

# SORCE Weekly Status Report – 7/16/2009 to 7/22/2009

## 1. Introduction

This status report addresses the performance of the SORCE spacecraft, instruments, and ground assets during the week of Thursday, July 16, through Wednesday, July 22, 2009.

## 2. Spacecraft Summary (submitted by Deb McCabe, July 23)

07/16	07/17	07/18	07/19	07/20	07/21	07/22
197	198	199	200	201	202	203

There was one MU read zero event this week:  
2009/199-17:52:22

There was a 1553 telemetry buffer overrun during DSP loads after a SIM B power on (due to a SPaM reset) on DOY 200-13:39. The cause of this is being investigated. After a successful DSP load, the instrument responded nominally. No science was lost due to this event.

GCI lockups:			(MINUTES)		
Instrument	Lockup Time	Response Time	Duration	Lat	Lon
solstice_a	2009/199-12:32:12	2009/199-13:53:11	80.98	-37.1	-48.3
solstice_a	2009/200-11:10:08	2009/200-12:33:07	82.98	-37.5	-35.7
solstice_a	2009/202-13:32:06	2009/202-14:44:03	71.95	-12.3	-33.8
solstice_b	2009/197-13:47:16	2009/197-14:55:41	68.42	-23.0	-20.4
solstice_b	2009/198-15:40:27	2009/198-16:50:12	69.75	-21.1	-52.7
solstice_b	2009/199-07:27:40	2009/199-09:01:41	94.02	-34.0	-33.1
solstice_b	2009/200-19:02:36	2009/200-20:38:41	96.08	-34.3	144.5
solstice_b	2009/201-11:35:28	2009/201-12:49:59	74.52	-21.3	-10.2
solstice_b	2009/203-05:05:45	2009/203-05:18:04	12.32	-15.5	-57.1
solstice_b	2009/203-06:54:20	2009/203-08:32:18	97.97	-36.6	-41.9
sim_a	2009/197-13:35:42	2009/197-14:26:53	51.18	-39.3	-64.1
sim_a	2009/198-10:29:21	2009/198-11:29:04	59.72	-37.6	-59.7
sim_a	2009/199-07:28:25	2009/199-08:31:15	62.83	-34.9	-30.5
sim_a	2009/200-07:44:19	2009/200-08:47:39	63.33	-35.6	-38.5
sim_a	2009/200-11:04:01	2009/200-12:01:51	57.83	-39.9	-63.4
sim_a	2009/201-06:16:49	2009/201-06:19:59	3.17	-26.0	-45.8
sim_a	2009/203-06:48:45	2009/203-06:53:41	4.93	-28.0	-63.3
sim_b	2009/197-13:42:12	2009/197-14:26:57	44.75	-32.1	-37.3
sim_b	2009/197-16:57:57	2009/197-17:41:08	43.18	-29.2	-80.3
sim_b	2009/198-08:47:29	2009/198-09:52:03	64.57	-31.2	-54.1
sim_b	2009/198-13:55:55	2009/198-14:43:20	47.42	-34.7	-54.3
sim_b	2009/198-15:47:13	2009/198-16:20:25	33.20	-6.0	-34.3
sim_b	2009/199-07:20:29	2009/199-07:23:06	2.62	-20.9	-57.6
sim_b	2009/199-14:15:15	2009/199-14:59:42	44.45	-28.4	-50.3
sim_b	2009/200-09:20:37	2009/200-10:24:51	64.23	-34.7	-66.0
sim_b	2009/200-12:58:21	2009/200-13:39:01	40.67	-18.7	-20.9
sim_b	2009/200-14:35:01	2009/200-15:16:07	41.10	-19.5	-46.7
sim_b	2009/202-04:55:45	2009/202-04:59:49	4.07	-26.9	-30.1
sim_b	2009/202-10:03:17	2009/202-10:57:43	54.43	-38.1	-34.5
tim	2009/198-13:57:41	2009/198-14:40:40	42.98	-32.0	-47.3
tim	2009/199-09:06:28	2009/199-10:05:46	59.30	-36.3	-50.5
tim	2009/199-14:18:47	2009/199-14:57:02	38.25	-21.2	-38.6
tim	2009/201-04:43:10	2009/201-05:47:18	64.13	-32.0	-9.4
tim	2009/201-08:04:50	2009/201-09:01:30	56.67	-39.7	-26.8
tim	2009/201-14:49:37	2009/201-15:29:53	40.27	-21.1	-59.3
tim	2009/203-03:27:59	2009/203-03:40:52	12.88	-14.0	-34.2
XPS	2009/198-03:52:42			-24.2	7.2
XPS	2009/199-09:01:37			-29.1	-68.9
XPS	2009/202-22:09:29			39.3	-47.5
XPS	2009/203-12:00:38			-32.0	-49.9

