

Abstract Submitted  
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**Rp-process and r-process Studies with Radioactive Beams at ATLAS** HYE YOUNG LEE, M. NOTANI, K.E. REHM, J.P. GREENE, D. HENDERSON, R.V.F. JANSSENS, C.-L. JIANG, R.C. PARDO, J.P. SCHIFFER, Argonne National Laboratory, N.J. GOODMAN, J.C. LIGHTHALL, S.T. MARLEY, A. WUOSMAA, Western Michigan University, L.J. JISONNA, R.E. SEGEL, Northwestern University, N. PATEL, Colorado School of Mines, M. PAUL, Hebrew University, X.D. TANG, University of Notre Dame — For astrophysical interests, measurements with various radioactive beams using the in-flight method have been performed at ATLAS. In order to compensate the low cross sections, detection techniques with high efficiencies have been developed using silicon strip detectors in coincidence with the Enge split-pole spectrograph. Among the on-going projects, the  $^{27}\text{Si}(d,t)^{26}\text{Si}$  reaction has been measured in inverse kinematics using a radioactive  $^{27}\text{Si}$  beam to study spins and parities of levels above the proton threshold which are important for the rp-process path. To investigate the possible impact of neutron capture reactions with light nuclei in r-process, results from (d,p) measurements as surrogates for (n, $\gamma$ ) studies will be also discussed. *This work was supported in part by the U.S. Department of Energy, Office of Nuclear Physics, under Contract No. DE-AC02-06CH11357 and by the NSF Grant No. PHY-02-16783 (Joint Institute for Nuclear Astrophysics).*

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