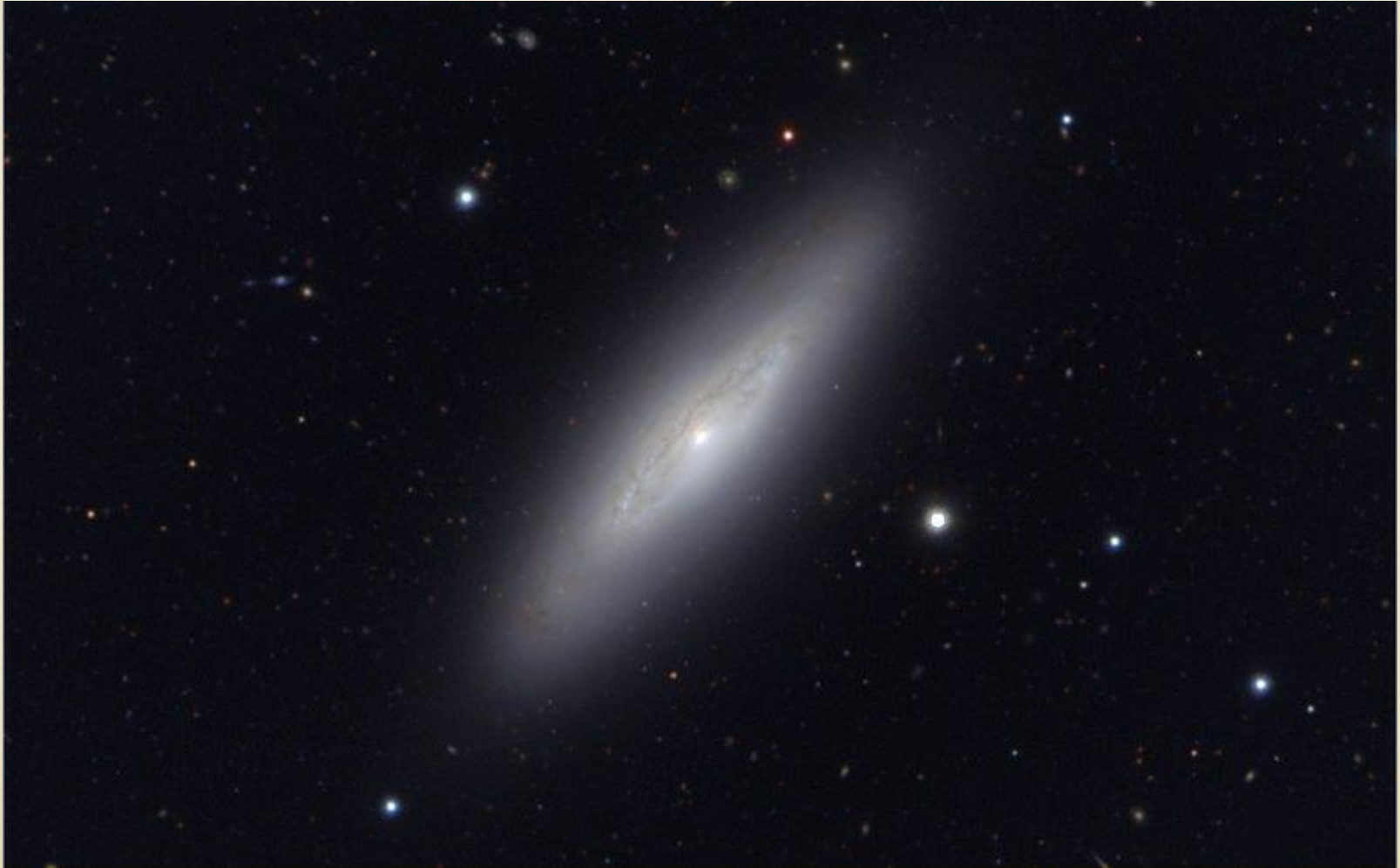


PS1 Overview

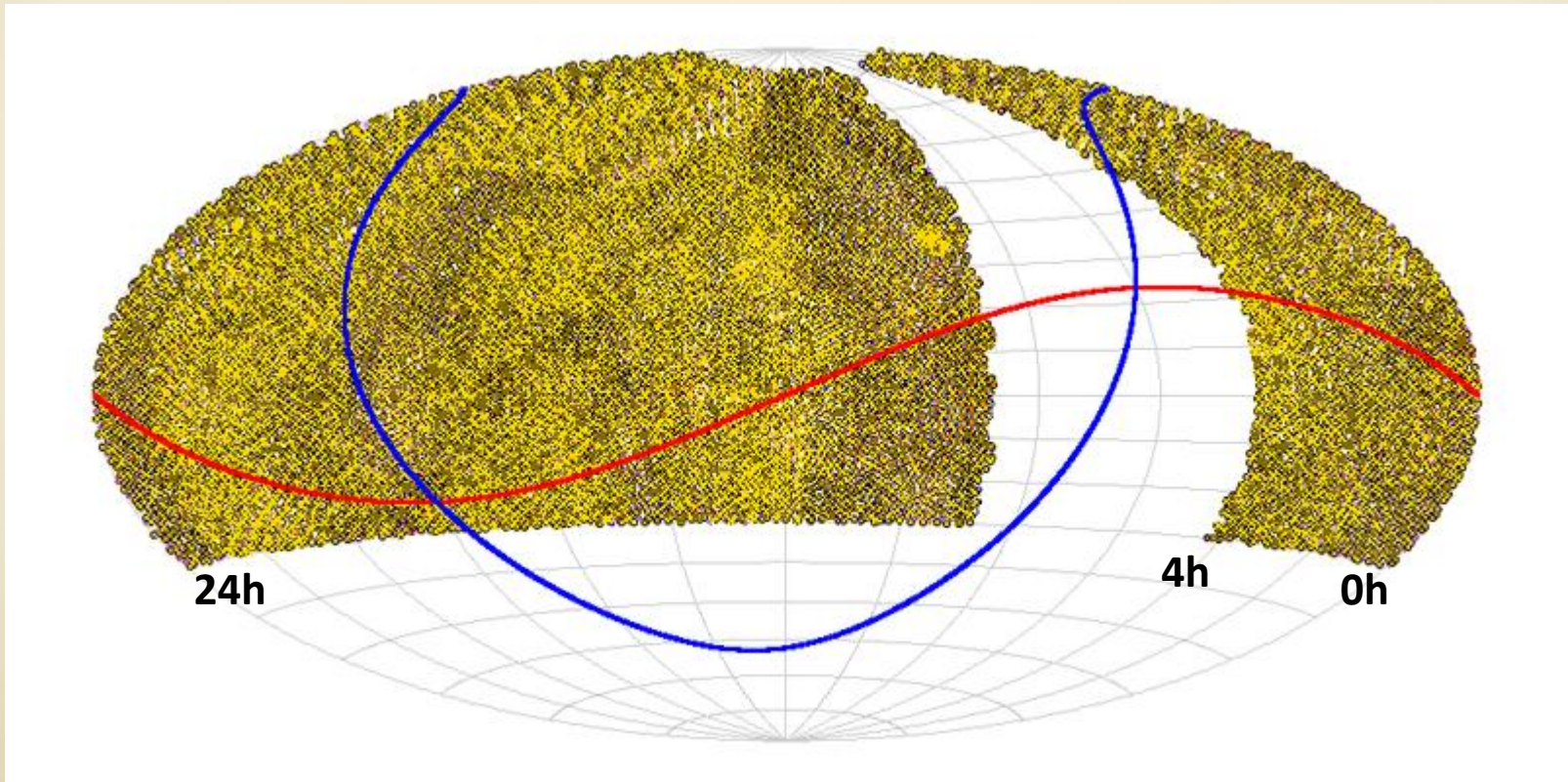


Durham PS1SC Extragalactic Workshop – January 2013

IPP Reprocessing status

Reduction of individual exposures

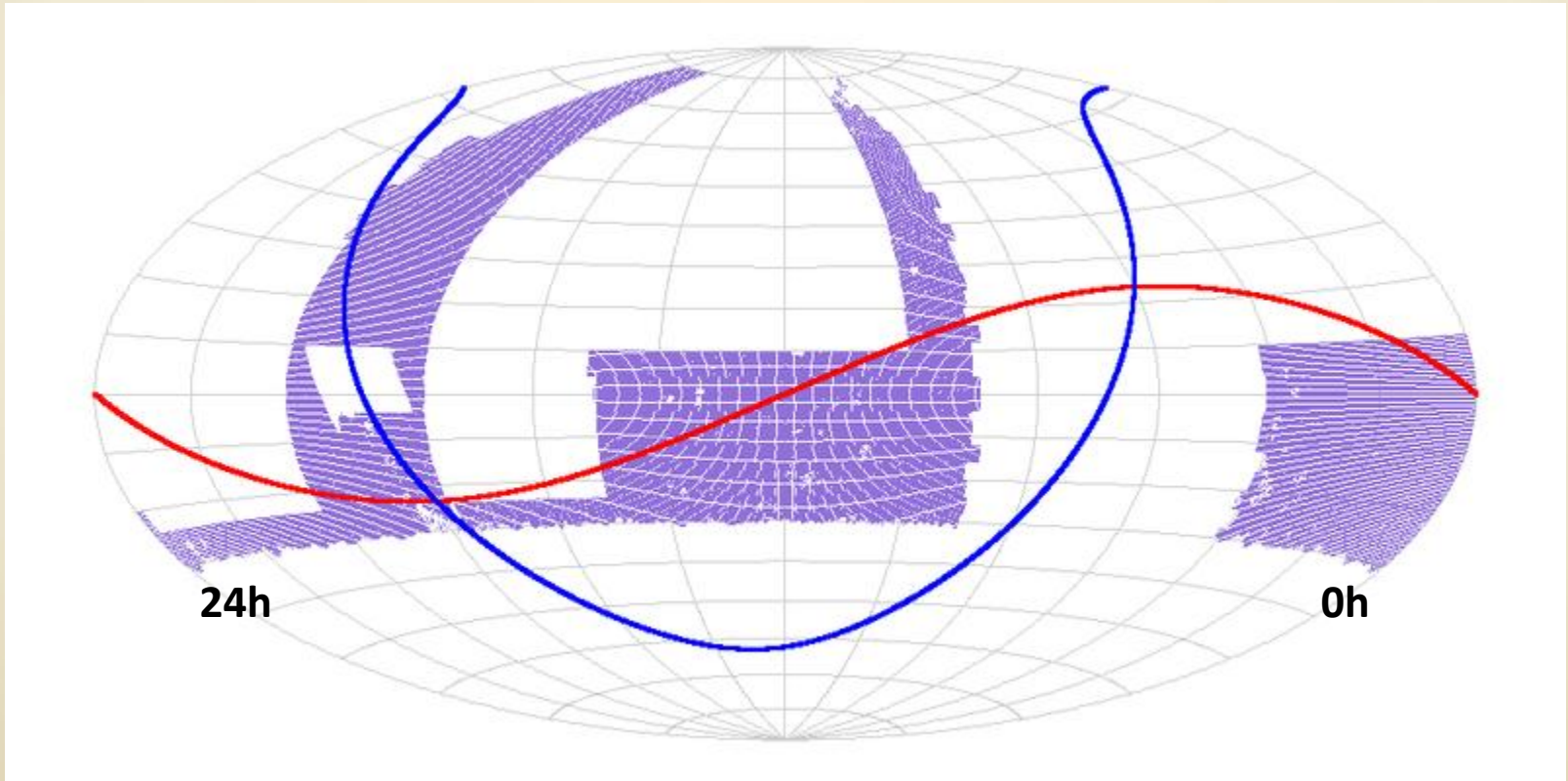
- 7/12/2012 (Ken Chambers)



Static sky progress

This get us the extended source and matched apertures

- 3/1/2013 (Ken Chambers)



Medium Deep Status

| | Latest refstack | deepstack |
|--------|-----------------|-----------|
| • MD01 | 3/08/2012 | |
| • MD02 | 27/09/2012 | |
| • MD03 | 1/11/2012 | |
| • MD04 | 25/11/2012 | 27/7/2012 |
| • MD05 | 2/12/2012 | |
