The MINERνA Operations Report
All Experimenters Meeting

Howard Budd, University of Rochester
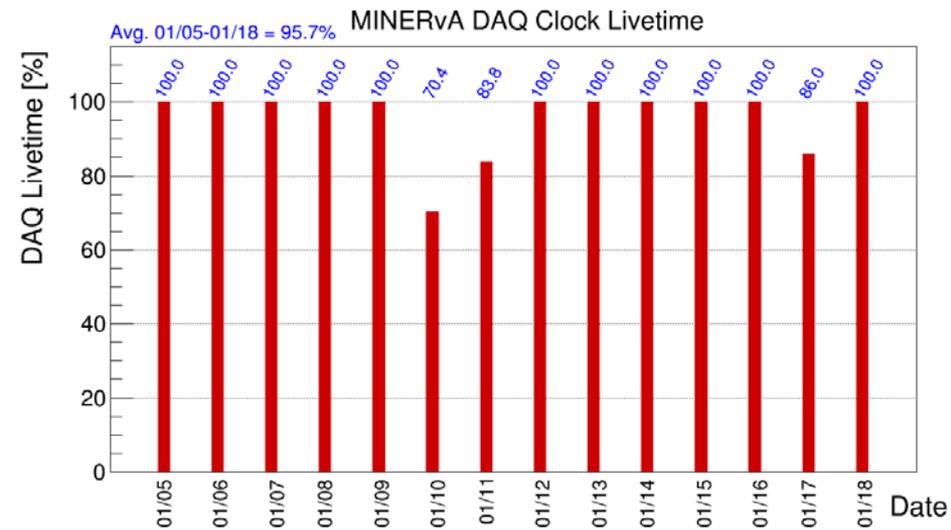## Jan 23, 2016

ν Data

Jan 5 to Jan 18, 2.76×10^{19} POT

% live time

MINERvA Live Time = 0.980
MINERvA*MINOS Live Time = 0.551
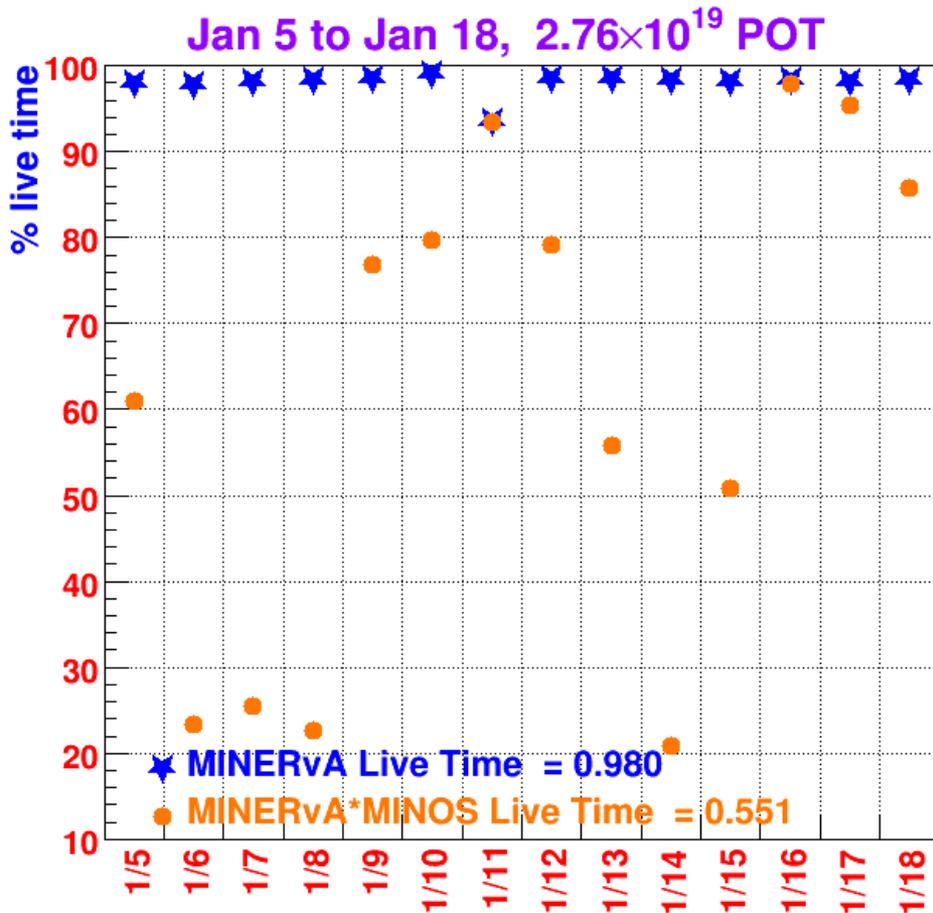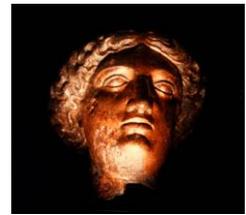
- Live Time – Jan 5-18
- 2.76×10^{19} POT
- MINERvA POT 98.0% live
- MINERvA DAQ 95.7% live
- MINERvA*MINOS 55.1% live

