Correcting for AOS Drifts

If LR1, LR2, or, the HRS are shifted, follow the instructions given below to correct for any drift.

- Use a staff account (director or violet).
- There is a logfile for each aos where the fix reference channel as well as the calibration channel are logged for each calibration. The last column, the drift, should ideally be close to 0.0. The logfiles are named:
  - `/logs/aos-logs/hrs.log`
  - `/logs/aos-logs/lr1.log`
  - `/logs/aos-logs/lr2.log`

  List the log file to know how big the drift is in channels.
- To confirm that we have a channel offset as read in the logfile, a good idea is to use the test signal (The centre channel should be 721 for both LR1 and LR2 and 1001 for the HRS). However, this is not very reliable, since the synthesizer for the test signal tends to be unstable. Here is how to this anyway:
  - Click on [Tune] and open a [Display] to one of the connected receivers.
  - Click on [Test Signal], which provides the test signal menu (see Fig. 1).
  - Click on [T.sig Enable] and [Select Signal]. You should see a strong spike appearing in the spectrum, which is shown on the oscilloscope (see Fig. 2).
  - Start a short integration of this signal and analyse it with your favourite software.
- Open an xterm window and start up a telnet session to SCORPIUS. Login as `root` using the sysadm root password.
- `cd /home/aoscon/src/cid`
- Make a backup of `defaults.c`:
  - `ls -l default*`
  - Check the date of the last modification of `defaults.c` and use this date (NOT the current date)
  - `mv defaults.c defaults.c_YYMMDD`
  - `cp defaults.c_YYMMDD defaults.c`
- Edit the file <defaults.c> modify the values for "`program.range[n]`" (*ie.* add the drift value to the channel values), where

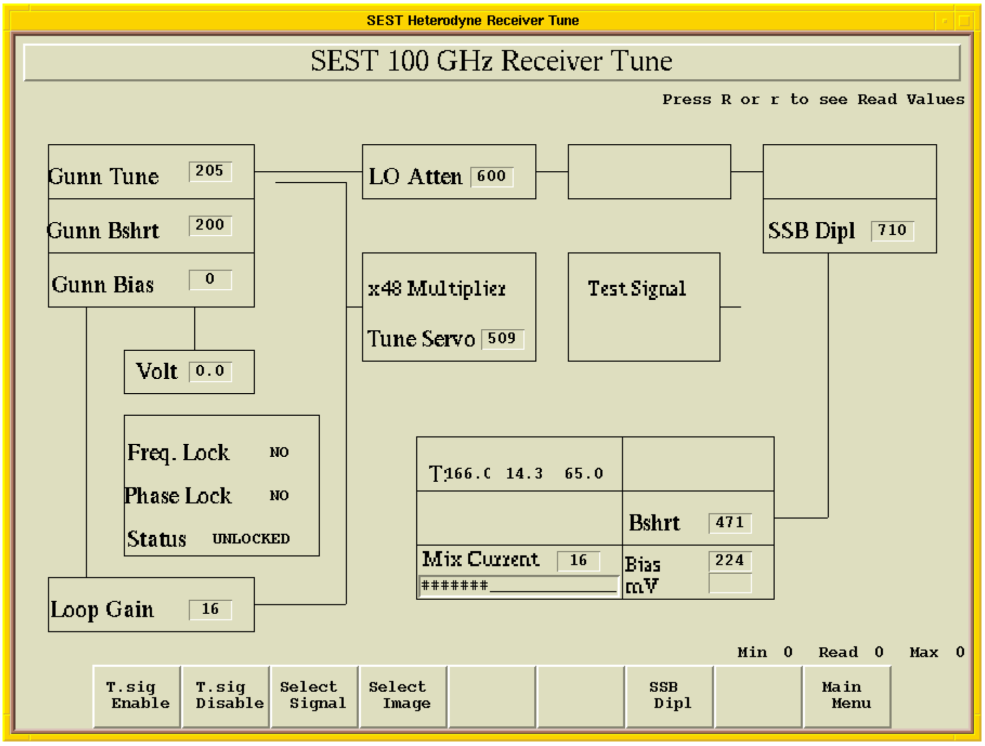

Figure 1: This is the tuning window providing the menu for the test signal control.

