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

  Prompt   'Array' prompt on the XUI's Obs page.

  Range   x y wid hgt -

  Syntax   ARRAY x y wid hgt

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.

if needed.

  Prompt   'Auto GuideBox Setup' button on XUI's Obs page.

  Syntax   AutoGuideBoxSetup

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

  Syntax   BM2DV

Cal.md5sum - [B 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 - [B 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 - [B G] Selection the Calibration Mirror position.

  Prompt   Lamp/Mirror icon in XUI window.

  Range   Out - lamps not visible.

In - lamps are in the optical path.

Initial   out

Syntax   `CalMir {out|in}`

CalMir.Init - [B G] 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 - [B G] 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 - [B G] 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 - [B G] 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 ldog terminal

Initial   off

Syntax   `CalMir.verbose {off | on}`

Camera - [B G] 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 - [B G] The camera mode specifics 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)

Syntax   `CamMode { basic | guiding | movie }`

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`

Cmd.BigDog.HostName - [G] Identifies the hostname of the bigdog computer for Cmd.BigDog network communications.

Range   Enter the hostname of the workstation BigDogIC.

Initial   bigdog

Syntax   `Cmd.BidDog.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`

Cmd.GuideDog.HostName - [G] Identifies the hostname of the GuideDog computer for Cmd.GuideDog network communications.

Range   Enter the hostname of the workstation GuideDogIC.

Initial   guidedog

Syntax   `Cmd.GuideDog.Hostname name`

CoAdd - [B G] 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   `COADD num`

Comment - [B G] 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 - [B G] 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 inthe FITS header.

Syntax   datatype *{ target | standard | calibration }*

Die - [B G] This command stops the execution of the IC program.

Syntax   DIE

Dit - [B G] Positions the Dichroic wheel.

Prompt   Dit icon in XUI window.

Range   The table below lists the Dit selections.

Pupil
0.9
Open
0.9

Syntax   Dit { pupil |*0.9 | oen | 0.8 }*

Dit.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   dit.detent.mode { center | moveto }

Dit.Init - [B G] initializes the dichroic wheel by searching for a position sensor and re-calibrating its position.

Prompt   'Dit.Init' button on the XUI Setup Window.

Syntax   Dit.Init

Dit.Sim - [B G] Dichroic Simulation sets the simulation flag for the dichroic wheel.

Prompt   none

Range   off -moves the real motor.

           on - simulate motor movements.

Initial   off

Syntax   Dit.Sim *{off | on}*

Dit.Step - [B G] Positions the dichroic wheel to a particular step position.

Prompt   'Dit.Step' prompt on the XUI's Setup page.

Range   step is from 0 to 256000-1.

Syntax   Dit.pos *step*

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

Range   off – verbose is off

           on – verbose is on.

Syntax   Dit.Verbose *{off | on}*

DMC41.mon.sim - [B G] Turn off/on the simulation flag for the DMC-4183 monitor task in littledog.

Prompt   none

Range   OFF – monitor the DMC-4183

           ON – simulate communication with the DMC-4183.

Syntax   DMC41.mon.sim *{off | on }*

DTime - [B G] Sets the deadtime delay after a telescope beam switch command is issued during a GO.

Prompt   'Beam Dtime' on XUI's Obs page

Range   From 0.5 to 20 seconds

Syntax   DTime *sec*

DV - [B G] Sends a command to DV (the Data Viewer). Only works on DV1.

Prompt   none

Range   Any legal DV command.

Syntax   DV *Any_Legal_DV_Command*

DV.Enable - [B G] This toggle determines if the IC sends data to DV.

Prompt   'dv.enable' on the XUI Setup tab.

Range   Off – Do not display images on DV.

           On – display images on DV.

Initial   On

Syntax   DV.enable *{off | on}*

DV.HostName - [B G] The IC program uses this hostname when send data or commands to DV.

Prompt   'dv.hostname' on the XUI Setup tab.

Range   Enter the hostname of the workstation running DV.

Initial   localhost

Syntax   DV.HOSTNAME *name*

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}*

GFlt.Step - [B G] Positions the Guide Filter to a particular step position.

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

Grat.Sim - [B G] The Grating Simulation command sets the simulation flag for the grating turret.

Prompt   none

Range   off -moves the real motor.

            on - simulate motor movements.

Initial   off

Syntax   Grat.Sim *{off | on}*

Grat.Step - [B G] Psitions 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.

on – verbose is ON

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).

Prompt   'GuideAB' pulldown on the XUI Slow.Gd CamMode tab.

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 stardard 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*

GuideBox.Adj - [G] Adjust the position of guidebox A and B by an incremental X, Y,value.

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*

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.ClearSky`

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

Prompt   'Guide.Clearsky' button on XUI Slow.Gd Cammode 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.

Range   Off – Correction not send.

              TCS – Correction sent to TCS.

Syntax   `GuideCorrectionsTo {Off|TCS}`

Guide.DivFlat - [G] Turn off/on the divide by Flat feature during guiding. Some guide Flat image are storted 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.FullImage`

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 jumpped out of the guidebox.

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

Syntax   `Guide.Flux.Enable { off | on }`

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 neighboring pixels, then the Peak algorithm is applied.

              Centroid – A centroid is calculated by weighting the pixel values to find the center of mass of the guide array.

              Bright – Works well for bright objects. Before the centroid algorithm is applied the data modified by:

              a. rescale the image so that [mean-std, mean+std] is mapped to [-25,25]..

              b. Set any negative values to 0.

