

The MINERvA Operations Report

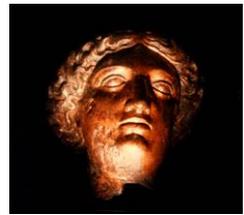
All Experimenters Meeting

Howard Budd, University of Rochester

Feb 29, 2016



v Data



- Again this week we had problems getting the live times. This might be related to the grid problems last week. We have been unable to report the livetimes from Feb 11-24.



v Data



Avg. livetime 02/11-02/24 = 99.1%

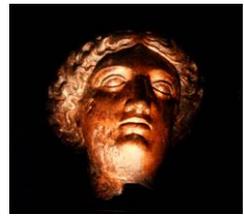
MINERvA DAQ Clock Livetime



- This plot shows the live time of the DAQ processes from Feb 11-24. If the DAQ is not alive, this will show as an inefficiency. As we continuously run the DAQ even when the beam is down the efficiency can still be high when the beam is down.



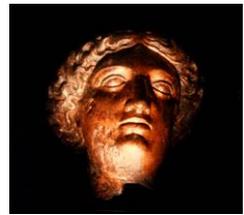
v Data



- If the DAQ live time is 100%, the POT live time is usually $\sim 1.5\%$ lower. This loss is due to the over head in beginning new runs and subruns.
- For Feb 11,12,14, 22, & 24 we lost $\sim 1\%$ of beam (here shown as DAQ livetime) due to a error reading the HV at the start of a run.
 - At the start of a run the DAQ will sometimes give a “Slowcontrol” error while trying to read the HV. Often manual intervention is needed to the DAQ running.
 - Slowcontrol is our stand alone program written by Cristian Gingu of PPD to look at the MINERvA hardware and to download constants.
 - This error is similar to the errors we get while trying to read the HV using Slowcontrol with beam triggers. In this case, the beam triggers are interfering with the Slowcontrol commands. We discovered this problem while trying to get the DAQ to run after the power outage.



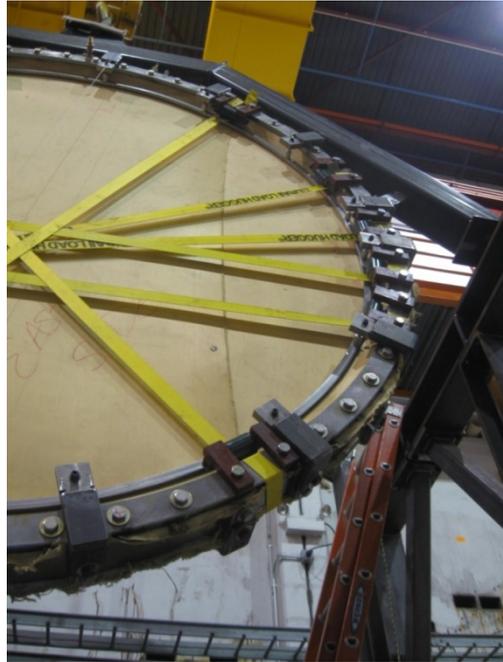
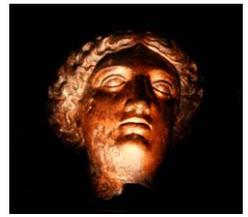
v Data



- We are looking at either a hardware or software solution. Note, that a firmware update of the CRIMS (the module with distributions the timing signal) would fix the problem. However, we do not want to update the CRIM firmware without a significant downtime to test it.
 - A new run will start at a known time. Our temporary solution is to prepare the shifter for the start of a new run.
- Since Feb 4, when effectively a CROCE which caused DAQ errors, was reseeded, we have had no other problem which stopped data taking.
- There was no beam during the other 2 times the DAQ live time was lower. We did not lose any POTs for the following:
 - Feb 19 we replaced a FEB
 - Feb 23 we updated the HV configuration file. This changed the HV of 9 tubes.



Water Target



- We filled the water target on Feb 22.
 - We took data while it was being filled.
- Filled by John Voirin's Group.



