



Frequently Asked Questions



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Preparing for your observation

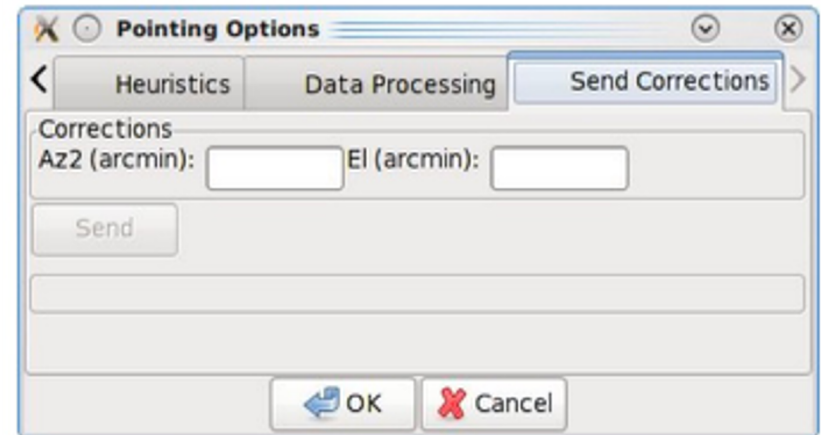
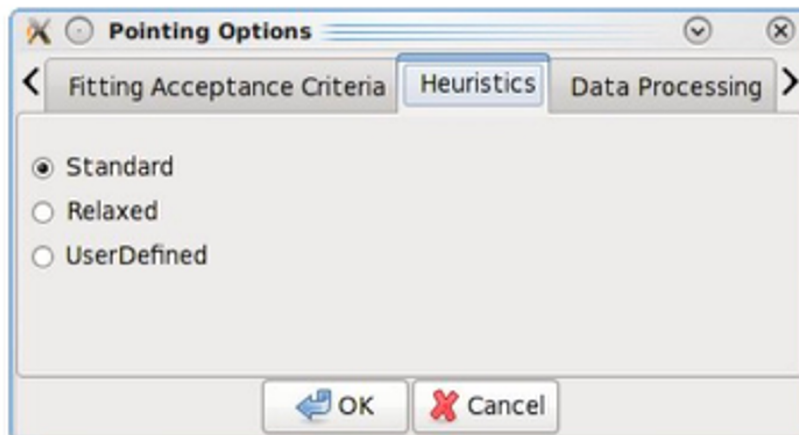
- Talk to your support scientist well in advance if you are having difficulties or are uncertain about your scripts
- Remember to enable both your project and observers. You need BOTH to be scheduled!
- Be aware not all receivers are available throughout the semester: check the receiver schedule for estimates of when things are available
 - <https://dss.gb.nrao.edu/receivers>
- Remember B-ranked projects end at the end of the semester, so you only have that period to get your observations!

Prepping your scripts

- Documenting your scripts makes life much easier for everyone involved.
- # Start comment lines in scripts with “#”
- All Frequencies should be in MHz.
- Check your RFI environment in advance
- It can be helpful to calibrate at the BEGINNING of your script, not the end. This way, if things go wrong, at least you have your reference. But be sensible about source rising/setting times, etc.

Point and Focus scans

- Choose pointing calibrators from the GBT pointing catalog, and in the correct band. If you can, a source that is *also* in the VLA flux calibrator manual will allow you to check your calibration when you point.
- During high frequency or poor weather conditions, “relaxed” heuristics are recommended
- Usually fine for other observations, too
- Under “Tools —> Options” in Astrid Data display