| • MD06 | 21/12/2012 | |
| • MD07 | 6/11/2011 | |
| • MD08 | 22/04/2012 | |
| • MD09 | 31/08/2012 | 27/7/2012 |
| • MD10 | 4/08/2012 | |

Medium Deep Status

Deepest exposure times:

| | g | r | i | z | y |
|------|-----|-----|-----|-----|-----|
| MD04 | 30k | 30k | 55k | 40k | 25k |
| MD09 | 35k | 35k | 70k | 75k | 35k |

refstack exposure times:

| | g | r | i | z | y |
|--------------------|---------|---------|----------|--------|--------|
| All (\neq MD07) | 7.5-10k | 7.5-10k | 15-17.5k | 15-20k | 15-20k |

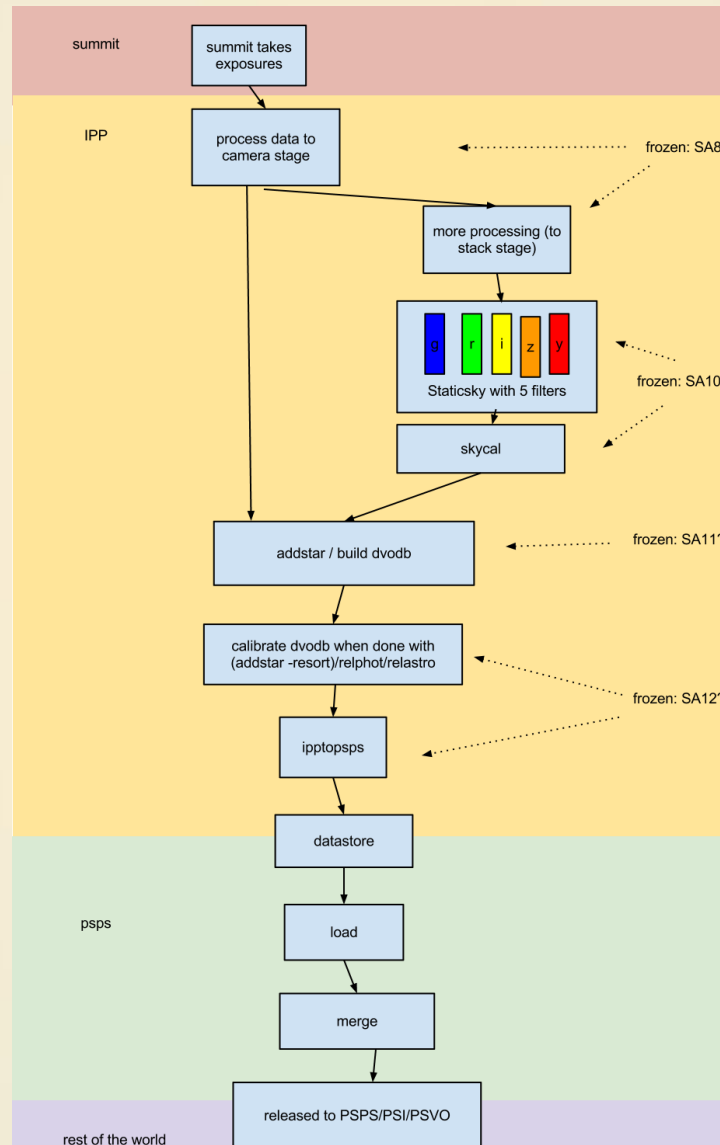
What froze when

Telescope

IPP

PSPS

Data released



SAS8 (pixels)

