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Subject: IMPACT Monthly Technical Progress Report, Contract NAS5-00133

Lil:

Enclosed is the monthly technical progress report for the STEREO IMPACT project for the month of June 2004.

Sincerely,

David Curtis
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CC:

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IMPACT Team

1. IMPACT Overview

This report is presented in sections by institution. Section 1 is an IMPACT Project Manager / System Engineer's overview.

1.1. *Contracting / Funding*

A formal proposal responding to SOW changes in launch and Phase E dates has been submitted informally and is going through channels at the University. Subcontracting plan iin work. Funding through August has been received and subcontracts are being augmented.

1.1.1. Liens

This is a list of Liens. Liens for activities at other institutions are sometimes repeated in their subsections of this report. These liens are estimated additional costs that might be incurred if problems happen. Only problems with a significant likelihood of occurrence are tracked. These liens are usually associated with risks in the risk list (see section 1.5), and you can see the predicted likelihood of occurrence there. Some of these liens have been requested to be encumbered by Project, marked (*). Items included in the POP04 budget recently submitted are marked in yellow.

UCB:

No.	Cause	Amount	Date
1*	LVPS schedule delays extend manpower (Risk UCB29). Cost a 1-month delay at full LVPS team spending rate.	$35,000+	01/04
2	Late failure in thermal vac requires rework/retest (Risk UCB27, etc).	$30,000	08/04
3	Testing failure requires rebuild/retest a board (using existing spare parts)	$20,000	~08/04
4	EMC rework and retest required (Risk UCB11). Assume rework can be done in a week or two. Does not include cost of retest of vibration & thermal vac.	$30,000	09/04
5	Schedule delays cause the consumption of boom suite schedule contingency (various risks). Cost 35 days of contingency at UCB I&T team rate.	$50,000+	07/04
~~6~~	~~STE calibrations sources.~~	~~$2,500~~	~~11/04~~
7	SEP Thermostats. These were over the budgeted amount. Budget was $10K at Caltech. Parts were actually $21,200, paid by UCB. New budget takes this into account.	$11,200	11/03
8	Subcontract J&T for board assembly work to maintain schedule	$50,000	1/04
9	Calibration and thermal vac chambers at UCB use oil roughing pumps. Replace those pumps with dry scroll pumps to reduce risk of contamination	$14,000	3/04
10	Increase travel to cover staffing requirements at APL during I&T	$40,000	10/04-1/06
11	Launch delay costs (launch 2/06)	$226,000	12/05
12	Redesign & rework costs should Actels need to be replaced due to reliability problems. Depends strongly on what kind of replacement is selected.	$500,000	?

Caltech:

No.	Cause	Amount	Date
1	Budget does not contain funding for investigations of part failures or contamination failures, re-makes of boards if coupons fail, etc. Some of this has already occurred, as more rework has been required in the hybrid development area than we budgeted for. Some die have failed test, some units have failed PIND testing, and in a couple of cases leaks have occurred after lead bending, which was caused by a problem with the tooling that has been corrected. In addition, QA costs have been a far bigger percentage of the overall cost than anticipated. Currently the yield of hybrids has improved with 16 of 20 passing electrical test in the last batch. (Amount = ~$50,000 (guess); Probability = 100%; time frame = March 2004).	$50,000	03/04
2	Unfunded schedule reserve: ~$25,000. This is becoming a reality, as our latest schedules show delivery in September 2004 (as required), whereas we had budgeted for delivery in July 2004. (Amount = $25,000; Probability = 100%; time frame = August 2004).	$25,000	8/04
3	Possible under-budgeting of environmental testing and bake out. $100K has been allocated. However, recent estimates suggest that the thermal balance/thermal vacuum test may require about 3 weeks. Recent cost estimates at JPL suggest that that might take the entire $100K. We are investigating other places for the environmental test program where the costs may be less. (Amount = ~$50,000 (guess); Probability = 50%; time frame = July 2004).	$50,000	7/04
4*	GSE Software support (extend a few months after January 2004)	$60,000	1/04
5*	Engineering Assistant (Risk UCB033)	$24,000	1/04
6*	Engineering support to maintain schedule (Risk UCB033)	$63,000	1/04
7*	Technician Support to maintain schedule (Risk UCB033)	$38,000	1/04
8	Overlooked hybrid costs: it was not realized that the cost estimate we were given for the hybrids did not include the qualification costs of 10 units. We have asked for a quote from JPL. (Amount = ~$10,000 (guess); Probability = 100%; time frame = March 2004).	$10,000	3/04
9	Unbudgeted tests: there are a number of tests outlined in the STEREO/IMPACT Requirements Verification Matrix that we are listed as responsible for but for which we did not budget. (Some I wasn't aware of and some I mistakenly thought would be done at UCB as part of EMC testing.) Test plans and procedures will need to be written and existing instrumentation either calibrated or new instrumentation	$25,000	7/04

