

## SORCE Weekly Status Report – 10/29/2009 to 11/04/2009

### 1. Introduction

This status report addresses the performance of the SORCE spacecraft, instruments, and ground assets during the week of Thursday, October 29, through Wednesday, Nov. 4, 2009.

### 2. Spacecraft Summary (submitted by D. McCabe 11/05/09)

10/29	10/30	10/31	11/01	11/02	11/03	11/04
302	303	304	305	306	307	308

There was a SOLSTICE A grating drive error that was recovered by RTS response at 2009/307-10:40:47

There were no MU read zero errors in the last reporting period.

GCI lockups:

(MINUTES)

Instrument	Lockup Time	Response Time	Duration	Lat	Lon
solstice_a	2009/302-11:08:03	2009/302-12:29:16	81.22	-22.0	-63.2
solstice_a	2009/302-18:02:22	2009/302-18:57:56	55.57	-27.9	-56.9
solstice_a	2009/303-18:19:14	2009/303-19:15:12	55.97	-25.1	-62.5
solstice_a	2009/304-08:21:27	2009/304-09:49:35	88.13	-15.0	-44.1
solstice_a	2009/304-16:52:21	2009/304-17:55:17	62.93	-34.0	-66.5
solstice_a	2009/307-16:06:23	2009/307-17:09:28	63.08	-25.6	-55.6
solstice_b	2009/303-18:21:15	2009/303-19:15:07	53.87	-20.9	-56.0
solstice_b	2009/304-11:44:42	2009/304-13:03:46	79.07	-32.9	-63.9
solstice_b	2009/306-07:14:33	2009/306-08:46:41	92.13	-13.3	-42.3
solstice_b	2009/306-15:52:07	2009/306-16:52:21	60.23	-23.2	-41.4
sim_a	2009/302-07:55:48	2009/302-08:43:31	47.72	-25.9	-7.9
sim_a	2009/302-12:51:14	2009/302-13:34:58	43.73	-33.2	-66.9
sim_a	2009/306-15:51:08	2009/306-16:20:05	28.95	-25.2	-44.5
sim_a	2009/308-11:09:17	2009/308-12:02:18	53.02	-33.1	-80.3
sim_b	2009/302-09:29:11	2009/302-10:20:46	51.58	-18.2	-43.9
sim_b	2009/302-11:13:36	2009/302-11:57:54	44.30	-32.3	-44.6
sim_b	2009/302-16:23:13	2009/302-16:49:19	26.10	-31.6	-39.7
sim_b	2009/302-18:01:19	2009/302-18:26:30	25.18	-29.8	-60.6
sim_b	2009/304-16:58:43	2009/304-17:23:28	24.75	-22.8	-44.6
sim_b	2009/305-17:20:35	2009/305-17:40:25	19.83	-8.4	-36.7
sim_b	2009/306-12:35:28	2009/306-13:05:56	30.47	-28.3	-0.5
sim_b	2009/307-09:11:18	2009/307-10:08:30	57.20	-23.0	-64.5
sim_b	2009/307-14:23:39	2009/307-14:59:52	36.22	-35.0	-51.3
sim_b	2009/307-16:07:12	2009/307-16:36:59	29.78	-24.0	-52.9
sim_b	2009/308-14:41:36	2009/308-15:16:38	35.03	-31.4	-52.3
tim	2009/302-16:17:20	2009/302-16:46:39	29.32	-38.6	-63.3
tim	2009/303-09:48:03	2009/303-10:35:13	47.17	-25.4	-43.8
tim	2009/303-14:54:36	2009/303-15:26:38	32.03	-39.3	-54.3
tim	2009/303-16:42:51	2009/303-17:03:47	20.93	-23.7	-35.6
tim	2009/303-20:05:37	2009/303-20:18:03	12.43	-4.1	-60.4
tim	2009/306-07:18:07	2009/306-08:11:53	53.77	-21.4	-31.7
tim	2009/306-08:57:46	2009/306-09:49:00	51.23	-26.5	-48.5
tim	2009/306-14:02:53	2009/306-14:40:22	37.48	-39.6	-64.4
XPS	2009/303-14:23:13			11.1	-161.8
XPS	2009/304-08:35:15			-38.2	4.1
XPS	2009/305-17:20:14			-9.2	-37.6
XPS	2009/307-09:19:51			-36.9	-33.5
XPS	2009/308-06:12:25			-22.3	-26.5
XPS	2009/308-16:25:52			-17.0	-53.5

