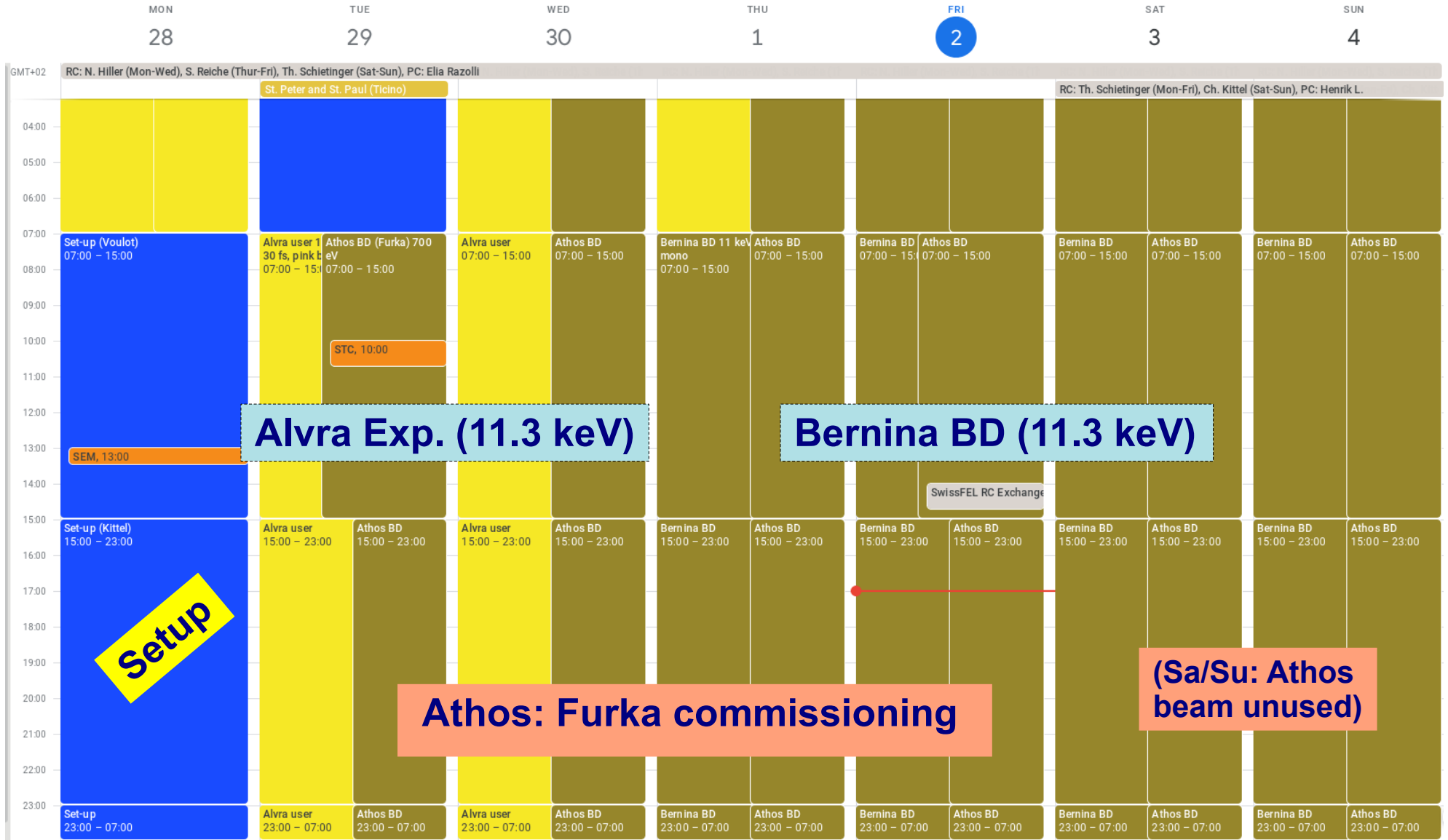


SwissFEL Operation – Run Coordinators' Report Week 26/2021

