Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

MANTIS, in Gas-Filled Mode – AMS for nuclear astrophysics at Notre Dame, first results PHILIPPE COLLON, CHRIS SCHMITT, DANIEL ROBERSTON, University of Notre Dame, DALE HENDERSON, BRENT SCHUMARD, Argonne National Laboratory, LARRY LAMM, EDWARD STECH, STEVEN KURTZ, University of Notre Dame — Over the past 2.5 years the Browne-Buechner spectrograph at the Nuclear Science Laboratory (NSL) at the University of Notre Dame has been renovated and its system upgraded to enable operations in the gas-filled mode. In addition to this, a new position sensitive PPAC detector and Ionization counter were developed as the focal plane detector of this system. The upgrade enables operation of the magnet both in the standard as well as in the gas-filled mode for the measurement of specific nuclear reactions of interest in stellar nucleosynthesis. The presentation will focus on the upgrade work that has involved both graduate and undergraduate students as well as the first tests of the system using the separation of the ^{58}Fe-^{58}Ni isobars as a benchmark measurement. First results on ^{40}Ca(α, γ)^{44}Ti as well as the detection of ^{36}Cl using AMS in conjunction with the gas-filled technique at Notre Dame will also be presented.

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Date submitted: 02 Jul 2007 Electronic form version 1.4