This section describes the command set for STARCAT.

For the syntax, the following conventions are used:

`Normal Courier` fonts must be typed as showed.

`Italic Courier` fonts represent choices or values to be determined by the user. These are further explained under the Range. Some examples:

`{off|on}` – represent a list of choice. You must select one.

`[value]` – the `[]` represent a optional parameter.

azel – Issues a LOAD RA,DEC command using observed Az El values.

Syntax `azel` *`Az El`*

Range *`Az – Azimuth, in degrees (N=0, E=90, S=180, w=270).`*

`El – Elevation in degrees (0 to 90).`

Example `AzEl 180 85.5`

Catalog.clear – Untoggles any catalog selection.

Syntax `Catalog.Clear`

Example `Catalog.Clear`

Catalog.set – Sets the toggle for a catalog by name.

Syntax `Catalog.set` *`catalog_name`*

Range *`catalog_name – can be {bsc5, fk5, gsc, irtf, sao, ukirt, hd.sao }.`*

Example `Catalog.set fk5`

CatFile.Inx.Path

CatFile.Name

CatFile.Ra.Path

CatFile.Radius – A set of properties are associated with each catalog: Name, Default Radius, and file paths to its RA and Index sorted files. These 4 commands allow you to set these properties.

Syntax `catfile.name` *`index name`*

`Catfile.radius` *`index radius`*

`Catfile.inx.path` *`index inx_file_path`*

`Catfile.ra.path` *`index ra_file_path`*

Range index – 0-7 (8 main catalog are supported)

Name – name of catalog (any string).

Radius - in arcseconds (1 to 200000)

Inx_file_path – full pathname of index sorted catalog.

Ra_file_path – full path name of RA sorted catalog

Example `Catfile.name 0 bsc5`

`Catfile.radius 0 27000`

`Catfile.inx.path 0 /starcatalogs2/bsc5.catalog.inx`

`Catfile.ra.path 0 /starcatalogs2/bsc5.catalog.ra`

Echo – Prints the parameter string to the text feedback window.

Syntax `Echo` *`string`*

Range *`string – Any message.`*

Example `Echo Hello, can you see this message?`

Elevation – Specifies the elevation in meters above sea level of the telescope. Used to calculate airmass and observed parameters.

Syntax `Elevation` *`meters`*

Range Meters – the elevation in meters.

Example `elevation 4168`

Guider – Tells starcat what guider is used. The guider affects the default search radius.

Syntax `Guider` *`{off-axis | tip-tilt | cshell | none}`*

Range off-axis – The default range is 250.

Tip-tilt – The default range is 160.

cshell – The default range is 90.

none – The default radius is based on the catalog selection for searching.

Example `guider off-axis`

HaDec – Issues a LOAD RA,DEC command using observed Ha Dec values.

Syntax `HaDec` *`Ha Dec`*

Range *`HA – Hour Angle (units of time)`*

`Dec – Declination in degrees.`

Example `HaDec -1:00 19:50`

Lapse – Given in Kelvin per minute. Used to calculate airmass and observed parameters.

Syntax `Lapse` *`rate`*

Range Rate – rate in Kelvin/minute.

Example `lapse 0.0065`

Latitude – Specifies the latitude of the telescope. Used to calculate airmass and observed parameters.

Syntax `Latitude` *`deg:min:sec {N | S}`*

Range Deg:Min:Sec – must be 90 degrees or less north or south of the equator.

Example `latitude 19:49:34.39 N`

Load – Specifies the parameters for the search position.

Syntax `Load` *`ra dec [eqx] [epoch] [pm_ra] [pm_dec]`*

Range `ra – Right Ascension (Time format)`

`Dec – Declination (degrees)`

`Eqx – equinox. Default is 2000`

`Epoch – Epoch. Default is equinox value.`

`Rapm – RA proper motion. Default is 0.`

`Decpm – Dec proper motion. Default is 0.`

Example `Load 20:34:23.4 19:49:34.39`

Longitude – Specifies the longitude of the telescope. Used to calculate airmass and observed parameters.

Syntax `Longitude` *`deg:min:sec {E | W}`*

Range Deg:Min:Sec – must be 180 degrees or less east or west of Greenwich.

Example `longitude 155:28:19.20 w`

LTOffset – Specifies the universal time to local time offset in minutes. Used to calculate airmass and observed parameters.

Syntax `LTOffset` *`value`*

Range Value – offset in minutes (-720 to 720).

Example `ltoffset –600`

MainClear – Clears the Main catalog list from the main catalog display area.

Syntax `MainClear`

MainFormat – Specifies the data format for the main catalog.

Syntax `MainFormat` *`{ Default | Obs | Mag }`*

Range Default – The default data format

Obs – Data format highlighting observed position information.

Mag – Data format highlighting magnitude information.

Example `MainFormat Obs`

MainNewPos – Takes the coordinates from the highlighted Main catalog row and places the values (in J2000, current epoch) in search coordinates input fields.

Syntax `MainNewPos` *`index`*

Range Index – Row in catalog list to use as new search position (0, 1, 2,…).

Example `MainNewPos 10`

MainSearchID – Searches the selected MainCatalogs for matching index or catalog ID. Matching records are loaded into the Main Catalog List.

Syntax `MainSearchID` *`ID`*

Range ID – Numeric ID value to search for.

Example MainSearchID 100334

MainSearchRA – Searches the selected MainCatalogs using the search parameter (mean J2000 ra, dec, and radius). Matching records are loaded into the Main Catalog List.

