



Large Synoptic Survey Telescope

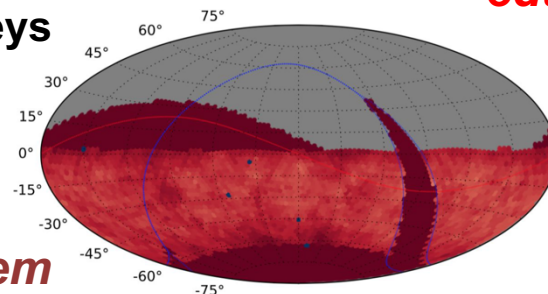
Massively parallel astrophysics - data enabled science

High dimensionality data exploration

A new window on the Universe

Transformative impact of sky surveys

*A unique discovery engine,
transformative in science, in
education & outreach, and in
data-enabled science &
cyberinfrastructure*

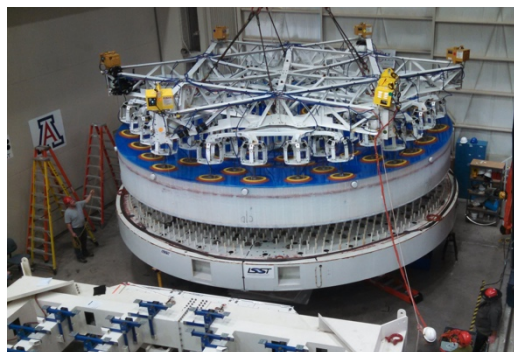


Dark matter and dark energy

Mapping the Milky Way

An Inventory of the Solar System

The Transient Optical Sky



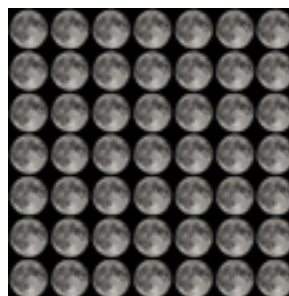
Ten-year survey of $>2 \times 10^{10}$ objects in space & time

3.2 Gigapixel camera, 2s readout, ~ 15 TB per night

825 visits per pointing (main survey = $18,000(^{\circ})^2$)

F1.2, 8.4m primary, FOV 3.5° ($9.6(^{\circ})^2$)

$\sim 10^7$ alerts per night, 60s latency



Survey start 2022-10-01





Large Synoptic Survey Telescope

Construction is progressing well; annual progress review September 2017 showed no significant concerns.
NSF/DOE-supported scope 50%/75% complete.

MC analysis shows >90% confidence of completing on time and within budget.

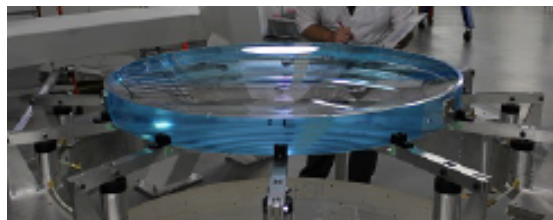


Camera refrigeration, lenses, looking good. Sensor delivery has improved.

Dome base ring beam, 16 sections in place, 14 bogies



DIMM installed at site of calibration telescope



Construction state in November 2017 c.f. original artist's impression

Survey start 2022-10-01; operations proposal received 2017-08; first review held 2017-12 went well; cost analyses continue. Next commissioning review soon.

NSF's National Center for Optical-Infrared Astronomy

NCOA Directorate

Science Delivery Programs

LSST
operations

Gemini
Observatory

Mid-Scale
Observatories (MSO)

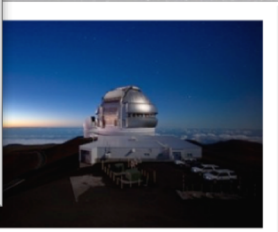
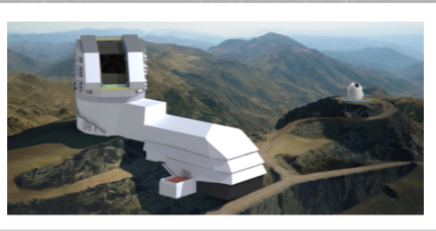
Community Science
& Data Center (CSDC)

Service & Labor Groups

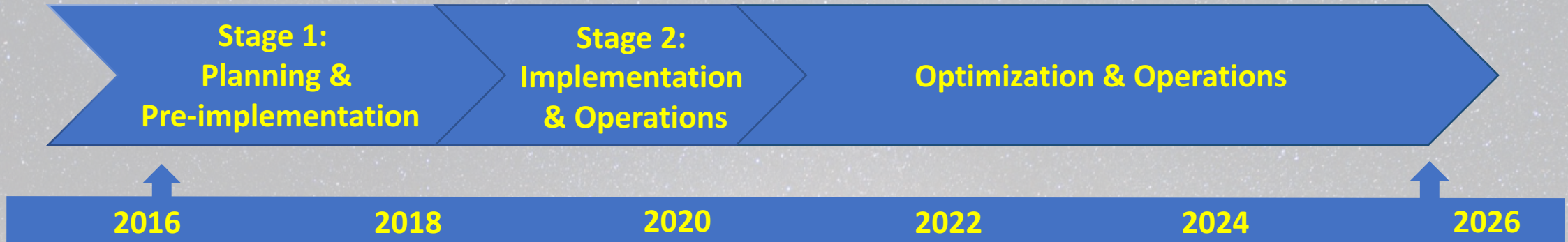
Science Operations
Services (SOS)

Engineering Operations
Services (EOS)

Center Operations
Services (COS)



Restructuring administration and operation of NSF's OIR assets to be accomplished in two stages.



- Organization, Management, and Operation (OMO) Plan delivered by AURA is a conceptual model that describes how AURA will manage and operate NCOA.
- OMO Plan reviewed by external panel that concluded
 - Plan satisfies expectations, complies with guidance, and satisfies boundary conditions established by NSF.
 - AURA understands the challenges in implementation and is well position to proceed.
- Gemini Board endorsed the concept of NCOA in Nov 2017.
- Restructuring action goes to Director and NSB in Feb as prerequisite to implementation.
- FY 2019 through 2020 implementation continues.