This section describes the command set of the Spex BigDog and GuideDog Instrument control applications.

Keys

B - This command applies to BigDog's IC application.
G - This command applies to GuideDog IC application.

**Adj.pt.rates** - [G] Clears the RA, Dec sum and guide rates used to determine the guider correction rates. Sends the pt.rate.inc command to the TCS to adjust the TCS pointing rates.

- **Prompt** 'Adj.Pt.Rate' button on XUI's Obs -> Guiding tab.
- **Syntax** Adj.pt.rates

**AFoc.Init** - [G] Array Focus Initialization initializes the focus motor by searching for the position sensor and re-calibrating the 0 position.

- **Prompt** 'AFoc.Init' button on the XUI Setup Window.
- **Syntax** Afoc.Init

**Afoc.Sim** - [G] Array Focus Simulation sets the simulation flag for the array focus.

- **Prompt** none
- **Range**
  - off - moves the real motor.
  - on - simulate motor movements.
- **Initial** off
- **Syntax** Afoc.Sim {off|on}

**AFoc.Step** - [G] Array Focus Position command allows you to position the focus to a particular step position.

- **Prompt** 'AFoc.Step' prompt on the XUI's setup page.
- **Range** step is from approx -271453 to 234491.
- **Syntax** Afoc.Step step

**Afoc.Verbose** - [G] Set the verbose flag for the AFOC program on littledog. ON will enable verbose printf output.

- **Prompt** none
- **Range**
  - off – verbose is off
  - on – verbose is on
- **Initial** off
- **Syntax** Afoc.Verbose {off|on}

**Array** - [G] Sets the size and location of sub-arrays. Currently only full size array readout are supported.

**AutoGuideBoxSetup** - [G] Sets up the guidebox coordinates (x,y position, wid, hgt) based on the current slit. Sets the TCS beam switch parameter for the TCS.

- **Prompt** 'Auto GuideBox Setup' button on XUI's Obs page.
- **Syntax** AutoGuideBoxSetup

**AutoSave** - [G] Determines whether the data is saved by the IC program.

- **Prompt** 'Autosave' on the observing parameter's Obs page.
- **Range**
  - Off - Data is not saved.
  - On - The IC program saves the data.
- **Initial** Off
- **Syntax** AutoSave { off | on }

**Beam.Pattern** - [G] Specifies the beam switch pattern during a GO

- **Prompt** Beam.Pattern on the Obs Basic tab.
- **Range**
  - A - Data assume to be a A image.
  - B - Data assume to be a B image.
  - AB - And A and B pair is taken with the telescope commanded into the A or B position.
- **Syntax** Beam.Pattern { A | B | AB }

**BM2DV** - [G] BadMask 2 DV – Sends the bad mask to DV as a FITS images.

- **Syntax** BM2DV

**Cal.md5sum** - [G] If ON, calculate the md5sum when saving data. The checksum are written to the file "md5sum.txt".

- **Syntax** Cal.md5sum { off | on }

**BM.Read** - [G] Tells the IC to read the bad pixel mask. The bad pixel is a .FITS file located in the IC directory. The filename should be "badmask.fits".

- **Syntax** BM.Read

**CalMir** - [G] Selection the Calibration Mirror position.

- **Prompt** Lamp/Mirror icon in XUI window.
- **Range** Out - lamps not visible.
CalMir.Init - [BG] Initializes the calibration mechanism’s the motors and set the initial positions to IN.

Prompt 'CalMir.Init' button on the XUI Setup Window.
Syntax CalMir.Init

CalMir.Step - [BG] CalMir Step command allows you to position the calibration mirror to a particular step position.

Prompt 'CalMir.Step' on the XUI Setup Window.
Range step is from 0 to about 259412.
Syntax CalMir.step step

CalMir.Sim - [BG] CalMir Simulation sets the simulation flag for the calmir software.

