SECCHI Status

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STEREO SWG
2-5 May 2005
Hamburg Planetarium
Delivery of the SCIP and SEB to APL are scheduled for this Friday!
SECCHI STATUS – SCIP FM-A

• All post-environmental test calibrations showed no significant changes from pre-environmental test conditions.
• The performance of all the telescopes is excellent, in that they meet or exceed requirements
  – Repaired the camera electronics boxes which had a problem with the FPGA design at cold temperatures. Used that occasion to replace with the new FPGA foundry and to correct the frequency problem giving the interference with SWAVES
  – CCD failure on the EUVI caused by improper GSE/harness used to take the place of the FM CEB which had been removed for repair. Calibrated the spare devices and replaced the CCD. Failure analysis by E2V indicates that there was an overvoltage condition, rather than an ESD event.
• Documentation is behind, but expect to catch up by PSR
SECCHI STATUS FM-A (2)

**SEB**
- Swapped the SEB-FMB with the SEB-FMA due to problems on FMA.
- We will deliver FMB (which had gone through TV/TB with the SCIP-FMA) with the SCIP-FMA.

**Software**
- Current software on FMA is fully flight functional, but not fully tested.
- Final testing will occur during TV of SCIP-FMB.
- Will require upload of 4.5 FM to A.
- Also may have additional software mods based on testing at observatory level.

**Hi**
- The HI assembly is completing its final preparations at the University of Birmingham prior to delivery to the Centre Spatiale de Liege for environmental testing and calibration. UBham did an excellent job in the repair of the 4 CEBs and 18 FPGA replacements, but this caused a delay on HI.
- PER scheduled for May 12 and expect delivery to APL June 20.
Missing Codes Problem

On the left is shown a histogram from the CEB before repair. It is shows the missing codes problem as the spikes of decreased occurrence of a particular data value. The plot is similar for the other two boards for both FM-A and FM-B of the SCIP-CEB. The bottom three plots show histograms for the EUVI, COR1 and COR2 for the repaired FM-A CEB. The problem has been fixed, and only one missing code remains at half full scale, rather than every 32 DN.
This is a 17.1 nm image through the complete flight EUVI telescope, the flight electronics system, and a cooled CCD. Initial analysis shows the system performed as expected.

This was before the CCD was replaced, but the new image looks the same.
Comparison of COR1 Straylight

July 2004

April 2005

0 0.5 1.0

$10^{-6}$ B/Bsun
COR2 Stray Light Image

- Stray Light Level = $2 \times 10^{-11} \, \text{B/B}_0$
- See reflections caused by two mirrors to reflect sunlight back out
- Circular baffles in the vacuum tank
- Horizontal louvers at the end of the tank
- A pattern of 3 very low reflective strips at the end
- Fringe around the occulter is very low
- No arcs or ghosts
Pictures: SCIP-A Activities (cont)

SCIP-A Chamber setup

SEB-B Installation

Chamber Sealed
Pictures: SCIP-A Activities

SCIP-A in Shipping Container for Move to A13

SCIP-A Coming out of Box in A13

SCIP-A on A13 Chamber Bench
Pictures: HI-A
SECCHI-B Status

• SCIP-FMB Completely Assembled. Vibration and conductive EMI testing performed
• TVAC facility has been renovated and the chamber is not ready
• SCIP-B (and SEB) have been moved into the calibration facility to perform final calibrations
  – Will be prior to TVAC, but only risk is a contamination event which would require a major refurb anyway.
• TVAC will include SCIP-FMB, SEB-FMA and HI-CEB-FMB, each controlled separately. Will perform
• Expect to be delivering SCIP and SEB at beginning of June and HI in July
• SEB-FMA had problem with occasional “long boots”. Thought to be in Start up ROM, which had been reworked to minimize code that was single string. Finally replaced RAD-750 CPU Card with flight spare and now seems OK. Will go through an analysis of former card to see why the failure was occurring.

• Not carrying any major technical issues, other than determination of the problem on the SEB
Pictures: SCIP-B

SCIP-B Vibration – Y Axis

EUVI-B Post Vibration
Focus Test
Pictures: SCIP-B (cont)
Pictures: SEB and CEB-A

SEB-A Vibration Test

SEB-A TVAC Test

CEB-A TVAC Test
Pictures: HI-B FPAs

HI2-B FPA Post Bake Functional Test

HI1-B FPA
Pictures: HI-B

HI-B Baffles

HI-B in Assembly Jig
Pictures: B Units

COR2-B Alignment Test Set-Up

Stim Telescope Set-Up

EUVI-B Flt Door Installation and Test
HI-A Composite Inner Structure, Base Panel, and Door Panel. Inner Structure is Built up Inside an Aluminum Frame

HI-A Composite Internal Baffles
SCIP-B Mechanical Integration

B Flight Harness Fit Check (Prior to shielding)

Telescope Mechanical Integration Onto B Bench