

MODIS SCIENCE TEAM MEETING

OCTOBER 9, 1996

PROJECT ON TRACK FOR JUNE 1998 LAUNCH

- **FLIGHT HARDWARE BEING DELIVERED AND INSTALLED**
- **SPACECRAFT INTEGRATION HAS BEGUN**
- **SUBCONTRACT DELIVERIES BEING COMPLETED**
- **LAUNCH VEHICLE AND LAUNCH FACILITIES PROGRESSING WELL**
- **ASTER AND CERES DELIVERIES IMMINENT**
- **MISR MAKING GOOD PROGRESS**
 - **BUT STILL AWAIT SYSTEM LEVEL TEST**
- **MOPITT SCHEDULE IS VERY TIGHT**
- **MODIS DEVELOPMENT IS LAGGING**

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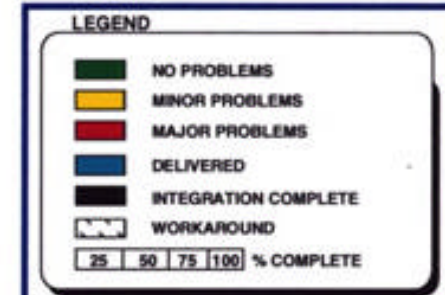
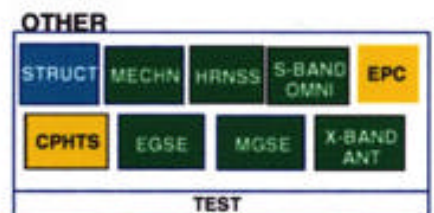
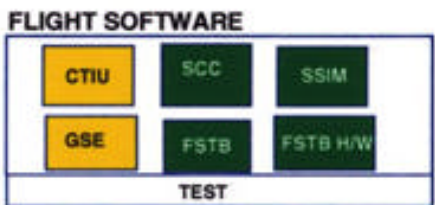
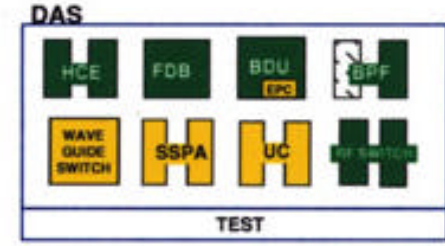
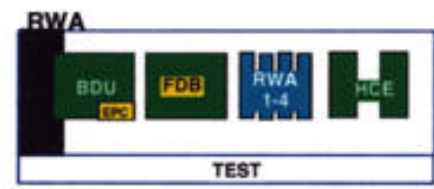
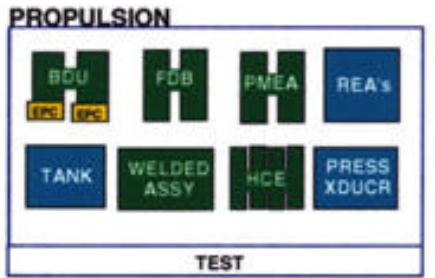
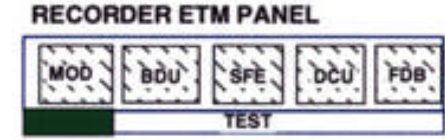
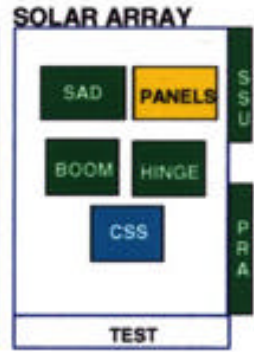
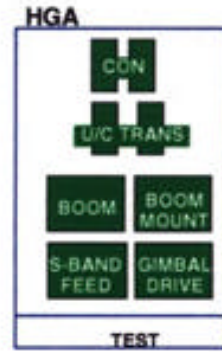
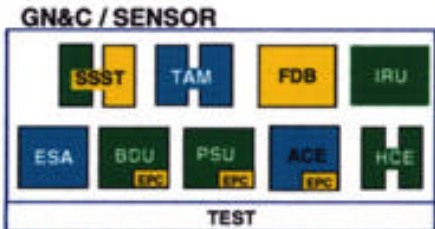
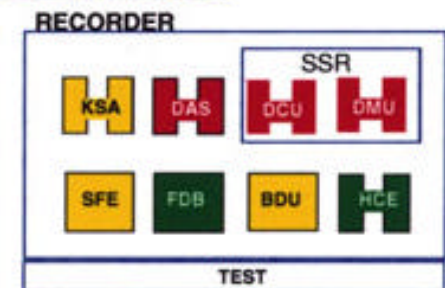
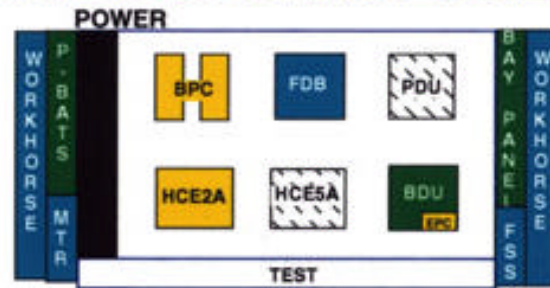
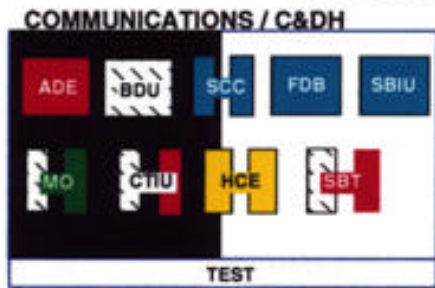
weeks



