^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

Parent: ^{104}Ag: E=0.0; $J^\pi=5^+$; $T_{1/2}$=69.2 min *10*; Q(ε)=4279 *4*; %ε+%$β^+$ decay=100.0
Activity from ^{106}Cd(P,2P$_n$), ^{107}Ag(p,p3n), ^{104}Pd(p,n), ^{103}Rh(^{3}He,2n), (1971Do10).
Measured γ, γγGe(Li) (1969Li20,1971Do10), pair spectrometer (1978Mu01).

^{104}Pd Levels

E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†	E(level)	Jπ†
0.0	0^+	2265.36 *3*	4^+	2767.0	4^+	3136.9 *4*	$4^+,5^+,6^+$
555.81 *4*	2^+	2298.9 *8*	4^-	2774.5 *4*	(4,5,6)	3157.9 *4*	$4^+,5^+$
1323.59 *6*	4^+	2444.5 *3*	$4^+,5^+,6^+$	2800.4	4^+	3193.3 *6*	$(3^-,4^-)$
1341.68 *5*	2^+	2456.6 *4*	(1,2,3)	2875.2? *5*	(4,5,6)	3280.5 *6*	4,5,6
1821.0 *26*	3^+	2479.6 *6*	1,2	2924.2 *3*	(4,5,6)	3309.6 *5*	4,5,6
1941.6? *5*		2570.3 *4*	$(4,5)^+$	3084? *6*	$(2^+$ to $5^+)$	3333.8 *8*	$3^-,4^-$
2082.38 *6*	4^+	2613.4 *5*		3097.8 *5*	1,2	3590.2? *6*	
2181.56 *6*	4^+	2677.8 *4*	4^+	3105.1 *4*	4^+	3607.7?	
2193.5? *6*	(4^+)	2715.9 *4*	(4,5,6)	3112.8 *6*	$5^+,6^+$		
2249.5 *5*	6^+	2760.3 *4*	(4,5,6)	3115.6? *5*			

† From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(689 *4*)	3590.2?		0.2 *1*	6.23 *23*	0.2 *1*	εK= 0.8596; εL= 0.1128 *3*; εM+= 0.02753 *9*
(945 *4*)	3333.8		0.25 *5*	6.43 *10*	0.25 *5*	εK= 0.8619; εL= 0.11107 *15*; εM+= 0.02704 *5*
(969 *4*)	3309.6		0.7 *1*	6.00 *7*	0.7 *1*	εK= 0.8620; εL= 0.11096 *15*; εM+= 0.02700 *4*
(999 *4*)	3280.5		0.04 *1*	7.27 *12*	0.04 *1*	εK= 0.8622; εL= 0.11083 *14*; εM+= 0.02697 *4*
(1086 *4*)	3193.3		0.02 *1*	7.65 *22*	0.02 *1*	εK= 0.8626; εL= 0.11048 *12*; εM+= 0.02687 *4*
(1121 *4*)	3157.9		7.1 *7*	5.13 *5*	7.1 *7*	εK= 0.8628; εL= 0.11036; εM+= 0.02683 *3*
(1142 *4*)	3136.9		1.8 *2*	5.74 *6*	1.8 *2*	εK= 0.8629; εL= 0.11029; εM+= 0.02681 *3*
(1166 *4*)	3112.8		6.9 *10*	5.18 *7*	6.9 *10*	εK= 0.8630; εL= 0.11021; εM+= 0.02679 *3*
(1174 *4*)	3105.1		4.5 *6*	5.37 *7*	4.5 *6*	εK= 0.8630; εL= 0.11019; εM+= 0.02678 *3*
(1181 *4*)	3097.8		0.02 *1*	7.73 *22*	0.02 *1*	εK= 0.8630; εL= 0.11016; εM+= 0.02678 *3*
(1355 *4*)	2924.2	0.0035 *20*	1.50 *20*	5.98 *7*	1.5 *2*	av Eβ= 142 *13*; εK= 0.8616; εL= 0.10945 *19*; εM+= 0.02659 *5*
(1404 *4*)	2875.2?	0.0009 *5*	0.20 *5*	6.89 *11*	0.20 *5*	av Eβ= 163 *13*; εK= 0.8601 *14*; εL= 0.10913 *25*; εM+= 0.02651 *7*
(1479 *4*)	2800.4	0.00018 *11*	0.020 *10*	7.93 *22*	0.02 *1*	av Eβ= 196 *13*; εK= 0.8561 *23*; εL= 0.1085 *4*; εM+= 0.02634 *9*
(1505 *4*)	2774.5	0.014 *5*	1.19 *20*	6.17 *8*	1.2 *2*	av Eβ= 207 *13*; εK= 0.854 *3*; εL= 0.1082 *4*; εM+= 0.02626 *10*
(1512 *4*)	2767.0	0.0027 *9*	0.217 *20*	6.91 *5*	0.22 *2*	av Eβ= 210 *13*; εK= 0.854 *3*; εL= 0.1081 *4*; εM+= 0.02624 *11*
(1519 *4*)	2760.3	0.0015 *5*	0.118 *10*	7.18 *5*	0.12 *1*	av Eβ= 213 *13*; εK= 0.853 *3*; εL= 0.1080 *5*; εM+= 0.02622 *11*
(1563 *4*)	2715.9	0.0016 *5*	0.088 *10*	7.34 *6*	0.09 *1*	av Eβ= 232 *13*; εK= 0.849 *4*; εL= 0.1073 *5*; εM+= 0.02606 *13*
(1601 *4*)	2677.8	0.0012 *4*	0.049 *10*	7.61 *9*	0.05 *1*	av Eβ= 249 *13*; εK= 0.844 *5*; εL= 0.1067 *6*; εM+= 0.02589 *15*
(1666 *4*)	2613.4	0.0021 *6*	0.058 *10*	7.58 *8*	0.06 *1*	av Eβ= 276 *13*; εK= 0.834 *6*; εL= 0.1053 *8*; εM+= 0.02556 *18*

