h^4_{9/2}$. J$^\pi$: E2 227.7γ to 2$^+$ level.
1639.68 *15*	6$^+$	118 ns *14*	A CD	μ=5.45 *5* T$_{1/2}$: from 1988St17 in (HI,xnγ) dataset. μ: from g-factor=0.909 *8* from TDPAD (1988St17). Configuration=$\pi h^4_{9/2}$. J$^\pi$: E2 138.3γ to 4$^+$ level.
1694.1 *3*	8$^+$	0.91 μs *3*	CD	μ=+7.15 *2* T$_{1/2}$: weighted average of 0.82 μs *6* (1988St17), 0.92 μs *2* (1976Ha62), and 1.0 μs *1* (1971MaXH). μ: from g-factor=+0.894 *2* from TDPAD (1977Ho17) (sign from 1975Wi01). Others: 0.895 *7* (1988St17), +0.911 *12* (1975Wi01), 0.89 *3* (1971MaXH). Configuration=$\pi h^4_{9/2}$. J$^\pi$: E2 54.2γ to 6$^+$ level.
2116.2 *3*	8$^+$		CD	Configuration=$\pi(h^3_{9/2}f_{7/2})$. J$^\pi$: M1 422.0γ to 8$^+$ level.
2120.99 *14*	3		D	J$^\pi$: D 619.5γ to 4$^+$, D 847.3γ to 2$^+$. 2020Li12 in ^{209}Bi(^{6}Li,3nγ) propose tentative negative parity.
2171.87 *16*	(6$^+$)		D	J$^\pi$: (E2) 670.4γ to 4$^+$.
2305.61 *22*	5$^{(+)}$		A CD	Configuration=$\pi h^4_{9/2}$. J$^\pi$: D 804.8γ to 4$^+$, D 666.0γ to 6$^+$, feeding from 5$^+$ parent in ε decay.
2313.60 *21*	7$^{(+)}$		D	J$^\pi$: D+Q 197.3γ to 8$^+$, D+Q 674.0γ to 6$^+$.
2324.43 *18*	4$^+$		D	J$^\pi$: (E2) 684.9γ to 6$^+$, (E2) 1050.9γ to 2$^+$.
2402.82 *24*			D	J$^\pi$: 2020Li12 in ^{209}Bi(^{6}Li,3nγ) propose J^π=(4$^+$).

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Adopted Levels, Gammas (continued)

^{212}Rn Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
2437.92 *24*			D	Jπ: 2020Li12 in ^{209}Bi(^{6}Li,3nγ) propose $J^{\pi}=(6^{+})$.
2455.42 *24*			D	Jπ: 2020Li12 in ^{209}Bi(^{6}Li,3nγ) propose $J^{\pi}=(4^{+})$.
2613.1 *3*			D	Jπ: 2020Li12 in ^{209}Bi(^{6}Li,3nγ) propose $J^{\pi}=(8^{+})$.
2654.9 *3*	10^{+}		CD	Configuration=$\pi h^{4}_{9/2}$. Jπ: E2 960.8γ to 8^{+} level.
2686.29 *19*	(6^{+})		A D	Jπ: (E2) 1184.9γ to 4^{+}.
2696.2 *4*			C	Configuration=$\pi h^{4}_{9/2}$.
2760.6 *3*	11^{-}	5.5 ns *2*	CD	$T_{1/2}$: from (HI,xnγ) (1988St17). Other <2 ns (1989Lo02). Configuration=$\pi(h^{3}_{9/2}i_{13/2})$. Jπ: E1 105.8γ to 10^{+} level.
2833.4 *3*			D	
2865.47 *23*	(6^{+})		D	Jπ: (E2) 1364.0γ to (4^{+}).
2881.3 *3*	12^{+}	2.08 ns *14*	CD	$T_{1/2}$: from (HI,xnγ) (1988St17). Other 2.0 ns (1977Ho17). Configuration=$\pi h^{4}_{9/2}$. Jπ: E2 226.4γ to 10^{+}.
2967.1 *3*			CD	
3066.1 *3*	(10^{+})		CD	Jπ: (E2) 949.9γ to 8^{+}, D 305.5γ to 11^{-}.
3250.4 *3*			D	
3278.2 *3*	(11)		CD	Jπ: (D+Q) 212.1γ to 10^{+}, (D+Q) 396.6γ to 12^{+}.
3297.7 *3*	12^{+}		CD	Configuration=$\pi(h^{3}_{9/2}f_{7/2})$. Jπ: from M1 ΔJ=0 416.3γ to 12^{+} level.
3357.5 *3*	14^{+}	7.4 ns *9*	CD	μ=15.0 *4* $T_{1/2}$: from (HI,xnγ) (1988St17). Other: 8 ns (1977Ho17). μ: from g-factor=1.07 *3* from TDPAD (1988St17). Configuration=$\pi(h^{3}_{9/2}f_{7/2})$. Jπ: from E2 476.2γ to 12^{+} level.
3476.4 *3*			D	
3494.2 *3*			D	
3510.2 *4*			C	Configuration=$\pi(h^{3}_{9/2}f_{7/2})$.
3687.1 *3*	(12^{+})		D	Jπ: (E2) 1031.9γ to 10^{+}.
3735.1 *3*	(13^{-})		CD	Jπ: (E2) 974.4γ to 11^{-}.
3990.9 *3*	15^{-}		CD	Configuration=$\pi(h^{3}_{9/2}i_{13/2})$. Jπ: E1 633.4γ to 14^{+} level.
3998.0 *4*			CD	
4046.2 *3*			D	
4066.6 *3*	17^{-}	28.9 ns *14*	CD	μ=17.9 *2* $T_{1/2}$: from (HI,xnγ) (1988St17). Other: 28 ns (1977Ho17). μ: from g-factor=1.05 *1* from TDPAD (1977Ho17,1988St17). Configuration=$\pi(h^{3}_{9/2}i_{13/2})$. Jπ: E3 709.1γ to 14^{+} level.
4134.5 *3*	(16^{-})		C	Configuration=$\pi(h^{3}_{9/2}i_{13/2})$. Jπ: (M1+E2) 67.9γ to 17^{-} level, 143.7γ to 15^{-} level.
4151.2 *3*	(15^{-})		CD	Jπ: D 793.7γ to 14^{+}, 416.2γ to 13^{-}.
4582.3 *3*	17^{-}		CD	Configuration=$\pi(h^{2}_{9/2}f_{7/2}i_{13/2})$. Jπ: M1 ΔJ=0 515.7γ to 17^{-} level.
4929.4 *3*			C	
5114.1 *3*	18^{-}		C	Configuration=$\pi(h^{2}_{9/2}f_{7/2}i_{13/2})$. Jπ: M1+E2 1047.4γ to 17^{-} level.
5357.1 *4*			C	
5426.9 *3*	20^{+}	5.2 ns *5*	C	Configuration=$\pi(h^{3}_{9/2}i_{13/2})$. $T_{1/2}$: From (HI,xnγ) (1988St17). Jπ: E3 1360.3γ to 17^{-} level.
5771.7 *3*	19^{-}		C	Configuration=$\pi(h^{3}_{9/2}f_{7/2})\otimes\nu(p^{-1}_{1/2}g_{9/2})$. Jπ: M1 657.6γ to 18^{-} level.
5794.4 *3*			C	

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Adopted Levels, Gammas (continued)

