NIRC2 Command Language
Version 1.4 (DRAFT)
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1 Introduction

This document provides syntax and a functional description for each of the commands that can be used to control NIRC2. The same information can be obtained by typing "help *command-name*" in a NIRC2 command window or by querying the Command/Keyword Database on the NIRC2 web page.

Commands are grouped by section into the following categories:

Detector Commands

Image Commands

Motor Commands

Information Commands

2 Detector Commands

2.1 coadd [n]

Set the number of coadds to n.

2.2 nsamp

Sets the number of samples in MCDS (multi-correlated double sampling) readout mode. If no argument is given, the current value is returned.

2.3 sampmode [type [Nsamp]]

Sets the readout mode: 1 = single, 2 = CDS, 3 = MCDS

2.4 samprate [rate]

Sets the pixel sampling rate to "rate".

2.5 subc nx [ny]

Select a centered nx x nx or nx x ny subarray.

2.6 tint [t]

Set integration time to t seconds. If t is not specified, the current integration time is reported.

3 Image Commmands

3.1 bstat [num]

prints statistics (mean, median, standard deviation) on buffer num in /scratch

3.2 bufN = bufN [+-/x* bufN]

Performs buffer math and puts the output into scratch/bufN.fits. For example, buf2 = buf3 - buf1. Can also be used for buffer copy. For example, buf2 = buf3. Buf N must lie in the range 1 to 4.

3.3 dp [n]

Display picture n.

3.4 dpname file

Display the specified fits file.

3.5 go

Prompt for taking an exposure.

3.6 goi [n]

Take an exposure. If n is specified, n exposures will be taken

3.7 goibuf [n]

Takes n images to the scratch buffer, /scratch/buf1.fits

3.8 odiff

Display the difference between the last two frames.

3.9 ostat [xs ys xe ye]

Show statistics from the last frame. If [xs ys xe ye] are specified, only the box defined by those pixels is used.

3.10 pdiff m n

Display the difference between frame m and frame n.

3.11 pstat n [xs ys xe ye]

Shows statistics from file n. If [xs ys xe ye] are specified, only the box defined by those pixels is used.

3.12 sdiff

Display the difference between the last two frames. (Has the opposite sign from odiff).

3.13 snapi [n]

Take n pairs of target and sky exposures. (The current nod parameters define the sky position. If n is not specified, a single pair is taken.)

3.14 test [n]

Takes n "test" frames (n=1 by default). Test frames are not written to disk.

3.15 wd n

Write scratch buffer n to the data directory as a new image.

4 Motor Commands

4.1 array

Inserts the specified array into the slit focal plane.

4.2 camera [x]

Select camera x, where x can be either a camera number (1,2,3) or a scale (e.g. 0.015).

4.3 close

Close the slits and mask.

4.4 clrgrism

Clears the grism slide.

4.5 corona name [x]

Set the coronagraphic spot n to position y.

4.6 dark

Inserts the aluminum cold plug (used for bias frames).

4.7 endnight

Puts the instrument into "safe" mode, for the end of the night.

4.8 fgr xx

Select a grism located in a filter wheel.

4.9 filt [text]

Insert the filter "text" (e.g. "filt j", "filt k", ...)

4.10 filter m n

Move the first filter wheel to position m, the second to position n.

4.11 grism

Insert grism x regardless of whether it is in the grism slide or the filter wheel.

4.12 homemot [list]

Home the specified motors (or all if no arguments are given).

4.13 image [filter]

Puts the instrument into imaging mode by: clearing the grism, and setting the slit and preslit to the positions appropriate for the particular camera in use. An optional filter name can be passed.

4.14 impupil

Insert the pupil imaging lens.

4.15 motwait [list]

Waits until all (or the specified list) of the motors are idle before returning.

4.16 mskclr

Remove the slit mask from the beam.

4.17 preslit

Set the preslit to a position which will baffle a slit when inserted, or baffle the imaging mode when the slits are cleared. This command will be done from within the slt* and sltclr commands.

4.18 psltclr

Clear the preslits.

4.19 pupil [text [-norot]]

Insert pupil mask text where text is one of a list of pupil mask names: circ, insc, hex1, hex2, ..., square, etc. Pupil mask complement TBD.

4.20 sgr n

Select grism number n in the grism slide.

4.21 shutter [open/close]

Opens or closes the shutter. If no arguments are given, the current status of the shutter is returned.

4.22 slit name [pos]

Insert the specified slit to the focal plane position stored with the slitrow command.

4.23 slitrow grism cenwave [camera]

Sets internal parameters for spectroscopy using the specified grism, camera, and central wavelength, and returns the row at which the slit and object should be centered on the image.

4.24 sltclr

Clear all slits and mask out of the beam.

4.25 sltmclr

Clear the mask for the slits.

4.26 sltsclr

Clear all slits out of the beam.

4.27 spec filt

Read the grism and camera names stored by the slitrow command and insert these into the beam. Optionally a blocking filter may be specified.

5 Information Commands

5.1 abs x

Take the absolute value of x.

5.2 ampang x1 y1 x2 y2

Converts two (x,y) pairs into a distance and an angle. The (x,y) coordinates are assumed to come from NIRC, hence a scale factor of 0.15 arcsec/pixel is used.

5.3 bells n

Ring the terminal bell n times.

5.4 camscale

Returns the scale (arcsec/pixel) for the current camera. Note that if the camera slide is in motion the scale for the destination camera (given by CAMTRGT) is returned.

5.5 dir

List data files.

5.6 disks

Prints out a sorted list of /sdata disks and their available disk space.

5.7 frame [n]

Set the next frame number to n.

5.8 grand

Output a random number.

5.9 help [command]

Display a brief list of commands, or more detailed information on command.

5.10 imagetyp [text]

Sets the IMAGETYP keyword to "text". If no text is specified, the current keyword value is printed.

5.11 lastfile

Shows the last file number.

5.12 lastframe

Looks in the OUTDIR directory for the highest numbered *.fits* file, and sets FRAMENO to that value.

5.13 loadstate [type] [file]

Read new configuration and write it to keywords.

5.14 newdir [disk]

Creates a new directory, either on the specified disk, or on the disk with the most space available, if no disk is specified. It then calls "runname" to set the current output path to this directory.

5.15 nextfile [n]

Set the next file number to n. If the value is left off, it will set the next file number to one greater than the largest number in the current output directory.

5.16 nextframe [n]

Sets FRAMENO, the next frame number, to n, or to the next highest number in the current FITS series.

5.17 object [str]

Same as obj.

5.18 observer [text]

Set observer names, or, if no text specified, return the current value.

5.19 pause [text]

Pauses until a carriage return is hit. If [text] is specified on the comand line, it replaces the default text.

5.20 runname [text]

Sets the data directory to text, or if text is not specified returns the current value.

5.21 savestate [name]

Save configuration keywords

5.22 setuser [-d] name

Adds the path HOME/p3/vis/name to the PATH variable, allowing observers to access their own personal scripts. Note that this path is added to the FRONT of PATH, meaning that if users have their own version of "goi," for example, it will be used rather than the facility version of goi. If "-d" is specified before the name, the directory is deleted from the PATH

5.23 showkeywords

Show the available NIRC keywords.

5.24 showtemps

Show the values of all temperature monitors on NIRC2.

6 Engineering Commands

6.1 detbias [n]

Set the detector bias.

6.2 gain [1-4]

Sets the preamp gain to one of four settings.

6.3 offset [q1 [q2 q3 q4]]

Sets the quadrant offsets to q1-q4.

6.4 preoff [val]

Sets the preamp offset to val.

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