

The MINERvA Operations Report

All Experimenters Meeting

Howard Budd, University of Rochester
Feb 9, 2015

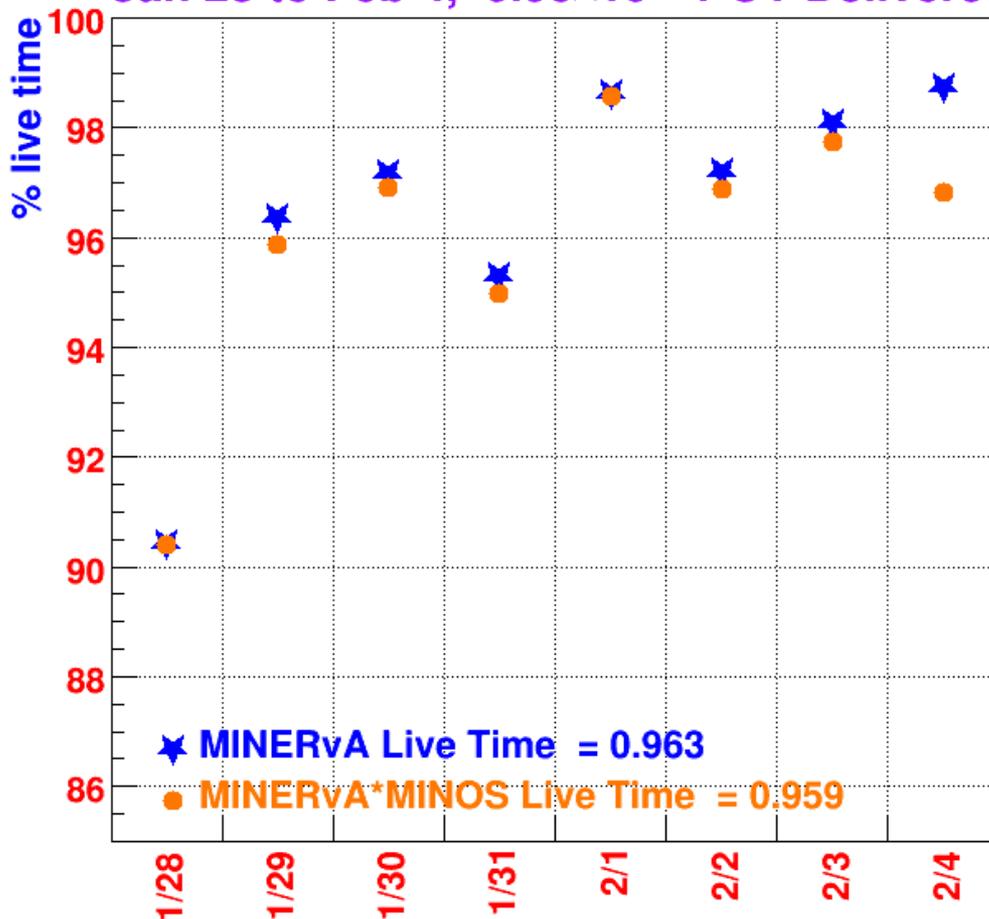




v Data



Jan 28 to Feb 4, 0.95×10^{19} POT Delivered



- Live time, Jan 28 – Feb 4
- MINERvA 96.3%
- MINERvA*MINOS 95.9%
- Jan 28 –
 - DAQ stopped. It took about 40 minutes to restart. Part of the problem was one of the restart scripts still had a reference to `mnvonline0` instead of `mnvonline03`.
 - The remaining inefficiency will be explained later



Live Times



- As previously stated, we replaced the old DAQ computer, mnvonline0, with the new DAQ computer, mnvonline03, on Jan 27 2015.
 - Despite trying to replicate the DAQ code from mnvonline0 to 03, not all the code & script updates made it over. One place in specific:
 - The code which forces a new subrun to start if there is a sequencer error. This was fixed on Jan 28.
 - If there is a sequencer error all the events past the sequencer error in the subrun are bad and they cannot be recovered.
 - Some of the Jan 28 inefficiency was due to this problem.