	obtained. These include requirements 4.10, 4.12, 4.23, 4.27, 4.28, and 4.42. If we have to get JPL to help us, the cost could be significant. (Amount = ~$25,000 (guess); Probability = 50% (UCB might help us); time frame = July 2004).		
10	Launch delay costs to Feb 06	$67,757	12/05
11	Continued detector testing at Caltech in the event that delivery is delayed from October 04 to January 05	$118,089	10/04

UMd:

No.	Cause	Amount	Date
1	SIT foils fail acoustic test	$20,000	2/04
2	SIT Vibration (currently planned to be combined with HET instruments, but may not work out)	$15,000	2/04
3	Parts screening (some parts not yet Oked by PCB and may need addition screening)	$10,000	9/03
4	Particle Calibration at BNL. This is desired but not required.	$20,000	11/03
5*	Engineering Support to maintain schedule (Risk UCB033)	$60,000	1/04
6	Replacement SSD detectors (only 2 of 5 detectors passed)	$10,000	5/04

GSFC (Tycho):

No.	Cause	Amount	Date
1	Revise SEP Central/LET/HET vibration analysis if required	$5,000	11/03
2*	Extra Solid-state Detector Lab manpower support to accommodate late detector delivery (Risk UCB033)	$20,000	12/03
3	Travel for accelerator end-to-end test, 100%	$5,000	6/04
4	Tom Nolan flight software support (Risk UCB033)	$15,000	5/04
5*	Engineering support to maintain schedule (Risk UCB033)	$40,000	1/04
6	Tycho's thermal vac chamber is planned for SIT and SEPT tests. If that fails we will have to rent a chamber. Probability low-moderate.	$25,000	8/04
7	Late HET Detector delivery resulting in additional acceptance tests for one instrument	$40,000	7/04
8	LET foils fail acoustic testing (unlikely since ETU tests passed)	$10,000	5/04
9	HET Actel additional testing	$20,000	6/04
~~10~~	~~SEPT re-test if Kiel cannot pay for it~~	~~$30,000~~	~~5/04~~

1.2. *Significant System-Level Accomplishments*

- Participated in Project EMC & Contamination Control committee meetings and bitrate handling telecom with spacecraft
- Participated in various MRB/FRB/PCB meetings
- Visited TiNi with Project team to discuss recent problems with TiNi actuators