Continued on next page (footnotes at end of table)

^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(1709 *4*)	2570.3	0.033 *6*	0.717 *20*	6.506 *23*	0.75 *2*	av Eβ= 295 *13*; εK= 0.826 *7*; εL= 0.1042 *9*; εM+= 0.02530 *21*
(1799 *4*)	2479.6	0.0027 *8*	0.037 *10*	7.84 *11*	0.04 *1*	av Eβ= 335 *13*; εK= 0.805 *9*; εL= 0.1015 *11*; εM+= 0.0246 *3*
(1822 *4*)	2456.6	0.029 *6*	0.35 *5*	6.87 *6*	0.38 *5*	av Eβ= 345 *13*; εK= 0.799 *9*; εL= 0.1007 *12*; εM+= 0.0244 *3*
(1835 *4*)	2444.5	0.52 *10*	6.0 *8*	5.65 *6*	6.5 *8*	av Eβ= 350 *13*; εK= 0.796 *9*; εL= 0.1002 *12*; εM+= 0.0243 *3*
(1980 *4*)	2298.9	0.047 *5*	0.303 *10*	7.012 *25*	0.35 *1*	av Eβ= 413 *14*; εK= 0.748 *12*; εL= 0.0940 *15*; εM+= 0.0228 *4*
(2014 *4*)	2265.36	5.1 *7*	29 *3*	5.05 *5*	34 *3*	av Eβ= 428 *14*; εK= 0.735 *12*; εL= 0.0924 *16*; εM+= 0.0224 *4*
(2030 *4*)	2249.5	0.2 *3*	1.0 *16*	6.5 *7*	1.2 *19*	av Eβ= 435 *14*; εK= 0.729 *13*; εL= 0.0916 *16*; εM+= 0.0222 *4*
(2086 *4*)	2193.5?	0.037 *19*	0.16 *9*	7.33 *22*	0.2 *1*	av Eβ= 460 *14*; εK= 0.706 *13*; εL= 0.0886 *17*; εM+= 0.0215 *4*
(2097 *4*)	2181.56	2.9 *4*	12.2 *14*	5.46 *6*	15.1 *17*	av Eβ= 465 *14*; εK= 0.701 *13*; εL= 0.0880 *17*; εM+= 0.0213 *4*
(2197 *4*)	2082.38	4.1 *5*	12.7 *14*	5.48 *5*	16.8 *17*	av Eβ= 509 *14*; εK= 0.657 *14*; εL= 0.0824 *18*; εM+= 0.0200 *5*
(2337 *4*)	1941.6?					
(2458 *5*)	1821.0	0.2 *4*	0.2 *6*	7.3 *10*	0.4 *9*	av Eβ= 625 *14*; εK= 0.533 *15*; εL= 0.0667 *18*; εM+= 0.0162 *5*
(2955 *4*)	1323.59	1.9 *25*	1.1 *16*	6.8 *6*	3 *4*	av Eβ= 850 *14*; εK= 0.329 *11*; εL= 0.0410 *13*; εM+= 0.0099 *3*

† Absolute intensity per 100 decays.

