SDO HMI Internal Weekly On-Orbit Report

Week of Monday, March 28, 2011 through Sunday, April 3, 2011

Summary

HMI successfully performed their weekly calibrations on Tuesday, March 29th (flatfield observation mode-1) and on Wednesday, March 30th (flatfield calibration/observation mode-2, reduced focus sweep) using timed scripts. Eclipse season continued into this week, and adjustments were made to the eclipse scripts in an effort to optimize eclipse recovery. Eclipse season ended on April 2nd. HMI received a timer violation error message on March 28th. This error has been seen once before, during the last eclipse season, and is related to the script system. It is not threatening to the safety of the instrument or the integrity of the science data. The existing IAR was updated and will continue to be investigated. On Thursday, March 31st, the monthly AIA GT/PZT calibration was executed successfully. HMI performed nominally throughout. HMI saw one corrupt image this week for an on-orbit total of 32. A new version of the EGSE (7-4-6) was installed successfully on the HMIIOC-CMD and HMIIOC-MON machines on April 1st. HMI is performing nominally.

Calibrations

Calibration	Date/Time	Script	Ran by	Notes
Flat field (observation mode-1)	29-Mar-11 18:11 UT	2701	Timed Script	Cals were set up one week ahead of time from the SPR and AIAIOC-MON machines to test the new EGSE release.
Detune	30-Mar-11 18:03 UT	2703	Timed Script	
Flat field (observation mode-1)	30-Mar-11 18:11 UT	2701	Timed Script	
Flat field (calibration mode)	30-Mar-11 18:19 UT	2702	Timed Script	
Reduced focus sweep	30-Mar-11 18:27 UT	2704	Timed Script	

Loads

1. **Eclipse scripts**
   Several changes were made to the eclipse entrance and exit scripts over the course of the week. A summary of the changes made to eclipse operations can be found in the "Other Operations" section.

Thermal Adjustments

See "Additional Operations" for thermal adjustments related to eclipse season.

S/C Calibrations/Maneuvers

1. **AIA GT/PZT Calibration**
   AIA successfully performed its monthly guide telescope calibration at 20:00 UT on March 31, 2011. HMI performed nominally.

Additional Operations

1. **Eclipses**
   Eclipse season ended on Thursday, April 2nd. See below for summaries of HMI eclipse operations. Full details can be found at https://hmi.lmsal.com/doc?cmd=vcur&proj_num=HMI02960.

UT Date	Temp raise [zone1, zone2, zone3]	Focus Sweeps	Deadbands
3/28/2011	[8,8,7]	full & reduced	Tightened for zones [1,2] for 45 min post-eclipse; tightened zone 3 for 3h 45m post-eclipse; zone 7 deadbands and target raised 2 C during and for 45 min post-eclipse.
3/29/2011	[8,8,7]	full & reduced	
3/30/2011	[8,8,7]	full & reduced	
3/31/2011	[8,8,7]	full & reduced (with two more reduced sweeps than previously)	
4/1/2011	[7,7,5]	None	
4/2/2011	[4,4,3]	full & reduced	

Instrument Anomalies
None

Limit violations
None

Clock Adjustments

Date/Time (UT)	HMI WRT ground (ms)	Adjustment
04/01/11 @ 17:20	-16	HMI from 0x800272 to 0x800273

Long term Trends

1. **Corrupt Image FSN 469769216 (0x1C001C000)**
   Occurrences this week:

1. 2011-04-02 @ 04:21:09
Occurrences to date: 30

2. **Corrupt Image FSN 9175180 (0x008C008C)**
Occurrences this week: None
Occurrences to date: 2

Other

1. **Timer Violation**
28-Mar-2011
HMI received the error message "HSQ204 06:15:25 EIP: ssim_tm: HSQ204 58244 Timer for frame 5 from framelist 1075 has been violated by 1 tick(s)" This occurred right when the eclipse was starting and script 3064 (changes deadbands, duty cycles, zone temps) kicked off. This message has been seen once before, during the last eclipse season. The existing IAR was updated and this error will continue to be investigated.

1. **EGSE Release 7-4-6 on JSOC Machines**
01-Apr-2011 at 23:53:54 UTC
Author: Emma Lehman

This afternoon Roger installed the new EGSE on all of the IOC machines (AIAIOC-MON and AIAIOC-CMD, HMIIOC_MON, HMIIOC_CMD, SDOIOC-SPR), and I re-connected for telemetry and set the limits (still eclipse limits) and globals.