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| Investigation: FIELDS |
| Progress accomplished this period: | June 2014 Reporting Period |
| 1. | Project Management and Product Assurance |
|  | a. | Project Management* Supported the following PERs and associated TRRs
	+ SDP SN2 (flight spare)
* Supported the following FRBs
	+ SDP SN7 boom wire retraction stoppage
	+ SDP SN3 fine wire crimp
* Supported the following Acceptance Reviews or PSRs
	+ EDI GDU SNs 2&6 Acceptance Review (1 Jul)
* Received delivery of the following flight hardware items at UNH
	+ SDP SNs 3, 4 and 12 for retest (from GSFC)
	+ EDI GDU SN2 for additional characterization testing (from GSFC)
* Delivery of the following flight hardware items from UNH to FIELDS partners
	+ None
* Prioritized and coordinated the efforts of the UNH team, subcontractors, foreign partners, outside vendors and in-house workshops to optimize schedule performance.
* Supported processing of NCRs and risks
 |
|  | b. | Product Assurance |
|  |  | Turco / Salwen* SDP refurbishment support
* EIDP uploading
* Workmanship standard recertification
* EDI HVOC life testing support and FM4 DFL1, 2 testing support.
* SDP7 and 8 long-term storage testing support.
* SDP 7 FRB support.
* EDI FM9 TVAC support.
* SDP 3, 4 long-term storage testing support and support for Probe thin wire crimp verification activity.
 |
| 2. | Systems Engineering and FIELDS I&T |
|  |  | Rau, Dors, Needell* Released new version of CDPU SRS
* Supported SDP SN07 anomaly investigation
* Performed GDU SN02 and SN06 Acceptance Test
* Continued development of SDP door deployment procedure
* Released EMI/EMC test report on SDP SN02 (flight spare)
* Continued supporting commissioning planning discussions with SOC
* Submitted verification material for ADP close out and EDI GDU SN06
 |
| 3. | Post-Delivery Support (UNH) |
|  |  | IS and Observatory Support (FIELDS)* Supported SDP SN03/04/12 removal, inspection and transport to UNH
* Transported GDU SN02 to UNH for testing as future flight unit
* Supported OBS-3 ADP canister thermistor anomaly investigation
* Performed OBS4 magnetometer boom inspection
* Prepared for and started OBS-3 TV test support
* Performed OBS3 post ship to NRL Functional Test including SDP motor/Hop
* Performed OBS3 Pre-TV Aliveness Test including ADP OBS Simulator Test
* Supported EDI GDU Maheu hat install on OBS3
* Submitted OBS-4 ADP RE Deployment WOA and updated procedure
* Performed OBS-4 ADP RE deployments and +Z RE closeout for flight
* Supported OBS-4 AFG/DFG 2nd/3rd motion magnetometer functionals
* Supported OBS-1 and OBS-2 operating hours accumulation
* Continued I&T planning for FIELDS at the OBS level
* Supported and reviewed OBS WOA, procedure development and PFR review
* Continued reviewing all test data from previous OBS tests
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| 4. | Science and Science Data Processing  |
|  |  | SWT and SWG * Participation in all science planning discussions.
* Continued preparation of the FIELDS instrumentation paper

