LESSON #8 WRITING AND RUNNING A COMMAND FILE

- 1. Open the SRT and a text editor such as Notepad.
- 2. We've learned how to do many different things with the SRT: how to move it, stow it, do npoints, change the frequency, change the bandwidth, calibrate it, and record data. We've also learned that the SRT moves very slowly, so doing these tasks can take a long time. Thankfully, there is a way to program the SRT and have it complete a list of commands by itself.
- 3. We'll write these programs in Notepad.
- 4. Each command will start with its own line.
- 5. Each line begins with a colon ":" unless it begins with a time.
- 6. The colon is followed by a space unless the line commands the telescope to wait for a given time.
- 7. Use an asterisk "*" to comment out a line. (The computer will not read what is written between asterisks. This is a good way to explain to a person what the code means.)
- 8. The following is a list of some of the commands you can use.

2008:206:14:00:00 Wait until the 14th hour (UT) of the 206th day of the year 2008, then read the next line.

:60 Wait 60 seconds, then read the next line

: Sun Go to the sun. This also works for other sources like Test and the Moon

: azel 120 45 go to a certain azimuth and elevation, in this case an

azimuth of 120 degrees and an elevation of 45 degrees

galactic 10 55 go to galactic coordinates 10 55. Azimuth/elevation coordinates

have their vertex on the horizon in the North with the azimuth

running along the horizon. Galactic coordinates have their vertex

at the galactic center (in Sagittarius) with the galactic azimuth runs

along with Milky Way.

: calibrate calibrate

: freq 1420.4 1 set frequency and mode, in this case the central frequency

is set to 1420.4 MHz and the mode is set to 1

: Sun n go to the sun and do an npoint to make sure the telescope is

aimed correctly

: record *filename*.rad record a file, remember that file names cannot have spaces

and must end with ".rad"

: roff stop recording, you can record multiple times into one file

: stow go to the stow position – a good thing to have your program

do when it is done

9. A friend of mine wanted to record the sun over the weekend. She wrote the following program:

2004:206:12:30:00 freq 1415 2 *wait unit 12:30 UT on July 25, then set *

*the frequency and mode. Notice that we are *

*using 1415 MHZ and mode 2 in order to *

observe the sun

: test	*go to the test position*
: calibrate	*calibrate the telescope*
: record sunjuly24.rad	*record a data file named sunjuly 24*
	notice that the name of the file ends with
	* .rad *
: Sun n	*go to the sun and do an npoint*
2004:206:14:00:00 Sun n	*wait until 14:00 UT and then do an npoint*
2004:206:16:00:00 Sun n	*wait until 16:00 UT and then do an npoint*
2004:206:18:00:00 Sun n	*wait until 18:00 UT and then do an npoint*
2004:206:20:00:00 roff	*wait until 20:00 UT and then stop recording*
: stow	*go to stow, (we can't see the sun at night)*
2004:206:12:30:00 freq 1415 2	*wait until 12:30 UT on July 25 $^{\mbox{\tiny th}}$ and then set*
	the frequency and mode
: test	*go to the test position*
: calibrate	*calibrate the telescope*
: record sunjuly25.rad	*record a data file named sunjuly25*
: Sun n	*go to the sun and do an npoint*
2004:207:14:00:00 Sun n	*wait until 14:00 UT and then do an npoint*
2004:207:16:00:00 Sun n	*wait until 14:00 UT and then do an npoint*
2004:207:18:00:00 Sun n	*wait until 14:00 UT and then do an npoint*
2004:207:20:00:00 roff	*wait until 14:00 UT and then stop recording*
: stow	*go to the stow position*

When she comes in on Monday, she'll have two data files waiting for here, one from July 24th named sunjuly24 and one from July 25th named sunjuly25. For each data file, she made sure that she was in the correct frequency and mode to record the sun. She also made sure to calibrate the telescope on an empty part of the sky (the test position) and to correct any aiming problems with repeated npoints. She could have used the ": roff" command to stop recording data when doing the npoints.

- 10. Decide on a task for the telescope to complete. Write out the task in words as if you were telling a person what to do. In Notepad, write a command file to perform the task. Comment each line (as my friend did) so that someone else will be able to understand what your program is doing.
- 11. Save your file to the SRT folder on the C:\ drive. YOUR FILE'S NAME MUST END WITH ".cmd".
- 12. Have the SRT run your program. In the SRT text window, type the name of your command file including the last four characters ".cmd". DO NOT HIT RETURN.

 Instead click the Rcmdfl button on the task bar (it stands for read command file)



- 13. Make sure that your program runs as intended and your data files are recorded correctly.
- 14. Stow the telescope; you're done.