^{98}Nb β^- decay (51.1 min) 1984Me04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh	NDS 164, 1 (2020)	15-Feb-2020

Parent: ^{98}Nb: E=84 *4*; $J^\pi=(5)^+$; $T_{1/2}$=51.1 min *4*; Q(β^-)=4591 *5*; %β^- decay=99.9 *1*

^{98}Nb-J^π,$T_{1/2}$: From ^{98}Nb Adopted Levels.

^{98}Nb-Q(β^-): From 2017Wa10.

1984Me04: sources of ^{98}Nb isomer were produced by ^{98}Mo(n,p) reaction using 0.5-g targets of Mo metal (98.3% enriched in ^{98}Mo) bombarded by E=14 MeV neutron from the Livermore Intense Neutron Source (LINS) facility. γ rays were detected with Ge(Li) detectors. Measured Eγ, Iγ, $\gamma\gamma$-coin. Deduced levels, J, π, β-decay branching ratios. Comparisons with available data and calculations based on IBA model.

Others:

1976Si04: γ, $\gamma\gamma$, $T_{1/2}$ (^{98}Nb isomer).

1976He10 (also thesis by Herzog): γ, $\gamma\gamma$, β, $\beta\gamma$.

1972KoYZ, 1971KoZM: γ, $\gamma\gamma$. 22 levels and 56 γ's reported. Results are consistent with those presented here.

1969Hu07: γ, $\gamma\gamma$, β, $\beta\gamma$, ce for 735.

1966Gu05: γ, $\gamma\gamma$, β, $\beta\gamma$, $T_{1/2}$(^{98}Nb isomer).

1962Wa36: γ, $T_{1/2}$(^{98}Nb isomer).

1961Ta08: γ, β, $T_{1/2}$(^{98}Nb isomer).

1960Or02: γ, β, $\beta\gamma$, $T_{1/2}$(^{98}Nb isomer).

1949Bo29: $T_{1/2}$(^{98}Nb isomer).

Additional information 1.

Q values: 4500 *200* (1976He10), 4600 *100* (1966Gu05).

^{98}Mo Levels

A 3742 level proposed by 1976Si04 has been omitted for lack of confirmation by 1984Me04.

E(level)†	J^π‡	E(level)†	J^π‡	E(level)†	J^π‡	E(level)†	J^π‡
0.0	0^+	2620.75 *5*	5^-	3229.13 *10*	(4^+)	3617.08? *21*	
734.73 *6*	0^+	2678.839 *25*	6^+	3241.1 *10*	$(4^+$ to 7)	3620.04 *19*	$(3^-,4)$
787.369 *16*	2^+	2700.82 *18*	2^+	3326.36 *4*	4^+	3623.50 *6*	4^+
1432.183 *16*	2^+	2767.62 *3*	4^+	3366.0? *3*		3711.8 *7*	5^-
1510.014 *19*	4^+	2813.27 *8*	2^+	3394.47 *5*	(4^+)	3723.7 *3*	4^+
1758.36 *4*	2^+	2836.79 *6*	6^+	3401.09 *9*	4^+	3737.71 *8*	4^+
2017.49 *4*	3^-	2856.24? *21*	4^+	3403.95 *11*	$(5^-,6^+)$	3777.84 *11*	4^+
2104.74 *15*	3^+	2976.88 *8*	4^+	3418.66 *17*	4^+	3809.19 *8*	$(4,5,6^+)$
2206.51 *8*	2^+	3010.9? *2*		3455.10 *5*	(4^+)	3809.59 *10*	$(4,5^-)$
2223.823 *20*	4^+	3020.42 *8*	5^-	3465.88 *8*	(4^+)	3842.7? *2*	$(4,5,6^+)$
2333.41 *3*	4^+	3021.71 *3*	4^+	3501.7 *3*	(4^+)	3947.4 *3*	(4^+)
2343.573 *25*	6^+	3050.92 *5*	4^+	3516.73 *7*	(4^+)	3964.28 *11*	$(4^+,5,6)$
2419.61 *4*	4^+	3067.66 *8*	(3^-)	3541.24? *15*		3981.78 *10*	3^-
2485.10 *6*	3^+	3095.6? *2*	2^+	3547.48 *6*	(4^+)	3998.59 *10*	5^-
2506.34 *4*	5^+	3097.08 *10*	(7^-)	3554.86? *12*		4060.59? *13*	$(4,5,6^+)$
2572.99 *11*	3	3165.84 *5*	4^+	3565.62 *8*	(4^+)	4076.40 *11*	$(4,5,6^+)$
2574.67 *7*	4^+	3208.95 *12*	$(4^+,5^-)$	3598.25 *16*	(4^+)	4103.3? *2*	(4^+)
2620.1 *3*	3^+	3211.54 *3*	(4^+)	3601.1 *4*	$(4^+,5,6)$		

† From a least-squares fit to Eγ data.

‡ From Adopted Levels.

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

β^- radiations

E(decay)	E(level)	Iβ^-[†][@]	Log *ft*	Comments
(572 *7*)	4103.3?	0.03 *1*	7.4 *2*	av Eβ=182.5 *24*
(599 *7*)	4076.40	0.046 *7*	7.3 *1*	av Eβ=192.6 *25*
(614[&] *7*)	4060.59?	0.037 *7*	7.5 *1*	av Eβ=198.6 *25*
(676 *7*)	3998.59	0.12 *2*	7.1 *1*	av Eβ=222.3 *25*
(693[&] *7*)	3981.78	0.12[‡] *2*	7.4[1u][#] *1*	av Eβ=249.7 *25* Log *ft*: too low for ΔJ=2, $\Delta\pi$=no transition.
(711 *7*)	3964.28	0.23 *5*	6.9 *1*	av Eβ=235.7 *25*
(728 *7*)	3947.4	0.07 *2*	7.4 *1*	av Eβ=242.3 *26*
(832[&] *7*)	3842.7?	0.05 *1*	7.8 *1*	av Eβ=283.9 *26*
(865 *7*)	3809.59	0.35 *4*	7.0 *1*	av Eβ=297.3 *26*
(866 *7*)	3809.19	0.11 *1*	7.52 *5*	av Eβ=297.5 *26*
(897 *7*)	3777.84	0.046 *6*	8.0 *1*	av Eβ=310.3 *27*
(937 *7*)	3737.71	0.23 *3*	7.3 *1*	av Eβ=326.7 *27*
(951 *7*)	3723.7	0.6 *2*	6.9 *2*	av Eβ=332.5 *27*
(963 *7*)	3711.8	0.010 *7*	8.7 *3*	av Eβ=337.5 *27*
(1052 *7*)	3623.50	1.26 *9*	6.77 *4*	av Eβ=374.3 *27*
(1055 *7*)	3620.04	0.09 *2*	7.9 *1*	av Eβ=375.8 *27*
(1058[&] *7*)	3617.08?	0.08 *2*	8.0 *1*	av Eβ=377.0 *27*
(1074 *7*)	3601.1	0.14 *4*	7.8 *1*	av Eβ=383.8 *27*
(1077 *7*)	3598.25	0.09 *2*	8.0 *1*	av Eβ=385.0 *27*
(1109 *7*)	3565.62	0.71 *7*	7.11 *5*	av Eβ=398.8 *28*
(1120[&] *7*)	3554.86?	0.035 *4*	8.44 *5*	av Eβ=403.3 *28*
(1128 *7*)	3547.48	0.65 *4*	7.18 *3*	av Eβ=406.5 *28*
(1134[&] *7*)	3541.24?	0.08 *2*	8.1 *1*	av Eβ=409.1 *28*
(1158 *7*)	3516.73	0.89 *5*	7.09 *3*	av Eβ=419.6 *28*
(1173 *7*)	3501.7	0.013 *3*	8.9 *1*	av Eβ=426.0 *28*
(1209 *7*)	3465.88	0.53 *7*	7.4 *1*	av Eβ=441.4 *28*
(1220 *7*)	3455.10	1.73 *6*	6.88 *2*	av Eβ=446.0 *28*
(1256 *7*)	3418.66	0.07 *2*	8.3 *1*	av Eβ=461.8 *28*
(1271 *7*)	3403.95	0.33 *3*	7.67 *4*	av Eβ=468.2 *28*
(1274 *7*)	3401.09	0.22 *3*	7.9 *1*	av Eβ=469.4 *28*
(1281 *7*)	3394.47	3.7 *2*	6.63 *3*	av Eβ=472.3 *28*
(1309[&] *7*)	3366.0?	0.04 *1*	8.6 *1*	av Eβ=484.7 *28*
(1349 *7*)	3326.36	3.30 *6*	6.77 *1*	av Eβ=502.0 *28*
(1434 *7*)	3241.1	0.09 *2*	8.4 *1*	av Eβ=539.4 *29*
(1446 *7*)	3229.13	0.22 *3*	8.1 *1*	av Eβ=544.7 *29*
(1463 *7*)	3211.54	10.4 *3*	6.41 *2*	av Eβ=552.5 *29* E(decay): 1300 *200* (1976He10), 1500 *300* (1969Hu07), 1420 *100* (1966Gu05). $\beta\gamma$-coin data (1976He10,1969Hu07,1966Gu05). Iβ=25 (1966Gu05).
(1466 *7*)	3208.95	0.33 *5*	8.8[1u] *1*	av Eβ=567.1 *28*
(1509 *7*)	3165.84	0.61 *6*	7.70 *5*	av Eβ=572.7 *29*
(1579[&] *7*)	3095.6?	0.05[‡] *2*	8.9[#] *2*	av Eβ=604.0 *29*
(1607 *7*)	3067.66	0.52 *4*	8.78[1u] *4*	av Eβ=628.3 *28*
(1624 *7*)	3050.92	2.4 *1*	7.23 *2*	av Eβ=624.0 *29*
(1653 *7*)	3021.71	6.37 *8*	6.83 *1*	av Eβ=637.1 *29*
(1655 *7*)	3020.42	0.78 *5*	7.75 *3*	av Eβ=637.7 *29*
(1664 *7*)	3010.9?	0.053 *6*	8.93 *5*	av Eβ=642.0 *29*
(1698 *7*)	2976.88	0.61 *5*	7.90 *4*	av Eβ=657.3 *29*
(1819[&] *7*)	2856.24?	0.013[‡] *6*	9.7[#] *2*	av Eβ=711.9 *29*
(1838 *7*)	2836.79	0.40 *5*	8.2 *1*	av Eβ=720.7 *30*
(1862[&] *7*)	2813.27	0.07[‡] *2*	9.0[#] *1*	av Eβ=731.4 *30*
(1907 *7*)	2767.62	7.7 *1*	7.00 *1*	av Eβ=752.2 *30*
(1974[&] *7*)	2700.82	0.16[‡] *3*	8.7[#] *1*	av Eβ=782.8 *30*

