

CSHELL XUI / IC Command Reference

Amended for cshell2 GUI.

Array - Set the size and location of sub-arrays to be readout for the next GO. These coordinates are relative to the physical device. Your data is normally viewed rotated 90° clockwise.

Prompt Array_icon on the Parameters screen, OBS page.
 Range x y wid hgt - The (x,y) location of the upper left corner and its width and hgt is specified. Please note that these values must be multiples of 8.
 Initial Full size (0 0 256 256).
 Syntax ARRAY x y wid hgt

AutoSave - Determines whether the data is saved to disk.

Prompt 'Autosave' on the observing parameter's Obs page.
 Range Off - Data is not saved, just display in DV.
 On - Data is saved and displayed on DV.
 Initial Off
 Syntax AutoSave { off | on }

Calcmean - When TRUE, the different frame ("c") can be averaged into buffer D for each cycle. The buffer C and D are DV buffers. Also see SubAB.

Prompt 'CalcMean D = mean(c)' check box on the XUI window.
 Range OFF or ON.
 Initial ON
 Syntax CalMean { off | on }

CamMode - Specifies the clocking and readout modes in the GO sequence.

Prompt N/A
 Range Basic- Acquires single images with just the basic options.
 SIM- Simulation mode. Allows the software to be used without the actual camera hardware.
 Initial Basic
 Syntax CAMMODE { basic | sim }

ChgClkBias - Changes the bias voltage to the clock/bias DAC. This is an engineering command.

Prompt 'ChgClkBias' button on the Observing Parameter's Engineering page.
 Range Board 1 to 4.
 DAC 1 to 16.
 Volts: -10 to 10.
 Initial N/A
 Syntax CHGCLKBIAS board dac volt

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

Prompt 'Coadd' on the observing parameter's Obs page.
 Range 1 to 32000
 Initial 1
 Syntax COADD num

Comment - Specifies a string to be placed in the fits header of the saved file as a comment.

Prompt 'Comment' on the observing parameter's Obs page.
 Range Any string up to 40 characters.
 Initial Undefined.
 Syntax COMMENT string

Control - An XUI command to specify with control page should be displayed on the GUI..

Range Observing, Macro, Setup, Eng.
 Initial Observing
 Syntax Control { observing | macro | setup | eng }

Cycles - Cycles is a repeat factor in a GO sequence under basic mode. For the ObsMode NoiseImage, Cycles indicates how many frames will be used to calculate the noise.

Prompt 'Cycles' on the observing parameter's Obs page.
 Range 1 to 1000.
 Initial 1
 Syntax CYCLES num

CVFWlen - When a CVF filter is selected, this parameter specifies the wavelength for the CVF filter. Setting the CVFWlen updates the user's order, which specifies which order to be used by grating to observe at the wavelength specified by CVFWlen.

Prompt 'CVFWLen' on the Filter Wheel Dialog Box.

Range 1.0 to 2.449, or 2.46 to 5.6
 Initial 2.20
 Syntax CVFWLEN num

Die - This command stops the execution of the IC program. This command can only be executed from the IC program.

Syntax DIE

DiMirrorInit - The command to initialize the Direct Imaging Mirror. The DiMirror places the instrument in spectroscopic or imaging mode.

Syntax DIMIRRORINIT

DoFastMode - Select the fast or slow clocking mode by setting Fastmode on or off. This is an engineering command.

Prompt 'DoFastMode' on the observing parameter's Eng page.
 Range Off - Slow clocking mode.
 On - Fast clocking mode.
 Initial Off
 Syntax DOFASTMODE { off | on }

DSPResetMsec - Specifies the amount of time in millisecond between array reset. Array resets are performed during idle periods.

Prompt 'DSP Reset Msec' on the observing parameter's Eng page.
 Range 500 to 10000 milliseconds
 Initial 1000
 Syntax DSPRESECMSEC num

DSPSampleMode - Specifies the sampling mode used to readout the array during a GO.

Prompt 'Sample Mode' on the observing parameter's Eng page.
 Range Single - A single sample is done by resetting the array. After the integration time has passed the array is readout to produce an image.
 Double - After an array reset, a pedestal image is readout. After the integration time, a sample image is readout. The final image is the result of the sample minus the pedestal readout.
 Initial Double

DTime - Specifies the dead time after a beam switch in seconds.

Prompt 'Beamswitch DTime' on the observing parameter's Setup page.
 Range 0 to 10 seconds.
 Initial 2
 Syntax DTIME sec

DV - 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 - This toggle determines if the IC sends data to DV at DV's home:port_number..

