

## SORCE Weekly Status Report – 7/02/2009 to 7/08/2009

### 1. Introduction

This status report addresses the performance of the SORCE spacecraft, instruments, and ground assets during the week of Thursday, July 2, through Wednesday, July 8, 2009.

### 2. Spacecraft Summary (submitted by Deb McCabe, July 8)

07/02	07/03	07/04	07/05	07/06	07/07	07/08
183	184	185	186	187	188	189

There was one MU read zero event this week:  
2009/185-11:58:07

The battery trickle charge rate was decreased from 0.46A to 0.25A on DOY 176 at AGO 34757. This was to ease the rate at which the battery is trickle charged, which should prolong battery life. Monitoring of this change will occur over the next few weeks.

GCI lockups:			(MINUTES)		
Instrument	Lockup Time	Response Time	Duration	Lat	Lon
solstice_a	2009/185-18:32:50	2009/185-19:19:22	46.53	-39.9	-76.9
solstice_a	2009/186-12:10:08	2009/186-13:07:46	57.63	-30.2	-29.8
solstice_a	2009/186-17:24:44	2009/186-17:59:11	34.45	-25.5	-8.5
solstice_a	2009/187-19:15:58	2009/187-19:53:44	37.77	-27.5	-47.2
solstice_a	2009/188-17:52:40	2009/188-18:34:45	42.08	-30.5	-38.8
solstice_b	2009/186-12:07:51	2009/186-13:07:41	59.83	-26.0	-37.7
solstice_b	2009/187-17:31:47	2009/187-18:16:28	44.68	-37.7	-49.7
solstice_b	2009/188-12:46:46	2009/188-13:42:57	56.18	-37.8	-28.3
solstice_b	2009/188-16:17:43	2009/188-16:57:25	39.70	-26.9	-7.1
solstice_b	2009/188-17:49:10	2009/188-18:34:39	45.48	-35.7	-52.0
solstice_b	2009/189-18:09:26	2009/189-18:53:50	44.40	-28.3	-44.8
sim_a	2009/183-12:52:48	2009/183-13:30:36	37.80	-13.6	-48.4
sim_a	2009/184-13:12:44	2009/184-13:49:18	36.57	-23.2	-45.9
sim_a	2009/186-12:08:48	2009/186-12:50:51	42.05	-27.8	-34.4
sim_a	2009/187-15:48:59	2009/187-16:25:26	36.45	-39.8	-50.9
sim_a	2009/188-06:21:35	2009/188-07:01:19	39.73	-39.7	83.5
sim_a	2009/188-16:10:41	2009/188-16:45:07	34.43	-37.3	-33.4
sim_a	2009/188-21:14:07	2009/188-21:36:58	22.85	-15.6	-64.8
sim_b	2009/184-13:16:13	2009/184-13:49:23	33.17	-29.8	-34.4
sim_b	2009/185-11:52:13	2009/185-12:31:18	39.08	-25.4	-28.1
sim_b	2009/185-20:19:09	2009/185-20:37:48	18.65	-32.8	-62.2
sim_b	2009/186-13:47:35	2009/186-14:28:16	40.68	-30.7	-53.4
sim_b	2009/186-17:21:31	2009/186-17:42:54	21.38	-31.2	-19.3
sim_b	2009/186-18:57:55	2009/186-19:20:15	22.33	-32.3	-46.5
sim_b	2009/187-14:06:01	2009/187-14:48:11	42.17	-35.3	-52.0
sim_b	2009/187-19:11:15	2009/187-19:40:11	28.93	-35.1	-64.5
sim_b	2009/188-10:58:56	2009/188-11:53:19	54.38	-20.3	-42.5
sim_b	2009/188-16:05:28	2009/188-16:45:13	39.75	-40.0	-56.7
tim	2009/182-12:34:50	2009/182-13:09:45	34.92	-7.6	-45.0
tim	2009/182-15:56:53	2009/182-16:24:09	27.27	-25.0	-71.6
tim	2009/182-19:30:47	2009/182-19:38:34	7.78	-35.7	-38.9
tim	2009/182-21:15:10	2009/182-21:43:43	28.55	-23.4	-37.7
tim	2009/182-22:51:33	2009/182-23:20:49	29.27	-24.8	-64.5
tim	2009/183-14:36:32	2009/183-15:05:15	28.72	-27.5	-53.1
tim	2009/183-19:42:19	2009/183-19:56:57	14.63	-39.2	-65.9
tim	2009/183-21:26:03	2009/183-21:34:12	8.15	-31.8	-63.5
tim	2009/185-20:27:08	2009/185-20:35:08	8.00	-17.4	-35.8
tim	2009/187-12:18:51	2009/187-13:08:11	49.33	-16.8	-61.5
tim	2009/188-12:40:07	2009/188-13:27:57	47.83	-28.8	-53.4

