



NHSC Web-Tutorials

PACS-104

*How to access and use spec data
reduction scripts*

Purpose of this tutorial

The hiipe distribution for PACS includes scripts for interactive data reduction. The collection of these scripts is known as the *ipipe*, for Interactive Pipeline. The standard scripts these are used for automatic pipeline processing, but are written so they can easily be run interactively by stepping through line-by-line, or in blocks in of lines. Also included in the ipipe are special scripts, such as ChopNodInteractive.py, that show you the guts of your observation in great detail, using plots and the MaskViewer. This tutorial will show you how to find and use these scripts.



Pre-requisites:

1. You should have completed the following tutorials:
 - **PACS-101:** *How to use these tutorials.*
 - **PACS-102:** *Creating (and Saving to a Pool) an Observation Context for your observation in your HIPE session*

This tutorial assumes you will have already started a HIPE session and will already have defined created an observational context called “obs” which contains all of the data and ancillary files you need to begin processing your data. You will also probably have saved this context to a pool in case of some failure during the following steps. The ipipe scripts all the observation context you have seen from PACS-102.



Step 1

Startup a new hipec session from your shell.

```
# <your hipec directory>/bin/hipec
```

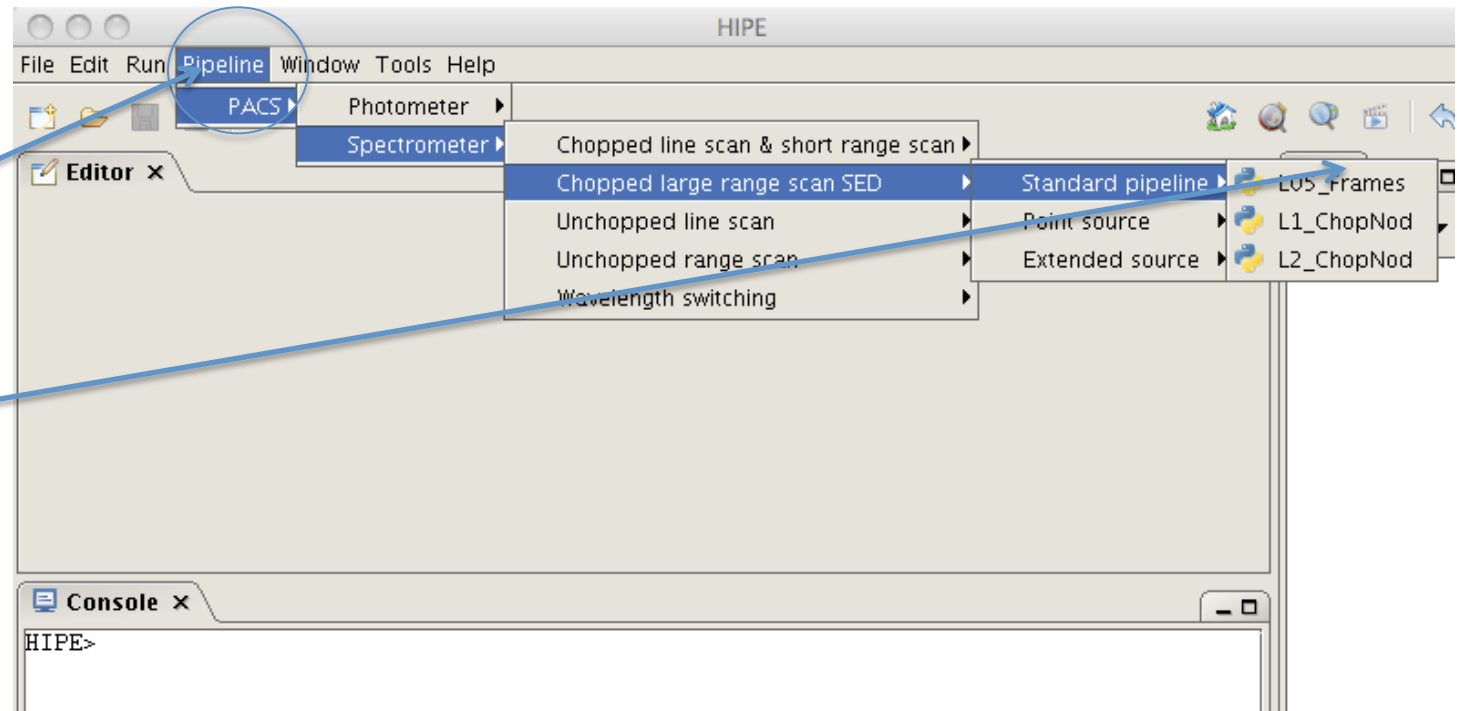


Step 2

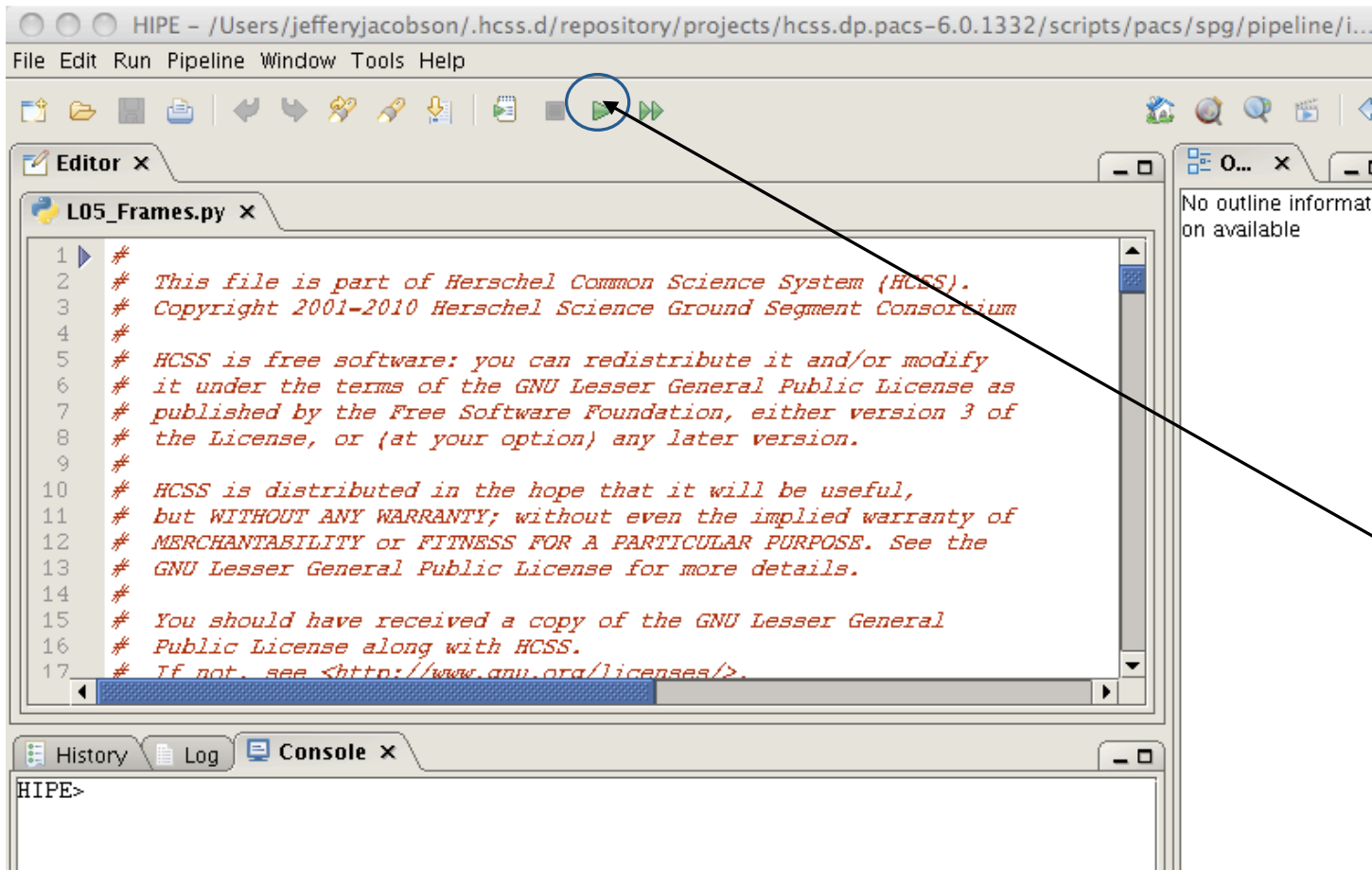
Hipe comes with interactive pipeline scripts. The next slide shows how to find these scripts.