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 - 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 - Specifies the TCP/IP port number when communication to DV for DV.

Prompt 'DV.Port' on the XUI Setup tab.
 Range Enter the port number of the DV application.
 Initial 30130
 Syntax DV.Port *port_number*

Echo - An XUI command to displays text on the XUI's text feedback window. Useful in XUI macros.

Range Any string.
 Syntax Echo *Starting macro file*

EPassword - The Epassword command allows you to enter a password. After entering the password successfully, any restrictive parameters (ie engineering) can be modified. Issing the command with an invalid password will cause those parameters to be restricted.

Prompt 'epassword' on the observing parameter's Eng page.
 Range Any string
 Syntax EPASSWORD string

Filename - The filename's prefix is used ot 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 '01jan045.a'.

Prompt 'Filename' on the observing parameter's Obs frame.
 Range A string of 8 characters
 Initial The current date in the form DDMMM
 Syntax FILENAME string

Filter - Select a filter combination using the 2 filter wheels. The selection are indicated by the index values.

Prompt Click on the Filter Icon on the observing parameters window.
 Range 0 - CVF Wlen & Open
 1 - 2.35 um NBF & Open
 2 - 4.05 um NBF & Open
 3 - He 1.083 & Open
 4 - HI 2.167 & Open
 5 - Both wheels blank
 6 - CVF Wlen & Open
 7 - 2.35 um NBF & Blocker
 8 - 4.05 um NBF & Blocker
 9 - 2.5 um Blocker
 10 - 4.1 um Blocker
 Initial Blank Blank 2.20
 Syntax FILTER { 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 }
 }

FilterInit - This command will initialize the filter wheels by moving them to their limit switches and then moving them to their initial position.

Syntax FILTERINIT

FilterPos - Allows you to position the filter wheels to any step position. Normaily you may only offset the wheel position -100 or +100 steps from its normal location. After entering the engineering password, this restrictions is removed, but be careful of flashing the array in this mode.

Range 1 to 40000 .
 Syntax FILTERPOS { A | B } step# [{A|B} step#]

Full Array – When TRUE, the full array is sampled and read out (256 x 256 pixels). When FALSE, the subarray parameter define the array's read out region.

Prompt: Subarray/Fullarray tabs on the XUI Observing screen.
 Syntax Fullarray { off | on }

Go - Performs a GO, which is a set of integrations. The GO command can take an optional parameter which determines the type extension for filenames in basic mode. Please read the section description of CamModes for a more complete description.

Syntax GO [{ obs | dark | flat | comp }]

GoInit - Initializes the go task in the IC program. The go task is responsible for controlling the DSPs and Array's electronics.

Syntax GOINIT

GoReset - Places the DSP in a reset operation mode. The go task's state will be change to ERROR.

Syntax GORESET

GratingInit - Initializes the grating. The grating is initialized by reading the step position from the encoder to set the step postion of the grating's stepper motor.

Syntax GRATINGINIT

GratingPos - Commands the grating's stepper motor to move to a specific step position.

Syntax GRATINGPOS
 Range 100000 to 400000

GratingRMove - Moves the grating from its current position by a relative number of steps.

Range -2000 to 2000
 Syntax GRATINGRMOVE steps

GWLen - Moves the grating to the indicated wavelenght. First the optimum order is calculated. The user's order is set to the optimum order. Then the step position of the grating is determined from the inputted wavelenght and this order. The grating is moved to this position.

Prompt See 'WaveLen' command.
 Range 1.0 to 6.0.
 Syntax GWLEN micons

ICPath - The path identifies the subdirectory the IC program uses when writing data files. This command will create new subdirectories if path doesn't exist. Supports the \$DATE and \$HOME macors.

Range Any legal unix subdirectory. 80 chars max.
 Initial \$HOME/data/\$DATE
 Syntax ICpath string

ImageNumber - An ID number used to create the filename. See Filename for an example.

Prompt 'Next Image Number' on the observing parameters Obs page.
 Range 1 to 9999
 Initial 1
 Syntax IMAGENUMBER num

InstMode - Places the instrument in Spectroscopic or Direct Imaging mode by moving the Direct Imaging mirror out or in.

Prompt 'Instrument Mode' menu is accessed by clicking on the Grating or DiMirror icon on Parameter's Observing page.
 Range S (Spectroscopic) Optical path is through grating.
 D (Direct Imaging) Blocks the grating
 Initial S
 Syntax INSTMODE { S | D }

itime - The amount of time the array is exposed between readouts, or the time interval for 1 Coadd. The minimum value is determined by the readout rate.

