



# NOvA Operations report for June-July 2024

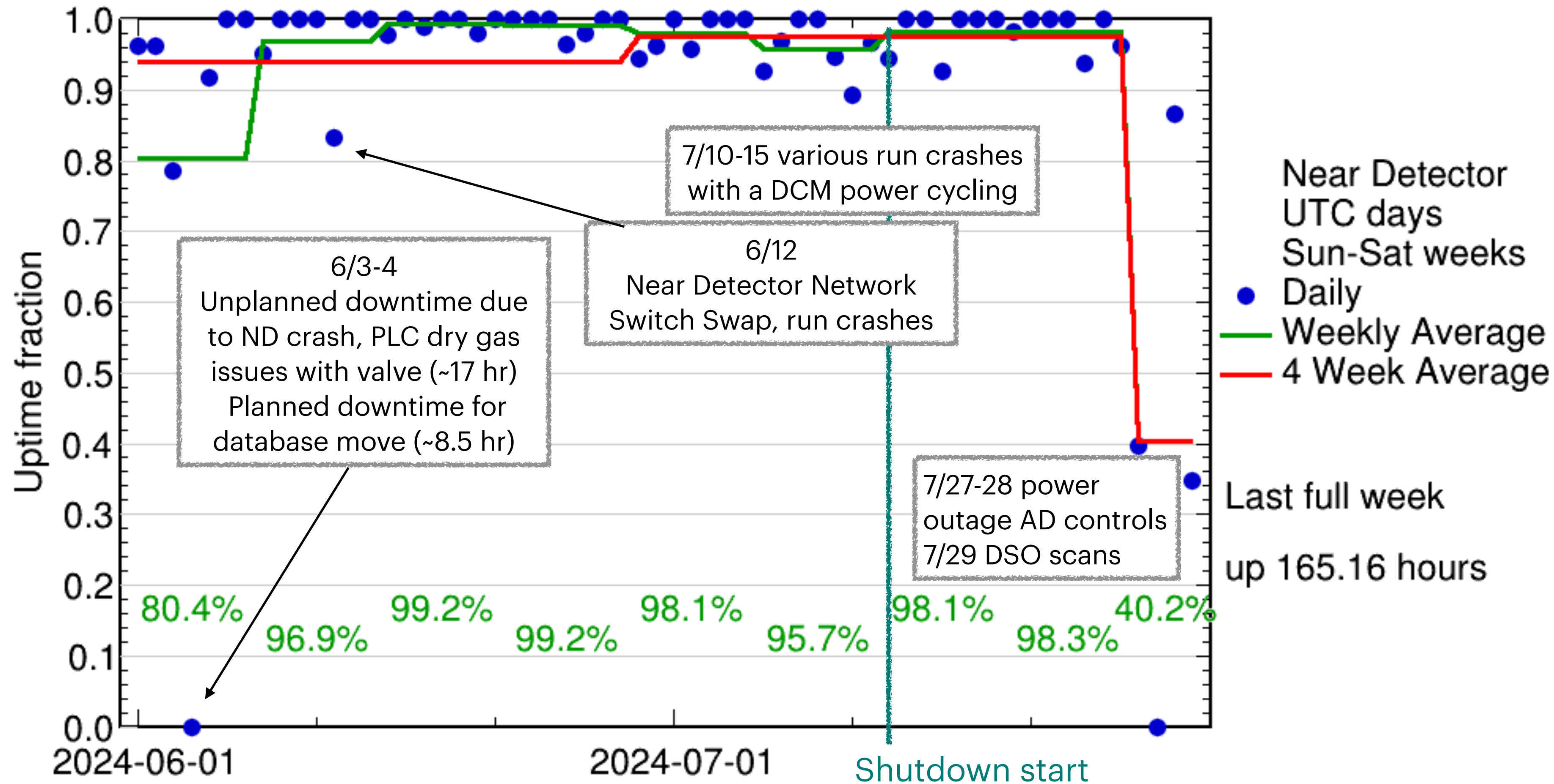
**Maria Martinez-Casales  
with Josh Barrow**