^{212}Rn Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
6166.7 *3*	20^+		C	Configuration=$\pi(h^3_{9/2}i_{13/2})\otimes\nu(p^{-1}_{1/2}g_{9/2})$. J^π: E1 395.0γ to 19^- level.
6174.2 *3*	(22^+)	101.8 ns *35*	C	μ=15.8 *2* Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(p^{-1}_{1/2}g_{9/2})$. $T_{1/2}$: weighted average of 101.2 ns *35* (2009Dr12, e-mail communications with the authors and B. Singh) and 104 ns *7* (1988St17). Others: 113 ns *6* (1977Ho17, uncertainty from 1976McZD). μ: from g-factor=0.72 *1* from TDPAD (1977Ho17,1988St17). J^π: from the measured g-factor in (HI,xnγ) (1977Ho17).
6709.3 *3*	(23^+)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(p^{-1}_{1/2}i_{11/2})$. J^π: D 535.0γ to (22^+) level and configuration assignment.
6821.4 *4*			C	
7142.0 *3*	(25^-)	18.0 ns *6*	C	μ=17.8 *5* Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\otimes\nu(p^{-1}_{1/2}g_{9/2})$. $T_{1/2}$: From 1977Ho17, uncertainty from 1977HoZQ. μ: from g-factor=0.71 *2* from TDPAD (1977Ho17). J^π: E3 967.8γ to (22^+) level.
7177.7 *5*			C	
7524.6 *4*	(25^-)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(p^{-1}_{1/2}j_{15/2})$. J^π: D ΔJ=0 382.6γ to (25^-) level and configuration assignment.
7819.1 *3*	(26^-)		C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes\nu(f_{5/2}g_{9/2})$. J^π: D 677.1γ to (25^-) level and configuration assignment.
7862.8 *3*	(26^-)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(f_{5/2}j_{15/2})$. J^π: D 720.8γ to (25^-) level and configuration assignment.
7878.3 *3*	(27^-)	14 ns *4*	C	μ=17.0 *8* Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(p^{-2}_{1/2}g_{9/2}i_{11/2})$. $T_{1/2}$: from 1977Ho17 in (HI,xnγ) with uncertainty from 1977HoZQ. μ: from g-factor=0.63 *3* from TDPAD (1977Ho17). J^π: E2 736.3γ to (25^-) level.
8361.9 *4*	(27^-)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(f^{-1}_{5/2}j_{15/2})$. J^π: D ΔJ=0 γ to (27^-) level and configuration assignment.
8497.3 *4*	(28^+)		C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\otimes\nu(p_{1/2}j_{15/2})$. O 1355.4$\gamma$ to (25^-), D 618γ to (27^-) level, configuration assignment.
8557.3 *4*	(28^+)		C	J^π: J from D 679.0γ to (27^-) level. Parity from E2 21.9γ from 30^+. See detailed comments about multipolarity of 21.9-keV transition from 8579 level. 2009Dr12 assign $28^{(-)}$ from comparison with shell-model calculations.
8579.2 *4*	(30^+)	154 ns *14*	C	μ=19.71 *9* Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\otimes\nu(p^{-2}_{1/2}g_{9/2}i_{11/2})$. $T_{1/2}$: from 1977Ho17 in (HI,xnγ) with uncertainty from 1977HoZQ. Others: 151 ns (1989Lo02) also from (HI,xnγ). μ: from g-factor=0.657 *3* from TDPAD (1977Ho17). J^π: E3 700.9γ to (27^-) level.
8932.9 *4*	(30^+)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes\nu(p^{-2}_{1/2}i_{11/2}j_{15/2})$. J^π: D ΔJ=0 353.7γ to (30^+) level configuration assignment.
9028.4 *5*			C	
9446.7 *4*	(31^+)		C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes\nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}i_{11/2})$. J^π: D 867.5γ to (30^+) level and configuration assignment.
9509.5 *4*	(31^+)		C	Configuration=$\pi(h^3_{9/2}i_{13/2})\otimes\nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}j_{15/2})$. J^π: D 930.3γ to (30^+) level and configuration assignment.
9608.4 *4*	(31)		C	Possible configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes\nu(p^{-2}_{1/2}g_{9/2}j_{15/2})$. J^π: D 1029.2γ to (30^+) level.
9695.8 *4*	(33^-)	4.9 ns *7*	C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\otimes\nu(p^{-2}_{1/2}i_{11/2}j_{15/2})$. $T_{1/2}$: from 1990Dr07 in (HI,xnγ). J^π: E3 1116.6γ to (30^+) level.
10102.4 *5*			C	

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Adopted Levels, Gammas (continued)

^{212}Rn Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
10124.7 *5*	(32^+)		C	Possible configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}i_{11/2})$. Jπ: D 615.2γ to (31^+) level and configuration assignment.
10619.5 *4*	(34^-)	≈20 ns	C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}j_{15/2})$. $T_{1/2}$: from 1990Dr07 in (HI,xnγ). Jπ: D 923.7γ to (33^-) level and configuration assignment.
10843.4 *5*	(32)		C	Jπ: D 1334.0γ to (31^+) level.
10961.4 *5*	(33)		C	Jπ: D 214.0γ from (34) level.
11086.0 *5*			C	
11175.3? *5*	(34)		C	Possible configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\otimes \nu(f^{-2}_{5/2}i_{11/2}j_{15/2})$ or $\pi(h^2_{9/2}i^2_{13/2})_{20+}\ \nu(f^{-2}_{5/2}g_{9/2}i_{11/2})$. Jπ: D 179.3γ from (35^-) level. E(level): ordering of 179-214 cascade is uncertain.
11262.0 *4*	(35^-)		C	Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-1}_{1/2}f^{-1}_{5/2}i_{11/2}j_{15/2})$ or $\nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}j_{15/2})$. Jπ: D 642.7γ to (34^-) level and configuration assignment.
11354.5 *4*	(35^-)	<3.5 ns	C	$T_{1/2}$: from 2009Dr12 in (HI,xnγ). Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-1}_{1/2}f^{-1}_{5/2}i_{11/2}j_{15/2})$ or $\nu(p^{-1}_{1/2}f^{-1}_{5/2}g_{9/2}j_{15/2})$. Jπ: D 735.1γ to (34^-) level and configuration assignment.
11462.5 *5*			C	
11670.8 *5*			C	
11827.3 *5*	(36^-)		C	Possible configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-2}_{1/2}f^{-1}_{5/2}g^2_{9/2}j_{15/2})$. Jπ: D 472.8γ to (35^-) level.
11880.3 *5*			C	
12052.8 *5*	$37^{(-)}$		C	Possible configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-1}_{1/2}i^{-1}_{13/2}g_{9/2}j_{15/2})$. Jπ: Q 698.1γ to $35^{(-)}$ level.
12165.7 *6*			C	
12211.3 *4*	$37^{(-)}$	17.3 ns *14*	C	$T_{1/2}$: from γγ(t) with a pulsed beam in (HI,xnγ) (2008Dr01,2009Dr12). Configuration=$\pi(h^2_{9/2}f_{7/2}i_{13/2})\otimes \nu(p^{-2}_{1/2}f^{-1}_{5/2}g_{9/2}i_{11/2}j_{15/2})$. Jπ: Q 856.7γ to $35^{(-)}$ level and configuration assignment.
12547.6 *5*	(38^+)	8.3 ns *14*	C	$T_{1/2}$: from γγ(t) with a pulsed beam in (HI,xnγ) (2008Dr01,2009Dr12). Configuration=$\pi(h^2_{9/2}i^2_{13/2})\otimes \nu(p^{-2}_{1/2}f^{-1}_{5/2}g_{9/2}i_{11/2}j_{15/2})$. Jπ: D 336.3γ to (37^-) level and configuration assignment.
13375.3 *11*			C	
13444.6 *5*			C	

[†] From least-squares fit to Eγ data.

[‡] Based on multipolarities deduced from γ(θ), γ(pol), γ(θ,H,t), and conversion coefficients measurements in (HI,xnγ) studies. Specific support is provided in the comments. Assignments are made under the general assumption that spin increases with increasing excitation energy in (HI,xnγ) reactions.

