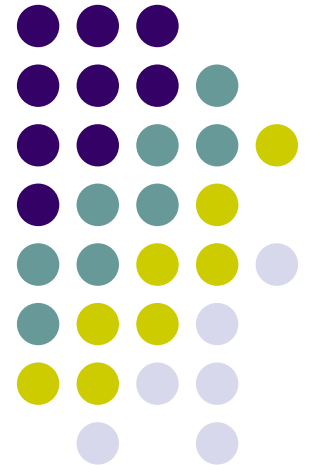


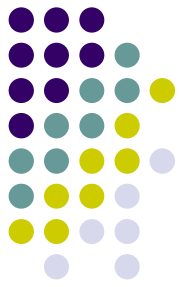
Muon Rate – Pressure Anticorrelation

Pittsford Mendon High Muon
Research 2004 - 2005

Physics Honors 4th Period Class



U of R Detector

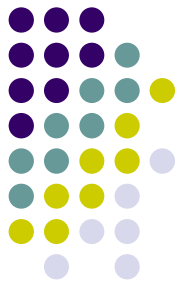


- 2 scintillating plates
- 370Hz detection rate
- 5 minute intervals
- Extremely precise compared to other smaller detectors

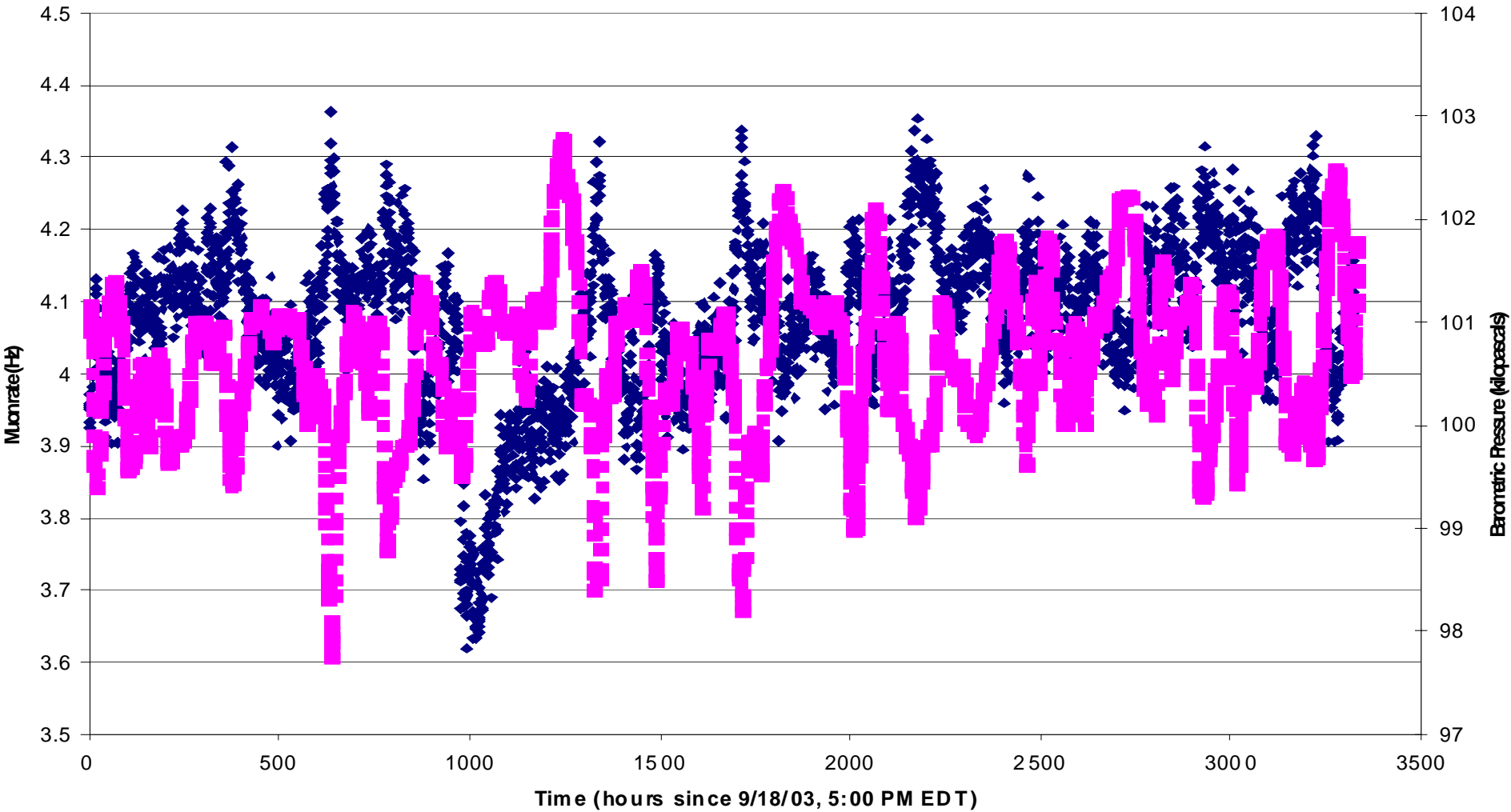
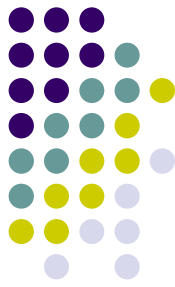