**Proton PMG/ All Experimenter's Meeting  
August 1st, 2024**

# Operations Highlights

- Thank you to all shifters and experts for their hard work in keeping our detectors running.
- Josh Barrow will take over as RunCo on August 11th
- ND database migrated to the AL9 nodes (and ifdb12) (June 3rd)
- FD DAQ database moved to AL9 nodes. Testing/debugging ongoing (Jul 31)
- ROC west NOvA machines mostly finished upgrad to AL9.
- Restarted ND refurbishment work at LArTF: assembling APDs and vacuum testing started July 23. Work continues this week.
- DAQ expert training on ROC west from August 5-9th.
- ND typical operation:
  - ~1-3 crashes per week with quick recovery in June
  - More instances of run crashes in July
- FD operating very stable before temperature/humidity increase on July 27
- Final FY24 numbers: (recorded/delivered at FD)
  - **2.85**/2.89 E20 (98.8%)

# Near Detector summary



Total POT recorded

46.25×10<sup>20</sup>

FHC: 26.80×10<sup>20</sup>

RHC:15.57×10<sup>20</sup>

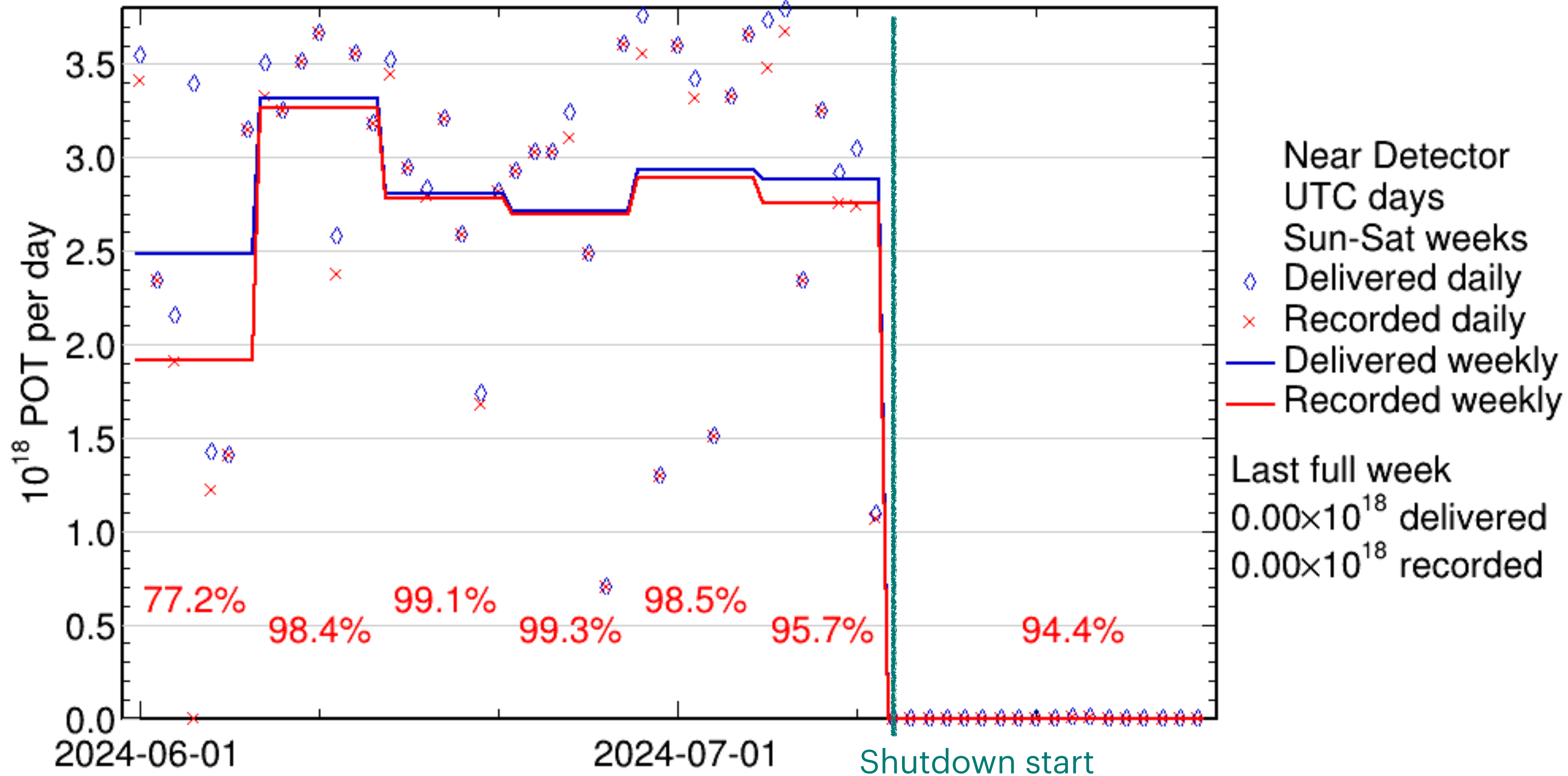
FY24 POT recorded

Delivered: 2.889×10<sup>20</sup>

Recorded: 2.802×10<sup>20</sup>

96.98%

# Near Detector summary



Total POT recorded

46.25x10<sup>20</sup>

FHC: 26.80x10<sup>20</sup>

