

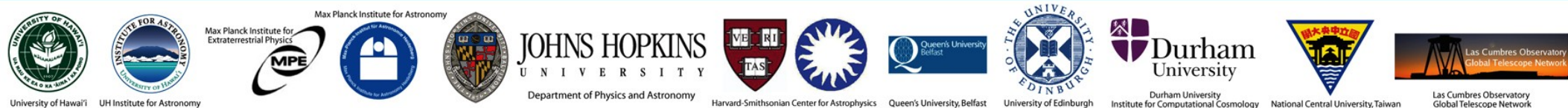


PS1 IPP : A Ghoulish and Grizzly Summary of the State of Pan-STARRS Data Processing

Eugene Magnier

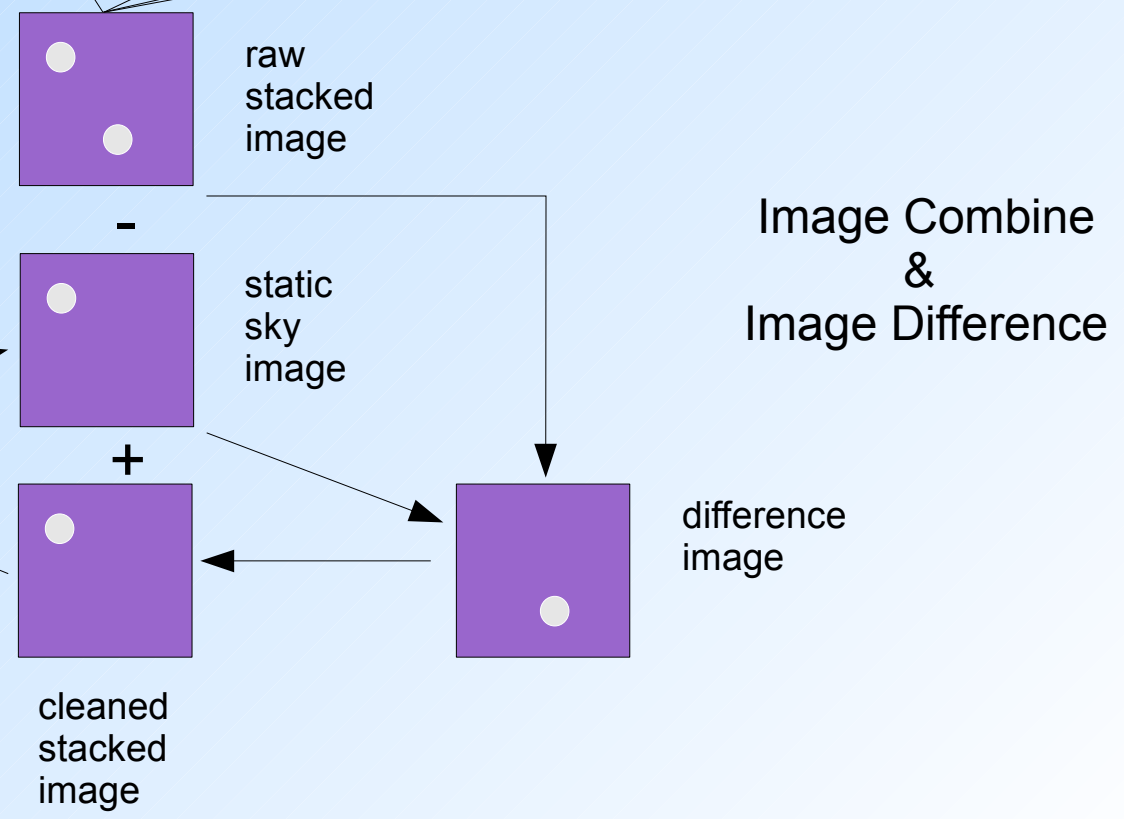
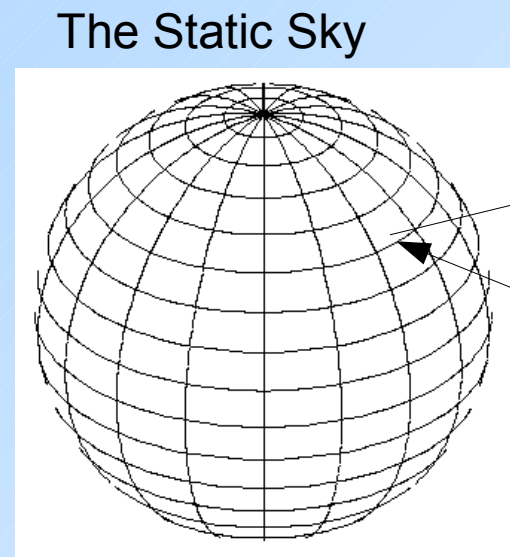
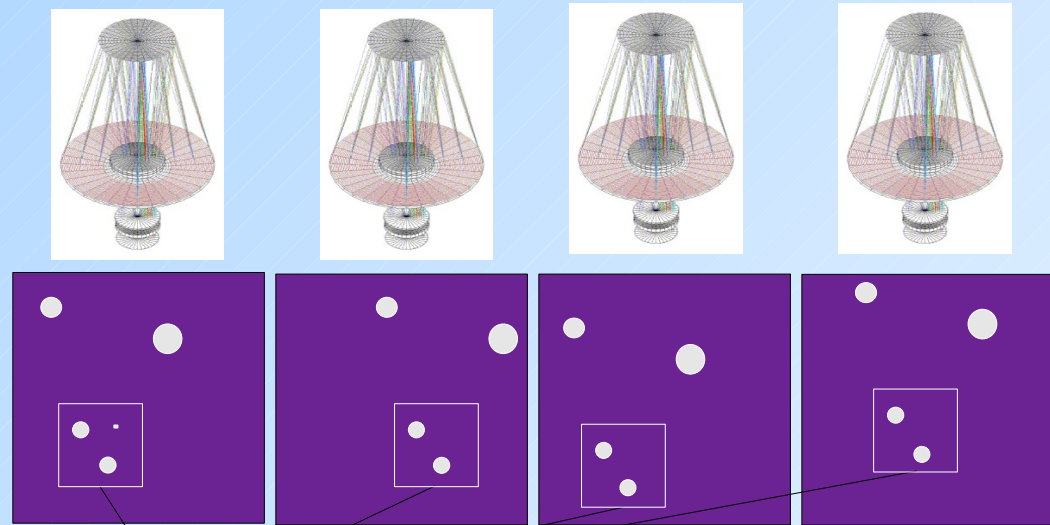
IfA IPP Team:
 Paul Price
 Bill Sweeney
 Josh Hoblitt

