

$^{56}\text{Fe}(\text{p},\text{p}'\gamma)$ 1969Kr04,1969Se10,1967Hi10

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong		NDS 112, 1513 (2011)	29-Oct-2009

Others: 1967Ma03, 1968Ka02, 1969Mu14, 1967Tr11.

1969Se10: E=7.8-8.3 MeV, DSA.

1967Hi10: E=6,7 MeV, E γ , p γ -coin.

1967Ma03: E=7 MeV, $\gamma\gamma(\theta)$, E γ , I γ , $\gamma\gamma$ -coin.

1967Tr11: E=4.73, 5.40, 5.94 MeV; $\gamma(\theta)$.

1968Ka02: E=7.8 MeV, $\gamma(\theta, \text{H})$.

1969Kr04: E=4.9, 5.5 MeV, $\gamma\gamma(\theta)$, $\gamma(\theta)$.

1969Mu14: E=6.78 MeV, $\gamma(\theta, \text{H})$.

See also 1973El08, 1973Di19, 1972Bb25, 1970Li19, 1969Ni10, 1969He21.

1968Ka02, 1969Mu14 compare g(846 level) from implant with previously known values.

 ^{56}Fe Levels

E(level) [†]	J π [#]	T _{1/2} [@]	E(level) [†]	J π [#]	T _{1/2} [@]	E(level) [†]	J π [#]	T _{1/2} [@]
0	0 ⁺		3119	(1 ⁺)	24 fs +11-10	3605	2 ⁺	0.12 ps +7-5
846	2 ⁺ [‡]		3122	4 ⁺	0.05 ps +5-3	3829	2 ⁺	43 fs 14
2084	4 ⁺ [‡]	0.7 ps +4-2	3368	2 ⁺	18 fs 7	3857	3 ⁺	23 fs 13
2654	2 ⁺ [‡]	28 fs 7	3445	3 ⁺	<28 fs	4046	3 ⁺	
2939	0 ⁺ [‡]	0.15 ps +8-6	3450	1 ⁽⁺⁾ [‡]	<13 fs			
2957	2 ⁺ [‡]	27 fs +9-8	3599	0 ⁺	<59 fs			

[†] From E γ and scheme.

[‡] Value consistent with that determined from $\gamma\gamma(\theta)$ (1969Kr04 and 1967Ma03) and summary of transition strengths extracted from T_{1/2} and I γ (1969Se10).

[#] From Adopted Levels.

[@] From DSA (1969Se10).

 $\gamma(^{56}\text{Fe})$

$\gamma\gamma(\theta)$:		2093 γ - 846 γ		A ₂ :		A ₄ :		1967Ma03	
E γ [†]	I γ [‡]	E _i (level)	J π _i	E _f	J π _f	Mult. [@]	δ ^{&}	Comments	
789 [#]		3445	3 ⁺	2654	2 ⁺			Additional information 1.	
846	100	846	2 ⁺	0	0 ⁺	E2			
1038		3122	4 ⁺	2084	4 ⁺				
1175 [#]	28	3829	2 ⁺	2654	2 ⁺				
1237	100	2084	4 ⁺	846	2 ⁺	E2		B(E2)(W.u.)=22 +7-13 Additional information 2.	
1361		3445	3 ⁺	2084	4 ⁺				
1772		3857	3 ⁺	2084	4 ⁺			B(M1)(W.u.)=0.12 4; B(E2)(W.u.)=2.7 9 Additional information 3. Additional information 4.	
1810	95 3	2654	2 ⁺	846	2 ⁺	M1+E2	-0.19 2		
2092	≈100	2939	0 ⁺	846	2 ⁺				
2111	97 2	2957	2 ⁺	846	2 ⁺	M1+E2	-0.20 4	B(M1)(W.u.)=0.0809 13; B(E2)(W.u.)=1.5 6	
2273		3119	(1 ⁺)	846	2 ⁺				
2522	88 4	3368	2 ⁺	846	2 ⁺				

Continued on next page (footnotes at end of table)

$^{56}\text{Fe}(\text{p},\text{p}'\gamma)$ 1969Kr04,1969Se10,1967Hi10 (continued) $\gamma(^{56}\text{Fe})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
2599		3445	3 ⁺	846	2 ⁺	3010		3857	3 ⁺	846	2 ⁺
2604		3450	1 ⁽⁺⁾	846	2 ⁺	3119		3119	(1 ⁺)	0	0 ⁺
2656	5 3	2654	2 ⁺	0	0 ⁺	3200		4046	3 ⁺	846	2 ⁺
2751 [#]		3599	0 ⁺	846	2 ⁺	3368	12 4	3368	2 ⁺	0	0 ⁺
2757 [#]		3605	2 ⁺	846	2 ⁺	3450		3450	1 ⁽⁺⁾	0	0 ⁺
2939 ^a		2939	0 ⁺	0	0 ⁺	3605		3605	2 ⁺	0	0 ⁺
2957	3 2	2957	2 ⁺	0	0 ⁺	3829 [#]	8	3829	2 ⁺	0	0 ⁺
2982 [#]	64	3829	2 ⁺	846	2 ⁺						

[†] From 1967Ma03, except as noted.

[‡] % photon branching from each level. Values are from 1967Hi10, except as noted.

[#] From 1967Hi10.

[@] From $\gamma(\theta)$ with adopted J^π values.

[&] From $\gamma(\theta)$ (1969Kr04).

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

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Legend

Level Scheme

Intensities: Type not specified

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
 $\longrightarrow$ γ Decay (Uncertain)

