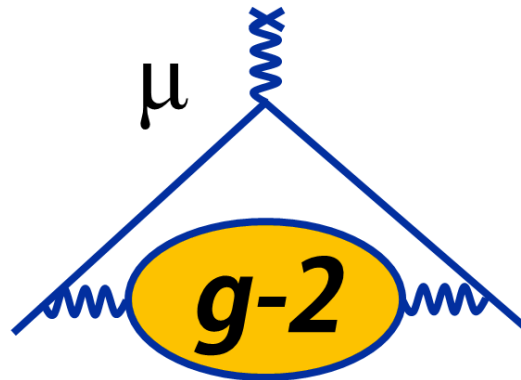




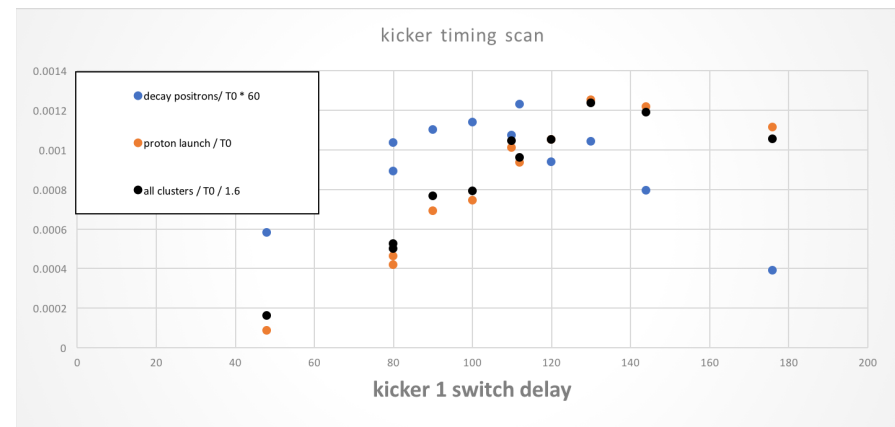
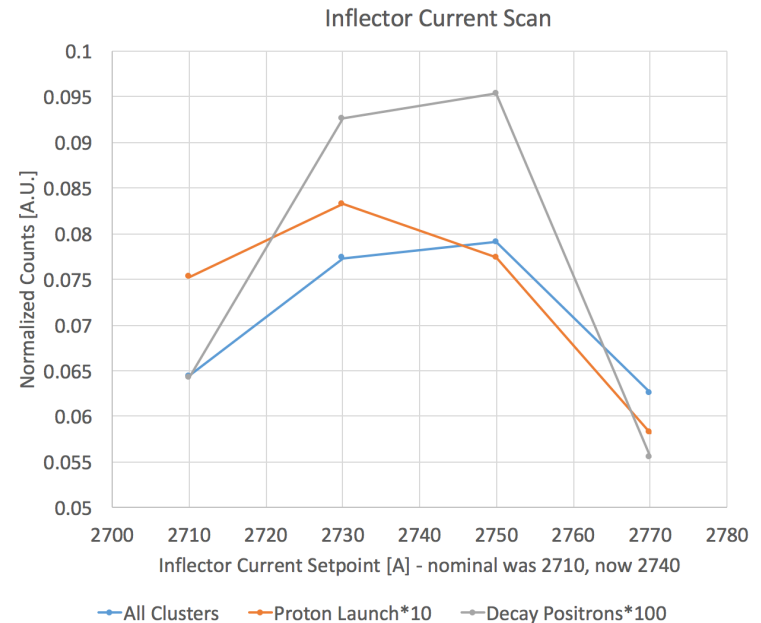
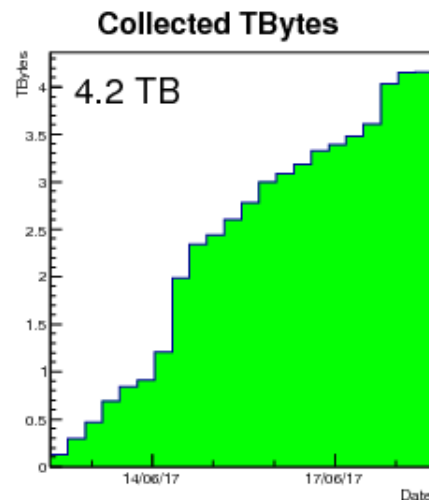
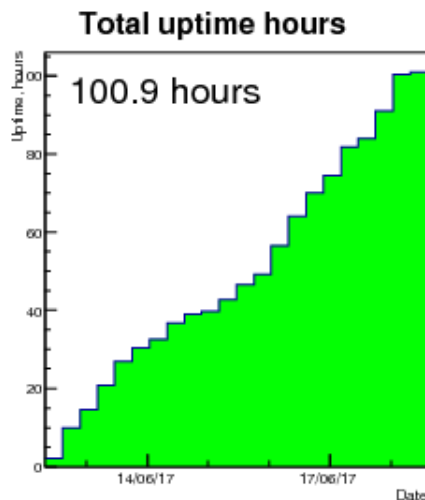
# Muon g-2 Experiment: Commissioning in Progress