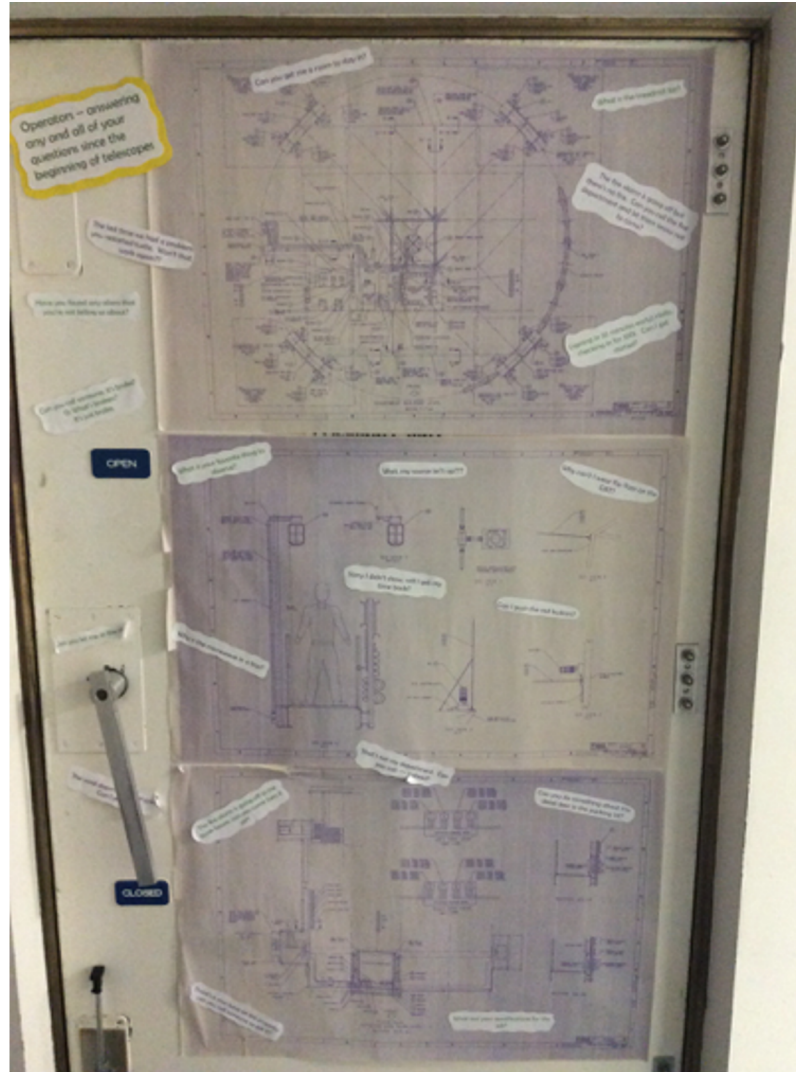
Before your observation:

- Make sure your scripts are ready and that they validate BEFORE you enable your project
- Make sure your LST ranges are correct, so that observations will be scheduled when your objects are above the minimum observing elevation (>5 degrees).
- Make sure black-out dates are up-to-date at all times
- Make sure **contact information** for everyone on the project is up-to-date
- Test remote access of the telescope on the computer and internet connection you will use during observations
- Make sure you remember the date and time of your observation and show up for it! You do not get time back for a no-show.
- Sign in ~30 minutes prior to your start time to make sure you don't have connection issues and to ensure you start right on time

Observing

- Don't use someone else's account, even if their session is already open and you are observing from the same location. This is NOT allowed.
 - *This can get your account banned.*
- Make sure not to duplicate session numbers within a project.
- Check your GBT data in real time for quality control with GBTIDL and the ASTRID data display

