

SDO HMI Internal Weekly On-Orbit Report

Week of Monday, May 23, 2011 through Sunday, May 29, 2011

Summary

HMI successfully performed its weekly calibrations on Tuesday, May 24th (obs-mode flatfield) and on Wednesday, May 25th (obs-mode flatfield, cal-mode flatfield, reduced focus sweep, detune). On May 23 the extra noise that has been showing up in the PZT voltages over the past few weeks stopped very abruptly at 21:00 UT. The FOT is investigating the cause of this noise. On May 25th, the duty cycles for the front window heaters were lowered, in order to decrease the front zone temperatures and raise the best focus setting, which has been dropping over the past several months. The adjustments resulted in a temperature change of about -0.4 degrees C, and a focus change of about + 0.17 steps, which is what was hoped for. On May 26th, the spacecraft performed an AIA GT/PZT calibration between 15:00 and 16:42 UT. HMI performed nominally. On May 27th, a zero-crossing of RWA 1 created noise in the AIA ISS y error and the HMI PZT voltages from about 03:00 – 06:00 UT. HMI is performing nominally.

Weekly Calibrations

Calibration	Date/Time	Script	Ran by	Notes
Flat field (observation mode-1)	24-May-11 17:00 UT	2701	Timed Script	
Flat field (observation mode-1)	25-May-11 17:00 UT	2701	Timed Script	
Flat field (calibration mode)	25-May-11 17:08 UT	2702	Timed Script	
Reduced focus sweep	25-May-11 17:16 UT	2704	Timed Script	
Detune	25-May-11 17:29 UT	2703	Timed Script	

Loads

None

Thermal Adjustments

1. Front Window Heater Adjustments

25-May-2011 at 18:16:14 UTC

The duty cycles for heater zones 1-3 (front temperatures) were lowered, in order to decrease the front zone temperatures and raise the best focus setting, which has been dropping over the past several months. The new settings are:

Heater Zone	Deadband Duty Cycle	Duration	Real Duty Cycle
1	22	33	21.21
2	4	28	3.52
3	19	11	18.18

The adjustments resulted in a temperature change of about -0.4 degrees C, and a focus change of about + 0.17 steps, which is what was hoped for. On May 26, 2011 at 22:00 UT, a focus sweep was performed and the deadbands were adjusted to match the new nominal temperatures. New deadband values are:

Heater Zone	Low Deadband	Target	High deadband
1	27.0	29.0	31.0
2	27.0	29.0	31.0
3	24.5	26.5	28.5

S/C Calibrations/Maneuvers

1. AIA GT/PZT Calibration

26-May-2011

The spacecraft performed an AIA GT/PZT Calibration from 15:00 to 16:42 UT. HMI performed nominally.

Additional Operations

2. PZT Leg Adjustment

23-May-2011 @ 18:20 UT

The PZT legs were adjusted to bring the voltages within safe ranges. The operation was performed via STOL and HMI performed nominally.

Instrument Anomalies

None

Limit violations

None

Clock Adjustments

Date/Time (UT)	HMI WRT ground (ms)	Adjustment
05/26/11 @ 22:05	+12	HMI from 0x80026f to 0x800270

Long term Trends

1. Corrupt Image FSN 469769216 (0x1C001C000)

Occurrences this week: None

Occurrences to date: 33

2. Corrupt Image FSN 9175180 (0x008C008C)

Occurrences this week: None

Occurrences to date: 2

Other

1. ISS Jitter

23-May-2011

The extra noise that has been showing up in the PZT voltages over the past few weeks stopped very abruptly at 21:00 UT. The FOT is investigating the cause of this noise.

2. SDP Workstation Reboots

25-May-2011 19:00 UT

The SDP workstations (AIASDP-MON and HMISDP-MON) were rebooted in accordance with the JSOC maintenance schedule. The other JSOC workstations were rebooted the previous week.

3. RWA 1 Zero crossing

27-May-2011

A zero-crossing of RWA 1 created noise in the AIA ISS y error and the HMI PZT voltages from about 03:00 – 06:00 UT.