

⁸³Ge β⁻ decay 1988Wi17

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 125, 201 (2015)	31-Dec-2014

Parent: ⁸³Ge: E=0.0; J^π=(5/2)⁺; T_{1/2}=1.85 s 6; Q(β⁻)=8693 4; %β⁻ decay=100.0

⁸³Ge activity from thermal neutron induced fission of ²³⁵U. Products mass separated and deposited onto a moving tape collector.

Measured E_γ, I_γ, γ(t), βγ and γγ coincidences using a Ge(Li) detector, a HPGe detector, and a thin plastic scintillator.

Decay-scheme normalization was not calculated because β⁻ population to ⁸³As g.s. is unknown. Authors deduced log ft values (not shown here) based on β⁻ decay of the isotope ⁸⁵Se to ⁸⁵Br.

⁸³As Levels

E(level) [†]	J ^π [‡]	T _{1/2} [‡]	E(level) [†]	E(level) [†]
0.0	(5/2 ⁻)	13.4 s 4	1543.41? 15	4130.11 23
306.51 4	(3/2 ⁻)		1804.78 11	4191.5 4
711.67 5			1977.86 18	4221.2 4
1193.70 10			2222.89 21	4228.3 4
1196.53 14			3100.2? 3	4364.4 5
1256.76 9			3522.6 3	4405.7 3
1329.87 10			3733.5 4	4434.1 3
1415.11 10			3956.5 3	4841.8 7
1434.92 9			3999.7 4	
1525.48 13			4030.6? 5	

[†] From a least-squares fit to E_γ, by evaluator.

[‡] From the Adopted Levels.

γ(⁸³As)

E _γ	I _γ	E _i (level)	J _i ^π	E _f	J _f ^π
306.51 5	100.0 5	306.51	(3/2 ⁻)	0.0	(5/2 ⁻)
405.18 5	11.4 7	711.67		306.51	(3/2 ⁻)
562.6 3	1.1 3	1977.86		1415.11	
618.37 12	2.5 3	1329.87		711.67	
711.66 8	3.1 3	711.67		0.0	(5/2 ⁻)
886.96 [†] 20	2.2 [†] 5	1193.70		306.51	(3/2 ⁻)
890.01 15	9.9 8	1196.53		306.51	(3/2 ⁻)
950.14 18	2.4 3	1256.76		306.51	(3/2 ⁻)
966.24 22	1.6 3	2222.89		1256.76	
1023.1 [†] 3	2.6 [†] 7	1329.87		306.51	(3/2 ⁻)
1093.10 [†] 10	5.5 [†] 13	1804.78		711.67	
1108.4 3	1.4 3	1415.11		306.51	(3/2 ⁻)
1128.52 16	6.3 8	1434.92		306.51	(3/2 ⁻)
1193.77 11	20.5 12	1193.70		0.0	(5/2 ⁻)
1196.2 5	0.7 5	1196.53		0.0	(5/2 ⁻)
1219.5 [†] 24	2.1 [†] 4	1525.48		306.51	(3/2 ⁻)
1256.81 11	8.8 7	1256.76		0.0	(5/2 ⁻)
1329.61 18	7.0 11	1329.87		0.0	(5/2 ⁻)
1415.09 11	11.1 8	1415.11		0.0	(5/2 ⁻)
1434.87 11	11.8 8	1434.92		0.0	(5/2 ⁻)
1525.50 14	13.6 12	1525.48		0.0	(5/2 ⁻)
1543.39 15	7.9 6	1543.41?		0.0	(5/2 ⁻)
1671.2 3	2.2 4	1977.86		306.51	(3/2 ⁻)

Continued on next page (footnotes at end of table)