Prompt none
Range off - moves the real motor.
on - simulate motor movements.
Initial off
Syntax CalMir.Sim {off | on}

CalMir.VERBOSE - [BG] Sets the verbose flag for the calmir program. Output is printed in the littledog terminal.

Prompt none
Range off – verbose is off.
on – verbose output in Idog terminal
Initial off
Syntax CalMir.VERBOSE {off | on}

Camera - [BG] Sets the Camera to be used for imaging. IARC is the supported camera. Spex also has a SIM camera mode for testing.

Range sim – simulation camera (for debugging only)
iarc – use the IARC hardware for imaging.
Syntax Camera { sim | iarc }

CamMode - [BG] The camera mode specifies an operation mode for the spex software.

Range basic – basic image mode
guiding – imaging and guiding. (Guidedog only)
movie – a movie mode (yet to be implemented)
Initial out
Syntax CamMode { out | in }

Cmd.BigDog - [G] This GuideDog command enables the XUI to send a command over the network to the BigDog IC.

Syntax Cmd.BigDog Command_for_bigdog_IC


Range Enter the hostname of the workstation BigDogIC.
Initial bigdog
Syntax Cmd.BigDog.Hostname name

Cmd.GuideDog - [G] This BigDog command enables the XUI to send a command over the network to the GuideDog IC.

Syntax Cmd.GuideDog Command_for_Guidedog_IC


Range Enter the hostname of the workstation GuideDogIC.
Initial guidedog
Syntax Cmd.GuideDog.Hostname name

CoAdd - [BG] The number of integrations summed together per beam or chop position in a GO.

Prompt ‘Coadd’ on the XUI’s Obs page.
Range 1 to 32000
Initial 1
Syntax C0ADD num

Comment - [BG] Specifies a string to be place in the FITS header of the saved file as a comment.

Prompt ‘Comment’ on the XUI’s Obs page.
Range Any string up to 40 characters.
Initial Undefined.
Syntax COMMENT string

Cycles - [BG] Cycles is a repetition factor in a GO sequence.

Prompt ‘Cycles’ on the XUI’s Obs page.
Range 1 to 10000.
Initial 1
Syntax CYCLES num
Datatype - **[B G]** Sets the DATATYPE keywork in the FITS header.

**Syntax**

```
datatype { target | standard | calibration }
```
DV.Port - [B G] Specifies the TCP/IP port number when communication to DV.

Prompt  'DV.Port' on the XUI Setup tab.
Range   Enter the port number of the DV application.
Initial Default is 30123.
Syntax  DV.Port port_number

Echo - [B G] Echo text to the XUI text feedback window. This command is useful for macros.

Range   Any text string
Syntax  Echo message_for_xui_window

Filename - [B G] This command defines the filename prefix is used to create filenames when saving data to disk. New filenames are constructed by concatenating Filename with the Image Number, then adding a file extension. For example, if Filename is '01jan' and image number is 45, the data file saved could be '01jan-00045.a.fits'.

Prompt  'Filename' on the XUI's Setup page.
Range   A string of 31 characters
Syntax  FILENAME string

GFlt - [B G] Positions the Guider Filter wheel.

Prompt  'GFlt' icon in XUI window.
Range   The table below lists the GFLT selections.

| Open     |
| Z        |
| J        |
| H        |
| K        |
| L'       |
| M' + ND1 |
| FeII     |
| H2       |
| BrY      |
| ContK    |
| CO + ND2 |
| H + K    |
| 3.454    |
| ZYJHK    |

Syntax  GFlt { open | Z | ... | ZYJHK }

Gflt.detent.mode - [B G] Select the centering mode for the detented mechanism.

Range   Center – measure the start and end of the detent using the comparator output. Position the mechanisms in the center.
        MoveTo – Move to the start of the detent, then slight further.
Syntax  Gflt.detent.mode { center | moveto }

GFlt.Init - [B G] The Guider Filter Initialization command initializes the Guider Filter wheel by searching for its home position sensor and it setting its step position.

