


Updates On The Call For White Papers And Scheduler

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8/13/2018 - SAC meeting



Large Synoptic Survey Telescope

The logo for the Large Synoptic Survey Telescope (LSST) features the letters 'LSST' in a bold, black, sans-serif font. The letter 'S' is filled with a blue-to-white gradient, resembling a nebula or a galaxy. Below the logo, the full name 'Large Synoptic Survey Telescope' is written in a smaller, italicized, white font.

Call for white papers



Contacts @ <https://community.lsst.org/c/sci/survey-strategy> and via email lsst-survey-strategy@lists.lsst.org

Workshops:

- LSST TVS-SC conference & hackathon (June 4-8)
- LSST SSSC sprint (July 10-12)
- DESC ObsStrat sessions @ DESC meeting (July 24)
- LSST 2018 PCW cadence sessions (Aug 13-17)
- Workshop on WFIRST/LSST DD fields (Aug 30-31)
- LSST Cadence Hackathon (LSSTC) (Sept 17-19)

White papers in progress:

- 2 from DESC (WFD, DD/minisurveys) <https://github.com/LSSTDESC/ObsStrat>
- 5 from SSSC (NES, DD, twilight, colors)
- Other collaborations?

White Paper Runs



Name		Description
baseline2018a	Baseline	Project-official baseline (official opsim v4 baseline, 6/2018). No dome crawl.
kraken_2026	Next baseline	Unofficial baseline (expected next baseline, including dome crawl). Comparison point for WP run simulations.
colossus_2665	Bigger baseline	Baseline style, with slightly expanded WFD footprint to better satisfy SRD constraints on fO
colossus_2664	No GP	No separated Galactic Plane proposal. Simply run WFD over galactic plane region.
colossus_2667	Single visits	Survey with single visits only. Standard visits in pairs each night replaced with single visits per night.
pontus_2489	Short visits	Survey with more visits. Standard 2x15s visits replaced with 1x20s in grizy and 1x40s in u band.
kraken_2042	No snaps	Survey without snaps (single 30s exposures per visit).
kraken_2035	9 DDF	Survey with 9 DD mini surveys instead of 5. Addition of 4 extra extragalactic DD fields.
mothra_2045	Rolling (2)	A rolling cadence in WFD. Two regions of declination, alternating on/off every other year throughout entire survey.
pontus_2502	Rolling (2)	A rolling cadence in WFD. Two regions of declination, alternating on/off every other year throughout the entire survey, but the background WFD remains "on" at a 25% reward level.
kraken_2036	Rolling (3)	A rolling cadence in WFD. Three regions of declination, alternating on/off every third year from years 3-8. Standard WFD coverage in years 1-2, 8-10 (first two and last two years).
pontus_2002	PS style	Very large WFD footprint (24,700 sq deg) and 5 DD mini-surveys (5 fields). ("PS style").
kraken_2044	PS - Single visits	Very large WFD footprint (24,700 sq deg) and 5 DD mini-surveys (5 fields) ["PS style"] but with single visits per night.
mothra_2049	PS - Rolling (2)	A rolling cadence on a very large WFD footprint (24,700 sq deg). Two regions of declination, alternating on/off every other year throughout entire survey.
nexus_2097	PS - Rolling (3)	A rolling cadence on a very large WFD footprint (24,700 sq deg). Three regions of declination, alternating on/off every third year from years 3-8. Full WFD coverage in years 1-2, 8-10 (first and last two years).

Scheduler status



Proposal based scheduler moving to feature based scheduler

Moving from previous "proposal-based" scheduler to "feature-based" scheduler (FBS)

Similar at a low-enough level, but FBS is more flexible;

- reward functions are not buried in proposals but easily accessible & extensible as python classes
- high level decision optimization accessible instead of hard-coded
- arbitrary sky resolution; translational dithering built-in

Runs released with white paper were created with proposal based (old) scheduler. New runs in response to white papers will be created with FBS.

