

## $^{42}\text{Ti}$

Bryant et al. discovered  $^{42}\text{Ti}$  in “( $^3\text{He},n$ ) Reactions on Various Light Nuclei” in 1964 ([1964Br13](#)). 25 MeV  $^3\text{He}$  ions from the Los Alamos variable energy cyclotron bombarded a solid calcium target and the excitation energy spectrum of  $^{42}\text{Ti}$  was extracted by measuring neutron energies with a bubble chamber. “The neutron spectrum from [the  $^{40}\text{Ca}(^3\text{He},n)^{42}\text{Ti}$ ] reaction is particularly interesting because, to our knowledge, the  $\text{Ti}^{42}$  nucleus has not been previously studied. The energy of the neutrons corresponding to the ground state was estimated from the mass defect of  $-25.20$  MeV ( $\text{C}^{12}$  scale) predicted for  $\text{Ti}^{42}$  ... which leads to a  $Q$  for the above reaction of  $-2.79$  MeV.”

Adapted from reference ([2011Me01](#))

[1964Br13](#) H. C. Bryant, J. G. Beery, E. R. Flynn, and W. T. Leland, Nucl. Phys. **53**, 97 (1964).

[2011Me01](#) D. Meierfrankenfeld, A. Bury, and M. Thoennessen, At. Data Nucl. Data Tables **97**, 134 (2011).

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