Live Times DAQ header problem



- We see an increase in runs with the data header problem with minerva03 as the DAQ machine.
 - A data header has a bad frame length, which causes the data be unpacked incorrectly in the offline system. The remaining events in the subrun are unusable.
 - In fact, the frame length is in the data header twice. The 1st frame length is occasionally wrong, but the 2^d frame length is always correct. The offline code looks at the 1st frame length.
 - This problem is the reason from some of the inefficiency from Jan 28 on. This and the sequencer error problem explains the remaining inefficiency on Jan 28. All of the inefficiency on Jan 29, 96.4% live time, is due to this problem.



Live Time DAQ Header Problem



- Donatella has a fix which enables the offline to analyze all the events in the subrun. Her code looks at both these frame lengths and if they are different picks the second. This fixes all the subruns she has tried this on.
 - This fix recovers all the events in the run.
 - We are still studying the fix & hope implement the fix this week.
 - We will then reprocess the runs which have this problem & then recalculate the live times.



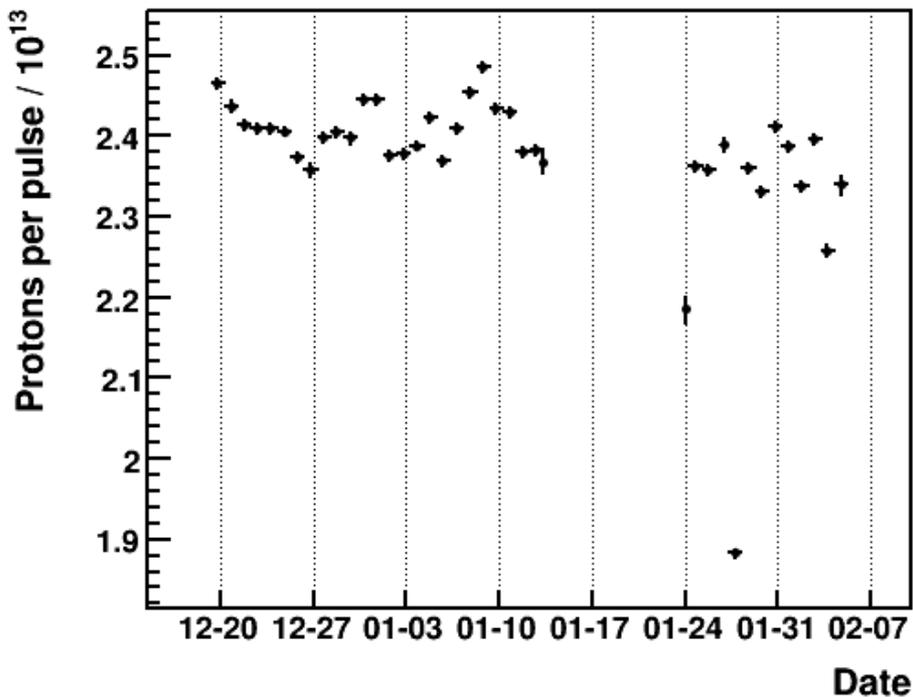
Jan 31 2015



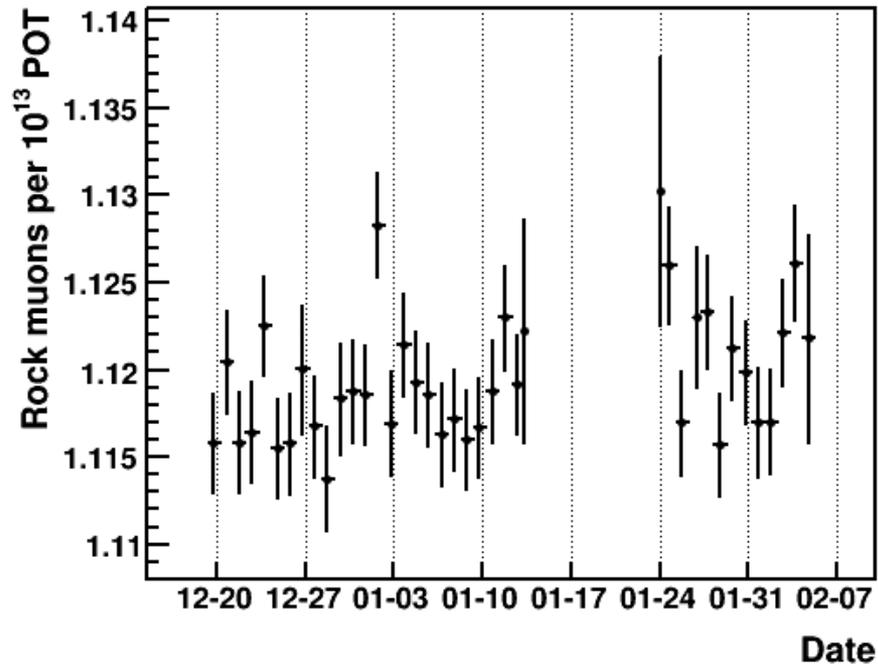
- On Jan 31 2015 – live time 95.3%
 - Some the inefficiency is due to the DAQ header problem, but it does not explain all the calculated inefficiency. After investigation we have determined the calculated inefficiency should be more than a factor of 2 higher. We are continuing the investigation.