Continued on next page (footnotes at end of table)

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†][@]	Log *ft*	Comments
(1996 *7*)	2678.839	27.9 *5*	6.52 *1*	av Eβ=792.9 *30* E(decay): 1960 *200* (1969Hu07), 1940 *100* (1966Gu05). $\beta\gamma$-coin data (1969Hu07,1966Gu05). Iβ=29 (1966Gu05).
(2055[&] *7*)	2620.1	0.07[‡] *2*	9.2[#] *1*	av Eβ=819.8 *30*
(2100 *7*)	2574.67	0.23 *5*	8.7 *1*	av Eβ=840.7 *30*
(2102 *7*)	2572.99	0.14 *3*	8.9 *1*	av Eβ=841.5 *30*
(2169 *7*)	2506.34	2.4 *2*	7.74 *4*	av Eβ=872.3 *30*
(2190[&] *7*)	2485.10	0.61[‡] *6*	8.35[#] *5*	av Eβ=882.1 *30*
(2255[&] *7*)	2419.61	1.5[‡] *1*	8.01[#] *3*	av Eβ=912.4 *30*
(2342[&] *7*)	2333.41	1.3[‡] *2*	8.1[#] *1*	av Eβ=952.4 *30*
(2451 *7*)	2223.823	15.9 *2*	7.14 *1*	av Eβ=1003.4 *30* E(decay): 2000 *200* (1976He10), 2430 *200* (1969Hu07), 2320 *100* (1966Gu05). $\beta\gamma$-coin data (1976He10,1969Hu07,1966Gu05). Iβ=38 (1966Gu05).
(2570[&] *7*)	2104.74	0.30[‡] *10*	9.0[#] *2*	av Eβ=1059.0 *30*
(3165 *7*)	1510.014	4.4 *16*	8.2 *2*	av Eβ=1339.1 *31* E(decay): 2900 *200*, 3000 *200* (1976He10); 3140 *200* (1969Hu07), 3100 *100* (1966Gu05). $\beta\gamma$-coin data (1976He10,1969Hu07,1966Gu05). Iβ=8 (1966Gu05).

[†] From γ+ce intensity balance at each level.
[‡] The value obtained from intensity balance is inconsistent with assigned ΔJ^π for the β transition. The apparent β^- feeding is most likely due to the fact that the decay scheme is incomplete, as many transitions are still unplaced.
[#] Value is too low to be consistent with assigned ΔJ^π values.
[@] Absolute intensity per 100 decays.
[&] Existence of this branch is questionable.

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

$\gamma(^{98}Mo)$

Iγ normalization: Σ(I(γ+ce) of γ rays to g.s.)=99.9 *1*. %IT<0.2, and no β^- decay is expected to g.s. and 735 level. Unplaced γ rays are expected to have negligible effect on the normalization factor.

Additional information 2.

Based on least-squares fit, possible assignments have been suggested (by evaluators) for unplaced transitions and given under comments only.

E_γ †	I_γ [a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	α[b]	Comments
86.65 *10*	0.42 *2*	2506.34	5^+	2419.61	4^+				E_γ: 86.65 in level scheme figure but 86.5 in table (1984Me04).
109.53 *10*	0.04 *1*	2333.41	4^+	2223.823	4^+				
146.6‡[e] *3*	0.14 *5*	2767.62	4^+	2620.75	5^-				
151.8 *2*	0.02 *1*	2485.10	3^+	2333.41	4^+				
157.88 *10*	0.41 *1*	2836.79	6^+	2678.839	6^+				E_γ: 157.877 *7* (1984Me04), but level energy difference is 157.95.
162.53 *15*	0.02 *1*	2506.34	5^+	2343.573	6^+				
172.44 *10*	0.87 *9*	2678.839	6^+	2506.34	5^+				
172.95 *5*	1.45 *9*	2506.34	5^+	2333.41	4^+	(M1(+E2))	+0.05 *11*	0.057 *3*	α(K)=0.0495 *22*; α(L)=0.0058 *4*; α(M)=0.00104 *7* α(N)=0.000158 *9*; α(O)=8.8×10^{-6} *4*
177.4[e] *2*	0.014 *6*	2856.24?	4^+	2678.839	6^+				
189.0[d] *3*	0.26[d] *4*	3165.84	4^+	2976.88	4^+				
189.0[d] *3*	0.005[d] *4*	3401.09	4^+	3211.54	(4^+)				
192.36[de] *14*	d@	2813.27	2^+	2620.1	3^+				
192.36[d] *14*	0.03[d] *1*	3403.95	$(5^-,6^+)$	3211.54	(4^+)				
194.1 *5*	0.02 *1*	3598.25	(4^+)	3403.95	$(5^-,6^+)$				
195.66 *10*	0.07 *1*	2419.61	4^+	2223.823	4^+				
206.3 *5*	0.06 *4*	2223.823	4^+	2017.49	3^-				
x238.8 *2*	0.02 *1*								
x247.1 *3*	0.02 *1*								
254.05 *14*	0.02 *1*	3021.71	4^+	2767.62	4^+				
259.00 *10*	0.40 *1*	2017.49	3^-	1758.36	2^+	(E1)			
x261.4 *4*	0.02 *1*								Possible placements: 3809-3547, 3778-3517, 2768-2506.
x269.4 *2*	0.03 *2*								Possible placement: 3366-3097.
282.52 *10*	0.043 *7*	2506.34	5^+	2223.823	4^+				
299.6[e] *2*	0.03 *1*	2506.34	5^+	2206.51	2^+	[M3]		0.244	α(K)=0.207 *3*; α(L)=0.0309 *5*; α(M)=0.00566 *8* α(N)=0.000847 *12*; α(O)=4.20×10^{-5} *6* Implied mult=M3 makes this low-energy transition questionable.
306.89[de] *10*	d@	2813.27	2^+	2506.34	5^+	[M3]		0.222	α(K)=0.188 *3*; α(L)=0.0280 *4*; α(M)=0.00512 *8* α(N)=0.000767 *11*; α(O)=3.82×10^{-5} *6* Implied mult=M3 makes this low-energy transition questionable.

$^{98}_{42}Mo_{56}$-4

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

$\gamma(^{98}Mo)$ (continued)

E_γ [†]	I_γ [a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	α[b]	Comments
306.89[d#] *10*	0.34[d] *2*	3403.95	$(5^-,6^+)$	3097.08	(7^-)				
315.0 *2*	0.04 *1*	2419.61	4^+	2104.74	3^+				
326.43 *13*	0.05 *1*	1758.36	2^+	1432.183	2^+	(M1(+E2))	−0.17 *22*	0.0111 *8*	α(K)=0.0098 *7*; α(L)=0.00113 *10*; α(M)=0.000201 *18* α(N)=3.06×10^{-5} *25*; α(O)=1.71×10^{-6} *10*
330.37 *10*	0.12 *1*	2836.79	6^+	2506.34	5^+	M1+E2	−0.24 *6*	0.01097 *25*	α(K)=0.00962 *22*; α(L)=0.00111 *3*; α(M)=0.000199 *6* α(N)=3.02×10^{-5} *8*; α(O)=1.69×10^{-6} *4*
335.258 *20*	10.2 *2*	2678.839	6^+	2343.573	6^+	(M1(+E2))	−0.01 *1*	0.01021	α(K)=0.00897 *13*; α(L)=0.001029 *15*; α(M)=0.000184 *3* α(N)=2.80×10^{-5} *4*; α(O)=1.580×10^{-6} *23*
345.53 *10*	0.09 *2*	2678.839	6^+	2333.41	4^+				
347.94 *10*	0.24 *2*	2767.62	4^+	2419.61	4^+				
350.78 *12*	0.05 *2*	2574.67	4^+	2223.823	4^+	(M1(+E2))	−0.13 *24*		
350.92 *10*	0.41 *2*	3516.73	(4^+)	3165.84	4^+				
380.4 *2*	0.04 *1*	2485.10	3^+	2104.74	3^+				
399.65 *10*	0.32 *2*	3020.42	5^-	2620.75	5^-	(M1(+E2))	+0.06 *15*		
401.61		2506.34	5^+	2104.74	3^+				E_γ: probably from $\gamma\gamma$ (1984Me04).
401.99 *10*	0.18 *2*	2419.61	4^+	2017.49	3^-				
408.4[de] *2*	[d@]	3809.19	$(4,5,6^+)$	3401.09	4^+				
408.4[d] *2*	0.027[d] *15*	3809.59	$(4,5^-)$	3401.09	4^+				
415.5 *4*	0.02 *1*	3229.13	(4^+)	2813.27	2^+				
434.26 *5*	1.21 *3*	2767.62	4^+	2333.41	4^+				
[x]438.9 *4*	0.03 *2*								Possible placement: 3843-3404.
443.6 *3*	0.05 *2*	3211.54	(4^+)	2767.62	4^+				
446.91 *10*	0.41 *3*	3067.66	(3^-)	2620.75	5^-				
448.2 *2*	0.05 *2*	2206.51	2^+	1758.36	2^+				
455.04 *10*	0.88 *3*	2678.839	6^+	2223.823	4^+				
465.5 *2*	0.06 *2*	2223.823	4^+	1758.36	2^+				
467.0 *9*	0.008 *7*	2485.10	3^+	2017.49	3^-				
469.90[e] *14*	0.09 *2*	2813.27	2^+	2343.573	6^+	[E4]			This γ, seen in β^- decay (51.1 min), is questionable in view of unlikely mult=E4 involved.
476.35 *10*	0.11 *2*	3097.08	(7^-)	2620.75	5^-	(E2)			
[x]481.00 *12*	0.11 *2*								Coin with 722γ, 787γ, 833γ, 1066γ. Possible placement: 3502-3020.
493.18 *10*	0.12 *3*	2836.79	6^+	2343.573	6^+	M1+E2	−0.29 *15*		
507.8 *3*	0.06 *3*	2017.49	3^-	1510.014	4^+				
[x]509.4	<0.3								Possible placements: 3964-3455, 3366-2856.
512 *1*	0.6 *2*	3723.7	4^+	3211.54	(4^+)				
514.78 *13*	0.20 *6*	3565.62	(4^+)	3050.92	4^+				
[x]523.3 *3*	0.07 *3*								Placement 3723-3211 (1984Me04) is incorrect. Possible placement: 2856-2333.
530.42 *14*	0.13 *4*	3208.95	$(4^+,5^-)$	2678.839	6^+				
543.83 *10*	0.58 *3*	2767.62	4^+	2223.823	4^+				

