^{81}Sr ε+β^+ decay (22.3 min) 1980Ho28

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 199,271 (2025)	1-Sep-2024

Parent: ^{81}Sr: E=0; J$^\pi$=1/2$^-$; T$_{1/2}$=22.3 min *4*; Q(ε)=3929 *6*; %ε+%β^+ decay=100
^{81}Sr-Q(ε): from 2021Wa16.
Others: 1982Th03, 1981FrZY, 1977LiZP, 1973Br32, 1971Do01.
1980Ho28: Chemically separated source; measured Eγ, Iγ, T$_{1/2}$; low-energy photon spectrometer (FWHM=550 eV at 122 keV) and Ge(Li) (FWHM=2.5 keV at 1.33 MeV).
1973Br32: Ge(Li) and Ge(Li)-NaI detectors, chemically separated source; measured Eγ, Iγ, $\gamma\gamma$ coin, γ-$\gamma^\pm$ coin, $\gamma\gamma$(t), Eβ, β^+-γ coin.
1981FrZY: single and coincidence spectra, measured with Ge(Li) (FWHM=2.5-3.5 keV at 1.33 MeV) and Si(Li), timing FWHM=12 ns. Source not chemically separated.

^{81}Rb Levels

Decay schemes of 1973Br32 and 1981FrZY are based on Ritz combination principle, intensity balances, and coincidence measurements. The 1980Ho28 scheme is based only on the Ritz principle and intensity balances. Different authors propose significantly different decay schemes. The adopted scheme is essentially that of 1980Ho28 with the addition of levels at 1061 keV and 1218 keV (proposed in 1981FrZY) and the $\gamma\gamma$-coin data from 1973Br32 and 1981FrZY. Levels at 497, 819, 866, 1344 and 1600, proposed in 1973Br32, are not adopted because γ rays deexciting them are either placed differently or are unobserved by 1980Ho28 or 1981FrZY.

E(level)†	J$^\pi$#	T$_{1/2}$#	Comments
0.0	3/2$^-$	4.571 h *4*	T$_{1/2}$: from Adopted Levels.
86.31 *7*	9/2$^+$	30.5 min *3*	T$_{1/2}$: from Adopted Levels.
153.481 *20*	5/2$^-$	0.21 ns *10*	
188.228 *17*	1/2$^-$,3/2$^-$		
245.271 *25*	5/2$^+$		
301.240 *16*	(3/2)$^-$		
443.387 *19*	1/2$^{(-)}$,3/2$^{(-)}$		
463.00 *5*	1/2$^+$,3/2,5/2,7/2$^-$		
486.69 *5*	(5/2$^-$)		
574.729 *23*	(1/2)$^-$		
630.59 *6*	(5/2$^+$)		
702.16 *4*	(1/2$^-$,3/2)		
711.93 *3*	(1/2$^-$,3/2,5/2$^+$)		
909.089 *19*	(3/2)$^-$		
923.02 *8*	(1/2$^-$,3/2)		
1061.42?‡ *7*	1/2$^+$		
1218.9‡ *5*	1/2$^{(+)}$,3/2		
1243.63 *13*	(1/2$^+$,3/2)		
1381.89 *3*	(3/2)$^-$		
1513.10 *12*	(1/2,3/2)		
1553.67 *4*	1/2$^-$,3/2$^-$		
1804.35 *13*	(1/2,3/2)		
1848.15 *18*	(1/2$^+$,3/2)		
2165.4 *4*	(1/2$^+$)		

† From a least-squares fit to Eγ, omitting 978.66, 1252.82 and 1554.15 from 1553.7 keV level; 1382.44 from 1381.9 keV level. Without and with considerations χ^2=3.4 and 1.8, respectively, cf. χ^2_{crit}=1.5.
‡ From 1981FrZY decay scheme only; based on $\gamma\gamma$-coin data.
# From Adopted Levels.

^{81}Sr ε+β^+ decay (22.3 min) 1980Ho28 (continued)

ε,β^+ radiations

The decay scheme is incomplete and the normalization to be considered as approximate.
εK, εL, εM, εN: Additional information 2.
av Eβ: Additional information 3.

