SHARC Observing Cookbook

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15 April 1997

This guide assumes that you have read, or will soon read, the SHARC Software Manual and SHARC Data Reduction Cookbook. Herein I merely list some commands in a concise manner to enable you to start observing quickly, or to refresh your memory each night. This is NOT definitive; use your own discretion.

(1) Start SHARC software on the Mac (Labview program SHARC Server, icon on the desktop). Make sure the dewar and electronics are ready (see SHARC Cryostat Manual).

(2) Issue command to start the VAX client software (assuming 350 microns):
SHARC /WAVELENGTH=350 /FREQUENCY=4.09 /SOUND /LOAD_PHASES

(3) Start the chopping secondary: SECONDARY XX 4.098
Insert the correct chopper throw, and make sure the chopper box produces this. (NOTE: Tuning the secondary is something you should first be shown how to do!) With the secondary throw set, phasing/flat-fielding will be automatic via AZO/ON_BEAM and AZO/OFF_BEAM.

(4) Go to a bright source, like a planet: PLANET SATURN

(5) Open a data file: DATA SATURN_350.MAP1

(6) Make a quick map to point up on source:
OTF 180 0 4 4 4 4

(7) Look at this map in CAMERA; find new pointing offsets. Repeat a few times.

(8) Phase the pixels: the command PHASE_12 should work for pixel 12 being the reference pixel; use PHASE_10 if you choose to use #10. If the phases started out at zero, you should phase twice.

(9) Save the phases with SHARC /SAVE_PHASES.

(10) On the first night of the run, perform gain (flat-field) calibration by: FF_SHARC which will take two sideways maps through your source. You may want to FF_SHARC 2 or 3 times, just to make sure you've flat-fielded well.

(11) On the first night of the run, perform focussing by playing with FOCUS /OFFSET=XX and taking a scan; when the planet looks brightest and most circular, you have it.

(12) Go to your source: OBSERVE NGC1068 and DATA NGC1068_350.MAP1

(13) While slewing, decide on the OTF parameters you need. For a suggestion, issue: SHARCOTF and respond to the simple questions. It will give you a sample OTF command. It's not the cleverest program - you should check to make sure you spend at least a minute of time per row. Reduce the number of rows accordingly to keep the total time within reason. Finally, try to avoid stepping in ZA by 5" or 10".

(14) Point on the planet several times during the night. Always record pointing offsets, airmass, and peak voltage. This will be used later to derive the atmospheric opacity. A typical command for pointing is:
OTF XX 0 4 4 4 4 where XX is your chopper throw plus 60".
At the end of the night, make a file consisting of one line per planet observation, each with the airmass & peak voltage. Then run SHARCTAU to determine tau. When you run CAMERA or BADRS, use this value of tau.