In this example you find the the pre-loaded ipipe scripts you can use to reduce your data.

From the Pipeline Menu, Select
PACS>Spectrometer-
>Chopped large...-
>StandardPipeline
L05_Frames
to load the Level 0 to
Level 0.5 ipipe script.

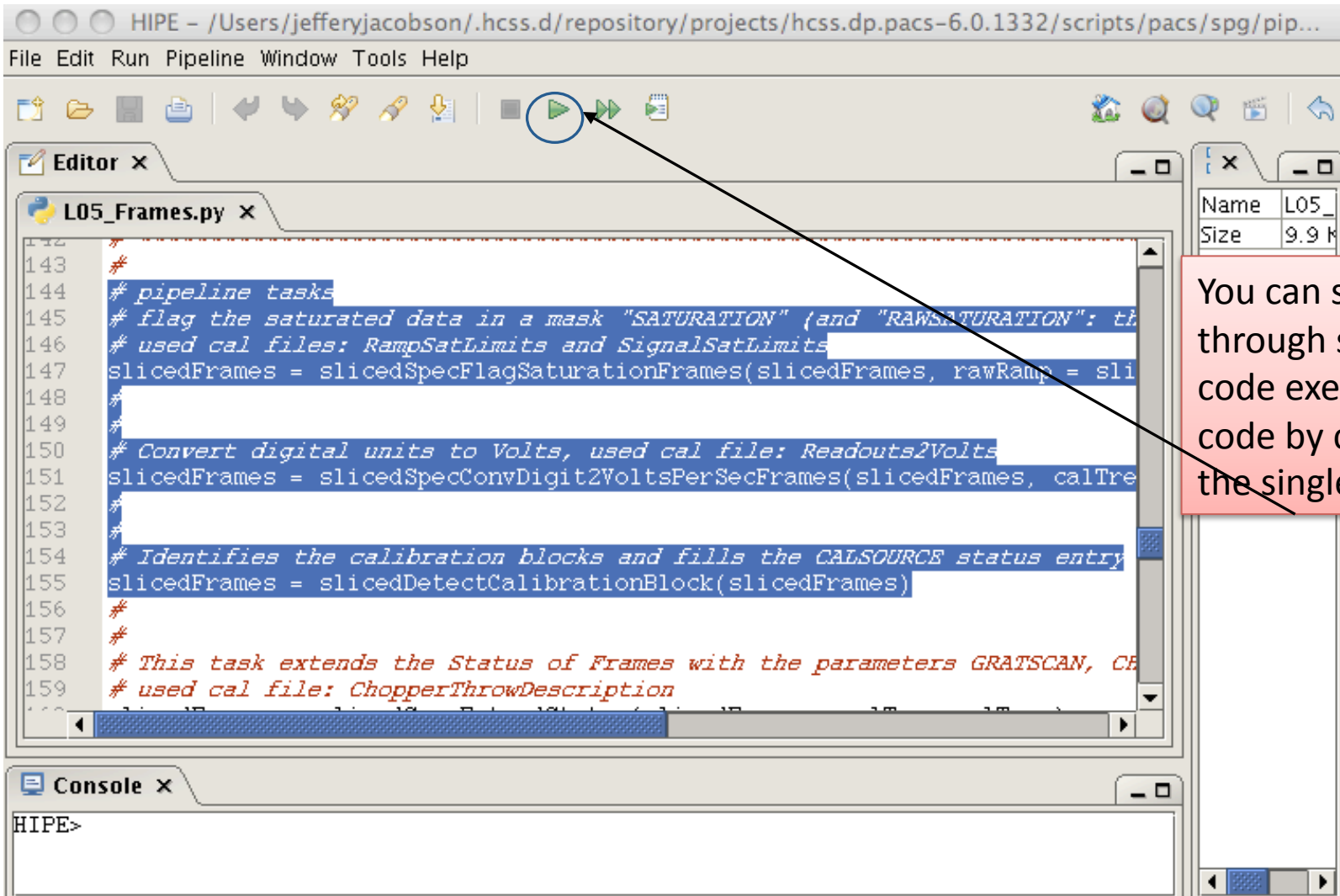


This should look like something like this when read in:

