^{129}La ε decay (11.6 min) 1979Br05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

Parent: ^{129}La: E=0.0; J$^\pi$=(3/2$^+$); $T_{1/2}$=11.6 min *2*; Q(ε)=3739 *22*; %ε+%β^+ decay=100.0
^{129}La-Q(ε): From 2012Wa38.
^{129}La-J$^\pi$,$T_{1/2}$: From ^{129}La Adopted Levels.
1979Br05: ^{130}Ba(p,2n) E=25 MeV, no chem sep; Ge γ, $\gamma\gamma$-coin, semi ce, semi β^+, $\gamma\beta^-$coin, half-life.
Others: 1998Ko66 (Q value=3.74 MeV *4* from $\beta\gamma$ coin data), 1963Ya05, 1963Pr02, 1963La03.

^{129}Ba Levels

E(level)	J$^\pi$ †	$T_{1/2}$ †	E(level)	J$^\pi$ †
0.0	1/2$^+$	2.23 h *11*	928.59 *9*	1/2$^+$
8.42 *6*	7/2$^+$	2.135 h *10*	1062.65 *10*	3/2$^+$
110.57 *5*	3/2$^+$		1068.1 *3*	(1/2,3/2,5/2)
253.76 *5*	3/2$^+$		1094.96 *8*	(3/2$^+$,5/2$^+$)
278.57 *5*	1/2$^+$		1119.85 *12*	1/2$^+$
318.38 *5*	1/2$^-$,3/2$^-$		1219.73 *25*	3/2$^+$,5/2$^+$
457.02 *6*	3/2$^+$		1258.1 *3*	(1/2,3/2,5/2)
459.29 *9*	5/2$^+$		1389.54 *9*	(1/2,3/2,5/2)
542.27 *8*	5/2$^+$		1439.23 *6*	3/2$^+$,5/2$^+$
617.81 *7*	(3/2$^+$,5/2$^+$)		1610.21 *8*	(5/2$^-$)
659.97 *8*	5/2$^+$		1635.40 *10*	1/2$^+$
667.77 *10*	(1/2,3/2,5/2)		1778.28 *10*	(1/2,3/2,5/2)
711.92 *6*	(3/2,5/2)$^+$		1804.80 *18*	3/2$^+$,5/2$^+$
787.07 *22*	(1/2,3/2,5/2)		1866.33 *9*	3/2$^+$,5/2$^+$
849.44 *9*	5/2$^+$		1990.50 *12*	1/2$^+$
888.65 *6*	(3/2$^+$,5/2$^+$)		2071.60 *17*	(1/2,3/2,5/2)
906.70 *9*	1/2$^-$,3/2$^-$		2285.31 *17*	(1/2,3/2,5/2)
911.38 *21*	(1/2,3/2,5/2)		2369.40 *22*	(1/2,3/2,5/2)

† From Adopted Levels.

ε,β^+ radiations

1979Br05 determined Eβ+ endpoints from F-K analyses in $\gamma\beta$+ coin and deduced Q+=3720 *50*.

E(decay)	E(level)	Iβ^+ †	Iε †	Log *ft*	I($\varepsilon+\beta^+$) †	Comments
(1370 22)	2369.40	0.00010 *5*	0.074 *25*	6.9 *2*	0.074 *25*	av Eβ=166.5 *98*; εK=0.8472 *3*; εL=0.11835 *13*; εM+=0.03308 *4*
(1454 22)	2285.31	0.00025 *6*	0.0738 *21*	6.95 *2*	0.0741 *21*	av Eβ=203.5 *97*; εK=0.8458 *6*; εL=0.11784 *16*; εM+=0.03292 *5*
(1667 22)	2071.60	0.0027 *6*	0.17 *3*	6.72 *8*	0.17 *3*	av Eβ=296.9 *96*; εK=0.8360 *17*; εL=0.1158 *3*; εM+=0.03233 *9*
(1749 22)	1990.50	0.0066 *14*	0.26 *5*	6.6 *1*	0.27 *5*	av Eβ=332.3 *97*; εK=0.8290 *23*; εL=0.1146 *4*; εM+=0.03199 *11*
(1873 22)	1866.33	0.011 *2*	0.26 *5*	6.6 *1*	0.27 *5*	av Eβ=386.7 *97*; εK=0.814 *4*; εL=0.1123 *5*; εM+=0.03133 *14*
(1934 22)	1804.80	0.0091 *18*	0.16 *3*	6.87 *8*	0.17 *3*	av Eβ=413.6 *97*; εK=0.805 *4*; εL=0.1109 *6*; εM+=0.03093 *16*
(1961 22)	1778.28	0.029 *4*	0.46 *6*	6.42 *6*	0.49 *6*	av Eβ=425.3 *97*; εK=0.800 *4*; εL=0.1102 *6*; εM+=0.03075 *17*

