^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24

History

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

Parent: ^{81}Rb: E=0; $J^\pi=3/2^-$; $T_{1/2}$=4.571 h *4*; Q(ε)=2239 *5*; %ε+%β^+ decay=100

^{81}Rb-J^π,$T_{1/2}$: from ^{81}Rb Adopted Levels.

^{81}Rb-Q(ε): from 2021Wa16.

Others: 1950Ka62, 1956Do52, 1966Ke02, 1967Vr07, 1968Li06, 1970Wa38, 1972Va41, 1973Br32, 1981FrZY, 1982Gr07.

1977Li14: γ singles and coin spectra with Ge(Li) (FWHM=2.5 keV at 1.33 MeV), internal conversion.

1975Va24: measured Eγ, Iγ, $\gamma\gamma$ coin, Eβ^+(max), I(ce); Ge(Li) detectors and Si(Au) detector (FWHM=5 keV at 1048 keV) for β^+ and ce.

1973Br32: Source obtained from ^{81}Sr decay (26 m); measured Eγ, Iγ, $\gamma\gamma$ coin, 511γ-511γ-γ coin, $\gamma\gamma$(t); Ge(Li) and NaI detectors.

1981FrZY: γ singles and coin spectra, measured with Ge(Li) (FWHM=2.5-3.5 keV at 1.33 MeV) and Si(Li), timing FWHM≈12 ns.

Decay scheme is basically that of 1977Li14, but some γ rays absent in 1977Li14 are also considered by the evaluator.

^{81}Kr Levels

E(level)†	J^π‡	$T_{1/2}$‡	Comments
0	$7/2^+$	2.13×10^5 y *+16−26*	
49.56 *5*	$9/2^+$	4.0 ns *4*	
190.62 *4*	$1/2^-$	13.10 s *2*	
456.72 *3*	$5/2^-$		
548.98 *3*	$5/2^+$		
608.49 *6*	$3/2^+$		
636.79 *4*	$3/2^-$		
700.80 *5*	$5/2^-$		
731.9? *5*	$(5/2)^+$		E(level): proposed by 1981FrZY only. 1977Li14 assigned 682γ to ^{81}Rb (30.5 min) decay.
919.74 *7*	$3/2^-$		
976.48 *19*	$1/2^+$		E(level): proposed in 1977Li14 only.
994.29 *4*	$1/2^-,3/2^-,5/2^-$		
1025.64 *4*	$3/2^-,5/2^-$		
1100.3? *5*	$5/2^+$		E(level): this level is placed in this decay scheme by 1981FrZY only. 1977Li14 placed it in (30.5 min) β^+ decay scheme.
1238.89 *9*	$(3/2)^+$		E(level): not proposed by 1981FrZY and 1973Br32.
1280.6? *4*	$(3/2,5/2^-)$		E(level): proposed tentatively by 1981FrZY and 1973Br32.
1338.26? *13*			E(level): proposed by 1975Va24 only.
1558.3? *4*			E(level): proposed tentatively by 1981FrZY only.
1677.97 *5*	$1/2^-,3/2^-,5/2^-$		
1744.96 *15*	$(1/2)^-$		E(level): proposed by 1975Va24 and 1977Li14 only.
2064.52 *17*	$(1/2,3/2)^-$		E(level): proposed by 1977Li14 and 1975Va24 only.

† From a least-squares fit to Eγ, omitting uncertain transitions unless all transitions deexciting level are uncertain.

‡ From Adopted Levels.

ε,β^+ radiations

1956Do52 report a β^+ branch with endpoint energy of 325 *40*; evaluator is unable to place this in adopted scheme.

Continued on next page (footnotes at end of table)

