




COS

Monthly Status Review



Agenda



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Progress Summary Since Last Monthly

- Supported/completed COS CDR 4/26-27/00.
- Completed G130M-b grating characterization.
- Continued TA simulation with TAACOS at CU.
- Continued working resource issues at UCB.
- Held COS Science Team Meeting.
- CU visited Tinsley 5/3/00.
- CU visited UCB 5/2-3/00 and 5/17-18/00.
- UCB continued board level acceptance testing
- UCB continued TDC diagnostic and performance testing.
- UCB continued FSW development on CDCE.

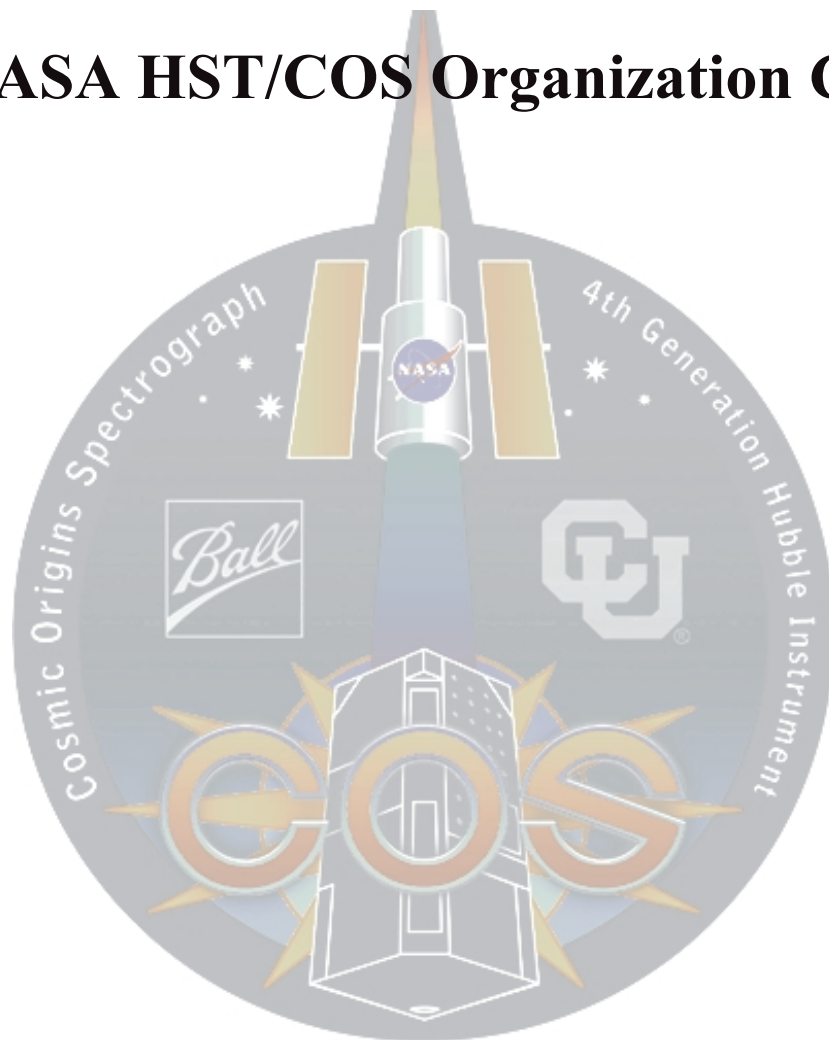


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CU/CASA HST/COS Organization Chart



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Optics Development Status

- Tinsley:
 - CU visited Tinsley on 5/3/00 to assess status.
 - Tinsley has slipped several weeks and is forecasting:
 - NUV flight units 6/25/00 (NCM1, NCM2, NCM3a, b, c)
 - NUV spares 9/1/00
- TA-1:
 - Coastal has delivered flight and spare TA-1 mirrors.
 - TA-1 mirrors now in coating at GSFC.
 - Next step is delivery to Ball for bonding into mount.



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J-Y Status

- JY is continuing efforts to recover from 12/99 storms.
 - Working to have UV efficiency test set-up back on-line earlier than last reported (May/June vs. late summer).
- CU has supported JY by doing ETU efficiency test at ARL.
 - Tests of the ETU at CU have not been consistent with JY's expectations.
 - CU has retested and checked coupon efficiencies at Ball.
 - CU is now checking with GSFC to provide another efficiency measurement of coupons.
- JY will process another ETU before manufacturing flight G140L gratings.
- Impacts to G140L delivery are uncertain but delivery will likely slip 1 month from 6/1/00 to 7/1/00.

