



Alert Production Status Update

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Review of recent progress - Alert Production S21a



- **Data analysis and QA**

- Generated stack-produced calibration products for DECam HiTS using Gen 3
- Regularly processing both DECam HiTS and HSC COSMOS in CI
- Completed ap_pipe processing of crowded field dataset, [DMTN-171](#) reviewed
- Began using Postgres database instead of SQLite

- **Infrastructure**

- Completed the afw::Filter redesign and replacement with FilterLabel
- Converted remaining AP pipeline to Gen 3

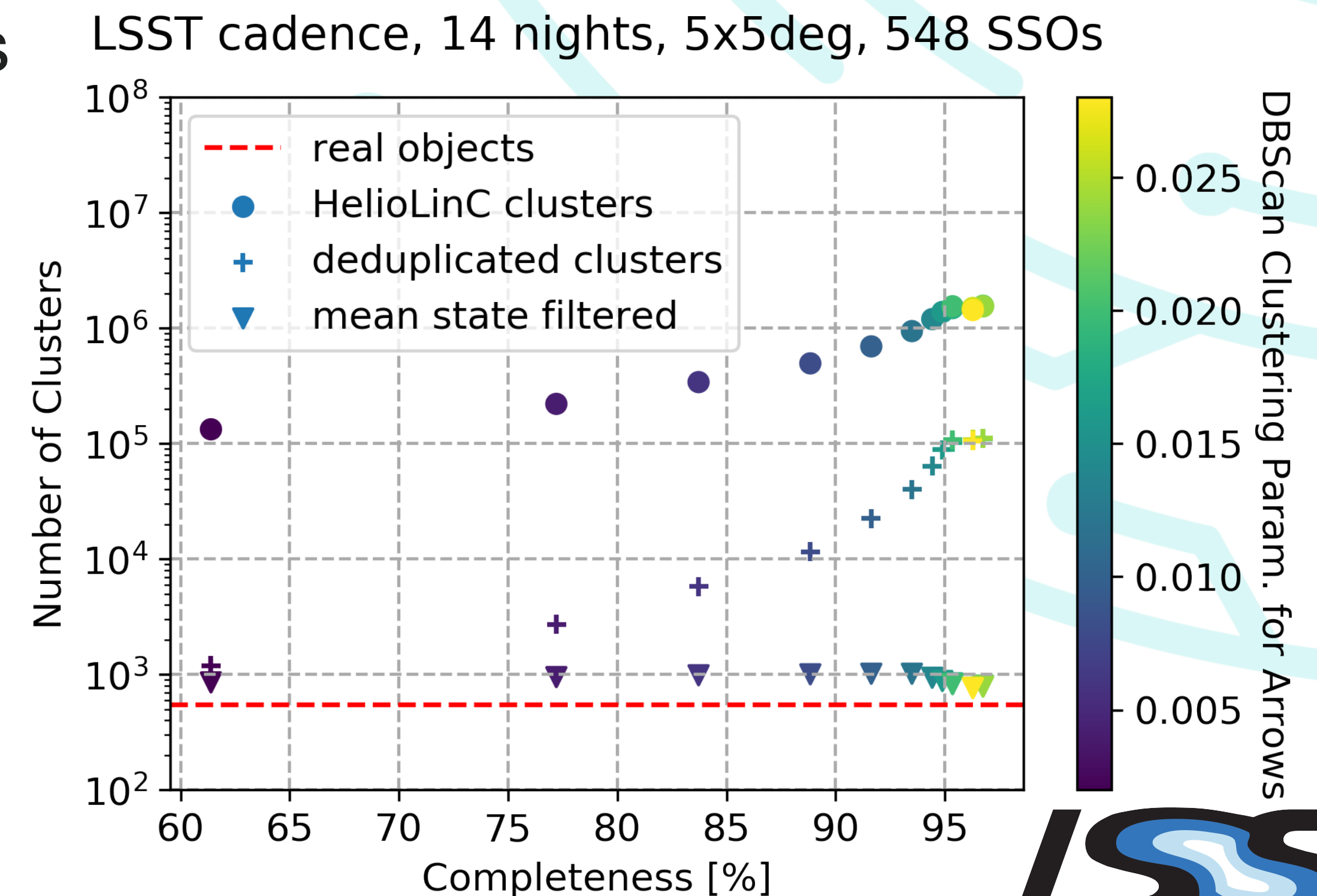
- **Alert distribution**

- Wrote [DMTN-165](#) detailing hybrid alert distribution proposal

Review of recent progress - Alert Production S21a

- **Solar System**

- Wrote [DMTN-180](#) summarizing the results of the Data Exchange Challenge with the Minor Planet Center
- Prototype linking algorithm Heliolinc2 now reaching 95% completeness
- Joachim Moeyens started writing his thesis