Science data processing activities (Compiled by Chutter)* ALL
	+ Continued working through coordinate system requirements
	+ Continued working on software to run at SDC
	+ Began discussions on how to use MMS-style CDFs (from Cluster data) to test processes, etc.
* UNH
	+ Successfully tested “real time” plotting during OBS4 mag boom deploy – detected motion of boom
	+ Continued work on EDI E Field interfaces
	+ Continued review of science and engineering telemetry from observatory level testing
	+ Improved some of the CDF skeleton files
* LPP
	+ New warning/error values have been added for return status.
	+ Better time computation: TT2000 offset and leap seconds included in tplot time computation.
	+ Bessel filter and digital filter responses added and under test.
* UCLA
	+ Work continues on magnetic field data processing
	+ Developing inflight calibration procedures
	+ Work continues on inflight calibration and procedures
* GSFC
	+ Wrote routine to calculate spin phase from sun pulse; wrote despin algorithm
	+ Worked on defining data format for high level ephemeris files: made some progress towards defining a CDF skeleton file
	+ Submitted final edits necessary for release of draft C of “461-SYS-SPEC-0115 - MMS Alignment and Coordinate System Document”.
* IRFU
	+ Continued implementation of functional version of DCV and DCE processes
	+ Clarified implementation of functional version of DCV and DCE processes
	+ Discussed interaction between SDP and ADP processing
* LASP
	+ Discussed interaction between ADP and SDP processing
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| 5. | Magnetometers |
|  | a. | DFG  |  |
|  |  |  | * Evaluation of observatory test data
* Continued activities in the frame of EDI/MAG data processing and in-flight calibration
 |
|  | b. | AFG |  |
|  |  |  | Science* Revised Magnetometer paper submitted.

Pre-launch Preparations* Work continues and code is being developed and documentation written for magnetic field data processing.
* Hannes Leinweber developing inflight calibration procedures, and generating code.
* Louise Lee converting analysis software to Python.
* Support SODAWG – emphasis on data products and associated coordinate systems.
* Began discussions on how to use MMS-style CDFs (from Cluster data) to test processes, etc.

Post-launch Preparations* Assess effort requirements to develop and maintain calibration system.

Engineering: Post-delivery Activity* Watching over activities in assessing LM6142.
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|  | c. | SCM | * SCM FMS => SENSOR S/N FM4 + PREAMP S/N FM3
	+ - SCM FMS (sensor, preamp) fully packed and ready for delivery if needed.
		- ADP complete.
* Final review of the FMS ADP in progress.
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| 6. | EDI |
|  |  | Note ship set number changes due to finalization of GDU assignments* Acceptance Review for GDUs SN2 and SN6

Ship Set 2 - SN2* Removed GeBK tape (due to some peel-off)
	+ Discovered that one of the gun heaters had lifted off slightly at one end
* TVAC (together with SN9)
* Re-staked Gun heaters
* Installed GeBK tape

Ship Set 4 - SN9* Vibration
* Installed GeBK tape
* TVAC

Gun - IWF efforts* Ship Set 4 - SN 4
	+ Continued investigation of offset problem on OPT\_DEFL board; The affected channel (Upper Injector) exhibits a higher sensitivity to external noise, compared to the second channel (Upper Deflector) on that board.
* Spare (or ship set 4) - SN 8
	+ Removed Grid and one housing shell; Identified problem with anomalously low resistance to be on the BEAM board;

Flight Software* Continued implementation and testing of electric field mode

HV amplifier trend root cause investigations (UNH)* Investigations of root cause for LED current drift observed in Guns continue at UNH with separate tests of the two DEFL boards removed from the SN 4 Gun. We will be wrapping up these tests soon and preparing a briefing of our findings.
* A GSFC LED test indicated a downward trend of the radiant flux of one of the two LEDs removed from a HVOC that was installed in EDI Gun SN4 and had exhibited a trend during Gun calibration. The significance of the measurement was confirmed and the test was repeated with a similar, albeit lower rate, trend. The two LEDs from this IWF HVOC as well as two from a UNH HVOC that was removed from a Gun board following a low CTR measurement in board level testing at IWF are being subject to CT scan testing at GSFC. We are awaiting results.

HVOCs* HVOC life testing continues at UNH with more than 2500 hours logged to date.
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| 7. | SDP/BEB/LVPS  |

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|  | a. | SDP/BEB/LVPS (KTH/IRFU/Oulu)* All hardware efforts are complete.
 |
|  | b. | SDP (UNH)Flight Spare SDP (SN2):* PER completed
* Vibration testing and post-vibration FFT completed successfully

SDP SN7* The UNH SDP team recommended a use-as-is disposition for SN 7 following an interruption of the wire boom retraction after successful FFT. The FRB requested an additional TV cold deployment test. This unit will go into the TV chamber, with SN 2, the flight spare. Pump down target is 10 July.