XPS	2009/183-14:36:50	-28.1	-52.0
XPS	2009/184-20:04:28	-31.6	-48.7
XPS	2009/185-15:11:55	-34.8	-57.5
XPS	2009/185-22:02:31	-21.1	-65.5

	SIM A	SIM B	SOL A	SOL B	TIM	XPS*
Week	7	10	5	6	11	4
Total	2027	2591	1404	1664	2251	2097

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

Fifteen ground station contacts were performed over the past week including one blind acquisition at AGO 34920 to recover from a failed support at AGO 34919 when the MOC configured for the primary, not the backup PTP.

	Captured VCDUS	Recorded VCDUS	%
SC housekeeping	320374	320376	100
IM housekeeping	43535	43536	100
Science	313298	313299	100

### 4. Instrument Status

#### 4.1. TIM (submitted by Greg Kopp, 08 July)

##### TIM operations during previous week

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

##### Current work

- Normal operations
  - Version 9 data processing provides daily updated TSI values
- Instrument temperatures warming slightly due to orbit parameters

##### TIM anomalies during previous week

- None

#### 4.2. SIM (submitted by Jerry Harder, July 9)

##### For days 2009/183 (July 2) to 2009/190 (July 9):

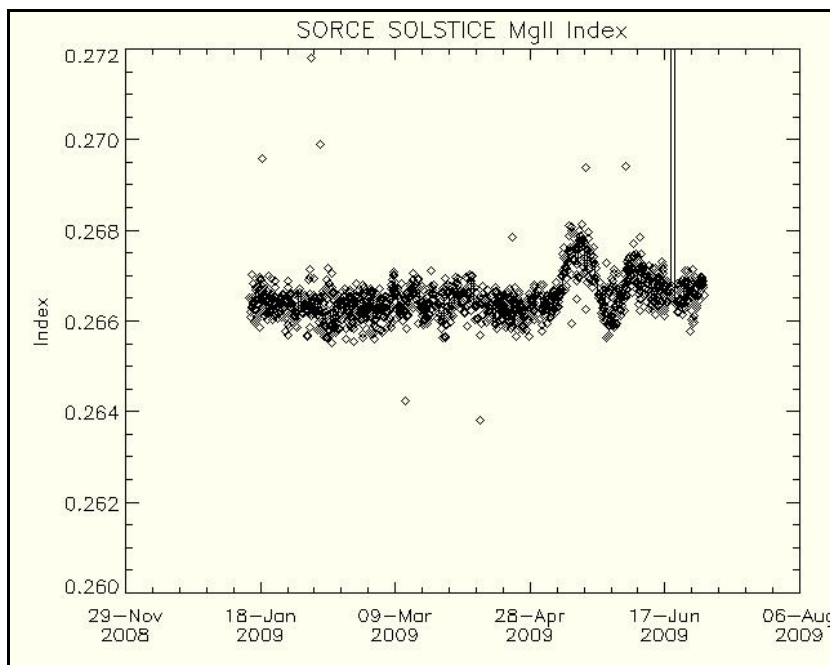
• Calibration Activities:	<u>SIM A</u>	<u>SIM B</u>
-- Prism Calibration A_cal_B	0	0
-- Prism Calibration B_cal_A	0	0
-- CCDDump	2	2
-- Image Dark	1	0
-- Image Light	1	1
-- Servo Gain 20 sec half cycle	2	2
-- Servo Gain 50 sec half cycle	1	1
-- Cruciform Scans	2	2
-- FOV Maps	0	0

