

OpSim Datasets for Cadence Workshop LSST2015

WARNING! These opsim runs are about to be depreciated in favor of a new set of tier1 runs. To see the list of (as yet unofficial) new runs, please go to [Operations Simulator Benchmark Surveys](#) . This version of the opsim runs uses [Summary table 2015 Summary Table description](#). There will be a schema difference between these runs and the current runs - 'finSeeing' (here) will be replaced by 'FWHMgeom' and 'FWHMeff' (there).

OpSim: Data and Analyses

From this page you can download database files and view analyses for 10-year simulated surveys produced by the Operations Simulator (OpSim). The Simulator generates an SQLite database that includes the pointing history of observations, and information about the telescope and instrument states, as well as the observing conditions at the time of an observation. To gain some insight into each simulation, we provide metrics characterizing each simulated survey produced by the Metrics Analysis Framework (MAF).

The simulated 10-year surveys presented in the following table have been produced for use at the [LSST Cadence Workshop \(LSST2015\)](#) which was held August 20-22, 2015 in Bremerton, WA. The motivation for creating this collection of simulated surveys is described by the [Exploratory Cadences Plan](#) document and is further described in this [Overview](#) from LSST2014 (some of these links may be outdated). This set of simulations starts with "Setup 0" which is similar to the current Baseline Cadence ([opsim3.61 - described in more detail here](#)), but run with tuned parameters, updated code, and refined characteristics. Subsequent simulations are variations on which science programs are included, how the observations are obtained, limits on the airmass, and the u-band exposure times.

For more information about the OpSim software visit the [Operations Simulation webpage](#).

More information about the MAF software can be found on the [MAF documentation pages](#), and an example of a visualization that can be created for a survey using MAF is this [Movie sample \(enigma_1189\)](#).

This table provides links to datasets and analysis of 10-year simulated surveys, and the columns are as follows :

- the "Setup" number from [Exploratory Cadences Plan](#),
- the name of the simulation (name of the machine and unique run ID) and a link to its SQLite database,
- a description of the survey setup and how a particular simulation differs from the Baseline Cadence (described in the first row or Setup 0),

We used two scripts from the Metrics Analysis Framework to generate a web page presentation of demographics & characteristics (schedulerValidation.py) as well as scientific performance metrics (sciencePerformance.py) for each run. The results from each script is denoted in a separate row for each run.

Results from the MAF scripts performed on all simulated surveys in this table can be navigated using a browser at <http://ops2.lsst.org:8888>.

For the details of the output file contents, see the description of the OpSim database "[Summary](#)" table.

Setup	Simulation Name	Description of the Survey Setup
0	enigma_1189 SQLite Data	<u>Modern Version of the Baseline Cadence</u> A candidate replacement simulation for the current Baseline Cadence (opsim3.61) produced with the latest version (v3.2.1) of the Operations Simulation (OpSim) code. The following adjustments have been made: includes Science Council approved Deep Drilling fields; Wide-Fast-Deep (WFD) design specification for areal coverage (18,000 deg) & WFD "boosted visits" = 75, 105, 240, 240, 210, 210 for u, g, r, i, z, & y filters where g, r, i and z visits are collected in pairs separated by about 30 minutes; includes revised scheduled downtime as well as random downtime; minAlt = 20 deg; MinDistance2Moon = 30 deg. Note that SRD design visits = 56, 80, 184, 184, 160, 160 for u, g, r, i, z, & y filters.
1	ops2_1098 SQLite Data	Uniform cadence (WFD), which asks for visits in pairs, and no other proposal.
2	ops2_1093 SQLite Data	Only uniform cadence (WFD), but does not require pairs of visits.
3	kraken_1033 SQLite Data	As the baseline cadence (Setup 0), but does not require pairs of visits.
4	enigma_1271 SQLite Data enigma_1266 SQLite Data	As the baseline cadence, but requests 3 visits per Wide-Fast-Deep field chosen instead of 2 visits, using the same window function for both 1-2 visits and 2-3 visits. As the baseline cadence, but requests 4 visits per Wide-Fast-Deep field.

5	kraken_1034 SQLite Data	As the baseline cadence, except that the u-band exposure time is 60 sec instead of 30 sec.; Nvisit for the u-band remains the same.
6	kraken_1035 SQLite Data	As the baseline cadence, except that the u-band exposure time is 60 sec instead of 30 sec; Nvisit for the u-band is decreased by a factor of 2.
7	kraken_1036 SQLite Data	As the baseline cadence, except for a shorter visit exposure time: 20 sec instead of 30 sec. Deep drilling proposal has visits based on 30sec exposure due to code issues.
8	kraken_1037 SQLite Data	As the baseline cadence, except for a longer visit exposure time: 60 sec instead of 30 sec.
9	ops2_1092 SQLite Data	<u>Pan-STARRS-like Cadence</u> This is the uniform cadence, and no other proposal, keeping pairs of visits, but increase the area to include everything with Dec <+15 deg (about 27,400 deg ²), and keeping the default airmass limit of 1.5.
10	kraken_1038 SQLite Data	As the baseline cadence, except for the more relaxed airmass limit of 2.0 instead of 1.5.
11	ops2_1096 SQLite Data	As Setup1 (uniform cadence with no other proposal), except for the more relaxed airmass limit of 2.0 instead of 1.5.
12	ops2_1097 SQLite Data	As Setup 1 (uniform cadence with no other proposal), except for the more stringent airmass limit of 1.3 instead of 1.5.