E906/SeaQuest Report

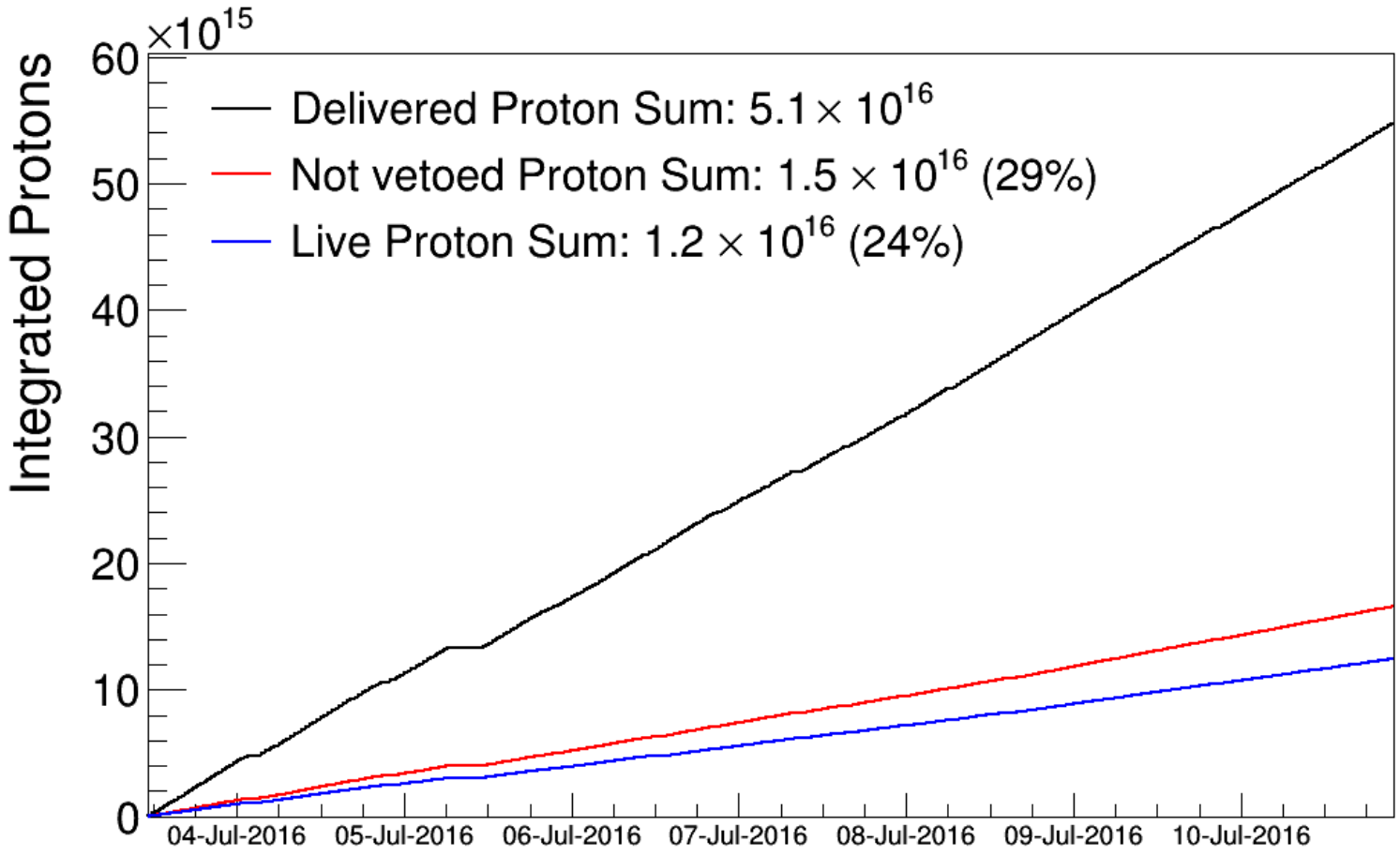
Michelle M. Medeiros
for the SeaQuest Collaboration

Jul. 11, 2016.

Beam.

Total protons accumulated: 5.1×10^{16}.

- Two weeks report: Jun. 27th - Jul. 11th.



Targets.

- Several deuterium heater alarms:

  - "false alarms"

  - happens when the current increases and it's getting close to the limit

  - all parameters **OK**

DAQ.

- Some ROC crashes $\rightarrow$ mostly fixed by rebooting ROCs remotely.
- DAQ computer crashed once $\rightarrow$ fixed by rebooting.
- On Saturday, Jul. 2^{nd}, DAQ stopped recording events:

  - temporarily fixed by replacing ethernet cables for ROCs 6, 10 and 14.

  - on Tuesday had to replace also the power switch for ROC 14 and Station 1 console server.

QIE.

- On Monday, Jul. 4th, noticed that the QIE data summary was missing for two days.
- It was reading out but the data wasn't being recorded in the database.
- Rebooting QIE board didn't fix it.
- This was fixed on Tuesday when we found and reconnected a loose cable.

