

# SeaQuest AEM Update

Brian Tice

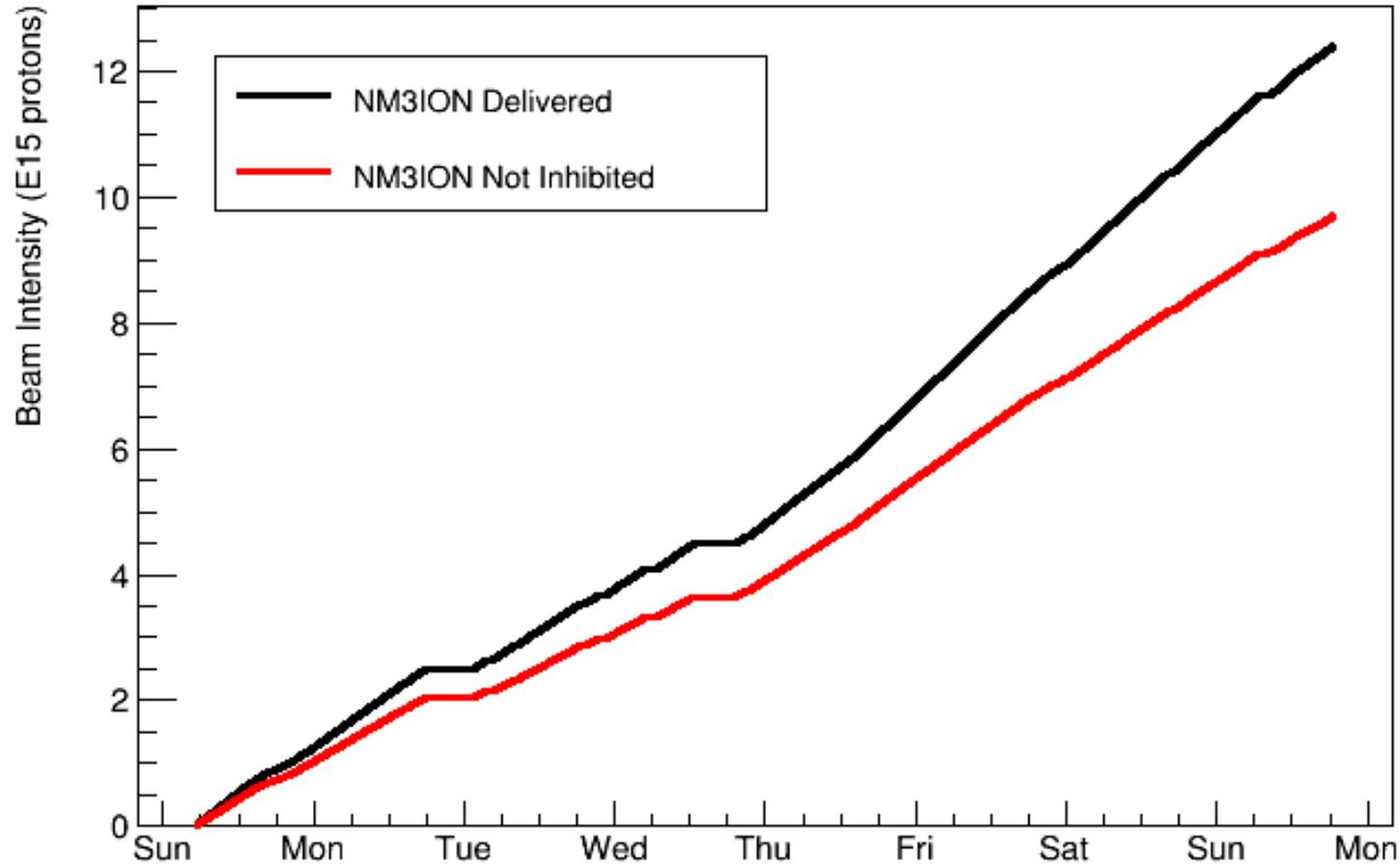
April 14, 2014

# Summary

- Active detector systems performing well
- Good DAQ uptime
  - ~1 crash per day fixed by electronics reset. Suspect radiation.
  - Installed borated polyethylene on upstream face of racks to reduce rad damage.
- Closely watching magnet temperatures when it gets warm outside
  - More on this later
- 53MHz duty factor staying at ~40% (same as last week)