SDP SN12* The UNH SDP team successfully completed the FFTs and re-stow operations of SNs 12 and 2. SN 12 was one of the units returned to UNH following Observatory environmental testing.

SDP SNs 3&4* The UNH team has successfully completed the FFTs, including full deployments, and re-stow of SNs 3 and 4. These units were the first delivered and have been in the stow configuration for the longest period of time. The successful deployments of these two units as well as those for SNs 7, 8 and 12 demonstrate the robustness of the design.
* The UNH team was unable to open the SN3 preamp to begin the planned probe swap, fine wire crimp rework process. After practice tests with non-flight hardware, the UNH SDP team made the load measurements on SDP SNs 3 and 4 as prescribed by the FRB. There were no signs of fine wire crimp slippage and the subsequent FRB agreed with the UNH recommendation to use these units as is.
* Successfully completed re-stow.
 |
|  | c.  | SDP (LASP)* a. Supported UNH with preamp outer guard removal issue.
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| 8. | ADP |
|  | a. | LASP ADP Post-Delivery Support Activities * Obs #1 – No LASP activity
* Obs #2 – No LASP activity
* Obs #3 – No LASP activity
* Obs #4 – No LASP activity
	+ Bob Ergun and Scott Tucker traveled to GSFC to post-environmental testing of the ADP instruments on Obs #4.
	+ Final deployment and functional testing was performed on both the +Z and –Z RE on Observatory 4. Additionally, a manual partial walkout test was performed on the –Z RE in order to verify hinge function.
	+ Disposition of a PR from Obs #1 necessitated inspection of the position of the Obs #4 +Z ADP Boom Frangibolt wire relative to the sheet metal orbital debris shield (ODS) below the ADP Boom closeout blanket. This inspection revealed that the wire bundle was in contact with the ODS but was not damaged. The bundle was reinforced with Kynar tubing and the blanket was closed out.
	+ Final inspection and close out was perform on the +Z ADP RE on Obs #4. This included science inspection, final launch latch reset, photographs, blanket closeout, and securing accelerometer cables under the blankets for flight.
	+ Final inspection of the –Z ADP RE was performed. However, final closeout of blankets and accelerometer cables could not be performed due to schedule and manpower constraints. This will be accomplished at a later date.
* ADP WOA closure review
* Supported MMS IS I&T planning teleconferences
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| 9. | DSP, Thermal, Systems Engineering, Product Assurance and Management (LASP) |
|  |  | DSP, Thermal - No activities this month. Systems Engineering and Program Management* Supported program as necessary.

Quality Assurance, Parts, and Materials Engineering – No LASP activities |
| 10. | CEB  |
|  | a. | Hardware |
|  |  |  | * No activity. CEB hardware activities are complete.
 |
|  | b. | CDPU Software  |
|  |  |  | * Uploaded CDPU FSW Release 2.0 to all MMS Observatories ( 8 Uploads )
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| 11. | Commissioning and Mission Operations (Needell) |
|  |  | * Participated in MRT7 - Mag Bood Deployment rehearsal
* Supported Observatory Post Vibration Functional Tests
* Supported Observatory Operating Hours
* Worked with SOC to develop Commissioning plans
* Submitted revised scripts for FLD-001 - FIELDS  Initial Checkout Activity
* Prepared revised scripts and review procedures to support OBS3 Thermal Vacuum Test
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| 12. Problems encountered and updates this period |

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|  |  | SDP* [UPDATE] Boom wire retraction stopped during stowing process (SDP FM7) (PFR-10160.53-138-OP)
	+ The SDP SN7 boom wire retraction stopped during re-stow following successful FFT. The remainder of the stowing operation completed normally.
	+ Symptoms are similar to deployment stoppages observed in TV but included a slight rise in motor current. This feature is consistent with earlier measurements during EMI susceptibility testing.
	+ FRB (6 June 2014) recommended disconnection of the pinion gear and assessment of motor sound in three deployer orientations.
	+ UPDATE:
		- Motor sound testing prescribed by the FRB revealed no mechanical concerns regarding the motor/gear box assembly.
		- FRB (20 Jun 2014) recommended conduct of a cold TV boom wire deployment of the SN7 as well as environmental testing of the flight spare (SN2).
		- The vibration test of SN2 is complete. The UNH SDP team is currently (9 Jul) preparing the TV test of SNs 2 and 7.

