

$^{92}\text{Br} \beta^-$ decay **2000PfZZ,1989Gr03,1976Ru01**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

Parent: ^{92}Br : $E=0.0$; $T_{1/2}=0.314$ s 16; $Q(\beta^-)=12537$ 7; $\% \beta^-$ decay=100.0

Others: 1992GrZX, 1989PfZZ, 1988Kr10, 1984Ew01, 1982Al01, 1978Cr03, 1978Kr15, 1977Sh10, 1975Kr17, 1974Kr21.

Production: delayed neutron emission following $^{235}\text{U}(\text{n},\text{f})$ $E=\text{th}$; $\text{Th}(\text{p},\text{x})$. Mass separation: 1976Ru01, 1978Cr03, 1984Ew01, 1988Kr10. Chemical separation: 1974Kr21.

The decay scheme is that of 2000PfZZ, a fragment of which was presented in 1989PfZZ. A very tentative 1994 level, whose existence was suggested by the $\beta\gamma$ coin work of 1989Gr03, has also been included.

 ^{92}Kr Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0	0 ⁺	1.840 s 8	2077.4 [#] 9		3086.6 [#] 10	
769.1 5	2 ⁺		2153.2 [#] 8	(1,2 ⁺)	3114.9 [#] 9	
1356.4 9			2164.3 [#] 8		3286.0 [#] 12	
1446.3 6	(1,2 ⁺)		2350.8 ^a 7	(1,2 ⁺)	4054.5 ^a 9	
1804.4 12	4 ⁺		2471.7 [#] 9		4482.5 [#] 7	(1,2 ⁺)
1994.2?@ 13			2587.2 [#] 8	(1,2 ⁺)	4511.4 [#] 12	
2019.4 8			2820.9 [#] 10		5011.4 ^a 12	
2046.6 ^a 12			2875.3 [#] 9		5078.8 ^{&} 8	(1,2 ⁺)

[†] From least-squares fit to E_γ allowing an uncertainty of 1 keV in all E_γ data, except as noted.

[‡] From Adopted Levels.

[#] From 1989Gr03.

@ Data of 1989Gr03 imply that a 593 γ feeds this level, but no γ ray deexciting this level has been reported. The evaluator, therefore, denotes level's existence as tentative.

& From 1989PfZZ.

^a Reported only in 2000PfZZ.

 β^- radiations

1989Gr03: deduced $Q(\beta^-)=12155$ 100 based on β endpoint energies for 14 $\beta\gamma$ coin spectra (13 branches); revised to $Q(\beta^-)=12220$ 55 in 1992GrZX cf. 12210 50 from 2003Au03 and 12537 7 from 2011AuZZ.

Average $E(\beta)$ per decay =3860 (1982Al01) cf. 3500 900 calculated for the present decay scheme using the RADLST code.

E(decay)	E(level)	$I\beta^-$ ^{†@}	Log ft [‡]	Comments
(7458 7)	5078.8	<0.18	>7.1	av $E\beta=3420.0$ 34
(7526 7)	5011.4	<0.35	>6.9	av $E\beta=3452.6$ 35
7.61×10^3 [#] 12	4511.4	<0.65	>6.7	av $E\beta=3694.2$ 35
7.57×10^3 [#] 17	4482.5	<0.30	>7.1	av $E\beta=3708.1$ 34
(8483 7)	4054.5	<0.12	>7.6	av $E\beta=3914.8$ 34
8.87×10^3 [#] 12	3286.0	<0.77	>6.9	av $E\beta=4285.6$ 35
8.99×10^3 [#] 30	3086.6	<0.59	>7.1	av $E\beta=4381.8$ 34

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^{92}Br β^- decay 2000PfZZ,1989Gr03,1976Ru01 (continued) β^- radiations (continued)