Fred Gray, Regis University  
All Experimenters' Meeting  
June 19, 2017



# Summary: Continuing optimization of inflector, kicker, quadrupoles with beam

- First >7 day magnet-on period.
- ~70% magnet and inflector uptime.
- ~60% DAQ uptime.
- Access from June 14 (7 a.m.) – June 16 (2 p.m.) for work in storage ring vacuum chambers.



Average Jobs Running Concurrently

**133**

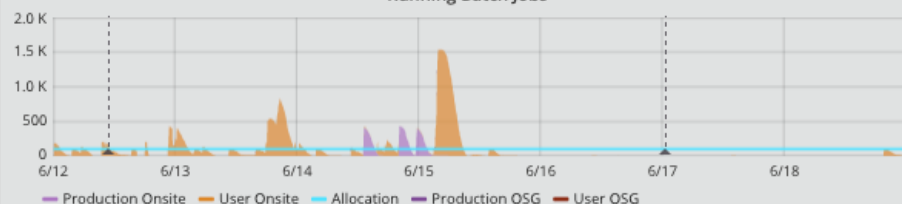
Total Jobs Run

**7675**

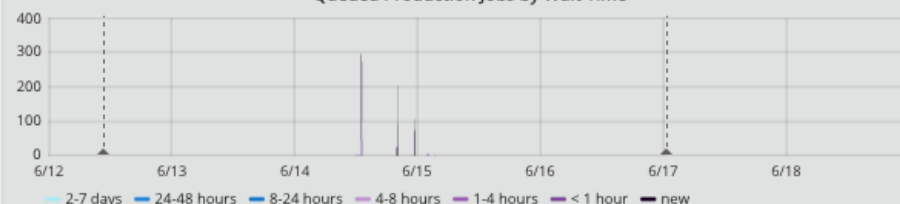
Average Time Spent Waiting in Queue (Production)