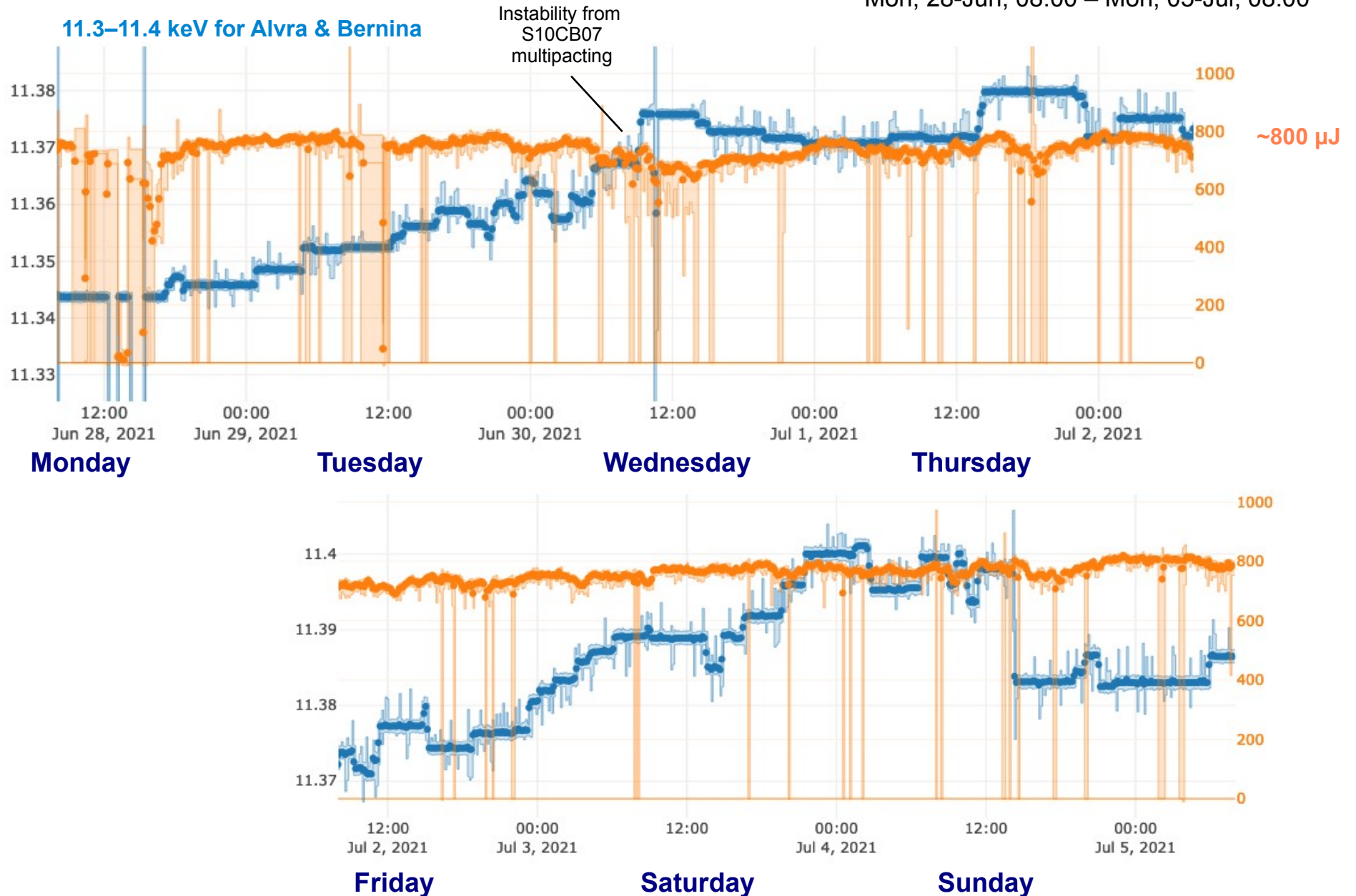
- **Week overview**
- **Aramis and Athos setup**
- **Issues**