$^{98}_{42}Mo_{56}$-5

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

$\gamma(^{98}Mo)$ (continued)

E_γ †	I_γ a	E_i(level)	J_i^π	E_f	J_f^π	Mult.&	δ&	$I_{(\gamma+ce)}$ a	Comments
544.5 *4*	0.10 *3*	3050.92	4^+	2506.34	5^+				
555.3 *2*	0.03 *2*	2572.99	3	2017.49	3^-				
557.5 *1*	0.13 *2*	2574.67	4^+	2017.49	3^-				
561.21	0.07	2767.62	4^+	2206.51	2^+				
562.3	0.10	3241.1	(4^+ to 7)	2678.839	6^+				
x569.1‡ *3*	0.27 *5*								Possible placements: 3778-3209, 3620-3051.
572.6 *5*	0.07 *4*	3623.50	4^+	3050.92	4^+				
575.06 *10*	0.26 *3*	2333.41	4^+	1758.36	2^+				
585.40	<0.004	2017.49	3^-	1432.183	2^+	[E1]			
590.90# *10*	0.38 *3*	3211.54	(4^+)	2620.75	5^-				
594.66 *13*	0.07 *2*	2104.74	3^+	1510.014	4^+				
603.28 *10*	0.57 *3*	2620.75	5^-	2017.49	3^-	(E2)			
631.4 *2*	0.05 *2*	3050.92	4^+	2419.61	4^+				
x637.5 *5*	0.05 *2*								Possible placement: 4103-3466.
644.847 *20*	6.0 *2*	1432.183	2^+	787.369	2^+	E2+M1	+1.69 *16*		
661.15 *19*	0.38 *5*	2419.61	4^+	1758.36	2^+	(E2)			
662.89 *15*	0.18 *5*	2767.62	4^+	2104.74	3^+				
672.59 *10*	0.66 *5*	2104.74	3^+	1432.183	2^+	M1+E2	+5.8 *9*		
676.87 *10*	0.11 *2*	3020.42	5^-	2343.573	6^+	(E1)			
679.68 *10*	0.11 *2*	3516.73	(4^+)	2836.79	6^+				
688.23 *10*	0.32 *2*	3021.71	4^+	2333.41	4^+				
696.5	≤0.005	2206.51	2^+	1510.014	4^+				
697.38 *10*	0.30 *2*	1432.183	2^+	734.73	0^+	(E2)			
705.5 *2*	0.04 *2*	3211.54	(4^+)	2506.34	5^+				
713.817 *20*	9.8 *2*	2223.823	4^+	1510.014	4^+	M1+E2	+1.13 *17*		
715.6 *3*	0.3 *2*	3394.47	(4^+)	2678.839	6^+				
717.5 *3*	0.30 *6*	3050.92	4^+	2333.41	4^+	[E2]			
722.626 *20*	79.0 *16*	1510.014	4^+	787.369	2^+	E2			
726.83 *10*	0.10 *3*	2485.10	3^+	1758.36	2^+				
734.74 *10*		734.73	0^+	0.0	0^+	E0		1.40 *8*	ce(K)/(γ+ce)=0.843 (1024γ)(735ce) coin (1969Hu07). E_γ: from level difference. $I_{(\gamma+ce)}$: from I(γ+ce)(697γ+1024γ+1282γ). No β^- decay is expected to 735 state.
746.28 *12*	0.08 *2*	3165.84	4^+	2419.61	4^+				
750.1 *2*	0.03 *1*	2767.62	4^+	2017.49	3^-				
753.0	0.010 *5*	2976.88	4^+	2223.823	4^+				E_γ: based on branching ratios for 3097 level in (α,2nγ), 2016Th01 proposed interchanging the placements of 753.0γ and 753.19γ, i.e. former from 2976 level, and the latter from 3097 level.
753.19 *14*	0.08 *1*	3097.08	(7^-)	2343.573	6^+	(E1)			E_γ: based on branching ratios for 3097 level in (α,2nγ), 2016Th01 proposed interchanging the placements of 753.0γ

$^{98}_{42}Mo_{56}$-6

$\gamma(^{98}Mo)$ (continued)

E_γ [†]	I_γ [a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	Comments
								and 753.19γ, i.e. former from 2976 level, and the latter from 3097 level.
773.7 *2*	0.09 *2*	3394.47	(4^+)	2620.75	5^-			
774.3	<0.02	2206.51	2^+	1432.183	2^+			
787.363 *20*	100	787.369	2^+	0.0	0^+	E2		α(N)=3.74×10^{-6} *6*; α(O)=2.05×10^{-7} *3*
791.646 *20*	8.38 *5*	2223.823	4^+	1432.183	2^+	(E2)		
791.98 *15*	0.26 *5*	3211.54	(4^+)	2419.61	4^+			
797.88 *10*	0.64 *3*	3021.71	4^+	2223.823	4^+			
814.8 *3*	0.04 *2*	2572.99	3	1758.36	2^+	D(+Q)	+0.10 *10*	
815.5 *3*	0.04 *2*	3021.71	4^+	2206.51	2^+			
819.95 *10*	0.28 *2*	3326.36	4^+	2506.34	5^+			
823.39 *5*	2.70 *6*	2333.41	4^+	1510.014	4^+	M1+E2	−0.388 *7*	
833.556 *20*	11.6 *4*	2343.573	6^+	1510.014	4^+	E2		
843.82 *10*	0.15 *2*	3067.66	(3^-)	2223.823	4^+			
[x]856.7 *3*	0.04 *2*							Possible placement: 3623-2768.
862.40[e] *14*	0.09 *2*	3541.24?		2678.839	6^+			
878.07 *10*	0.77 *3*	3211.54	(4^+)	2333.41	4^+			
885.58 *10*	0.16 *2*	3229.13	(4^+)	2343.573	6^+			
887.0 *5*	0.03 *2*	3723.7	4^+	2836.79	6^+			
900.97 *10*	0.11 *2*	3737.71	4^+	2836.79	6^+			
906.86 *10*	0.60 *2*	3326.36	4^+	2419.61	4^+			
909.67 *5*	1.37 *3*	2419.61	4^+	1510.014	4^+	M1+E2	−0.64 *10*	
[x]912.8 *4*	0.04 *2*							Coin with 679γ. Possible placement: 3419-2506.
917.05 *13*	0.07 *2*	3021.71	4^+	2104.74	3^+			
[x]920.2 *3*	0.07 *3*							Coin with 1230γ. Possible placements: 3541-2621, 2679-1758.
922.3 *4*	0.07 *3*	3601.1	$(4^+,5,6)$	2678.839	6^+			
944.6 *5*	0.05 *2*	3623.50	4^+	2678.839	6^+			
[x]946.7 *5*	0.06 *2*							Possible placements: 3366-2420, 3051-2105.
[x]958.2 *5*	0.22 *4*							
959.8 *5*	0.16 *5*	3465.88	(4^+)	2506.34	5^+			
970.86 *10*	0.66 *3*	1758.36	2^+	787.369	2^+	M1+E2	−0.97 *14*	
975.02 *14*	0.10 *1*	2485.10	3^+	1510.014	4^+	M1+E2	−0.9 *+6−16*	
[x]983.5 *4*	0.03 *2*							Possible placement: 3326-2344.
985.2 *4*	0.08 *2*	3208.95	$(4^+,5^-)$	2223.823	4^+			
987.47 *10*	0.45 *3*	2419.61	4^+	1432.183	2^+			
992.88 *5*	1.18 *3*	3326.36	4^+	2333.41	4^+			
996.30 *5*	2.22 *4*	2506.34	5^+	1510.014	4^+	M1+E2	−0.96 *10*	
1002.9 *2*	0.10 *4*	3020.42	5^-	2017.49	3^-	(E2)		
1004.31 *10*	0.10 *4*	3021.71	4^+	2017.49	3^-			
1009.3 *1*	0.05 *4*	2767.62	4^+	1758.36	2^+			
1023.7 *1*	1.09 *7*	1758.36	2^+	734.73	0^+	E2		
1035.5 *3*	0.04 *2*	3455.10	(4^+)	2419.61	4^+			
1048.70 *10*	0.26 *3*	3623.50	4^+	2574.67	4^+			

