

Abstract Submitted  
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**Optical potential analysis for  $^{26}\text{Al}$  elastic scattering of protons and deuterons** A. BEY, K.L. JONES, K.T. SCHMITT, S.T. PITTMAN, S.H. AHN, A. AYRES, UTK, R.L. KOZUB, S. GRAVES, S. STRAUSS, TN Tech. U., D.W. BARDAYAN, K.Y. CHAE, M.S. SMITH, C.D. NESARAJA, ORNL, W.A. PETERS, ORAU, P.D. O'MALLEY, A. ADEKOLA, I. SPASSOVA, M.E. HOWARD, Rutgers U, D. WALTER, Col. Sch. Mines — Destruction of  $^{26}\text{Al}$  in many explosive stellar environments is thought to proceed through the  $(p,\gamma)$  reaction. The effect of this reaction on the observed abundances of  $^{26}\text{Al}$  in the galaxy and its extinction in meteorites remains an open question. In this context, an experimental campaign has been carried at the HRIBF facility (ORNL) with a particular focus on studying the astrophysically involved single-particle levels of  $^{27}\text{Si}$ . Since the reliability of the spectroscopic information deduced from direct reactions lies on the validity of nuclear-reaction theories, it is essential to determine the best nucleon optical model potential parameters for the relevant targets. To this end, we have measured the elastic scattering of  $^{26}\text{Al}+p$  and  $^{26}\text{Al}+d$  in inverse kinematics at an incident energy of 117 MeV. Details about the experimental approach will be presented along with the preliminary results.

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