SAS10 (static sky)

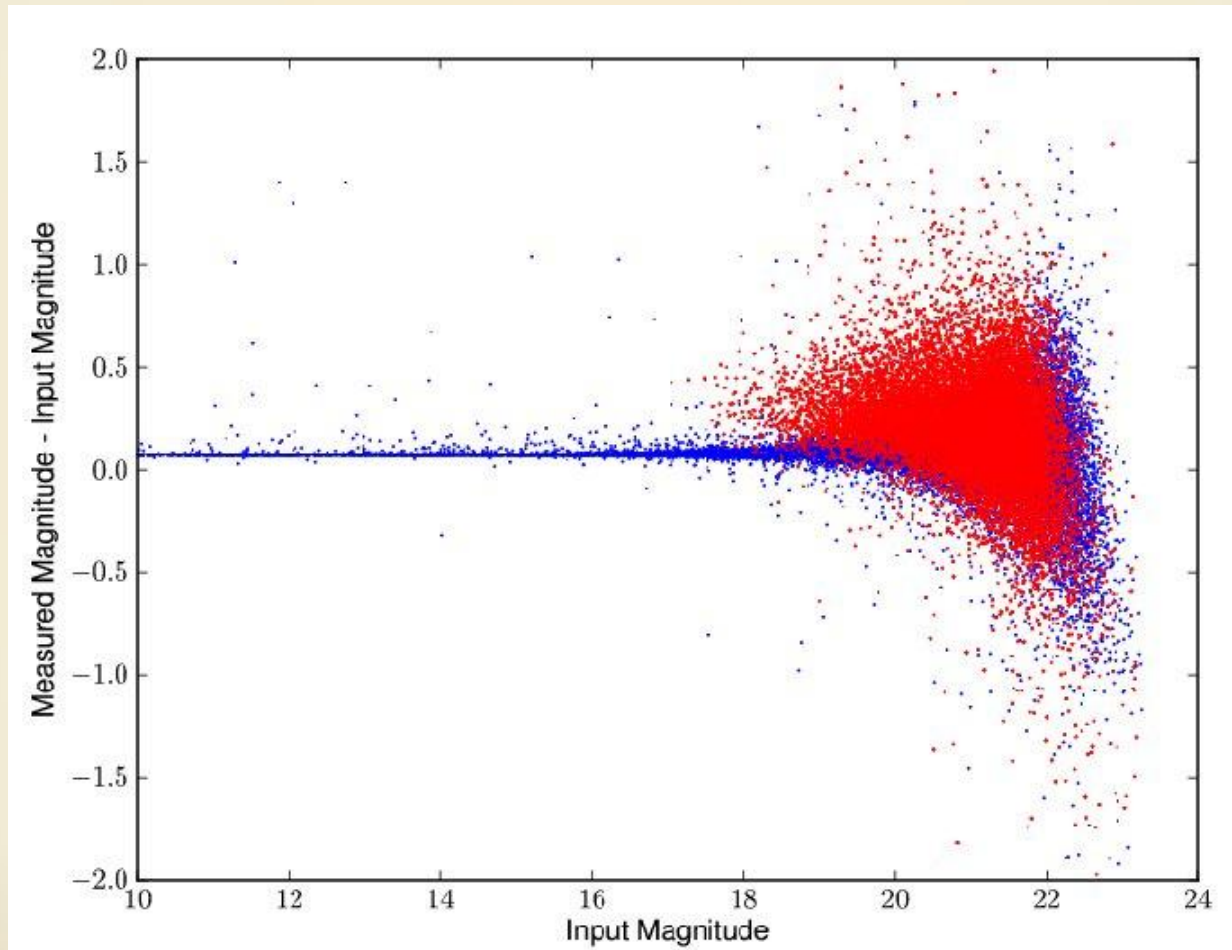
SAS11

SAS12

(Heather Flewelling)

IPP tests – fake data

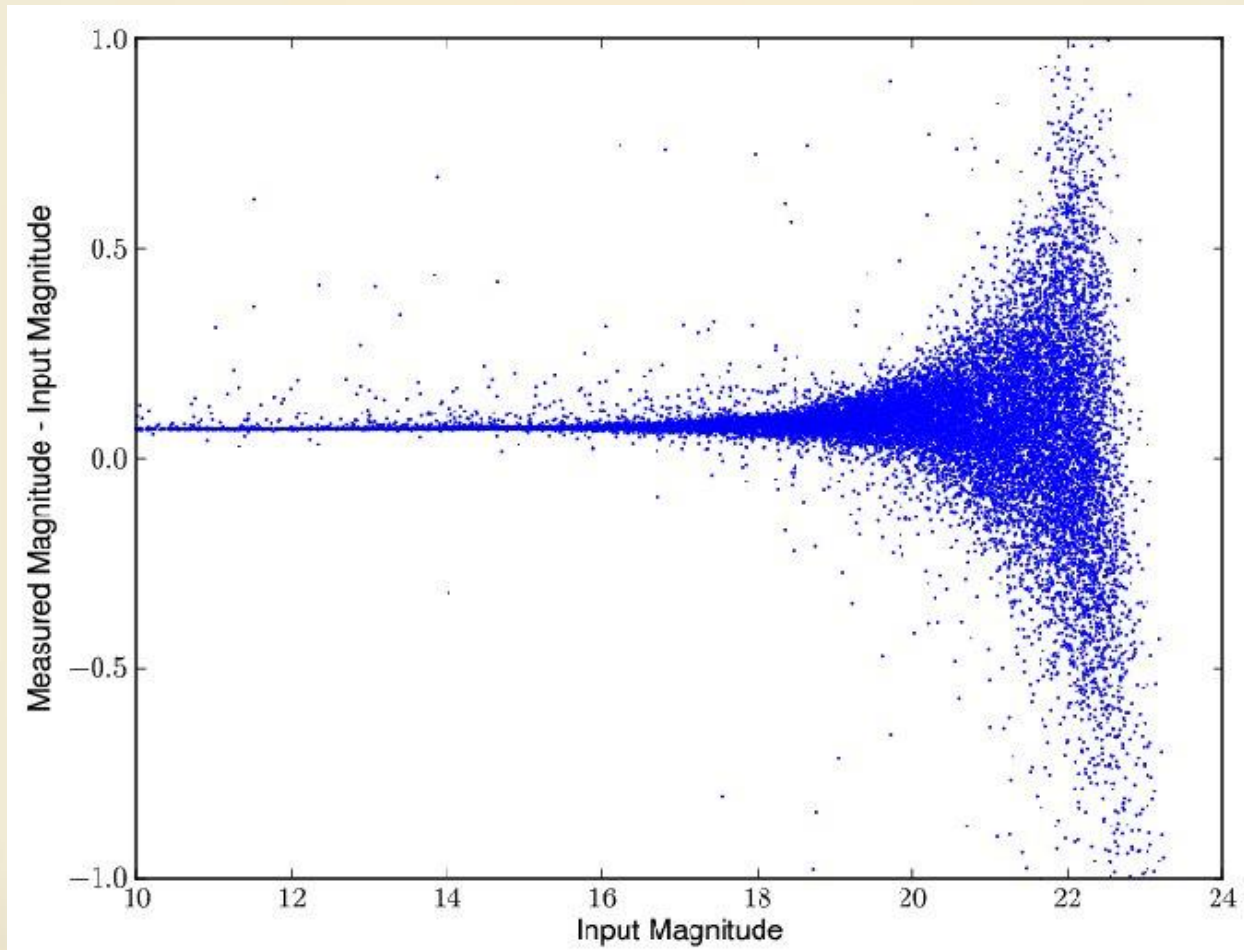
Kron mags for fake stars (blue) and galaxies (red) on a fake background:



