

Transients Discussion Items

Don Petravick, Nathan Whitehorn

Core of PBDR on Transients.

- We will have some kind of alert pipeline, with max latencies of 24 hours (reliability requirement?). Alert pipeline will build on S3 code (presumably, SPT).
- Rate of alerts is going to be of order 500 per year from the LATs based on SPT results <- new knowledge for PBDR
 - The majority of SPT (and ACT) transients are short (hours or less). Do we need to bump the alert time scale to < 1 day?
 - 500/year is **new** sources, does not include AGN flares.
 - 500/year is a lot (though not LSST level!), so we need tiers of interestingness/distribution systems to make it workable for community
- Transients portfolio is based on live-generated maps (made in US for Chile, at pole for SPLAT)
- Effort split into alert generation and distribution components

Self-identified concerns in the Draft to discuss.

- There is no prose discriminating between variability and transients.
 - Where do we draw the line?
 - What AGN flares are “interesting”? Do we have a connection to the AGN community about what they might want for near-real-time follow-up vs. long-term cross-correlation?
- There is no discussion of detection thresholds (except 30 mJy for GRB afterglows.)
- Requirements traceability as to what is made into public alerts (Transients PDR asserts public alerts are public)
- Contents of Alert are not yet specified:
 - Postage stamp of I, Q, U? Polarization only?
 - Light curves?
 - Ephemeris for solar system objects?
- Frequency of repeat alerts for same object (eg significantly differing flux) is discussed as TBD.
- The PBDR text states “Initial Classification” (do we want this? will need traceable requirement)
- The PBDR text states Daily Maps will be high-pass filtered, prose implies transients process relies on this filtering. Who is responsible for this?

Self-identified concerns in the Draft to discuss.

- Current “formal” requirements area a swag w/ no serious traceability.
 - 1) Issue transient alerts within 24 hours of data being taken 90% of the time, and within 48 hours 95% of the time.
 - 2) Update publicly available catalog of transients, within one hour; 95% of the time of issue of alert.
- Division between MREFC part and Analysis working groups:
 - “Additional annotations beyond alert messages originating in the Transient Detection Pipelines are the responsibility of the sources science work group, and are out of scope of the construction and follow on operations projects.

Figures

