



LARGE SYNOPTIC SURVEY TELESCOPE



Large Synoptic Survey Telescope (LSST)
Organization and Staffing

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LSST Organization and Staffing

Definitions of Terms

- Glossary of Abbreviations ([Document-11921](#))
- Glossary of Definitions ([Document-14412](#))



LSST Organization and Staffing

1 Background

The Large Synoptic Survey Telescope (LSST) is a proposed large-aperture, wide-field, ground-based telescope designed to obtain sequential images of the entire visible sky every few nights. In addition to the traditional images of luminous stars and galaxies, the LSST will provide unprecedented three-dimensional maps of the Universe's mass distribution. These maps can be used to better understand the nature of dark energy, which is driving the accelerating expansion of the Universe. The LSST will also provide a comprehensive census of our solar system, including potentially hazardous asteroids as small as 100 meters in size. In addition to providing the scientific community with unprecedented data, the project is dedicated to education and public outreach efforts to share the science of LSST with a broad audience, including the general public, educators, and the next generation of scientists.

The LSST observatory will be constructed on Cerro Pachón in northern Chile. All environmental impact requirements have been met, and construction permits have been obtained. At the end of construction, the LSST project will have delivered a telescope with an 8.4-meter effective aperture; 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 at the University of Illinois in Urbana-Champaign. The project will then conduct a 10-year survey, during which the LSST will deliver a data set suitable for answering a wide range of pressing questions in astrophysics, cosmology, and fundamental physics.

2 Governance

The LSST Project Office is a stand-alone center of the Association of Universities for Research in Astronomy (AURA). Under this arrangement, AURA assumed fiduciary responsibility for federal funds awarded for the project. The AURA Board of Directors has established the AURA Management Council for LSST (AMCL) to provide oversight and advocacy for the project, but by policy, AURA delegates significant autonomy and resource decision-making authority to its centers' primary managers.

In 2003, the LSST Corporation, a 501(c)3 Arizona not-for-profit with headquarters in Tucson, was formed to design, construct, and operate the LSST. LSSTC's institutional members include universities, observatories, laboratories, and planetaria. The LSSTC now serves as the agent for non-Federal funding contributed to the Project. LSSTC was instrumental in the early development of the Project and has raised more than \$50 million, applying it to early long-lead construction items and additional development efforts. LSSTC currently retains title to two key elements of the telescope: The primary/tertiary mirror (M1/M3) and the secondary mirror blank (M2), but has signed a Memorandum of Understanding with AURA to make these elements available for the telescope construction. In the future, LSSTC will use its resources to help prepare the community for science with LSST, and will enter into agreements with international partners to secure additional financial support for operations.



NSF

As the lead agency overseeing the LSST Project, the National Science Foundation (NSF) monitors overall project cost and schedule performance relative to the baseline and ensures that the system's science requirements are met. The NSF executes its responsibilities for the physical site, telescope, telescope facility, and data management system through a cooperative agreement.

DOE

The U.S. Department of Energy (DOE) has assumed technical and financial responsibility for providing the LSST camera. The DOE's responsibilities are executed by a collaboration led by SLAC National Accelerator Laboratory.

JOG

The Joint Oversight Group (JOG), comprised of representatives from the NSF and DOE, meets regularly with LSST senior management to coordinate the Project's activities.

AURA

Association of Universities for Research in Astronomy (AURA) is a consortium that operates astronomical observatories it terms "centers." The LSST Project Office (LPO) is one of AURA's six centers. Under this arrangement, AURA assumes full fiduciary responsibility and accountability for the NSF funds awarded for LSST. AURA also provides administrative services, advocacy, and oversight. Management authority has been delegated to the LSST Director, who reports directly to the President of AURA.

AMCL

The AURA Management Council for LSST (AMCL) provides oversight of LPO-specific technical and management issues to ensure fulfillment of AURA's contractual responsibilities.

LSSTC

The Arizona 501(c)3 not-for-profit LSST Corporation was formed in 2003 to design, construct, and operate the LSST. Following the LPO's establishment as an AURA center, LSSTC continues its governance of the Project by providing recommendations, advice, and input on all key management and science decisions subsequently acted upon by the AMCL.

LPO

The LSST Project Office (LPO) and LSST Project Manager (PM) manage LSST's distributed technical work package teams as a single integrated project.

NOAO

As a founding LSSTC institutional member and a sister AURA center, National Optical Astronomy Observatory (NOAO) hosts the Telescope and Site team and the international Internet networking group of the Data Management team.

SLAC

SLAC National Accelerator Laboratory leads a consortium of DOE-funded national laboratories that has assumed responsibility for providing the LSST camera. Although the Camera project manages its own schedule and budget, including contingency, the Camera team's schedule and requirements are integrated with the larger Project. The camera effort is accountable to the LPO.



2.1 Roles and Responsibilities

The LSST Project is structured so that each manager works in tandem with a scientist to ensure continued focus on the system's science goals and requirements in addition to effective, efficient management.

DIRECTOR

The Director is responsible for the overall conduct of the project and is charged with ensuring that both the scientific goals and management constraints on the project are met. He or she is the principal public spokesperson for the project in all matters and represents the project to the scientific community, AURA, the member institutions of LSSTC, and the funding agencies.