γ(^{104}Pd)

Iγ normalization: assuming the sum of γ's to the g.s.=100. No Iε to g.s.
Coincidence measurements by 1971Mu22 are summarized on the decay scheme.
Internal conversion data are reported by 1960Nu02. Low resolution and probable contamination from ^{103}Ag limit their reliability above 600 keV and are not included here.

E_γ†	I_γ&	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[a]	Comments
179.3[b] *3*	1.0 *2*	2444.5	4+,5+,6+	2265.36	4+			
183.2[b] *3*	0.5 *1*	2265.36	4+	2082.38	4+			
x204‡[b]	≈0.7							
263.2 *2*	1.1 *5*	2444.5	4+,5+,6+	2181.56	4+	E2	0.0460	α(K)= 0.0391; α(L)=0.00565; α(M)=0.00107; α(N+..)=0.00019 α(K)exp=0.054 *16*
x289.7 *2*	1.3 *2*							
362.3 *2*	1.4 *3*	2444.5	4+,5+,6+	2082.38	4+	M1,E2		α(K)exp=0.013 *3*
444.5 *2*	1.8 *3*	2265.36	4+	1821.0	3+	M1,E2		α(K)exp=0.011 *2*
479.2 *2*	1.1 *2*	1821.0	3+	1341.68	2+	M1,E2		α(K)exp=0.007 *3*
497‡[b]	≈0.5	1821.0	3+	1323.59	4+			
555.8 *2*	100 *1*	555.81	2+	0.0	0+	E2	0.00447	α(K)=0.00384; α(L)=0.00048 α(K)exp=0.0032 *9*
618.0#[b] *5*	0.6 *2*	1941.6?		1323.59	4+			

Continued on next page (footnotes at end of table)

^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10 (continued)

γ(^{104}Pd) (continued)

E_γ †	I_γ &	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [a]	Comments
623.2 *2*	2.7 *5*	2444.5	$4^+,5^+,6^+$	1821.0	3^+			
659.3 *3*	0.5 *1*	2924.2	(4,5,6)	2265.36	4^+			
740.5 *2*	7.8 *10*	2082.38	4^+	1341.68	2^+			
758.7 *2*	6.9 *9*	2082.38	4^+	1323.59	4^+			
767.6 *2*	71 *2*	1323.59	4^+	555.81	2^+	E2	0.00190	α(K)=0.00164; α(L)= 0.0002
785.7 *2*	10.3 *15*	1341.68	2^+	555.81	2^+			
x805.9#b *5*	0.3 *1*							
839.7 *2*	1.5 *3*	2181.56	4^+	1341.68	2^+			
857.9 *2*	11.2 *15*	2181.56	4^+	1323.59	4^+			
863.0 *3*	7.4 *10*	3112.8	$5^+,6^+$	2249.5	6^+			
872‡b	≈0.3	3136.9	$4^+,5^+,6^+$	2265.36	4^+			
x883‡b *2*	≈0.3							
892.6 *3*	0.5 *1*	3157.9	$4^+,5^+$	2265.36	4^+			
908.0 *3*	4.8 *6*	3157.9	$4^+,5^+$	2249.5	6^+			
923.3 *5*	7.5 *10*	2265.36	4^+	1341.68	2^+			
925.9 *5*	13.5 *16*	2249.5	6^+	1323.59	4^+			
941.6 *3*	27.0 *25*	2265.36	4^+	1323.59	4^+			
955.3@ *3*	0.6 *1*	3136.9	$4^+,5^+,6^+$	2181.56	4^+			
974.2@ *2*	0.02	2298.9	4^-	1323.59	4^+			
1022.9 *5*	0.6 *1*	3105.1	4^+	2082.38	4^+			
1075.3 *3*	2.3 *4*	3157.9	$4^+,5^+$	2082.38	4^+			
1103‡b *2*	0.3 *1*	2444.5	$4^+,5^+,6^+$	1341.68	2^+			
1120.5 *4*	0.9 *1*	2444.5	$4^+,5^+,6^+$	1323.59	4^+			
1133.1@ *3*	0.19	2456.6	(1,2,3)	1323.59	4^+			
x1192‡b	≈0.3							
1247.1# *5*	0.6 *2*	2570.3	$(4,5)^+$	1323.59	4^+			
1265.2 *3*	4.6 *7*	1821.0	3^+	555.81	2^+			
1283.9 *4*	0.8 *1*	3105.1	4^+	1821.0	3^+			
1316.0#b *5*	0.3 *1*	3136.9	$4^+,5^+,6^+$	1821.0	3^+			
x1323‡b *2*	≈0.4							
1341.8 *3*	7.9 *11*	1341.68	2^+	0.0	0^+			
1354.3@ *3*	0.05	2677.8	4^+	1323.59	4^+			
1374.1@ *3*	0.10	2715.9	(4,5,6)	1341.68	2^+			
1418.5 *3*	0.13	2760.3	(4,5,6)	1341.68	2^+			
1425.0 *5*	0.24	2767.0	4^+	1341.68	2^+			
1451.2 *4*	1.2 *2*	2774.5	(4,5,6)	1323.59	4^+			
x1456‡b *2*	≈0.3							
x1478.7#b *5*	0.3 *1*							
1526.6 *3*	7.7 *10*	2082.38	4^+	555.81	2^+			
x1544.7#b *5*	0.5 *2*							
1551.6@ *5*	0.2 *1*	2875.2?	(4,5,6)	1323.59	4^+			
1600.2 *4*	1.1 *2*	2924.2	(4,5,6)	1323.59	4^+			
1625.8 *3*	5.5 *8*	2181.56	4^+	555.81	2^+			
1637.7@ *5*	0.2 *1*	2193.5?	(4^+)	555.81	2^+			
x1687‡b	≈0.2							
1709.5 *5*	1.0 *2*	2265.36	4^+	555.81	2^+			
x1723‡b	≈0.2							
1743.1@ *9*	0.35	2298.9	4^-	555.81	2^+			
1761#b *5*		3084?	$(2^+$ to $5^+)$	1323.59	4^+			
1763.1#b *5*	0.7 *2*	3105.1	4^+	1341.68	2^+			

