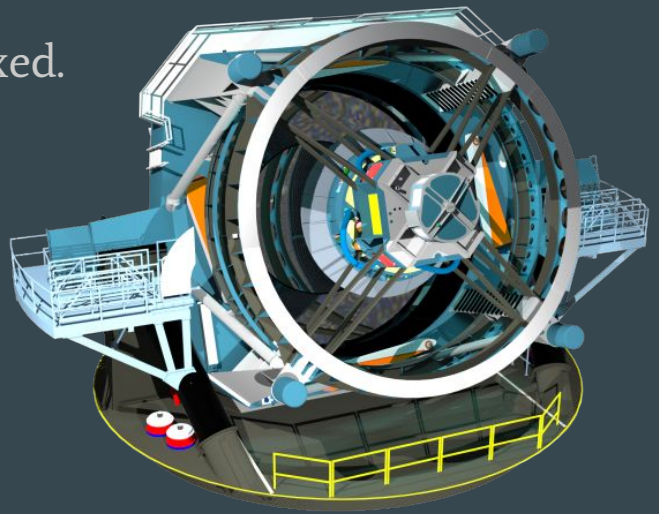
LSST & Ultrasat

...

Large Synoptic Survey Telescope

- Dark energy, dark matter, transients, solar system, MW formation.
- 8m telescope w. 3 billion pixel camera
- 800 images & 30 TB/ night
- 15s exposure in six bands, reach depth ~24.5 ®
- Fast and wide survey modes, but cadence not yet fixed.
- Survey start 2023-2024.



LSST data access and alert stream

LSST members (eg A.F.) will be able to access a DB containing both image data and transient detections. Products available there ~1 day after observations.

An immediate alert stream immediately public, but stream limited to 5-10 brokers (bandwidth limited).

Can expect up to 10 million alerts each night, with up to 1TB / night size.

The broker landscape

DESY submitted a letter of intent to host an LSST broker (PI Kowalski).

Full proposal guidelines expected Fall 2019 with due date Spring 2010.

A number of brokers exist today: ANTARES, MARS, LASAIR, ALERCE, ... Focused either on convenience (web interface) or machine learning (photometric classification).

Potentially unique focus on multi-messenger science and analysis flexibility.

Ultrasat

NUV-imager

15 deg FoV

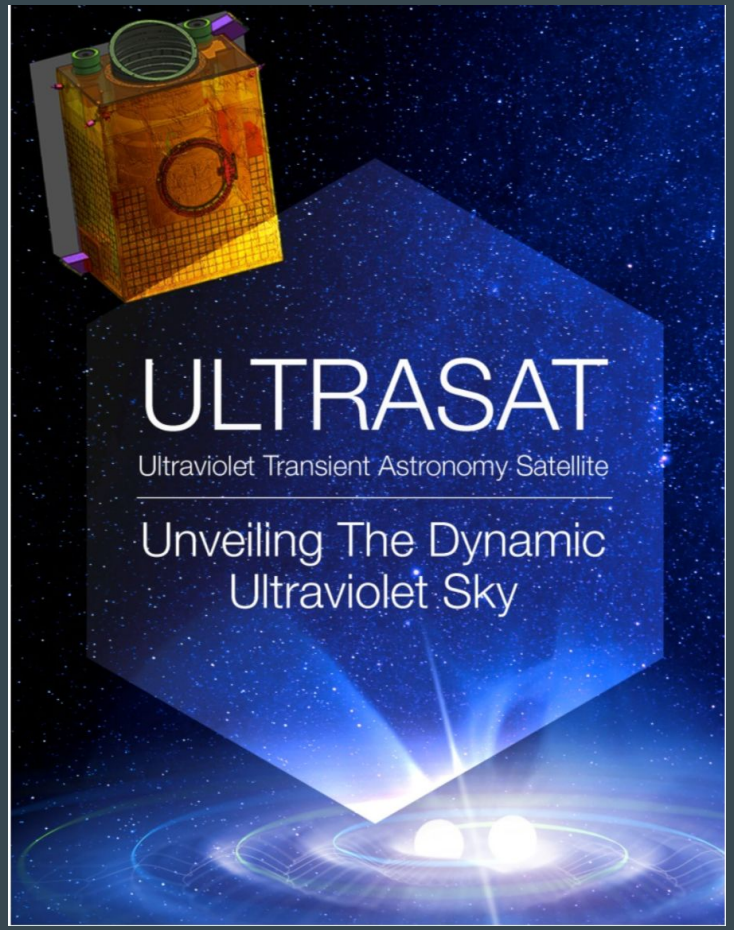
5 min cadence

Plan to be in orbit by 2023/4 and take data for 3 years.

Many research areas require real-time response.

GW, CC SNe, TDE.

Instrument output likely as stream.



Ultrasat

NUV-imager

15 deg FoV

5 min cadence

Plan to be in orbit by 2023/4 and take data for 3 years.

Many research areas require real-time response.

GW, CC SNe, TDE.

Instrument output likely as stream.