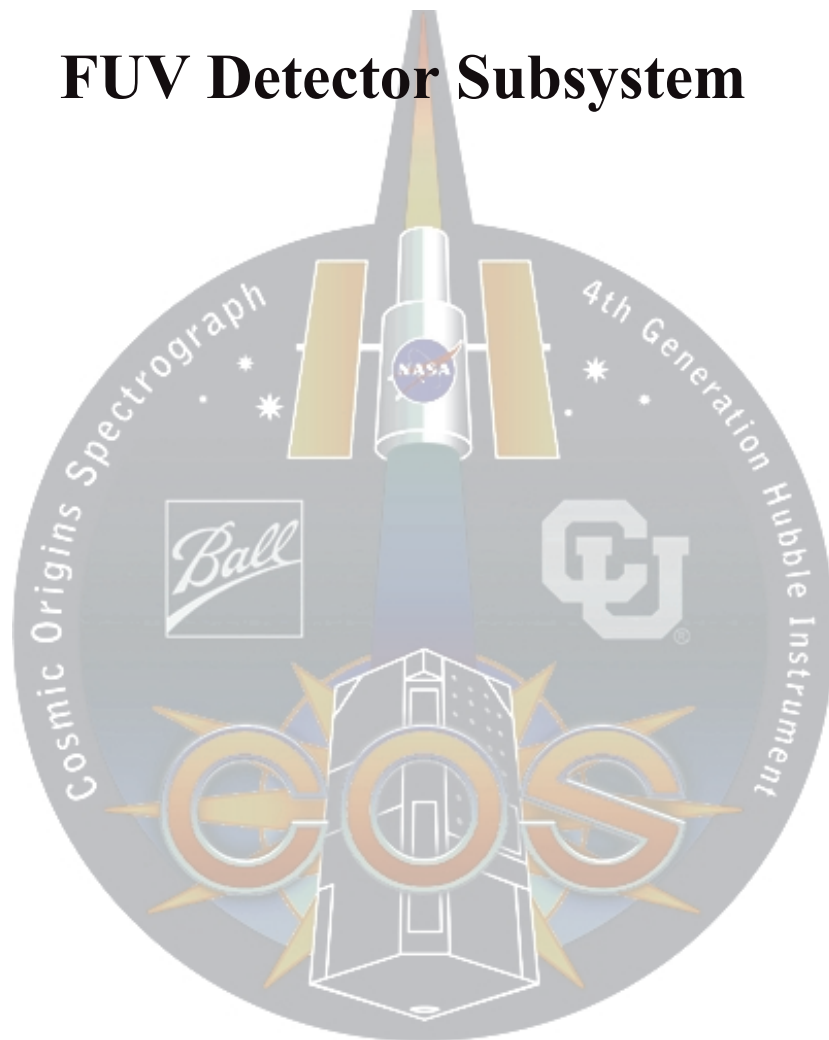


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FUV Detector Subsystem



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UCB FUV Detector Status - Personnel Issues

- No COS personnel have quit since February.
- J&T is still supporting DCE functional testing.
- Raffanti still supporting TDC diagnostic testing ~ 1 day/week plus consulting via daily phone conversations.
- Baja Technologies is still supporting electrical systems test and integration preparations.
- MAG Systems has temporarily completed COS activities and will pick-up spare detector assembly and test starting around August.



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UCB FUV Detector Status - Facilities

- Preparations for building renovations have already started.
- Renovations slated to start in June and go for approximately 18 months.
- All UCB COS personnel are being moved to the new Space Sciences Building.
- Present plan is to move all lab space EXCEPT cleanrooms to new building.
- CU is very concerned about the risks associated with completing the flight builds in the cleanrooms in the old building:
 - UCB is preparing a plan for moving and setting up a COS facility in the cleanroom in the new building.