Rock Muons/POT



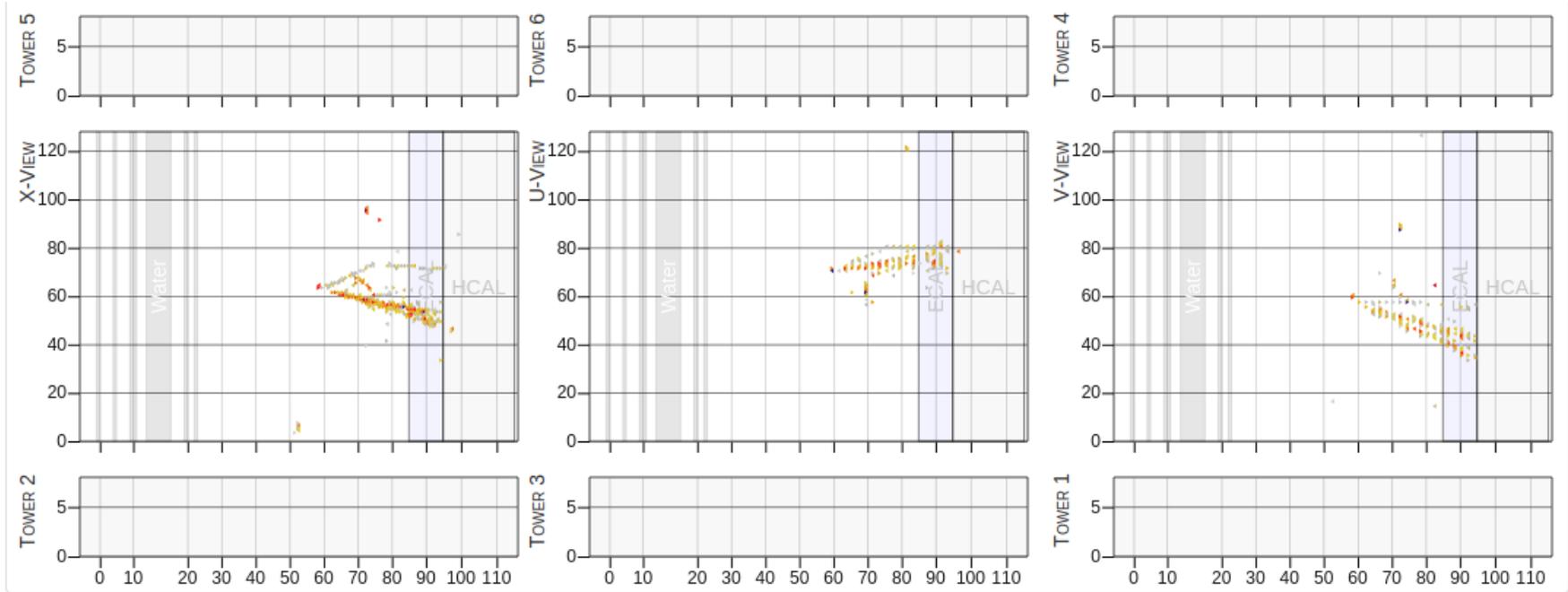
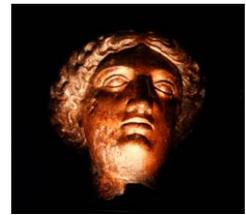
POT/Pulse



