

NOvA Operations Update

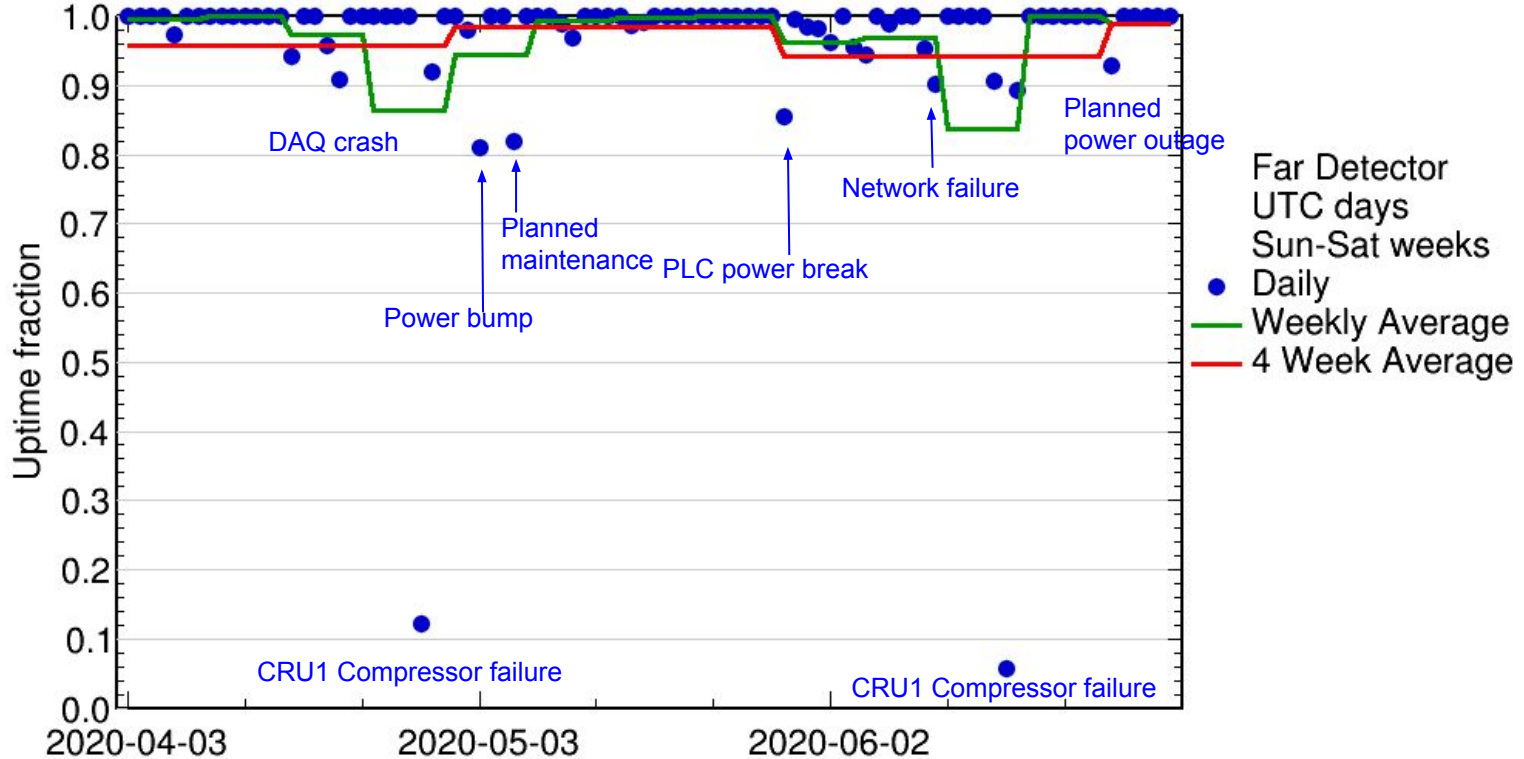
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Proton PMG Meeting
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NOvA Operation Status