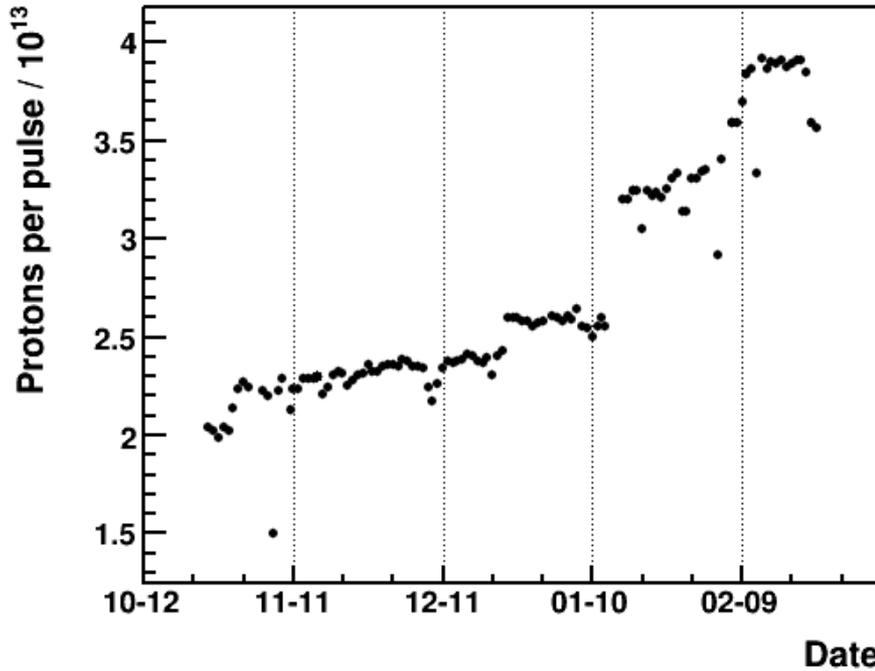
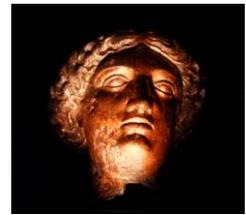
Water Target



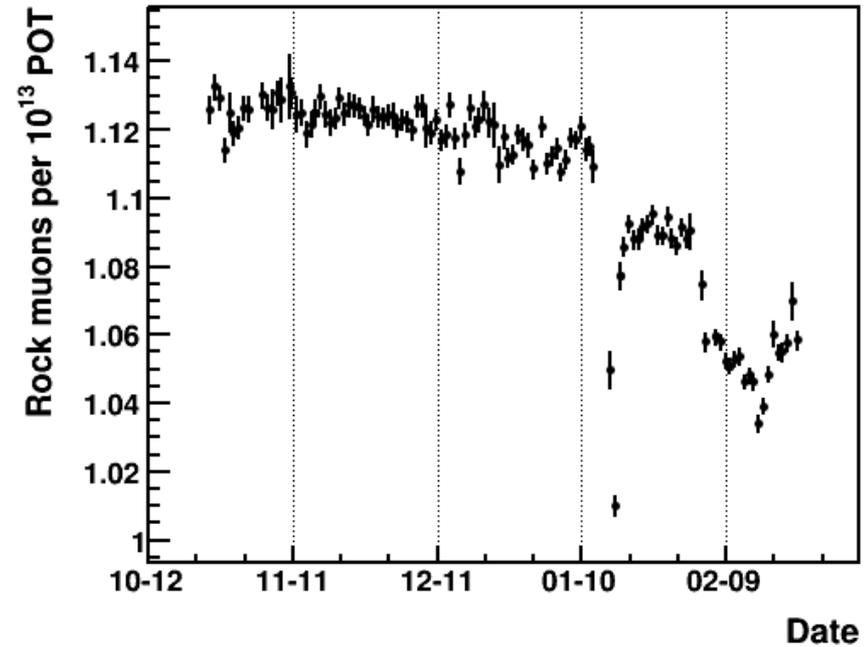
- We are measuring the gap between the kevlar window and the scintillator planes. There is still a $5/16$ " downstream gap & $5/8$ " upstream gap
- We are measuring any movement of the scintillator plane. We will use an instrument designed by Jim Kilmer, in PPD.
 - With the water target not touching the scintillators there will be no movement.
 - Measurements done by Pete Simon's group in PPD



