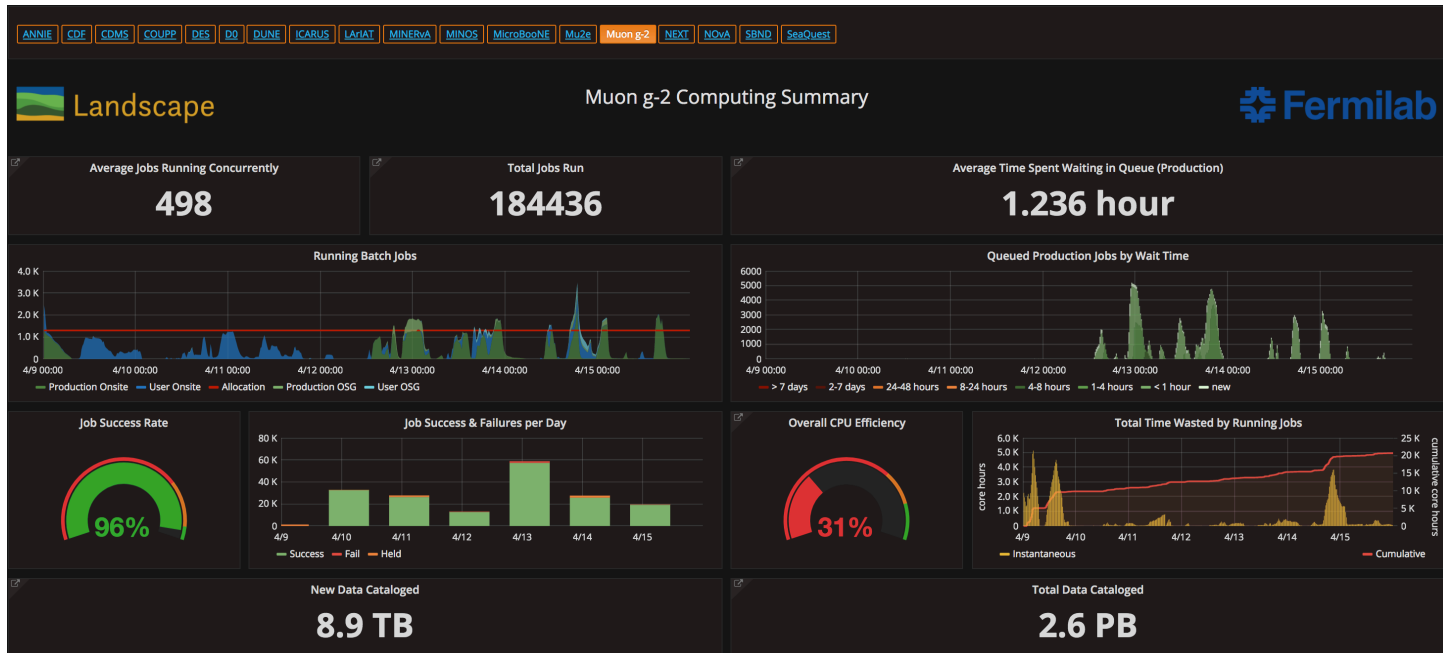


# Muon $g-2$ AEM Update

Brendan Kiburg, Jarek Kaspar  
Apr 16, 2018

# Computing



- New release v9 on Apr 10<sup>th</sup>
  - (takes advantage of art multithreading features). Improves efficiency
  - 4/15 – Mistaken submission with v8
  - Hopeful that our low CPU efficiency woes are improving

# Offline Production Woes

- "Our data production rate has maxed out at 1/10<sup>th</sup> our data taking rate. We need help!" – Brendan Casey, Offline Production Manager
- Details:
  - Currently able to unpack an 8 hour shift in about 4 hours, and reconstruct the 8 hour shift in about 4 hours (6000 jobs)
  - The processed data lives on /scratch
  - FTS creates/extracts the metadata, which is currently a bottleneck, before transferring to tape
    - *art* team was surprised this step takes a long time
    - We will ask for help w/ code review
    - per *NOVA* : hope to extract metadata instead of on FTS