**49.9 min**

Running Batch Jobs



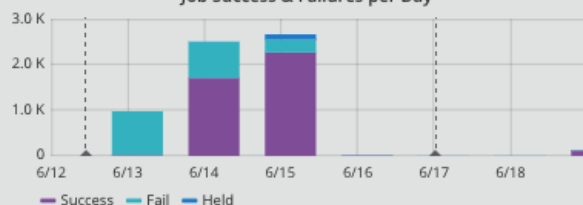
Queued Production Jobs by Wait Time



Job Success Rate

**65%**

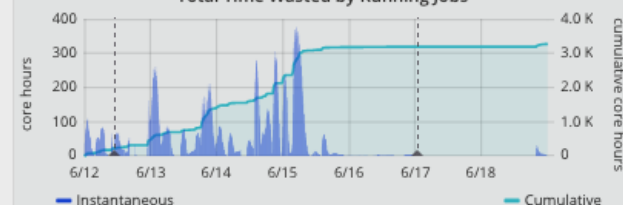
Job Success & Failures per Day



Overall CPU Efficiency

**69%**

Total Time Wasted by Running Jobs



New Data Cataloged

**6.4 TB**

Total Data Cataloged

**0.4 PB**

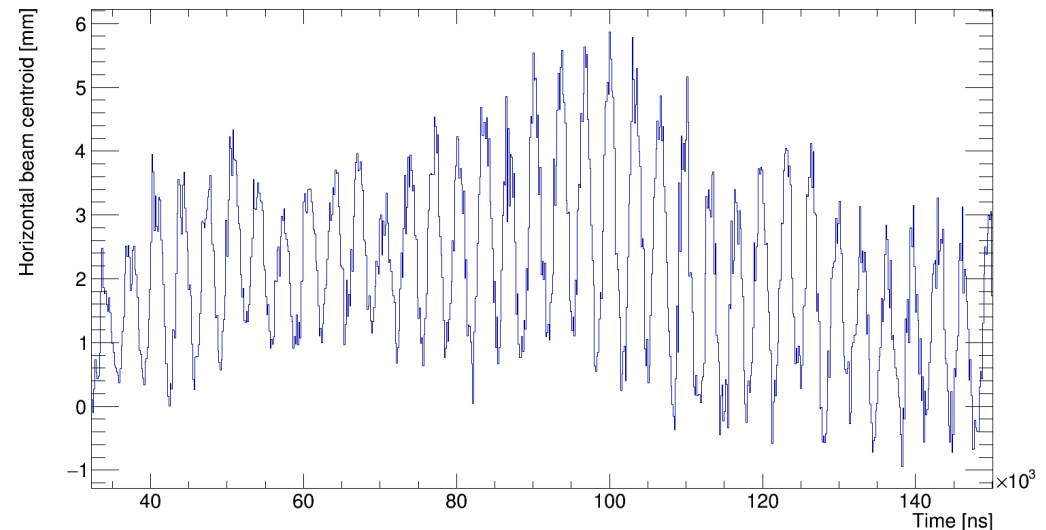
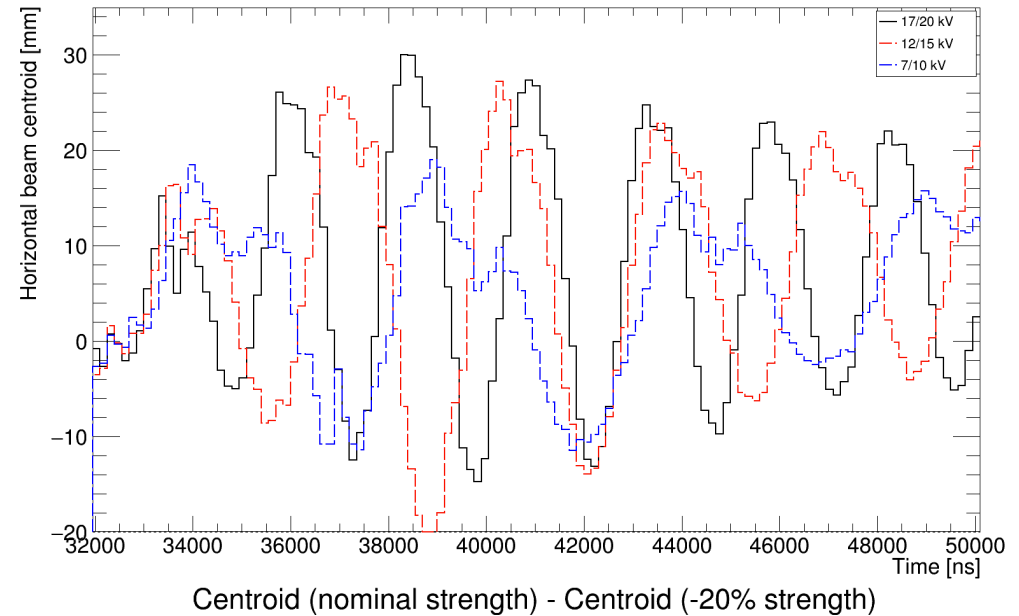
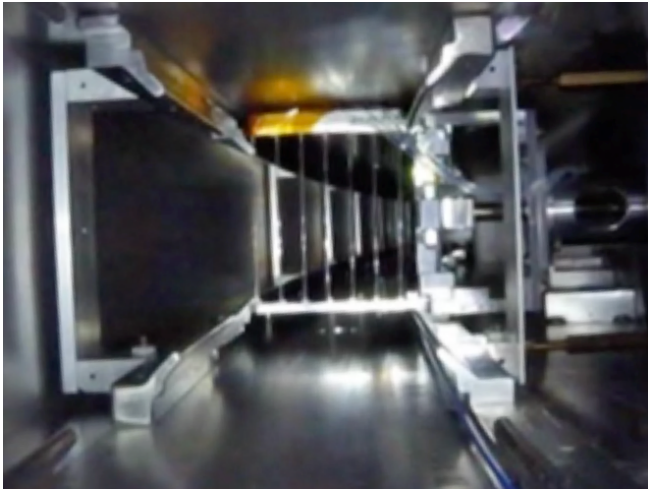
- Finishing new production scripts and software release.
- Well-attended tutorial sessions on accessing data.

