^{166}Lu ε decay (2.65 min) 1974De09,2007Mc08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 1103 (2008)	1-Mar-2008

Parent: ^{166}Lu: E=0.; J$^{\pi}$=6$^-$; T$_{1/2}$=2.65 min *10*; Q(ε)=5570 *30*; %ε+%β^+ decay=100.0

2007Mc08: measured $\gamma\gamma(\theta)$ out-of-beam for three cascades using 8 Compton suppressed segmented YRAST Ball Clover HPGE detectors. These data are a byproduct of a study of ^{168}Ta ε decay for which the source was produced using 130-MeV ^{16}O bombardment of ^{159}Tb; the ^{166}Lu component May Be a mixture of all three isomers, but the 6$^-$ isomer′s presence is confirmed by the observation of the 997γ which is known from that decay but not from the 0$^-$ or 3$^{(-)}$ isomer decays.

^{166}Yb Levels

E(level)†	J$^{\pi}$‡	T$_{1/2}$	Comments
0	0$^+$		
102.38 *3*	2$^+$		
330.48 *4*	4$^+$		
667.95 *5*	6$^+$		
(932.38 *5*)			E(level): from Adopted Levels.
1039.20 *6*	(3)$^+$		
1098.24 *6*	8$^+$		
1162.87 *6*	(4)$^+$		
1327.81 *5*	(5)$^+$		
1482.39 *6*	(6)$^+$		
1505.38 *7*	(5)$^-$		
1570.55 *15*	(5)$^-$		
1616.85 *6*	(4$^-$)		
1684.82 *15*	(2$^+$,3,4$^+$)		
1724.81 *11*	(6$^+$,7$^+$)		
1744.6 *3*	(3$^+$,4$^+$)		
1790.31 *7*	(5$^-$)		
1812.62 *16*	(8$^+$)		
1818.01 *23*	(4$^+$,5,6$^+$)		
1833.2 *5*	(7)$^-$		
1865.39 *6*	(6)$^-$		
1957.06 *6*	(5,6)$^+$		
1958.89 *7*	7$^-$		
2016.34 *22*	(4$^+$,5,6$^+$)		
2165.73 *7*	(6,7)$^+$		
2233.32 *6*	6$^-$,7$^-$	<10 ns	

† From least-squares fit to Eγ.
‡ From Adopted Levels.

ε,β^+ radiations

Iε,log *ft* The total intensity of γ rays not placed in the decay scheme is 14%; consequently, Iε and log *ft* values are given for only the strongest branches, and the values for the 2233 level alone can Be considered to Be reliable.

E(decay)†	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)‡	Comments
3247	2233.32	19 *1*	50 *4*	4.69 *4*	69 *5*	av Eβ=1046 *14*; εK=0.608 *7*; εL=0.0953 *11*; εM+=0.0287 *4*
(3.61×10^3# *3*)	1957.06	0.7 *4*	1.5 *7*	6.30 *22*	2.2 *11*	av Eβ=1171 *14*; εK=0.548 *7*; εL=0.0857 *11*; εM+=0.0258

Continued on next page (footnotes at end of table)

^{166}Lu ε decay (2.65 min) 1974De09,2007Mc08 (continued)

ϵ,β^+ radiations (continued)