Prompt  'GFlt.Init' button on the XUI Setup Window.
Syntax  GFlt.Init

GFlt.Sim - [B G] The Guider Filter Simulation command sets the simulation flag for the Guider Filter wheel.

Prompt  none
Range    off - moves the real motor.
         on - simulate motor movements.
Initial  off
Syntax   GFlt.Sim {off | on}


Prompt  'GFlt.Pos' prompt on the XUI's Setup page.
Range   step is from 0 to 640,000-1.
Syntax  GFlt.pos step

GFlt.Verbose - [B G] Set the verbose flag for the Guider Filter wheel program. Verbose output appears on in the littledog terminal.

Range   off -verbose is OFF.
         on – verbose is ON.
Initial  off
Syntax   GFlt.Verbose {off | on}

Go - [B G] Starts the image acquisition sequence.
Syntax  GO

Go.Init - [B G] Reload the IARC's image controller program.
Syntax  Go.Init

Grat - [B G] Positions the grating turret.
Prompt Grat icon in XUI window.
Range The table below lists the Grating selections.

| ShortXD | Prism | LXD_long | LXD_short | SO_long | SO_short |

Syntax Grat { ShortXD | … | SO_short }

Grat.detent.mode - [B G] Select the centering mode for the detented mechanism.
Range Center – measure the start and end of the detent using the comparator output. Position the mechanisms in the center.
MoveTo – Move to the start of the detent, then slight further.
Syntax Grat.detent.mode { center | moveto }

Grat.Init - [B G] The Grating Initialization command initializes the grating turret by searching for a position sensor and re-calibrating its home position.
Prompt 'Grat.Init' button on the XUI Setup Window.
Syntax Grat.Init

Prompt none
Range off - moves the real motor.
on - simulate motor movements.
Initial off
Syntax Grat.Sim { off | on }

Grat.Step - [B G] Positions the grating turret to a particular step position.
Prompt ‘Grat.Step’ prompt on the XUI’s Setup page.
Range step is from 0 to 1,440,000-1.
Syntax Grat.pos step

Grat.Verbose - [B G] Sets the verbose flag for the grating application. Verbose output is display in the littledog terminal window.
Range off – verbose is OFF.
Initial off
Syntax Grat.Verbose { off | on }

GuideAB - [G] GuideAB is a slow guide parameter used to specify if the need to guide just in the A beam, or in both beams (A & B).
Range
Syntax GuideAB { off | on }

GuideBox - [G] Sets the size and position of the Box on the array used in the guiding/offset calculations. When setting up the A box, the B box will be set to the standard spex offset of x+0, y+63 pixels, or 0, 7.56 arcseconds beam switch offset.
Prompt N/A
Range A or B to identify GuideBox A or B.
x, y, wid, hgt – location and size for the guide subarray. X,Y is upper-left corner.
Syntax GuideBox { a | b } x y wid hgt

Prompt Up/Down arrow on the XUI Obs tab.
Range x_inc y_inc – X, Y increment in pixels (as floats)
Syntax GuideBox.Adj x_inc y_inc

GuideBox.Center - [G] Positions the guidebox so it is centered an (x,y).
Prompt A & B ‘CenXY’ on the XUI subarray tabs.
Range A or B to identify GuideBox A or B.
x, y – location for the guide subarray..
Syntax GuideBox.Center { a | b } x y

GuideBox.Wid - [G] Adjust the size (both wid & hgt) of the guidebox. Adjusted so that the center pixel is still in the same location.
Prompt A & B ‘WH’ on the XUI subarray tabs.
Range A or B to identify GuideBox A or B.
Wid – size for the guide subarray..
Syntax GuideBox.Wid { a | b } wid

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Guide.ClearRate - [G] This command zeros the accumulated offset totals used to determine rate correction.

- **Prompt** 'ClearRate' button on XUI Slow.Gd Cammode tab.
- **Syntax** Guide.ClearRate

Guide.ClearSky - [G] This command clears the sky buffer in the IC for the slowguide mode.