	SIM A	SIM B	SOL A	SOL B	TIM	XPS*
Week	7	12	3	12	7	4
Total	2046	2607	1416	1680	2268	2113

**3. Ground Support / Contact Summary** (submitted by D. McCabe)

Fourteen ground station contacts were performed over the past week.

	Captured VCDUS	Recorded VCDUS	%
SC housekeeping	323772	323773	100
IM housekeeping	43692	43693	100
Science	324104	324105	100

**4. Instrument Status**

**4.1. TIM** (submitted by Greg Kopp, 23 July)

TIM operations during previous week

- Normal Ops (TSI data w/ Cavity B)
- Cavity A&B, A&C, B&D comparisons

Current work

- Normal operations
  - Version 9 data processing provides daily updated TSI values
- Completed 3-weeks of optical power and irradiance comparisons between the cryogenic TSI Radiometer Facility and both:
  - PICARD/PREMOS flight instrument
  - Ground-based version of VIRGO/PMO-6

Thanks to both André Fehlmann and Wolfgang Finsterle from PMOD for enjoyable and productive visits!

TIM anomalies during previous week

- None

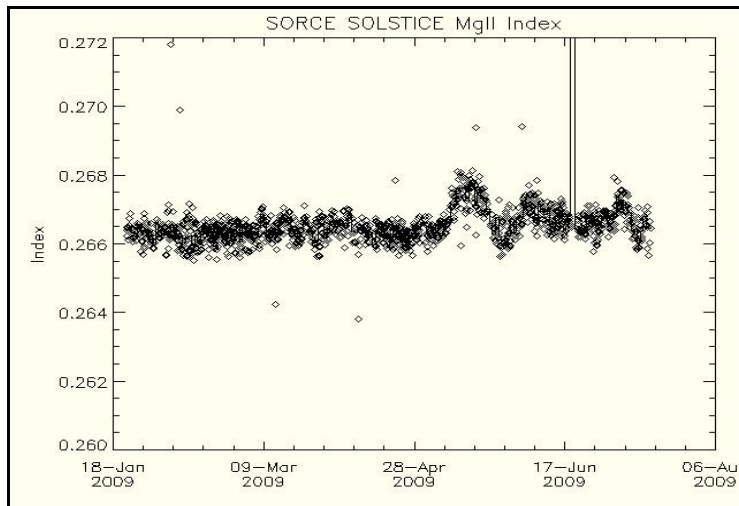
**4.2. SIM**

**4.3. SOLSTICE** (submitted by Marty Snow, July 22)

For days 2009/196 (July 15) to 2009/203 (July 22):

- SOLSTICE A grating drive errors:
  - 2009/196, 11:25:25
  - 2009/200, 12:34:55
  - 2009/202, 14:45:30
- SOLSTICE B grating drive errors:
  - 2009/199, 09:03:22

