
NIRSPEC

UCLA Astrophysics Program

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NIRSPEC Software Programming Note 10.02 Program Launching

1. General Description

This document describes the current situation of startup scripts that assist with starting the NIRSPEC software. The important thing to remember when starting up the programs is that our control software is split into a server program that actually controls the instrument but has no real user interface, and a series of client programs that interact with the user and the server.

For most operations and testing, you just need to run the server and the main client with the proper options. The later descriptions of how to run the quicklook, echelle format simulator and image rotator are for those cases where the main client is already running and you want to start another client independently.

2. Running the Server

So the first step in running the NIRSPEC software is to run the server. The basic command is `run_nirspec_server` that can be run at any unix prompt on the NIRSPEC computer. It takes two optional arguments:

- s which means to run a simulated server (make sure to later run a simulated client)
- nodcs which specifies not to connect to a telescope simulator.

For most of the real instrument tests you want to use a real server, but no dcs simulator so type:

```
run_nirspec_server -nodcs
```

This will run the server without the dcs. The server is automatically forked into the background so you can continue typing in the same window. There is a shorthand for this particular option:

```
runserver
```

which does exactly the same thing. If there is already a server running, then the routine will prompt you if you want to kill the first one. Only one server can run at one time (NOTE: although there is only one server, it does consist of three related processes so don't be alarmed to see three procedures killed).

To stop a real server use:

```
stop_nirspec
```

This will also kill the dataviews client if it is running, and will stop the quicklook guis.

A simulated server can be stopped with:

```
stop_nirspeccsim
```

3. Running the main client

The main client is the dataviews client, and it should be run for all normal operations. Although a separate routine from the server, it is responsible for such crucial tasks as updating the frame number no matter which client begins an exposure.

There is an all purpose routine for starting all or part of the clients that always starts the dataviews client. The command is `run_nirspec_client` and it can be run from any normal unix prompt. It takes parameters that specify which other clients to run. Its parameters are:

```
-s      => connect to a simulated server.  
-nodcs => do not connect to the telescope control system.  
-noql  => do not create a quicklook client (see below).  
-noefs => do not create an echelle format simulator client.  
-noimrot => do not create a rotator client.
```

For most testing, you want to specify `-nodcs -noefs` and `-noimrot` so the command looks like:

```
run_nirspec_client -nodcs -noefs -noimrot
```

Again there is a short hand for this particular configuration:

```
runclient
```

This option will create a quicklook gui connected to the server. If you specify `-s` for simulated server, then the quicklook will try to connect to a simulated server as well.

A final variation is `run_client` which is a short hand for `run_nirspec_client -nodcs -noefs -noql -noimrot`. So this just runs the dataviews client without any other guis.

To stop a client (real or simulated) use:

```
stop_client
```

4. Running The Quicklook Independently

If you want a quicklook package, there are three different starting routines depending on the type of server you want it to pay attention to. Note that for most cases, you get a quicklook when you run the client so you won't need to do this.

If you are running a real nirspec server use:

```
run_rql &
```

This works at any unix prompt and creates a quicklook connected to the real server.

For a simulated server use:

```
run_sql &
```

If you want to run the quicklook without connecting to any server (for example if you just want to look at old data) use:

```
run_ql &
```

In all cases you will get two quicklook windows. If you don't want both select exit under one of their file menus.

There is a modification to the quicklook that is specially designed to read in reduced images with wavelength information in the header. It is automatically started with the DRP as data is reduced, but you can start a stand alone version to look at previously reduced data by typing:

```
run_dql &
```

5. Running The Echelle Format Simulator Independently

Just like the quicklook, the EFS can work with either the real or simulated server. Since the EFS doesn't form a real connection, however, the only difference is in the scripts that are written out. So if you want the output scripts to work with the real server use:

```
run_efs &
```

for making scripts for the simulated server use:

```
run_efs -s &
```

6. Running The Montemp Program

To run the temperature monitoring program, the Nirspec server must first be running (see above). It does not work with the simulated server. To run the montemp program just type:

```
run_temp &
```

at any UNIX prompt. Once the program has started. Hit the start button and select a log file name. The program will do the rest.