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(1764 *6*)	2165.4	0.032 *7*	0.158 *39*	6.33 *10*	0.19 *4*	av Eβ=323.7 *26*; εK=0.722 *14*; εL=0.0885 *18*; εM+=0.01943 *36*
(2081 *6*)	1848.15	0.106 *18*	0.154 *36*	6.49 *7*	0.26 *4*	av Eβ=461.8 *26*; εK=0.516 *22*; εL=0.0632 *27*; εM+=0.0139 *5*
(2125 *6*)	1804.35	0.132 *23*	0.168 *44*	6.47 *8*	0.30 *5*	av Eβ=481.1 *26*; εK=0.488 *23*; εL=0.0597 *28*; εM+=0.0131 *5*
(2375 *6*)	1553.67	2.05 *45*	1.35 *21*	5.67 *7*	3.4 *5*	av Eβ=592.0 *27*; εK=0.345 *21*; εL=0.0421 *26*; εM+=0.0092 *5*
(2416 *6*)	1513.10	0.219 *46*	0.131 *20*	6.70 *6*	0.35 *5*	av Eβ=610.4 *27*; εK=0.326 *21*; εL=0.0398 *25*; εM+=0.00871 *49*
(2547 *6*)	1381.89	3.5 *7*	1.58 *24*	5.66 *6*	5.1 *7*	av Eβ=669.1 *27*; εK=0.270 *19*; εL=0.0329 *23*; εM+=0.00722 *43*
(2685 *6*)	1243.63	0.14 *6*	0.048 *16*	7.22 *14*	0.19 *6*	av Eβ=731.4 *27*; εK=0.222 *16*; εL=0.027 *2*; εM+=0.00593 *38*
(2710 *6*)	1218.9	≥0.14	≥0.04	≤7.3	≥0.18	av Eβ=742.7 *27*; εK=0.214 *16*; εL=0.0261 *19*; εM+=0.00573 *37* I($\varepsilon+\beta^+$): lower limit from an intensity balance of 0.182 *23*.
(2868# *6*)	1061.42?	≤0.26	≤0.07	≥7.2	≤0.33	av Eβ=814.5 *27*; εK=0.172 *13*; εL=0.0210 *16*; εM+=0.00461 *31* I($\varepsilon+\beta^+$): from intensity balance of 0.11 *22* at this level.
(3006 *6*)	923.02	0.33 *7*	0.064 *13*	7.20 *8*	0.39 *7*	av Eβ=877.5 *27*; εK=0.143 *12*; εL=0.0175 *14*; εM+=0.00384 *27*
(3020 *6*)	909.089	8.0 *12*	1.55 *23*	5.82 *6*	9.6 *12*	av Eβ=884.0 *27*; εK=0.141 *11*; εL=0.0172 *14*; εM+=0.00377 *26*
(3217 *6*)	711.93	≤2.6	≤0.4	≥6.5	≤3	av Eβ=974.5 *28*; εK=0.110 *9*; εL=0.0134 *11*; εM+=0.00294 *21* I($\varepsilon+\beta^+$): upper limit for possible different placements of several γ rays from the level. Transition intensity balance gives 2.6 *4*.
(3227 *6*)	702.16	0.34 *10*	0.049 *13*	7.38 *11*	0.39 *10*	av Eβ=979.1 *28*; εK=0.109 *9*; εL=0.0132 *11*; εM+=0.00290 *21*
(3298 *6*)	630.59	0.68 *13*	0.25 *4*	8.31[1u] *7*	0.93 *14*	av Eβ=1032.0 *27*; εK=0.231 *16*; εL=0.0283 *20*; εM+=0.00621 *38*
(3354 *6*)	574.729	7.9 *12*	0.94 *15*	6.13 *6*	8.8 *12*	av Eβ=1037.7 *28*; εK=0.093 *8*; εL=0.0114 *10*; εM+=0.00250 *18*
(3442# *6*)	486.69	≤0.28	≤0.08	≥8.9	≤0.36	av Eβ=1097.5 *27*; εK=0.197 *15*; εL=0.0242 *18*; εM+=0.00531 *34* I($\varepsilon+\beta^+$): upper limit from an intensity balance of 0.15 *21*.
(3466 *6*)	463.00	≤0.43	≤0.044	≥7.5	≤0.47	av Eβ=1089.6 *28*; εK=0.082 *7*; εL=0.0100 *9*; εM+=0.00219 *16* I($\varepsilon+\beta^+$): upper limit from assigned for possible different placement of γ ray from the level. Transition intensity balance gives 0.47 *9*.
(3486 *6*)	443.387	16.6 *24*	1.69 *27*	5.91 *6*	18.3 *24*	av Eβ=1098.8 *28*; εK=0.080 *7*; εL=0.0098 *8*; εM+=0.00215 *16* E(decay): 3457 *92* (from measured E_0=2435 *92* + 1022) (1973Br32).

