

$^{42}\text{Ca}(\alpha, \text{d})$ 1976De24

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 190,1 (2023)	20-Jun-2023

Target ^{42}Ca $J^\pi=0^+$.

1976De24: E=34.8 MeV alpha beam produced from the Princeton azimuthally varying field (AVF) cyclotron. Enriched target of ^{42}Ca (94.4%). Deuterons detected in a freon cooled ΔE -E silicon detector telescope followed by a third detector in anticoincidence (FWHM=60 keV). Measured $\sigma(E_d, \theta)$. Deduced levels, L, J, π from DWBA analysis.

1994Fi01: E=55.7 MeV α beam was produced from the Bonn isochronous cyclotron. Target was self-supporting ^{42}Ca . Reaction products were detected with a ΔE -E silicon detector telescope. Measured $\sigma(\theta)$. Deduced levels.

 ^{44}Sc Levels

E(level) [†]	L [‡]	d σ /d Ω ($\mu\text{b/sr}$) [#]	Comments
773 15	2	10	
970 15	6	400	E(level): other 970 30 (1994Fi01).
1052 15	4	240	
1186 15	2	12	
1533 15	4	70	E(level): other 1510 30 (1994Fi01).
1683 15	5	15	
2616 15		100	
2930 30			
3190 30			
4340 30			
6260 30			
6690 30			
6830 30			

[†] From 1976De24 up to 2615 level and from 1994Fi01 above that.

[‡] From DWBA analysis of measured $\sigma(\theta)$ (1976De24).

[#] At 20° (1976De24).