E(decay)†	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)‡	Comments
						4
(3.78×10³# *3*)	1790.31	1.1 *7*	1.7 *11*	6.3 *3*	2.8 *18*	av Eβ=1246 *14*; εK=0.512 *7*; εL=0.0800 *11*; εM+=0.0241 *3*
(3.85×10³ *3*)	1724.81	1.5 *2*	2.3 *4*	6.16 *8*	3.8 *6*	av Eβ=1276 *14*; εK=0.498 *7*; εL=0.0778 *10*; εM+=0.0234 *3*
(4.06×10³ *3*)	1505.38	1.5 *3*	1.7 *3*	6.32 *9*	3.2 *6*	av Eβ=1376 *14*; εK=0.453 *6*; εL=0.0706 *10*; εM+=0.0212 *3*
(4.24×10³ *3*)	1327.81	2.2 *8*	2.3 *8*	6.25 *16*	4.5 *16*	av Eβ=1458 *14*; εK=0.418 *6*; εL=0.0651 *9*; εM+=0.0196 *3*
(4.41×10³ *3*)	1162.87	1.4 *5*	3.1 *11*	8.00^{1u} *16*	4.5 *16*	av Eβ=1513 *14*; εK=0.577 *5*; εL=0.0921 *9*; εM+=0.0278 *3*
(4.90×10³ *3*)	667.95	3.6 *8*	2.1 *4*	6.40 *10*	5.7 *12*	av Eβ=1762 *14*; εK=0.307 *5*; εL=0.0477 *7*; εM+=0.01433 *21*
(5.24×10³ *3*)	330.48	2.0 *7*	2.2 *7*	8.45^{1u} *15*	4.2 *14*	av Eβ=1885 *14*; εK=0.441 *5*; εL=0.0698 *8*; εM+=0.02104 *23*

† E(β^+) to the 2233-keV level has been measured as 2225 keV *160*.
‡ Absolute intensity per 100 decays.
# Existence of this branch is questionable.

γ(^{166}Yb)

Iγ normalization: No β^+ or ε feeding to ^{166}Yb g.s. is expected (ΔJ=6), so Σ (I(γ+ce) to g.s.)=100.

1974De09 pointed out that the following γ rays definitely belong to ^{166}Lu decay but could not be assigned with sufficient certainty to one of the three activities. The intensity given for these lines is normalized to the ground-state decay values of ^{166}Lu.

Conversion coefficient data from 1974De09 normalized so α(K)exp(337.5γ)=0.0383=α(K)(E2 theory).

Eγ	Iγ	Eγ	Iγ
308.8 6	0.6 3	1389.8 6	1.2 6
312.9 4	0.8 4	1548.2 6	0.5 3
401.7 3	1.1 3	1594.5 6	0.6 3
416.1 5	0.6 3	1620.2 6	0.6 3
549.6 6	0.8 4	1654.0 6	0.8 4
612.1 6	1.6 4	1693.9 6	0.6 3
671.6 4	1.5 4	1809.3 6	0.6 3
697.3 6	0.9 3	1888.1 6	0.6 3
735.2 6	0.9 3	2149.2 6	0.6 3
769.4 8	0.4 2	2259.0 6	1.0 3
915.9 6	0.7 4	2262.8 6	1.0 3
942.6 6	0.9 4	2362.6 10	1.0 3
948.0 6	1.0 4	2448.5 6	1.2 3
962.1 6	0.8 4	2481.5 6	0.5 3
1011.6 6	0.9 4	2489.6 6	0.5 3
1171.0 6	1.0 4	2547.5 6	0.5 2
1316.6 10	0.6 3	2762.5 5	0.4 2

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
67.57 *4*	9.7 *10*	2233.32	$6^-,7^-$	2165.73	$(6,7)^+$	E1	0.943	α(K)=0.767 *11*; α(L)=0.1379 *20*; α(M)=0.0310 *5*; α(N+..)=0.00802 *12* α(N)=0.00708 *10*; α(O)=0.000901 *13*; α(P)=3.22×10^{-5} *5* Mult.: from α(exp)=0.70 *26* (α(exp) have been deduced from γγ coincidence measurement) (1974De09).
74.92 *10*	2.2 *3*	1865.39	$(6)^-$	1790.31	(5^-)	M1,E2	8.9 *12*	α(K)=4.0 *25*; α(L)=4 *3*; α(M)=0.9 *7*; α(N+..)=0.23 *18* α(N)=0.21 *16*; α(O)=0.024 *17*; α(P)=0.00024 *16* Mult.: from α(exp)=9.4 *20* deduced from γγ-coincidence measurement (1974De09).
93.2 *5*	0.5 *1*	1958.89	7^-	1865.39	$(6)^-$	[M1,E2]	4.17 *11*	α(K)=2.3 *12*; α(L)=1.4 *9*; α(M)=0.35 *23*; α(N+..)=0.09 *6* α(N)=0.08 *6*; α(O)=0.009 *6*; α(P)=0.00013 *8*
^{x}99.53 *20*	1.1 *1*							
102.38 *3*	61.5 *30*	102.38	2^+	0	0^+	E2	2.93	α(K)=0.968 *14*; α(L)=1.501 *22*; α(M)=0.370 *6*; α(N+..)=0.0941 *14* α(N)=0.0844 *12*; α(O)=0.00970 *14*; α(P)=4.10×10^{-5} *6* Mult.: from α(K)exp=1.1 *3*, α(L)exp=1.4 *3* and α(M+N)=0.51 *9* (1974De09). %Iγ=25.4 *6* assuming recommended normalization.

