



Your Name | Your Meeting | Month DD–DD, YYYY



Meredith Rawls | Rubin PCW | August 10, 2023

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DECam Processing with the Alert Production Pipeline

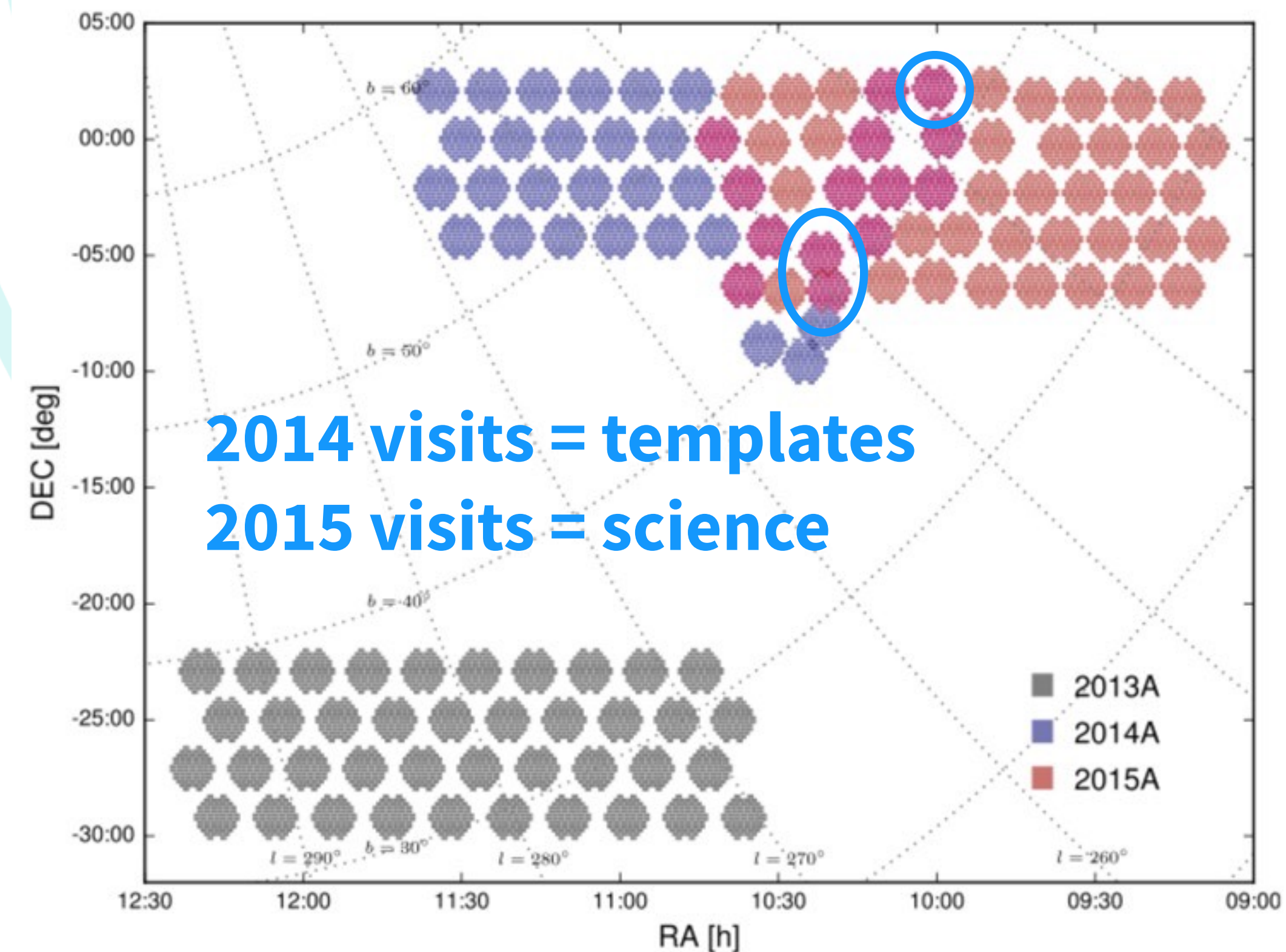
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What have we learned from DECam in AP?

1. Catalogs are fun, but pixels tell the real story
2. Doing things in more than one tract is tricky
3. No definitive list of flags will tell you if a source is trash
4. Garbage in garbage out, i.e., templates matter