Rock Muons/POT



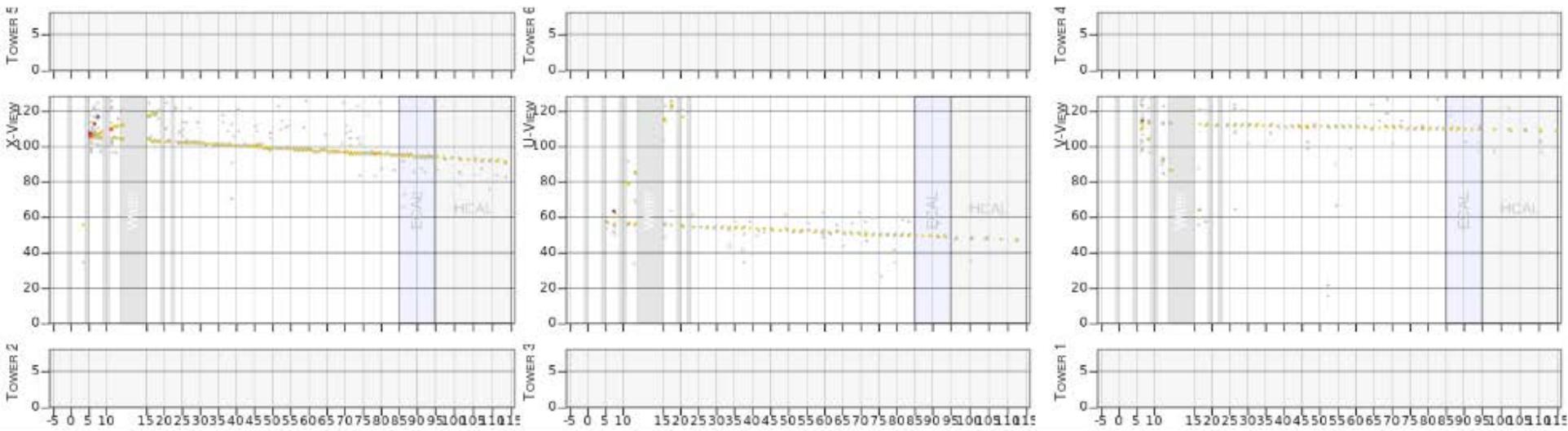
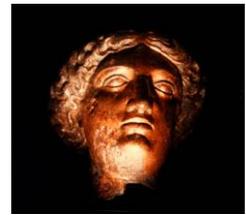
POT/Pulse