1.3. *System Design Updates*

- None

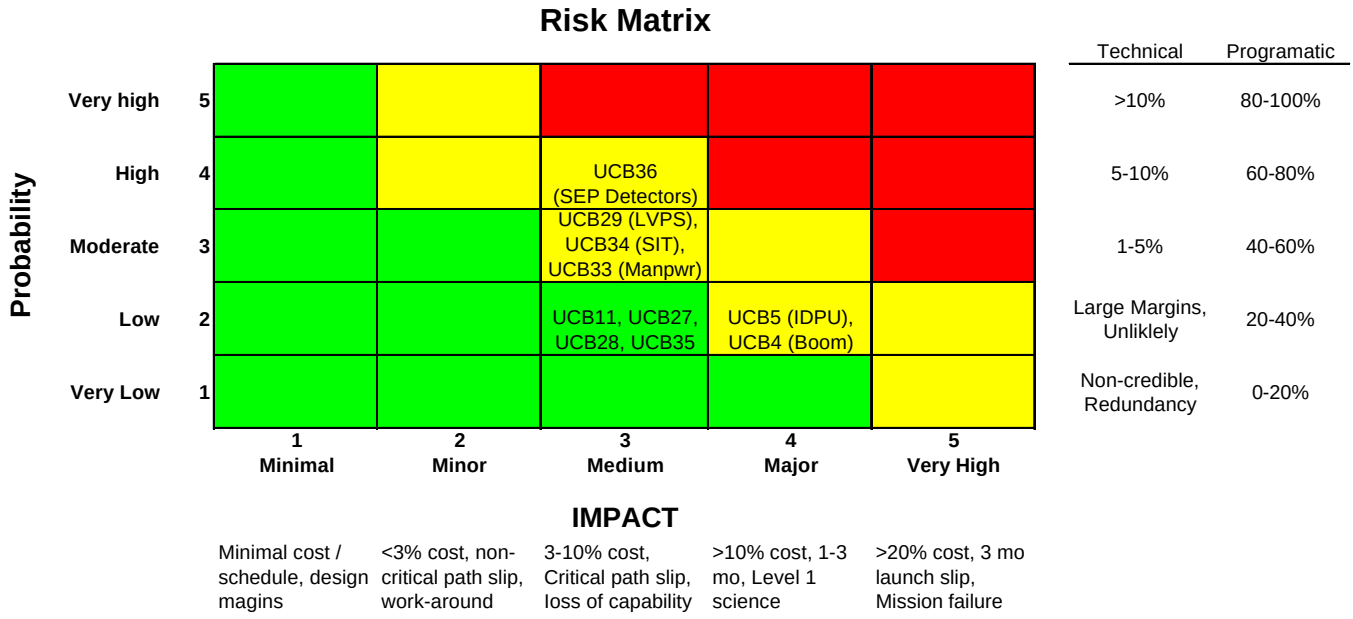
1.4. *System Outstanding Issues*

- Schedule issues due to recent problems in the power converters and LET detectors

1.5. *Top 10 Risks*

Top 10 risks are attached. No changes to the list.

IMPACT Top Ten Risks 2/2004



No.	Risk Item	Score	Mitigation	Mitigation Schedule			
				Sub-system Test	System Test	Env test	Early Orbit Test
UCB_5	IMPACT boom is a new design. Failure could affect Imager pointing requirements as well as boom-mounted instruments.	MEDIUM	Design for reliability. Early prototype testing. Qual model testing completed. Adequate force margins demonstrated.	MEDIUM	MEDIUM	MEDIUM	LOW
UCB_4	The IDPU is a single point failure mechanisim for the IMPACT suite and PLASTIC	MEDIUM	IDPU is a simple, reliable system. Extra attention has been paid to ensuring its reliability, minimizing the risk of fault propagation. Extensive EM & FM testing	MEDIUM	MEDIUM	MEDIUM	MEDIUM
UCB_36	HET, LET, and SIT detector fallout during life test. Not enough HET detectors for the flight build, and few or no spares for SIT and LET. New detectors being obtained, but a there is a schedule risk	MEDIUM	Pree for early delivery of replacement detectors. Proceed with poor detectors and replace them with new ones later in the schedule	MEDIUM	MEDIUM	MEDIUM	LOW
UCB_34	SIT Schedule slippage, on critical path	MEDIUM	Add manpower to recover schedule	MEDIUM	LOW	LOW	LOW
UCB_29	LVPS behind schedule, on critical path; further slipping could delay delivery to spacecraft	MEDIUM	Add manpower to LVPS task to avoid further slippage	MEDIUM	LOW	LOW	LOW
UCB_33	Instrument fabrication & test schedule limited by available personnel	MEDIUM	Subcontract assembly work, authorize over-time, bring on new people	LOW	LOW	LOW	LOW
UCB_35	New undiagnosed Actel part failures may impact flight hardware	LOW	Keep abrest of Actel's analysis results; Make changes to minimize ground bounce which may be related to failures according	LOW	LOW	LOW	LOW
UCB_11	Stringent EMI requirements may delay schedule if testing fails	LOW	Careful design, ETU power converter testing, early system testing	LOW	LOW	LOW	LOW
UCB_27	Actel timing differences between flight & ETU parts may cause failures late in testing impacting delivery schedule	LOW	Do FM Thermal Vac early to allow time for finding and fixing timing problems; for designs on the critical path, consider installing a flight Actel in the ETU &	LOW	LOW	LOW	LOW
UCB_28	Thermal limitations of detectors result in a low bakeout temperature which might require a very long bakeout	LOW	Bakeout subsystems prior to detector integration to reduce time of instrument-level bakeout; early bakeout	LOW	LOW	LOW	LOW

2. Berkeley Status

2.1. *Summary of Status*

Schedule status through May has been provided separately.