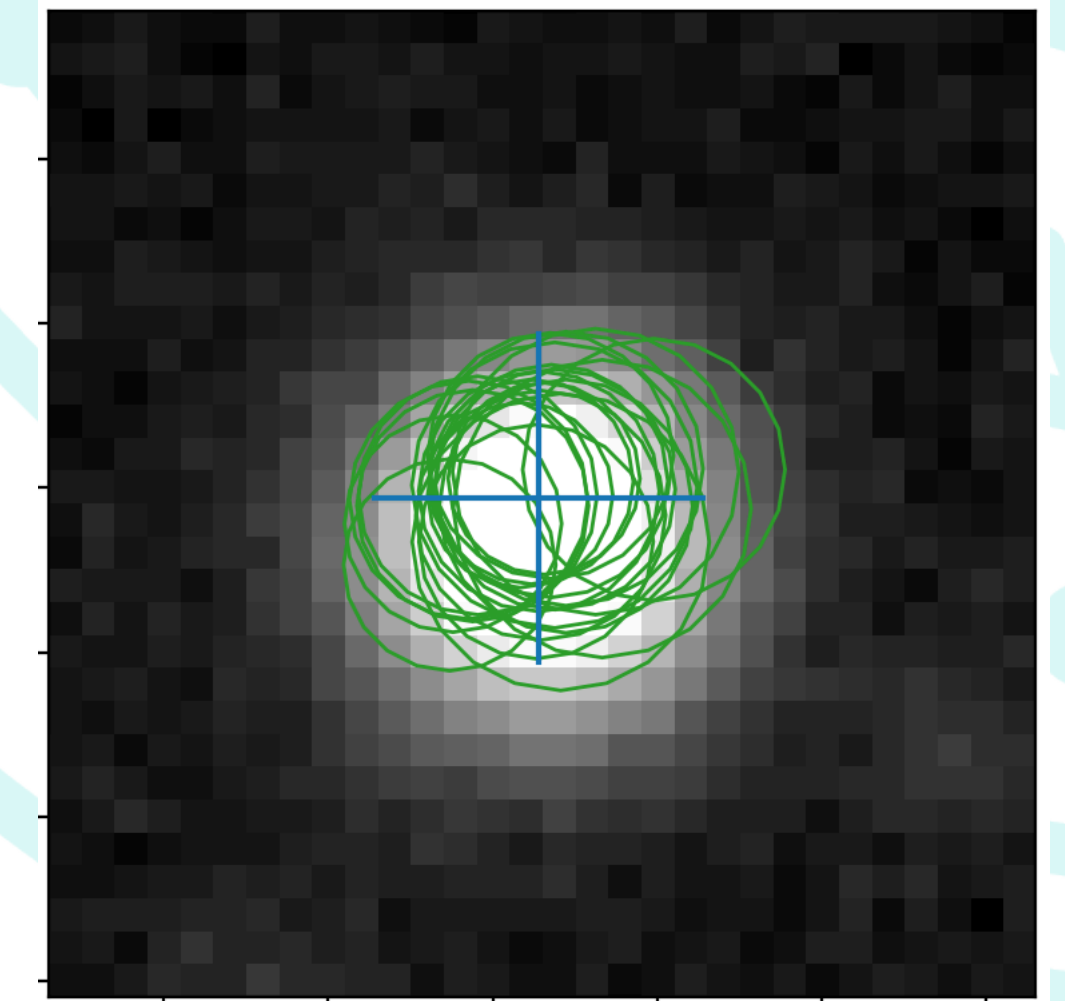
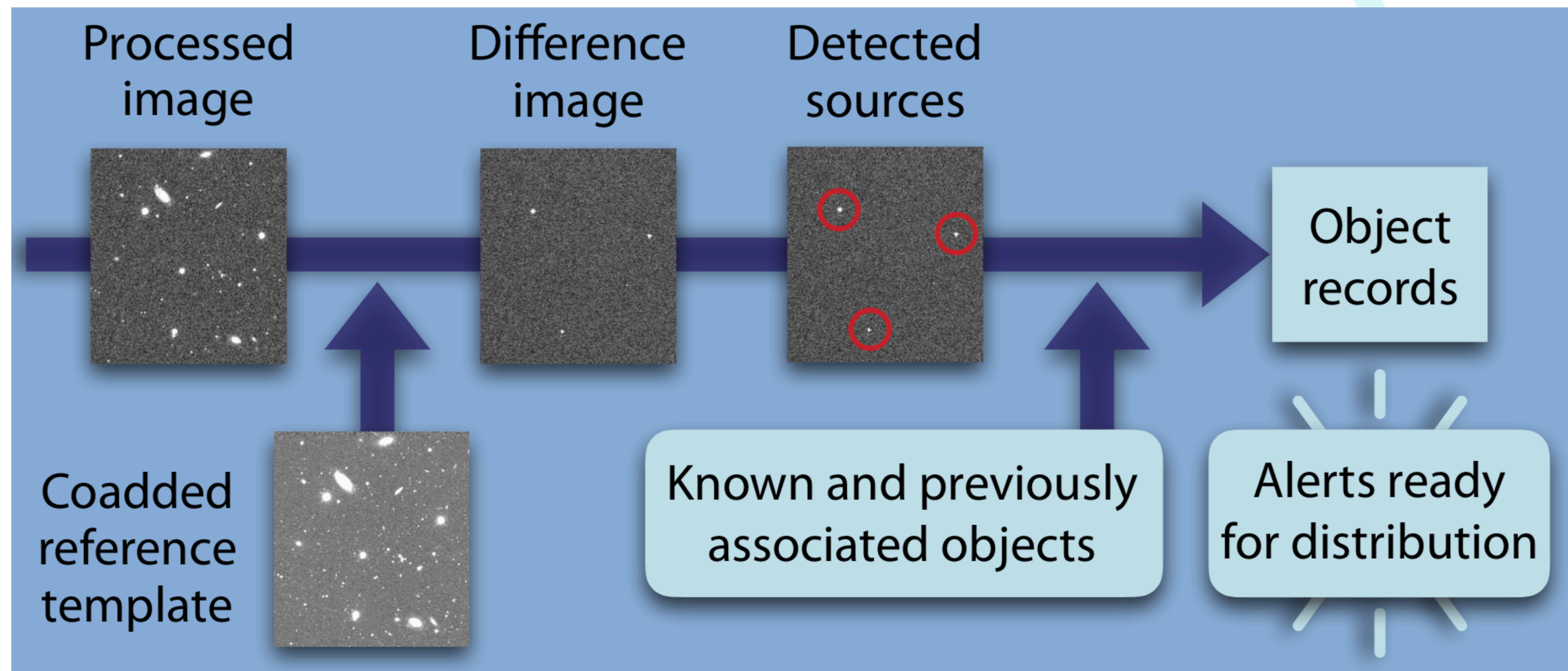
Bonus(?): Sometimes you catch a satellite



Origin of the HiTS dataset
(Förster et al. 2016)

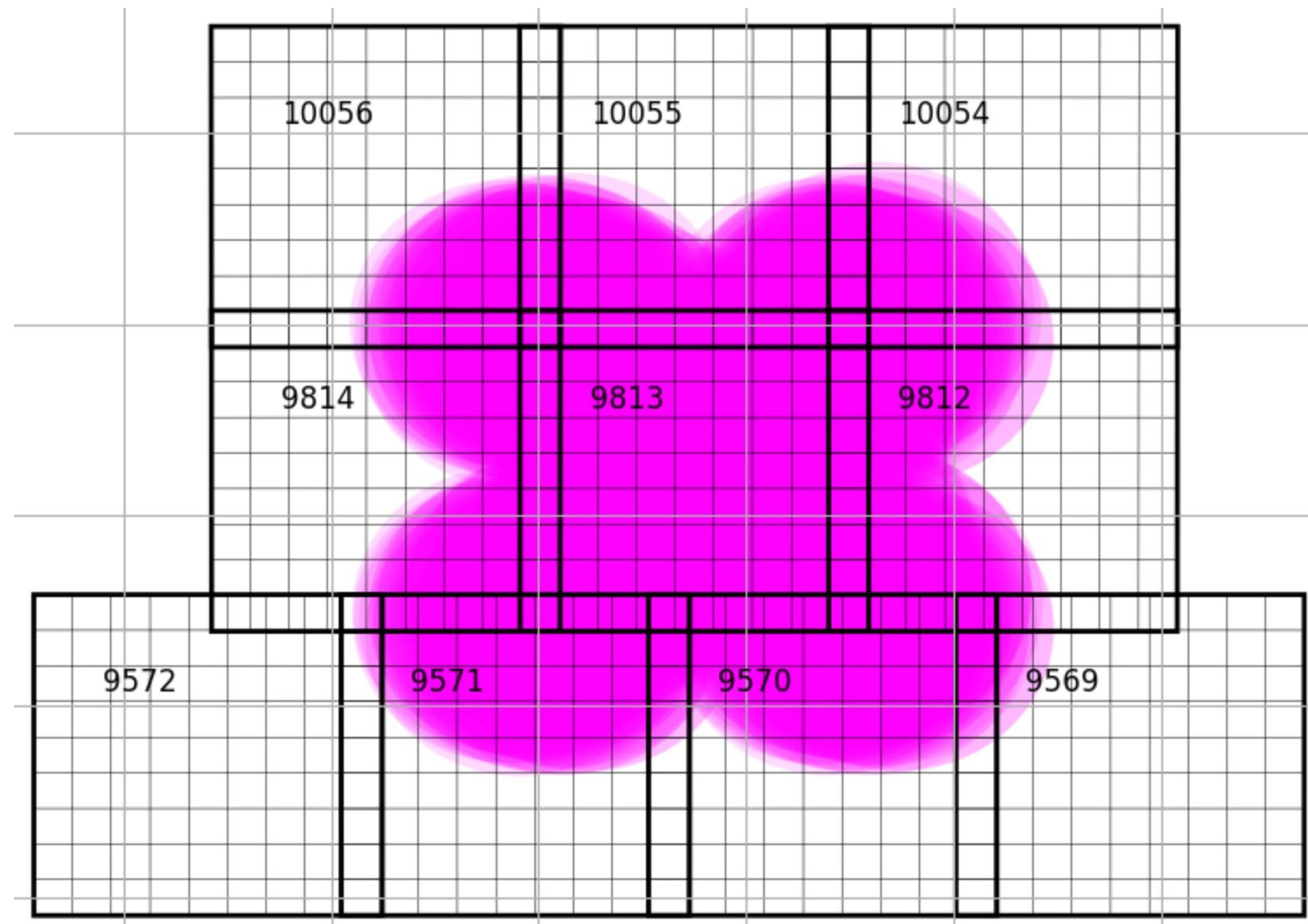
Catalogs are fun, but pixels tell the real story

