

SORCE

Solar Radiation & Climate Experiment

























Data















[SORCE Spacecraft Status – Aug. 19, 2013](#)








Data Access Summary

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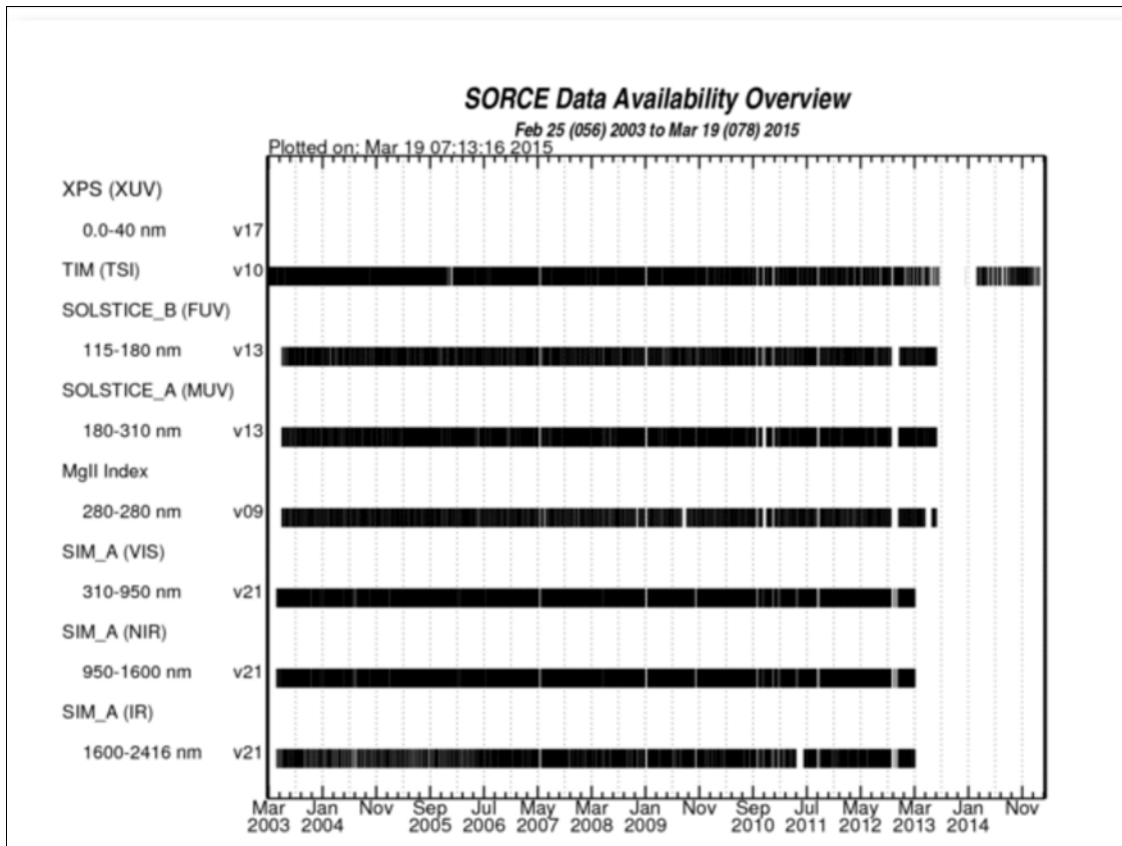
Available Data Summary Table/Data Access

Data Product	Instrument	Time Cadence	Spectral Coverage	Spectral Resolution	Level	Ver.	Data Info	Full MissionData Download Files	Interactive Access	FileReaders (Listed by Lanuage)
TotalSolar Irradiance(TSI)	TIM	Daily	All	N/A	3	17	?	 513 KB		IDL
	TIM	6-Hourly	All	N/A	3	17	?	 2.03 MB		IDL
SpectralSolar Irradiance (SSI)	Combined SSI	Daily	0.1-40nm & 115-2416nm	Varies 1-34nm	3		?	 34 MB		IDL
	SIM	Daily	240-2416nm	Varies 1-34nm	3	21	?	 24 MB  ZIP  IDL 25 Mb		IDL
	SOLSTICE	Daily	FUV 115-180nm	1nm	3	13	?	 2.5MB  ZIP  IDL 2.6 MB		IDL
	SOLSTICE	Daily	MUV 180-310nm	1nm	3	13	?	 4.5MB  ZIP  IDL 4.7 Mb		IDL
	XPS	Daily	0.1-27nm	Broadband	3	10	?	 1.5 MB  IDL 1.0 Mb		IDL
	XPS	6-Hourly	0.1-27nm	Broadband	3	10	?	 5.8 MB  IDL 4.1MB		IDL
	XPS	Daily	0.1-40nm	0.1nm	4	10	?	690 KB 		IDL
	XPS	Daily	0.1-40nm	1nm	4	10	?	690 KB 		IDL