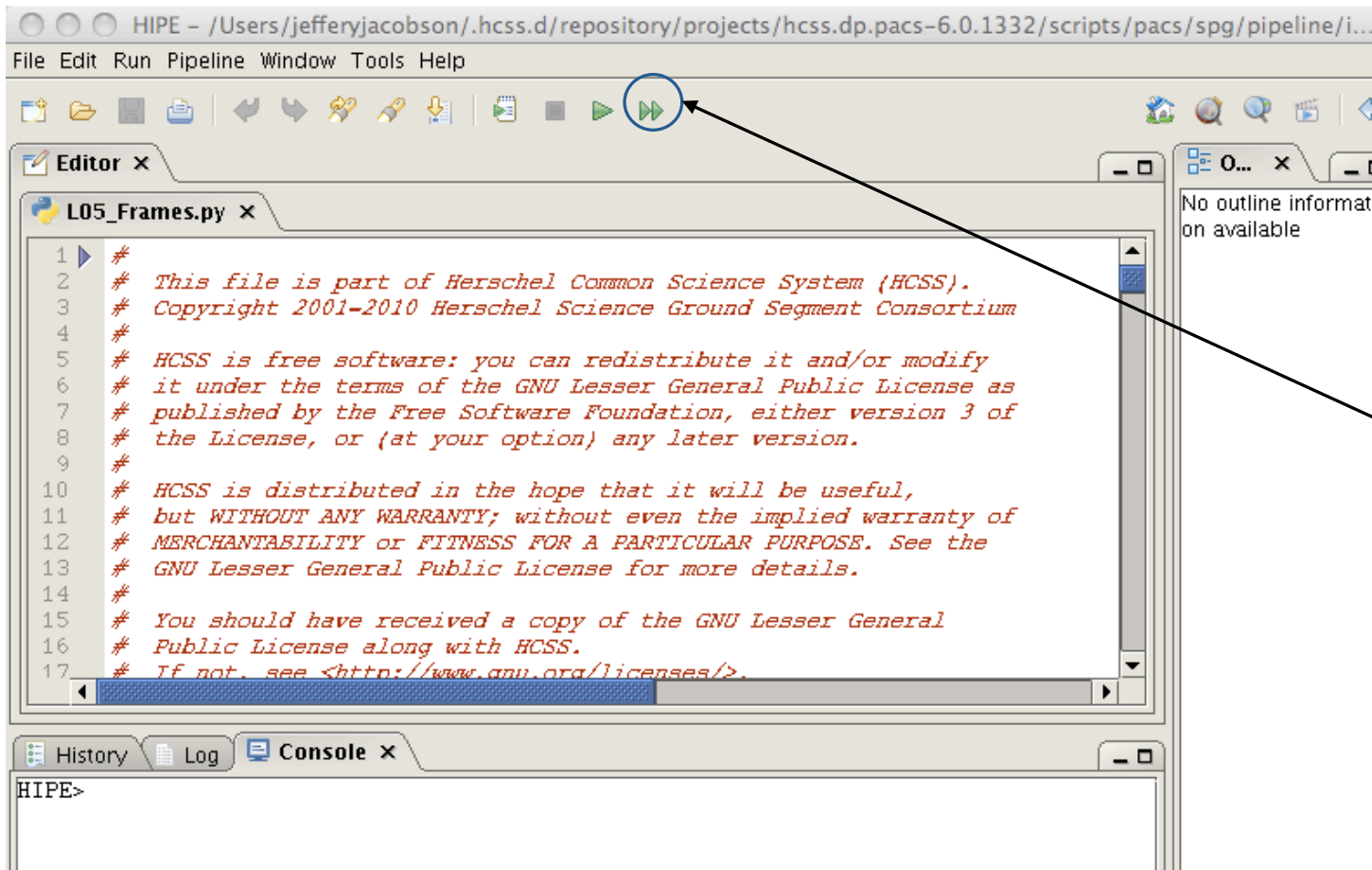


You can step to the first line of executable code by clicking on the single arrow.

You can also run more than one line of selected code.



You can step through selected code executable code by clicking on the single arrow.