Held design review in July; valuable feedback going into adoption of FBS. FBS is still in development for use as official scheduler.

Scheduler status



Current status

Release of opsim 4.1.3 Aug 2018:

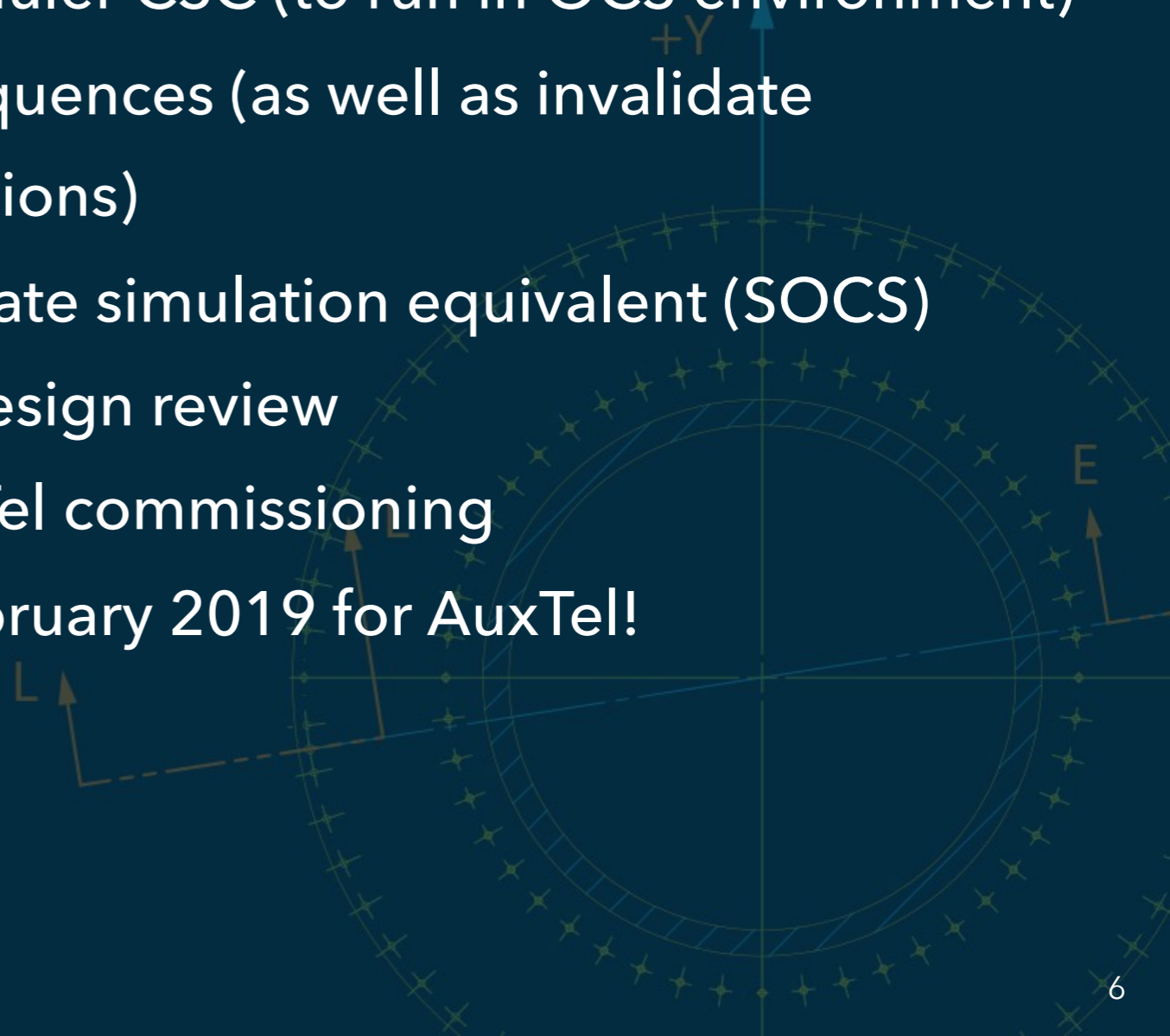
- Includes proposal scheduler, as well as (SOCS-compatible) FBS*
 - Includes functional CSC prototype (control module for scheduler in real OCS).
 - Jupyter notebook integration.
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- * Not officially using FBS yet - still need to understand and validate effects of various features, basis functions and surveys (including recreating a realistic baseline run).
 - * Work in progress: found and fixed bugs in recalculated sky values, included cloud cover in a way consistent with standard OpSim environment, and updated features to meet T&S requirements (moon avoidance zone).
 - * Working on balancing input specifications to create a realistic baseline, as well as fully understanding their effects (to simulate other types of runs).
 - * Expect to be able to swap to FBS by end of the year. We will use FBS for runs responding to call for white papers.

