^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015

Parent: ^{87}Br: E=0.0; $J^\pi=5/2^-$; $T_{1/2}=55.65$ s *13*; Q(β^-)=6818 *3*; %β^- decay=100.0

^{87}Br-Changed from $3/2^-$ due to observations from high spin experiments. See 2006Po09 for more details.

%β^-n=2.60 *4*.

1983Ra21: thermal neutron fission of ^{235}U, mass separated fission products, GeLi detectors, γ singles spectrum and coincidences.

1977Nu04: thermal neutron fission of ^{235}U, radiochemical separation, measured delayed neutron and γ spectra.

1975To09: thermal neutron fission of ^{235}U, mass-separated fission products, GeLi and SiLi detectors, measured γ spectra and $\beta\gamma$ coincidences.

Other γ-ray spectrometry: 1966Wi03, 1970Lu06, 1971Er15, and 1975Hu02.

^{87}Kr Levels

%N: calculated from Γ(n) from Adopted Levels and $\Gamma(\gamma)$ estimated (by previous evaluator, 1991Si02) to be < 0.04 keV for levels with odd parity and < 0.2 keV for levels with even parity.

E(level)[†]	J^π[‡]
0	$5/2^+$
531.99 *4*	$1/2^+$
1419.67 *3*	$(7/2^+)$
1476.11 *5*	$3/2^+,5/2^+$
1577.59 *4*	$9/2^+$
1841.41 *5*	$(9/2^+)$
1881.20 *6*	$3/2^+,5/2^+$
2005.42 *4*	$3/2^+,5/2^+$
2071.66 *5*	
2086.7 *6*	$(1/2^+)$
2105.37 *9*	$(11/2^+)$
2122.53 *6*	$3/2^+,5/2^+$
2258.68 *7*	$11/2^-$
2300.02 *6*	$(1/2^+)$
2329.9 *6*	
2369.48 *7*	
2372.35 *6*	$(3/2^+,5/2^+)$
2451.91 *5*	
2462.86 *10*	
2498.59 *5*	
2513.74 *9*	
2518.69 *8*	$7/2^+$
2547.1 *3*	
2565.9 *6*	
2605.78 *16*	
2641.74 *6*	
2715.24 *10*	
2757.72 *8*	
2787.33 *11*	$3/2^+,5/2^+$
2821.06 *6*	
2832.1 *6*	
2836.55 *5*	(3/2,5/2)
2863.26 *10*	
3004.0 *3*	
3020.81 *16*	
3026.85 *4*	

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

^{87}Kr Levels (continued)

E(level)[†]	Jπ[‡]	Comments
3080.78 *15*		
3142.91 *15*		
3171.86 *16*		
3217.87 *5*		
3225.97 *10*		
3237.19 *10*		
3256.64 *6*		
3288.4 *3*		
3297.13 *21*		
3301.9 *4*		
3361.9 *7*		
3434.75 *11*		
3444.9? *3*		E(level): a question mark in Table V of 1983Ra21 indicates that this level may be considered tentative.
3559.7 *3*		
3599.00 *15*		
3645.48 *7*	3/2,5/2,7/2	
3657.3 *10*		
3689.1 *5*		
3777.4 *6*		
3807.02 *11*		
3809.41 *15*		
3874.18 *8*	3/2,5/2,7/2	
3909.8 *7*		
3917.16 *10*	3/2,5/2,7/2	
3923.0 *6*		
4027.2 *5*		
4136.3 *4*		
4180.82 *6*	3/2$^{(-)}$,5/2,7/2	
4192.1 *10*		
4197.91 *11*		
4204.1 *15*		
4223.4 *3*		
4226.34 *9*		
4265.1 *6*		
4297.29 *15*	3/2,5/2,7/2	
4327.22 *10*	3/2,5/2,7/2	
4416.93 *6*	3/2$^{(-)}$,5/2,7/2	
4524.15 *15*	3/2,5/2,7/2	
4548.29 *20*		
4572.49 *15*	3/2,5/2,7/2	
4595.52 *6*	3/2$^{(-)}$,5/2,7/2	
4620.90 *20*	3/2,5/2,7/2	
4644.58 *13*	3/2$^{(-)}$,5/2,7/2	
4655.2 *3*		
4668.21 *8*	3/2$^{(-)}$,5/2,7/2	
4710.35 *6*	5/2$^+$,7/2	
4711.26 *10*	3/2,5/2,7/2	
4728.2 *10*		
4734.55 *19*	3/2,5/2,7/2	
4752.71 *20*	3/2,5/2,7/2	
4784.46 *14*	3/2$^{(-)}$,5/2,7/2	
4807.9 *4*	3/2,5/2,7/2	
4824.9 *4*	1/2,3/2,5/2	
4836.29 *20*	3/2,5/2,7/2	
4858.87 *13*	3/2$^{(-)}$,5/2,7/2	

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

^{87}Kr Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	E(level)[†]	Jπ[‡]
4872.05 *15*	3/2,5/2,7/2		5280.72 *14*	3/2,5/2,7/2
4889.4 *5*			5302.56 *21*	3/2,5/2$^{(+)}$
4917.7 *11*	3/2,5/2,7/2		5340.2 *3*	3/2,5/2,7/2
4925.7 *7*	3/2,5/2,7/2		5370.1 *3*	3/2,5/2,7/2
4961.56 *7*	3/2$^{(-)}$,5/2,7/2	50 ns *25*	5383.1 *3*	3/2,5/2,7/2
4962.43 *21*	3/2,5/2,7/2		5406.34 *20*	3/2,5/2,7/2
4976.1 *9*			5419.9 *5*	
5003.2 *5*			5424.2 *9*	
5021.7 *3*	3/2,5/2,7/2		5439.9 *9*	
5033.9 *6*			5454.9 *3*	3/2,5/2,7/2
5044.7 *3*	3/2,5/2,7/2		5466.79 *13*	3/2,5/2,7/2$^{(-)}$
5059.69 *20*	3/2,5/2,7/2		5473.74 *20*	3/2,5/2,7/2
5065.9 *3*			5546.7 *6*	(5/2$^-$)
5076.19 *17*	3/2$^{(-)}$,5/2,7/2		5561.9 *9*	5/2$^-$
5088.9 *4*			5594.7 *3*	(5/2$^-$)
5103.55 *20*	3/2,5/2,7/2		5606.4 *5*	3/2$^-$
5120.39 *20*	3/2,5/2,7/2		5635.2 *5*	(5/2$^-$)
5136.08 *20*	3/2,5/2,7/2		5648.8 *9*	(5/2$^-$)
5155.1 *6*			5659.9 *4*	(5/2$^-$)
5183.4 *3*	3/2,5/2,7/2		5672.3 *4*	(5/2$^-$)
5195.25 *18*	3/2,5/2,7/2$^{(-)}$		5685.6 *3*	(5/2$^-$)
5201.21 *18*	3/2,5/2,7/2$^-$		5698.8 *4*	(5/2$^-$)
5214.27 *14*	3/2$^-$,5/2$^-$,7/2$^-$		5714.5 *9*	(5/2$^-$)
5245.6 *3*	3/2,5/2,7/2		5793.1 *4*	(5/2$^-$)

[†] From least-squares fit to γ energies.
[‡] From ^{87}Kr Adopted Levels. Arguments made are from logft values presented here and connecting γ transitions.

β^- radiations

IB,LOGFT As noted by 1983Ra21, for this complex decay scheme with many unplaced γ rays with $I_\gamma > 0.1\%$, the computed intensities of the weak β branches, for example, $I_\beta < 0.3\%$, may be unreliable.

E(decay)	E(level)	Iβ$^-$[†‡]	Log *ft*	Comments
(1025 *3*)	5793.1	0.068 *9*	6.21 *7*	av Eβ=382 *8*
(1104 *3*)	5714.5	0.0065 *13*	7.34 *9*	av Eβ=415 *8*
(1119 *3*)	5698.8	0.018 *2*	6.93 *6*	av Eβ=422 *8*
(1132 *3*)	5685.6	0.11 *1*	6.16 *5*	av Eβ=428 *8*
(1146 *3*)	5672.3	0.039 *4*	6.63 *6*	av Eβ=434 *8*
(1158 *3*)	5659.9	0.027 *3*	6.80 *6*	av Eβ=439 *8*
(1169 *3*)	5648.8	0.006 *2*	7.47 *15*	av Eβ=444 *8*
(1183 *3*)	5635.2	0.040 *5*	6.67 *6*	av Eβ=450 *8*
(1212 *3*)	5606.4	0.049 *6*	6.62 *6*	av Eβ=463 *8*
(1223 *3*)	5594.7	0.061 *5*	6.54 *5*	av Eβ=468 *8*
(1256 *3*)	5561.9	0.022 *7*	7.03 *14*	av Eβ=482 *8*
(1271 *3*)	5546.7	0.033 *5*	6.87 *7*	av Eβ=489 *8*
(1344 *3*)	5473.74	0.38 *3*	5.90 *4*	av Eβ=521 *8*
(1351 *3*)	5466.79	0.72 *7*	5.63 *5*	av Eβ=524 *8*
(1363 *3*)	5454.9	0.19 *2*	6.23 *5*	av Eβ=529 *8*
(1378 *3*)	5439.9	0.010 *3*	7.52 *14*	av Eβ=536 *8*