Continued on next page (footnotes at end of table)

^{81}Sr ε+β^+ decay (22.3 min) 1980Ho28 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(3628 *6*)	301.240	29 *5*	2.45 *45*	5.78 *7*	31 *5*	av Eβ=1164.8 *28*; εK=0.069 *6*; εL=0.0084 *7*; εM+=0.00184 *14* E(decay): 3706 *30* (from measured E_0=2684 *30* + 1022) (1973Br32).
(3684# *6*)	245.271	<0.07	<0.01	>9.8^{1u}	<0.08	av Eβ=1208.0 *27*; εK=0.152 *12*; εL=0.0187 *15*; εM+=0.00410 *28* I($\varepsilon+\beta^+$): upper limit from an intensity balance of −0.01 *8*.
(3741 *6*)	188.228	6.7 *13*	0.51 *10*	6.50 *8*	7.2 *13*	av Eβ=1217.5 *28*; εK=0.061 *5*; εL=0.0074 *7*; εM+=0.00163 *12*
(3929# *6*)	0.0	11 *11*	0.7 *6*	6.4 *4*	12 *11*	av Eβ=1305.4 *28*; εK=0.0507 *45*; εL=0.0062 *5*; εM+=0.00135 *10* I($\varepsilon+\beta^+$): from net I(ε+β^+) negative feeding at the g.s.. 100 − ΣI(ε+β^+) to the excited states yields ≈10.5 and there are the negative feeding of 0.15 *3* and 1 *4* at the 86.3 and 153.5 keV levels, imply inaccurate or missing γ placement. The decay scheme is incomplete and the normalization to be considered as approximate.

† From total transition intensity balance, Iγ(1+α), at each level.
‡ Absolute intensity per 100 decays.
# Existence of this branch is questionable.

γ(^{81}Rb)

Iγ normalization: from intensity balances and measured relative I($\gamma^\pm$)=245 Iγ(443γ)=24.2 *18* (1973Br32), assuming theoretical Iβ^+/I(ε+β^+) ratios. The decay scheme is incomplete and the normalization to be considered as approximate.