(Danny Farrow)

IPP tests – fake data

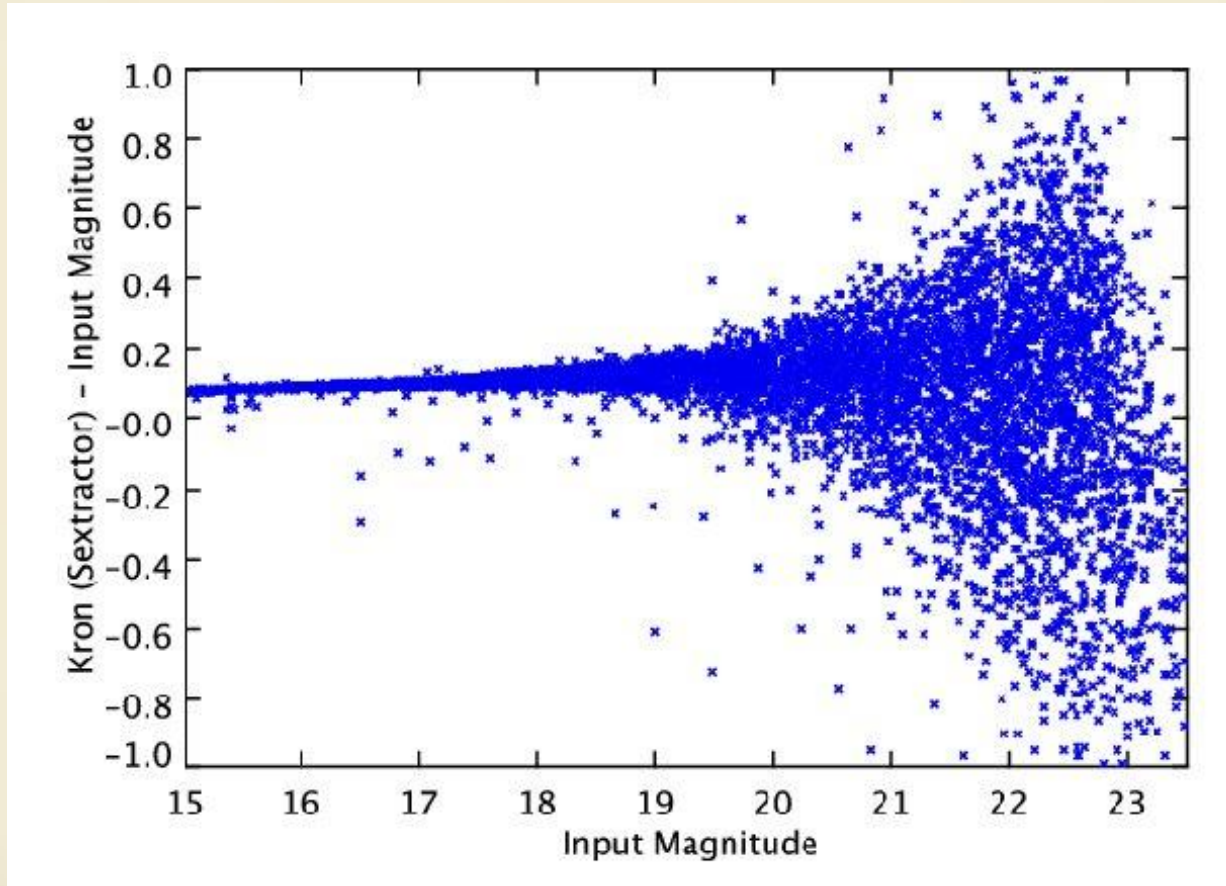
Kron mags for stars only:



(Danny Farrow)

IPP tests – fake data

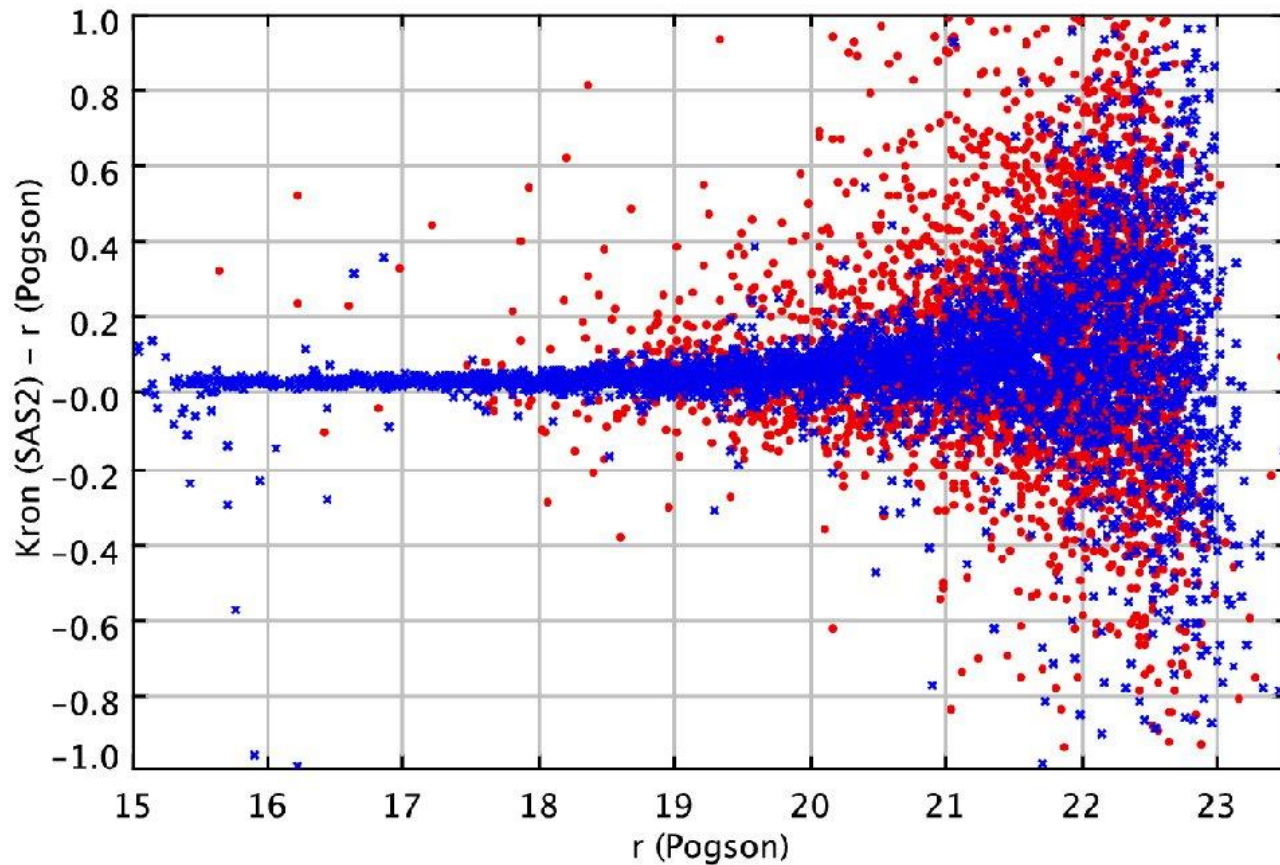
SExtractor (MAG_AUTO) looks slightly worse (stars again):