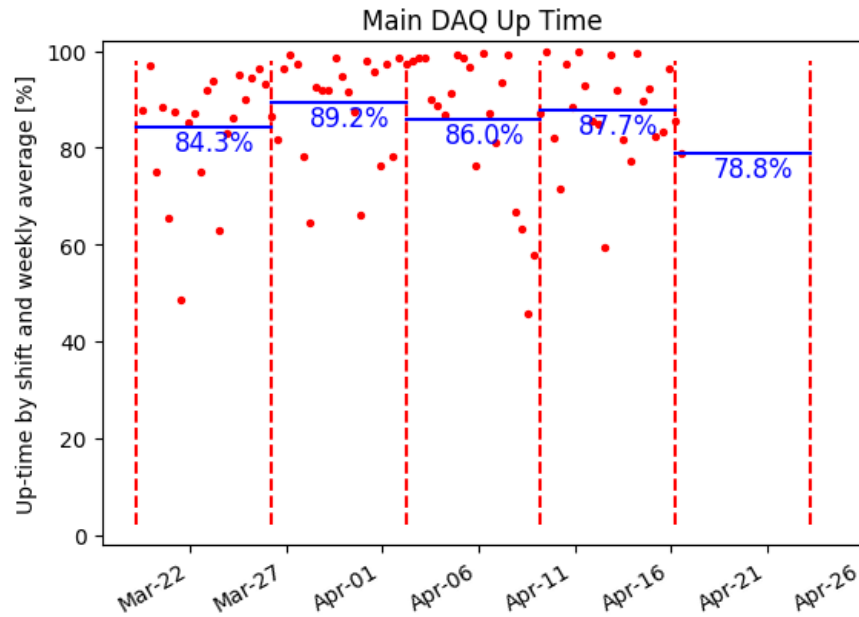
# Various Challenges Last Week

- Mon-Wed: Li Lens repair
- Wed-Thu: RF struggles (could only run 8 pulses)
- Thu: Turned On
- Fri: Kicker HV increased ~20%
  - Able to store more beam with better momentum distribution
  - Flux increase ~60%. Approaching 35-40% of design goal.
  - Great news → Systematics last Sat, this Mon, Tue to tweak other parameters
- Fri 3:30 PM, pressure switch A0 tripped compressor
  - Great operator response to get compressor going again
  - Slow dumped magnet
  - Stabilized, ramped up, trolley run, got quads up again by 4:30 am

