

$^{72}\text{Ge}(\text{p},2\text{n}\gamma)$ 1980Te01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 188,1 (2023)	17-Jan-2023

1980Te01: Ep=25 MeV proton beam from the AVF cyclotron of the Vrije Universiteit. Targets were Ge metal (97% enriched in ^{71}Ge). γ rays were detected Ge(Li) detectors. Measured E_γ , I_γ , $\gamma\gamma$ -coin, $\gamma\gamma(t)$. Deduced levels, lifetimes.

1980Ho02: E=28 MeV proton from the AVF cyclotron of the Vrije Universiteit. γ rays were detected with NaI(Tl) detectors. Measured g-factor with atomic beam magnetic resonance method.

1980Te01 do not give a separate level scheme for this reaction. The evaluators have placed the γ rays based on decay scheme proposed by **1980Te01** for ^{71}Se ε decay. In two cases the γ rays were placed based on results from heavy-ion in-beam γ -ray spectroscopy.

 ^{71}As Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.0	$5/2^-$		$g=0.656$ 16 (1980Ho02)
143.49 7	$(1/2)^-$	59 ns 10	$T_{1/2}$: from delayed coincidence with respect to the beam pulse.
147.41 4	$(3/2)^-$	<2 ns	$T_{1/2}$: from delayed coincidence with respect to the beam pulse.
828.62 14	$(3/2)^-$		
870.30 7	$(5/2)^-$		
924.57 7	$(7/2^-)$		
977.87 5	$(3/2^-, 5/2^-)$		
1000.21 20	$9/2^+$		
1129.02 21	$3/2^+, 5/2^+$		
1242.62 4	$(3/2^-, 5/2^-)$		
1394.7 2	$(9/2)^-$		
1615.67 9	$(3/2, 5/2, 7/2^-)$		
1713.9 3	$13/2^+$		

[†] From least-squares fit to E_γ in ^{71}Se ε decay by **1980Te01**.

[‡] From Adopted Levels.

 $\gamma(^{71}\text{As})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
143.4 2	18 2	143.49	$(1/2)^-$	0.0	$5/2^-$	E_γ : uncertainty of 2.2 keV quoted in table 2 of 1980Te01 seems a misprint.
147.3 2	100	147.41	$(3/2)^-$	0.0	$5/2^-$	$\alpha(\text{K})\exp(143\gamma)/\alpha(\text{K})\exp(147\gamma)=6$ (1980Te01).
681.2 2	7 1	828.62	$(3/2)^-$	147.41	$(3/2)^-$	
713.7 [†] 2	6 1	1713.9	$13/2^+$	1000.21	$9/2^+$	
722.9 2	3 1	870.30	$(5/2)^-$	147.41	$(3/2)^-$	
830.2 2	11 1	977.87	$(3/2^-, 5/2^-)$	147.41	$(3/2)^-$	
870.3 2	14 1	870.30	$(5/2)^-$	0.0	$5/2^-$	
924.4 2	29 2	924.57	$(7/2^-)$	0.0	$5/2^-$	
^x 974.0 2	5 1					
981.6 2	14 1	1129.02	$3/2^+, 5/2^+$	147.41	$(3/2)^-$	
1000.0 2	26 2	1000.21	$9/2^+$	0.0	$5/2^-$	
1095.0 2	7 1	1242.62	$(3/2^-, 5/2^-)$	147.41	$(3/2)^-$	
1242.5 2	7 1	1242.62	$(3/2^-, 5/2^-)$	0.0	$5/2^-$	
^x 1246.6 2	2 1					
1394.7 [†] 2	8 1	1394.7	$(9/2)^-$	0.0	$5/2^-$	
1468.0 3	6 1	1615.67	$(3/2, 5/2, 7/2^-)$	147.41	$(3/2)^-$	

Continued on next page (footnotes at end of table)

$^{72}\text{Ge}(\text{p},2\text{n}\gamma)$ 1980Te01 (continued) $\gamma(^{71}\text{As})$ (continued)

[†] Placement by evaluators based on ($^{19}\text{F},\alpha 2\text{p}\gamma$) results.

^x γ ray not placed in level scheme.

 $^{72}\text{Ge}(\text{p},2\text{n}\gamma)$ 1980Te01Level Scheme

Intensities: Relative I_γ

Legend

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

