

Mickael Rigault | ZTF meeting @ Stockholm | August 2018

Pysedm

Status report

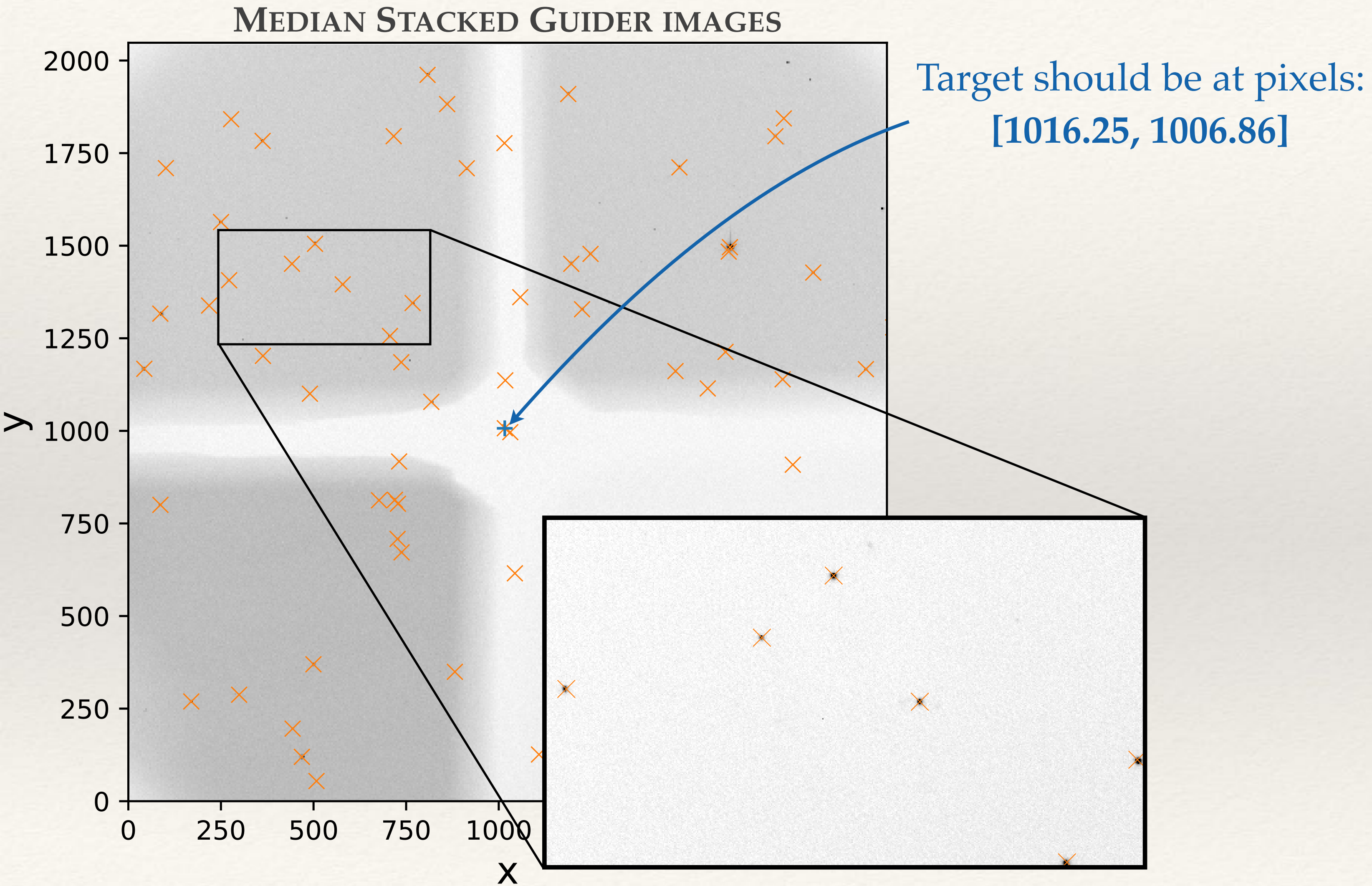
What's new ?

Fully compatible with the new lens-array

**Use of guider image (from the rainbow camera)
to guess the target position inside the IFU**

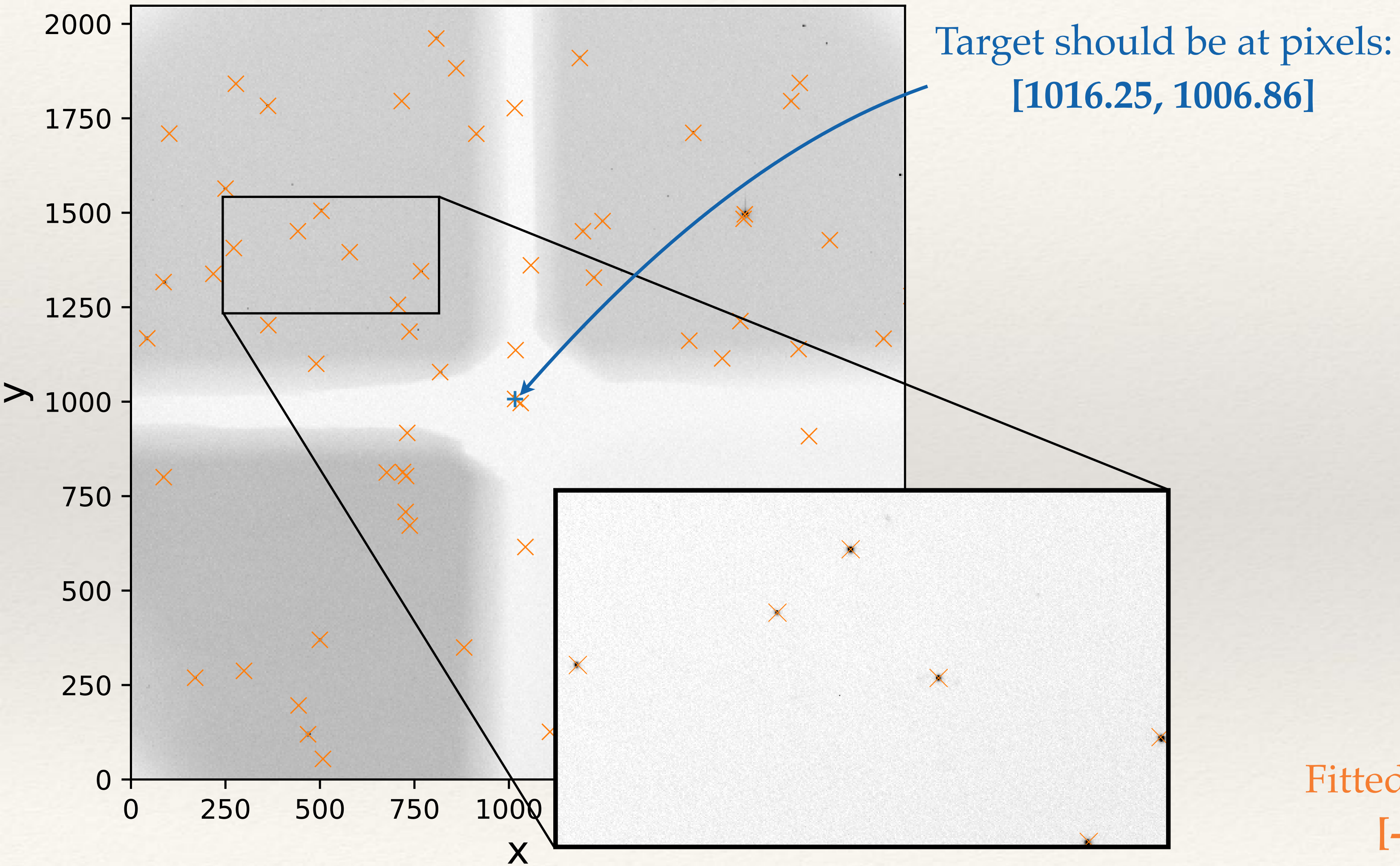
pipeline fully automated
ccd → spectra → typing & Marshall