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^{129}La ε decay (11.6 min) 1979Br05 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	$I\beta^+$ †	$I\varepsilon$†	Log *ft*	$I(\varepsilon+\beta^+)$†	Comments
(2104 *22*)	1635.40	0.034 *4*	0.34 *4*	6.62 *5*	0.37 *4*	av Eβ=488.1 *97*; εK=0.772 *5*; εL=0.1061 *8*; εM+=0.02959 *20*
(2129 *22*)	1610.21	0.095 *10*	0.87 *7*	6.22 *4*	0.96 *8*	av Eβ=499.2 *98*; εK=0.767 *6*; εL=0.1053 *8*; εM+=0.02936 *21*
(2300 *22*)	1439.23	0.078 *10*	0.44 *5*	6.58 *6*	0.52 *6*	av Eβ=575.0 *98*; εK=0.723 *7*; εL=0.0990 *9*; εM+=0.02760 *25*
(2349 *22*)	1389.54	0.045 *7*	0.22 *3*	6.89 *7*	0.27 *4*	av Eβ=597.0 *98*; εK=0.708 *7*; εL=0.0970 *10*; εM+=0.0270 *3*
(2481 *22*)	1258.1	0.016 *5*	0.058 *20*	7.5 *2*	0.074 *25*	av Eβ=655.6 *99*; εK=0.668 *7*; εL=0.0914 *10*; εM+=0.0255 *3*
(2519 *22*)	1219.73	0.046 *9*	0.15 *3*	7.1 *1*	0.20 *4*	av Eβ=672.8 *99*; εK=0.656 *8*; εL=0.0896 *10*; εM+=0.0250 *3*
(2619 *22*)	1119.85	0.12 *2*	0.32 *4*	6.83 *7*	0.44 *6*	av Eβ=717.5 *99*; εK=0.623 *8*; εL=0.0850 *11*; εM+=0.0237 *3*
(2644 *22*)	1094.96	0.24 *3*	0.62 *7*	6.56 *5*	0.86 *9*	av Eβ=728.7 *99*; εK=0.614 *8*; εL=0.0839 *11*; εM+=0.0234 *3*
(2671 *22*)	1068.1	0.014 *7*	0.035 *18*	7.8 *2*	0.049 *25*	av Eβ=740.8 *99*; εK=0.605 *8*; εL=0.0826 *11*; εM+=0.0230 *3*
(2676 *22*)	1062.65	0.044 *12*	0.11 *3*	7.3 *1*	0.15 *4*	av Eβ=743.2 *99*; εK=0.603 *8*; εL=0.0824 *11*; εM+=0.0229 *3*
(2810 *22*)	928.59	0.076 *17*	0.14 *3*	7.2 *1*	0.22 *5*	av Eβ=804 *10*; εK=0.558 *8*; εL=0.0760 *11*; εM+=0.0212 *3*
(2828 *22*)	911.38	0.017 *9*	0.032 *16*	7.9 *2*	0.049 *25*	av Eβ=811 *10*; εK=0.552 *8*; εL=0.0752 *11*; εM+=0.0210 *3*
(2832 *22*)	906.70	0.078 *18*	0.14 *3*	7.3 *1*	0.22 *5*	av Eβ=814 *10*; εK=0.550 *8*; εL=0.0750 *11*; εM+=0.0209 *3*
(2850 *22*)	888.65	0.71 *6*	1.27 *10*	6.31 *4*	1.98 *15*	av Eβ=822 *10*; εK=0.544 *8*; εL=0.0742 *11*; εM+=0.0207 *3*
(2890 *22*)	849.44	0.12 *2*	0.20 *4*	7.1 *1*	0.32 *6*	av Eβ=839 *10*; εK=0.531 *8*; εL=0.0723 *11*; εM+=0.0201 *3*
(2952 *22*)	787.07	0.060 *12*	0.090 *18*	7.5 *1*	0.15 *3*	av Eβ=868 *10*; εK=0.510 *8*; εL=0.0695 *10*; εM+=0.0193 *3*
(3027 *22*)	711.92	1.95 *11*	2.59 *14*	6.06 *3*	4.54 *24*	av Eβ=902 *10*; εK=0.485 *8*; εL=0.0661 *10*; εM+=0.0184 *3*
(3071 *22*)	667.77	0.10 *3*	0.12 *4*	7.4 *2*	0.22 *7*	av Eβ=922 *10*; εK=0.471 *7*; εL=0.0641 *10*; εM+=0.0179 *3*
(3079 *22*)	659.97	0.78 *6*	0.95 *7*	6.50 *4*	1.73 *13*	av Eβ=925 *10*; εK=0.469 *7*; εL=0.0638 *10*; εM+=0.0178 *3*
(3121 *22*)	617.81	0.96 *8*	1.11 *9*	6.45 *4*	2.07 *16*	av Eβ=945 *10*; εK=0.455 *7*; εL=0.0620 *10*; εM+=0.0172 *3*
(3197 *22*)	542.27	0.17 *4*	0.18 *4*	7.3 *1*	0.35 *8*	av Eβ=979 *10*; εK=0.432 *7*; εL=0.0588 *10*; εM+=0.0164 *3*
(3280 *22*)	459.29	0.94 *9*	0.86 *8*	6.60 *5*	1.80 *17*	av Eβ=1017 *10*; εK=0.408 *7*; εL=0.0554 *9*; εM+=0.01542 *25*
(3282 *22*)	457.02	9.8 *5*	9.0 *5*	5.59 *3*	18.8 *10*	av Eβ=1018 *10*; εK=0.407 *7*; εL=0.0553 *9*; εM+=0.01539 *25*
(3421 *22*)	318.38	0.42 *13*	0.32 *10*	7.1 *2*	0.74 *23*	av Eβ=1081 *10*; εK=0.368 *6*; εL=0.0500 *8*; εM+=0.01392 *23*
(3460 *22*)	278.57	15.0 *5*	10.9 *4*	5.55 *2*	25.9 *8*	av Eβ=1100 *11*; εK=0.358 *6*; εL=0.0486 *8*; εM+=0.01352 *22*
(3485 *22*)	253.76	3.3 *3*	2.3 *2*	6.23 *5*	5.6 *5*	av Eβ=1111 *11*; εK=0.351 *6*; εL=0.0477 *8*; εM+=0.01328 *22*
(3628 *22*)	110.57	9.1 *10*	5.4 *6*	5.90 *5*	14.5 *16*	av Eβ=1177 *11*; εK=0.317 *6*; εL=0.0429 *7*; εM+=0.01195 *20*
(3739 *22*)	0.0	11 *2*	5.8 *10*	5.89 *8*	17 *3*	av Eβ=1228 *11*; εK=0.292 *5*; εL=0.0396 *7*; εM+=0.01102 *18* I(ε+β+): from 1979Br05 based on the growth and decay

