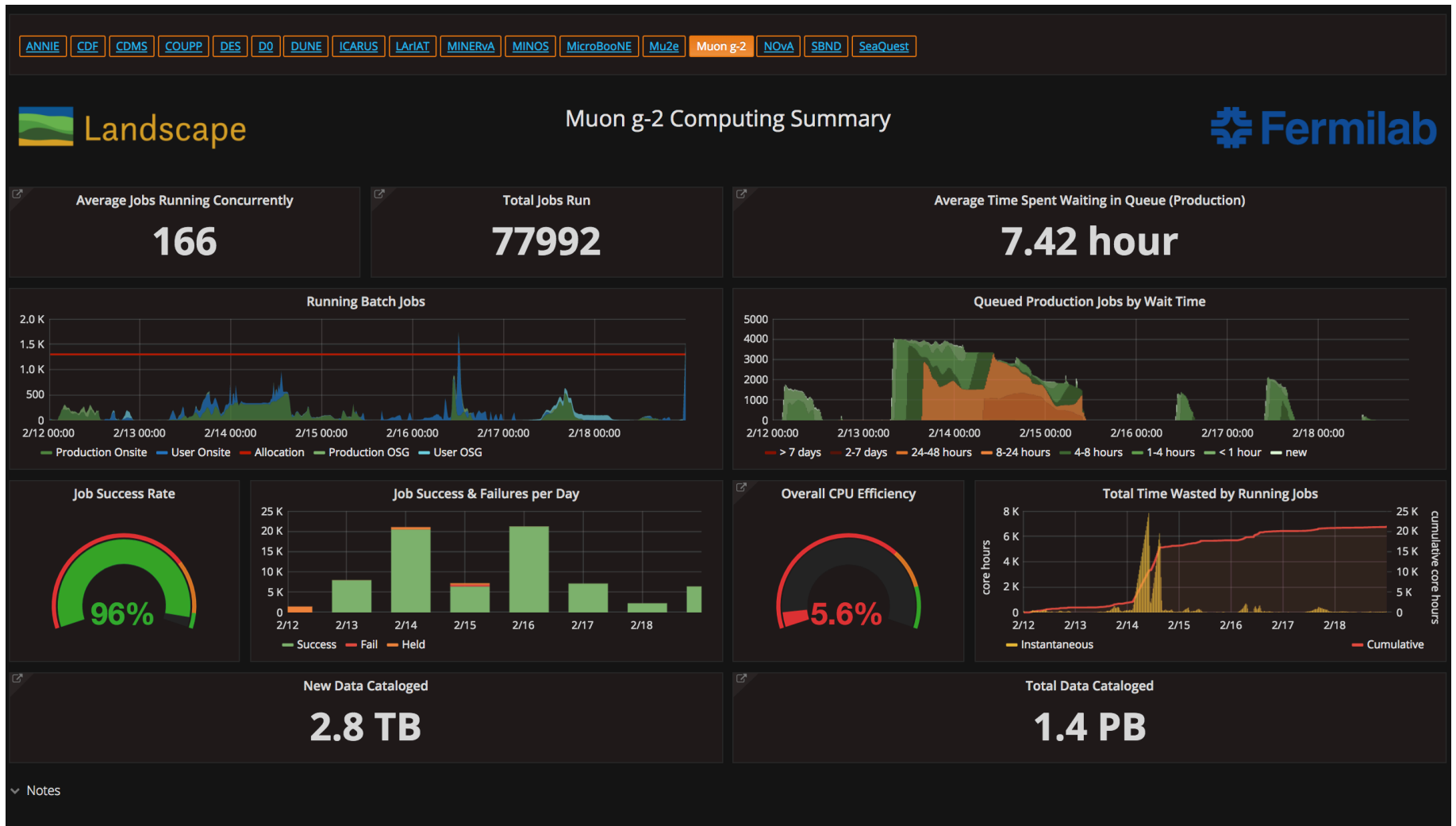


Muon $g-2$ AEM Update

Brendan Kiburg, Jarek Kasper
Feb 19, 2018

Computing

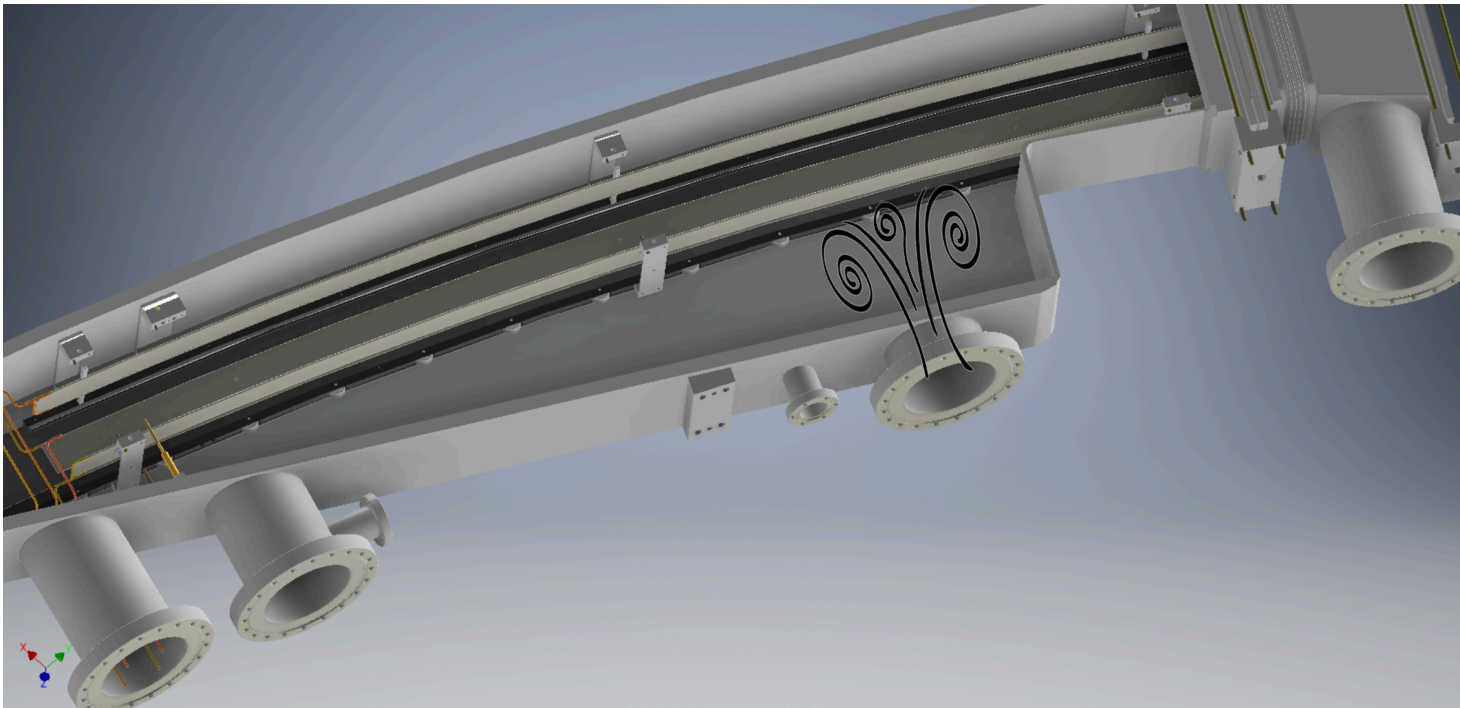


Last Week

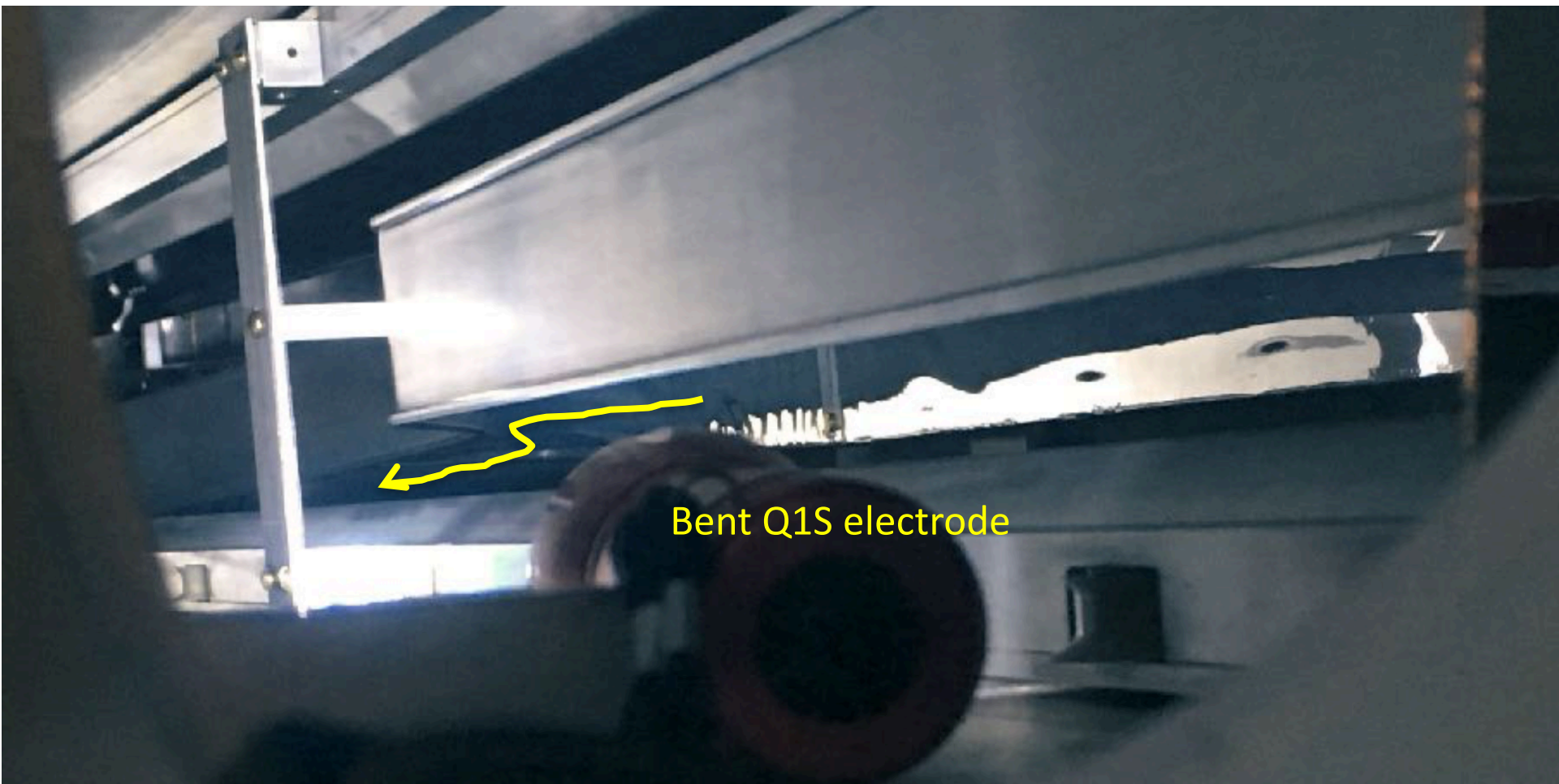
- Performed SRV access [Mon-Thurs]
 - Brought in engineering and tech support to help with the trolley motion problems
 - Extracted and retuned the absolute magnetic field calibration probe
 - Performed tests with the kickers
 - Used downtime to improve magnet/inflexor cryo
 - Pumped down Thursday pm. Had an issue.
 - Identified electrical short of two quad plates
 - Suspected mechanical damage
 - Decided not to bring trolley around
 - Performed another letup Friday afternoon

Q1 Vacuum incident

- Accidentally connected 1 atm cryo pump reservoir to the ring which was at 10^{-4} atm, at Q1short location in vacuum chamber.
- Fair amount of damage
 - Inner Q1S electrode bent significantly w/ one horizontal ceramic standoff broken
 - Outer Q1S mylar electrode intact but one vertical ceramic broken
 - Cage strut bent, uncertain how much cage might have shifted within chamber



Q1 Vacuum incident (looking downstream)



