

Abstract Submitted  
for the DNP06 Meeting of  
The American Physical Society

**Elastic scattering on p-nuclei for the improvement of the optical model potential.** A. PALUMBO, W. TAN, J. GOERRES, M. WIESCHER, Nuclear Structure Laboratory, University of Notre Dame, D. GALAVIZ, National Superconducting Cyclotron Laboratory, Michigan State University, G. GYURKY, ZS. FULOP, E. SOMORJAI, Institute of Nuclear Research (Atomki), N. OZKAN, R.T. GURAY, Kocaeli University, UNIVERSITY OF NOTRE DAME TEAM, MICHIGAN STATE UNIVERSITY TEAM, ATOMKI TEAM, KOCAELI UNIVERSITY TEAM — P-nuclei are thought to form through photodisintegration reactions on seed r- or s- nuclei of mainly the  $(\gamma, n)$ ,  $(\gamma, \alpha)$  and  $(\gamma, p)$  types. This requires high temperatures of  $T_9 = 2-3$ . A possible production site may include Type II supernovae. Abundance calculations for the p-nuclei involve an extended network of about 20,000 nuclear reactions of almost 2000 nuclei. These rates are calculated with the statistical Hauser Feshbach Model (HF-Model). Elastic scattering experimental data provides a test for the global parameterizations that are used in these statistical model calculations. Recent experiments suggest inconsistencies between the predicted and measured  $(\gamma, \alpha)$  rates which may be due to problems with the  $\alpha$ -potential parameters. To explore these parameters the alpha scattering cross sections on  $^{120,124,126,130}\text{Te}$  have been measured at energies both close below and above the Coulomb barrier at the FN tandem accelerator of the University of Notre Dame. First results are presented and discussed.

Annalia Palumbo  
University of Notre Dame

Date submitted: 29 Jun 2006

Electronic form version 1.4