# Beam

## Beam Delivered April 6-13, 2014



Total POT:  
Delivered - 12.4  $E15$   
Accepted - 9.7  $E15$

22% of beam  
inhibited for having  
high instantaneous  
intensity

# Trigger

- Continue with high mass Drell-Yan trigger
  - Trigger roads set has increased acceptance of both Drell-Yan and J/Psi events
- Collected small amount of data to do prescale studies
  - Discussing how to optimize background/systematics event rates with signal deadtime

Trigger	Prescale Factor
FPGA2	40
FPGA3	8
FPGA4	200
FPGA5	50

# Flammable Gas Detector

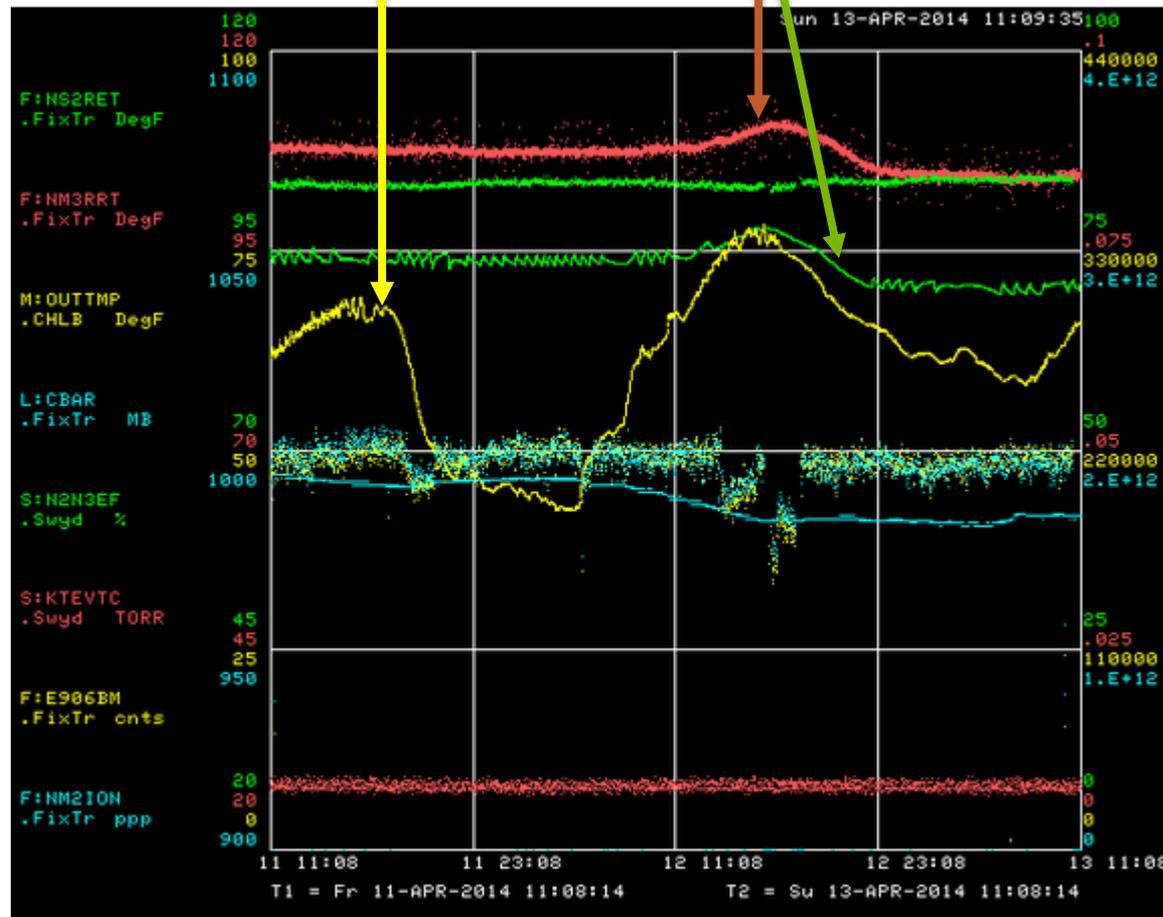
- Need this safety monitor to operate the experiment
- False alarms sounded 3 times one shift
  - Alarm set at 12%, but device always read 9-10%.
- Flammable gas detector replaced, but the real solution is...
- VESDA system to be installed next week
  - Electronics are shielded from radiation
  - FESS started installation on Thursday. Only 1-2 hours of work left. Thanks!