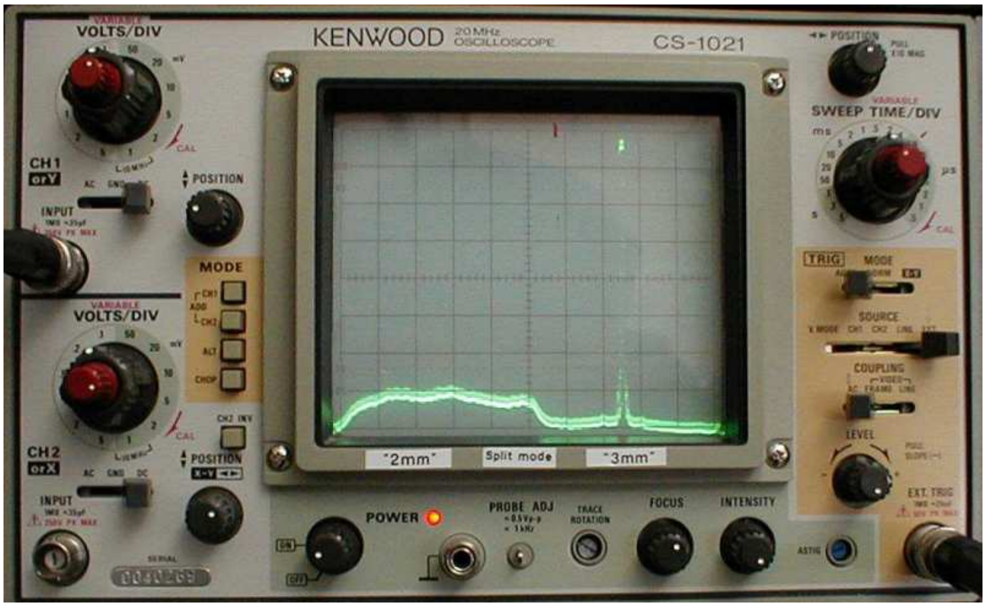

Figure 2: This is the oscilloscope showing the spectrum including the spike of the test signal.

- `n=0,1` for hrs
- `n=2,3` for lr1
- `n=4,5` for lr2

The numbers indicate the start and end value of the channel of the referring spectrometer. The original values would be 1 and 2000 for the HRS and 1 and 1440 for both the LRS. The actual values are already increased by a number, which represent the cumulative offset applied because of previous channel drifts. Simply modify them again with the newly derived channel drift. Add a comment of what you have done to the beginning of the file.

- Type:
  - `make all`
  - `ps -aux | grep cid` (to get the `<pid>` for the "cid")
  - `kill <pid>` (usually 93)
  - `cd ..`
  - `make install`
  - `cd /`
  - `shutdown -ry 0` (alternatively, boot SCORPIUS manually)

- In PEGASUS click $\boxed{\text{Aos}}$ button to open the AOS window (see Fig. 3). Then *Setup* to open the setup window (see Fig. 4) and select the AOS to be checked. Make a comb integration TWICE! If you get error messages, insert the new channel range, and clear the other settings in the setup window. Take note of the values for `ref.channels` and the `width` in the log window. Check in *Setup* that it looks ok. **Note:** You will have to click on the `comb` button even if it is selected as the second time it is selected but the `obsmode` button is unselected. Selecting the `comb` button again will also set the `obsmode` button.

- Login to VELA as 'daprog' and type:
  - `tcsh`
  - `aos`
  - `cd conf`

- Make backup copies by:
  - `pcp aoss.par`
  - `pcp aost.par`

- Edit the file <aost.par>
  - replace the channel values for `LR1 (lr1_1, lr1_2)`