 EDI* [NEW] Converter fold-back during post-TV detector characterization (GDU FM9) (PFR-10160.53-141-OP)
	+ A converter fold-back with GDU9 occurred during the detector characterization activities in the room 145 vacuum chamber.
		- There were coincident thunderstorms and flickering lights in the building. Data review supports unstable AC power at this time as the cause of the problem. Closure awaits a report of the findings and review by the FRB.
* [March 2014] GDU SN6 MCP Supply Current Red Limit Violations (PFR-10160.53-140-IP)
	+ Observations
		- Two single sample MCP Supply Current red limit violations occurred during the Detector Characterization. With the next housekeeping sample the currents were reported as normal again.
		- A third single-sample red limit violation occurred on March 28, 2014, also during the Detector Characterization.
	+ There were no subsequent recurrences.
	+ Similar observations were made during Detector Characterization with with GDU SNs 1 (PFR-88), 5 (PFR-105 and 4 (PFR-117). All those PFRs are closed.
	+ Cause: Presumably bit errors on the GDU command link (LVDS) due to electronic noise in the test environment.
	+ Corrective action: None proposed. Use as is.
	+ Status: [CAN BE CLOSED]. We continued testing of GDU SN6, including TV, without recurrence.
* [NO UPDATE] Low Beam Current at 500 eV (EDI GDU FM9) (PFR-10160.53-136-OP)
	+ During the first functional test in vacuum (room 105 chamber) of GDU SN9 we did not get enough beam current out at 500 eV. At 1keV things were just fine.
	+ UPDATE
		- FFT retest in room 145 chamber, per FRB recommendation, showed situation at 500 eV was unchanged, and that we now had the same problem at 1keV.
		- Corrective action: FRB recommended replacement of the BGS with the available spare (BGS SN13) and conduct of measurements to assess the impact on calibration.
		- Test of the Gun/GDE SN9 with the new BGS showed adequate beams but a discrepancy of ~3 degrees in the pointing. Subsequent checks of the alignment in the test setup and beam tracing calculations provided evidence that MGSE alignment and the effect of magnetic field could account for the discrepancy. The decision was made to proceed with GDU reintegration and retest.
		- The GDU 9 FFT in vacuum (room 105 TV chamber) showed nominal results except that the azimuthal scan across the hole in the Maheu hat revealed a change of about 2 degrees in azimuth from the test performed with the previous BGS. Approximately 1.5 degree of this change remains after accounting the effects of the magnetic field differences in the 2 chambers.
		- The GDU9 PER recommended proceed at risk. Accept this amount of deviation from IWF calibration and develop an algorithm for in-flight corrections. A separate NCR (PFR-10160.53-139) was initiated and a residual risk (PIMS ID 125) defined.
		- Cause/Status: Awaits retest of the removed BGS. NCR to remain open pending this investigation
* [UPDATE] Beam pointing deviation relative to the Gun/GDE calibration (GDU FM9) (PFR-10160.53-139-OP)
	+ The FM9 Gun Calibration at IWF is not 100% valid after the exchange of the beam generation system. See PFR-10160.53-136. A pointing deviation of about 2 degrees between the calibration and the actual pointing with the new BGS has been determined in testing at UNH.
	+ Actions (UNH):
		- Prepare the inflight calibration plan for presentation at PSR.
		- Retest in the room 145 chamber
			* [UPDATE]: Retest (9 Jul) produced similar results
* [UPDATE] Upper Injector +140V offset (EDI Gun FM4) (PFR-10160.53-137-OP)
