

SHOC INSTRUMENT CHANGE NOTES: APPLICABLE TO LESEDI TELESCOPE ON

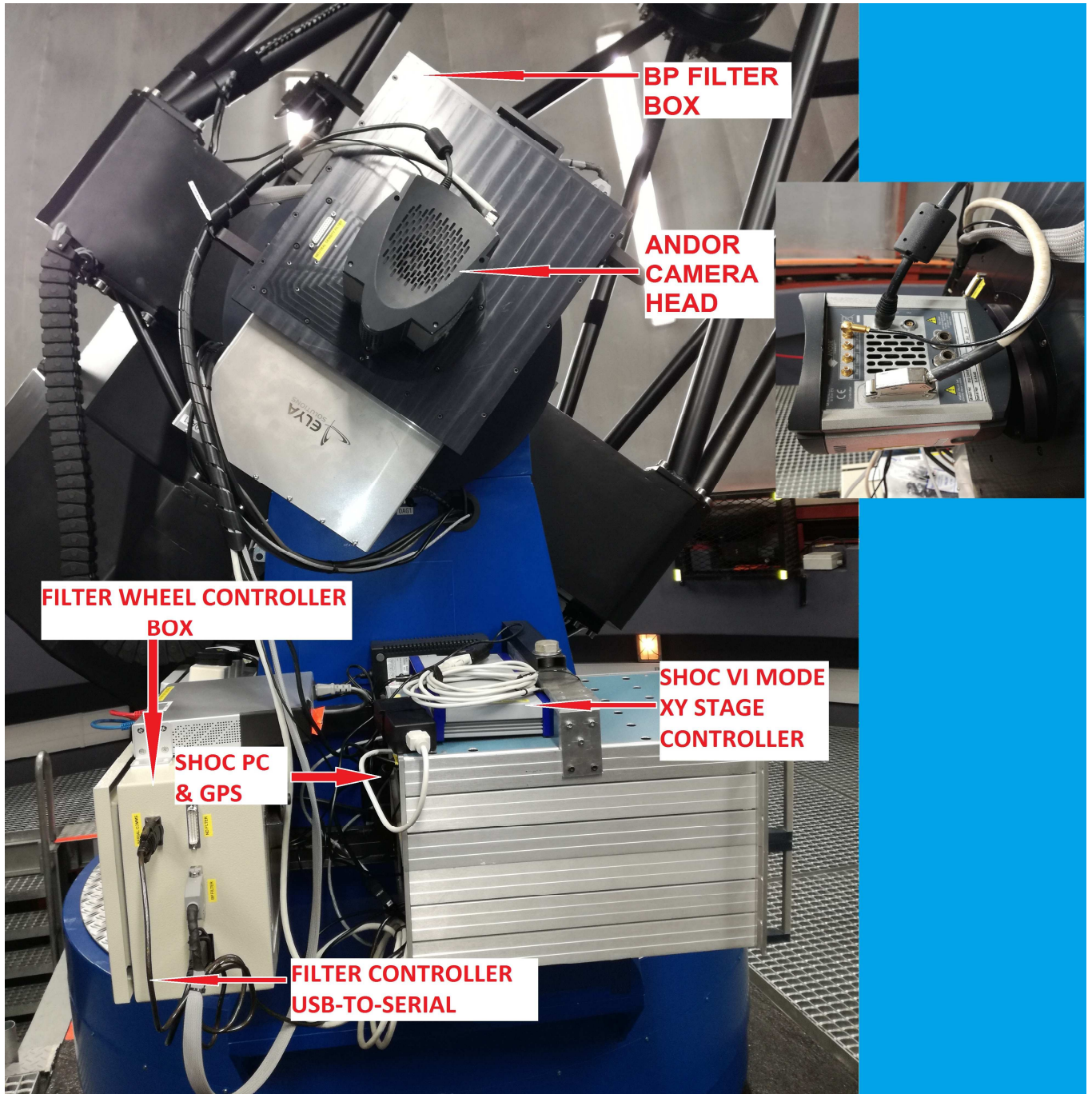


Figure 1: SHOC VIEW FROM WEST

ON THE TELESCOPE:

1. Mount SHOC PC Crate on Telescope (see picture). See Appendix for the implications of mounting the “wrong” PC Crate. Do NOT Connect the mains power cable at this stage.
2. Mount Andor Camera Unit on Telescope de-rotator – see picture. (Ensure Camera lens has been cleaned by gently blowing with compressed air.)
3. Connect the Filter Wheel Controller (permanently mounted on telescope) USB-to-serial cable to SHOC PC (see pic.)
4. Connect USB-to-serial cable from shoc vi mode xy stage controller to SHOC PC however do not connect its power supply (see pic.) this is not in use yet.
5. Connect Acq. Camera usb to SHOC PC
6. Connect GPS Antenna to GPS Unit inside PC Crate
7. Connect Network Cable to PC Crate
8. Connect SHOC PC to Andor Camera Unit
9. Connect PSU to Andor Camera Unit
10. Connect GPS trigger signal cable to Andor Camera unit “ext trig”
11. Connect PC Crate to Telescope mains (normal Kettle plug lead)
12. Switch on Crate Power & SHOC PC (in front behind black tape)

IN THE CONTROL ROOM:

1. Useful info may be available at: <http://topswiki.saao.ac.za/index.php/SHOC> - especially if there’s any doubt as to whether these instrument change notes are up-to-date with possible software updates . . .
2. Ensure that IT updates DNS records to allow correct web browser access – this is particularly important now that SHOCnDisbelief is regularly swapped between Lesedi & 74” telescopes.....
3. After IT has updated the DNS records do the following:
 - 3.1 Open xterminal, type in “ssh ccd@shocndisbelief.suth.saao.ac.za” when prompt for a password type “Saaoccd”.
 - 3.2 Run **shocboxswitch.sh** command, then when asked “Do you wish to revert to the default?” type “NO”
 - 3.3 When asked “which telescope should be used?” then type in **1M** and when prompt for a password type “Saaoccd” the script will run.
4. Connect to the web browser: <http://shoc1m.suth.saao.ac.za:5000>. When prompted to log in, use the username and password below:
***VERY IMPORTANT!** See Appendix for a detailed explanation by Amanda about the implications of mounting the “wrong” SHOC Computer on the “wrong” Telescope.

Username: shoc1m
Password: Saa01m

There are three tabs, for **Filter control**, **GPS control**, and **Camera control**

5. Go to the **Camera** tab, click the **“Turn Camera on”** button – see figure 2. If the camera switches on OK the **“Control”** tab GUI will appear – See Figure 3.

