2022-03-22 Science Metric Development Agenda and Meeting notes

Date

22 Mar 2022

Location

Zoom alias : https://ls.st/rsv

Zoom: https://noirlab-edu.zoom.us/j/96120781994?pwd=bCtpT3Q3b2RsU1ZBRUFaSnUrZXo3Zz09#success

Attendees

Erik Dennihy Peter Ferguson Colin Slater Keith Bechtol Michael Martinez Robert Lupton

Regrets

Leanne Guy Jeffrey Carlin

Useful links

Metric tracking dashboards

- DC2 and HSC RC2 monthly reprocessing (Gen3 and Gen2/3, faro): https://chronograf-demo.lsst.codes/sources/2/dashboards/75
- Nightly CI (Gen3, faro): https://chronograf-demo.lsst.codes/sources/2/dashboards/70

Rubin science pipelines weekly change log and Github repo: https://github.com/lsst-dm/lsst_git_changelog

Status of jenkins jobs and slack channle for notifications: #dmj-s_verify_drp_metrics slack channel

Discussion items

Item	Who	Pre-meeting notes	Minutes
News, announcements and task review	All		
CI status, bugs, issues of the week	All		

| Faro Development status | Leanne Guy | • Spring 2022 epic

⚠ DM-33385 - Jira project doesn't exist or you don't have permission to view it.

• Backlog epic:

⚠ DM-29525 - Jira project doesn't exist or you don't have permission to view it.

• Progress on conversion to parquet | • Remaining infrastructure in faro to support adding many more metrics
  ○ Relationship with visualization
    ■ Visualization capability within faro
    ■ Connection to analysis_drp – understanding the relationship between these two software packages
    ■ Infrastructure for visualizing ensembles of metric values / statistics / correlations
  ○ Diagnostic capability
    ■ Partly addressed with shelf
    ■ Other tooling for understanding an unexpected metric value – related to visualization above
  ○ Metric naming convention and metric package specifications
  ○ Review of documentation
  ○ Review of unit tests / coverage
  ○ List of metrics to be implemented / review of metric specifications
  ○ Any additional analysis contexts needed?
  ○ Persisting metrics as lsst.verify.Measurement objects
    ■ Performance question when scaling up to thousands of metric values
  ○ Matching routine for using external catalogs.
• MatchedCatalogTable base class merged last week
• Rough example of PA1 using MatchedCatalogTableMeasurement (Git branch tickets/DM-32613)
  ○ Just using aperature photometry 12 as the measure since the PsfFlux column in not available in current matched table.
• DM-33959 has been bumped up the priority list for pipelines. We're expecting a fix to land in w15. DM-31855 is essentially a duplicate so this has been marked as 'won't fix. This would apply astrometric and and photometric calibrations to source parquet tables.
  ○ Would a second matching step need to run to make table of matched sources?
  ○ Join once and persist or join every time we run a metric.
  ○ There is a value is
  ○ We could profile the joining now using the isolatedStarAssociationTask keys as an index |

| Data processing campaigns | Jeffrey Carlin Keith Bechtol | RC2/DC2 reprocessing epic :

⚠ DM-26911 - Jira project doesn't exist or you don't have permission to view it.

○ w_2021_40 RC2:

⚠

DM-32248 - Jira project doesn't exist or you don't have permission to view it.
○ w_2021_44 DC2 :

⚠

DM-32391 - Jira project doesn't exist or you don't have permission to view it.

