SDO HMI Internal Weekly On-Orbit Report

Week of Monday, March 21, 2011 through Sunday, March 27, 2011

Summary

HMI successfully performed their weekly calibrations on Tuesday, March 22nd (flatfield observation mode-1) and on Wednesday, March 23rd (flatfield calibration/observation mode-2, full focus sweep) using timed scripts. Eclipse season continued this week, and adjustments were made to the eclipse scripts in an effort to optimize eclipse recovery. On March 24th HMI performed post-eclipse detunes in place of focus sweeps; the data has not yet been analyzed. The second Station-Keeping (Delta V) Maneuver was performed successfully on March 23rd. HMI saw two corrupt images this week, for an on-orbit total of 31. HMI is performing nominally.

Calibrations

Calibration	Date/Time	Script	Ran by	Notes
Flat field (observation mode-1)	22-Mar-11 19:00 UT	2701	Timed Script	
Flat field (observation mode-1)	23-Mar-11 19:00 UT	2701	Timed Script	
Flat field (calibration mode)	23-Mar-11 19:08 UT	2702	Timed Script	
Full Focus Sweep	23-Mar-11 19:16 UT	2705	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. **Station-Keeping Maneuver**

   23-Mar-2011

   The second Station-Keeping Maneuver (Delta V) was performed successfully on March 23rd.

Additional Operations

1. **EGSE testing on SPR machine**

25-Mar-2011 at 23:18:44 UTC
Author: Emma Lehman

From the SPR machine (with the new EGSE):

Set up next week's weekly cals:

Obs mode flat (2701) 29-mar-2011 @ 18:11 UT
Detune (2703) 30-mar-2011 @ 18:03 UT
Obs mode flat-2 (2701) 30-mar-2011 @ 18:11 UT
Cal mode flat (2702) 30-mar-2011 @ 18:19 UT
Reduced focus sweep (2704) 30-mar-2011 @ 18:27 UT

2. **Eclipses**
Eclipse season began on Thursday, March 11 at 07:00 UT. 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
3/21/2011	[8,8,6]	None	Tightened for zones [1,2,3] for 45 min post-eclipse
3/22/2011	[8,8,7]	full & reduced	Tightened for zones [1,2,3] for 45 min post-eclipse; zone 7 deadband low raised during eclipse
3/23/2011	[8,8,7]	full & reduced	same
3/24/2011	[8,8,7]	None- Detunes instead	same
3/25/2011	[8,8,7]	full & reduced	Tightened for zones [1,2,3] for 45 min post-eclipse; zone 7 deadbands and target raised 2 C during and for 45 min post-eclipse.
3/26/2011	[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.

Instrument Anomalies
None

Limit violations
None

Clock Adjustments

Date/Time (UT)	HMI WRT ground (ms)	Adjustment
03/21/11 @ 20:03	+18 ms	HMI from 0x800272 to 0x800271
03/25/11 @ 23:04	-6 ms	HMI from 0x800271 to 0x800272

Long term Trends

1. **Corrupt Image FSN 469769216 (0x1C001C000)**
    1. 2011-03-26 @ 23:40:56
    2. 2011-03-27 @ 03:11:04

    Occurrences to date: 29

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

Other

1. **ISS Error Noise**
    There have been regular, small spikes in the PZT voltages for the last few weeks. The noise abruptly stopped at 14:00 UT on March 23. Diagnostic data was taken from 18:24-20:50 UT on the 23rd but will most likely not be very useful since this was after the noise stopped. The noise is still unexplained and is currently being investigated.

    23-Mar-2011 at 21:16:05 UTC
    Author: Zoe & Emma

    Ran the jitter diagnostic STOL from 18:24 - 20:50 UT to try to gather some information on the ISS Y-error spikes. Filename (for diag package) is 20110323_ISSCAL_iss_jitter_march23.

2. **Limit update**
    The yellow limit on TS35 was raised locally on the HMIioc-MON machine. It will be changed back at the end of eclipse season.

    21-Mar-2011 at 20:38:12 UTC
    Author: Emma Lehman

    Updated hmi_instr_on_orbit_limit.src to raise the yellow limit on TS35 by two

degrees to 46.0 C. I ran hmi_change_tm_limits on HMI-MON only, so if TS35 ends up hitting the limit we will not get phone alerts, but it will still show up on the web sites and in the HMIIOC-CMD log.