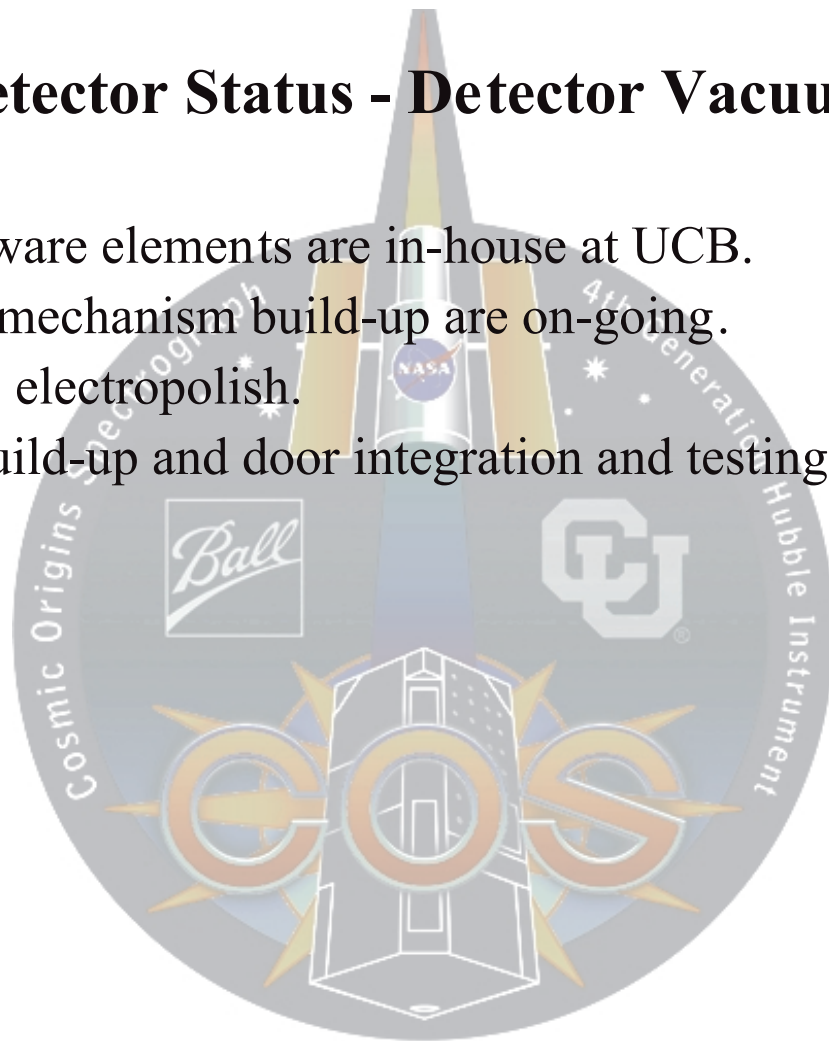
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UCB FUV Detector Status - Detector Vacuum Assembly

- All major hardware elements are in-house at UCB.
- Door and door mechanism build-up are on-going.
- Vacuum box in electropolish.
- Vacuum box build-up and door integration and testing scheduled for late June.





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UCB FUV Detector Status - Electronics

ACTIVITY	Electronic Board								
	Amps	HVFM	HVPS	LVPC	DCE-A	DCE-B	DCE-C	TDC-X	TDC-Y
Parts List	C	C	C	C	C	C	C	C	C
Schematic	C	C	C	C	C	C	C	C	C
Parts Stress Analysis	NS	NA	NA	NA	NA	C	C	C	C
Worst Case Analysis	NA	NA	NA	NS	NA	C	C	C	C
Board Thermal Analysis	C	NA*	NA	NA	C	C	C	NS	NS
Release Layout	C	C	C	C	C	C	C	S	S
Board Fabrication	C	C	C	C	C	C	C	NS	NS
Kit Parts	C	C	C	C	C	C	C	C	C
Board Coupon Testing	C	C	C	C	C	C	C	NS	NS
Stuff Boards	C	C	C	C	C	C	C	NS	NS
Board Workmanship Acceptance	C	C	C	C	C	C	C	NS	NS
Board Engineering Acceptance	C	C	C	C	C	C	C	NS	NS
Engineering Test & Acceptance	C	C	C	C	S	S	S	NS	NS
Temperature Cycle Test	S	C	C	C	NS	NS	NS	NS	NS
Voltage Margin Test	S	NA	NA	NA	NS	NS	NS	NS	NS
Final Acceptance Test	S	C	C	C	NS	NS	NS	NS	NS
Legend	C = Complete		NA = Not Applicable		S = Started		NS= not started		



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UCB FUV Detector Status - Actels