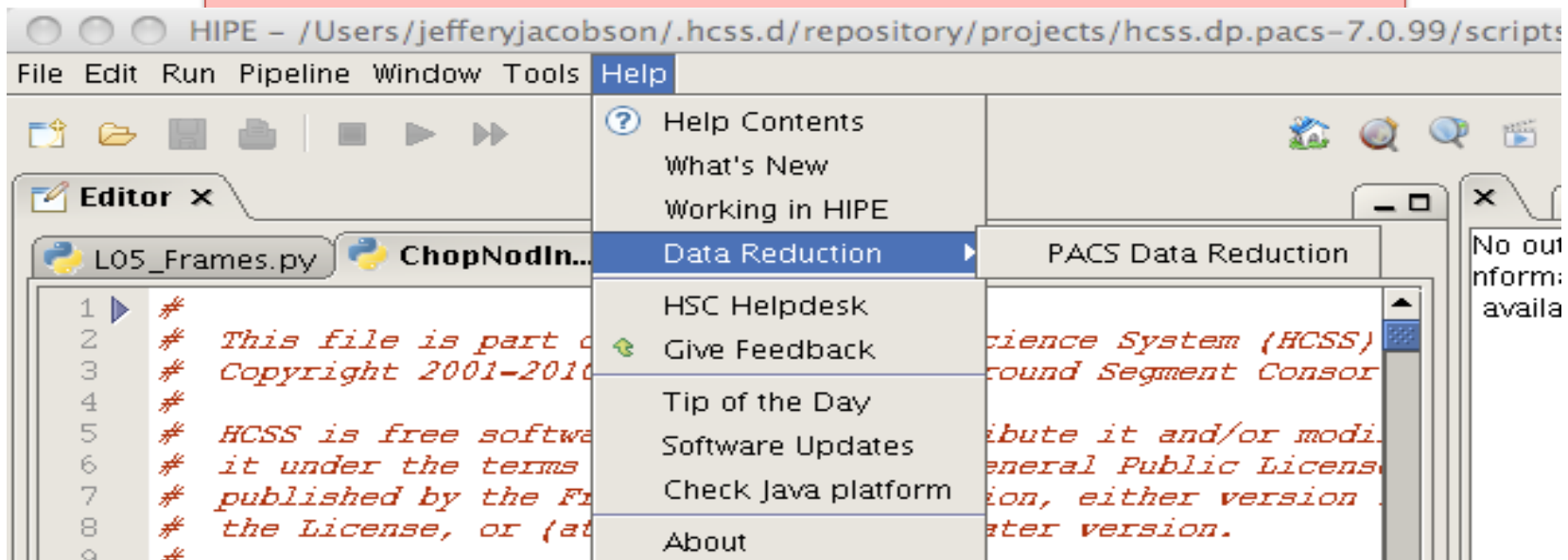


You can run the entire file by clicking on the double arrow.

What do these scripts do?

There are detailed comments in each script, describing inputs and outputs. script, but for a full explanation see the PACS Data Reduction Guide (PDRG)

-> Help Menu -> Data Reduction -> PACS Data Reduction



TOC Search Favorites

- Introductory
 - Welcome
 - Read Me First
 - Quick Start Guide
 - HIPE Owner's Guide
 - Frequently Asked Questions
 - What's New
- Analysis Tools
 - Herschel Data Analysis Guide
 - Scripting and Data Mining
- PACS
 - PACS Data Reduction Guide
 - A First Quick Look at your Data
 - Introduction to PACS Data
 - A PACS observation
 - The data structure (simple version)
 - The spectrometer pipeline steps
 - The photometer pipeline steps
 - The Levels
 - In the Beginning is the Pipeline. Spectroscopy
 - Further topics. Spectroscopy



Chapter 2. Introduction to PACS Data

Table of Contents

[2.1. A PACS observation](#)

[2.2. The data structure \(simple version\)](#)

[2.3. The spectrometer pipeline steps](#)

[2.4. The photometer pipeline steps](#)

[2.5. The Levels](#)