E(decay)	E(level)	$I\beta^{-\dagger@}$	Log $ft^{\ddagger}$	Comments
9.27×10 ³ # 27	3114.9	<2.7	>6.4	av $E\beta=4368.1$ 34
9.57×10 ³ # 27	2875.3	<2.5	>6.5	av $E\beta=4483.6$ 34
9.51×10 ³ # 24	2820.9	<0.71	>7.1	av $E\beta=4509.8$ 34
9.27×10 ³ # 40	2587.2	<0.83	>7.0	av $E\beta=4622.4$ 34
9.58×10 ³ # 18	2471.7	<1.9	>6.7	av $E\beta=4678.0$ 34
(10186 7)	2350.8	<1.7	>6.8	av $E\beta=4736.2$ 34
9.79×10 ³ # 25	2164.3	<2.0	>6.7	av $E\beta=4826.0$ 34
10.01×10 ³ # 25	2153.2	<3.3	>6.5	av $E\beta=4831.3$ 34
10.11×10 ³ # 8	2077.4	<5.9	>6.3	av $E\beta=4867.8$ 34
(10490 7)	2046.6	<3.1	>6.6	av $E\beta=4882.6$ 35
10.15×10 ³ # 21	2019.4	<1.12	>7.0	av $E\beta=4895.7$ 34
(10733 7)	1804.4	<3.3	>6.6	av $E\beta=4999.1$ 35
				log $f^{1u}_t > 9.0$, av $E\beta=5007$ 4 if $J^\pi(^{92}\text{Br})=2^-$.
(11091 7)	1446.3	<5.7	>6.4	av $E\beta=5171.2$ 34
(11181 7)	1356.4	<0.59	>7.4	av $E\beta=5214.3$ 34
				log $f^{1u}_t > 9.9$, av $E\beta=5224$ 3 if $J^\pi(1356)=0^+$.
(11768 7)	769.1	<29	>5.8	av $E\beta=5496.2$ 34
(12537& 7)	0.0	<33	>8.5 ^{1u}	av $E\beta=5882.1$ 34

[†] Deduced by evaluator from photon intensity balance at each level. The values shown do not include the (unknown) uncertainty in I_γ data; the latter could be very significant. (see also the comment on decay scheme normalization).

[‡] Values are given as limits; see comment on decay scheme normalization. Note also that the uncertainty in measured photon intensities is unknown.

Measured endpoint energy for β^- spectrum in coincidence with γ ray(s) deexciting this level; data from 1989Gr03, have been rounded to nearest 10 keV.

@ Absolute intensity per 100 decays.

& Existence of this branch is questionable.

 $\gamma(^{92}\text{Kr})$

$E_\gamma^{\dagger}$	$I_\gamma^{\ddagger@a}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	Comments
358 ^b	≤0.1	1804.4	4 ⁺	1446.3	(1,2 ⁺)		I_γ : from 1989PfZZ; no value given in 2000PfZZ.
573.0	0.8	2019.4		1446.3	(1,2 ⁺)		
587.4	1.3	1356.4		769.1	2 ⁺		
593 ^b		2587.2	(1,2 ⁺)	1994.2?			Reported in 1989Gr03 only, so placement shown as tentative.
631.0	0.6	2077.4		1446.3	(1,2 ⁺)		
677.5	5.7	1446.3	(1,2 ⁺)	769.1	2 ⁺	D	
717.8	1.6	2164.3		1446.3	(1,2 ⁺)		
^x 740@ 2							
769.2	100.0	769.1	2 ⁺	0.0	0 ⁺	E2	
801.0&	0.2	2820.9		2019.4			
922.0&	0.2	3086.6		2164.3			
^x 975&							Uncertain γ ; possibly coincident with 718 γ (2000PfZZ).
994.4&	0.3	2350.8	(1,2 ⁺)	1356.4			
1026	0.2	2471.7		1446.3	(1,2 ⁺)		
1035.3	5.6	1804.4	4 ⁺	769.1	2 ⁺	E2	
1250.0	1.3	2019.4		769.1	2 ⁺		