Adopted Levels, Gammas (continued)

γ(^{212}Rn)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
1273.70	2+	1273.7 *1*	100	0.0	0+	E2	0.00515	α(K)=0.00411 *6*; α(L)=0.000786 *11*; α(M)=0.000188 *3*; α(N)=4.90×10^{-5} *7*; α(O)=1.060×10^{-5} *15* α(P)=1.501×10^{-6} *21* E_γ: others: 1274.8 *20* in ^{212}Fr ε decay, 1273.7 *1* in ^{209}Bi(^{6}Li,3nγ).
1501.42	4+	227.7 *1*	100	1273.70	2+	E2	0.333	α(K)=0.1252 *18*; α(L)=0.1540 *22*; α(M)=0.0409 *6*; α(N)=0.01066 *15*; α(O)=0.00218 *3* α(P)=0.000254 *4* B(E2)(W.u.)=1.050 *+44−40* E_γ: others: 227.72 *10* in ^{212}Fr ε decay, 227.6 *1* in ^{209}Bi(^{6}Li,3nγ). Mult.: from ce measurements in ^{212}Fr ε decay.
1639.68	6+	138.3 *1*	100	1501.42	4+	E2	2.13	α(K)=0.316 *5*; α(L)=1.340 *20*; α(M)=0.361 *6*; α(N)=0.0939 *14*; α(O)=0.0190 *3* α(P)=0.00213 *3* B(E2)(W.u.)=0.40 *+6−4* E_γ: others: 138.30 *10* in ^{212}Ft ε decay, 138.2 *1* in ^{209}Bi(^{6}Li,3nγ).
1694.1	8+	54.2 *3*	100	1639.68	6+	E2	150 *5*	α(L)=111 *4*; α(M)=29.8 *10*; α(N)=7.73 *24*; α(O)=1.55 *5*; α(P)=0.170 *6* B(E2)(W.u.)=0.117 *7*
2116.2	8+	422.0 *1*	100	1694.1	8+	M1	0.236	α(K)=0.192 *3*; α(L)=0.0340 *5*; α(M)=0.00806 *12*; α(N)=0.00210 *3*; α(O)=0.000460 *7* α(P)=6.72×10^{-5} *10* E_γ: from ^{209}Bi(^{6}Li,3nγ). Other: 422.0 *2* in (HI,xnγ). Mult.: Q is assigned in ^{209}Bi(^{6}Li,3nγ) based on DCO ratio, however, the DCO is also consistent with a (D+Q) ΔJ=0 transition.t.
2120.99	3	619.5[@] *2*	22[@] *4*	1501.42	4+	D[&]		
		847.3[@] *1*	100[@] *13*	1273.70	2+	D[&]		
2171.87	(6+)	532.2[@] *1*	100[@] *15*	1639.68	6+	(E2)[&]	0.0304	α(K)=0.0209 *3*; α(L)=0.00713 *10*; α(M)=0.00180 *3*; α(N)=0.000469 *7*; α(O)=9.88×10^{-5} *14* α(P)=1.280×10^{-5} *18*
		670.4[@] *1*	32[@] *6*	1501.42	4+	(E2)[&]	0.0182	α(K)=0.01333 *19*; α(L)=0.00366 *6*; α(M)=0.000911 *13*; α(N)=0.000237 *4*; α(O)=5.03×10^{-5} *7* α(P)=6.72×10^{-6} *10*
2305.61	5(+)	133.7[@] *2*	<6[@]	2171.87	(6+)			
		666.0[@] *3*	18[@] *6*	1639.68	6+	D+Q[&]		
		804.3[@]	100[@] *24*	1501.42	4+	D+Q[&]		E_γ: others: 801.9 *15* in ^{212}Fr ε decay, 804.8 *2* in (HI,xnγ).
2313.60	7(+)	141.8[@] *3*	<8[@]	2171.87	(6+)			
		197.3[@] *2*	100[@] *8*	2116.2	8+	D+Q[&]		
		674.0[@] *2*	25[@] *8*	1639.68	6+	D+Q[&]		
2324.43	4+	152.4[@] *2*	<8[@]	2171.87	(6+)			
		684.9[@] *2*	42[@] *8*	1639.68	6+	(E2)[&]	0.01739	α(K)=0.01280 *18*; α(L)=0.00346 *5*; α(M)=0.000858 *12*; α(N)=0.000223 *4*;

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Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								α(O)=4.75×10^{-5} *7* α(P)=6.35×10^{-6} *9*
2324.43	4$^+$	823.0[@] *2*	100[@] *17*	1501.42	4$^+$	(E2)[&]	0.01192	α(K)=0.00908 *13*; α(L)=0.00215 *3*; α(M)=0.000526 *8*; α(N)=0.0001369 *20*; α(O)=2.93×10^{-5} *5* α(P)=4.00×10^{-6} *6*
		1050.9[@]	33[@] *8*	1273.70	2$^+$	(E2)[&]	0.00739	α(K)=0.00580 *9*; α(L)=0.001201 *17*; α(M)=0.000290 *4*; α(N)=7.55×10^{-5} *11* α(O)=1.626×10^{-5} *23*; α(P)=2.27×10^{-6} *4*
2402.82		901.4[@] *2*	100[@]	1501.42	4$^+$	(E2)[&]	0.00995	α(K)=0.00768 *11*; α(L)=0.001718 *24*; α(M)=0.000419 *6*; α(N)=0.0001089 *16* α(O)=2.34×10^{-5} *4*; α(P)=3.22×10^{-6} *5*
2437.92		936.5[@] *2*	100[@]	1501.42	4$^+$	(E2)[&]	0.00923	α(K)=0.00716 *10*; α(L)=0.001568 *22*; α(M)=0.000381 *6*; α(N)=9.92×10^{-5} *14*; α(O)=2.13×10^{-5} *3* α(P)=2.95×10^{-6} *5*
2455.42		954.0[@] *2*	100[@]	1501.42	4$^+$	(E2)[&]	0.00890	α(K)=0.00692 *10*; α(L)=0.001501 *21*; α(M)=0.000365 *6*; α(N)=9.49×10^{-5} *14*; α(O)=2.04×10^{-5} *3* α(P)=2.83×10^{-6} *4*
2613.1		973.4[@] *2*	100[@]	1639.68	6$^+$	(E2)[&]	0.00856	α(K)=0.00667 *10*; α(L)=0.001432 *20*; α(M)=0.000348 *5*; α(N)=9.04×10^{-5} *13*; α(O)=1.94×10^{-5} *3* α(P)=2.70×10^{-6} *4*
2654.9	10$^+$	960.8 *1*	100	1694.1	8$^+$	E2	0.00878	α(K)=0.00683 *10*; α(L)=0.001476 *21*; α(M)=0.000359 *5*; α(N)=9.33×10^{-5} *13*; α(O)=2.00×10^{-5} *3* α(P)=2.78×10^{-6} *4*
2686.29	(6$^+$)	1046.6[@] *2*	21[@] *5*	1639.68	6$^+$	(E2)[&]	0.00745	α(K)=0.00585 *9*; α(L)=0.001212 *17*; α(M)=0.000293 *5*; α(N)=7.62×10^{-5} *11* α(O)=1.642×10^{-5} *23*; α(P)=2.29×10^{-6} *4* E_γ: other: 1047.3 *20* from ^{212}Fr ε decay. I_γ: other: 52 *5* from ^{212}Fr ε decay.
		1184.9[@] *2*	100[@] *11*	1501.42	4$^+$	(E2)[&]	0.00589	α(K)=0.00467 *7*; α(L)=0.000919 *13*; α(M)=0.000221 *3*; α(N)=5.74×10^{-5} *8*; α(O)=1.241×10^{-5} *18* α(P)=1.750×10^{-6} *25* E_γ: other: 1185.6 *20* from ^{212}Fr ε decay. I_γ: from ^{212}Fr ε decay.
2696.2		1002.1 *3*	100	1694.1	8$^+$			
2760.6	11$^-$	105.8 *1*	100 *4*	2654.9	10$^+$	E1	0.405	α(K)=0.316 *5*; α(L)=0.0679 *10*; α(M)=0.01624 *24*; α(N)=0.00417 *6*; α(O)=0.000869 *13* α(P)=0.0001114 *16* B(E1)(W.u.)=1.91×10^{-5} *+8−7* δ: value of 0.11 *3* from (HI,xnγ) results in a B(M2)(W.u.) of 6.E+1 *4* which significantly exceeds RUL. δ not adopted here. E_γ: other: 105.8 *1* in ^{209}Bi(^{6}Li,3nγ). I_γ: other: 100 *8* in ^{209}Bi(^{6}Li,3nγ).
		644.5 *3*	3.8 *7*	2116.2	8$^+$	[E3]	0.0581	α(K)=0.0342 *5*; α(L)=0.0178 *3*; α(M)=0.00464 *7*; α(N)=0.001214 *18*;

