

Abstract Submitted  
for the SES15 Meeting of  
The American Physical Society

**New energy levels for  $^{157}\text{Sm}$**  C.J. ZACHARY, E.H. WANG, J.H. HAMILTON, A.V. RAMAYYA, Y.X. LUO, Vanderbilt University, J.O. RASMUSSEN, LBNL, S.J. ZHU, Tsinghua University — This work is based on analysis of  $\gamma$ - $\gamma$ - $\gamma$  and  $\gamma$ - $\gamma$ - $\gamma$ - $\gamma$  coincidence data from the observation of prompt  $\gamma$ -rays emitted in the  $^{252}\text{Cf}$  spontaneous fission with Gammasphere at Lawrence-Berkeley National Lab. An extended new level structure of  $^{157}\text{Sm}$  is proposed in part based upon systematics of adjacent  $^{155}\text{Sm}$  and  $^{159}\text{Sm}$ . A comparison of the three isotopes will be presented. The proposed new  $^{157}\text{Sm}$  structure incorporates 21 new transitions and 12 new levels and shifts 5 of the previously determined transitions to higher spin values.

Joseph Hamilton  
Vanderbilt University

Date submitted: 07 Oct 2015

Electronic form version 1.4