Wildfire Commands Commonly Used with Phoenix

Phoenix may be run either using a direct command line interface to the control program "Wildfire" or using a GUI. The following summarizes the Wildfire commands. Full documentation is available in the [Wildfire manual](#).

- Dectector
- Mechanism Control
- Data Management
- Exposure Control
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- System Commands

Detector

setup phoenix - high level script typically run immediately after entering wildfire. Initializes default parameter values, initializes voltages, downloads microcode, sets detector bias, and activates detector. Done automatically when using GUI version of wildfire. Must be run by hand after starting non-GUI version of wildfire.

luc - list all available microcodes.

?ucode - list the current default microcode. May *not* be the microcode (if any) actually in use.

download *<microcode_name>* - kill current microcode and download a new microcode. If no microcode name is specified, the default is shown and the microcode name must be specified interactively. Microcode PHava4a12_08 is used for most Phoenix applications. PH2q4a12_01 reads out the entire usable (512x1024) portion of the Phoenix array. dl is an acceptable synonym of download.

setbias *<value>* - sets the detector bias voltage. A requested value near 0.320 usually yields the desired response value of 0.300.

activate - activates the infrared array for normal operation.

deactivate - deactivates the infrared array. Protects array when not in use.

lnrs *<number>* - sets the number of low noise reads done during an exposure. Using 8 low noise reads reduces read noise to 35 electrons RMS, compared with 60 electrons RMS for a single read. Read noise increases again for more than 8 low noise reads. Each read takes just over a second, restricting the minimum exposure time to *<number>* seconds.

Mechanism Control

status s or **t** or **v** - update status display with current: s=**s**tatus of instrument mechanisms, t=**t**emperatures throughout the instrument, or v=**v**oltages of various components.

init filt - move filter wheel to reference position.

init lyot - move lyot wheel to reference position.

init slit - move slit wheel to reference position.

init viewer - move viewer wheel to reference position.

init grat - move grating to reference position.

help *<mechanism name>***- list contents of the positions on that mechanism and give the syntax of the command.**

cover *<position>* **- position is either open or closed. opens or closes the instrument window cover**

filt *<filtpos>* **- rotates a particular filter into the light path.** *<filtpos>* **is usually specified as ``***<integer>***'' but the name of the filter, as listed by help can also be used.**

lyot*<lyotpos>* **- rotate a particular lyot mask into the light path.** *<lyotpos>* **is typically specified as ``lyot***<num>***'', where the lyot mask corresponding to** *<num>* **is described by help lyot.** *<lyotpos>* **may also be ``dark''. As for filt, users are warned not to use an integer for** *<lyotpos>*.

slit *<slitpos>* **- rotate a particular slit into the light path.** *<slitpos>* **is typically specified as ``slit***<num>***'', where the slit corresponding to** *<num>* **is described by help slit.** *<slitpos>* **may also be ``dark'', ``open'', or ``lyot_viewer_lens''. As for filt, users are warned not to use an integer for** *<slitpos>*.

viewer<*viewerpos*> - rotate the viewer wheel to the specified position. <*viewerpos*> is ``open'' when using the spectrograph, ``slitviewer'' when imaging a slit or imaging the field through the open slit, ``dark'' when blocking light to the grating, or ``lyotviewer'' when aligning the instrument during installation on the telescope.

grat<*encoder*> - set the grating to the requested encoder position. See elsewhere in the manual for formulae relating wavelength and encoder values.

kick<*mechanism*><*position*> - gives the mechanism a move with added force if it is stuck.

Data Management

headerdir <*dirname*> - specify the full pathname of the directory in which image header files are to be stored.

pixeldir <*dirname*> - specify the full pathname of the directory in which image pixel files are to be stored.

filename <*template*> - a template for specifying the filename (without path) for image files. The current picture number will inserted where %d or %03d appear in the template. If neither %d or %03d appear in the template, the picture number is appended.

longheaders on or off - enables or disables inclusion of system voltages and temperatures in the image headers. Default is off, but should be turned on to automatically archive instrument behavior.

nextpic - sets the picture number that will be used to construct the filename for the next image. Picture number increments automatically after each exposure. See description of filename.

zs <*minvalue*> <*maxvalue*> - sets the display limits of subsequent pictures in the ximtool to <*minvalue*> <*maxvalue*>. The default is zs 0 0 which autoscales the image.