7. Running The Dcs Simulator

The telescope simulator is for the Keck II telescope. It can be run from any UNIX prompt with:

```
run_dcs &
```

To stop the simulator use:

```
stop_dcs &
```

8. Running The Guider Software

The guider software relies on a special program manager called traffic that must be run first. To run it just type:

```
traffic &
```

at any UNIX prompt. The dcs simulator must be running for full guider functioning so follow the directions above to start the DCS if it isn't already running. Then type:

```
aut_start
```

at any UNIX prompt to start the guider software.

9. Running the Data Reduction Pipeline

The Data Reduction Pipeline is also an IDL application and is run with:

```
run_drp
```

You stop it from its gui.

10. Eavesdrop Program

The eavesdrop program is another IDL application and it is run with:

```
run_eaves &
```

To stop it use the quit button or the quit in the pulldown menu. If the program crashes, there will be an icon for a tcsh shell at the bottom of the screen. Open this screen and type exit at the IDL prompt.

11. Image rotator software

There are two pieces to the image rotator software, a gui called imrot and a server that connects to the dcs and the nirspec server. To run the gui type:

```
run_imrot &
```

To stop the gui hit the quit bar on it.

For the server, you can either type `startrot` at a unix prompt, or select the image rotator button on the dataviews client, and select rotator on. This will start the rotator. To stop the image rotator server, you can select stop with the dataviews client, or type `stoprot`.

12. Summary

Routine Name	Start command (possible flags)	Stop command
Server	Run_nirspec_server -s (simulated) -nodcs runserver (shorthand for run_nirspec_server -nodcs)	Stop_nirspec (real server) stop_nirspecsim (simulated)
Client (default is to run connected to the dcs, and run a quicklook, efs and image rotator)	run_nirspec_client -s (simulated) -nodcs (No dcs connection) -noefs (No efs) -noql (No quicklook) -noimrot (No image rotator) runclient (shorthand for run_nirspec_client -nodcs run_client (shorthand for run_nirspec_client -nodcs -noefs -noql -noimrot	Stop_client
Quicklook	run_ql (No connections) run_rql (Connected to a real server) run_sql (Connected to a simulated server) run_dql (Gives wavelengths for reduced data)	Select quit_all menu under the file menu. For crashes, find the tcsh icon that's running IDL and type exit at the IDL prompt.
EFS	run_efs -s (writes simulated scripts)	Select quit menu under the file menu For crashes, find the tcsh icon that's running IL and type exit at the IDL prompt.
MONTEMP	run_temp	Select quit menu under the file menu

		For crashes, find the tcsh icon that's running IL and type exit at the IDL prompt.
DCS Simulator	run_dcs	Stop_dcs
Guider	aut_start (requires that traffic is running)	Quit button.
DRP	later...	
Eaves Drop	run_eaves	Select quit menu under the file menu For crashes, find the tcsh icon that's running IL and type exit at the IDL prompt.
Image Rotator	run_imrot – run's gui startrot – run's server server can be started from dataviews.	Quit button on imrot. Stoprot – stop's server or stop button on dataviews.

13. Standard procedure at the Telescope

This procedure assumes the Keck dcs2 server is already running.

From anywhere:

```
run_nirspec_server
```

In each screen where you want them to run:

```
run_client
run_rql &
run_efs &
run_imrot &
```

Initialize all mechanisms from the dataviews engineering menu. Once initialized, you can run the image rotator software by selecting it on the dataviews gui.

To stop, select stop image rotator from dataviews gui. Stop the efs and image rotator gui's with their stop buttons. Then type:

```
stop_nirspec
```

This will stop the quicklooks, dataviews and server.