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

ε,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)†‡	Comments
(175 *5*)	2064.52		0.059 *5*	5.762 *47*	0.059 *5*	εK=0.8620 *9*; εL=0.1127 *6*; εM+=0.02532 *26*
(494 *5*)	1744.96		0.105 *7*	6.454 *31*	0.105 *7*	εK=0.87331 *37*; εL=0.10368 *18*; εM+=0.02300 *16*
(561 *5*)	1677.97		1.23 *5*	5.503 *21*	1.23 *5*	εK=0.87400 *36*; εL=0.10314 *17*; εM+=0.02287 *15*
(1000 *5*)	1238.89		0.37 *8*	6.52 *9*	0.37 *8*	εK=0.87618 *32*; εL=0.10140 *14*; εM+=0.02242 *15*
(1213 *5*)	1025.64	0.00296 *38*	2.40 *7*	5.894 *14*	2.40 *7*	av Eβ=88.2 *21*; εK=0.87558 *34*; εL=0.10089 *14*; εM+=0.02230 *14*
(1245 *5*)	994.29	0.0089 *10*	3.85 *19*	5.710 *22*	3.86 *19*	av Eβ=101.9 *21*; εK=0.87469 *38*; εL=0.10074 *14*; εM+=0.02226 *14*
(1319 *5*)	919.74	0.00195 *19*	0.263 *16*	6.927 *27*	0.265 *16*	av Eβ=133.3 *21*; εK=0.8704 *6*; εL=0.10013 *15*; εM+=0.02212 *14*
(1538 *5*)	700.80	0.28 *6*	4.7 *10*	5.81 *9*	5.0 *10*	av Eβ=226.1 *21*; εK=0.8274 *20*; εL=0.09494 *26*; εM+=0.02097 *14*
(1602 *5*)	636.79	1.81 *10*	19.8 *9*	5.222 *19*	21.6 *9*	av Eβ=253.4 *21*; εK=0.8035 *25*; εL=0.09214 *31*; εM+=0.02035 *14* E(decay): 1597 *35*, measured β^+ endpoint energy=575 *35* (1956Do52).
(1631 *5*)	608.49	0.0216 *30*	0.198 *30*	7.24 *6*	0.220 *30*	av Eβ=265.8 *21*; εK=0.7913 *28*; εL=0.09071 *34*; εM+=0.02003 *14*
(1690# *5*)	548.98	0.002625	0.017375	8.3263 *48*	0.02	av Eβ=291.0 *21*; εK=0.7621 *33*; εL=0.08732 *39*; εM+=0.01929 *14* I($\varepsilon+\beta^+$): −0.015 *24* from intensity balance.
(2048 *5*)	190.62	25.7 *12*	39.3 *27*	5.143 *21*	65.0 *30*	av Eβ=446.4 *22*; εK=0.5309 *47*; εL=0.0607 *5*; εM+=0.01339 *13* E(decay): 2072 *21*, from weighted average of measured β^+ endpoint energies of 1050 *30* (1972Va41) and 1050 *30* (1956Do52); other: 1950Ka62 (990 *50*).
(2239# *5*)	0	0.11797	0.38203	8.51^{1u}	0.5	av Eβ=556.9 *22*; εK=0.6695 *34*; εL=0.07742 *41*; εM+=0.01712 *13* I($\varepsilon+\beta^+$): if log $f^{1u}t$>8.5; no branch expected or reported.

† From γ-ray transition intensity balance at each level.
‡ Absolute intensity per 100 decays.
# Existence of this branch is questionable.

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$

Iγ normalization: From Σ(I(γ+ce) to g.s.)=(100%−Iβ(g.s.))=99.75% *25*, which follows from Iβ(g.s.)<0.50% (deduced assuming log $f^{1u}t$>8.5 for 7/2$^+$ g.s. ε feeding from 3/2$^-$ ^{81}Rb parent), assuming mult(190γ) is pure E3.
Iγ(511)=64 (relative in % scale) (1968Li06).
α(K)exp data are from β spectra of 1977Li14, renormalized by evaluator so α(K)exp(446.1 keV transition)=0.00273 *20* (the value adopted from (p,nγ)).

E$_\gamma$[‡]	I$_\gamma$[#d]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[b]	δ[b]	α[c]	Comments
49.57[@] *5*	2.9 *7*	49.56	9/2$^+$	0	7/2$^+$	M1(+E2)	0.19 *+12−19*	1.3 *6*	%Iγ=0.068 *16* α(K)exp=1.1 *5* α(K)=1.1 *4*; α(L)=0.17 *12*; α(M)=0.028 *19* α(N)=0.0025 *15*
59.65 *15*	0.35 *7*	608.49	3/2$^+$	548.98	5/2$^+$	[M1,E2]		3.3 *28*	%Iγ=0.0082 *16* α(K)=2.7 *22*; α(L)=0.5 *5*; α(M)=0.09 *8* α(N)=0.007 *7* E$_\gamma$: not reported by other authors.
63.97 *5*	2.4 *5*	700.80	5/2$^-$	636.79	3/2$^-$	(M1+E2)	0.15 *+9−15*	0.54 *14*	%Iγ=0.056 *12* α(K)exp=0.46 *12* α(K)=0.47 *11*; α(L)=0.061 *23*; α(M)=0.010 *4* α(N)=9.4×10^{-4} *32* E$_\gamma$: weighted average of 63.96 *4* (1975Va24) and 64.5 *4* (1977Li14).
^{x}68.79[@] *8*	0.69 *7*								
87.80 *10*	0.69 *7*	636.79	3/2$^-$	548.98	5/2$^+$	[E1]		0.1325 *19*	%Iγ=0.0162 *17* α(K)=0.1175 *17*; α(L)=0.01276 *18*; α(M)=0.002047 *29* α(N)=0.0002002 *29* E$_\gamma$: not reported by other authors.
180.20 *10*	6.59 *17*	636.79	3/2$^-$	456.72	5/2$^-$	[M1,E2]		0.07 *4*	%Iγ=0.154 *5* α(K)=0.058 *34*; α(L)=0.007 *4*; α(M)=0.0011 *7* α(N)=1.1×10^{-4} *7* E$_\gamma$: not reported by other authors.
190.44 *7*	2760 *60*	190.62	1/2$^-$	0	7/2$^+$	E3		0.479 *7*	%Iγ=64.64 *35* α(K)=0.399 *6*; α(L)=0.0681 *10*; α(M)=0.01108 *16* α(N)=0.000984 *14* E$_\gamma$: from Adopted Gammas. Other: 190.32 *3*: weighted average of 190.4 *2* (1970Wa38), 190.1 *3* (1973Br32), 190.30 *3* (1975Va24), 190.4 *2* (1977Li14), 190.4 *5* (1981FrZY), 190.54 *10* (1982Gr07), and 190.4 *3* (1968Li06). I$_\gamma$: 64.5 (in 1968Li06 − value set to the strongest branch). Mult.: α(K)exp/(α(L+...)exp+α(M)exp)=4.53 *3* (1975Va24). α(K)exp(190)/α(K)exp(446)=190 *30* (1975Va24).