Rock Muons/POT



Event Display



X View

V View

U View

Nuclear Target CC Event

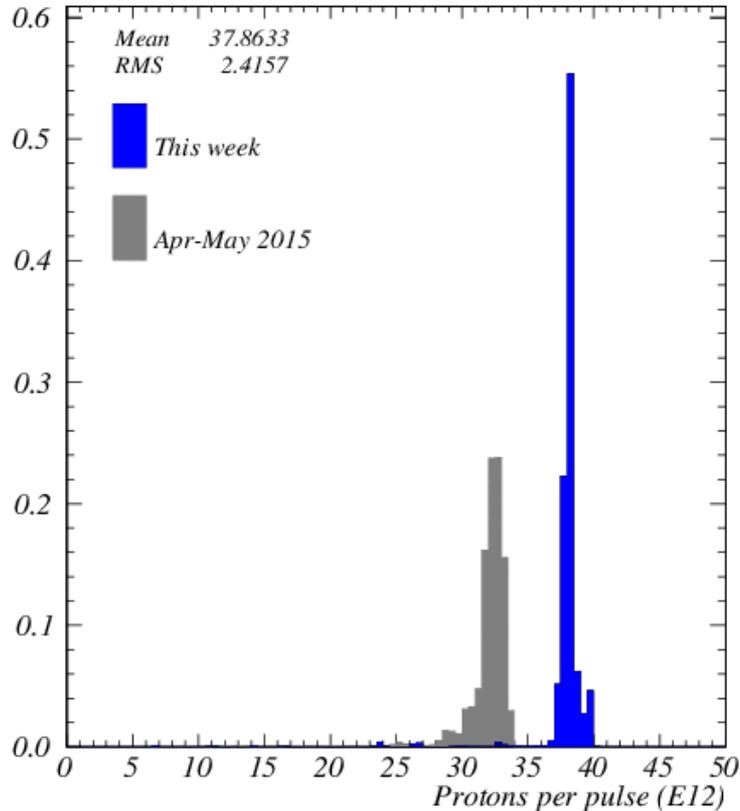


NuMI Beam Plots

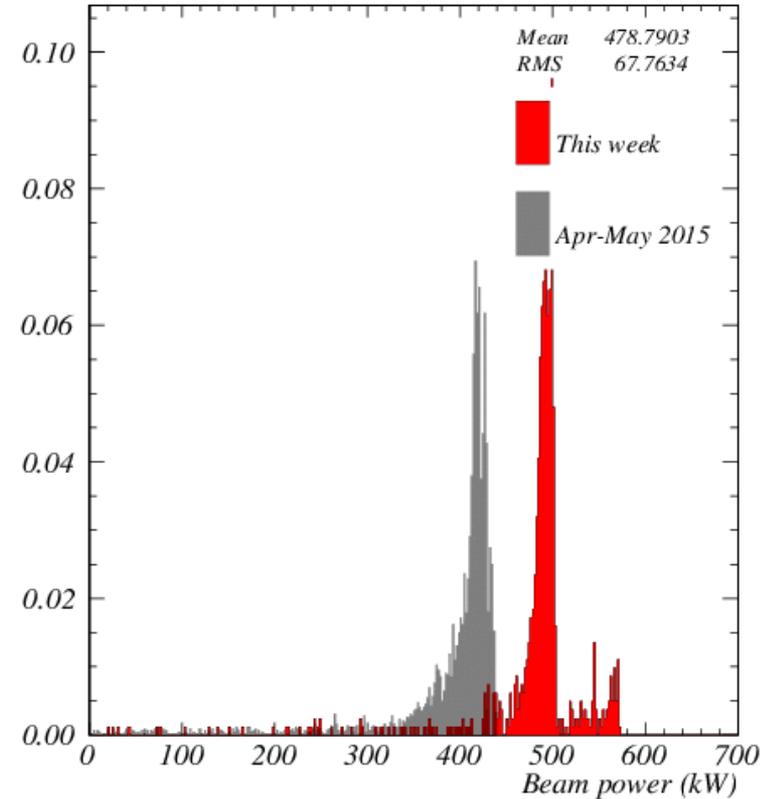
Feb 22-28 , 2016



Week ending 00:00 Monday 29 February 2016



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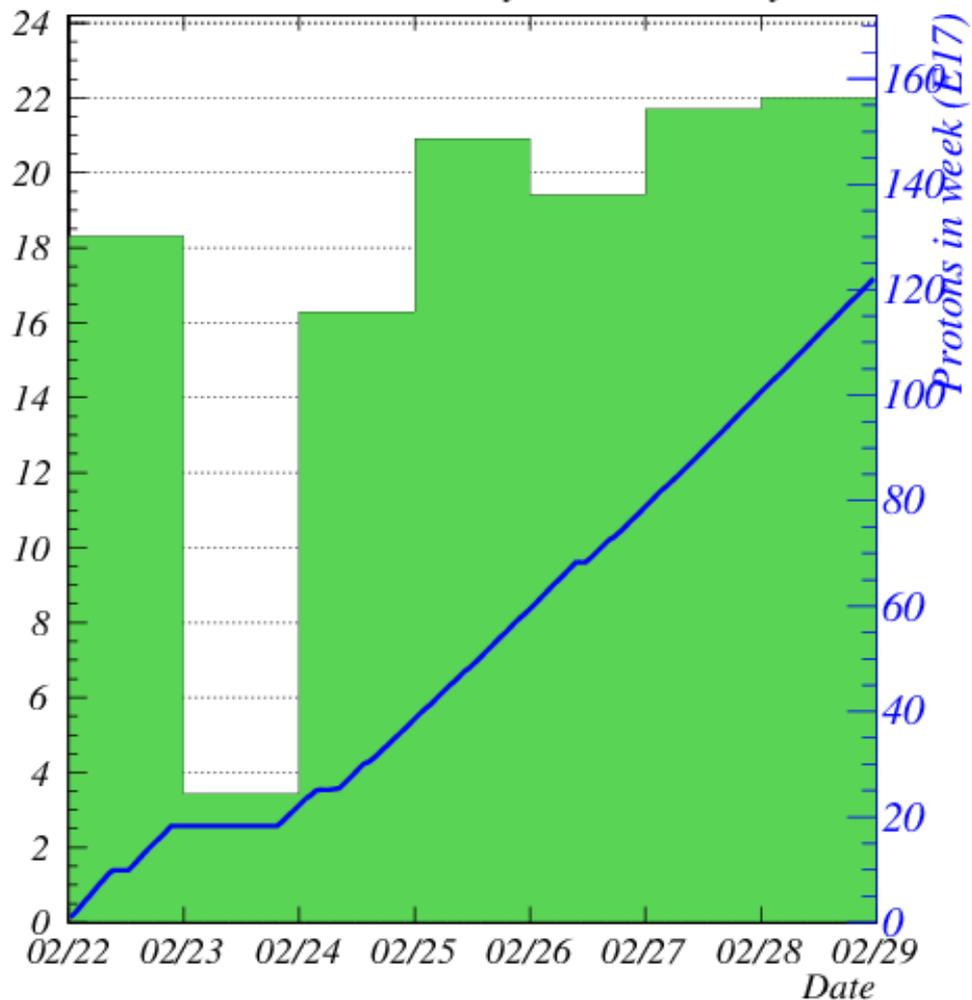
- Phil made some changes: increased beam power axis to 700 MW & the grey average is now the best 2015 running.