$^{212}_{86}Rn_{126}$-6

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								α(O)=0.000254 *4* α(P)=3.25×10^{-5} *5* B(E3)(W.u.)=27 *+10−7* E_γ: other: 644.4 *5* in ^{209}Bi(^{6}Li,3nγ). I_γ: other: < 2 in ^{209}Bi(^{6}Li,3nγ).
2760.6	11$^-$	1066.4 *3*	8.5 *10*	1694.1	8$^+$	[E3]	0.01672	α(K)=0.01212 *17*; α(L)=0.00345 *5*; α(M)=0.000863 *13*; α(N)=0.000225 *4*; α(O)=4.82×10^{-5} *7* α(P)=6.54×10^{-6} *10* B(E3)(W.u.)=1.8 *+6−4* E_γ: other: 1067.1 *3* in ^{209}Bi(^{6}Li,3nγ). I_γ: other: 3.8 *19* in ^{209}Bi(^{6}Li,3nγ).
2833.4		147.1[@] *2*	100[@]	2686.29	(6$^+$)			
2865.47	(6$^+$)	179.2[@] *2*	70[@] *30*	2686.29	(6$^+$)			
		1364.0[@] *3*	100[@] *30*	1501.42	4$^+$	(E2)[&]	0.00455	α(K)=0.00363 *5*; α(L)=0.000680 *10*; α(M)=0.0001624 *23*; α(N)=4.22×10^{-5} *6* α(O)=9.15×10^{-6} *13*; α(P)=1.302×10^{-6} *19*
2881.3	12$^+$	120.7 *3*	0.61 *14*	2760.6	11$^-$	[E1]	0.295	α(K)=0.232 *4*; α(L)=0.0479 *8*; α(M)=0.01144 *18*; α(N)=0.00294 *5*; α(O)=0.000616 *10* α(P)=7.99×10^{-5} *13* B(E1)(W.u.)=2.4×10^{-7} *6* E_γ: other: 120.3 *2* in ^{209}Bi(^{6}Li,3nγ). I_γ: other: < 0.8 in ^{209}Bi(^{6}Li,3nγ).
		226.4 *1*	100.0 *11*	2654.9	10$^+$	E2	0.340	α(K)=0.1268 *18*; α(L)=0.1577 *23*; α(M)=0.0419 *6*; α(N)=0.01092 *16*; α(O)=0.00223 *4* α(P)=0.000259 *4* B(E2)(W.u.)=4.52 *+32−29* Mult.: Q from γ(θ) in (HI,xnγ), M2 excluded by comparison to RUL. E_γ: other: 226.3 *1* in ^{209}Bi(^{6}Li,3nγ). I_γ: other: 100 *8* in ^{209}Bi(^{6}Li,3nγ).
2967.1		206.5[@] *1*	100[@]	2760.6	11$^-$	D[&]		E_γ: other: 206.6 *3* in (HI,xnγ).
3066.1	(10$^+$)	305.5[@] *2*	17[@] *4*	2760.6	11$^-$	D[&]		
		949.9[@] *1*	100[@] *9*	2116.2	8$^+$	(E2)[&]	0.00898	α(K)=0.00697 *10*; α(L)=0.001516 *22*; α(M)=0.000369 *6*; α(N)=9.59×10^{-5} *14*; α(O)=2.06×10^{-5} *3* α(P)=2.85×10^{-6} *4* E_γ: other: 950.3 *2* in (HI,xnγ).
3250.4		564.1[@] *2*	100[@]	2686.29	(6$^+$)	(E2)[&]	0.0266	α(K)=0.0186 *3*; α(L)=0.00599 *9*; α(M)=0.001507 *22*; α(N)=0.000393 *6*; α(O)=8.28×10^{-5} *12* α(P)=1.081×10^{-5} *16*
3278.2	(11)	212.1[@] *2*	26.7 *16*	3066.1	(10$^+$)	(D+Q)[&]		E_γ: other: 211.8 *3* in (HI,xnγ). I_γ: other: 20 *13* in ^{209}Bi(^{6}Li,3nγ).
		396.6[@] *2*	87[@] *13*	2881.3	12$^+$	(D+Q)[&]		

$^{212}_{86}Rn_{126}$-7

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
3278.2	(11)	623.5[@] *2*	100 *13*	2654.9	10^+	(D+Q)[&]		E_γ: other: 623.3 *2* in (HI,xnγ).
3297.7	12^+	(19.5[#])	0.063 *12*	3278.2	(11)			
		231.5 *3*	12.0 *24*	3066.1	(10^+)	(E2)	0.315	α(K)=0.1209 *18*; α(L)=0.1438 *22*; α(M)=0.0382 *6*; α(N)=0.00995 *15*; α(O)=0.00203 *3* α(P)=0.000237 *4* I_γ: other: 9 *5* in ^{209}Bi(^{6}Li,3nγ).
		416.3 *1*	100 *5*	2881.3	12^+	M1	0.245	α(K)=0.199 *3*; α(L)=0.0353 *5*; α(M)=0.00837 *12*; α(N)=0.00218 *3*; α(O)=0.000477 *7* α(P)=6.97×10^{-5} *10* Mult.: Q is assigned in ^{209}Bi(^{6}Li,3nγ) based on DCO ratio, however, the DCO is also consistent with a (D+Q) ΔJ=0 transition.
		537.1 *1*	87 *5*	2760.6	11^-	E1	0.00952	α(K)=0.00781 *11*; α(L)=0.001303 *19*; α(M)=0.000306 *5*; α(N)=7.93×10^{-5} *12* α(O)=1.715×10^{-5} *24*; α(P)=2.43×10^{-6} *4* Mult.: D from γ(θ) in (HI,xnγ), Δπ=yes from level scheme. I_γ: other: 73 *14* in ^{209}Bi(^{6}Li,3nγ).
3357.5	14^+	(59.8[#] *6*)	0.28[#] *5*	3297.7	12^+	(E2)	93 *5*	α(L)=69 *4*; α(M)=18.5 *10*; α(N)=4.81 *25*; α(O)=0.97 *5*; α(P)=0.106 *6* B(E2)(W.u.)=2.9 *6*
		476.2 *1*	100.0 *19*	2881.3	12^+	E2	0.0395	α(K)=0.0261 *4*; α(L)=0.01008 *15*; α(M)=0.00257 *4*; α(N)=0.000670 *10*; α(O)=0.0001402 *20* α(P)=1.79×10^{-5} *3* B(E2)(W.u.)=0.0319 *+45−36*
3476.4		595.1[@] *2*	100[@]	2881.3	12^+	D[&]		
3494.2		733.6[@] *2*	100[@]	2760.6	11^-	(E2)[&]	0.01507	α(K)=0.01125 *16*; α(L)=0.00288 *4*; α(M)=0.000711 *10*; α(N)=0.000185 *3*; α(O)=3.94×10^{-5} *6* α(P)=5.32×10^{-6} *8*
3510.2		628.9 *3*	100	2881.3	12^+			
3687.1	(12^+)	806.1[@] *2*	100[@] *13*	2881.3	12^+	(E2)[&]	0.01243	α(K)=0.00943 *14*; α(L)=0.00226 *4*; α(M)=0.000555 *8*; α(N)=0.0001444 *21*; α(O)=3.09×10^{-5} *5* α(P)=4.21×10^{-6} *6*
		1031.9[@] *2*	50[@] *13*	2654.9	10^+	(E2)[&]	0.00765	α(K)=0.00600 *9*; α(L)=0.001252 *18*; α(M)=0.000303 *5*; α(N)=7.88×10^{-5} *11* α(O)=1.696×10^{-5} *24*; α(P)=2.37×10^{-6} *4*
3735.1	(13^-)	974.4 *3*	100	2760.6	11^-	(E2)[&]	0.00855	α(K)=0.00666 *10*; α(L)=0.001429 *20*; α(M)=0.000347 *5*; α(N)=9.02×10^{-5} *13*; α(O)=1.94×10^{-5} *3* α(P)=2.69×10^{-6} *4*
3990.9	15^-	255.6 *3*	0.56 *15*	3735.1	(13^-)			
		633.4 *1*	100 *3*	3357.5	14^+	E1	0.00687	α(K)=0.00566 *8*; α(L)=0.000929 *13*; α(M)=0.000218 *3*; α(N)=5.64×10^{-5} *8*; α(O)=1.223×10^{-5} *18* α(P)=1.742×10^{-6} *25*
3998.0		640.5 *3*	100	3357.5	14^+			
4046.2		1164.9[@] *2*	100[@]	2881.3	12^+	(E2)[&]	0.00608	α(K)=0.00482 *7*; α(L)=0.000954 *14*; α(M)=0.000229 *4*; α(N)=5.97×10^{-5} *9*;