# Kicker and quadrupoles affect beam as expected

Coherent betatron oscillations vs. quadrupole voltage and vs. kicker current:

$$\omega_{CBO} = (1 - \sqrt{1 - n})\omega_C$$

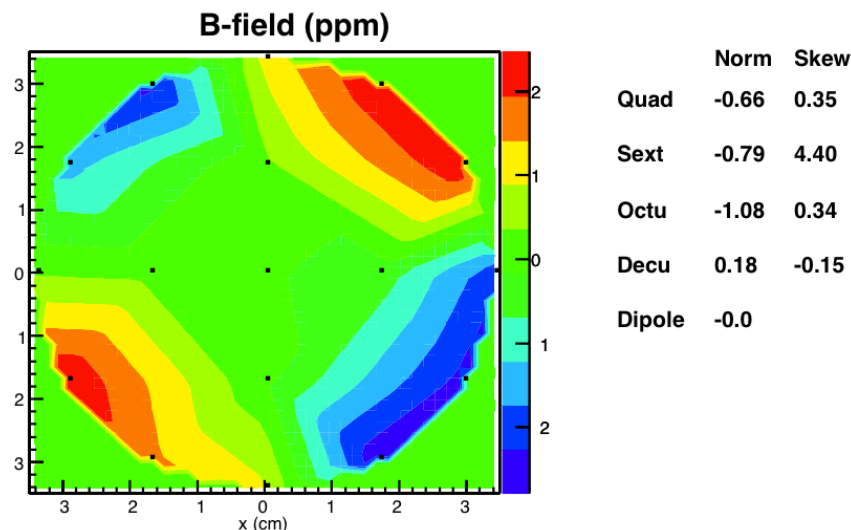
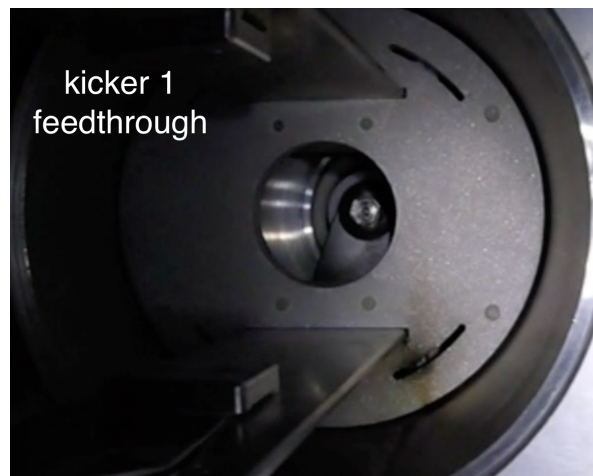
Measured with fiber harp:





# Activities during June 14-16 access

- Trolley now makes full circuit around vacuum chambers!
- Used for video inspection of kickers and quadrupoles: only one sparking location.
- First complete B-field map since vacuum chamber installation:
  - Large perturbation in inflector region needs more investigation.
- Vacuum gauges installed near quadrupoles.
- Tracker gas changed to Argon/Ethane.



# Plans for upcoming week

- Raise threshold for radiation monitors in MC-1.
- Improve vacuum in storage ring.
  - Probably a small leak to fix in tracker.
- Improve transmission through inflector.
- Implement surface coils to reduce radial magnetic field.
- Test “scraping” with quadrupoles and collimators.