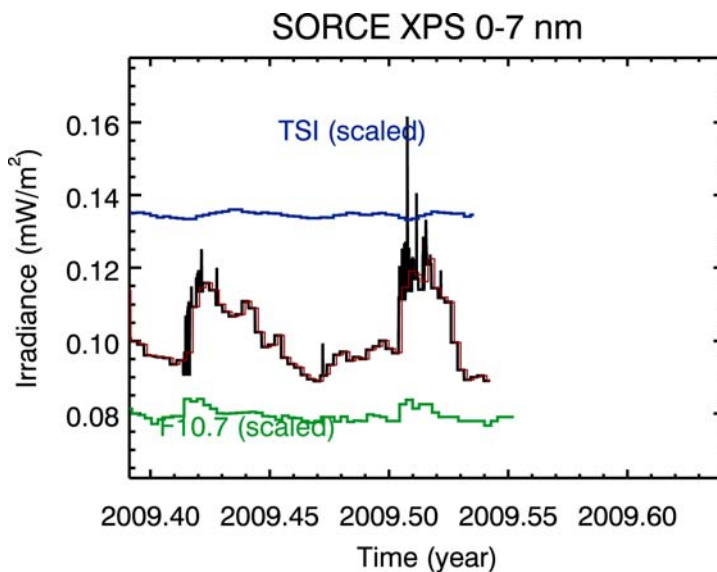
- Data Gaps for SOLSTICE A (date, length in minutes):
  - 2009/196, 11:24:35 89 minutes
  - 2009/199, 13:53:59 82 minutes
  - 2009/200, 12:33:55 84 minutes
  - 2009/202, 14:44:50 73 minutes
- Data Gaps for SOLSTICE B (date, length in minutes):
  - 2009/196, 09:47:17 88 minutes
  - 2009/197, 14:56:28 69 minutes
  - 2009/198, 16:50:59 71 minutes
  - 2009/199, 09:02:28 95 minutes
  - 2009/200, 20:39:29 97 minutes
  - 2009/201, 12:50:46 75 minutes



**4.4. XPS** (submitted by Tom Woods, 22 July)

For days 2009/191 (July 10) to 2009/202 (July 21):

- Number of XPS GCI errors: 12
- SORCE XPS Data Gaps: None
- SORCE XPS Calibration Experiment Duration: None
- Flares: None above class M1.0



5. **Planning** (automated report submitted by Jay Kominek, July 23)

**Plans completed 16 July – 23 July:**

**SORCE Spacecraft**

<b>Activity</b>	<b>Total</b>	<b>Total Time</b>
Solar Rolls	393	12:30
Stellar Rolls	431	13:18
Ram Avoidance	0	0:00
Solar Alignment	4	1:36
Stellar Alignment	0	0:00
Field of View Maps	8	3:43
FSS Calibration	0	0:00
Station Contacts	14	3:12
GCI Checks	829	0:13
State Vector Upload	7	0:21
MU Checksum	1	0:12

**SIM A (Primary)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
ESR Mode	7	6:26
ESR Mode with HRT	0	0:00
IR Scan	5	5:11
Quick Scan	14	5:39
Quick Scan HRT	0	0:00
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	0	0:00
Field of View Map	8	3:43
Prism Calibration	0	0:00
Image Light	1	0:06
Image Dark	1	0:05
ESR Full Scan	0	0:00
Dark	27	0:20
<b>Special Activity</b>		
Power Cycle Checks	207	13:48

**SIM B (Secondary)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
ESR Mode	6	5:20
ESR Mode with HRT	0	0:00
IR Scan	1	1:02
Quick Scan	2	0:48
Quick Scan HRT	0	0:00
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	0	0:00
Field of View Map	8	3:43
Prism Calibration	0	0:00
Image Light	1	0:06
Image Dark	1	0:05
ESR Full Scan	0	0:00
Dark	4	0:03
<b>Special Activity</b>		
Power Cycle Checks	207	13:30

## **SOLSTICE A (MUV)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
Normal Scan	87	69:07
Quick Scan	50	12:46
Mini Quick Scan	39	10:24
<b>Stellar Activity</b>		
Fixed Wavelength	0	0:00
Companion	0	0:00
Stellar Scan	0	0:00
Zero Order Scan	0	0:00
Number Unique Targets	0	0:00
<b>Calibration Activity</b>		
Filter Calibration	1	1:00
Fixed Wavelength	0	0:00
AB Comparison	1	1:01
Mini 64 Scan	7	7:12
MUV Solar Alignment	2	0:48
FUV Solar Alignment	2	0:47
MUV Stellar Alignment	0	0:00
FUV Stellar Alignment	0	0:00
MUV Field of View Map	8	3:43
FUV Field of View Map	0	0:00
<b>Special Activity</b>		
Power Cycle Checks	104	4:28
Step Response Test	1	0:02

