Abstract Submitted for the HAW05 Meeting of The American Physical Society

Analysis of the Astrophysically Important ²⁸Si(p, t)²⁶Si Reaction¹ J.A. HOWARD, R.L. KOZUB, Tenn. Tech. U., D.W. BARDAYAN, J.C. BLACK-MON, M.S. SMITH, ORNL, K. CHAE, U. Tenn., M.S. JOHNSON, ORAU, K.L. JONES, S.D. PAIN, J.S. THOMAS, Rutgers, R.J. LIVESAY, Col. School Mines, D.W. VISSER, UNC — Study of ²⁶Al in astrophysical environments is important to models of Galactic chemical evolution because the observation of this long-lived radioactive nucleus in the Galaxy indicates that stellar nucleosynthesis has occurred "recently" (in the last million years). However, the source of ²⁶Al production in nature is still an open question, in large part due to uncertainties in the ²⁵Al(p, γ)²⁶Si reaction rate arising from a lack of information on the ²⁶Si level structure above the proton threshold. To rectify this, the ²⁶Si level structure was measured at the Holifield Radioactive Ion Beam Facility through study of the ²⁸Si(p, t)²⁶Si reaction. A 40 MeV proton beam was used to bombard a natural Si target, and the energy and angular distibutions of tritons were measured to reveal important ²⁶Si level information. Details of the data analysis will be presented.

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