

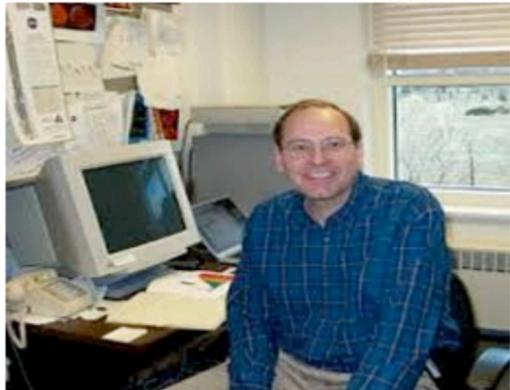


SORCE Mission Status

LASP Activity -

With the launch date rapidly approaching, the SOC (Science Operations Center) personnel are making significant progress on science data systems for each SORCE instrument. Since the instruments shipped to Orbital last spring, both science and housekeeping telemetry have been accessed regularly by scientists and engineers for use in reviewing instrument performance and health. Currently they are scrupulously monitoring the instrument test results and analyzing data.

The current status of individual instrument process algorithm is as follows: SOLSTICE algorithms are complete, and software is now being debugged and tested with all components in place. Data are being validated against UARS SOLSTICE data. The theoretical definition of TIM and SIM algorithms has advanced to allow software design and implementation in preparation for the SORCE launch. XPS will utilize the exact same TIMED software with the assistance of a small adapter module.



Tom Woods, XPS scientist, reviews the incoming data from SORCE.

The big push is to be prepared for the Mission Operations Rehearsal # 1 scheduled for 4 days, beginning September 30. This rehearsal will require that all early orbit sun-pointing (no stellar observations) algorithms and calculations be in place. This rehearsal covers launch and spacecraft operations up to the first 48 hours after launch. No science operations will be addressed during this rehearsal.



Countdown to Launch - December 1

(as of September 23, 2002)

69 DAYS

A second rehearsal scheduled for mid November will require that all pointing algorithms and calculations be in place.

During real-time spacecraft contacts, LASP maintains direct communication with the spacecraft via ground stations sending commands, and receiving and checking real-time telemetry. LASP will communicate with SORCE via ground stations in Santiago, Chile and Wallops Island, Virginia twice daily during normal operations. The Mission Operations and Ground Station plans are coming together with a focus on ensuring ground station readiness for SORCE launch.

Dr. Byron Smiley joined LASP in August to work on the SORCE program. Byron is filling a post-doctoral position and will initially work on the SIM data processing. While a physics graduate student at CU, he worked with magnetically shielded charged dust detectors on five sounding rockets. Stop by his office (LSTB 215) to introduce yourself and welcome him to LASP.

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Tentative Dates for Upcoming Events:

- 9/24 - 9/25 Ground Operations Review (KSC)
- 9/30 - 10/1 Mission Ops Rehearsal # 1 (LASP)
- 10/8 - 10/9 Pre-Ship Operations Readiness Review, Mission Readiness Review (Orbital)
- 10/22 Pre-Ship Review (Orbital)
- 10/25 SORCE shipped from Orbital to KSC
- 11/14 - 11/17 Mission Ops Rehearsal # 2 (LASP)
- 11/20 Flight/Launch Readiness Reviews (KSC)
- 11/22 Launch Rehearsal (KSC)
- 12/1 SORCE Launch (KSC)

NASA Public Affairs Officer, Lynn Chandler, will be visiting LASP on September 30 and October 1 to present the SORCE mission Public Affairs Plan, which includes all planned media events and press releases. The first news release will be when SORCE arrives at Kennedy Space Center in late October. Two weeks prior to launch many more press related activities commence, and they continue for 48 hours after the launch. Several special promotional media pieces are being prepared to go with these events.

The SORCE 24-page brochure will be going to the printer in early October. If anyone is interested in seeing the most current draft, please contact Vanessa George. Additional promotional pieces in the works are a pre-launch video that will go out to the news media before the launch and will be used as a resource when needed following the launch. NASA television producers will be coming to LASP with Lynn Chandler on September 30 to shoot final clips for the animated video and to explore effective visualization techniques to present the final real data from SORCE via the web. The television producers will also be interviewing the SORCE Principal Investigator and key mission participants for the Press Kit and Video File.