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^{129}La ε decay (11.6 min) 1979Br05 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Comments
		of 372γ and 411γ from decay of the daughter ^{129}Cs.

† Absolute intensity per 100 decays.

γ(^{129}Ba)

Iγ normalization: From sum of I(γ+ce+ε+β^+ to g.s.)=100 with I(ε+β^+) to g.s.=17% 3 (1979Br05).

E_γ	I_γ[&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ	α[@]	Comments
(8.4 2)		8.42	7/2$^+$	0.0	1/2$^+$	[M3]		1.05×10^8 19	α(L)=7.8×10^7 14; α(M)=2.2×10^7 4 α(N)=4.6×10^6 8; α(O)=5.9×10^5 11; α(P)=6.5×10^3 11 E_γ: deduced from energy differences of gammas to 7/2$^+$ and 1/2$^+$ levels.
64.6 1	0.9 1	318.38	1/2$^-$,3/2$^-$	253.76	3/2$^+$	E1		0.756	α(K)=0.641 10; α(L)=0.0920 14; α(M)=0.0189 3 α(N)=0.00398 6; α(O)=0.000572 9; α(P)=3.14×10^{-5} 5 α(L)exp=0.14 5
85.1[a] 2	≤0.1	542.27	5/2$^+$	457.02	3/2$^+$	[M1+E2]		2.5 10	α(K)=1.6 4; α(L)=0.7 5; α(M)=0.15 11 α(N)=0.030 23; α(O)=0.004 3; α(P)=8.79×10^{-5} 15
102.3[‡] 3	≤0.1	110.57	3/2$^+$	8.42	7/2$^+$	[E2]		1.78 4	α(K)=1.133 19; α(L)=0.507 10; α(M)=0.1108 22 α(N)=0.0230 5; α(O)=0.00305 6; α(P)=5.24×10^{-5} 9
110.5 1	68.5 31	110.57	3/2$^+$	0.0	1/2$^+$	M1		0.743	α(K)=0.636 9; α(L)=0.0853 13; α(M)=0.0176 3 α(N)=0.00380 6; α(O)=0.000580 9; α(P)=4.19×10^{-5} 6 α(K)exp=0.64 4; α(M)exp=0.018 2
138.7 1	1.6 2	457.02	3/2$^+$	318.38	1/2$^-$,3/2$^-$	[E1]		0.0917	α(K)=0.0786 12; α(L)=0.01042 15; α(M)=0.00214 3 α(N)=0.000455 7; α(O)=6.75×10^{-5} 10; α(P)=4.26×10^{-6} 6
143.3 1	5.1 2	253.76	3/2$^+$	110.57	3/2$^+$	E2(+M1)	>1.7	0.519 25	α(K)=0.381 13; α(L)=0.109 10; α(M)=0.0234 23 α(N)=0.0049 5; α(O)=0.00067 6; α(P)=1.95×10^{-5} 3 α(K)exp=0.49 12
168.1 1	5.2 2	278.57	1/2$^+$	110.57	3/2$^+$	E2,M1		0.27 5	α(K)=0.216 19; α(L)=0.044 18; α(M)=0.009 4 α(N)=0.0020 8; α(O)=0.00028 10; α(P)=1.25×10^{-5} 5 α(K)exp=0.23 2
[x]173.6 1	2.0 4								
178.3 3	0.5 1	457.02	3/2$^+$	278.57	1/2$^+$	[M1+E2]		0.23 3	α(K)=0.181 14; α(L)=0.035 13; α(M)=0.007 3 α(N)=0.0016 6; α(O)=0.00023 8; α(P)=1.05×10^{-5} 6
202.9[†] 3	0.8 3	457.02	3/2$^+$	253.76	3/2$^+$	[M1+E2]		0.151 14	α(K)=0.123 6; α(L)=0.022 7; α(M)=0.0047 15 α(N)=0.0010 3; α(O)=0.00014 4; α(P)=7.3×10^{-6} 5
205.6 2	1.1 2	459.29	5/2$^+$	253.76	3/2$^+$	[M1+E2]		0.145 13	α(K)=0.118 5; α(L)=0.021 7; α(M)=0.0045 14 α(N)=0.0010 3; α(O)=0.00014 4; α(P)=7.0×10^{-6} 5
207.9 1	1.9 4	318.38	1/2$^-$,3/2$^-$	110.57	3/2$^+$	[E1]		0.0302	α(K)=0.0259 4; α(L)=0.00337 5; α(M)=0.000690 10 α(N)=0.0001476 21; α(O)=2.21×10^{-5} 4; α(P)=1.467×10^{-6} 21
244.8 2	0.6 1	787.07	(1/2,3/2,5/2)	542.27	5/2$^+$				
253.8 1	32.5 14	253.76	3/2$^+$	0.0	1/2$^+$	E2		0.0777	α(K)=0.0621 9; α(L)=0.01227 18; α(M)=0.00260 4 α(N)=0.000549 8; α(O)=7.80×10^{-5} 11; α(P)=3.43×10^{-6} 5 α(K)exp=0.065 7; α(L)exp=0.013 2
254.9[‡] 2	1.3 3	711.92	(3/2,5/2)$^+$	457.02	3/2$^+$				