RHC: 15.57x10<sup>20</sup>

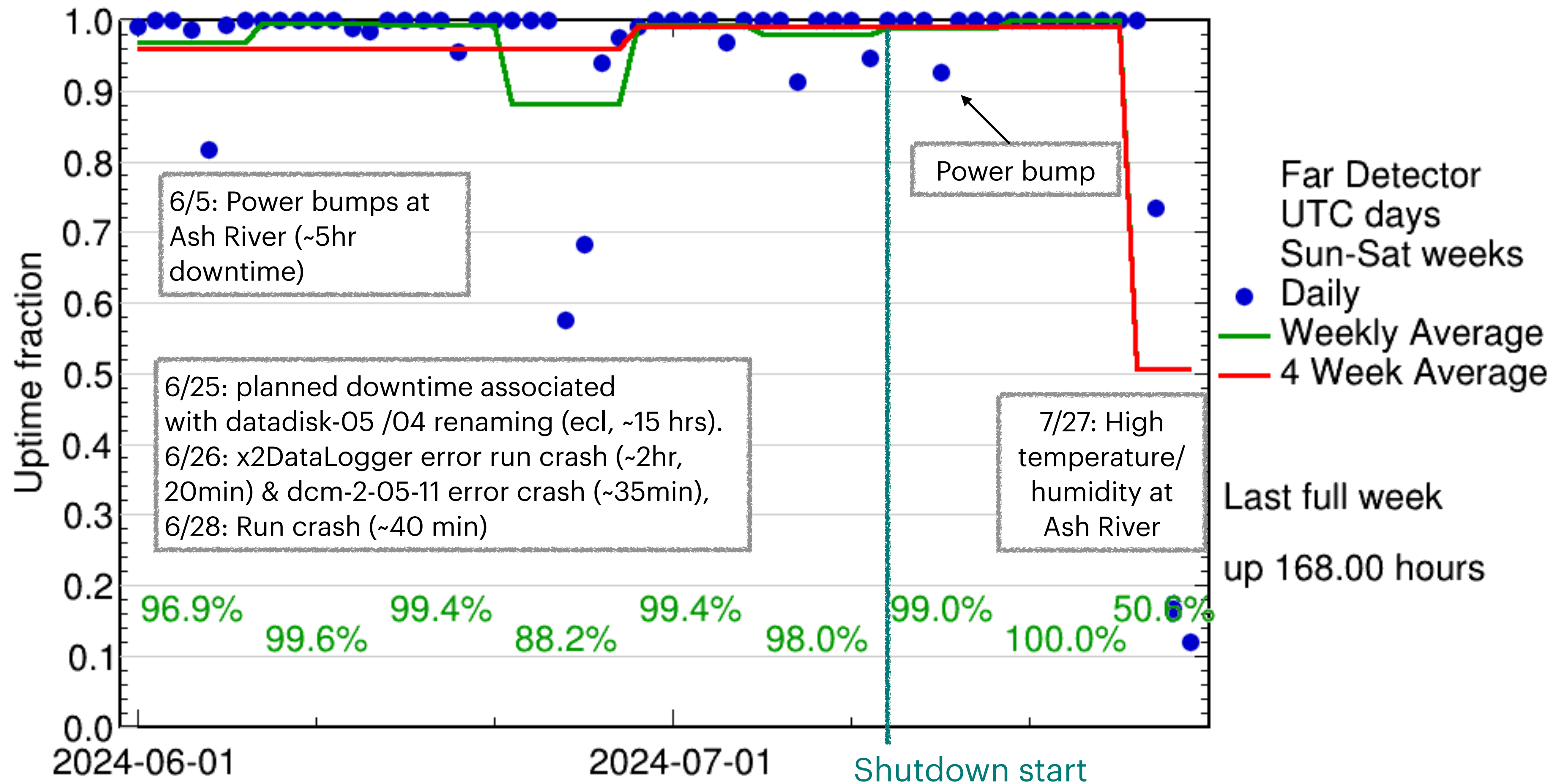
FY24 POT recorded

Delivered: 2.889x10<sup>20</sup>

Recorded: 2.802x10<sup>20</sup>

96.98%

# Far Detector summary



Total POT recorded

44.95×10<sup>20</sup>

FHC: 29.42×10<sup>20</sup>

RHC: 15.54×10<sup>20</sup>

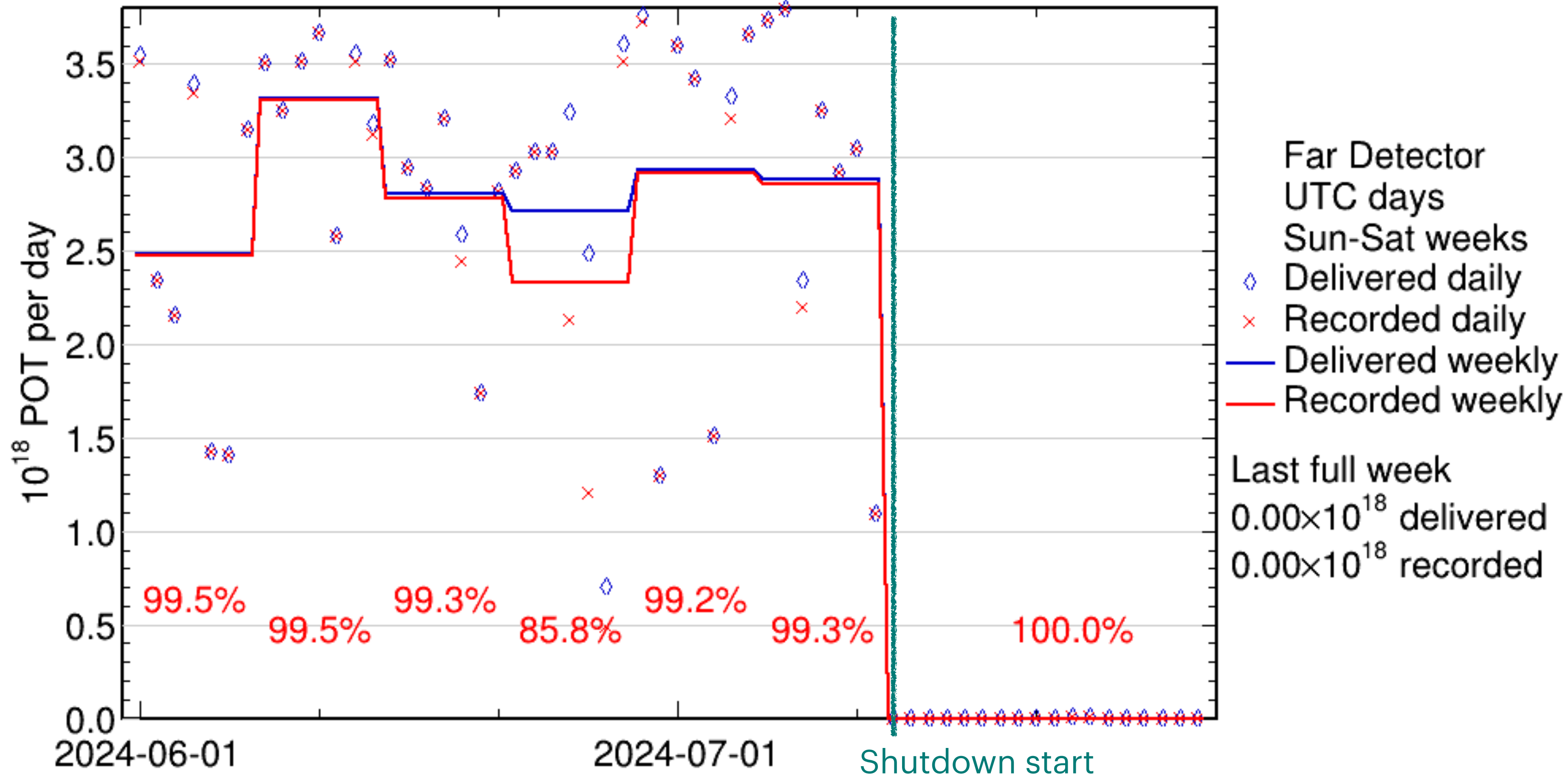
FY24 POT recorded

Delivered: 2.889×10<sup>20</sup>

Recorded: 2.853×10<sup>20</sup>