E$_\gamma$[†]	I$_\gamma$[†a]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	δ	α[&]	Comments
55.95 *3*	0.53 *4*	301.240	(3/2)$^-$	245.271	5/2$^+$	[E1]		0.527 *7*	α(K)=0.465 *7*; α(L)=0.0522 *7*; α(M)=0.00851 *12* α(N)=0.000926 *13*; α(O)=3.47×10^{-5} *5*
86.26 *19*		86.31	9/2$^+$	0.0	3/2$^-$	E3		17.66 *31*	α(K)=12.12 *20*; α(L)=4.68 *9*; α(M)=0.790 *15* α(N)=0.0739 *14*; α(O)=0.000825 *14* E$_\gamma$: weighted average of 86.2 keV *2* (1977LiZP) and 86.6 keV *5* (1981FrZY). Mult.: from α(K)exp/(α(L)exp+α(M)exp)=2.57 *30* (1956Do52). α(K)/(α(L)+α(M))=2.22 (E3 theory).
113.02 *3*	0.98 *8*	301.240	(3/2)$^-$	188.228	1/2$^-$,3/2$^-$	[M1,E2]		0.36 *26*	α(K)=0.31 *22*; α(L)=0.044 *34*; α(M)=0.007 *6* α(N)=8.E−4 *6*; α(O)=2.4×10^{-5} *16*
131.56 *14*	0.13 *8*	574.729	(1/2)$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$				
142.15 *3*	17.3 *5*	443.387	1/2$^{(-)}$,3/2$^{(-)}$	301.240	(3/2)$^-$	[M1,E2]		0.16 *11*	α(K)=0.14 *9*; α(L)=0.018 *13*; α(M)=0.0030 *21* α(N)=3.2×10^{-4} *22*; α(O)=1.1×10^{-5} *7*
147.76 *3*	172 *5*	301.240	(3/2)$^-$	153.481	5/2$^-$	[M1,E2]		0.14 *9*	α(K)=0.12 *8*; α(L)=0.016 *11*; α(M)=0.0026 *18* α(N)=2.8×10^{-4} *19*; α(O)=1.0×10^{-5} *6*
153.54 *3*	193 *6*	153.481	5/2$^-$	0.0	3/2$^-$	(M1+E2)	<0.5	0.061 *16*	α(K)=0.053 *13*; α(L)=0.0063 *19*; α(M)=0.00104 *31* α(N)=1.16×10^{-4} *32*; α(O)=4.6×10^{-6} *10*
158.96 *6*	0.70 *11*	245.271	5/2$^+$	86.31	9/2$^+$	[E2]		0.1764 *25*	α(K)=0.1526 *21*; α(L)=0.02008 *28*; α(M)=0.00331 *5* α(N)=0.000354 *5*; α(O)=1.205×10^{-5} *17*
188.27 *3*	88 *3*	188.228	1/2$^-$,3/2$^-$	0.0	3/2$^-$	[M1,E2]		0.061 *34*	α(K)=0.053 *30*; α(L)=0.007 *4*; α(M)=0.0011 *6* α(N)=1.2×10^{-4} *7*; α(O)=4.4×10^{-6} *23*
197.32 *8*	0.51 *14*	909.089	(3/2)$^-$	711.93	(1/2$^-$,3/2,5/2$^+$)	[D,E2]			
206.98 *7*	1.70 *17*	909.089	(3/2)$^-$	702.16	(1/2$^-$,3/2)	[D,E2]			
217.73 *4*	1.86 *20*	463.00	1/2$^+$,3/2,5/2,7/2$^-$	245.271	5/2$^+$				E$_\gamma$: γ placed elsewhere by 1973Br32. γ from ^{81}Rb β^+ decay at same E in 1981FrZY.
245.24 *4*	4.0 *3*	245.271	5/2$^+$	0.0	3/2$^-$	[E1]		0.00697 *10*	α(K)=0.00618 *9*; α(L)=0.000666 *9*; α(M)=0.0001095 *15* α(N)=1.231×10^{-5} *17*; α(O)=5.17×10^{-7} *7* E$_\gamma$: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY. γ placed elsewhere by 1973Br32.
255.16 *3*	8.9 *4*	443.387	1/2$^{(-)}$,3/2$^{(-)}$	188.228	1/2$^-$,3/2$^-$				
289.95 *5*	0.6 *3*	443.387	1/2$^{(-)}$,3/2$^{(-)}$	153.481	5/2$^-$				

γ(^{81}Rb) (continued)