From ENSDF

γ(^{129}Ba) (continued)

E_γ	I_γ[&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ	α[@]	Comments
270.7[‡] *2*	0.3 *1*	888.65	(3/2$^+$,5/2$^+$)	617.81	(3/2$^+$,5/2$^+$)				
278.6 *1*	100	278.57	1/2$^+$	0.0	1/2$^+$	M1		0.0589	α(K)=0.0505 *7*; α(L)=0.0066 *1*; α(M)=0.00137 *2* α(N)=0.000295 *5*; α(O)=4.52×10^{-5} *7*; α(P)=3.30×10^{-6} *5* α(K)exp=0.049 *3*; α(L)exp=0.0072 *5*; α(M)exp=0.0020 *3* Mult.: ce data give M1(+E2) with δ<1.2, but ΔJ^π forbids E2.
307.2[a] *2*	1.4 *2*	849.44	5/2$^+$	542.27	5/2$^+$				
318.4 *1*	8.2 *5*	318.38	1/2$^-$,3/2$^-$	0.0	1/2$^+$	E1		0.00979	α(K)=0.00843 *12*; α(L)=0.001078 *16*; α(M)=0.000221 *3* α(N)=4.74×10^{-5} *7*; α(O)=7.16×10^{-6} *10*; α(P)=4.93×10^{-7} *7* α(K)exp=0.012 *4*
339.1 *2*	0.9 *2*	617.81	(3/2$^+$,5/2$^+$)	278.57	1/2$^+$				
341.5 *2*	1.2 *2*	659.97	5/2$^+$	318.38	1/2$^-$,3/2$^-$				
346.4[‡] *2*	≤0.3	888.65	(3/2$^+$,5/2$^+$)	542.27	5/2$^+$				
346.5 *1*	20.7 *10*	457.02	3/2$^+$	110.57	3/2$^+$	M1(+E2)	<0.4	0.0330 *6*	α(K)=0.0283 *6*; α(L)=0.00375 *6*; α(M)=0.000773 *13* α(N)=0.000167 *3*; α(O)=2.55×10^{-5} *4*; α(P)=1.83×10^{-6} *5* α(K)exp=0.033 *5*
348.7 *1*	6.4 *6*	459.29	5/2$^+$	110.57	3/2$^+$	M1(+E2)	<0.6	0.0322 *8*	α(K)=0.0275 *8*; α(L)=0.00371 *7*; α(M)=0.000765 *15* α(N)=0.000165 *3*; α(O)=2.51×10^{-5} *4*; α(P)=1.77×10^{-6} *7* α(K)exp=0.045 *18*
349.4[‡] *2*	0.4 *2*	667.77	(1/2,3/2,5/2)	318.38	1/2$^-$,3/2$^-$				
381.5 *2*	0.4 *1*	659.97	5/2$^+$	278.57	1/2$^+$				
393.5[†] *2*	0.4 *2*	711.92	(3/2,5/2)$^+$	318.38	1/2$^-$,3/2$^-$				
406.2 *1*	2.0 *2*	659.97	5/2$^+$	253.76	3/2$^+$	M1,E2		0.0200 *22*	α(K)=0.0170 *22*; α(L)=0.00243 *6*; α(M)=0.000503 *9* α(N)=0.0001079 *24*; α(O)=1.62×10^{-5} *7*; α(P)=1.06×10^{-6} *19* α(K)exp=0.030 *14*.
414.0 *1*	0.5 *2*	667.77	(1/2,3/2,5/2)	253.76	3/2$^+$				
431.8 *2*	1.6 *2*	542.27	5/2$^+$	110.57	3/2$^+$				
433.3 *2*	1.0 *2*	711.92	(3/2,5/2)$^+$	278.57	1/2$^+$				
448.6 *1*	21.0 *13*	457.02	3/2$^+$	8.42	7/2$^+$	(E2)		0.01336	α(K)=0.01117 *16*; α(L)=0.001738 *25*; α(M)=0.000363 *5* α(N)=7.74×10^{-5} *11*; α(O)=1.140×10^{-5} *16*; α(P)=6.65×10^{-7} *10* α(K)exp=0.007 *4* Mult.: α(K)exp allows E1 also within uncertainty, but E1 rejected by ΔJ^π.
457.0 *1*	32.5 *26*	457.02	3/2$^+$	0.0	1/2$^+$	M1,E2		0.0146 *20*	α(K)=0.0124 *18*; α(L)=0.00173 *10*; α(M)=0.000359 *18* α(N)=7.7×10^{-5} *5*; α(O)=1.16×10^{-5} *9*; α(P)=7.8×10^{-7} *15* α(K)exp=0.012 *2*
458.2 *1*	8.5 *6*	711.92	(3/2,5/2)$^+$	253.76	3/2$^+$	M1,E2		0.0145 *19*	α(K)=0.0123 *18*; α(L)=0.00172 *10*; α(M)=0.000357 *18* α(N)=7.7×10^{-5} *5*; α(O)=1.15×10^{-5} *9*; α(P)=7.7×10^{-7} *15* α(K)exp=0.012 *4*
507.3[‡] *2*	3.9 *4*	617.81	(3/2$^+$,5/2$^+$)	110.57	3/2$^+$				
531.2 *2*	0.5 *2*	849.44	5/2$^+$	318.38	1/2$^-$,3/2$^-$				

