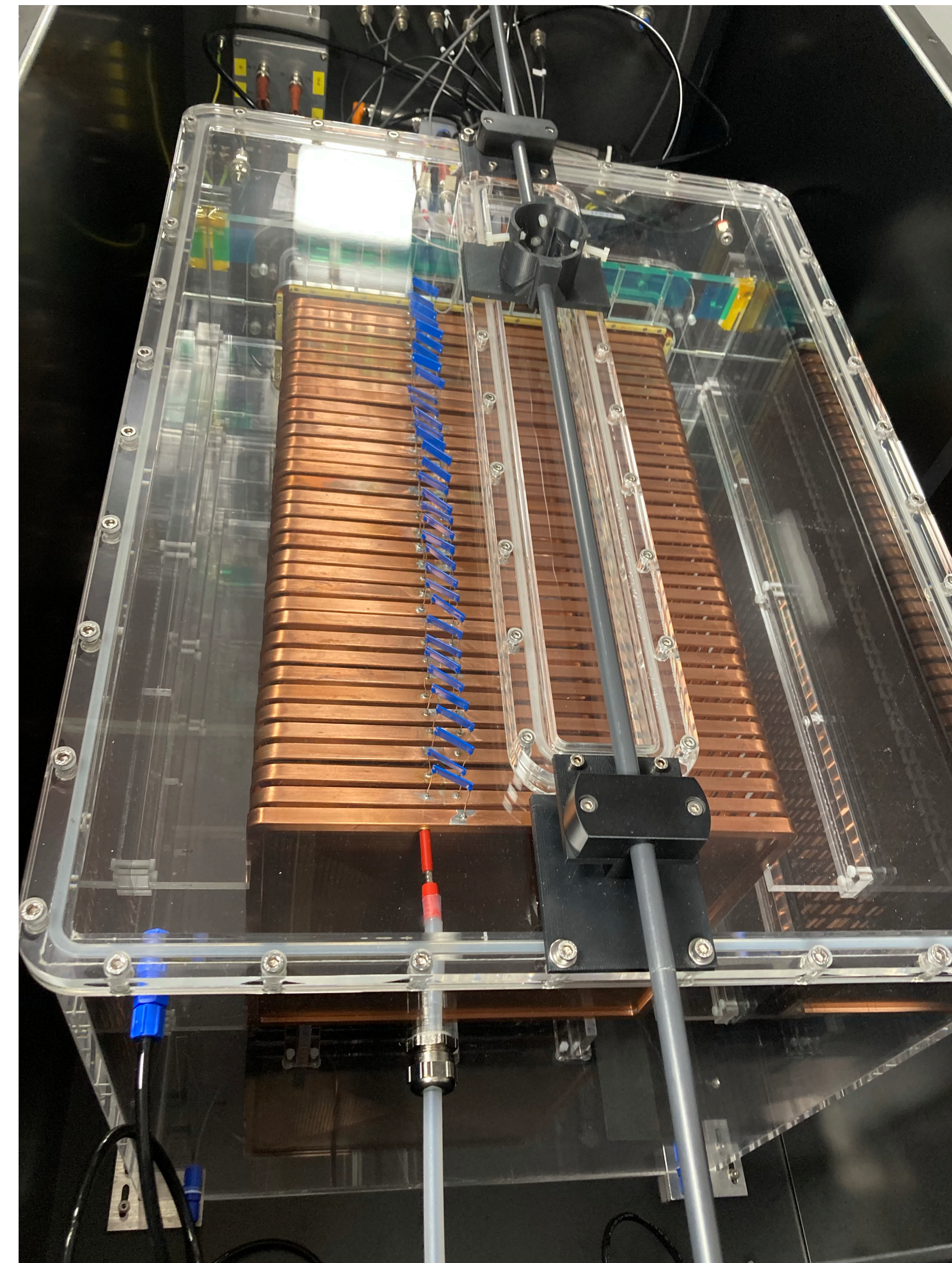


RUN5: status

Stefano Piacentini

General Meeting

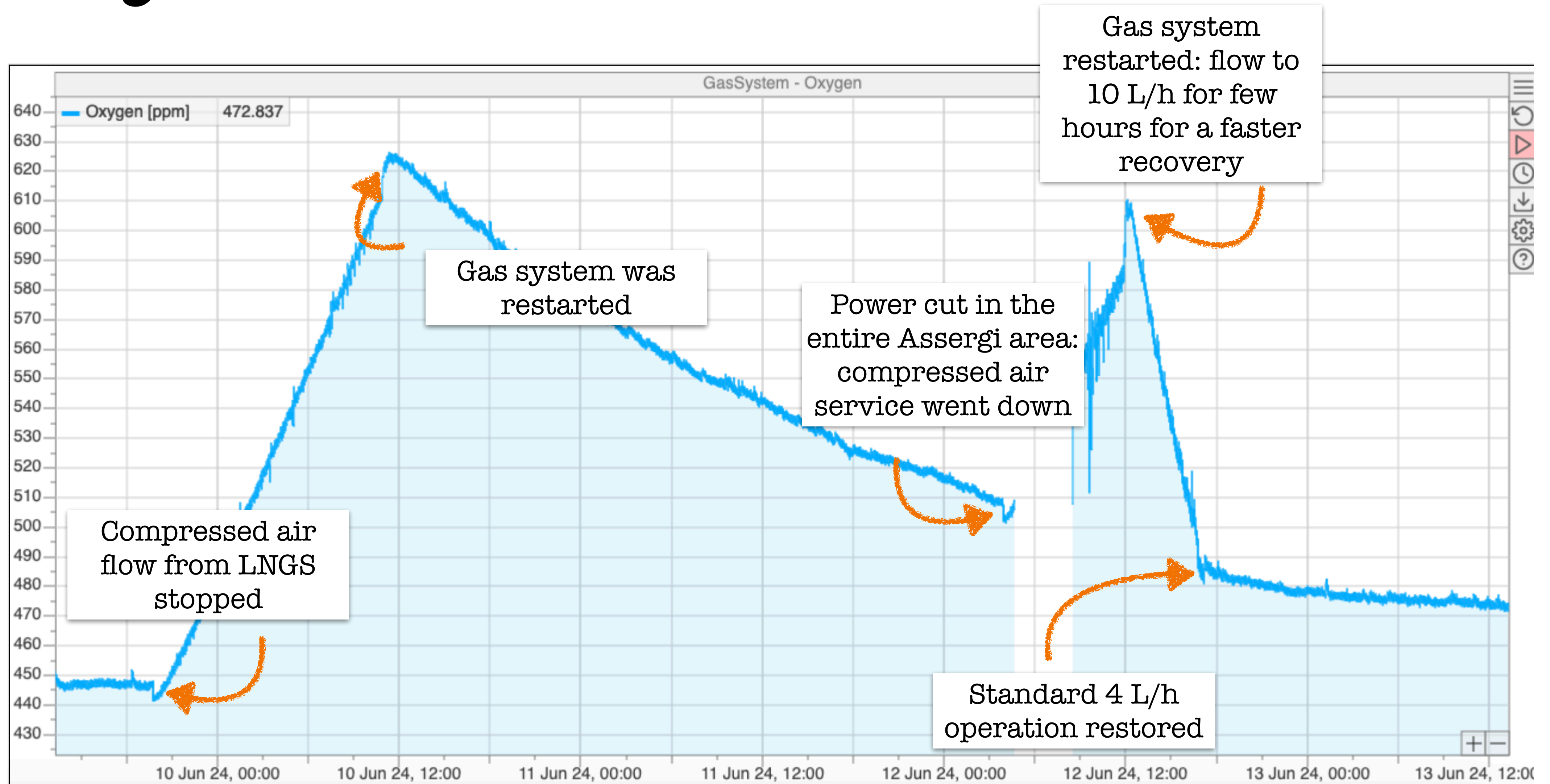
20/06/2024



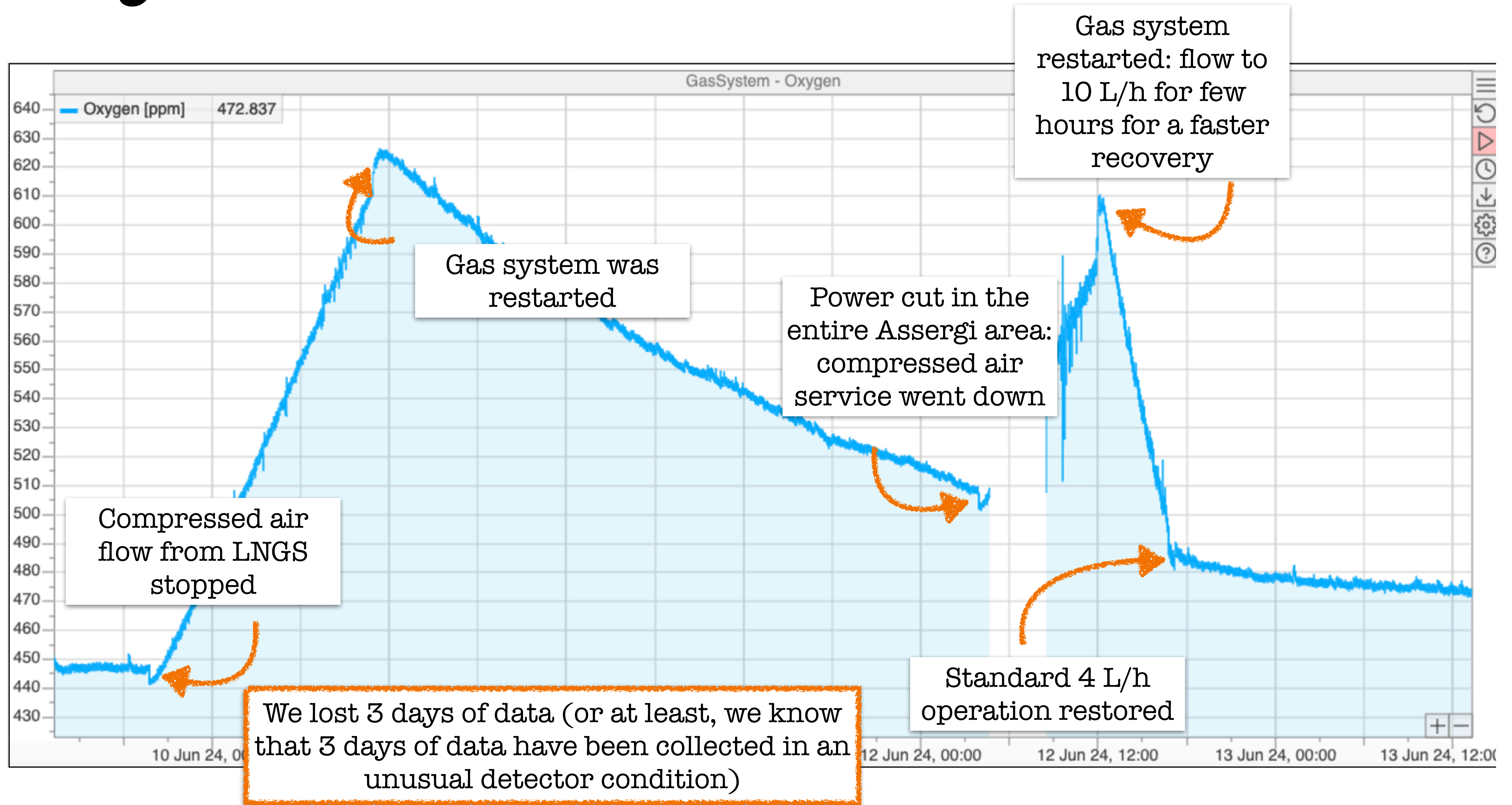
RUN 5: logbook so far

| Start | Stop | Numbers | Description | Total Runs | Data pics | Gas Flow | Filter Line 1 | Filter Line2 | Notes |
|---------------------|---------------------|---------------|--|------------|-----------|----------|----------------|--------------|---|
| 2024-05-03 15:58:18 | 2024-05-07 11:18:11 | 56894 - 57524 | Bkg + Daily Calibrations | 630 | 207369 | 5 | Blue+Red+Radon | Not in use | Restart after technical intervention on the gas system. Filters probably absorbed impurity (water, radon, nitrogen). |
| 2024-05-08 8:38:46 | 2024-05-09 10:34:58 | 57525 - 57734 | Bkg + Daily Calibrations | 209 | 67195 | 5 | Not in use | Blue+Red | Line 1 is being cleaned with the vacuum pump. Data taking restarted after ~20 h wrt the previous range of runs. |