(Danny Farrow)

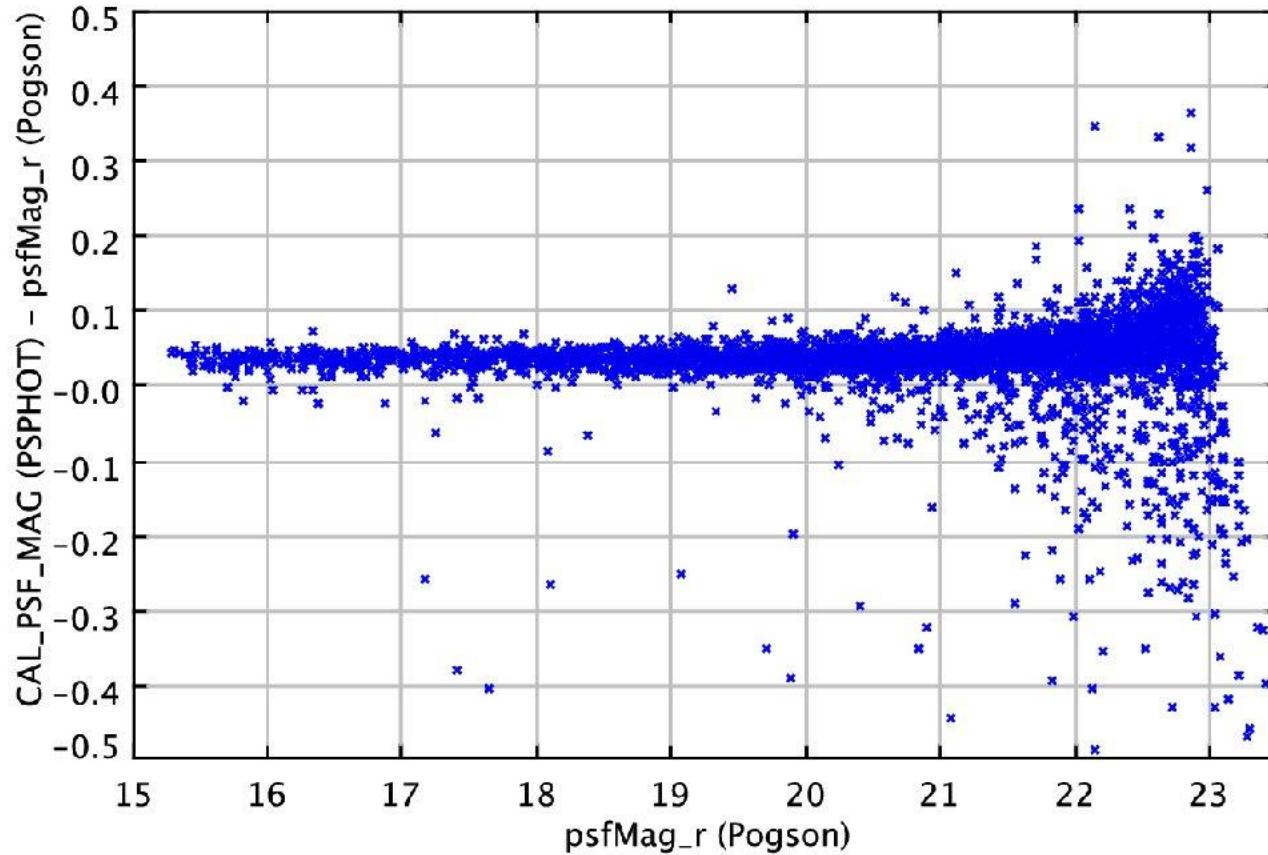
IPP tests - SDSS data

This is real r-band data – psphot run on SDSS tiles (Kron) cf the DR8 (modelMag):
(i.e run on the same pixels)



IPP tests - SDSS data

PSF mags compare much better (stars only):



IPP tests – real data

Offset/RMS between pspot Kron and SDSS modelMag (r-band):

(Same pixels – SDSS tiles)

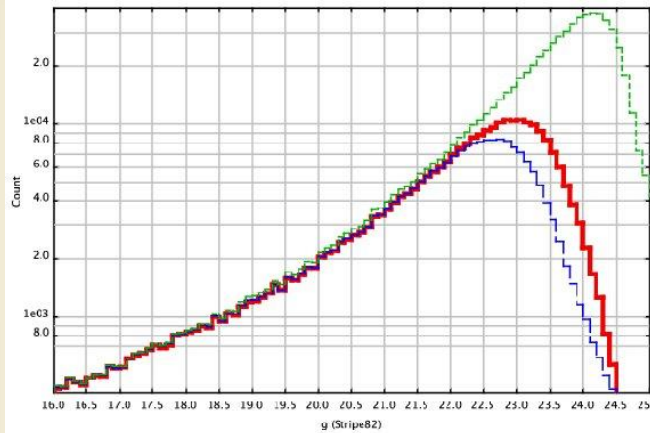
(Different pixels – SAS2 stack)

| DR8 mag | psphot SDSS (galaxies) | psphot SDSS (stars) | psphot SAS2 (galaxies) | psphot SAS2 (stars) |
|---------|---------------------------|------------------------|---------------------------|------------------------|
| <18 | | 0.02 ± 0.01 | | 0.02 ± 0.01 |
| 18-20 | 0.11 ± 0.16 | 0.04 ± 0.04 | 0.06 ± 0.16 | 0.05 ± 0.04 |
| 20-21 | 0.16 ± 0.26 | 0.06 ± 0.08 | 0.13 ± 0.25 | 0.06 ± 0.09 |
| 21-22 | 0.18 ± 0.26 | 0.12 ± 0.18 | 0.16 ± 0.31 | 0.11 ± 0.18 |
| 22-22.5 | 0.17 ± 0.26 | 0.18 ± 0.30 | 0.17 ± 0.35 | 0.18 ± 0.30 |