Continued on next page (footnotes at end of table)

^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10 (continued)

γ(^{104}Pd) (continued)

E_γ †	I_γ &	E_i(level)	J_i^π	E_f	J_f^π
1781.8 *4*	3.4 *6*	3105.1	4^+	1323.59	4^+
1788.2#b *5*	0.1 *1*	3112.8	$5^+,6^+$	1323.59	4^+
1792.0#b *5*	0.2 *1*	3115.6?		1323.59	4^+
1813.7 *4*	1.0 *2*	3136.9	$4^+,5^+,6^+$	1323.59	4^+
1835.0@ *5*	0.1 *1*	3157.9	$4^+,5^+$	1323.59	4^+
1869.7@ *5*	0.02	3193.3	$(3^-,4^-)$	1323.59	4^+
1889.9# *10*	0.8 *3*	2444.5	$4^+,5^+,6^+$	555.81	2^+
1900.9@ *5*	0.21	2456.6	(1,2,3)	555.81	2^+
1923.8@ *5*	0.04	2479.6	1,2	555.81	2^+
1956.9@ *5*	0.04	3280.5	4,5,6	1323.59	4^+
1986.0 *4*	0.7 *1*	3309.6	4,5,6	1323.59	4^+
1992.0@ *5*	0.20	3333.8	$3^-,4^-$	1341.68	2^+
2014.0# *5*	0.2 *1*	2570.3	$(4,5)^+$	555.81	2^+
x2115.0#b *5*	0.05 *5*				
x2157‡b *2*	0.2 *6*				
2218.3@ *5*	0.1 *1*	2774.5	(4,5,6)	555.81	2^+
2244.6@ *5*	0.02	2800.4	4^+	555.81	2^+
2266.6@ *5*	0.2 *1*	3590.2?		1323.59	4^+
2284.1#b *5*	0.1 *1*	3607.7?		1323.59	4^+
2549.0@ *5*	0.05 *5*	3105.1	4^+	555.81	2^+
2582.3@ *10*	0.05 *5*	3136.9	$4^+,5^+,6^+$	555.81	2^+
2613.4@ *5*	0.06	2613.4		0.0	0^+
2777.9@ *5*	0.06	3333.8	$3^-,4^-$	555.81	2^+
3097.8@ *5*	0.02	3097.8	1,2	0.0	0^+

† From 1971Mu22 except as noted.
‡ From 1969Li20, not reported by 1971Mu22.
# From 1971Do10, not reported by 1971Mu22.
@ From 1978Mu01.
& For absolute intensity per 100 decays, multiply by 0.926 *13*.
a 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.
b Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