PS1 consortium members



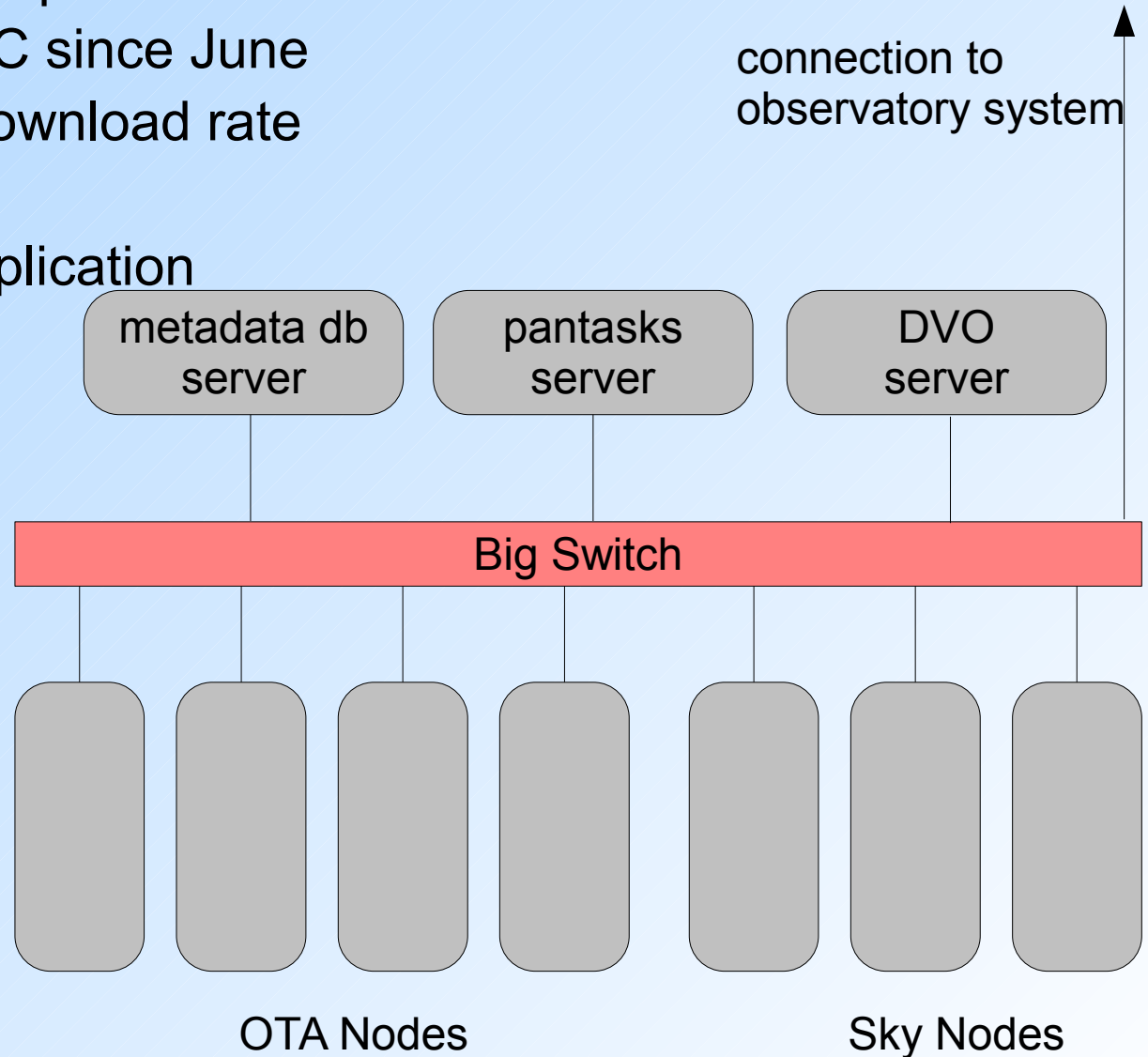
Analysis Strategies

2.7GB / image
1-2 TB / night
1800 TB raw data in 3.5 years



IPP hardware status

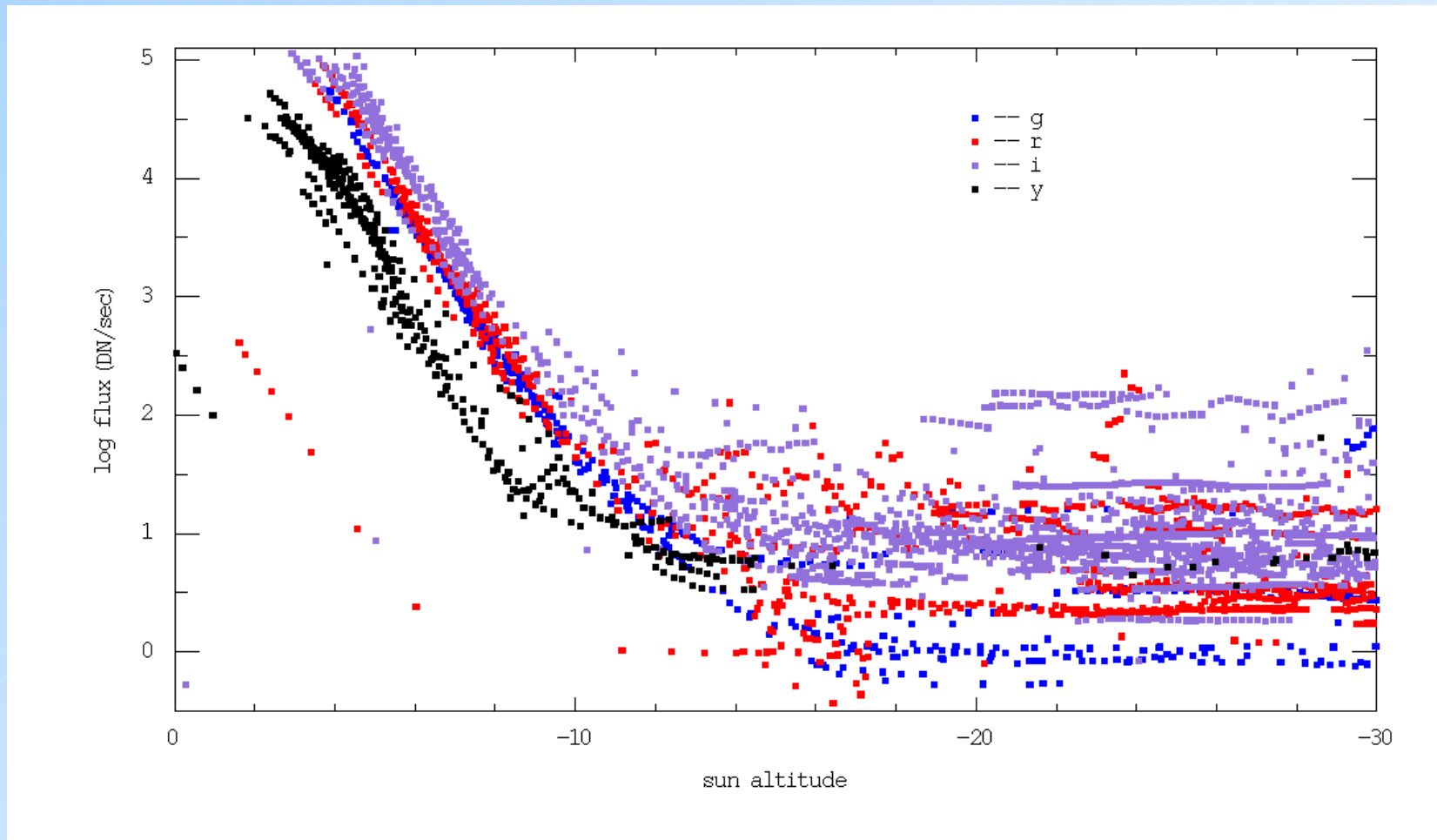
- MHPCC Cluster : 32 nodes in place, 0.5TB online, 188 cores
- 1Gbit link from summit to MHPCC
- 6 nodes in Manoa for development & tests
- Automatic summit->MHPCC since June
- Demonstrated sustained download rate
 - 37sec / exposure
- Automatic cross-cluster duplication