$^{212}_{86}Rn_{126}$-8

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[‡]	α	Comments
									α(O)=1.289×10^{-5} *18* α(P)=1.82×10^{-6} *3*
4066.6	17$^-$	75.7 *2*	23.0 *12*	3990.9	15$^-$	[E2]		30.1 *6*	α(L)=22.2 *5*; α(M)=5.98 *12*; α(N)=1.55 *3*; α(O)=0.313 *6*; α(P)=0.0344 *7* B(E2)(W.u.)=2.94 *+17−15*
		709.1 *1*	100 *4*	3357.5	14$^+$	E3		0.0449	α(K)=0.0279 *4*; α(L)=0.01263 *18*; α(M)=0.00327 *5*; α(N)=0.000855 *12*; α(O)=0.000180 *3* α(P)=2.33×10^{-5} *4* B(E3)(W.u.)=21.3 *+17−15*
4134.5	(16$^-$)	67.9 *3*	100 *13*	4066.6	17$^-$	(M1+E2)	0.45 *+22−28*	15.1 *61*	α(L)=11.3 *45*; α(M)=2.9 *13*; α(N)=0.75 *32*; α(O)=0.156 *63*; α(P)=0.0196 *65*
		143.7 *3*	59 *7*	3990.9	15$^-$				
4151.2	(15$^-$)	416.2 *3*	≈6	3735.1	(13$^-$)				I_γ: other: < 20 in ^{209}Bi(^{6}Li,3nγ).
		793.7 *3*	100 *17*	3357.5	14$^+$	D[&]			
4582.3	17$^-$	447.8 *2*	20.0 *13*	4134.5	(16$^-$)				
		515.7 *1*	100 *3*	4066.6	17$^-$	M1		0.1381	α(K)=0.1121 *16*; α(L)=0.0198 *3*; α(M)=0.00469 *7*; α(N)=0.001222 *18*; α(O)=0.000267 *4* α(P)=3.91×10^{-5} *6*
4929.4		778.3 *3*	38 *10*	4151.2	(15$^-$)				
		862.8 *3*	77 *6*	4066.6	17$^-$				
		938.3 *3*	100 *15*	3990.9	15$^-$				
5114.1	18$^-$	531.7 *1*	100 *3*	4582.3	17$^-$	M1		0.1273	α(K)=0.1034 *15*; α(L)=0.0182 *3*; α(M)=0.00432 *6*; α(N)=0.001125 *16*; α(O)=0.000246 *4* α(P)=3.60×10^{-5} *5*
		979.6 *3*	8.1 *10*	4134.5	(16$^-$)	[E2]		0.00846	α(K)=0.00659 *10*; α(L)=0.001411 *20*; α(M)=0.000342 *5*; α(N)=8.91×10^{-5} *13*; α(O)=1.92×10^{-5} *3* α(P)=2.66×10^{-6} *4*
		1047.4 *1*	57 *4*	4066.6	17$^-$	M1+E2	1.4 *2*	0.0122 *11*	α(K)=0.0098 *9*; α(L)=0.00183 *14*; α(M)=0.00044 *4*; α(N)=0.000113 *9*; α(O)=2.47×10^{-5} *18* α(P)=3.5×10^{-6} *3*
5357.1		774.8 *3*	70 *13*	4582.3	17$^-$				
		1290.5 *3*	100 *14*	4066.6	17$^-$				
5426.9	20$^+$	(69.8[#] *6*)	0.43 *6*	5357.1					
		844.5 *2*	18 *3*	4582.3	17$^-$	[E3]		0.0288	α(K)=0.0195 *3*; α(L)=0.00702 *10*; α(M)=0.00179 *3*; α(N)=0.000468 *7*; α(O)=9.91×10^{-5} *14* α(P)=1.311×10^{-5} *19* B(E3)(W.u.)=37 *7*
		1360.3 *1*	100 *6*	4066.6	17$^-$	E3		0.00984	α(K)=0.00748 *11*; α(L)=0.001777 *25*; α(M)=0.000436 *7*; α(N)=0.0001139 *16* α(O)=2.45×10^{-5} *4*; α(P)=3.40×10^{-6} *5* B(E3)(W.u.)=7.4 *8* Mult.: O from γ(θ) in (HI,xnγ), M3 excluded by comparison to RUL.

$^{212}_{86}Rn_{126}$-9

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α	Comments
5771.7	19$^-$	344.8 *2*	6.2 *5*	5426.9	20$^+$	[E1]	0.0243	α(K)=0.0198 *3*; α(L)=0.00346 *5*; α(M)=0.000817 *12*; α(N)=0.000211 *3*; α(O)=4.54×10^{-5} *7* α(P)=6.30×10^{-6} *9*
		657.6 *1*	100.0 *23*	5114.1	18$^-$	M1	0.0726	α(K)=0.0590 *9*; α(L)=0.01035 *15*; α(M)=0.00245 *4*; α(N)=0.000638 *9*; α(O)=0.0001396 *20* α(P)=2.04×10^{-5} *3*
		1705.1 *3*	0.86 *14*	4066.6	17$^-$	[E2]	0.00314	α(K)=0.00244 *4*; α(L)=0.000431 *6*; α(M)=0.0001021 *15*; α(N)=2.65×10^{-5} *4*; α(O)=5.77×10^{-6} *8* α(P)=8.30×10^{-7} *12*
5794.4		865.0 *2*	100 *3*	4929.4				
		1212.3 *3*	20 *4*	4582.3	17$^-$			
6166.7	20$^+$	372.3 *2*	4.2 *5*	5794.4				
		395.0 *1*	100.0 *25*	5771.7	19$^-$	E1	0.0181	α(K)=0.01473 *21*; α(L)=0.00254 *4*; α(M)=0.000599 *9*; α(N)=0.0001549 *22*; α(O)=3.33×10^{-5} *5* α(P)=4.66×10^{-6} *7*
		739.7 *1*	9.8 *7*	5426.9	20$^+$			
6174.2	(22$^+$)	(7.5# *6*)	0.0011# *6*	6166.7	20$^+$	[E2]	6.8×10^5 *35*	α(M)=5.1×10^5 *27*; α(N)=1.34×10^5 *69*; α(O)=2.7×10^4 *14*; α(P)=2.9×10^3 *15* B(E2)(W.u.)=4.0 *+35−18*
		402.5 *3*	15 *3*	5771.7	19$^-$	[E3]	0.258	α(K)=0.0951 *14*; α(L)=0.1202 *18*; α(M)=0.0325 *5*; α(N)=0.00851 *13*; α(O)=0.00176 *3* α(P)=0.000212 *3* B(E3)(W.u.)=45 *+52−21*
		747.3 *1*	100 *5*	5426.9	20$^+$	[E2]	0.01450	α(K)=0.01086 *16*; α(L)=0.00274 *4*; α(M)=0.000677 *10*; α(N)=0.0001762 *25* α(O)=3.76×10^{-5} *6*; α(P)=5.08×10^{-6} *8* B(E2)(W.u.)=3.7×10^{-5} *+34−16*
6709.3	(23$^+$)	535.0 *1*	100	6174.2	(22$^+$)	D		
6821.4		647.2 *2*	100	6174.2	(22$^+$)			
7142.0	(25$^-$)	432.5 *2*	4.9 *3*	6709.3	(23$^+$)	(M2)	0.663	α(K)=0.505 *8*; α(L)=0.1195 *17*; α(M)=0.0295 *5*; α(N)=0.00775 *11*; α(O)=0.001689 *24* α(P)=0.000242 *4* B(M2)(W.u.)=0.142 *10* Mult.: Q from γ(θ) in (HI,xnγ), Δπ=(yes) from level scheme.
		967.8 *1*	100.0 *20*	6174.2	(22$^+$)	E3	0.0209	α(K)=0.01473 *21*; α(L)=0.00460 *7*; α(M)=0.001158 *17*; α(N)=0.000302 *5*; α(O)=6.44×10^{-5} *9* α(P)=8.66×10^{-6} *13* B(E3)(W.u.)=28.8 *10*
7177.7		356.3 *3*	100	6821.4		D		
7524.6	(25$^-$)	382.6 *2*	100	7142.0	(25$^-$)	D		
7819.1	(26$^-$)	294.5 *3*	6.9 *8*	7524.6	(25$^-$)	D		
		677.1 *1*	100 *7*	7142.0	(25$^-$)	D		