2.1. A PACS observation

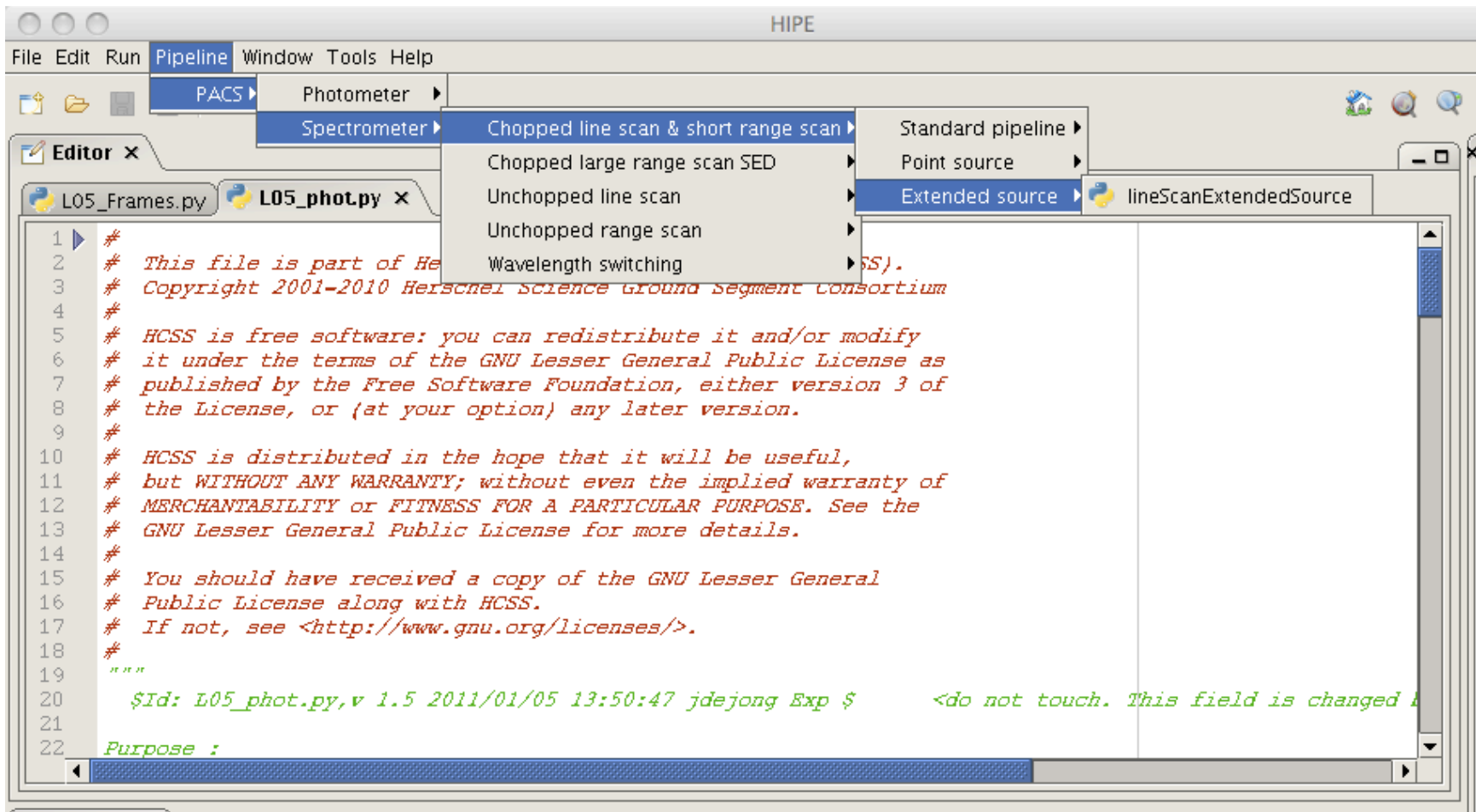
If you are not familiar with how PACS works we recommend you read the PACS Data Reduction Guide (see [here](#)). PACS observations involve the synchronous purpose of exploring the spatial and spectral space your AOR spectroscopy observation you can have: chopper movements between two mirrors rastering to make a bigger map or looking at off-positions: arating r