Some Data Processing Statistics

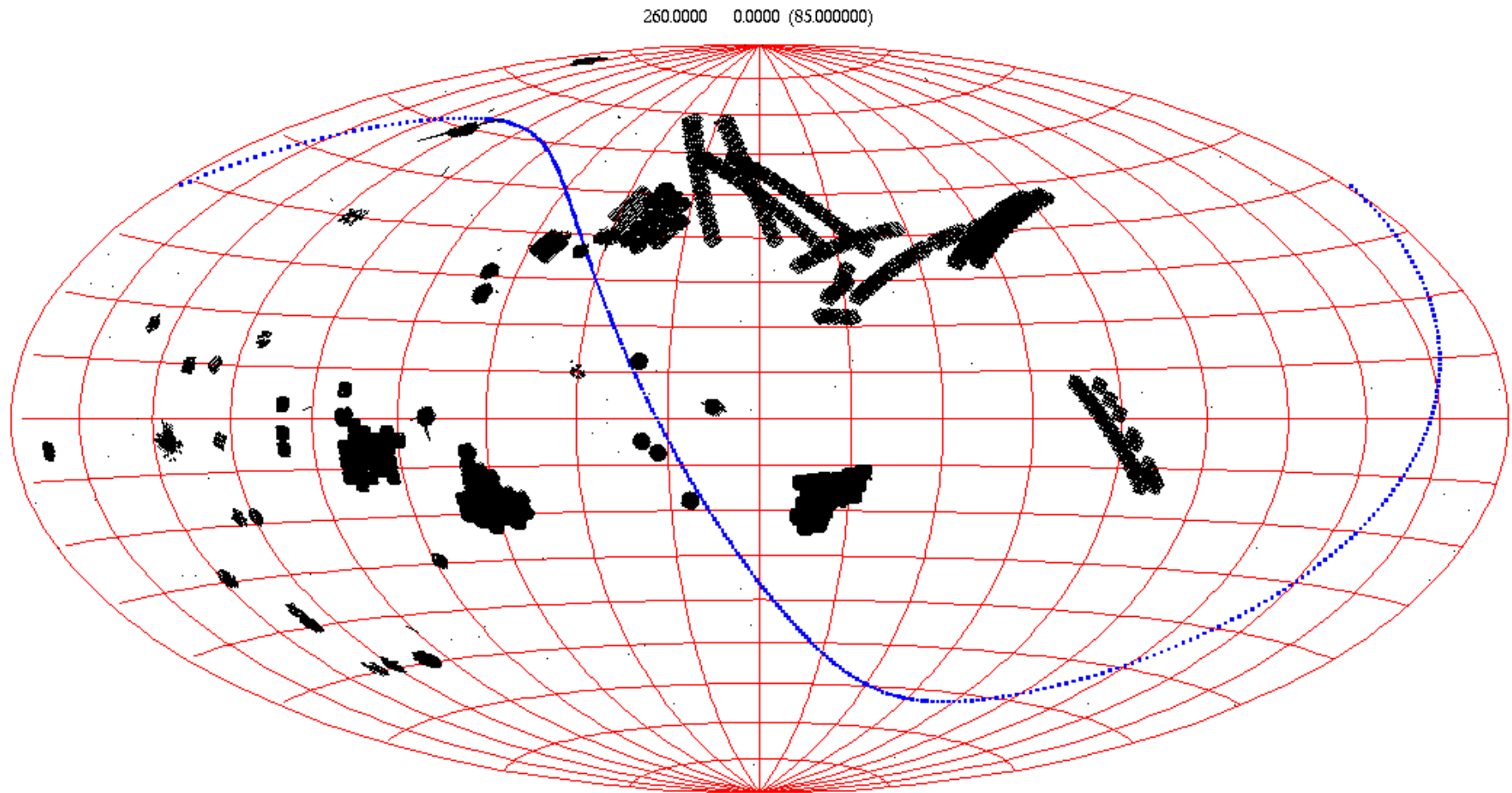
- 40113 exposures downloaded to date
 - 15754 detrend, 24357 “science”
- 217531 chips (3625 exposures) successfully processed
- 2436 exposures processed at 'camera' level

