Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

Improved Mass Measurements of Nuclei Around N = Z = 34 and The First High Precision Mass Measurement of ^{70m}Br[1] J. SAVORY, C. BACHELET, M. BLOCK, G. BOLLEN, M. FACINA, C.M. FOLDEN III, G. GUENAUT, E. KWAN, A.A. KWIATKOWSKI, D.J. MORRISSEY, G.K. PANG, A. PRINKE, R. RINGLE, H. SCHATZ, S. SCHWARZ, P. SCHURY, C.S. SUMITHRARACHCHI, National Superconducting Cyclotron Laboratory, Michigan State University, Michigan — Mass measurements of N = Z nuclei are important for the study of symmetries in nuclear structure, modeling of element synthesis in the rp-process and fundamental interactions tests. Heavy N = Z are located close to or even beyond the proton drip line. The Low Energy Beam and Ion Trap (LEBIT) facility succeeded in making the first high precision mass measurement of ^{70m}Br, an N = Z proton drip line nuclei. In addition to ^{70m}Br, the masses of ^{71}Br, ^{70}Se and ^{68}Se were measured by Penning trap mass spectrometry of thermalized rare isotopes produced by fast-beam fragmentation. The results indicate that ^{68}Se poses a greater waiting point in the rp-process, than previously thought.

[1]This work was done with the support of Michigan State University, the National Science Foundation Grant PHY-0110253 and the US Department of Energy Contract DE-FG02-00ER41144.

J. Savory
National Superconducting Cyclotron Laboratory,
Michigan State University, Michigan

Date submitted: 14 Aug 2007 Electronic form version 1.4