Rubin Observatory

Data Release Productions Plans
S21b (Mar Apr May)

Yusra AlSayyad DMLT February 24 2021
I'll change themes next time.

NSF · AURA · U.S. DEPARTMENT OF ENERGY | Office of Science · SLAC · CHARLES AND LISA SIMONYI FUND FOR ARTS AND SCIENCES · LSST CORPORATION

What happened Dec Jan Feb

- Supported January and February Auxtel runs *(Fisher-Levine)*

- Scarlet was made default deblender. Looking at first RC2 run `w_2020_6` Monday *(Moolekamp)*

- Healsparse *(Rykoff),* PIFF via meas_extensions_piff *(Meyers),* added to the stack

- Add precursor functionality to support adding Visit-level summary statistics to the PVIs *(Rykoff)*

- Began design for RFC-726: Validation and verification of calibration products in cp_verify *(Waters)*

2020 pre-pandemic Auxtel data (not from Jan/Feb 2021runs)

Video courtesy of Merlin Fisher-Levine

What happened Dec Jan Feb

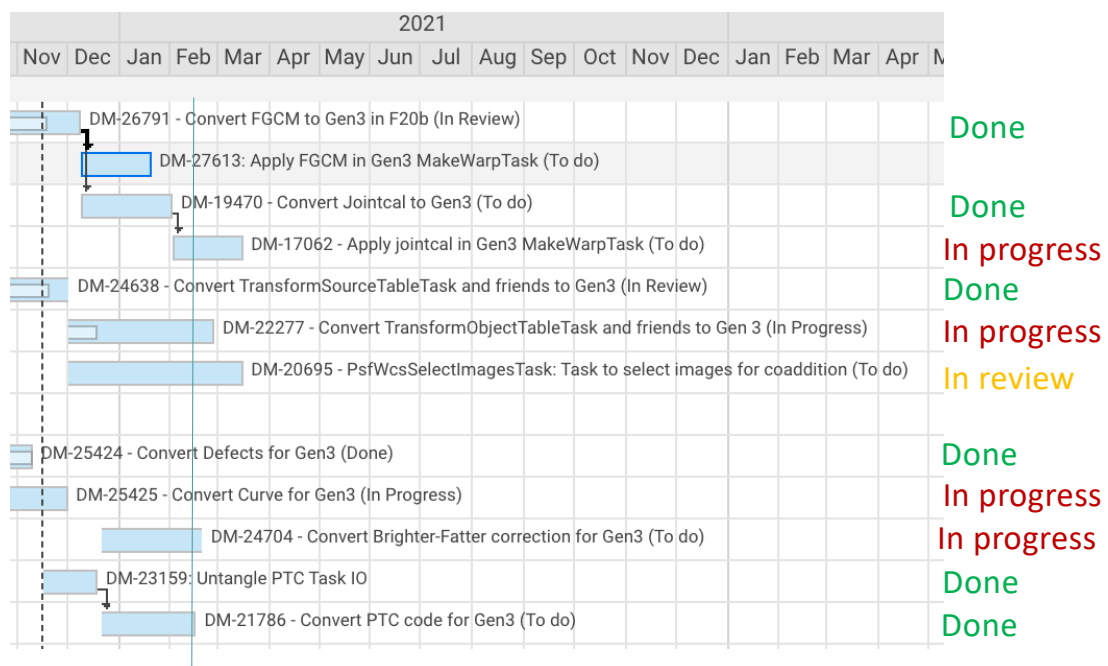- But the top priority was quitting Gen2

Top Priority for S21a was quitting Gen2 By

- (1) Finish converting DRP pipeline (by w_2020_10 next week!) ✅

	Status
DM-26791 - Convert FGCM to Gen3 in F20b (In Review)	Done
DM-27613: Apply FGCM in Gen3 MakeWarpTask (To do)	
DM-19470 - Convert Jointcal to Gen3 (To do)	Done
DM-17062 - Apply jointcal in Gen3 MakeWarpTask (To do)	In progress
DM-24638 - Convert TransformSourceTableTask and friends to Gen3 (In Review)	Done
DM-22277 - Convert TransformObjectTableTask and friends to Gen 3 (In Progress)	In progress
DM-20695 - PsfWcsSelectImagesTask: Task to select images for coaddition (To do)	In review
DM-25424 - Convert Defects for Gen3 (Done)	Done
DM-25425 - Convert Curve for Gen3 (In Progress)	In progress
DM-24704 - Convert Brighter-Fatter correction for Gen3 (To do)	In progress
DM-23159: Untangle PTC Task IO	Done
DM-21786 - Convert PTC code for Gen3 (To do)	Done

Top Priority for S21a is quitting Gen2 By

- (2) Get team members who are working on new features developing against the gen3 repos, including…

Top Priority for S21a is quitting Gen2 By

- Get team members who are working on new features developing against the gen3 repos.
  - Nate Lust hosted a series of party-programming sessions to assist moving workflows to **gen3 repos**. Mostly everyone is `using /datasets/hsc/gen3repo` now for development
  - Using **BPS**. *Adamow* and *Gower* gave a tutorial at Science Pipelines team meeting last week. Already use by some early adopters: *Taranu, Rawls, me.*