twilight sky flux

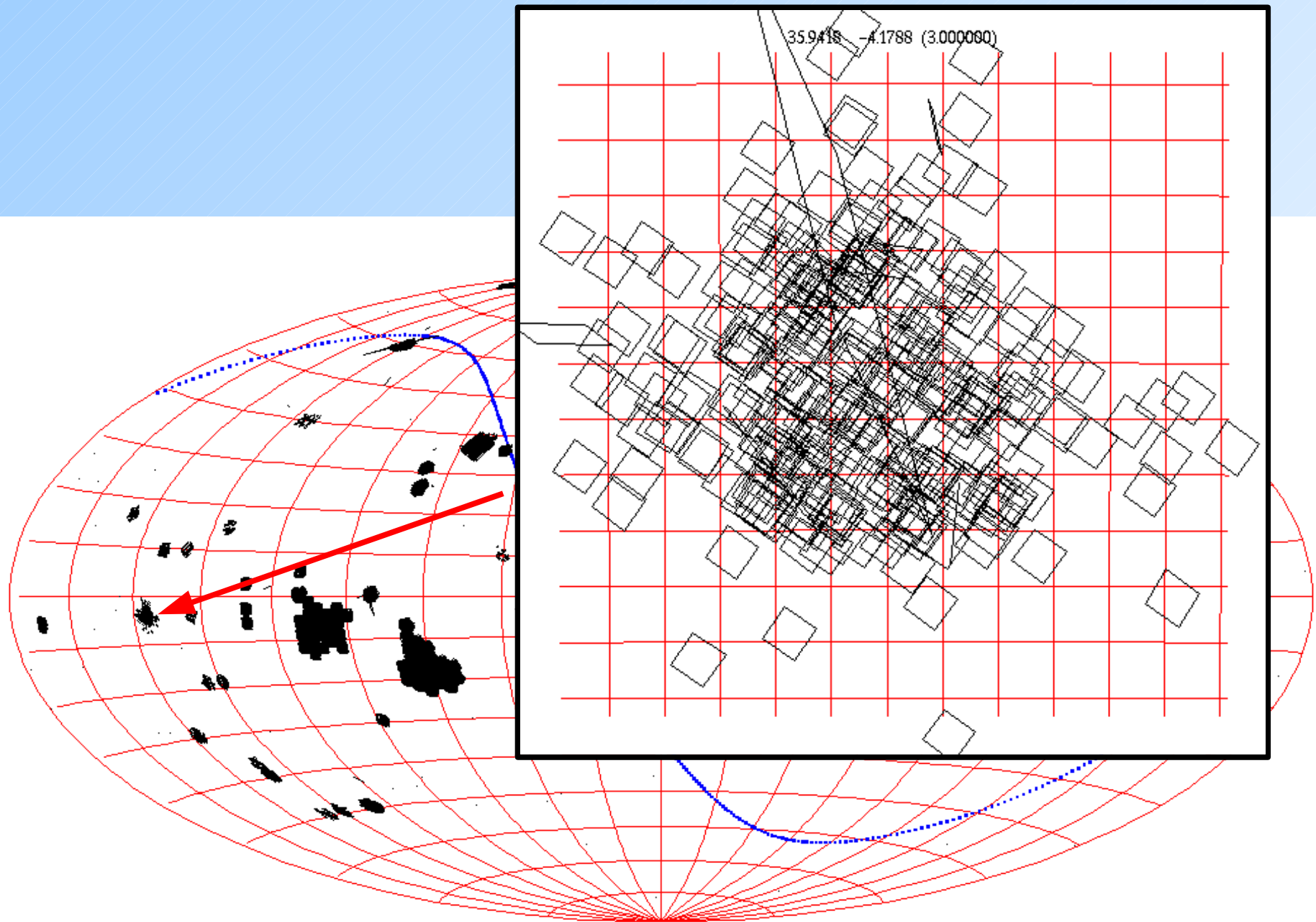


Processed Exposures on the Sky

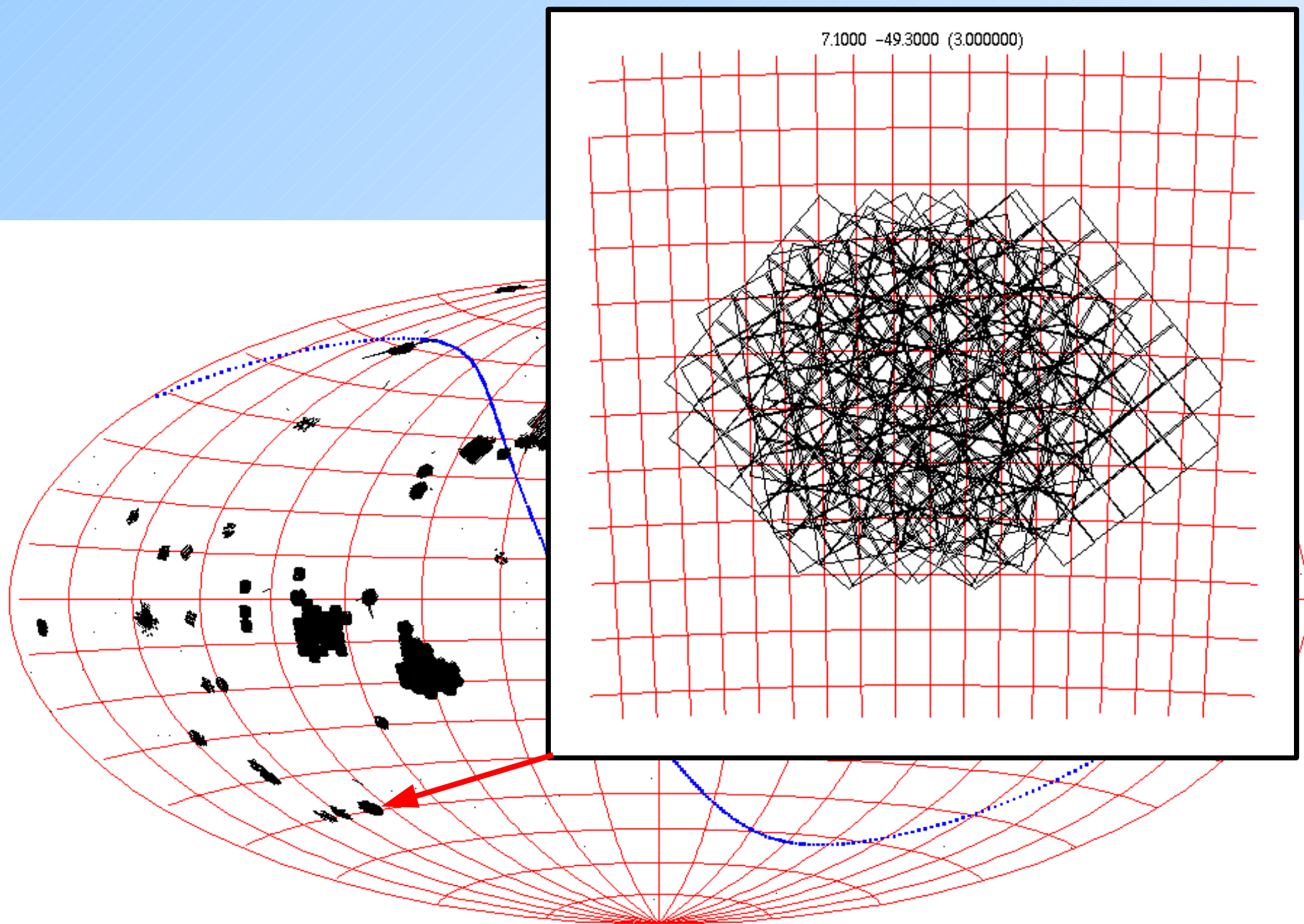
- Automated chip processing of science image (since 10/27)
- Most processing to date for tests / spot checks
- Not yet automatically building DVO database for all science images