98.75%

# Far Detector summary



Total POT recorded

$44.95 \times 10^{20}$

FHC:  $29.42 \times 10^{20}$

RHC:  $15.54 \times 10^{20}$

FY24 POT recorded

Delivered:  $2.889 \times 10^{20}$

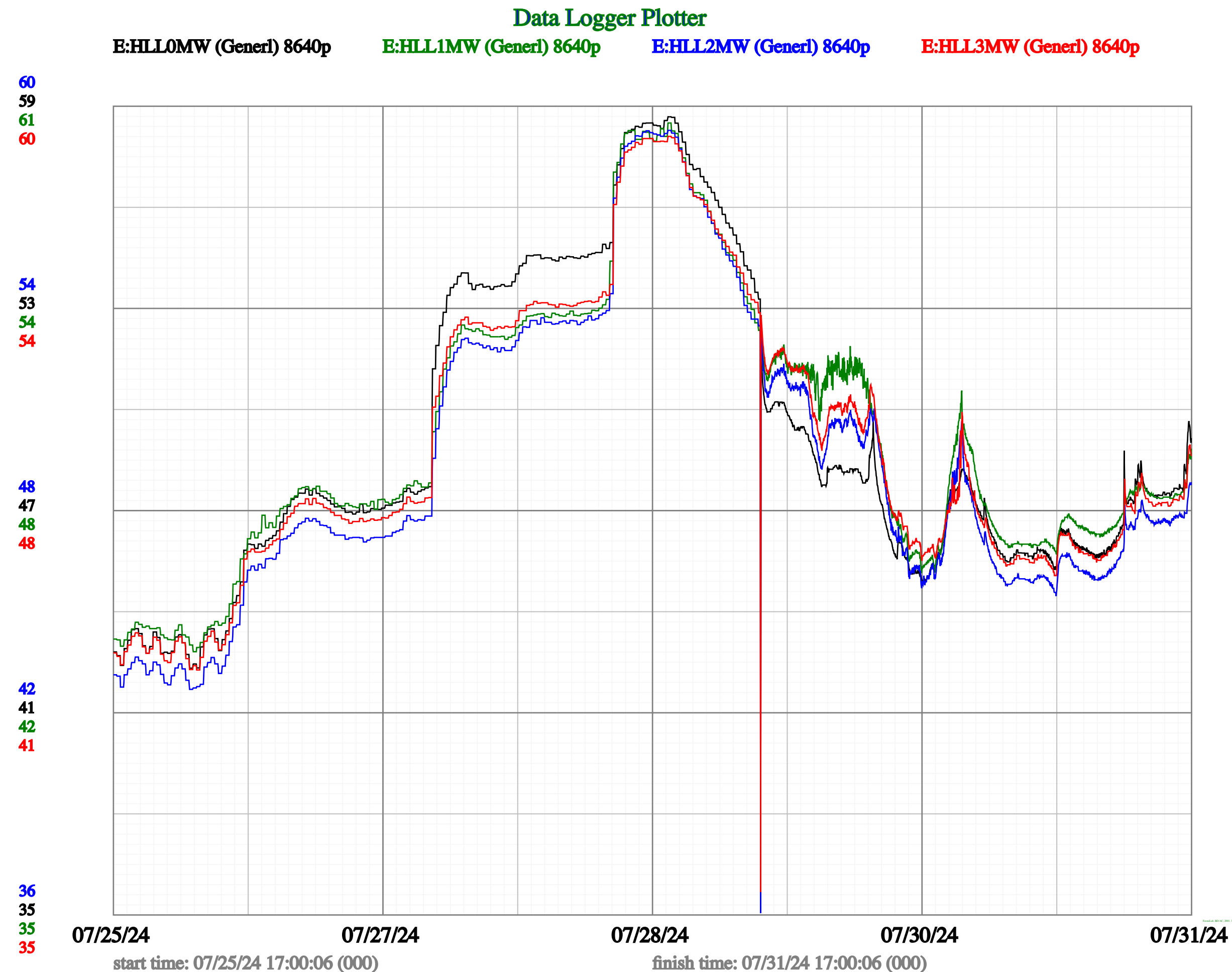
Recorded:  $2.853 \times 10^{20}$

98.75%

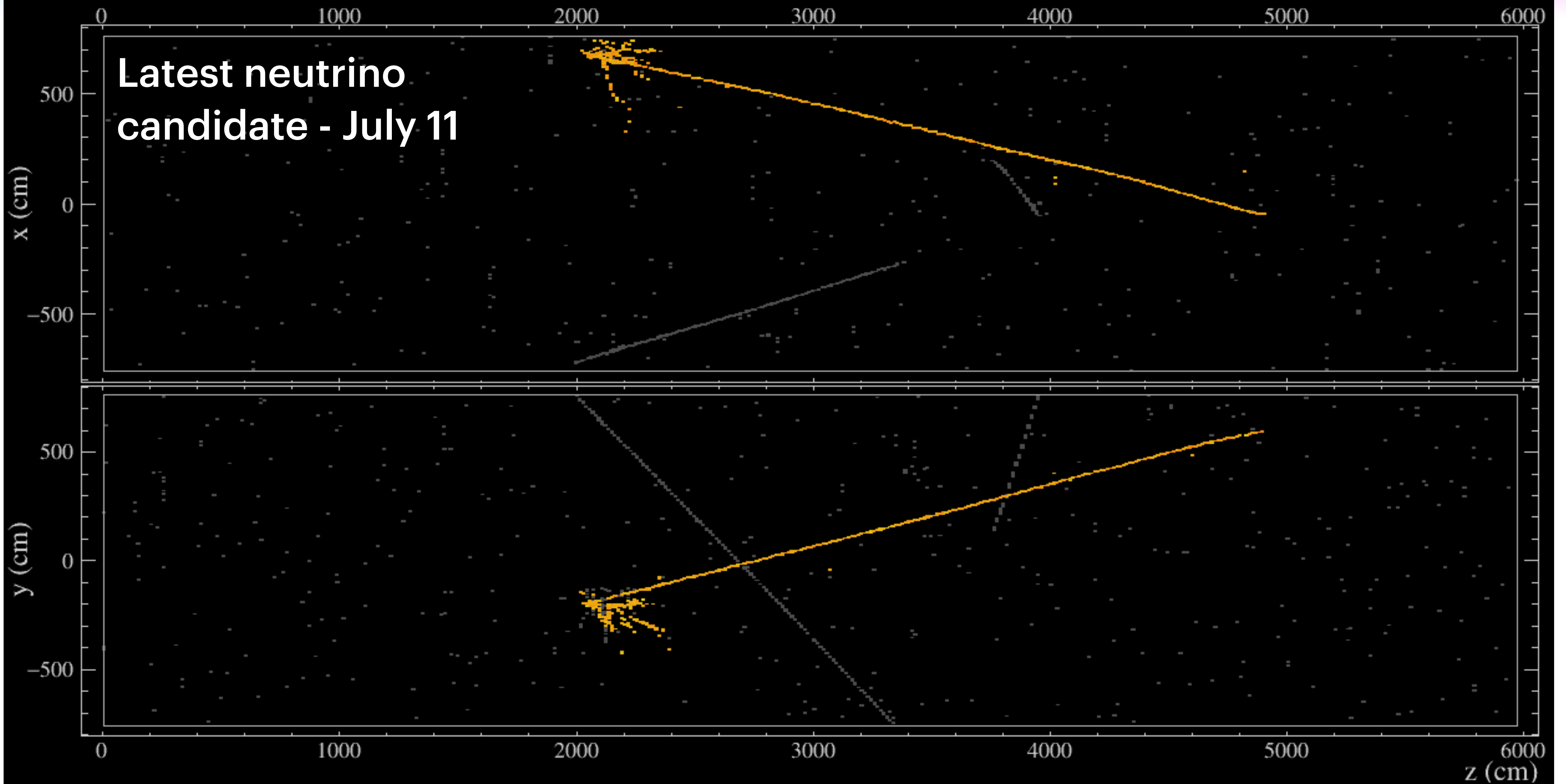
Last full week  
 $0.00 \times 10^{18}$  delivered  
 $0.00 \times 10^{18}$  recorded