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(1394 *3*)	5424.2	0.029 *10*	7.08 *16*	av Eβ=543 *8*
(1398 *3*)	5419.9	0.047 *15*	6.87 *14*	av Eβ=545 *8*
(1412 *3*)	5406.34	0.21 *5*	6.24 *11*	av Eβ=551 *8*
(1435 *3*)	5383.1	0.15 *2*	6.41 *7*	av Eβ=561 *8*
(1448 *3*)	5370.1	0.14 *2*	6.46 *7*	av Eβ=567 *8*
(1478 *3*)	5340.2	0.14 *2*	6.49 *7*	av Eβ=580 *8*
(1515 *3*)	5302.56	0.26 *3*	6.27 *6*	av Eβ=597 *8*
(1537 *3*)	5280.72	0.56 *8*	5.96 *7*	av Eβ=607 *9*
(1572 *3*)	5245.6	0.18 *2*	6.49 *6*	av Eβ=623 *9*
(1604 *3*)	5214.27	1.18 *8*	5.71 *4*	av Eβ=637 *9*
(1617 *3*)	5201.21	0.83 *6*	5.87 *4*	av Eβ=643 *9*
(1623 *3*)	5195.25	0.95 *7*	5.82 *4*	av Eβ=646 *9*
(1635 *3*)	5183.4	0.18 *2*	6.56 *6*	av Eβ=651 *9*
(1663 *3*)	5155.1	0.04 *1*	7.24 *11*	av Eβ=664 *9*
(1682 *3*)	5136.08	0.16 *2*	6.66 *6*	av Eβ=672 *9*
(1698 *3*)	5120.39	0.53 *5*	6.15 *5*	av Eβ=680 *9*
(1714 *3*)	5103.55	0.43 *4*	6.26 *5*	av Eβ=687 *9*
(1729 *3*)	5088.9	0.088 *10*	6.96 *6*	av Eβ=694 *9*
(1742 *3*)	5076.19	0.45 *4*	6.27 *5*	av Eβ=700 *9*
(1752 *3*)	5065.9	0.068 *7*	7.10 *5*	av Eβ=704 *9*
(1758 *3*)	5059.69	0.28 *3*	6.49 *5*	av Eβ=707 *9*
(1773 *3*)	5044.7	0.44 *4*	6.31 *5*	av Eβ=714 *9*
(1784 *3*)	5033.9	0.046 *10*	7.30 *10*	av Eβ=719 *9*
(1796 *3*)	5021.7	0.16 *3*	6.77 *9*	av Eβ=725 *9*
(1815 *3*)	5003.2	0.054 *4*	7.26 *4*	av Eβ=733 *9*
(1842 *3*)	4976.1	0.070 *20*	7.17 *13*	av Eβ=745 *9*
(1856 *3*)	4962.43	0.19 *3*	6.75 *7*	av Eβ=752 *9*
(1856 *3*)	4961.56	3.14 *13*	5.53 *3*	av Eβ=752 *9*
(1892 *3*)	4925.7	0.18 *4*	6.81 *10*	av Eβ=769 *9*
(1900 *3*)	4917.7	0.13 *4*	6.96 *14*	av Eβ=772 *9*
(1929 *3*)	4889.4	0.082 *20*	7.18 *11*	av Eβ=785 *9*
(1946 *3*)	4872.05	0.45 *3*	6.46 *4*	av Eβ=793 *9*
(1959 *3*)	4858.87	0.60 *5*	6.35 *4*	av Eβ=799 *9*
(1982 *3*)	4836.29	0.220 *20*	6.80 *5*	av Eβ=810 *9*
(1993 *3*)	4824.9	0.140 *20*	7.01 *7*	av Eβ=815 *9*
(2010 *3*)	4807.9	0.150 *20*	6.99 *6*	av Eβ=823 *9*
(2034 *3*)	4784.46	1.88 *10*	5.92 *3*	av Eβ=834 *9*
(2065 *3*)	4752.71	0.32 *3*	6.71 *5*	av Eβ=849 *9*
(2083 *3*)	4734.55	0.35 *4*	6.69 *6*	av Eβ=857 *9*
(2090 *3*)	4728.2	0.051 *20*	7.53 *18*	av Eβ=860 *9*
(2107 *3*)	4711.26	0.34 *3*	6.72 *5*	av Eβ=868 *9*
(2108 *3*)	4710.35	3.21 *14*	5.75 *3*	av Eβ=868 *9*
(2150 *3*)	4668.21	0.83 *7*	6.4	av Eβ=888 *9*
(2163 *3*)	4655.2	0.130 *10*	7.19 *4*	av Eβ=894 *9*
(2173 *3*)	4644.58	0.95 *7*	6.34 *4*	av Eβ=899 *9*
(2197 *3*)	4620.90	0.44 *4*	6.68 *5*	av Eβ=910 *9*
(2222 *3*)	4595.52	2.32 *12*	5.98 *3*	av Eβ=922 *9*
(2246 *3*)	4572.49	0.88 *6*	6.42 *4*	av Eβ=932 *9*
(2270 *3*)	4548.29	0.120 *9*	7.31 *4*	av Eβ=944 *9*
(2294 *3*)	4524.15	0.39 *4*	6.81 *5*	av Eβ=955 *9*
(2401 *3*)	4416.93	3.38 *22*	5.96 *4*	av Eβ=1005 *9*
(2491 *3*)	4327.22	0.98 *6*	6.56 *3*	av Eβ=1047 *9*
(2521 *3*)	4297.29	0.53 *4*	6.85 *4*	av Eβ=1061 *9*
(2553 *3*)	4265.1	0.110 *20*	7.56 *8*	av Eβ=1077 *9*
(2592 *3*)	4226.34	0.11 *3*	7.58 *12*	av Eβ=1095 *9*
(2595 *3*)	4223.4	0.076 *8*	7.75 *5*	av Eβ=1096 *9*
(2614 *3*)	4204.1	0.23 *9*	7.28 *17*	av Eβ=1105 *9*

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(2620 *3*)	4197.91	0.31 *4*	7.15 *6*	av Eβ=1108 *9*
(2626 *3*)	4192.1	0.077 *20*	7.76 *12*	av Eβ=1111 *9*
(2637 *3*)	4180.82	4.6 *3*	5.99 *3*	av Eβ=1116 *9*
(2682 *3*)	4136.3	0.26 *8*	7.27 *14*	av Eβ=1137 *9*
(2791 *3*)	4027.2	0.092 *20*	7.80 *10*	av Eβ=1189 *9*
(2895 *3*)	3923.0	0.12 *4*	7.75 *15*	av Eβ=1238 *9*
(2901 *3*)	3917.16	1.94 *11*	6.54 *3*	av Eβ=1241 *9*
(2908 *3*)	3909.8	0.13 *3*	7.72 *10*	av Eβ=1245 *9*
(2944 *3*)	3874.18	0.85 *6*	6.93 *4*	av Eβ=1261 *9*
(3009 *3*)	3809.41	0.76 *6*	7.02 *4*	av Eβ=1292 *9*
(3011 *3*)	3807.02	0.22 *5*	7.56 *10*	av Eβ=1293 *9*
(3041 *3*)	3777.4	0.15 *5*	7.74 *15*	av Eβ=1307 *9*
(3129 *3*)	3689.1	0.18 *4*	7.72 *10*	av Eβ=1350 *9*
(3161 *3*)	3657.3	0.10 *3*	7.99 *13*	av Eβ=1365 *9*
(3173 *3*)	3645.48	0.87 *6*	7.06 *4*	av Eβ=1370 *9*
(3219 *3*)	3599.00	0.110 *9*	7.98 *4*	av Eβ=1392 *9*
(3258 *3*)	3559.7	0.047 *4*	8.37 *4*	av Eβ=1411 *9*
(3373 *3*)	3444.9?	0.100 *20*	8.11 *9*	av Eβ=1466 *9*
(3383 *3*)	3434.75	0.39 *3*	7.53 *4*	av Eβ=1471 *9*
(3456 *3*)	3361.9	0.11 *3*	8.11 *12*	av Eβ=1506 *9*
(3516 *3*)	3301.9	0.72 *11*	7.33 *7*	av Eβ=1534 *9*
(3521 *3*)	3297.13	0.110 *10*	8.15 *4*	av Eβ=1537 *9*
(3530 *3*)	3288.4	0.130 *20*	8.08 *7*	av Eβ=1541 *9*
(3561 *3*)	3256.64	3.69 *23*	6.65 *3*	av Eβ=1556 *9*
(3581 *3*)	3237.19	0.210 *20*	7.90 *5*	av Eβ=1565 *9*
(3592 *3*)	3225.97	0.62 *5*	7.44 *4*	av Eβ=1571 *9*
(3600 *3*)	3217.87	1.30 *8*	7.12 *3*	av Eβ=1575 *9*
(3646 *3*)	3171.86	0.140 *20*	8.11 *7*	av Eβ=1597 *9*
(3675 *3*)	3142.91	0.160 *10*	8.07 *3*	av Eβ=1611 *9*
(3737 *3*)	3080.78	0.170 *20*	8.07 *6*	av Eβ=1640 *9*
(3791 *3*)	3026.85	5.24 *19*	6.61 *2*	av Eβ=1666 *9*
(3797 *3*)	3020.81	0.140 *20*	8.19 *7*	av Eβ=1669 *9*
(3814 *3*)	3004.0	0.073 *11*	8.48 *7*	av Eβ=1677 *9*
(3955 *3*)	2863.26	0.22 *4*	8.07 *8*	av Eβ=1745 *9*
(3981 *3*)	2836.55	5.6 *3*	6.68 *3*	av Eβ=1758 *9*
(3986 *3*)	2832.1	0.070 *20*	8.58 *13*	av Eβ=1760 *9*
(3997 *3*)	2821.06	1.94 *10*	7.13 *7*	av Eβ=1755 *58*
(4031 *3*)	2787.33	0.160 *20*	8.24 *6*	av Eβ=1781 *9*
(4060 *3*)	2757.72	0.74 *5*	7.59 *3*	av Eβ=1796 *9*
(4103 *3*)	2715.24	0.190 *20*	8.20 *5*	av Eβ=1816 *9*
(4176 *3*)	2641.74	0.44 *7*	7.87 *7*	av Eβ=1851 *9*
(4212 *3*)	2605.78	0.082 *10*	8.62 *6*	av Eβ=1869 *9*
(4252 *3*)	2565.9	0.16 *4*	8.34 *11*	av Eβ=1888 *9*
(4271 *3*)	2547.1	0.38 *4*	7.98 *5*	av Eβ=1897 *9*
(4299 *3*)	2518.69	0.74 *7*	9.4[1u]	av Eβ=1910 *9*
(4304 *3*)	2513.74	0.290 *20*	8.11 *4*	av Eβ=1913 *9*
(4319 *3*)	2498.59	1.31 *7*	7.46 *3*	av Eβ=1920 *9*
(4355 *3*)	2462.86	0.29 *3*	8.13 *5*	av Eβ=1937 *9*
(4366 *3*)	2451.91	1.24 *10*	7.51 *4*	av Eβ=1943 *9*
(4446 *3*)	2372.35	2.15 *13*	7.30 *3*	av Eβ=1981 *9*
(4449 *3*)	2369.48	0.96 *9*	7.65 *5*	av Eβ=1982 *9*
(4488 *3*)	2329.9	0.050 *20*	8.95 *18*	av Eβ=2002 *9*
(4518 *3*)	2300.02	0.68 *5*	7.83 *4*	av Eβ=2016 *9*
(4559 *3*)	2258.68	0.41 *5*	8.07 *6*	av Eβ=2036 *9*
(4695 *3*)	2122.53	0.55 *11*	8.00 *9*	av Eβ=2101 *9*
(4713 *3*)	2105.37	0.200 *20*	8.44 *5*	av Eβ=2110 *9*
(4731 *3*)	2086.7	0.11 *6*	8.71 *24*	av Eβ=2119 *9*