Exposure Control

setparams <*parname*> <*parvalue*> - general utility for setting exposure parameters. Valid parameter names are: airmass, coadds, comment, dec, delaysec, display, epoch, filename, headerdir, lnrs, mode, offset, picnum, pics,

pixeldir, ra, type, and **ucode. Valid parameter values differ for each parameter. Several of the parameters may be modified specifically by using other commands, e.g. picnum.**

pics *<number>* **- sets the number of separate images to generate for each go command.**

coadds *<number>* **- sets the number of images to be coadded before writing the summed image to disk. Default is 1.**

settime *<seconds>* **- sets the exposure time for the next image.**

title *<title>* **- changes the title for the next exposure.**

comment *<comment>* **- changes the comment for the next exposure.**

eask - used to specify which exposure parameters will be interactively set by the ask command and which will be listed by the plist command. At the prompt for each parameter, enter ``'' ``l'', ``a'', or ``la'' for parameters that are to be ignored, listed, asked, or listed/asked.

ask - prompts for exposure parameters specified as ``askable'' in the eask command. Parameters may also be set individually with specific commands or globally with ped or puse. Parameters are not sent to the instrument until the next observation is initiated.

plist - prints values for exposure parameters specified as ``listable'' in eask. ppar is a synonym.

go - takes one or more images (See pics) with the current setup. Picture number increments automatically after each image is saved.

observe - equivalent to an ask followed by a go with an option to abort the operation after the ask.

ped - equivalent to ask, except that all available parameters are queried, regardless of whether they were specified as ``askable'' in eask.

puse *<parfile>* **- restores exposure parameter values from a disk file called** *<parfile>***.par in /wfpar/PHOENIX/. Default parameter values are in a disk file called ``phoenix.par''. Does not change instrument mechanisms.**

psave *<parfile>* - saves exposure parameter values to a disk file called *<parfile>***.par** in **/wfpar/PHOENIX/. Does not save locations of instrument mechanisms.**

Telescope Control

east *<offset>* **- offsets telescope east by the specified number of arcsec.**

west *<offset>* **- offsets telescope west by the specified number of arcsec.**

north *<offset>* **- offsets telescope north by the specified number of arcsec.**

south *<offset>* **- offsets telescope south by the specified number of arcsec.**

toffset *<eastoffset> <northoffset>* **-** offsets telescope by *<eastoffset>*,*<northoffset>* **arcsec.**

resetoffset - resets to 0, 0 the telescope offset value written in the image header.

tcp_on, tcp _off - turns on or off the requesting and saving of the telescope header information. The values saved in the image header are date, ST, UT, HA, RA, dec, epoch, airmass, and ZD. tcp_on is the default when starting wildfire if the telescope control computer is running. tcp_on is required to move the telescope with the above telescope control words.

Observing Scripts

abba *<ampl> <n>* **Execute n a-b-b-a sequences along the slit with a separation ampl in arcsec between ab positions (e.g. abba 5 2 will do 2 abba sequences offsetting +2.5 and -2.5 arcsec from the starting position which is typically the center of the slit).**

slitscan *<ampl> <m> <n>* **Take n sets of observations at m positions along the slit separated by ampl arcsec. For example slitscan 4 3 2 will execute 2 sequences of 3 exposures separated by 4 arcsec along the slit (-4,0,+4) and then return to the starting position.**

zcenter *<x> <y> <angle> <scale>* **Recommended values 128 504 180 0.085. Set the x,y pixel values, position angle, and pixel scale for the slit center. This script is used for the source of these values by recenter, abba and slitscan.**

System Commands

help - enter interactive help facility.

exit - exit wildfire and return to the Unix prompt.

**!*<unix_command>* - executes the specified Unix command in a subshell.

source *<tclfile>* - execute a tcl script within wildfire. *<tclfile>* must consist of a full path specification, filename, and extension. The extension is typically ``.tcl''.

logtemps - enters mode in which various instrument temperatures (expressed as voltages) are written to the file /home/irlab/hklog. This file must be owned by the user currently running wildfire. Type *<control-c>* to exit from the logtemps script and resume normal wildfire operation.

abort - can be typed during an integration to abort. Following this command the user should exit from wildfire and kill the window. Then g phoenix can be used to restart wildfire. abort follow immediately by a go will probably hang wildfire and require a reboot!

hung, hung2 - Should the wildfire program hang, these commands can be executed in the console window in combination with *<control-c>* in the wildfire window. This should unhang the code so a reboot is not required.

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