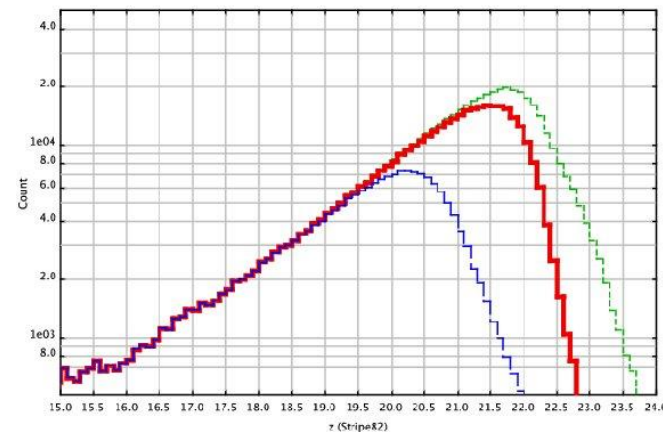
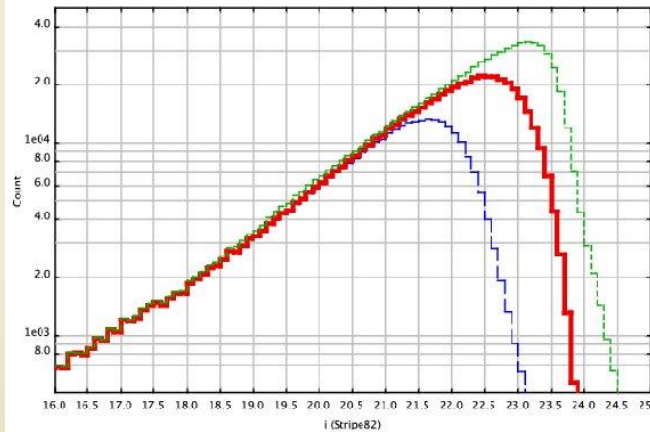
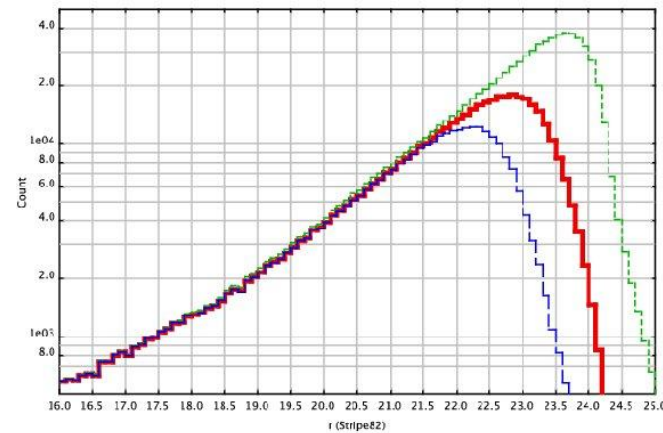
(Note the SAS2 data is somewhat deeper than the SDSS tiles)

Depth of SAS2 stacks

g 23.0/22.8



r 22.8/22.2



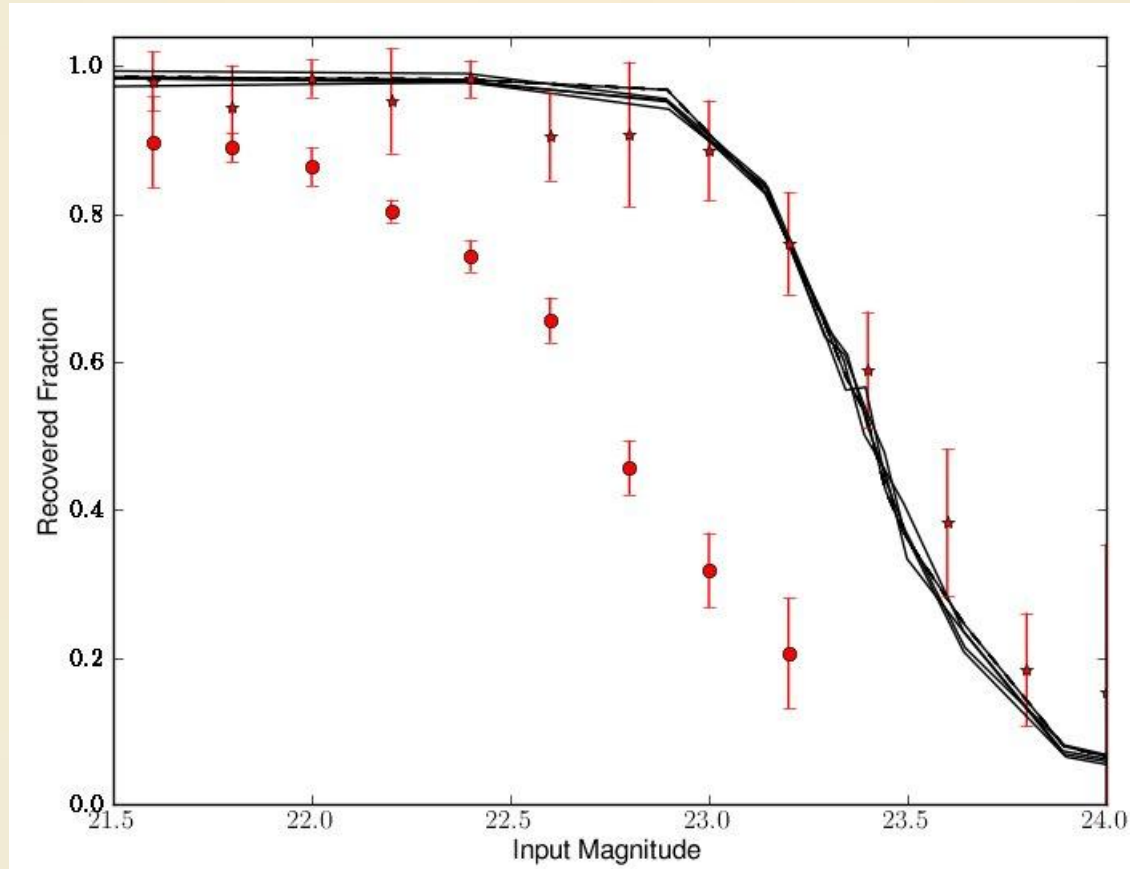
i 22.5/21.6

z 21.7/20.3

SAS2 / DR8 matched to Stripe82 – modelMag of counts peak

Detection Efficiency

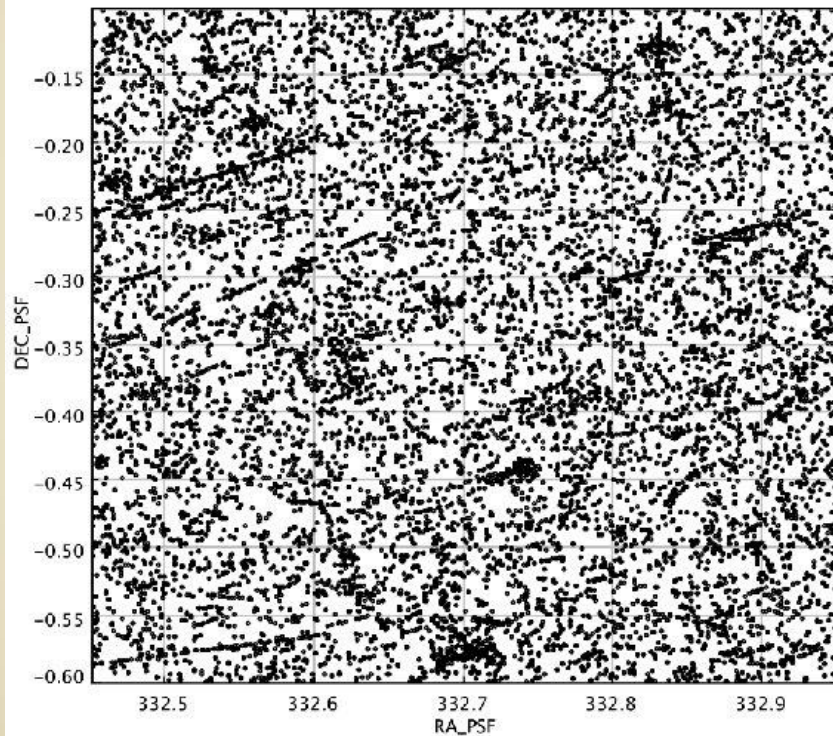
Real SAS2 r-band stack – circles fake galaxies, asterisks (and lines) fake stars:



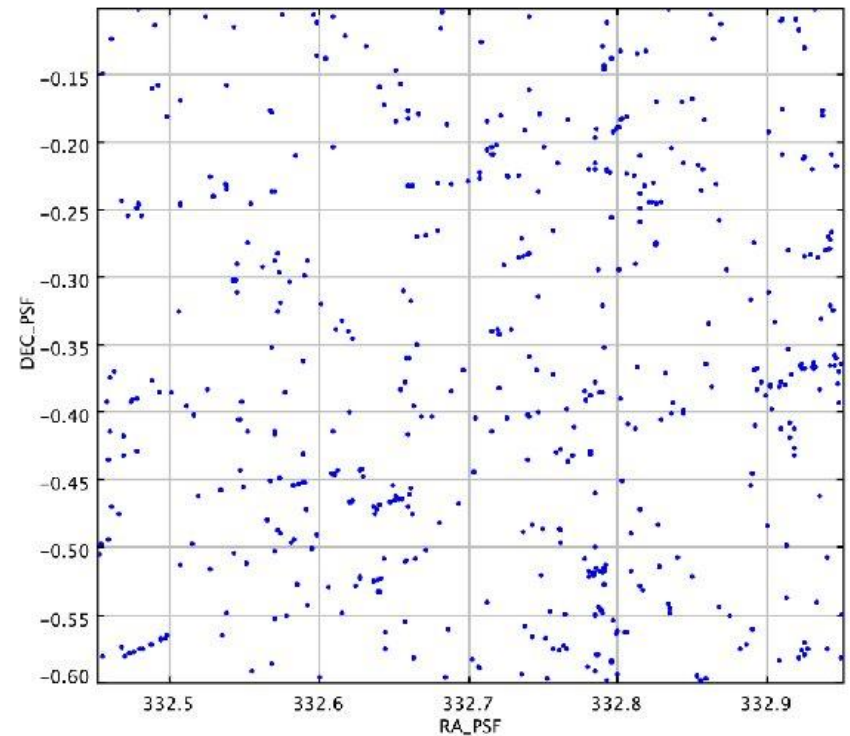
(Danny Farrow)

