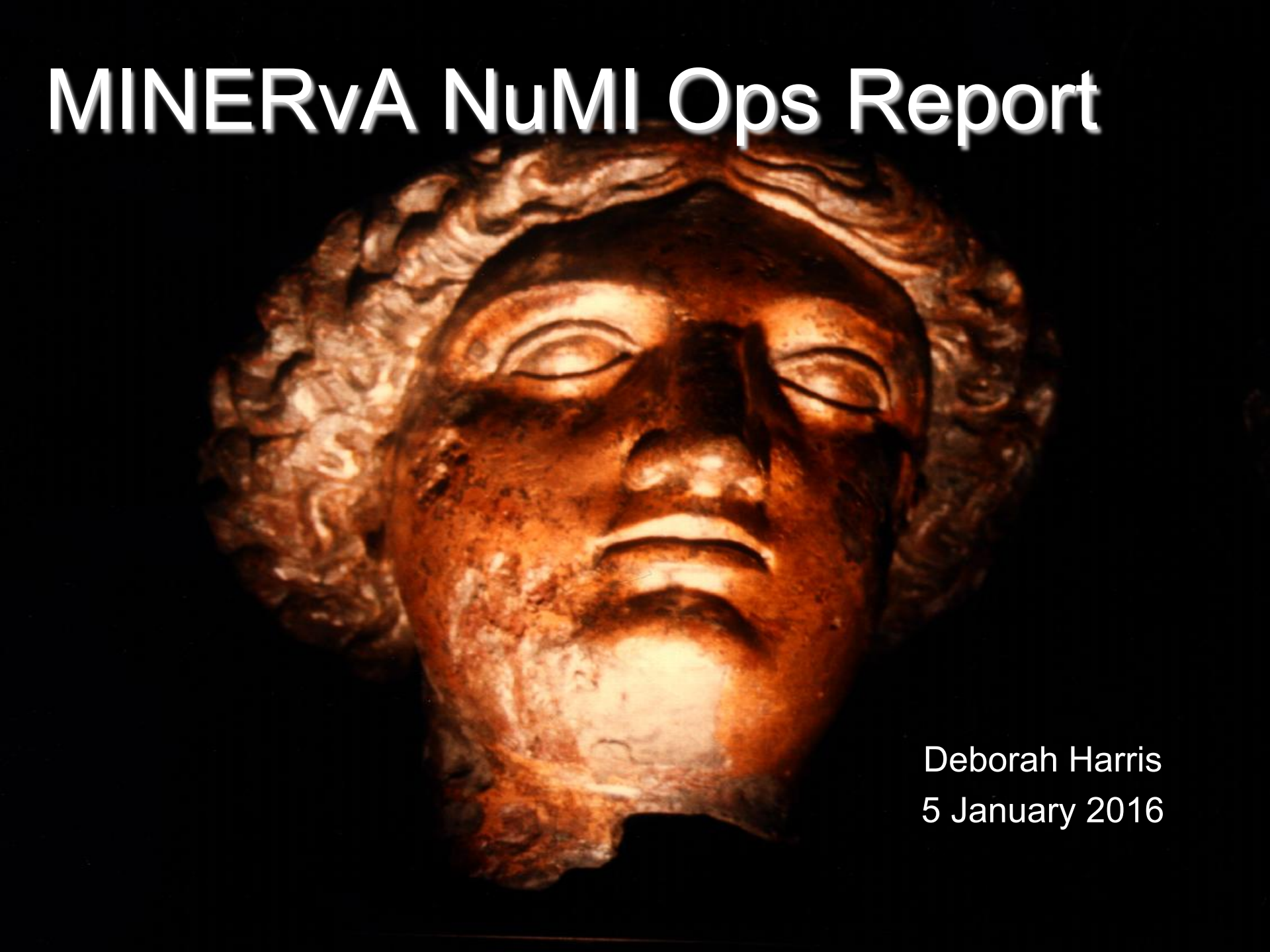
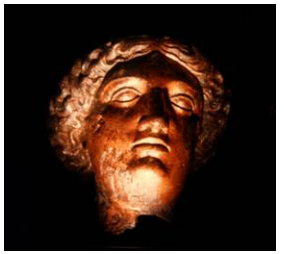
MINERvA NuMI Ops Report