- Tracking every step starting from the raw image is powerful
- There is no substitute for eyeballs on images

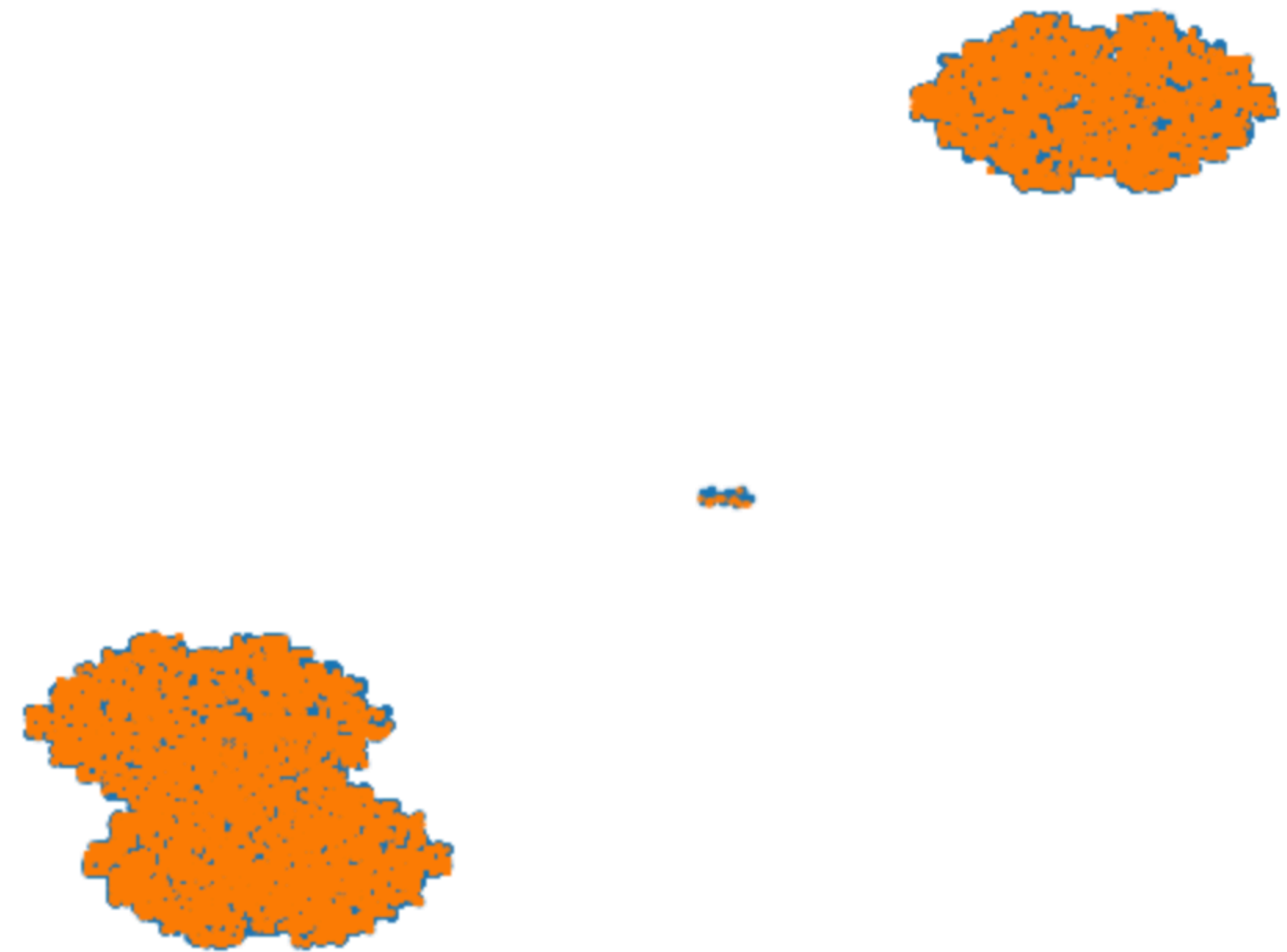


DIA Source positions (green)
DIA Object position (blue)