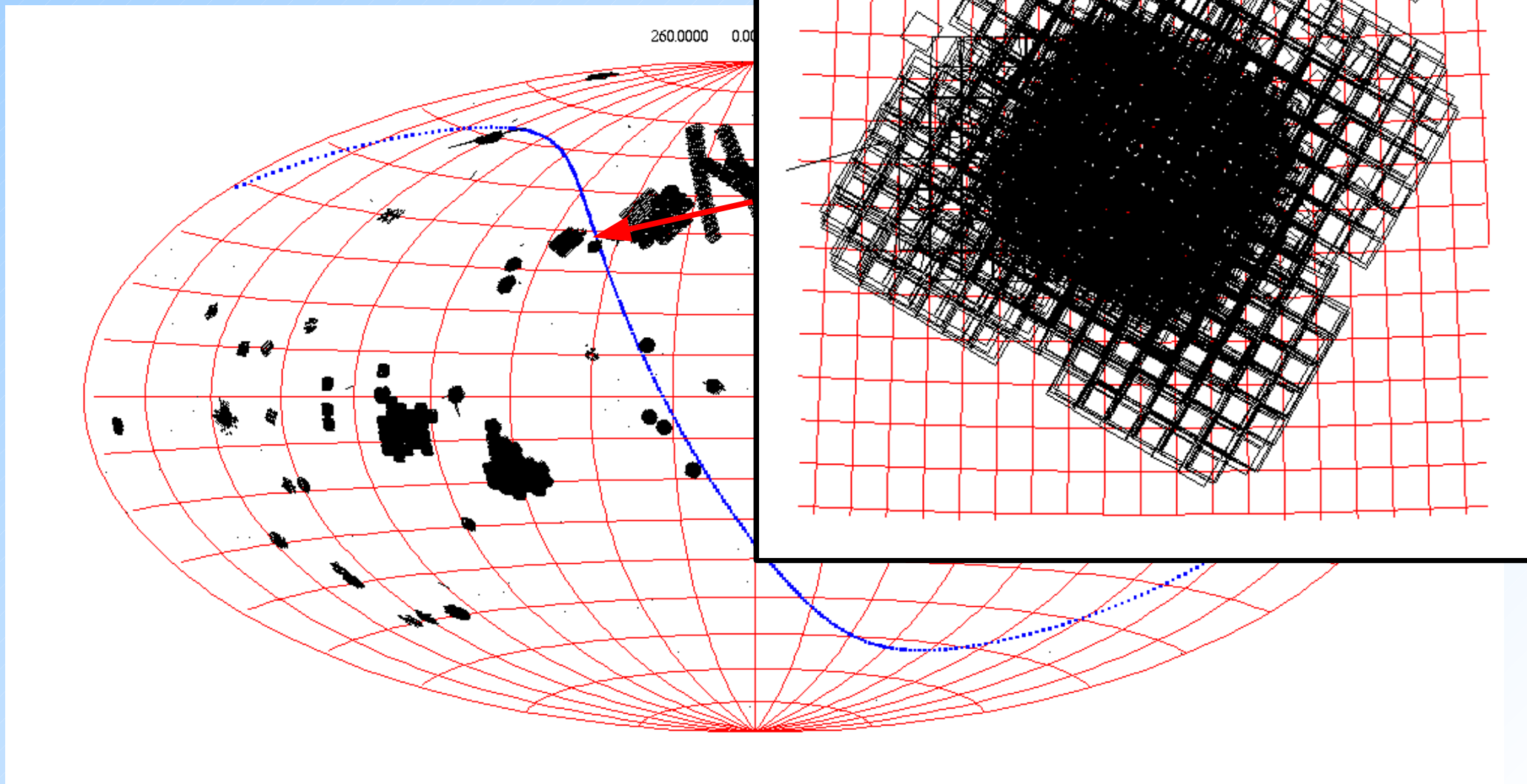
Processed Exposures on the Sky



Processed Exposures on the Sky

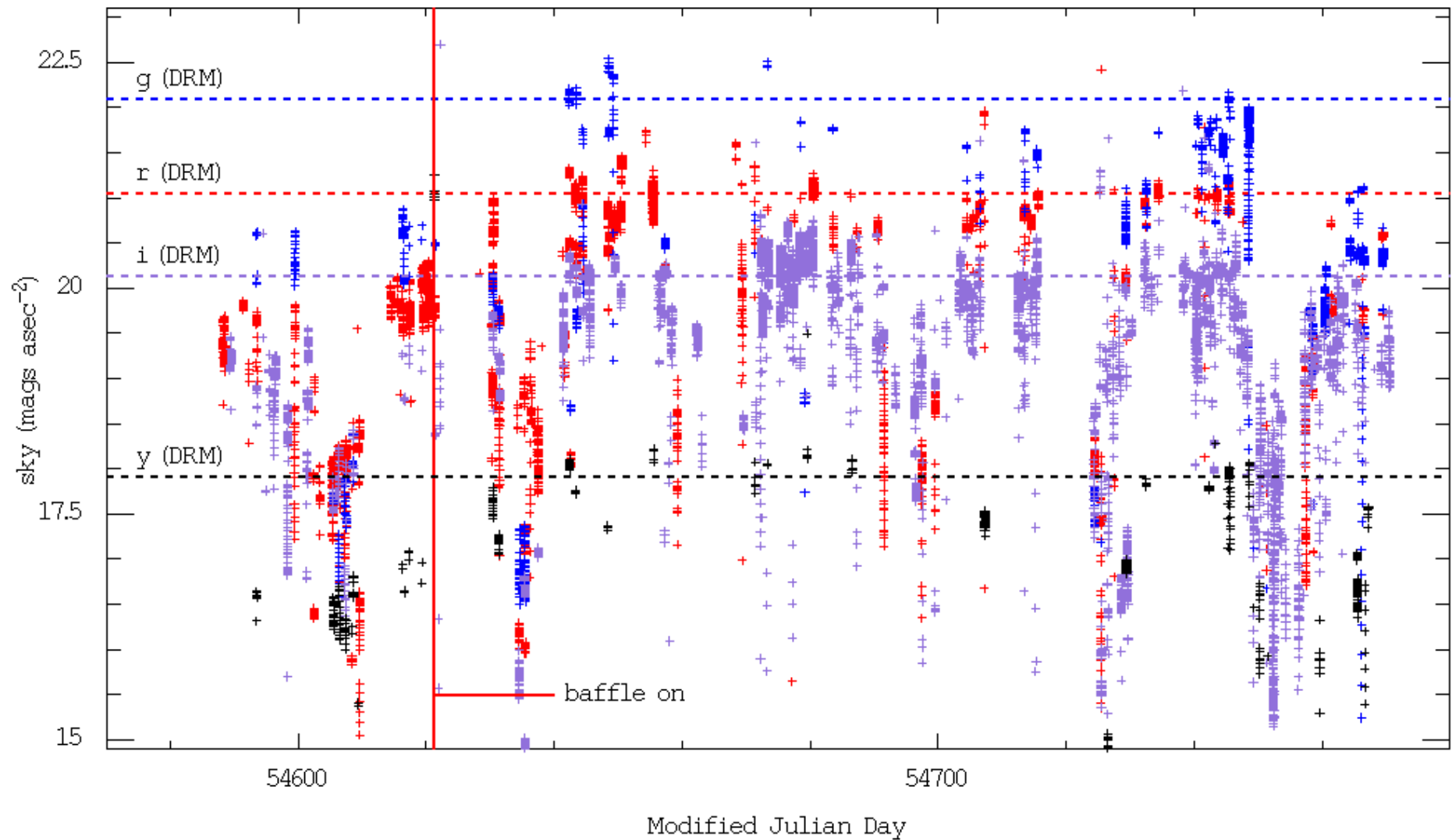


Processed Exposures on the Sky



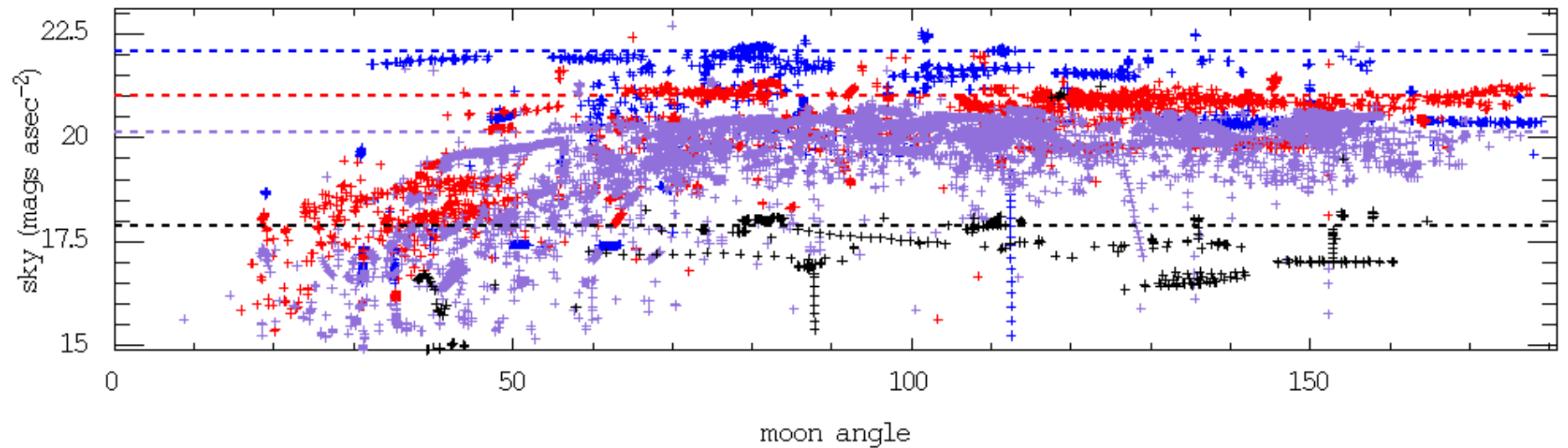
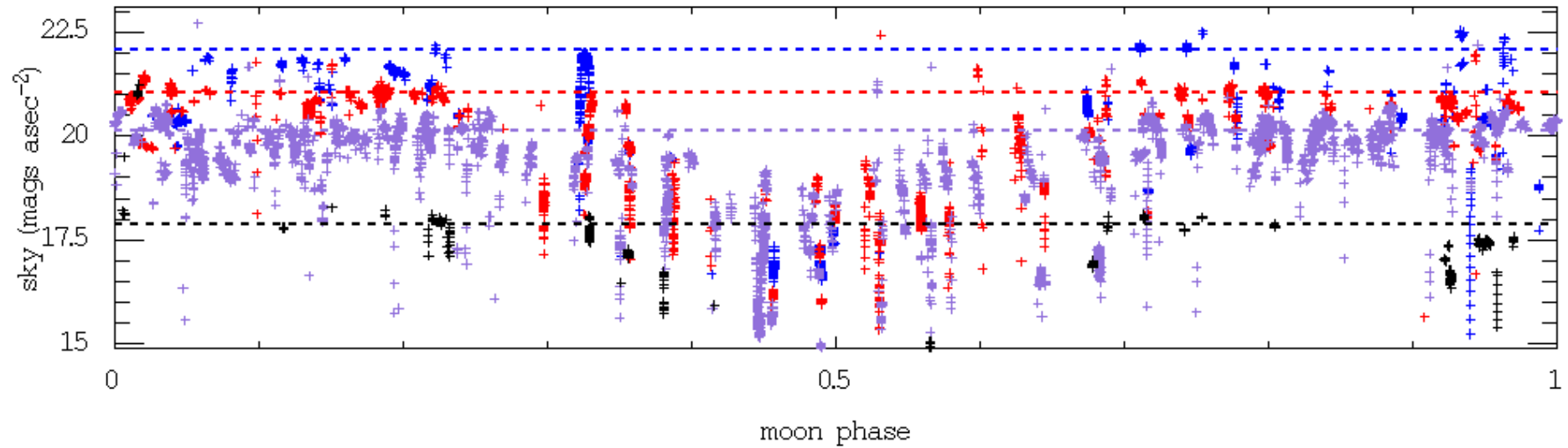
Sky Brightness Statistics from IPP