$^{98}_{42}Mo_{56}$-7

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

$\gamma(^{98}Mo)$ (continued)

E_γ [†]	I_γ [a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	Comments
1052.95 *10*	0.12 *2*	2485.10	3^+	1432.183	2^+	M1+E2	−0.97 *+27−36*	
1057.62[#] *10*	0.26 *2*	3401.09	4^+	2343.573	6^+			I_γ: could be partly sum line (722+335) also (evaluators).
1061.25[c] *13*	0.11[c] *1*	3165.84	4^+	2104.74	3^+			
1061.25[c] *13*	0.11[c] *1*	3394.47	(4^+)	2333.41	4^+			
1063.0 *2*	0.33 *2*	2574.67	4^+	1510.014	4^+	M1+E2	−2.7 *+8−15*	E_γ: poor fit. Level-energy difference=1064.7.
[x]1065 *1*	0.04 *1*							Possible placement: 4076-3011.
[x]1078.2 *4*	0.02 *1*							Possible placements: 3096-2017, 2837-1758.
1097.2 *2*	0.02 *1*	3516.73	(4^+)	2419.61	4^+			
1102.66 *10*	0.51 *2*	3326.36	4^+	2223.823	4^+			
1106.8 *4*	0.04 *2*	3211.54	(4^+)	2104.74	3^+			
1110.76 *10*	0.86 *2*	2620.75	5^-	1510.014	4^+	(E1)		
[x]1111.5 *2*	0.17 *5*							Coin with 714γ.
1117.1 *2*	0.08 *3*	3623.50	4^+	2506.34	5^+			
1121.6 *3*	0.10 *5*	3455.10	(4^+)	2333.41	4^+			
1122.32 *10*	0.19 *5*	3465.88	(4^+)	2343.573	6^+			
1142.2[e] *3*	0.04 *1*	3366.0?		2223.823	4^+			
1168.827 *20*	19.1 *4*	2678.839	6^+	1510.014	4^+	(E2)		
1183.6 *2*	0.03 *1*	3516.73	(4^+)	2333.41	4^+			
1187.1[e] *5*	0.03 *2*	2620.1	3^+	1432.183	2^+	M1+E2	−1.0 *+10−5*	
1189.3 *3*	0.10 *3*	3809.59	$(4,5^-)$	2620.75	5^-			
1190.8[c] *2*	0.14[c] *3*	2700.82	2^+	1510.014	4^+			
1190.8[c] *2*	0.14[c] *3*	3208.95	$(4^+,5^-)$	2017.49	3^-			
1194.02 *10*	0.53 *3*	3211.54	(4^+)	2017.49	3^-			
[x]1199.2[‡] *4*	0.14 *5*							
1204.15 *16*	0.09 *2*	3547.48	(4^+)	2343.573	6^+			
1213.30[#e] *15*	0.10 *2*	3547.48	(4^+)	2333.41	4^+			E_γ: poor fit. Level-energy difference=1214.1.
1221.75 *10*	0.25 *2*	3326.36	4^+	2104.74	3^+			
1230.15 *5*	1.52 *4*	2017.49	3^-	787.369	2^+	(E1)		
1254.69 *16*	0.08 *2*	3598.25	(4^+)	2343.573	6^+			
1257.2	0.08 *2*	3601.1	$(4^+,5,6)$	2343.573	6^+			
1257.59 *5*	1.00 *4*	2767.62	4^+	1510.014	4^+			
1263.36 *11*	0.13 *2*	3021.71	4^+	1758.36	2^+			
1268.6 *3*	0.07 *2*	3947.4	(4^+)	2678.839	6^+			
1273.5[e] *2*	0.08 *2*	3617.08?		2343.573	6^+			
1282.78	≤0.02	2017.49	3^-	734.73	0^+	[E3]		
1285.4 *3*	0.05 *2*	3964.28	$(4^+,5,6)$	2678.839	6^+			
1289.98 *15*	0.11 *2*	3394.47	(4^+)	2104.74	3^+			
1291.4 *4*	0.08 *4*	3623.50	4^+	2333.41	4^+			E_γ: poor fit. Level-energy difference=1290.1.
1308.9 *2*	0.08 *2*	3326.36	4^+	2017.49	3^-			
1310.1 *2*	0.13 *2*	3516.73	(4^+)	2206.51	2^+			
1317.33 *10*	0.85 *3*	2104.74	3^+	787.369	2^+	M1+E2	+3.1 *6*	
1323.99 *10*	0.28 *2*	3547.48	(4^+)	2223.823	4^+			E_γ: poor fit. Level-energy difference=1323.66.

$^{98}_{42}Mo_{56}$-8

^{98}Nb β^- decay (51.1 min) 1984Me04 (continued)

$\gamma(^{98}Mo)$ (continued)

E_γ[†]	I_γ[a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	Comments
1326.7	0.03 *2*	2836.79	6^+	1510.014	4^+			
1335.45 *5*	1.33 *2*	2767.62	4^+	1432.183	2^+			
1341.74 *10*	0.42 *2*	3565.62	(4^+)	2223.823	4^+			
[x]1356.7 *5*	0.02 *1*							Possible placement: 3843-2485.
[x]1360.1 *4*	0.02 *1*							Possible placement: 3466-2105.
[x]1370	<0.005							
[x]1373.2 *3*	0.06 *1*							Possible placement: 3947-2575.
1377.5[c] *5*	0.03[c] *2*	3394.47	(4^+)	2017.49	3^-			Placement from 1976Si04.
1377.5[c] *5*	0.03[c] *2*	3998.59	5^-	2620.75	5^-			
[x]1386.82 *10*	0.27 *2*							Coin with 195γ, 481γ, 530γ, 722γ, 787γ, 922γ, 1057γ.
1389.8 *4*	0.04 *1*	3723.7	4^+	2333.41	4^+			
1394.07 *10*	0.14 *2*	3737.71	4^+	2343.573	6^+			
1399.83 *17*	0.08 *1*	3623.50	4^+	2223.823	4^+			
1407.5 *1*	0.14 *3*	3165.84	4^+	1758.36	2^+			
1417.0 *4*	0.11 *3*	3623.50	4^+	2206.51	2^+			
1419.07 *10*	0.35 *5*	2206.51	2^+	787.369	2^+	M1+E2	−0.33 *11*	
1432.175 *20*	5.32 *5*	1432.183	2^+	0.0	0^+	E2		
1436.42 *5*	2.70 *4*	2223.823	4^+	787.369	2^+	(E2)		
1442.6 *3*	0.06 *2*	3547.48	(4^+)	2104.74	3^+			
1461.0 *2*	0.06 *2*	3565.62	(4^+)	2104.74	3^+			
1466.79 *10*	0.90 *3*	2976.88	4^+	1510.014	4^+	(M1(+E2))	+0.05 *17*	
1499.3 *5*	0.04 *2*	3516.73	(4^+)	2017.49	3^-			
1510.43[e]	≤0.3	3020.42	5^-	1510.014	4^+			
1511.68 *2*	5.16 *5*	3021.71	4^+	1510.014	4^+			
1515.5 *2*	0.08 *2*	3620.04	$(3^-,4)$	2104.74	3^+			
1518.79 *10*	0.19 *2*	3623.50	4^+	2104.74	3^+			
[x]1532.9 *7*	0.013 *9*							
1540.92 *5*	2.10 *4*	3050.92	4^+	1510.014	4^+	(M1(+E2))	−0.20 *27*	
1546.03 *5*	4.21 *8*	2333.41	4^+	787.369	2^+	(E2)		
1568.17 *15*	0.10 *2*	3326.36	4^+	1758.36	2^+			
[x]1580.0 *9*	0.010 *8*							Possible placements: 3598-2017, 3011-1432.
1585.6[e] *2*	0.05 *2*	3095.6?	2^+	1510.014	4^+			
1589.62 *10*	0.15 *1*	3021.71	4^+	1432.183	2^+			
1602.0 *4*	0.02 *1*	3620.04	$(3^-,4)$	2017.49	3^-			
[x]1610.5 *3*	0.15 *2*							
1618.75 *11*	0.24 *3*	3050.92	4^+	1432.183	2^+	[E2]		I_γ: 0.08 *3* (1976Si04).
1620.70 *11*	0.20 *4*	3964.28	$(4^+,5,6)$	2343.573	6^+			I_γ: 0.08 *3* (1976Si04).
1632.17 *10*	0.82 *3*	2419.61	4^+	787.369	2^+			
1636.0 *2*	0.12 *1*	3394.47	(4^+)	1758.36	2^+			
1655.87 *10*	0.37 *2*	3165.84	4^+	1510.014	4^+			
[x]1690.3 *3*	0.02 *1*							I_γ: other: 0.10 *3* (1976Si04).
1697.2 *2*	0.26 *4*	2485.10	3^+	787.369	2^+	M1+E2	−0.52 *13*	
1701.503 *20*	9.5 *1*	3211.54	(4^+)	1510.014	4^+			

$\gamma(^{98}Mo)$ (continued)

