Abstract Submitted
for the APR06 Meeting of
The American Physical Society

**Search for the Wobbling Mode in $^{171}$Ta**[1] D.J. HARTLEY, W.H. MOHR, J.R. VANHOY, US Naval Academy, M.A. RILEY, A. AGUILAR, C. TEAL, Florida State, R.V.F. JANSSENS, M.P. CARPENTER, F.G. KONDEV, A.A. HECHT, T. LAURITSEN, E.F. MOORE, S. ZHU, Argonne National Lab, M.K. DJONGOLOV, M. DANCHEV, L.L. RIEDINGER, Tennessee, G.B. HAGEMANN, G. SLETTEN, NBI, P. CHOWDHURY, S.K. TANDEL, Massachusetts-Lowell, W.C. MA, Mississippi State, S.W. ODEGARD, Oslo — Perhaps the strongest evidence for a nucleus possessing *stable* triaxial deformation is the observation of a wobbling excitation. Such exotic sequences have been confirmed in $\pi i_{13/2}$ bands of $N \approx 94$ Lu nuclei [1], and the region may extend to $N \approx 100$ in Hf nuclei. However, it has not been possible to confirm the presence of wobbling structures in the heavier isotopes [2]. In order to determine whether stable triaxiality plays a role in $N \approx 100$ nuclei, an experiment was conducted to search for the wobbling mode in $^{171}$Ta. High-spin states in $^{171}$Ta were produced in the $^{124}$Sn($^{51}$V,4$n$) reaction and the $\gamma$ rays were detected with Gammasphere. Although the $i_{13/2}$ band was extended to (101/2), no wobbling structure was identified. The implications of this result on the region of triaxiality will be discussed. [1] S.W. Odegard *et al.*, Phys. Rev. Lett. **86**, 5866 (2001). [2] D.J. Hartley *et al.*, Phys. Lett. B **608**, 31 (2005).

[1]Sponsered by NSF and DOE under grant nos. PHY-0300673, PHY-0139950, DE-FG02-96ER40983, W-31-109-ENG-38.

Daryl Hartley
US Naval Academy

Date submitted: 13 Jan 2006 Electronic form version 1.4