$^{83}\text{Ge} \beta^-$ decay 1988Wi17 (continued) $\gamma(^{83}\text{As})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ	$E_i(\text{level})$	E_f	J_f^π
1916.0 [†]	4	2222.89		306.51	(3/2 ⁻)	3027.7	5	4221.2	1193.70	
1978.1	3	1977.86		0.0	(5/2 ⁻)	3031.2	9	4228.3	1196.53	
2087.7	3	3522.6		1434.92		3427.1	5	3733.5	306.51	(3/2 ⁻)
2194.7	6	3999.7		1804.78		3649.4	6	3956.5	306.51	(3/2 ⁻)
2325.9	4	3522.6		1196.53		3693.2	6	3999.7	306.51	(3/2 ⁻)
2604.8	4	4130.11		1525.48		3733.1	6	3733.5	0.0	(5/2 ⁻)
2626.8	4	3956.5		1329.87		3823.2	6	4130.11	306.51	(3/2 ⁻)
2793.6 [‡]	3	3100.2?		306.51	(3/2 ⁻)	3921.9	5	4228.3	306.51	(3/2 ⁻)
2805.7 [‡]	6	4221.2		1415.11		4129.9	5	4130.11	0.0	(5/2 ⁻)
2834.0	5	4030.6?		1196.53		4191.4	4	4191.5	0.0	(5/2 ⁻)
2873.3	4	4130.11		1256.76		4364.3	5	4364.4	0.0	(5/2 ⁻)
2880.1	4	4405.7		1525.48		4405.6	6	4405.7	0.0	(5/2 ⁻)
2908.8	5	4434.1		1525.48		4433.6	5	4434.1	0.0	(5/2 ⁻)
2999.3	5	4434.1		1434.92		4841.6	7	4841.8	0.0	(5/2 ⁻)

[†] From spectrum in coincidence with 306 γ .

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

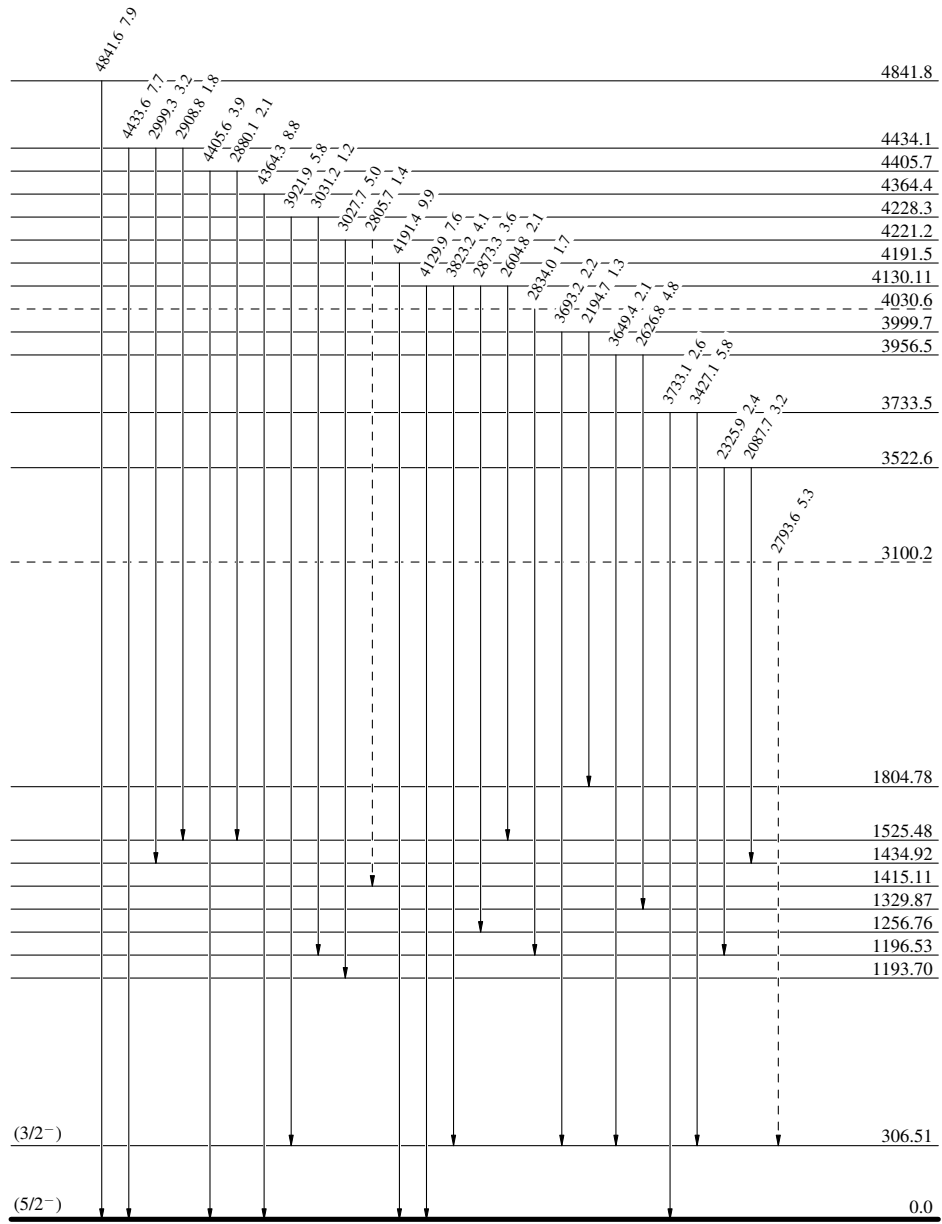
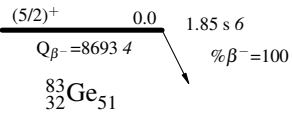
${}^{83}\text{Ge}$ β^- decay 1988Wi17