- **Prompt** 'ClearSky' button on XUI Obs->Guiding tab.
- **Syntax** Guide.ClearSky

GuideCorrectionsTo - [G] Tells the camera where to sent the guide correction offset.

- **Prompt** 'CorrectionsTo' on Slow.Gd Tab on XUI's Obs panel.
- **Syntax** GuideCorrectionsTo {Off|TCS}

Guide.DivFlat - [G] Turn off/on the divide by Flat feature during guiding. Some guide Flat image are stored in spex, if enabled and the flats exists, the guide image is divided by the flat image.

- **Prompt** 'Div Flat' checkbox on XUI's OBS->Guiding tab.
- **Syntax** Guide.DivFlat

Guide.Flux.Enable - [G] When ON, the guider will issues a visual and audio (via TCS3) warning when the total flux of the guidebox image drops by 50%. This could mean the guide star jumped out of the guidebox.

- **Prompt** 'Flux Enable' checkbox on XUI's OBS->Guiding tab.
- **Syntax** Guide.Flux.Enable

Guide.FullImage - [G] This command takes a full frame images and displays it in buffer D of DV (data viewer). You need a full frame image to specify your subarrays.

- **Prompt** 'Guide.FullImage' button on XUI Obs->Guiding tab.
- **Syntax** Guide.FullImage

GuideGainX, GuideGainY - [G] A gain factor is applied to the offset magnitude when calculating pixel offset to RA,DEC sky offsets. Separate command are provide for the X and Y axis.

- **Prompt** 'GainXY' on the XUI Slow.Gd CamMode tab.
- **Range** The gain ranges from 0 to 50
- **Initial** n/a
- **Syntax** GuideGainX gain
  GuideGainY gain

GuideMethod - [G] The algorithm used to calculate the X, Y displacement in the Guide Array is specified by the GuideMethod command.

- **Prompt** 'Method' on the XUI Slow.Gd CamMode tab.
- **Range** Available GuideMethods are:
  - **Peak** – Maximum pixel value in the guide array determines the object's locations.
  - **Peak+Smooth** – Each pixel value is replaced by averaging its value and all it neighbooding pixels, then the Peak algorithm is applied.
  - **Centroid** – A centroid is calculated by weighting the pixel values and its location to determine the object's location.
  - **Centroid+Flt1** – Before the centroid algorithm is applied the data modified by:
    a. rescaled so that [mean-std, mean+std] is mapped to [-25,25].
    b. Set any negative values to 0.
  - **Centroid+Flt2** – Before the centroid algorithm is applied the data is modified by:
    a. Subtract the mean value from each pixel.
    b. Divide by the standard deviation.
    c. Set any values < 1 is set to 0.
- **Initial** n/a
- **Syntax** GuideMethod { peak | peak+smooth | centroid | centroid+flt1 | centroid+flt2 }


- **Prompt** 'Reset Flux' bittpm on XUI's OBS->Guiding tab.
- **Syntax** Guide.Reset.Flux

Guide.Sleep - [G] During slow guiding a sleep interval can be specified to control the rate of correction issues to the Telescope Control System.

- **Prompt** ?
- **Range** 0.25 to 60 seconds.
- **Initial** ?
- **Syntax** GuideSleep seconds

Guide.TakeSky - [G] This command take akjnd stores and image in the sky buffer for slow guide mode. The sky buffer is subtracted from the image while guiding.
**Guide.warning** [G] The the RA or DEC guiding offset are greater that the guide.warning level, a printed warning is displayed on the XUI. This command sets the warning offset value.