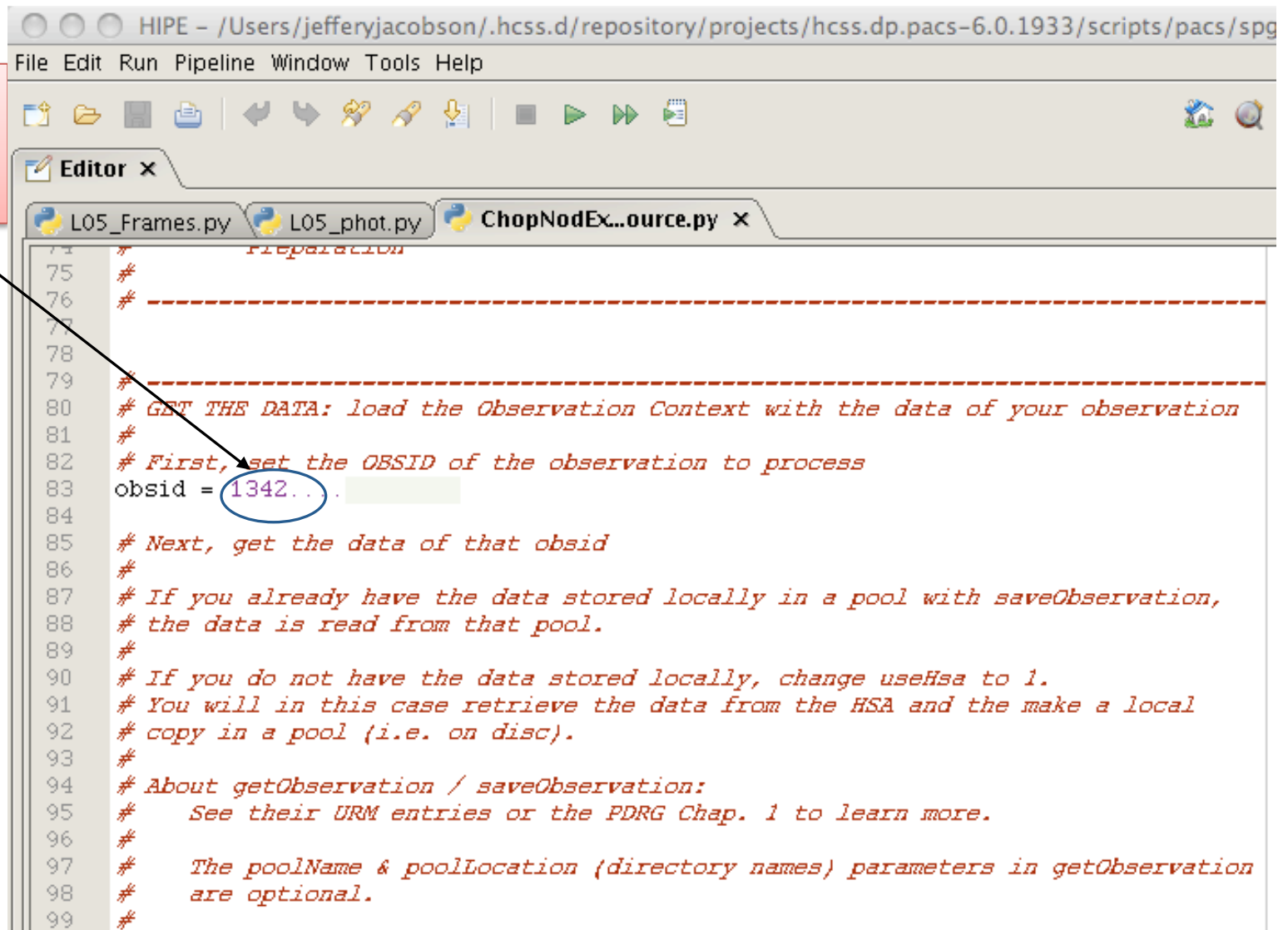
Step 3

Run one of the extended scripts on your own obsid.
This will required changing the ipipe script. We
recommend that you save the file to a new file name.
Otherwise, you will replace the file in you HIPE
distribution. Save it using File->**Save As**

For example, find the Chopped lineScanExtendedSource ipipe script. Click on lineScanExtendedSource to load it.