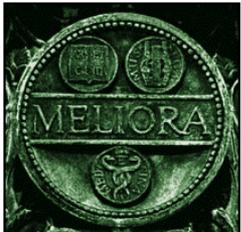
Protons for the Week



Week to 00:00 Monday 29 February 2016



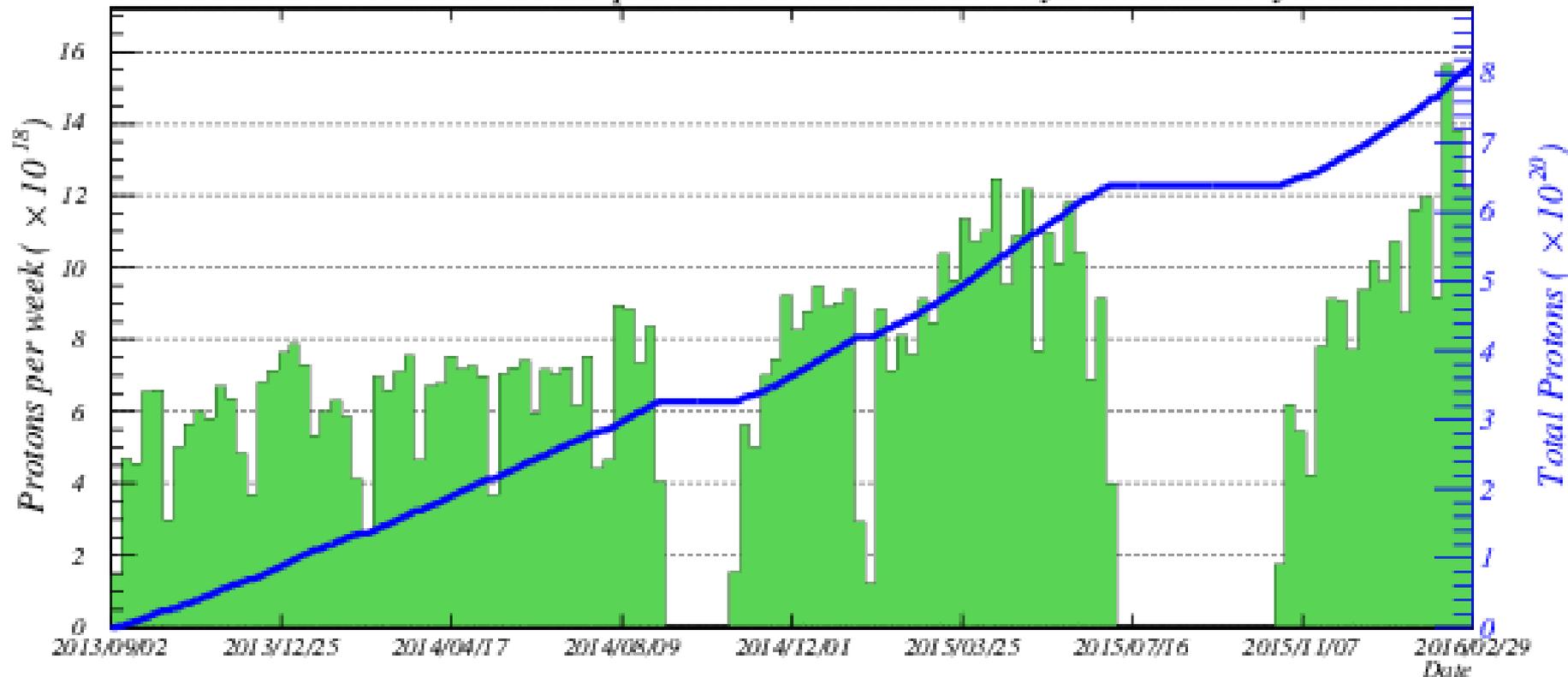
1.22×10^{19} POT
Feb 22-28, 2016



Protons for ME Run



Total MINOS+NOvA protons to 00:00 Monday 29 February 2016



81.30×10^{19} POT - Sep 6, 2013 – Feb 28, 2016