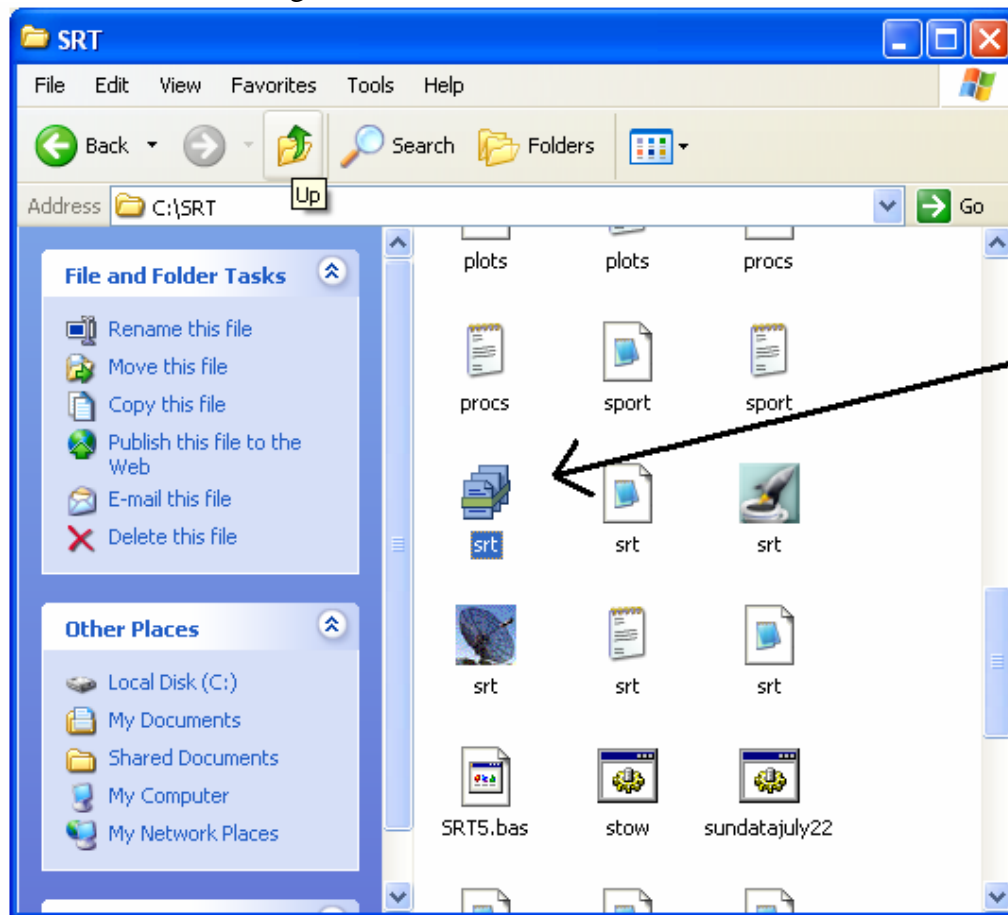


Welcome to the Small Radio Telescope (SRT)