$^{81}_{36}Kr_{45}$-3

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ[‡]	I_γ[#d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[c]	Comments
218.2 *5*	0.8 *2*	919.74	$3/2^-$	700.80	$5/2^-$				%Iγ=0.019 *5* E_γ: weighted average of 218.8 *6* (1977Li14) and 217.8 *5* (1981FrZY).
243.94 *13*	13.3 *4*	700.80	$5/2^-$	456.72	$5/2^-$	M1+E2	+1.6 *+6−3*	0.0287 *26*	%Iγ=0.312 *12* α(K)exp=0.023 *4* α(K)=0.0253 *22*; α(L)=0.00296 *27*; α(M)=0.00048 *4* α(N)=4.7×10^{-5} *4* E_γ: weighted average of 244.3 *2* (1970Wa38), 244.2 *3* (1973Br32), 243.80 *8* (1975Va24), 244.3 *2* (1977Li14).
266.2[&] *5*	1.6 *2*	456.72	$5/2^-$	190.62	$1/2^-$	[E2]		0.0258 *4*	%Iγ=0.037 *5* α(K)=0.02270 *35*; α(L)=0.00266 *4*; α(M)=0.000429 *7* α(N)=4.17×10^{-5} *6*
283.1[&] *5*	1.9 *4*	919.74	$3/2^-$	636.79	$3/2^-$	M1		0.00841 *12*	%Iγ=0.045 *9* α(K)=0.00745 *11*; α(L)=0.000810 *12*; α(M)=0.0001313 *19* α(N)=1.323×10^{-5} *19* E_γ,I_γ: from γγ coin.
319.09 *10*	1.9 *2*	1238.89	$(3/2)^+$	919.74	$3/2^-$	E1(+M2)	0.16 *+9−16*	0.0037 *8*	%Iγ=0.045 *5* α(K)=0.0033 *7*; α(L)=0.00036 *8*; α(M)=5.8×10^{-5} *13* α(N)=5.8×10^{-6} *13* E_γ: weighted average of 319.06 *10* (1975Va24), 319.5 *4* (1977Li14).
339.64[f] *20*	2.5 *3*	976.48	$1/2^+$	636.79	$3/2^-$	E1		0.00263 *4*	%Iγ=0.059 *7* α(K)=0.002341 *33*; α(L)=0.0002492 *35*; α(M)=4.02×10^{-5} *6* α(N)=4.04×10^{-6} *6* E_γ: weighted average of 339.70 *20* (1975Va24), 339.4 *4* (1977Li14). 1975Va24 place this γ from the 1677-keV level.
357.42 *6*	32.6 *10*	994.29	$1/2^-,3/2^-,5/2^-$	636.79	$3/2^-$	(M1+E2)	0.5 *+6−5*	0.0057 *16*	%Iγ=0.764 *29* α(K)exp=0.0049 *15* α(K)=0.0050 *14*; α(L)=5.5×10^{-4} *17*; α(M)=8.9×10^{-5} *27* α(N)=8.9×10^{-6} *26* E_γ: weighted average of 357.7 *2* (1970Wa38), 357.9 *2* (1973Br32), 357.38 *4* (1975Va24), 357.7 *2* (1977Li14), and 357.6 *5* (1968Li06). I_γ: 0.7 (relative to Iγ(190)=64.5 in 1968Li06).
386.09[f] *6*	3.6 *4*	994.29	$1/2^-,3/2^-,5/2^-$	608.49	$3/2^+$				%Iγ=0.084 *10*