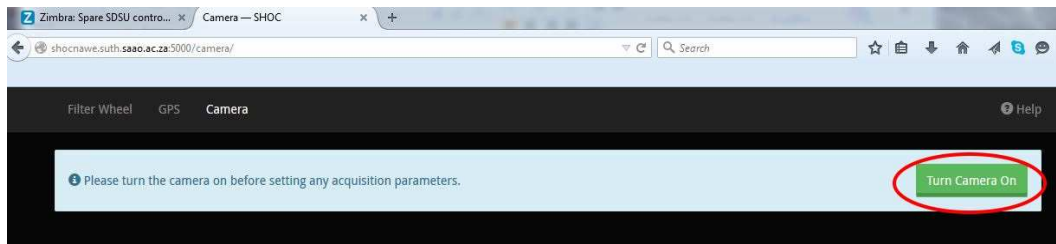


Figure 2: Initial state of "Camera" tab

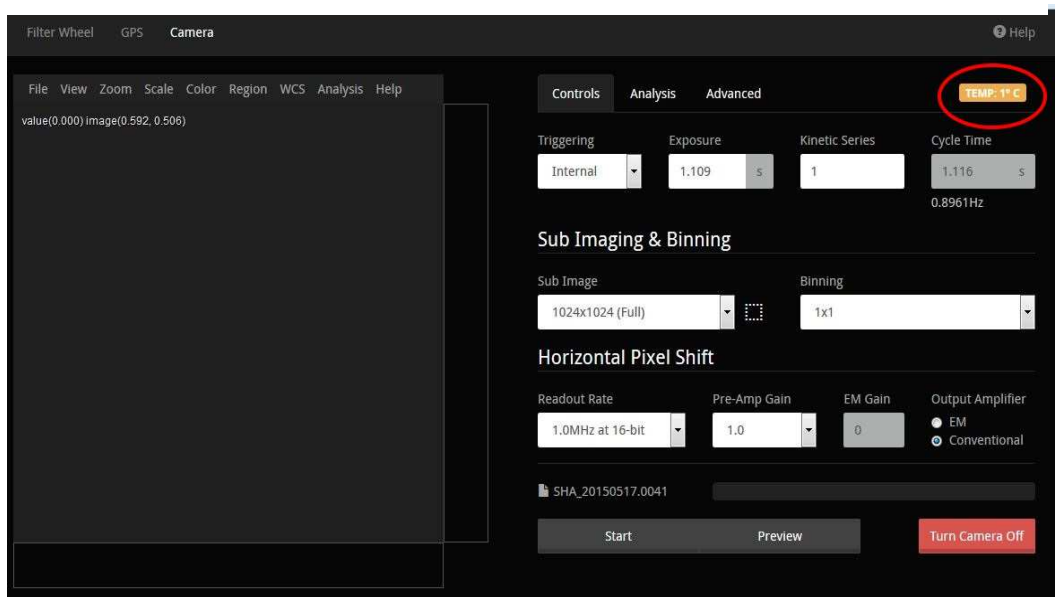


Figure 3: Camera "Control" tab GUI

6. Set the camera temperature: See the temperature display/button in the top RH corner. It should have a red background and the reading should start dropping.
 - a. Click on the Temperature display button. The **“advanced”** tab GUI should appear – see Figure 4.
 - b. To avoid unnecessary stress to the thermoelectric cooler, click on the **“Set Temperature”** box (Figure 4) and change the set point to **-25°C**. Check that the temperature settles at the new set point. Note that the servo seems to overshoot quite a lot. Once at the set point, the button background colour changes to green. This can take a few minutes . . .

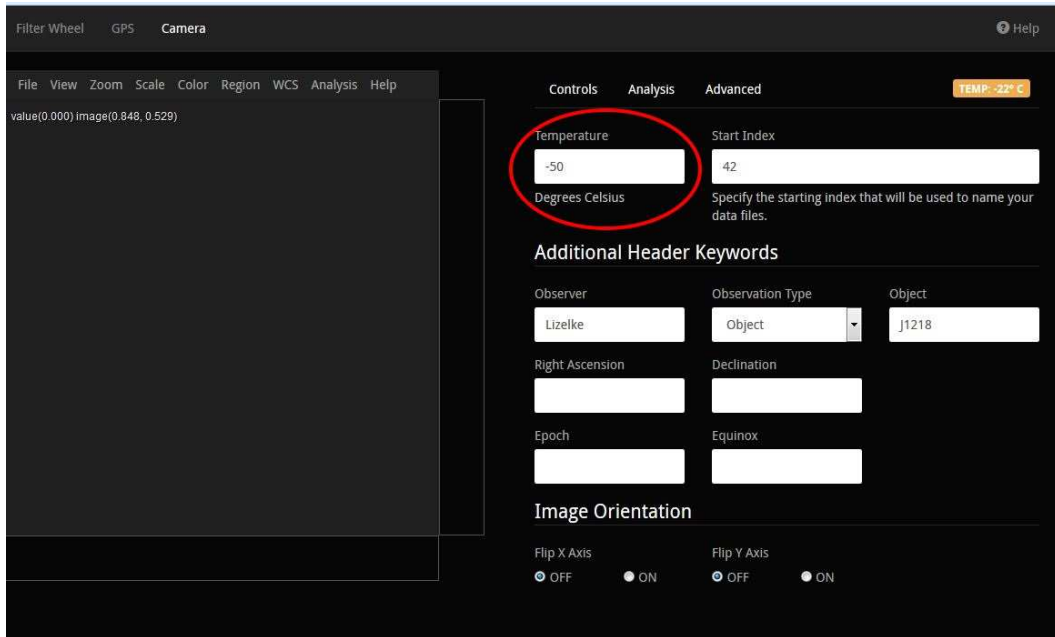


Figure 4: "Advanced" tab GUI

7. Check that the camera is reading out: Click on the "Controls" tab (Figure 5), confirm the setting is full frame, conventional mode (the default) and press "preview". Images should appear every ~ 1.2 sec. Once confirmed that images are coming through, press "stop". Note that camera has no shutter, therefore before bias frames can be taken, the dome lights must be switched off, ensure dome shutters and cover is closed (it's not necessary that it should be completely dark inside the dome, but there should be no direct light falling on the optical path). Running the cursor over the image display area will bring up a notification panel with X,Y coordinates and the count at this position. The counts should be around 400 or so.

