Instructions for running a2011

Carl Heiles, Josh Goldston (27 May 2005)[1]

If you get started more than eight minutes late, please call Josh Goldston at 510 299 4427.

In case of any problems or concerns please call Josh Goldston at 510 299 4427. These are observations with ALFA and GALSPECT. The observing procedure consists of running a calibration routine (called Smart Frequency Switching) and then making a map with basketweave scanning (the observing routine is called Basketweave Scanning).

Here we go:

1. On *observer2* login as dtusr.
2. Open an xterm and type **cima**.
3. On the center window entitled "Welcome to CIMA" enter your name and project number = A2011 (note "A" is CAPITALIZED). Then under "Select observing mode" select "Line".
4. A new window entitled "Available Receivers" pops up. Click "ALFA", click "Disable Quick Tsys", and then "Select Receiver Now". This will start rotating the turret to ALFA. Finally, click on "DISMISS" to get rid of this window.
5. On the "Observers Interface" window (upper left of screen) click on "Command File Observing".
6. A new window opens up near the upper right labelled "Command File Observing". Click "Command file"; a new window opens up entitled "Select Command File".
7. In this new "Select Command File" window you see a set of files displayed. Our observing files have names like "`LWS_day_5`". We want to sequentially run through the days. Every time a file is done successfully, check it off on the attached list. Select the next file by clicking on it. For example, if all files up to "`LWS_day_4`" have been observed already, select "`LWS_day_5`".

   Then click on "Open".
8. Return to the "Command File Observing" window near the upper right of the screen. Click "Start Command Line Observation".
9. At this point look at the "AO Observer Display" window near the bottom right of the screen. At the bottom left of this window the word "Observing" shold be highlighted in green. Also, this window prints out a line every time it does something. It should progress in a normal fashion.

[1] Adapted from "Instructions for running a2032" by Snezana Stanimirovic (May 22 2005).

The telescope should start driving to the source.

If the yellow word "IDLE" appears instead of the green "Observing" at the bottom left of this window, or if there are any *red* messages, then there is a *problem*. If so, call Josh Goldston at 510 299 4427.

10. While the telescope is driving to the desired position, login to *dataview* as user "guest" (password is "naic305m").

11. On *dataview*, open an xterm and login to the *galfa1* computer by typing:

    [guest@dataview guest]$ ssh -i galfa_key galfa@galfa1

    This links this window to the *galfa1* computer.

12. In this same *galfa1* window type: **# ps**

    This makes a list of processes running on the *galfa1* computer. If the word *gdiag* exists in the right hand column then either somebody forgot to turn off the spectrometer or someone else is using it. You need to kill this process. Do so by typing

    # kill PID , where PID is the number in the first column.

13. In the same *galfa1* window type:

    # /var/diag

    Let it run for some time, like 30 sec, you will see lots of messages, GALSPECT is warming up. Stop this by typing Control-C.

14. Wait until the telescope gets on the source. Then in the same *galfa1* window type:

    # /var/levels

    This will finish quickly and give you a short summary. Check RMS values, they should all be around 10. If they are not close to 10, try it again. And again. And again. If the RMS values keep being wrong, then call Josh Goldston at 510 299 4427.

15. When you type the above command there is a possibility that you will see the message

    LO2: Set failed, got back: ERROR setting freq

    If you see this message, then do the following:

    (a) Open up a new xterm on *dataview*.

    (b) login to wappserv as user wapp (password=wappme) by typing
    ssh wapp@wappserv
    It will ask for the password: type **wappme** .

    (c) Type
    ```
    source /share/wappsrc/bin/start_gpib
    ```

(d) Then return to the previous step where you type `/var/levels` in the *galfa1* window.

16. FINALLY! We are set to observe! In the *galfa1* window type:

    # /var/A2011

    Again, note that "A" is capitalized. Typing this starts GALSPECT and it will beigin to write data files with the GALSPECT. It will begin to write bunches of numbers on the *galfa1* window.

17. On *dataview* select "Quick Look Data Display" and make sure the spectra are being updated.

18. The first action is a calibration, which takes a few minutes. This must finish before the telescope starts moving, so we try to leave plenty of time. As a result the telescope might not start moving for several minutes; this is not a problem.

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19. To stop at the end of the run:

    (a) On *observer2*, on the "AO Observer Display" click "Abort Observation". Wait a moment until everything stops. If it doesn't stop, keep typing "Abort observation" until it does.

    (b) On *dataview*'s *galfa1* window (the one which prints numbers all the time) press Control-C. This should stop GALSPECT. If it doesn't, keep hitting Control-C.

    (c) On *observer2*, on the "Observers Interface" window, click "Exit Normally" to exit from CIMA.

20. OPTIONAL STEP DURING OBSERVING: HAPPY BIRTHDAY!!:

    You can view data using GALSPECT's display:

    (a) Open a new xterm on *dataview* and type:

    [guest@dataview guest]$ vncviewer galfa1

    This brings up a plot entitled "TightVNC: Pixmap framebuffer".

    (b) With the cursor on this plot window, type "a" three times.

    (c) Move the cursor to this *plot window* and type "h" once.

    (d) With the cursor on this plot window, type "L".

    (e) At this point you should see seven plots, one for each of ALFA's beams. Each plot has two graphs, one yellow and one green. They should look similar, like a flat-topped choclate birthday cake viewed from the side (yum-yum!). In the very center should be a narrow 21-cm line with height about the same as that of the cake; regard the line as a birthday candle in the very center of the cake.

    These plots should continually update once per second. If this doesn't happen, then call Josh Goldston at 510 299 4427.

(f) The G-ALFA notebook in the control room has more details on GALSPECT operation.

Thank you very much!
Carl and Josh