2.2. *Major Accomplishments*

SWEA/STE:

- All SWEA/STE boards complete and tested.
- All STE Detector boards tested.
- STE-U FM1 assembled, in test
    - Thermal Balance test complete
    - Thermal Vac #1 door failure (PFR1008) resolved and reworked; Tvac#2 complete
    - Mounted to boom during FM1 boom vibration
        - Door failed post-vib CPT; PFR1011
- STE-U FM2 assembly complete, in bench test

IDPU:

- FM1 and FM2 IDPU complete except for LVPS. FM1 assembled using ETU LVPS and is being used to support STE-U, Boom/MAG FM1 thermal vac

LVPS/HVPS:

- SIT HVPS FM2 in assembly (bottom of priority queue).
- SWEA/STE-D FM1 LVPS in test.
    - Problems resolved, testing near completion.
- PLASTIC FM1 LVPS delivered
- PLASTIC FM2 in test
- SEP FM1 delivered (less conformal coat)
- SEP FM2 delivered (less conformal coat)
    - Intermittent noise problem
- IDPU LVPS FM1 testing nearly complete.
- Resolution of LTC1877 problem (PFR 1007) involves replacement of all LTC1877s with a new batch; affects all power converters. New batch expected to complete screening mid August.

Boom:

- FM1 unit complete, deployment test complete, MAG and STE-U integrated, vibration test complete, thermal vac test started.
    - Alignment pins shook loose; non-structural; glued in place.
- FM2 unit ready to replace potentially deformed parts

GSE:

- All GSE delivered. Some added features in progress.

2.3. *Design Updates*

- None.

2.4. *Outstanding Problems*

2.5. *New Problems*

- A number of issues with the power converters have been discovered and dealt with.

2.6. *Top Risks.*

- LVPS schedule tight
- Open Actel problems

2.7. *Problem/Failure Quick Look*

ID #	Description	Assignee	Opened	Closed
1001	Qual boom deployment failure in Thermal Vac	McCauley	2003-08-15	2004-01-07
1002	STE-U Assembly problems (broken bond wire)	Curtis	2004-04-12	2004-06-25
1004	SEP LVPS Middle FM1 Problem	Heavner	2004-04-23	2004-06-08
1005	SEP LVPS Top FM1 Problem	Heavner	2004-04-27	2004-06-08
1006	STE-U FM1 Mis-wire (thermal vac feed-through)	Curtis	2004-04-30	2004-06-25
1007	SWEA LVPS FM1 LTC1877 Failure	Curtis	2004-05-10	
1008	STE-U FM1 Door failure (cold)	Curtis	2004-05-10	2004-06-25
1009	STE-U FM1 preamp oscillations	Curtis	2004-06-14	2004-06-25
1011	STE-U FM1 Door failure (post-vib)	Curtis	2004-06-28	

3. GSFC (SEP) Status

STEREO Progress Report for June, 2004 (GSFC: Tycho von Rosenvinge, Larry Ryan, Sandy Shuman, Kristin Wortman, and John Hawk)

During the past month, our efforts have been focused on three areas: (1) testing of detectors for the HET telescopes, (2) completing the design and fabrication of all the LET, HET, and SEP Central mechanical parts in time for the scheduled accelerator tests at Michigan State University (MSU), and (3) completion of flight software. Although we had not found enough flight quality detectors for two HETS at the time of the MSU accelerator tests, we did populate both telescopes and took both to MSU. In order to meet the accelerator schedule some shortcuts were taken: e.g., the LET mounting bracket was not light-weighted to the flight weight; the HET telescopes also need some material removed from them. By so doing, we were able to have flight model HET, LET, and SEP Central electronics and detectors assembled for both Flight Model 1 (FM1) and Flight Model 2 (FM2) for end-to-end testing at MSU. The mechanical parts needing light-weighting will be completed during the coming month while the flight boards are being conformal coated. Preliminary beam at MSU was obtained July 7, with the main beam time on July 9, 10, and 11. Very preliminary results of these tests will be summarized here for HET. The first beam exposure was on HET FM2. One immediate problem was that the leakage current on the H2 detector grew rapidly as soon as the beam started, causing the H2 detector to become under-depleted. This did not occur for any other detector in FM1 or FM2.

One of the important findings at MSU was that there is cross-talk between H1i and H1o. This was never seen using pulsers. In the case of the on-board Stim pulsers, they inject signal at the preamp input, after a CRC network between the detector and the preamp input. This means that, even with the H1 detector in place, the Stim pulser does not create cross-talk events even at its maximum output signal. Pulser tests which injected the signal before the CRC network did not have the H1 detector in place. Detector simulating capacitors were used but there was no simulation of the small capacitance between H1i and H1o. So unfortunately the cross-talk did not become apparent until we were at MSU with a Ni beam which created very large signals in the H1 detector.