	+ During the functional test of the reintegrated FM4 Gun, IWF measured a+140V offset in Upper Injector. The+140V offset is linear over the full range from 0...2000V. This appears to be a fixed offset, not a gain error. This voltage is provided by a channel in the Gun Optics board (the half board). The test was performed on 12 May and repeated on 13 May with the same result.
	+ The SN 4 EDI Gun was disassembled at IWF to investigate the voltage offset on the Optics board UI channel found during Gun stack testing. The offset was not observed in subsequent board level testing.
	+ [UPDATE, 9 Jul 2014]:
		- IWF has been unable to further isolate the problem. Gun SN4 has bee set aside so that team resources could focus on Gun SN8.
* [UPDATE] Lower than expected impedance measurement during safe to mate (EDI GUN FM8) (PFR-10160.53-133-IP)
	+ During the safe to mate incoming receiving inspection test at UNH, a lower than usual impedance measurement was seen across the +5V line (P5V2) to ground: (800 Ohm versus ~4M Ohm for earlier units). IWF reported also that their incoming test at UNH showed a higher than previously measured and out of family supply current at the P5V2 line. The Gun performance is otherwise nominal
	+ Tests at UNH by UNH and IWF to investigate the cause of the anomaly, including tests in vacuum, have identified possible sources of the problem. Partial disassembly is required to further isolate the problem. The Gun/GDE were returned to IWF for further investigation, rework and recalibration.
	+ [UPDATE, 9 Jul 2014]:
		- IWF has isolated the problem to the Beam Board. IWF will replace the beam board with a new one assembled at UNH.
* [CLOSED] EDI GDU FM6 Red limit violation of Gun Anode HV amplifier LED current (PFR-10160.53-128-IP)
	+ When switching the gun energy from 250 eV to 500eV during the first (baseline) full functional test in vacuum, the GDU primary current increased to 156 mA which is out of family compared to other GDUs (expected current in that instrument state: ~121 mA). The next analog HK sample showed a red limit violation on the Gun Anode HV amplifier LED current (39mA). The red limit violation was not a transitional effect but stayed, as did the non-nominal primary current.
	+ Subsequent investigation and FRB discussion indicate that the problem is most likely related to the HVOC in the negative side of the anode amplifier. Analysis showed that the circuit would perform within requirements with this device disconnected. The recommended modification to the beam board was made. Subsequent tests in vacuum of the Gun were successful. The GDU6 was reintegrated and the FFT in air was successful.
	+ UPDATE, CLOSURE:
		- GDU6 has successfully completed environmental testing. Performance of the anode HV amplifier is as expected. Initiated residual risk (ID 126) given that no clear root cause was identified.
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| 14. Issues and concerns |
|  |  | From FIELDS PM* The EDI Gun continues to be the critical path for GDU and FIELDS. Commitments of the IWF team to the Solar Orbiter project as well as continued technical problems have made the schedule issue more acute.
	+ The delivery of the 8th Gun/GDE (SN8) is now expected 11 August. UNH is considering GDU SN8 testing and characterization reductions in order to meet Project schedule.
	+ UNH is providing electronics technician support at IWF in July.
* The risk record regarding GDU performance and schedule (PIMS ID 176, MMS Project) is being used as a tool to help coordinate mitigation efforts.
	+ The FM2 EDI GDU was returned to UNH from GSFC for additional testing and characterization. This risk mitigation effort was conducted to better prepare this unit for flight.

