Rubin Observatory

Vera C. Rubin Observatory
Data Management

Glossary and Acronyms

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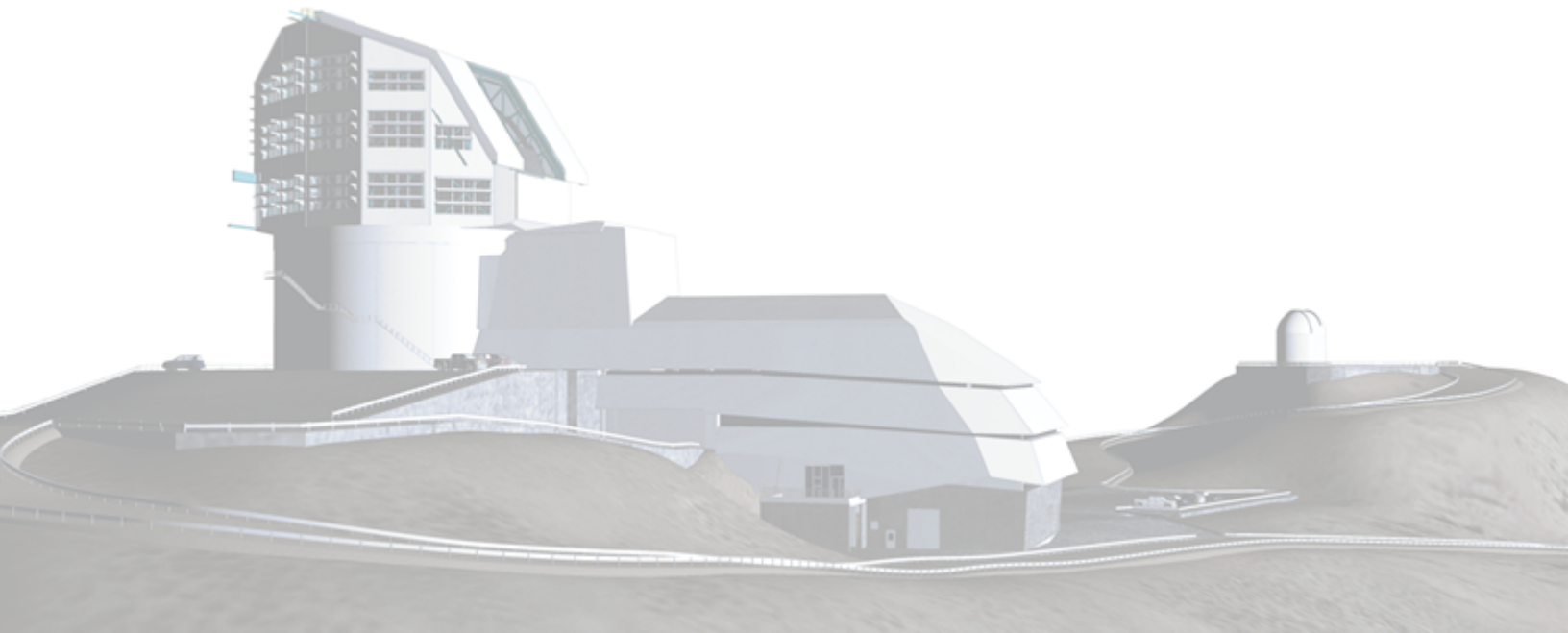

Rubin Observatory

Abstract

A dictionary of Rubin-related key terms and acronyms in an easily readable format.

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Change Record

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Glossary and Acronyms

Butler A middleware component for persisting and retrieving image datasets (raw or processed), calibration reference data, and catalogs.

calibration The process of translating signals produced by a measuring instrument such as a telescope and camera into physical units such as flux, which are used for scientific analysis. Calibration removes most of the contributions to the signal from environmental and instrumental factors, such that only the astronomical component remains.

camera An imaging device mounted at a telescope focal plane, composed of optics, a shutter, a set of filters, and one or more sensors arranged in a focal plane array.

Construction The period during which LSST observatory facilities, components, hardware, and software are built, tested, integrated, and commissioned. Construction follows design and development and precedes operations. The LSST construction phase is funded through the NSF MREFC account.

Data Management The LSST Subsystem responsible for the Data Management System (DMS), which will capture, store, catalog, and serve the LSST dataset to the scientific community and public. The DM team is responsible for the DMS architecture, applications, middleware, infrastructure, algorithms, and Observatory Network Design. DM is a distributed team working at LSST and partner institutions, with the DM Subsystem Manager located at LSST headquarters in Tucson.

Data Management Subsystem The Data Management Subsystem is one of the four subsystems which constitute the LSST Construction Project. The Data Management Subsystem is responsible for developing and delivering the LSST Data Management System to the LSST Operations Project.

Data Management System The computing infrastructure, middleware, and applications that process, store, and enable information extraction from the LSST dataset; the DMS will process peta-scale data volume, convert raw images into a faithful representation of the universe, and archive the results in a useful form. The infrastructure layer consists of the computing, storage, networking hardware, and system software. The middleware layer handles distributed processing, data access, user interface, and system operations services. The applications layer includes the data pipelines and the science data archives' products and services.

DM Data Management.

DMS Data Management Subsystem.

flux Shorthand for radiative flux, it is a measure of the transport of radiant energy per unit area per unit time. In astronomy this is usually expressed in cgs units: erg/cm2/s.

LSST Legacy Survey of Space and Time (formerly Large Synoptic Survey Telescope).

Major Research Equipment and Facility Construction the NSF account through which large facilities construction projects such as LSST are funded.

middleware Software that acts as a bridge between other systems or software usually a database or network. Specifically in the Data Management System this refers to Butler for data access and Workflow management for distributed processing..

MREFC Major Research Equipment and Facility Construction.

National Science Foundation primary federal agency supporting research in all fields of fundamental science and engineering; NSF selects and funds projects through competitive, merit-based review.

NSF National Science Foundation.

Operations The 10-year period following construction and commissioning during which the LSST Observatory conducts its survey.

Project Manager The person responsible for exercising leadership and oversight over the entire LSST project; he or she controls schedule, budget, and all contingency funds.

RTN Rubin Technical Note.

Subsystem A set of elements comprising a system within the larger LSST system that is responsible for a key technical deliverable of the project.

Subsystem Manager responsible manager for an LSST subsystem; he or she exercises authority, within prescribed limits and under scrutiny of the Project Manager, over the relevant subsystem's cost, schedule, and work plans.