Deborah Harris

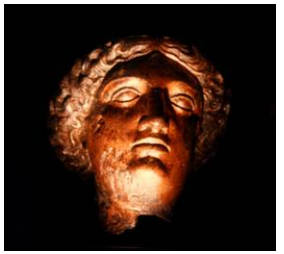
5 January 2016

Rock Muon Monitoring



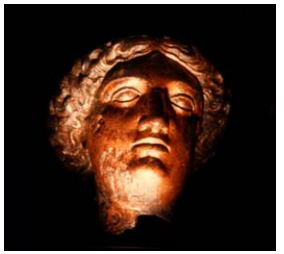
- MINERvA checks once per day
  - Rate of rock muons traversing MINERvA /POT
  - Rate of rock muons traversing MINERvA and tracked by MINOS /POT
  - Rate of rock muons traversing MINERvA and tracked by MINOS /POT for gates with a MINOS match
- Web site is available to the public, although documentation of site is not public
- http://minerva.fnal.gov/nusoft/minervacal/daily_muon_monitoring.html

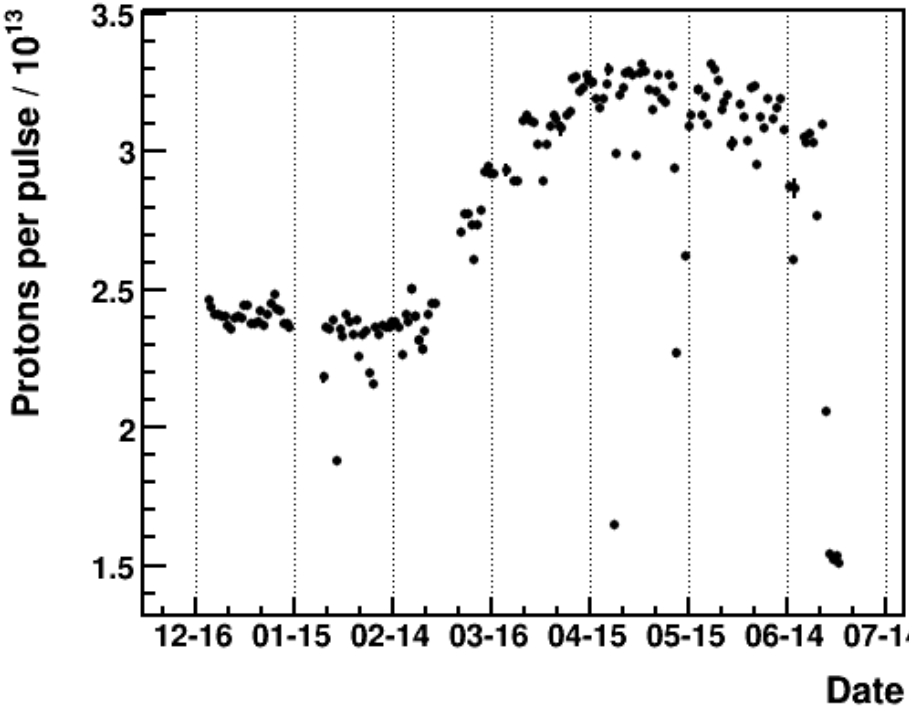
What these plots show

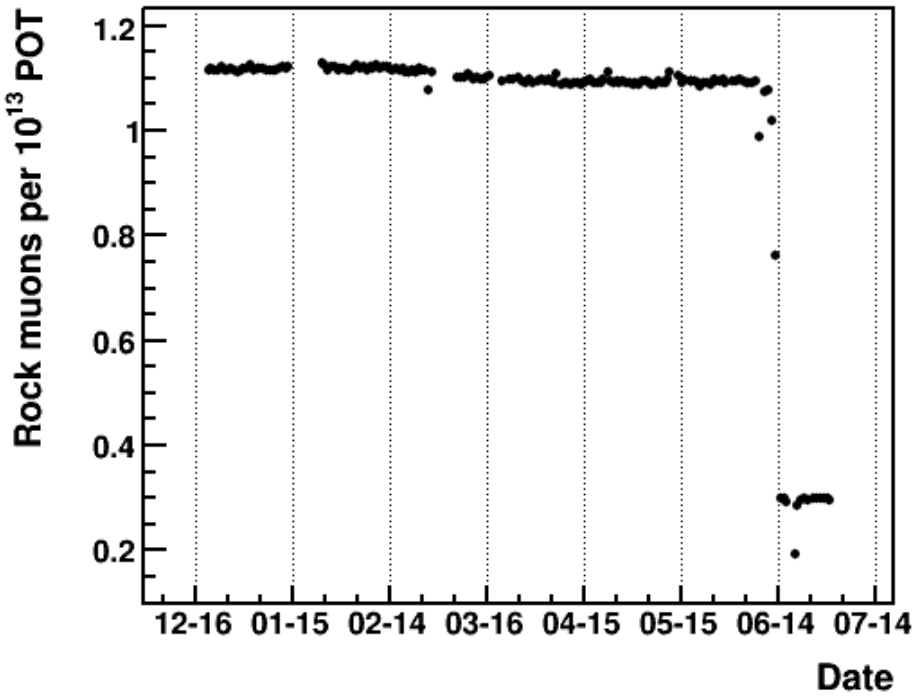


- Most common thing we see and then act on: whether or not the previous night's processing found the MINOS data files to run
- Can also see evidence of increasing detector deadtime as a function of protons on target
- Large changes in rock muons/POT: horn current changing from 200kA to 0kA