• Science Activities:	<u>SIM A</u>	<u>SIM B</u>
-- ESR Full Scan Segments	0	0
-- ESR Table Scan Segments	7	0
-- 24-minute Scans	14	0
-- 24-minute Scans w/ HRT	1	1
-- IR scans	7	0

**4.3. SOLSTICE** (submitted by Marty Snow, July 8)

For days 2009/182 (July 1) to 2009/189 (July 8):

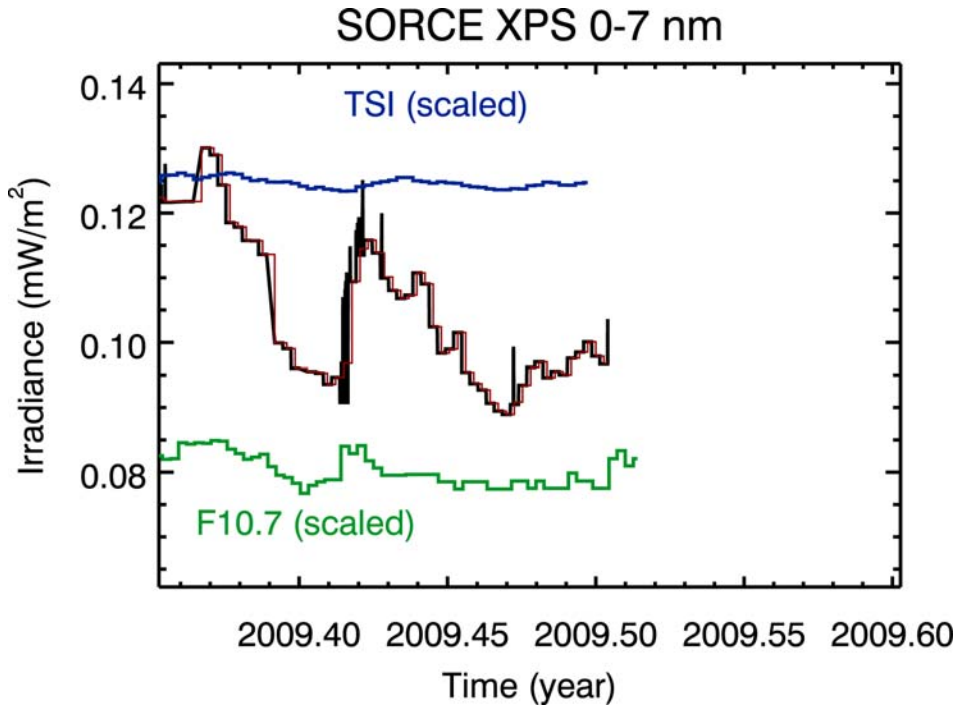
- SOLSTICE A grating drive errors:  
2009/186, 13:09:30  
2009/186, 18:01:00
- SOLSTICE B grating drive errors:  
2009/188, 13:43:55
- Data Gaps for SOLSTICE A (date, length in minutes):  
2009/182, 13:39:12      64 minutes  
2009/185, 19:20:09      47 minutes  
2009/186, 13:08:38      59 minutes  
2009/186, 17:59:59      35 minutes  
2009/187, 19:54:31      39 minutes  
2009/188, 18:35:39      43 minutes
- Data Gaps for SOLSTICE B (date, length in minutes):  
2009/184, 15:49:11      55 minutes  
2009/186, 13:08:44      61 minutes  
2009/187, 18:17:15      45 minutes  
2009/188, 13:43:44      57 minutes  
2009/188, 16:58:12      40 minutes  
2009/188, 18:35:42      47 minutes



