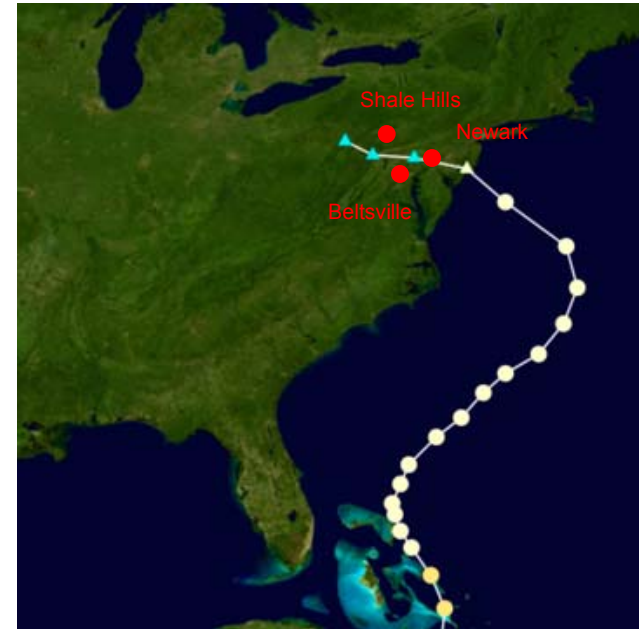
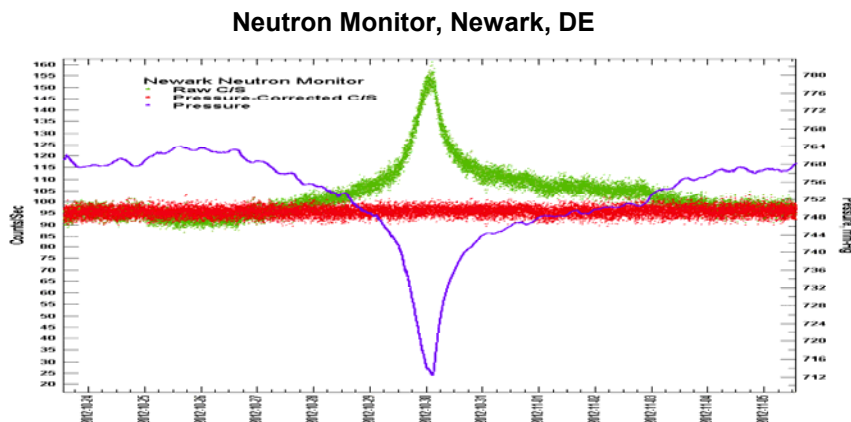
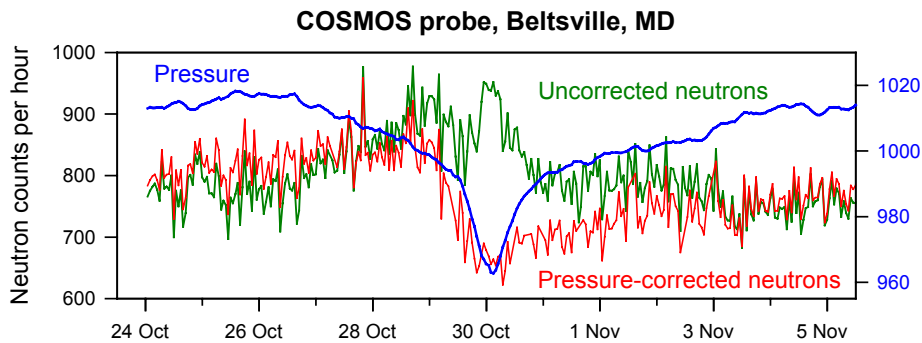
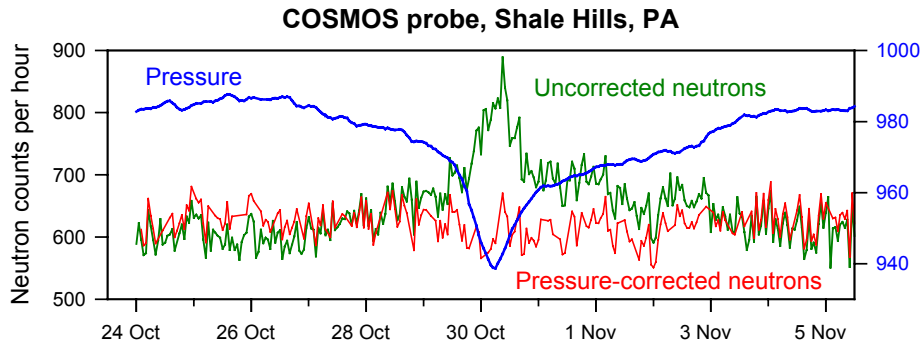


