

SNS • **SORCE News Source**



Solar Radiation and Climate Experiment Monthly Newsletter

January 2008

SORCE Celebrates 5 Years In-Orbit!

LASP employees celebrated the 5th Anniversary of SORCE being in orbit on January 25, the exact day it was launched five years ago. The festivities started with a program to reminisce the old times, followed by an overview of exactly what SORCE is measuring, why, and what it means. The afternoon concluded with birthday cake and hors d'oeuvres in the LASP lobby. SORCE is an accomplishment that everyone should be proud of! NASA's recent extension of the SORCE Mission for another four years will allow scientists to continue charting the solar irradiance record into the new solar cycle.



SORCE Team Members (left to right) – Jerry Harder (Project Scientist), Tom Woods (PI), Tom Sparn (LASP Program Mgr.), Gary Rottman (Original PI). *Photo by James Thomas.*



Tom Sparn gave a nice talk/walk through Memory Lane. *Photo by James Thomas.*



LASP lobby celebration overview. *Photo by Mike Bryant.*

The SORCE measurements are important for many reasons, including:

- Total Solar Irradiance (TSI) and Solar Spectral Irradiance (SSI) are critical for climate change studies.
- SORCE TIM is making the most accurate TSI measurement ever.
- SORCE SIM is making the first daily SSI measurement at longer than 400 nm. SOLSTICE continues the UV record.
- The SORCE mission is preventing gaps that would severely disrupt the irradiance record.
- SORCE results connect the present to long-term trends.

A photo from launch day, Jan. 25, 2003. at Kennedy Space Center (left to right) – Pete Withnell, Heather Reed-Withnell, Mike Anfinson, and David Gathright.



More Party Photos –



SORCE's fearless leader, Tom Woods.
Photo by Mike Bryant.



Dave Crotser and Matt Triplett give the SORCE Mission and the party a thumbs-up! Photo by James Thomas.



Photo by James Thomas.

Tim Flaherty goes along with the "Fun in the Sun" Hawaiian theme. Photo by Mike Bryant.



Below is a table summarizing the **Key Findings** by each of the SORCE instruments.

Finding	TIM	SIM	SOL.	XPS
High-quality, daily-released solar irradiance data valuable for current and future environmental and climate studies	X	X	X	X
Fundamental determination that the Total Solar Irradiance (TSI) is $\sim 1361 \text{ W/m}^2$, not 1366 W/m^2	X			
Solar Spectral Irradiance (SSI) daily record has started for the first time for $\lambda > 400 \text{ nm}$		X		
Improved understanding of TSI and SSI variability over time scales ranging from minutes (flares) to years (solar cycle)	X	X	X	X
Improved precision of the solar Mg II index with higher spectral resolution measurements			X	
Improved understanding of the spectral contributions to the TSI		X	X	
Detection of flares in the TSI and improved understanding of the spectral variations during flares	X		X	X



Gail Tate and Karen Bryant toast to another 5 years!
Photo by Mike Bryant.

Future performance predictions are very positive in every area:

Spacecraft:

- S/C bus in excellent health – no significant anomalies.
- Still using the primary components of S/C bus.
- Orbit dropping about 1.5 km/year (no propulsion).

Mission Operations / Data Systems:

- 2 contacts per day, >99% data captured.
- Mature data processing system, which releases products daily.

Instruments:

- Instruments are in excellent health for extended mission.
- Redundant channels in all instruments.
- There have been two mechanism anomalies (XPS and SOLSTICE), and neither one of these reduced the science output as a result. Pre-flight life cycle tests lead us to expect 7+ more years for mechanisms.

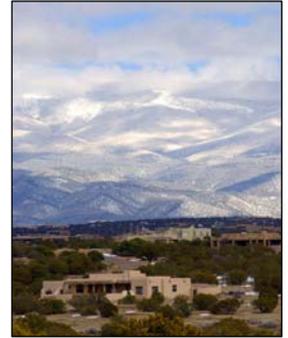
SORCE has been funded for 4 additional years, through January 2012. As we move into the Extended Mission Phase, our goal is to promote a nice long highly successful mission life for SORCE.



SORCE Science Meeting – “SORCE’s Past, Present, and Future Role in Earth Science Research”

*Feb. 5-7, 2008
 Santa Fe, New Mexico*

Photo summary in your next SORCE Newsletter – February 2008! With record attendance, this excellent meeting focused on variations in the Sun’s radiation and the Earth environment. Most presentations are available on the SORCE Meeting website now –



<http://lasp.colorado.edu/sorce/2008SciMeeting>.

373,057

Hits to the SORCE Website
(Since 4/21/03, As of 2/11/08)

Upcoming Meetings / Talks – SORCE scientists plan to present papers or attend the following 2008 meetings:

- SORCE Science Meeting, Feb. 5-7, Santa Fe, NM
- AGU Spring Meeting, May 27-30, Ft. Lauderdale, FL
- CAWSES (SCOSTEP), June 1-6, Bozeman, MT
- 37th COSPAR Scientific Assembly, July 13-20, Montreal, Canada
- International Radiation Symposium (IRS2008), Aug. 3-8 Iguacu Falls, Brazil

**To submit information to this newsletter, please contact:
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