| 2024-05-09 11:24:02 | 2024-05-13 18:53:38 | 57735 - 58528 | Bkg + Daily Calibrations | 793 | 262563 | 5 | Blue+Red+Radon | Not in use | Line 1 operation is restored. Data taking restarted suddenly after the swap. Oxygen level raising, and density of the gas initially below nominal value. Water flow increased and sensor temperature decreased from -17 °C to -21 °C. |
| 2024-05-13 18:53:45 | 2024-05-15 10:30:00 | 58529 - 58849 | Bkg + Daily Calibrations [Low Gas Flow] | 320 | 105349 | 2 | Blue+Red+Radon | Not in use | Gas flow set to 2 l/h to study behavior of oxygen. |
| 2024-05-15 10:30:00 | 2024-05-17 11:08:46 | 58850 - 59245 | Bkg + Daily Calibrations [Low Gas Flow] | 395 | 129910 | 2 | Not in use | Blue+Red | Gas flow set to 2 l/h to study behavior of oxygen. |
| 2024-05-17 11:08:51 | 2024-05-17 12:03:27 | 59246 - 59252 | Bkg + Daily Calibrations [Low Gas Flow] | 6 | 2405 | 3 | Not in use | Blue+Red | Gas flow set to 3 l/h to decrease oxygen and humidity concentrations. |
| 2024-05-17 12:05:39 | 2024-05-20 9:11:44 | 59253 - 59777 | Bkg + Daily Calibration [Low Gain - Low Gas flow] | 524 | 176578 | 3 | Not in use | Blue+Red | Official start of RUN5. Low gain configuration [GEMS HV = 420V and Drift field = 500 V/cm]. |
| 2024-05-20 9:14:45 | 2024-05-28 9:56:15 | 59778 - 61251 | Bkg + Daily Calibration [Low Gain] | 1473 | 485662 | 4 | Not in use | Blue+Red | We increased the gas flow to 4 l/h to compensate the slow increase oxygen and humidity and the slow decrease of the LY |
| 2024-05-28 18:21:58 | 2024-06-09 19:41:18 | 61261 - 63413 | Bkg + Daily Calibration [Low Gain] | 2152 | 722284 | 4 | Not in use | Blue+Red | The Fe source now collimated in z!!! No interventions on the gas lines. Tried tightening a connection to see if that was the one leaking. Filters not touched. Installed a new recovery bottle for the next swap. Water levels in the chiller ok. Upgrade of the kernel of the DAQ machine and fix to the local/mirror SQL db. |
| 2024-06-09 19:41:22 | 2024-06-12 5:35:46 | 63414 - 63848 | Bkg + Daily Calibration [Low Gain] | 434 | 143768 | 4 | Not in use | Blue+Red | Gas system stopped the fresh flow due to lack of compressed air. Oxygen levels are higher for this data sample. On 12/06/2024 at 12:00 fresh flow set to 10 L/h to recover more quickly. |
| 2024-06-12 17:29:19 | 2024-06-12 18:23:39 | 63849 - 63854 | Bkg + Daily Calibration [Low Gain] | 5 | 2405 | 10 | Not in use | Blue+Red | |
| 2024-06-12 18:24:34 | Now | 63855 - Now | Bkg + Daily Calibration [Low Gain] | - | - | 4 | Not in use | Blue+Red | Standard data acquisition restored. |

Gas system "issues"

