

# DRP Metrics Monitoring 2021-01-04

Mondays 12pm - 12:50pm EST

Yusra's Zoom: <https://princeton.zoom.us/j/yusra>

## Attendees:

Yusra, Leanne, Eli, Sophie, Lauren, Matthias, Christopher Waters, Keith, Dan, Morgan, Arun, Simon, Josh, Hsin-Fang, Ian, Fred, Robert, Jim, Zeljko, Eric, Lee, Jeff, Andres

## Agenda:

- Review Action items from last week
  - Review w\_2020\_50
    - What was noteworthy in this rerun?
      - Switched from PS1 refcat to GAIA refcat
      - commandlineTasks' --clobber-output blows away the entire output repo.
      - visitAnalysis fails on RC2fakes.
    - What changed? Annotate.
      - stellar locus regression (see below)
      - relative and absolute astrometry are independent
- ☐ [Jeffrey Carlin](#) Add an absolute astrometry match-to-refcat metric to dashboard



[DM-34153](#) - Jira project doesn't exist or you don't have permission to view it.

- ☐ [Yusra AlSayyad](#) Do a rerun with w50 PS1 refcat and one with shrunk refcat errors.
- ☒ [Lauren MacArthur](#) Rerun visitAnalysis with refcat that was used in processing (Gaia) : plots from a current run on the



[DM-28214](#) - Jira project doesn't exist or you don't have permission to view it.

ticket branches can

be found here: <https://lsst.ncsa.illinois.edu/~lauren/lauren/DM-28214/w06/gaia/plots/>

- What do we expect from w\_2021\_02?
  - Possibly Scarlet. See RFC-745.
  - What new metric can we expect next time
- Review w48 DC2?
- AOB

Two glitches with pipe\_analysis after switching to reading in the parquet tables diagnosed & fixed on



[DM-28168](#) - Jira project doesn't exist or you don't have permission to view it.

Some significant "issues" to discuss. Refer to



[DM-28173](#) - Jira project doesn't exist or you don't have permission to view it.

## Minutes:

Action items from last time:

Add injection metrics to dashboard.

Regularly running matchedVisitMetrics on DC2. Currently getting errors of type "can't find data". Eric will look into next week.

w\_2020\_50 FGCM outputs. Now in logs directory.

Why did FGCM solution change? Eli started looking but not too deeply yet. Overall model is the same. Runs on different sample of stars each time. Expect some amount of noise, however the current differences are larger than expected.


w\_2020\_50 was last re-run. One huge change is switching from Pan-STARRS refcat to Gaia refcat. Accidentally deleted entire output directory. Clobber behavior was not as expected. Anything with clobber-output will clobber entire output repo. Option to be handled with care! In general, we should avoid using clobber in a production setting. Clobber options should probably only be used when experimenting. Suggest not to ever use --clobber-output at this time. Will go away with Gen3.

Problem with coadd analysis, a few runs didn't work, working with Lauren on that.

RC2 fakes has problem with visitAnalysis, just found this morning. Posted issue on JIRA.

Astrometry. Single-frame repeatability improves slightly. There was a small change with the match radius.

Large stellar locus width regression. Lauren is investigating:

 [DM-28173](#) - Jira project doesn't exist or you don't have permission to view it.

Match to reference catalog. Coadd positions determined

from Gaia reference and matched to Pan-STARRS. Validate\_DRP says photometric repeatability. Doing the match per patch. Fitting also done per patch. What is happening when JointCal WCS is applied. Density of Gaia sources is much lower. New jointCal with Gaia is applying much larger astrometric shifts. Both the visit-level and coadd are shifted. Suspect that image to image registration has gone wrong. This would mess up coadd stellar locus. PS1 refcat has a lot of galaxies it in, more galaxies than stars in astrometric fit. Check whether astrometry is only using stars. Have we done the check that running with PS1 goes back to the expected result? Would need to run jointcal again on everything. Plan to do that test this week. Note there was a bug where region loaded by refcat was shifted. Demonstrate that held-back Gaia stars are consistent with Gaia system. Coherent structures observed across focal plane. The regression is observed in COSMOS field (smaller dither, longer exposures?). AM1 and AM2 look OK. Atmospheric terms should be a level tens mas, where we are seeing shifts in ultra-deep at order hundred mas. Look at camera distortion field from wide and ultra-deep. No dithering in deep field to solve lower order terms of distortion field.