E_γ[†]	I_γ[a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[&]	Comments
1718.9	0.06 *1*	3229.13	(4^+)	1510.014	4^+			
1758.46 *12*	0.06 *1*	1758.36	2^+	0.0	0^+	[E2]		
1758.7	0.05 *1*	3516.73	(4^+)	1758.36	2^+			E_γ,I_γ: from $\gamma\gamma$.
1785.66 *14*	0.08 *1*	2572.99	3	787.369	2^+	D(+Q)	+0.01 *6*	
1792.05 *10*	0.25 *2*	3809.59	$(4,5^-)$	2017.49	3^-			
1816.37 *10*	0.47 *2*	3326.36	4^+	1510.014	4^+			
1833.0 *3*	0.04 *1*	2620.1	3^+	787.369	2^+	M1+E2	−0.54 *13*	
[x]1847.7 *4*	0.02 *1*							
1877.3 *4*	0.03 *2*	3981.78	3^-	2104.74	3^+			
1884.40 *5*	3.09 *3*	3394.47	(4^+)	1510.014	4^+			
1908.6 *2*	0.06 *2*	3418.66	4^+	1510.014	4^+			
1913.4 *4*	0.03 *1*	2700.82	2^+	787.369	2^+	(M1(+E2))	−0.14 *14*	
1945.01 *5*	1.48 *2*	3455.10	(4^+)	1510.014	4^+			
1955.82[#] *10*	0.22 *2*	3465.88	(4^+)	1510.014	4^+			I_γ: could be partly sum line (1169+787) also (evaluators).
1980.17 *5*	3.47 *3*	2767.62	4^+	787.369	2^+	(E2)		
[x]2000.4 *5*	0.02 *1*							
2006.6 *3*	0.12 *2*	3516.73	(4^+)	1510.014	4^+			
2017.48 *10*	0.32 *2*	2017.49	3^-	0.0	0^+	[E3]		
2023.05 *10*	0.16 *1*	3455.10	(4^+)	1432.183	2^+			
2037.39 *10*	0.081 *8*	3547.48	(4^+)	1510.014	4^+			
[x]2051.6 *6*	0.02 *1*							Possible placement: 3809-1758.
2055.5 *4*	0.08 *2*	3565.62	(4^+)	1510.014	4^+			
[x]2082.9 *1*	0.040 *8*							
[x]2095.0 *7*	0.008 *4*							
2113.41 *10*	0.34 *4*	3623.50	4^+	1510.014	4^+			
[x]2116.9 *3*	0.03 *1*							
[x]2127.6[‡] *5*	0.08 *3*							
[x]2133.0 *3*	0.022 *8*							Possible placement: 3566-1432.
[x]2183.0 *9*	0.009 *6*							
2189.4 *5*	0.010 *5*	2976.88	4^+	787.369	2^+	[E2]		
2191.1 *5*	0.046 *7*	3623.50	4^+	1432.183	2^+			
2201.8 *7*	0.011 *7*	3711.8	5^-	1510.014	4^+			
2206.5	≤0.006	2206.51	2^+	0.0	0^+			
[x]2209.1[‡] *7*	0.04 *2*							
[x]2214.9 *5*	0.012 *5*							
2223.5[e] *2*	0.057 *6*	3010.9?		787.369	2^+			
2234.31 *10*	0.19 *1*	3021.71	4^+	787.369	2^+			
2263.0 *2*	0.039 *7*	3050.92	4^+	787.369	2^+	[E2]		
2267.8 *1*	0.049 *6*	3777.84	4^+	1510.014	4^+			
2299.10 *10*	0.12 *1*	3809.19	$(4,5,6^+)$	1510.014	4^+			
[x]2327.8 *4*	0.03 *1*							
2332.7[e] *2*	0.055 *11*	3842.7?	$(4,5,6^+)$	1510.014	4^+			
2378.29 *10*	0.106 *7*	3165.84	4^+	787.369	2^+			

$\gamma(^{98}Mo)$ (continued)

E_γ [†]	I_γ [a]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]2396.5 *4*	0.017 *6*					
2424.1[‡e] *3*	0.15 *5*	3211.54	(4^+)	787.369	2^+	
[x]2433.0[‡] *8*	0.08 *4*					
2471.72 *10*	0.10 *1*	3981.78	3^-	1510.014	4^+	
2488.55 *10*	0.10 *1*	3998.59	5^-	1510.014	4^+	I_γ: sum line 1701+787 also.
2538.91 *10*	0.066 *6*	3326.36	4^+	787.369	2^+	
2550.54[e] *12*	0.040 *7*	4060.59?	$(4,5,6^+)$	1510.014	4^+	
2566.35 *10*	0.049 *7*	4076.40	$(4,5,6^+)$	1510.014	4^+	
2607.03 *10*	0.110 *6*	3394.47	(4^+)	787.369	2^+	
2631.3 *3*	0.012 *4*	3418.66	4^+	787.369	2^+	
2667.75 *10*	0.069 *6*	3455.10	(4^+)	787.369	2^+	
2671.1 *2*	0.03 *1*	4103.3?	(4^+)	1432.183	2^+	
2714.3 *3*	0.014 *3*	3501.7	(4^+)	787.369	2^+	
2730.9 *3*	0.04 *1*	3516.73	(4^+)	787.369	2^+	E_γ: poor fit. Level-energy difference=2729.4.
2760.02 *10*	0.083 *4*	3547.48	(4^+)	787.369	2^+	
2767.45[e] *11*	0.037 *4*	3554.86?		787.369	2^+	
2836.21 *11*	0.050 *5*	3623.50	4^+	787.369	2^+	
2936.8 *5*	0.006 *2*	3723.7	4^+	787.369	2^+	
[x]2980.5 *9*	0.002 *1*					
[x]3027.8 *6*	0.004 *2*					
[x]3103.8 *2*	0.015 *2*					
[x]3151.1 *5*	0.008 *3*					
[x]3325.4 *14*	0.00010 *8*					

[†] The uncertainties on some of the transitions have been increased (by evaluators) as suggested by the least-squares fitting procedure. The revised minimum uncertainties, based on expected statistical errors only (not on actual positions of the peaks in the γ-ray spectra) are 0.020 for Iγ>5, 0.050 for Iγ=1 to 5 and 0.10 for Iγ<1.

[‡] From 1976Si04 only; treated as uncertain (evaluators).

[#] Not reported by 1976Si04. Treated as uncertain (evaluators) since intensity given by 1984Me04 should have been detected by 1976Si04.

[@] Only a small fraction of the intensity may belong here.

[&] From Adopted Gammas.

[a] For absolute intensity per 100 decays, multiply by 0.9307 *16*.

[b] 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.

[c] Multiply placed with undivided intensity.

[d] Multiply placed with intensity suitably divided.

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

[x] γ ray not placed in level scheme.

$^{98}_{42}Mo_{56}$-11

^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided

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
- Coincidence (Uncertain)

$(5)^+$ 84 51.1 min *4*
Q_{β^-}=4591 *5* $\%\beta^-$=100.0
$^{98}_{41}Nb_{57}$

Iβ⁻	Log *ft*		
0.03	7.4	(4⁺)	4103.3
0.046	7.3	(4,5,6⁺)	4076.40
0.037	7.5	(4,5,6⁺)	4060.59
0.12	7.1	5⁻	3998.59
0.12	7.4[1u]	3⁻	3981.78
0.23	6.9	(4⁺,5,6)	3964.28
0.07	7.4	(4⁺)	3947.4
0.05	7.8	(4,5,6⁺)	3842.7
0.35	7.0	(4,5⁻)	3809.59
0.11	7.52	(4,5,6⁺)	3809.19
0.046	8.0	4⁺	3777.84
0.23	7.3	4⁺	3737.71
0.22	7.9	4⁺	3401.09
0.40	8.2	6⁺	2836.79
27.9	6.52	6⁺	2678.839
		5⁻	2620.75
		6⁺	2343.573
0.30	9.0	3⁺	2104.74
		3⁻	2017.49
4.4	8.2	4⁺	1510.014
		2⁺	1432.183
		0⁺	0.0