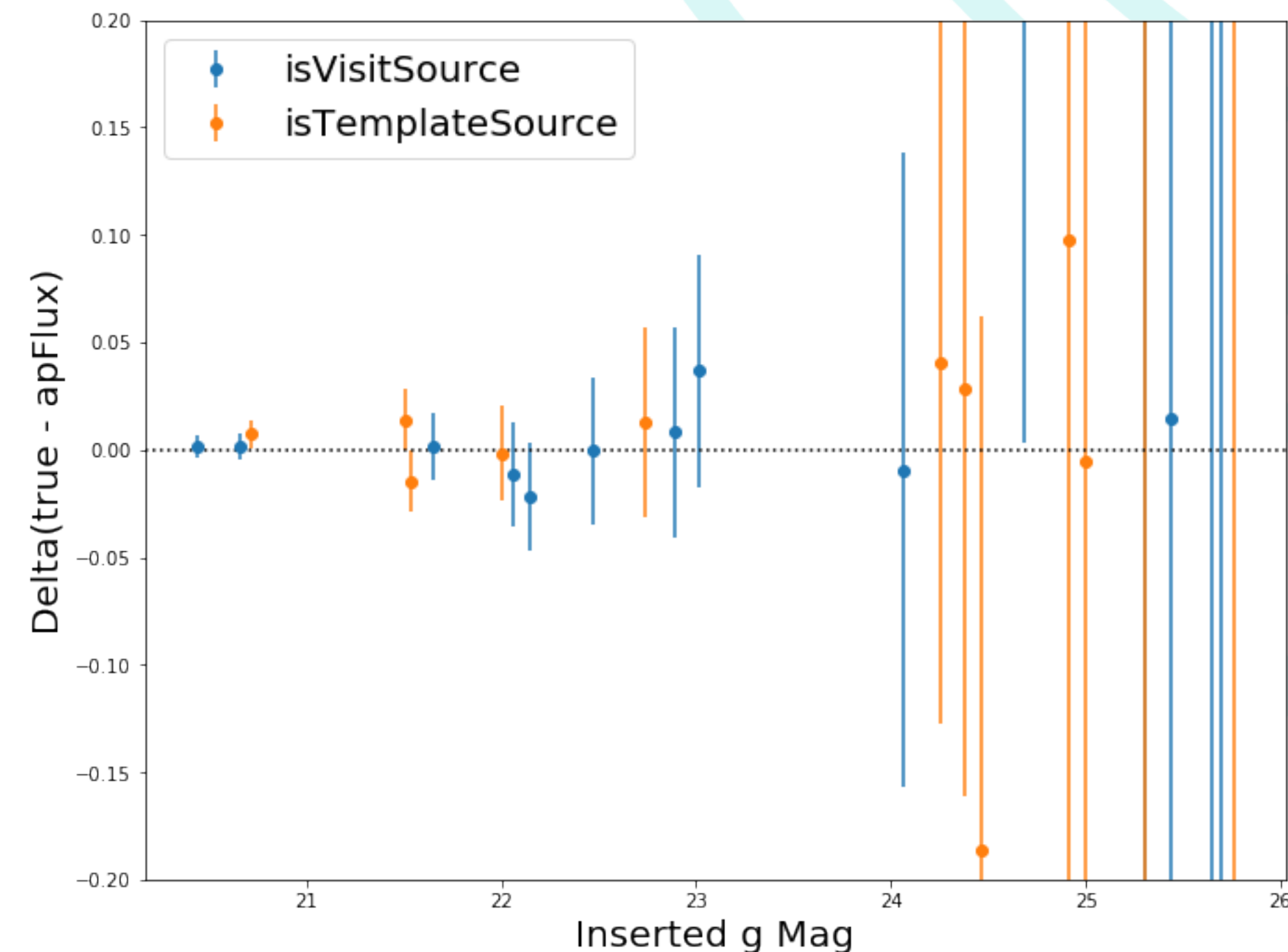
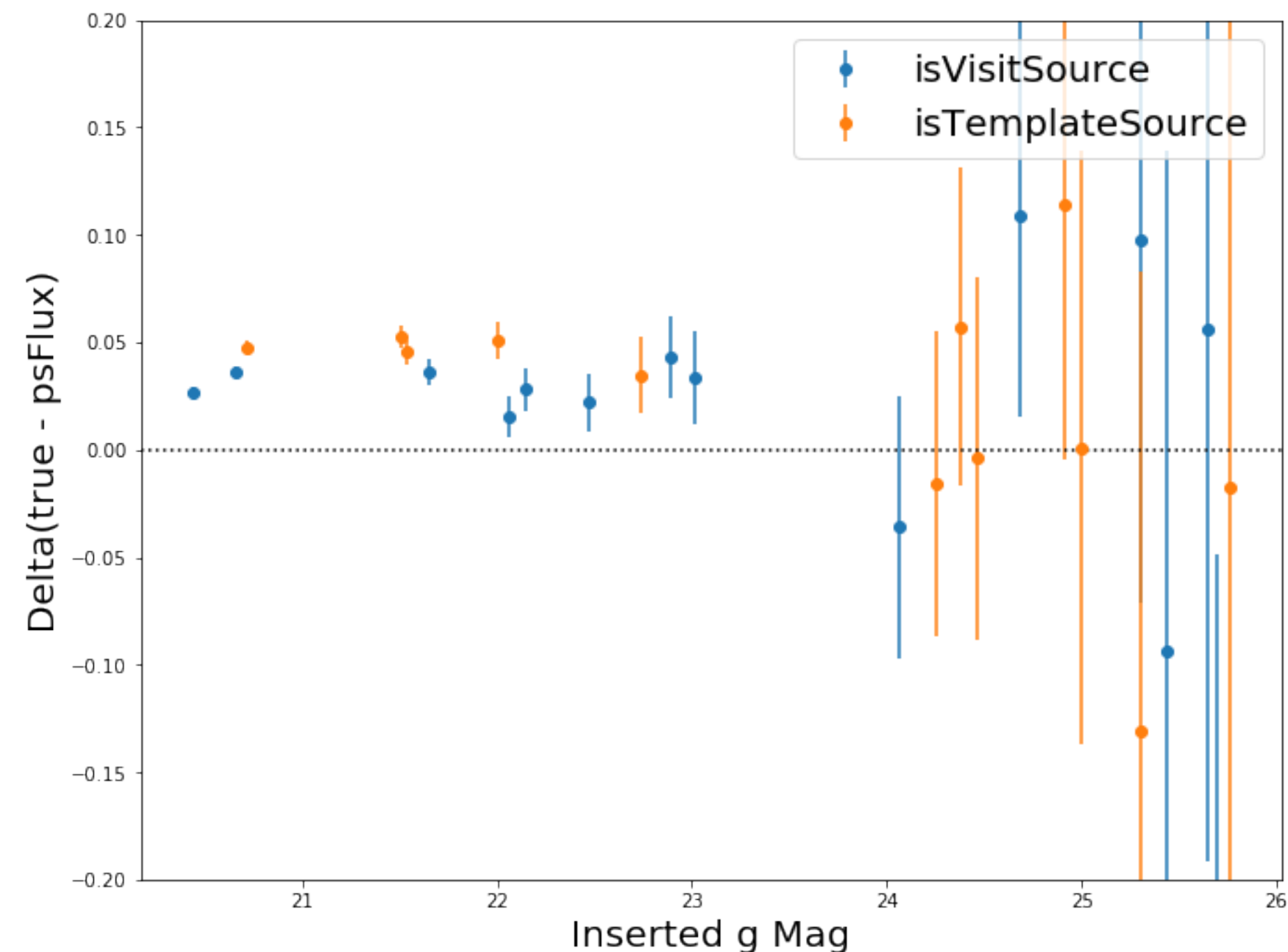