- dashed lines are values expected in DRM



Sky Brightness Statistics from IPP

- Sensitivity to the Moon



Sky Brightness Statistics from IPP

- Moon-free sky brightness histograms

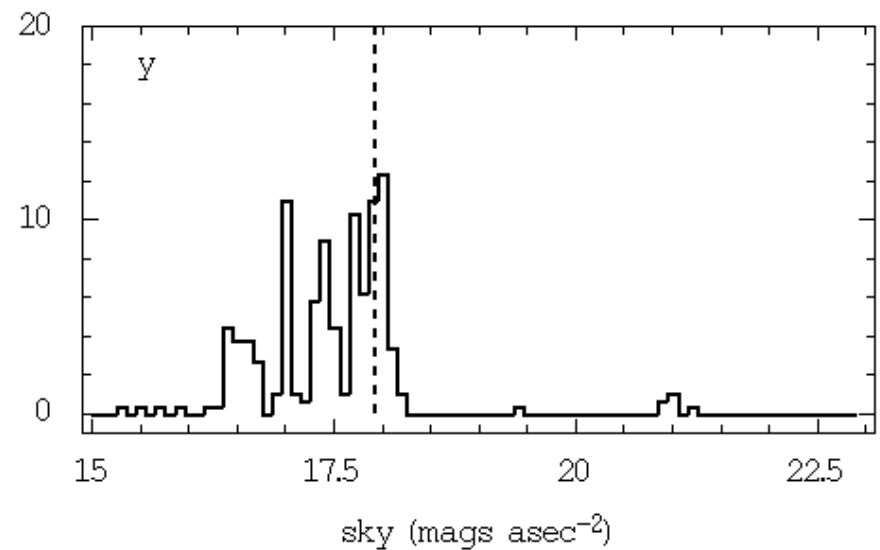
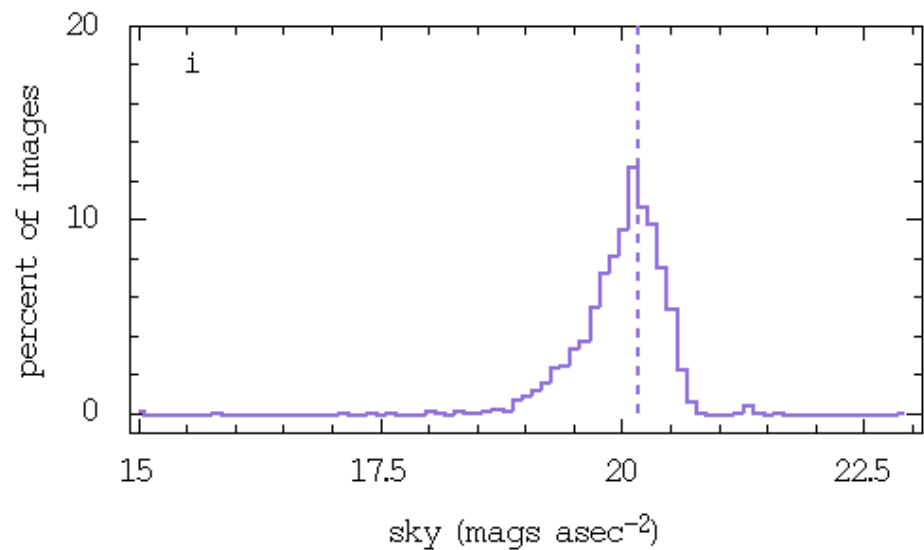
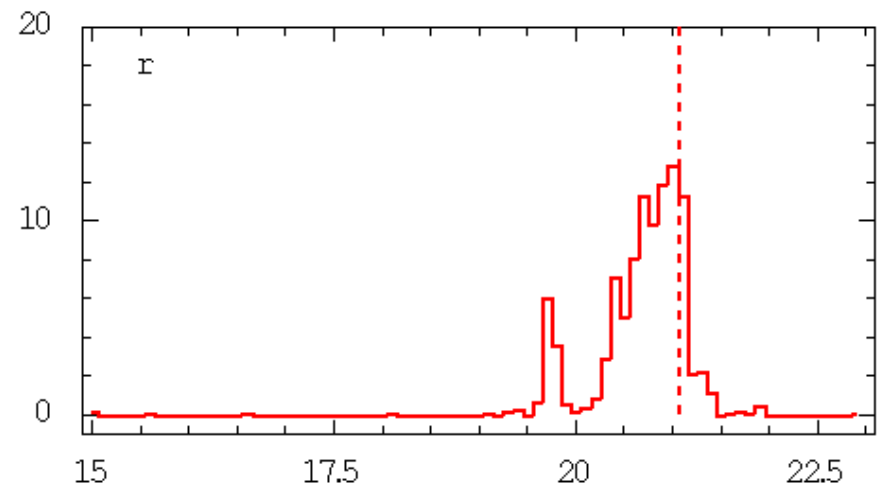
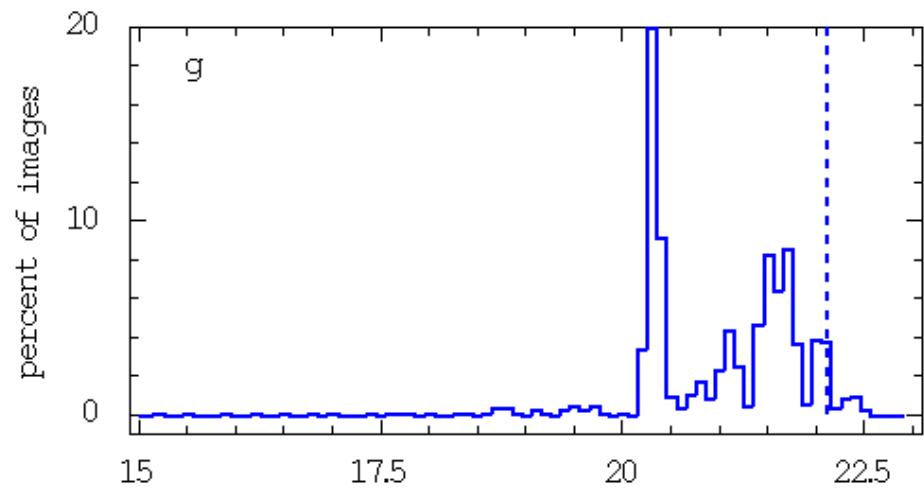


Image Quality Statistics from IPP

- We measure PSF and Moments-based IQ stats
- These plots are for all chip-processed images since June 2008.

