^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2257 (2008)	15-Aug-2008

Parent: ^{81}Rb: E=0; $J^\pi=3/2^-$; $T_{1/2}$=4.572 h *4*; Q(ε)=2239 *6*; %ε+%$β^+$ decay=100.0

Others: 1950Ka62, 1956Do52, 1967Vr07, 1970Wa38, 1972Va41, 1973Br32, 1981FrZY, 1982Gr07, 1982Th03.

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

1973Br32: measured Eγ, Iγ, γγ coin, 511γ-511γ-γ coin, γγ(t); Ge(Li) and NaI detectors.

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

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

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.

^{81}Kr Levels

E(level)†	J^π‡	$T_{1/2}$‡	Comments
0	$7/2^+$		
49.56 *5*	$9/2^+$	3.9 ns *4*	
190.72 *5*	$1/2^-$	13.10 s *3*	
456.74 *4*	$5/2^-$		
548.98 *4*	$5/2^+$		
608.52 *6*	$3/2^+,5/2^+$		
636.85 *5*	$3/2^-$		
700.86 *6*	$(5/2)^-$		
731.9? *5*	$(5/2)^+$		E(level): proposed by 1981FrZY only. 1977Li14 assigned 682γ to ^{81}Rb (30.5 min) decay.
919.83 *6*	$3/2^-$		
976.55 *18*	$1/2^+$		E(level): proposed by 1977Li14 only.
994.34 *5*	$(1/2,3/2,5/2)^-$		
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.
1239.05 *8*	$(3/2)^+$		E(level): not proposed by 1981FrZY and 1973Br32.
1280.6? *3*	$(1/2^+,3/2,5/2^-)$		E(level): proposed tentatively by 1981FrZY and 1973Br32.
1338.39? *13*			E(level): proposed by 1975Va24 only.
1558.4? *4*	1/2,3/2,5/2		E(level): proposed tentatively by 1981FrZY only.
1678.04 *6*	$1/2^-,3/2^-$		
1744.86 *12*	$(1/2)^-$		E(level): proposed by 1975Va24 and 1977Li14 only.
2064.69 *14*	$(1/2,3/2)^-$		E(level): proposed by 1977Li14 and 1975Va24 only.

† From 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.

E(decay)	E(level)	Iε‡	Log *ft*	I(ε+$β^+$)‡	Comments
(174 *6*)	2064.69	0.059 *5*	5.75 *5*	0.059 *5*	εK=0.8611 *7*; εL=0.1149 *6*; εM+=0.02402 *14*
(494 *6*)	1744.86	0.106 *7*	6.45 *3*	0.106 *7*	εK=0.8726; εL=0.10556 *6*; εM+=0.02179 *2*
(561 *6*)	1678.04	1.26 *6*	5.485 *23*	1.26 *6*	εK=0.8733; εL=0.10499 *5*; εM+=0.02166 *1*

Continued on next page (footnotes at end of table)