Doing things in more than one tract is tricky

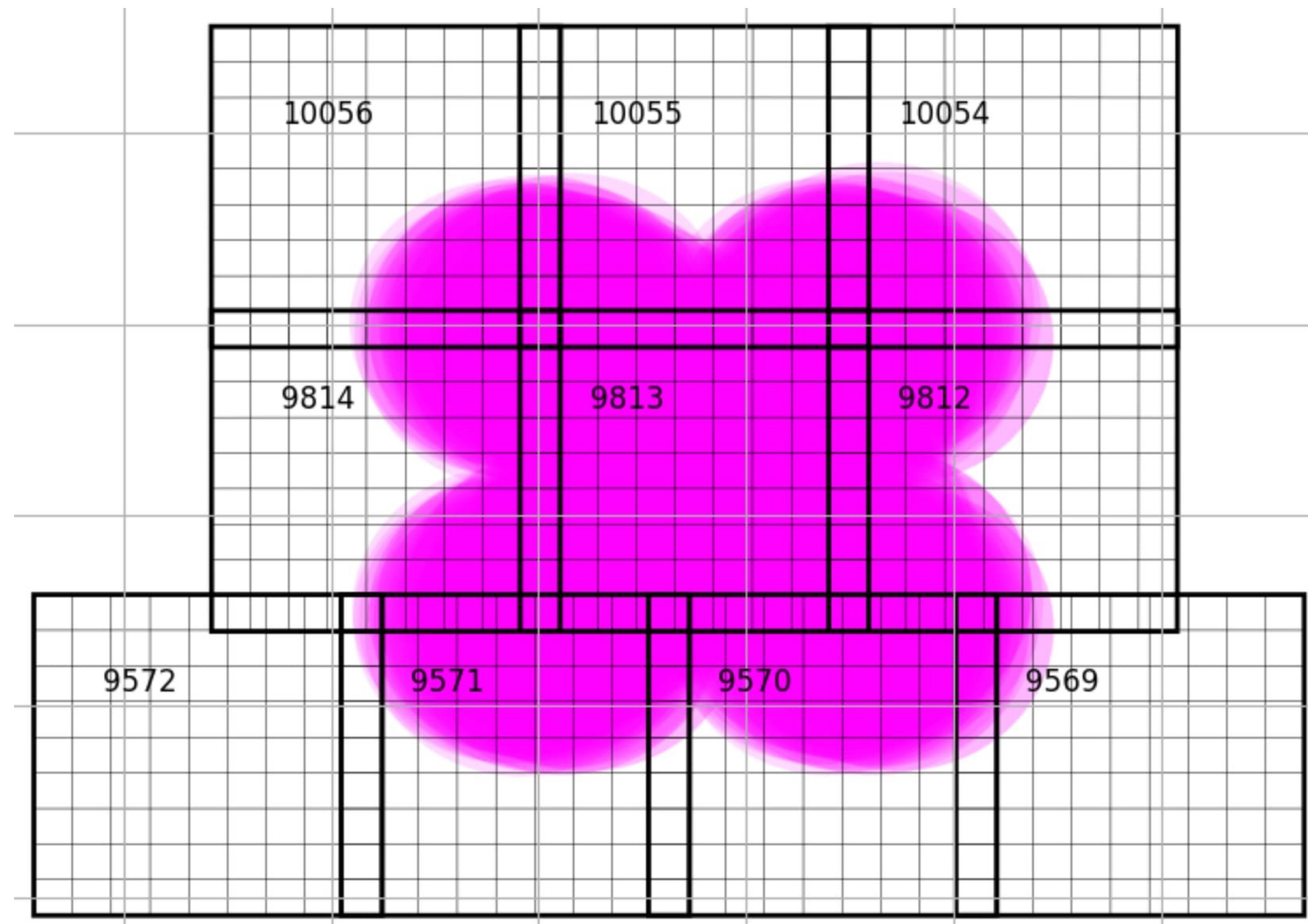


HSC precursor AP data: tract 9813

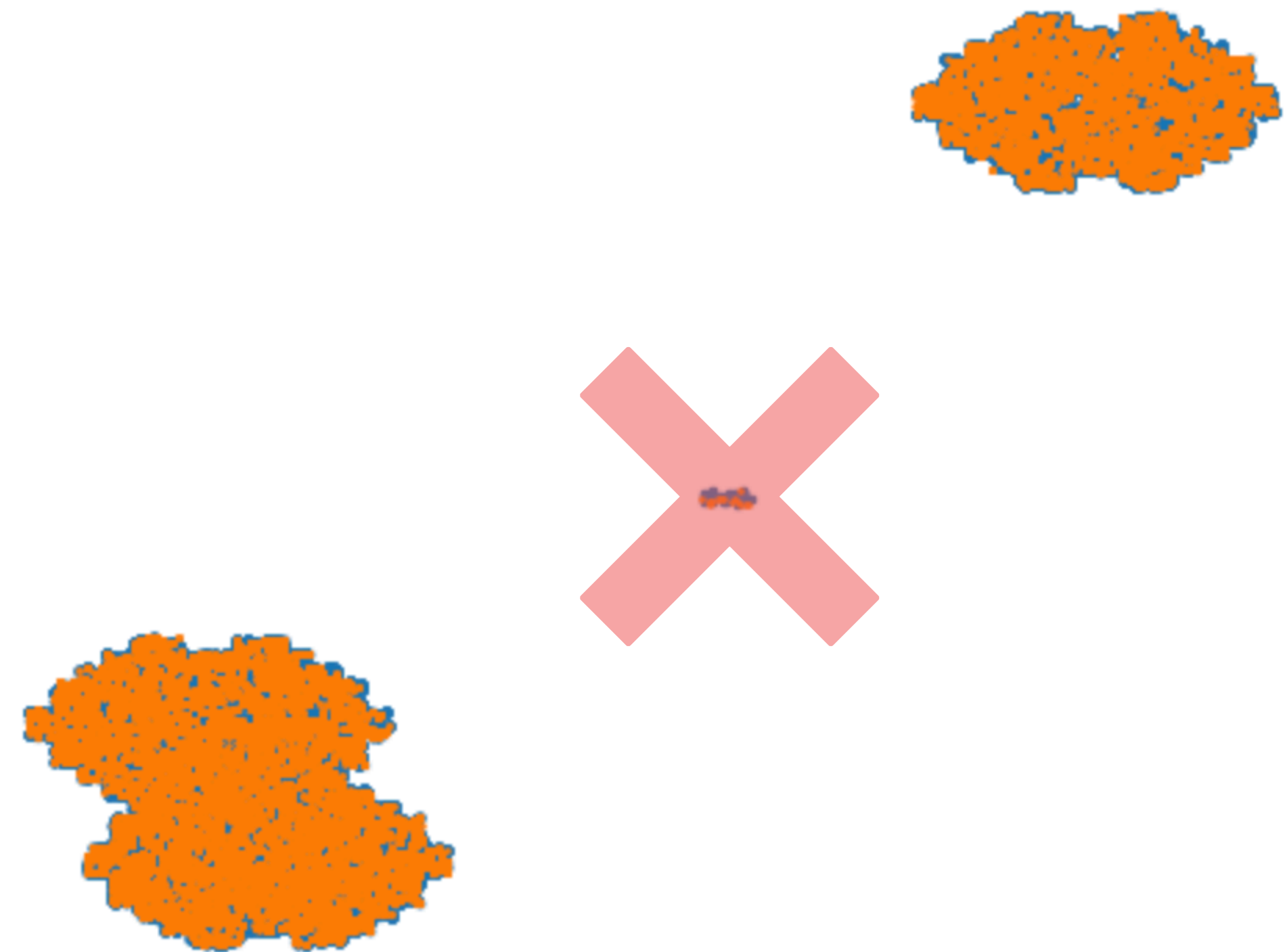