Re-runs: test with PS1 refcat.

PSF size residuals (coadd) have increased slightly.

Only the matchedVisit metrics are visit level on the dashboard currently.

Sky Objects Metrics are now by tract.


w\_2021\_01 will be tagged in next couple days. w\_2021\_02 will be tagged next Wednesday (~10 days from now). Possibly scarlet. RFC-745.

w\_2021\_01 is out already, so I guess \_02 is this week. (w\_2021\_01 went out on Dec 31, 2020)

Was there a w\_2020\_48 DC2 re-run? No matchedVisit metrics to look at.

Action Items

| Description   | Due date    | Assignee    | Task appears on                   |
|---|-------------|-------------|-----------------------------------|
| <input type="checkbox"/> Add a plot with fakes stats to the dashboard. <a href="#">Sophie Reed</a> 04 Sep 2020  | 04 Sep 2020 | Sophie Reed | DRP Metrics Monitoring 2020-08-07 |
| <input type="checkbox"/> Sophie to add field in metric definition to hold thresholds. <div><a href="#">DM-43364</a> - Getting issue details...<div>STATUS</div></div> : We need to talk about this when Sophie is back! |             |             | DRP Metrics Monitoring 2024-04-22 |

|   |  |                                |                                   |
|---|--|--------------------------------|-----------------------------------|
| <input type="checkbox"/>  | Sophie to add field in metric definition to hold thresholds.<br><a href="#">DM-43364</a> - Getting issue details... <span>STATUS</span>                                  |                                | DRP Metrics Monitoring 2024-03-18 |
| <input type="checkbox"/>  | Clare: add analyzeMatchedVisitsCore to drp_pipe step8  |                                | DRP Metrics Monitoring 2023-06-26 |
| <input type="checkbox"/>  | Sophie: make a new list for outstanding analysis_drp plots that require moving, send to Jim  |                                | DRP Metrics Monitoring 2023-06-26 |
| <input type="checkbox"/>  | turn catchFailures on in calibrate. Add flag to indicate that deblender failed because PSF is bad.   |                                | DRP Metrics Monitoring 2022-10-31 |
| <input type="checkbox"/>  | <a href="#">Yusra AlSayyad</a> Eric's account was deleted; we need to make sure he has all his logs.   | <a href="#">Yusra AlSayyad</a> | DRP Metrics Monitoring 2021-06-14 |
| <input type="checkbox"/>  | <a href="#">Arun Kannawadi</a> Modifv rho stats in pipe_analysis to use debiased moments (see <a href="#">DM-30751</a> - Getting issue details... <span>STATUS</span> ). | <a href="#">Arun Kannawadi</a> | DRP Metrics Monitoring 2021-04-19 |
| <input type="checkbox"/>  | Investigate rho-stats an ellipticity resids in w_2020_06 post-Scarlet <a href="#">Arun Kannawadi</a> <a href="#">Fred Moolekamp</a>                                      | <a href="#">Arun Kannawadi</a> | DRP Metrics Monitoring 2021-03-01 |
| <input type="checkbox"/>  | <a href="#">Yusra AlSayyad</a> Do a rerun with w50 PS1 refcat and one with shrunk refcat errors.   | <a href="#">Yusra AlSayyad</a> | DRP Metrics Monitoring 2021-01-04 |
| <input type="checkbox"/>  | <a href="#">Jeffrey Carlin</a> Add an absolute astrometry match-to-refcat metric to dashboard  | <a href="#">Jeffrey Carlin</a> | DRP Metrics Monitoring 2021-01-04 |
| <div> <a href="#">DM-34153</a> - Jira project doesn't exist or you don't have permission to view it.</div> |  |                                |                                   |
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