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)‡	Comments
(681# *6*)	1558.4?		0.6 *5*	6.0 *4*	0.6 *5*	εK=0.8742; εL=0.10426 *3*; εM+=0.021487 *8*
(1000 *6*)	1239.05		0.38 *8*	6.52 *10*	0.38 *8*	εK=0.8756; εL=0.10319 *2*; εM+=0.021233 *4*
(1139# *6*)	1100.3?		<0.06	>7.4	<0.06	εK=0.8758; εL=0.10290 *2*; εM+=0.021165 *4*
(1213 *6*)	1025.64	0.0028 *4*	2.29 *14*	5.91 *3*	2.29 *14*	av Eβ=88.6 *26*; εK=0.8750 *2*; εL=0.10267 *3*; εM+=0.021113 *6*
(1245 *6*)	994.34	0.0090 *11*	3.91 *20*	5.696 *23*	3.92 *20*	av Eβ=102.0 *26*; εK=0.8741 *3*; εL=0.10251 *4*; εM+=0.021079 *8*
(1319 *6*)	919.83	0.00194 *20*	0.264 *17*	6.92 *3*	0.266 *17*	av Eβ=133.7 *26*; εK=0.8699 *6*; εL=0.10189 *7*; εM+=0.02095 *2*
(1538 *6*)	700.86	0.28 *6*	4.7 *9*	5.80 *9*	5.0 *10*	av Eβ=226.6 *26*; εK=0.8270 *20*; εL=0.09662 *24*; εM+=0.01986 *5*
1597 *35*	636.85	1.82 *10*	19.9 *8*	5.211 *19*	21.7 *9*	av Eβ=253.9 *26*; εK=0.803 *3*; εL=0.0938 *3*; εM+=0.01927 *7* E(decay): measured β+ endpoint energy=575 *35* (1956Do52).
(1630 *6*)	608.52	0.018 *6*	0.16 *5*	7.31 *15*	0.18 *6*	av Eβ=266.1 *26*; εK=0.791 *3*; εL=0.0923 *4*; εM+=0.01897 *7*
(1690# *6*)	548.98	<0.004	<0.03	>8.1	<0.03	av Eβ=291.6 *26*; εK=0.762 *4*; εL=0.0889 *4*; εM+=0.01826 *8* I(ε+β+): −0.01 *4* from intensity balance.
2072† *21*	190.72	25 *1*	39 *2*	5.137 *22*	64 *3*	av Eβ=447.6 *27*; εK=0.530 *4*; εL=0.0617 *5*; εM+=0.01268 *10*
(2239# *6*)	0	<0.12	<0.38	>8.5[1u]	<0.50	av Eβ=558.8 *27*; εK=0.668 *3*; εL=0.0787 *4*; εM+=0.01619 *8* I(ε+β+): if log $f^{1u}t$>8.5; no branch expected or reported.

† From weighted average of measured β+ endpoint energies of 1050 *30* (1972Va41) and 1050 *30* (1956Do52); other: 1950Ka62 (990 *50*).
‡ Absolute intensity per 100 decays.
# Existence of this branch is questionable.

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

γ(^{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.
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_γ [†]	I_γ [‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
49.57 *5*	2.9 *7*	49.56	9/2$^+$	0	7/2$^+$	M1(+E2)	0.19 *+12−19*	1.3 *6*	α(K)exp=1.1 *5* α(K)=1.1 *5*; α(L)=0.17 *12*; α(M)=0.028 *19*; α(N+..)=0.0025 *16* α(N)=0.0025 *16* E_γ: from 1975Va24.
59.65 *15*	0.35 *7*	608.52	3/2$^+$,5/2$^+$	548.98	5/2$^+$	[M1,E2]		3 *3*	α(K)=2.7 *23*; α(L)=0.5 *5*; α(M)=0.09 *8*; α(N+..)=0.007 *7* α(N)=0.007 *7* E_γ,I_γ: from 1975Va24; not reported by other authors.
63.97 *5*	2.4 *5*	700.86	(5/2)$^-$	636.85	3/2$^-$	(M1+E2)	0.15 *+9−15*	0.54 *14*	α(K)exp=0.46 *12* α(K)=0.47 *12*; α(L)=0.061 *23*; α(M)=0.010 *4*; α(N+..)=0.0009 *4* α(N)=0.0009 *4* E_γ: 63.96 *4* (1975Va24), 64.5 *4* (1977Li14).
[x]68.79 *8*	0.69 *7*								
87.80 *10*	0.69 *7*	636.85	3/2$^-$	548.98	5/2$^+$	[E1]		0.1325	α(K)=0.1175 *17*; α(L)=0.01276 *19*; α(M)=0.00205 *3*; α(N+..)=0.000200 *3* α(N)=0.000200 *3* E_γ,I_γ: from 1975Va24; not reported by other authors.
180.20 *10*	6.59 *17*	636.85	3/2$^-$	456.74	5/2$^-$	[M1,E2]		0.07 *4*	α(K)=0.06 *4*; α(L)=0.007 *5*; α(M)=0.0011 *8*; α(N+..)=0.00011 *7* α(N)=0.00011 *7* E_γ,I_γ: from 1975Va24; not reported by other authors.
190.46 *16*	2760 *60*	190.72	1/2$^-$	0	7/2$^+$	E3		0.478	α(K)=0.398 *6*; α(L)=0.0680 *10*; α(M)=0.01108 *17*; α(N+..)=0.000983 *15* α(N)=0.000983 *15* I(190γ)=64.8% 7 assuming decay-scheme normalization recommended here. 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). E_γ: from Adopted Gammas. From ^{81}Rb ε decay (4.572 h), Eγ data are 190.4 keV *2* (1970Wa38), 190.1 keV *3* (1973Br32), 190.30 keV *3* (1975Va24), 190.4 keV *2* (1977Li14), 190.4 keV *5* (1981FrZY), 190.54 keV *10* (1982Gr07), 190.3 keV *5* (1982Th03).
218.8 *6*	0.8 *2*	919.83	3/2$^-$	700.86	(5/2)$^-$				E_γ: from 1977Li14. 1981FrZY report Eγ=217.8 *5*.
243.87 *17*	13.3 *4*	700.86	(5/2)$^-$	456.74	5/2$^-$	M1+E2	+1.6 *+6−3*	0.029 *3*	α(K)exp=0.023 *4*