# FD Anomalous High Humidity July 27-28

- Temperature and dew point increased quickly 7/27 ~noon in Ash River.
- Run unstable from 7/27 night. Difficulty bringing run back up / cooling electronics.
- Experts at Ash River checked environmental controls were functioning and proceeded to deploy additional Makeup Air Unit to cool down hall on 7/28. Stopped run.
- 7/29 after humidity decreased detector still had difficulty cooling. Decided to power off until dew point lowers.
- Plan in place to inspect affected FEBs.
- Implementing additional alarms and full remote monitoring of environmental controls.
- Additional protocol for shifters to monitor dew point.



# Latest neutrino candidate - July 11



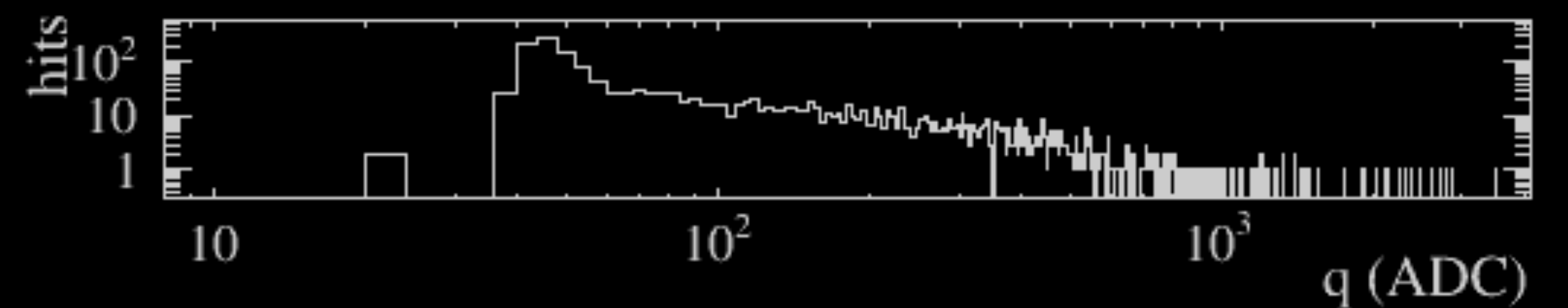
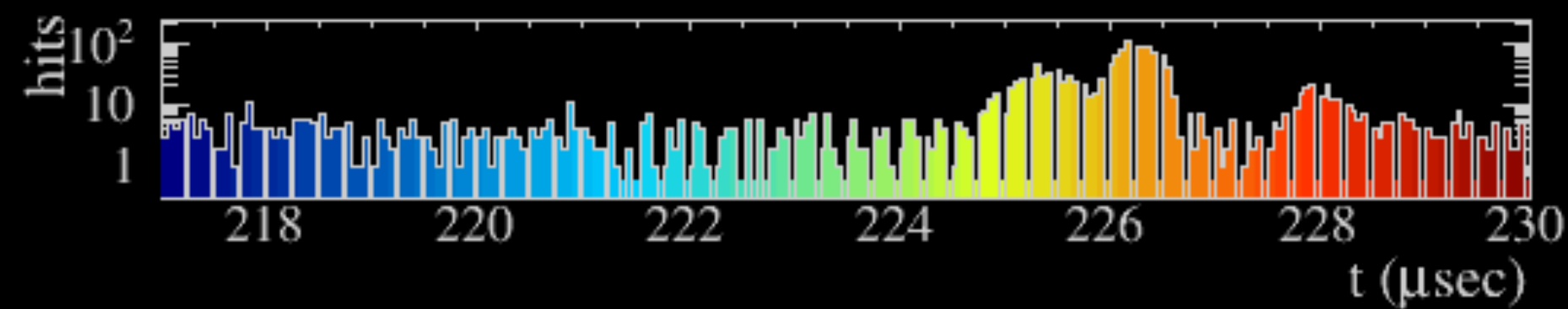
**NOvA - FNAL E929**

Run: 50984 / 61

Event: 4564 / NuMI

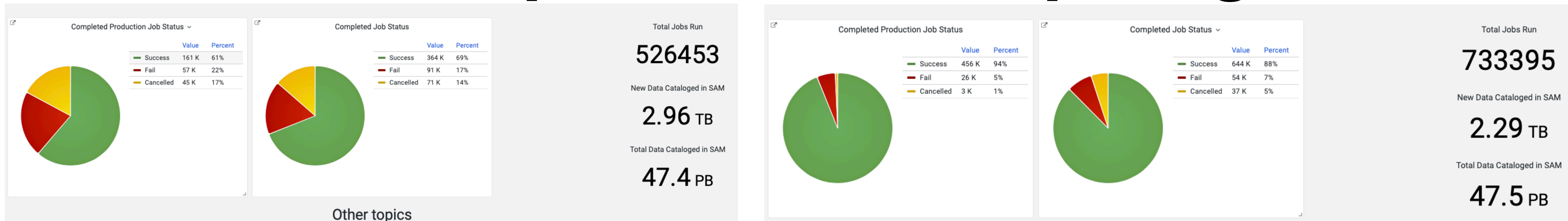
UTC Thu Jul 11, 2024

12:15:55.340602432





# NOvA production/computing



- In June and July, NOvA ran a total of 1.2M jobs, of which 600 k were from production.
- Production received unique requests:
  - processing of FD nbar trigger raw data files.
  - data and simulation files of ND Prod5.1 Zero Horn Current (ZHC)
  - Updates to Nova relative energy calibration keepup processing
- Infrastructure:
  - re-organization and modernization of NOvA's grid and production tools, following AL9 update -- validation/testing ongoing.
- Start thinking about new miniproduction and new big production campaign starting in autumn.
- Ceph migration is done, most machines are migrated to AL9
  - Data Quality machines are the last SL7 machine holdouts that we're working to retire.
- Using spack for parts of our code base natively, and relying on SL7 containers for the rest.
- Most software stack is building in AL9 natively via spack, working on the last few highest-level packages.

# Backup