γ(^{129}Ba) (continued)

E_γ	I_γ &	E_i(level)	J_i^π	E_f	J_f^π
533.9 *1*	1.7 *2*	542.27	$5/2^+$	8.42	$7/2^+$
549.5†‡ *2*	2.2 *3*	659.97	$5/2^+$	110.57	$3/2^+$
570.2† *2*	0.7 *3*	888.65	$(3/2^+,5/2^+)$	318.38	$1/2^-,3/2^-$
588.3 *1*	0.4 *1*	906.70	$1/2^-,3/2^-$	318.38	$1/2^-,3/2^-$
601.3†‡ *2*	4.1 *3*	711.92	$(3/2,5/2)^+$	110.57	$3/2^+$
609.3 *2*	0.9 *2*	617.81	$(3/2^+,5/2^+)$	8.42	$7/2^+$
610.1‡ *2*	0.5 *1*	888.65	$(3/2^+,5/2^+)$	278.57	$1/2^+$
617.8 *1*	4.2 *3*	617.81	$(3/2^+,5/2^+)$	0.0	$1/2^+$
x622.0 *3*	1.0 *3*				
628.1 *2*	0.3 *1*	906.70	$1/2^-,3/2^-$	278.57	$1/2^+$
632.8‡ *2*	0.2 *1*	911.38	(1/2,3/2,5/2)	278.57	$1/2^+$
651.5 *2*	1.2 *2*	659.97	$5/2^+$	8.42	$7/2^+$
653.0‡ *2*	0.2 *1*	906.70	$1/2^-,3/2^-$	253.76	$3/2^+$
674.8‡ *2*	0.2 *1*	928.59	$1/2^+$	253.76	$3/2^+$
703.5 *1*	2.6 *2*	711.92	$(3/2,5/2)^+$	8.42	$7/2^+$
711.9 *1*	0.5 *1*	711.92	$(3/2,5/2)^+$	0.0	$1/2^+$
738.8 *1*	1.1 *1*	849.44	$5/2^+$	110.57	$3/2^+$
744.2‡ *2*	0.2 *1*	1062.65	$3/2^+$	318.38	$1/2^-,3/2^-$
760.6†‡ *2*	≤0.3	1610.21	$(5/2^-)$	849.44	$5/2^+$
771.6 *2*	0.3 *1*	1389.54	(1/2,3/2,5/2)	617.81	$(3/2^+,5/2^+)$
776.6‡ *2*	≤0.2	1094.96	$(3/2^+,5/2^+)$	318.38	$1/2^-,3/2^-$
778.1 *1*	2.6 *3*	888.65	$(3/2^+,5/2^+)$	110.57	$3/2^+$
808.9 *1*	0.4 *1*	1062.65	$3/2^+$	253.76	$3/2^+$
814.3†‡ *3*	0.2 *1*	1068.1	(1/2,3/2,5/2)	253.76	$3/2^+$
816.4†‡ *1*	0.6 *2*	1094.96	$(3/2^+,5/2^+)$	278.57	$1/2^+$
x831.8 *2*	0.6 *2*				
841.2‡ *2*	0.8 *2*	1094.96	$(3/2^+,5/2^+)$	253.76	$3/2^+$
841.3‡ *2*	1.3 *2*	1119.85	$1/2^+$	278.57	$1/2^+$
866.0 *2*	≤0.2	1119.85	$1/2^+$	253.76	$3/2^+$
880.2 *1*	1.6 *2*	888.65	$(3/2^+,5/2^+)$	8.42	$7/2^+$
888.7 *1*	2.0 *2*	888.65	$(3/2^+,5/2^+)$	0.0	$1/2^+$
901.3 *4*	0.3 *1*	1219.73	$3/2^+,5/2^+$	318.38	$1/2^-,3/2^-$
928.6 *1*	1.1 *1*	928.59	$1/2^+$	0.0	$1/2^+$
966.0 *3*	0.5 *1*	1219.73	$3/2^+,5/2^+$	253.76	$3/2^+$
984.3 *2*	0.6 *1*	1094.96	$(3/2^+,5/2^+)$	110.57	$3/2^+$
1004.3†‡ *3*	0.3 *1*	1258.1	(1/2,3/2,5/2)	253.76	$3/2^+$
1017.6 *1*	0.9 *1*	1635.40	$1/2^+$	617.81	$(3/2^+,5/2^+)$
1061.9 *2*	0.4 *1*	1990.50	$1/2^+$	928.59	$1/2^+$
1068.0 *1*	1.0 *1*	1610.21	$(5/2^-)$	542.27	$5/2^+$
1071.2 *2*	≤0.3	1389.54	(1/2,3/2,5/2)	318.38	$1/2^-,3/2^-$