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ[‡]	I_γ[#d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[c]	Comments
									E_γ: weighted average of 386.09 *6* (1975Va24), 386.0 *3* (1977Li14). 1981FrZY placed their Eγ=386.2 *5* line in the ^{81}Rb level scheme.
388.86 *7*	19.6 *10*	1025.64	3/2$^-$,5/2$^-$	636.79	3/2$^-$	M1		0.00387 *5*	%Iγ=0.459 *25* α(K)exp=0.0042 *14* α(K)=0.00344 *5*; α(L)=0.000370 *5*; α(M)=6.00×10^{-5} *8* α(N)=6.06×10^{-6} *8* E_γ: weighted average of 388.7 *2* (1970Wa38), 389.2 *2* (1973Br32), 388.84 *6* (1975Va24), 389.0 *2* (1977Li14), and 388.2 *5* (1968Li06). I_γ: 0.5 (relative to Iγ(190)=64.5 in 1968Li06).
x399.7[#] *5*	1.1 *3*								
x443.0[@] *5*	0.69 *4*								
446.16 *2*	1000 *30*	636.79	3/2$^-$	190.62	1/2$^-$	M1+E2	0.44 *+20−26*	0.00308 *23*	%Iγ=23.5 *9* α(K)=0.00273 *21*; α(L)=0.000296 *24*; α(M)=4.8×10^{-5} *4* α(N)=4.8×10^{-6} *4* E_γ: weighted average of 446.3 *2* (1970Wa38), 446.3 *2* (1973Br32), 446.14 *2* (1975Va24), 446.3 *1* (1977Li14), and 446.33 *10* (1982Gr07), and 446.0 *5* (1968Li06). I_γ: 22.0 (relative to Iγ(190)=64.5 in 1968Li06).
456.73 *3*	130 *4*	456.72	5/2$^-$	0	7/2$^+$	E1		1.22×10^{-3} *2*	%Iγ=3.04 *11* α(K)exp=0.0014 *5* α(K)=0.001081 *15*; α(L)=0.0001147 *16*; α(M)=1.854×10^{-5} *26* α(N)=1.864×10^{-6} *26* E_γ: weighted average of 456.7 *2* (1970Wa38), 456.9 *2* (1973Br32), 456.71 *3* (1975Va24), 456.9 *1* (1977Li14), and 456.7 *5* (1968Li06). I_γ: 3.0 (relative to Iγ(190)=64.5 in 1968Li06).
476.69 *3*	22.5 *6*	1025.64	3/2$^-$,5/2$^-$	548.98	5/2$^+$	E1		1.09×10^{-3} *2*	%Iγ=0.527 *18* α(K)=0.000971 *14*; α(L)=0.0001031 *14*; α(M)=1.665×10^{-5} *23* α(N)=1.675×10^{-6} *23* E_γ: weighted average of 476.8 *2* (1970Wa38), 476.4 *3* (1973Br32), 476.68 *3* (1975Va24), 476.8 *1* (1977Li14), and 476.6 *8* (1968Li06). I_γ: 0.5 (relative to Iγ(190)=64.5 in 1968Li06).

$^{81}_{36}Kr_{45}$-5

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ ‡	I_γ #d	E_i(level)	J_i^π	E_f	J_f^π	Mult.b	δb	αc	Comments
499.44 *8*	5.1 *2*	548.98	$5/2^+$	49.56	$9/2^+$	[E2]		0.00320 *4*	%Iγ=0.119 *5* α(K)=0.00284 *4*; α(L)=0.000314 *4*; α(M)=5.07×10^{-5} *7* α(N)=5.04×10^{-6} *7* E_γ: weighted average of 499.7 *15* (1973Br32), 499.45 *8* (1975Va24), and 499.4 *2* (1977Li14).
510.4 *3*	230a *40*	700.80	$5/2^-$	190.62	$1/2^-$	E2		0.00300 *4*	%Iγ=5.4 *9* α(K)exp=0.0025 *7* α(K)=0.00265 *4*; α(L)=0.000293 *4*; α(M)=4.74×10^{-5} *7* α(N)=4.72×10^{-6} *7* I_γ: from γγ coin (1977Li14). E_γ: weighted average of 510.5 *5* (1975Va24), 510.4 *3* (1977Li14) from γγ coin.
532.3f *5*	10.3 *10*	1558.3?		1025.64	$3/2^-$,$5/2^-$				%Iγ=0.241 *24* E_γ,I_γ: from 1981FrZY; not observed by other authors.
537.60 *4*	96 *7*	994.29	$1/2^-$,$3/2^-$,$5/2^-$	456.72	$5/2^-$	E2(+M1)		0.0022 *4*	%Iγ=2.25 *17* α(K)exp=0.0024 *7* α(K)=0.00194 *33*; α(L)=0.00021 *4*; α(M)=3.4×10^{-5} *6* α(N)=3.4×10^{-6} *6* E_γ: from 1975Va24. Others: 537.6 *2* (1970Wa38), 537.6 *2* (1973Br32), and 537.6 *10* (1977Li14), and 537.7 *5* (1968Li06). I_γ: 2.4 (relative to Iγ(190)=64.5 in 1968Li06).
537.8 *2*	8 *3*	1238.89	$(3/2)^+$	700.80	$5/2^-$	[E1]		8.14×10^{-4} *11*	%Iγ=0.19 *7* α(K)=0.000724 *10*; α(L)=7.67×10^{-5} *11*; α(M)=1.239×10^{-5} *17* α(N)=1.248×10^{-6} *18* E_γ: unweighted average of 537.6 *2* (1970Wa38), 537.6 *2* (1973Br32), 538.2 *1* (1975Va24) and 537.6 *10* (1977Li14). I_γ: from γγ coin.
549.02 *4*	20.3 *6*	548.98	$5/2^+$	0	$7/2^+$	M1+E2	1.2 *+28−6*	0.00213 *24*	%Iγ=0.475 *17* α(K)exp=0.0025 *7* α(K)=0.00189 *21*; α(L)=0.000206 *25*; α(M)=3.3×10^{-5} *4*

