

$^{35}\text{Cl}(^3\text{He},t)$ 1976Be08

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Lijie Sun and Jun Chen		NDS 211,1 (2026)	30-Sep-2025

$J^\pi=3/2^+$ for ^{35}Cl ground state.

1976Be08: $^{35}\text{Cl}(^3\text{He},t)^{35}\text{Ar}$ is studied in an attempt to search for the member of T=3/2 isobaric quartets in ^{35}Ar . A 35-MeV ^3He beam from the Michigan State University cyclotron impinged on a $200\ \mu\text{g}/\text{cm}^2$ $\text{Li}-^{35}\text{Cl}$ target. Tritons were detected using a scintillator-proportional counter detector system at the focal plane of the Enge split-pole spectrograph. A T=3/2, $3/2^+$ level at 5537 keV 25 in ^{35}Ar was observed in $^{33}\text{S}(^3\text{He},n)^{35}\text{Ar}$ (**1975Da14**) but causing an IMME breakdown. **1976Be08** measured the ^{35}K g.s. mass using $^{40}\text{Ca}(^3\text{He},^8\text{Li})^{35}\text{K}$ and predicted the T=3/2 member in ^{35}Ar to be 5579 keV 14. **1976Be08** did not find new peaks in $^{35}\text{Cl}(^3\text{He},t)^{35}\text{Ar}$ between 5484 keV 10 and 5591 keV 10 that were already known from $^{36}\text{Ar}(^3\text{He},\alpha)^{35}\text{Ar}$ (**1973Be26**).

 ^{35}Ar Levels

E(level)[†]

4721
4782
5116
5205
5387
5484
5591
5911
6033

[†] Peaks are seen in triton spectrum in **1976Be08** with no energy values reported. The authors mark those peaks with numbers corresponding to those listed in TABLE I of **1973Be26** (not the same authors) in $^{36}\text{Ar}(^3\text{He},\alpha)^{35}\text{Ar}$. The energy values quoted here are taken by the evaluators from that table.