

Abstract Submitted
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Cosmic Ray Telescope Assembly and Operation JUAN RAMIREZ CHAVEZ, MARIA TRONCOSO, SEWAN FAN, Hartnell Comm Coll, STEFAN RITT, Paul Scherrer Institute — Cosmic rays consist of particles accelerated from remote supernova remnant explosions and travel vast distances throughout the cosmos. Upon arriving at earth, the majority of them ionize gases in the upper atmosphere, while others interact with gas molecules in the troposphere and producing secondary cosmic rays, which are the main focus of this research. To observe the secondary cosmic rays, we assembled a detector telescope equipped with two silicon photomultipliers (SiPMs). Each SiPM is coupled to a bundle of 4 wavelength shifting optical fibers that are embedded inside a plastic scintillator sheet. The SiPM signals were amplified using a fast preamplifier with coincidence between detectors established using a logic AND gate. The coincidence events were recorded with two devices, a digital counter and an Arduino microcontroller. For detail analysis of the SiPM waveforms, a DRS4 digitizer captured the waveforms for offline analysis with the CERN software package Physics Analysis Workstation. Results from our experiments would be presented.

Juan Ramirez Chavez
Hartnell Comm Coll

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