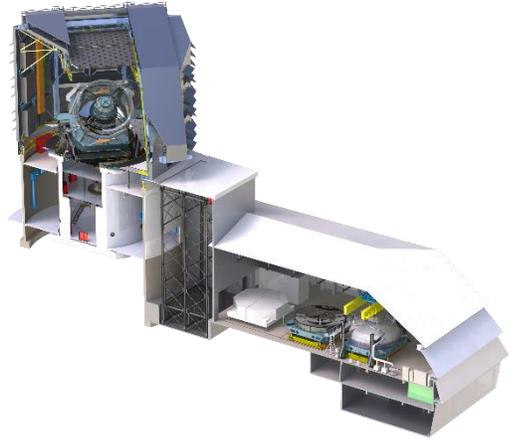


The Large Synoptic Survey Telescope (LSST) will be a large-aperture, wide-field, ground-based facility designed to obtain sequential images of the entire visible sky every few nights. From its home on Cerro Pachón in northern Chile, the LSST will conduct a 10-year survey that will deliver a 200 petabyte set of images and data products that will address some of the most pressing questions about the structure and evolution of the universe and the objects in it, including:



- Understanding Dark Matter and Dark Energy
- Hazardous Asteroids and the Remote Solar System
- The Transient Optical Sky
- The Formation and Structure of the Milky Way

The LSST Project Office (LSSTPO), an independent AURA center, is responsible for managing the LSST construction project – a partnership between the National Science Foundation (NSF) and the U.S. Department of Energy (DOE). At the end of construction, the LSST project will have delivered an 8.4-meter aperture telescope; all required support facilities; a 3.2-gigapixel camera; a supercomputing and data storage facility in La Serena, Chile; offices for Chile-based staff; and a data archive center at the National Center for Supercomputing Applications (NCSA) at the University of Illinois in Urbana-Champaign. As lead agency, the NSF funds the LSSTPO and is responsible for the telescope and site facilities, the data management system, and the education and public outreach infrastructure. The DOE, through a consortium of national laboratories led by SLAC National Accelerator Laboratory, is responsible for providing the camera. Through the LSSTPO, the LSST construction project is managed as a single coordinated effort.

Selected Highlights of Progress in September 2015:



Large rocks from a landslide caused by a 16 September 2015 earthquake litter the road to the Cerro Pachón summit. No injuries were reported, and after detailed inspections, no damage was revealed to the completed LSST foundations and excavations. The road was cleared within a day.



The main electrical transformer for the LSST summit site was delivered to enable connection to the main power grid and to move away from the need to use local generator power.

- The AURA Management Council for LSST (AMCL) met with the project 3 September at SLAC. The AMCL meets three times per year to review project status and provide internal oversight on behalf of the AURA Board.
- Deputy Director, Dr. Beth Willman started this month. Beth has already been making a major contribution to the Project interactions with the Science community and is leading the Operations proposal development.
- AURA hosted an LSST Governance meeting 2 September with representatives of the principal partners for the LSST operations phase. This meeting focused on partnerships and governance models.



Summary Status for September 2015

- LSST and AURA leadership met with NASA officials the week of 14 September 2015 to discuss what LSST can do in the near-Earth objects (NEO) context. The analysis shows that, within reasonable uncertainties regarding “false positives” and existing experience with DECam, LSST can likely detect approximately 70% of NEOs down to H=22. With some optimization of the cadence strategy and an extension of the survey to 12 years, preliminary analysis shows LSST can increase the fraction to 85% or higher. Feedback from NASA was positive, and the parties will continue to explore potential operations collaboration opportunities.
- The Simulations team prototyped a machine-readable database of LSST parameters. During a September test, an external machine accessed and meaningfully interpreted key values in the database. When implemented, the parameter database will provide configuration files used in simulations and in DM processing of science data.
- A significant earthquake occurred near the LSST site in Chile 16 September 2015. There were no injuries and a detailed inspection of the site revealed no damage to the completed LSST foundations and excavations. The local facilities crew was able to clear the roads of significant debris within one day to restore site access.
- LSST has continued to work very closely with both sensor vendors this month. Each vendor is investigating performance issues with their production sensors that were not present in prototype devices. While this is a high priority, LSST needs only one vendor to deliver 200 sensors, and if the primary vendor is late, the team will have sensors from the second vendor to install, mitigating the schedule delivery risk by almost 1.5 years.
- Successful reviews were conducted at Ball Aerospace for the Lens 1 and Lens 2 (L1-L2) assembly for the camera, at Empresarios Agrupados for the telescope mount, and internally for filter coating procurement. The contract for the camera Shutter prototype blades was awarded to San Diego Composites, and JDSU completed a demonstration contract for the broadband anti-reflective (BBAR) coating.

Financial Status 30 September:

- NSF has authorized \$107 million; In addition to work accomplished, \$53.6 million is encumbered in contracts.

Financial Summary - August 2015	NSF	DOE
Total Project Cost	\$473M	\$168M
Budget Cost Work Performed	\$49.3M	\$49.5M
Percent Complete	13%	36%
Cumulative CPI	1.08	1.00
Cumulative SPI	0.93	0.91
Remaining Contingency	\$78M	\$30M

Schedule Status 30 September:

- NSF Project has a -\$3.74 million schedule variance. Three quarters of this is from slower progress on the summit construction and a slower approach to implementing the long haul networks in Chile. Summit construction is expected to improve in the coming summer season, and the long haul network work is proceeding in a lower risk but slower manner. All critical path items are progressing as necessary to meet schedule.
- The Project continues to have more than 13 months of float and remains on schedule for October 2022 Survey Start.

Contingency and Issue Management:

- The Camera team continues to work with both sensor vendors on schedule issues. Initial deliveries are scheduled later in 2015 and all mitigations continue to be available.
- Weather issues have continued to slow progress on site. Besalco and LSST are working on recovering roughly two weeks of delay. Telescope mount design work has reached sufficient design maturity to authorize long lead procurements and several changes are being processed to take advantage of technical and risk improvements.
- Both sides of the Project have healthy contingency levels at 23% and 34% of remaining work for the NSF and DOE respectively.