Syntax `MainSearchRA`

Example MainSearchRA

MainSentToTCS – Issues a C.SLEW command to the TCS using the coordinates from the selected entry in the Main Catalog.

Syntax `MainSentToTCS`

Example `MainSentToTCS`

MainSort – Indicated the sort field for the MainCatalog.

Syntax `MainSort` *`{ Index | RA | Dec | Mag | Ang.Offset | RA.Offset | Dec.Offset | Airmass | Name | HA | Alt | Azi }`*

Example `MainSort RA`

NewEntryPos – Loads a new search position by reading the XUI input widget for RA,DEC, Equinox, and Epoch.

Syntax `NewEntryPos`

Example `NewEntryPos`

POM.Sync – Toggle whether the POM should synchronize its position with that of the x-y stage. The synchronization occurs only after using **XYStage.offset**.

Syntax `POM.Sync` {*on* | *off*}

Range {*on*|*off*}

Example `POM.Sync on`

PosFromTCS – Loads a new search position by querying the TCS for its position..

Syntax `PosFromTCS`

Example `PosFromTCS`

PosNew – Loads a new search position by reading the XUI input widget for RA,DEC, Equinox, and Epoch.

Syntax `PosNew`

Example `PosNew`

Pressure – Specifies the atmospheric pressure at the telescope. Used to calculate airmass and observed parameters

Syntax `Pressure` *`value`*

Range Value – pressure in mBars (200 to 2000).

Example `pressure 650`

Quit – Exits the STARCAT program.

Syntax `Quit`

Radius – Sets the search box size. The number given is the "radius" of the box.

Syntax `Radius` *`value`*

Range Value – radius in arcseconds.

Example `radius 400`

RHumidity – Specifies the relative humidity at the telescope. Used to calculate airmass and observed parameters.

Syntax `RHumidity` *`value`*

Range Value – relative humidity (0.0 to 1.0).

Example `rhumidity 0.10`

SkyMap.showID – Indicate if the ID value should be display on the skymap display..

Syntax `SkyMap.showID { off | on }`

Range `off – Do not display ID.`

`On – Display the ID value.`

Example `SkyMap.showID on`

SkyMap.showMag – Indicate if the 1st Magnitude value should be display on the skymap display..

Syntax `SkyMap.showMag { off | on }`

Range `off – Do not display magnitude.`

`On – Display the magnitude.`

Example `SkyMap.showMag on`

TCS – Sends a command to the TCS.

Syntax `TCS command`

Range Command – the TCS command to be sent.

Example `tcs 0:00:00 0:00:0 0.0000 0.000 2000.0 C.SLEW`

TCSHostname – Identifies the host used to handle communications to the TCS.

Syntax `TCSHostname host`

Range Enter a valid hostname

Example `tcshostname vtcshost`

TempK – Specifies the temperature at the telescope in Kelvin. Used to calculate airmass and observed parameters.

Syntax `TempK value`

Range Value – temperature in Kelvin (100 to 350).

Example `tempk 273.0`

UpdatePeriod– Indicate the period when the catalog observed positions are updated (using the UpdatePosition command).

Syntax `UpdatePeriod sec`

Range sec – Update period in seconds..

UpdatePosition – The command updates all positional information. (Automatically executed by starcat every UpdatePeriod).

Syntax `UpdatePosition`

Example `UpdatePosition`

UpdateTime – Updates the time information. This command is automatically execute every second by the starcat application.

Syntax `UpdateTime`

Example `UpdateTime`

UserClear – Clears the user's catalog list from the user catalog display area.

Syntax `UserClear`

UserFormat – Specifies the data format for the user list.

Syntax `UserFormat { Default | Obs | Mag }`

Range Default – The default data format

Obs – Data format highlighting observed position information.

Mag – Data format highlighting magnitude information.

Example `UserFormat Obs`

UserLoad – Loads the user's catalog file into the user catalog display area. Note there are 2 supported formats, see UserTextFmt.

Range Filename – the user's catalog list file.

Syntax `UserLoad filename`

UserNewPos – Takes the coordinates from the specified user catalog display row and places the values (in J2000, current epoch) in search coordinates input fields.

Syntax `UserNewPos index`

Range Index – Row in catalog list to use as new search position (0, 1, 2,…).

Example `UserNewPos 10`

UserSentToTCS – Issues a C.SLEW command to the TCS using the coordinates from the selected entry in the UserCatalog.

Syntax `UserSentToTCS`

Example `UserSentToTCS`

UserSort – Indicated the sort field for the UserCatalog.

Syntax `UserSort { Index | RA | Dec | Mag | Ang.Offset | RA.Offset | Dec.Offset | Airmass | Name | HA | Alt | Azi }`

Example `UserSort RA`

UserTextFmt – This parameter tell the UserLoad command the format for the text files (user list) to be loaded. Two formats are supported. See the User Guide for data format examples.

Syntax `UserTextFmt { textfmt2 | textfmt1 }`

Range `textfmt1 – This is the old style (xstartcat and starcat v1) text format`

`Textfmt2 – starcat v2 text format.`

Example `UserTextFmt textfmt2`

Wavelength – Specifies the observed wavelength in microns. Used to calculate airmass and observed parameters.

Prompt 'Wavelength' text box on the Setup Options Page.

Range Value – wavelength in microns (0.1 to 50.0).

Syntax `Wavelength value`

Example `wavelength 0.550`

XYStage.Offset – Move the x-y stage to the specified RA, DEC position.

Syntax `XYStage.Offset ra dec`

Range

Example `XYStage.Offset 64.0 32.25`

Command – description.

Syntax `Command Parameters`

Range `var – desc.`

Example `Command Parameters`