$^{81}_{36}Kr_{45}$-6

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ[‡]	I_γ[#d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[c]	Comments
								α(N)=3.3×10^{-6} *4* E_γ: weighted average of 548.9 *2* (1970Wa38), 549.05 *4* (1975Va24), 548.9 *1* (1977Li14), and 547.7 *12* (1968Li06). I_γ: 0.4 (relative to Iγ(190)=64.5 in 1968Li06).
568.90 *4*	25.1 *7*	1025.64	3/2$^-$,5/2$^-$	456.72	5/2$^-$	M1,E2	0.00188 *29*	%Iγ=0.588 *21* α(K)exp=0.0015 *6* α(K)=0.00167 *26*; α(L)=0.000181 *30*; α(M)=2.9×10^{-5} *5* α(N)=2.9×10^{-6} *5* E_γ: from 1975Va24. Others: 569.0 *2* (1970Wa38), 568.8 keV *3* (1973Br32), 568.9 *1* (1977Li14), 568.8 *8* (1968Li06). I_γ: 0.6 (relative to Iγ(190)=64.5 in 1968Li06).
602.48 *15*	2.2 *1*	1238.89	(3/2)$^+$	636.79	3/2$^-$	[E1]	6.23×10^{-4} *9*	%Iγ=0.0515 *26* α(K)=0.000554 *8*; α(L)=5.86×10^{-5} *8*; α(M)=9.47×10^{-6} *13* α(N)=9.55×10^{-7} *13* E_γ: weighted average of 601.2 *10* (1970Wa38), 602.0 *5* (1973Br32), 602.60 *15* (1975Va24), 602.3 *3* (1977Li14). Not seen by 1981FrZY, not placed by 1973Br32.
608.45 *8*	11.1 *5*	608.49	3/2$^+$	0	7/2$^+$	E2	1.79×10^{-3} *3*	%Iγ=0.260 *13* α(K)=0.001586 *22*; α(L)=0.0001734 *24*; α(M)=2.81×10^{-5} *4* α(N)=2.80×10^{-6} *4* E_γ: weighted average of 609.0 *10* (1970Wa38), 608.2 *3* (1973Br32), 608.45 *8* (1975Va24), 608.5 *2* (1977Li14).
682.3[f] *5*	<9.2	731.9?	(5/2)$^+$	49.56	9/2$^+$	(E2)	1.30×10^{-3} *2*	%Iγ<0.215 α(K)=0.001153 *16*; α(L)=0.0001253 *18*; α(M)=2.028×10^{-5} *29* α(N)=2.031×10^{-6} *29* E_γ: from 1981FrZY; this γ is placed by 1981FrZY only. 1977Li14 assigned γ to ^{81}Rb (30.5 min) decay.
689.9[&] *3*	1.3 *1*	1238.89	(3/2)$^+$	548.98	5/2$^+$	[M1,E2]	0.00115 *12*	%Iγ=0.0304 *24* α(K)=0.00102 *10*; α(L)=0.000110 *12*; α(M)=1.77×10^{-5} *20* α(N)=1.78×10^{-6} *19*
[x]698.9[@] *2*	0.69 *17*							
701.47[e f] *12*	2.3[e] *8*	1338.26?		636.79	3/2$^-$			%Iγ=0.054 *19* E_γ: weighted average of 701.3 *2* (1970Wa38), 701.7 *10* (1973Br32), 701.53 *12* (1975Va24), 701.5 *5* (1977Li14).
701.47[e f] *12*	2.3[e] *8*	1677.97	1/2$^-$,3/2$^-$,5/2$^-$	976.48	1/2$^+$			%Iγ=0.054 *19* E_γ: placed from this level by 1977Li14 only. Others placed γ deexciting the 701 or 1338 levels. Weighted average of 701.3 *2* (1970Wa38), 701.7 *10* (1973Br32), 701.53 *12* (1975Va24), 701.5 *5* (1977Li14).
729.09 *6*	12.7 *4*	919.74	3/2$^-$	190.62	1/2$^-$	(M1)	9.13×10^{-4} *13*	%Iγ=0.297 *11*