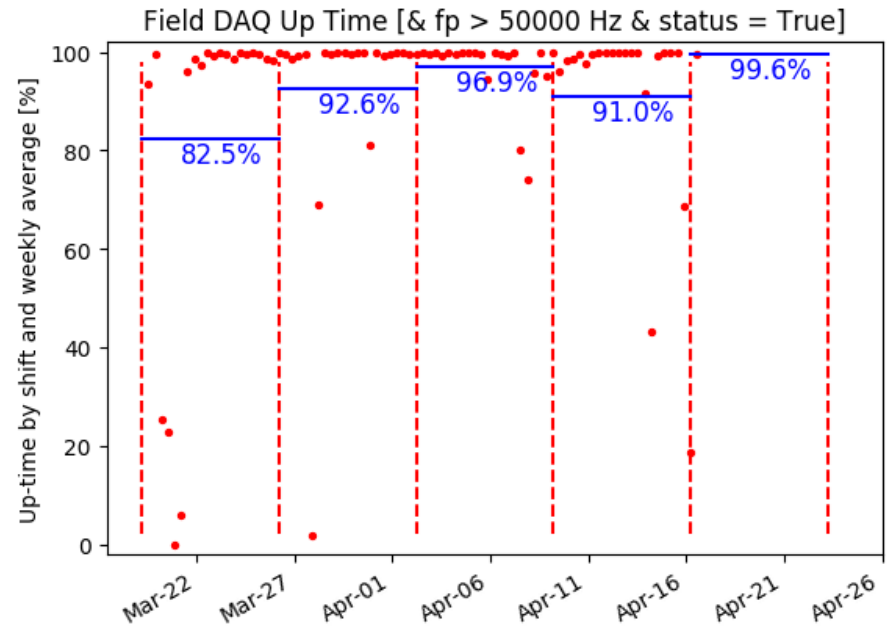
# Various Challenges Last Week

- Sat: Studies (great progress with tuning @ higher setpoint)
- Sun: ground fault, downtime
  - Opportunistic trolley run to reset clock
  - We were mostly ready for beam when Switchyard supply breaker trip → transient tripped off all of our compressors
  - Magnet Slow Dumped 2:30 pm
  - Great operator response to prevent quench (<150 sec total from alarm until running again)
  - Waited for stability (~5 pm)
  - Some trouble with a warm bubble in a ring after slow dump
  - Got systems back up around 10:30 pm
- Mon: No trolley run, performing systematics while we ensure stability w/ complex

# DAQ Up Time Trend Plots

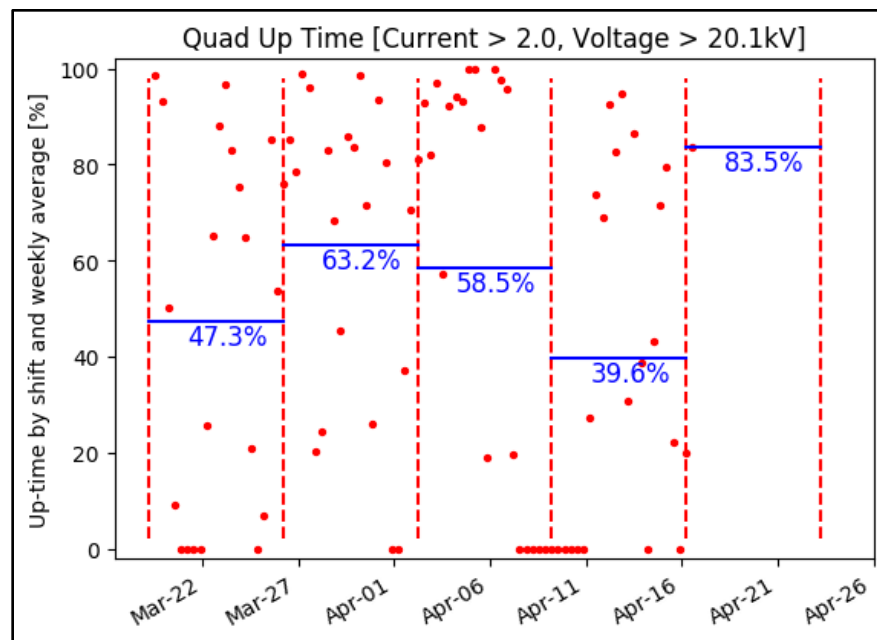
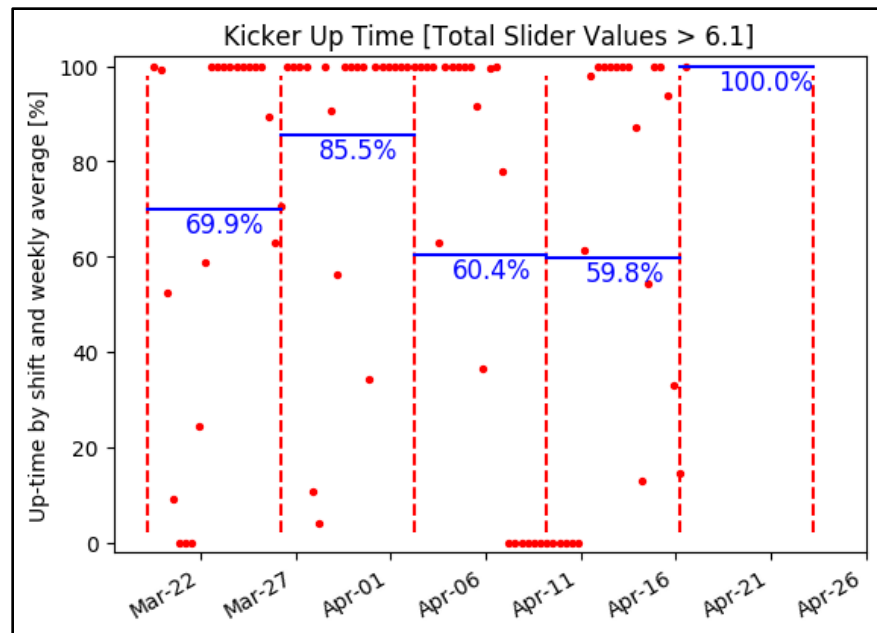
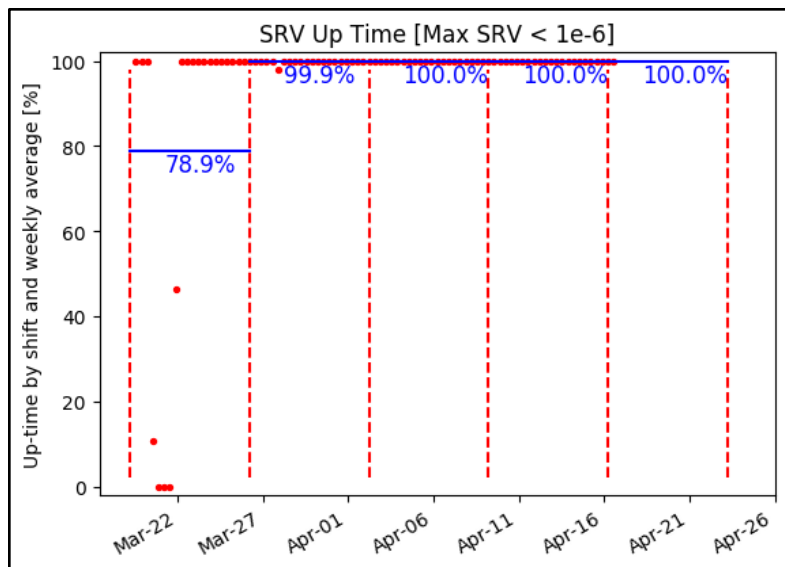