$\gamma(^{166}Yb)$ (continued)

E_γ	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[†]	δ	α[#]	Comments
139.0 *3*	1.0 *3*	1957.06	(5,6)$^+$	1818.01	(4$^+$,5,6$^+$)				
^{x}160.0 *6*	0.6 *3*								
166.6[&]		1957.06	(5,6)$^+$	1790.31	(5$^-$)				from fig. 7 of 1974De09; absent from tabulated data.
^{x}191.8 *3*	1.2 *2*								
^{x}195.54 *15*	2.1 *3*								
208.65 *10*	9.1 *9*	2165.73	(6,7)$^+$	1957.06	(5,6)$^+$	M1+E2	0.9 *4*	0.34 *5*	α(K)=0.26 *6*; α(L)=0.060 *4*; α(M)=0.0138 *11*; α(N+..)=0.00365 *24* α(N)=0.00321 *23*; α(O)=0.000423 *13*; α(P)=1.5×10^{-5} *4* Mult.: from α(K)exp=0.27 *5* (1974De09).
212.4 *3*	2.8 *3*	1957.06	(5,6)$^+$	1744.6	(3$^+$,4$^+$)	(E2)		0.220	α(K)=0.1391 *21*; α(L)=0.0621 *10*; α(M)=0.01499 *23*; α(N+..)=0.00387 *6* α(N)=0.00344 *6*; α(O)=0.000417 *7*; α(P)=6.59×10^{-6} *10* Mult.: from α(K)exp=0.28 *18* (1974De09).(α(K)exp consistent with M1 or E2 but ΔJ=2 from decay scheme).
219.4 *3*	0.8 *1*	1790.31	(5$^-$)	1570.55	(5)$^-$				
228.12 *3*	188.5 *14*	330.48	4$^+$	102.38	2$^+$	E2		0.1743	α(K)=0.1136 *16*; α(L)=0.0466 *7*; α(M)=0.01121 *16*; α(N+..)=0.00290 *4* α(N)=0.00258 *4*; α(O)=0.000314 *5*; α(P)=5.47×10^{-6} *8* Mult.: from α(K)exp=0.10 *1*, α(L)exp=0.045 *4* (1974De09) and A_2=+0.104 *20*, A_4=+0.005 *26* for 228γ-102$\gamma(\theta)$ (2007Mc08).
248.53 *7*	11.8 *6*	1865.39	(6)$^-$	1616.85	(4$^-$)	(E2)		0.1324	α(K)=0.0891 *13*; α(L)=0.0333 *5*; α(M)=0.00797 *12*; α(N+..)=0.00206 *3* α(N)=0.00183 *3*; α(O)=0.000226 *4*; α(P)=4.38×10^{-6} *7* Mult.: from α(K)exp=0.14 *6* (1974De09).
^{x}268.16 *16*	2.0 *2*								
272.2 *5*	4.0 *5*	1957.06	(5,6)$^+$	1684.82	(2$^+$,3,4$^+$)				
274.41 *4*	24.4 *15*	2233.32	6$^-$,7$^-$	1958.89	7$^-$	M1		0.200	α(K)=0.1678 *24*; α(L)=0.0252 *4*; α(M)=0.00564 *8*; α(N+..)=0.001523 *22* α(N)=0.001324 *19*; α(O)=0.000190 *3*; α(P)=1.015×10^{-5} *15* Mult.: from α(K)exp=0.184 *26* (1974De09).
276.28 *4*	33.4 *20*	2233.32	6$^-$,7$^-$	1957.06	(5,6)$^+$	(E1)		0.0244	α(K)=0.0205 *3*; α(L)=0.00304 *5*; α(M)=0.000677 *10*; α(N+..)=0.000180 *3* α(N)=0.0001575 *22*; α(O)=2.18×10^{-5} *3*; α(P)=1.031×10^{-6} *15* Mult.: from α(K)exp=0.058 *20* (1974De09).
288.87[@] *5*	4.67[@] *11*	1327.81	(5)$^+$	1039.20	(3)$^+$	E2		0.0829	α(K)=0.0585 *9*; α(L)=0.0187 *3*; α(M)=0.00446 *7*; α(N+..)=0.001159 *17* α(N)=0.001028 *15*; α(O)=0.0001286 *18*; α(P)=2.97×10^{-6} *5*
288.87[@] *5*	4.67[@] *11*	1616.85	(4$^-$)	1327.81	(5)$^+$				
294.84 *26*	0.95 *20*	1865.39	(6)$^-$	1570.55	(5)$^-$				
^{x}319.37 *15*	1.85 *25*								
330.9[@] *5*	1.1[@] *2*	1812.62	(8$^+$)	1482.39	(6)$^+$				

