

Abstract Submitted
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Students using large muon detectors to investigate an array of cosmic ray phenomena¹ PAUL SEDITA, Canandaigua Academy, KEVIN MCFARLAND, University of Rochester — During the summers of 2004 to 2008 high school students were given the opportunity to refurbish, characterize and ultimately experiment with large muon detectors at the University of Rochester. The 2.3 m² panels used for the cosmic ray investigations were remnants of the NuTeV experiment conducted at Fermilab in the late 1990's, and provided a means for measuring surface cosmic ray muon rates with high precision over many years of time. The first set of experiments carried out by students used data from two stacked paddles running in coincidence mode to detect significant muon fluctuations due to solar events, model an indirect relationship between muon frequency and atmospheric pressure, and determine if muon rates were dependent of the time of day. Current and archived data can be accessed at <http://muon2.pas.rochester.edu/data/>. In subsequent summers, students and teachers utilized four panel arrays to characterize directionality, angular distribution and frequency of atmospheric muon shower events. For all investigations students presented their findings to their peers and mentors via weekly seminars, e-logs, and poster sessions.

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