From FIELDS SE* OBS-3 ADP +Z Boom Canister B-side thermistor is not operational and may be left that way for flight

Science Data Processing Issues (Compiled by Chutter)* ALL
	+ Confusion about use of LANL attitude/ephemeris files and/or software at the SDC, reviewing needs to help SODAWG write statement of work for LANL
* GSFC
	+ Resolved: Awaiting sensor orientation information of AFG and DFG
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| Activities planned for next reporting period |
|  |  | Management |
|  |  |  | * Prepare contract modifications for U of Iowa, UCLA and LASP based on modification expected from SwRI for FIELDS July 2013 proposal.
* Prepare the GFY15 spend plan (08 Aug due date).
* Update the Gun and GDE schedule.
* Continue to review and update the EDI GDU delivery and risk mitigation.
* Continue to push open NCRs to closure. Support FRBs as needed.
* Continue to prioritize and coordinate the work of the UNH team and its FIELDS partners.
* Support/staff T/V testing as needed
* Receive delivery of the following items at UNH
	+ EDI SN8 Gun and GDE (from IWF, 11 Aug)
* Delivery of the following flight hardware items from UNH to FIELDS partners
	+ None
* Prepare and conduct the following PERs and associated TRRs
	+ TRRs: SDP SN2 & 7 TV testing
* Prepare and conduct the following PSRs or Acceptance Reviews.
	+ GDU SNs 2 & 6 Acceptance Review (conducted 1 Jul)
	+ GDU SN 9 Acceptance Review
* Make or coordinate delivery of the following to GSFC IS or S/C teams
	+ SDP SNs 3, 4 & 12
	+ SDP SNs 7 & 8
	+ EDI GDU SNs 2 & 6
	+ EDI GDU SN 9
* CDRL and contract deliverable submissions:
	+ None planned
 |
|  |  | Product Assurance, Configuration Management, Parts, Materials, Facilities |
|  |  |  | Turco/Salwen* Continue support for SDP test and verification activities
* SDP FM7 and FM2 (flight spare) TV test support
* EDI FM9 PSR support
* SDP FM7 & FM8 cleaning and bagging for shipment
 |
|  |  | Systems Engineering & FIELDS I&T |
|  |  |  | Rau, Dors, Needell* Support SDP SN03/04 Life Testing and Re-crimp activity
* Support GDU SN06, GDU SN02 and GDU SN09 Acceptance Reviews
* Perform GDU SN09 EMI, Magnetics, FIT and Acceptance Test
* Continue submitting FIELDS verification material for closure
 |
|  |  | Post-Delivery Support (UNH) |
|  |  |  | IS and Observatory Support (FIELDS)* Finish development of SDP door deployment procedure for OBS level
* Transport GDU SN02, SN06 SN09 and SDP3/4/7/8/12 to GSFC
* Install and test delivered GDU's and SDP's on OBS1/2/4
* Support OBS-3 TV
* Perform magnetometer boom inspections as available
* Continue I&T planning for FIELDS at the OBS level
 |
|  |  | Science |
|  |  |  | SWT and SWG* Support science telecons as needed
* Continue preparation FIELDS Instrumentation papers

