

$^{56}\text{Fe}(^3\text{He},\text{p})$ 1973Ha27,1973Ca07

Type	History	Citation	Literature Cutoff Date
Full Evaluation	Author C. D. Nesaraja and B. Singh	ENSDF	31-Oct-2015

1973Ha27: E=22 MeV, FWHM approximately 32 keV. accelerator. Measured $\sigma(E,\theta)$.

1973Ca07: E=15.08 MeV, FWHM approximately 28 keV. Enriched targets, beam from University of Pennsylvania tandem accelerator. Measured $\sigma(E,\theta)$.

1972Ly01: E=12 MeV, FWHM approximately 40 keV. Enriched targets. Measured $\sigma(E,\theta)$.

 ^{58}Co Levels

E(level) ^{†‡}	L [†]	dσ/dΩ (max) (mb/sr) [#]	Comments
0	2	0.019	E(level), dσ/dΩ (max) (mb/sr): includes the 25 level (1973Ca07), but the contribution from this level is expected to be small (1973Ha27). L: from 1973Ha27.
372 10	2	0.026	
1048 10	0+2	0.261	
1242 10		0.015	
1372 @ 15	0+2		dσ/dΩ (max)=0.031 mb/sr (1973Ha27).
1425 @ 15	0+2		dσ/dΩ (max)=0.029 mb/sr (1973Ha27).
1608 10	2+(4)	0.033	L: L=2+4 in 1972Ly01.
1669 10	4	0.021	L: L=0 (1972Ly01), L=2 (1973Ha27).
1735 10	0+2	0.175	L: L=0 (1972Ly01).
1819 10	0&	0.195	
1872 10	0+2	0.364	
1984 10	2	0.079	
2252 10	0+2	0.115	L: L=0 (1972Ly01).
2343 10	2	0.010	
2534 10	0+2	0.046	
2636 10	0+2	0.041	L: from 1973Ha27. L=(2) (1972Ly01), L=2 (1973Ca07).
2740 10		0.017	
2850 10		0.013	
3100 10	2	0.055	
3292 10	0+2	0.166	L: from 1973Ha27. L=2 (1972Ly01).
3322 @ 15			
3417 10	2+4	0.058	L: from 1972Ly01; L=2 (1973Ha27).
3555 @ 15	2		dσ/dΩ (max)=0.034 mb/sr (1973Ha27). From the relative strength of excitation of 3423 and 3555 in 1973Ha27, this level should have been seen by 1973Ca07.
3613 10	0+2	0.046	L: from 1972Ly01.
3640 10	0+2		
3670 10	0+2	0.298	dσ/dΩ (max) (mb/sr): for 3670+3640.
3797 20			L: 1972Ly01 report L=0+2 for 3765 20.
3923 @ 20			
3970 10		0.018	
4009 10		0.027	
4049 10		0.020	
4107 10	(0+2)	0.046	E(level): doublet.
4175 10		0.028	
4253 10		0.035	
4325 10	4	0.021	
4448 10	2	0.049	L: also 2 for 4419 20 in 1972Ly01 and for 4424 20 in 1973Ha27.
4555 10	(2)	0.039	L: from 1972Ly01.
4708 10		0.030	
4849 10		0.117	
5057 10		0.056	

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$^{56}\text{Fe}(^3\text{He},\text{p})$ **1973Ha27,1973Ca07 (continued)** ^{58}Co Levels (continued)

E(level) ^{†‡}	L [†]	dσ/dΩ (max) (mb/sr) [#]	Comments
5183 <i>10</i>		0.049	
5306 <i>10</i>		0.030	
5392 <i>10</i>	0+2	0.103	L: L=0+2 in 1972Ly01 and 2 in 1973Ha27 .
5454 <i>10</i>		0.062	
5495 <i>20</i>	2		E(level): average of 5497 <i>20</i> (1972Ly01) and 5493 <i>20</i> (1973Ha27). dσ/dΩ (max)=0.06 mb/sr (1972Ly01).
5531 <i>10</i>	(0)	0.080	L: 0 in 1972Ly01 . E(level),dσ/dΩ (max) (mb/sr): probably a doublet (1973Ha27). Two 0 ⁺ levels at about this energy are deduced from (³ He,py) data.
5651 <i>10</i>	0+2	0.162	
5739 <i>10</i>	0	0.965	
5852 ^a <i>20</i>			dσ/dΩ (max)=0.09 mb/sr (1972Ly01).
5888 ^a <i>20</i>			dσ/dΩ (max)=0.08 mb/sr (1972Ly01).
5948 ^a <i>20</i>			dσ/dΩ (max)=0.11 mb/sr (1972Ly01).

[†] From [1973Ca07](#), except where noted otherwise. Relative ΔE=5 keV.

[‡] There seems to be no relation between the strength of excitation of levels and the peaks reported in this reaction.

[#] Values are from [1973Ca07](#), uncertainty=15%.

[@] Observed only by [1973Ha27](#).

[&] From [1973Ha27](#), [1972Ly01](#).

^a Observed by [1972Ly01](#).