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^{92}Br β^- decay 2000PfZZ,1989Gr03,1976Ru01 (continued) $\gamma(^{92}\text{Kr})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
1277.5 &	5.2	2046.6		769.1	2 ⁺	
^x 1298.1 &	2.5					Coincident with 769 γ (2000PfZZ).
1308.5	9.4	2077.4		769.1	2 ⁺	
1375.1	1.0	2820.9		1446.3	(1,2 ⁺)	
1384.0	5.0	2153.2	(1,2 ⁺)	769.1	2 ⁺	
1395.2	2.0	2164.3		769.1	2 ⁺	
^x 1414.0 &	0.6					Coincident with 769 γ (2000PfZZ).
1429.0 &	0.2	2875.3		1446.3	(1,2 ⁺)	
1446.6	10.3	1446.3	(1,2 ⁺)	0.0	0 ⁺	
^x 1547 &	0.2					Possibly coincident with 769 γ (2000PfZZ).
1581.8 &	1.1	2350.8	(1,2 ⁺)	769.1	2 ⁺	
^x 1605.2 &	0.5					Coincident with 678 γ (2000PfZZ).
1640.5	0.8	3086.6		1446.3	(1,2 ⁺)	
1668.2 &	0.3	3114.9		1446.3	(1,2 ⁺)	
1702.0	3.0	2471.7		769.1	2 ⁺	
1818.5 &	1.2	2587.2	(1,2 ⁺)	769.1	2 ⁺	
^x 1918.1 &	0.5					Coincident with 678 γ (2000PfZZ).
^x 2053 &	0.4					Coincident with 678 γ (2000PfZZ).
2106.2	4.0	2875.3		769.1	2 ⁺	
^x 2142.7 &	0.3					Coincident with 678 γ (2000PfZZ).
2153.4 &	0.6	2153.2	(1,2 ⁺)	0.0	0 ⁺	
^x 2233 &	0.1					Coincident with 769 γ (2000PfZZ).
2346.1	4.3	3114.9		769.1	2 ⁺	
2350.6 &	1.5	2350.8	(1,2 ⁺)	0.0	0 ⁺	
2516.9	1.3	3286.0		769.1	2 ⁺	
2586.7 &	0.2	2587.2	(1,2 ⁺)	0.0	0 ⁺	
2607.5 &	0.1	4054.5		1446.3	(1,2 ⁺)	
^x 2626 &	0.1					Possibly coincident with 1035 γ (2000PfZZ).
^x 2764.8 &	0.4					Coincident with 769 γ (2000PfZZ).
3036.0 &	0.1	4482.5	(1,2 ⁺)	1446.3	(1,2 ⁺)	
3286.0 &	0.1	4054.5		769.1	2 ⁺	
^x 3405.3 &	0.3					Coincident with 769 γ , 678 γ (2000PfZZ).
3565.0 &	0.6	5011.4		1446.3	(1,2 ⁺)	
3633.0 &	0.1	5078.8	(1,2 ⁺)	1446.3	(1,2 ⁺)	
3713.0	0.1	4482.5	(1,2 ⁺)	769.1	2 ⁺	
3742.3	1.1	4511.4		769.1	2 ⁺	
^x 4115 &	0.1					Coincident with 678 γ (2000PfZZ).
^x 4165 &	0.1					Coincident with 678 γ (2000PfZZ).
^x 4314 &	0.1					Possibly coincident with 678 γ (2000PfZZ).
4483.0 &	0.3	4482.5	(1,2 ⁺)	0.0	0 ⁺	
5078.0 &	0.2	5078.8	(1,2 ⁺)	0.0	0 ⁺	

[†] From 2000PfZZ, except as noted. All but 17 of the placed transitions were also reported in 1989PfZZ (from $E(\text{level}) \leq 1805$) or in 1989Gr03 (from $E(\text{level}) > 1805$); gammas reported only in 2000PfZZ are indicated.

[‡] Relative photon intensity, from 2000PfZZ; for transitions deexciting $E(\text{level}) \leq 1805$, these data are also given (rounded-off values) in 1989PfZZ. Authors do not state uncertainty.

$^{92}\text{Br} \beta^-$ decay [2000PfZZ,1989Gr03,1976Ru01](#) (continued)

$\gamma(^{92}\text{Kr})$ (continued)

From Adopted Gammas.