$^{129}_{56}$Ba$_{73}$-6

^{129}La ε decay (11.6 min) 1979Br05 (continued)

γ(^{129}Ba) (continued)

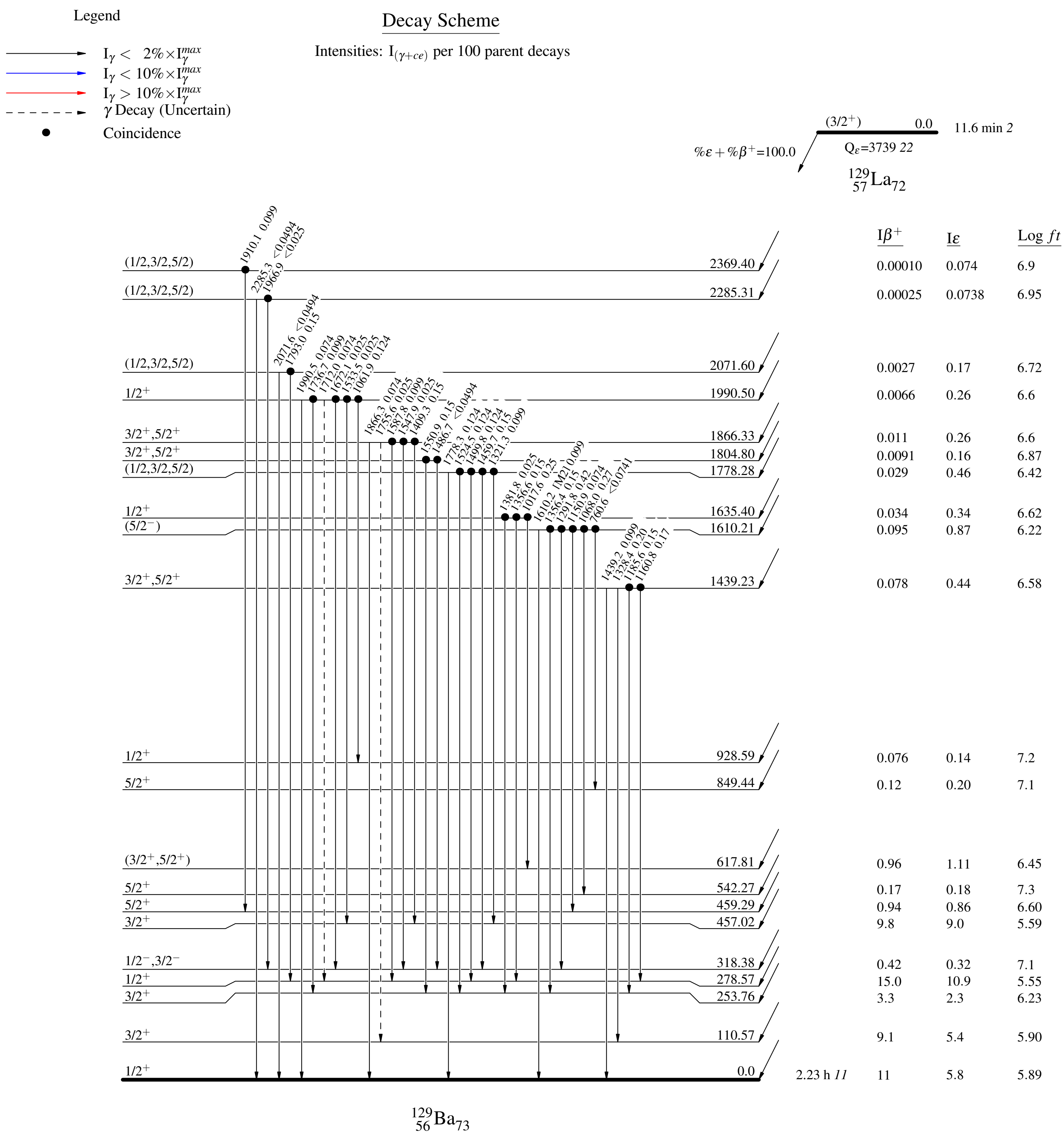
E_γ	I_γ[&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]
1086.5 2	1.0 1	1094.96	$(3/2^+,5/2^+)$	8.42	$7/2^+$	
1095.0 3	0.3 1	1094.96	$(3/2^+,5/2^+)$	0.0	$1/2^+$	
1119.9[†] 2	0.3 1	1119.85	$1/2^+$	0.0	$1/2^+$	
1135.8 1	0.5 1	1389.54	(1/2,3/2,5/2)	253.76	$3/2^+$	
1150.9 2	0.2 1	1610.21	$(5/2^-)$	459.29	$5/2^+$	
1160.8 1	0.6 1	1439.23	$3/2^+,5/2^+$	278.57	$1/2^+$	
1185.6 1	0.5 1	1439.23	$3/2^+,5/2^+$	253.76	$3/2^+$	
^{x}1236.5 1	0.4 1					
1291.8 1	1.6 2	1610.21	$(5/2^-)$	318.38	$1/2^-,3/2^-$	
1321.3[†‡] 2	0.3 1	1778.28	(1/2,3/2,5/2)	457.02	$3/2^+$	
1328.4 1	0.7 1	1439.23	$3/2^+,5/2^+$	110.57	$3/2^+$	
1356.4[‡] 2	0.5 1	1610.21	$(5/2^-)$	253.76	$3/2^+$	
1356.6[‡] 2	0.5 1	1635.40	$1/2^+$	278.57	$1/2^+$	
1381.8 2	0.10 5	1635.40	$1/2^+$	253.76	$3/2^+$	
1409.3 1	0.5 1	1866.33	$3/2^+,5/2^+$	457.02	$3/2^+$	
1439.2[†] 1	0.3 1	1439.23	$3/2^+,5/2^+$	0.0	$1/2^+$	
1459.7[†‡] 2	0.5 1	1778.28	(1/2,3/2,5/2)	318.38	$1/2^-,3/2^-$	