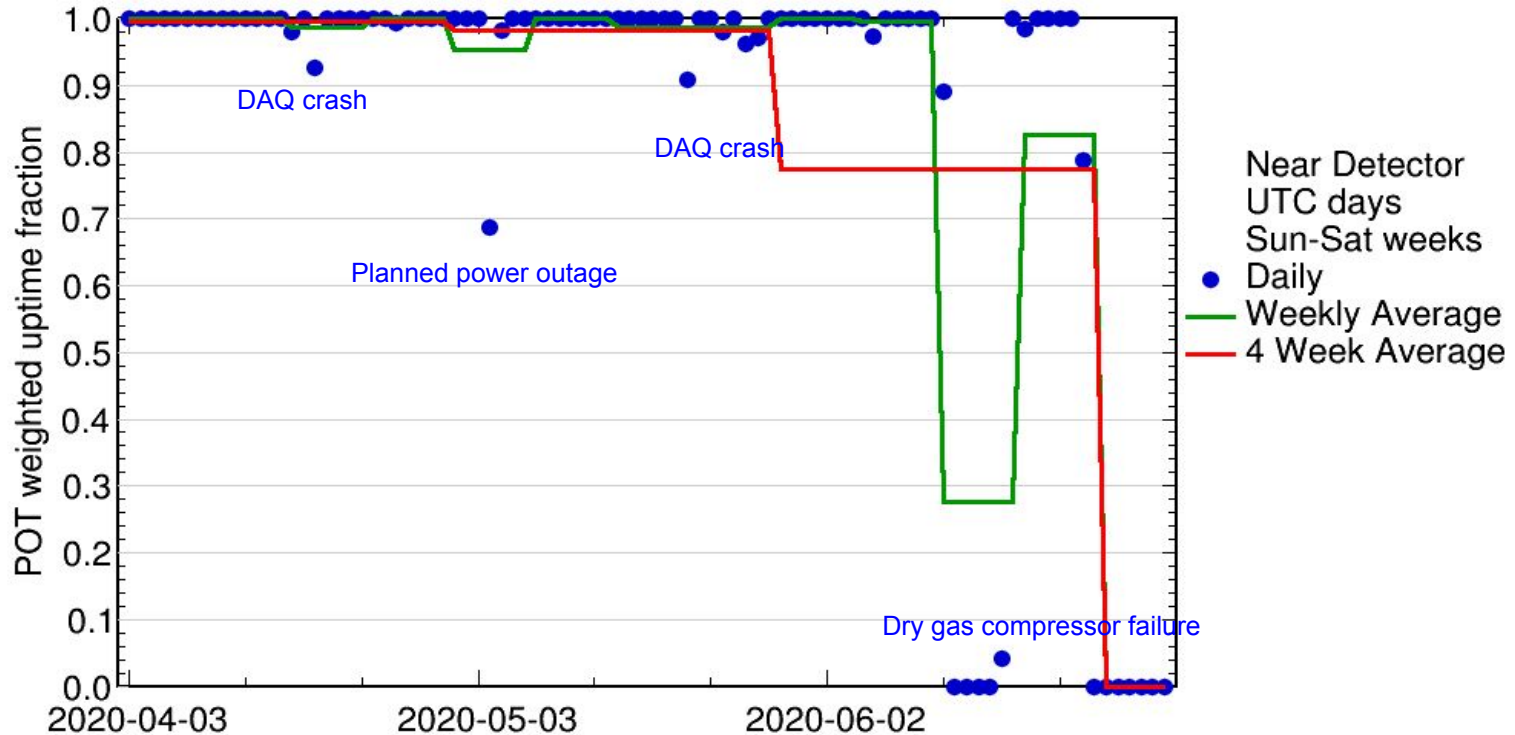
- We keep both our far detector and near detector running with no beam since March 21 to minimize hardware loss due to power cycling and maintain sensitivity to non-beam physics.
- Most of our Remote Operation Centers are closed due to COVID-19. Shifters are given tools to take shifts from their laptop or home computer to monitor the detectors at regular intervals.
- Additional email/text alarms to notify experts whenever the DAQ goes down or any hardware issues occur.
- So far everything works pretty well.
- Work ongoing during the summer shutdown to improve DAQ/Data-Quality softwares.

Far Detector Operations



Major Downtimes: CRU1 compressor failed on 4/28 and 6/16, each causing ~24 hrs downtime

