SORCE Weekly Status Report – 10/22/2009 to 10/28/2009

1. Introduction

This status report addresses the performance of the SORCE spacecraft, instruments, and ground assets during the week of Thursday, October 22, through Wednesday, October 28, 2009.

2. Spacecraft Summary (submitted by D. McCabe, 10/29/09)

10/22	10/23	10/24	10/25	10/26	10/27	10/28
295	296	297	298	299	300	301

FLAWS 87 was opened on an extra command being sent from the ATS to begin the Sunset Activities (SPaM checks and battery heater disable commands). The cause of the planning error is under investigation.

GCI lockups: (MINUTES)

Instrument	Lockup Time	Response Time	Duration	Lat	Lon
solstice_a	2009/295-12:35:51	2009/295-13:42:56	67.08	-25.0	-35.2
solstice_a	2009/296-19:37:52	2009/296-20:28:35	50.72	-37.2	-67.8
solstice_a	2009/297-21:41:02	2009/297-22:22:52	41.83	-19.0	-65.1
solstice_a	2009/299-12:10:19	2009/299-13:14:27	64.13	-38.9	-13.6
solstice_b	2009/296-12:51:42	2009/296-13:59:56	68.23	-25.9	-44.1
solstice_b	2009/297-20:04:32	2009/297-20:45:39	41.12	-17.9	-38.9
solstice_b	2009/298-09:58:55	2009/298-11:19:59	81.07	-4.7	-42.9
solstice_b	2009/300-09:07:55	2009/300-10:17:25	69.50	-35.3	9.1
solstice_b	2009/300-14:01:42	2009/300-15:08:51	67.15	-38.2	-53.4
solstice_b	2009/300-19:09:48	2009/300-20:00:19	50.52	-25.8	-57.0
sim_a	2009/295-16:06:36	2009/295-16:25:22	18.77	-38.8	-16.3
sim_a	2009/295-21:11:06	2009/295-21:16:49	5.72	-17.4	-42.1
sim_a	2009/296-14:29:47	2009/296-15:05:30	35.72	-28.0	-65.0
sim_a	2009/296-21:24:54	2009/296-21:34:07	9.22	-20.7	-57.0
sim_a	2009/297-11:26:26	2009/297-12:08:31	42.08	-18.2	-41.2
sim_a	2009/297-13:11:16	2009/297-13:45:41	34.42	-33.0	-40.0
sim_a	2009/297-16:35:02	2009/297-17:00:01	24.98	-39.8	-47.2
sim_a	2009/299-18:52:22	2009/299-19:11:47	19.42	-29.6	-53.5
sim_a	2009/299-20:32:28	2009/299-20:48:57	16.48	-23.8	-68.1
sim_a	2009/300-15:56:11	2009/300-16:14:47	18.60	-24.9	-6.1
sim_b	2009/295-12:33:57	2009/295-13:11:09	37.20	-21.2	-40.9
sim_b	2009/295-14:17:59	2009/295-14:48:18	30.32	-33.9	-41.7
sim_b	2009/295-21:02:27	2009/295-21:16:55	14.47	-33.6	-70.3
sim_b	2009/297-18:24:40	2009/297-18:37:14	12.57	-23.8	-22.6
sim_b	2009/297-20:00:13	2009/297-20:14:22	14.15	-26.8	-52.1
sim_b	2009/297-23:23:11	2009/297-23:28:41	5.50	-7.4	-75.6
sim_b	2009/298-12:50:50	2009/298-12:55:42	4.87	38.3	-163.0
sim_b	2009/301-10:50:17	2009/301-11:40:41	50.40	-17.1	-59.6
tim	2009/295-22:51:14	2009/295-23:25:36	34.37	-10.3	-58.1
tim	2009/296-21:08:58	2009/296-21:31:32	22.57	-39.9	-118.6
tim	2009/297-16:34:26	2009/297-16:57:25	22.98	-39.9	-49.9
tim	2009/297-18:23:48	2009/297-18:34:33	10.75	-25.5	-25.2
tim	2009/297-19:56:21	2009/297-20:11:43	15.37	-33.3	-65.7
tim	2009/298-20:15:43	2009/298-20:29:03	13.33	-26.5	-62.2
tim	2009/299-10:26:19	2009/299-11:03:27	37.13	-30.6	-17.1
tim	2009/300-15:54:02	2009/300-16:12:12	18.17	-28.9	-13.3
tim	2009/300-20:58:26	2009/300-21:03:40	5.23	0.0	-49.4
XPS	2009/296-11:08:37			-13.1	-37.2
XPS	2009/296-11:10:21			-16.8	-32.5
XPS	2009/296-12:53:08			-28.7	-39.1
XPS	2009/300-14:00:21			-36.9	-59.1
XPS	2009/300-15:51:11			-33.5	-23.6
XPS	2009/300-17:32:33			-26.2	-33.0

	SIM A	SIM B	SOL A	SOL B	TIM	XPS*
Week	10	8	4	6	9	6
Total	2156	2734	1480	1762	2378	2233

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

Fourteen ground station contacts were performed during the report period

	Captured VCDUS	Recorded VCDUS	%
SC housekeeping	319482	319483	100
IM housekeeping	43659	43660	100
Science	306072	306073	100

4. Instrument Status

4.1. TIM (submitted by Greg Kopp, October 30)

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
- 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

- Unusually high number of GCI lockups this week.