Hurricane Sandy in three cosmic-ray neutron records

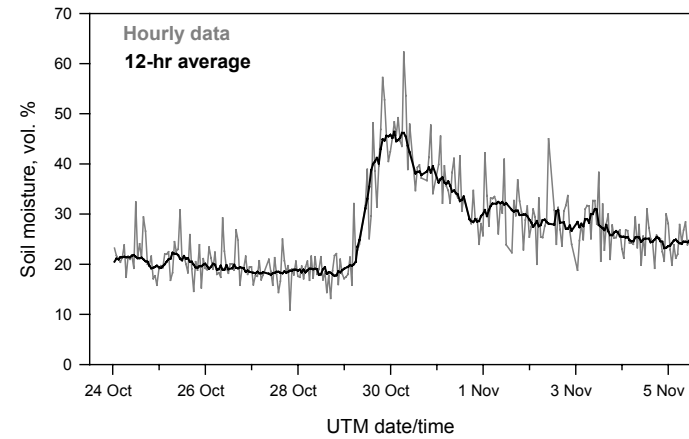
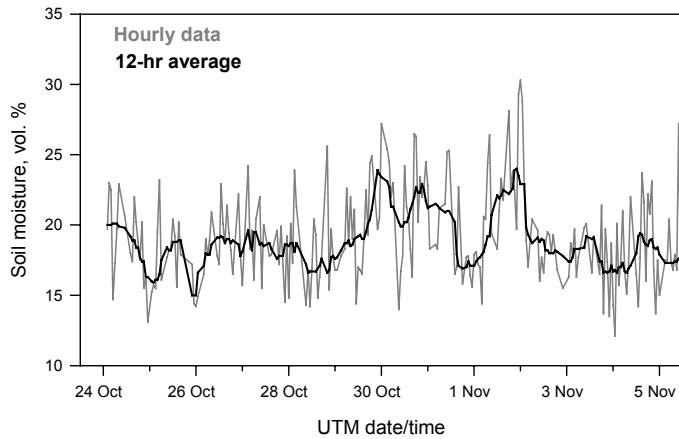
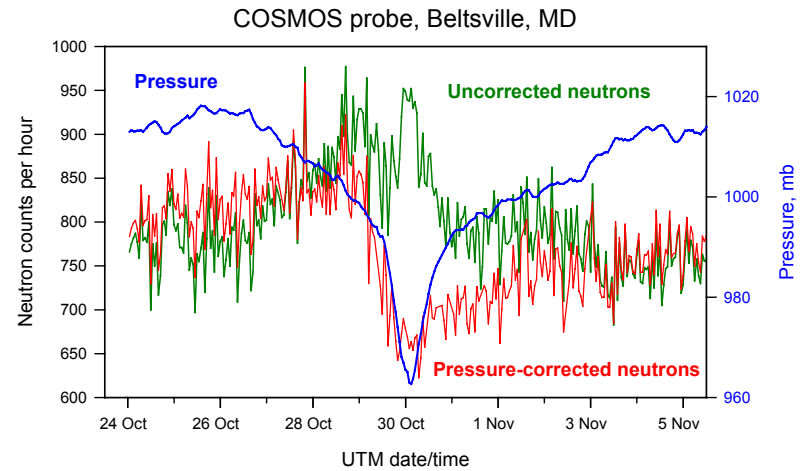
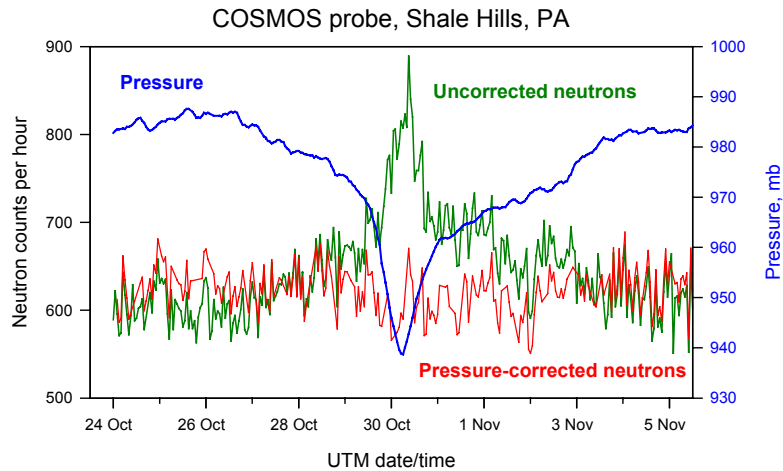


As the hurricane Sandy (above) passed through the Northeastern USA, it went over three instruments that measure cosmic-ray neutron intensity, a neutron monitor that is sensitive to pressure, and two COSMOS probes that are sensitive to pressure and surface moisture.

The two COSMOS probes have different responses because one, Beltsville, experienced large rainfall, whereas the other did not. More on that on next page. COSMOS data are available here: cosmos.hwr.arizona.edu. The COSMOS project is funded by the Atmospheric and Geospace Sciences Division of the National Science Foundation.

The Newark neutron monitor data show a response to pressure drop. Data and plot are courtesy of Roger Pyle of the Bartol Research Institute, University of Delaware. Neutron monitor data are available here: <http://neutronm.bartol.udel.edu>.

Two different COSMOS records of the hurricane Sandy



At Shale Hills, PA, the hurricane did not produce much rain. Pressure dropped, neutron count rate went up, and pressure-corrected neutron count rate remained nearly constant. Thus, the neutron-derived soil moisture (bottom panel) shows little change.

At Beltsville, MD, the hurricane produced much rain. Pressure dropped, neutron count rate went up, but pressure-corrected neutron count rate dropped in response to added water. This drop corresponds to the large increase in soil moisture (bottom panel).