Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

**Search for Collective Oblate Structures in $^{186}$W**[1] P. CHOWDHURY, V.S. PRASHER, S.K. TANDEL, E. MERCHAN, Y. QIU, C.J. (KIM) LISTER, UMass Lowell, D. CLINE, A.B. HAYES, C.-Y. WU, U. of Rochester, M.P. CARPENTER, R.V.F. JANSSENS, T.L. KHOO, B.P. KAY, D. SEWERYNIAK, S. ZHU, C.R. HOFFMAN, C.J. CHIARA, L. AFANASIEVA, M. ALBERS, Argonne National Laboratory, A.J. MITCHELL, R. SHEARMAN, UMass Lowell — Neutron-rich, A≈180 nuclei exhibit distinctive characteristics that enable a rare transition from prolate to oblate collective rotation at high spins. Recent investigation of prompt rotational structures in $^{180}$Hf provided evidence for a rotational structure that can be associated with collective oblate rotation. Oblate shapes are predicted to become yrast at $I \approx 14\hbar$ in $^{186}$W as compared to $I \geq 20\hbar$ in $^{180}$Hf. Prompt rotational states in $^{186}$W were populated using 725 MeV and 800 MeV $^{136}$Xe beam energies from the ATLAS accelerator incident on a thin enriched $^{186}$W target. Coincident detection of binary reaction fragments and $\gamma$-rays was achieved using the recently upgraded Rochester $4\pi$ heavy-ion detector array, CHICO2 in conjugation with Gammasphere. Analysis of the data is in progress and will be presented.

[1]This work is supported by the U.S. Department of Energy.

Vikram Singh Prasher
University of Massachusetts Lowell

Date submitted: 27 Jun 2013 Electronic form version 1.4