DECAM precursor AP data: all of this

Doing things in more than one tract is tricky



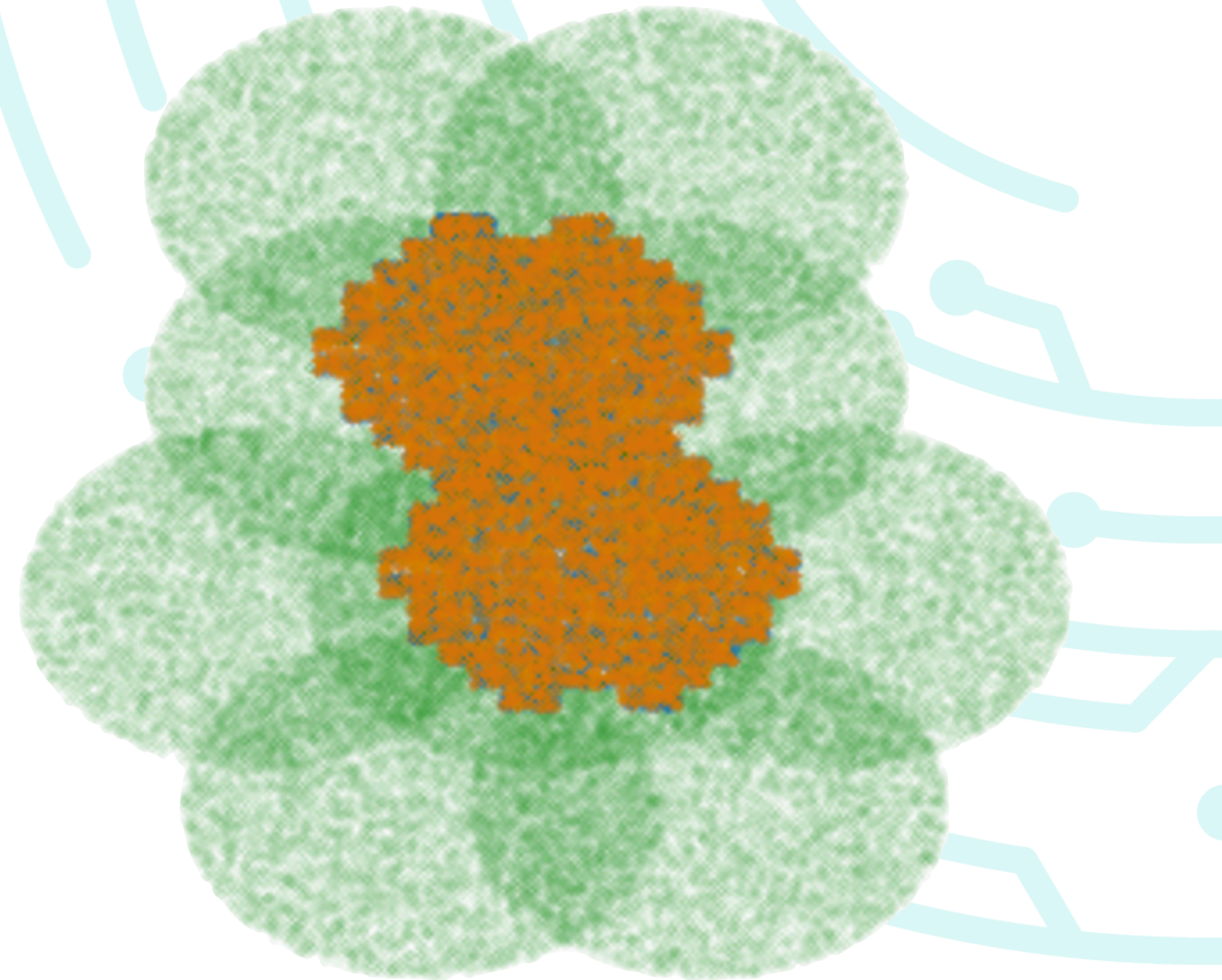
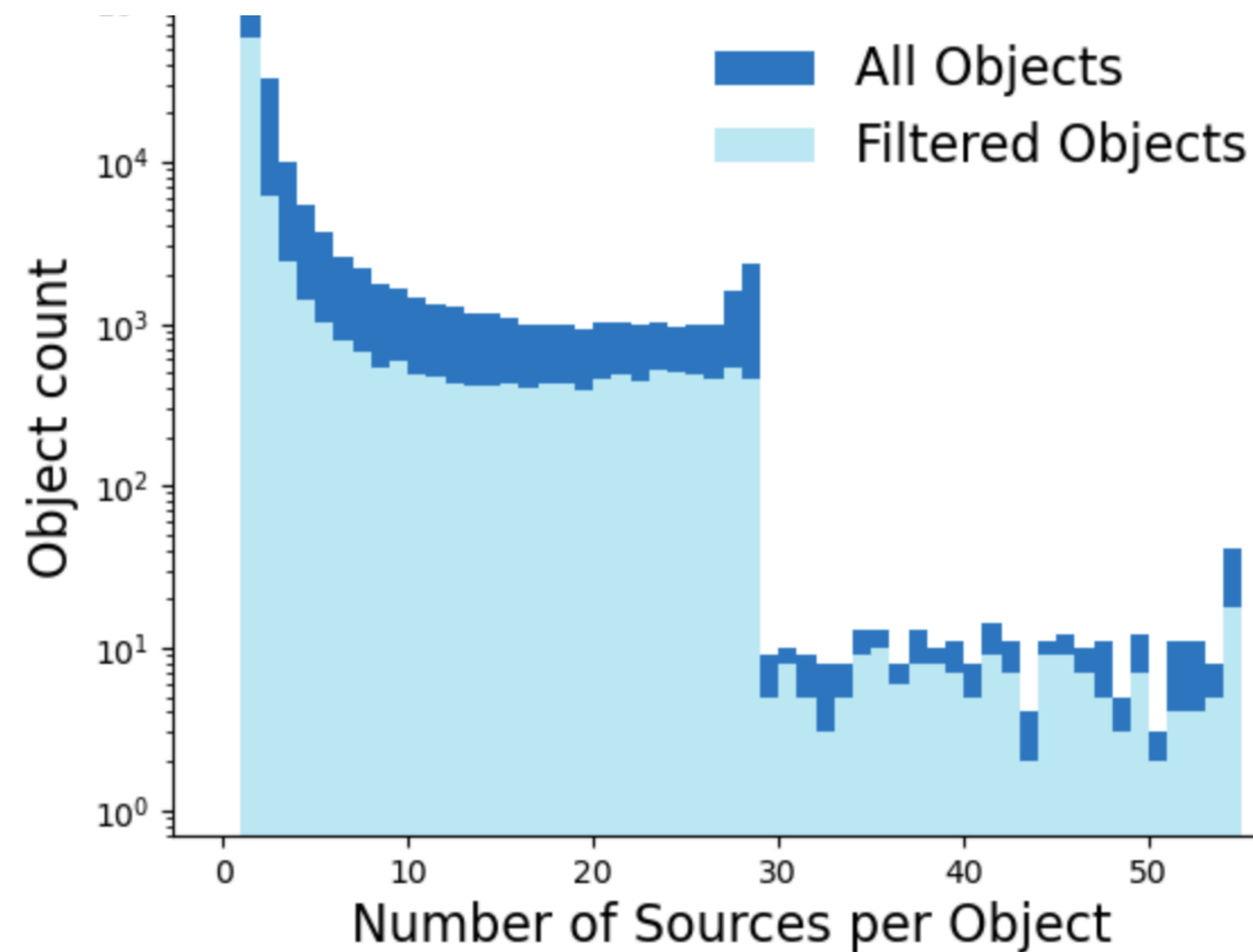
HSC precursor AP data: tract 9813