              Faint – Work well for Faint objects. 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.

              d.   Subtract the mean value

              Very Faint – Works will for much fainter objects. Before the centroid algorthm is apply the data is modified by:

              a) Each pixel value is replaced by averaging its value with all its value plus all its neighboring pixels.

              b) Subtract the mean value from each pixel.

              c) Divide by the standard deviation.

              d) Set any values < 1 is set to 0.

              e) Subtract the mean value

Initial   n/a

Syntax   `GuideMethod { peak | peak+smooth | centroid | centroid+flt1 | centroid+flt2 }`

Guide.Reset.Flux - [G] Establish the base line flux level for guidebox images for the Flux.Enable warnings.

Prompt   'Reset FLux' bittpm on XUI's OBS->Guiding tab.

Syntax   `Guide.resetFlux`

GuideSleep - [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.

Prompt	'Guide.TakeSky' button on XUI Slow.Gd Cammode tab.
Syntax	`Guide.TakeSky`

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:

LowBias_HighGain	
LowBias_LowGain	
MinBias_LowGain	
HigBias_LowGain	

The Bias parameters for the Guidedog/Aladdin system is:

400mV	VDET to -3.4v.
500mV	VDET to -3.3v.
600mV	VDET to -3.2v
700mV	VDET to -3.1v

Prompt	IARC.Bias on XUI's Setup Tab.
Range	(See above table)
Initial	Bigdog/H2RG is LowBias_HighGain
	Guidedog/Aladdin is 400vV
Syntax	`iarc.bias bias_string`

iarc.db.ext - [B G] Sets the iarc double extersion 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

Range	off – Save a single image FITS
	on – Save data + extensions data.
Initial	on
Syntax	`iarc.dbl.ext {off	on}`

iarc.io - [B G] Passes a command to the IARC server.

Syntax	`iarc.io command`

iarc.sif - [B G] Sets IARC Save Intermediate Files flag. The IARC server is capable of saving each array readout as a FITS file. This is a array engineering feature.

Range	off – sif is OFF.
	on – sif is ON (intermediate files are saved)
Initial	off
Syntax	`iarc.sif {off	on}`

iarc.voffset - [B G] Sets the offset voltage of a IARC video Channel DAC.

Range	bd - ID the board. 0 to 3.
	dac – ID the dac on the board. 0 to 7
	voffset – The offset value. 0 to 4095
Syntax	`iarc.voffset bd dac voffset`

IgnoreLdog - [B G] The spex IC application polls polls littledog for status updates at 4Hz. This flag disables the updates. Useful if littledog is offline.

Prompt	'Ignore LDog' on the XUI setup page.
Range	off – Do not poll for littledog data.
	on – Polls for littledog data.
Initial	off
Syntax	`IgnoreLDog {off	on}`

IgnoreMotors - [B G] Normally GO cannot be issued if the motor are in any other state that READY (in other words, the motors are idle and already have been initialized). This command disables that restriction, allowing GO to proceed regardless of the motor state.

Prompt	'Ignore Motors' on the XUI setup page.
Range	off – Only allow GO when motors are READY.
	on – Ignore motor's state when executing the go command.
Initial	off

Syntax   `IgnoreMotors {off | on}`

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

Prompt   ?

Range   1 to 9999

Initial   1

Syntax   `ImageNumber number`

Instrument - [B G] This command set 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 is all the components (array, motors) of the camera is 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 truned 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 your are observing and is place 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 place 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.

Open
PK_50
SP_2.5

0.1xSTOP
Long4
Long5
Long6
Short3
Short4
Short5
Short6
Short7
CH4_s
CH4_l
Blank

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 specifed 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 varaiables 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 itime value.

Prompt	'Pixel.Time' prompt on the Setup tab..
Syntax	pixel.time { 3 | 5 }

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

Prompt	'Username' prompt on the XUI login dialog
Syntax	Program.id YYYYSNNN

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.
	Double – A reset, Read, Read is used to create a coadd image. This is a Sampe-Pedestal read.
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_p*osition_angle*

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

Range	0 to 360 degrees.
Syntax	RotAng Mechanical_r*otation_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}*

Rot.Step - [B G] The Rot.Step command moves the rotator to a step position.

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

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.

Open
Mirror
0.3x15
0.5x15
0.8x15
1.6x15
3.0x15
0.3x60
0.5x60
0.8x60
1.6x60
3.0x60

Syntax   `Slit { Open | Mirror | … | 3.0x60 }`

Slit.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   `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.Sim - [B G] The Slit Simulation command sets the simulation flag for the slit wheel.

Range   off -moves the real motor.

on - simulate motor movements.

Initial   off

Syntax   `slit.sim {off | on}`

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   off – verbose is off

on – verbose is on

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 the object - sky image when the SubAB switch is ON.

Prompt   'Objeck-Sky' check box on the XUI window.

Range   OFF or ON.

Initial   OFF

Syntax   `SUBAB  { off | on }`

SyncFocusToGrating - [B G] When ON, the Array Focus position is synchronize whenever a Grating is selected.

Range   off – Grating command don'tt affect the array focus.

on – Set the array focus, with a grating is selected.

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 on **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 tempeature 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 }*

Telescope - [B G] This command set the value of the TELESCOP keyword for the FITS image header.

Prompt   none

Range   any string up to 40 characters.

Initial   n/a

Syntax   Telescope *string*