

# **NOvA Operations Summary**

## **September 2020**

Hongyue Duyang (U of SC) and Matt Judah (UPitt)  
PMG Meeting  
10/15/2020

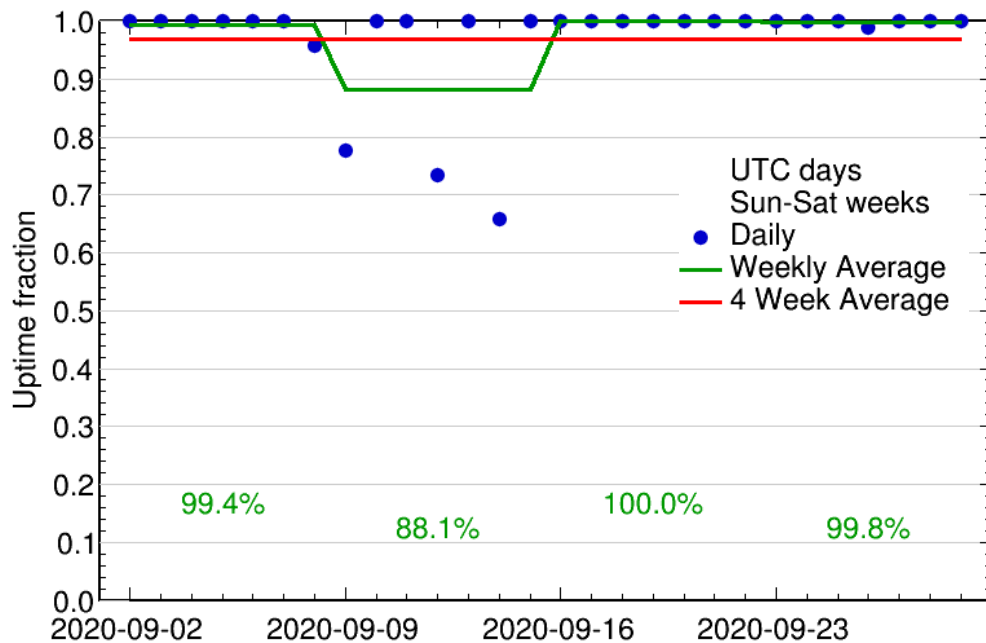


# Operations At-a-Glance

- Web-based shifts continue to run smoothly
  - Experts provide 24/7 on-call support and make use of automated alerts
- Shutdown work:
  - Primarily focused on upgrading the DAQ systems to SL7
  - New hardware installations at Ash River
  - Updating our offline Data Quality checks

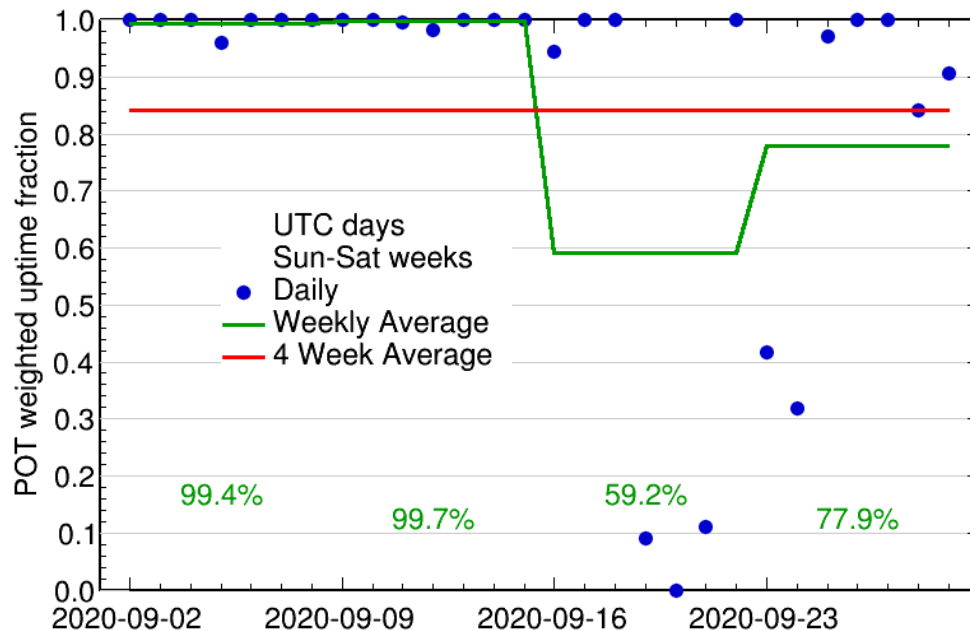
# Far Detector Operations

- **Major Downtimes:**
  - 9/12 - Power Bump at AR
  - 9/14 - Compressor Failure overnight, technician called in for repairs in the morning
- **Downtime Length:**
  - 16 hours of unplanned downtime
  - 6 hours for planned expert work



# Near Detector Operations

- **Major Downtimes:**
  - 9/19 - 9/21 - Weekend down time for IERC work at Fermilab
  - 9/23 - Powered down for more work at Fermilab.
- Several small downtimes due to run crashes
- Most downtimes are related to summer work