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ[‡]	I_γ[#d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[c]	Comments
								α(K)=0.000811 *11*; α(L)=8.62×10^{-5} *12*; α(M)=1.397×10^{-5} *20* α(N)=1.414×10^{-6} *20* E_γ: weighted average of 729.0 *3* (1970Wa38), 729.0 *3* (1973Br32), 729.09 *6* (1975Va24), 729.1 *1* (1977Li14) from $\gamma\gamma$ coin, and 729.7 *10* (1968Li06). I_γ: 0.4 (relative to Iγ(190)=64.5 in 1968Li06).
758.11 *14*	2.2 *1*	1677.97	1/2$^-$,3/2$^-$,5/2$^-$	919.74	3/2$^-$			%Iγ=0.0515 *26* E_γ: weighted average of 757.7 *2* (1970Wa38), 757.8 *3* (1973Br32), 758.23 *12* (1975Va24), 758.3 *2* (1977Li14). Not seen by 1981FrZY.
782.5[&] *5*	0.6 *1*	1238.89	(3/2)$^+$	456.72	5/2$^-$	[E1]	3.50×10^{-4} *5*	%Iγ=0.0141 *24* α(K)=0.000311 *4*; α(L)=3.28×10^{-5} *5*; α(M)=5.30×10^{-6} *7* α(N)=5.35×10^{-7} *8*
803.69 *6*	35.9 *10*	994.29	1/2$^-$,3/2$^-$,5/2$^-$	190.62	1/2$^-$	M1,E2	0.00079 *5*	%Iγ=0.841 *30* α(K)exp=0.00080 *32* α(K)=0.00070 *5*; α(L)=7.5×10^{-5} *6*; α(M)=1.22×10^{-5} *9* α(N)=1.23×10^{-6} *9* E_γ: weighted average of 803.6 *2* (1970Wa38), 803.4 *2* (1973Br32), 803.74 *6* (1975Va24), 803.5 *2* (1977Li14), and 803.6 *5* (1968Li06). I_γ: 0.8 (relative to Iγ(190)=64.5 in 1968Li06).
822.8[f] *5*	6.7 *7*	1280.6?	(3/2,5/2$^-$)	456.72	5/2$^-$			%Iγ=0.157 *17* E_γ: 1981FrZY placed in their scheme an 882.8γ from the 1280-keV level in disagreement with level energy difference which is 823 keV. In the table, the 882.8γ does not appear, but an 822.8γ does. Placement not adopted.
834.75[†@] *6*	35.0[@] *10*	1025.64	3/2$^-$,5/2$^-$	190.62	1/2$^-$	M1,E2	0.00072 *4*	%Iγ=0.820 *29* α(K)exp=0.0007 *3* α(K)=0.00064 *4*; α(L)=6.9×10^{-5} *5*; α(M)=1.11×10^{-5} *8* α(N)=1.12×10^{-6} *7* E_γ: uncertainty multiplied by a factor of 2 in the fitting; level-energy difference=835.03. E_γ: weighted average of 835.0 *2* (1970Wa38), 834.7 *2* (1973Br32), 834.73 *6* (1975Va24), 834.8 *2* (1977Li14), and 835.4 *10* (1968Li06). I_γ: 0.7 (relative to Iγ(190)=64.5 in 1968Li06).
[x]903.2[#] *6*	0.2 *1*							
[x]912.5[#] *6*	0.2 *1*							
[x]968.4[#] *9*	<0.1							