4.2. SIM (submitted by Jerry Harder, October 28)

For days 2009/295 (Oct. 22) to 2009/302 (Oct. 29):

Calibration Activities:	SIM A	SIM B
-- 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	0	0
-- FOV Maps	0	0

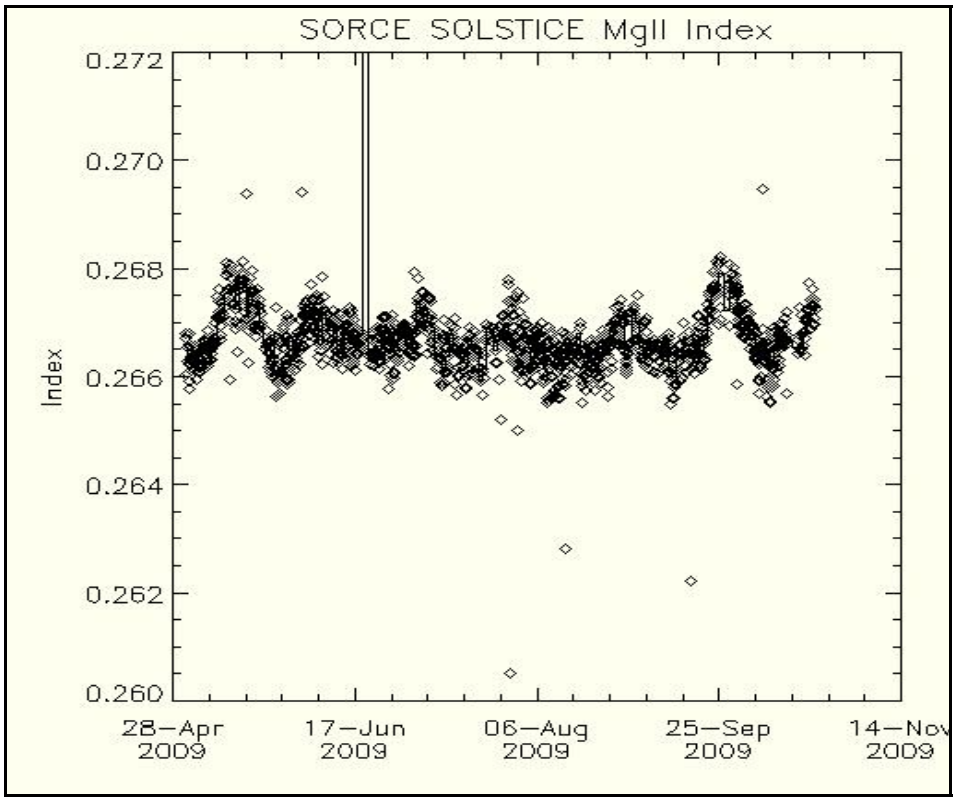
Science Activities:	SIM A	SIM B
-- ESR Full Scan Segments	0	0

-- ESR Table Scan Segments	7	0
-- 24-minute Scans	14	0
-- 24-minute Scans w/ HRT	0	0
-- IR scans	7	0

4.3. SOLSTICE (submitted by Marty Snow, October 28)

For days 2009/294 (Oct. 21) to 2009/301 (Oct. 28):