A very important question now is how to handle the cross-talk events. Currently the on-board event queueing routine does limited unpacking of the incoming events but the consensus seems to be that we should fix the cross-talk events there because there will then not need to be any changes made to the subsequent on-board code.

The algorithm for setting the leakage current DACs for every detector channel worked well at MSU.

Lifetest #5 has been begun with all the remaining untested HET detectors.

Next Month

The focus during this next month will be on completing Lifetest #5, completion of the SIT mechanical design, and on analyzing the data taken at MSU.

4. Kiel/ESTEC (SEPT) Status

June 2004

4.1. *Summary of Status*

a) Rework activities on all four failure cases mentioned in May report are continuing.
b) New schedule worked out with Tabitha Merchant. FM1 SEPT will be ready in time for FM1 EMC without thermal hardware. Waiver needed.

4.2. *Major Accomplishments*

a) All four SEPT sensors disassembled. Problems with staked screws were overcome. 9 out of 14 detector stacks are reworked at Canberra (new wire bonding, new stand-offs, new DURAL housing, same detectors, same cabling). Remaining 5 stacks must await delivery of new cables in August. Cable manufacturer AXON was unable to speed up delivery.
b) All aluminium parts in door mechanism are reworked and cleaned. All titanium parts are anodised per AMS2488D Type II with Teflon impregnation at FlightFab, Beltsville, MD. Covers received additional Ge Kapton film at GSFC. All parts are returned to Kiel, waiting for detectors to arrive (expected July 19) to re-assemble sensors.
c) 10 pin-pullers were inspected at TiNi. According to Michael Bokaie/TiNi a few of the SEPT pin-pullers were “questionable”. It is unclear whether this means fabrication of new pin-pullers. The pin-pullers are not yet returned to Kiel. We expect also new crimped wires because of a crimp tool incident at TiNi with the original delivery. Need at least 8 pin-pullers and wire sets by beginning of August in order to avoid delay in the SEPT schedule. Rework of backshells (new epoxy inserts) for actuator connector J3 completed.
d) Analogue and digital electronics for flight spare fabricated, tested and assembled in FM2 SEPT-NS electronics box, where it replaces the electronics damaged in the Kiel incident. Repair of damaged boards on hold, waiting for new ACTEL FPGA. Burning expected in August 2004 at company Astrium in conjunction with other burning activities. When completed this electronics will be assembled and serve as flight spare.
e) Decision reached with funding agency DLR to resolve or at least mitigate funding problems. 90 % of extra money needed to cover costs for repetition of environmental tests will eventually be granted. This will alleviate the GSFC list of liens (item 10).

4.3. *Design Updates*

4.4. *Outstanding Problems*

1. IMPACT PR 7001, 7002, 7003, FM2 SEPT-NS accident

4.5. *New Problems*

1. Potential need for waiver: do FM1 EMC without thermal hardware
2. Potential risk for schedule delay if pin-pullers are not returned in time

4.6. *Top Risks*

4.7. *Problem/Failure Quick Look*

ID #	Description	Assignee	Opened	Closed
7001	SEPT-DoorOpening	Mueller-Mellin	2004-02-20	
7002	SEPT-Detector	Mueller-Mellin	2004-03-05	
7003	SEPT-Pinpuller	Mueller-Mellin	2004-03-10	
	FM2 SEPT-NS accident	Mueller-Mellin		

5. Caltech/JPL (SEP) Status

5.1. *Summary of Status*

Activities centered on preparing for the end-to-end test of LET, HET, and SEP Central at the MSU accelerator scheduled for early July.

Major Accomplishments:

- Assembled LET FM 1 and FM 2 with flight detectors for the first time.

Critical Milestones status (from Critical/Key Milestone chart of 3/31/04):

- Milestone 12: SEP Suite – FM 1 I&T Complete was not completed.

