Drop-Down Menus

This document describes the TCSGUI drop-down menus that are along the top of the TCSGUI.

File Menu:

Open/Transfer Worklists...

Load a new worklist into the TCSMON program. After this occurs, the filename will show up under the Next → Worklists menu on the TCSGUI and can then be used for selecting the "next" object. **Please Note: loading a worklist with more than 900 objects will cause TCS to crash!**

Up to 10 worklists may be loaded. On loading the 11th worklist, the first worklist loaded will be overwritten on the menu by the new list.

The worklists files are kept loaded even after exiting and restarting. To clear out the worklist entries, use the File → Clear List menu option.

Worklists are files supplied by the user in ASCII (text) format that contain a list of predefined objects that the user may wish to point to. This allows easier lookups by the user for the "Next" object. See Worklists and Ephemerides for format.

Open/Transfer Ephemerides...

Load a new ephemerides file into the TCSMON program. After this occurs, the filename will show up under the Next-→Solar System -->Ephemerides menu on the TCSGUI and can then be used for selecting the "next" object.

Up to 20 ephemerides may be loaded. On loading the 21st, the first file loaded will be overwritten on the menu space by the name of the new file.

The ephemerides are kept loaded even after exiting and restarting. To clear out the ephemerides entries, use the File → Clear List menu option.

Ephemerides are generally used for minor planets and comets. See Ephemerides and Worklistsfor format.

Open Macro File...

Load a macro file. This file is then accessed via the Tools → From Macro popup.

Macro files are ASCII (text) files containing commands in the TCS command language.

A macro file is generally a preprogrammed set of telescope move commands, and can make use of more advanced language features like wait time and wait event.

Open Command File...

Load a command file. After it is loaded, the name of the file is placed into the command file section of the display area of the TCSGUI.

The command scan be accessed and executed via a popup window activated by the Tools → Previous Commands or Tools → Manual Commands menu selections.

Command files are ASCII (text) files containing commands in the TCS command language.

A command file is generally a list of previously executed TCS commands that was created using the File → Save Command History feature described below.

Save Command History As...

Save the current TCS command history list to a user specified file.

Commands are normally saved by the system to $HOME/.tcsgui.cmd.

Save Object History As...

Save the current TCS object history list to a user specified file.

Objects are normally saved by the system to $HOME/.tcsgui.obj once the system moves to that object.

Clear Lists

Clear out all worklists and ephemerides lists.

These lists are normally kept and reloaded when the TCSGUI is restarted. Use this command to clear out those lists from the TCS buffers. Note: This does **not** delete the files from disk.

It is generally a good idea for an observer to execute this command when starting a new run to clear out the prior observer's lists.

Clear Previous Objects

Clears the list of previous objects that the TCS has pointed to.

Exit

Exit the TCSGUI.

Note: this does not close out all TCSGUIs running, only the one 'Exit' was selected from. Each TCSGUI must be closed out individually.

This also does not exit the TCSMON program (which normally stays running).

Next Menu:

Next-> Star -> (FK5, BSC)

Choose the"next" object from FK5 catalog or the Yale Bright Star Catalog.

Next -> Star By Name-> (Common Name, Letter + Constellation)

Choose the"next" object by either specifying the common name of a star (e.g."Rigel") or by the Greek letter and constellation (e.g. "Beta Orionis").

Next ->FK5 Stars Near Zenith

This command will search for all the FK5 stars located within a specified zenith distance and magnitude range.

The popup window allows the user to specify the zenith distance and magnitude limits.

Clicking on Search will initiate the FK5 catalog search for stars matching the specified criteria.

After the search is completed, a new window is brought up showing a sky plot of all the FK5 stars that match the criteria. A text list is also displayed in the search window.

Clicking on either the "X" in the sky plot or the entry in the text field will place the specified star into the "Next" buffer.

NOTE: The sky plot of the stars updates once every 10 minutes.

Next-> BSC Stars Near Zenith

(Yale Bright Star Catalog stars)

This command will search for all stars listed in the Yale **B**right **S**tar **C**atalog within a specified zenith distance and magnitude range.

The popup window allows the user to specify the zenith distance and magnitude limits.

Clicking on Search will initiate the BSC catalog search for stars matching the specified criteria.

After the search is completed, a new window is brought up showing a sky plot of all the BSC stars that match the criteria. A text list is also displayed in the search window.

Clicking on either the "X" in the sky plot or the entry in the text field will place the specified star into the next buffer.

NOTE: The sky plot of the stars updates once every 10 minutes.

Next -> Nearby Faint Stars

This command will display a list of "focus" stars close to the current telescope position.

Selecting the desired star and clicking the Apply or OK buttons will enter the star's coordinates into the "Next" buffer.

Next -> Nearby BSC Stars

This command will display a list of stars found in the Yale Bright Star Catalog that are close to the current telescope position (as opposed to near the zenith).

Selecting the desired star and clicking the Apply or OK buttons will enter the star's coordinates into the "Next" buffer.

Next -> Extended Objects -> (NGC, IC, Messier)

Choose the Next object from the NGC, IC or Messier catalog.

Next -> Solar System -> (Planets, Ephemerides, Moon, Sun)

Choose the Next object either from the list of planets, a user supplied ephemeris (which must have been loaded previously), the moon, or the sun.