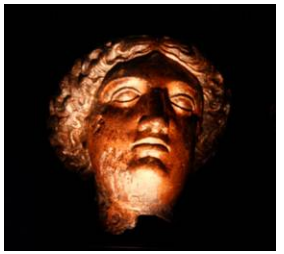
Evidence of Horn Current Change

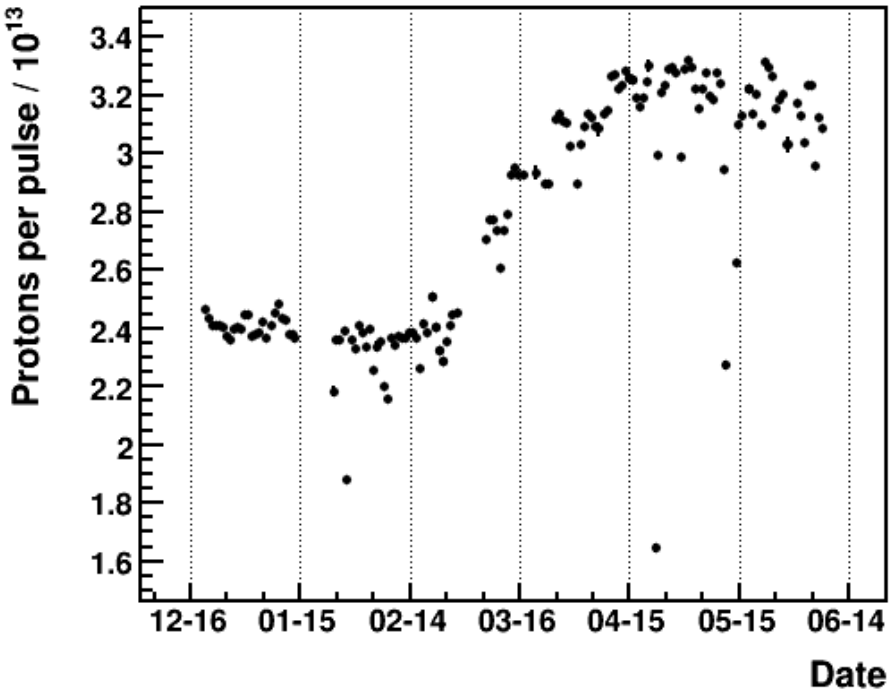


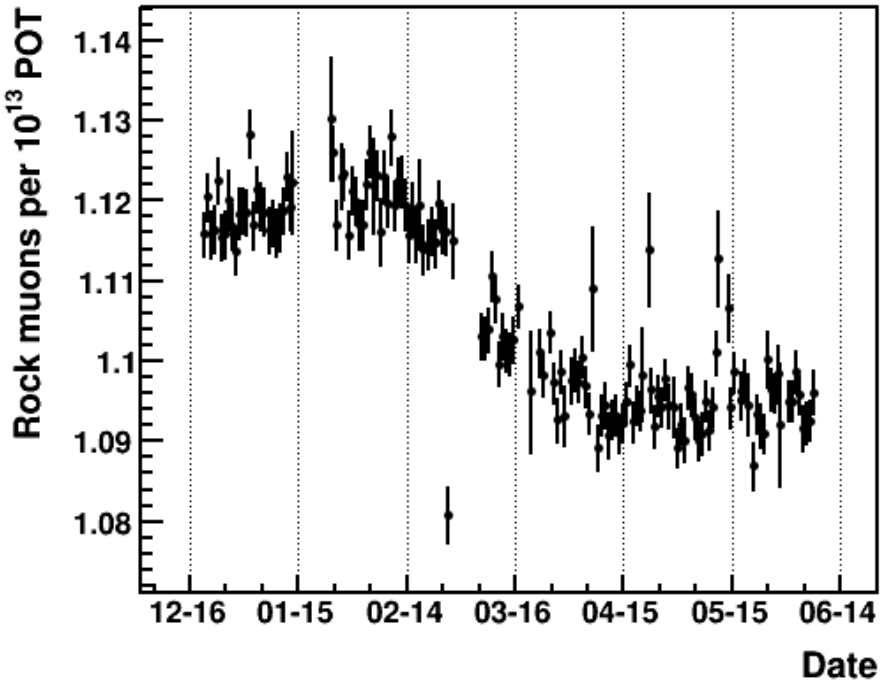




Evidence of deadtime

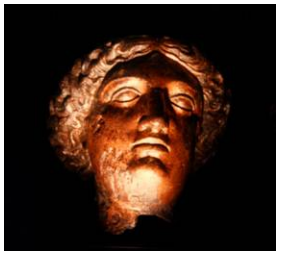


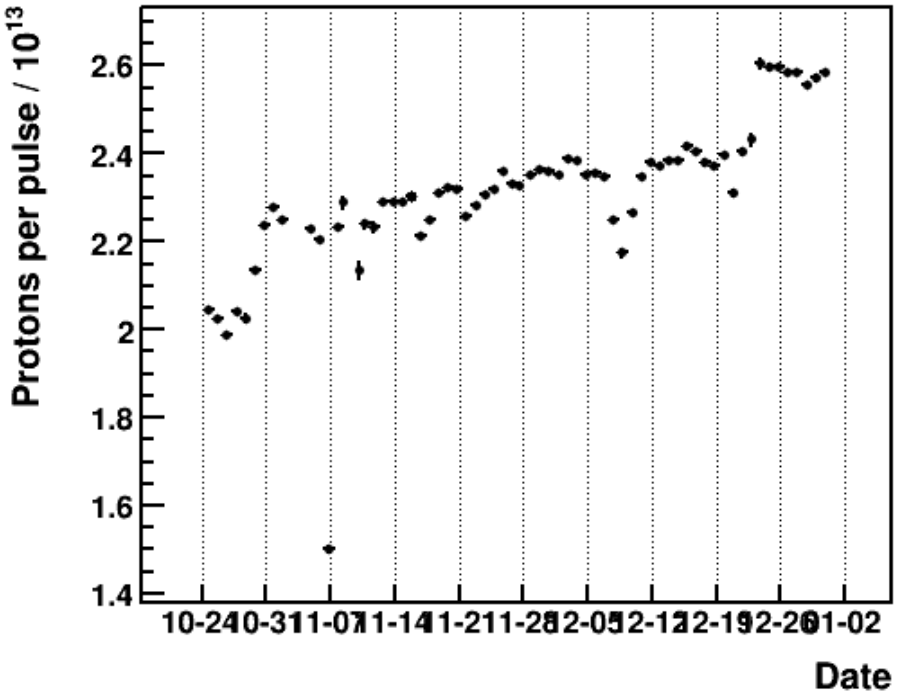