Muon Rate and Pressure

U of R Muon Detector Data | October 2004

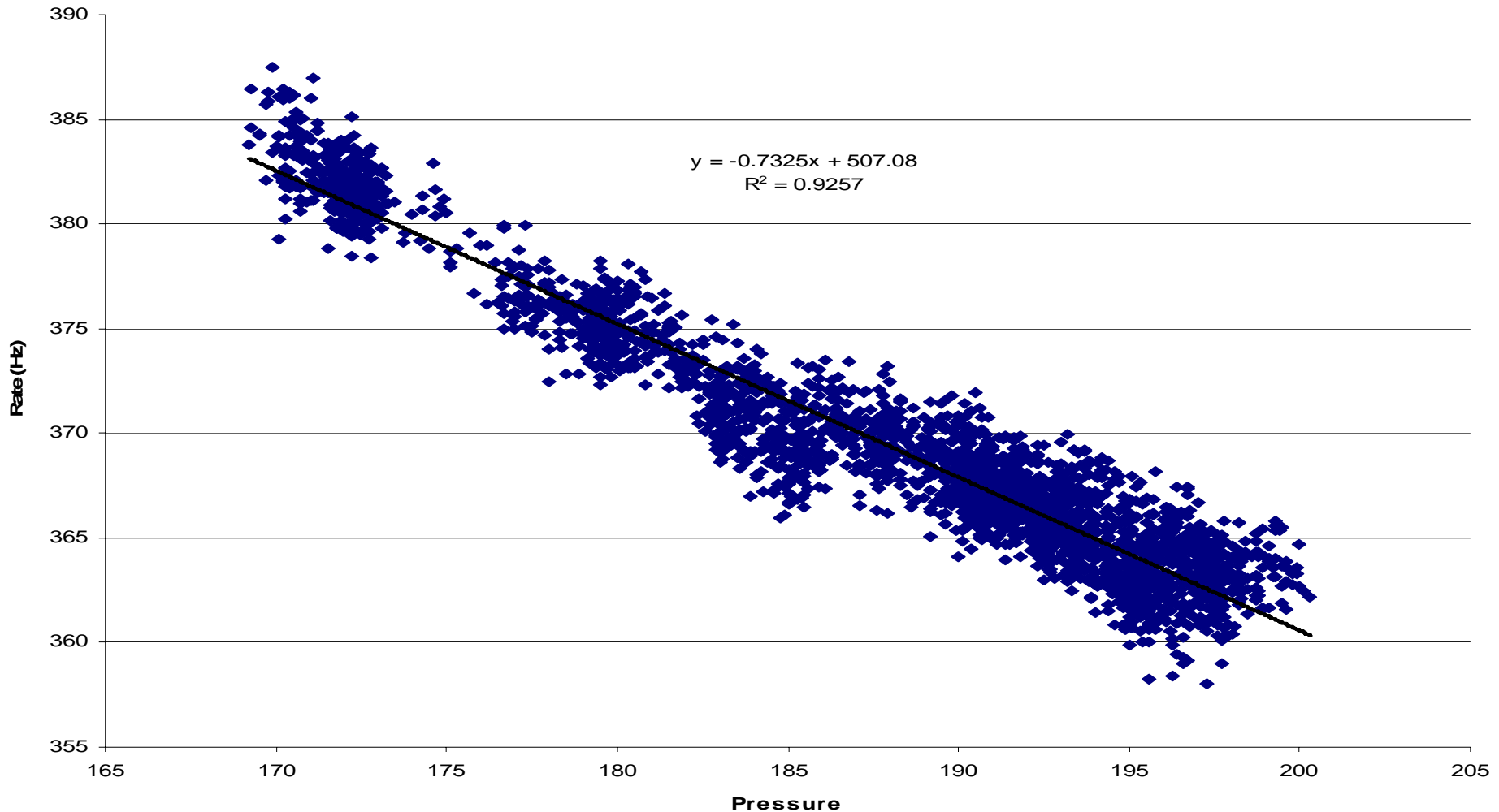


Mendon Research 03-04

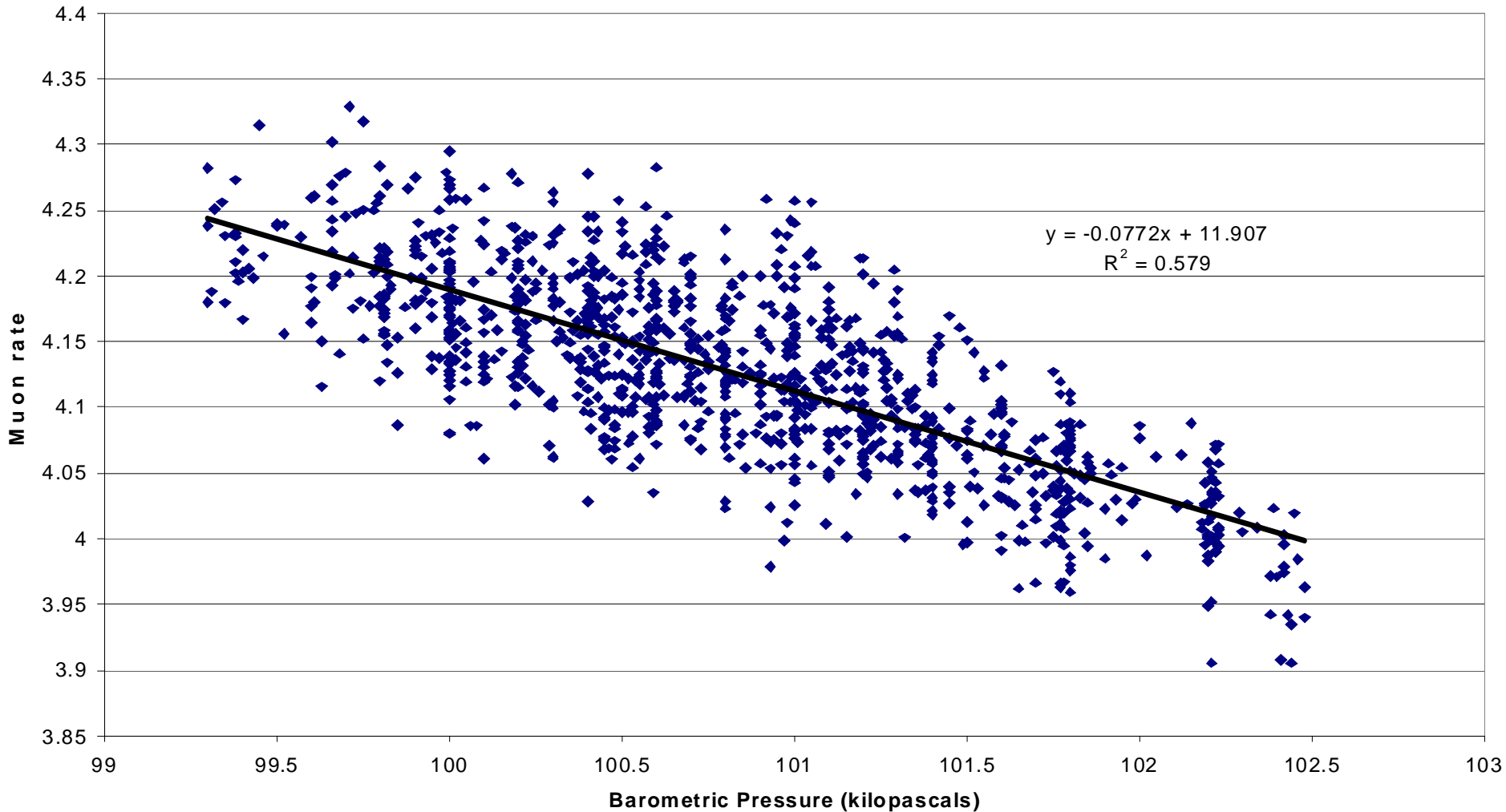


Muon Rate vs. Pressure

U of R Muon Detector Data | October 2004