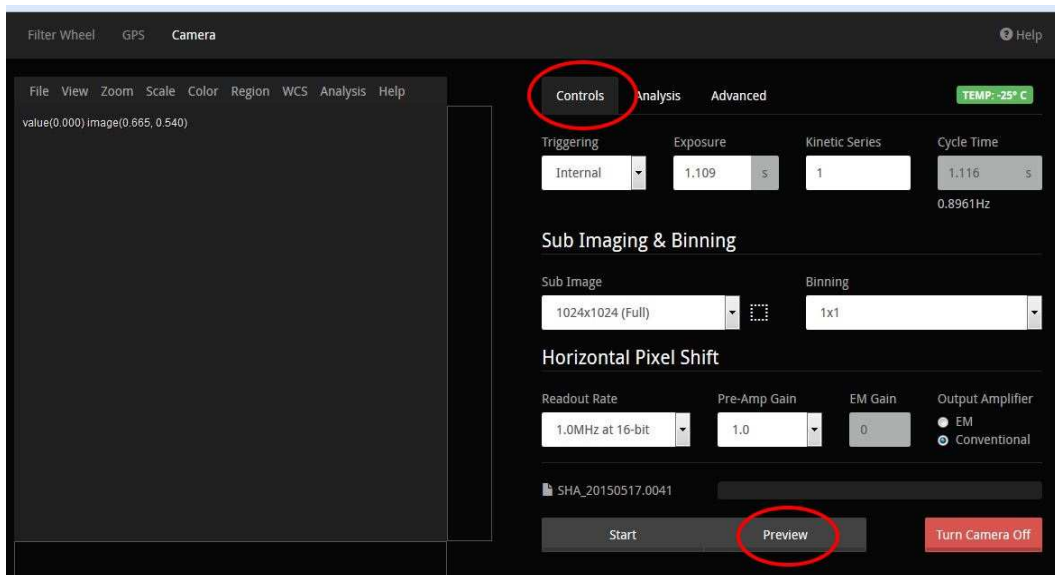


Figure 5: Camera "Controls" Tab

8. Check that the camera fan is running. (Check this at the camera)
9. Turn the camera off: Click on the “Turn Camera Off” button at the LHS bottom corner of the GUI.
10. Check the Filter & GPS operation: Click on the “Filter Wheel” and “GPS” Tabs at the top RH corner of the web GUI to access the controls . See Figures 6 & 7.
11. On the web page Filter Tab initialize and move filters to check their operation.