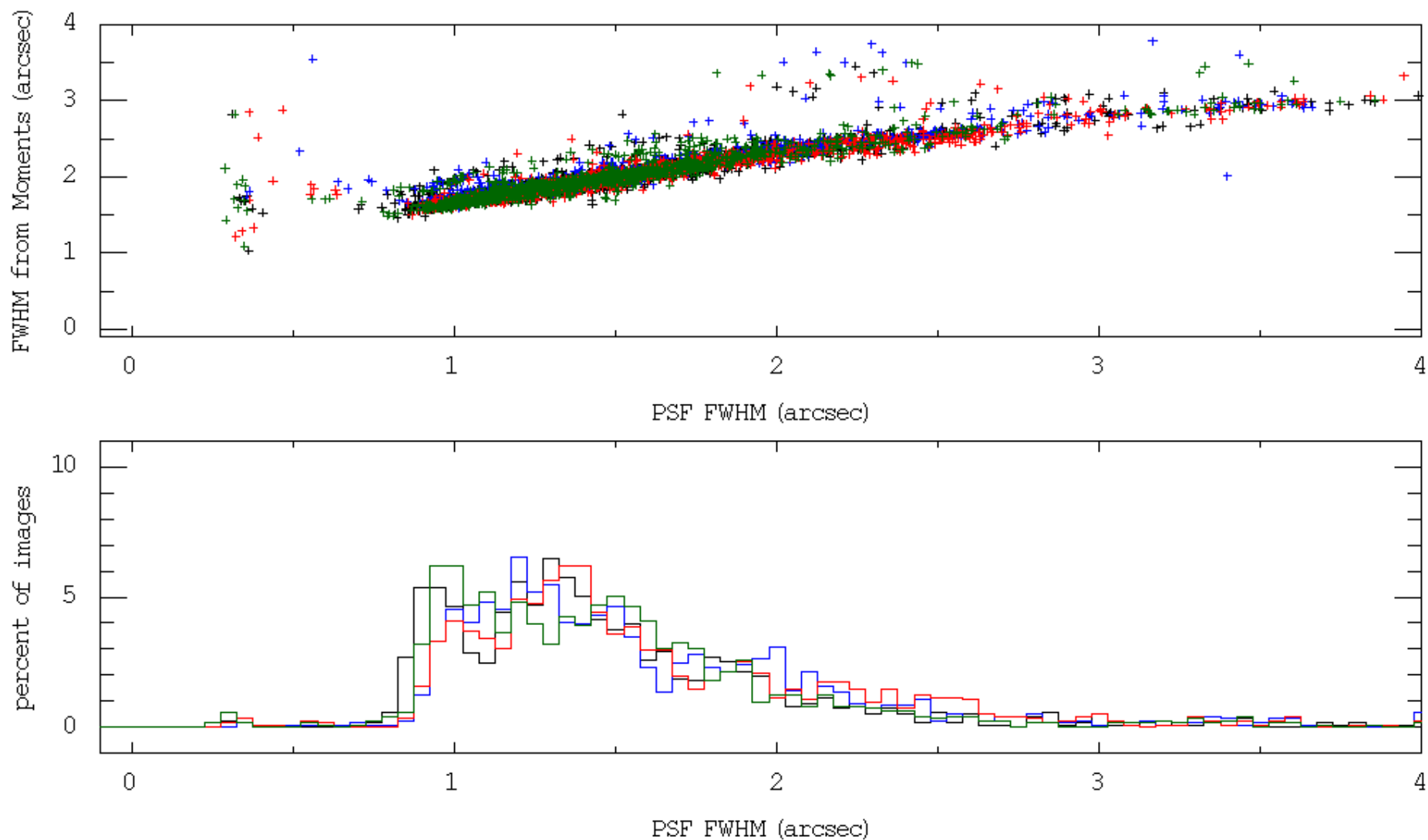
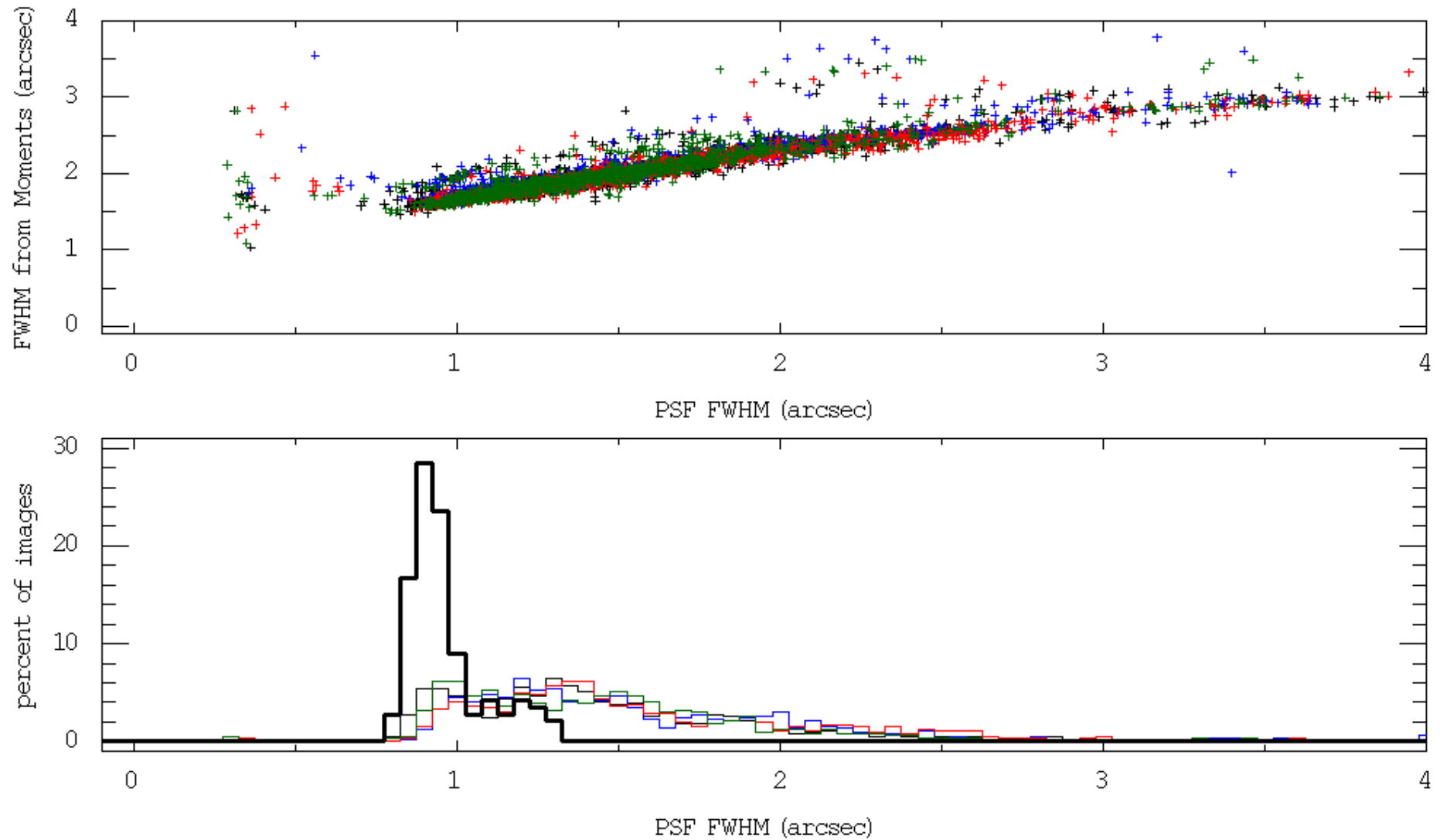
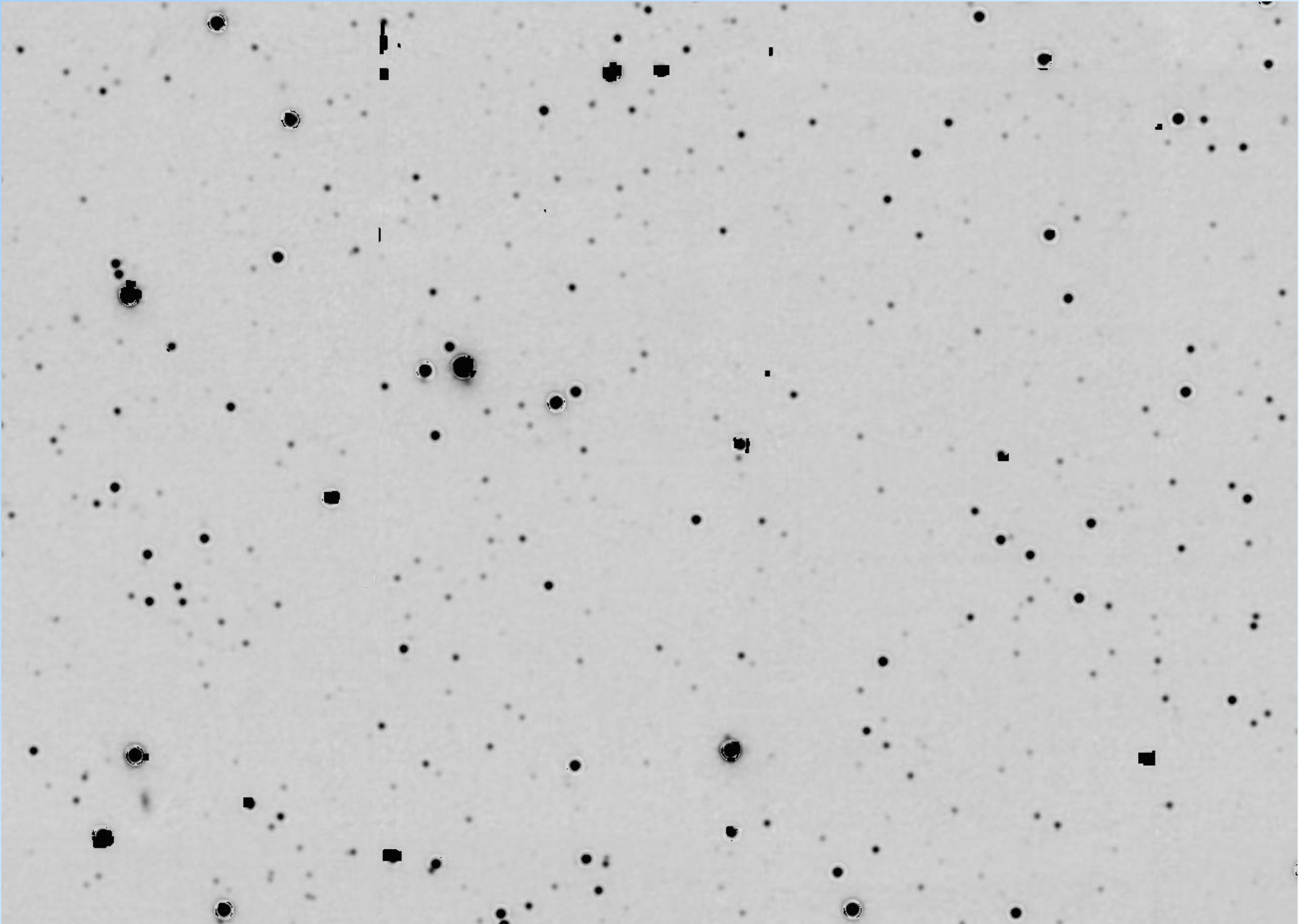