**Syntax**

```
Guide.warning arc_seconds
```

**iarc.Bias** [B G] Set the array bias level in the IARC Controller. This affect well depth and electronic gain. The bias parameters for the Bigdog/H2RG system is:

<table>
<thead>
<tr>
<th>LowBias_HighGain</th>
<th>400mV</th>
<th>VDET to -3.4v.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LowBias_LowGain</td>
<td>500mV</td>
<td>VDET to -3.3v.</td>
</tr>
<tr>
<td>MinBias_LowGain</td>
<td>600mV</td>
<td>VDET to -3.2v</td>
</tr>
<tr>
<td>HigBias_LowGain</td>
<td>700mV</td>
<td>VDET to -3.1v</td>
</tr>
</tbody>
</table>

The Bias parameters for the Guidedog/Aladdin system is:

<table>
<thead>
<tr>
<th>400mV</th>
<th>VDET to -3.4v.</th>
</tr>
</thead>
<tbody>
<tr>
<td>500mV</td>
<td>VDET to -3.3v.</td>
</tr>
<tr>
<td>600mV</td>
<td>VDET to -3.2v</td>
</tr>
<tr>
<td>700mV</td>
<td>VDET to -3.1v</td>
</tr>
</tbody>
</table>

**Prompt** IARC.Bias on XUI's Setup Tab.

**Range** (See above table)

**Initial** Bigdog/H2RG is LowBias_HighGain

**Guidedog/Aladdin is 400mV**

**Syntax** iarc.bias bias_string

**iarc.db.ext** [B G] Sets the iarc double extension feature. When ON, spex will save the double readout mode data using FITS extensions. The additional data include in the extension are:

- Sum of the Pedestal Data.
- Sum of the Sample Data.
- First NDR/Pedestal Data

**Prompt** IARC.db.ext on XUI's Setup Tab.

**Range** (See above table)

**Initial** off

**Syntax** iarc.db.ext {off | on}

**ImageNumber** [B G] An ID number used to create the FITS filenames. See Filename for details.

**Prompt** ImageNumber number

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**Instrument - [B G]** This command sets the value portion of the INSTRUME keyword for the FITS image header.

- **Prompt**: none
- **Range**: any string up to 40 characters.
- **Initial**: n/a
- **Syntax**: `Instrument string`

**isready - [B G]** Returns ERR_NONE if all the components (array, motors) of the camera are ready. Otherwise, returns ERR_BUSY. This command gives you a way to test if the camera is ready. Intended for macro files. The next line in a macro file after the isready command will not be executed until all component return to the ready state.

- **Syntax**: `isready`

**itime - [B G]** The amount of time the array is exposed between readouts, or the time interval for 1 coadd. The minimum value is depend on the array readout rate.

- **Prompt**: 'itime' on the XUI Obs page.
- **Range**: 0.0001 to 1800 seconds
- **Initial**: 1
- **Syntax**: `itime seconds`

**Lamp - [B G]** This command turns the lamps off or on. See Lamp.set for an improved lamp command.

- **Range**
  - Lamps are:
    - QTH – controls the QTH lamp.
    - Inc – controls the Incandescent lamp.
    - IR – turn on the IR source.
    - AR – turn on the argon lamp
- **Syntax**: `Lamp { QTH | Inc | IR | AR} {off | on}`

**Lamp.Init - [B G]** Initializes the lamps control and turn off all lamps.

- **Prompt**: 'Lamp.Init' button on the XUI Setup Window.
- **Syntax**: `Lamp.Init`

**Lamp.set - [B G]** Another more flexible command to turn off or on the lamps. The specified lamp are turned ON, the other are turned off. For example:

- `lamp.set` - Turn off all lamps.
- `Lamp.set IR` - Turns on the IR lamp, others Off.
- `Lamp set Inc AR` - Turns on the Inc and AR. Others off.

**Lamp.Sim - [B G]** Sets the simulation flag for the lamp software.

- **Prompt**: none
- **Range**: off – controls the real lamps.
  - on - simulate lamp control.
- **Initial**: off
- **Syntax**: `Lamp.Sim {off | on}`

**LDHostName - [B G]** Specifies the hostname of the littledog computer. Littledog is the PC used by spex for motor control, temperature control and various analog/digital IO functions.

- **Prompt**: ‘LD hostname’ prompt on the XUI Setup tab.
- **Range**: Enter the hostname for the littledog PC.
- **Initial**: ldoc
- **Syntax**: `LDHostName name`

**Log - [B G]** The camera software keeps a log of message it produces during execution. This command allows the users to log a message into this file.