γ(^{166}Yb) (continued)

E_γ	I_γ[‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[†]	α[#]	Comments
330.9[@] 5	1.1[@] 2	2016.34	(4$^+$,5,6$^+$)	1684.82	(2$^+$,3,4$^+$)			
337.50 3	100	667.95	6$^+$	330.48	4$^+$	E2	0.0521	α(K)=0.0383 6; α(L)=0.01066 15; α(M)=0.00252 4; α(N+..)=0.000657 10 α(N)=0.000581 9; α(O)=7.40×10^{-5} 11; α(P)=2.00×10^{-6} 3 Mult.: from α(L)exp=0.011 3 (1974De09).
^{x}353.96 20	1.3 3							
360.09 7	8.8 7	1865.39	(6)$^-$	1505.38	(5)$^-$	M1	0.0966	α(K)=0.0811 12; α(L)=0.01210 17; α(M)=0.00270 4; α(N+..)=0.000730 11 α(N)=0.000635 9; α(O)=9.09×10^{-5} 13; α(P)=4.89×10^{-6} 7 Mult.: from α(K)exp=0.103 25 (1974De09).
367.95 3	76.7 23	2233.32	6$^-$,7$^-$	1865.39	(6)$^-$	M1	0.0913	α(K)=0.0766 11; α(L)=0.01142 16; α(M)=0.00255 4; α(N+..)=0.000689 10 α(N)=0.000599 9; α(O)=8.58×10^{-5} 12; α(P)=4.61×10^{-6} 7 Mult.: from α(K)exp=0.085 8, α(L)exp=0.014 3 (1974De09).
^{x}377.4 4	0.9 2							
382.97 4	7.5 5	1865.39	(6)$^-$	1482.39	(6)$^+$	(E1)	0.01110	α(K)=0.00936 14; α(L)=0.001357 19; α(M)=0.000302 5; α(N+..)=8.06×10^{-5} 12 α(N)=7.03×10^{-5} 10; α(O)=9.82×10^{-6} 14; α(P)=4.84×10^{-7} 7 Mult.: from α(K)exp=0.029 14 (1974De09).
386.7 6	0.7 3	1957.06	(5,6)$^+$	1570.55	(5)$^-$			
397.02 10	3.6 1	1724.81	(6$^+$,7$^+$)	1327.81	(5)$^+$			
430.28 3	12.2 7	1098.24	8$^+$	667.95	6$^+$	E2	0.0264	α(K)=0.0203 3; α(L)=0.00470 7; α(M)=0.001096 16; α(N+..)=0.000288 4 α(N)=0.000254 4; α(O)=3.32×10^{-5} 5; α(P)=1.098×10^{-6} 16
442.87 20	1.3 3	2233.32	6$^-$,7$^-$	1790.31	(5$^-$)			
445.8 4	0.53 21	2016.34	(4$^+$,5,6$^+$)	1570.55	(5)$^-$			
453.86 8	3.85 25	1616.85	(4$^-$)	1162.87	(4)$^+$			
^{x}467.6 5	0.9 3							
474.74 6	6.7 4	1957.06	(5,6)$^+$	1482.39	(6)$^+$			
^{x}487.2 3	1.5 4							
490.4 5	1.1 3	1818.01	(4$^+$,5,6$^+$)	1327.81	(5)$^+$			
494.2 8	0.6 3	1162.87	(4)$^+$	667.95	6$^+$			
^{x}523.9 5	1.24 12							
534.2[&] 6	1.3 4	2016.34	(4$^+$,5,6$^+$)	1482.39	(6)$^+$			Eγ, Iγ from table 1a of 1974De09, assignment to 2.65 min decay from fig. 7 of 1974De09.
537.64 4	20.0 8	1865.39	(6)$^-$	1327.81	(5)$^+$	(E1)	0.00518	α(K)=0.00438 7; α(L)=0.000622 9; α(M)=0.0001379 20; α(N+..)=3.70×10^{-5} 6 α(N)=3.22×10^{-5} 5; α(O)=4.53×10^{-6} 7; α(P)=2.31×10^{-7} 4 Mult.: from α(K)exp=0.016 8 (1974De09).
577.70 5	9.9 6	1616.85	(4$^-$)	1039.20	(3)$^+$	[E1]	0.00444	α(K)=0.00376 6; α(L)=0.000531 8; α(M)=0.0001177 17; α(N+..)=3.16×10^{-5} 5 α(N)=2.75×10^{-5} 4; α(O)=3.88×10^{-6} 6; α(P)=1.99×10^{-7} 3

