

Heterodyne Observing Cookbook

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1 Quick Start Guide

- Log on to `kilauea` from its console or remotely using secure shell.
- Run `UIP` and issue `PUNDIT TRUE` if necessary.
- Open the dome shutter as soon as possible to help the telescope structure cool down. As of this writing, `UIP` is required to open the shutter.
- Make sure that the telescope is 90–180 degrees away in azimuth from the Sun, if it is still up.
- Avoid direct sunlight from hitting the primary mirror, secondary mirror, and its support structure.
- Pull the stop switch.
- Use `UIP`'s `SHUTTER` command to open (fully or partially).
- Turn the `IF` processor on if the array `AOS` (`AOS5`) is used.
- Issue a full `L0` command (including the `/RECEIVER` option) to configure the frontend.
- The antenna zenith angle has to be smaller than 45 degrees to move the Sidecab receiver optics.
- Load the correct pointing file before you forget.
- Open a new data file.
- Issue a full `SPECTROMETER` command (including the `/RESTART` option) to configure the backend.
- Position the tertiary mirror using the `TERTIARY` command so that the receiver can see the sky. Manually rotate and lock the rotating tertiary mirror for the Cassegrain focus.

- Tune up the receiver and measure the y-factor.
- Remove the tertiary and fifth mirror covers if the receiver is on the Cassegrain focus.
- Turn the DSOS on for the 650 and 850 GHz receivers.
- Make sure that the secondary mirror focus is in the stealthy updates mode.
- Tune the secondary mirror wobbler while the telescope is stationary or sidereal-tracking. Set the analog PIDG knobs first.
- Load the recent pointing offsets (FAZO and FZAO) before the initial pointing. Consult the pointing logbook.
- Point often for the first 2–3 hours. Repoint no later than an hour after the initial pointing. Point every 2–2.5 hours for the rest of the night.

2 Quick Shutdown Guide

- Start closing the shutter first. It will take a long time for the shutter to fully close. Use the close switch on the control panel.
- Do not stow the telescope yet if the Sun is up. Wait until the shutter closes down to 15–20 %.
- Turn the DSOS off.
- Turn the receiver off.
- Put the mirror covers back on.
- Turn the IF processor off.
- Stow the telescope using the `STOW` command.
- Set the zenith angle to 53 degrees if there are heterodyne receivers on the Cassegrain focus.
- Stop the secondary mirror wobbler.
- Quit UIP and logout from `kilauea`.
- Push the stop switch once the shutter is fully closed and the telescope is stowed.

3 Observing Manual

Coming soon...