Mostly fine, lots of beam downtime last week



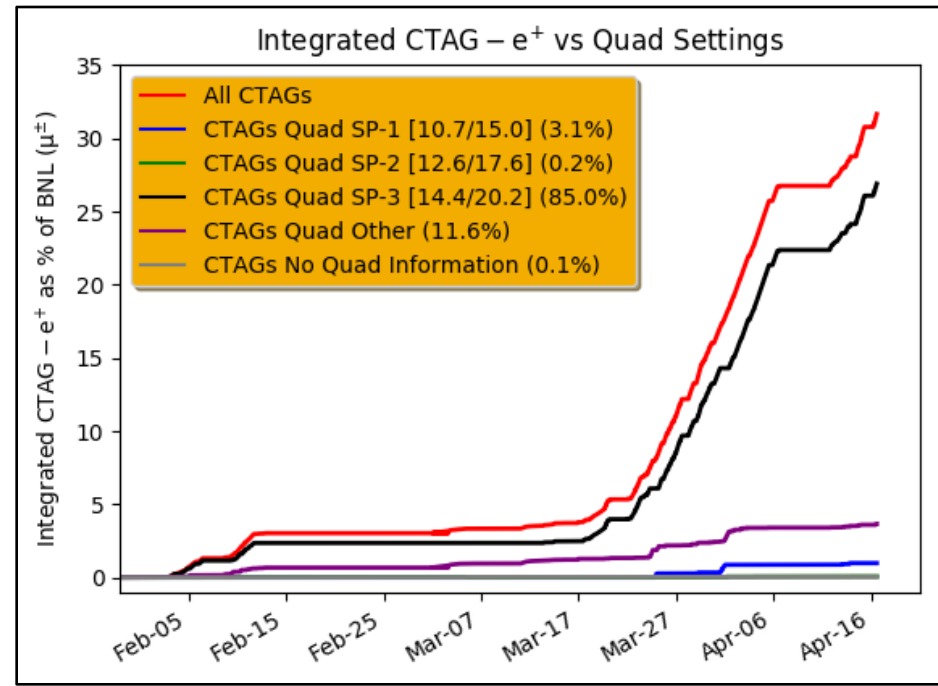
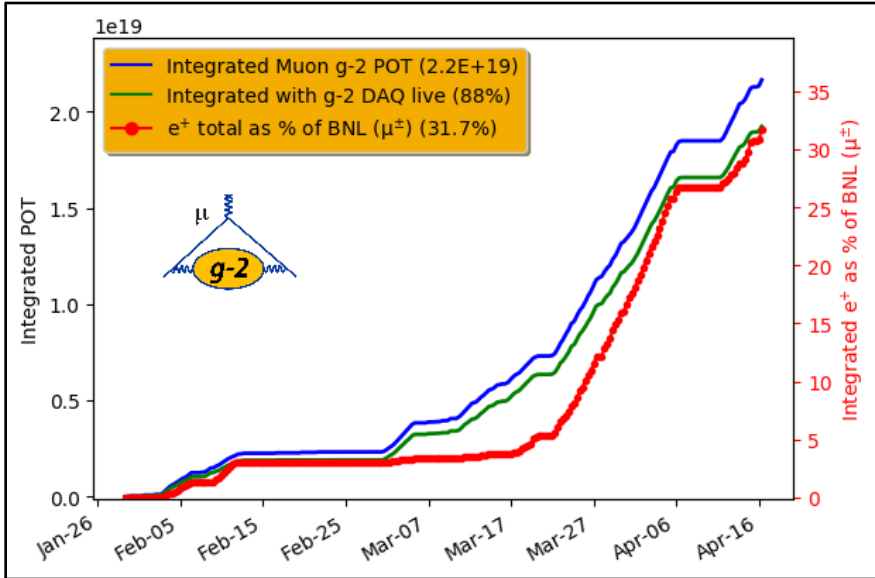
Lots of magnet downtime last week.  
No performance issues