γ(^{166}Yb) (continued)

E_γ	I_γ ‡	E_i(level)	J^π_i	E_f	J^π_f	Mult. †	δ	α #	$I_{(\gamma+ce)}$ ‡	Comments
625.3 & *5*	1.0 *3*	1724.81	(6^+,7^+)	1098.24	8^+					
629.32 *7*	17.1 *10*	1957.06	(5,6)$^+$	1327.81	(5)$^+$	M1		0.0227		α(K)=0.0191 *3*; α(L)=0.00280 *4*; α(M)=0.000624 *9*; α(N+..)=0.0001688 *24* α(N)=0.0001466 *21*; α(O)=2.10$\times10^{-5}$ *3*; α(P)=1.140$\times10^{-6}$ *16* Mult.: from α(K)exp=0.016 *6* (1974De09).
^{x}648.1 *6*	1.0 *3*									
659.93 *5*	9.0 *6*	1327.81	(5)$^+$	667.95	6^+	(E2)		0.00911		α(K)=0.00738 *11*; α(L)=0.001343 *19*; α(M)=0.000307 *5*; α(N+..)=8.15$\times10^{-5}$ *12* α(N)=7.14$\times10^{-5}$ *10*; α(O)=9.72$\times10^{-6}$ *14*; α(P)=4.12$\times10^{-7}$ *6*
(705.08)		1744.6	(3^+,4^+)	1039.20	(3)$^+$				≈1.0	E_γ,$I_{(\gamma+ce)}$: from Adopted Gammas. I(γ+ce) based on adopted branching and I(γ+ce) feeding level, assuming No ε+β^+ branch to level.
708.82 *7*	2.8 *3*	1039.20	(3)$^+$	330.48	4^+	(E2)		0.00774		α(K)=0.00631 *9*; α(L)=0.001113 *16*; α(M)=0.000253 *4*; α(N+..)=6.75$\times10^{-5}$ *10* α(N)=5.91$\times10^{-5}$ *9*; α(O)=8.08$\times10^{-6}$ *12*; α(P)=3.53$\times10^{-7}$ *5*
714.39 *15*	1.50 *15*	1812.62	(8^+)	1098.24	8^+					
735.2 *6*	0.9 *3*	1833.2	(7)$^-$	1098.24	8^+					
^{x}760.9 *6*	0.6 *3*									
794.11 *5*	7.3 *5*	1957.06	(5,6)$^+$	1162.87	(4)$^+$					
(811.92)		1744.6	(3^+,4^+)	932.38?					≈2.4	E_γ,$I_{(\gamma+ce)}$: from Adopted Gammas. I(γ+ce) based on adopted branching and I(γ+ce) feeding level, assuming No ε+β^+ branch to level.
814.46 *5*	16.5 *9*	1482.39	(6)$^+$	667.95	6^+	M1		0.01189		α(K)=0.01002 *14*; α(L)=0.001454 *21*; α(M)=0.000324 *5*; α(N+..)=8.76$\times10^{-5}$ *13* α(N)=7.61$\times10^{-5}$ *11*; α(O)=1.093$\times10^{-5}$ *16*; α(P)=5.94$\times10^{-7}$ *9*
832.20 *8*	14.7 *11*	1162.87	(4)$^+$	330.48	4^+	M1+E2	+0.6 *2*	0.0097 *8*		α(K)=0.0082 *7*; α(L)=0.00121 *9*; α(M)=0.000270 *18*; α(N+..)=7.3$\times10^{-5}$ *5* α(N)=6.3$\times10^{-5}$ *5*; α(O)=9.1$\times10^{-6}$ *7*; α(P)=4.8$\times10^{-7}$ *4* δ: from A_2=+0.019 *15*, A_4=+0.075 *25* for 832γ-228γ(θ) (2007Mc08). (evaluator′s analysis gives δ=+0.50 *+8−7* or −2.6 *+5−7*; second solution is rejected because α(K)exp from (α,xnγ) implies pure M1).
837.57 *8*	6.7 *4*	1505.38	(5)$^-$	667.95	6^+	E1+M2	0.31 *+3−4*	0.0044 *6*		α(K)=0.0037 *5*; α(L)=0.00056 *8*; α(M)=0.000126 *17*; α(N+..)=3.4$\times10^{-5}$ *5* α(N)=3.0$\times10^{-5}$ *4*; α(O)=4.2$\times10^{-6}$ *6*; α(P)=2.2$\times10^{-7}$ *3*

