

Abstract Submitted  
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**Investigation of Cherenkov Light in an Oil Drum with Cosmic Radiation**<sup>1</sup> ZACHARY WEDEL, REXAVALMAR NIDUAZA, JUAN CASTRO, FAVIAN ZAVALA, SEWAN FAN, LAURA FATUZZO, Hartnell College — Photomultiplier Tubes (PMTs) have been around for decades and have become well understood in their use as cosmic ray detectors. Multi-Pixel Photon Counters (MPPCs), on the other hand, are still being explored as more viable, cost-effective light detector for counting cosmic rays. To detect cosmic rays by the Cherenkov effect, we placed an acrylic cylinder, with wavelength-shifting fibers coiled around it and filled with distilled water, inside a light-tight box that was able to detect the weak light signals with PMTs (1 and 3 inch), an MPPC (3mm x 3mm), and with coincidence between different detectors. Additionally, we utilized an oil drum with approximate volume of 30 gallons as a light-tight vessel to conduct coincidence counts for detecting cosmic rays using the PMTs and MPPCs (3mm x 3mm and 1mm x 1mm). In this poster presentation, we would present our findings as a comparative analysis between the two different vessels and the efficiency thereof of the same to determine whether or not the MPPC is a viable instrument for detecting cosmic rays that produce Cherenkov light.

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