Detectors:

- Micron Semiconductor continued delivering 1-mm-thick detectors as replacements for devices that failed thermal-vacuum testing because of excessive leakage current growth. In June, one L3 detector, six H1 detectors, and three H3 detectors were received. In addition, Micron returned three repaired H3 detectors that had been sent back for re-wirebonding. The H1 and H3 detectors were visually inspected and then sent to GSFC for testing.
- Detector selections were made for the two LET flight instruments and assembled into the telescopes.
- Upon test of the LET flight units, it was discovered that 6 of the 20 L1 detectors in the two units had some open circuits between the detectors and their preamps. The problem was traced to broken traces in the flexi-strips of the detector mounts. A Problem-Failure Report was initiated (IMPACT PFR 2002) and the problem is being addressed. Two of the faulty devices were pulled from FM 2 and EM detectors were put in their place. So FM 2 is fully populated with detectors for the accelerator run. FM 1 has 4 faulty devices and they were left in place and their analysis chains will be turned off for the accelerator run. It will be possible to collect enough data with the two configurations to satisfy the objectives of the end-to-end test.
- The test hardware needed to run the HET/LET/SEP-Central end-to-end test at the Michigan State University National Superconducting Cyclotron Laboratory (MSU/NSCL) was completed and shipped to MSU. The test run is scheduled for July 9-11, with the possibility of some test beam a day or two earlier.

Electronics:

- Prepared for end-to-end test at MSU.
- Tested LVPS FM 1 & FM 2. Some problems were uncovered and the units were returned to Berkeley. The units were refurbished and sent back to Caltech and integrated into the two flight units. FM 1 seems to be OK but there are still some issues with FM 2. It will need to be returned to Berkeley for re-work after the accelerator run. It is stable enough to be used for the run.
- Selection of the thermal balance/thermal vac chamber at JPL got underway.

Software (Davis):

- Worked on preparing software for MSU accelerator run.

GSE:

- Worked on preparing software for MSU accelerator run.

5.2. *Design Updates*

- No resource updates this month.

5.3. *Outstanding Problems*

- Actel and Rich Katz at GSFC are investigating the problems with the flight Actels. A new programming algorithm has been developed at Actel and it will be used on the LET flight Actels.
- Higher than expected thermal vacuum run failures of the L3 detectors and HET detectors is requiring Micron to provide a few additional flight devices. This may require retrofitting of HET sometime in the summer.
- Preliminary analysis suggests that the nominal fairing release time will cause excessive heating to the L1 detectors (to 65C) based on the heating levels specified, which may have considerable margin (factor 3) over what might actually be experienced. The lower heating level would only heat the detectors to 45C. In the meantime, partly for other reasons, an additional window is being added to LET and perhaps that will mitigate the problem. More calculations are underway.

5.4. *New Problems*

- Some L1 detector mount traces were discovered broken after assembly into FM 1 and FM 2. See IMPACT_PFR_2002.

5.5. *Top Risks.*

- Actel parts may not be reliable. This would affect many NASA projects.
- 1-mm detectors may have a serious leakage current growth problem. However, enough good LET detectors have been identified to populate both flight instruments. HET detectors may be more of a concern, perhaps requiring swapping out detectors later than desired.
- Faulty L1 detector devices are not replaceable in the near-term, so a repair procedure needs to be defined and executed.
- Higher than expected free molecular heating might require a re-design of the LET sensor head.
- The budget is very tight with no reserve being held at Caltech.

5.6. *Problem/Failure Quick Look*

- None.

5.7. *Lien List*

- At the time of this writing (7/12/04) a new budget had been submitted. It features delivery of both flight units to APL in October 2004, an additional year of Phase E, an additional 3 months of Phase C/D, and covers all liens listed in this section in previous reports. We have been asked to list in this section the amount of money required to keep testing the flight units in case it is decided that we deliver in January 2005 instead of October 2004. According to the new budget, this amount is $118,089. The

budget was prepared a few months ago and the current schedule is calling for delivery in November, rather than October, so some of this lien will likely be needed. Solving the L1 detector mount problems will require additional monies and may cause a delay in the EMC test, currently scheduled for mid-September.

6. SIT MONTHLY TECHNICAL PROGRESS REPORT

6.1. *SUMMARY of STATUS*

a. SIT TELESCOPE – Prototype at UMd for ETU/FM testing. Flight SSDs are still under test at GSFC. Spare SSDs have been ordered.
b. SIT TOF System – FM1 is at UMd and is being tested as part of the integrated FM1 electronics. FM2 has been delivered to UMd and awaits testing. The old FM, which we are using as ETU, is at UMd and is available for ETU testing.
c. SIT Energy System – FM1 and FM2 have been trimmed and tested. FM1 is installed in and is participating in the testing of the integrated FM1 electronics. ETU is at UMd available for ETU testing.
d. SIT Logic System – FM1 has been functional tested and is undergoing further test as part of the integrated SIT electronics. FM2 is at GSFC awaiting its Actel. The ETU board is at UMd.
e. Motherboard – FM1 and FM2 MBs are at UMd and have been functionally tested. FM1 is integrated with the other FM1 electronics. FM2 needs to return to GSFC for touchup.
f. SIT HVPS - Flight HVPS FM1 is undergoing test at UMd.
g. Flight Software – Version 02/26/04 is installed in the ETU under test at UMd.

