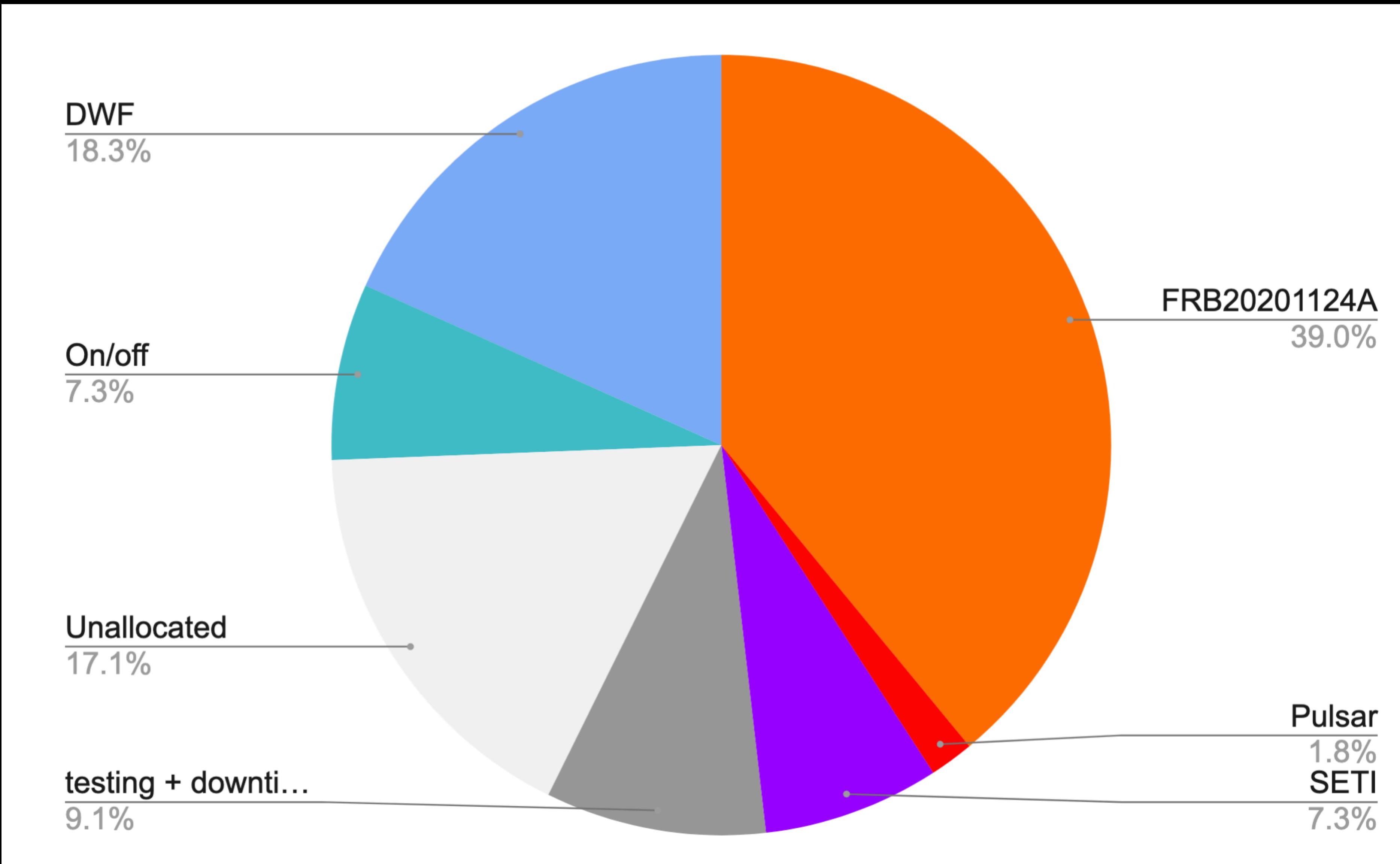
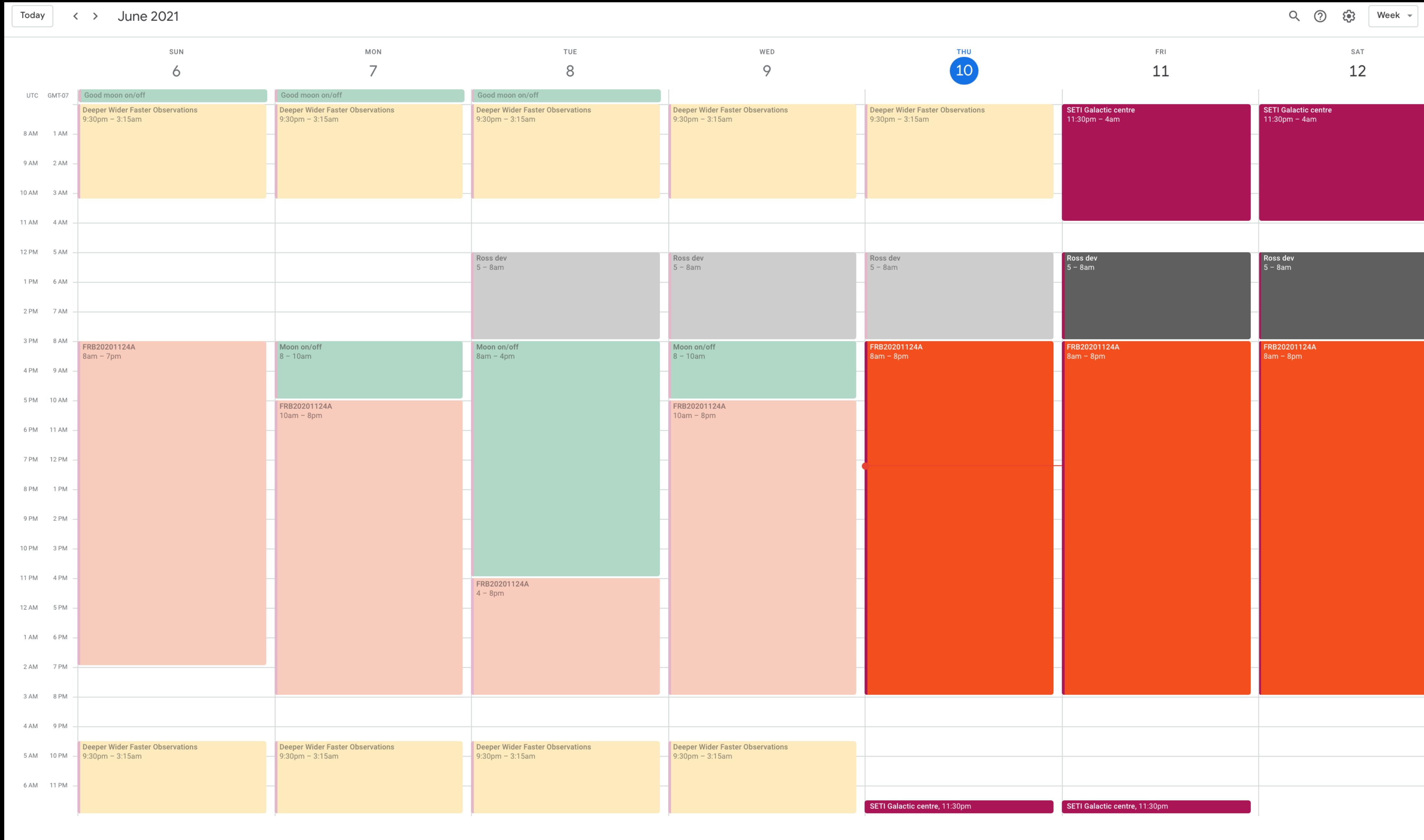