E_γ[†]	I_γ[†a]	E_i(level)	J_i^π	E_f	J_f^π	Comments
301.30 3	8.3 4	301.240	(3/2)$^-$	0.0	3/2$^-$	
347.8 3	0.29 26	923.02	(1/2$^-$,3/2)	574.729	(1/2)$^-$	
386.55 4	9.4 5	574.729	(1/2)$^-$	188.228	1/2$^-$,3/2$^-$	
410.83 11	2.5 4	711.93	(1/2$^-$,3/2,5/2$^+$)	301.240	(3/2)$^-$	E_γ: 412.6 5 γ ray observed in 1973Br32 is placed elsewhere by 1973Br32.
421.29 6	5.4 4	574.729	(1/2)$^-$	153.481	5/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
422.47 15	2.1 3	909.089	(3/2)$^-$	486.69	(5/2$^-$)	
443.34 4	100 3	443.387	1/2$^{(-)}$,3/2$^{(-)}$	0.0	3/2$^-$	
463.08 17	1.7 3	463.00	1/2$^+$,3/2,5/2,7/2$^-$	0.0	3/2$^-$	
465.80 5	6.9 4	909.089	(3/2)$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$	
477.15 16	3.7 4	630.59	(5/2$^+$)	153.481	5/2$^-$	γ from ^{81}Rb β^+ decay at same energy in 1981FrZY.
486.69[b@] 6	6.7[b] 11	486.69	(5/2$^-$)	0.0	3/2$^-$	
486.69[b@c] 6	0.6[b] 12	1061.42?	1/2$^+$	574.729	(1/2)$^-$	
507.0[#] 5	≥1.02[#]	1218.9	1/2$^{(+)}$,3/2	711.93	(1/2$^-$,3/2,5/2$^+$)	
523.71 4	7.6 3	711.93	(1/2$^-$,3/2,5/2$^+$)	188.228	1/2$^-$,3/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
541.51 14	0.68 25	1243.63	(1/2$^+$,3/2)	702.16	(1/2$^-$,3/2)	
548.65 5	3.18 16	702.16	(1/2$^-$,3/2)	153.481	5/2$^-$	E_γ: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY.
558.8 4	0.21 11	711.93	(1/2$^-$,3/2,5/2$^+$)	153.481	5/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
574.67 3	38.5 12	574.729	(1/2)$^-$	0.0	3/2$^-$	
607.88 3	7.8 3	909.089	(3/2)$^-$	301.240	(3/2)$^-$	
630.57 6	1.66 13	630.59	(5/2$^+$)	0.0	3/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
644.56 17	1.17 12	1553.67	1/2$^-$,3/2$^-$	909.089	(3/2)$^-$	
663.6 3	0.48 10	909.089	(3/2)$^-$	245.271	5/2$^+$	E_γ: 1981FrZY report a 664-keV sum peak from 153γ+$\gamma^\pm$.
670.4 3	0.60 10	1381.89	(3/2)$^-$	711.93	(1/2$^-$,3/2,5/2$^+$)	
702.14 9	5.79 23	702.16	(1/2$^-$,3/2)	0.0	3/2$^-$	
711.90 6	7.9 3	711.93	(1/2$^-$,3/2,5/2$^+$)	0.0	3/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
720.81 3	20.2 6	909.089	(3/2)$^-$	188.228	1/2$^-$,3/2$^-$	
769.5 4	0.12 8	923.02	(1/2$^-$,3/2)	153.481	5/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
807.04 18	0.48 8	1381.89	(3/2)$^-$	574.729	(1/2)$^-$	
811.01 12	0.92 10	1513.10	(1/2,3/2)	702.16	(1/2$^-$,3/2)	
841.34 15	1.22 11	1553.67	1/2$^-$,3/2$^-$	711.93	(1/2$^-$,3/2,5/2$^+$)	
851.39 6	3.40 15	1553.67	1/2$^-$,3/2$^-$	702.16	(1/2$^-$,3/2)	
895.10 25	0.83 10	1381.89	(3/2)$^-$	486.69	(5/2$^-$)	E_γ: γ placed elsewhere by 1973Br32.
909.03 3	15.5 5	909.089	(3/2)$^-$	0.0	3/2$^-$	
923.05 8	1.76 11	923.02	(1/2$^-$,3/2)	0.0	3/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
938.45 3	16.9 5	1381.89	(3/2)$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$	
[x]953.8 4	0.29 8					1981FrZY report an E=954.5 5 sum peak from 443γ+$\gamma^\pm$.
978.66[‡] 7	2.13 12	1553.67	1/2$^-$,3/2$^-$	574.729	(1/2)$^-$	E_γ: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY.
998.6 4	0.19 7	1243.63	(1/2$^+$,3/2)	245.271	5/2$^+$	
1066.96 8	2.19 12	1553.67	1/2$^-$,3/2$^-$	486.69	(5/2$^-$)	
1080.72 11	2.80 14	1381.89	(3/2)$^-$	301.240	(3/2)$^-$	

γ(^{81}Rb) (continued)