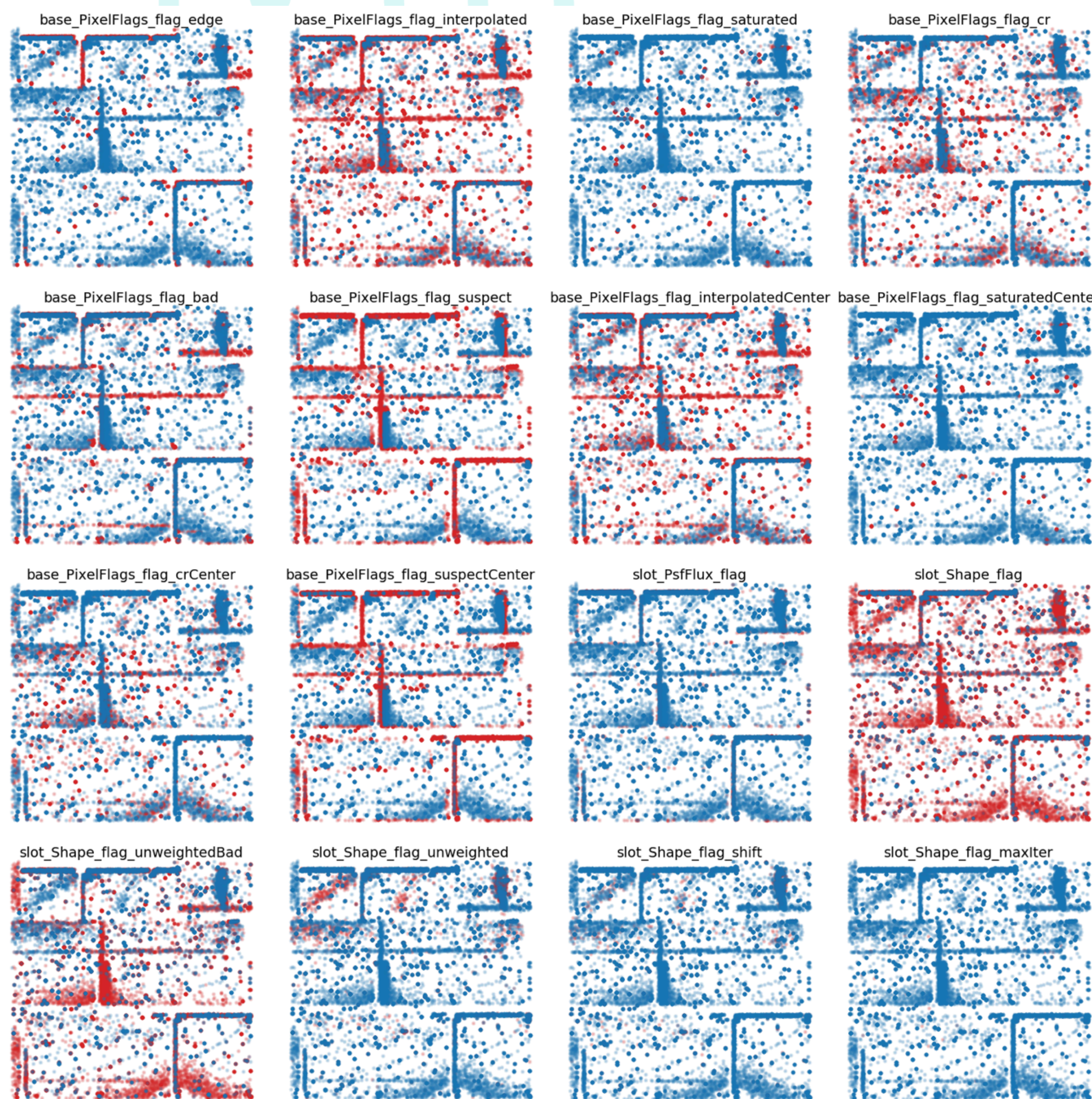
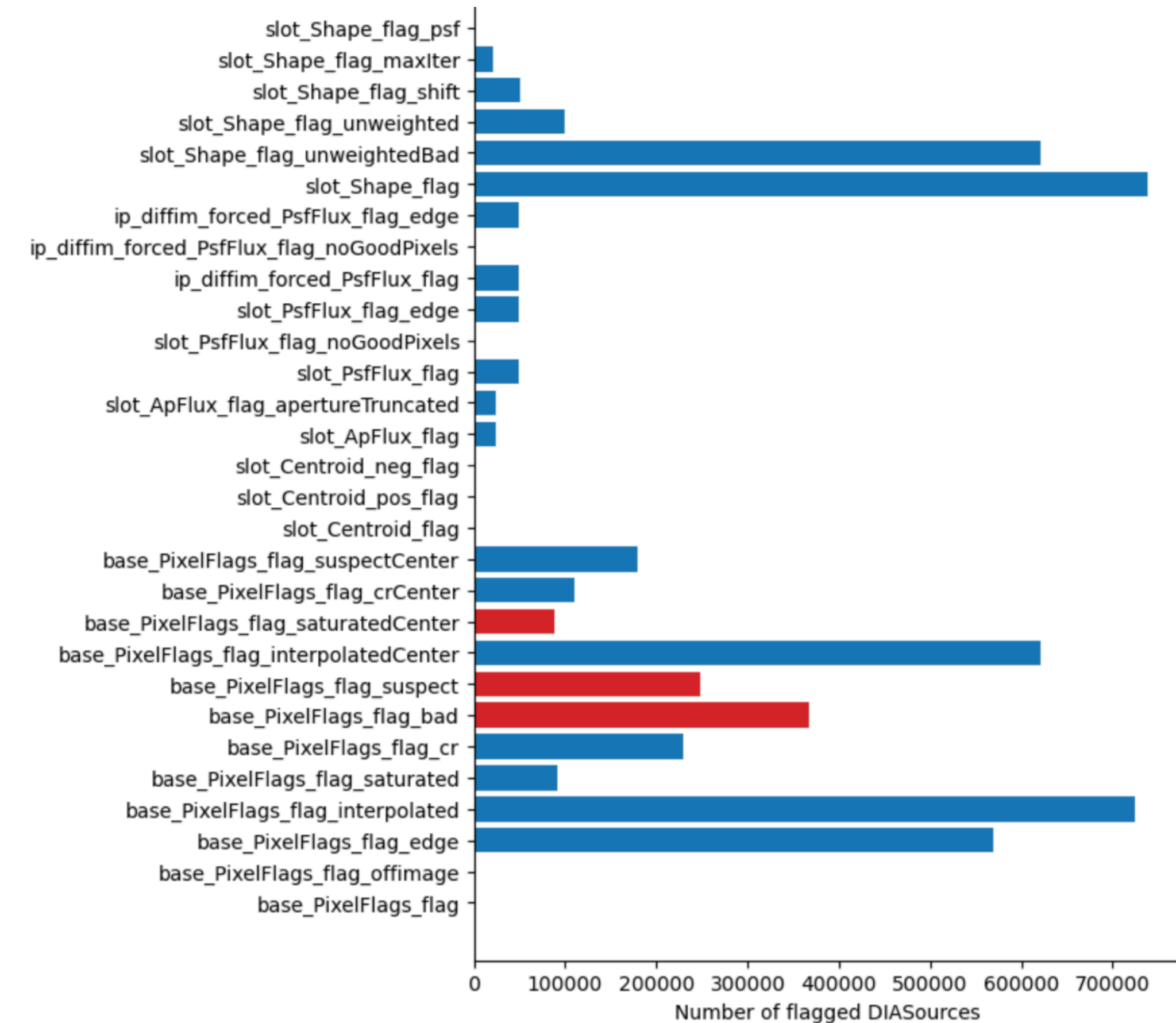
DECam precursor AP data: all of this
(except for that)

Doing things in more than one tract is tricky

- Injecting synthetic/fake sources
- Building multi-tract coadds for use as templates
- Some regions happen to be deeper than others

