

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Measuring the speed of light using QuarkNet Muon detectors as a method to engage pre-high school students in scientific activity WILLIAM GABELLA, MEDFORD WEBSTER, Vanderbilt University — A small group of middle school students measures the speed of muons using four Quarknet Muon counters and explore using hardware, data acquisition, and analysis during the half day session. The students with our guidance learn about cosmic rays and relativistic particles. They observe the narrow distribution of time differences from the Quarknet Muon counters, and begin to think about “short” times. For the measurement, they must understand muon coincidences in pairs of detectors while measuring the differences in the time between two sets separated by a distance of two stories. They must also account for the systematic delay in the signal time as written to the computer, done by interchanging detectors. The students must move and mount hardware, pull cables, run the acquisition computer, and analyze the data in spreadsheets. They are enthusiastic, enjoy themselves, and report well to the next set of students.

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Date submitted: 06 Jan 2012

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