- **Range**: Any text message.
- **Syntax**: `log message`

**MeanImage - [B G]** A GO feature when enable will accumulated coadd images in buffer D of DV.

- **Prompt**: 'meanimage' on the XUI's Obs Basic page.
- **Range**: Off – turns off feature.
  - On – enables mean images in DV.
- **Syntax**: `MeanImage { off | on }`

**n6700.monitor - [B G]** Disable or enable the monitoring of the array power supplies. N6700 is the model of the power supply unit.

- **Range**: Off – disable monitoring.
  - On – enable monitoring.
- **Syntax**: `n6700.monitor { off | on }`

**NDR - [B G]** The Non-Destructive Read parameter identifies the number of samples or times the array is readout to obtain the image for 1 coadd. Not the increasing NDR may lower your noise, but will increase your minimum integration time.

- **Prompt**: 'NDR' on the XUI's Setup page.
- **Range**: 1 to 128
- **Initial**: 32 for bigdog, 8 for guidedog.
- **Syntax**: `NDR number`
Object - [B G] This text identifies the object you are observing and is placed in the FITS header on the OBJECT header line.

Prompt 'Object' on the XUI Setup page.
Range Any string up to 40 characters.
Initial 'Name of Object'
Syntax `object string`

Observer - [B G] This text identifies the observers and is placed in the FITS header on the OBSERVER header line.

Prompt 'Observer' on the XUI Setup page.
Range Any string up to 40 characters.
Initial 'Your name'
Syntax `observer string`

ObsMode - [B G] Determines the beam switch pattern for 1 cycle in the Basic CamMode.

Prompt 'Obs Mode' on the XUI's Obs page.
Range
0 - Obj(A) integrates at the present beam position. This data is treated as an 'object' frame.
1 - Sky (B) integrates at the present beam position. This data is treated as a 'sky' frame.
2 - Pair (AB). In this mode, a pair of images are taken. First the telescope is positioned at the A beam and a 'object' image is taken. Then the telescope is positioned at the B beam and a 'sky' image is taken.
Initial 0
Syntax `obsMode index`

Osf - [B G] Positions the order sorter filter wheel.

Prompt OSF icon in XUI window.
Range The table below lists the selections.

<table>
<thead>
<tr>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
</tr>
<tr>
<td>PK_50</td>
</tr>
<tr>
<td>SP_2.5</td>
</tr>
<tr>
<td>0.1xSTOP</td>
</tr>
<tr>
<td>Long4</td>
</tr>
<tr>
<td>Long5</td>
</tr>
<tr>
<td>Long6</td>
</tr>
<tr>
<td>Short3</td>
</tr>
<tr>
<td>Short4</td>
</tr>
<tr>
<td>Short5</td>
</tr>
<tr>
<td>Short6</td>
</tr>
</tbody>
</table>

Syntax `Osf { Open | PK_50 | ... | Blank }`

Osf.detent.mode - [B G] Select the centering mode for the detented mechanism.

Range Center – measure the start and end of the detent using the comparator output. Position the mechanisms in the center.
MoveTo – Move to the start of the detent, then slight further.
Syntax `osf.detent.mode { center | moveto }

Osf.Init - [B G] Order Sorter Filter Initialization initializes the osf wheel by searching for a position sensor and re-calibrating its position.

Prompt 'Osf.Init' button on the XUI Setup Window.
Syntax `osf.Init`

Osf.Sim - [B G] Order Sorter Filter Simulation sets the simulation flag for the OSF wheel.

Range off - moves the real motor.
on - simulate motor movements.
Initial off
Syntax `osf.Sim {off | on}

Osf.Step - [B G] The OSF.Step command allows you to position the osf to a particular step position.

Prompt 'OSF.Step' prompt on the XUI's setup page.
Range 0 to 640,000 steps.
Syntax `OSF.Step step`

Osf..Verbose - [B G] Set the verbose flag for the OSF wheel program on littledog. ON will enable verbose printf output.