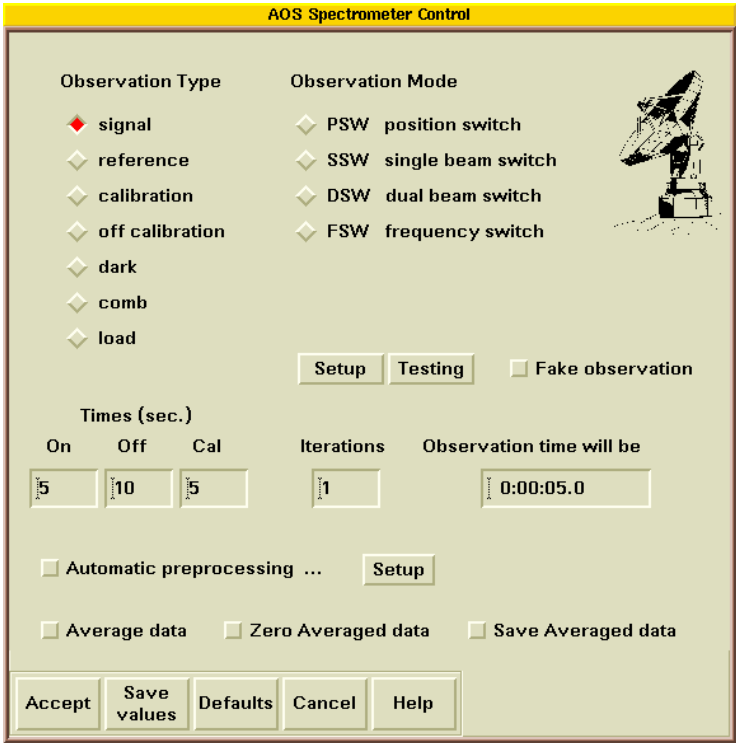

Figure 3: This is the AOS window for the manual control of the spectrometers.

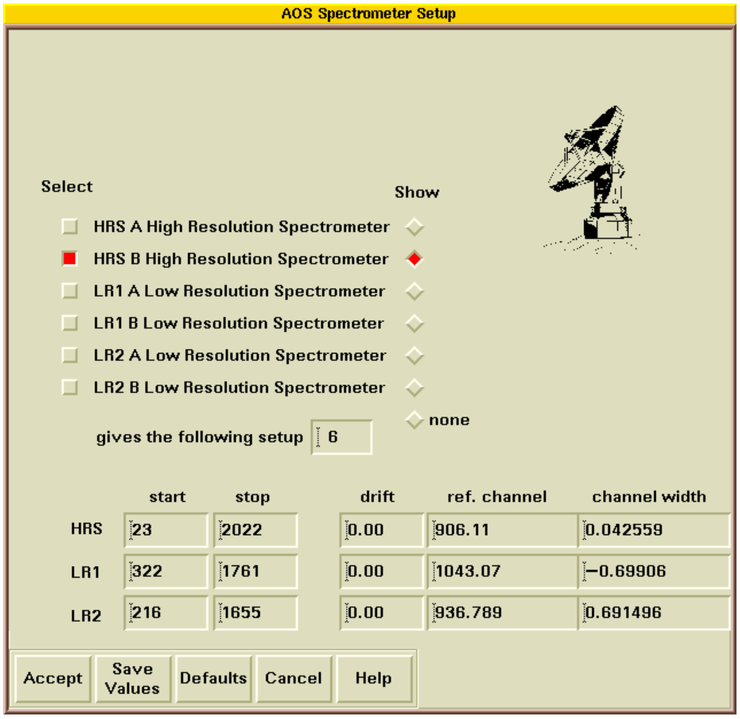

Figure 4: This is the setup window of the AOS control.

or

- LR2 (lr2_1, lr2_2)
- HRS (hrs_1, hrs_2)

- Edit the file <aoss.par>
  - replace the channel values for LR1 (lr1_cstart, lr1_cstop)

  or

  - LR2 (lr2_cstart, lr2_cstop)
  - HRS (hrs_cstart, hrs_cstop)
  - modify the values for reference channel and for the width (lr1_ref_chan, lr1_width, lr2_ref_chan, lr2_width, hrs_ref_chan, and, hrs_width)

- Type:
  - cd ..
  - make install
  - rms .,aost.par (and answer 'Y' if needed)
  - rms .,aoss.par (and answer 'Y' if needed)

- Now, test the new setting with the testsignal
- Write down the corresponding changes in the green staff notes binder "AOS CENTER-CHANNEL"
- Write a message to the system administrator (*mlerner@eso.org*) so he knows that he has to apply this change to the spare SCORPIUS *ie* VINCHUCA.