False Detections

Typical SAS2 area – objects with no match in Stripe 82



All warps

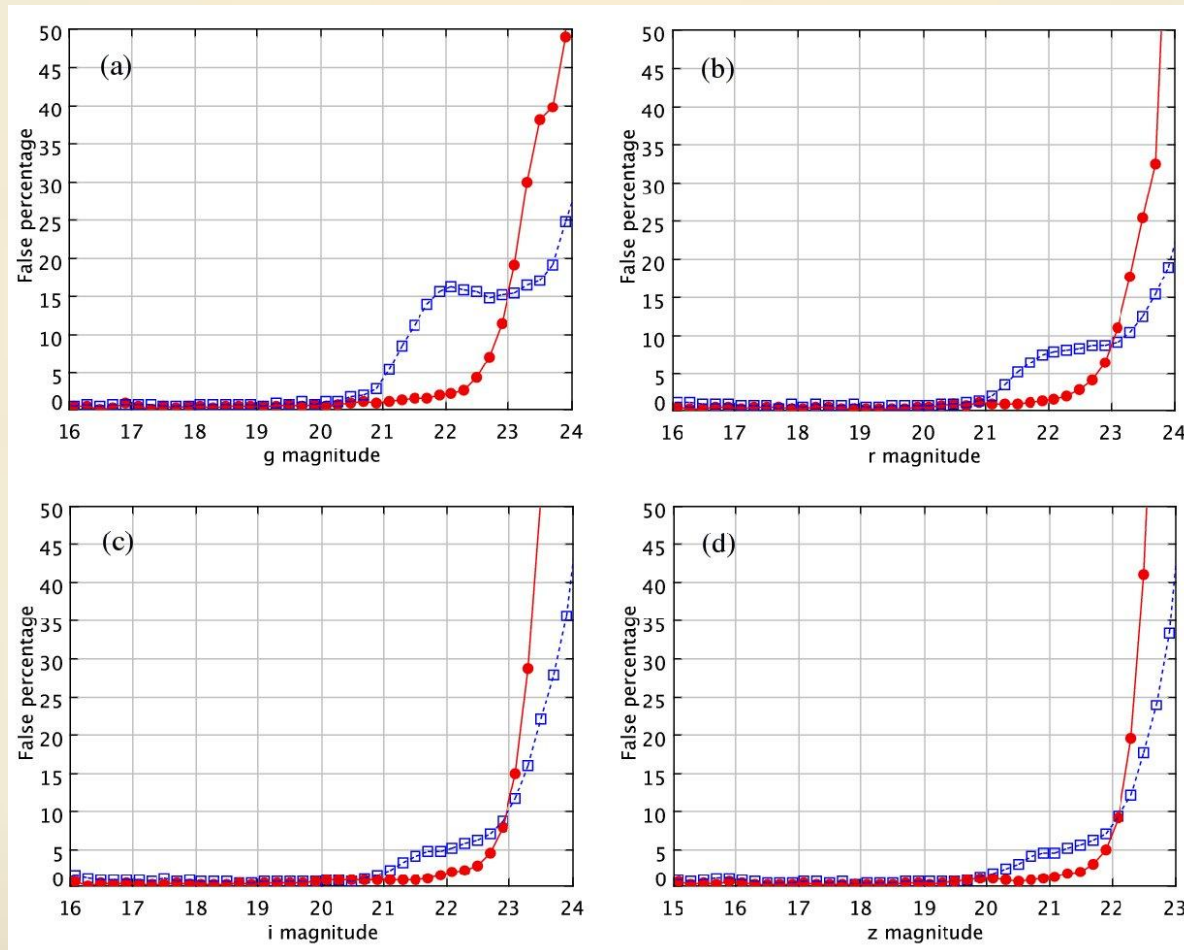


Stack

False Detections

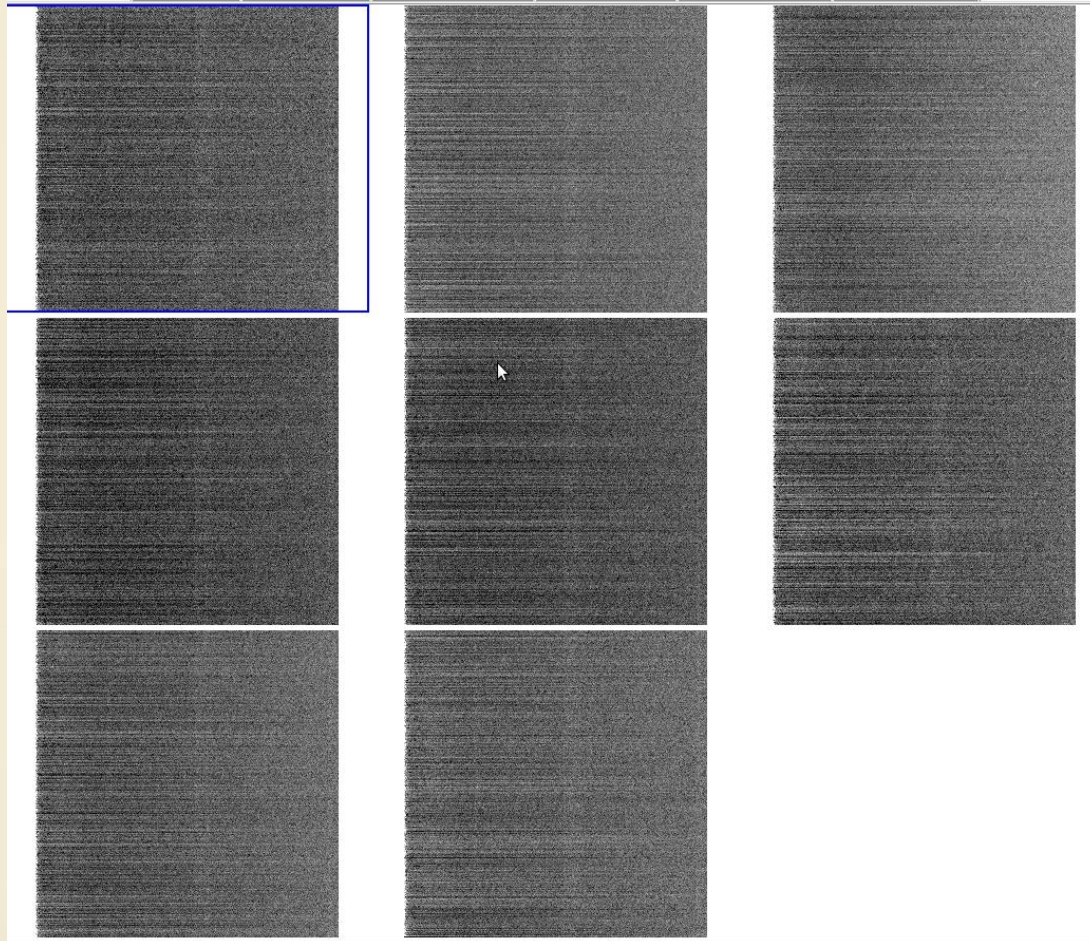
i.e. No match in Stripe82

With $\text{PSF_QF_PERFECT} > 0.85$ and $\text{FLAGS} \& 0x1003bc88 == 0$ (takes out $\sim 20\%$)



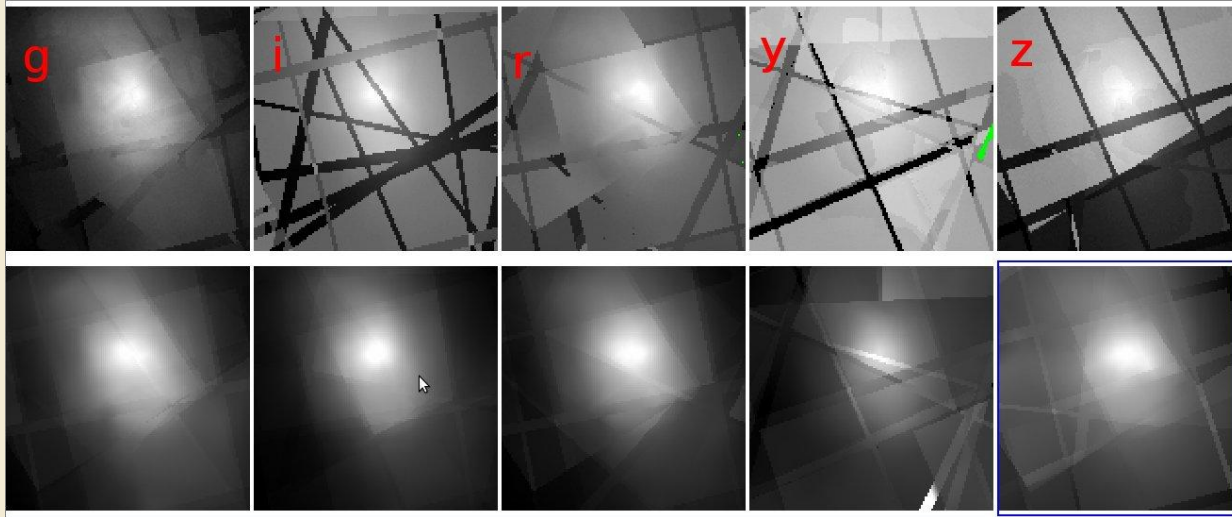
Still Problems with Bias

(from Chris Waters)



Background restoration

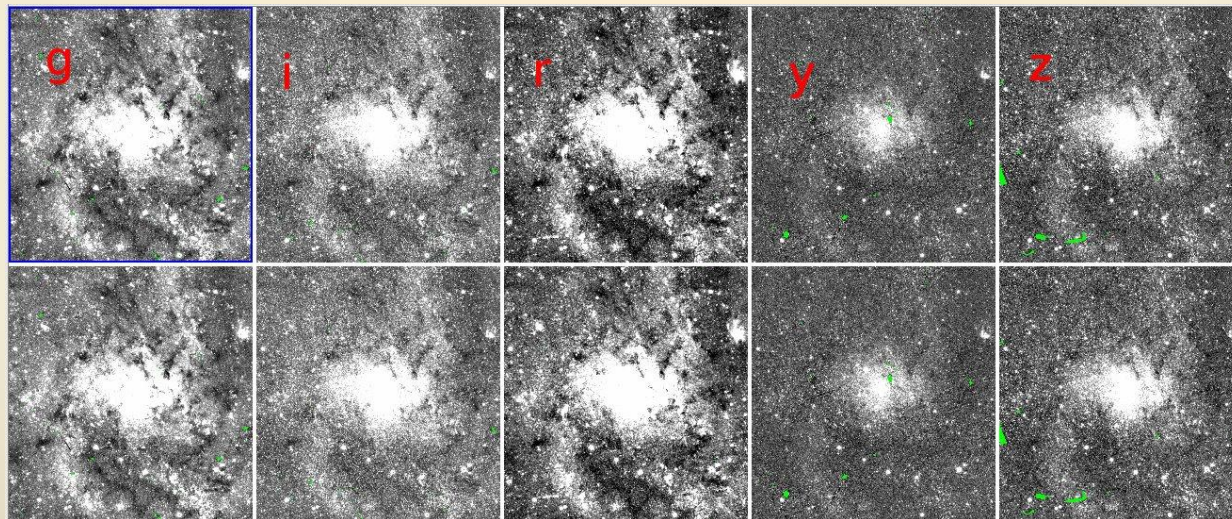
(from Chris Waters)



Model:

Original:

Restored:



Issues

- More tests to check the Kron magnitudes
- Extended source code not working correctly
- Need to do tests on Medium Deeps
- Bias/dark structure still an issue
- Background regeneration needs testing