Prompt none
Range off – verbose is off
on – verbose is on
Initial off
Syntax `Osf.Verbose {off | on}
**ParameterReset** - [B G] Set may camera values to the startup defaults.

Syntax: `ParameterReset`

**ParameterRestore** - [B G] Executes the ParameterSave macro file created from the last parameterSave command. If the “AF” flag is specified the image number is restored from the macro file. Otherwise the current image number is maintained.

Syntax: `ParameterRestore { AF }`

**ParameterSave** - [B G] Create the macro file `~/macro/INST/ParameterSave`. Thus saving some state variables for the instrument. ParameterRestore execute this macro file.

Syntax: `ParameterSave`

**Path** - [B G] This path identifies the subdirectory the IC programs uses when saving FITS data files. Will create a directory if it doesn’t exist. The following strings substitution are applied:

- `$HOME` is replaced with your home path.
- `$DATE` is replaced with the current date, ie: YYMMDD

Prompt: 'Path' on the XUI's Obs page.

Range: Any legal UNIX subdirectory

Syntax: `PATH string`

**Pixel.Time** - [B G] Pixel.time controls the clocking and sample rate used on the array. Values are in microseconds per pixel. This affects the array readout time, and minimum time value.

Prompt: 'Pixel.Time' prompt on the Setup tab..

Syntax: `pixel.time { 3 | 5 }

**Program.ID** - [B] Set the PROG_ID keyword in the FITS header. This identifies the IRTF Program using the instrument. Normally observer login into the XUI, thus setting their program ID.

Prompt: 'Username' prompt on the XUI login dialog

Syntax: `Program.id YYYYSSNNN`

**Query.path.filename** - [B] A query command that allows other program to query the current path and filename from spex.

Syntax: `query.path.filename`

**Readout.mode** - [B G] Sets the IARC readout mode which control how array readout are used to create a coadd.

Range: Single – A Reset and Single readout is used for a coadd image.

Syntax: `readout.mode { SINGLE | DOUBLE }

**Rot** - [B G] Positions the Rotator to the Sky’s position angle.

Prompt: ROT icon in XUI window.

Range: 0 to 360 degrees.

Syntax: `Rot Sky_position_angle`

**Rot.Ang** - [B G] Positions the Rotator to the rotator’s mechanical angle.

Range: 0 to 360 degrees.

Syntax: `RotAng Mechanical_rotation_angle`

**Rot.Init** - [B G] Initializes the ROT device by searching for its home sensor and initializing its position.

Prompt: 'Rot.Init' button on the XUI Setup Window.

Syntax: `Rot.Init`

**Rot.Sim** - [B G] The Rotator Simulation command sets the simulation flag for the rotator device.

Range: off - moves the real motor.

on - simulate motor movements.

Initial: off

Syntax: `Rot.Sim {off | on}


Prompt: 'OSF.Step' prompt on the XUI's setup page.

Range: 0 to (1,440,000-1) steps.

Syntax: `rot.step step`

**Rot.toPA** - [B G] Set the Rotator (sky position angle) to the current Parallatic Angle (from the TCS).

Prompt: none.

Syntax: `rot.toPA`

**Rot.Verbose** - [B G] Set the verbose flag for the ROT wheell program on littledog. ON will enable verbose printf output.

Prompt: none

Range: off – verbose is off

on – verbose is on

Initial: off

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SpeX User's Guide

Dictionary of Commands

Syntax  Rot.Verbose \{off|on\}

Slit - \{B G\} Positions the slit wheel to a slit position.

Prompt  Slit icon in XUI window.

Range  The table below lists the selections.

\begin{tabular}{ll}
Open & \\
Mirror & \\
0.3x15 & \\
0.5x15 & \\
0.8x15 & \\
1.6x15 & \\
3.0x15 & \\
0.3x60 & \\
0.5x60 & \\
0.8x60 & \\
1.6x60 & \\
3.0x60 & \\
\end{tabular}

Syntax  Slit \{ Open | Mirror | ... | 3.0x60 \}

Slit.detent.mode - \{B G\} Select the centering mode for the detented mechanism.

