

Abstract Submitted
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East-West Asymmetry of Muon Flux in Nashville, TN SEAN NOMOTO, University of Wisconsin - River Falls, DANIEL SOTO, Nashville State Community College, MEDFORD WEBSTER, Vanderbilt University — In the summer of 2008, results from measuring the muon flux from cosmic radiation by scintillator detectors were showed a favored Easterly flux with an asymmetry of 0.965 ± 0.005 . The East-West Effect model predicts that the Earth shields trajectories from the Eastern direction so the asymmetry should have been greater than one. However, the East-favored asymmetry may have been due to background flux from low energy secondary particles. First, the cosmic radiation attenuation through one, three, four, and then five layers of brick was observed. The total flux was reduced by approximately 10 % between one and three layers of brick. The flux was measured unshielded, with one layer of bricks, and with five layers of bricks. The measurements showed less asymmetry than in 2008, and the unshielded ratios from 2009 statistically disagreed with the unshielded asymmetries from 2008 by $\sim 4\sigma$. A possible explanation may be that a change in the flux of charged ions from solar winds are perturbing the Earth's magnetic field—changing the trajectories of incoming cosmic particles, but it is also possible that the observed effect was a statistical fluctuation. This research was supported in part by the U. S. National Science Foundation — NSF Grant PHYS - 0649123.

Sean Nomoto
University of Wisconsin - River Falls

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