The complete SORCE public relations package will also include a 4-page NASA Fact Sheet with a brief overview of the mission and instrument photos. A lithograph, which is a 2-page glossy handout, is distributed at the actual launch. It covers the mission overview and educational outreach activities. An interactive SORCE CD-ROM is currently in test



and NASA personnel are working on a full Education and Outreach package for professional educators.

The new SORCE web page should be available by the end of September. As the launch date nears, the data collection and science will be a prominent feature on the site. The web page will also meet the needs of the non-technical person, and public educators teaching at many levels. You can contact the SORCE web developer, Ann Windnagel (ann.windnagel@lasp.colorado.edu), with any feedback or suggestions.

The last SORCE Monthly Program Status Review was held on Wednesday, September 18, at LASP with people from NASA, Orbital Sciences, and LASP participating. Agenda items included the topics in this newsletter, but in much greater detail. Future Monthly Program Status Reviews will be replaced with specific meetings in preparation for launch.



After three weeks of testing, SORCE is shown coming out of the Thermal Vacuum Chamber on August 27.

Orbital Sciences Activity -

When the thermal vacuum testing ended on August 27, activity at Orbital shifted to fine-tuning the instruments, conducting post-environment tests, and addressing the anomalies that occurred during the three weeks of thermal vacuum testing. The XPS and SOLSTICE were shipped back to LASP for further analysis, re-work, and improvements, and they will be returning to Orbital the week of September 23. All instrument issues have been thoroughly reviewed and are completely resolved for flight.

Besides focusing on the instruments, the Orbital software team has been working with LASP on many software enhancements. New flight software code



(6.2 OBC & APE) was loaded on September 19.

The software up-grade will capture all the test track updates and improve the APE and CEU performance. This new upgrade will allow the Comprehensive Performance Testing to continue as scheduled for the rest of the month.

Following the final optical alignments, the solar array installation, deployment testing, stowing and blanketing will take place. Orbital will also be very involved in preparing for the upcoming Mission Operations rehearsal at LASP, since this will be the final testing before SORCE leaves for the launch site. As this rehearsal is being conducted from the LASP Mission Operations Center using the engineering model satellite hardware (called the flatsat, located at Orbital's facilities in Sterling, VA), the spacecraft will undergo Mass Properties testing to determine the craft's mass distribution. These data are critical to proper operation of the spacecraft attitude control system.

The month of October will also include additional Mission Operations tests as well as a Long Duration test. The purpose of the Long Duration test is to allow the spacecraft to run uninterrupted for 5 straight days, making contact with LASP two times per day, just like it will be doing in orbit. This will serve as the final verification that both the spacecraft and the mission operators are ready for the move to the launch site.

Kennedy Space Center Activity -

Launch preparations are well underway, with Kennedy Space Center (KSC) under way for SORCE'S arrival. LASP engineers will participate in a Ground Operations Review Meeting at KSC on September 24 and 25 to discuss SORCE requirements. After testing at Orbital has concluded and the Pre-Ship Review (PSR) conducted, the SORCE spacecraft and the Ground Support Equipment (GSE) required to move, operate, and test the spacecraft will be prepared for shipment to KSC. The scheduled ship-date to KSC is October 25. SORCE will be transported by chartered truck, with Orbital and LASP personnel closely monitoring from a separate chase vehicle. The shipment will arrive at KSC on Saturday, October 26, and will immediately be unpacked. At that point, the post-ship checkout and Pegasus integration process will commence.



A SORCE technician checks the bolts connecting the Instrument Module platform to the Spacecraft Bus.

Upcoming Meetings

SORCE scientists plan to present papers or attend the following 2002 - 2003 meetings:

- COSPAR, Oct. 14-19, Houston, TX
- AMS, Nov. 4-8, San Antonio, TX
- NIST Satellite Instrument Calibration Workshop, Nov. 5-7, Gaithersburg, MD
- EOS Investigators Working Group Nov. 18-20, Ellicott City, MD
- AGU Fall Meeting, Dec. 6-10, San Francisco, CA
- AAS, Jan. 5-9, Seattle, WA
- AMS, Feb. 9-13, Long Beach, CA
- AAAS, Feb. 13-18, Denver, CO

To submit information to this newsletter, please contact: vanessa.george@lasp.colorado.edu