Guessing IFU position | *use of guider images*

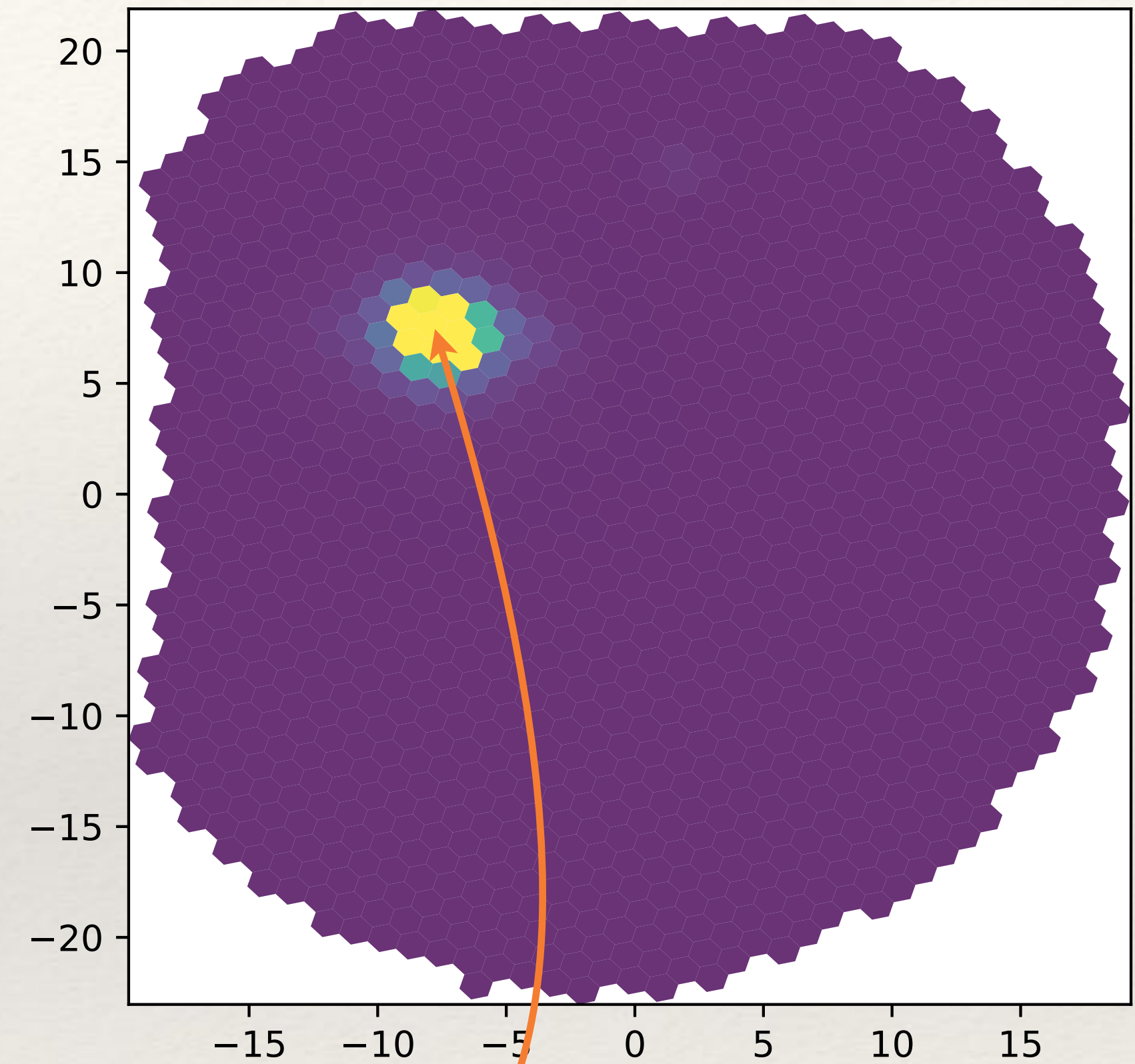


Guessing IFU position | *use of guider images*

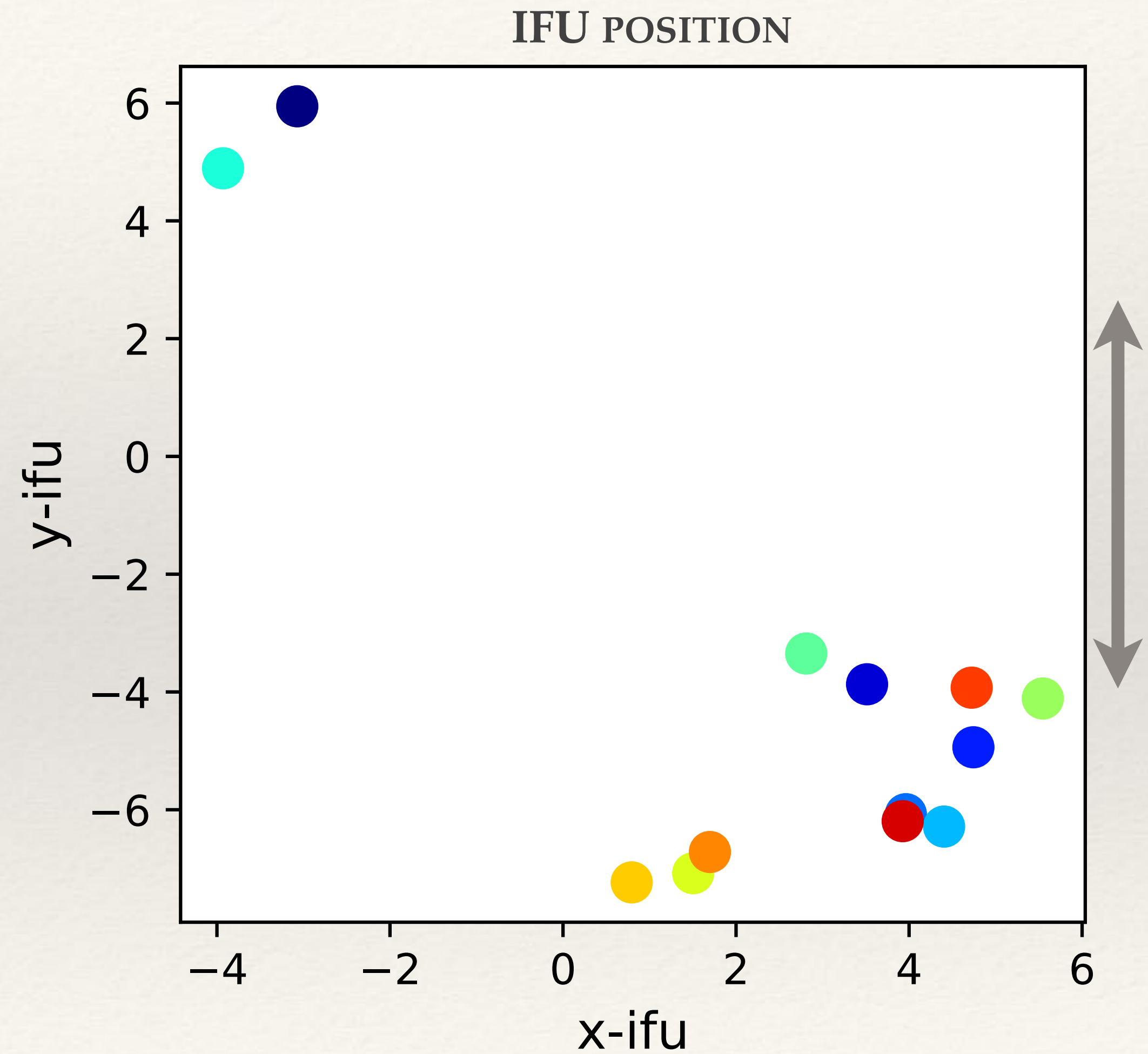
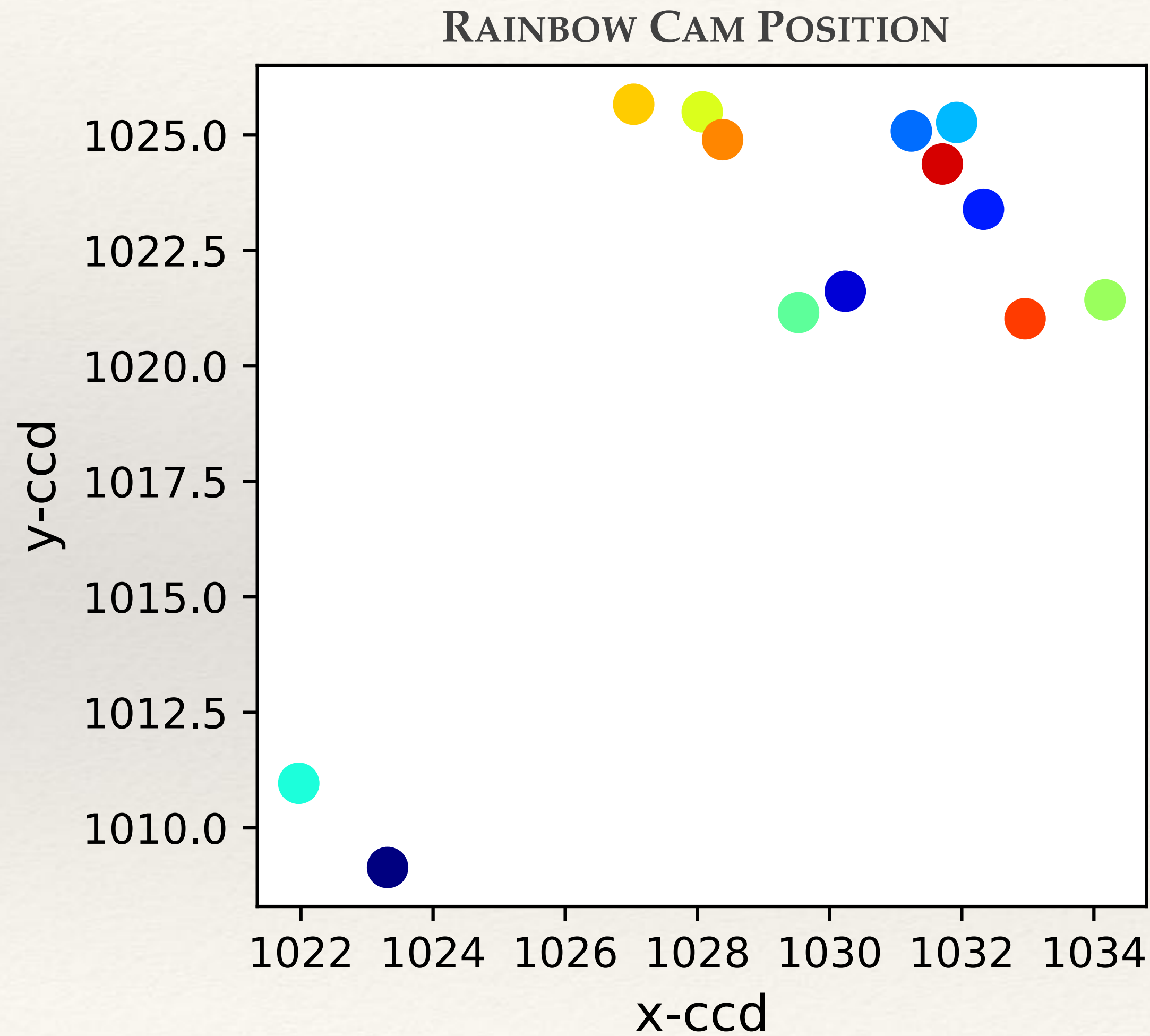
MEDIAN STACKED GUIDER IMAGES



λ -STACKED 3D CUBE

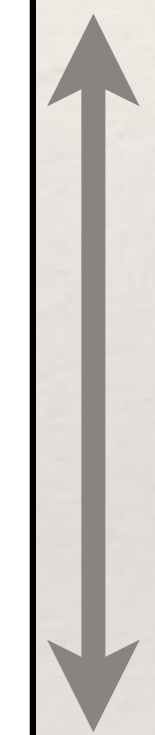
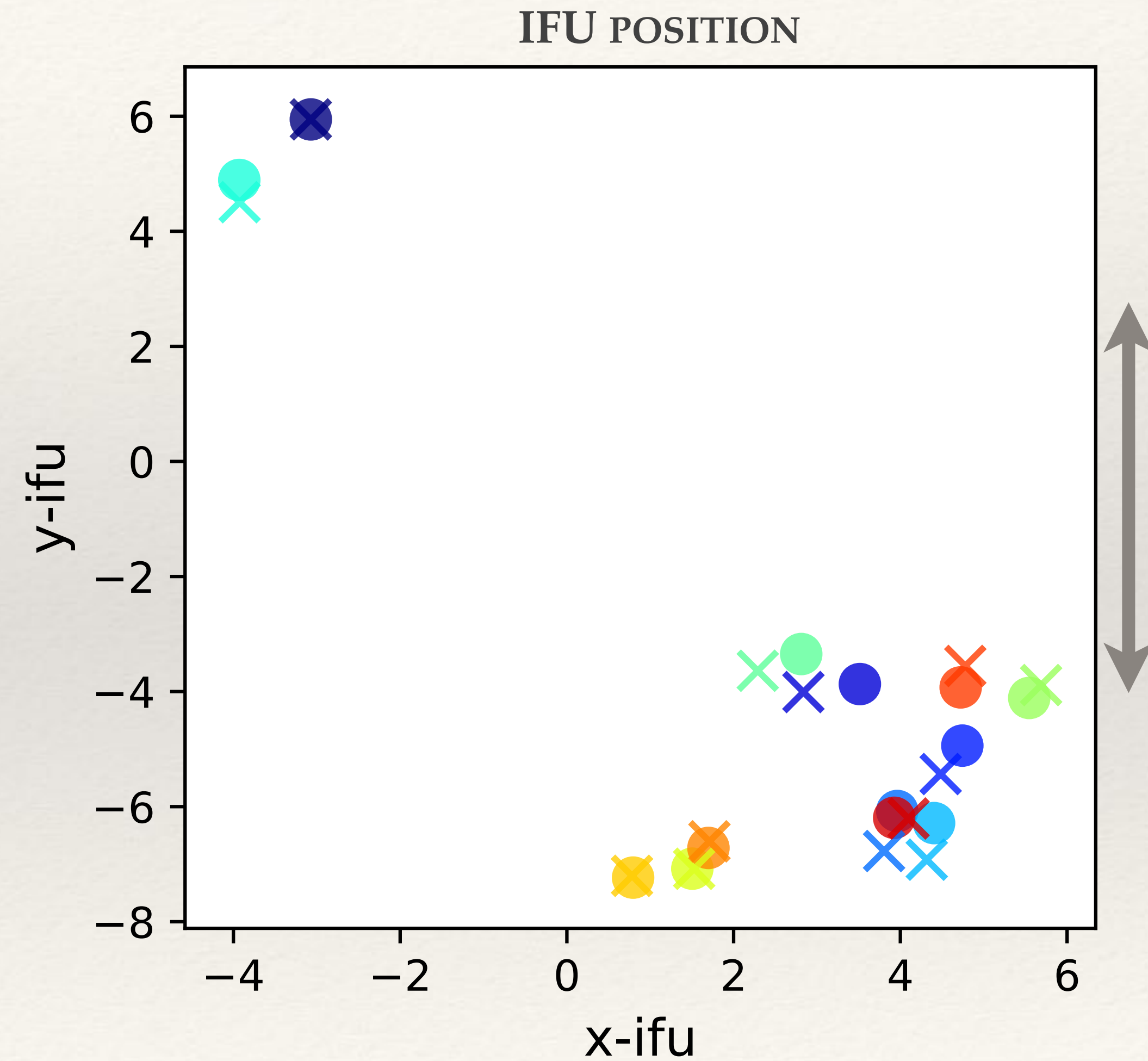
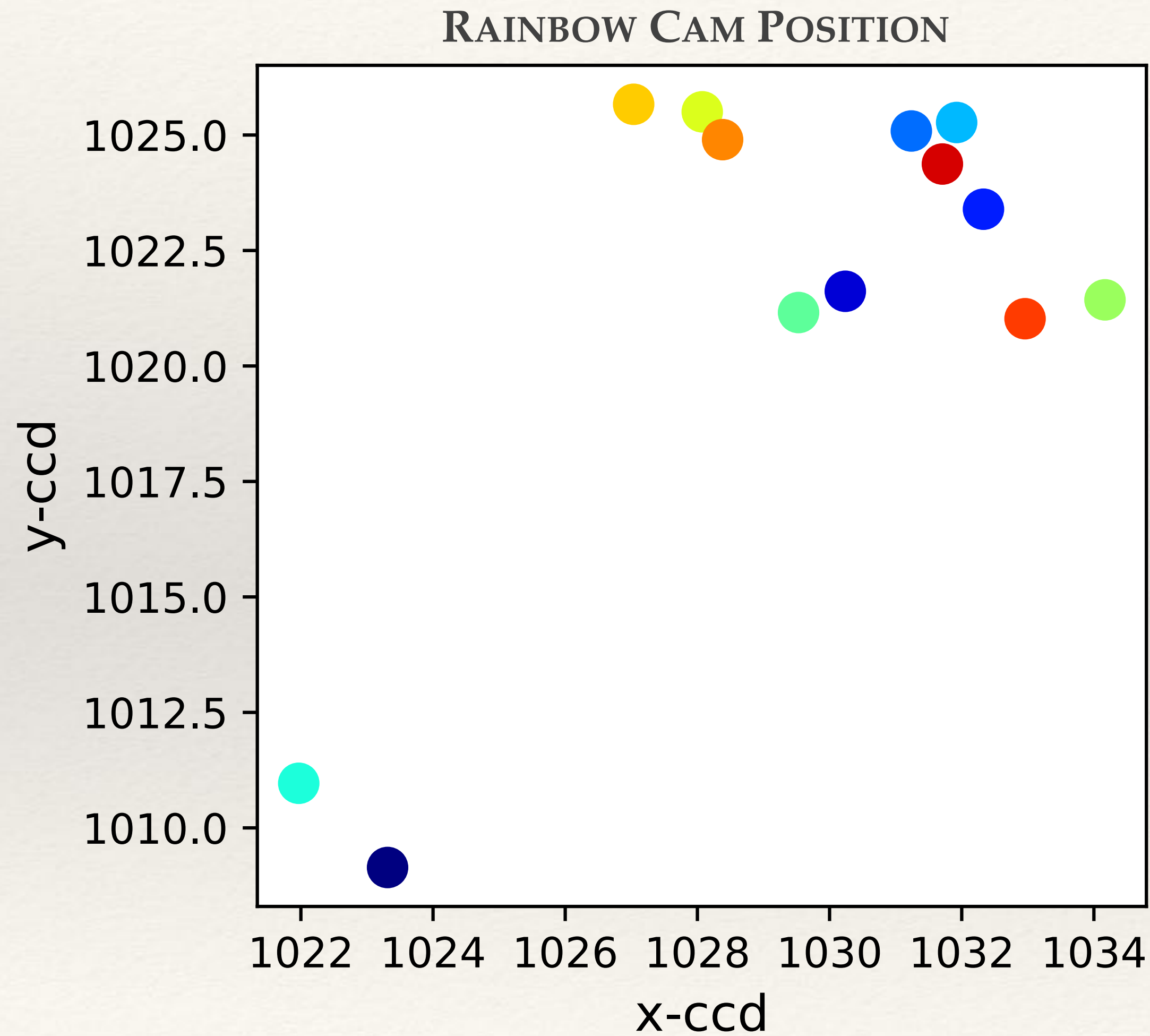