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

γ(^{81}Kr) (continued)

E_γ †	I_γ ‡a	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	δ#	αb	Comments
									α(K)=0.0253 *23*; α(L)=0.0030 *3*; α(M)=0.00048 *5*; α(N+..)=4.7×10^{-5} *5* α(N)=4.7×10^{-5} *5* E_γ: 243.80 *8* (1975Va24), 244.3 *2* (1977Li14).
266.2@ *5*	1.6 *2*	456.74	5/2$^-$	190.72	1/2$^-$				
283.1@ *5*	1.9 *4*	919.83	3/2$^-$	636.85	3/2$^-$	(M1)		0.00841	α(K)=0.00745 *11*; α(L)=0.000810 *12*; α(M)=0.0001313 *20*; α(N+..)=1.323×10^{-5} *20* α(N)=1.323×10^{-5} *20* E_γ,I_γ: from γγ coin.
319.09 *10*	1.9 *2*	1239.05	(3/2)$^+$	919.83	3/2$^-$	E1(+M2)	0.16 *+9−16*	0.0037 *8*	α(K)=0.0033 *7*; α(L)=0.00036 *9*; α(M)=5.8×10^{-5} *14*; α(N+..)=5.8×10^{-6} *14* α(N)=5.8×10^{-6} *14* E_γ: 319.06 *10* (1975Va24), 319.5 *4* (1977Li14).
339.64d *18*	2.5 *3*	976.55	1/2$^+$	636.85	3/2$^-$	E1		0.00263	α(K)=0.00234 *4*; α(L)=0.000249 *4*; α(M)=4.02×10^{-5} *6*; α(N+..)=4.04×10^{-6} *6* α(N)=4.04×10^{-6} *6* E_γ: 339.70 *20* (1975Va24), 339.4 *4* (1977Li14). 1975Va24 place this γ from the 1677-keV level.
357.39 *6*	32.6 *10*	994.34	(1/2,3/2,5/2)$^-$	636.85	3/2$^-$	(M1+E2)	0.5 *+6−5*	0.0057 *16*	α(K)exp=0.0049 *15* α(K)=0.0050 *15*; α(L)=0.00055 *17*; α(M)=9.E−5 *3*; α(N+..)=9.E−6 *3* α(N)=9.E−6 *3* E_γ: 357.38 *4* (1975Va24), 357.7 *2* (1977Li14).
386.09d *6*	3.6 *4*	994.34	(1/2,3/2,5/2)$^-$	608.52	3/2$^+$,5/2$^+$				E_γ: 386.09 *6* (1975Va24), 386.0 *3* (1977Li14). 1981FrZY placed their Eγ=386.2 *5* line in the ^{81}Rb level scheme.
388.85 *6*	19.6 *10*	1025.64	3/2$^-$,5/2$^-$	636.85	3/2$^-$	M1		0.00387	α(K)exp=0.0042 *14* α(K)=0.00344 *5*; α(L)=0.000370 *6*; α(M)=6.00×10^{-5} *9*; α(N+..)=6.06×10^{-6} *9* α(N)=6.06×10^{-6} *9* E_γ: 388.84 *6* (1975Va24), 389.0 *2* (1977Li14).
x399.7 *5*	1.1 *3*								
x443.0 *5*	0.69 *4*								
446.15 *3*	1000 *30*	636.85	3/2$^-$	190.72	1/2$^-$	M1+E2	0.44 *+20−26*	0.00308 *24*	α(K)=0.00273 *21*; α(L)=0.000296 *25*; α(M)=4.8×10^{-5} *4*; α(N+..)=4.8×10^{-6} *4* α(N)=4.8×10^{-6} *4* E_γ: 446.14 *2* (1975Va24), 446.3 *1* (1977Li14).

