

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**Results from the LISA Commissioning Experiment on the decay of  $^{24}\text{O}^* \rightarrow ^{23}\text{O} + \text{n}^1$**  WARREN F. ROGERS, Westmont College, MONA COLLABORATION — The Large multi-Institutional Scintillator Array (LISA) at NSCL, Michigan State University was constructed and tested by undergraduate students from several institutions in the MoNA (Modular Neutron Array) collaboration. LISA is used in conjunction with MoNA for detection of neutrons at large angles to the beam axis, corresponding to high energy decays from exotic nuclei at or beyond the neutron dripline. The LISA commissioning experiment was designed to measure and resolve neutron decays from the first two excited states ( $2^+$  and  $1^+$ ) of  $^{24}\text{O}$  to the  $^{23}\text{O}$  ground state, using proton-knockout of  $^{26}\text{F}$  on a thin Be target. The trajectories of charged fragments at the site of the decay were identified using the Sweeper Magnet chamber detectors and inverse-tracking through the magnet. The two scintillator arrays measured the time of flight path of neutrons. Decay energies were determined using these decay kinematics and invariant mass spectroscopy. The two  $^{24}\text{O}$  states were previously observed, but with insufficient resolution to separate the two cleanly. This experiment provided sufficient resolution to separate the two states cleanly. Results for the decay energies and comparison with Monte Carlo simulations will be presented.

<sup>1</sup>Work Supported by the National Science Foundation

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Date submitted: 11 Jul 2014

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