Rock Muons/POT



Event Display



X View

V View

U View

π^0 Event



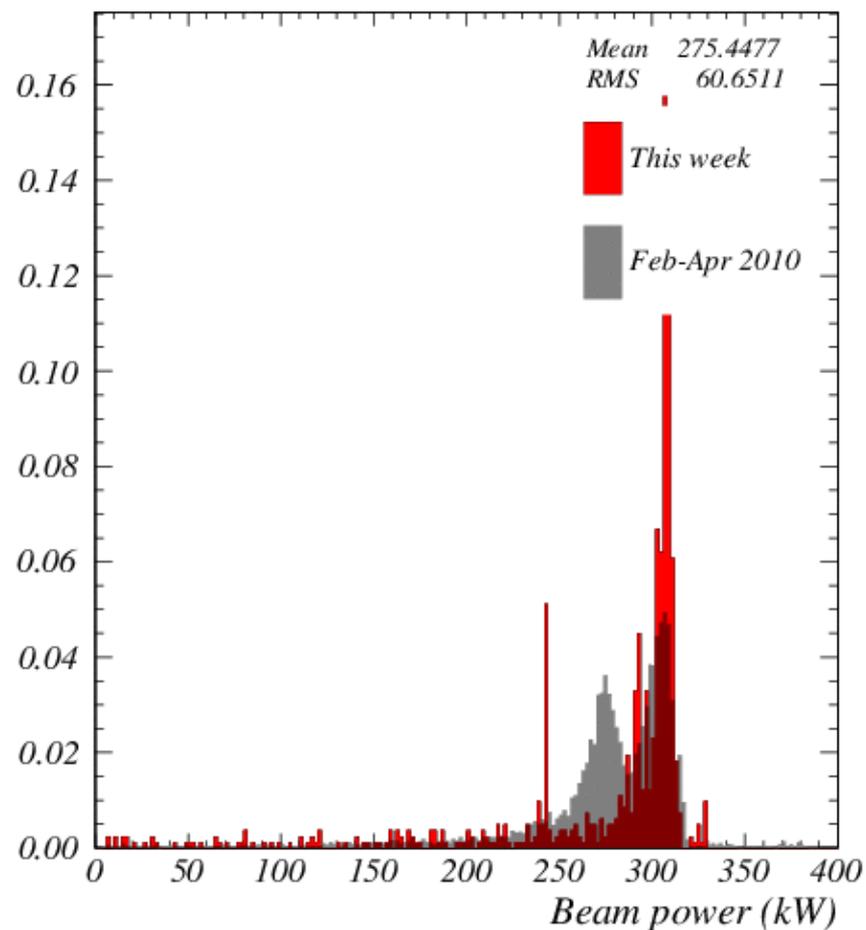
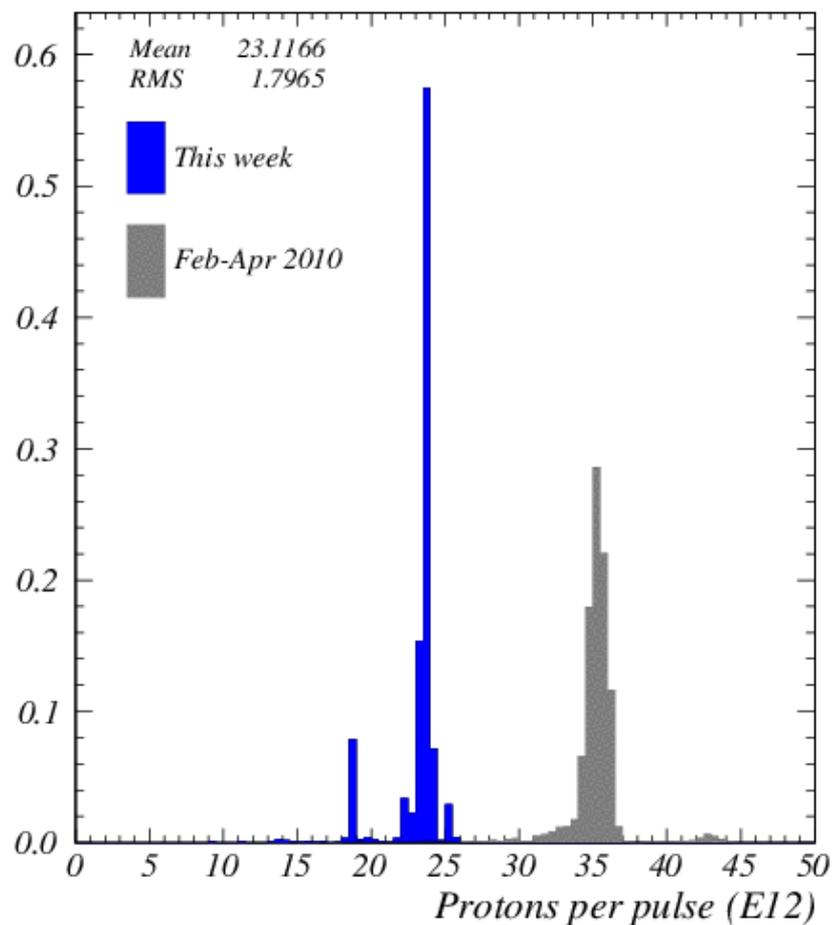
NuMI Beam Plots