Review of recent progress - Alert Production S21a



- **Fake source injection for AP**

- Full pipeline for injecting fake sources is now implemented
- Already uncovered and helped fix a bug in the measurement of psFlux on difference images (DM-28498)



Review of recent progress - Alert Production S21a



- **Jointcal**

- Gen 3 conversion nearly complete
 - Final conversion reviewed and soon ready to be merged (DM-27869)
 - Still need to persist metrics for full Gen 2 parity (DM-28863)

- **Image differencing**

- New technote [DMTN-179](#) summarizing current state of ZOGY implementation
- Fixed kernel normalization for decorrelation afterburner
- Kicked off a focused sprint to characterize the performance of the existing image differencing algorithms and identify areas for improvement

Plans for S21b - Alert Production

- **Jointcal**

- Apply proper motions and parallaxes to reference catalogs
- Generate distortion models for use with the new astrometric fitter

- **Image Differencing**

- Complete the image differencing sprint, and report on results
- Classify and generate metrics to evaluate image differencing artifacts

- **Infrastructure for Real/Bogus**

- Develop tooling which can be used as part of training a real-bogus classifier.
- Prepare initial DIASource cutouts to use for the classifier.
- Deploy real-bogus Zooniverse project.

Plans for S21b - Alert Production

- **Alert Distribution**

- Plan alert stream integration with production system
- Investigate using Confluent Schema Registry

- **Data Analysis and QA**

- Regular analysis of processing of DECam and HSC data through AP pipelines, now also using Gen 3
- Add new metrics to CI monitoring

- **Solar System**

- Plan for integration of MOPS with the Alert Production pipeline
- Clean up and document new Heliolinc2 linking algorithm