ACTIVITY	ACTEL FPGA's								
	Amps	HVFM	HVPS	LVPC	DCE-A	DCE-B	DCE-C	TDC-X	TDC-Y
Initial ACTEL Design	NA	NA	NA	NA	C	C	NA	C	C
ACTEL Peer Review	NA	NA	NA	NA	C	C	NA	C	C
End-to-end System Simulation	NA	NA	NA	NA	NS	NS	NA	NS	NS
FPGA tests with ETU electronics	NA	NA	NA	NA	C	C	NA	S	S
Release ACTEL schematic/burn	NA	NA	NA	NA	NS	NS	NA	NS	NS
Legend	C = Complete		NA = Not Applicable		S = Started		NS= not started		

- UCB, CU, DN are now working to plan an Actel acceptance review with GSFC



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UCB FUV Detector Status - TDCs

- Performance assessments and diagnostic testing of the commercial TDC-X and TDC-Y (CTDC) has been ongoing for the past four weeks.
- The primary TDC performance drivers are meeting the resolution requirements in X and Y and meeting the dead-time requirements.
- Testing to date has revealed:
 - Difficulties in meeting X resolution and difficulties in maintaining resolution as a function of count-rate.
 - Dead-time performance looks promising.
 - Numerous modifications to the flight layouts, which will require the production of new PWB.



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UCB FUV Detector Status - TDCs

- UCB is making incremental progress on the TDC boards but data collection, analysis, and board tweaking is a time consuming process, which is further hindered by EE shortages.
- A tiger team is assembling at UCB this week to review all gathered data and brainstorm possible solutions.
- In parallel with the tiger team review, UCB is starting the revised board layout.



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UCB FUV Detector Status - Systems

- Document Status:
 - CM Plan - released.
 - QA Plan - approved by GSFC with 2 small comments.
 - Performance Verification Plan - released, pending GSFC approval.
 - ICD Rev. A - in final review at CU, Ball, UCB, GSFC.
 - Environmental Verification Plan - released, pending GSFC approval.
 - EEE Parts Stress Analysis - released.
 - FMECA - released.
 - DVA Backplate Stress and Fracture Assessment - internal review now.
- Details of the FUV Subsystem I&T plan are now being worked.



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UCB FUV Detector Status - Summary & Issues

- DVA related activities at UCB are making good progress.
- Except for TDC difficulties, all electronic subassemblies are making good progress.
- Primary areas of concern at present:
 - TDC development
 - Facility renovation, move, risk, etc.
- Delays associated with TDCs have moved delivery to Ball out to mid-February '01 (Ball's need date is 1/15/00).
 - We will start working with UCB immediately to see how delivery date can be restored.



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Operations & Software Activities at CU

- GSE Software Development at CASA-ARL
 - COS Science Data Index and Analysis Software (CEDAR)
 - Website gives full details for CEDAR: <http://cos-arl.colorado.edu/CEDAR/>
 - Build II "beta" being used at BATC in support of early, FSW Testing.
 - Build II Science Data Viewer demonstrated to CU IDT on 5/11/2000.
 - Build II Science Data Viewer completed on 5/15/2000.
 - Build II tools and overall program functionality in final stages of development.
 - Build II slated for Demo/Testing at BATC in early July, 2000.
 - Build II formal release, w/ documentation slated for early August, 2000.
 - Build III development and release tied to BATC FSW development schedule.
 - Build III usage at BATC expected in the December, 2000 timeframe.



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Operations & Software Activities at CU

- GSE Software Development at CASA-ARL
 - COS Target Acquisition Simulation Software (TAACOS)
 - Website gives full details for TAACOS: <http://cos-arl.colorado.edu/TAACOS/>
 - Additional simulations required for Build I FUV "TAACOS Report" added three weeks of new test-runs.
 - New TAACOS simulations, and subsequent discussions with CU IDT, indicate that the recommended TA FSW modifications will likely be less severe than originally anticipated.
 - Build I Software for FUV channel scheduled for completion and report issued on 5/22/2000.
 - Build I Software for NUV channel scheduled for completion and report issued in early July, 2000.
 - Build II Software - contingent upon results of Target Acquisition Simulations from Build I, but no earlier than August, 2000.



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Operations & Software Activities at CU

- Assistance with FSW Development Efforts at UCB
 - DCE FSW Documentation Efforts
 - Website gives full details of DCE Documentation efforts underway:
 - <http://cos-arl.colorado.edu/DCE/>
- Highlights:
 - DCE Software Development is well underway, with current code supporting FUV Detector HW development and test.
 - Resolved potential issue between DCE "CRC" FSW, and existing HST code-image checksum methodology. Result - No change to DCE FSW, as base-lined algorithm can be used with exiting HST upload strategy.
 - DCE Software Test Plan is nearing completion, with sign-off expected in early June, 2000.
 - DCE Software Test Procedures are in development, and all unit and component test procedures are expected to be complete by late August, 2000.