									2003 68 MB  2004 50 MB  2005 68 MB  2006 64 MB  2007 63 MB  2008 63 MB  2009 61 MB  2010 60 MB  2011 59 MB  2012 56 MB  2013 18 MB 			IDL
Space Weather	Magnesium II (MgII)	as measured	280nm	core-to-wing	2	10	?	 1.1 MB  560 KB		IDL		

 text file
  zipped text file
  IDL save file
  zipped IDL save file
  NetCDF
  Zipped NetCDF
  Interactive

Data Availability Chart



Reading Data Files

The following readers are available for the data files in the table above:

- [TSI and SSI Level 3 text file reader](#) (code in IDL)
- [XPS Level 4 NetCDF File Reader](#) (zip file, code written in IDL)

Quick Overview

The SORCE instrument suite produces two primary data products: [Total Solar Irradiance \(TSI\)](#) and [Solar Spectral Irradiance \(SSI\)](#) from 0.1 nm to 40 nm and from 115 nm to 2400 nm, with other secondary data products produced and disseminated as a means to more directly serve other scientific communities. TSI data products are formulated using measurements made by the SORCE TIM instrument, and are available in both daily average or 6-hourly average formats. The SSI data product is comprised of measurements made by the four SORCE spectral instruments, with XPS making measurements from 0.1 – 40 nm, SOLSTICE-A from 115-180 nm, SOLSTICE-B from 180-310 nm, and SIM from 310-2400 nm. The spectral interval from 40-115 nm is not covered by the SORCE mission

SORCE data products are available for public access. SORCE data may be accessed from three different locations:

Location		URL	Content
SORCE Web Site	Primary	This web page (table above)	Full product documentation and direct downloads
LISIRD Web Site	Alternate	http://lasp.colorado.edu/lisird/	Solar irradiance data from SORCE and other missions via interactive tools and common interfaces
GES DISC	Archive	http://disc.gsfc.nasa.gov/SORCE/	Archived Level 0 and science products

Refinement of data processing algorithms and some on-orbit characterization of the SORCE instruments continue. Please read the release notes on the [TSI](#) and the [SSI](#) web pages for detailed quality information about the products you may be

interested in.

Data Product Characteristics

Characteristic	Total Solar Irradiance (TSI)	Solar Spectral Irradiance (SSI)
Coverage	Full Solar disk	Full Solar disk
Temporal Characteristics	6-Hourly and Daily	Daily
Spectral Coverage	All wavelengths	0.1-40 nm and 115-2400 nm
Spectral Resolution	Total Solar Irradiance	Instrument and wavelength dependent, ranging from 0.1 nm from SOLSTICE at 200 nm to 34 nm from SIM at 2000 nm
Key Geophysical Parameters	Total Solar Irradiance	Incoming Solar Irradiance
Absolute Accuracy (Relative Standard Uncertainty, 1 sigma)	0.035% (350 parts per million)	Varies per spectral region, Please see SORCE Instrument Overview for measurement objectives and the SSI web page for current status.
Relative Accuracy	0.001% (10 ppm) per year	Varies with spectral region, Please see SORCE Instrument Overview for measurement objectives and the SSI web page for current status.

Science Data Processing

The SORCE Science Data System (SDS) performs all science data production activities. It consists of the hardware and software components necessary to generate, manage, and distribute all SORCE standard science data products. The SORCE SDS routinely produces total solar irradiance and solar spectral irradiance data products on a daily basis, which are formulated using measurements from the four primary instruments onboard the SORCE spacecraft. The Science Data System utilizes raw spacecraft and instrument telemetry, routinely-maintained calibration data, and other ancillary information to produce and distribute a variety of data products that have been corrected for all known instrumental and operational effects.

The table at the top of this page summarizes the core SORCE data products. SORCE provides routine daily measurements of TSI, SSI from 0.1 nm to 40 nm and 115 nm to 2400 nm, and other solar-irradiance derived products that support the atmospheric, climate, and space weather communities. TSI data products are formulated using measurements made by the SORCE TIM instrument, and are available in both daily average or 6-hourly average formats. The SSI data products, including the Mg index, are comprised of measurements made by the SORCE spectral instruments. Routine calibration and validation is a significant effort to maintain the high quality of the solar irradiance data products.

Data processing is performed automatically with the production of data through Level 3 two to five days after the data has been downlinked from the spacecraft, allowing for telemetry retransmissions and receipt of definitive spacecraft orbital ephemerides from NORAD. TSI and SSI data products are made available to the public immediately after they are produced by the data processing system, following automated quality checks.

The data products are available by direct download or interactive access on the [SORCE Interactive Data Access web site](#), and are formally delivered to the [GES DISC](#) on a daily basis for long-term archival. Dissemination of SORCE data products via the SORCE website at LASP enhances convenience for users as data access methods are tailored to those most functional for retrieving SORCE solar irradiance data. The SORCE project at LASP indexes and maintains a full archive of data products, making possible various and flexible data access interfaces that are intended to provide added convenience to end-users. Configuration management of data is built into the SORCE data system, owing to integration of the SORCE data processing and dissemination components.