Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Possible particle-hole intruder sequence in ^{83}Se$_{49}$.[1] WILLIAM WALTERS, ANNE MARIE FORNEY, University of Maryland, College Park — A new sequence of higher-spin levels at 1266 ($7/2^+$), 2407 ($11/2^+$), 3689 ($15/2^+$), and 4673 ($19/2^+$) has been identified in the single-neutron-hole ^{83}Se$_{49}$ nucleus. This sequence feeds into the $5/2^+$ level at 583 keV that is strongly populated in (d,p) reaction studies and considered as a 1-particle-2-hole state connected to the known $d_{5/2}$ ground state of ^{85}Se$_{51}$. The data were taken using Gammasphere at the ATLAS accelerator complex at Argonne National Laboratory following the interaction of a 630-MeV ^{82}Se beam with ^{208}Pb and ^{238}U targets. These and previously identified levels in ^{83}Se will be compared to shell-model calculations. [1] Richard A. Meyer, O. G. Lein III, and E. A. Henry, Phys. Rev. C **25**, 682 (1982). [2] Luis A Montestruque et al., Nucl. Phys. **A305**, 29 (1978). [3] Marie-Genevieve Porquet et al., Eur. Phys. J. A **39**, 295 (2009).

[1]This work is supported by the U.S. Department of Energy, Office of Nuclear Physics under Contract DE-AC02-06CH11357 and under Grant DE-FG02-94ER40834. This research used resources of ANLs ATLAS facility, which is a DOE Office of Science User Facility.

William Walters
University of Maryland, College Park

Date submitted: 28 Jun 2019 Electronic form version 1.4