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^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ[‡]	I_γ[#d]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[c]	Comments
977.15 *4*	24.3 *8*	1677.97	$1/2^-,3/2^-,5/2^-$	700.80	$5/2^-$			%Iγ=0.569 *22* E_γ: from 1975Va24. Others: 977.3 *2* (1970Wa38), 977.1 *3* (1973Br32), 977.1 *2* (1977Li14), and 978.0 *8* (1968Li06). I_γ: 0.6 (relative to Iγ(190)=64.5 in 1968Li06).
993.69[f] *14*	0.69 *17*	994.29	$1/2^-,3/2^-,5/2^-$	0	$7/2^+$			%Iγ=0.016 *4* E_γ,I_γ: from 1975Va24. Not seen by other authors. Eγ is 4σ lower than expected for this placement, so evaluator shows it as uncertain.
1025.08[f] *16*	0.35 *17*	1025.64	$3/2^-,5/2^-$	0	$7/2^+$			%Iγ=0.008 *4* E_γ,I_γ: from 1975Va24. Not seen by other authors. Eγ is low for this placement, so evaluator shows it as doubtful.
1041.24 *5*	23.0 *13*	1677.97	$1/2^-,3/2^-,5/2^-$	636.79	$3/2^-$			%Iγ=0.539 *33* E_γ: weighted average of 1041.3 *2* (1970Wa38), 1041.1 *3* (1973Br32), 1041.25 *5* (1975Va24), 1041.1 *2* (1977Li14).
1047.94 *23*	2.0 *2*	1238.89	$(3/2)^+$	190.62	$1/2^-$	[E1]	1.95×10^{-4} *3*	%Iγ=0.047 *5* α(K)=0.0001739 *24*; α(L)=1.825×10^{-5} *26*; α(M)=2.95×10^{-6} *4* α(N)=2.98×10^{-7} *4* E_γ: weighted average of 1047.83 *15* (1975Va24), 1048.4 *3* (1977Li14).
1069.47 *11*	2.6 *1*	1677.97	$1/2^-,3/2^-,5/2^-$	608.49	$3/2^+$			%Iγ=0.0609 *27* E_γ: weighted average of 1069.7 *2* (1970Wa38), 1069.2 *4* (1973Br32), 1069.44 *11* (1975Va24), 1069.3 *3* (1977Li14).
1087.7[&] *5*	0.3 *1*	2064.52	$(1/2,3/2)^-$	976.48	$1/2^+$	[E1]	1.82×10^{-4} *3*	%Iγ=0.0070 *23* α(K)=0.0001621 *23*; α(L)=1.701×10^{-5} *24*; α(M)=2.75×10^{-6} *4* α(N)=2.78×10^{-7} *4*
1090.6[f] *4*	0.5 *1*	1280.6?	$(3/2,5/2^-)$	190.62	$1/2^-$			%Iγ=0.0117 *24* E_γ: unweighted average of 1091.3 *2* (1970Wa38), 1090.0 *4* (1975Va24), 1090.4 *5* (1977Li14). Placed by 1973Br32 only; 1975Va24 and 1977Li14 could not place γ.
1100.3[f] *5*	4.8 *5*	1100.3?	$5/2^+$	0	$7/2^+$	[M1,E2]	3.90×10^{-4} *11*	%Iγ=0.112 *12* α(K)=0.000346 *9*; α(L)=3.67×10^{-5} *11*; α(M)=5.93×10^{-6} *18* α(N)=6.00×10^{-7} *17* E_γ: from 1981FrZY; tentatively assigned to ^{81}Kr, $T_{1/2}$ designated as "long". However, 1977Li14 assign Eγ=1099.9 *2* to ^{81}Rb ε decay (30.5 min).
1108.12 *16*	2.2 *1*	1744.96	$(1/2)^-$	636.79	$3/2^-$			%Iγ=0.0515 *26* E_γ: weighted average of 1108.6 *2* (1970Wa38), 1108.1 *4* (1973Br32), 1107.93 *15* (1975Va24), 1108.0 *2* (1977Li14).
1136.4[&] *4*	0.5 *1*	1744.96	$(1/2)^-$	608.49	$3/2^+$			%Iγ=0.0117 *24*

^{81}Rb $\varepsilon+\beta^+$ decay (4.571 h) 1977Li14,1975Va24 (continued)

$\gamma(^{81}Kr)$ (continued)

E_γ ‡	I_γ #d	E_i(level)	J_i^π	E_f	J_f^π	Comments
1363.8& *6*	0.2 *1*	2064.52	$(1/2,3/2)^-$	700.80	$5/2^-$	%Iγ=0.0047 *23*
1368.1*f* *5*	37 *4*	1558.3?		190.62	$1/2^-$	%Iγ=0.87 *10* E_γ,I_γ: from 1981FrZY; not observed by other authors.
x1381.5# *5*	0.4 *1*					
1427.74 *20*	1.4 *1*	2064.52	$(1/2,3/2)^-$	636.79	$3/2^-$	%Iγ=0.0328 *24* E_γ: weighted average of 1427.3 *3* (1973Br32), 1427.91 *22* (1975Va24), 1427.8 *2* (1977Li14). Not seen by 1981FrZY. 1973Br32 placed γ from a tentative 1883-keV level.
1487.07 *21*	0.4 *2*	1677.97	$1/2^-,3/2^-,5/2^-$	190.62	$1/2^-$	%Iγ=0.009 *5* E_γ: weighted average of 1487.01 *21* (1975Va24), 1487.4 *5* (1977Li14).
x1536.0# *8*	0.2 *1*					
1554.7 *4*	1.8 *2*	1744.96	$(1/2)^-$	190.62	$1/2^-$	%Iγ=0.042 *5* E_γ: weighted average of 1555.3 *10* (1970Wa38), 1554.9 *3* (1977Li14), 1553.8 *5* (1975Va24).
1874.0& *4*	0.6 *1*	2064.52	$(1/2,3/2)^-$	190.62	$1/2^-$	%Iγ=0.0141 *24*