$^{212}_{86}Rn_{126}$-10

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	α	Comments
7862.8	(26$^-$)	720.8 *1*	100	7142.0	(25$^-$)	D		
7878.3	(27$^-$)	(15.5# *6*)	0.137# *12*	7862.8	(26$^-$)	M1	153	B(M1)(W.u.)=4.0×10^{-4} *+19−10*
		(59.2# *6*)	1.40# *16*	7819.1	(26$^-$)	[M1]	11.8 *4*	α(L)=8.9 *3*; α(M)=2.13 *8*; α(N)=0.554 *19*; α(O)=0.121 *4*; α(P)=0.0177 *6* B(M1)(W.u.)=7.4×10^{-5} *+31−18*
		353.8 *3*	3.1 *9*	7524.6	(25$^-$)	[E2]	0.0856	α(K)=0.0483 *7*; α(L)=0.0278 *4*; α(M)=0.00723 *11*; α(N)=0.00188 *3*; α(O)=0.000390 *6* α(P)=4.77×10^{-5} *7* B(E2)(W.u.)=0.0021 *+11−7*
		736.3 *1*	100 *4*	7142.0	(25$^-$)	E2	0.01495	α(K)=0.01117 *16*; α(L)=0.00285 *4*; α(M)=0.000704 *10*; α(N)=0.000183 *3*; α(O)=3.91×10^{-5} *6* α(P)=5.27×10^{-6} *8* B(E2)(W.u.)=0.0017 *+7−4*
8361.9	(27$^-$)	483.7 *2*	100	7878.3	(27$^-$)	D		
8497.3	(28$^+$)	619.0 *1*	100 *6*	7878.3	(27$^-$)	D		
		1355.4 *3*	31 *3*	7142.0	(25$^-$)	O	0.00992	α(K)=0.00753 *11*; α(L)=0.00179 *3*; α(M)=0.000441 *7*; α(N)=0.0001150 *17*; α(O)=2.47×10^{-5} *4* α(P)=3.44×10^{-6} *5*
8557.3	(28$^+$)	195.5 *3*	3.7 *7*	8361.9	(27$^-$)			
		679.0 *1*	100 *8*	7878.3	(27$^-$)	D		
8579.2	(30$^+$)	(21.9# *6*)	9.6×10^{-4}# *25*	8557.3	(28$^+$)	(E2)	1.28×10^4 *19*	α(L)=9.5×10^3 *14*; α(M)=2.5×10^3 *4*; α(N)=6.5×10^2 *10*; α(O)=131 *20*; α(P)=14.2 *21* B(E2)(W.u.)=0.072 *21* Mult.: E3 and M2 are excluded by RUL. E2 remains the only possibility. This point has been discussed in e-mail communication of B. Singh on Dec 18, 2009 with G.D. Dracoulis, and there is general agreement with the conclusions drawn here, and for implied positive parity of 8557-keV level.
		(81.9# *6*)	0.65# *9*	8497.3	(28$^+$)	[E2]	20.7 *8*	α(L)=15.3 *6*; α(M)=4.11 *16*; α(N)=1.07 *4*; α(O)=0.215 *9*; α(P)=0.0237 *9* B(E2)(W.u.)=0.066 *+12−10*
		700.9 *1*	100 *3*	7878.3	(27$^-$)	E3	0.0463	α(K)=0.0286 *4*; α(L)=0.01316 *19*; α(M)=0.00341 *5*; α(N)=0.000891 *13*; α(O)=0.000187 *3* α(P)=2.42×10^{-5} *4* B(E3)(W.u.)=27.1 *+29−24*
8932.9	(30$^+$)	353.7 *2*	100	8579.2	(30$^+$)	D		
9028.4		449.2 *3*	100	8579.2	(30$^+$)	D		
9446.7	(31$^+$)	867.5 *2*	100	8579.2	(30$^+$)	D		
9509.5	(31$^+$)	930.3 *2*	100	8579.2	(30$^+$)	D		
9608.4	(31)	1029.2 *2*	100	8579.2	(30$^+$)	D		
9695.8	(33$^-$)	1116.6 *1*	100 *6*	8579.2	(30$^+$)	E3	0.01508	α(K)=0.01105 *16*; α(L)=0.00303 *5*; α(M)=0.000755 *11*; α(N)=0.000197 *3*; α(O)=4.21×10^{-5} *6*

$^{212}_{86}Rn_{126}$-11

Adopted Levels, Gammas (continued)

γ(^{212}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α	Comments
								α(P)=5.75×10^{-6} *8* B(E3)(W.u.)=43 *6*
10102.4		406.6 *3*	100	9695.8	(33$^-$)	D		
10124.7	(32$^+$)	615.2 *3*	100	9509.5	(31$^+$)	D		
10619.5	(34$^-$)	923.7 *1*	100	9695.8	(33$^-$)	(M1)	0.0298	α(K)=0.0243 *4*; α(L)=0.00422 *6*; α(M)=0.000997 *14*; α(N)=0.000260 *4*; α(O)=5.69×10^{-5} *8* α(P)=8.32×10^{-6} *12* B(M1)(W.u.)=1.4×10^{-6} *+14−5* Mult.: D from γ(θ) in (HI,xnγ), Δπ=no from level scheme.
10843.4	(32)	1334.0 *3*	100	9509.5	(31$^+$)	D		
10961.4	(33)	118.0 *3*	52 *9*	10843.4	(32)			
		859 *1*	100 *40*	10102.4				
11086.0		1390.2 *3*	100	9695.8	(33$^-$)			
11175.3?	(34)	214.0[a] *3*	100	10961.4	(33)	D		E_γ: ordering of 179-214 cascade is uncertain.
11262.0	(35$^-$)	642.7 *3*	100	10619.5	(34$^-$)	D		
11354.5	(35$^-$)	(92.5[#] *8*)	3.5[#] *9*	11262.0	(35$^-$)	[M1]	3.20 *10*	α(L)=2.44 *7*; α(M)=0.579 *17*; α(N)=0.151 *5*; α(O)=0.0330 *10*; α(P)=0.00482 *14*
		179.3[a] *3*	13.0 *14*	11175.3?	(34)	D		E_γ: ordering of 179-214 cascade is uncertain.
		735.1 *2*	100 *6*	10619.5	(34$^-$)	D		
		1658.4 *3*	23 *4*	9695.8	(33$^-$)	[E2]	0.00328	α(K)=0.00256 *4*; α(L)=0.000455 *7*; α(M)=0.0001080 *16*; α(N)=2.81×10^{-5} *4*; α(O)=6.11×10^{-6} *9* α(P)=8.77×10^{-7} *13*
11462.5		843.0 *3*	100	10619.5	(34$^-$)			
11670.8		316.3 *3*	100	11354.5	(35$^-$)			
11827.3	(36$^-$)	472.8 *3*	100	11354.5	(35$^-$)	D		
11880.3		1260.8 *3*	100	10619.5	(34$^-$)			
12052.8	37$^{(-)}$	698.1 *3*	100	11354.5	(35$^-$)	Q		
12165.7		285.4 *3*	100	11880.3		D		
12211.3	37$^{(-)}$	158.4 *3*	3.9 *7*	12052.8	37$^{(-)}$	D		
		856.7 *2*	100 *7*	11354.5	(35$^-$)	(E2)	0.01100	α(K)=0.00843 *12*; α(L)=0.00194 *3*; α(M)=0.000475 *7*; α(N)=0.0001237 *18*; α(O)=2.65×10^{-5} *4* α(P)=3.63×10^{-6} *5* B(E2)(W.u.)=7.5×10^{-4} *7* Mult.: Q from γ(θ) in (HI,xnγ), M2 excluded by comparison to RUL.
		949.5 *3*	22 *6*	11262.0	(35$^-$)	[E2]	0.00899	α(K)=0.00698 *10*; α(L)=0.001518 *22*; α(M)=0.000369 *6*; α(N)=9.60×10^{-5} *14*; α(O)=2.06×10^{-5} *3* α(P)=2.86×10^{-6} *4* B(E2)(W.u.)=9.8×10^{-5} *+23−25*
12547.6	(38$^+$)	336.3 *3*	100	12211.3	37$^{(-)}$	(E1)	0.0257	α(K)=0.0209 *3*; α(L)=0.00366 *6*; α(M)=0.000866 *13*; α(N)=0.000224 *4*; α(O)=4.81×10^{-5} *7* α(P)=6.67×10^{-6} *10* B(M1)(W.u.)=5.9×10^{-7} *+12−9* Mult.: D from γ(θ) in (HI,xnγ), Δπ=yes from level scheme.

