

Abstract Submitted
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^{25}Al levels observed in the $^{28}\text{Si}(\text{p},\alpha)^{25}\text{Al}$ reaction S.T. PITTMAN, Univ. of Tenn., D.W. BARDAYAN, ORNL, J.C. BLACKMON, LSU, R.L. KOZUB, Tenn. Tech. Univ., M.S. SMITH, ORNL — The level structure of ^{25}Al has been studied at the ORNL Holifield Radioactive Ion Beam Facility (HRIBF) by measuring the angular and energy distributions of alpha particles from the $^{28}\text{Si}(\text{p},\alpha)^{25}\text{Al}$ reaction. Proton beams (~ 10 nA) at laboratory energies of 40- and 42-MeV, respectively, were generated by the 25 MV tandem accelerator and bombarded a natural silicon target ($50 \mu\text{g}/\text{cm}^2$). Alpha particles were detected and identified in the Silicon Detector Array (SIDAR) in the “telescope” configuration [1]. Angular distributions were extracted for strongly populated states, and distorted-wave Born approximation (DWBA) calculations were performed using the code DWUCK4 to determine spin and parity. Results of this experiment, including angular distributions of alpha particles and spin and parity assignments for ^{25}Al excited states, will be discussed. [1] D.W. Bardayan *et al.*, Phys. Rev. C **65**, 032801(R) (2002). *This work was supported by research grants from the Department of Energy.

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