

At the start of each check experiment

- CAIN - integration time
- [focus](#)
- Attenuation
- Hybrid
- Coherence

N.B. For hybrid setups and checking coherence see the separate notes at [Mopra setup notes](#) . Some of the software setup described below may also be needed for this hardware testing.

If starting up from scratch, follow [these notes](#).

The following software needs to be run for setup and running an experiment:

Integration time

The integration time already setup is shown in the camon window (use /mopra-x in camon to see all bands). If it needs to be reset use: > newcain cycle <sec> - to setup the integration cycle time in secs. Default cycle time has been 10s but mm observers often use ~2sec. For VLBI 5sec may be more appropriate. To see what else "newcain" can do just type "newcain" without any parameters and it will give you a list of commands. CAUTION: Please only use "newcain" if you really understand what you are changing.

attest

attest can be used to set attenuation, focus the receiver and stow the antenna. Run attest by logging into bigrock as observer and running

```
> attest &
```

Attenuation

Generally automatic attenuation in vlobs should be turned off. It often gets the wrong value and SDO measurements saturate, giving no Tsys values. Select the "atten" tab in attest.

Coarse attenuators should be set to "0 0 0 0" for L and S band, "0 1 0 0" for 7mm and perhaps "1 1 1 1" for everything else (may need updating). To adjust the fine attenuators, check the current settings show in camon (attest does not display the current settings) and choose the appropriate values. Then click "go". If the attenuators are set to an appropriate value, the DAS IF selev and offset should be roughly midrange, GTP should be ~1.0-4.0 and SDO should be similar to GTP, if the Tsys value seen by vlobs are not zero.

For the 22 GHz receiver with the quarter-wave plate for circular polarisation the setup has mm-attenuators at " 7 4" (check in Monica that the C26 levels are below 15 V), the coarse attenuators are set at "2 2 2 2" and the fine attenuators are adjusted for the right GTP and SDO levels as described above (Aug'08 that was "4 1 2 2").

focus

Each frequency has a separate [focus setting](#). To set this, choose the “focus” tab in attest and move the slide to the correct value and click “Go”.

Antenna stow

To stow the antenna **exit vlobs** and choose the “stow” tab in attest. Then click the “go” button.

Antenna control

Mopra is run by the program vlobs. This points the antenna, sets up the frequency and logs Tsys.

TCS should not be run at the same time as vlobs. Before starting vlobs for the first time, run

```
> killtcs
```

Schedules

Copy the sched input file from the atnf ftp area for this experiment, e.g. v001a_Mp.com. This needs to be converted into a vlobs file. Normally these should be copied onto bigrock at `~atcaobs/sched_vlbi`. atcasched is used to do the conversion. E.g.

```
atcasched
@v001a_Mp.com
write
exit
```

vlobs

To run vlobs log into bigrock as observer and run “vlobs”. There is a startup bug, it can take dozens of times before it actually starts. If your terminal is full of garbage characters, use the “reset” function of the terminal (middle mouse button on an xterm, or a menu option on fancy terms (e.g. Unused “terminal” on gnome-terms).

The main vlobs commands are:

| | |
|-------------------|---|
| file | Load the selection schedule, e.g. file v001a |
| start | Start the schedule running |
| stop | Stop the currently running schedule |
| set att servo off | Turn off attenuation servo loop (default) |
| lo_disable | Disable setting of frequency chain (not usually done) |
| lo_enable | Enable setting of frequency chain (default) |

| | |
|------|--|
| stow | Stow the antenna, but better to quit vlobs and use attest (usually at end or incoming storm) |
|------|--|

To start and stop a schedule:

```
file v001a
start
stop
```

DAS setup

Go to DAS guis. Click 'Start Monitoring'. Select File → Load to select the correct DAS profile, then Config HDW. DASPro will tell you which to use or else run:

```
lo_setup
Mopra
2
32094 64 (or whatever your central freq. and bandwidth are)
32094 64
```

If Inversion after sampler is 'EVEN' then choose `_n` profile. If it is 'ODD' then choose `_f` profile (or vsop).

Recording

Usually Mopra data is recorded remotely to Narrabri, onto cavsi2.

Run `cdisko` as normal but make the following changes:

- Select Remote Disk Recording in the recording mode selection
- Select the Configure→Show eVLBI settings menu item to get the eVLBI dialog
- Set the following values

| | |
|-----------------|-------------|
| Remote Hostname | cavsi2-ext2 |
| TCP Port # | 9999 |
| TCP Window size | 400 |

Record as normal

Post observing

At the end of the session (or during as well if required) you need to copy the mopra logs down to Sydney. Log onto any machine in Epping as "vlbi" and run the command `mopralog.sh`

```
> mopralog.sh
```

This will invoke `rsync` to copy down the logs directory.

From:

<http://www.atnf.csiro.au/vlbi/dokuwiki/> - **ATNF VLBI Wiki**

Permanent link:

<http://www.atnf.csiro.au/vlbi/dokuwiki/doku.php/lbaops/mopranotes>

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