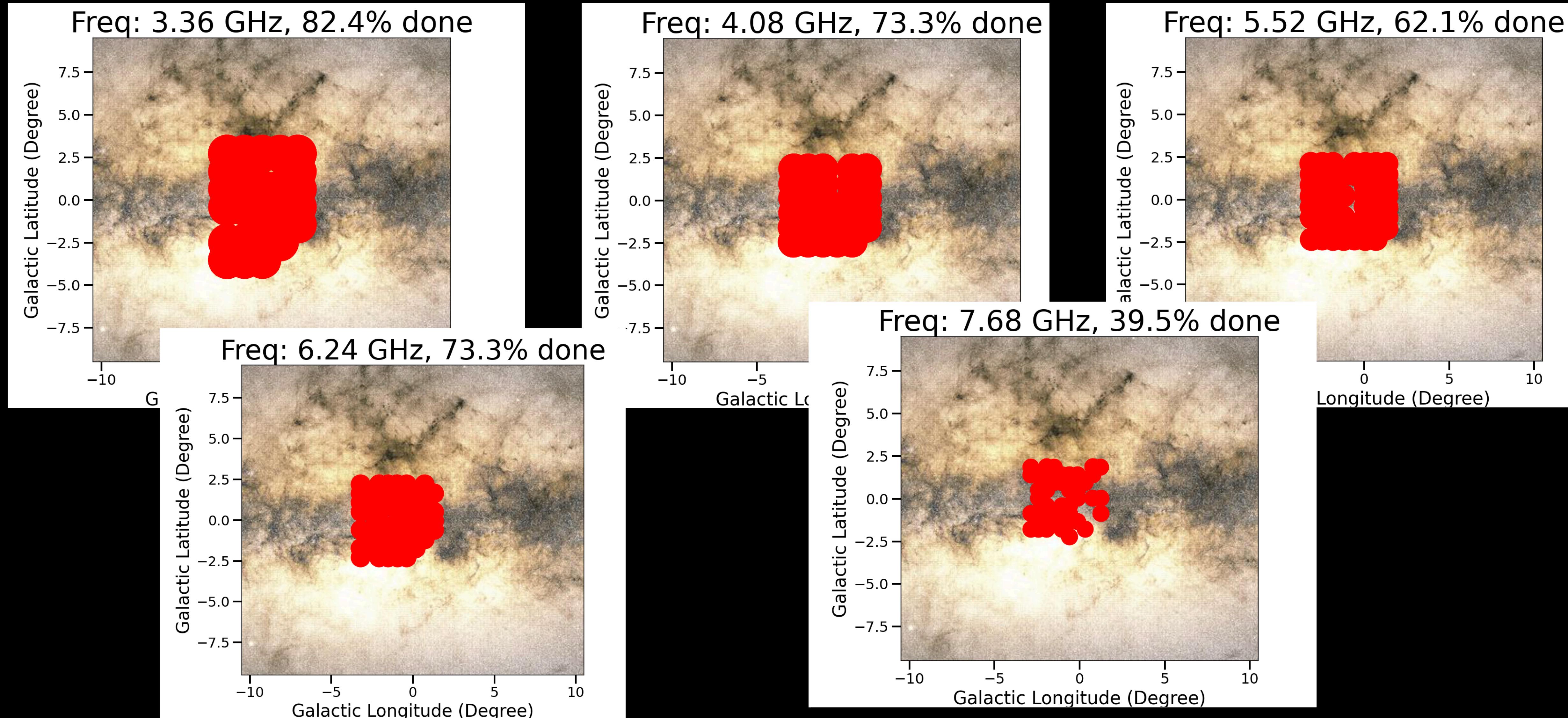