	SIM A	SIM B	SOL A	SOL B	TIM	XPS*
Week	4	11	5	5	8	6
Total	2160	2745	1486	1766	2386	2239

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

Fifteen ground station contacts were performed during the report period.

	Captured VCDUS	Recorded VCDUS	%
SC housekeeping	330466	330467	100
IM housekeeping	45752	45753	100
Science	319886	319887	100

### 4. **Instrument Status**

#### 4.1. **TIM** (submitted by Greg Kopp, Nov. 5)

##### TIM operations during previous week

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

##### Current work

- Normal operations
  - Version 9 data processing provides daily updated TSI values
- Started Version 10 data reprocessing
  - Updated cavity inter-comparisons show continued exponentially decreasing degradation, similar to what is applied to current Version 9 data
  - Servo gain calibrations show continued stability

##### TIM anomalies during previous week

- None.

#### 4.2. **SIM** (submitted by Jerry Harder, Nov. 6)

For days 2009/303 (Oct. 30) to 2009/310 (Nov. 6):

- Calibration Activities:

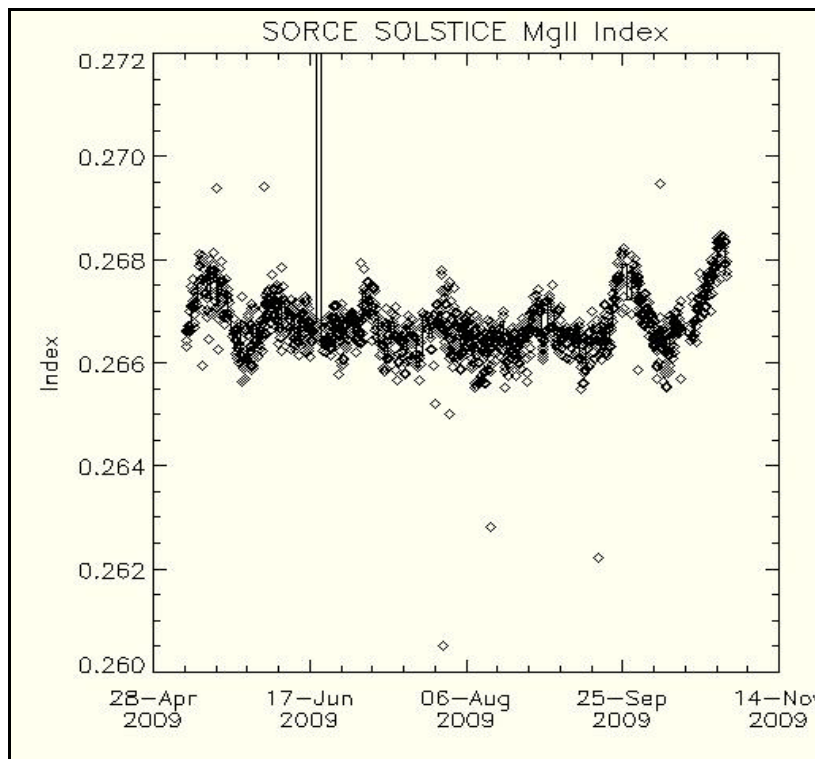
	<u>SIM A</u>	<u>SIM B</u>
-- Prism Calibration A_cal_B	25	25
-- Prism Calibration B_cal_A	25	25
-- CCDDump	2	2
-- Image Dark	1	0
-- Image Light	1	1
-- Servo Gain 20 sec half cycle	2	2
-- Servo Gain 50 sec half cycle	1	1
-- Cruciform Scans	2	2
-- FOV Maps	0	0
- Science Activities:

	<u>SIM A</u>	<u>SIM B</u>
-- ESR Full Scan Segments	0	0
-- ESR Table Scan Segments	9	3
-- 24-minute Scans	14	1
-- 24-minute Scans w/ HRT	0	0
-- IR scans	7	1

**4.3. SOLSTICE** (submitted by Marty Snow, Nov. 5)

For days 2009/302 (Oct. 29) to 2009/309 (Nov. 5):

- SOLSTICE A grating drive errors:  
2009/302, 12:30:54
- SOLSTICE B grating drive errors: None
- Data Gaps for SOLSTICE A (date, length in minutes):  
2009/302, 12:30:03 82 minutes  
2009/302, 18:58:43 56 minutes  
2009/303, 19:16:03 57 minutes  
2009/304, 09:50:22 89 minutes  
2009/304, 17:56:04 64 minutes  
2009/307, 10:41:35 95 minutes  
2009/307, 17:10:15 64 minutes
- Data Gaps for SOLSTICE B (date, length in minutes):  
2009/303, 19:16:09 55 minutes  
2009/304, 13:04:33 80 minutes  
2009/306, 08:47:29 93 minutes  
2009/306, 16:53:08 61 minutes



**4.4. XPS** (submitted by Tom Woods, 29 October)

For days 2009/296 (Oct. 23) to 2009/307 (Nov. 3):

- Number of XPS GCI errors: 10
- 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, November 5)

**Plans completed 29 October – 05 November:**

**SORCE Spacecraft**

<b>Activity</b>	<b>Total</b>	<b>Total Time</b>
Solar Rolls	364	11:15
Stellar Rolls	481	14:30
Ram Avoidance	0	0:00
Solar Alignment	4	1:27
Stellar Alignment	0	0:00
Field of View Maps	0	0:00
FSS Calibration	0	0:00
Station Contacts	15	2:45
GCI Checks	834	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	5:16
ESR Mode with HRT	0	0:00
IR Scan	7	7:05
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	2	1:34
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	28	0:21
<b>Special Activity</b>		
Power Cycle Checks	208	14:52

**SIM B (Secondary)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
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	0	0:00
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	2	1:34
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	0	0:00
<b>Special Activity</b>		
Power Cycle Checks	208	14:34

## **SOLSTICE A (MUV)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
Normal Scan	93	72:48
Quick Scan	43	11:48
Mini Quick Scan	37	10:07
<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	1:00
Mini 64 Scan	7	7:05
MUV Solar Alignment	2	0:42
FUV Solar Alignment	2	0:44
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	4:28
Step Response Test	1	0:02

## **SOLSTICE B (FUV)**

<b>Solar Activity</b>	<b>Total</b>	<b>Total Time</b>
Normal Scan	94	80:36
Quick Scan	44	8:13
Mini Quick Scan	37	6:54
<b>Stellar Activity</b>		
Fixed Wavelength	358	16:52
Companion	45	2:37
Stellar Scan	44	7:42
Zero Order Scan	454	13:19
Number Unique Targets	35	41:24
<b>Calibration Activity</b>		
Fixed Wavelength	0	0:00
AB Comparison	1	1:00
Mini 64 Seam	7	7:05
MUV Solar Alignment	2	0:42
FUV Solar Alignment	2	0:44
MUV Stellar Alignment	2	0:18
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	98	98:27
Normal Eclipse	135	55:18
<b>Calibration Activity</b>		
Degradation A	1	0:52
Degradation C	1	0:52
Aliveness D	1	0:52

Gain Calibration AB	0	0:00
Gain Calibration CD	0	0:00
Solar Alignment	2	1:34
Field of View Map	0	0:00

### **Special Activity**

Power Cycle Checks	208	8:57
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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, 5 November 2009)