Guessing IFU position | *use of guider images*



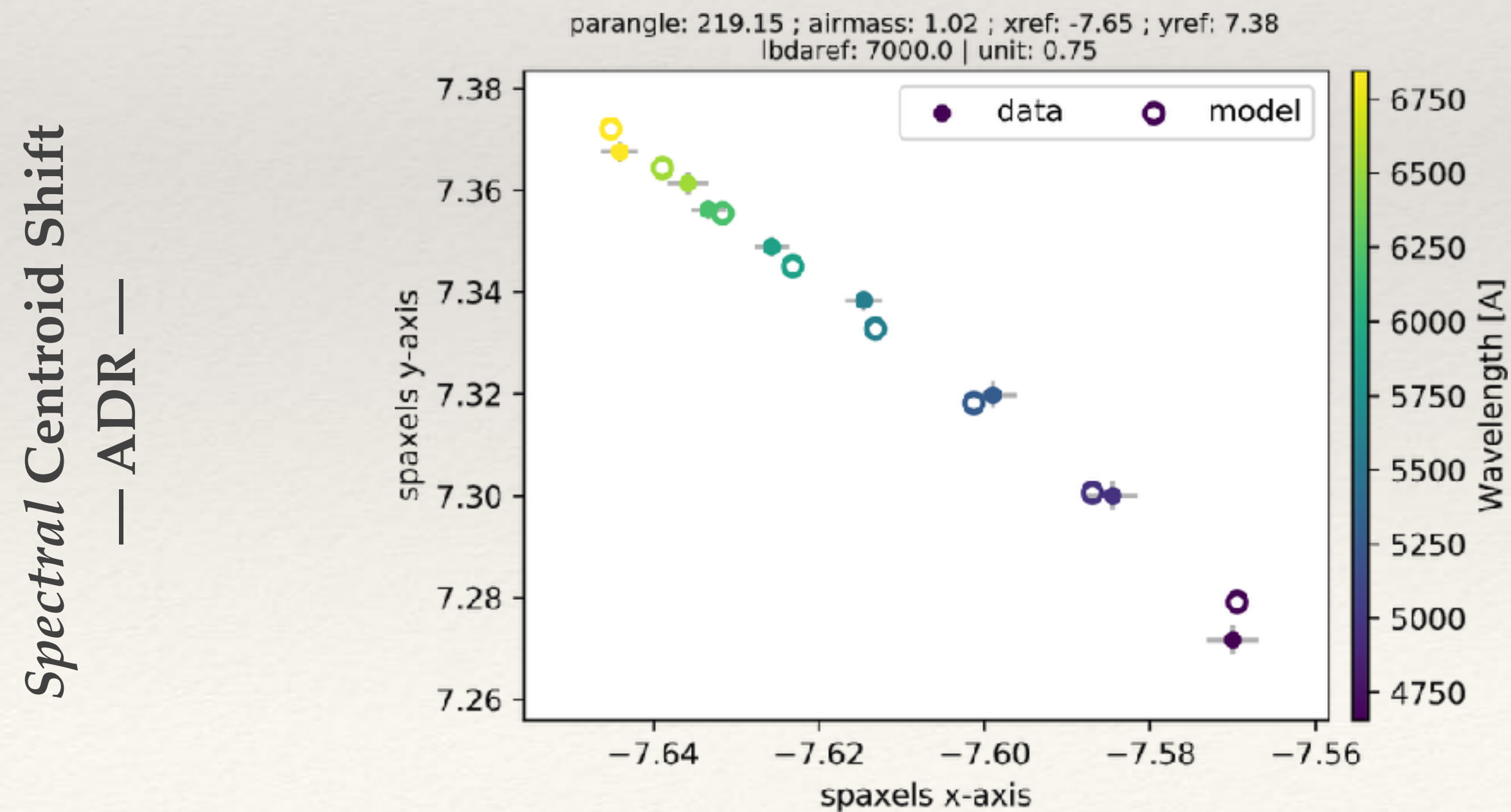
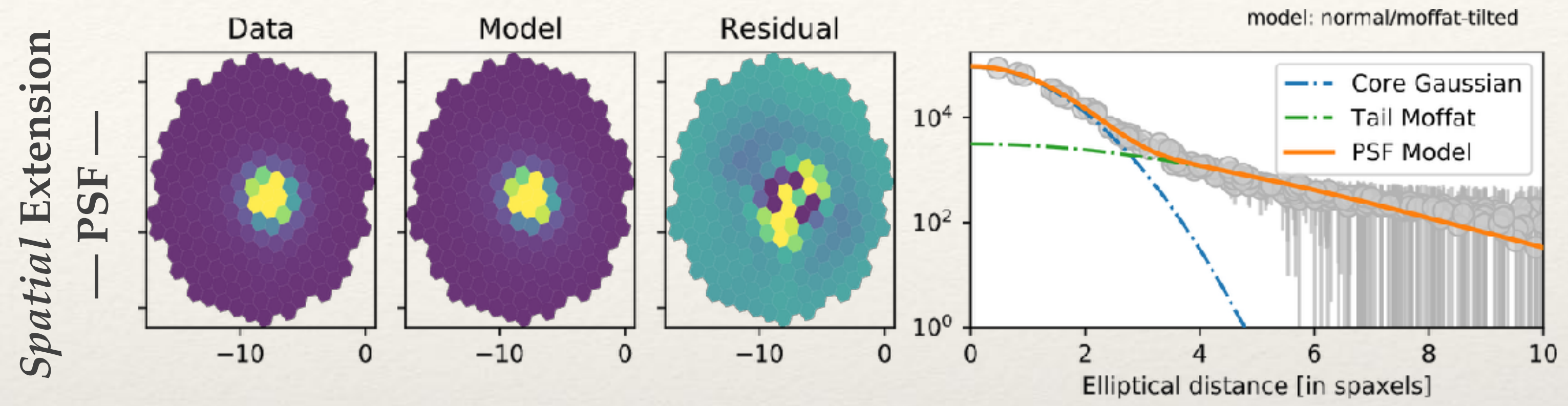
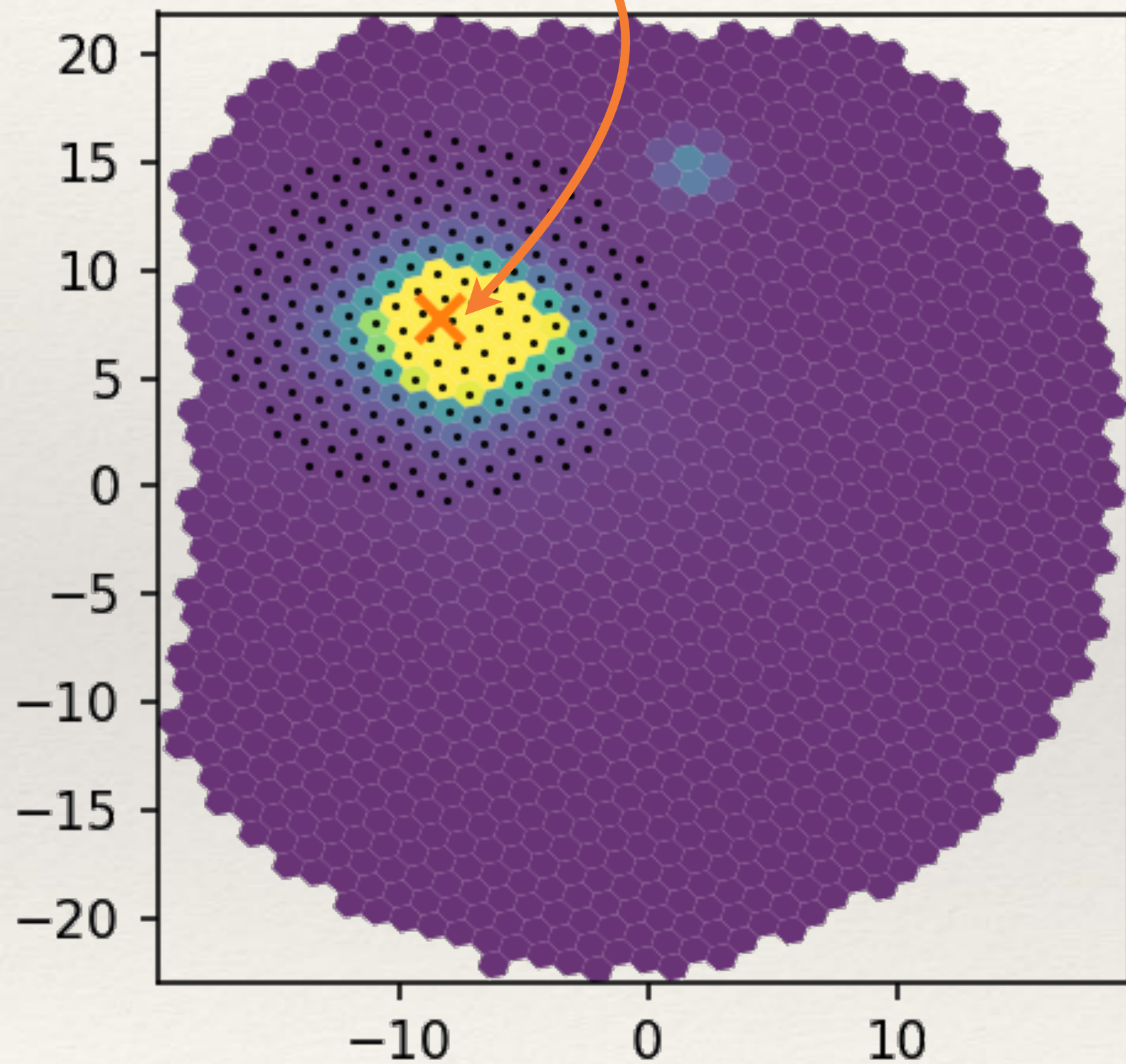
Guessing IFU position | *use of guider images*

Currently: Simple 2x2 matrix



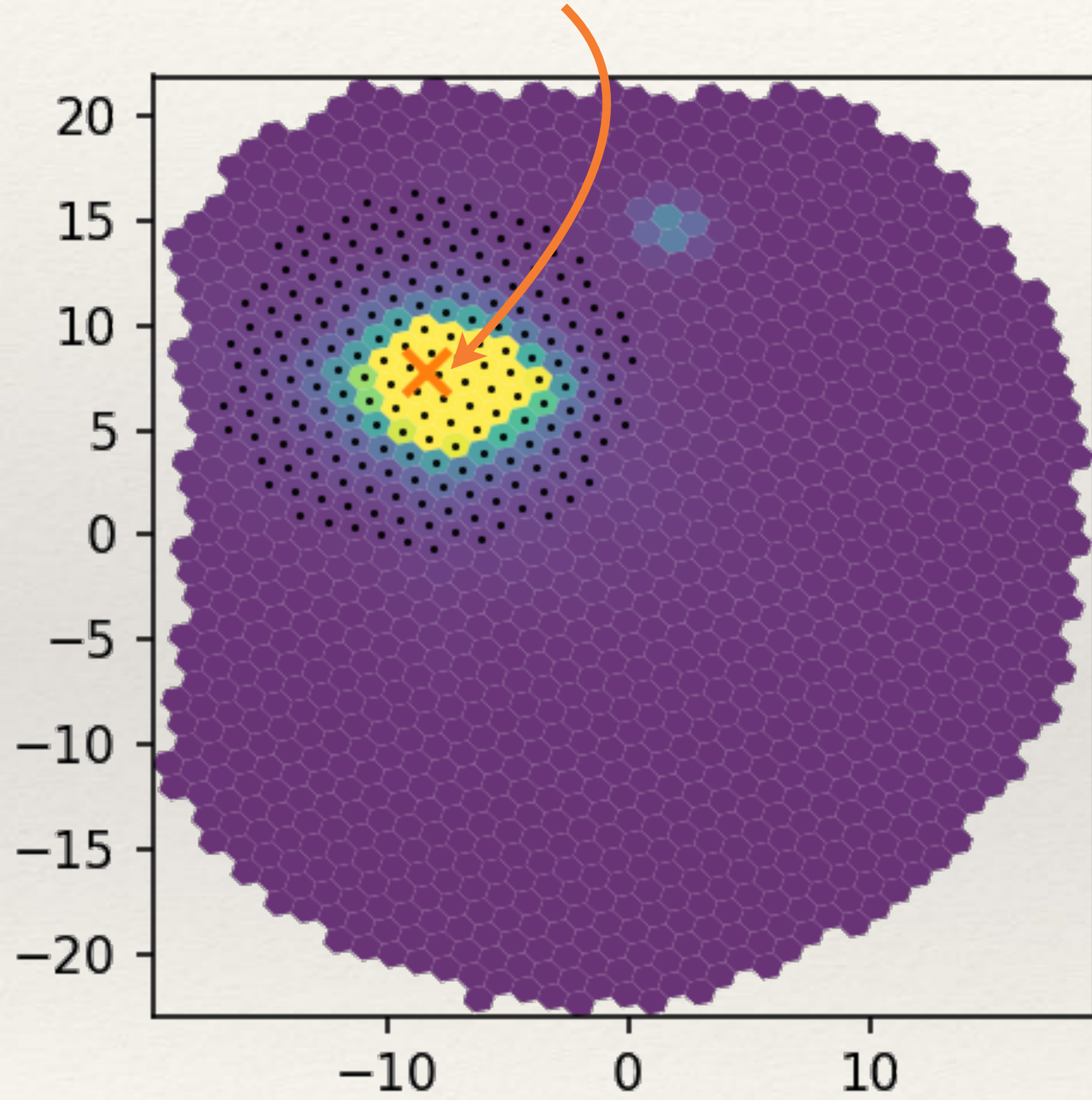
Guessing IFU position | *use of guider images*

