

$^{30}\text{Si}(\text{t},\alpha),(\text{d},^3\text{He})$ 1969Jo13,1974Ma34

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 113, 909 (2012)		1-Jan-2012

$J^\pi(^{30}\text{Si})=0^+$.

Others: 1986Ha24, 1968Be13.

1969Jo13: $^{30}\text{Si}(\text{t},\alpha)$, $E=11.8$ MeV; α particles were detected by nuclear emulsions plates (5° 13030° laboratory angle); Measured angular distribution of α particles; deduced level energy, L values and J^π .

1974Ma34: $^{30}\text{Si}(\text{d},^3\text{He})$, $E=52$ MeV; 4 sets of $\Delta E+E$ Si telescope; Measured angular distribution of ^3He ; deduced level energy, L values, spectroscopic factors, J^π .

1986Ha24: $^{30}\text{Si}(\text{t},\alpha)$, $E=17$ MeV, deduced spectroscopic factors for g.s., 1st, and 2nd excited states.

1968Be13: $^{30}\text{Si}(\text{d},^3\text{He})$, $E=23.4$ MeV, deduced spectroscopic factors for g.s. and 1st excited states.

 ^{29}Al Levels

E(level) [†]	J^π @	L#	C ² S&	Comments
0	$5/2^+$	2	3.264	C ² S: Others: 3.50 (1986Ha24), 5.6 (1968Be13), 5.3 (1974Ma34).
1398	$1/2^+$	0	0.310	C ² S: Others: 0.32 (1986Ha24), 0.8 (1968Be13), 0.91 (1974Ma34).
1754		2		J^π : $3/2^+$ in $^{30}\text{Si}(\text{d},^3\text{He})$ —1974Ma34. In the Adopted Levels $J^\pi=7/2^+$. C ² S: Others: 0.27 (1986Ha24), 0.35 (1974Ma34).
2224	$7/2^+$			J^π : Compared to the 2212 keV level of ^{27}Al and ^3He angular distribution (1974Ma34). In the Adopted Levels $J^\pi=3/2^+$. C ² S: Other: (0.40) (1974Ma34).
2866	$(3/2,5/2)^+$	2	0.323	C ² S: Other: 0.87 (1974Ma34).
3062	$(3/2,5/2)^+$	2	1.322	C ² S: Other: 1.4 (1974Ma34).
3185 [‡]		(3)	(0.150)	J^π : $(5/2^-,7/2^-)$ from L=(3). In Adopted Levels $J^\pi=5/2^+$.
3433	$1/2^+$	0	0.111	C ² S: Other: 0.17 (1974Ma34).
3578 [‡]				
3642 [‡]	$(3/2,5/2)^+$	2	0.173	C ² S: Others: 0.33 for doublet (3642+3672) (1974Ma34).
3672	$(3/2,5/2)^+$	2	0.101	
3935 [‡]				
3986 [‡]	$(5/2^-,7/2^-)$	(3)	(0.082)	
4057 [‡]				
4220 [‡]	$(3/2,5/2)^+$	2	0.163	
5210		1		E(level): Only reported in 1974Ma34, the evaluator assumes the level energy as a doublet of 5181 keV and 5248 keV levels. A spectroscopic factor $C^2S=1.54$ is reported from $^{30}\text{Si}(\text{d},^3\text{He})$ in 1974Ma34.

[†] Quoted energies from the Adopted Levels. The levels are reported both in 1969Jo13 and 1974Ma34, except otherwise noted.

[‡] Reported only in 1969Jo13.

From 1969Jo13, except otherwise noted.

@ From 1969Jo13 and 1974Ma34 based on L values, except otherwise noted.

& From 1969Jo13. Normalized so that $\Sigma_i S=6.0$. Relative value.