Prompt 'itime' on the observing parameter's Obs page.
 Range 0.1 to 3600.0 seconds
 Initial 1
 Syntax ITIME sec

isready - Returns ERR_NONE when 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

Lamp - Turn off/on the calbration lamps This command automaticly move the lamp mirror out when the lamps are turned off, and in when the lamps are on.

Prompt 'Cal_Lamp' icon on the Parameter window's Observing page.
 Range off
 AR - Argon Lamp
 KR - Krypton Lamp
 XE - Xenon Lamp
 Cont - Continuum Lamp
 Initial Blank
 Syntax LAMP { off | AR | KR | XE | Cont }

LampInit - The command to initialize the lamp and lamp mirror by turning the lamp off and moving the mirror out of position.

Syntax LAMPINIT

LampMirror - More a mirror so the calibration lamp are out or in the optical light path.

Range Out - lamps are out of optical path.
 In- lamp are in optical path.
 Syntax LAMPMIRROR { out | in }

Object - This information identifies the object you are observing and is placed in the fits header.

Prompt 'Object' on the observing parameter's Obs page.
 Range Any string up to 40 characters.
 Initial 'Name of Object'
 Syntax OBJECT string

Observer - This information identifies the observers and is placed in the fits header.

Prompt 'Observer' on the observing parameter's Obs page.
 Range Any string up to 40 characters.
 Initial 'Your name'
 Syntax OBSERVER string

ObsMode - The observing mode determines the beam switch pattern performed in a GO sequence and when in the sequence the files are saved. The obmode is identified by an index number

- Prompt 'Obs Mode' on the observing parameter'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.
3 - Pair (AB). In this mode, a pair of frames are taken. First the telescope is position at the A beam and a 'object' frame is taken. Then the telescope is positioned a the B beam and a 'sky' frame is taken.
4 - Noise Image. This is a special mode used to produce noise images. For each cycle a image is readout. Using these images, the standard deviation of each pixel is calculated. A frame is produced where each pixel position contains the standard deviation of that pixel position. These value are multiplied by 100 to preserve decimal information.
- Initial 0
- Syntax OBSMODE num

Order - Set the user's order. The grating wavelenght is calculated based on the grating angle (step position) and an implied order. This implied order is called the user's order. Normal the user's order is set to the optimum order for a given wavelenght. This command allows you to change the user's order.

- Prompt None. Enter command at prompt.
- Range 8 to 60
- Initial Optimum order
- Syntax ORDER num

Path - The path identifies the subdirectory the IC programs uses when saving FITS files. Will create the 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:
01JAN
- Prompt 'Path' on the XUI's Obs page.

- Range Any legal UNIX subdirectory
- Syntax PATH *string*

PVoltage - Sets the user programmable voltage's VDDUC and VDET on the clock bias board.

- Prompt The observing parameter's Setup page contains prompts for set the voltages. First input the appropriate values in VDDUC and VDET. Then select the 'Set Programmable Voltages' with the mouse to send these values.
- Range VDDUC range is -3.75 to -2.505 volts.
VDET range is -3.75 to -2.505 volts.
In addition, vdet >= vdduc and (vdet-vdduc)<=1.5 volts.
- Initial Undefined. You must initialize the voltage as part of your startup procedures.
- Syntax PVOLTAGE vdduc vdet

RotatImage - This option automatically rotates the image clockwise 90° in the obsmode Stare and Nod.

- Prompt None. Enter command at command prompt.
- Range Off - No rotation performed.
On - Rotates the image.
- Initial On
- Syntax ROTATEIMAGE { Off | ON }

Samples - This parameter identifies the number of samples or times the array is readout to obtain the image for 1 coadd. Note that increased the number of samples will lower you noise, but will also increase you minimum integration time. This is a engineering or restricted command.

- Prompt 'Samples' on the Observing Parameter's Eng page.
- Range 1 to 256.
- Initial 1
- Syntax SAMPLES num

SetMotorRdy - This command sets the status for all the motorized items (filter, dit, len, pplate) to the READY state. This command is intended for engineering purposes only. Since all item must in in a ready state before a GO is accepted, this command clears any ERROR condition due to mechincal failures. Do not attempt to move any motors which has been set ready using this command. This is an engineering or restricted command.