Screenshot from Monika's presented bps yaml:


```
includeConfigs:
- bps-operator.yaml
- bps-site-htcondor.yaml

template_dataid: "{tract}_{patch}_{band}_{visit}_{exposure}_{detector}"
pipelineYaml: "${OBS_SUBARU_DIR}/pipelines/DRP.yaml"
campaign: "G3W07"
submitPath: "{submitRoot}/{outCollection}"
saveDot: False
computeSite: ncsapool
requestMemory: 2048
requestCpus: 1

payload:
  payloadName: cihsc
  butlerConfig: "${CI_HSC_GEN3_DIR}/DATA/butler.yaml"
  inCollection: "HSC/defaults"
  outCollection: "shared/ci_hsc_output/{timestamp}"
  dataQuery: "skymap='discrete/ci_hsc' AND tract=0 AND patch=69"
```

Top Priority for **S21a** is quitting Gen2 By

- expanding **gen3 pipelines only**, adding to `DRP.yaml`:
  - With Gen3 it's simple to generate multiple flavors of coadds during a single DRP.
    - template generation during a DRP (DM-DRP-22)
    - difference imaging during a DRP (DM-DRP-28)
    - forced photometry on Diffim lightcurves
  - Running another iteration of `processCcd` (DM-DRP-21)

U.S. DEPARTMENT OF ENERGY | Office of Science

Top Priority for **S21a** is quitting Gen2 By

- expanding **gen3 pipelines only**, adding to `DRP.yaml`:
  - With Gen3 it's simple to generate multiple flavors of coadds during a single DRP.
    - template generation during a DRP (DM-DRP-22)
    - difference imaging during a DRP (DM-DRP-28)
    - forced photometry on Diffim lightcurves
  - 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)*
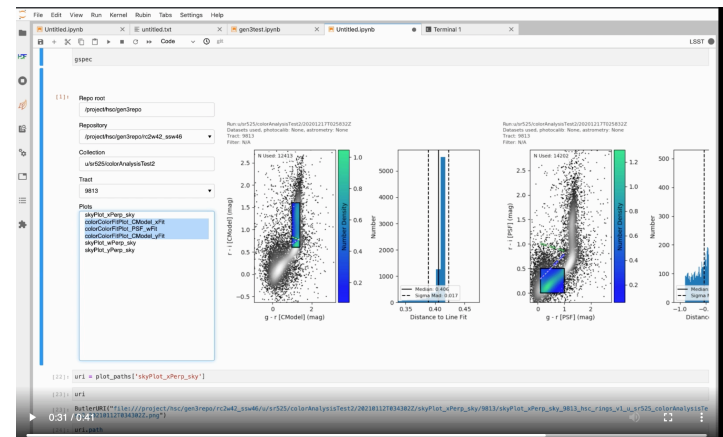
Top Priority for **S21b** is quitting Gen2 By

- expanding **gen3 pipelines only**, adding to `DRP.yaml`:
  - With Gen3 it's simple to generate multiple flavors of coadds during a single DRP.
    - template generation during a DRP (DM-DRP-22)
    - difference imaging during a DRP (DM-DRP-28)
    - forced photometry on Diffim lightcurves
  - 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)*

Top Priority for **S21b** is quitting Gen2 By

- Switching over our monthly reprocessings of HSC-RC2 and Imsim-DC2 to Gen3 *(all)*
  - Starting with w_2020_10, we run both.
  - Analyze the results, make adjustments until they match (*MacArthur* decides what that means)
  - If this takes 3 iterations, we'll achieve pipeline parity by June 1, with a month to spare for the DP0.2 pipeline freeze.
  - Monthly DRP Performance meeting

- Continuing work on Gen3 static QA plots: `analysis_drp` (*reed)* and ability to browse them (*Morton*)

Rubin
Observatory

Everything else

- Make a WCS/skymap for healpix to support HIPS coadds
- Defining catalogs of fakes we want to inject and interpret in monthlies *(Kelvin, Reed, joined by Meyers on his DESC time)*

- DRP **Measurement** Activities for S21a
  - Started development of a Gen3 simultaneous multi-band galaxy photometry afterburner PipelineTask based on [Multiprofit](#) *(Taranu)*
  - Ensured that Scarlet works with the Gen3 data release pipeline. Ongoing firefighting *(Moolekamp)*
  - Continue galaxy colors by GaaP: PSF- and aperture-matched photometry *(Kannawadi)*

- DRP **Image Characterization** Activities for S21a
  - Improve handling of instrumental background effects: amp-to-amp offsets. *(Kelvin)*
  - Continue modeling scattered light from bright stars to subtract as background *(Schmitz)*

DRP **Ops** Activities :

- In Dec/Jan/Feb we:
  - Enabled transform Source and Object table tasks for DC2
  - Ensured calibration products can be generated/applied in gen3 DC2 (Waters)
  - Almost ensured a gen3 DRP can be run on DC2 (*all*) – sort of
  - And that is maintained in a `ci_imsim_gen3` – not yet

- In S21b to priority is validating and maintaining DC2 Gen3 DRP pipeline:
  - Get that `ci_imsim_gen3` in Jenkins
  - Get the diffim forced photometry pipelines validated for DC2
  - Validate Gen3 DC2 Pipeline via monthly reprocessings

Personnel changes for S21b

- Clare Saunders returns ~April 1
- Andres Plazas is new father as of Feb 16th, and also on leave until April 1
- Robert: Jim Gunn update