



# Data Release Production Plans

F21B (Sept Oct Nov)

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U.S. DEPARTMENT OF  
**ENERGY**

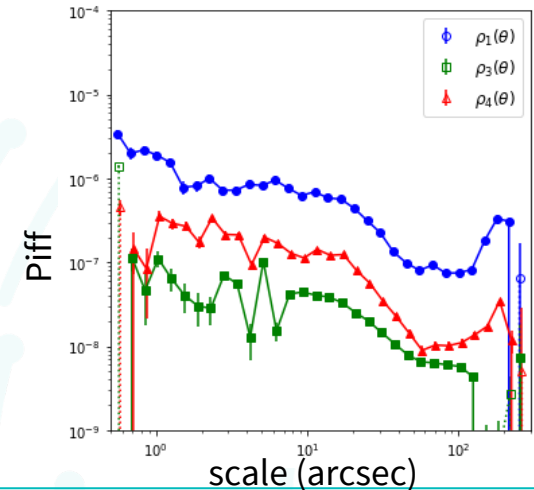
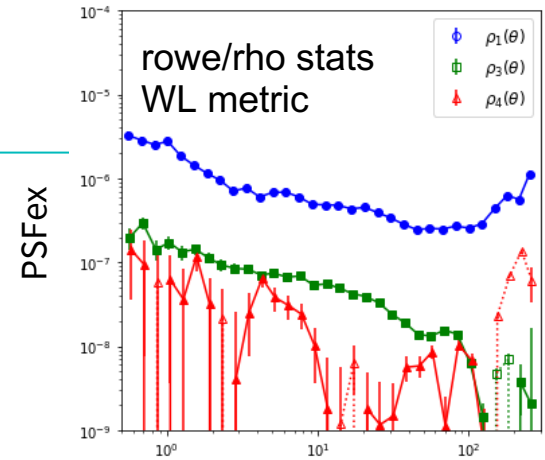
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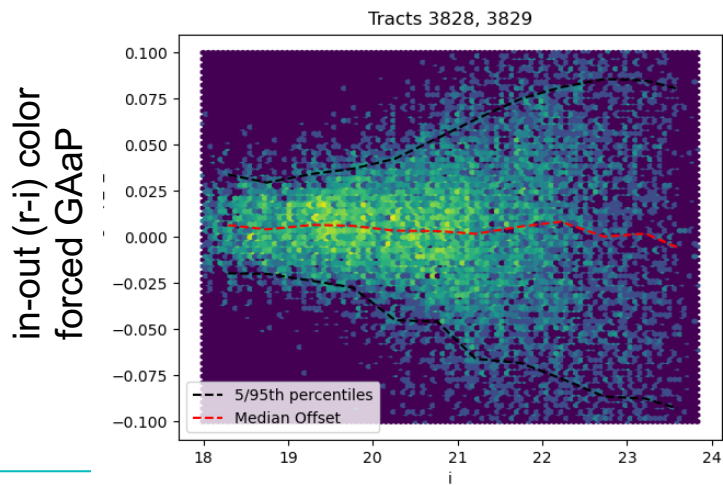
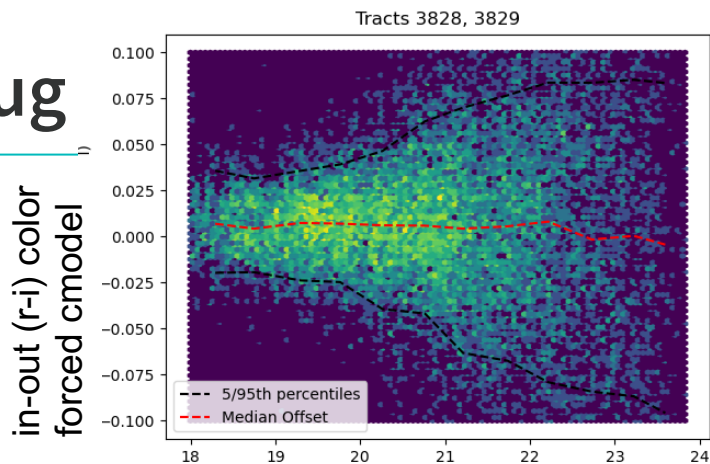
# What happened Jun Jul Aug

- Continued refining the Gen3 DRP Pipeline, through monthly DC2/RC2 reprocessings.
  - Training a new operator lead to more formal decision tree, and the “step” subsets that we have today.
- [v22.0.0 of the Science Pipelines](#) marked the official release of the Gen3 middleware and the start of the deprecation process for the Gen2
- Freely expanding Gen3-only pipeline:
  - SDM’ed ForcedSource Tables
  - Multi-tract diffIm templates
- Now possible to run the Science Pipelines with **Piff** instead of PSFex.
  - Before doing any tuning, science performance comparable to PSFex. PSFex will remain default until March.