$^{81}_{36}Kr_{45}$-4

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

γ(^{81}Kr) (continued)

E_γ [†]	I_γ [‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[b]	Comments
456.73 *5*	130 *4*	456.74	5/2⁻	0	7/2⁺	E1		1.22×10⁻³	α(K)exp=0.0014 *5* α(K)=0.001081 *16*; α(L)=0.0001147 *16*; α(M)=1.85×10⁻⁵ *3*; α(N+..)=1.86×10⁻⁶ *3* α(N)=1.86×10⁻⁶ *3* E_γ: 456.71 *3* (1975Va24), 456.9 *1* (1977Li14).
476.69 *3*	22.5 *6*	1025.64	3/2⁻,5/2⁻	548.98	5/2⁺	E1		1.09×10⁻³	α(K)=0.000971 *14*; α(L)=0.0001031 *15*; α(M)=1.665×10⁻⁵ *24*; α(N+..)=1.675×10⁻⁶ *24* α(N)=1.675×10⁻⁶ *24* E_γ: 476.68 *3* (1975Va24), 476.8 *1* (1977Li14).
499.44 *7*	5.1 *2*	548.98	5/2⁺	49.56	9/2⁺	[E2]		0.00321	α(K)=0.00284 *4*; α(L)=0.000314 *5*; α(M)=5.07×10⁻⁵ *8*; α(N+..)=5.04×10⁻⁶ *7* α(N)=5.04×10⁻⁶ *7* E_γ: 499.45 *8* (1975Va24), 499.4 *2* (1977Li14).
510.43 *26*	230[&] *40*	700.86	(5/2)⁻	190.72	1/2⁻	E2		0.00300	α(K)exp=0.0025 *7* α(K)=0.00265 *4*; α(L)=0.000293 *5*; α(M)=4.74×10⁻⁵ *7*; α(N+..)=4.72×10⁻⁶ *7* α(N)=4.72×10⁻⁶ *7* I_γ: from γγ coin (1977Li14). E_γ: 510.5 *5* (1975Va24), 510.4 *3* (1977Li14) from γγ coin.
532.3[d] *5*	10.3 *10*	1558.4?	1/2,3/2,5/2	1025.64	3/2⁻,5/2⁻				E_γ,I_γ: from 1981FrZY; not observed by other authors.
537.60 *4*	96 *7*	994.34	(1/2,3/2,5/2)⁻	456.74	5/2⁻	E2(+M1)		0.0022 *4*	α(K)exp=0.0024 *7* α(K)=0.0019 *4*; α(L)=0.00021 *4*; α(M)=3.4×10⁻⁵ *7*; α(N+..)=3.4×10⁻⁶ *6* α(N)=3.4×10⁻⁶ *6* E_γ: 537.60 *4* (1975Va24), 537.6 *10* (1977Li14).
538.19 *10*	8 *3*	1239.05	(3/2)⁺	700.86	(5/2)⁻				E_γ,I_γ: from γγ coin. Eγ: 538.2 *1* (1975Va24), 537.6 *10* (1977Li14).
549.03 *5*	20.3 *6*	548.98	5/2⁺	0	7/2⁺	E2(+M1)	≥0.8	0.00220 *22*	α(K)exp=0.0025 *7* α(K)=0.00195 *19*; α(L)=0.000213 *22*; α(M)=3.4×10⁻⁵ *4*; α(N+..)=3.4×10⁻⁶ *4* α(N)=3.4×10⁻⁶ *4* E_γ: 549.05 *4* (1975Va24), 548.9 *1* (1977Li14).
568.90 *4*	25.1 *7*	1025.64	3/2⁻,5/2⁻	456.74	5/2⁻	M1(+E2)	≤3.2	0.0019 *3*	α(K)exp=0.0015 *6* α(K)=0.00165 *24*; α(L)=0.00018 *3*; α(M)=2.9×10⁻⁵ *5*; α(N+..)=2.9×10⁻⁶ *5* α(N)=2.9×10⁻⁶ *5* E_γ: 568.90 *4* (1975Va24), 568.9 *1* (1977Li14).
602.54 *13*	2.2 *1*	1239.05	(3/2)⁺	636.85	3/2⁻				E_γ: 602.60 *15* (1975Va24), 602.3 *3* (1977Li14). Not seen by 1981FrZY, not placed by 1973Br32.
608.46 *7*	11.1 *5*	608.52	3/2⁺,5/2⁺	0	7/2⁺	E2		0.00179	α(K)=0.001586 *23*; α(L)=0.0001734 *25*;

