Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Beta Decay Half-Life of 84Mo[1] J.B. STOKER, P.F. MANTICA, D. BAZIN, A. BICKLEY, A. BECERRIL, H. CRAWFORD, K. CRUSE, A. ESTRADE, M. MOSBY, C.J. GUESS, G.W. HITT, G. LORUSSO, M. MATOS, R. MEHARCHAND, K. MINAMISONO, F. MONTES, J. PEREIRA, G. PERDIKAKIS, J.S. PINTER, H. SCHATZ, J. VREDEVOOGD, R.G.T. ZEGERS, NSCL/MSU — The β-decay half-life ^{84}Mo governs leakage out of the Zr-Nb cycle, a high temperature rp-process endpoint in x-ray binaries [1]. Treatment of the background and the poor statistics accumulated during the previous half-life measurement leave questions about statistical and systematic errors. We have remeasured the half-life of ^{84}Mo using a concerted setup of the NSCL β-Counting System [3] and 16 detectors from the Segmented Germanium Array [4]. We will report the half-life for ^{84}Mo, deduced using 40 times the previous sample size. The application of the NSCL RF Fragment Separator to remove unwanted isotopes, and hence reduce background for the half-life measurement, will also be discussed. [1] H. Schatz et al., Phys. Rep. 294, 167 **1998** [2] P. Kienle et al., Prog. Part. Nuc. Phys. 46, 73 **2001** [3] J. Prisciandaro et al., NIM A 505, 140 **2003** [4] W. Mueller et al., NIM A 466, 492 **2001** [5] D. Gorelov et al. PAC **2005**, Knoxville, TN, May 16-20

[1]This work supported by NSF grants PHY-06-06007 and PHY-05-20930 and JINA grant PHY-02-16783.

Joshua Stoker

Date submitted: 25 Jun 2008 Electronic form version 1.4