Next -> Worklists

Choose the "Next" object from one of the user specified worklists (which must have been loaded previously).

Next-> Manual Entry -> (RA/Dec, HA/Dec, Az/El)

Choose the Next object by specifying the position in either Right Ascension/Declination, Hour Angle/Declination or Azimuth/Elevation.

NOTE: when specifying using HA/Dec or Az/El, the tracking will not be enabled. The telescope will move to the position and halt. To start the tracking choose Next->Start Tracking.

Next-> Previous Object

Choose the Next object by selecting the object from the displayed list of objects that the system has already pointed to.

Next -> Flat, Stow, Zenith, Start Tracking and Stop Tracking

Choose the Next object as one of the preselected stow positions. After moving to one of these fixed positions, the telescope tracking will be turned off.

To kill the tracking at the current location, choose Next->Stop Tracking .

Tools Menu:

Tools-> Handpaddle Rates

This brings up a popup window that allows the user to change the various movement rates for the telescope and to reverse the direction sense of the handpaddle joystick.

NOTE: These are **not** the track rates. [Need to include the track rate info somewhere]

Unless you really know what you are doing, you should not adjust any of the rates other than the digital step size.

The ranges for each speed are as follows (defaults in **bold**):

```
Slew:      0.5 - 0.8  deg/sec   (maximum value)
Search:    0.1 - 0.5  deg/sec   [0.2]
Set:       0.0 - 0.10 deg/sec   [0.5 arcmin/sec]
Guide:     0.0 - 1.0  arcmin/sec[0.99arcsec/sec]
Digital Mode Step size:  0.0 - 60 arcsec [0.30]
Reference Position Rate - 600.00 arcsec/sec
```

The *digital handpaddle mode* allows the user to move in discrete increments each time the handpaddle joystick is moved. (e.g. if you wanted to offset to a point 3 arcseconds to the north, you could select a step size of 1 arcsec and then toggle the joystick to the north 3 times).
You can also use the slider underneath the step size to change the step size. *Step sizes greater than 10 arcsecs are not recommended. Use the "offset" computer handpaddle for larger moves (select this by clicking on the offset label/button on the left side of the TCSGUI.*

Selecting the box in front of the **RA or DEC "Sign Reversed"** will reverse the direction of all the handpaddle motion in that direction (e.g. swap north-south or east-west directions).

The **reference position rate** is the rate at which the telescope will move when changing from one reference position the other. See Ref1+Ref2 for more information on reference positions.

Tools-> Weather Units

This selection allows the user to switch the weather display between English and Metric units.

Tools -> Wavelength

This allows the user to modify the wavelength used for the refraction calculations for the telescope pointing. The value used is displayed on the TCSGUI in the upper right corner (wave).

Tools -> Enable Dome Automation

Enables/disables dome automation. A small red box next to this menu item indicates that the dome automation system is enabled. The label of the DomeAz button will also have an (AUTO) appended to it when the system is enabled. Note that it will take a few moments for any dome command to be implemented.

If emergency stop has been hit, the dome automation system will disable. It will remain in that state until re-enabled by the user via this menu function.

When the telescope is sent to the Flat or Stow positions, the dome will automatically be sent to its park position. If Zenith is chosen from the next menu, then the user is prompted if they wish the dome to go to the park position.

Note: by clicking on the Dome Az button on the TCSGUI, dome offsets may be entered although they are rarely (if ever) needed under the new dome automation system.

Tools -> Park Dome

This command sends the "Park Dome" command to the 2.7 m dome automation system. The dome will move to its park position (dome slit pointed west) and then automatically disable the automation.

Observers should leave the dome in this position at the end of each night.

Make sure that you press Emergency Stop when the dome has finished moving to shut things down at the end of the night.

Tools-> Previous or Manual Command

This command will pop up a window that contains a list of the previously executed commands. You can click on any of the commands listed and it will be entered on the command line or you can type in the command on the command line.

Clicking on Apply or OK will cause the command line to execute.

Tools -> From Macro File

(This command is currently disabled.)

Tools->From Command File

(This command is currently disabled.)

View Menu:

View-> Sky Plot of Next

This command brings up a sky plot of each successive object chosen from the next menu. The plot is cumulative with the latest selection having a cursor superimposed on it as well as the current telescope position.

Clicking on Clear will clear the cumulative list.

The yellow line on the plot represents the current obstruction mask.

View -> Point

This command displays the calculated and actual positions for the telescope. The positions displayed are:

Mean - raw unprecessed coordinates
Apparent - mean coordinates precessed to the current epoch
Refracted - precessed coordinates that are corrected for atmospheric refraction.

View-> Weather History

This command pops up a window with the the Mt.Locke weather history for the past 24 hours (or however long the TCSMON has been running).

For monitoring weather conditions, most observers prefer the 'wx' command (issued on any Mt.Locke Unix system).

See weather for more information about the Mt.Locke weather system as well as other helpful weather links.

Needs updating to John's new tool – use John's weather not what is on TCS?

View->Command History

Same as Tools → Previous or Manual Command

View ->Object History

Same as Next → Previous Object

Special Menu:

Many of these are for Mt. Locke only. How do we want to handle these?