$^{212}_{86}Rn_{126}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{212}Rn)$ (continued)

E_i(level)	E_γ †	I_γ †	E_f	J^π_f	Comments
13375.3	1164 *1*	100	12211.3	$37^{(-)}$	
13444.6	1233.3 *3*	100	12211.3	$37^{(-)}$	

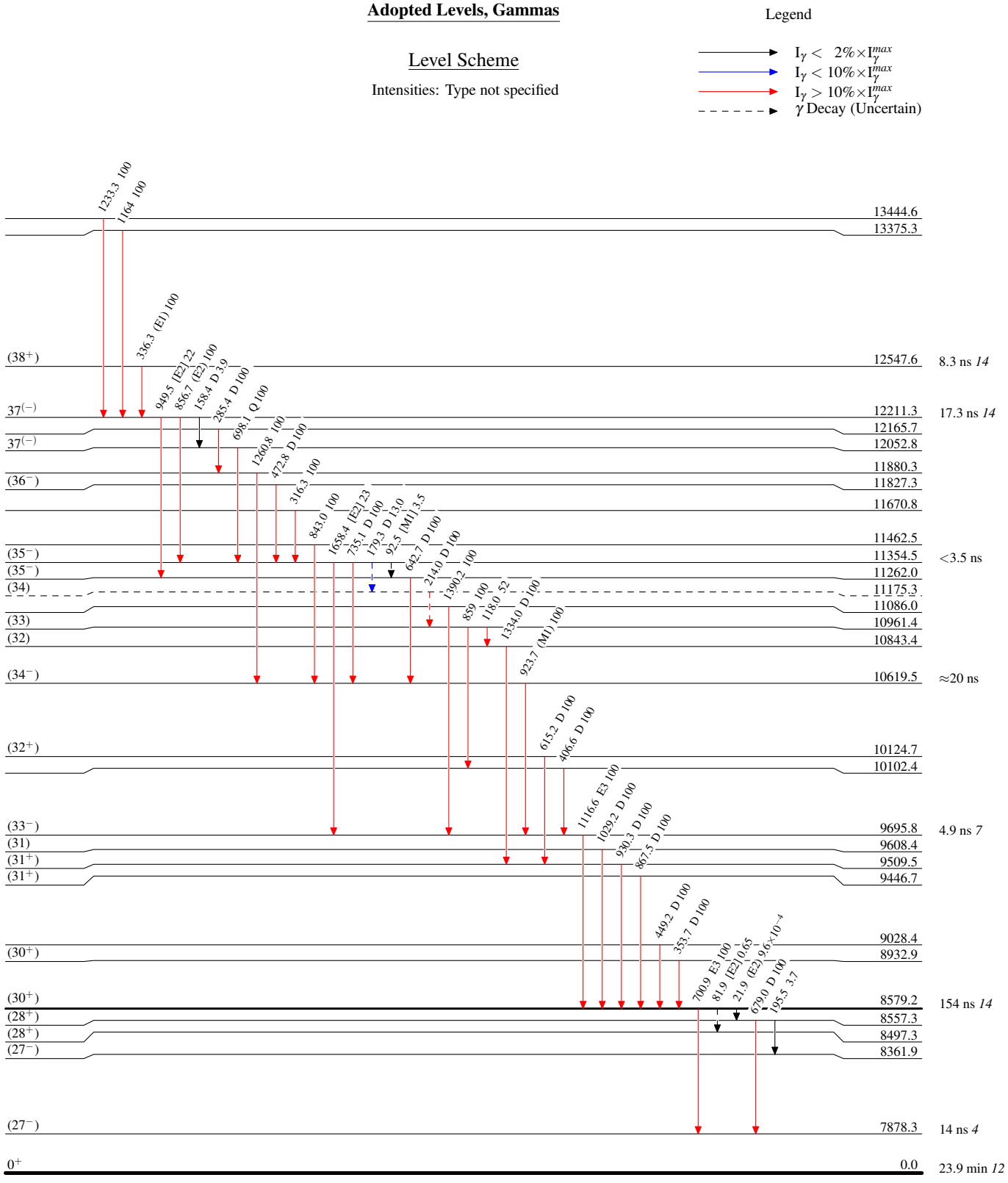
† From (HI,xnγ) data set, except where noted.
‡ Based on conversion coefficients, angular correlation and linear polarization measurements of (HI,xnγ) studies, except where noted.
# This γ not seen in (HI,xnγ) data of 2009Dr12, but implied by $\gamma\gamma$ data. Eγ is deduced by the evaluators from the level-energy difference. The Iγ is deduced by the evaluators from the measured I(γ+ce) reported in (HI,xnγ) and total conversion coefficient.
@ From ^{209}Bi(^{6}Li,3nγ).
& From DCO in ^{209}Bi(^{6}Li,3nγ).
a Placement of transition in the level scheme is uncertain.

$^{212}_{86}Rn_{126}$-13

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

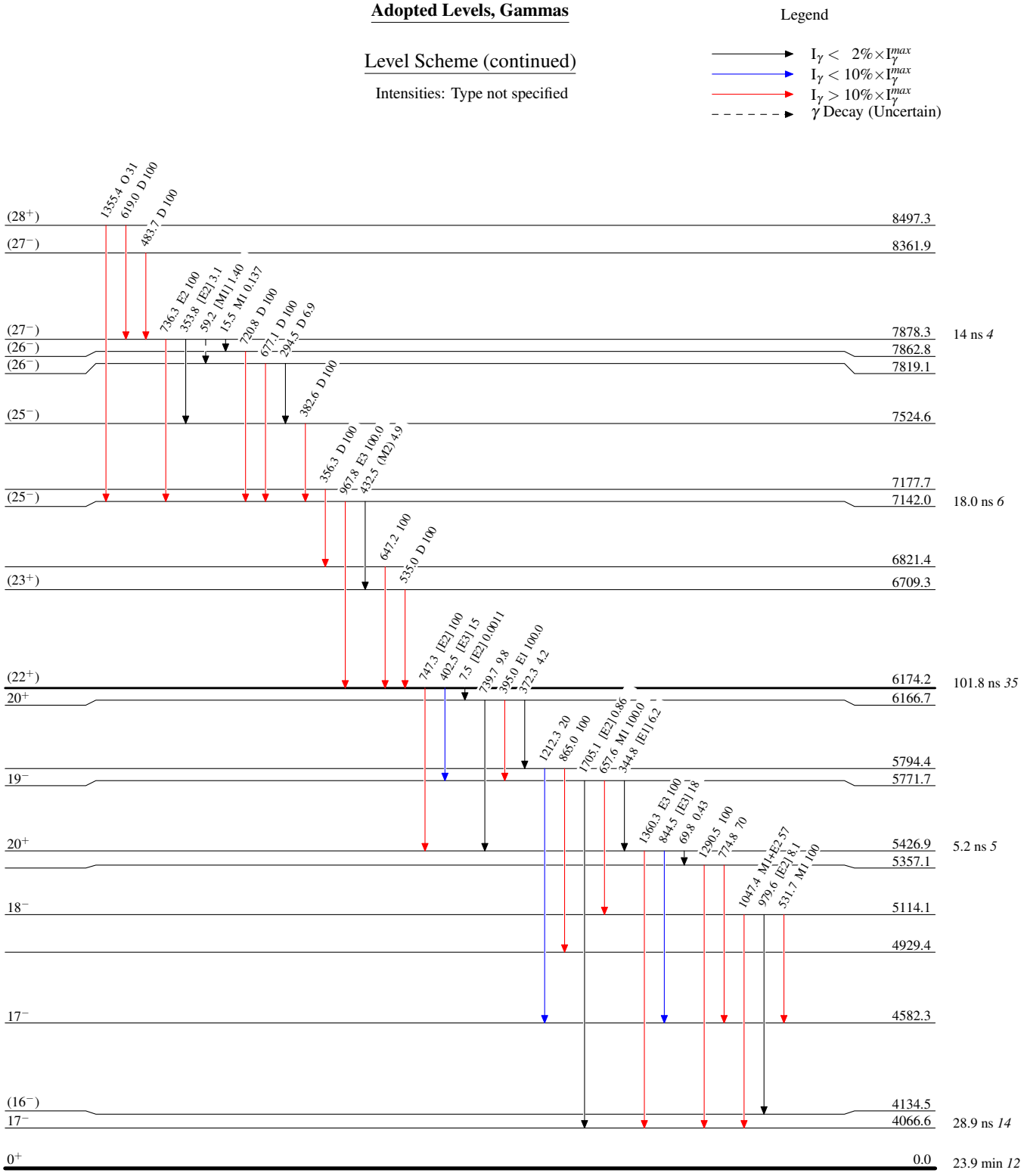


$^{212}_{86}Rn_{126}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{212}_{86}Rn_{126}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

