

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**Uniformity and Crosstalk in Multi-Anode Photomultiplier Tubes**<sup>1</sup> OSCAR DEEVER, William and Mary College — Multi-anode photomultiplier tubes can process signals from 64 different sources, by splitting the anode into 64 different segments, and analyzing the signal from each of those segments separately. With a precise understanding of how they function, they can therefore be used as a substitute for 64 separate single photomultiplier tubes (PMTs). This could increase the convenience and reduce the cost of many larger experiments, which require large scintillating arrays, and therefore many PMTs in order to obtain better precision. However we need to have both a measure of how much variance in signal gain there is between different anodes, and how much cross-talk there is between adjacent channels. In order to measure the uniformity we compared signal strength from a fiber optic of uniform intensity, when placed at the center of each anode. In order to measure crosstalk we looked at the signal strength in the adjacent anodes when the LED was at the center of an anode. Our uniformity measurements showed that all the anodes were within the factory allowance, and showed that uniformity is consistent across several voltages below 1000V. Our measure of the signal strength of the crosstalk will allow later experiments to take it's effect into account.

<sup>1</sup>This material is based upon work supported by the National Science Foundation under Grant No. PHY-1206053.

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Date submitted: 25 Jul 2014

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