E_γ[†]	I_γ[†a]	E_i(level)	J^π_i	E_f	J^π_f	Comments
1090.75 *17*	0.90 *9*	1553.67	$1/2^-,3/2^-$	463.00	$1/2^+,3/2,5/2,7/2^-$	
1110.26 *10*	1.63 *11*	1553.67	$1/2^-,3/2^-$	443.387	$1/2^{(-)},3/2^{(-)}$	
1136.63 *11*	1.14 *8*	1381.89	$(3/2)^-$	245.271	$5/2^+$	
1193.76 *5*	3.48 *15*	1381.89	$(3/2)^-$	188.228	$1/2^-,3/2^-$	
1211.2 *4*	0.38 *7*	1513.10	(1/2,3/2)	301.240	$(3/2)^-$	
1243.0 *4*	0.20 *7*	1243.63	$(1/2^+,3/2)$	0.0	$3/2^-$	
1252.82[‡] *10*	1.81 *10*	1553.67	$1/2^-,3/2^-$	301.240	$(3/2)^-$	
1273.45 *19*	0.93 *10*	1848.15	$(1/2^+,3/2)$	574.729	$(1/2)^-$	
1317.54 *24*	0.29 *7*	1804.35	(1/2,3/2)	486.69	$(5/2^-)$	
1324.7 *4*	0.64 *9*	1513.10	(1/2,3/2)	188.228	$1/2^-,3/2^-$	
1360.6 *3*	0.57 *8*	1804.35	(1/2,3/2)	443.387	$1/2^{(-)},3/2^{(-)}$	
1365.68 *22*	0.75 *8*	1553.67	$1/2^-,3/2^-$	188.228	$1/2^-,3/2^-$	
1382.44[‡] *8*	2.32 *12*	1381.89	$(3/2)^-$	0.0	$3/2^-$	
1400.33 *6*	2.39 *12*	1553.67	$1/2^-,3/2^-$	153.481	$5/2^-$	
^{x}1468.8 *4*	0.51 *7*					
1502.5 *7*	0.25 *7*	1804.35	(1/2,3/2)	301.240	$(3/2)^-$	
1533.6 *7*	0.12 *7*	2165.4	$(1/2^+)$	630.59	$(5/2^+)$	
^{x}1544.6 *5*	0.17 *7*					
1554.15[‡] *11*	1.56 *10*	1553.67	$1/2^-,3/2^-$	0.0	$3/2^-$	
1603.0 *7*	0.38 *8*	1848.15	$(1/2^+,3/2)$	245.271	$5/2^+$	E_γ: γ placed elsewhere by 1973Br32.
1616.31 *17*	0.60 *8*	1804.35	(1/2,3/2)	188.228	$1/2^-,3/2^-$	
^{x}1627.5 *7*	0.11 *6*					
^{x}1631.9 *7*	0.21 *7*					
^{x}1654.4 *3*	0.49 *8*					
1659.6 *5*	0.13 *5*	1848.15	$(1/2^+,3/2)$	188.228	$1/2^-,3/2^-$	
1679.6 *7*	0.46 *7*	2165.4	$(1/2^+)$	486.69	$(5/2^-)$	
^{x}1698.35 *18*	0.22 *6*					
1722.2 *7*	0.47 *7*	2165.4	$(1/2^+)$	443.387	$1/2^{(-)},3/2^{(-)}$	

[†] From 1980Ho28, if not noted otherwise. Iγ data from 1980Ho28 and 1973Br32 are in reasonable agreement, whereas data from 1981FrZY frequently disagree significantly with those from 1980Ho28. Fourteen weaker γ rays (Eγ=98 *1*, 172.0 *5*, 177.6 *5*, 237.5 *10*, 314 *1*, 319 *1*, 496.5 *10*, 517 *1*, 545.2 *5*, 586.2 *10*, 819.2 *10*, 1034.8 *8*, 1344 *1*, 1620 *2*) reported in 1973Br32 are absent in the higher resolution and statistically superior spectra of 1980Ho28 and consequently omitted here; so is Eγ=97.6 *5* from 1982Th03. Eγ=507.0, 516.4, 543.3, 589.1, 975.1? from 1981FrZY are also absent in 1980Ho28; the 507γ is retained here because it is observable only in coin spectra (unmeasured by 1980Ho28), the others are omitted because they are only tentatively assigned to ^{81}Rb or are presumed by 1981FrZY to be identical to γ rays from 1973Br32 which are not adopted here.

[‡] Eγ at least 3σ from a least-squares adjusted value; datum omitted from least-squares level energy adjustment. γ could be complex or misplaced.

[#] From 1981FrZY; not reported in 1980Ho28. Observed only in $\gamma\gamma$ coin spectra owing to proximity of strong $\gamma^{\pm}$ peak.

[@] A 487γ placed from a 487 level in 1980Ho28 (as in (α,2nγ)) is placed from a 1061 level in 1981FrZY based on observed coincidence with 421γ and 574γ, both of

γ(^{81}Rb) (continued)

which deexcite the 574 level. Since several γ rays can be placed feeding a 487 level, and the 1061 level deexcites to a level absent in (α,2nγ), the evaluator retains both 487 and 1061 levels, assuming the 487γ to be a doublet in ^{81}Sr ε decay. The quoted Eγ applies to that doublet. Intensity balance at the 486 level requires I(486γ)≥5.9 *4* from that level, whereas Iγ(doublet)=7.3 *5*. Thus, I(486γ) from 486 level could range from 5.5 to 7.8 so the evaluator assigns 6.7 *11*, leaving 0.6 *12* for I(486γ) from the 1061 level.