Calendar



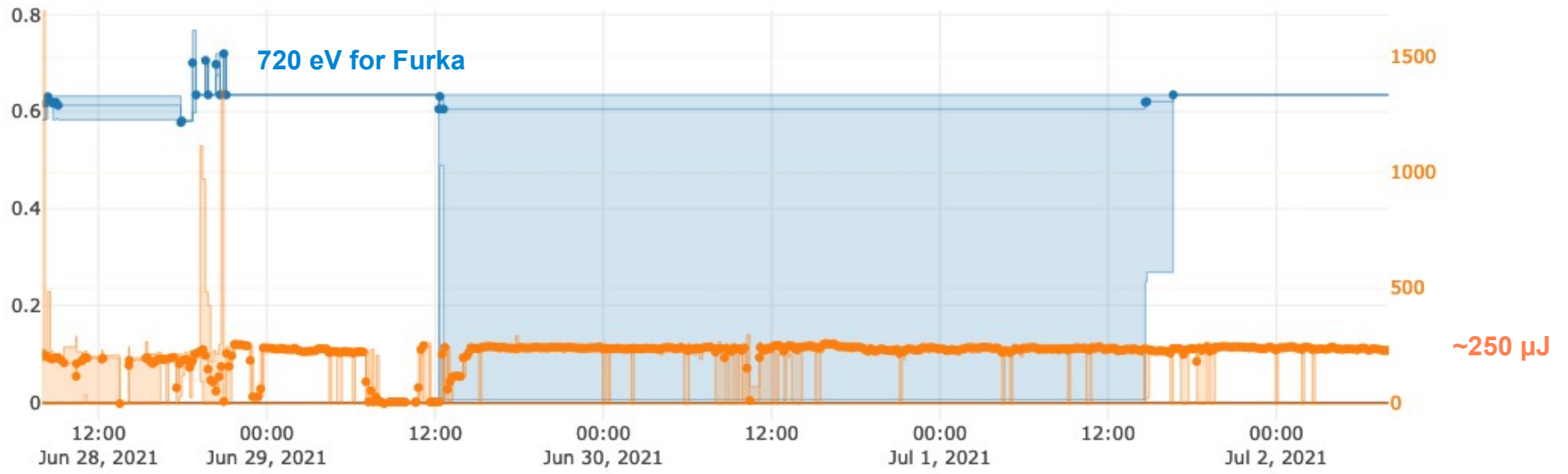
Week overview (Aramis)

● Photon energy (keV)
● Photon pulse energy (μJ)
Mon, 28-Jun, 08:00 – Mon, 05-Jul, 08:00



Week overview (Athos)

● Photon energy (keV)
● Photon pulse energy (μJ)
Mon, 28-Jun, 08:00 – Mon, 05-Jul, 08:00



