

Mount Adjustments and Pointing Corrections

It is now time to adjust the SRT mount and make the necessary pointing corrections. Correcting the pointing requires adjustments to both the hardware and software controlling the motion of the antenna. Before proceeding make sure that the antenna is fully operational and capable of receiving commands for the software interface.

Before attempting to correct the pointing make sure that the computer clock time is correct and that the correct station longitude and latitude have been entered into the SRT.CAT file.

- * first word is key word
- * station: latitude longitude west in degrees
- * sat: satellite ID then longitude west
- * sou: source ra, dec, name

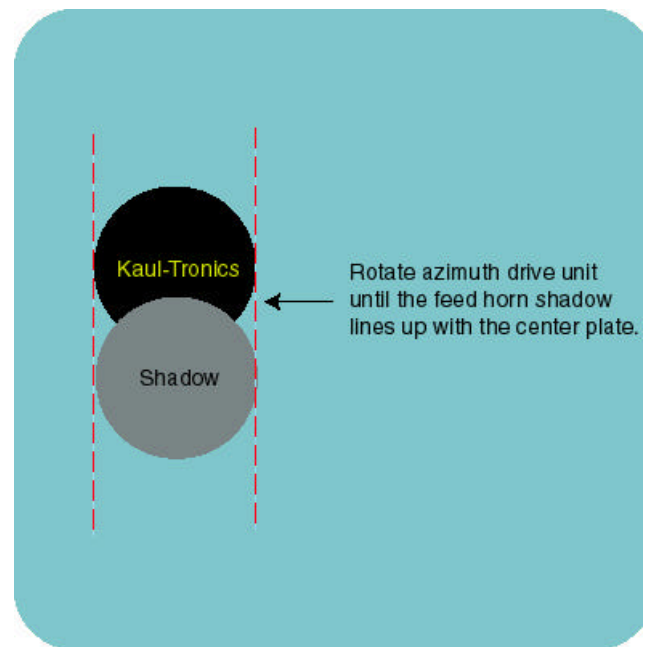
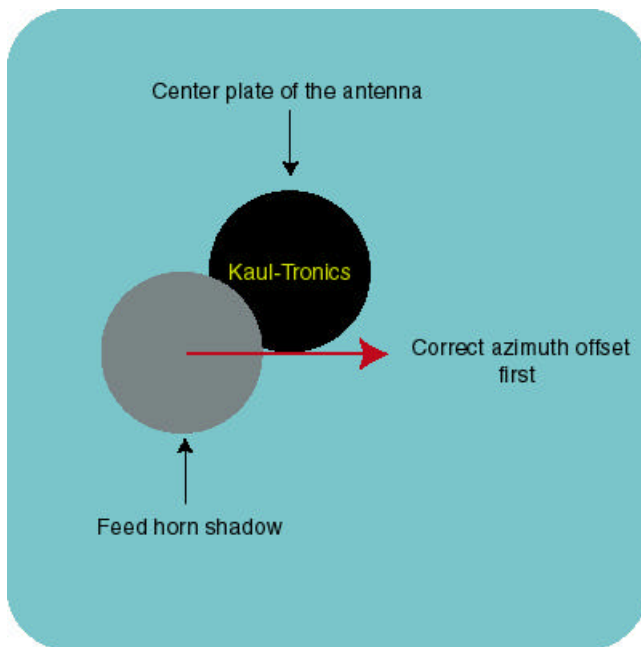
STATION 42.5 71.5

If necessary, change these coordinates to those of your installation site.