1486.7[†‡] 3	≤0.2	1804.80	$3/2^+,5/2^+$	318.38	$1/2^-,3/2^-$	
1499.8 2	0.4 1	1778.28	(1/2,3/2,5/2)	278.57	$1/2^+$	
1524.5[†‡] 3	0.4 1	1778.28	(1/2,3/2,5/2)	253.76	$3/2^+$	
1533.5 3	0.10 5	1990.50	$1/2^+$	457.02	$3/2^+$	
1547.9 3	0.10 5	1866.33	$3/2^+,5/2^+$	318.38	$1/2^-,3/2^-$	
1550.9 2	0.5 1	1804.80	$3/2^+,5/2^+$	253.76	$3/2^+$	
1587.8 2	0.3 1	1866.33	$3/2^+,5/2^+$	278.57	$1/2^+$	
1610.2 2	0.3 1	1610.21	$(5/2^-)$	0.0	$1/2^+$	[M2]
1672.1 3	0.10 5	1990.50	$1/2^+$	318.38	$1/2^-,3/2^-$	
1712.0[a] 3	0.2 1	1990.50	$1/2^+$	278.57	$1/2^+$	
1736.7 2	0.3 1	1990.50	$1/2^+$	253.76	$3/2^+$	
1755.6[a] 2	0.10 5	1866.33	$3/2^+,5/2^+$	110.57	$3/2^+$	
1778.3 2	0.4 1	1778.28	(1/2,3/2,5/2)	0.0	$1/2^+$	
^{x}1785.5 5	0.2 1					
1793.0 2	0.5 1	2071.60	(1/2,3/2,5/2)	278.57	$1/2^+$	
1866.3 2	0.2 1	1866.33	$3/2^+,5/2^+$	0.0	$1/2^+$	
1910.1 2	0.3 1	2369.40	(1/2,3/2,5/2)	459.29	$5/2^+$	
1966.9 2	≤0.1	2285.31	(1/2,3/2,5/2)	318.38	$1/2^-,3/2^-$	
1990.5 3	0.2 1	1990.50	$1/2^+$	0.0	$1/2^+$	
2071.6 3	≤0.2	2071.60	(1/2,3/2,5/2)	0.0	$1/2^+$	
2285.3 3	≤0.2	2285.31	(1/2,3/2,5/2)	0.0	$1/2^+$	