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COS Schedule for CU/UCB



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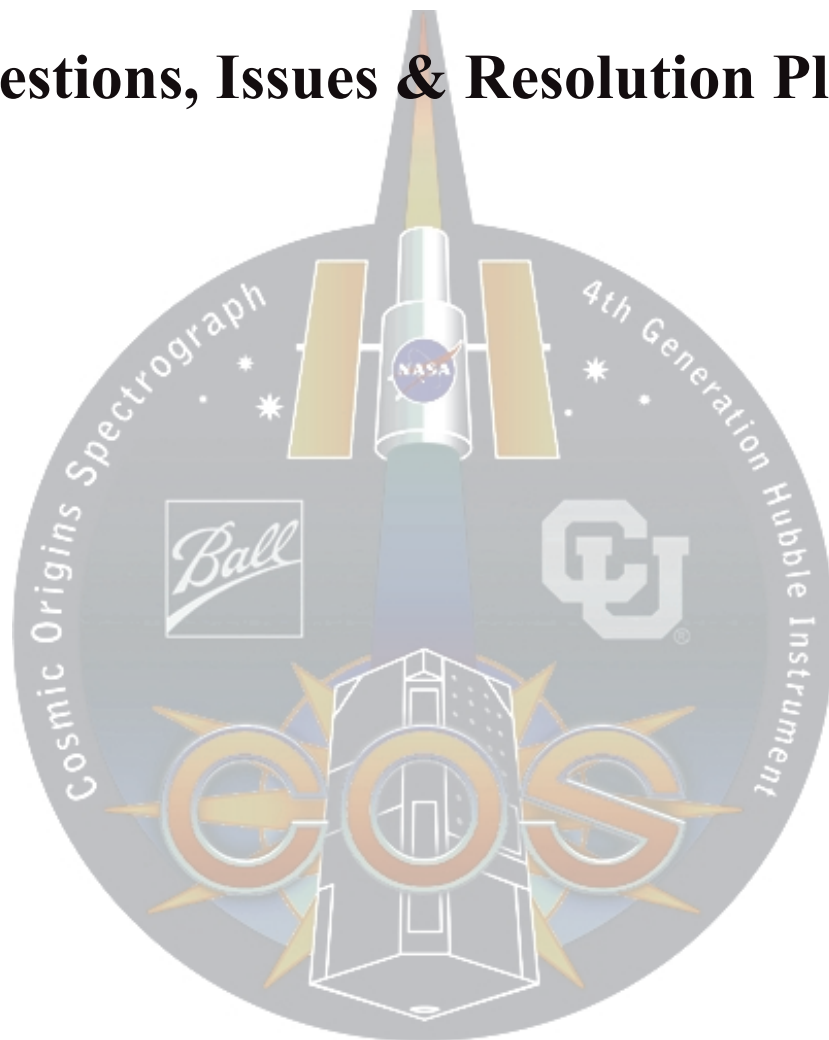
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Questions, Issues & Resolution Plan

- None



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Upcoming Events/Activities

- Hold DCE FSW code walk through.
- Hold TDC tiger team review at UCB.
- Support JY efficiency testing as required.
- Take delivery of 2 flight G140L gratings.
- Implement UCB move plan.
- Complete TAACOS build 1.
- Continue system build-up and test at UCB.
- Work UCB schedule to improve delivery date.



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Science Team Meeting Summary

- COS Science Team met at CASA-ARL on 16 May.
- COS development status and schedule at CU, Ball, and Berkeley were presented:
 - In general, the Science Team was very impressed with progress on COS.
 - There is concern about:
 - COS launch being tied to WFC3 readiness;
 - COS development activities at Ball being delayed.
 - Don Hood and Ossy Siegmund were thoroughly grilled about thermal and mechanical stability issues — i.e., what lessons have been learned from FUSE, STIS, and ACS? (Stability/distortion issues need to be discovered early.)
 - Some team members requested clarification from STScI on why the observer cannot specify an arbitrary wavelength for NUV gratings that are scanned.
 - Next meeting during 25-26 September will include a half-day Science Team peer review of the science calibration algorithms and data products.