† Poor fit; uncertainty multiplied by a factor in the fitting.
‡ Weighted average of data from 1975Va24, 1977Li14, 1981FrZY, 1973Br32, 1970Wa38, when available and listed in the comments. ΔE in 1975Va24 may be underestimated in some cases (e.g., for the 190γ).
# From 1977Li14.
@ From 1975Va24.
& From 1977Li14; not reported by others.
a I(510γ + $\gamma^\pm$)=2880 *150* (1973Br32), 2850 *90* (1970Wa38); I($\gamma^\pm$)=2670 *110* (1977Li14). I($\gamma^\pm$)=2314 *86* expected based on level scheme.
b From Adopted Gammas, except as noted.
c Additional information 1.
d For absolute intensity per 100 decays, multiply by 0.0235 *5*.
e Multiply placed with undivided intensity.
f Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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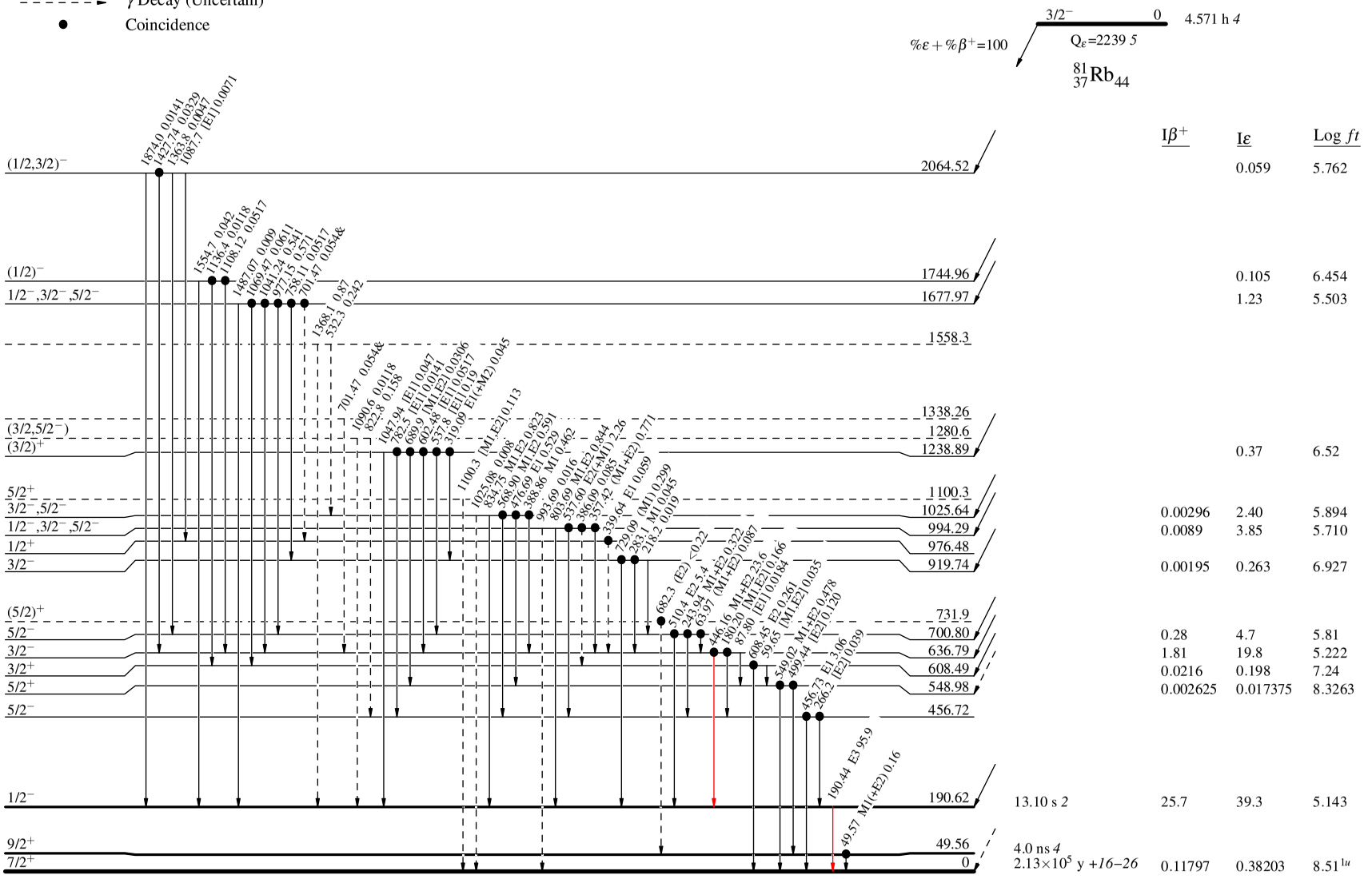
^{81}Rb ε decay (4.571 h) 1977Li14,1975Va24

Decay Scheme

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

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



$^{81}_{36}Kr_{45}$

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