- Syntax SETMOTORDY

Shutter - Selects a shutter wheel position.

Prompt Shutter
 Range Open
 Close
 2.5SPF
 Initial Close
 Syntax SHUTTER {Close | Open | 2.5SPF }

Range 1 to 100.
 Initial 1
 Syntax SLOWCNT num

Stop - During an integration or GO cycle, the stop command is used to abort the acquisition.

Prompt 'Stop' button on the XUI's command frame.
 Syntax STOP

ShutterInit - This command initializes the shutter wheel by searching for it limit switch, then moving the shutter to the closed position.

Prompt None. Enter command at command prompt.
 Syntax ShutterInit

SubAB - 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 'SubAB c=a-b' check box on the XUI window.
 Range OFF or ON.
 Initial OFF
 Syntax SUBAB { *off* | *on* }

ShutterPos - Allows you to move the shutter to an absolute step position.

Prompt None. Enter command at command prompt.
 Range 0 to 4999
 Syntax ShutterPos step#

TCLS - Use this command to send a text string to the Lake Shore Temperature Controller. This string is assumed to be a valid controller command.

Range Any text up to 60 characters.
 Syntax TCLS *string*

Slit - Select and moves to a slit wheel position.

Prompt Slit
 Range 0.5, 1.0, 1.5, 2..0, 4.0, Blank, Open, J, H, K, L, L', M
 Initial Blank
 Syntax Slit {0.5 | 1.0 | 1.5 | 2..0 | 4.0 | Blank | Open | J | H | K | L | L' | M }

TCS - Using this command you may send a string to the Telescope Control System (TCS). This string is assumed to be a correct TCS command with a 40 character maximum limit.

Range Any legal TCS command.
 Syntax TCS string

SlitInit - Initializes the slit wheel by moving it into the limit and then setting it to BLANK.

Prompt None. Enter command at command prompt.
 Syntax SlitInit

TCSHostName - Identifies the computer host accepting TCS commands.

Range The TCS1 host is 'tcsd_host'
 Initial 'tcsd_hosts'
 Syntax TCSHOSTNAME name

SlitPos- Move the slit wheel to a step position

Prompt None. Enter command at command prompt.
 Range 0 to 64000
 Syntax SlitPos step#

TCSI - Use this command to send a text string to the Scientific Instruments Temperature Controller. This string is assumed to be a valid controller command.

Range Any text up to 60 characters.
 Syntax TCSI *string*

SlowCnt - When DoFastMode is OFF, the SlowCnt variable specifies the numbers of NOP's or delays in the DSP clocking algorithm. This effectively slows down the clocking pattern which lowers the readout rate and read noise. This is an engineering or restricted command.

Prompt 'SlowCnt' on the Observing Parameter's Eng page.

TCCSystem - An option which control how cshell communications to the TCS.

Range OFF - Don't talk to the tcs.

Sim – simulated communications to the tcs.
 TCS1 – communicate to the tcs1 system.
 TCS3 – communicate to the tcs3 system.
 Initial TCS1
 Syntax TCSSystem { off | sim | tcs1 | tcs3 }

Wait - Sets the acquire or Go task busy for a time interval specified seconds.
 Range 0.1 to 60.0 seconds
 Initial N/A
 Syntax WAIT sec

TempRecord - TempRecord allows you to switch OFF/ON the recording to temperature information. When ON, the temperature information is appended to the file 'temper.log'. The recording interval is once every 5 minutes.

Prompt 'TempRecord' on the Observing parameter's Eng page.
 Range OFF or ON.
 Initial OFF
 Syntax TEMPRECORD { off | on }

Wavelength- This command changes the value of the CVFWlen and GWLen. It is provide to allow the use to change the grating and CVF wavelenght with a single command.

Prompt WaveLen on the Parameters window Observing Page.
 Range 1.10 to 2.449, 2.46 to 5.60 microns
 Syntax WAVELEN num

VCCD - Selects the position for the visible CCD dichroic/Netural Density filter assembly.

Prompt Click on the VCCD Icon on the observing parameters window.
 Range Out - VCCD Dichroic and ND filter out of light path.
 In - Places the VCCD Dichroic and ND filter in light path.
 Initial Out
 Syntax VCCD { out | in }

Command - Describe_command.

Prompt XU_i_PROMPTS
 Range describe_parameters.
 Initial N/A
 Syntax SYNTAX

VCCDInit - The command to initialize the visible CCD dichroic/Netural Density filter assembly.

Syntax VCCDINIT