- Status
  - Version 10 reprocessing is complete and is being evaluated before being released.
  - 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
  - Evaluating version 10 data.
- Future Plans
  - Preparing for version 11 reprocessing.
  - Improved dark model
  - Shutter timing offset
  - Correction scale factor
  - Quick look processing

**SOLSTICE** (submitted by Doug Lindholm, 15 October 2009)

- Status
  - Routine data processing is producing version 10 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
  - Debugging shift in wavelength correction.
  - 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, 5 November 2009)

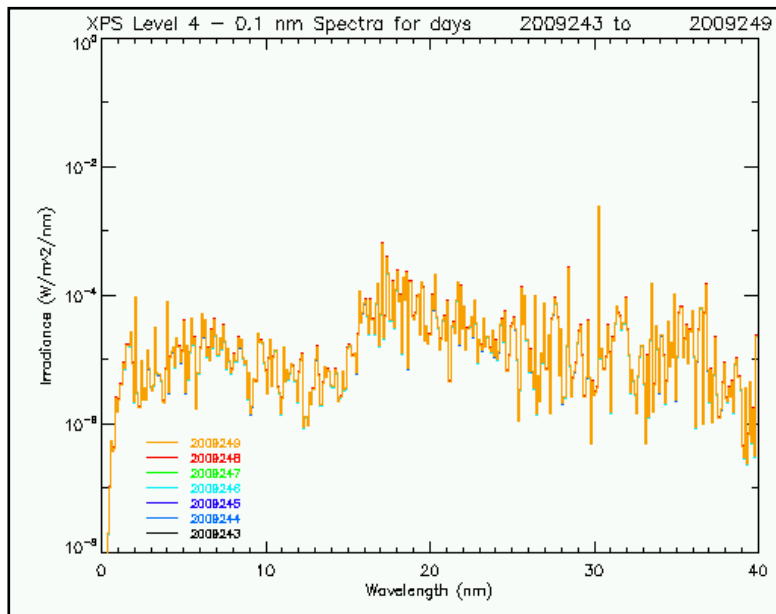
- Status
  - The routine processing of version 17 data is ongoing.
  - The level 3 data products are available on the SORCE web site and LISIRD.
- Work in Progress

- Wavelength shift corrections for recent cold events.
- Evaluating 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.

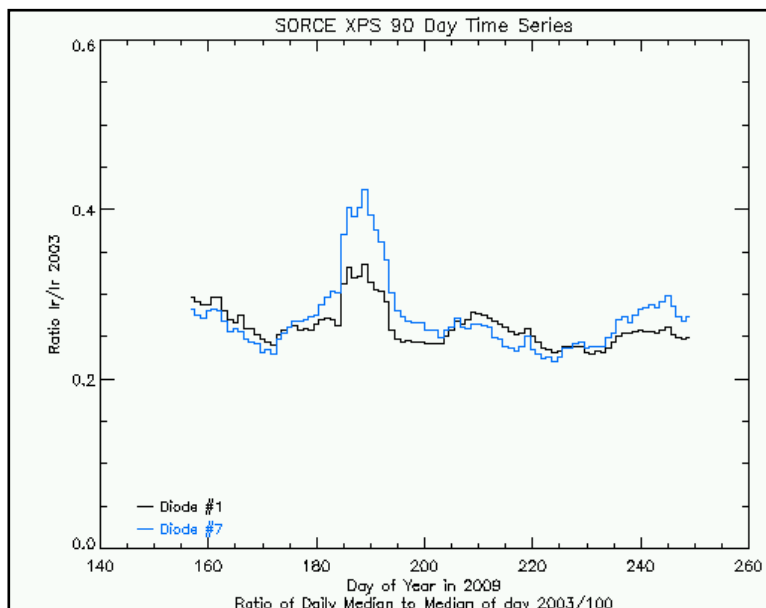
**XPS** (submitted by Brian Templeman, 10 September 2009)

- 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 2009/243 to 2009/249**

Total level 1b Observations Processed:	27031
Percent used in level 2 Processing:	54.3598
Total level 3 Observations Processed:	14694



Weekly Image



Diode Time Series