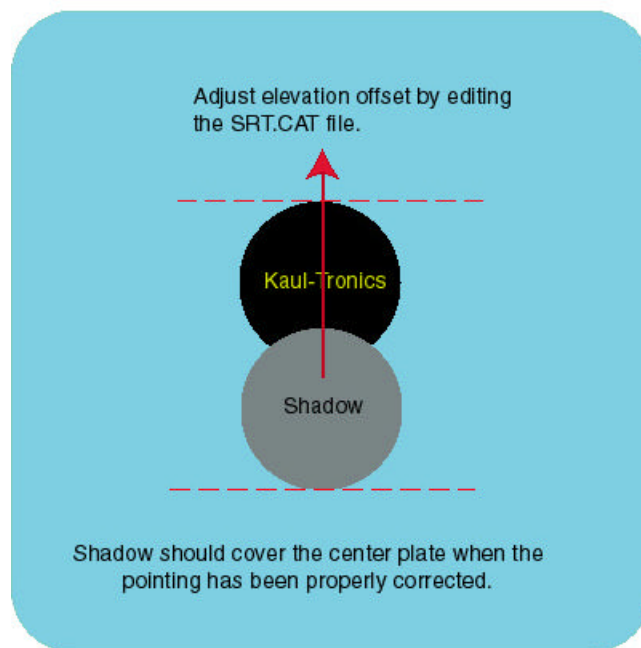
Step 1: Command the antenna to track the sun by left clicking the mouse button on the word **SUN** on the interface display. Next left click the button at the top of the display marked **TRACK**. At this time the antenna will move to where the software determines the location of the sun to be. The antenna will most likely not be pointed in the actual direction of the sun once the move is complete.

Step 2: Once the antenna has moved in both azimuth and elevation, visually check the pointing by looking at the location of the shadow cast by the feed horn. If the pointing is correct, the shadow should be perfectly aligned to the center plate in the middle of the dish.

Step 3: If the shadow is not centered, begin correcting the pointing by rotating the azimuth drive on the mounting pole until the shadow of the feed is lined up with the center plate. After moving the drive unit, securely tighten all hardware on the azimuth drive.



Step 4: Adjustments to the vertical alignment of the shadow can only be made through software corrections. It may be helpful at this point to review the instructions on using the SRT.CAT file at this time.



Any offset in the elevation angle can be corrected by simply changing the ELLIMITS in the SRT.CAT file. Open the file in any convenient text editor and change the value of the lower elevation limit. In the figure below the lower limit is 13.5 degrees.

An increase in the lower elevation limit will move the feed horn shadow upwards on the dish. The shadow will always move in a direction opposite to the change made in the elevation limit angle.

```
* SOU 03 29 11 54 24 37 Pulsar 1.00
* SOU 03 29 11 54 24 37 Pulsar 0.71451866398
*AZLIMITS 104.0 250.0 /* mid az range is south */
*ELLIMITS 14.0 160.0 /* elevation limit south - north */
AZLIMITS 103.0 250.0
ELLIMITS 13.5 160.0
UTHOURS 5.0 /* hours from local to UT */
COMM 1 /* COM1 */
CALCONS 0.5 /* gain correction constant to put power in units of K */
BEAMWIDTH 5.0 /* 3 dB antenna beamwidth in degrees */
MANCAL 0 /* 0 or absence indicates automated cal vane */
ANTILT 0.0 0.0 /* antenna basetilt north_up east_up degrees */
```

Alternative Method for Making Pointing Corrections

Instead of using the shadow of the feed horn to correct the pointing, the antenna can be moved using the pointing offsets until the power is peaked on the sun. This method is a little more tedious but slightly more accurate.

Step 1: Command the antenna to move to the position of the sun as explained above.

Step 2: Command the antenna to move to the position of the sun as explained above. Next, loosen the bolts that secure the azimuth drive to the stationary mounting pole.

Step 3: Have a helper rotate the dish in azimuth forwards and backwards until the peak power level displayed on the SRT interface is found. Move the dish to the position of the peak and securely fasten the bolts to the azimuth drive.

Step4: Using pointing offsets, find the peak power in elevation and adjust the ELLIMITS in the SRT.CAT file.

NOTE: Check the Outer Limits!

The second number following the AZ(EL)LIMITS keyword is the outer software limit. This limit should be a little less than the physical limit set.