New Levels of $^{157}$Pm$^1$ J. RANGER, Furman University, Vanderbilt University, E.H. WANG, J.H. HAMILTON, A.V. RAMAYYA, J.K. HWANG, Vanderbilt University, A. NAVIN, M. REJMUND, A. LEMASSON, S. BHATTACHARYYA, GANIL, Y.X. LUO, J.O. RASMUSSEN, LBNL, S.J. ZHU, Tsinghua University, G.M. TER-AKOPIAN, YU. OGANESSIAN, JINR — Gamma rays in coincidence with isotopically-identified fission fragments using VAMOS++ and EXOGAM, produced using $^{238}$U on a $^9$Be target, at an energy near the Coulomb barrier have been observed [1,2]. In the present work, we have combined data from the in-beam mass- and Z-gated spectra with the $\gamma$-$\gamma$-$\gamma$-$\gamma$ data from $^{252}$Cf (SF) to assign transitions and levels in $^{157}$Pm. In contrast to [3], the transitions previously assigned to $^{156}$Pm are all seen in the M-Z gated spectra of $^{157}$Pm and are not seen in the M-Z gated spectra of $^{156}$Pm. The new expanded levels of $^{157}$Pm are remarkably similar to those of the levels in $^{155}$Pm, which have been assigned as a well-deformed rotational band built on $\pi 5/2 \ [532]$, as in $^{155}$Pm.

$^1$Vanderbilt University Physics and Astronomy REU Program

James Ranger
Furman University

Date submitted: 17 Sep 2014

Electronic form version 1.4