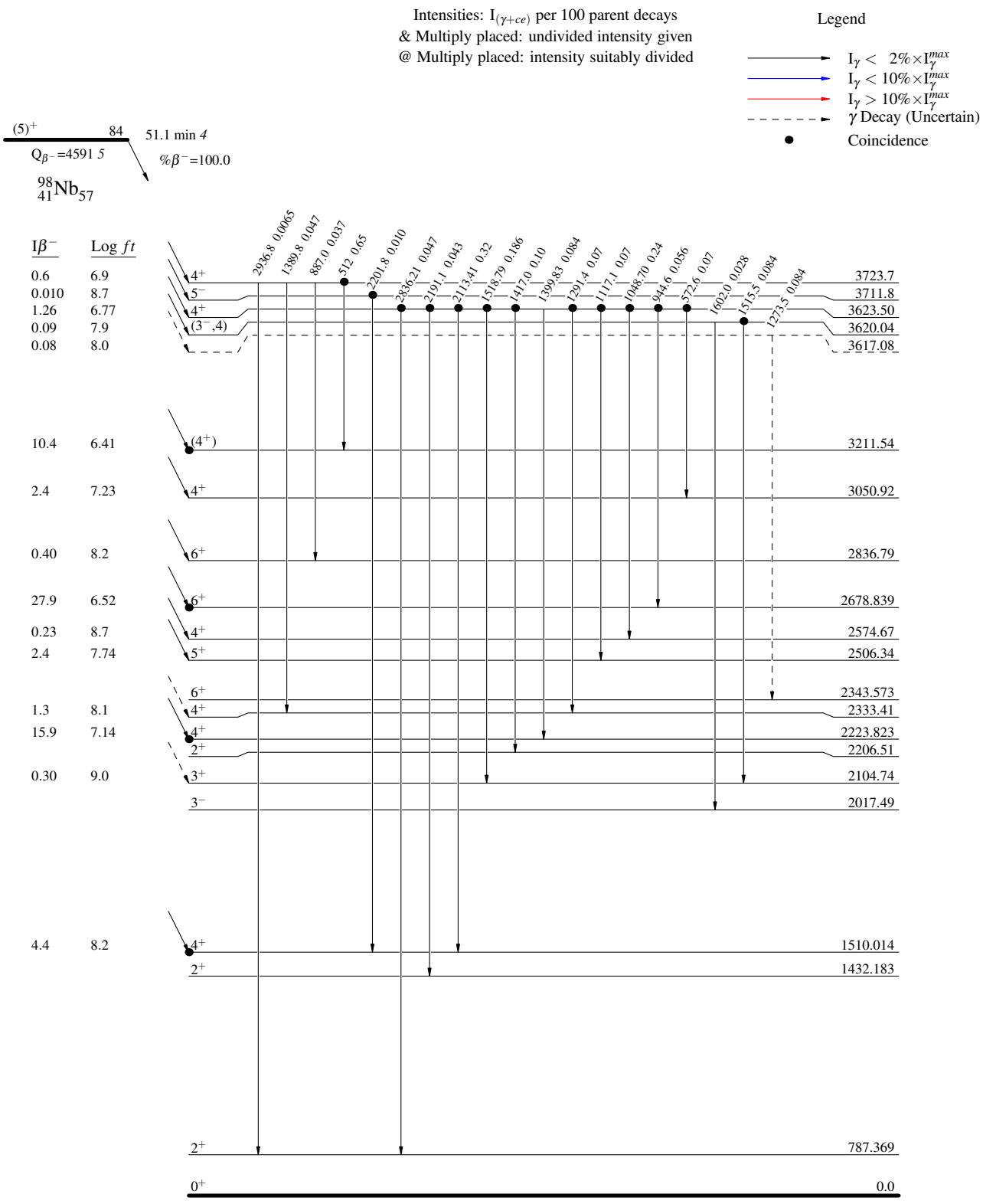
2671.1 0.037; 2566.35 0.046; 2550.54 0.037; 2488.55 0.102; 1377.5 0.037&; 2471.72 0.102; 1877.3 0.037; 1620.70 0.19; 1285.4 0.056; 1268.6 0.074; 2332.7 0.051; 1792.05 0.242; 1189.3 0.09; 408.4 0.025@; 2299.10 0.121; 408.4; 2267.8 0.046; 1394.07 0.140; 900.97 0.112

$^{98}_{42}Mo_{56}$

^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

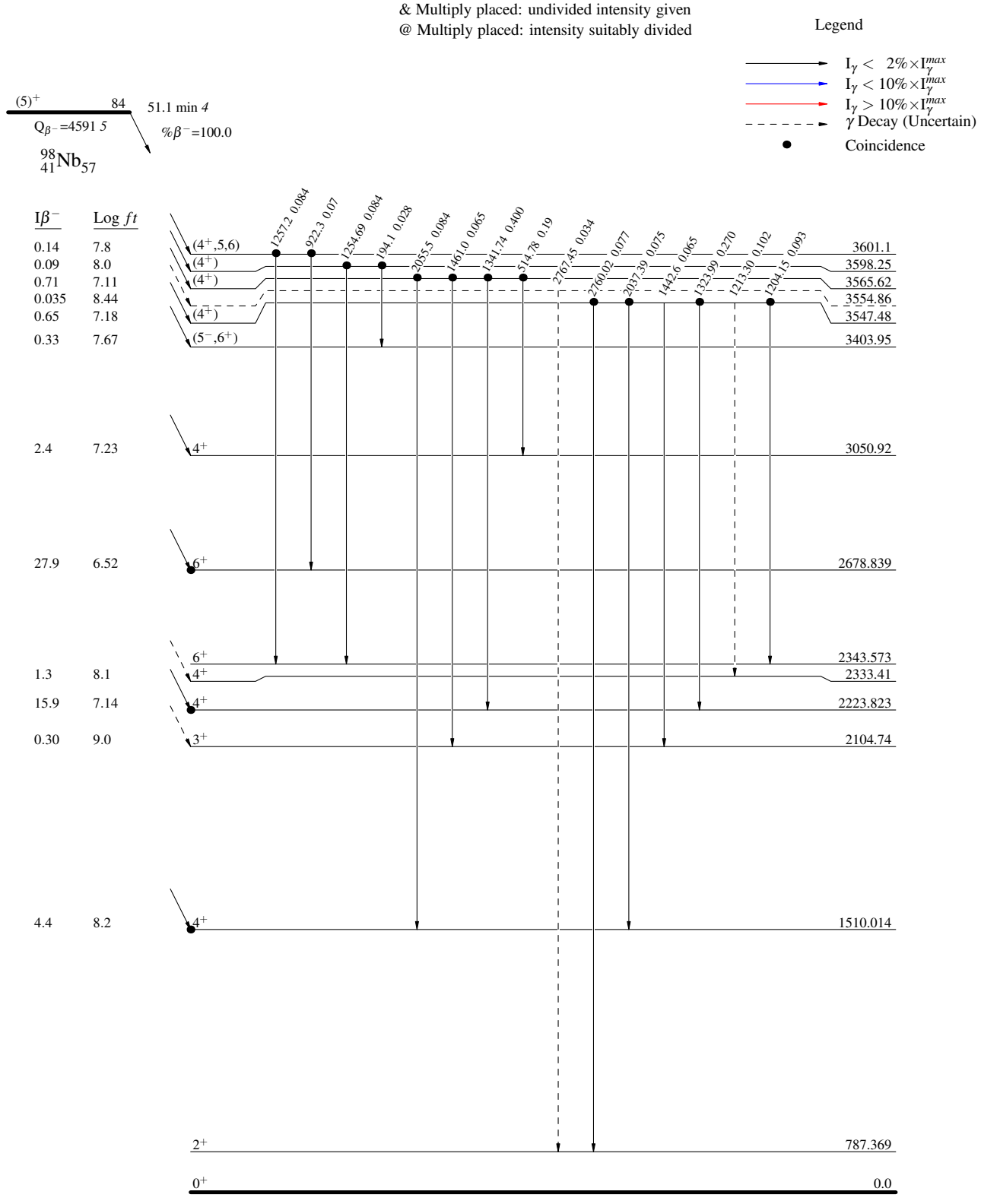
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

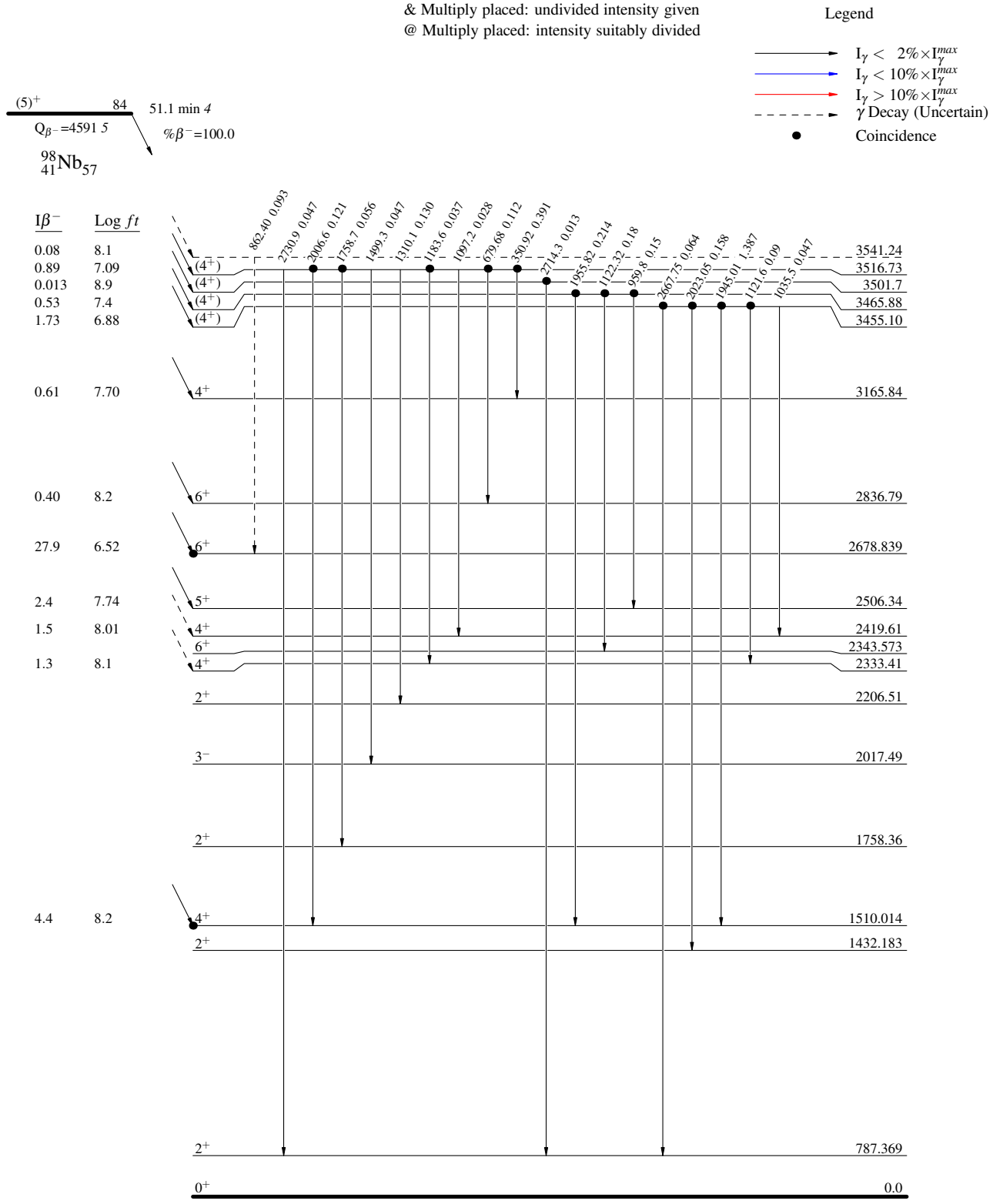
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