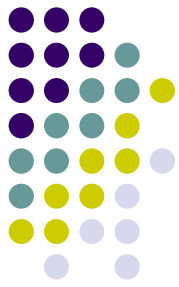
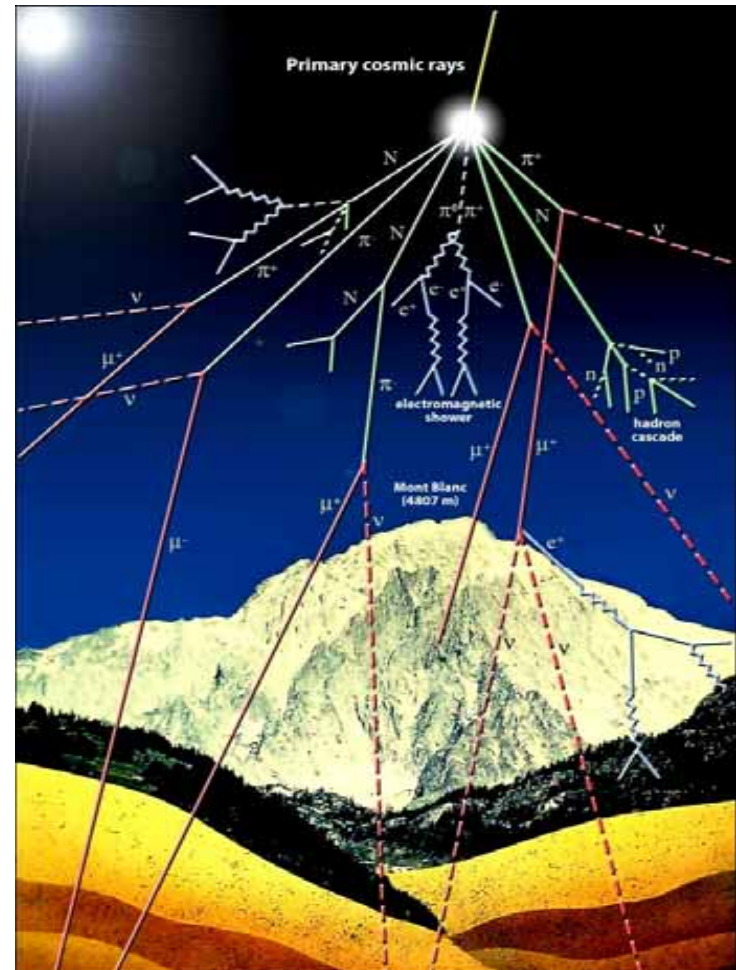


Mendon Research 03-04



Analysis

- Anticorrelation between muon rate and barometric pressure
- Pressure increases the density of the atmosphere
- Greater rate of interaction between muon particles and atmospheric molecules
- Loss of energy through the ionization of atmospheric molecules increases likelihood of muon decay



Pressure-Corrected Muon Rate