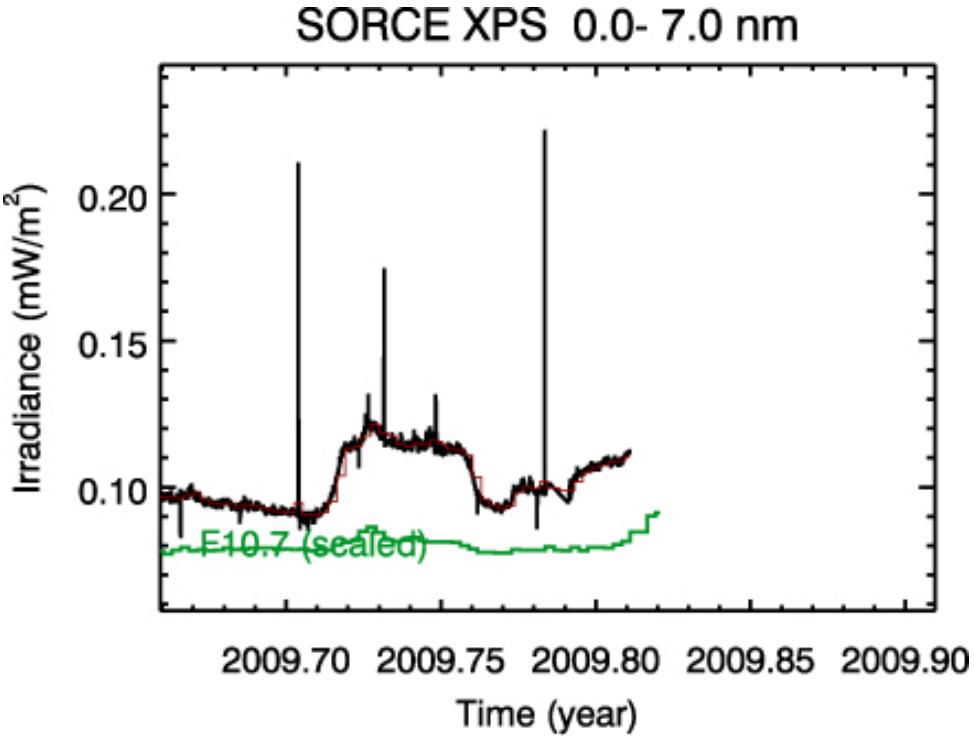
- SOLSTICE A grating drive errors: None
- SOLSTICE B grating drive errors: None
- Data Gaps for SOLSTICE A (date, length in minutes):
  2009/295, 13:43:43 68 minutes
  2009/296, 20:29:22 52 minutes
  2009/297, 22:23:40 43 minutes
  2009/299, 13:15:14 65 minutes
- Data Gaps for SOLSTICE B (date, length in minutes):
  2009/294, 06:58:09 14 minutes
  2009/294, 11:49:34 69 minutes
  2009/296, 14:00:43 69 minutes
  2009/297, 20:46:26 42 minutes
  2009/298, 11:20:47 82 minutes
  2009/300, 10:18:13 70 minutes
  2009/300, 15:09:38 68 minutes
  2009/300, 20:01:06 51 minutes



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

For days 2009/289 (Oct. 16) to 2009/300 (Oct. 27):

- 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, October 29)

Plans completed 22 October – 29 October:

SORCE Spacecraft

Activity	Total	Total Time
Solar Rolls	415	12:10
Stellar Rolls	428	12:58
Ram Avoidance	0	0:00
Solar Alignment	4	1:18
Stellar Alignment	0	0:00
Field of View Maps	0	0:00
FSS Calibration	0	0:00
Station Contacts	14	2:29
GCI Checks	832	0:13
State Vector Upload	7	0:21
MU Checksum	1	0:12

SIM A (Primary)

Solar Activity	Total	Total Time
ESR Mode	7	5:16
ESR Mode with HRT	0	0:00
IR Scan	7	7:09
Quick Scan	14	5:39

Quick Scan HRT	0	0:00
Calibration Activity		
Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	0	0:00
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
Special Activity		
Power Cycle Checks	209	13:56

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	0	0:00
Calibration Activity		
Fixed Wavelength	0	0:00
Servo Gain Calibration	2	1:20
Solar Alignment	0	0:00
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
Special Activity		
Power Cycle Checks	209	13:38

SOLSTICE A (MUV)

Solar Activity	**Total**	**Total Time**
Normal Scan	93	73:54
Quick Scan	42	11:38
Mini Quick Scan	35	10:06
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	1:01
Fixed Wavelength	0	0:00
AB Comparison	1	1:01
Mini 64 Scan	7	7:09
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)

Solar Activity	Total	Total Time
Normal Scan	94	81:38
Quick Scan	43	8:08
Mini Quick Scan	37	6:58
Stellar Activity		
Fixed Wavelength	378	18:22
Companion	69	3:59
Stellar Scan	23	3:25
Zero Order Scan	495	14:31
Number Unique Targets	39	41:16
Calibration Activity		
Fixed Wavelength	0	0:00
AB Comparison	1	1:01
Mini 64 Seam	7	7:09
MUV Solar Alignment	0	0:00
FUV Solar Alignment	0	0:00
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
Special Activity		
Power Cycle Checks	104	4:37
Step Response Test	1	0:02

TIM

Solar Activity	Total	Total Time
Normal Solar	100	103:14
Normal Eclipse	123	53:59
Calibration Activity		
Degradation A	1	1:03
Degradation C	0	1:02
Aliveness D	0	0:00
Gain Calibration AB	0	0:00
Gain Calibration CD	1	6:00
Solar Alignment	2	1:23
Field of View Map	0	0:00
Special Activity		
Power Cycle Checks	202	8:41

XPS

Calibration Activity		
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, 15 October 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.
  - Version 10 processing code is being tested.

- 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, 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, 15 October 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.
    - Updating SIM exposure time data.
- 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