Expected Location
based on Guider Astrometry

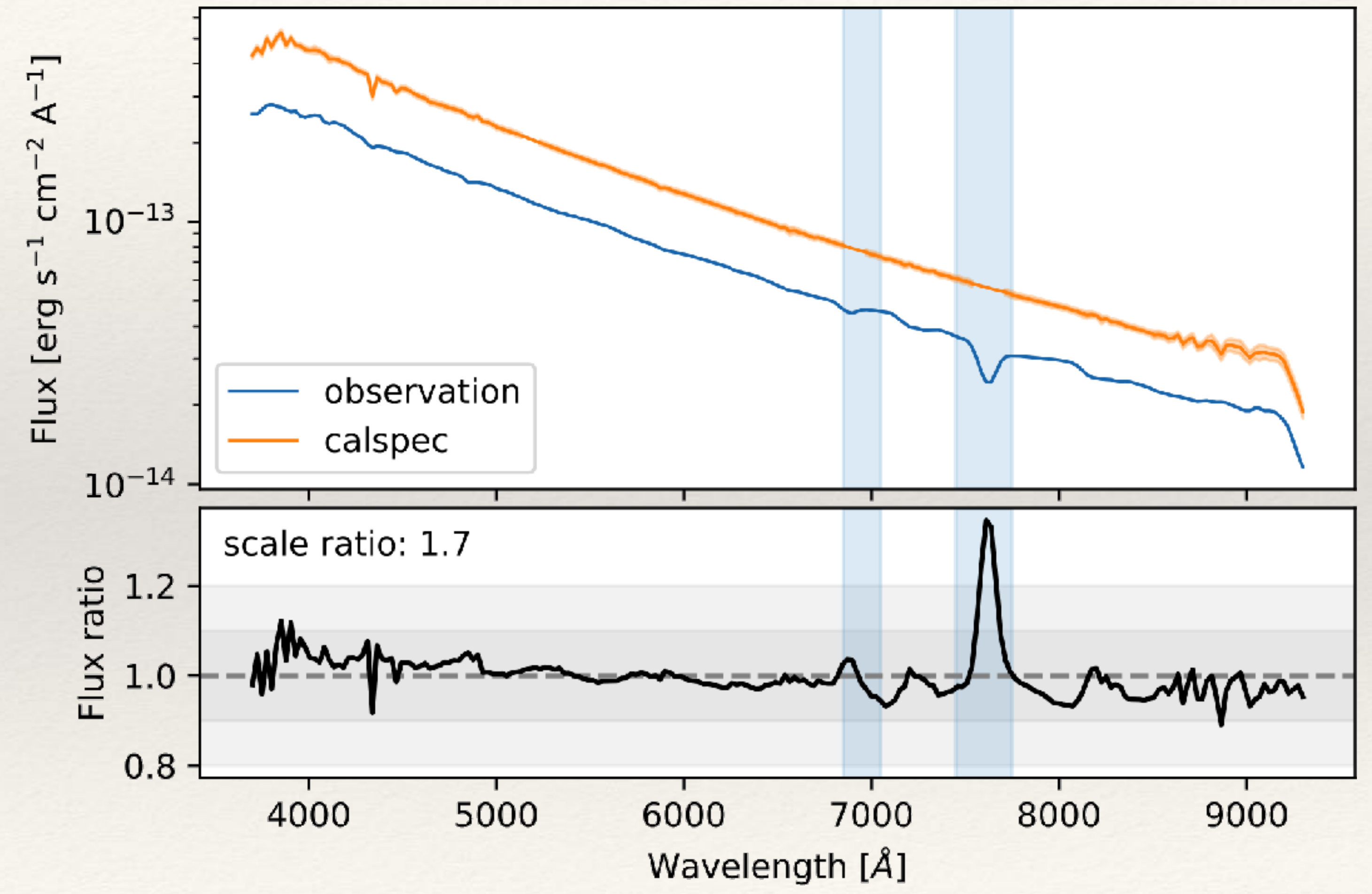


Guessing IFU position | *use of guider images*

Expected Location
based on Guider Astrometry



BD+33d2642 | $t_{obs} - t_{fluxcal} : -0.08$ hours



pysedm fully automated pipeline

CCD → 3D cube : ~5min

Flexure corrections
(*trace-position & wavelength*)

Meta-guider Astrometry
(*building + solving wcs*)

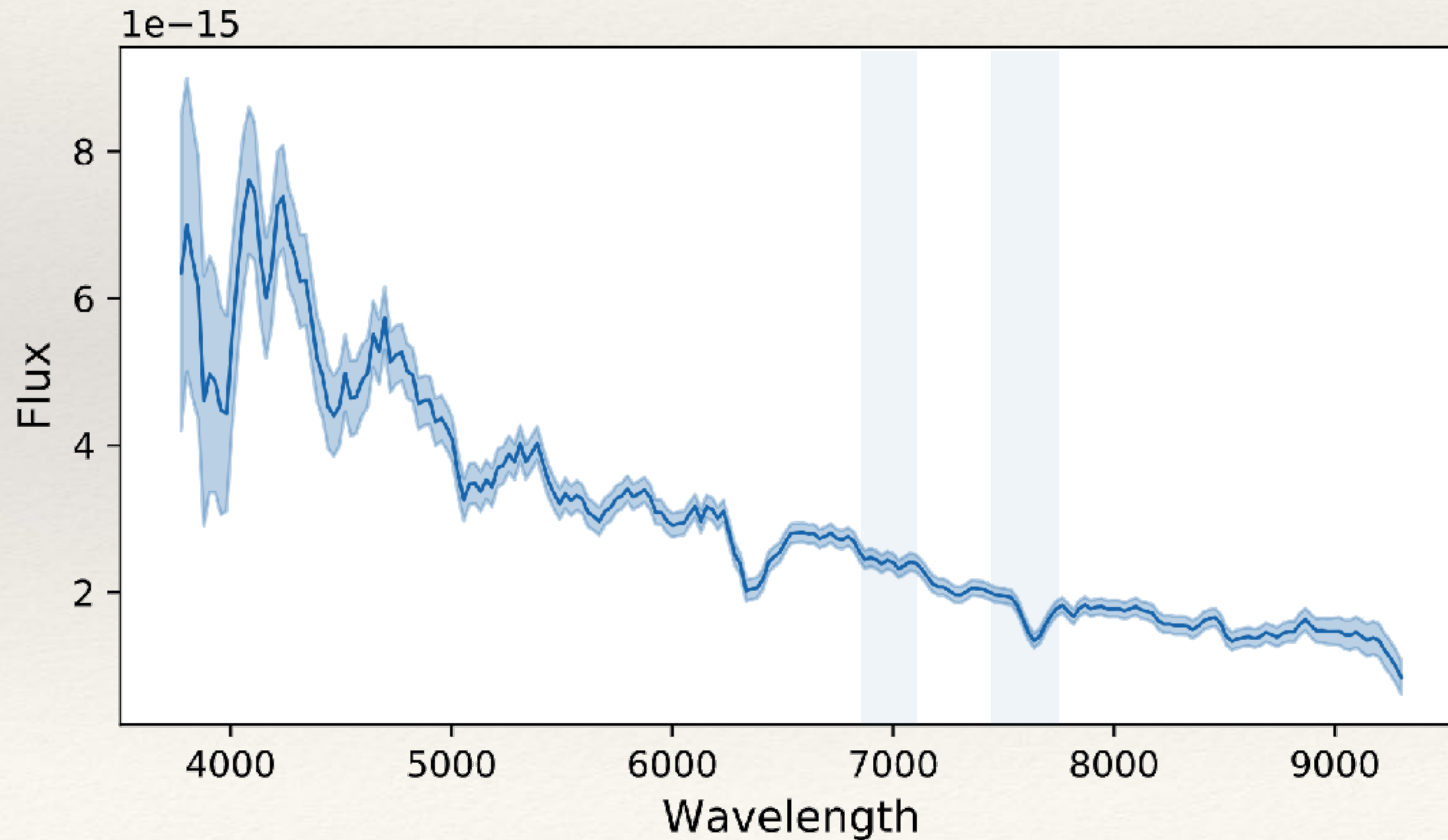
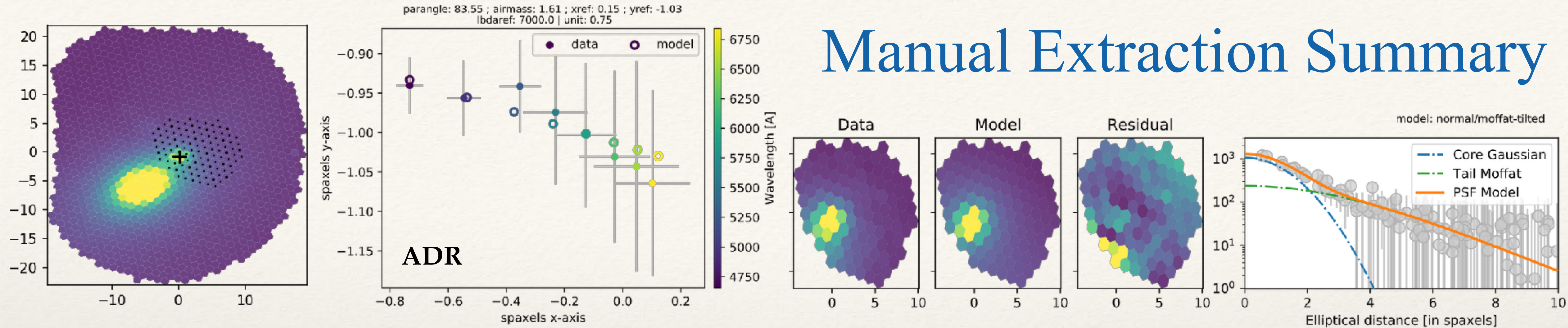
3D cube → Spectra: ~1min

Centroid position
(*ADR model*)

PSF modelling & fitting
(*based on meta-slices*)

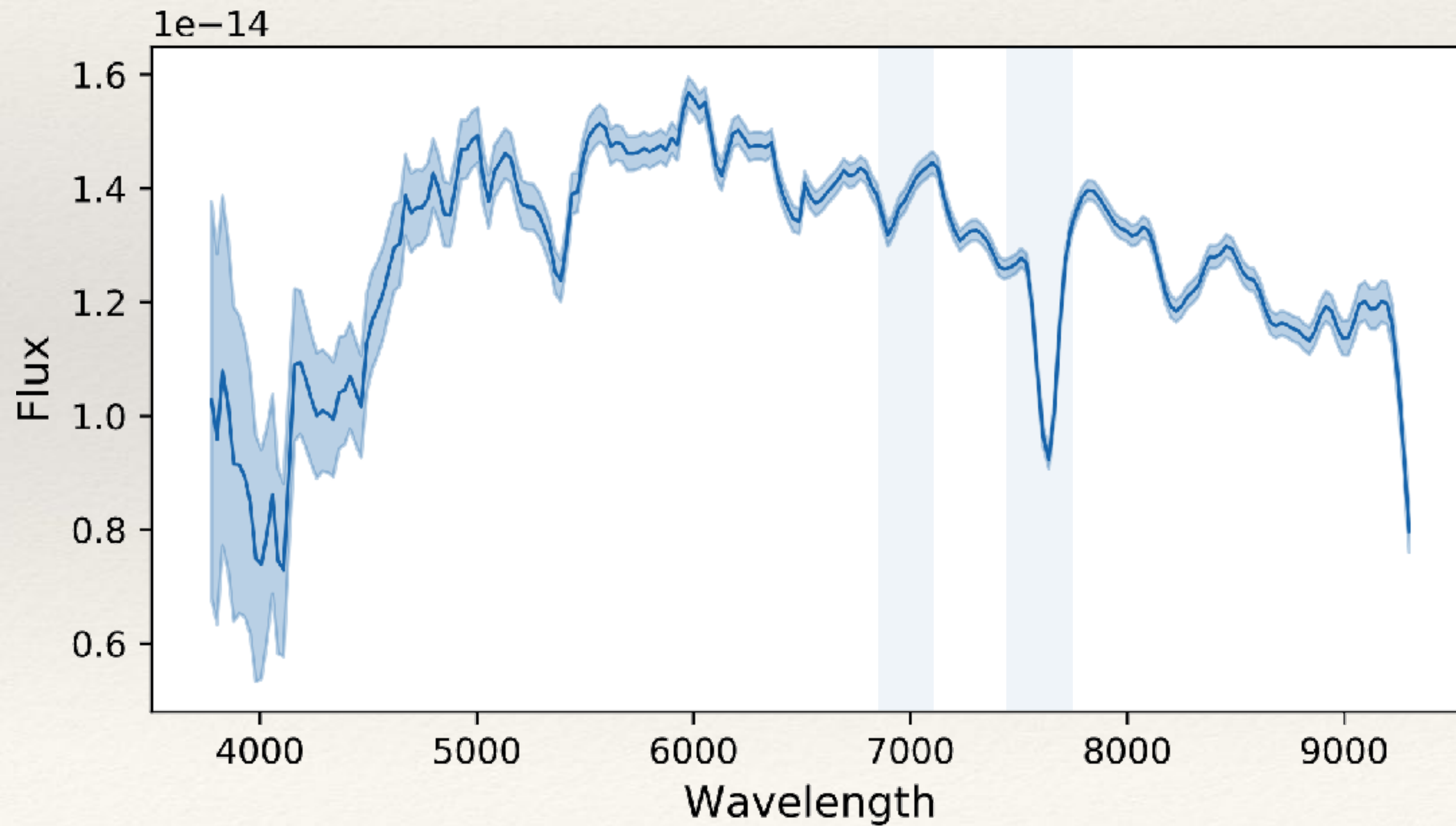
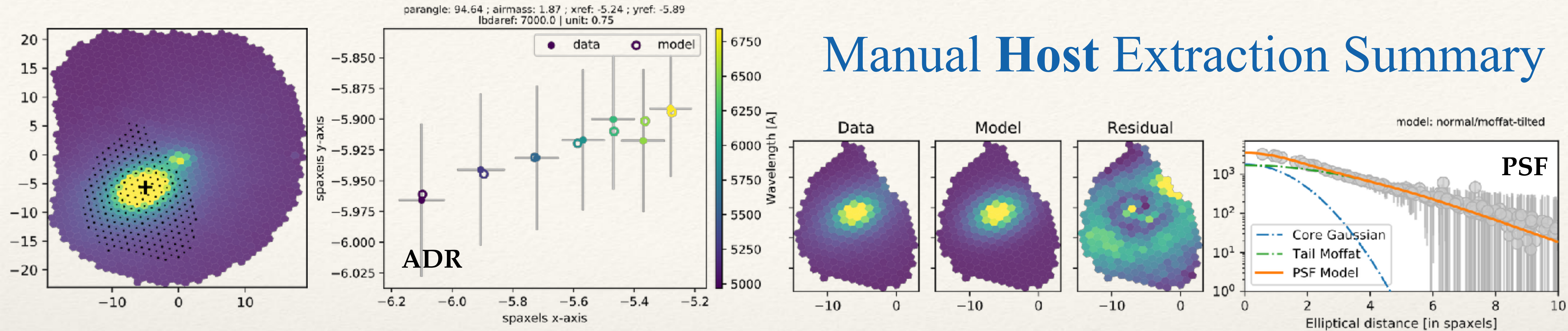
No Human interaction needed