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†][‡]	Log *ft*	Comments
(4746 *3*)	2071.66	2.2 *3*	7.42 *6*	av Eβ=2126 *9*
(4813 *3*)	2005.42	0.6 *5*	8.0 *4*	av Eβ=2158 *9*
(4937 *3*)	1881.20	2.26 *21*	7.48 *4*	av Eβ=2218 *9*
(5240 *3*)	1577.59	1.1 *5*	7.91 *20*	av Eβ=2365 *9*
(5342 *3*)	1476.11	1.7 *7*	7.76 *18*	av Eβ=2414 *9*
(5398 *3*)	1419.67	4.8 *16*	7.33 *15*	av Eβ=2441 *9*
(6286 *3*)	531.99	1.2 *5*	8.23 *19*	av Eβ=2870 *98*
(6818 *3*)	0	12.0 *19*	7.39 *7*	av Eβ=3127 *9*

[†] From γ-ray intensity balances.
[‡] Absolute intensity per 100 decays.

$\gamma(^{87}Kr)$

Iγ normalization: 1983Ra21 normalize I_γ to the absolute intensity of 22.0 *15* γ's per 100 decays for the 1419 γ, as reported to them by P. Hoff, based on absolute γ and β count rate measurements. 1975To09 give 12 *2* and 1977Nu04 31.2 *3* for the same intensity. The latter value cannot be correct since it leads to a ground-state feeding of 123%.

E_γ[†][‡]	I_γ[#][a]	E_i(level)	J_i^π	E_f	J_f^π
[x]93.54 *7*	0.130 *9*				
[x]121.42 *7*	0.036 *4*				
[x]175.59 *10*	0.052 *9*				
[x]190.29 *7*	0.078 *10*				
230.33 *9*	0.54 *4*	2071.66		1841.41	$(9/2^+)$
263.96 *7*	0.20 *2*	2105.37	$(11/2^+)$	1841.41	$(9/2^+)$
[x]346.06 *7*	0.080 *6*				
[x]380.14 *7*	0.15 *1*				
[x]389.14 *20*	0.031 *6*				
421.74 *10*	3.2 *3*	1841.41	$(9/2^+)$	1419.67	$(7/2^+)$
[x]447.61 *15*	0.10 *2*				
[x]454.4 *5*	0.031 *10*				
461.52 *7*	0.43 *3*	1881.20	$3/2^+,5/2^+$	1419.67	$(7/2^+)$
[x]493.39 *7*	0.100 *9*				
529.60 *15*	1.3 *2*	2005.42	$3/2^+,5/2^+$	1476.11	$3/2^+,5/2^+$
532.03 *7*	5.4 *4*	531.99	$1/2^+$	0	$5/2^+$
555.72 *7*	0.047 *4*	3559.7		3004.0	
[x]583.6 *5*	0.09 *3*				
[x]600.44 *15*	0.086 *10*				
610.46 *7*	0.60 *6*	2451.91		1841.41	$(9/2^+)$
611.5 *8*	0.24 *6*	2086.7	$(1/2^+)$	1476.11	$3/2^+,5/2^+$
[x]614.2 *9*	0.05 *3*				
617.5 *3*	0.12 *4*	2498.59		1881.20	$3/2^+,5/2^+$
636.39 *8*	0.16 *1*	2641.74		2005.42	$3/2^+,5/2^+$
651.96 *7*	1.10 *8*	2071.66		1419.67	$(7/2^+)$
681.22 *8*	0.38 *3*	2258.68	$11/2^-$	1577.59	$9/2^+$
[x]685.9 *7*	0.038 *20*				
[x]692.5 *4*	0.031 *2*				
698.59 *9*	0.14 *1*	2821.06		2122.53	$3/2^+,5/2^+$
714.09 *7*	0.19 *1*	2836.55	(3/2,5/2)	2122.53	$3/2^+,5/2^+$
[x]719.46 *10*	0.060 *7*				
724.57 *15*	0.082 *10*	2605.78		1881.20	$3/2^+,5/2^+$

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ [†‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π	Comments
737.96 *7*	0.47 *3*	3256.64		2518.69	7/2$^+$	
[x]798.6 *3*	0.038 *9*					
824.0 *3*	0.12 *2*	2300.02	(1/2$^+$)	1476.11	3/2$^+$,5/2$^+$	
831.26 *7*	1.30 *9*	2836.55	(3/2,5/2)	2005.42	3/2$^+$,5/2$^+$	
[x]834.8 *4*	0.17 *7*					
853.6 *6*	0.10 *4*	3225.97		2372.35	(3/2$^+$,5/2$^+$)	
853.8 *6*	0.05 *2*	2329.9		1476.11	3/2$^+$,5/2$^+$	
[x]860.00 *15*	0.020 *3*					
874.30 *7*	0.39 *3*	2451.91		1577.59	9/2$^+$	
[x]878.3 *5*	0.028 *9*					
[x]889.9 *7*	0.06 *3*					
893.42 *9*	0.40 *3*	2369.48		1476.11	3/2$^+$,5/2$^+$	
896.0[@] *4*	0.13 *3*	2372.35	(3/2$^+$,5/2$^+$)	1476.11	3/2$^+$,5/2$^+$	
[x]907.86 *20*	0.066 *10*					
920.98 *7*	0.52 *4*	2498.59		1577.59	9/2$^+$	
940.8 *6*	0.15 *5*	3777.4		2836.55	(3/2,5/2)	
944.12 *7*	1.4 *1*	1476.11	3/2$^+$,5/2$^+$	531.99	1/2$^+$	
952.66 *15*	0.74 *7*	2372.35	(3/2$^+$,5/2$^+$)	1419.67	(7/2$^+$)	
955.1 *3*	0.36 *7*	3026.85		2071.66		
[x]963.9 *3*	0.074 *10*					
[x]987.8 *3*	0.048 *2*					
[x]990.3 *3*	0.013 *2*					
[x]998.6 *3*	0.042 *10*					
[x]1009.2 *3*	0.048 *10*					
[x]1017.7 *3*	0.10 *2*					
1021.26 *7*	1.30 *9*	3026.85		2005.42	3/2$^+$,5/2$^+$	
1037.63 *7*	0.29 *2*	2513.74		1476.11	3/2$^+$,5/2$^+$	
[x]1041.77 *10*	0.076 *10*					
1043.3 *6*	0.12 *4*	3301.9		2258.68	11/2$^-$	
1044.3 *6*	0.06 *2*	4961.56	3/2$^{(-)}$,5/2,7/2	3917.16	3/2,5/2,7/2	
[x]1060.69 *15*	0.089 *10*					
[x]1064.75 *15*	0.075 *10*					
1078.88 *9*	0.10 *1*	2498.59		1419.67	(7/2$^+$)	
1095.16 *15*	0.093 *10*	3217.87		2122.53	3/2$^+$,5/2$^+$	
1099.88 *10*	0.099 *10*	2518.69	7/2$^+$	1419.67	(7/2$^+$)	E_γ: The transition is a poor fit and is not included in the least square adjustment to fit the energy levels. That adjustment gives 1099.04 *8*.
[x]1113.05 *20*	0.044 *9*					
[x]1120.19 *15*	0.072 *9*					
1126.78 *15*	0.085 *10*	3645.48	3/2,5/2,7/2	2518.69	7/2$^+$	
[x]1139.7 *4*	0.044 *9*					
1146.2 *6*	0.16 *4*	2565.9		1419.67	(7/2$^+$)	
1146.3 *6*	0.15 *4*	3217.87		2071.66		
[x]1186.27 *10*	0.13 *2*					
[x]1198.1 *3*	0.064 *10*					
1212.60 *9*	0.19 *2*	3217.87		2005.42	3/2$^+$,5/2$^+$	
[x]1220.7 *4*	0.038 *10*					
[x]1225.58 *15*	0.091 *20*					
[x]1255.1 *5*	0.11 *3*					
[x]1276.4 *4*	0.045 *10*					
1285.66 *9*	0.22 *4*	2863.26		1577.59	9/2$^+$	
1291.7 *2*	0.11 *1*	3297.13		2005.42	3/2$^+$,5/2$^+$	
[x]1298.6 *5*	0.058 *20*					
1311.21 *10*	0.16 *2*	2787.33	3/2$^+$,5/2$^+$	1476.11	3/2$^+$,5/2$^+$	
1330.43 *15*	0.14 *2*	3171.86		1841.41	(9/2$^+$)	
1338.03 *7*	0.74 *5*	2757.72		1419.67	(7/2$^+$)	