$\gamma(^{166}$Yb) (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ	α[#]	Comments
860.56 *11*	8.0 *5*	1958.89	7$^-$	1098.24	8$^+$	E1(+M2)		0.014 *13*	α(K)=0.012 *11*; α(L)=0.0019 *17*; α(M)=0.0004 *4*; α(N+..)=0.00012 *11* α(N)=0.00010 *9*; α(O)=1.4×10^{-5} *13*; α(P)=8.E−7 *7*
901.5 *6*	1.0 *4*	1570.55	(5)$^-$	667.95	6$^+$				
936.79 *7*	14.0 *6*	1039.20	(3)$^+$	102.38	2$^+$	E2		0.00424	α(K)=0.00352 *5*; α(L)=0.000564 *8*; α(M)=0.0001271 *18*; α(N+..)=3.40×10^{-5} *5* α(N)=2.97×10^{-5} *5*; α(O)=4.14×10^{-6} *6*; α(P)=1.98×10^{-7} *3*
^{x}975.0 *6*	0.8 *3*								
997.38 *5*	43.9 *18*	1327.81	(5)$^+$	330.48	4$^+$	M1+E2	−10 +*3*−*13*	0.00376 *7*	α(K)=0.00313 *6*; α(L)=0.000493 *8*; α(M)=0.0001108 *18*; α(N+..)=2.97×10^{-5} *5* α(N)=2.59×10^{-5} *5*; α(O)=3.62×10^{-6} *6*; α(P)=1.76×10^{-7} *3* Mult.: from Adopted Gammas. consistent with α(K)exp=0.006 *4* (1974De09). δ: from Adopted Gammas. δ=−0.2 *1* or −10 +*3*−*13* from authors′ analysis of A_2=−0.21 *2*, A_4=−0.03 *1* for 997γ-228$\gamma(\theta)$ (2007Mc08).
^{x}1021.2 *5*	1.35 *28*								
1056.3 *6*	5.1 *11*	1724.81	(6$^+$,7$^+$)	667.95	6$^+$				
1060.28 *11*	3.2 *2*	1162.87	(4)$^+$	102.38	2$^+$				
1067.34 *20*	6.2 *8*	2165.73	(6,7)$^+$	1098.24	8$^+$				
1122.38 *8*	9.9 *5*	1790.31	(5$^-$)	667.95	6$^+$				
1144.5 *5*	1.2 *3*	1812.62	(8$^+$)	667.95	6$^+$				
1151.1[@] *4*	1.1[@] *3*	1482.39	(6)$^+$	330.48	4$^+$				
1151.1[@] *4*	1.1[@] *3*	1818.01	(4$^+$,5,6$^+$)	667.95	6$^+$				