The current Director is **Steven M. Kahn**, based at LSST headquarters in Tucson.

DEPUTY DIRECTOR

The Deputy Director supports the Director in the execution of the overall LSST project and assumes his or her duties and authority during any short term or extended absence, planned or unplanned.

The Deputy Director position is currently open but will be based at LSST headquarters in Tucson.

CHIEF SCIENTIST

The Chief Scientist serves as the principal scientific advisor to the LSST Director issues and as an interface to the science community in order to ensure that the LSST program is scientifically and technologically well founded and that the specifications are appropriate for achieving the scientific goals of the project.

The current Chief Scientist is **Tony Tyson**, based at University of California, Davis.

PROJECT MANAGER

The Project Manager exercises technical leadership and oversight over the entire LSST project. The Project Manager controls schedule, budget, and all contingency funds.

The current Project Manager is **Victor Krabbendam**, based at LSST headquarters in Tucson.

PROJECT SCIENTIST

The Project Scientist serves as the principal scientific advisor to the LSST Project Manager to ensure that LSST system specifications are appropriate for achieving the scientific goals of the project. The Project Scientist also works closely with the Systems Engineering group and chairs the LSST Science Council.

The current Project Scientist is **Zeljko Ivezić**, based at University of Washington in Seattle.

SYSTEMS ENGINEERING MANAGER

The Systems Engineering Manager leads the LSST Systems Engineering group. He or she is the chief technical leader of the project with responsibilities spanning the full life cycle of the entire project from design and development to commissioning and hand-over to operations. He or she is responsible for integrating the various technical contributions of the major subsystems (Telescope and Site, Camera, and Data Management) into an integrated system through interface design and specification, modeling, and simulations. The Systems Engineer will also develop the detailed plan for commissioning the LSST as an end-to-end system, from data acquisition to data distribution.

The current Systems Engineering Manager is **George Angeli**, LSST headquarters in Tucson.



SYSTEMS SCIENTIST

The Systems Scientist is a member of the Systems Engineering group and serves as the chief liaison to all project scientists. The Systems Scientist works closely with the Systems Engineering Manager and is responsible for the flow-down of science requirements. The Systems Scientist ensures that acceptance testing and commissioning address the science requirements.

The current systems scientist is **Chuck Claver**, based at LSST headquarters in Tucson.

SENIOR SYSTEMS ENGINEER

The Senior Systems Engineer is a member of the Systems Engineering group. He or she works closely with the Systems Engineering Manager and the Systems Scientist on the integrated LSST system's various technical issues spanning the full life cycle of the entire project.

The current Senior Systems Engineer is **Brian Selvy**, based at LSST headquarters in Tucson.

SYSTEM ANALYSIS SCIENTIST

The System Analysis Scientist is a member of the Systems Engineering group. S/he is responsible for system analyses using the project's high level modeling tools (ImSim, OpSim, CalSim), as well as various other computational environments. S/he works closely with the simulation teams, project scientists, and systems engineers to lead the effort to develop and coordinate key system level architectures, including the conceptual design of select critical components of these architectures.

The current System Analysis Scientist is **Bo Xin**, based at LSST headquarters in Tucson.

SIMULATIONS LEAD

The Simulation Lead leads the group responsible for producing the project's high level modeling tools (ImSim, OpSim, CalSim). These modeling tools are used to test and optimize the scientific returns of the LSST survey; design and test algorithms for use by Data Management; evaluate the capabilities and scalability of the reduction and analysis pipelines; and provide realistic LSST data to the science collaborations to evaluate the expected performance of LSST. Under the direction of the Systems Engineering group, the Simulation group's principle goal during construction is to deliver simulators to support commissioning.

The current Simulations Lead is **Andy Connolly**, based at University of Washington in Seattle.

SAFETY MANAGER

The Safety Manager is responsible for the development, management, and oversight of the Project's safety, health, and environmental (SHE) program. S/he reports directly to the LSST Project Manager and works closely with LSST subsystem managers, systems engineers, and the local safety managers/coordinators at each participating organization.

The current Safety Manager is **Chuck Gessner**, based at LSST headquarters in Tucson.

TELESCOPE AND SITE SUBSYSTEM MANAGER

The Telescope and Site Subsystem Manager leads the group responsible for the telescope structure, telescope mirrors, optical wavefront measurement and control system, telescope and observatory control systems software, and the summit and base facilities. The Telescope technical team is hosted by NOAO.

The current Telescope and Site Subsystem Manager is **Bill Gressler**, based at NOAO in Tucson.



TELESCOPE AND SITE SCIENTIST

The Telescope and Site Scientist serves as the principal scientific advisor to the Telescope and Site Subsystem Manager to ensure that subsystem's specifications are appropriate for achieving the scientific goals of the project.

The Telescope and Site Scientist position is currently open.