AuxTel - Erik to give update AP/DiffIm | Prior issues with AuxTel photometric calibration issues now understood, a bug to the calibrated fluxes written to parquet tables was discovered and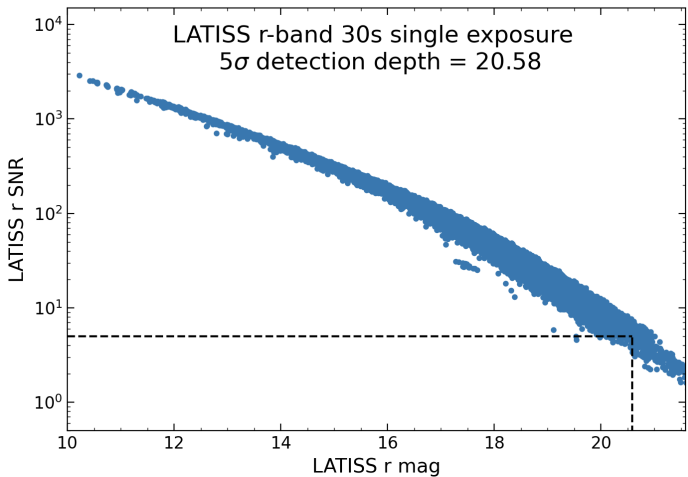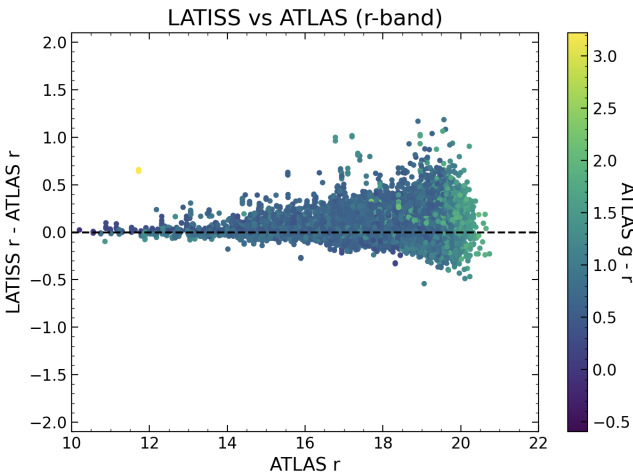 a fix is under development (see

⚠ DM-34019 - Jira project doesn't exist or you don't have permission to view it.

). For now, we can still calibrate fluxes using AFW tables and photoCalib object. Calibration is good but shows some systematics in scatter.

LATISS vs ATLAS (r-band)

LATISS r-band 30s single exposure
5σ detection depth = 20.58

I need to generate/register a skymap for the different fields in order perform co-addition, is there a way to do this outside of repo/main to allow for experimentation? butler register-skymap --config-file /path/to/file /path/to/repo (could experiment on rc2subset, example config in obs_lsst) Discrete skymaps will become more work than worth at some point. Option would be to make a small repository and do a test with discrete skymap. Then make skymap in repo/main Are there any single-visit/detector level metrics are implemented now in Faro that are worth running on the afw tables we have already generated? Keith and Erik to schedule a meeting to talk about next steps for computing metrics to support AuxTel observing What quantities are most useful to AuxTel during the night Merlin is probably the person to talk to about current AuxTel data processing and RubinTV visualization of metric values Short term analysis_drp, producing many QA plots. Person is Sophie Reed. Potentially generate a webpage of useful plots. Another source of |

DP0.2	Colin Slater Leanne Guy		
AOB	Leanne Guy	Potential co-working session ideas here	Next meeting 29 Mar 2022

List of tasks (Confluence)

	Description	Due date	Assignee	Task appears on
☐	Leanne Guy to talk to Science Pipelines (Yusra) about when do this transfer **19 Oct 2021**	19 Oct 2021	Leanne Guy	2021-09-28 Science Metric Development Agenda and Meeting notes
☐	Leanne Guy arrange to disucss at a future meeting if there are metrics from PDR3 & this paper that we might want to include in faro. **26 Oct 2021**	26 Oct 2021	Leanne Guy	2021-08-31 Science Metric Development Agenda and Meeting notes
☐	Colin to ask about capturing ideas for improvement to the stellar locus algorithm **30 Nov 2021**	30 Nov 2021		2021-11-09 Science Metric Development Agenda and Meeting notes
☐	Colin Slater to make a preliminary draft agenda for a workshop to clarify visualization use cases for science verification and validation		Colin Slater	2022-04-19 Science Metric Development Agenda and Meeting notes
☐	Jeffrey Carlin to review metric specification package organization and the relationship to formal requirements documents		Jeffrey Carlin	2022-04-19 Science Metric Development Agenda and Meeting notes
☐	Keith Bechtol Schedule a time to have focused discussion on verification package, potentially next status meeting		Keith Bechtol	2021-09-14 Science Metric Development Agenda and Meeting notes
☐	Keith Bechtol to make a ticket to better understand mapping of these camera and calibration products characterization efforts to verification documents and the focus of these efforts. Discuss with the SCLT		Keith Bechtol	2021-09-14 Science Metric Development Agenda and Meeting notes