

GROND – COOKBOOK

By Monika Lendl

Not complete and not necessarily completely correct, no guarantees!

BASICS

- There are usually two people who will be using GROND: you and the GRB person. Try to get along with him/her, they are very familiar with GROND and can be of great help!
- Transferring and selecting the OB's is the same as for FEROS/WFI.
- There are three windows that you will be using on the control computer: BOB, GROND Control and the Console.
 - BOB is the window where you import OB's or select predefined OB's and send them to the telescope.
 - GROND Control is the window that shows the status of the instrument, for example whether the shutters are open and which position the mirror M3 is...
 - The Console is, well, an ordinary Linux Console.
- Both, guider and the g,r,i,z images saturate at 65 000 ADU.

STARTUP

- (check if the last OB executed terminated normally)
- Type into the console: `grondGRI` (this is sort of a cleanup to reset the bob and all)
- In BOB go to: *Configure -> Environment* and set the options to *w2p2dhs* and *p2pp*
- In BOB go to: *Interface* and set it to *OBS-Mode*
- In GROND Control: switch *TCS* to *on*
- If not already done by the GRB person, open GROND's cold shutter and protective shutter by typing into the console: `grondMC OPEN` (protective shutter) and `grondCS OPEN`
- The mirror M3 is used to switch between WFI/FEROS and GROND. To switch it to GROND, go to the Console and type: `grondM3 GROND` to switch back to WFI/FEROS after the observation, type `grondM3 WFI`

OBSERVATION

- First, ask the telescope operator to switch the guiding to GROND. The exposure times in the guider should be something like (from the top): 5 - 3 - 2 . Depending on your guidstar you might want to change them. The uppermost number should always be the largest, the number in the middle should be second largest and the exposure time (lower number) should be shortest.
- To get an OB, click on the folder-symbol in the BOB window.

- To send it to the telescope, click the telescope-symbol a bit further down. The telescope is now moving to the coordinates.
- Select a bright (but not saturated) star in the guider. And click on Start Guiding. The Guider display will now switch from the field of stars to the guidstar. Check that it stays in the center of the field. Then, click on the field that has popped up on the control screen (sorry, I don't remember exactly what it says, probably "start observation" or similar)
- If the OB's you are using have telescope dithering, the telescope will move after each g,r,l,z exposure. You will have to select a guidstar after the movements.
- After the OB has terminated, fetch another OB as described above.

END

- To switch back to WFI/FEROS, type into the console: grondM3 WFI
- If you are the last person to use GROND (check with the GRB person), you can also close the shutters. To do this, type grondMC CLOSE and grondCS CLOSE

PROBLEMS

- BOB crashes. Go to the console and check there is no other bob open. (e.g. ps -A | grep bob). Then start the bob again by typing bob (or BOB?)
- Can't move M3 – try typing grondGRI in the Console. Try restarting the BOB again. Ask for help. If everything else fails, there is a switch at the telescope to move the mirror.
- The OBs crash – make sure there is only one BOB running. Do a grondGRI. Check if the coordinates are observable.
- The guider keeps losing the guidstar– check the guidstar is bright enough (ideally, 10 000 counts), not saturated and adapt the exposure times of the guider. Maybe choose a different guidstar
- The guider keeps drifting off – talk to the TO: make sure that the WFI guiding is switched off.

CALIBRATION FRAMES

- Dark and Bias frames are taken frequently by the GRB people. I am not sure how frequently they take flats.
- You can take skyflats yourself. For this, there are standardized OB's. See below.

SKYFLATS

- Coordinates: these depend on the time of the year. The TO has a list and will point the telescope accordingly.
- There are standardized OB's for the skyflats which have to be started when the sun is at an altitude of -10°.

- To import these OB's, go to the folder symbol in BOB, and select "skyflat" for evening-flats and "skyflat2" for morning-flats
- You have block the telescope from pointing (the TO has already pointed it to the right coordinates). After you have imported the OB, click on it so it expands. Then you can right-click on a little arrow next to "GROND_img_acq_Preset_telescope". It then turns into a hand indicating that the telescope will not try to change position.

TRICKS

- You can change the exposure time for the guider without having to stop guiding. To do this, just change the exposure time on the right side in the guider-window. But make sure you keep it shorter than the other two numbers.
- If you don't want to keep the telescope pointing to the same place for more than one OB (e.g. when you are observing planetary transits), disable the option "GROND_img_acq_Preset_telescope" as described for skyflats.
- If you want to abort an exposure, abort it in the BOB window and also abort the exposures in the GROND Control window.

CLEAR SKIES!!!