Decay Scheme

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)



13.4 s 4

 ${}^{83}_{33}\text{As}_{50}$

$^{83}\text{Ge} \beta^-$ decay 1988Wi17

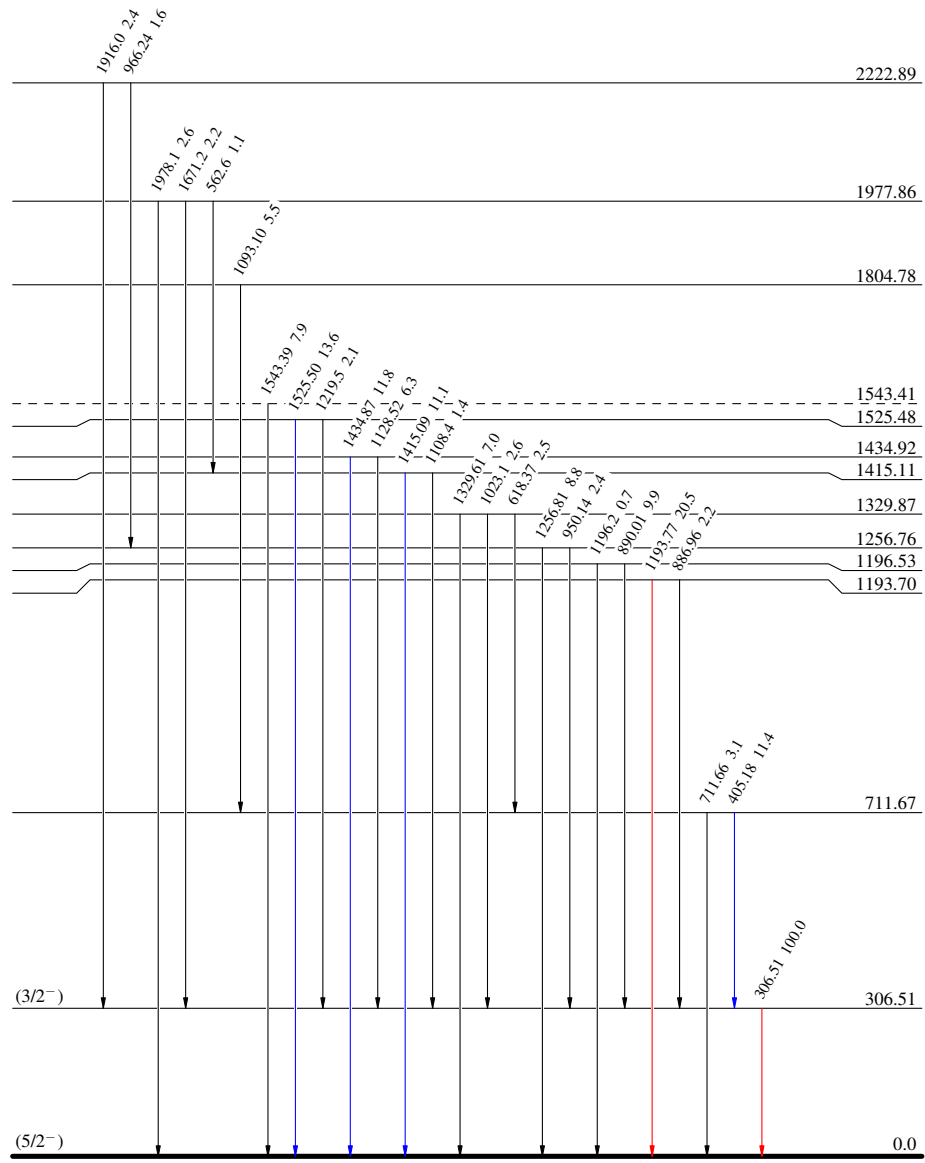
Decay Scheme (continued)

Intensities: Relative I_γ

Legend

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

$(5/2)^+$ 0.0 1.85 s 6
 $Q_{\beta^-} = 8693.4$ % $\beta^- = 100$
 $^{83}_{32}\text{Ge}_{51}$



13.4 s 4

$^{83}_{33}\text{As}_{50}$