1165.2 *6*	1.0 *4*	1833.2	(7)$^-$	667.95	6$^+$	E1		1.14×10^{-3}	α(K)=0.000965 *14*; α(L)=0.0001315 *19*; α(M)=2.90×10^{-5} *4*; α(N+..)=1.82×10^{-5} *3* α(N)=6.79×10^{-6} *10*; α(O)=9.70×10^{-7} *14*; α(P)=5.22×10^{-8} *8*; α(IPF)=1.038×10^{-5} *21*
1174.80 *13*	10.8 *10*	1505.38	(5)$^-$	330.48	4$^+$				
^{x}1185.2 *6*	2.0 *6*								
^{x}1186.9 *6*	1.0 *4*								
1197.2 *3*	1.4 *2*	1865.39	(6)$^-$	667.95	6$^+$				
^{x}1201.5 *4*	1.0 *2*								
^{x}1234.2 *3*	2.1 *4*								
1240.05 *25*	3.3 *4*	1570.55	(5)$^-$	330.48	4$^+$				
^{x}1261.7 *6*	0.8 *4*								
1290.71 *20*	23.9 *17*	1958.89	7$^-$	667.95	6$^+$	E1		1.01×10^{-3}	α(K)=0.000806 *12*; α(L)=0.0001093 *16*; α(M)=2.41×10^{-5} *4*; α(N+..)=6.70×10^{-5} *10* α(N)=5.65×10^{-6} *8*; α(O)=8.07×10^{-7} *12*; α(P)=4.36×10^{-8} *7*; α(IPF)=6.05×10^{-5} *9*

^{166}Lu ε decay (2.65 min) 1974De09,2007Mc08 (continued)

γ(^{166}Yb) (continued)

E_γ	I_γ‡	E_i(level)	J^π_i	E_f	J^π_f
x1301.9 4	1.6 3				
x1306.0 5	1.2 3				
x1310.8 7	1.3 2				
x1349.4 6	0.8 4				
1354.35 15	4.2 9	1684.82	(2+,3,4+)	330.48	4+
x1398.0 9	1.8 5				
1459.63 10	19.2 10	1790.31	(5−)	330.48	4+
1487.3 4	2.6 5	1818.01	(4+,5,6+)	330.48	4+
1497.33 23	1.8 4	2165.73	(6,7)+	667.95	6+
x1505.1 4	1.8 4				
1582.2 6	0.6 3	1684.82	(2+,3,4+)	102.38	2+
1626.63 25	2.3 4	1957.06	(5,6)+	330.48	4+
x1640.3 6	0.9 3				
x1645.4 6	0.7 3				
1685.85 25	1.20 20	2016.34	(4+,5,6+)	330.48	4+
x1720.3 6	0.6 3				

† From Adopted Gammas, unless otherwise noted.

‡ For absolute intensity per 100 decays, multiply by 0.414 23.

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

@ Multiply placed with undivided intensity.