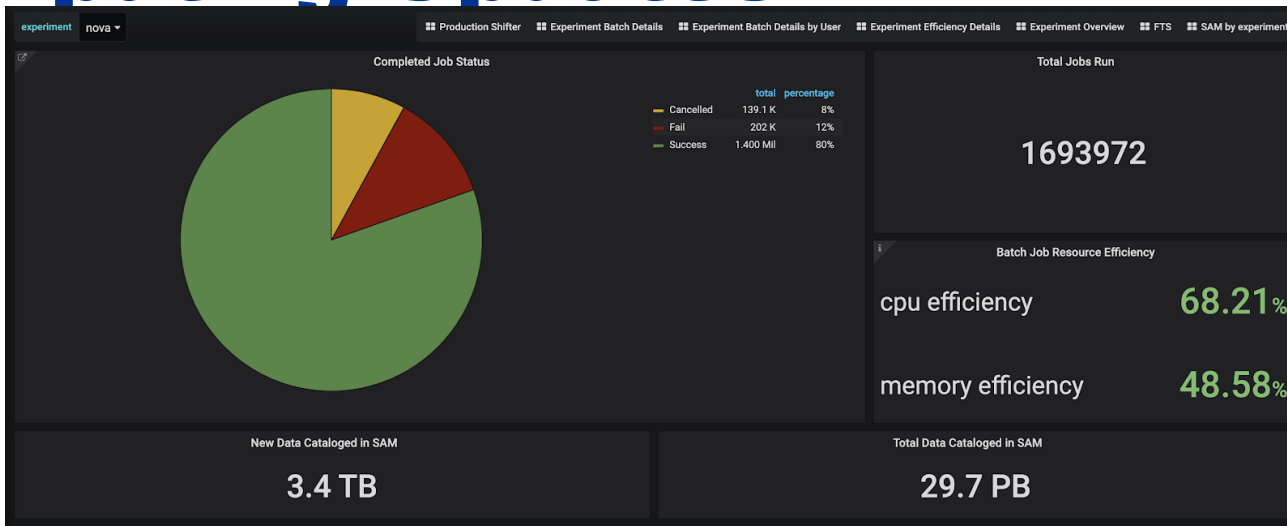
# Summer Work

- Major push has been moving the NOvA DAQ from SLF6 to SL7
  - Basic strategy: Convert some nodes to SL7 to test our existing DAQ code on SL7 hardware
- **Far Detector:**
  - Three (3) SL7 nodes running successfully as buffer nodes with full trigger processing
  - SL7 manager node used to control all DAQ nodes.
    - Communication appears to be a bit slow, we are currently running with 10% less buffer nodes (130)
    - Working to understand the bottleneck
  - Other operations upgrades:
    - Installed new router and several new DAQ nodes

# Summer Work

- Major push has been moving the NOvA DAQ from SLF6 to SL7
  - Basic strategy: Convert some nodes to SL7 to test our existing DAQ code on SL7 hardware
- **Near Detector:**
  - Entire buffer node farm is running successfully in SL7
  - SL7 manager node used to control all DAQ nodes.
  - Using SL7 node as our data machine
  - Goal is to get the entire ND DAQ running on SL7 nodes.

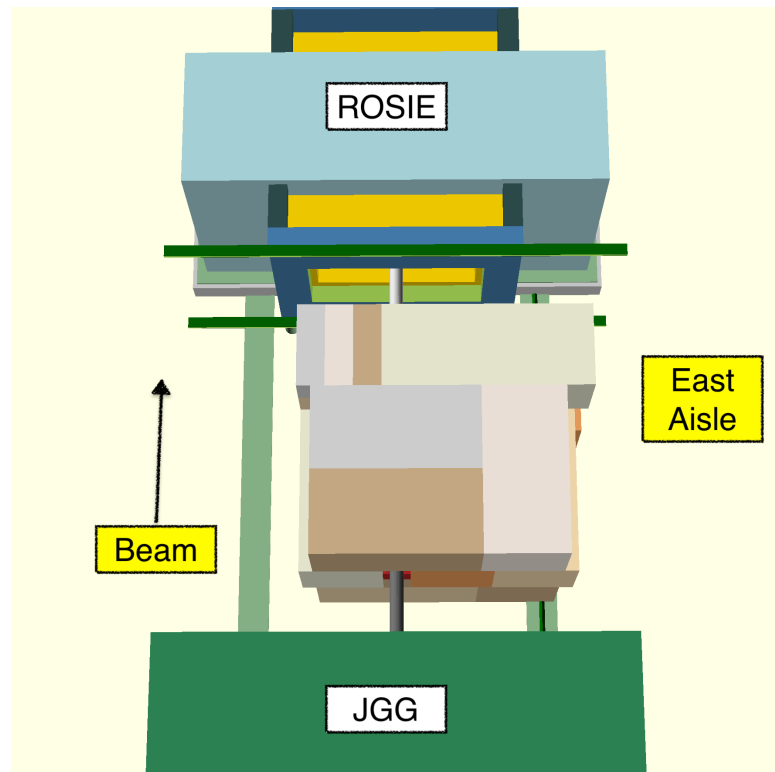
# Computing Updates



- Between Sep 1 - Oct 5, NOvA ran a total of ~1.7M jobs
- Out of ~1.7M jobs, ~930k were Production.
- Production 5.1 campaign is currently underway which is responsible for the large increase in the number of production jobs
- Previous week, Production completed MiniProduction v1 for both FHC and RHC mode.
- This mini-production will be used to validate all changes made to the detector simulation for Prod5.1
- The FIFE monitor that we previously used to monitor these stats had a bug which on our report was replaced by this new monitoring webpage on Sep 24.

# NOvA Test Beam Status

- Based on simulations, we are working with PPD engineers, AD safety officers, and the radiation safety group to deploy new concrete-block shielding at MC7
  - Mitigates the MCenter plume impinging on our detector
  - Would need to be deployed no later than November
- Planning our operations and run plan for our final run to ensure we collect as much good data as possible before Summer 2021
- Analysis of Period 2 data is ongoing





# **NOvA Analysis Updates**

“Supernova detection in NOvA”  
published in Journal of Cosmology and Astroparticle  
Physics