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ †‡	I_γ #a	E_i(level)	J_i^π	E_f	J_f^π
1344.60 *15*	0.21 *2*	4180.82	$3/2^{(-)}$,5/2,7/2	2836.55	(3/2,5/2)
1349.19 *7*	0.45 *3*	1881.20	$3/2^+$,$5/2^+$	531.99	$1/2^+$
1355.1 *6*	0.10 *3*	3874.18	3/2,5/2,7/2	2518.69	$7/2^+$
1356.0 *6*	0.07 *2*	2832.1		1476.11	$3/2^+$,$5/2^+$
1360.59 *20*	3.4 *2*	2836.55	(3/2,5/2)	1476.11	$3/2^+$,$5/2^+$
x1366.4 *4*	0.062 *20*				
1376.08 *15*	0.10 *1*	3217.87		1841.41	$(9/2^+)$
1389.77 *7*	0.11 *3*	4226.34		2836.55	(3/2,5/2)
1415.43 *15*	1.5 *2*	3256.64		1841.41	$(9/2^+)$
1419.71 *7*	22.0 *15*	1419.67	$(7/2^+)$	0	$5/2^+$
x1436.2 *4*	0.021 *5*				
1443.21 *15*	0.14 *2*	3020.81		1577.59	$9/2^+$
1449.24 *7*	1.10 *8*	3026.85		1577.59	$9/2^+$
x1464.95 *15*	0.16 *3*				
x1471.68 *15*	0.44 *5*				
1476.06 *7*	7.9 *6*	1476.11	$3/2^+$,$5/2^+$	0	$5/2^+$
x1488.39 *10*	0.015 *9*				
1493.38 *8*	0.34 *3*	4711.26	3/2,5/2,7/2	3217.87	
x1496.80 *20*	0.061 *7*				
x1551.7 *2*	0.061 *7*				
x1554.58 *15*	0.11 *1*				
x1561.0 *4*	0.0053 *20*				
1577.60 *7*	6.0 *4*	1577.59	$9/2^+$	0	$5/2^+$
x1602.0 *4*	0.094 *20*				
1607.32 *7*	1.40 *9*	3026.85		1419.67	$(7/2^+)$
1640.24[b] *20*	0.18[b] *3*	3217.87		1577.59	$9/2^+$
1640.24[b] *20*	0.18[b] *3*	3645.48	3/2,5/2,7/2	2005.42	$3/2^+$,$5/2^+$
x1655.3 *4*	0.059 *10*				
1659.58 *9*	0.21 *2*	3237.19		1577.59	$9/2^+$
1685.58 *15*	0.19 *2*	4327.22	3/2,5/2,7/2	2641.74	
x1744.3 *5*	0.069 *20*				
x1759.32 *15*	0.12 *1*				
1768.07 *7*	0.56 *4*	2300.02	$(1/2^+)$	531.99	$1/2^+$
x1781.2 *4*	0.13 *4*				
x1796.2 *7*	0.14 *9*				
1798.31 *7*	0.60 *4*	3217.87		1419.67	$(7/2^+)$
x1831.5 *3*	0.20 *2*				
1836.78 *7*	1.4 *1*	3256.64		1419.67	$(7/2^+)$
1840.10 *15*	0.38 *4*	2372.35	$(3/2^+,5/2^+)$	531.99	$1/2^+$
x1847.3 *3*	0.12 *2*				
1868.7 *3*	0.13 *2*	3288.4		1419.67	$(7/2^+)$
1881.20 *20*	1.9 *2*	1881.20	$3/2^+$,$5/2^+$	0	$5/2^+$
1882.2 *4*	0.60 *10*	3301.9		1419.67	$(7/2^+)$
x1899.9 *4*	0.05 *1*				
x1906.8 *3*	0.076 *10*				
1934.67 *8*	0.22 *2*	4961.56	$3/2^{(-)}$,5/2,7/2	3026.85	
x1947.9 *3*	0.084 *20*				
x1953.6 *4*	0.064 *10*				
1958.23 *15*	0.16 *2*	3434.75		1476.11	$3/2^+$,$5/2^+$
1965.58 *9*	0.22 *5*	3807.02		1841.41	$(9/2^+)$
2005.52 *7*	5.3 *4*	2005.42	$3/2^+$,$5/2^+$	0	$5/2^+$
x2022.6 *3*	0.11 *2*				
x2035.42 *15*	0.077 *8*				
x2066.3 *3*	0.15 *3*				
2071.66 *7*	2.3 *2*	2071.66		0	$5/2^+$
x2080.9 *4*	0.086 *20*				

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ †‡	I_γ #a	E_i(level)	J_i^π	E_f	J_f^π	Mult.
x2092.84 15	0.058 7					
x2107.90 20	0.13 2					
x2110.23 15	0.099 10					
x2119.9 3	0.19 6					
2122.62 9	1.20 9	2122.53	3/2+,5/2+	0	5/2+	
2125.85 20	0.19 3	4962.43	3/2,5/2,7/2	2836.55	(3/2,5/2)	
x2138.7 3	0.12 2					
2143.40 15	0.25 3	4595.52	3/2(−),5/2,7/2	2451.91		
2169.30 7	0.55 4	3645.48	3/2,5/2,7/2	1476.11	3/2+,5/2+	
x2175.4 3	0.088 20					
2192.46 10	0.31 4	4197.91		2005.42	3/2+,5/2+	
2226.1 3	0.15 3	3645.48	3/2,5/2,7/2	1419.67	(7/2+)	
x2254.23 15	0.19 2					
2258.44 10	0.15 1	2258.68	11/2−	0	5/2+	[E3]
2299.93 8	0.31 2	2300.02	(1/2+)	0	5/2+	
x2318.6 3	0.051 10					
x2339.90 15	0.12 1					
2345.3 4	0.37 6	4416.93	3/2(−),5/2,7/2	2071.66		
2345.4 6	0.12 4	3923.0		1577.59	9/2+	
2369.39 10	0.56 8	2369.48		0	5/2+	
2372.38 7	1.00 8	2372.35	(3/2+,5/2+)	0	5/2+	
2398.01 7	0.45 3	3874.18	3/2,5/2,7/2	1476.11	3/2+,5/2+	
2411.74 15	0.13 1	4416.93	3/2(−),5/2,7/2	2005.42	3/2+,5/2+	
x2417.76 15	0.18 2					
x2434.30 15	0.12 1					
2446.2 3	0.12 2	4327.22	3/2,5/2,7/2	1881.20	3/2+,5/2+	
2451.88 10	0.67 5	2451.91		0	5/2+	
2454.70 20	0.30 3	3874.18	3/2,5/2,7/2	1419.67	(7/2+)	
2462.82 10	0.29 3	2462.86		0	5/2+	
x2469.4 3	0.059 9					
2498.58 7	0.57 4	2498.59		0	5/2+	
2509.63 20	0.17 2	4961.56	3/2(−),5/2,7/2	2451.91		
2519.0 4	1.30 9	2518.69	7/2+	0	5/2+	
2523.97 10	0.31 3	4595.52	3/2(−),5/2,7/2	2071.66		
x2536.2 9	0.07 3					
2547.1 3	0.38 4	2547.1		0	5/2+	
x2570.8 3	0.12 2					
2575.37 9	0.58 5	4416.93	3/2(−),5/2,7/2	1841.41	(9/2+)	
x2590.03 15	0.13 1					
x2596.3 3	0.099 10					
2603.20 8	0.41 3	4180.82	3/2(−),5/2,7/2	1577.59	9/2+	
x2607.1 3	0.081 10					
x2622.77 15	0.053 6					
2638.7 4	0.43 7	4710.35	5/2+,7/2	2071.66		
2639.0 6	0.12 4	5280.72	3/2,5/2,7/2	2641.74		
2641.67 8	0.59 5	2641.74		0	5/2+	
2662.79 15	0.34 5	4668.21	3/2(−),5/2,7/2	2005.42	3/2+,5/2+	
x2688.79 15	0.033 20					
2693.94 10	0.41 3	3225.97		531.99	1/2+	
2704.88 7	1.7 1	4710.35	5/2+,7/2	2005.42	3/2+,5/2+	
x2709.2 3	0.13 2					
2715.19 10	0.19 2	2715.24		0	5/2+	
x2744.7 6	0.013 3					
2754.3 4	0.24 3	4595.52	3/2(−),5/2,7/2	1841.41	(9/2+)	
x2811.3 6	0.16 4					