Manual Extraction Summary



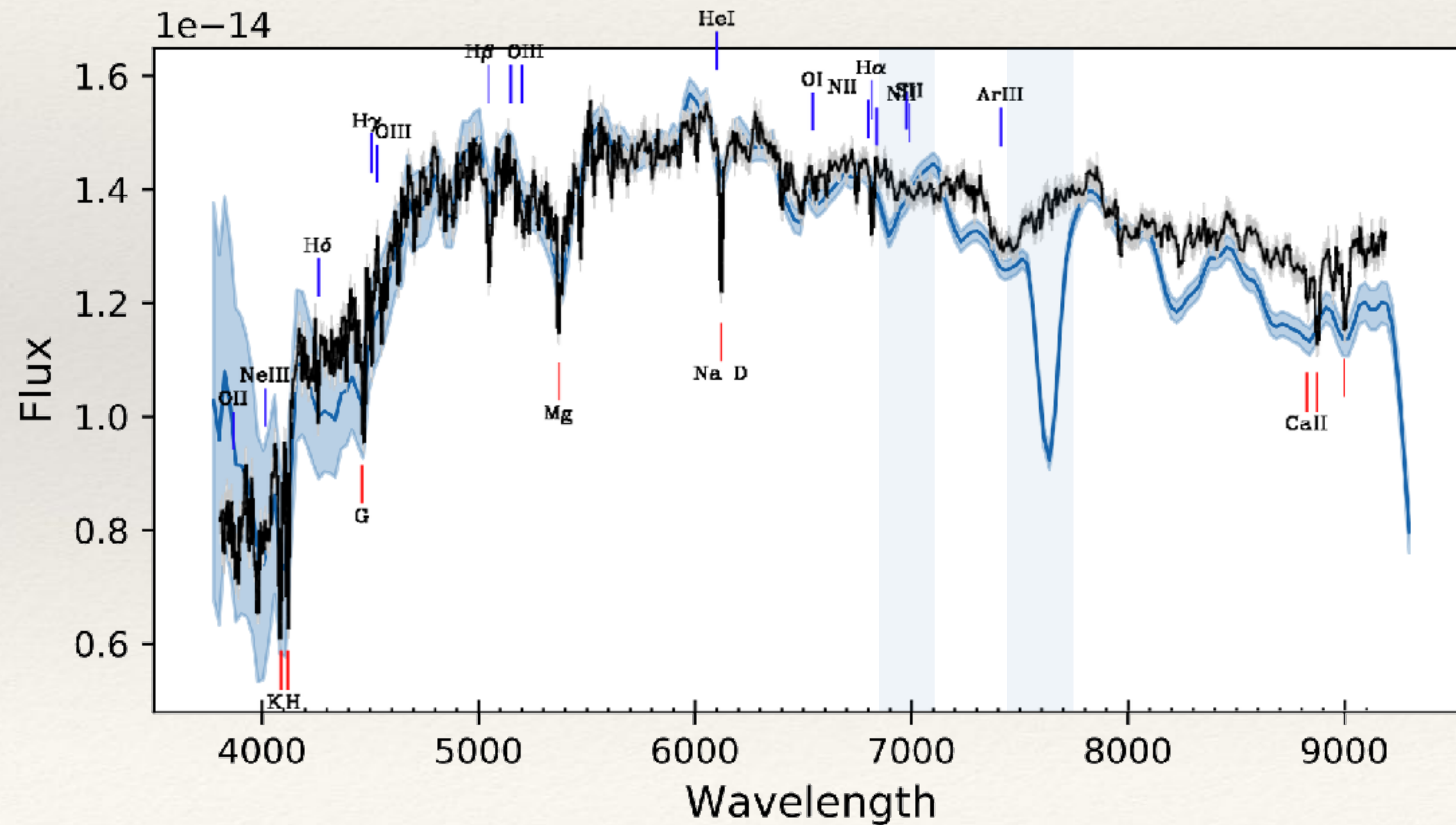
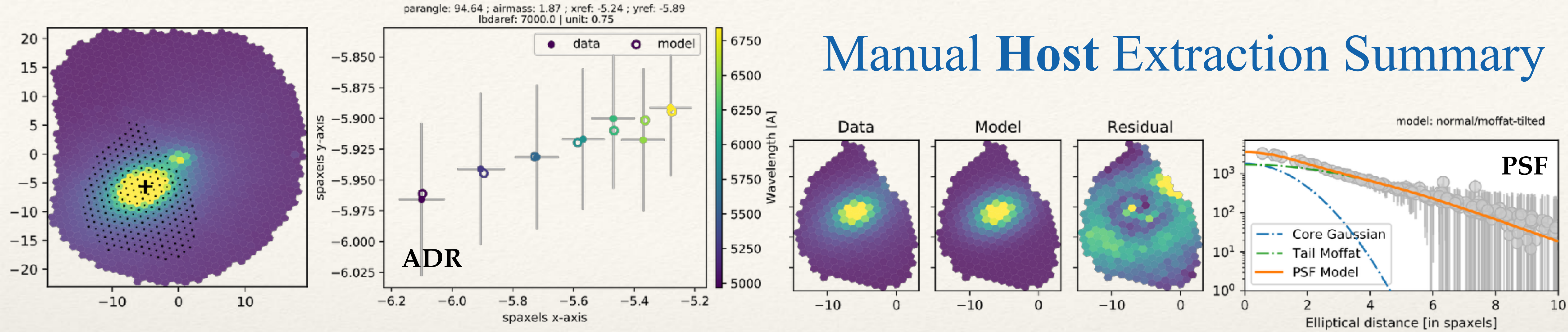
ZTF18abdiqdh
On the 5th of July 2018
~ 17.75 mag | 25 min

Manual Host Extraction Summary



Host of
ZTF18abdiqdh

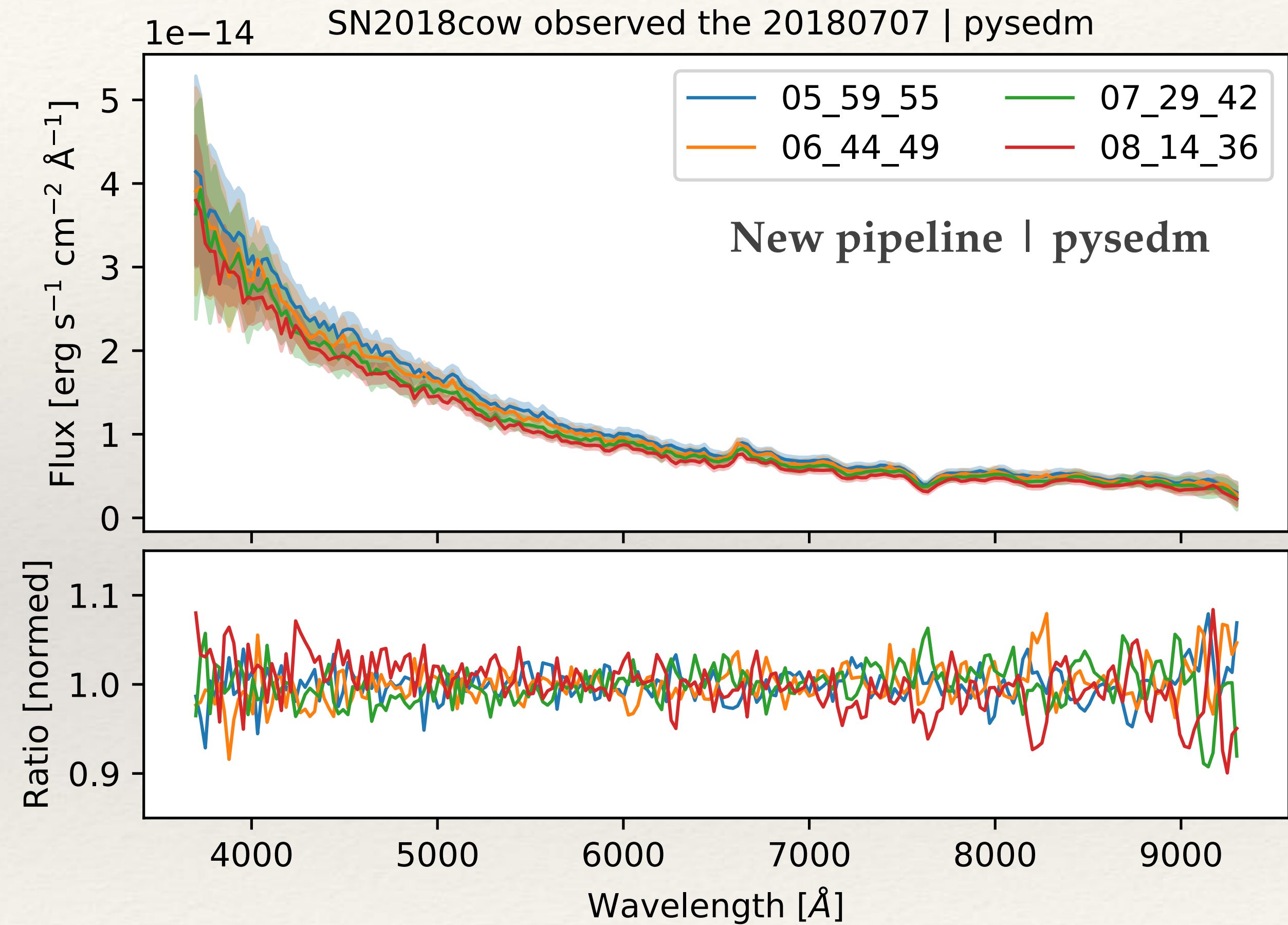
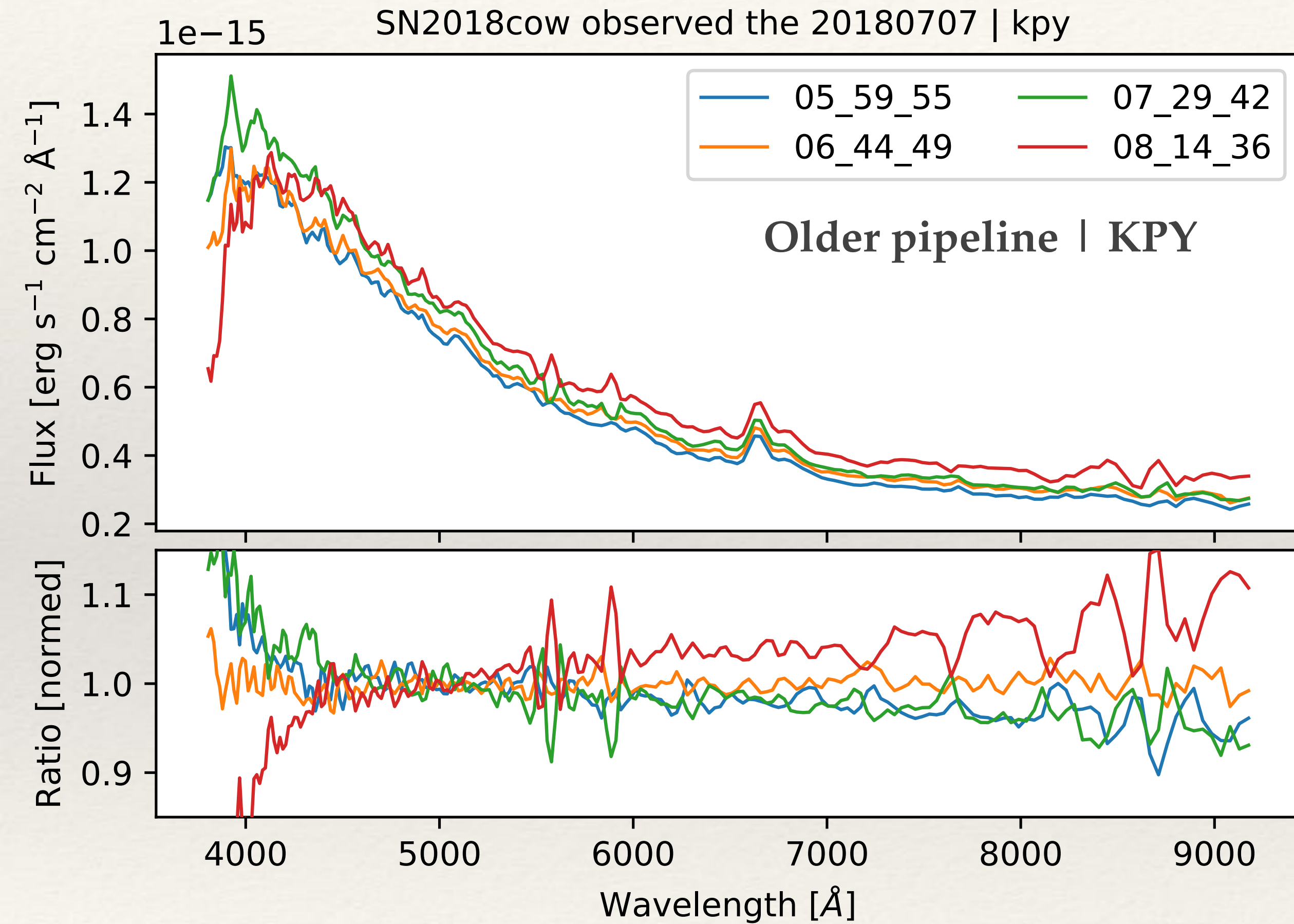
Manual Host Extraction Summary