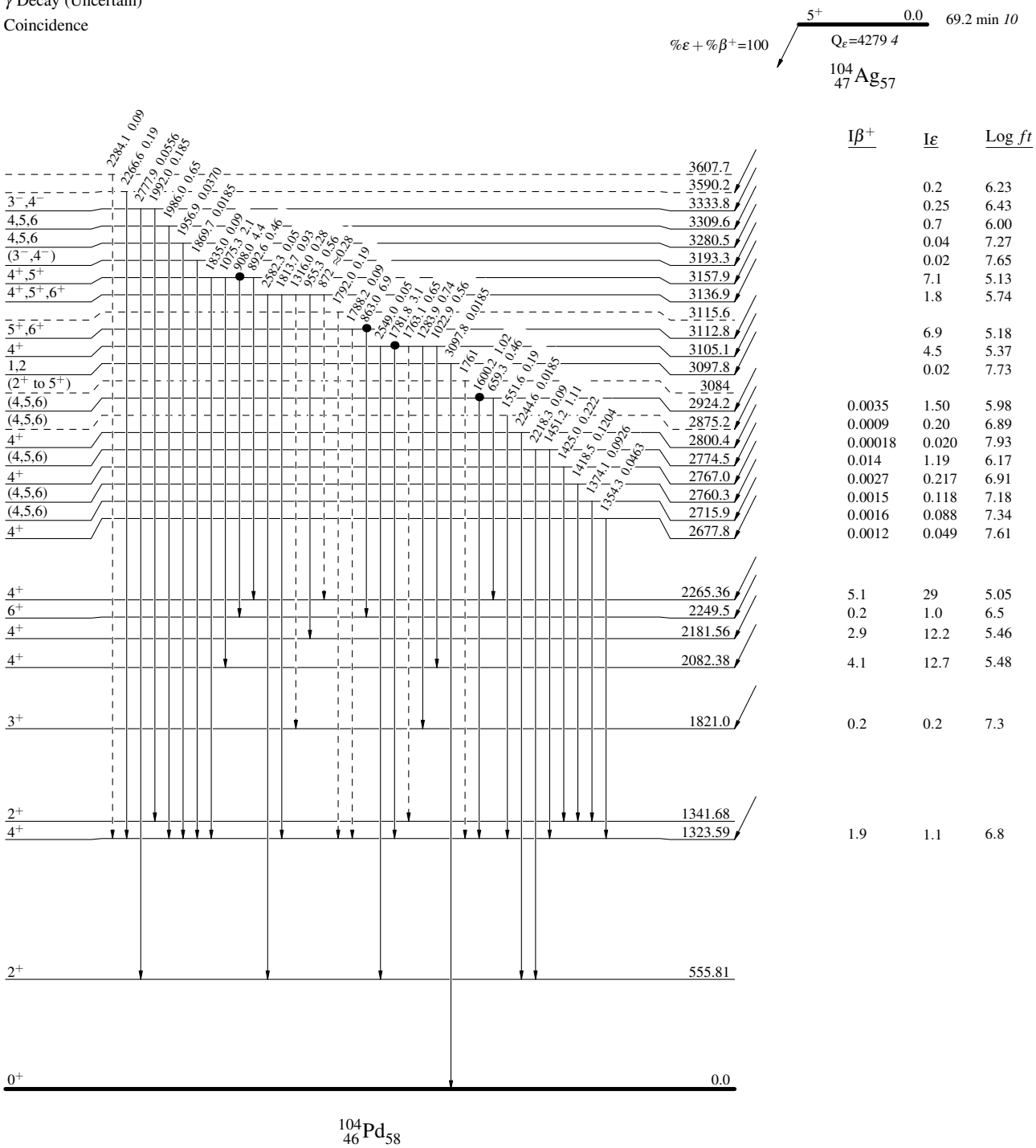
^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10