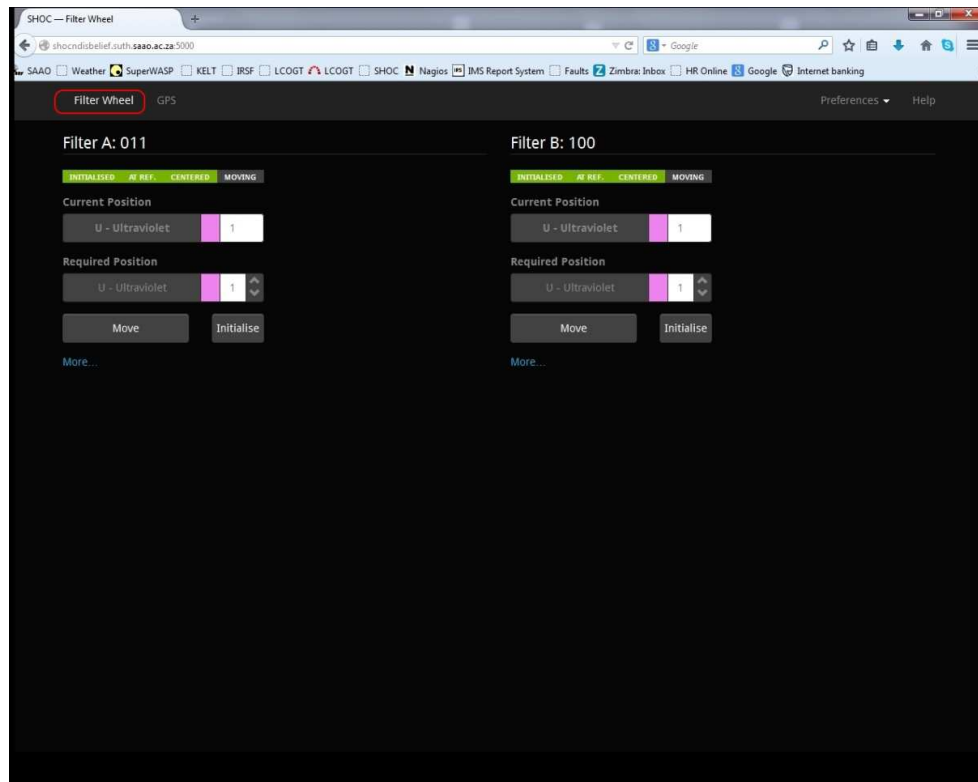


Figure 6: Filter Wheel GUI

12. On the web page GPS Tab, just check to ensure that there is no Antenna Fault (If this happens check that the antenna has been connected properly to the GPS unit in the port labelled "antenna" also refer to page 18 of the user manual under the section titled "hardware fault monitoring" point 2.)
13. GPS data acquisition is an automatic process and will start as soon as dome is opened.
14. Further information and user manuals (for trouble shooting) can be found at <http://shoc.sao.ac.za/Documentation.html>

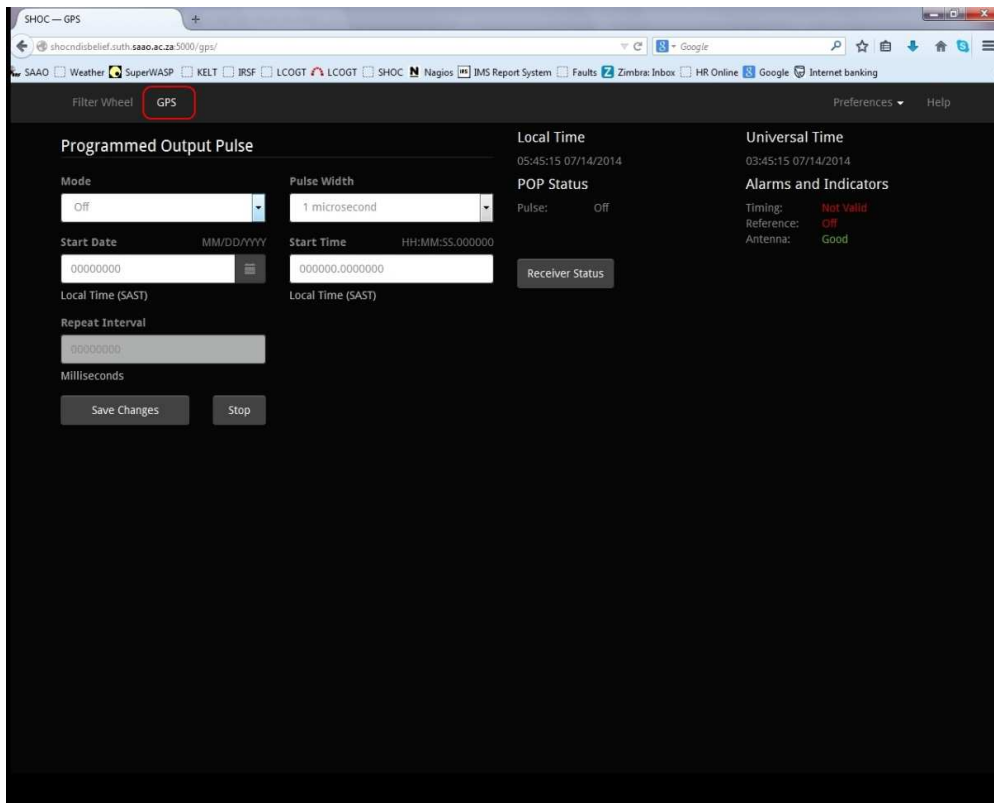


Figure 7: GPS Tab GUI

Appendix:

In an email dated 15 January 2016, Amanda explained the implications of mounting the “wrong” CHOC Computer on the “wrong” telescope, as follows:

“If the boxes are switched (i.e. shocnawe goes on the 40in or shocndisbelief goes on the 74in), then the observer will not be able to connect to the machine using the appropriate website and account (which is shoc40in or shoc74in for each telescope, respectively).

The instrument could be accessed by logging into the WRONG account, so if shocndisbelief were mounted on the 74in, then the 74" observer could run the shoc40in web interface and transfer data as shoc40in. This would be functional, but then all of the data paths would be incorrect because files would be stored under the 40in telescope folders, and the observer is likely to get confused when logging in and out. Things could get really hairy in this case if for some reason multiple SHOCs were mounted and an observer mistakenly logged into the wrong one, thus controlling the instrument on a different telescope.

The preferred solution is for IT to know how to change whatever information is required so that the SHOC box can be correctly tied to the correct telescope username where it is mounted.”