MINERvA DAQ Clock Livetime

Avg. 01/05-01/18 = 95.7%

DAQ Livetime [%]

100.0 100.0 100.0 100.0 100.0 70.4 83.8 100.0 100.0 100.0 100.0 100.0 86.0 100.0

Date

2

ν Data

- Jan 11 – 93.5% MINERvA live.
  - At the end of the Jan 10-11 shutdown, we put the roof on. We were still checking the detector for light leaks when beam came back.
- In Aug 2016 a typo put in ntp.config file caused the time for the MINERvA DAQ machine timing to be determined using its own clock rather than from the MINOS DAQ machine. Over the next 5 months the MINERvA DAQ machine fell 3 seconds behind the MINOS DAQ machine.
  - We discovered the problem when our "Rock Muon Plots" showed were not matching MINERvA & MINOS tracks due to timing.
    - Due to problems in MINERvA keep up , the "Rock Muon Plots" were created late, in January,.
  - We are in the process of matching these tracks in keep up.
  - We are putting the timing checks in our near line where this problem can be discovered immediately.
  - In hardware, The NTP server for the MINERvA DAQ machine will not have to be changed again.

3

ν Data

- Jan 5 – 18 56.3% MINOS
  - MINOS Data Quality Validation processes (MINOS near line) uses a cut on the max ADC value for each channel. Channels with high ADC values are flagged as bad channels. With enough bad channels, a whole subrun is declared bad, hence we compute a much lower live time. This cut was determined at the start of MINOS, but with the increasing intensity and beam energy it needs to be revised. In fact with the ME run, the intensity is high enough that over the last 2 weeks 50% of MINOS data is being declared bad in near line. Our MINOS efficiencies are calculated using MINOS near line.
  - We are determining analysis efficiencies for present intensities. For a CC inclusive measurement the efficiencies falls off ~ 5 – 7 % from all the intensity effects.
  - Keep up and data analysis does not use this cut.

- For the last 3 weeks the MINOS efficiency without this cut is 99.1%
- We will try to recalculate the efficiencies without this cut.
- This was the reason for lower MINOS efficiencies in May-Jun 2016, not light injection or a bad channel.
- Thanks to Donatella Torretta and Steve Hahn for understanding this.

MINERvA Computing Summary
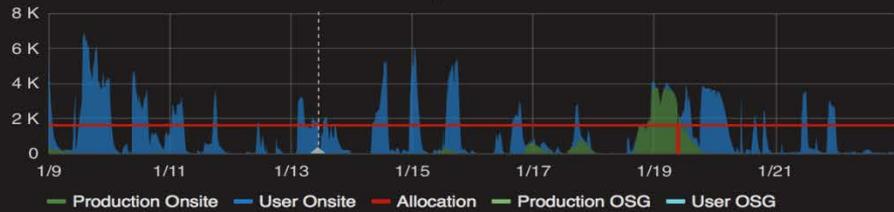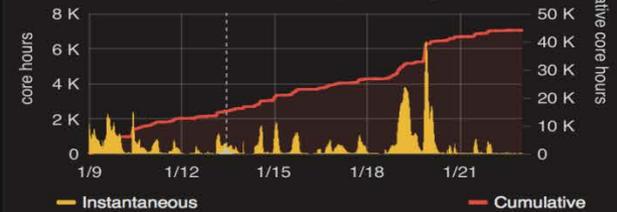
- Jan 9-23, Average concurrent jobs are lower than quota
- Job Success rate is very good
- Efficiency is low. Appears to be a production inefficiency mainly around 01/09/2017 (access files in the tape) and users' job which requires large memory around 01/19/2017