Image Quality Statistics from IPP

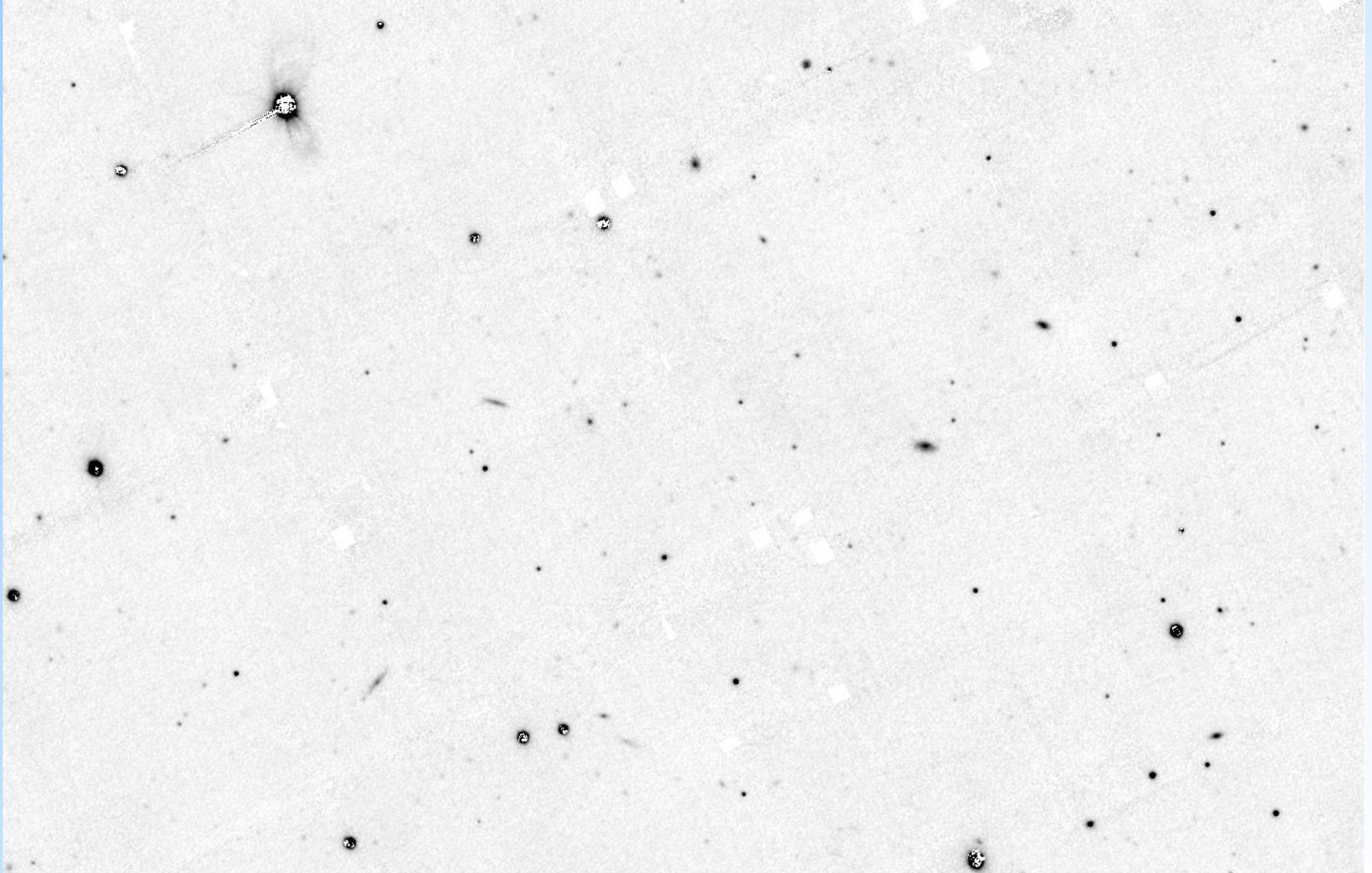
- We measure PSF and Moments-based IQ stats
- Heavily line from this week



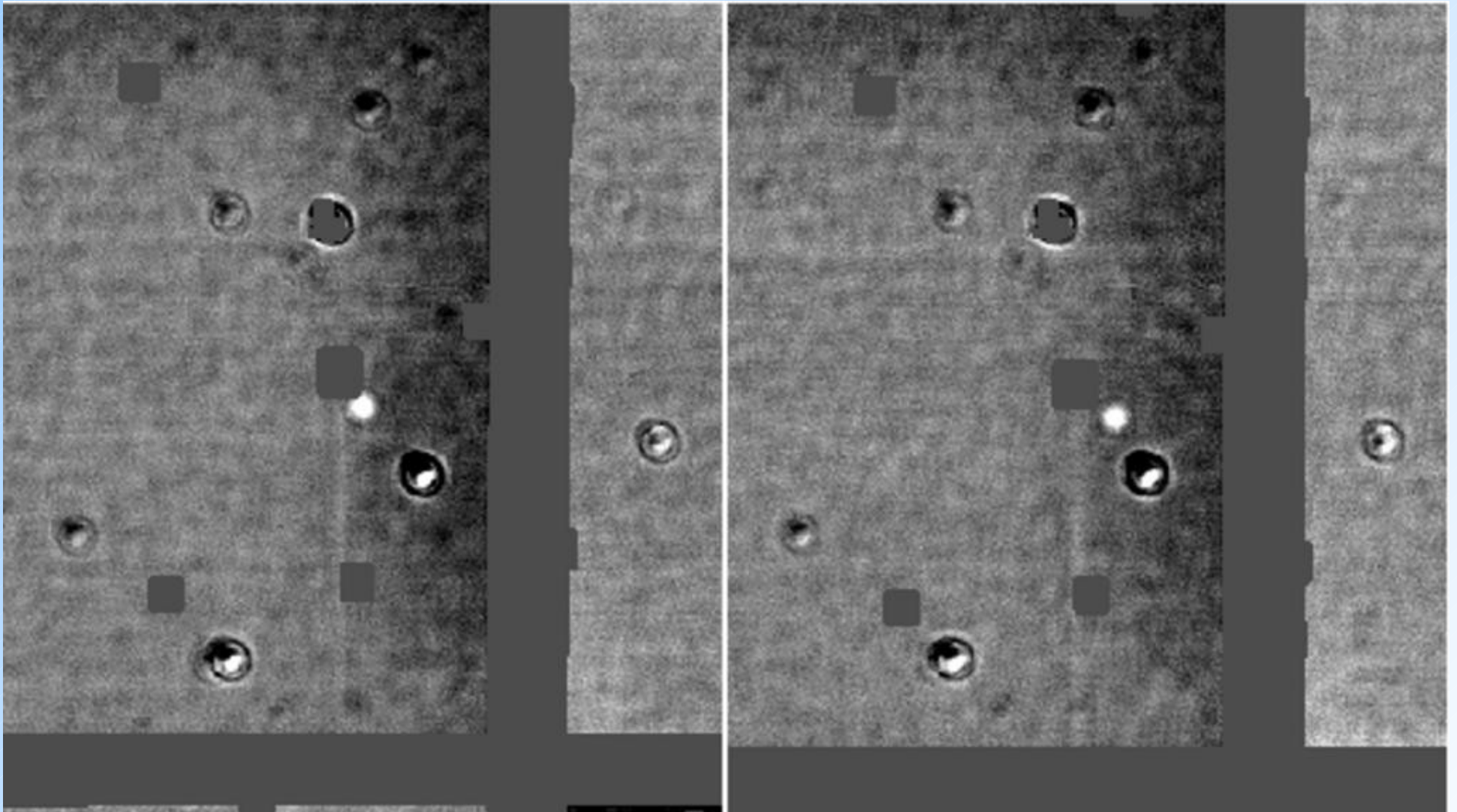
Stacking Sample (last month)



Stacking Sample (this week)



First PS1 Asteroid : 2001 KF4 (already known)



Thanks to Larry Denneau for MPC help

Summary

- All IPP subsystems are in place, except for:
 - Magic is only partially integrated,
 - Fake / Force photometry needs to be tested
- Processing of all science stages has been demonstrated
- Robustness and Stability of solutions needs to be improved
 - PSF 2D model, astrometry solution, stacking / difference kernel
- Efficiency OK, but needs to get better
- Flat-field correction needs to be fixed.