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ [†‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π
2820.97 *7*	1.8 *1*	2821.06		0	$5/2^+$
2828.79 *20*	0.20 *2*	4710.35	$5/2^+$,7/2	1881.20	$3/2^+$,$5/2^+$
2836.36 *7*	1.4 *1*	2836.55	(3/2,5/2)	0	$5/2^+$
[x]2853.35 *15*	0.089 *8*				
[x]2862.9 *4*	0.065 *10*				
2869.20 *15*	0.24 *2*	4710.35	$5/2^+$,7/2	1841.41	$(9/2^+)$
2889.8 *4*	0.10 *2*	4961.56	$3/2^{(-)}$,5/2,7/2	2071.66	
[x]2901.0 *5*	0.086 *20*				
2907.46 *15*	0.40 *4*	4327.22	3/2,5/2,7/2	1419.67	$(7/2^+)$
[x]2914.6 *7*	0.088 *20*				
[x]2922.6 *4*	0.10 *2*				
[x]2925.6 *3*	0.033 *7*				
[x]2931.64 *15*	0.14 *4*				
2943.0 *3*	0.077 *10*	4784.46	$3/2^{(-)}$,5/2,7/2	1841.41	$(9/2^+)$
[x]2967.05 *10*	0.06 *3*				
[x]2970.8 *8*	0.09 *3*				
2997.21 *7*	2.3 *2*	4416.93	$3/2^{(-)}$,5/2,7/2	1419.67	$(7/2^+)$
3003.9 *3*	0.12 *1*	3004.0		0	$5/2^+$
3017.39 *15*	0.27 *2*	4858.87	$3/2^{(-)}$,5/2,7/2	1841.41	$(9/2^+)$
3026.77 *7*	1.30 *9*	3026.85		0	$5/2^+$
[x]3039.9 *4*	0.047 *10*				
3048.04 *20*	0.10 *1*	4524.15	3/2,5/2,7/2	1476.11	$3/2^+$,$5/2^+$
3066.85 *15*	0.13 *1*	4644.58	$3/2^{(-)}$,5/2,7/2	1577.59	$9/2^+$
3080.72 *15*	0.17 *2*	3080.78		0	$5/2^+$
3090.8 *6*	0.09 *3*	4668.21	$3/2^{(-)}$,5/2,7/2	1577.59	$9/2^+$
3091.6 *6*	0.23 *5*	5214.27	$3/2^-$,$5/2^-$,$7/2^-$	2122.53	$3/2^+$,$5/2^+$
[x]3112.9 *3*	0.10 *2*				
3132.64 *9*	0.25 *2*	4710.35	$5/2^+$,7/2	1577.59	$9/2^+$
3142.85 *15*	0.16 *1*	3142.91		0	$5/2^+$
3166.81 *15*	0.31 *3*	5466.79	3/2,5/2,7/2$^{(-)}$	2300.02	$(1/2^+)$
3175.74 *7*	1.30 *9*	4595.52	$3/2^{(-)}$,5/2,7/2	1419.67	$(7/2^+)$
3217.61 *9*	0.33 *3*	3217.87		0	$5/2^+$
3225.9 *3*	0.11 *1*	3225.97		0	$5/2^+$
3235.5 *3*	0.13 *1*	4655.2		1419.67	$(7/2^+)$
3248.45 *9*	0.40 *3*	4668.21	$3/2^{(-)}$,5/2,7/2	1419.67	$(7/2^+)$
3256.77 *10*	0.32 *3*	3256.64		0	$5/2^+$
[x]3275.2 *2*	0.034 *4*				
3281.23 *20*	0.33 *4*	4858.87	$3/2^{(-)}$,5/2,7/2	1577.59	$9/2^+$
[x]3294.1 *7*	0.04 *3*				
[x]3305.9 *5*	0.049 *20*				
3314.6 *6*	0.11 *3*	4734.55	3/2,5/2,7/2	1419.67	$(7/2^+)$
[x]3317.8 *9*	0.058 *20*				
[x]3343.7 *5*	0.028 *5*				
3361.8 *7*	0.11 *3*	3361.9		0	$5/2^+$
[x]3364.8 *7*	0.068 *20*				
3381.0 *8*	0.13 *6*	5466.79	3/2,5/2,7/2$^{(-)}$	2086.7	$(1/2^+)$
3383.3 *7*	0.15 *6*	4961.56	$3/2^{(-)}$,5/2,7/2	1577.59	$9/2^+$
[x]3395.1 *7*	0.063[&] *20*				
3435.07 *15*	0.23 *2*	3434.75		0	$5/2^+$
3444.8 *3*	0.10 *2*	3444.9?		0	$5/2^+$
[x]3458.6 *3*	0.074 *9*				
3461.06 *20*	0.28 *3*	5466.79	3/2,5/2,7/2$^{(-)}$	2005.42	$3/2^+$,$5/2^+$
3498.4 *3*	0.26 *3*	5076.19	$3/2^{(-)}$,5/2,7/2	1577.59	$9/2^+$
[x]3536.8 *6*	0.077 *20*				

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^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ †‡	I_γ #a	E_i(level)	J_i^π	E_f	J_f^π
3541.79 *15*	0.44 *3*	4961.56	3/2$^{(-)}$,5/2,7/2	1419.67	(7/2$^+$)
x3559.5 *6*	0.016 *5*				
3598.92 *15*	0.110 *9*	3599.00		0	5/2$^+$
x3611.9 *4*	0.097 *10*				
x3645.97 *20*	0.082 *8*				
3657.2 *10*	0.10 *3*	3657.3		0	5/2$^+$
x3683.2 *8*	0.057 *10*				
3689.0 *5*	0.18 *4*	3689.1		0	5/2$^+$
x3693.2 *5*	0.067 *10*				
x3738.2 *5*	0.074 *20*				
x3781.5 *7*	0.10 *3*				
3794.46 *15*	0.74 *6*	5214.27	3/2$^-$,5/2$^-$,7/2$^-$	1419.67	(7/2$^+$)
3804.6 *3*	0.17 *6*	5280.72	3/2,5/2,7/2	1476.11	3/2$^+$,5/2$^+$
3809.32 *15*	0.76 *6*	3809.41		0	5/2$^+$
x3829.0 *8*	0.038 *10*				
3860.90 *15*	0.26 *2*	5280.72	3/2,5/2,7/2	1419.67	(7/2$^+$)
x3874.0 *8*	0.085 *20*				
3909.7 *7*	0.13 *3*	3909.8		0	5/2$^+$
3917.06 *10*	2.0 *1*	3917.16	3/2,5/2,7/2	0	5/2$^+$
x3930.2 *10*	0.11 *5*				
x3970.0 *10*	0.059 *20*				
x4012.3 *3*	0.0064 *8*				
4027.1 *5*	0.092 *20*	4027.2		0	5/2$^+$
x4050.0 *4*	0.10 *3*				
x4055.1 *8*	0.011 *4*				
x4092.8 *5*	0.10 *3*				
x4109.86 *20*	0.10 *1*				
4136.2 *4*	0.26 *8*	4136.3		0	5/2$^+$
4180.54 *10*	4.0 *3*	4180.82	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
4192.0 *10*	0.077 *20*	4192.1		0	5/2$^+$
4204.0 *15*	0.23 *9*	4204.1		0	5/2$^+$
x4219.1 *7*	0.10 *4*				
4223.3 *3*	0.076 *8*	4223.4		0	5/2$^+$
x4231.0 *4*	0.13 *2*				
x4241.66 *20*	0.050 *5*				
x4258.4 *3*	0.027 *3*				
4265.0 *6*	0.11 *2*	4265.1		0	5/2$^+$
4297.18 *15*	0.53 *4*	4297.29	3/2,5/2,7/2	0	5/2$^+$
x4311.9 *10*	0.064 *20*				
4326.83 *20*	0.27 *2*	4327.22	3/2,5/2,7/2	0	5/2$^+$
4523.96 *20*	0.29 *3*	4524.15	3/2,5/2,7/2	0	5/2$^+$
4533.8 *3*	0.068 *7*	5065.9		531.99	1/2$^+$
x4539.3 *10*	0.069 *20*				
4548.16 *20*	0.120 *9*	4548.29		0	5/2$^+$
x4564.1 *5*	0.029 *6*				
4572.36 *15*	0.88 *6*	4572.49	3/2,5/2,7/2	0	5/2$^+$
x4581.9 *17*	0.11 *4*				
4596.4 *6*	0.22 *6*	4595.52	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
4620.77 *20*	0.44 *4*	4620.90	3/2,5/2,7/2	0	5/2$^+$
4644.58 *20*	0.82 *7*	4644.58	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
4663.4 *4*	0.42 *4*	5195.25	3/2,5/2,7/2$^{(-)}$	531.99	1/2$^+$
4669.9 *4*	0.28 *4*	5201.21	3/2,5/2,7/2$^-$	531.99	1/2$^+$
4710.23 *20*	0.39 *4*	4710.35	5/2$^+$,7/2	0	5/2$^+$
4728.1 *10*	0.051 *20*	4728.2		0	5/2$^+$
4734.44 *20*	0.24 *2*	4734.55	3/2,5/2,7/2	0	5/2$^+$
4752.57 *20*	0.32 *3*	4752.71	3/2,5/2,7/2	0	5/2$^+$