# Trend Plots Ring

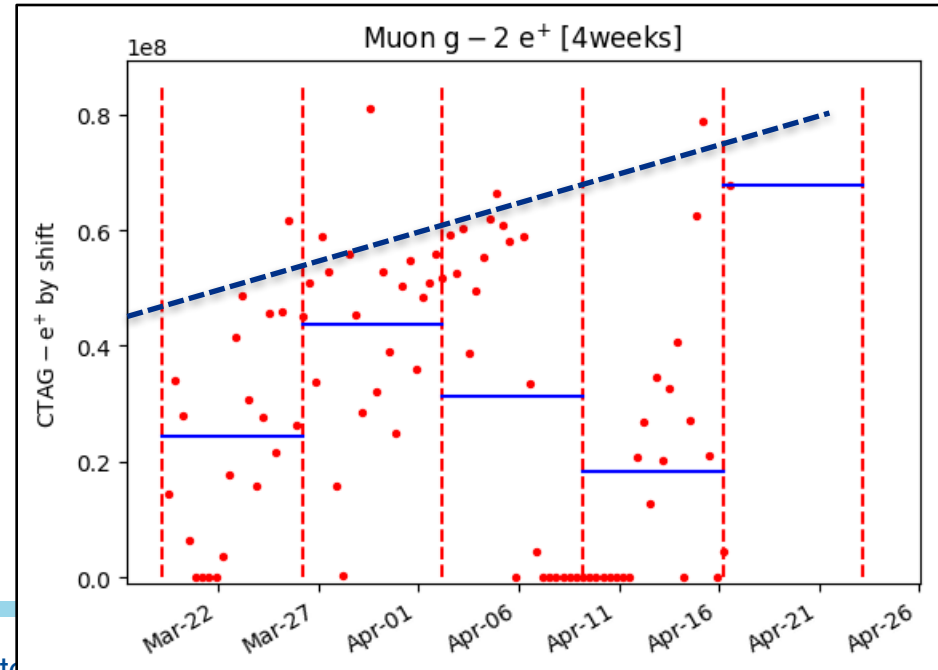


- SRV up for a while now
- Several magnet downtimes (takes down quads/kickers)
- Usual quad sparks/recovery
- Kickers happy at new set point

# Performance



- All decay positrons
  - Upper right shows subsets with different quad settings
- ~0.32 x BNL since 3/21
- 88% POT weighted livetime
- Our best shifts e<sup>+</sup> are getting better



Muon g-2

April 16, 2018

Update for new