Feb 2 – 8, 2015



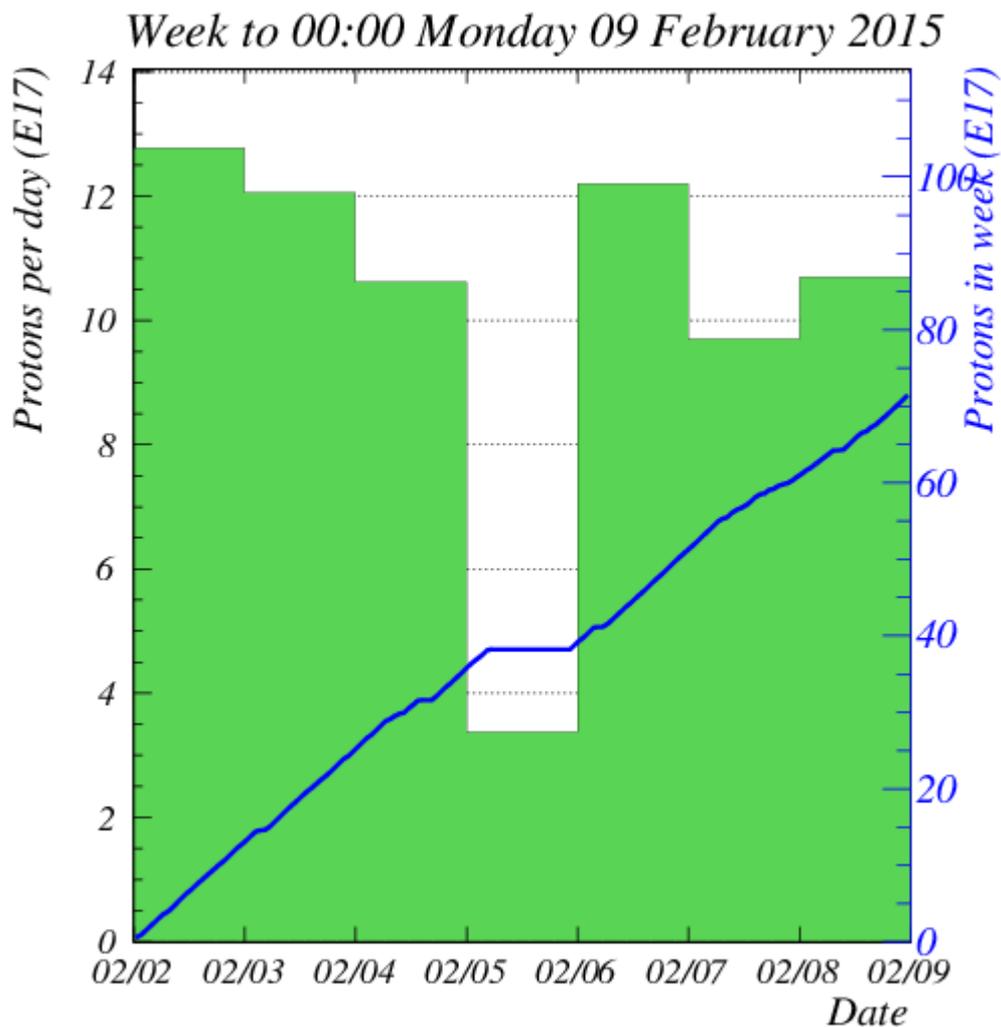
Week ending 00:00 Monday 09 February 2015