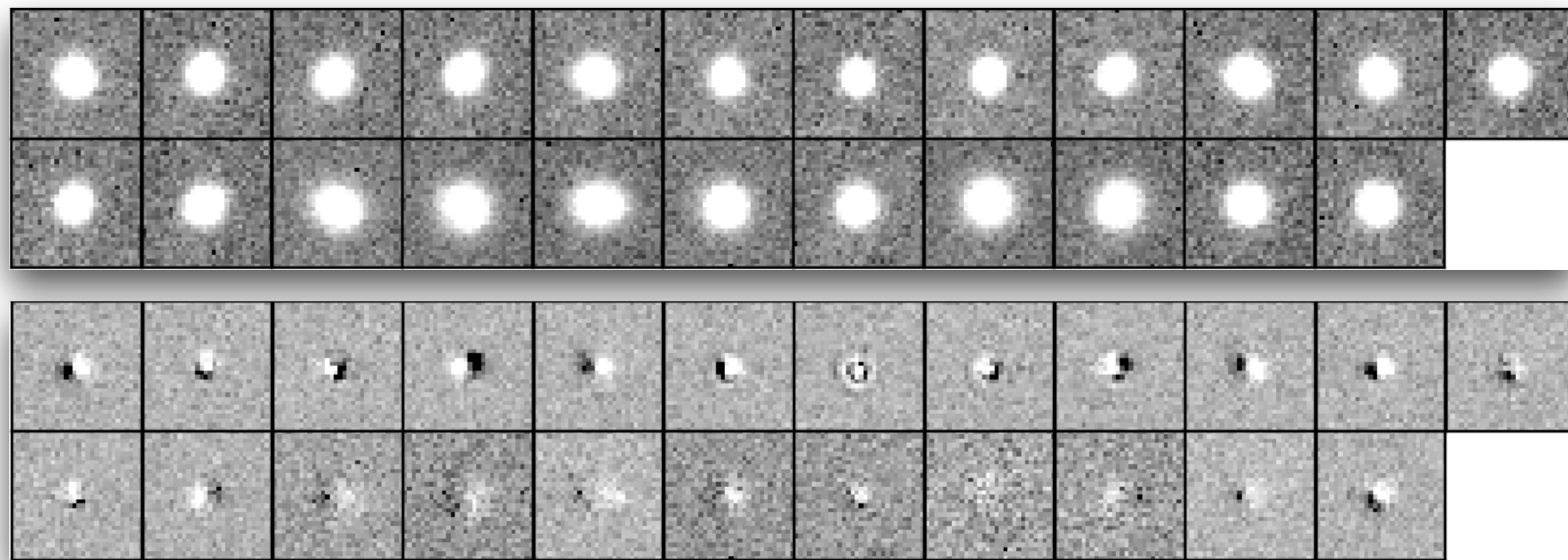


No definitive list of flags will tell you if a source is trash

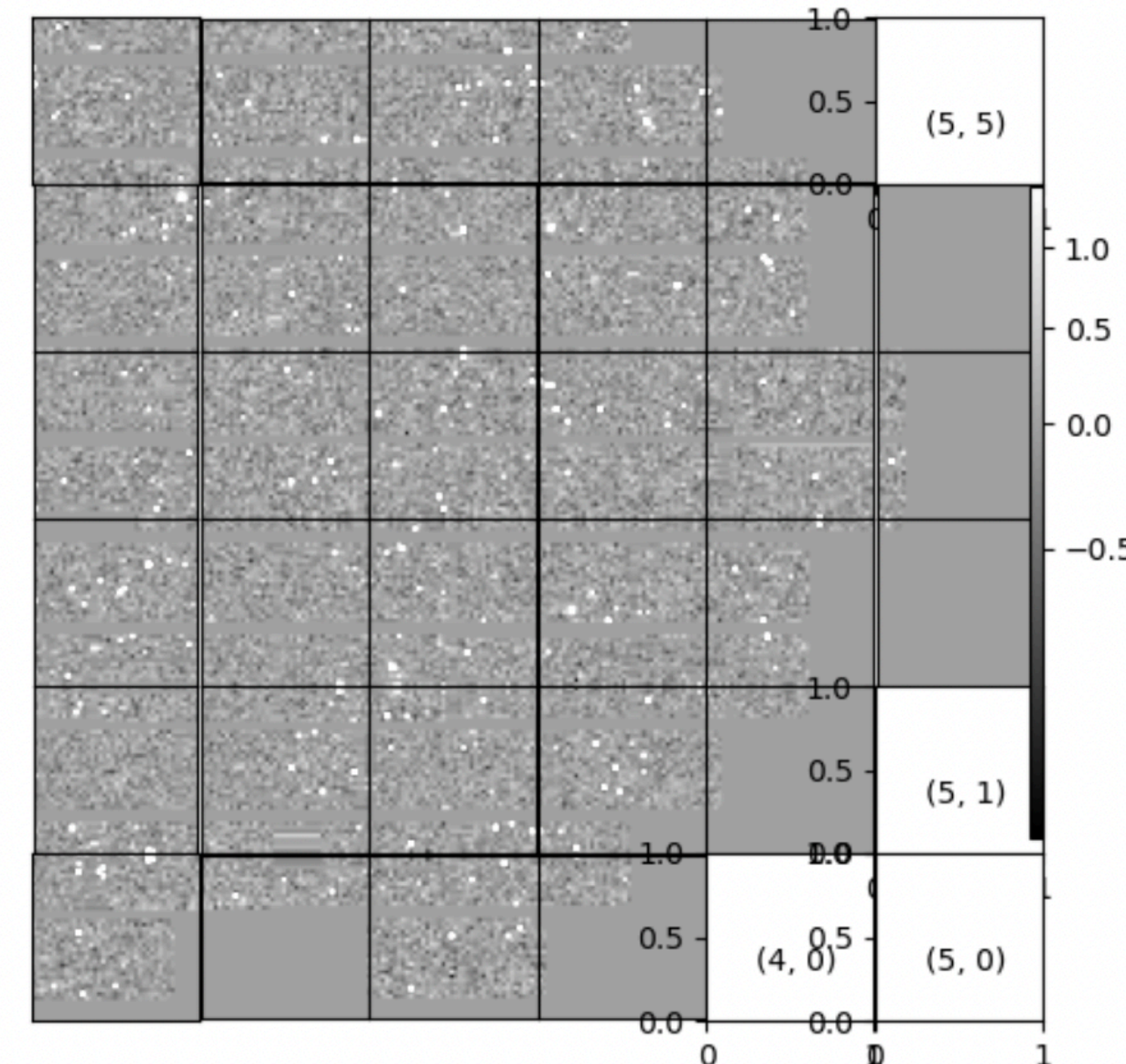


Garbage in garbage out, i.e., templates matter

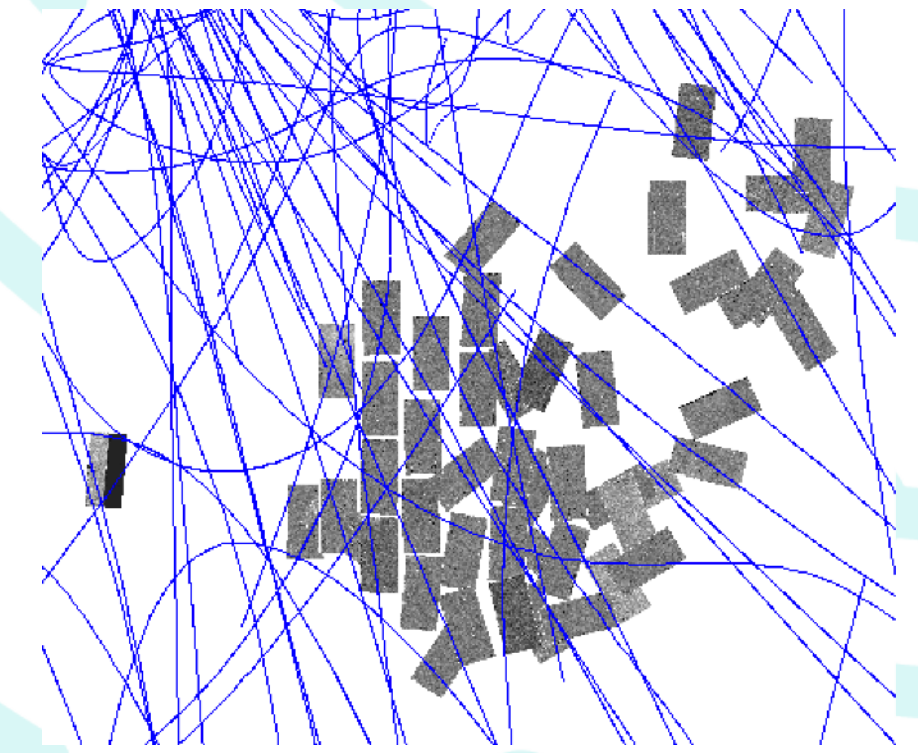
- The ideal template does not exist, but many bad ones do
- Crowded fields, weird edge cases, missing patches
- Our Science Pipelines are really awesome, yet not magic