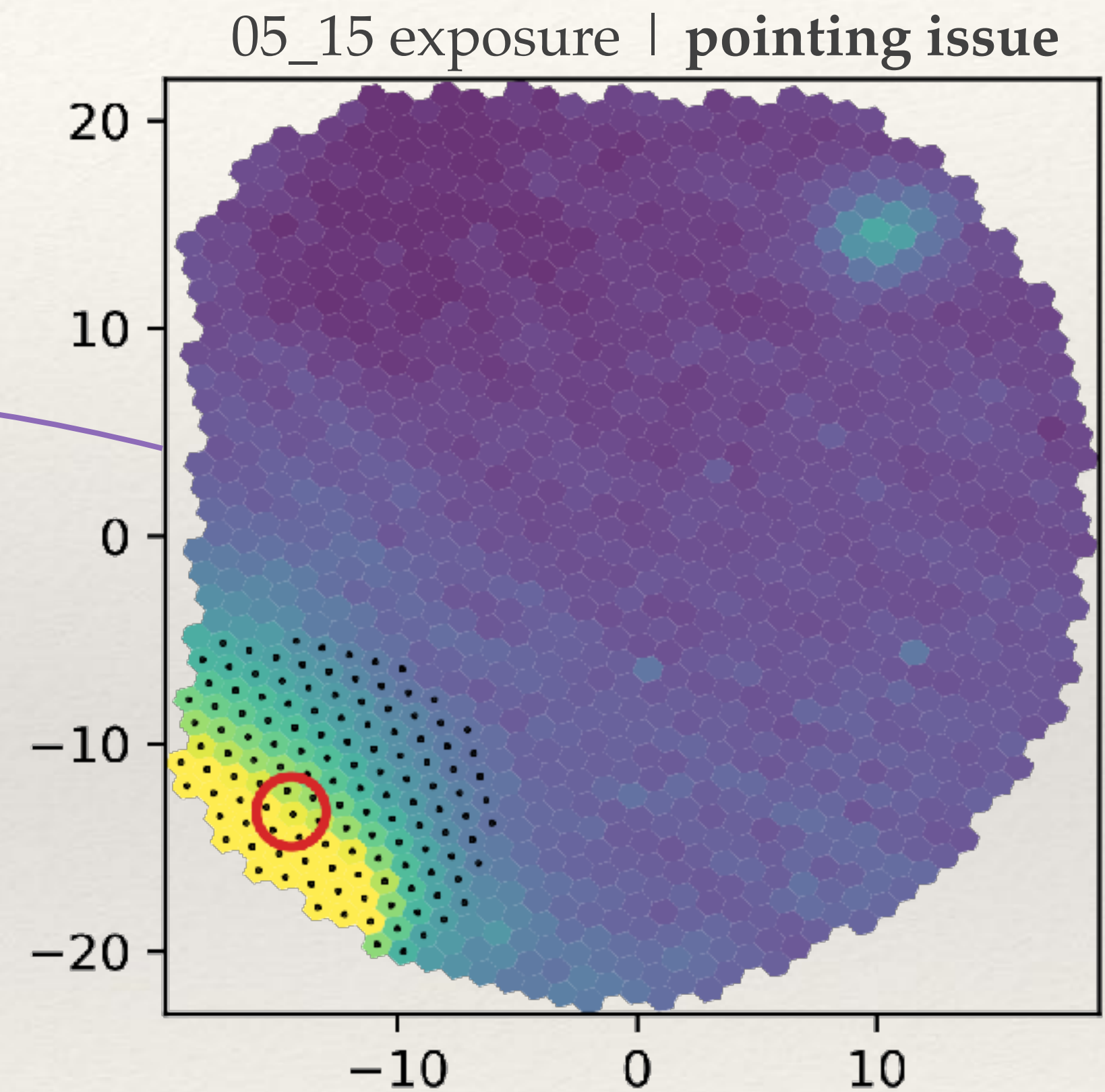
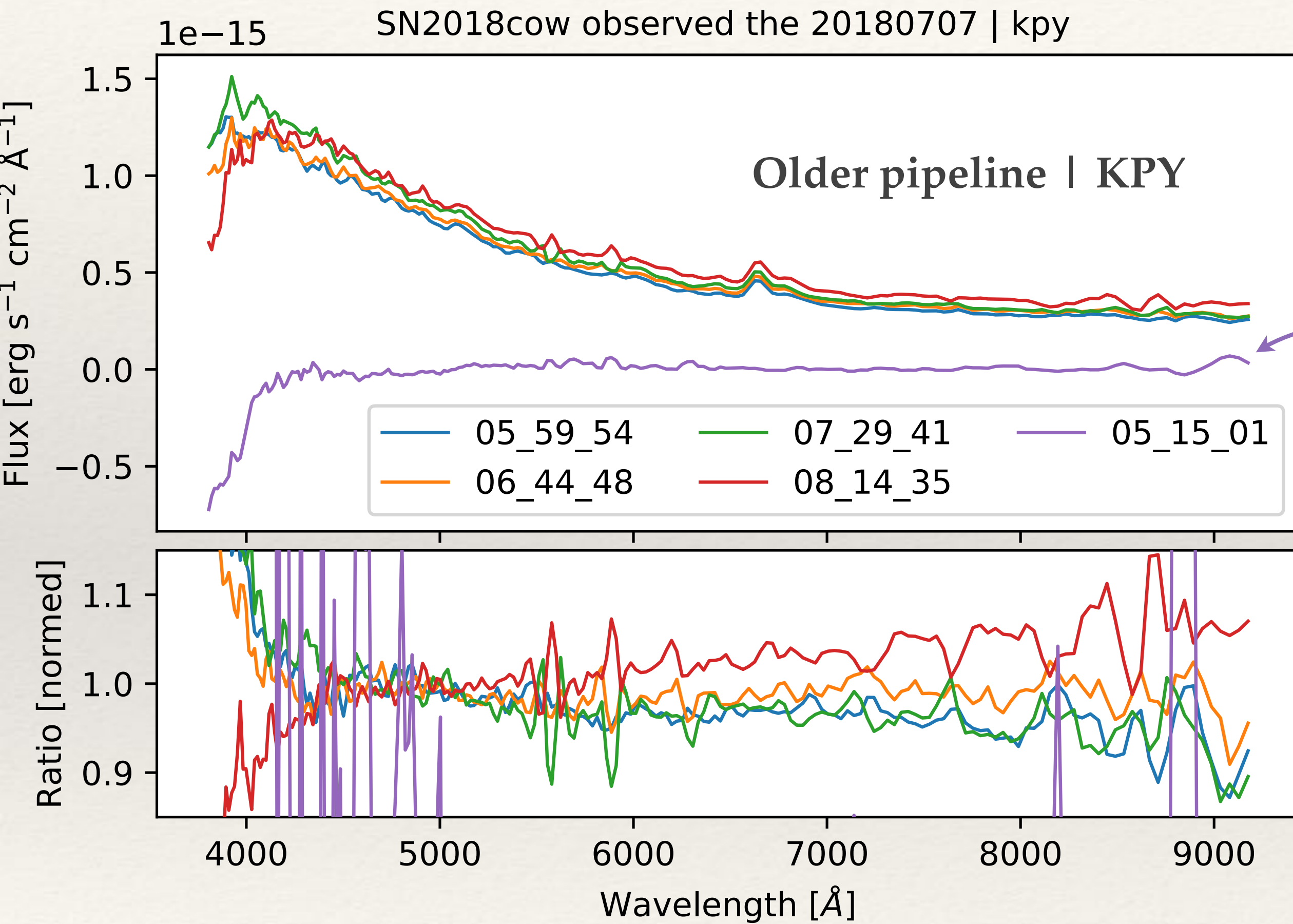
SDSS Spectra
from here (dr14)
(13.6 mag in sdss-r)