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

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

γ(^{81}Kr) (continued)

E_γ[†]	I_γ[‡a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[b]	Comments
								α(M)=2.80×10^{-5} *4*; α(N+..)=2.80×10^{-6} *4*
								α(N)=2.80×10^{-6} *4*
								E_γ: 608.45 *8* (1975Va24), 608.5 *2* (1977Li14).
682.3[d] *5*	<9.2	731.9?	(5/2)$^+$	49.56	9/2$^+$	(E2)	1.30×10^{-3}	α(K)=0.001153 *17*; α(L)=0.0001253 *18*; α(M)=2.03×10^{-5} *3*; α(N+..)=2.03×10^{-6} *3*
								α(N)=2.03×10^{-6} *3*
								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*	1239.05	(3/2)$^+$	548.98	5/2$^+$			
[x]698.9 *2*	0.69 *17*							
701.53[cd] *12*	2.3[c] *8*	1338.39?		636.85	3/2$^-$			E_γ: 701.53 *12* (1975Va24), 701.5 *5* (1977Li14).
701.53[cd] *12*	2.3[c] *8*	1678.04	1/2$^-$,3/2$^-$	976.55	1/2$^+$			E_γ: placed from this level by 1977Li14 only. Others placed γ deexciting the 701 or 1338 levels. Eγ: 701.53 *12* (1975Va24), 701.5 *5* (1977Li14).
729.09 *5*	12.7 *4*	919.83	3/2$^-$	190.72	1/2$^-$	(M1)	9.13×10^{-4}	α(K)=0.000811 *12*; α(L)=8.62×10^{-5} *12*; α(M)=1.397×10^{-5} *20*; α(N+..)=1.414×10^{-6} *20*
								α(N)=1.414×10^{-6} *20*
								E_γ: 729.09 *6* (1975Va24), 729.1 *1* (1977Li14) from γγ coin.
758.25 *10*	2.2 *1*	1678.04	1/2$^-$,3/2$^-$	919.83	3/2$^-$			E_γ: 758.23 *12* (1975Va24), 758.3 *2* (1977Li14). Not seen by 1981FrZY.
782.5[@] *5*	0.6 *1*	1239.05	(3/2)$^+$	456.74	5/2$^-$			
803.72 *7*	35.9 *10*	994.34	(1/2,3/2,5/2)$^-$	190.72	1/2$^-$	M1,E2	0.00079 *6*	α(K)exp=0.00080 *32*
								α(K)=0.00070 *5*; α(L)=7.5×10^{-5} *6*; α(M)=1.22×10^{-5} *10*; α(N+..)=1.23×10^{-6} *9*
								α(N)=1.23×10^{-6} *9*
								E_γ: 803.74 *6* (1975Va24), 803.5 *2* (1977Li14).
822.8[d] *5*	6.7 *7*	1280.6?	(1/2$^+$,3/2,5/2$^-$)	456.74	5/2$^-$			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.
834.74 *6*	35.0 *10*	1025.64	3/2$^-$,5/2$^-$	190.72	1/2$^-$	M1,E2	0.00072 *5*	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} *8*
								α(N)=1.12×10^{-6} *8*
								E_γ: 834.73 *6* (1975Va24), 834.8 *2* (1977Li14).
[x]903.2 *6*	0.2 *1*							
[x]912.5 *6*	0.2 *1*							
[x]968.4 *9*	<0.1							
977.15 *4*	24.3 *8*	1678.04	1/2$^-$,3/2$^-$	700.86	(5/2)$^-$			E_γ: 977.15 *4* (1975Va24), 977.1 *2* (1977Li14).
993.69[d] *14*	0.69 *17*	994.34	(1/2,3/2,5/2)$^-$	0	7/2$^+$			E_γ,I_γ: from 1975Va24. Not seen by other authors. Eγ is 4σ