Scheduler status



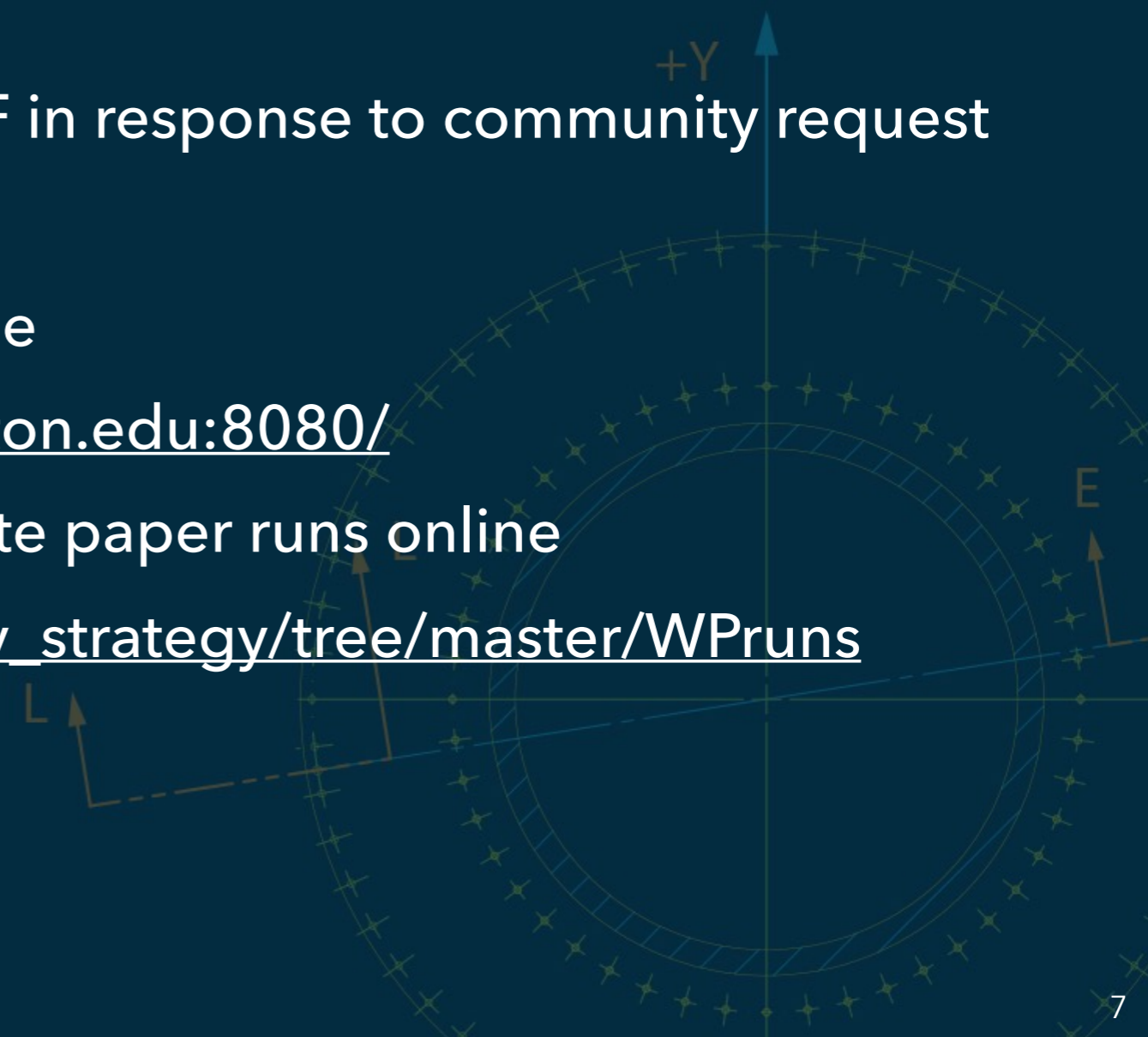
Future development

- Start using FBS by end of the year.
- Investigate block scheduling capabilities in FBS.
- Will refactor FBS code to simplify and document interfaces and classes
- Must add required support for Scheduler CSC (to run in OCS environment)
 - Schedule observations in OCS sequences (as well as invalidate scheduled-but-not-taken observations)
- Create scheduler CSC code and update simulation equivalent (SOCS)
 - Incorporate feedback from July design review
- Add capabilities for scheduling AuxTel commissioning
- Basic scheduler CSC starts use in February 2019 for AuxTel!

