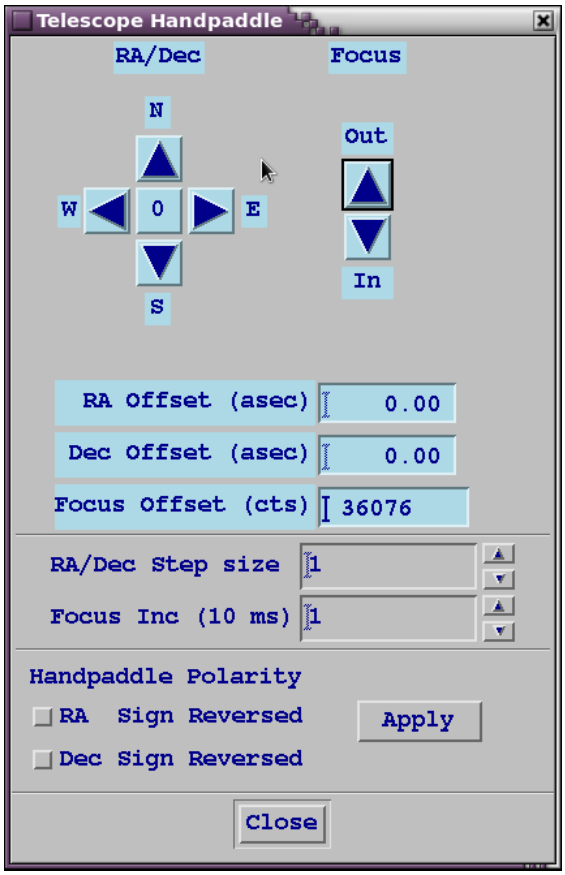
Hidden Menus and Buttons

At various locations on the TCSGUI are labels that seem to have a "box" around them. Clicking on these with the left mouse button will reveal various menus and options.

Currently, you can click on any of the following on the TCSGUI:

Offset: brings up a “computer handpaddle”, shown in the picture below. Here you can enter position offsets manually or by clicking on the arrow buttons to offset from your current position. You can also adjust the telescope focus here as well.



The RA and Dec offset keeps track of manual moves made with the arrows. Clicking on the “0” in the middle of the arrows sets back to the initial position.

The RA/Dec step size may be changed to take smaller or larger steps when using this handpaddle or the digital mode on the physical handpaddles. It is a good idea to check the value set into this step size so you are not surprised with a very large move set in by a previous user.

Zero: brings up a menu with various options for zeroing out the coordinates. See zeros for more details. NEED IMAGE. And instructions

Rates: brings up a window that allows you to choose fixed or programmed track rates.

Track rates are NOT turned on by clicking the Track Rates button.

Variable and Fixed track rates.

The current track rates are shown next to the Rates button. The values displayed are in arcsec/sec. The TCS system has two track rate modes: Track On: V & Track On: F. To determine which mode the TCS is currently in, check the Mode field on the TCS GUI (located at the top/center of the display section).

The "V" (Variable) mode indicates that the TCS system will automatically calculate and update the track rates at periodic intervals based on differential refraction and on the deviation of the flexure model. Note the user can modify this rate via the scale factors under the Rates button on the TCSGUI.

In "F" (fixed) mode, the user specifies the track rate and the system will continually track at the specified rate.

Adjusting:

To change modes or modify the fixed rate, click on Rates in the TCSGUI (located on the far left side about halfway down). This will bring up a window that allows you to Enable/disable fixed tracking as well as specify the HA & Dec rates for Fixed rate mode. If Fixed tracking is not enabled, then the Program mode is used.

Note: The HA & DEC "Rate Multipliers" are applied to the PMAC directly since these values imply that there is a scale factor error in the servo system. These dynamic values allow tweaking the built-in rates to compensate for mechanical or object-related drifts. These are applied only when the fixed rate toggle is not highlighted. (e.g. variable or "program" rate mode).