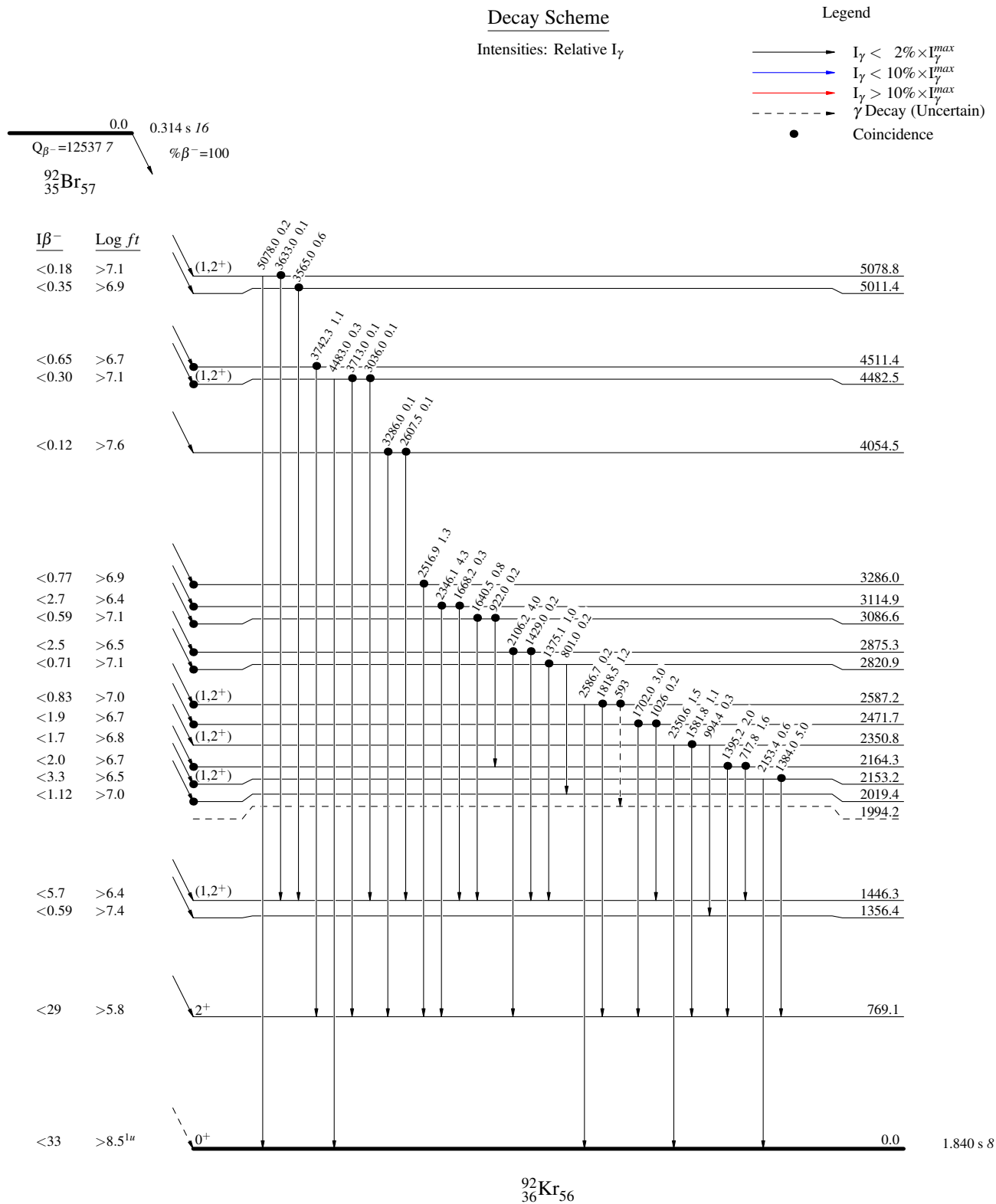
@ From [1975Kr17](#). γ not reported in [1989Gr03](#), [1989PfZZ](#) or [2000PfZZ](#); probably does not belong to ^{92}Kr .

& Reported only in [2000PfZZ](#).

^a For absolute intensity per 100 decays, multiply by <0.59.

^b Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

^{92}Br β^- decay 2000PfZZ,1989Gr03,1976Ru01

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Decay Scheme (continued)

Intensities: Relative I_γ

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