Continued on next page (footnotes at end of table)

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ [†‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π
4770.43 *20*	0.26 *3*	5302.56	3/2,5/2$^{(+)}$	531.99	1/2$^+$
4784.32 *15*	1.8 *1*	4784.46	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
4807.8 *4*	0.15 *2*	4807.9	3/2,5/2,7/2	0	5/2$^+$
4824.8 *4*	0.14 *2*	4824.9	1/2,3/2,5/2	0	5/2$^+$
[x]4829.8 *8*	0.0038 *10*				
4836.15 *20*	0.22 *2*	4836.29	3/2,5/2,7/2	0	5/2$^+$
4871.90 *15*	0.45 *3*	4872.05	3/2,5/2,7/2	0	5/2$^+$
4889.3 *5*	0.082 *20*	4889.4		0	5/2$^+$
4917.6 *11*	0.13 *4*	4917.7	3/2,5/2,7/2	0	5/2$^+$
4925.6 *7*	0.18 *4*	4925.7	3/2,5/2,7/2	0	5/2$^+$
4961.54 *15*	2.0 *1*	4961.56	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
4975.9 *9*	0.07 *2*	4976.1		0	5/2$^+$
5003.0 *5*	0.054 *10*	5003.2		0	5/2$^+$
5021.5 *3*	0.16 *3*	5021.7	3/2,5/2,7/2	0	5/2$^+$
5033.7 *6*	0.046 *10*	5033.9		0	5/2$^+$
5044.5 *3*	0.44 *4*	5044.7	3/2,5/2,7/2	0	5/2$^+$
[x]5049.4 *22*	0.016 *10*				
5059.53 *20*	0.28 *3*	5059.69	3/2,5/2,7/2	0	5/2$^+$
5076.08 *20*	0.19 *2*	5076.19	3/2$^{(-)}$,5/2,7/2	0	5/2$^+$
5088.7 *4*	0.088 *10*	5088.9		0	5/2$^+$
5103.39 *20*	0.43 *4*	5103.55	3/2,5/2,7/2	0	5/2$^+$
5120.23 *20*	0.53 *5*	5120.39	3/2,5/2,7/2	0	5/2$^+$
5135.92 *20*	0.16 *2*	5136.08	3/2,5/2,7/2	0	5/2$^+$
5154.9 *6*	0.04 *1*	5155.1		0	5/2$^+$
[x]5166.6 *16*	0.016 *9*				
5183.2 *3*	0.18 *2*	5183.4	3/2,5/2,7/2	0	5/2$^+$
5195.02 *20*	0.53 *5*	5195.25	3/2,5/2,7/2$^{(-)}$	0	5/2$^+$
5200.84 *20*	0.55 *4*	5201.21	3/2,5/2,7/2$^-$	0	5/2$^+$
5214.3 *3*	0.21 *2*	5214.27	3/2$^-$,5/2$^-$,7/2$^-$	0	5/2$^+$
5245.4 *3*	0.18 *2*	5245.6	3/2,5/2,7/2	0	5/2$^+$
5281.5 *9*	0.011 *4*	5280.72	3/2,5/2,7/2	0	5/2$^+$
[x]5318.4 *9*	0.024 *9*				
5340.0 *3*	0.14 *2*	5340.2	3/2,5/2,7/2	0	5/2$^+$
[x]5362.5 *12*	0.024 *10*				
5369.9 *3*	0.14 *2*	5370.1	3/2,5/2,7/2	0	5/2$^+$
5382.9 *3*	0.15 *2*	5383.1	3/2,5/2,7/2	0	5/2$^+$
[x]5395.3 *10*	0.024 *6*				
5406.16 *20*	0.21 *3*	5406.34	3/2,5/2,7/2	0	5/2$^+$
5419.7 *5*	0.047 *15*	5419.9		0	5/2$^+$
5424.0 *9*	0.029 *10*	5424.2		0	5/2$^+$
5439.7 *9*	0.010 *3*	5439.9		0	5/2$^+$
5454.7 *3*	0.19 *2*	5454.9	3/2,5/2,7/2	0	5/2$^+$
5473.56 *20*	0.38 *3*	5473.74	3/2,5/2,7/2	0	5/2$^+$
5546.5 *6*	0.033 *5*	5546.7	(5/2$^-$)	0	5/2$^+$
5561.7 *9*	0.022 *7*	5561.9	5/2$^-$	0	5/2$^+$
5594.5 *3*	0.061 *5*	5594.7	(5/2$^-$)	0	5/2$^+$
5606.2 *5*	0.049 *6*	5606.4	3/2$^-$	0	5/2$^+$
5635.0 *5*	0.040 *5*	5635.2	(5/2$^-$)	0	5/2$^+$
5648.6 *9*	0.006 *2*	5648.8	(5/2$^-$)	0	5/2$^+$
5659.7 *4*	0.027 *3*	5659.9	(5/2$^-$)	0	5/2$^+$
5672.1 *4*	0.039 *4*	5672.3	(5/2$^-$)	0	5/2$^+$
5685.4 *3*	0.11 *1*	5685.6	(5/2$^-$)	0	5/2$^+$
5698.6 *4*	0.018 *2*	5698.8	(5/2$^-$)	0	5/2$^+$
5714.5 *9*	0.011 *2*	5714.5	(5/2$^-$)	0	5/2$^+$
5793.1 *4*	0.015 *2*	5793.1	(5/2$^-$)	0	5/2$^+$

Continued on next page (footnotes at end of table)

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09 (continued)

$\gamma(^{87}Kr)$ (continued)

† From 1983Ra21, unless indicated otherwise.
‡ In addition to the transitions listed here, 1977Nu04 report a transition at 5588.6 *10* with Iγ=0.0154 (normalized to data of 1983Ra21). This transition is not seen by 1983Ra21. A 5821 keV γ transition was reported in 1975To09. This would be expected to have been seen in 1983Ra21 based on intenstity comparisons, and so is not included here.
# From 1983Ra21, unless otherwise noted. Intensities per 100 ^{87}Br decays. 1977Nu04 and 1975To09 give values of I_γ for about 20 γ's based on very different assumptions of normalization for 1420 γ, but the relative I_γ's are in good agreement.
@ Value of 896 *4* given by 1983Ra21 is a misprint (private communication from first author).
& Value of 0.063 2 given by 1983Ra21 is a misprint (private communication from first author to 1991Si02).
a Absolute intensity per 100 decays.
b Multiply placed with undivided intensity.
x γ ray not placed in level scheme.

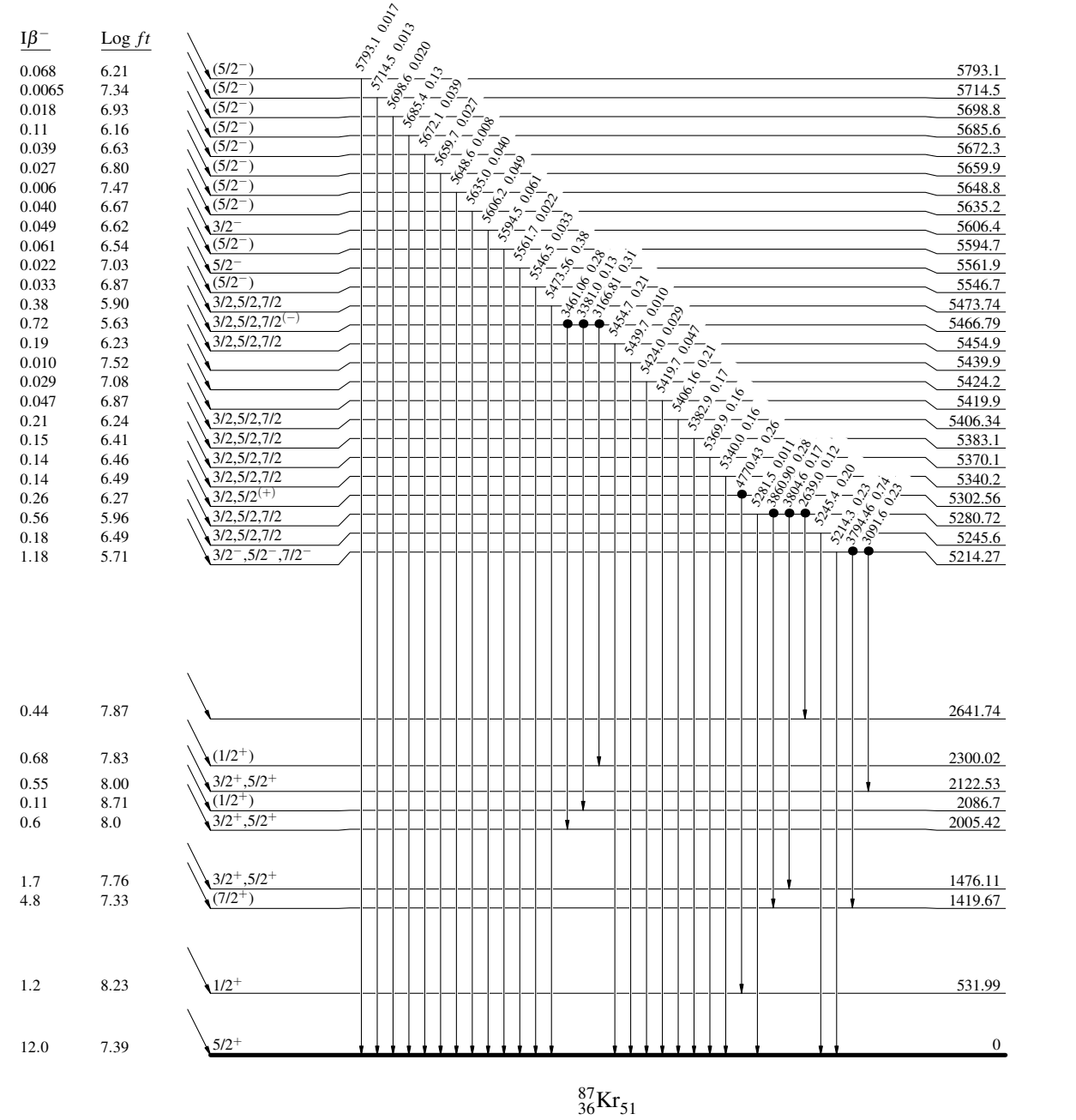
^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme

Intensities: I_γ per 100 parent decays

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- Coincidence

5/2− 0.0 55.65 s *13*
Q_{β^-}=6818 *3* $\%\beta^-$=100
$^{87}_{35}Br_{52}$

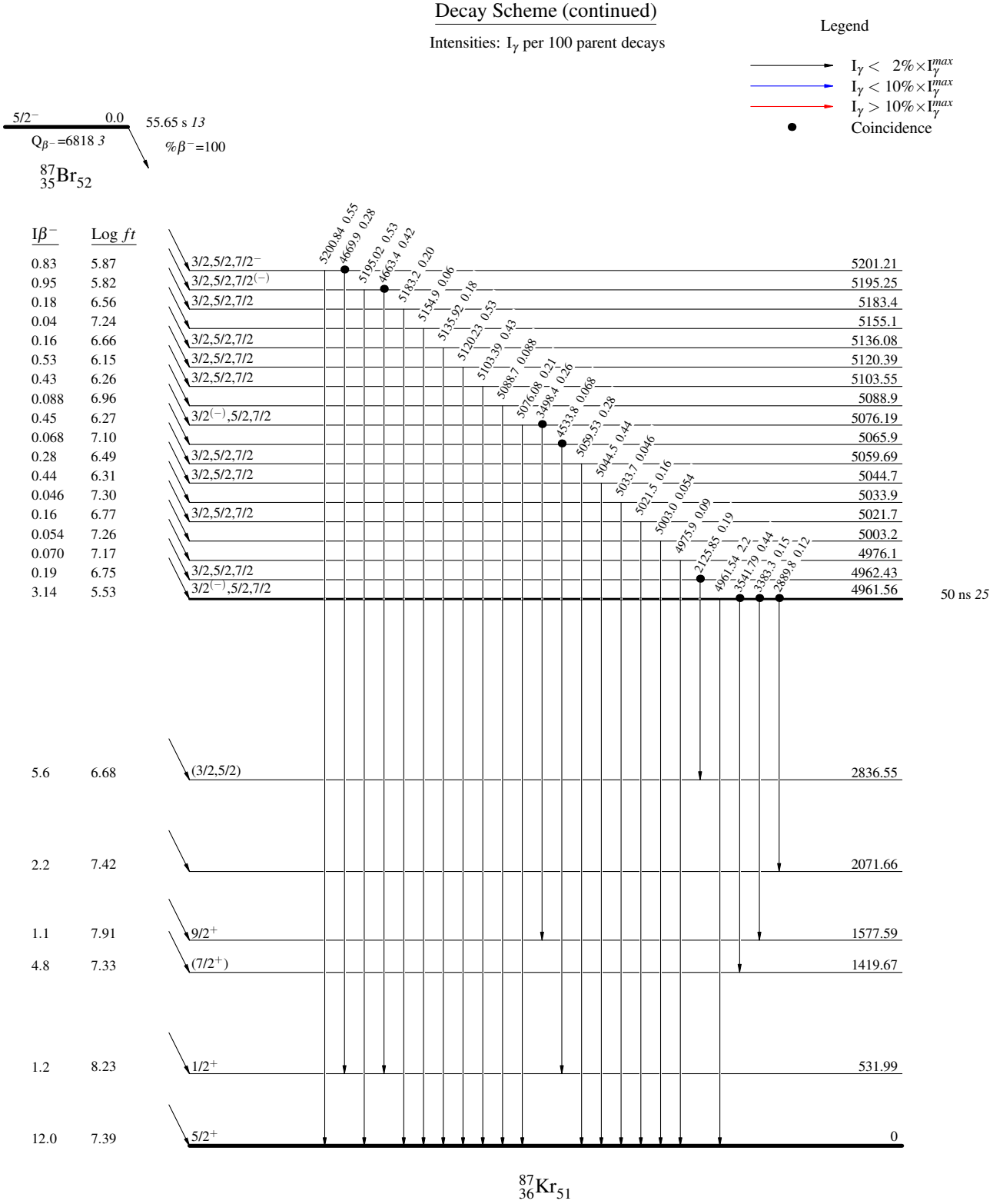


$^{87}_{36}Kr_{51}$

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays



^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- Coincidence

$5/2^-$ 0.0 55.65 s *13*

Q_{β^-}=6818 *3* $\%\beta^-$=100

$^{87}_{35}Br_{52}$

Iβ⁻	Log *ft*		
3.14	5.53	$3/2^{(-)},5/2,7/2$	4961.56
0.18	6.81	3/2,5/2,7/2	4925.7
0.13	6.96	3/2,5/2,7/2	4917.7
0.082	7.18		4889.4
0.45	6.46	3/2,5/2,7/2	4872.05
0.60	6.35	$3/2^{(-)},5/2,7/2$	4858.87
0.220	6.80	3/2,5/2,7/2	4836.29
0.140	7.01	1/2,3/2,5/2	4824.9
0.150	6.99	3/2,5/2,7/2	4807.9
1.88	5.92	$3/2^{(-)},5/2,7/2$	4784.46
0.32	6.71	3/2,5/2,7/2	4752.71
0.35	6.69	3/2,5/2,7/2	4734.55
0.051	7.53		4728.2
0.34	6.72	3/2,5/2,7/2	4711.26
3.21	5.75	$5/2^+,7/2$	4710.35
0.83	6.4	$3/2^{(-)},5/2,7/2$	4668.21
0.130	7.19		4655.2
0.95	6.34	$3/2^{(-)},5/2,7/2$	4644.58
0.44	6.68	3/2,5/2,7/2	4620.90
1.94	6.54	3/2,5/2,7/2	3917.16
1.30	7.12		3217.87
5.24	6.61		3026.85
1.24	7.51		2451.91
2.2	7.42		2071.66
0.6	8.0	$3/2^+,5/2^+$	2005.42
2.26	7.48	$3/2^+,5/2^+$	1881.20
		$(9/2^+)$	1841.41
1.1	7.91	$9/2^+$	1577.59
4.8	7.33	$(7/2^+)$	1419.67
12.0	7.39	$5/2^+$	0