Ref 1, Ref 2: brings up a menu that allows you to download either the current telescope position or the last commanded position into the reference positions (additionally, for Ref 2, it will allow you to specify a position relative to Ref 1). See Offset Positions for more details.

Epoch: brings up a window that allows selection of the type of coordinates to be displayed on the Telescope line of the display (observed, apparent,…)

Dome Az: brings up a window in which an offset for the dome automation system may be applied (rarely needed with the new system). A specific dome azimuth may be specified under this window as well. This offset is applied directly to the target position of the dome.

Emergency Stop

Clicking on the big red EMERGENCY STOP button on the upper right hand corner of the screen will cause the emergency stop relays to be activated for the entire 2.7 m TCS system.

You should click on this at the end of the night to power down the amps, dome controller, and other devices.

See Safety for more information.

EVERYTHING after this point is the old stuff and needs updating. Still has links to Snoopy/Nexus.

Weather Information

The weather information is displayed at the far right of the TCSGUI screen. It is currently updated every 5 minutes. The history of weather data recorded by the TCS can be found under the View-> Weather History menu.

Weather warning and caution conditions are displayed in the alert (error) display area.

For more details on the weather system see weather.

For a history of the weather over the past hour, issue the wx command from any observing station.

Changing Displayed Weather Units

The user can choose either English or Metric units for the weather display via the Tools-> Weather Units menu. The default is to display the measurements in English units.

Error/Info Messages

Error and informational messages are displayed in the Alert, Error and Information button area of the TCSGUI. These messages describe errors, abnormal states, limit conditions, weather warnings, etc...

Users should ignore any PMAC Status #### messages unless they stay on for more than ~30 seconds.

See Error Messages for a complete listing of all TCS Error Messages.

The most common error messages that the user will be dealing with are:

TCSConnectError - This means that the TCSGUI is not connected to the TCSMON program. To restart TCSMON, go to Special-> Restart TCS monitor . (see Starting TCSMON).

PMAC Stopped Telescope - This message means that thePMAC (the low level motion control system) commanded the emergency stop relays to kick in. This can be just because you clicked on the Emergency Stop button at the end of the night or the PMAC or TCSMON detected some unsafe condition and caused the emergency stop to trip.

On Target - This message means that the TCS has acquired its last autoslew target. Note: this message remains displayed even if you drive the telescope off of the position manually or via offsetting.

Weather Warnings - All weather warning conditions are displayed here. They range in severity from cautions to close dome conditions. See weather for more info.

What is really important to watch:

When starting up the TCSGUI, particularly on the first night of an observing run, you need to check each of the following at a minimum:

Obstruction mask selected is appropriate to the telescope configuration.

Correct mount model is selected.

Zeros have a reasonable value in them (e.g. less than or equal to ~2 arcmins).

When moving to a new object, make sure that:

The Next coordinates are really what you want to move to.

There are no limit error messages.

The telescope does not get close to any objects it could hit or cables that could get hung. Remember, it is the users responsibility to make sure the telescope is operated in a safe manner (e.g. you can't blame the TCS system for a collision! It is not smart enough to avoid all problem areas yet.).

The Offset coordinates are very small at the end of the move and the "On Target" button is displayed.

Don't hit Go Next until you are ready to move as the dome will start moving automatically to the next object's location.

While tracking an object:

Check to see that Dome Automation is still enabled (look on the Dome Az button for the (AUTO) label).

If you are using the autoguider, watch the guider coordinates to monitor guide corrections.

If you are manually guiding, check that the handpaddle is in "DIG" mode and NOT "GDE". (The digital mode is preferred since it is a faster acting system. However, you must have a small value (~0.3 arcsec) entered in the digital handpaddle rate.

Zenith distance (ZD) if you are close to the horizon. The system will stop tracking when ZD>= 85 degrees.

Weather error/info messages. Please abide by these messages. Failure to do so may result in loss of observing privileges.