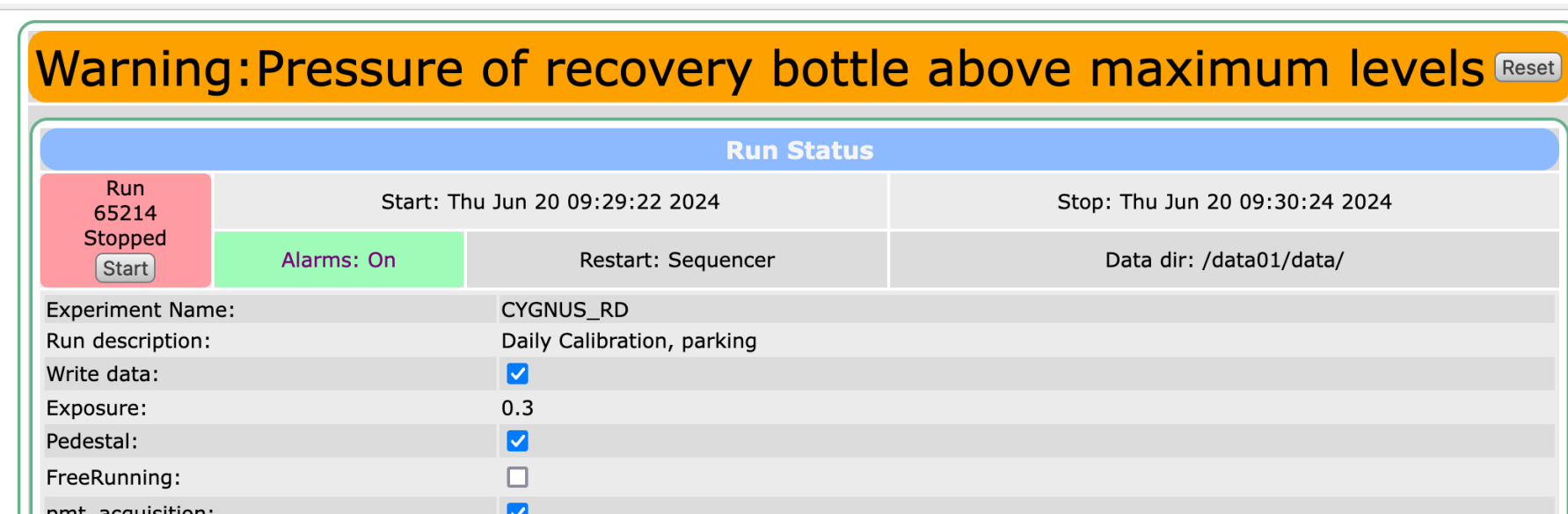


Gas system “issues”



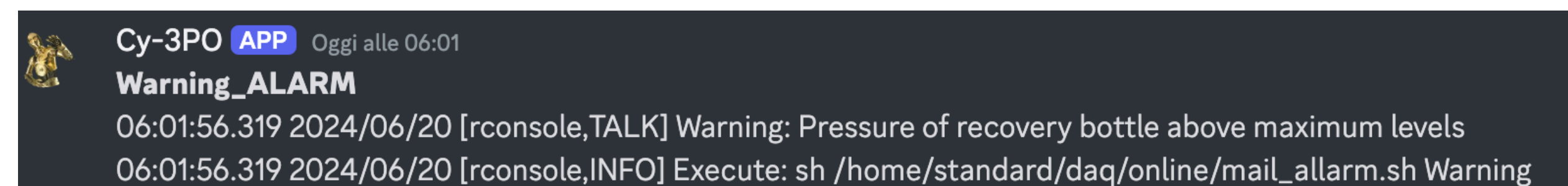
Restored/improved alarms

- I re-evaluated the alarm systems [10/06/2024]:
 - most of the alarms were not active → re-activated
 - some of the “new” important quantities (humidity, oxygen levels) and other useful quantities are alarmed with a **Warning** system



Warning: Pressure of recovery bottle above maximum levels Reset

| Run Status | |
|--|---|
| Run 65214 Stopped Start | Start: Thu Jun 20 09:29:22 2024 Stop: Thu Jun 20 09:30:24 2024 |
| Alarms: On | Restart: Sequencer Data dir: /data01/data/ |
| Experiment Name: | CYGNUS_RD |
| Run description: | Daily Calibration, parking |
| Write data: | <input checked="" type="checkbox"/> |
| Exposure: | 0.3 |
| Pedestal: | <input checked="" type="checkbox"/> |
| FreeRunning: | <input type="checkbox"/> |
| omt acquisition: | <input checked="" type="checkbox"/> |



Cy-3PO **APP** Oggi alle 06:01
Warning_ALARM
06:01:56.319 2024/06/20 [rconsole,TALK] Warning: Pressure of recovery bottle above maximum levels
06:01:56.319 2024/06/20 [rconsole,INFO] Execute: sh /home/standard/daq/online/mail_allarm.sh Warning

- At least for me, the newly restored alarm system worked on the night between 11th of June and 12th of June, when the power cut happened (I woke up with the alarms)
- Midas control panel allows for simple alarms based on a simple condition. Regarding more complex alarms, in case, we'll have to develop them at the frontend level.

New .csv with “good” data runs

- I will maintain, at least temporarily, a .csv files tagging the RUN5 data runs that we believe are “good”:
 - no pedestals
 - no calibrations
 - no “bad” runs [e.g. the runs with high oxygen concentration]
- You can find the link to the file on the [Operation wiki page](#), together with other useful information:

- RUN5 "good" run list:
 - [Last update: 20/06/2024](#)
 - Position on the cloud: `cygno-analysis/Operation/LIME/RUN5_goodruns.csv`
 - The above `.csv` file contains, for each RUN5 run, a flag which is equal to `1` if the run can be considered as "good" for the analysis, and it is equal to `0` if:
 - the run is a pedestal
 - the run is a calibration run
 - the run has parameters (humidity and pressure) outside the good-operation range

- I will update this file once per week, until a definitive solution is implemented