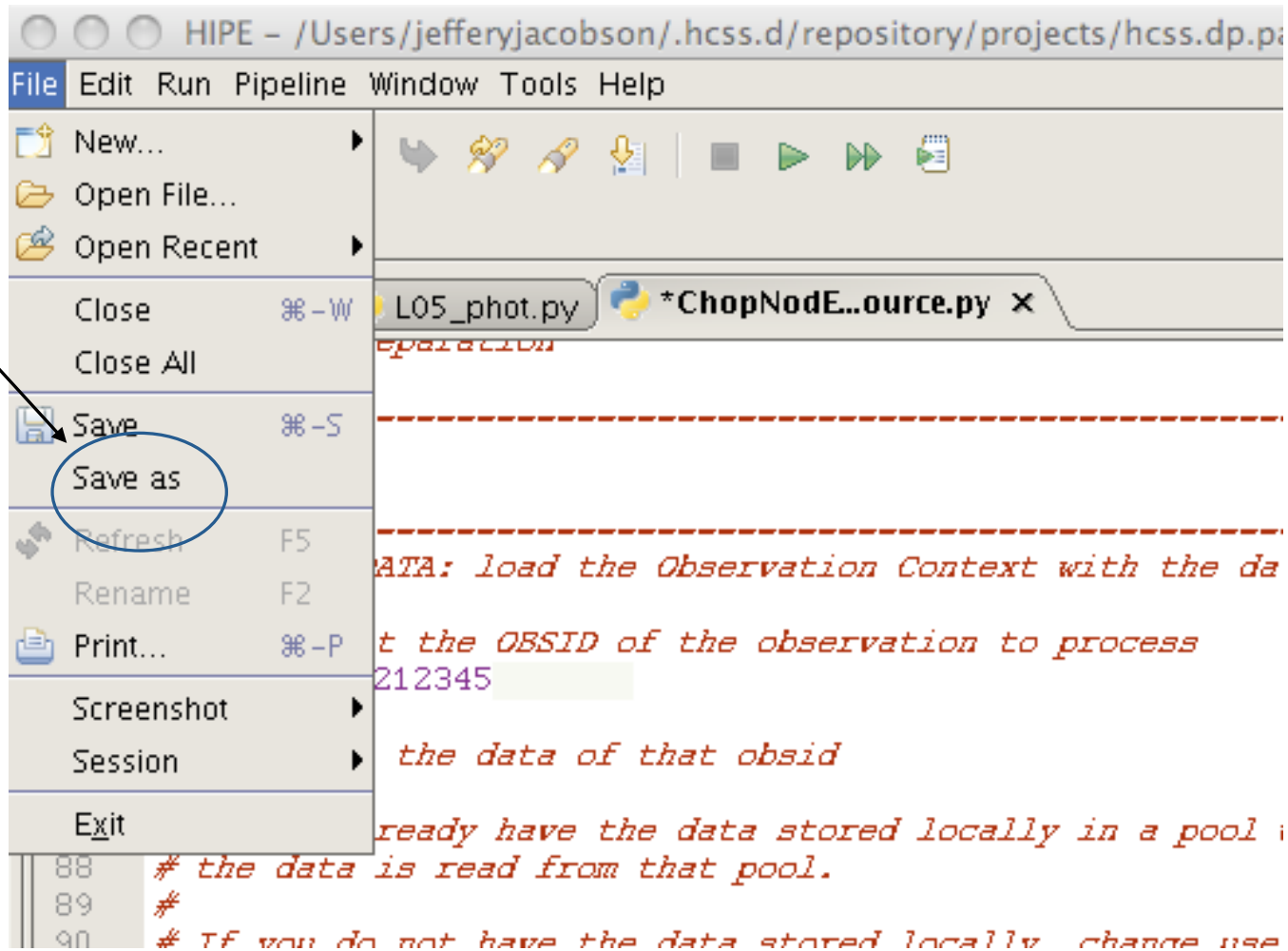
Edit the file,
changing the
obsid.



```
HIPE - /Users/jefferyjacobson/.hcsc.d/repository/projects/hcss.dp.pacs-6.0.1933/scripts/pacs/spg
File Edit Run Pipeline Window Tools Help

Editor x
L05_Frames.py L05_phot.py ChopNodEx...ource.py x
74 # Preparation
75 #
76 # -----
77 #
78 # -----
79 #
80 # GET THE DATA: load the Observation Context with the data of your observation
81 #
82 # First, set the OBSID of the observation to process
83 obsid = 1342...
84
85 # Next, get the data of that obsid
86 #
87 # If you already have the data stored locally in a pool with saveObservation,
88 # the data is read from that pool.
89 #
90 # If you do not have the data stored locally, change useHsa to 1.
91 # You will in this case retrieve the data from the HSA and the make a local
92 # copy in a pool (i.e. on disc).
93 #
94 # About getObservation / saveObservation:
95 # See their URM entries or the PDRG Chap. 1 to learn more.
96 #
97 # The poolName & poolLocation (directory names) parameters in getObservation
98 # are optional.
99 #
```

Open File->
Click on
"Save As".
This will
bring up a
dialog box.
See the next
slide.



Use this dialog to changed the directory and filename.

