

$^{30}\text{Si}(t,p)$ 1982Fo02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

1982Fo02: E=15 MeV triton beam was produced from the University of Pennsylvania FN tandem accelerator. Target was $\approx 24 \mu\text{g}/\text{cm}^2$ self-supporting ^{30}Si (95.6% enriched). Reaction products were momentum analyzed with a multiangle magnetic spectrograph (FWHM=19 keV) and detected in nuclear emulsion plates. Measured $\sigma(\theta)$ from 7.5° to 105° . Deduced levels, L-transfers from DWBA analysis.

Other:

1972Pr18: E=2.8 MeV. Spectrum shown at 173° with 15 groups from 1942 to 6385. FWHM=100 keV.

All data are from **1982Fo02**.

 ^{32}Si Levels

E(level)	J^π	L	σ_{max} (mb/sr)	Comments
0		0	3.97	
1943 5		2	0.31	
4239 8		2	0.029	
4996 9		0	0.23	
5229 [‡] 3	(1 ⁺) [‡]		0.023	
5295 5		3	0.88	
5427 14		2	0.075	
5509 5		4,5	0.38	L: 4 or 5 with some preference for L=5.
5786 [†] 6		(0)	0.59	
5893 [‡] 8	(3 ⁺) [‡]		0.073	E(level): possibly a doublet.
5967 4		3	0.25	
6208 [†] 9		1+2	0.25	
6256 8		0	0.29	
6394 6		2	2.20	
6477 6		3	0.50	
6734 9		1	1.4	
6860 5		3	0.29	
7083 5		2	0.23	
7482 9			0.73	
7743 6			0.10	
7793 9		3,4	1.3	
7887 18			0.084	
7978 14		3	0.082	
8066 9		2	0.92	
8321 8		5	0.19	
8361 10		2	1.1	
8422 10				
8567 8		3	0.29	
8650 15		2	0.20	
8758 9		3,4	0.67	
8842 13				
8877 8				
8971 9				
9003 7				
9192 12				
9543 6				
9701 6				
9782 12				
9934 29				
9975 25				
10052 5				
10237 5				

Continued on next page (footnotes at end of table)

 $^{30}\text{Si}(\text{t,p})$ **1982Fo02 (continued)**

 ^{32}Si Levels (continued)

<u>E(level)</u>	<u>E(level)</u>	<u>E(level)</u>	<u>E(level)</u>
10279 6	10603 15	10778 13	10971 9
10317 5	10664 14	10846 13	11398 7
10461 9	10725 9	10888 12	11454 8

† Doublet.

‡ 5229 and 5893 are possibly unnatural states with $J^\pi=1^+$ and 3^+ , respectively.