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

^{81}Rb ε decay (4.572 h) 1977Li14,1975Va24 (continued)

γ(^{81}Kr) (continued)

E_γ[†]	I_γ[‡a]	E_i(level)	J_i^π	E_f	J_f^π	Comments
						lower than expected for this placement, so evaluator shows it as uncertain.
1025.08[d] *16*	0.35 *17*	1025.64	3/2$^-$,5/2$^-$	0	7/2$^+$	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*	1678.04	1/2$^-$,3/2$^-$	636.85	3/2$^-$	E_γ: 1041.25 *5* (1975Va24), 1041.1 *2* (1977Li14).
1047.94 *23*	2.0 *2*	1239.05	(3/2)$^+$	190.72	1/2$^-$	E_γ: 1047.83 *15* (1975Va24), 1048.4 *3* (1977Li14).
1069.42 *10*	2.6 *1*	1678.04	1/2$^-$,3/2$^-$	608.52	3/2$^+$,5/2$^+$	E_γ: 1069.44 *11* (1975Va24), 1069.3 *3* (1977Li14).
1087.7[@] *5*	0.3 *1*	2064.69	(1/2,3/2)$^-$	976.55	1/2$^+$	
1090.2[d] *3*	0.5 *1*	1280.6?	(1/2$^+$,3/2,5/2$^-$)	190.72	1/2$^-$	E_γ: 1090.0 *4* (1975Va24), 1090.4 *5* (1977Li14). Placed by 1973Br32 only; 1975Va24 and 1977Li14 could not place G.
1100.3[d] *5*	4.8 *5*	1100.3?	5/2$^+$	0	7/2$^+$	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).
1107.96 *12*	2.2 *1*	1744.86	(1/2)$^-$	636.85	3/2$^-$	E_γ: 1107.93 *15* (1975Va24), 1108.0 *2* (1977Li14).
1136.4[@] *4*	0.5 *1*	1744.86	(1/2)$^-$	608.52	3/2$^+$,5/2$^+$	
1363.8[@] *6*	0.2 *1*	2064.69	(1/2,3/2)$^-$	700.86	(5/2)$^-$	
1368.1[d] *5*	37 *4*	1558.4?	1/2,3/2,5/2	190.72	1/2$^-$	E_γ,I_γ: from 1981FrZY; not observed by other authors.
[x]1381.5 *5*	0.4 *1*					
1427.85 *15*	1.4 *1*	2064.69	(1/2,3/2)$^-$	636.85	3/2$^-$	E_γ: 1427.91 *22* (1975Va24), 1427.8 *2* (1977Li14). Not seen by 1981FrZY. 1973Br32 placed γ from a tentative 1883-keV level.
1487.07 *19*	0.4 *2*	1678.04	1/2$^-$,3/2$^-$	190.72	1/2$^-$	E_γ: 1487.01 *21* (1975Va24), 1487.4 *5* (1977Li14).
[x]1536.0 *8*	0.2 *1*					
1554.6 *5*	1.8 *2*	1744.86	(1/2)$^-$	190.72	1/2$^-$	E_γ: 1554.9 *3* (1977Li14), 1553.8 *5* (1975Va24).
1874.0[@] *4*	0.6 *1*	2064.69	(1/2,3/2)$^-$	190.72	1/2$^-$	

[†] Weighted average of data from 1975Va24 and 1977Li14, except as noted. Eγ from these authors and from 1981FrZY, 1973Br32, 1970Wa38 are in excellent agreement. However, ΔE from 1975Va24 may be underestimated in some cases (e.g., for the 190γ).
[‡] From 1977Li14.
[#] From Adopted Gammas, except As noted.
[@] From 1977Li14; not observed by other authors.
[&] I(510γ + γ$^\pm$)=2880 *150* (1973Br32), 2850 *90* (1970Wa38); I(γ$^\pm$)=2670 *110* (1977Li14). I(γ$^\pm$)=2314 *86* expected based on level scheme.
[a] For absolute intensity per 100 decays, multiply by 0.0235 *6*.
[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] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