Host of
ZTF18abdiqdh

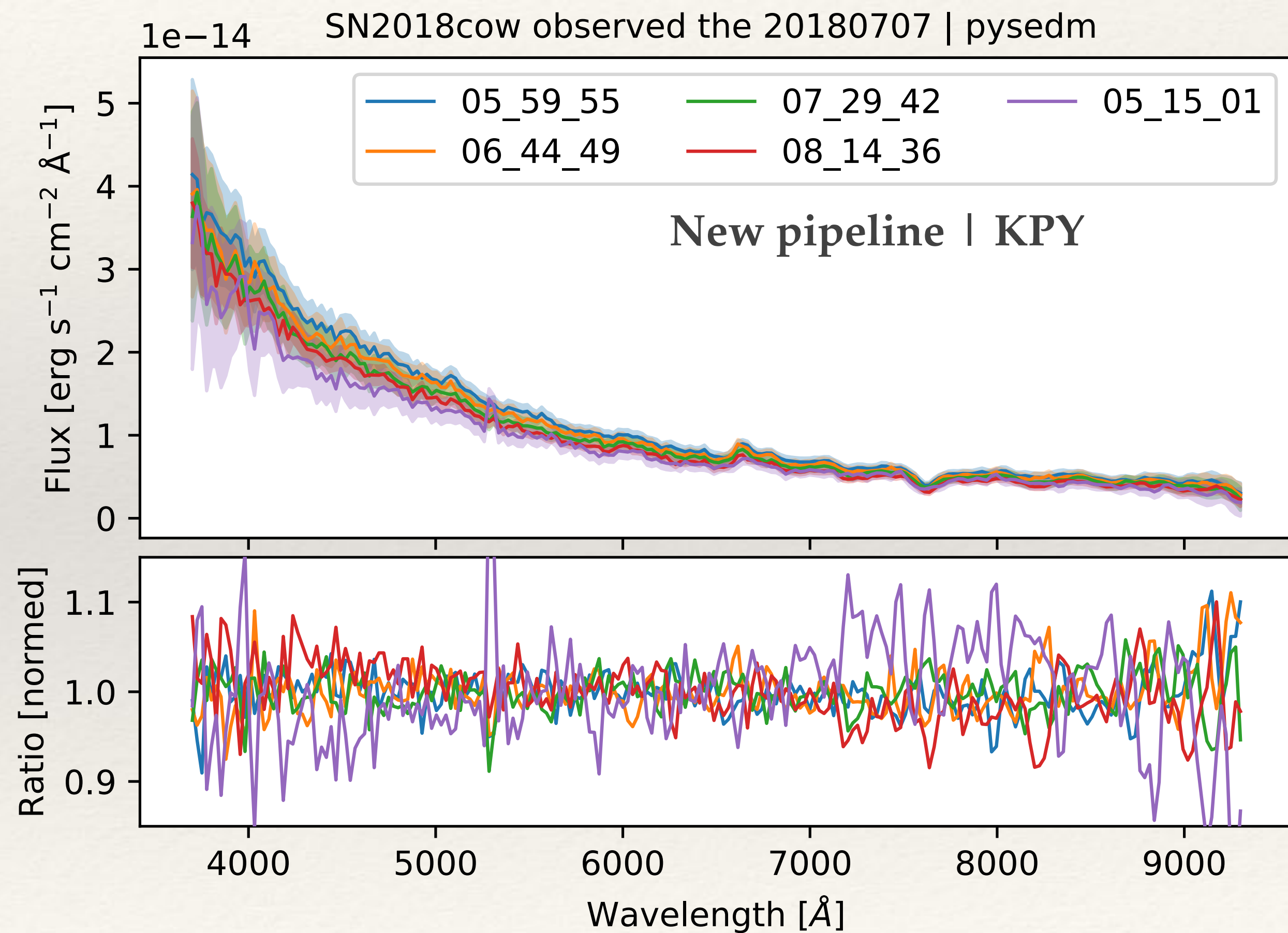
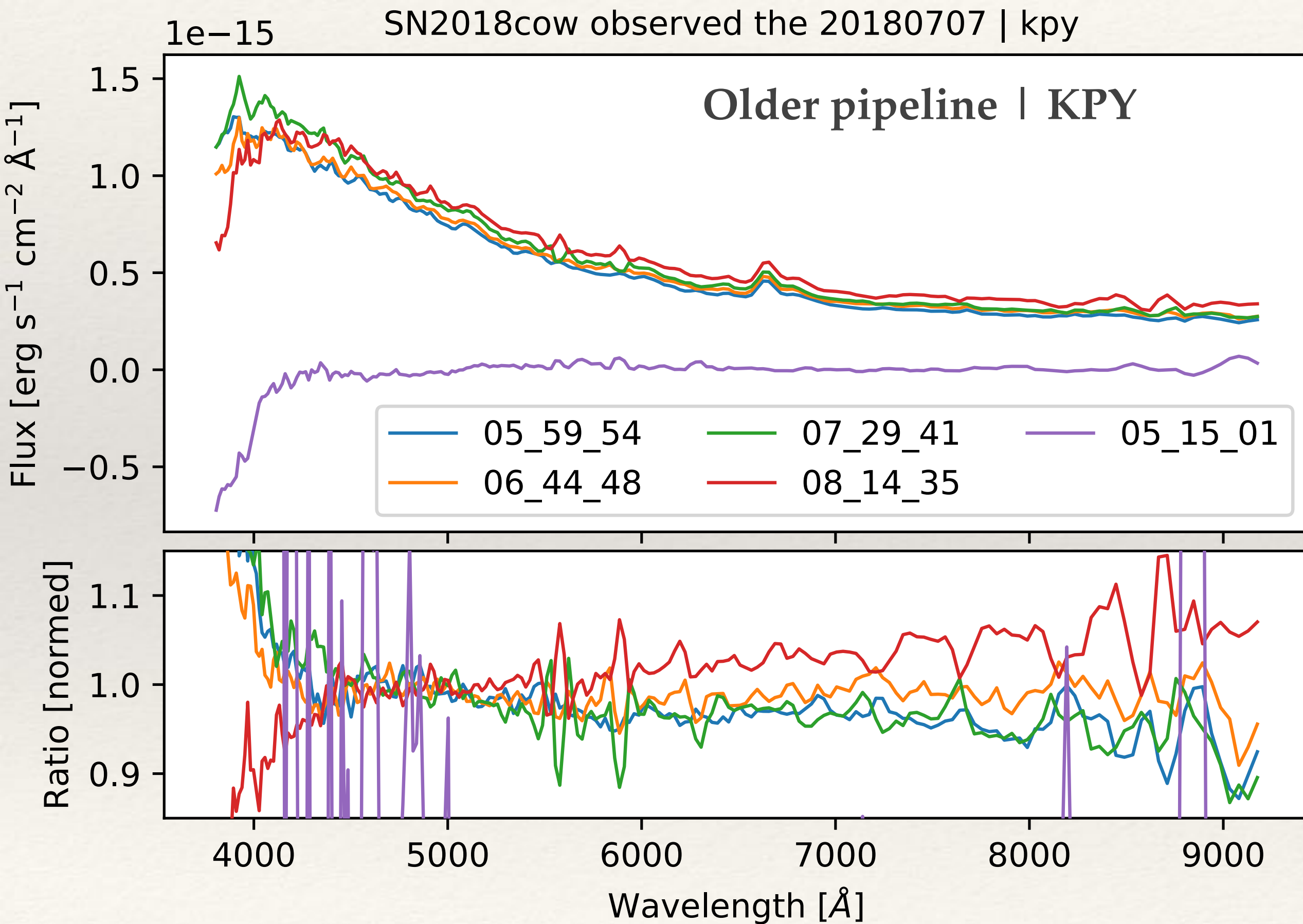
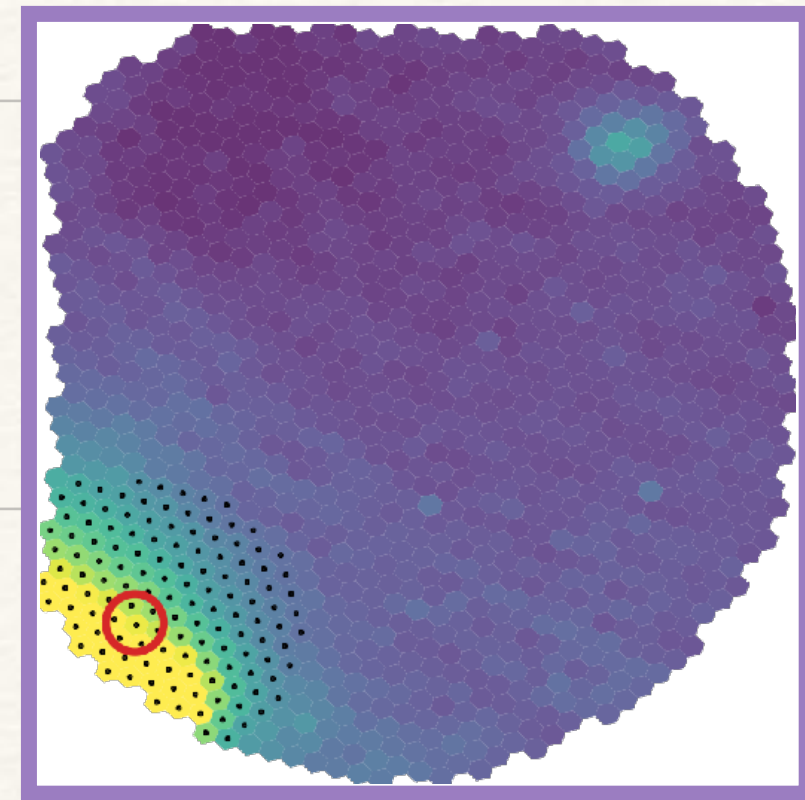
kpy vs. pysedm | Several observations during the night



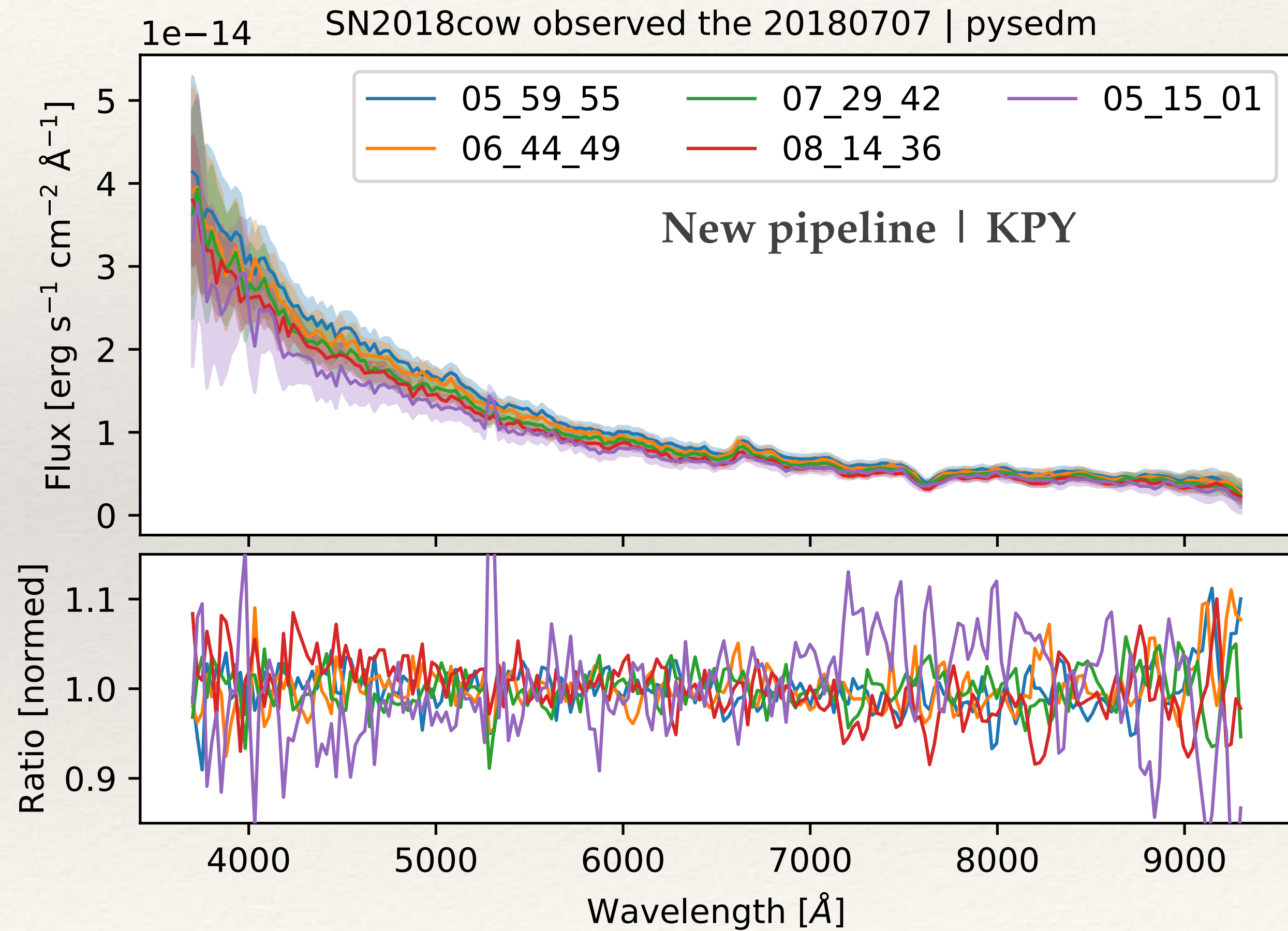
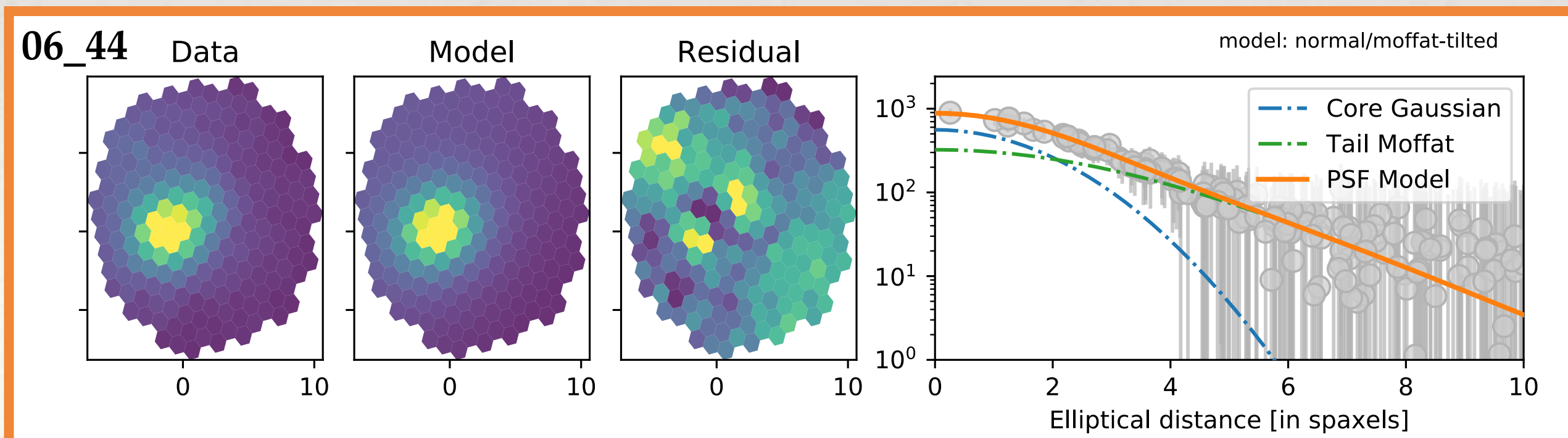
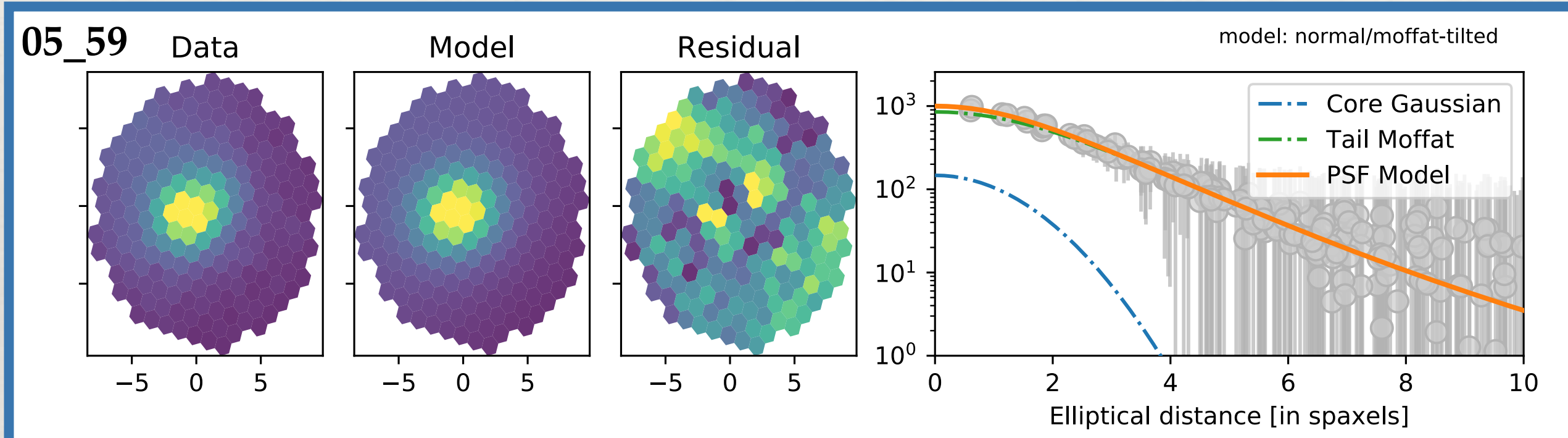
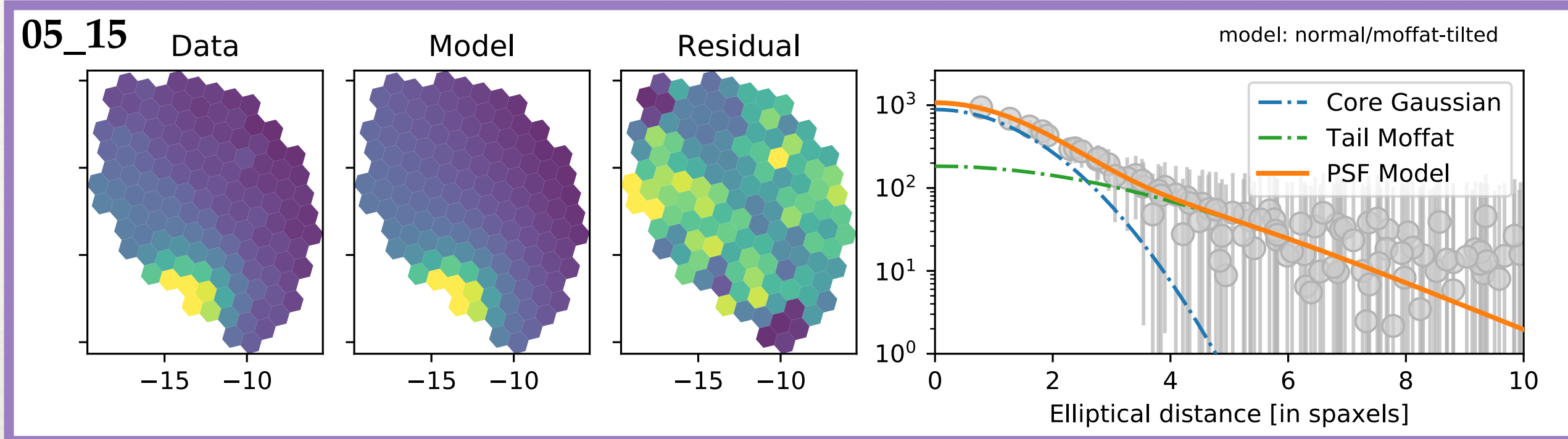
kpy vs. pypedm | pointing issue



