Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Triaxial Deformation in ^{171}Re?[1] D.J. HARTLEY, E.E. PEDICINI, J. CAVEY, J.R. VANHOY, US Naval Academy, R.V.F. JANSSENS, M.P. CARPENTER, F.G. KONDEV, T. LAURITSEN, S. ZHU, Argonne National Laboratory, M.A. RILEY, X. WANG, S. MILLER, Florida State Univ., L.L. RIEDINGER, Univ. of Tennessee, A.D. AYANGEAKAA, U. GARG, J. MATTA, Univ. of Notre Dame, C.J. CHIARA, Univ. of Maryland, P. CHOWDHURY, S. HOTA, E.G. JACKSON, Univ. of Massachusetts-Lowell, W.C. MA, Mississippi State Univ., E.S. PAUL, Univ. of Liverpool, J. SIMPSON, Daresbury Laboratory, J.J. CARROLL, M. LITZ, Army Research Laboratory — Nuclei that display the wobbling mode (associated with the rotation of a triaxially-deformed nucleus) are centered around $N = 94$. Currently, wobbling has only been observed in $Z = 71$ (Lu) and $Z = 73$ (Ta) isotopes, but the role of the proton Fermi surface is not well defined. In order to investigate this, high-spin states were populated in the $N = 96$ nucleus ^{171}Re through the ^{120}Sn(^{55}Mn,$4n$) reaction. The $\pi i_{13/2}$ sequence (on which all known wobbling bands have been based) was extended to much higher spin, but no evidence for wobbling was found. A possible explanation for the lack of wobbling will be discussed. In addition, evidence will be shown for a Landau-Zener crossing between two of the negative-parity sequences.

[1]Work funded in part by the NSF (PHY-1203100) and the DOE (DE-AC02-06CH11357).

D.J. Hartley
US Naval Academy

Date submitted: 01 Jul 2013 Electronic form version 1.4