4.4. **XPS** (submitted by Tom Woods, 08 July)

For days 2009/177 (June 26) to 2009/188 (July 7):

- Number of XPS GCI errors: 13
- 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 9)

*Plans completed 02 July – 09 July:*

**SORCE Spacecraft**

Activity	Total	Total Time
Solar Rolls	509	16:23
Stellar Rolls	295	9:45
Ram Avoidance	0	0:00
Solar Alignment	4	1:15
Stellar Alignment	0	0:00
Field of View Maps	0	0:00
FSS Calibration	0	0:00
Station Contacts	14	2:32
GCI Checks	825	0:13
State Vector Upload	7	0:21
MU Checksum	1	0:12

**SIM A (Primary)**

Solar Activity	Total	Total Time
ESR Mode	7	5:38
ESR Mode with HRT	0	0:00
IR Scan	7	8:24
Quick Scan	14	5:39
Quick Scan HRT	1	0:24

**Calibration Activity**

Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	2	1:19
Field of View Map	0	0:00
Prism Calibration	0	0:00
Image Light	1	0:06
Image Dark	1	0:05
ESR Full Scan	0	0:00
Dark	30	0:22

**Special Activity**

Power Cycle Checks	208	13:52
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**SIM B (Secondary)****Solar Activity**                      **Total**                      **Total Time**

ESR Mode	0	0:00
ESR Mode with HRT	0	0:00
IR Scan	0	0:00
Quick Scan	0	0:00
Quick Scan HRT	1	0:24

**Calibration Activity**

Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	2	1:19
Field of View Map	0	0:00
Prism Calibration	0	0:00
Image Light	1	0:06
Image Dark	1	0:05
ESR Full Scan	0	0:00
Dark	2	0:01

**Special Activity**

Power Cycle Checks	208	13:34
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**SOLSTICE A (MUV)****Solar Activity**                      **Total**                      **Total Time**

Normal Scan	93	91:05
Quick Scan	42	11:51
Mini Quick Scan	37	10:25

**Stellar Activity**

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

**Calibration Activity**

Filter Calibration	1	1:15
Fixed Wavelength	0	0:00
AB Comparison	1	1:12
Mini 64 Scan	7	8:26
MUV Solar Alignment	0	0:00
FUV Solar Alignment	0	0:00
MUV Stellar Alignment	0	0:00
FUV Stellar Alignment	0	0:00
MUV Field of View Map	0	0:00
FUV Field of View Map	0	0:00

**Special Activity**

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	99:33
Quick Scan	43	8:08
Mini Quick Scan	36	6:56
<b>Stellar Activity</b>		
Fixed Wavelength	161	7:08
Companion	15	0:52
Stellar Scan	56	6:52
Zero Order Scan	151	4:26
Number Unique Targets	38	19:53
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
AB Comparison	1	1:12
Mini 64 Seam	7	8:26
MUV Solar Alignment	0	0:00
FUV Solar Alignment	0	0:00
MUV Stellar Alignment	0	0:00
FUV Stellar Alignment	0	0:00
MUV Field of View Map	0	0:00
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	102	127:06
Normal Eclipse	99	30:10
<b>Calibration Activity</b>		
Degradation A	1	1:22
Degradation C	0	0:00
Aliveness D	0	0:00
Gain Calibration AB	0	0:00
Gain Calibration CD	1	6:00
Solar Alignment	2	1:19
Field of View Map	0	0:00
<b>Special Activity</b>		
Power Cycle Checks	201	8:39

## **XPS**

<b>Calibration Activity</b>		
Calibration	0	0:00

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, 25 June 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 2009/164 to 2009/171
 

Total level 1b Observations Processed:	24311
Percent used in level 2 Processing:	59.7878
Total level 3 Observations Processed:	14535