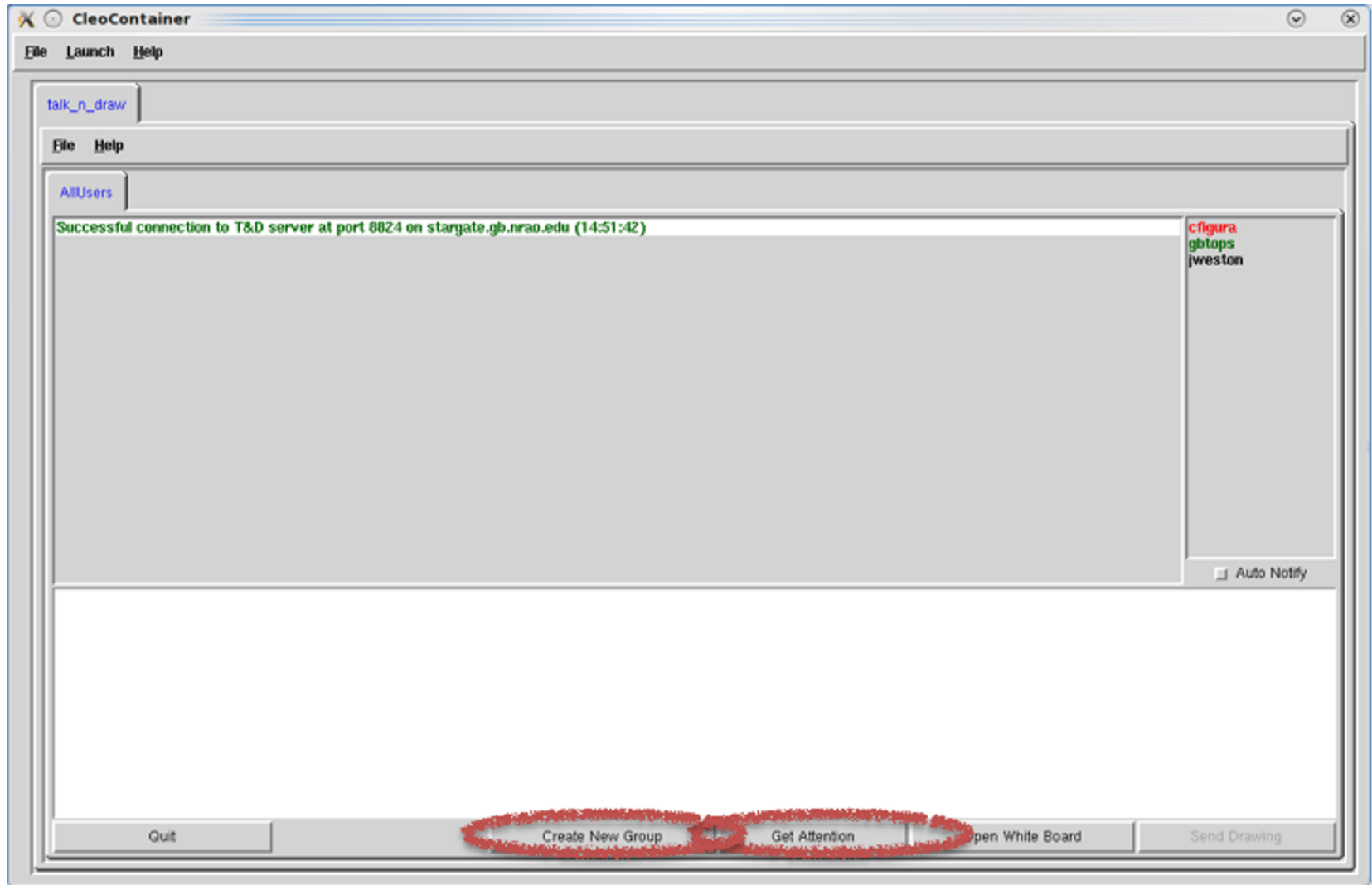
The Operators



The Operators

- Be nice to them.
- Operators will always tell you when things are ready for you. If you interrupt them to ask, it will take longer because they'll need to stop and answer you.
- Unless your project is operator run approved, they cannot run your project for you.
- Be clear and specific about any issues you are having, and specify the exact error messages you are receiving. Good resources to ask if a warning or error is something worth worrying about while observing.
- No, they aren't there to fix any and all problems that happen on the observatory property. But they do know who you **SHOULD** call.
- Yes, they can let you in the main door if you forgot your keycard. Call x2341.

Talk and Draw



Receiver changes

- Receiver changes take time, and you do not know what receiver the observer before you will be using. Plan for this.
- Switching between Gregorian receivers take 2-4 minutes depending on receiver and other factors.
- Extending/retracting the boom for the prime focus requires at least 7-10 minutes.
- You CANNOT change prime focus feeds on the fly, they require a maintenance day. So no switching between the 820 and 342 MHz feeds.

After Observing

- Don't run over your scheduled time. Telescope time is expensive, and every second counts, so plan accordingly.
- Submit observer comments after your observation! If you had issues, this way we know they exist and we can perhaps fix them before you observe again.
- Analyze your data in a timely matter.
- Check for any problems you might need to work around in your next observing session
- Even if this was your last observation, we want to know if there are any issues that could cause problems with someone else's data, too!

HI observations and Mapping

- Always do a point/focus scan before taking data. You can maybe skip this if you know the observer before you was also at L and did point/focus, but you can't depend on that
- Take a short spectrum on a known object to make sure things look OK
- Check that a maps starting and ending positions and the spacing between integrations are correct. This is easy to get wrong, so double check!
- The GBT point spread function is a gaussian (not square or circular).

Pulsar Observing

- Do NOT rebalance between a calibration scan of the noise diode and the science scan on a pulsar of interest
- Make sure that the vegas.fold_parfile parameter in Astrid points to the correct file on disk

Weather issues

- If there is a lot of snow, the operator may halt your observation and move telescope to the 'snow dump' position. Observations may resume once snow is 'dumped' (or halted permanently if snow/ice are too bad).
- In cold weather ($<17^{\circ}\text{F}/-8.3^{\circ}\text{C}$), the slew rates are half the rate they are in warm, so be aware, especially in December-February.
- The telescope will be stowed for sustained wind that is > 35 MPH or gusts that are >40 MPH.
- The operator only stops for wind when it reaches this limit. They will not warn you if the wind will affect your data. While we try to avoid scheduling in weather that will affect you, things can change fast, so point regularly, and if it's too bad for your observations, you can ask the operator to stop your time.
- The antenna will be shut down for temperatures that are $<-10^{\circ}\text{F}/-23^{\circ}\text{C}$

Other Frequent issues

- Blanking: if a lot of your data is being blanked, that usually means your switching frequency is too small. See Observers Guide Table 8.2 for minimum “swper” values for different modes of frequency switching.
- Not reaching your desired sensitivity?
Remember:
- effective integration time \neq observing time

$$t_{eff} = \frac{t_{on}t_{off}}{t_{on} + t_{off}}$$



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