Near Detector Operations



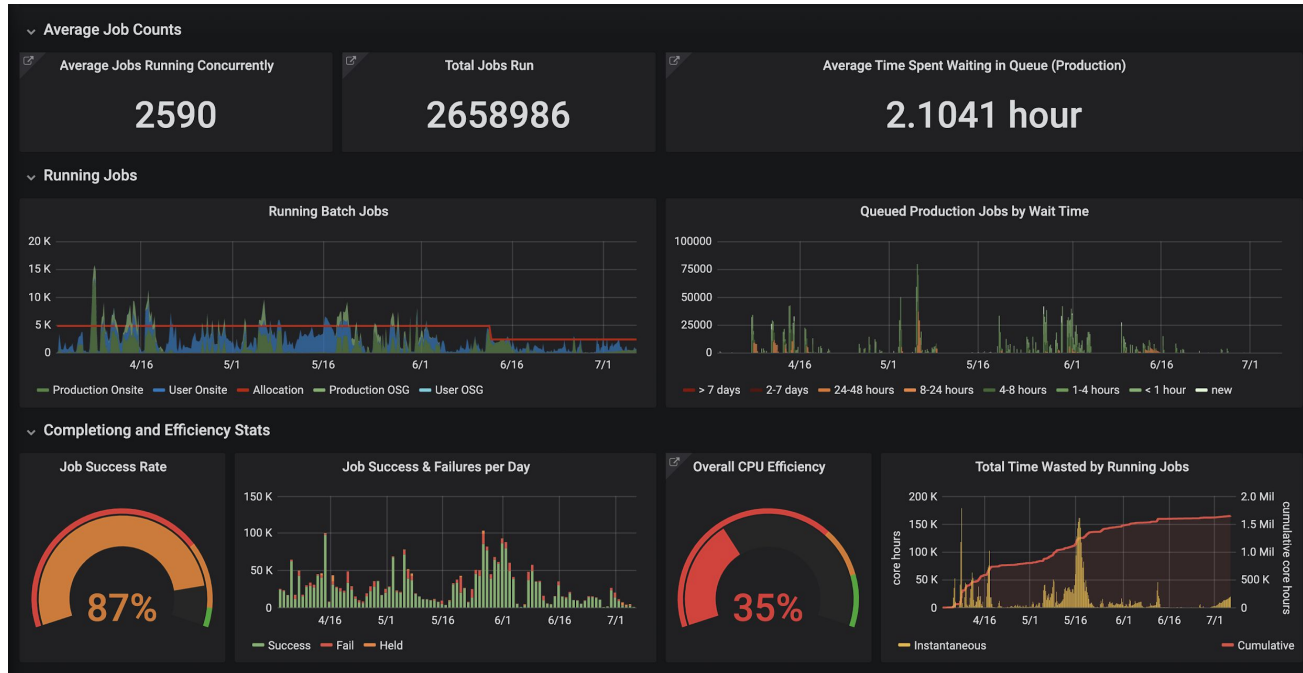
Major Downtimes: ND dry gas compressor failed twice on and 6/12 and 6/24, causing ~1 week / 2 weeks downtime. (Minos elevator was out of commission for much of last week.)

Recovered on Tuesday 7/7.

NOvA Analysis Update

- New papers published or submitted in the quarter.
 - The paper on NOvA's search for neutrino signatures coincident with gravitational wave alerts from the LIGO/VIRGO collaboration: DOI:10.1103/Phys. Rev. D 101 (112006)
 - The paper on NOvA's capabilities and sensitivity to supernova neutrinos was and posted as arXiv:2005.07155 and submitted to the Journal of Cosmology and Astroparticle Physics.
 - The paper on the tuned neutrino interaction model used by NOvA in its two previous neutrino oscillation analyses was posted as arXiv:2006.08727, and was submitted to the European Physical Journal C.
 - The paper on NOvA's measurement of the coherent production of neutral pions in neutral-current neutrino interactions was accepted for publication in Physical Review D.
- New physics results presented at Neutrino 2020.
 - The first ν_μ and ν_e inclusive cross-section results. Both measurements are double differential in outgoing lepton energy and scattering angle. (The first of its kind in the world for ν_e .)
 - A new neutrino oscillation result, employing improvements to simulation, reconstruction, analysis method, and 50% more neutrino-mode beam data.

Computing Updates



- Finished Production 5 campaign for Neutrino2020 in May.
- Between April 2, 2020 - July 6, 2020 : Total ~2.7M jobs were run out of which ~1.5M were production.
- Looking forward to the Production 5.1 campaign focussed on producing samples for NOvA ND analysis.

NOvA Testbeam Status

- Operations concluded for FY2020 in March. Expecting to resume data collecting later this year upon the return of Switchyard beam.
- Currently In a 'mothballed' safe state, with weekly walk-throughs to monitor all systems. Only system running is the dry gas for the APDs.
- Making progress in data analysis.
- A lot of concurrent work ongoing to further our understanding of the beam and identify improvements for our next run.

