Review of recent progress - Alert Production F21A

- **Alert distribution**

  - Created a test implementation of a confluent schema registry

  - Set up a proof-of-concept alert database on the IDF

- **Infrastructure**

  - Members of the AP team continued to support the conversion to Gen 3 middleware

  - Created pure Gen 3 reference catalog ingestion and conversion Tasks

  - Added support for synthetic source injection throughout AP

  - Enhancements to the AP metrics system

Review of recent progress - Alert Production F21A

- **Catalog Association**
  - Implemented DRP-mode association task
  - Integrated the Solar System Processing object association task with AP
  - Refactored AssociationTask and began optimizing performance.

- **Data analysis and QA**
  - Regularly processing both DECam HiTS and HSC COSMOS in CI
  - Added new metrics for image QA
  - Reprocessed precursor datasets including synthetic source injection

Review of recent progress - Alert Production F21A

- **Image differencing**

  - Wrote and revised the [Image Differencing Audit](#)

  - Increased test coverage

  - Fixed bugs in option to convolve the science image

  - Fixed bugs in preconvolution option

  - Added decorrelation afterburner for preconvolved images

- **Jointcal**

  - Proper motions are now applied to matched sources.

Review of recent progress - Alert Production F21A

- **Solar System Processing (formerly known as MOPS)**

  - Refined the trailed source fitting algorithm

  - Added trailed source measurement on difference images and stored the measurements in the APDB. We can now claim DM-AP-13

  - Created a mock Solar System object catalog, and Daily Data Release Products pipeline prototype

  - Integrated the Solar System object association pipeline with AP (worth mentioning this twice…)

Plans for F21B and beyond - Alert Production

- **Pipeline infrastructure**

  - Performance tuning sprint in November

- **Integration**

  - Plan for and begin integration of the AP pipeline with the IDF and USDF.

- **Image Differencing**

  - Classify and generate metrics to evaluate image differencing artifacts

  - Compare image differencing when convolving the template / the science image and evaluate whether we can claim DM-AP-12

Plans for F21B and beyond - Alert Production

- **Data Analysis and QA**

  - Regular analysis of processing of DECam and HSC data through AP pipelines, now only using Gen 3

  - Reprocess the Saha bulge crowded field dataset in Gen 3

  - Deeper analysis using synthetic sources

  - Analysis of timeseries features

- **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.

  - Begin development on a real-bogus classifier

Plans for F21B and beyond - Alert Production

- **Alert Distribution**

  - Plan alert stream integration with production system

  - Create a prototype complete alert distribution system in the IDF (Burwood is helping)

- **Jointcal**

  - Apply proper motion to reference catalogs

- **Solar System**

  - Complete the integration of SSP with the Alert Production pipeline

  - Clean up and document new Heliolinc2 linking algorithm

  - Speed up and add new measurements to Trailed Source Fitting