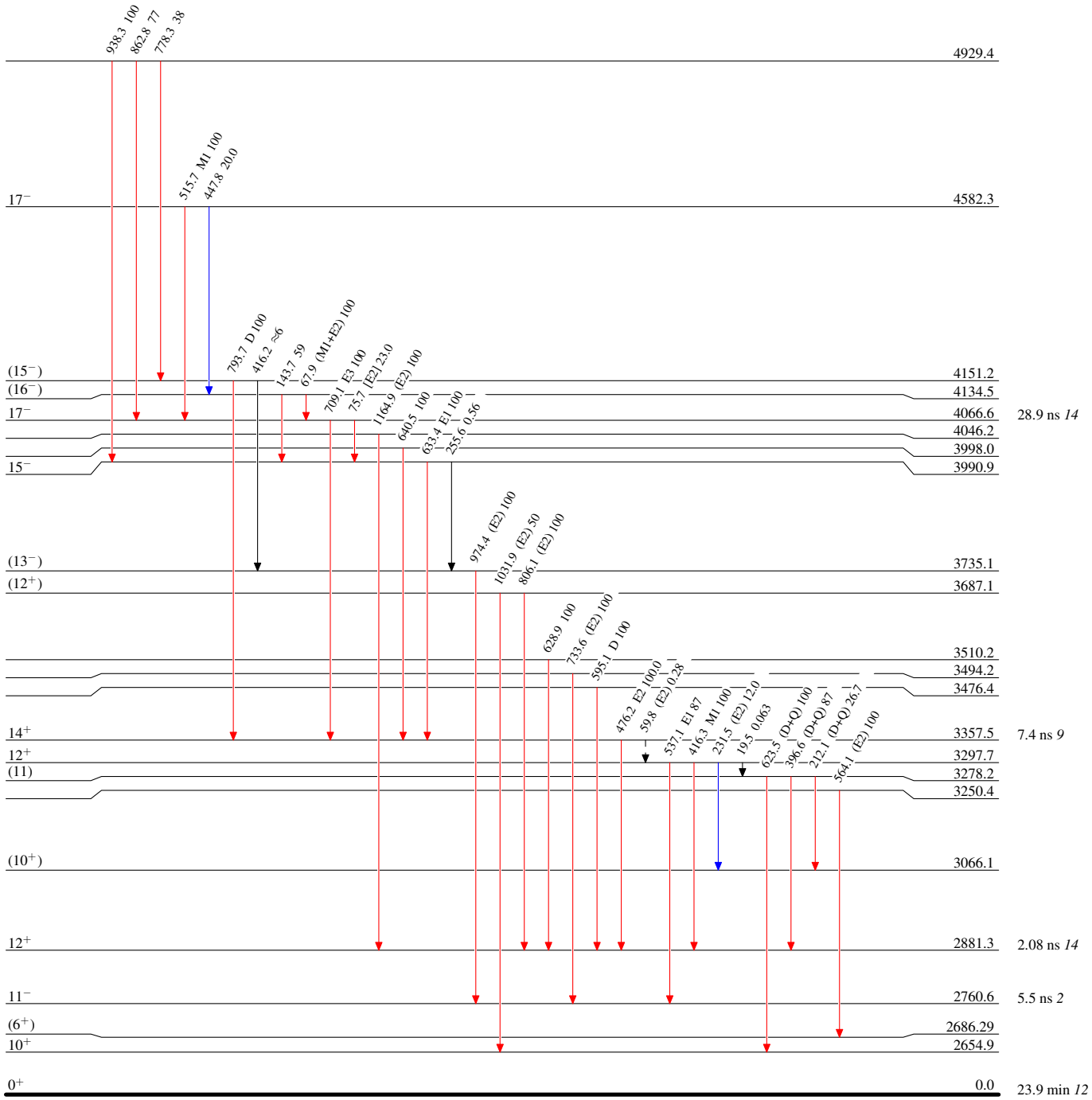
Legend

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

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

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

γ Decay (Uncertain)

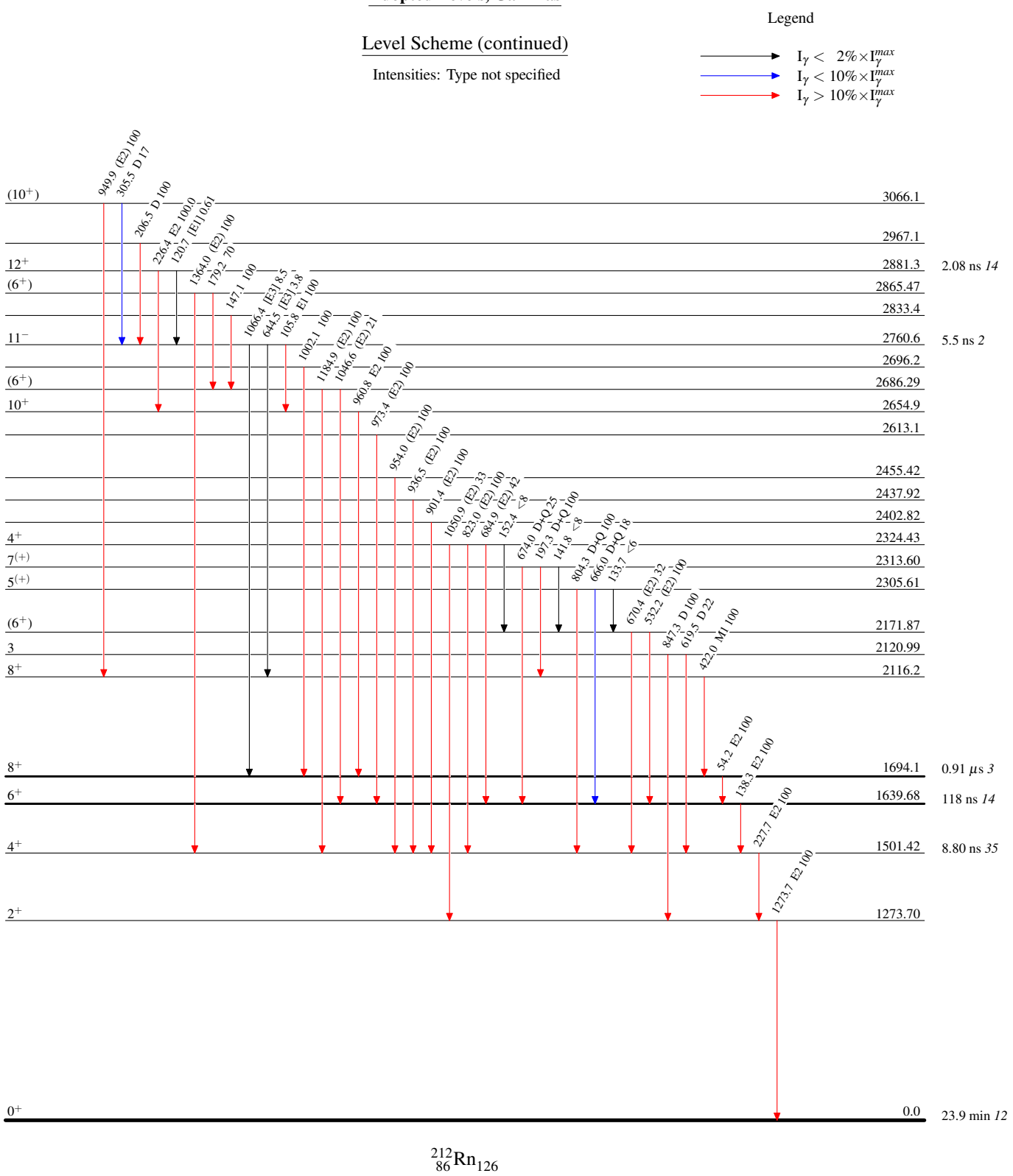


$^{212}_{86}Rn_{126}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{212}_{86}Rn_{126}$