6.1.1. Schedule Changes

The current SIT schedule is available from the project scheduler.

6.2. *MAJOR ACCOMPLISHMENTS*

6.2.1. This Month

Energy Boards - SN1 thermal testing was completed and the unit was integrated with the other SIT FM1 electronics

Logic Board – FM1 fabrication was completed at GSFC and the unit was thermal tested for over 100 hours. Functional testing was also completed. A problem with the test setup was discovered and fixed. It was decided to proceed with FM2.

TOF Boards – FM1 boards were integrated with the other SIT electronics in the electronics housing.

Mother Board: Both flight Mother Boards were fabricated and delivered to UMd where they were functionally tested. FM2 needs to return to GSFC for touchup.

Electronics Housing and Integrated Electronics – Sandy mounted the complete FM1 electronics in the SIT Electronics housing and returned the assembly to UMd. Testing on the unit has proceeded. We have discovered the need for a shield between the Energy front end and the Logic board. A temporary shield board was installed to allow continued testing. Bench calibrations were performed.

6.2.2. Next Month

Next month we will integrate the electronics with the prototype telescope, and if it is ready, with the flight telescope.

6.3. *DESIGN UPDATES*

6.3.1. Resources

	Last Month	This Month	Change
Mass (kg) *	1.46	1.46	0
Power (W)	1.56	1.56	0.0
Telemetry (bps)	418	418	0

* Includes 200g book-kept by GSFC for SIT structure

6.4. *OUTSTANDING PROBLEMS*

Excess current in as many as three of our SSDs.

6.5. *NEW PROBLEMS*

6.6. *NEW RISKS*

6.7. *PROBLEM/FAILURE QUICK LOOK*

Starts at first turn-on of flight hardware.

ID #	Description	Assignee	Opened	Closed
SIT1	Apparent failure of PH300 chip U4 of FM1 energy board	PHW	4/29/04	

7. CESR (SWEA) Status

Both flight units delivered to UCB, no open issues. Integration with UCB electronics covered in UCB section.

8. GSFC (MAG) Status

FM1 and FM2 complete and delivered to UCB for integration with the IDPU and Boom. See the UCB section for status of that activity.

9. EPO at UCB

Monthly E/PO Report June, 2004

Formal Education:

Lonnie Villalobos, a middle school science teacher is contracted for partnering with the E/PO team to add educator interest components for the Magnetism lesson. He worked to include the magnetism lesson in the SEGway teacher resources site. And he also added Student Objectives to each of the three sessions in the Magnetism Guides.
http://cse.ssl.berkeley.edu/impact/magnetism/flash/mag_flash.html

Informal Education:

On Thursday, June 3rd, Dr. Peticolas presented the STEREO incandescence project to the American Astronomical Society in a poster called: "Informal Education: Space Weather Music Using Sonification of Solar Wind Data" with co-authors: L. M. Peticolas, R. M. Manzanares, N. Craig, J. G. Luhmann, B. Jacobs, E. Campion, S. Bale, and B. J. Méndez.

On June 9, Dr's Peticolas, Craig, Luhmann, Bale, and Salem met with David Bithell, Roberto Morales, and Andy Schmeder, to discuss the STEREO incandescence project. The software applications for listening to Helios SEP data and the project's web page were shown. Future goals for the project were set.

On June 25th, L. Peticolas, N. Craig, and I. Sicar met with D. Bithell and R. Morales to suggest further changes in the STEREO incandescence project.

Public Outreach:

N. Craig worked with Indraneel Sicar to improve the STEREO incandescence project's web page, which will be launched in the next couple months.

Cross Cutting:

On June 17th, L. Peticolas and N. Craig joined in the STEREO E/PO teleconference phone call to share their current IMPACT activities and learn about other STEREO E/PO activities.

Respectfully Submitted,
IMPACT E/PO scientists Nahide Craig, Laura Peticolas