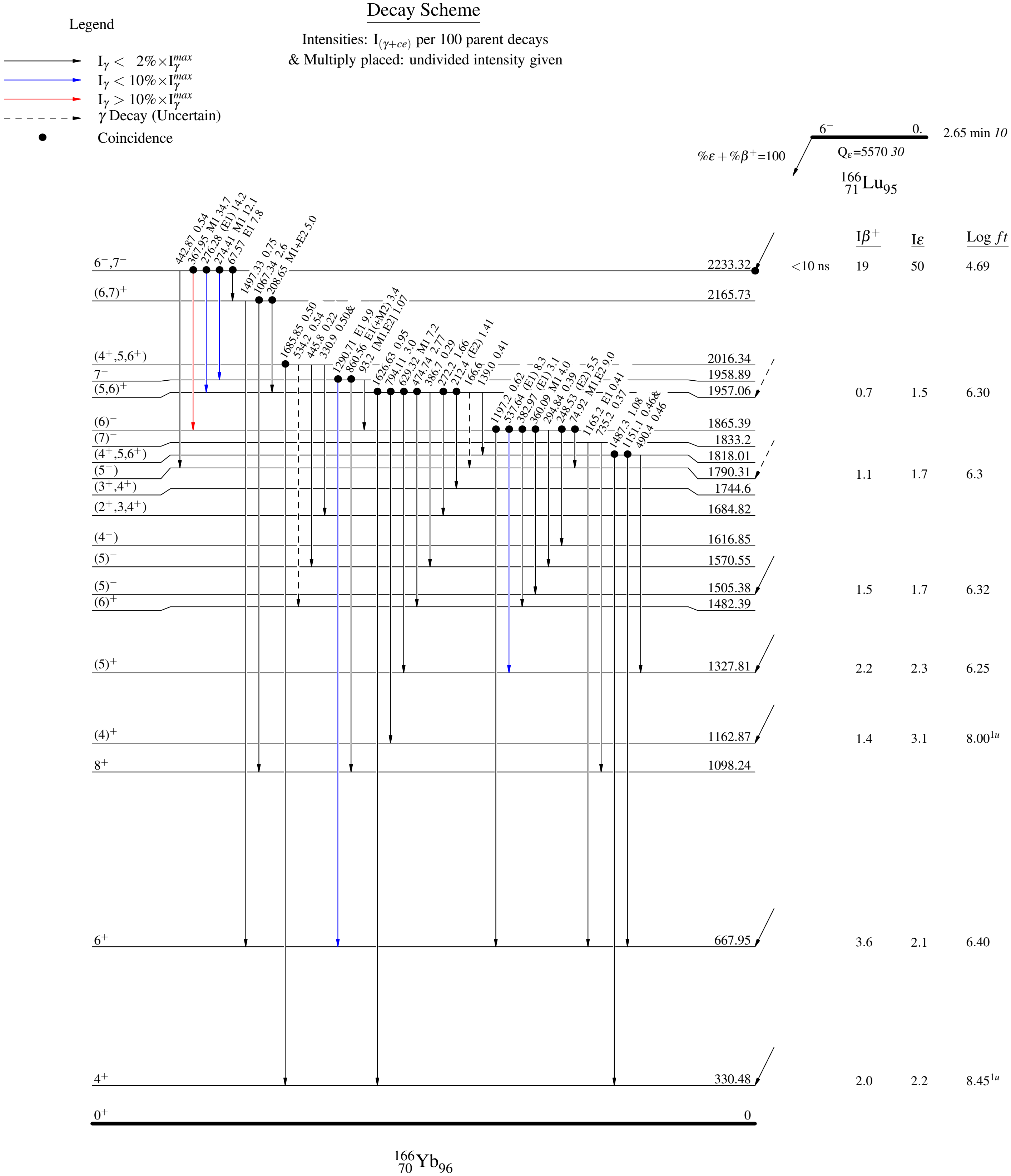
& Placement of transition in the level scheme is uncertain.

x γ ray not placed in level scheme.

$^{166}_{70}Yb_{96}$-8

^{166}Lu ε decay (2.65 min) 1974De09,2007Mc08

Decay Scheme



^{166}Lu ε decay (2.65 min) 1974De09,2007Mc08

Decay Scheme (continued)

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