

The SIRTf Science Operations System:
How Well Are We Really Doing?

Suzanne R. Dodd
Manager, SIRTf Science Center
California Institute of Technology
M/S 314-6
1200 E. California Blvd.
Pasadena CA 91125
(626) 395 8098
Fax (626) 432 7484
sdodd@ipac.caltech.edu

Oral Presentation

The Space Infrared Telescope Facility (SIRTf) was successfully launched on August 25th, 2003. After a 90 day In Orbit Checkout and Science Verification period, SIRTf began its five year mission of science observations at wavelengths ranging from 3.6 to 160 microns. Early results from SIRTf show the Observatory performing exceptionally well, meeting performance requirements in virtually all areas. The California Institute of Technology is the home for the SIRTf Science Center (SSC). SSC is responsible for selecting observation proposals, providing technical support to the science community, performing mission planning and science observation scheduling, instrument calibration and performance monitoring during operations, and production and archival quality data products.

The SIRTf development and operations activities are highly cost constrained. The challenge has been to design, and now operate, a highly efficient Science Operations System (SOS) which meets the scientific community's expectations for NASA's last Great Observatory. One principle SOS design component was to incorporate a set of efficient, easy to use tools for scientists to plan their observation sequences in a rapid and automated manner. Observation requests are translated directly into command sequences, simplifying both the long range planning and short term scheduling processes. Pipeline data processing is highly automated and data-driven, with a direct linkage to the uplink data system to insure data accountability at the observation level. Innovative web-based tools with a similar look and feel as the planning software are used to retrieve and analyze the archived data.

This paper will describe how the SIRTf Science Operation System has performed since launch, and how the system has been adapted based upon in-flight performance. It will also discuss lessons learned which can be applied to future science operation systems. This work was performed at the California Institute of Technology under contract to the National Aeronautics and Space Administration.