Magnets.

- On Wednesday, Jun. 29th, beam was down and when it came back, couldn't ramp our magnets up.
- It happened because the ACNET crashed due to a bad update.
- MCR was able to ramp our magnets up by using the old version.

Stations and Chambers.

Station 1:

- Station 1 bottles were calculated to last for $\sim$8.9 days by observing the changes in pressure.
- Measured Station 1 response by using radioactive source and pulse height is 25% higher than when measured in April.
- Station 1 HV tripped a few times $\rightarrow$ successfully reset by either ramping up or rebooting CAEN.

Stations and Chambers.

Station 2:

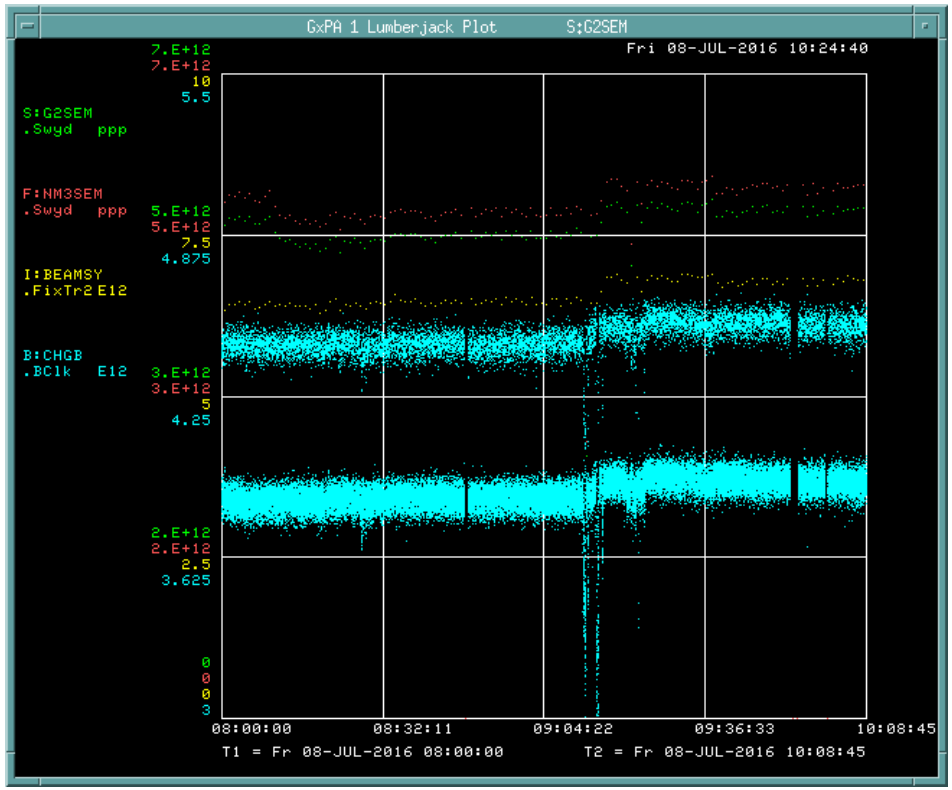
- D2U chambers started giving short HV alarms.
- Had to lower the voltage to stop the alarms.
- Called MCR to see if there was something different with the beam.
- At first, nothing seemed different...

Stations and Chambers.

Station 2:

- D2U chambers started giving short HV alarms.
- Had to lower the voltage to stop the alarms.
- Called MCR to see if there was something different with the beam.
- At first, nothing seemed different...

- Later, Adam Watts realized there was a slight increase in beam intensity in the Switchyard beam due to efficiency improvement after some booster injection RF capture tuning.
- The time matches with the start of the trips. There is a correlation but we're not sure if it is indeed the cause.



Keithley Monitor.

- Monitor that records temperature, pressure and humidity information around the detectors.
- In the beginning of July, we realized our environment monitor wasn't recording data for a while.
- Lost this kind of data from Apr 12th to Jul 1st $\rightarrow$ no alarm went off because the monitor was responding to pings but unable to read the sensor data.
- Power cycled and it worked again. But for 2 days only.
- Installed a remote power swtich for the monitor and added alarms to our SlowControl Status.
- These issues seem to be related to radiation because the monitor is sitting on a top of a crate and not being blocked from radiation.

Our New SeaQuest Member.

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Summary.

- Deuterium target alarms, but no real issue related to it.
- Some ROC and DAQ crashes $\rightarrow$ all resolved by reboots.
- Issues with recording QIE data $\rightarrow$ solved by fixing a loose cable.
- Trouble ramping magnet up $\rightarrow$ fixed by using old ACNET version.
- HV trips for Stations 1 and 2, where the ones in Station 2 seem to be correlated to slightly higher beam intensity.
- Keithley monitor is now recording data again.
- All other stations and hodoscopes were running well.