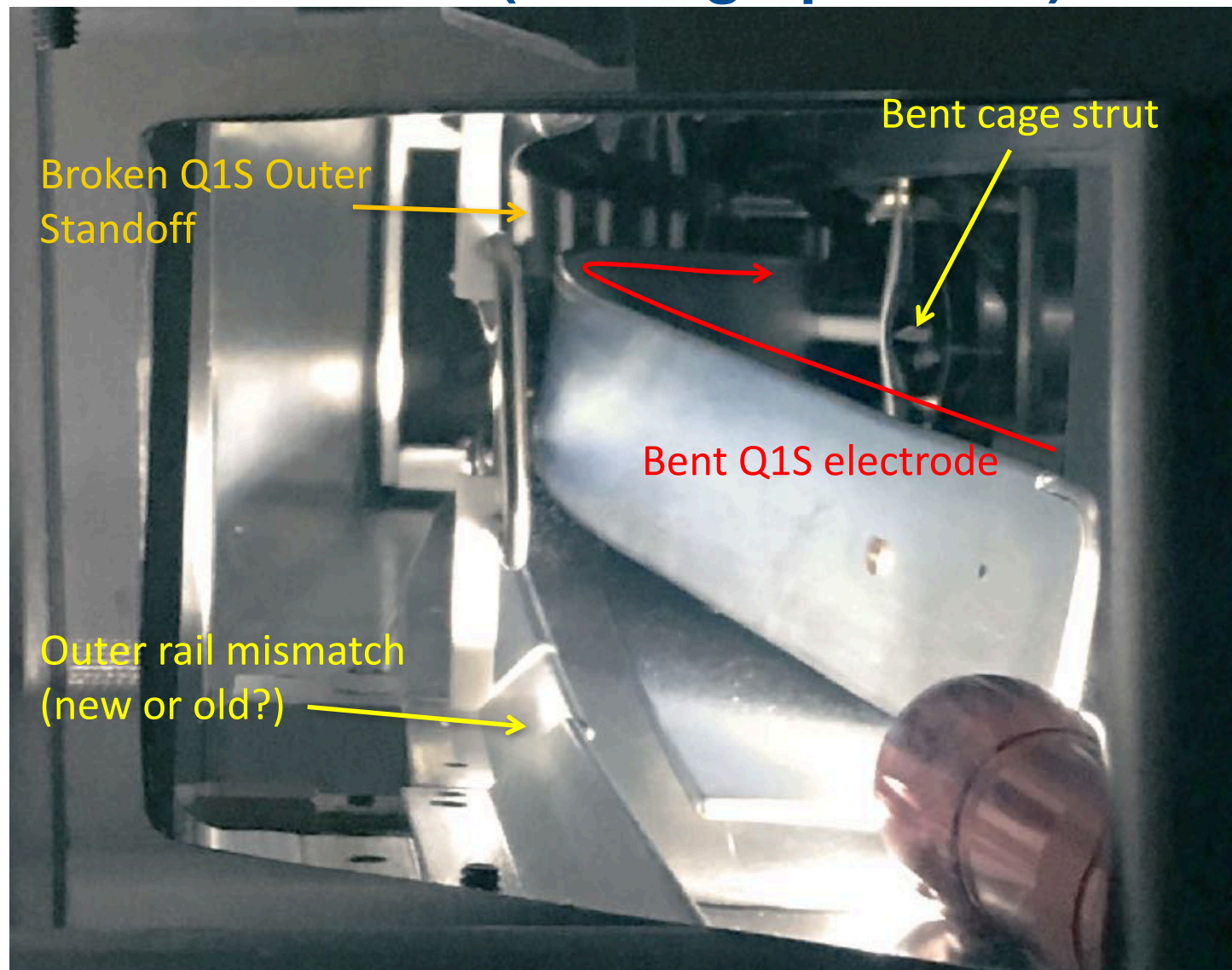
Pictures from J. Kaspar and H. Nguyen

Q1 Vacuum incident (looking downstream)



Broken horizontal ceramic
standoff on Q1S inner

Q1 Vacuum incident (looking upstream)



Where are we headed

- Experiment stood down this weekend
- Brought in extra engineering and technical support
 - Examining the possibility of an in-situ repair. Written plan being drafted, could know if its hopeful by Thursday.
 - Mechanical: Need to ensure trolley passes
 - Electrical: Repairs may be difficult, quad may not "work"
 - Physics: Systematics with out of spec quad need to be examined
 - Assessing alternatives
 - Turn off quadrupole (and its symmetric partner)
 - Pulling the chamber