Range  \begin{itemize}
  \item Center – measure the start and end of the detent using the comparator output. Position the mechanisms in the center.
  \item MoveTo – Move to the start of the detent, then slight further.
\end{itemize}

Syntax  slit.detent.mode \{ center | moveto \}

Slit.Init - \{B G\} The Slit Initialization command initializes the Slit device by searching for its home sensor and initializing its position.

Prompt  ‘Slit.Init’ button on the XUI Setup Window.

Syntax  Slit.Init

Slit.Step - \{B G\} The Slit.Step command moves the slit to a step position.

Prompt  ‘Slit.Step’ prompt on the XUI's setup page.

Range  0 to (384,000-1) steps.

Syntax  slit.step step

Slit.Verbose - \{B G\} Set the verbose flag for the Slit wheel program on littledog. ON will enable verbose printf output.

Prompt  none

Range  \begin{itemize}
  \item off – verbose is off
  \item on – verbose is on
\end{itemize}

Initial  off

Syntax  Slit.Verbose \{off|on\}

Stop - \{B G\} During an integration or GO cycle, the stop command is used to abort the acquisition.

Prompt  ‘Stop’ button on the XUI’s main window.

Syntax  Stop

SubAB - \{B G\} After an image is taken, it can be read by DV for display, this switch also instructs DV to calculate the object-sky image when the SubAB switch is ON.

Prompt  ‘Object-Sky’ check box on the XUI window.

Range  \begin{itemize}
  \item OFF or ON.
\end{itemize}

Initial  OFF

Syntax  SUBAB \{ off | on \}

SyncFocusToGrating - \{B G\} When ON, the Array Focus position is synchronize whenever a Grating is selected.

Range  \begin{itemize}
  \item off – Grating command don’t affect the array focus.
  \item on – Set the array focus, with a grating is selected.
\end{itemize}

Initial  on

Syntax  SyncFocusToGrating \{off | on\}

TC218 – \{B G\} Use this command to send a text string to the Temperature controller Model 218. The 218 is a 8 channel temperature monitor. This string is assumed to be a valid temperature controller command.

Range  Any text up to 60 characters.

Syntax  TC218 string

TC335a – \{B G\} Use this command to send a text string to the Temperature controller Model 335 using on BigDog. This string is assumed to be a valid temperature controller command.
Range Any text up to 60 characters.
Syntax TC335a string

TC335b – [B G] Use this command to send a text string to the Temperature controller Model 335 using GuideDog. This string is assumed to be a valid temperature controller command.
Range Any text up to 60 characters.
Syntax TC335b string

TC.sim - [B G] The Temperature Controller Simulation command sets the simulation flag for the temperature controller process.
Range off – Real IO to temperature controller.
on – simulates via software.
Initial off
Syntax tc.sim {off | on}

TC.sql - [B G] The Temperature Controller SQL flag turns off/on writing temperature data to the SQL database. This SQL database holds the data used to generate the spex temperature monitor web page.
Range off – Do not save temperature data.
on – Save temperature data to SQL
Initial off
Syntax tc.sql {off | on}

TCS - [B G] Sends a command string to the TCS.
Range cmd – Any valid TCS command, 50 characters maximum.
Syntax tcs cmd

TCSHostname - [B G] Specifies the hostname of the TCS computer. TCS command will be directed towards this host.
Prompt 'TCS Hostname' on the XUI Setup tab.
Range Enter the hostname for the tcs computer.
Initial n/a
Syntax TCSHostname string

TCS.system - [B G] TCS communication option.
Range off – TCS communication is not attempt.
sim – TCS communications are simulated.
tcs3 – TCS communications are enabled to TCS3.
Initial tcs3
Syntax tcs.system {off | sim | tcs3}