$^{129}_{56}$Ba$_{73}$-7

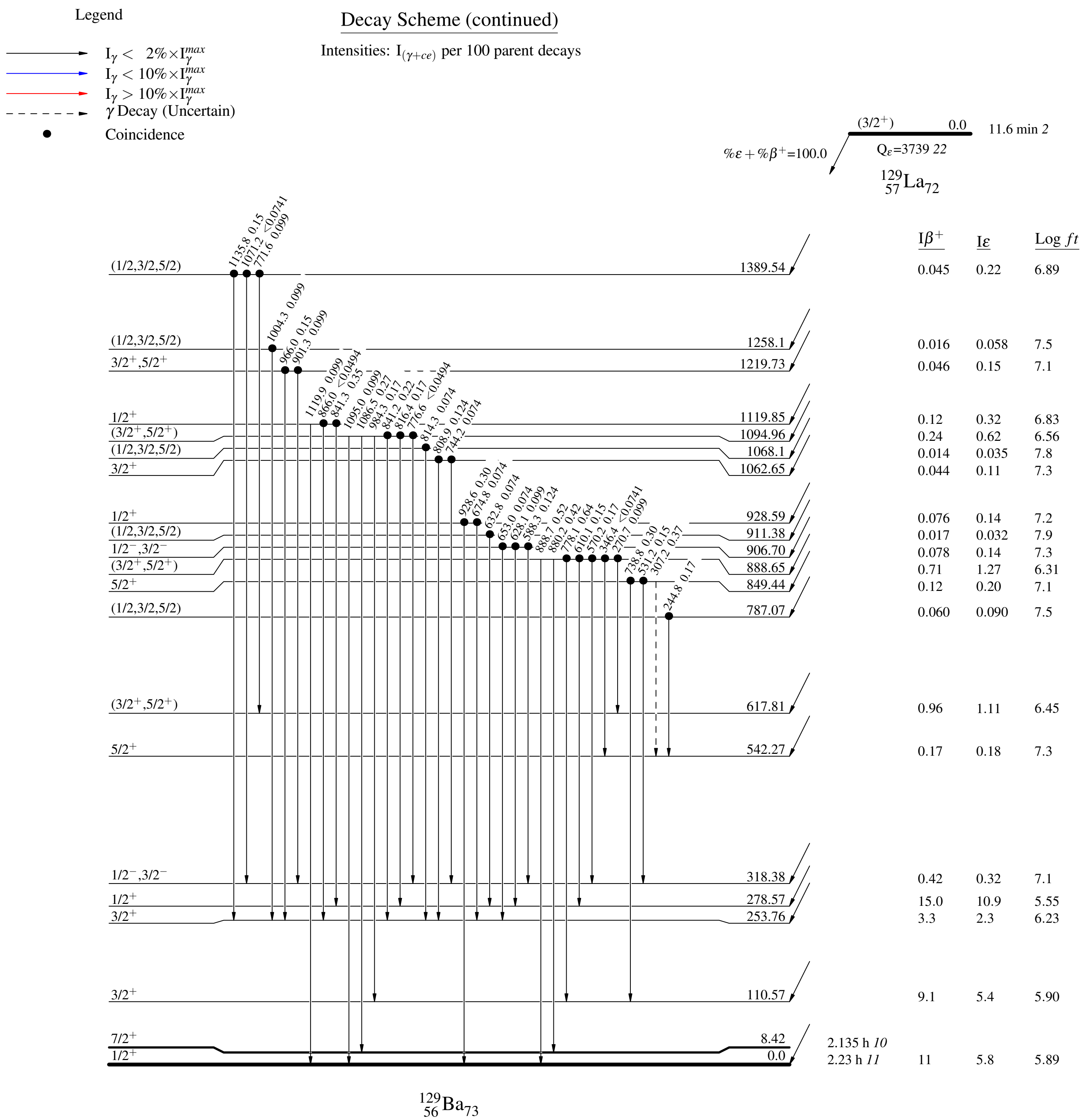
γ(^{129}Ba) (continued)

† Composite line with impurity in singles spectrum.
‡ Observed in γγ-coin only.
# From ce data. α(exp) were deduced from Iγ data and Ice values normalized so that α(K)=0.0216 for 357.4-keV E2 transition in ^{130}Ba.
@ Overlaps M1 and E2 for M1+E2 transitions when δ not given.
& For absolute intensity per 100 decays, multiply by 0.247 *7*.
a Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

^{129}La ε decay (11.6 min) 1979Br05



^{129}La ε decay (11.6 min) 1979Br05



^{129}La ε decay (11.6 min) 1979Br05