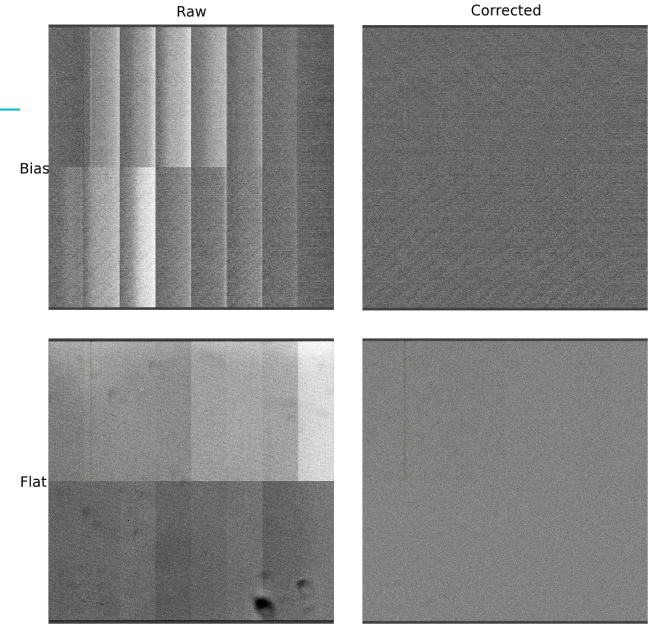
# What happened Jun Jul Aug

- Technotes on:
  - status of Scarlet [[dmtn-194](#)]
  - algorithm for masking streaks [[dmtn-197](#)]
- On monthly reprocessings, commissioned and validated Gaussian Aperture and PSF Photometry (**GAaP**) for measuring galaxy colors [[dmtn-190](#), [Kuijken+15](#)]



# What happened Jun Jul Aug

- Demonstrated initial **automated calibration product production** (CPP) at the summit with OCPS preparing for daily CPP. A full set of ComCam calibrations was also produced manually to confirm that the summit environment is consistent with that at NCSA.
- **September Auxtel run** was completed with **Gen3!**
- `cp_verify`, containing tasks to evaluate the quality of calibration products is now part of `lsst_distrib`, which will allow it to be added to the summit calibration workflow
- Claimed *DM-DRP-23*, *DM-DRP-8*, *DM-DRP-20*



A single LATISS bias (top) and flat (bottom) exposure assembled to show the full detector both before (left) and after (right) instrument signature removal. The raw exposures (left) had only overscan subtraction performed. The processed exposures (right) have had bias, dark, flat, and defect corrections. The round features in the raw flat exposure (bottom left) are likely images of out-of-focus dust grains on the filter and are largely corrected by the flat field calibration.

# F21B: Long-running projects

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- **DRP QA** Activities for F21a
  - Chronograph dashboard that we look at monthly at the DRP metrics meeting has switched over to Gen3 DC2/RC2 reruns
- **DRP Measurement** Activities for F21a
  - Simultaneous multi-band galaxy photometry afterburner PipelineTask based on [Multiprofit](#) (*Taranu*)
- **DRP Image Characterization** Activities for F21a
  - Improve handling of instrumental background effects: amp-to-amp offsets. (*Kelvin*)
    - *Merged F21A, to be validated and turned on by default F21B.*

# F21B: Continuing new projects started F21A

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- **Coadds for measurement** aka. small-cell, edge-free coadds.
  - Wrote a caddition task that uses an online algorithm to accumulate images one-by-one
  - **Next steps:** Princeton a host institution for DESC sprint week next week. Coadds for shear measurement is one of the projects. We plan to concretely learn what coadd/PSF properties Sheldon et al need for metadetection.
  - Save artifact masks for use by survey maps and cell-based coadds.
  - Track and improve interpolation steps in single frame processing
- **HIPS images:**
  - Made a WCS for HEALPix to support warping coadds into the HPX projection
  - Discussed timeline with EPO (the other customer for HIPS images).
  - **Next steps:** sphgeom.Pixelization for HEALPix, HEALPix skymap in the butler, pipetask to warp coadds on to HEALPix skymap, script to consolidate HEALPIX coadds into directory/file HIPS structure. EPO wants color jpegs.

# F21B: Continuing new projects started F21

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- Fit stellar parallax and proper motion by integrating GBDES astrometric fitting code
  - In progress: Refactoring and wrapping GBDES (*Saunders*)
- Improving Photometric Calibration by implementing “Compensated Aperture Flux” Plugin
  - On hold. Starting next month. (*Lust*)
- Detection on multi-band coadds
  - On hold. Starting next month. (*Moolekamp*)
- Running another iteration of processCcd (DM-DRP-21)
  - DMTN-172, describes the initial design of iterative image characterization, now possible with Gen 3 middleware (*Bosch*)
  - On hold

# DRP Ops Activities

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- In Jun/Jul/Aug/Sept we:
  - **Froze the DP0.2 pipeline**
  - “Instead of tagging June 30th and backporting fix all summer, we will use new weekly with fixes on it ~Sept 30. This will be the RC for v23.” This came true!
  - Now run ci\_imsim nightly.
  - Renamed many columns in the DRP parquet outputs for consistency. Did an audit on the Object table to ensure that all needed for QA, we present. See RFC-807 and [notebook](#)
  - Supported the proof of concept exercise of running gen3-eotest at SLAC with USDF
- In F21B (Oct/Nov) we will:
  - Respond to emergent issues that arise from test runs by the execution team and validation by the V&V team. Backport patches.
  - Validate v23 as part of the V&V team (*Reed/MacArthur*)
  - Tune Piff configuration (*Meyers*)



# Personnel changes for F21B

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- Moved into the new office.
- Got a new admin: Angela Lewis
- Josh Meyers:
  - 50% Ops algorithms and pipelines
  - 15% Construction T&S Active Optics
  - Expecting in December
- Jim Bosch trying out new schedule:
  - Pipelines Days M/T
  - Middleware Days W/Th



