**Processing the Data With UVOTPY**

1. Get data downloaded
2. Open your terminal (and navigate into folder where you put the data)
3. Initiate ipython with “ipython --pylab”
4. Get coordinates for SN by typing “tns \_\_SNName\_\_” into google
5. Copy the RA/Dec to your clipboard
6. In ipython type: and then hit enter
   1. from uvotpy import uvotgetspec
   2. ra,dec = \_\_\_ , \_\_\_ (paste stuff from clipboard and add a comma)
   3. obsid = “\_first11digits\_”
   4. ext = 1
   5. datadir = “\_targetid\_/uvot/image”
   6. uvotgetspec.getSpec(ra,dec,obsid,ext,indir=datadir,fit\_second=True,chatter=1)
7. You will get 3 figures of spectra spit out
8. Then in ipython type: and then hit enter
   1. phafiles = ['sw\_targetid\_ugu\_1ord\_1\_g.pha', 'sw\_targetid\_ugu\_1ord\_2\_g.pha',…\_all the pha files for that target id\_]
   2. uvotspec.sum\_PHAspectra(phafiles,outfile='sum\_\_targetid\_.fits',wave\_shifts=[0,0],objectname='\_SNName\_',chatter=5,ignore\_flags=True)
9. Exit out of ipython by typing “exit”
10. Convert one extensions’ PHA file to something we can plot by typing this into the terminal and then hitting enter
    1. ftlist sw\_targetid\_ugu\_1ord\_1\_g.pha+2 columns=lambda,flux,fluxerr rownum=no colheader=no outfile=\_targetid\_e1spectrum.txt clobber=yes option=T
11. Convert summed fits spectra to something we can plot by typing this into the terminal and then hitting enter
    1. ftlist sum\_\_targetid\_.fits columns=wave,flux,fluxerr rownum=no colheader=no outfile=\_targetid\_sumspectrum.txt clobber=yes option=T
12. Then you can plot in Jupyter Notebook

**Definitions**

Sequence | Vers | Object | Observed | Processed | Comment

Sequence – first 8 digits are the ‘target id’ (a specific coordinate is associated with it) and adding the last 3 digits is the ‘obs id’ (these are sequentially added)

Vers – first time it appears on Quicklook site (like new data)

Object – comes from observing plan sent to archive

Log.uir | Exp ID | ICU.label | Mode | Submode | Filter | Event Window

Exp ID – based on time started

ICU.label – what was used

ImageWindow | Binning | Duration | Count Rate | Image Dataloss | Good Attitude Fraction | Completion

Aux = auxillary files from spacecraft

Bat = burst alert telescope

Log = various observing logs (gives you the uir{uvot instrument report})

Uvot = data from uvot

Xrt = xray telescope

.ex = exposure map coordinates

.rw = raw exposure CCD coordinates

.sk = sky image (what we use), instrument pointing information, uses stars to improve astrometric calibration

AT = Astrophysical Transient

ANON = template observation