CAMERA SUBSYSTEM MANAGER

The Camera Subsystem Manager leads the team responsible for the 3.2-gigapixel LSST camera, which will take more than 800 panoramic images of the sky every night. He or she oversees the effort of a consortium of six Department of Energy laboratories to design and build the camera sensors, optics, electronics, cryostat, filters and filter exchange mechanism, and camera control system. The six DOE labs are SLAC, Argonne, Brookhaven, Fermilab, Lawrence Livermore, and Los Alamos.

The current Camera Subsystem Manager is **Nadine Kurita**, based at SLAC in Menlo Park, CA.

CAMERA SCIENTIST

The Camera Scientist serves as the principal scientific advisor to the Camera Subsystem Manager to ensure that subsystem's specifications are appropriate for achieving the scientific goals of the project.

The current Camera Scientist is **Steve Ritz**, based at UC Santa Cruz in Santa Cruz, CA.

DATA MANAGEMENT SUBSYSTEM MANAGER

The Data Management Subsystem Manager leads the group responsible for the data management system, which will capture, store, catalog, and serve the LSST dataset to the scientific community and public. The DM team is responsible for the DM System architecture, applications, middleware, infrastructure, algorithms, and Observatory Network Design. The DM manager oversees a distributed team working at LSST and partner institutions IPAC, NCSA, Princeton University, University of Washington, and SLAC.

The current DM Subsystem Manager is **Jeff Kantor**, based at LSST headquarters in Tucson.

DATA MANAGEMENT SCIENTIST

The Data Management Scientist serves as the principal scientific advisor to the Data Management Subsystem Manager to ensure that subsystem's specifications are appropriate for achieving the scientific goals of the project.

The current DM Scientist is **Mario Juric**, based at LSST headquarters in Tucson.

SENIOR SOFTWARE ENGINEER

The Senior Software Engineer applies a systematic, disciplined, quantifiable approach to the design, development, operation, and maintenance of the LSST software.

The current Senior Software Engineer is **Robyn Allsman**, based at LSST headquarters in Tucson.

EDUCATION AND PUBLIC OUTREACH SUBSYSTEM MANAGER

The EPO Subsystem Manager leads the team responsible for the cyberinfrastructure, user interfaces, and outreach programs necessary to connect educators, planetaria, citizen scientists, amateur astronomers, and the general public to the transformative LSST dataset. The EPO team is also responsible for maintaining the public and Project websites, organizing LSST exhibits at professional



meetings, and distributing the LSST E-News quarterly, which reaches more than 3,000 addresses and is also translated into Chilean Spanish.

The current EPO Manager is **Suzanne Jacoby**, based at LSST headquarters in Tucson.

EDUCATION AND PUBLIC OUTREACH SCIENTIST

The EPO Scientist serves as the principal scientific advisor to the EPO Subsystem Manager to ensure that subsystem's specifications are appropriate for achieving the scientific goals of the project.

The current EPO Scientist is **Tim Axelrod**, working 25% of his time based at LSST headquarters in Tucson.

BUSINESS MANAGER

The LSST Business Administrator is responsible for all business activities of the LSST Project and the LSST Corporation. He or she serves as the liaison to the AURA Central Administrative services, develops and monitors contracts, and serves as the LSST Corporation Secretary.

The current Business Administrator is **Daniel Calabrese**, based at LSST headquarters in Tucson.

INFORMATION TECHNOLOGY SYSTEMS ADMINISTRATORS

The Information Technology Systems Administrators maintains the Project's servers, networks, and computing hardware. He also provides technical support to the Project Management Office and the distributed Project team.

The current IT Systems Administrator is **Iain Goodenow and Stefan Dimmick**, based at LSST headquarters in Tucson.

DOCUMENT SPECIALIST

The Document Specialist maintains the Project's document archive as well as providing editing and technical writing services. He also coordinates administrative support to the Project Management Office and the distributed Project team.

The current Document Specialist is **Rob McKercher**, based at LSST headquarters in Tucson.

PROJECT CONTROLS SPECIALIST

The Project Controls Specialist works closely with the Project Manager and each of the Subsystem Managers to maintain the Project Management Control System (PMCS) and Earned Value Management System (EVMS). This system includes work breakdown structure (WBS), the full project schedule, the budget, and the basis of estimates.

The current Project Controls Specialist is contractor **Kevin Long**, based in Ellensburg, WA.

GRAPHIC ARTIST / WEB DESIGNER

The Graphic Artist and Web Designer is responsible for creating and maintaining LSST branding through logos, illustrations, photography, presentation graphics, poster templates, etc. She also maintains the look and content of LSST public and corporate websites, which operate on the Drupal content management framework.

The current graphic artist/web designer is **Emily Acosta**, based at LSST headquarters in Tucson.

LSSTPO ADMINISTRATIVE ASSISTANTS



The LSSTPO Administrative Assistants perform a variety of administrative responsibilities in support of the Director, Project Manager, PO staff, and other distributed team members, as necessary. They assist in reporting, document creation, and purchasing. They also manage calendars; coordinate staff travel arrangements and reimbursement processing; and schedule, plan, and set up meetings.

The current Administrative Assistants are **Sandra Ortiz** and **Glenaver Charles-Emerson**, based at the LSST headquarters in Tucson.

2.2 Org Chart