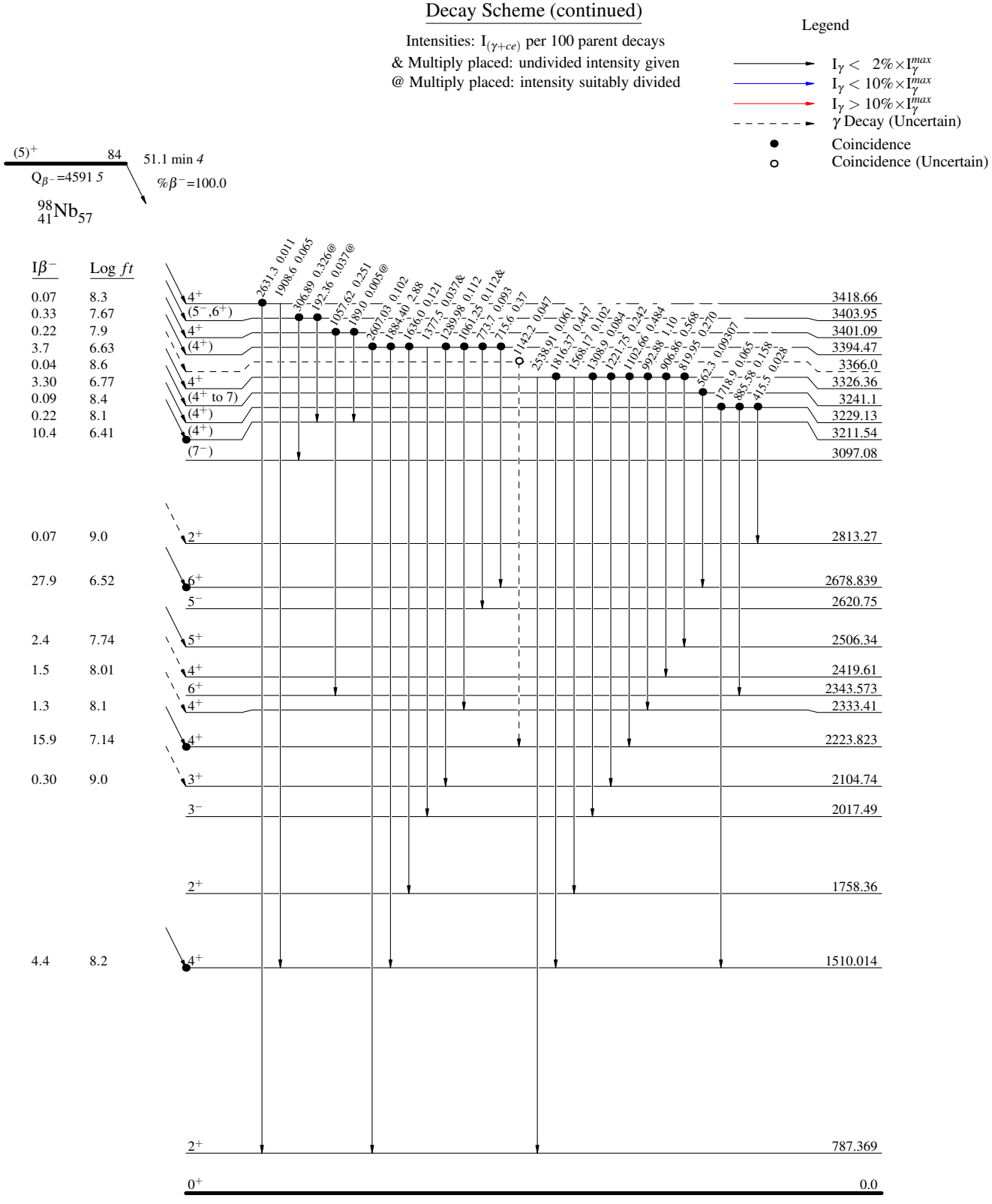
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

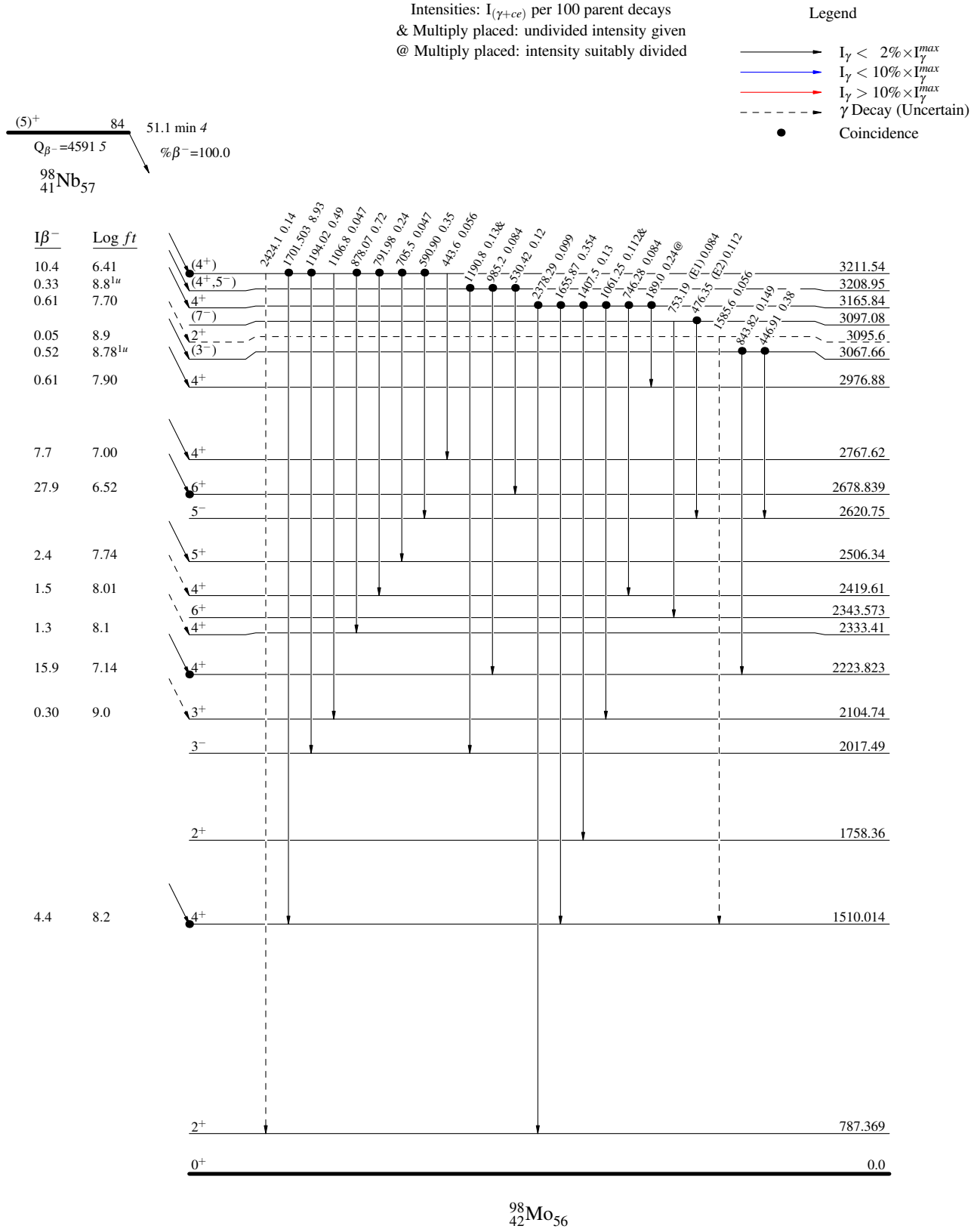
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