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)
- Coincidence

Decay Scheme

Intensities: I_γ per 100 parent decays



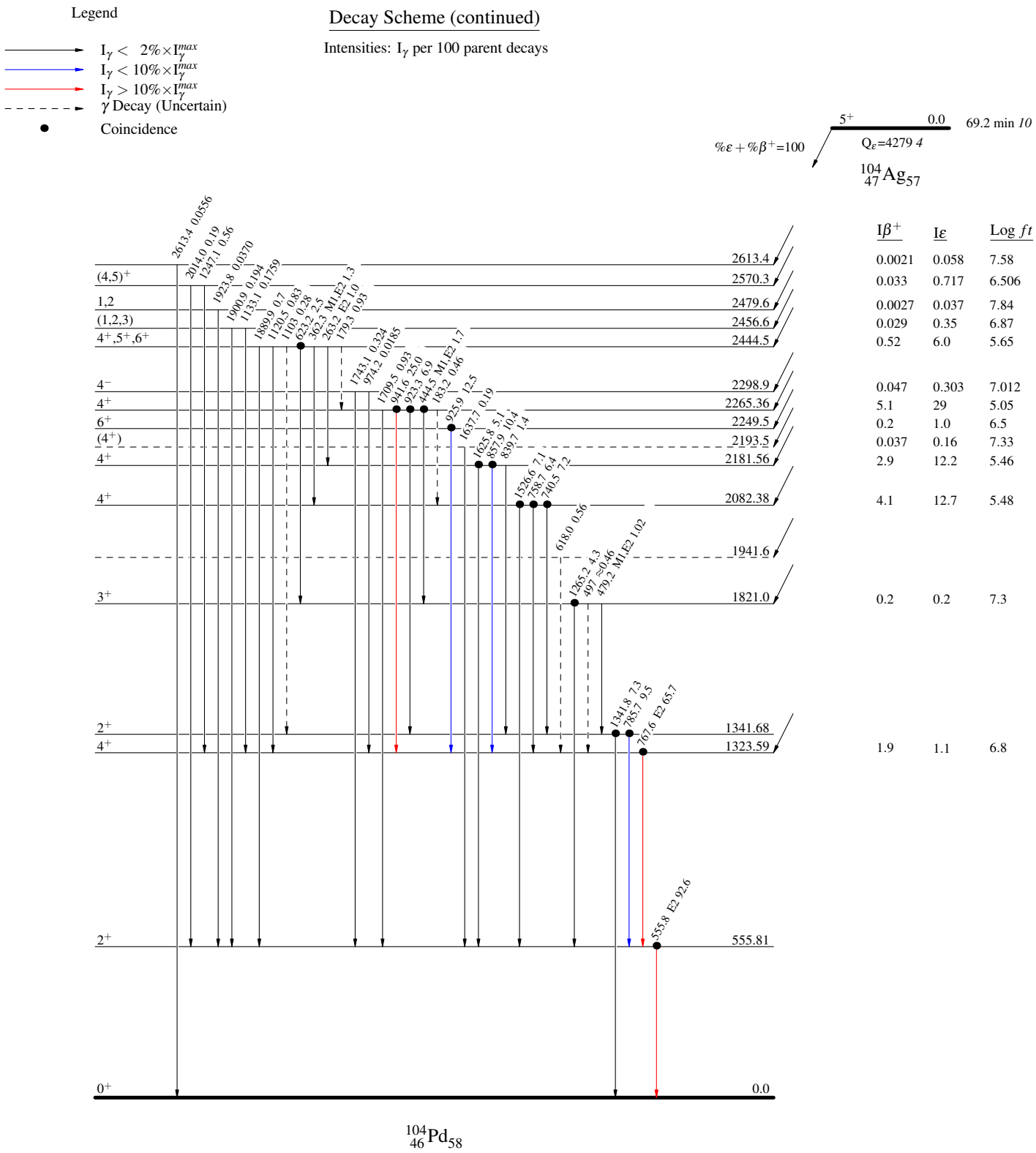
	Iβ+	Iε	Log *ft*
3607.7			
3590.2		0.2	6.23
3333.8		0.25	6.43
3309.6		0.7	6.00
3280.5		0.04	7.27
3193.3		0.02	7.65
3157.9		7.1	5.13
3136.9		1.8	5.74
3115.6			
3112.8		6.9	5.18
3105.1		4.5	5.37
3097.8		0.02	7.73
3084			
2924.2	0.0035	1.50	5.98
2875.2	0.0009	0.20	6.89
2800.4	0.00018	0.020	7.93
2774.5	0.014	1.19	6.17
2767.0	0.0027	0.217	6.91
2760.3	0.0015	0.118	7.18
2715.9	0.0016	0.088	7.34
2677.8	0.0012	0.049	7.61
2265.36	5.1	29	5.05
2249.5	0.2	1.0	6.5
2181.56	2.9	12.2	5.46
2082.38	4.1	12.7	5.48
1821.0	0.2	0.2	7.3
1341.68			
1323.59	1.9	1.1	6.8
555.81			
0.0			

$^{104}_{46}Pd_{58}$

^{104}Ag ε decay (69.2 min) 1978Mu01,1971Do10

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays



$^{104}_{46}Pd_{58}$