[&] Additional information 4.

[a] For absolute intensity per 100 decays, multiply by 0.178 *22*.

[b] Multiply placed with intensity suitably divided.

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

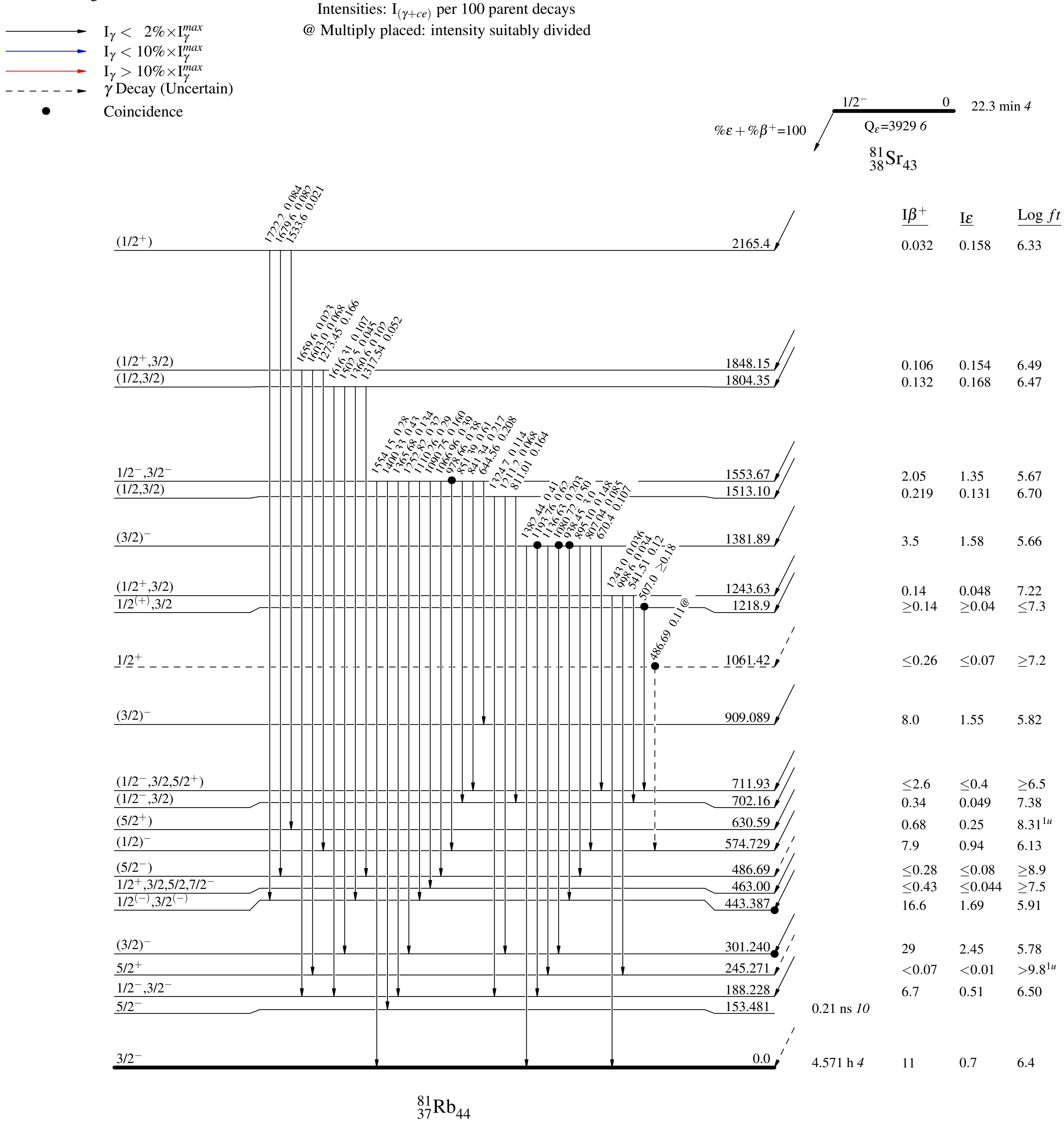
[x] γ ray not placed in level scheme.

$^{81}_{37}$Rb$_{44}$-7

^{81}Sr ε decay (22.3 min) 1980Ho28

Decay Scheme

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



^{81}Sr ε decay (22.3 min) 1980Ho28

Decay Scheme (continued)

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