

Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

First experimental evidence of the rp-process nucleus ^{96}Cd ¹ A. BECERRIL REYES, V. ANDREEV, B. AREND, D. BAZIN, M. DOLEANS, R. FONTUS, P. GLENNON, P. MANTICA, J. OTTARSON, D. SANDERSON, H. SCHATZ, J. STOKER, O. TARASOV, J. VINCENT, J. WAGNER, X. WU, A. ZELLER, National Superconducting Cyclotron Laboratory, Michigan State University — The rapid proton capture process has been proposed as the mechanism that powers the observed type I X-ray bursts in the universe. The time scale for the rp-process is governed by the beta-decay half-lives of several even-even $N = Z$ waiting point nuclei, in particular, ^{96}Cd is the only one with an unknown beta decay half-life between ^{56}Ni and ^{100}Sn . The recently built Radio Frequency Fragment Separator (RFFS) at the NSCL filters out unwanted particles in rare proton rich beams according to their velocities, thus improving the beam purity by several orders of magnitude. The RFFS was successfully commissioned in May 2007 and used to identify ^{96}Cd nuclei for the first time. Preliminary results on the production rate of ^{96}Cd will be presented.

¹This work is supported in part by NSF grants PHY06-06007 and PHY05-20930.

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Date submitted: 11 Jul 2007

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