## **SOLSTICE B (FUV)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
Normal Scan	96	77:59
Quick Scan	44	8:15
Mini Quick Scan	38	7:04
<b>Stellar Activity</b>		
Fixed Wavelength	453	18:55
Companion	60	3:30
Stellar Scan	17	2:01
Zero Order Scan	411	12:01
Number Unique Targets	39	36:46
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
AB Comparison	1	1:01
Mini 64 Seam	7	7:12
MUV Solar Alignment	2	0:48
FUV Solar Alignment	2	0:47
MUV Stellar Alignment	0	0:00
FUV Stellar Alignment	0	0:00
MUV Field of View Map	8	3:43
FUV Field of View Map	0	0:00
<b>Special Activity</b>		
Power Cycle Checks	104	4:37
Step Response Test	1	0:02

## **TIM**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
Normal Solar	104	101:49
Normal Eclipse	119	53:35
<b>Calibration Activity</b>		
Degradation A	1	0:26
Degradation C	0	0:00
Aliveness D	0	0:00

Gain Calibration AB	0	0:00
Gain Calibration CD	0	0:00
Solar Alignment	2	1:42
Field of View Map	8	3:43

### **Special Activity**

Power Cycle Checks	207	8:54
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### **XPS**

#### **Calibration Activity**

Calibration	0	0:00
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Since December 2005, XPS is activated for a continuous 1-min integration at filter wheel position 6 (0.1-18 nm range) and only has a monthly calibration experiment.

## **6. Data Processing Summary**

**TIM** (submitted by Doug Lindholm, 25 June 2009)

- Status
  - Version 9 routine processing is ongoing.
  - Version 9 TSI data are available on LISIRD, the SORCE web site, and the GES DISC with the new LASP ASCII file format.
- Work in progress
  - Preparing for version 10 reprocessing.
  - Code modifications (generalizations) to support Glory TIM data processing.
- Future Plans
  - Field of view analysis and pointing correction.

**SOLSTICE** (submitted by Doug Lindholm, 25 June 2009)

- Status
  - Modifications of software are being evaluated to fix problems in the version 10 data. Reprocessing will begin soon.
  - Routine data processing is producing version 9 level 3 FUV and MUV SOLSTICE data products. These are available on the SORCE web site and LISIRD.
  - MgII index is being produced routinely and is available on the SORCE web site.
- Work in Progress
  - Evaluating tasks for version 11 reprocessing.
  - Filter experiment analysis to improve dead time correction and filter transmission.
- Future Plans
  - Analysis of instrument misalignment calibration.
  - Analysis of level 3 uncertainties.
  - Improved Jan 2006 slit anomaly correction.
  - Improvement of field of view maps.