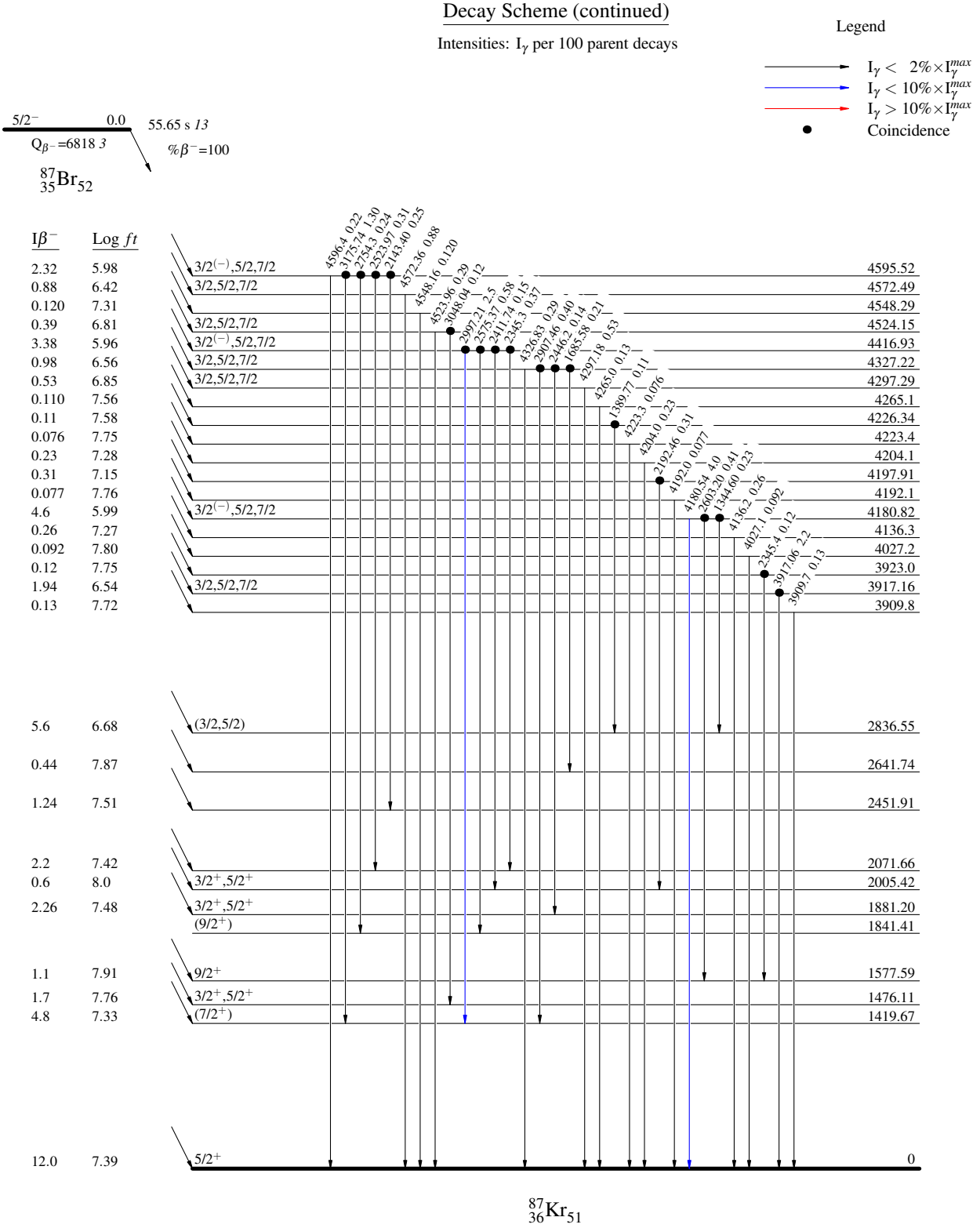
50 ns *25*

$^{87}_{36}Kr_{51}$

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays

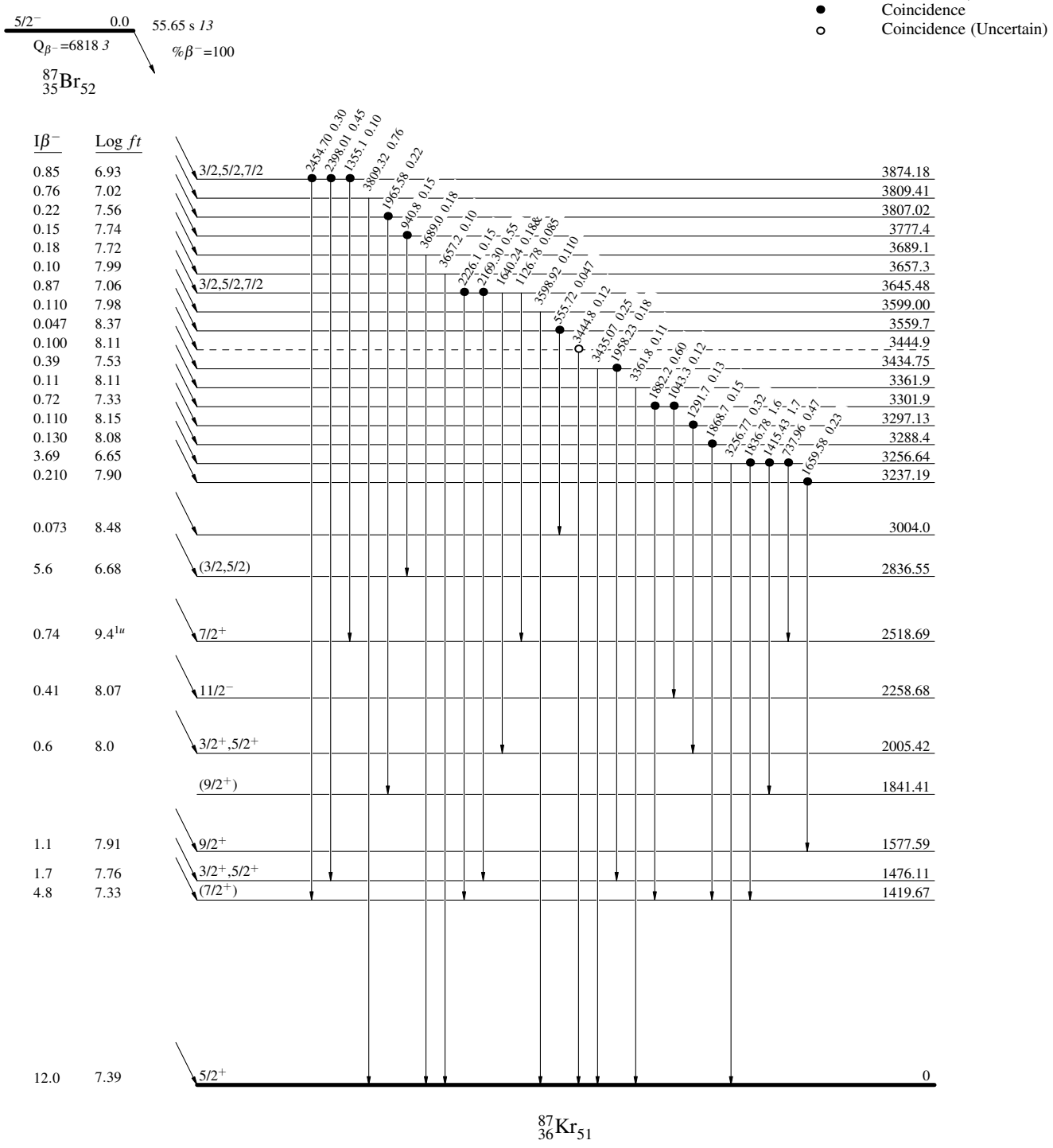


^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays
& Multiply placed: undivided intensity given

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- Coincidence
- Coincidence (Uncertain)



^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence

$5/2^-$ 0.0 55.65 s *13*
Q_{β^-}=6818 *3* $\%\beta^-$=100
$^{87}_{35}Br_{52}$

Iβ⁻	Log *ft*	
0.62	7.44	3225.97
1.30	7.12	3217.87
0.140	8.11	3171.86
0.160	8.07	3142.91
0.170	8.07	3080.78
5.24	6.61	3026.85
0.140	8.19	3020.81
0.073	8.48	3004.0
0.22	8.07	2863.26
5.6	6.68	(3/2,5/2) 2836.55
0.070	8.58	2832.1
1.94	7.13	2821.06
0.160	8.24	3/2⁺,5/2⁺ 2787.33
0.74	7.59	2757.72
0.190	8.20	2715.24
2.15	7.30	(3/2⁺,5/2⁺) 2372.35
0.55	8.00	3/2⁺,5/2⁺ 2122.53
2.2	7.42	2071.66
0.6	8.0	3/2⁺,5/2⁺ 2005.42
		(9/2⁺) 1841.41
1.1	7.91	9/2⁺ 1577.59
1.7	7.76	3/2⁺,5/2⁺ 1476.11
4.8	7.33	(7/2⁺) 1419.67
1.2	8.23	1/2⁺ 531.99
12.0	7.39	5/2⁺ 0

3225.9 0.13, 2695.94 0.41, 853.6 0.10, 3217.61 0.33, 1798.31 0.60, 1640.24 0.18&, 1376.08 0.12, 1212.60 0.21, 1146.3 0.15, 1095.16 0.093, 1330.43 0.16, 3142.85 0.18, 3080.72 0.19, 3026.77 1.30, 1607.32 1.40, 1449.24 1.10, 1021.26 1.30, 955.1 0.36, 1443.21 0.16, 3003.9 0.14, 1285.66 0.22, 2836.36 1.6, 1360.59 3.6, 831.26 1.30, 714.09 0.21, 1356.0 0.09, 2820.97 2.0, 698.59 0.16, 1311.21 0.18, 1338.03 0.74, 2715.19 0.21

$^{87}_{36}Kr_{51}$

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence

$5/2^-$ 0.0
Q_{β^-}=6818 *3*
55.65 s *13*
$\%\beta^-$=100
$^{87}_{35}Br_{52}$

Iβ⁻	Log *ft*		
0.44	7.87		2641.74
0.082	8.62		2605.78
0.16	8.34		2565.9
0.38	7.98		2547.1
0.74	9.4[1u]	7/2+	2518.69
0.290	8.11		2513.74
1.31	7.46		2498.59
0.29	8.13		2462.86
1.24	7.51		2451.91
2.15	7.30	(3/2+,5/2+)	2372.35
0.96	7.65		2369.48
0.050	8.95		2329.9
0.68	7.83	(1/2+)	2300.02
0.41	8.07	11/2−	2258.68
0.55	8.00	3/2+,5/2+	2122.53
0.200	8.44	(11/2+)	2105.37
0.11	8.71	(1/2+)	2086.7
0.6	8.0	3/2+,5/2+	2005.42
2.26	7.48	3/2+,5/2+	1881.20
		(9/2+)	1841.41
1.1	7.91	9/2+	1577.59
1.7	7.76	3/2+,5/2+	1476.11
4.8	7.33	(7/2+)	1419.67
1.2	8.23	1/2+	531.99
12.0	7.39	5/2+	0

2641.67 0.59
636.39 0.18
724.57 0.082
1146.2 0.16
2547.1 0.38
2519.0 1.30
1099.88 0.099
1037.63 0.31
2498.58 0.57
1078.88 0.12
920.98 0.52
617.5 0.12
2462.82 0.29
2451.88 0.67
874.30 0.39
610.46 0.60
2372.38 1.00
1840.10 0.38
952.66 0.74
896.0 0.13
2369.39 0.56
893.42 0.40
853.8 0.07
2299.93 0.33
1768.07 0.56
824.0 0.14
2258.44 [E3]10.17
681.22 0.38
2122.62 1.20
263.96 0.22
611.5 0.24

$^{87}_{36}Kr_{51}$

^{87}Br β^- decay 1983Ra21,1977Nu04,1975To09

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays
& Multiply placed: undivided intensity given