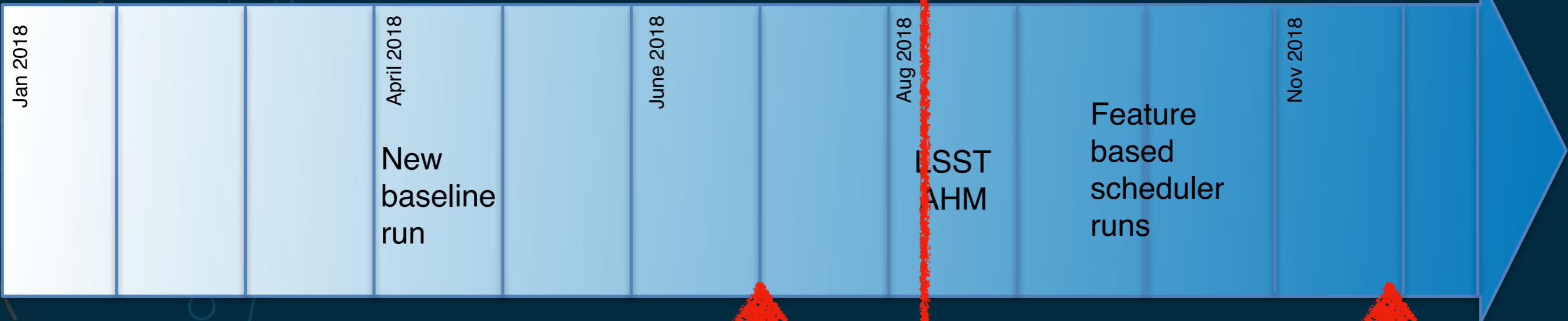


Current status

- Added moving object 'observation' generation package (sims_movingObjects) and metrics (in MAF)
- Introduced these to the SSSC at July sprint - good responses!
- Adding season length metric to MAF in response to community request
- Metrics for all white paper runs online
 - <http://astro-lsst-01.astro.washington.edu:8080/>
- Comparison of metrics between white paper runs online
 - https://github.com/lstt-pst/survey_strategy/tree/master/WPruns



2018



Call issued

Submission Deadline

2019



SAC WP comments

Create list of simulations

Simulated surveys released