Science operation update





Galactic plane survey update



Updates on RFSoC / Attemplifier interface

- “Spectrometer” (total power) mode compiled for 4x2 inputs + UDP streaming mode
- Packets are flowing through network.
- Tweaks to firmware are needed to:
 - Make sure UPD destination port is configurable for every output pair
 - Interface to control RFSoC boards as similar to SNAPS as possible
- Current backend receiver codes ingest data
- Connect new antennas to board
- attemplifiers <-> rfsoc <-> recorders mapping established.
 - + get-ing and set-ing attenuation values
- IF-balancing logic to deal with RFSoC + SNAP boards at the same time (testing changes to configuration files, + python modules, etc...)
- What's still needed:
 - Tests listed in Jack's document underway:
Input panel <-> ADC <-> pipeline number mapping
+ cross-talk measurement possibly by Monday
 - Collect data with backend:
 - perform on/off measurement
 - perform pulsar observation

Update on high-speed data capture

- Current voltage-streaming mode can ingest **4 GB/s** on each NIC
Would like to push it up to at least **8 GB/s** (64 gbits/s)
- Kernel-bypassing on Connect X5 NICs.
`libvma + libibverbs`
- Current status:
 - ping-pong between IBV builtin server and client
 - Flow creation within voltage recorder
 - “Work completion” (i.e. packet reception) errors out

Updates on Correlator

- Written “toy” python correlator.
- Collected “golden” data on bright quasar (3c84)
- xGPU + hashpipe:
 - Correlator compiled for 4-bit mode
 - Can run in “live” mode
- Testing 4-bit correlator:
 - Writing: disk \leftrightarrow RAM hashpipe threads to load and offload data easily
 - Investigate source of packet drops (turns out package was compiled with debug flag)
- Imaging software for faster display of data
- Live data flow + correlator
- GPU Complex multiplier for delay and phase compensation (currently happening offline post-correlation)