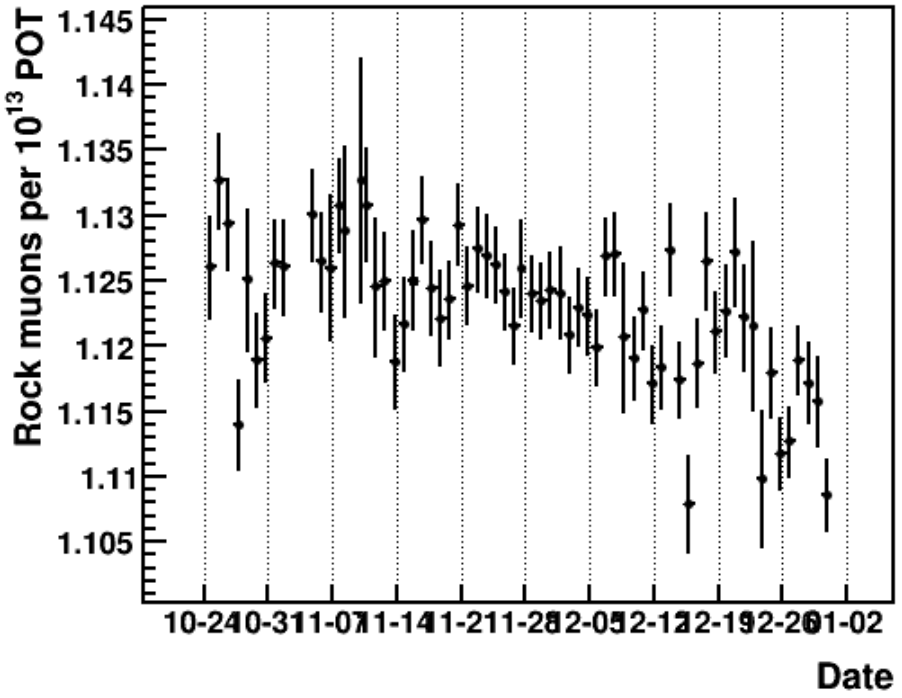


Note: this is going from 0+6 to 2+6, so 1/3 of the spills have 2x the intensity. If all the spills had 2x the intensity then this plot implies we would see a ~10% drop in rock muons/POT

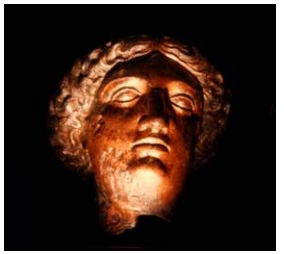
Recent Running







Other Easy Plots to add



- MINOS-matched Muons above or below some threshold per POT
- Regular check of the muon momentum distribution

- Not worth adding: Calorimetric energy plots not reliable online because of delay in calibration procedure and the per cent level change of PE per month