Science data processing plans* ALL
	+ Work on INITIAL versions of software by end of November
	+ Use SPDF tools to verify CDF and skeleton files follow MMS CDF Guide
	+ Work on error and warning management
	+ Support SODAWG
* UNH
	+ Work on real time data display – test run during ADP deploys
	+ Continue working on EDI E Field interfaces
	+ Work on RunEst software (for E Field and mag spin axis calibration)
	+ Continue work on scripting to control processing
	+ Continue L0 to L1 software updates as necessary
* LPP
	+ [in progress] Finalize errors and warning management and provide M. Chutter with error/warning codes and corresponding actions.
	+ ~~L1B data will be delivered in both SCM123 and OMB reference frames as decided on the data processing group meeting, Iowa, March 2014.~~ [New] At first, L1B will be delivered in SCM123 frame only. In case of misalignment, the transformation matrix from SCM123 to OMB will be used and data will then be delivered in OMB only in order to provide less disk space consuming files. So far, this matrix is set to identity: SCM123 and OMB are supposed to be the same reference frames.
	+ Test further the SCM calibration software with the new SCM L1A CDF files provided by M. Chutter in Mag123 system
	+ [in progress]Digital filter response will be tested in the calibration software
	+ Include coordinate transformation from mechanical frame OMB to GSE in L1BtoL2 : interface with K. Bromund’s software as decided on the data processing group meeting, Iowa, March 2014
	+ Include CDF version number computation (vX.Y.Z)
* UCLA
	+ Continue developing in-flight calibration procedures
	+ Continue converting analysis software to python
* GSFC
	+ Work on coordinate transformation software.
	+ Implement fully functional QL and L2pre software.
	+ Continue work with LANL and DSWG to define requirements for attitude/ephemeris data product and transformation software
	+ Implement metadata and proper versioning scheme in L1B, QL, and L2pre data product
	+ Modify calibration file as agreed at FIELDS meeting: add uncertainties and temperature correction coefficients.
	+ Investigate creating MMS-style attitude/ephemeris from Cluster attitude/ephemeris.
* IRFU
	+ Generate test files using Cluster data
	+ Complete basic functionality of DCV and DCE processes
* LASP
	+ Continue improving DCE software
 |
|  |  | AFG |
|  |  |  | * Continue work on data products guide.
* Continue developing inflight calibration procedures.
* Continue software analysis activities.
* Continue to support SODAWG.
* Participate in MRT9C – Orbit in the life exercise [ Level 0 to SITL/QL process in place]
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|  |  | DFG |
|  |  |  | * Continue support of observatory testing.
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|  |  | SCM |
|  |  |  | * FMS ADP: final review still to be completed.
 |
|  |  | EDI |
|  |  |  | Ship Set 2 - SN2* Pre-ship inspections (FIELDS Acceptance Test)
* Deliver to GSFC for integration on OBS 2 (position 2, bay 8)

Ship Set 1 - SN6* Pre-ship inspections (FIELDS Acceptance Test)
* Deliver to GSFC for integration on OBS 1 (position 2, bay 8)

Ship Set 4 - SN9* Detector Characterization
* Repeat gun calibration verification test in 145 chamber
* EMC, FIT, Magnetics
* Pre-ship inspections (FIELDS Acceptance Test)
* Deliver to GSFC for integration on OBS 4 (position 1, bay 4)

Gun - IWF efforts* Ship Set 4 - SN 4
	+ Continue investigation of offset problem on FM4 OPT-DEFL board; suggest to reflow HV resistor contacts and re-test for sensitivity to noise.
	+ Re-assemble, retest, calibrate, ship to UNH
* Spare (or ship set 4) - SN 8
	+ Remove BGS for better access to BEAM board; continue diagnostic testing

Flight Software* Continue implementation and testing of electric field mode

Investigation of HV amplifier trends* Continue board level testing at UNH.
* Report findings to Project

HVOCs (UNH)* Continue the HVOC life testing (12 devices). The 3000 hour program should finish in July.
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|  |  | SDP/LVPS/BEBs/Preamp/Probe (KTH/ Oulu/IRFU) |
|  |  |  | * Hardware work is complete. No hardware activity planned.
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|  |  | SDP/LVPS/BEBs/Preamp/Probe (UNH) |
|  |  |  | UNH SDP:* Conduct TV test of SNs 2 and 7. Review results and plan forward with FRB following cold deployment testing. Re-stow and remove SN7 from chamber after cold deployment test.
* Delivery of SDP SNs 7&8 to GSFC pending FRB approval.

LVPS* No activity planned
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|  |  | ADP/SDP/DSP (LASP) |
|  |  |  | QA/Parts/Materials – No activities plannedDSP – No activity plannedADP* No Post-Delivery ADP support activities are planned until August.

AEB – No activity plannedSDP* No activity planned.

Thermal* No activity planned

Systems and Program Management* Support project as needed.
 |
|  |  | CEB Hardware and Software |
|  |  |  | * Support SDP and EDI testing as needed.
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|  |  | Commissioning and Mission Operations (Needell) |
|  |  |  | * Support Observatory 3 Thermal Vacuum Test
* Deliver plans and procedures to SOC for MRT17a - Commissioning activities
* Continue working with SOC to develop CSTOL scripts for Commissioning Activities.
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