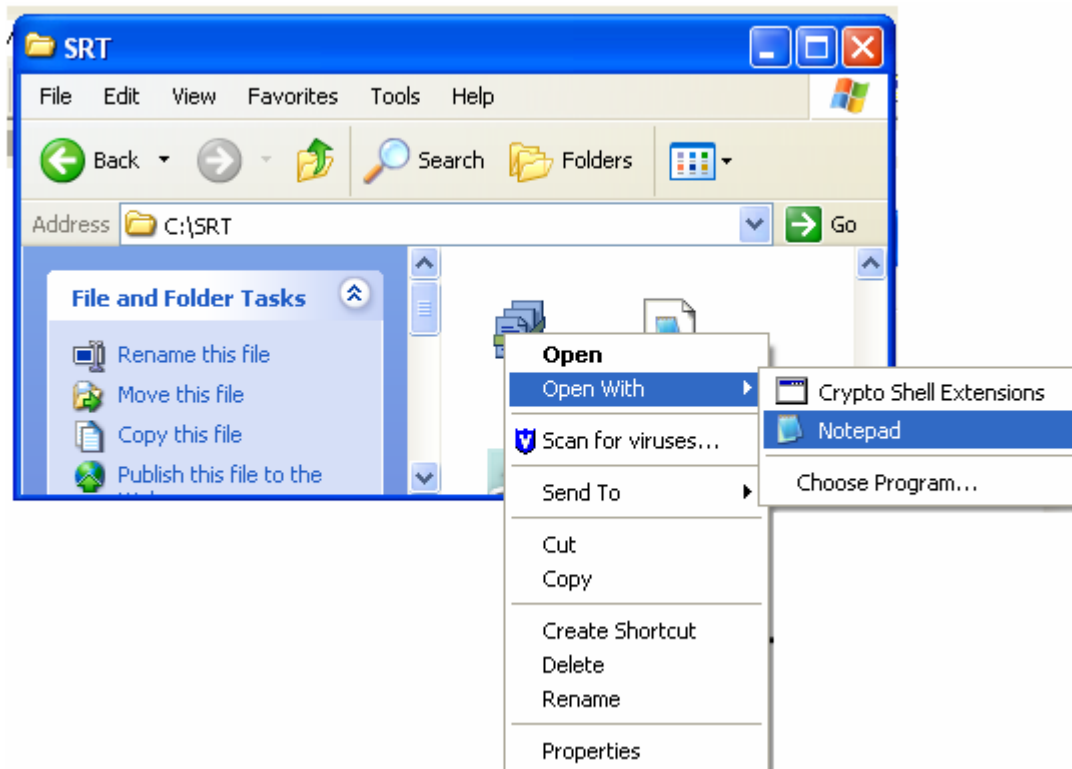
The SRT is a great resource for high schools and colleges interested in having their students conduct real scientific experiments. It is a versatile and capable instrument. Technical information, software downloads and some lesson plans can be found at <http://web.haystack.mit.edu/SRT/index.html>

In the following 8 lessons, students learn how to operate the telescope, record and analyze data – all the skills they need to conduct their own investigations. Here, the bare bones of the SRT are shown. Follow the instructions on <http://web.haystack.mit.edu/SRT/SRTexe.html> to install your software.

Open up My Computer → C:\ drive → SRT folder find the SRTcatalog file that looks like the following



Right-click on this file and open it with Notepad



you should see the following code.

```

srt - Notepad
File Edit Format View Help
* sample srt.cat file
* SIMULATE RECEIVER
* SIMULATE ANTENNA 20
* first word is key word
* STATION: latitude longitude west in degrees
* SAT: satellite ID then longitude west
* SOU: source ra, dec, name, epoch
STATION 42.5 71.5 Haystack
* source coords epoch 1950 unless specified
SOU 05 31 30 21 58 00 Crab
SOU 05 32 48 -5 27 00 Orion
SOU 05 42 00 -1 00 00 S8
SOU 23 21 12 58 44 00 Cass
SOU 00 00 00 00 00 00 Sun
SOU 17 42 54 -28 50 00 SgrA
SOU 06 29 12 04 57 00 Rosett
SOU 18 17 30 -16 18 00 M17
SOU 20 27 00 41 00 00 CygEMN
SOU 00 00 00 00 00 00 Moon
SOU 21 12 00 48 00 00 G90
SOU 05 40 00 29 00 00 G180
SOU 12 48 00 28 00 00 GNpole
SOU 00 39 00 40 30 00 Androm
SOU 05 14 12 18 44 00 AC1
SOU 03 29 00 54 00 00 PULSAR
SOU 08 30 00 -45 00 00 PS
GALACTIC 10 1 RC_CLOUD
GALACTIC 229 26 test
AZLIMITS 92.0 265.0 /* mid az range is south */
ELLIMITS 4.0 160.0 /* elevation limit south - north */
COMM 1 /* COM 1 */
CALCONS 1.0 /* gain correction constant to put power in units of K */
BEAMWIDTH 7.0 /* 3 dB antenna beamwidth in degrees - used to set offsets for scans */
MANCAL 1 /* 0 or absence indicates automated cal vane */
NOISECAL 200.0 /* initial value for noise diode calibration */
DIGITAL /* needed for digital receiver */
TOLERANCE 5 /* optional max error in counts */
COUNTERSTEP 50 /* optional stepped antenna motion */
RECORDFORM TAB VLSR /* optional tabs between fields and VLSR in output */
*ELBACKLASH 3.0 /* optional correction for elevation backlash */

```

Pay close attention to the lines:

* SIMULATE RECEIVER

and

* SIMULATE ANTENNA 20

The asterisks in front of these lines indicate that they are not read by the computer. If, for some reason, either the receiver or antenna mount are not working, this computer program can simulate their function. To do this, simply delete the asterisks before these lines. The “20” indicates that the simulated antenna will move 20 times faster than the real antenna. It is useful to simulate the antenna in order to have it test command files. More on that later.