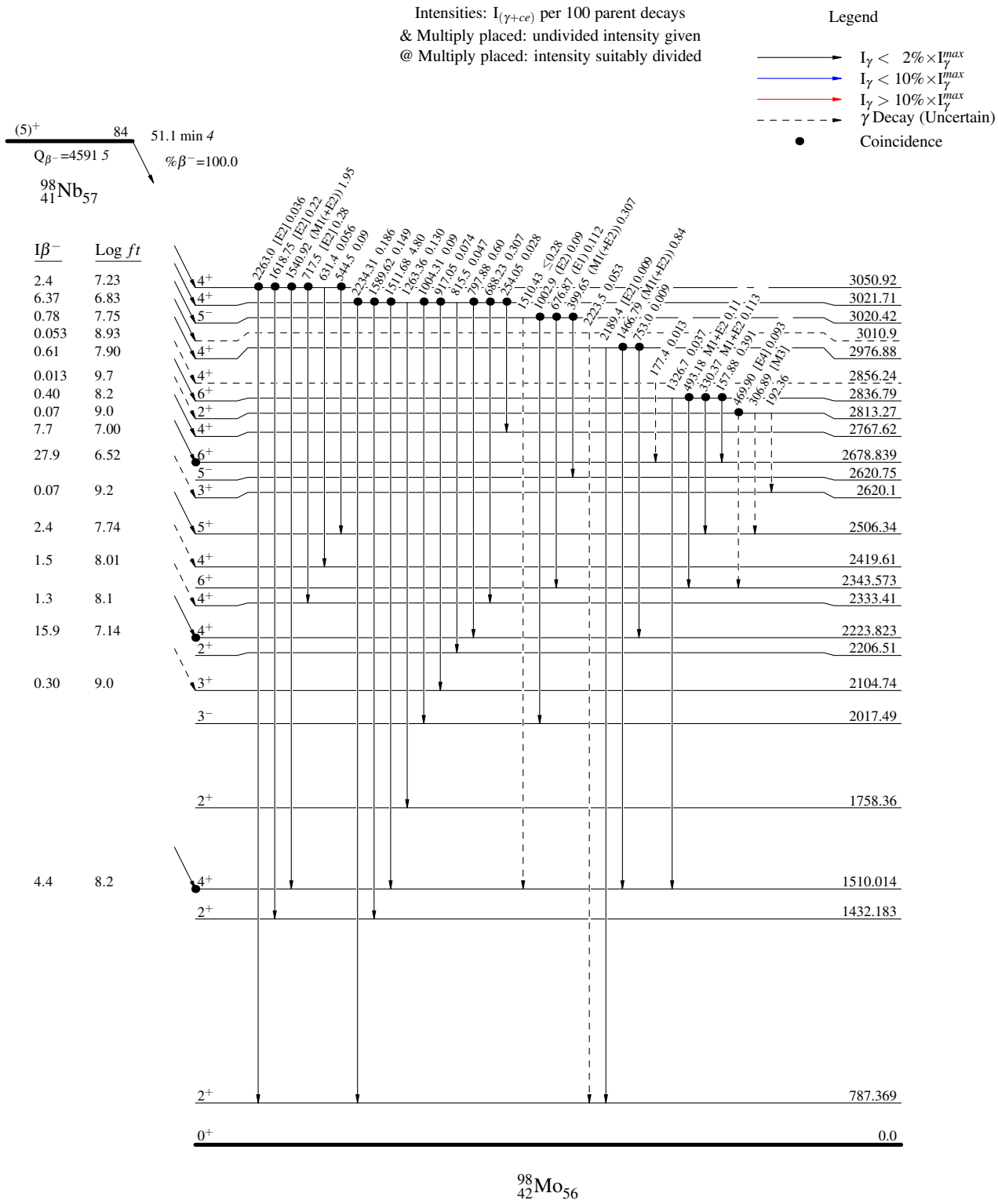
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

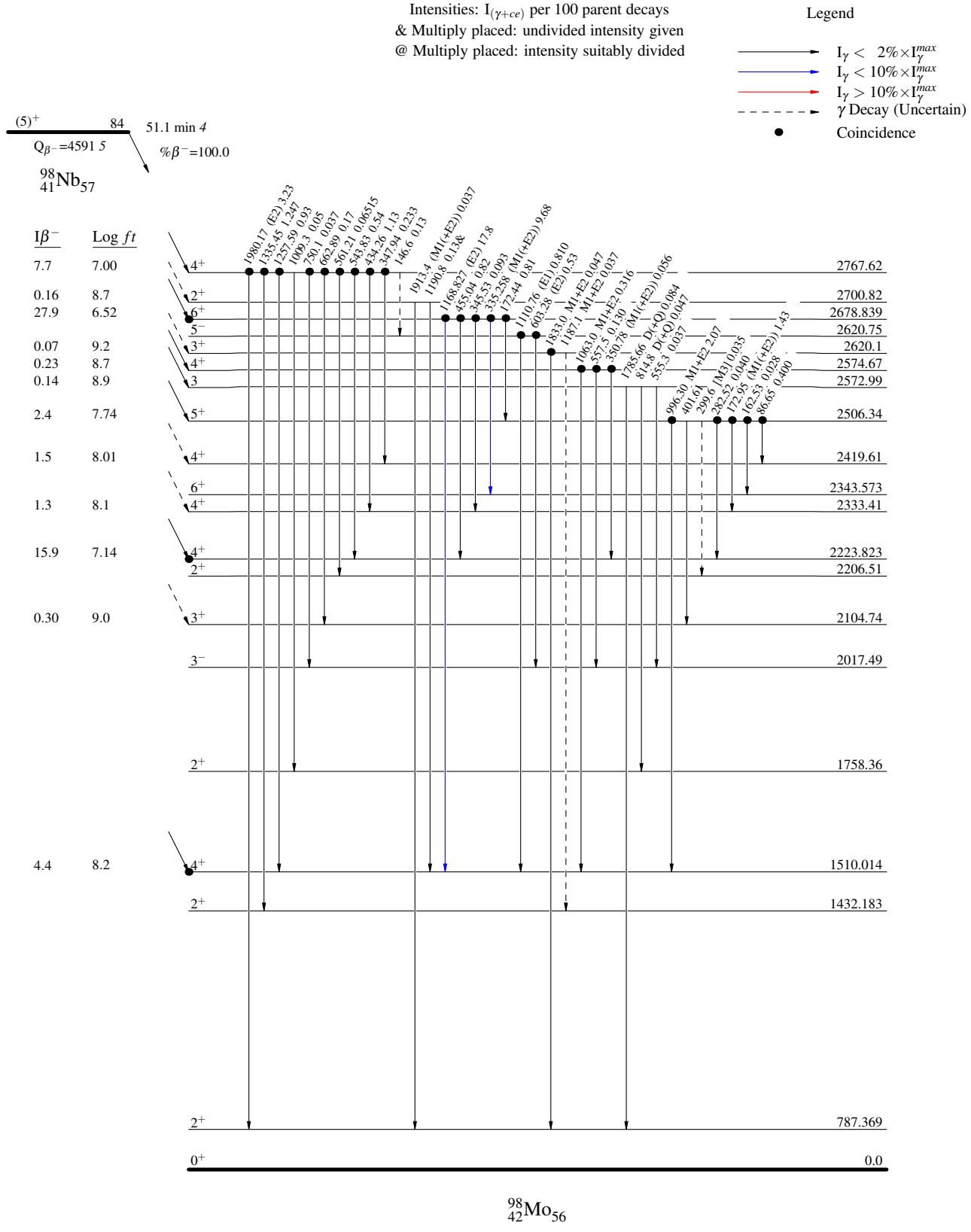
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

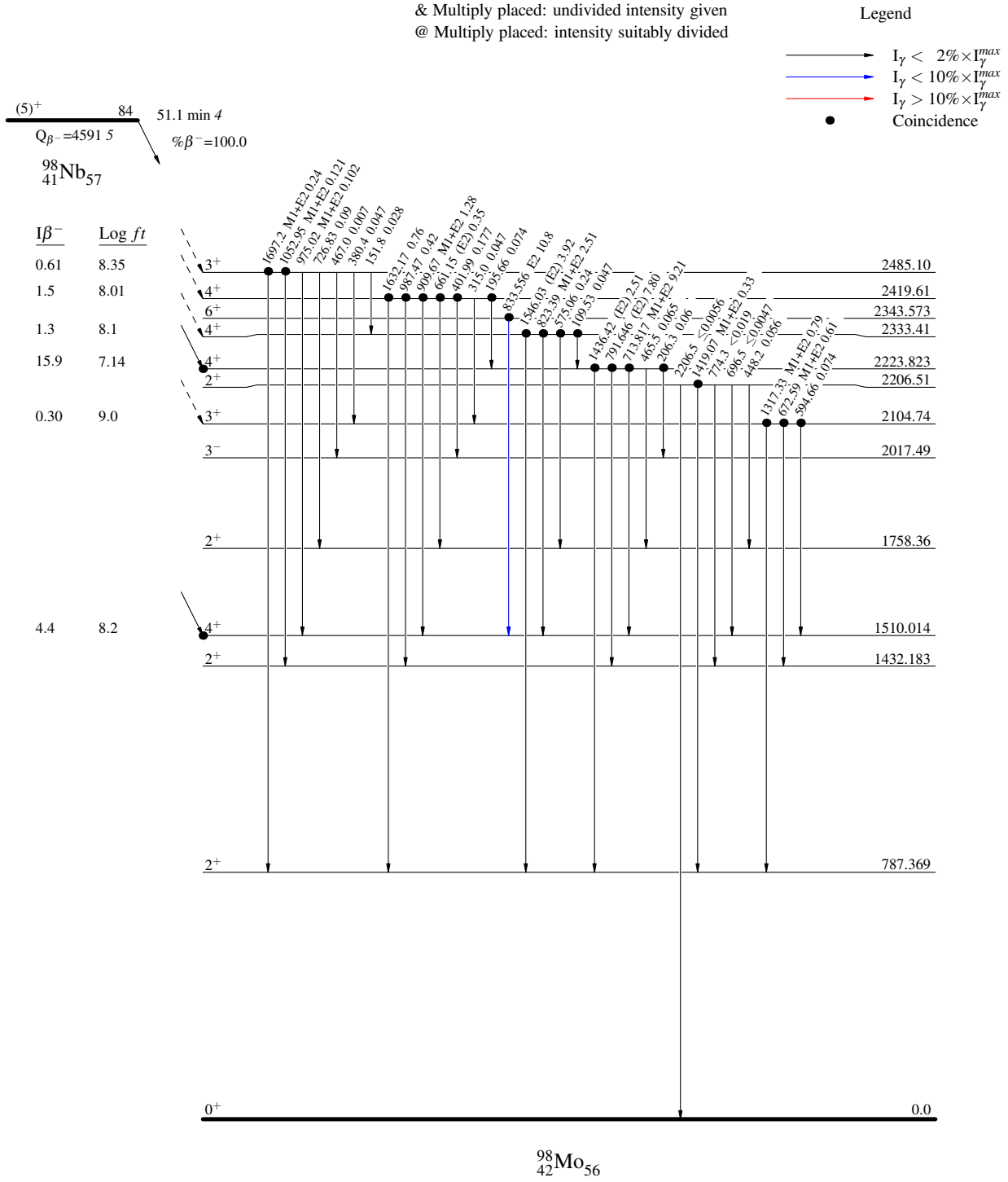
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided



^{98}Nb β^- decay (51.1 min) 1984Me04

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given
@ Multiply placed: intensity suitably divided