Many DIA Sources for one DIA Object

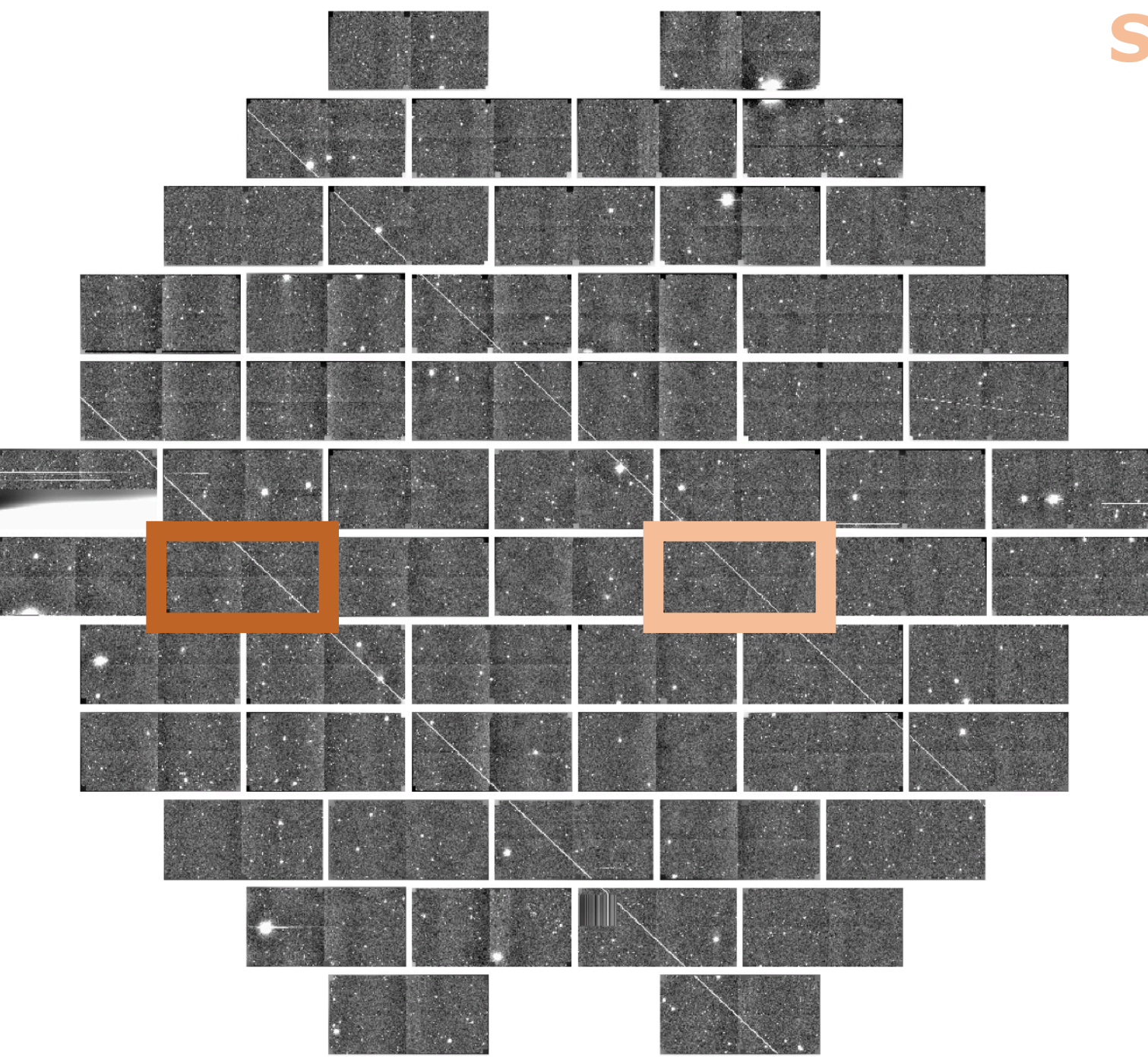


Template patches
with and without data

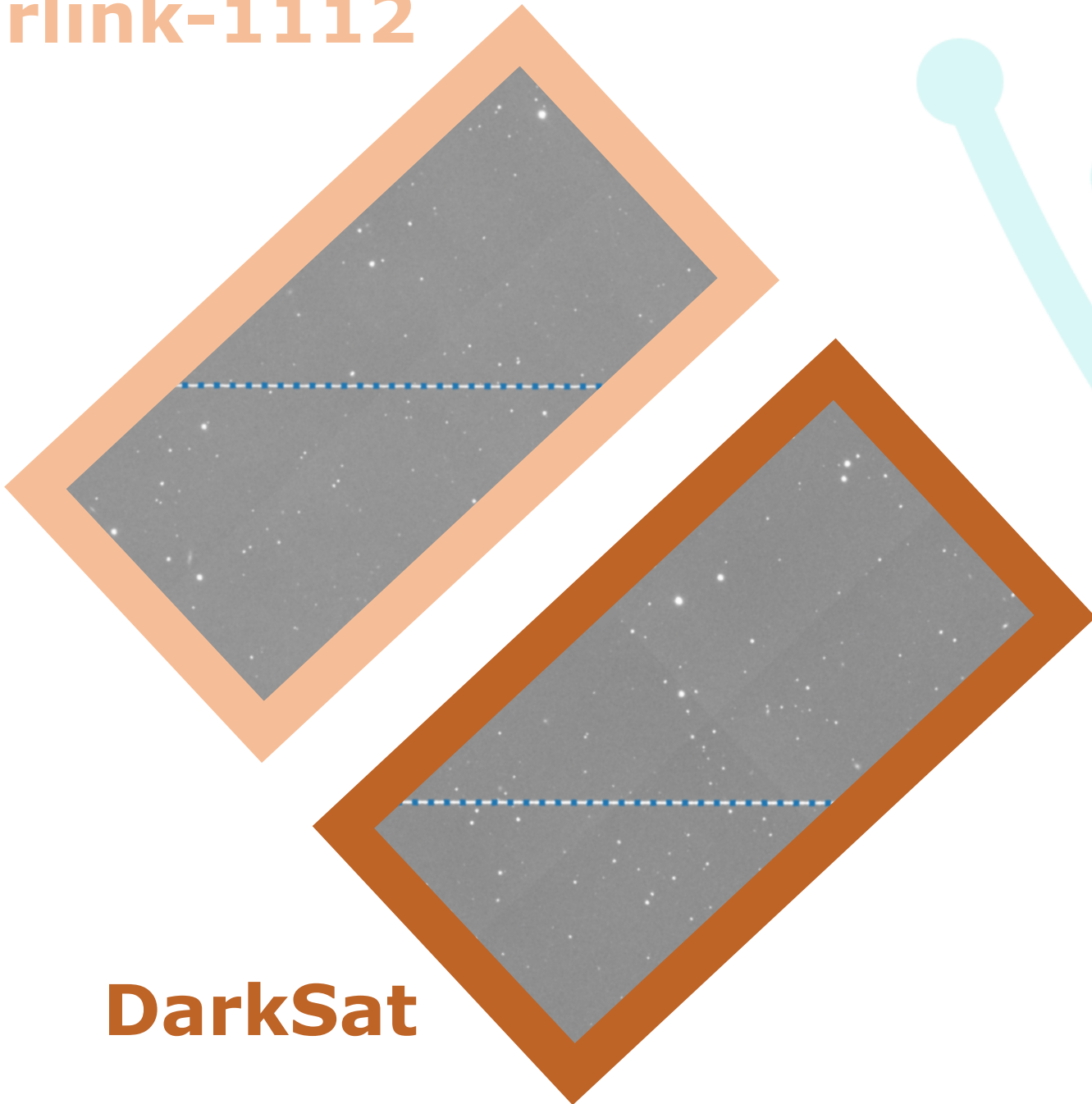


Astrometry is hard

Bonus(?): Sometimes you catch a satellite



Starlink-1112



DarkSat

DarkSat brightness for Tyson et al. 2020



2019 Starlink photobomb

DECam makes our pipelines more robust

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LSSTCam will be its own idiosyncratic adventure!
DECam precursor datasets are helping us prepare

