Abstract Submitted for the DNP12 Meeting of The American Physical Society

High-spin Spectroscopy in ¹⁶³Hf¹ R.B. YADAV, W.C. MA, Q.A. IJAZ, J. MARSH, Mississippi State University, G.B. HAGEMANN, NBI, Denmark, M. CARPENTER, C. HOFFMAN, R.V.F. JANSSENS, F.G. KONDEV, T. LAURIT-SEN, S.F. ZHU, G. GÜRDAL, M. ALCORTA, ANL, L.L. RIEDINGER, Univ. of Tennessee (Knoxville), D. HARTLEY, US Naval Academy, S. MUKHOPADHYAY, Bhabha Atomic Research Centre, India — High-spin states of the odd-A nucleus ¹⁶³Hf were populated through the ⁷⁴Ge(⁹⁴Zr,5n) reaction. Decay γ rays were measured with the Gammasphere spectrometer array at ANL. Only two bands were known previously, the lowest one-quasiparticle band based on the neutron $i_{13/2}$ orbital and an excited negative-parity band (ABF) [1]. One band was extended to higher spin and more than eleven new bands observed, most of which were linked to each other. Spins and parities of levels were determined based on the measured multipolarities of γ rays. The results will be discussed within the framework of cranked shell model calculations.

[1] K. P. Blume *et al.*, Nucl. Phys. A 464, 445 (1987).

¹Work supported by U.S. DOE grants DE-FG02-95ER40939 (MSU) and DE-AC02-06CH11357 (ANL).

Ram Yadav Mississippi State University

Date submitted: 21 Jun 2012

Electronic form version 1.4