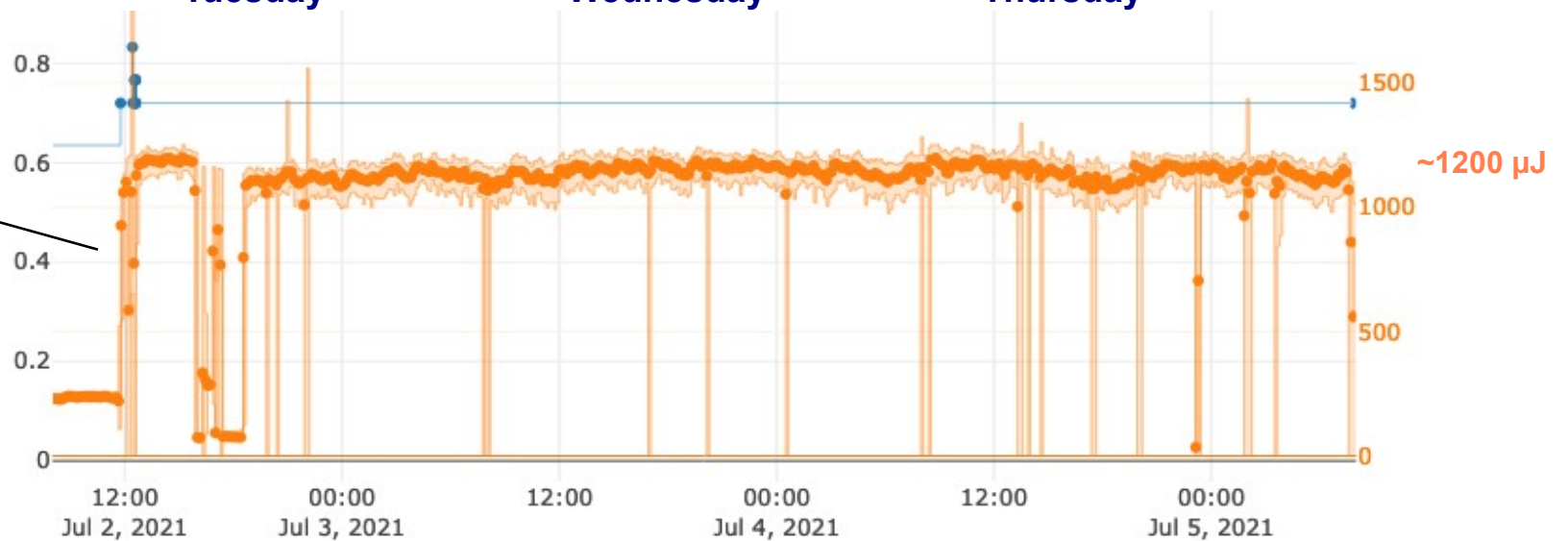
Monday

Tuesday

Wednesday

Thursday

Reoptimization
by beam dynamics



Friday

Saturday

Sunday

Machine setup

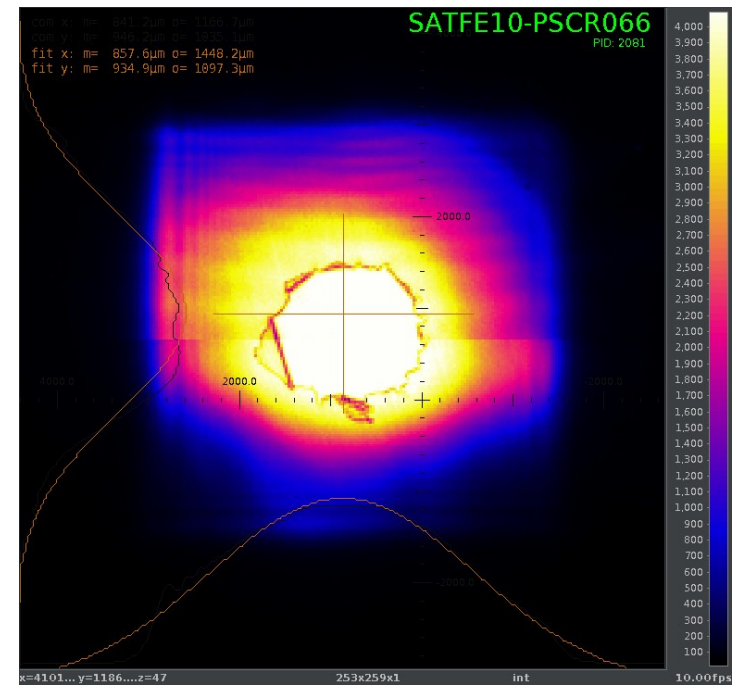
Ch. Kittel, D. Voulot,
S. Reiche, E. Ferrari,
E. Prat

- Checked energy scaling in Athos with SATCB01
→ worked and can be used on request (otherwise RF has work to do with the station)
- **Aramis setup:**
 - Standard checks, slight BW optimisation, photon energy was already at 11.3 keV
- **Athos setup:**
 - Difficulties to bring up the pulse energy again (strong diffraction pattern). First half of the week only lasing with SATUN13–22.
 - Better luck on Friday: after restoring K values and CHIC gaps back to 1.2 mJ after some optimization. FEL spot not perfect, but this is a known issue. Losses limit operation to 25 Hz, to be addressed in setup on Monday.
 - Switch to 10 Hz over the weekend (beam not used anyway).



Issues

- Serious problems with C-band RF station **S10CB07**
 - Gave rise to lasing instability in Aramis on Wednesday (multipacting)
 - Klystron should be replaced soon (summer shutdown)
- S30CB11 and S30CB12 sometimes stuck on conditioning (Sunday night)
- Photon shutter in Athos closed for about 10 min., reopened by operators (Sunday, 23:00)
- 0.4 μm Al foil in SATFE10-OATT065 broken (too much beam intensity)



Ch.Kittel, ELOG 20427