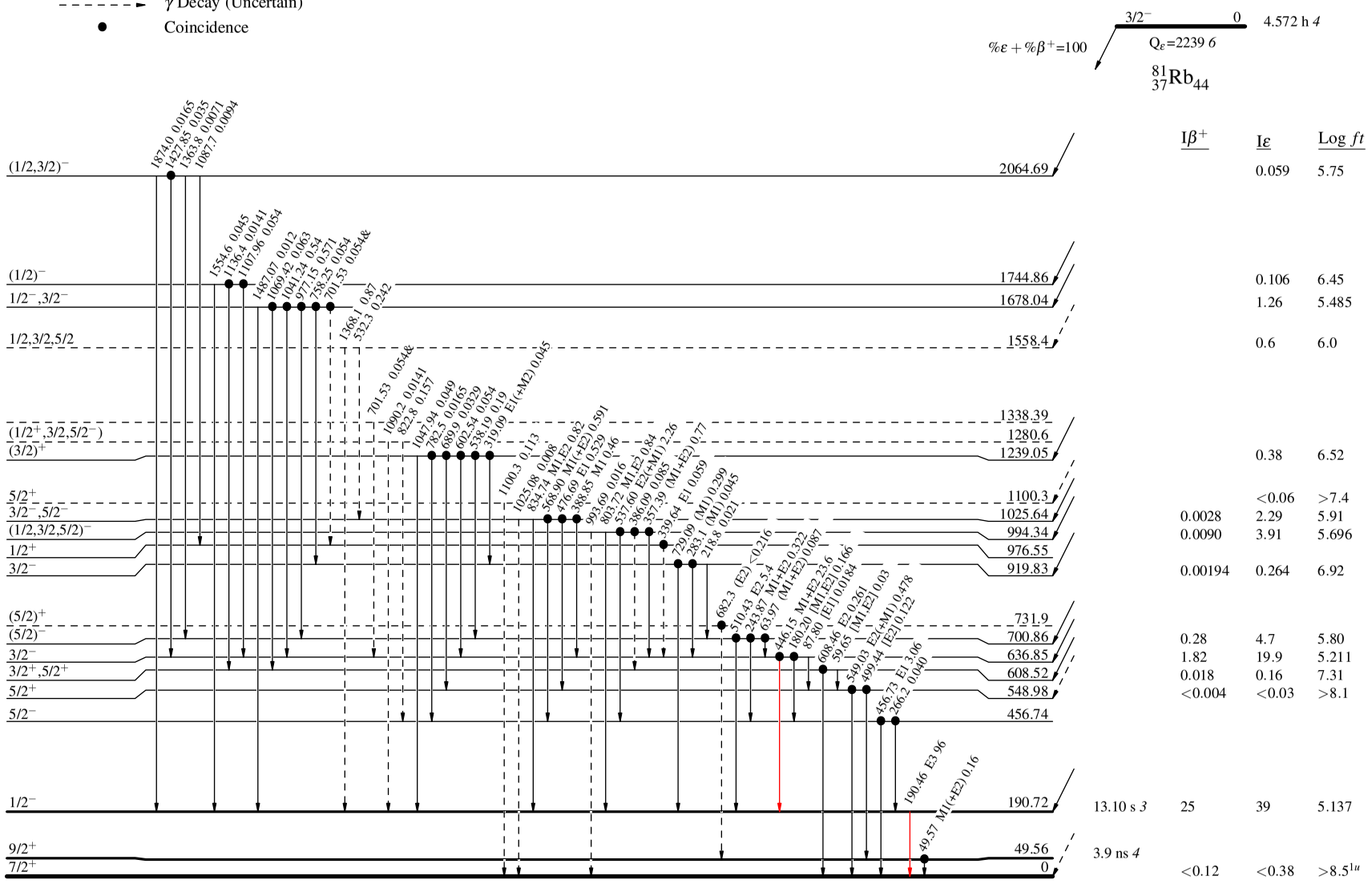
$^{81}_{36}Kr_{45}$-7

^{81}Rb ε decay (4.572 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



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

$^{81}_{36}Kr_{45}$-8