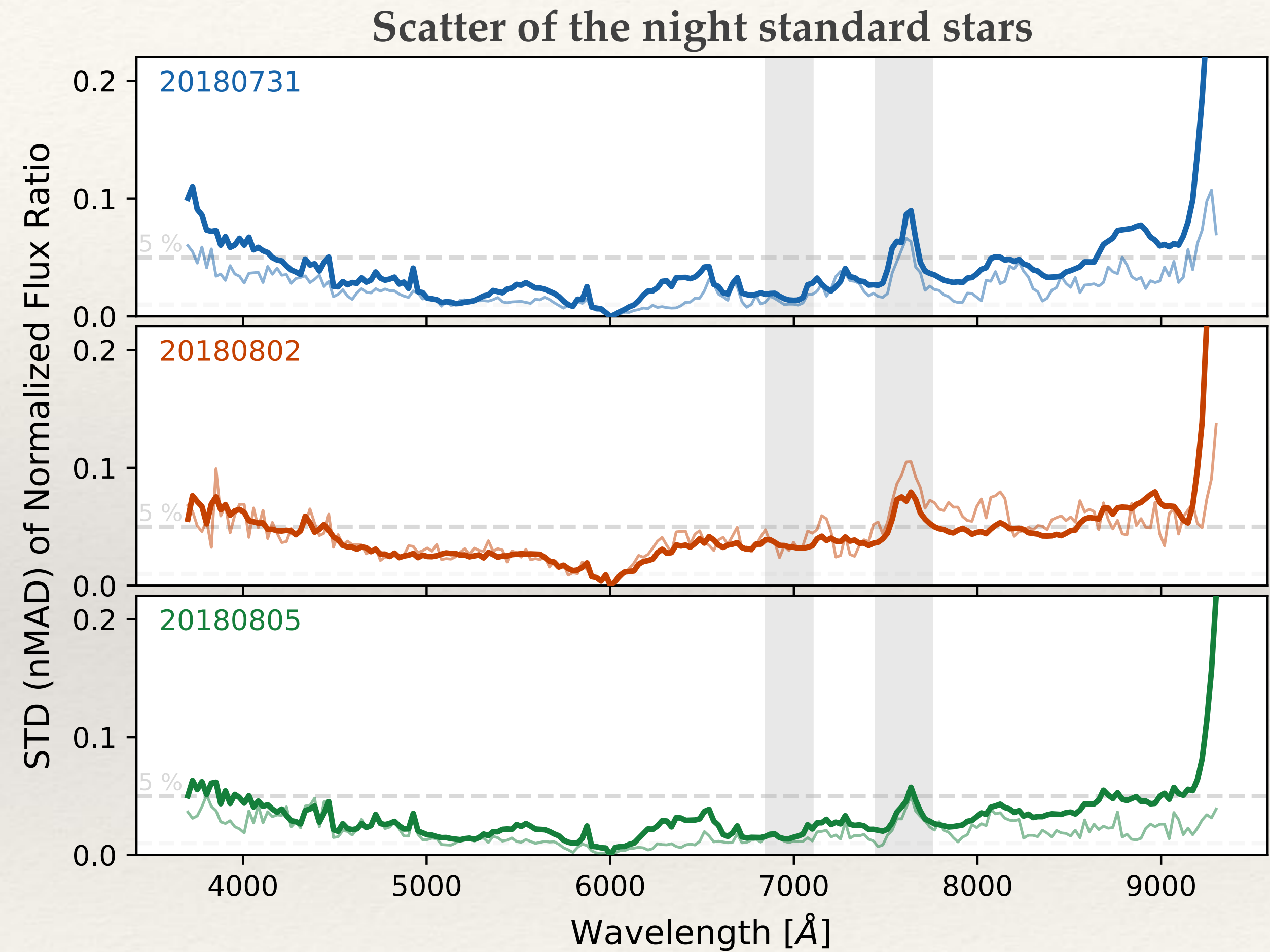
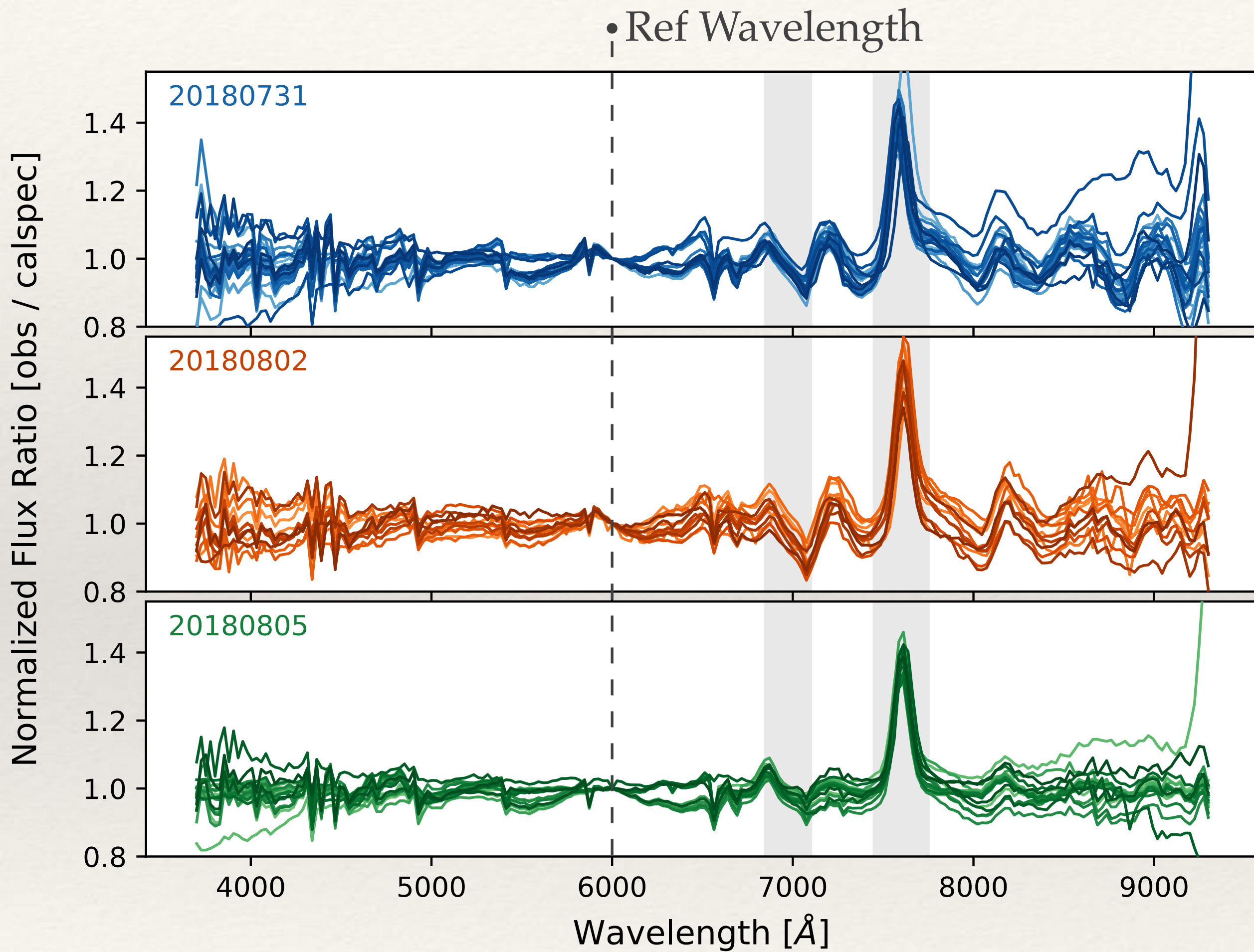
kpy vs. pypedm | pointing issue



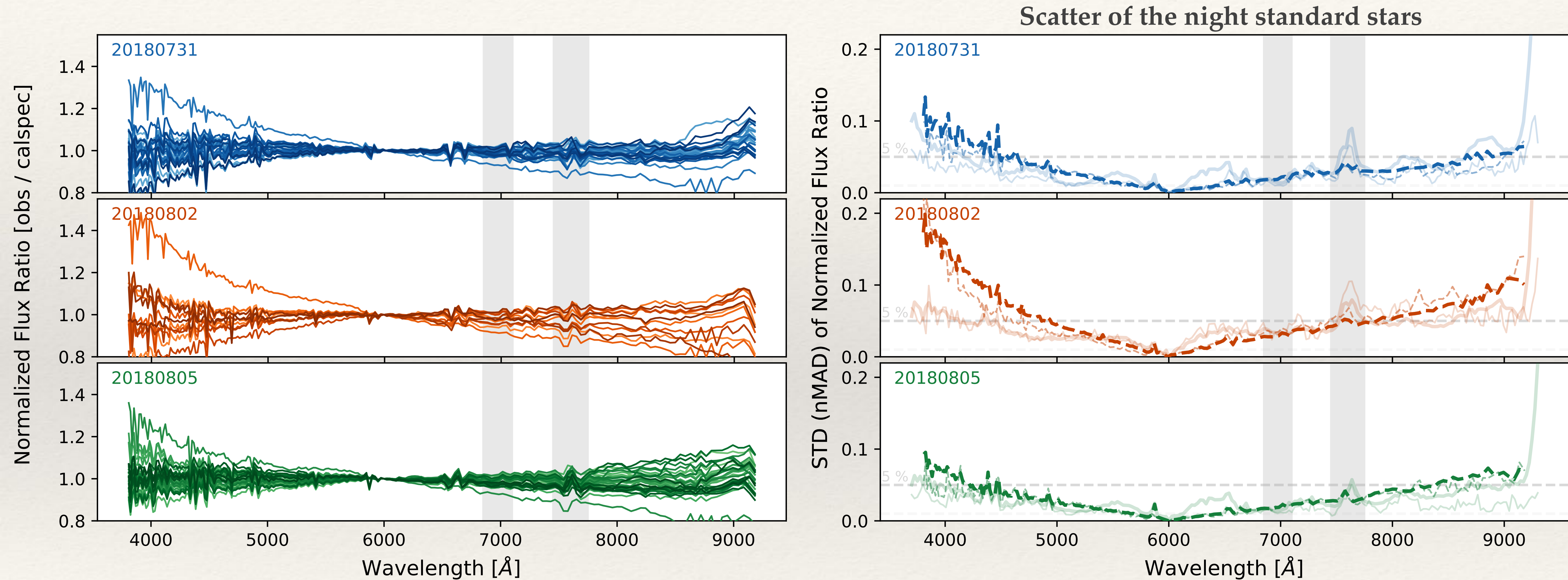
kpy vs. pypedm | pointing issue & PSF fitting



Standard Star Scatter



Standard Star Scatter | kpy vs. pypedm



Conclusion

pysedm pipeline is now fully automated

Spectra are available ~6 min after end of exposure

Typing possible for $>19.5\text{mag}$ in less than 45 min

Software fully compatible with python 2.7 and 3.x

To be finished:

accurate wcs | telluric correction

More development possible (like host subtraction)