# Magnet Temperature

- Higher outdoor temperature results in higher magnet temperature
- Magnets heat up when its >70 outside
- System set point lowered by 5 degrees
- Improved cooling coming next week
  - Forecast predicts we stay below 65 until then

Magnet temp.

Outdoor temp.



# ECL

[http://dbweb0.fnal.gov:8080/ECL/seaquest/C/show\\_month](http://dbweb0.fnal.gov:8080/ECL/seaquest/C/show_month)

- ECL instance for SeaQuest
- Loaded with SeaQuest users and shifts

Mon 14	Tue 15	Wed 16	Thu 17	Fri 18	Sat 19	Sun 20
<b>Week</b> Mon-Sun 00:00-23:59						
Run Coordinator (4.0) Dave Christian						
<b>Owl</b> Mon 00:01-...	<b>Owl</b> Tue 00:01-...	<b>Owl</b> Wed 00:01-...	<b>Owl</b> Thu 00:01-...	<b>Owl</b> Fri 00:01-0...	<b>Owl</b> Sat 00:01-...	<b>Owl</b> Sun 00:01-...
A (1.25) Kun Liu B (1.25) Arun Tadep	A (1.25) Kun Liu B (1.25) Arun Tadep	A (1.25) Arun Tadep B (1.25) Shou Miyas	A (1.25) Arun Tadep B (1.25) Shou Miyas	A (1.25) Arun Tadep B (1.25) Shou Miyas	A (1.25) Arun Tadep B (1.25) Shou Miyas	A (1.25) Arun Tadep B (1.25) Shou Miyas
<b>Day</b> Mon 08:00-...	<b>Day</b> Tue 08:00-...	<b>Day</b> Wed 08:00-...	<b>Day</b> Thu 08:00-...	<b>Day</b> Fri 08:00-1...	<b>Day</b> Sat 08:00-1...	<b>Day</b> Sun 08:00-...
A (1.0) Paul Reimer	A (1.0) Paul Reimer	A (1.0) Paul Reimer	A (1.0) Chuck Brown	A (1.0) Chuck Brown	A (1.0) Don Geesan	A (1.0) Don Geesan
<b>Swing</b> Mon 16:...	<b>Swing</b> Tue 16:0...	<b>Swing</b> Wed 16:...	<b>Swing</b> Thu 16:0...	<b>Swing</b> Fri 16:00...	<b>Swing</b> Sat 16:0...	<b>Swing</b> Sun 16:0...
A (1.0) Brian Tice B (1.0) Don Geesan	A (1.0) Joshua Rubi B (1.0) Brian Tice	A (1.0) Joshua Rubi B (1.0) Brian Tice	A (1.0) Su- Yin Wang B (1.0) Jinyuan Wu			

# Misc.

- NM3ION read by also by scaler DAQ, independent of acnet
- “Caution Magnetic Field” signs added to doors and near magnets
- Sudden increase in beam intensity Friday morning (1.2E12 → 1.6E12)
  - Shifters adjusted beam inhibit threshold accordingly
  - Booster kicker timing issue. Request of 2 turns gave 1.5.
- Online decoding code overhaul. Many times faster
  - Online decoding sample rate from 1:20 → 1:4
  - Attempted to add tracking but it used too much CPU. This is the next step.
- Safe from heartbleed
  - OpenSSL versions that contained the vulnerability have been patched