**SIM** (submitted by Doug Lindholm, 25 June 2009)

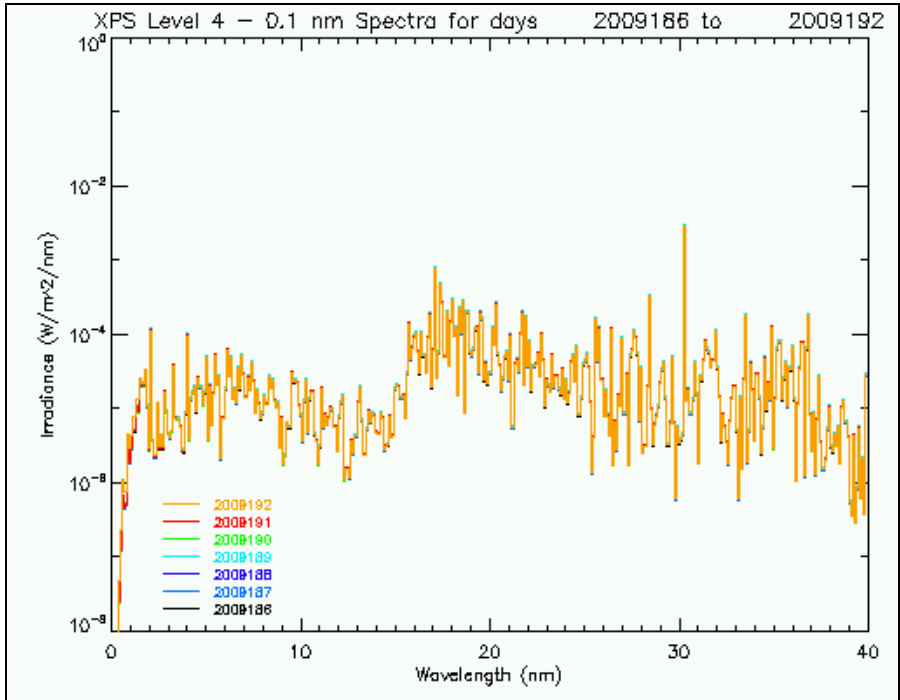
- Status
  - The routine processing of version 17 data is ongoing.
  - The level 3 data products are available on the SORCE web site and LISIRD.
- Work in Progress
  - Calibration to improve the quality of early mission data.
  - Testing of new SIM exposure time algorithm.
- Future Plans
  - Process SIM B.
  - Investigate UV degradation.

- Consider field of view correction for data affected by the filter wheel anomaly.

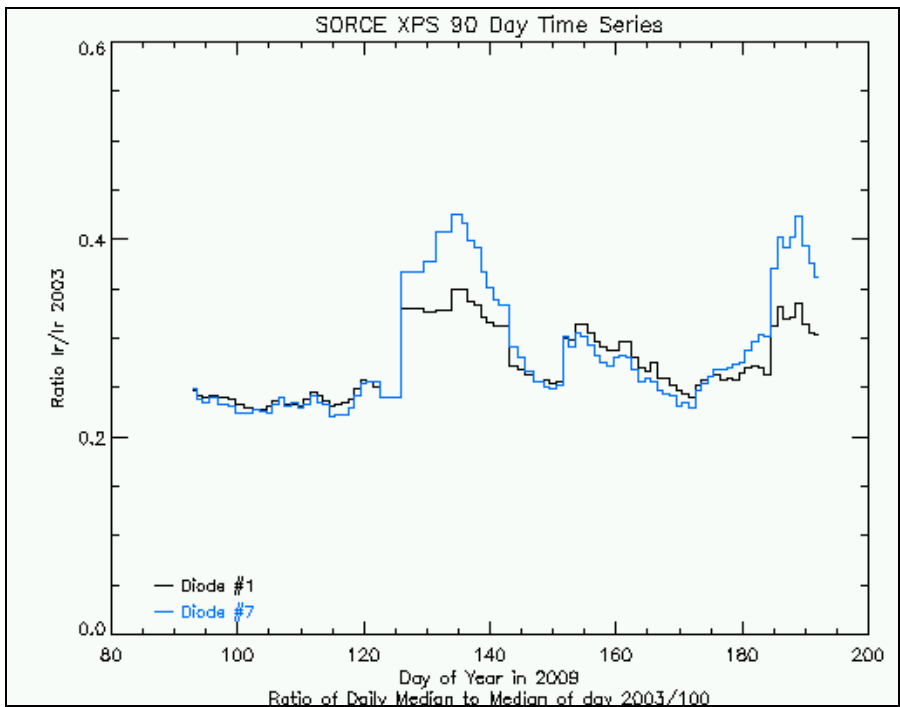
**XPS** (submitted by Brian Templeman, 17 July 2009)

- Version 9 XPS data are being routinely reprocessed and released.
- The safe-hold events in January did not appear to affect data quality.
- **SORCE XPS Data Processing Statistics for 2009/186 to 2009/192**

Total level 1b Observations Processed:	16171
Percent used in level 2 Processing:	91.3487
Total level 3 Observations Processed:	14772



Weekly Image



Diode Time Series