Week ending 00:00 Monday 09 February 2015





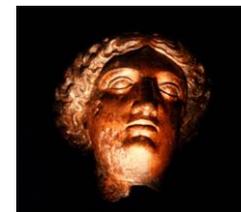
Protons for the Week



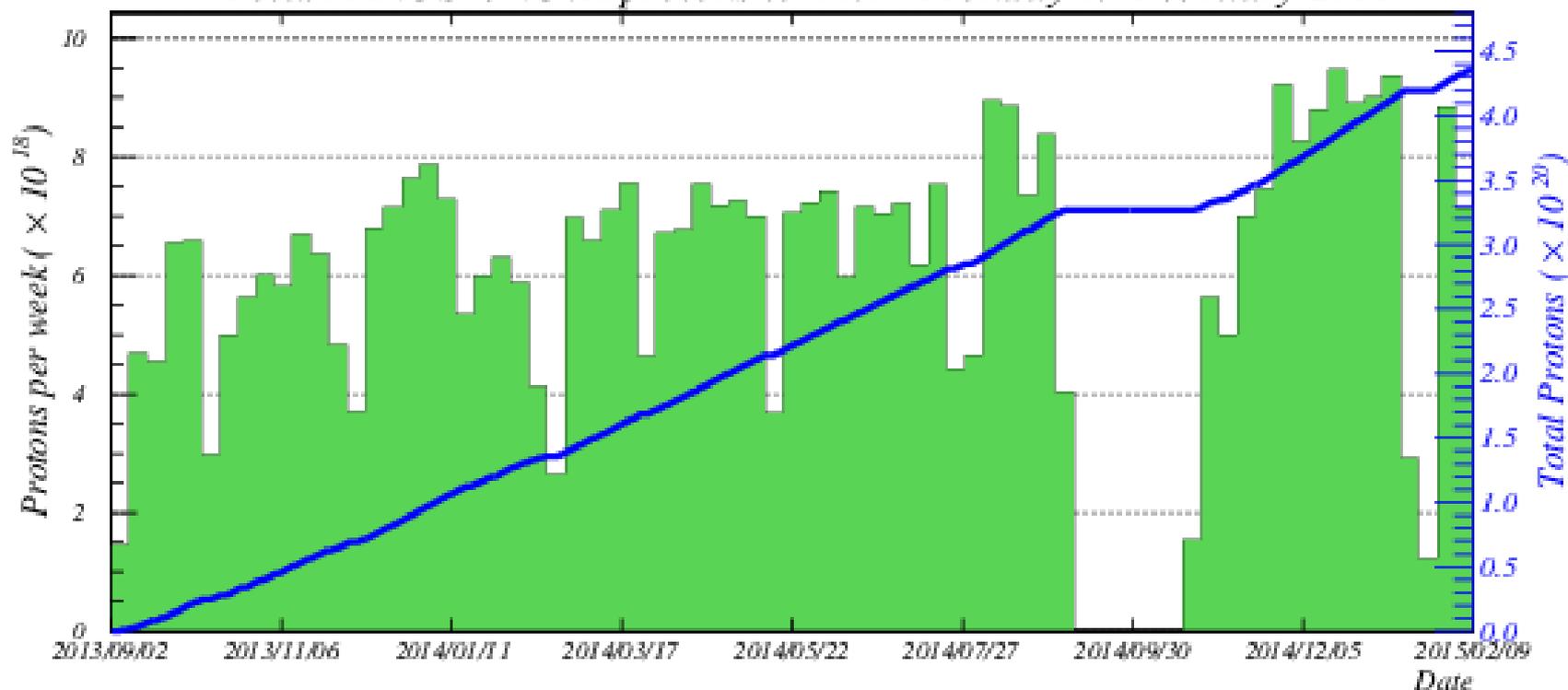
0.71×10^{19} POT
Feb 2 – 8, 2015



Protons for ME Run



Total MINOS+/NOvA protons to 00:00 Monday 09 February 2015



43.60×10^{19} POT

Sep 6, 2013 at 15:00 – Feb 8, 2015