to LAUNCH

...and counting

EOS AM-1 SPACECRAFT BUILD STATUS



As of October 3, 1995

EOS AM-1 INSTRUMENT STATUS

ASTER

CSP	MPS	TIR
VNIR VEL	VNIR VSR	SWIR

MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
FUNCTIONAL CHECKOUT	100%
ENVIRONMENTAL TEST & CALIBRATION	100%

CERES FM1

SENSOR	AZMTH CABLE	AZMTH CTL ASSY	MAM
PWR COND ASSY	ELEV CTL ASSY	ELEV N CABLE	DATA ACQ ASSY

MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
FUNCTIONAL CHECKOUT	100%
ENVIRONMENTAL TEST & CALIBRATION	100%

CERES FM2

SENSOR	AZMTH CABLE	AZMTH CTL ASSY	MAM
PWR COND ASSY	ELEV N CTL ASSY	ELEV N CABLE	DATA ACQ ASSY

MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
FUNCTIONAL CHECKOUT	100%
ENVIRONMENTAL TEST & CALIBRATION	100%

MISR

SYSLOG ELEC	SIGNAL ELEC	CAM ELE	CAM 1-9	CABLING
POWER	GONIO METER	DFUSUR	CCD	OB
CAL DIOD	OPTICS & FLTRS	COVER	SYSKOM ELEC	

CAMERA CALIBRATION	100%
MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
FUNCTIONAL CHECKOUT	100%
ENVIRONMENTAL TEST	100%

MODIS

MEM	CLAM	SAM	SDSM	FAM
BLACK BODY	SCAN MIRROR	SOLAR DIFF	AOA	SRCA
DOORS	RAD COOLER	MAIN-FRAME	FOCAL PLANE	

MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
SUBSYSTEM FUNCTIONAL CHECKOUT	100%
SYSTEM INTEGRATION	100%
ENVIRONMENTAL TEST & CALIBRATION	100%

MOPITT

CALIB SRCS	ELEC S/S	POWER SUPPLY MOD	STRUCT	SCAN MIRROR
COOLRS	PMC's	CHOPPR	PORT CVR ASSY	
LMC'S	SCI S/W	FLT S/W	OPTICS	

MECHANICAL ASSEMBLY	100%
ELECTRICAL ASSEMBLY	100%
FUNCTIONAL CHECKOUT	100%
ENVIRONMENTAL TEST & CALIBRATION	100%

INSTRUMENT ACCOMMODATIONS

RAD	CPHTS	HCE
COLD PLATE	SWIR	FDB
HX	TIR	IBDU
	MOPITT	

LEGEND

NO PROBLEMS	100%
MINOR PROBLEMS	75%
MAJOR PROBLEMS	50%
DELIVERED	25%
INTEGRATION COMPLETE	0%
WORKAROUND	0%

As of October 3, 1996

TOP TEN ISSUES

9/30/96

PSR #	ISSUE (DATE LISTED)	ACTIONEE	DUE DATE	STATUS AS OF 9/30/96	CLOSURE PLAN
1.	Impact of 2nd EOS S-Band Transponder SWAP with Landsat 7 - I&T Driver (9/4/96)	Ho Wood	Replan due 10/30/96	<u>Status AS OF 9/30/96</u> <ul style="list-style-type: none"> In the process of notifying LMMS of the GSFC decision. Impact Assessment from LMMS to be generated. 	<ul style="list-style-type: none"> Replan I&T flow based on new delivery date.
2.	MODIS Schedule Contingency Eroding.	K. Anderson D. Weber	Resolve by 10/2/96	<u>STATUS AS OF 9/30/96</u> <ul style="list-style-type: none"> MEM testing continues. Resistor networks to be replaced in November. Work-around developed to minimize impact of resistor failures only partially effective. No schedule margin to LMAS need date. GSFC/SBRS develpd. cost and schedule mitigation actions. Briefed to Codes 300, 	<ul style="list-style-type: none"> Utilized EM Electronics for preliminary instrument characterization. SBRS focusing on schedule. Hughes developing I&T options for recovering schedule. FY97 budget may further impact. Will probably force slow down of FMI and cancelation of FM 2.

				400, and 700.	
3.	<p>TRW Solar Array</p> <ul style="list-style-type: none"> -Harness concern (CLOSED) -Hinge concern (CLOSED) 	<p>TRW/ LMMS R. Ho D. Keys J. Mannion</p>	<p>SAA Delivery 5/97</p>	<p><u>Status as of 9/30/96</u></p> <ul style="list-style-type: none"> • 24 Solar cell modules bonded to substrate. Hinge repair procedure corrected on autoclave. All 8 SPAs completed curing. • SPAs completed Ge coating • All solar cells except attrition, are at TRW. 1800 cell shortage resulted in decision to use screen-out build #2 cells. • Q-board #3 completion expected of 9/16/96 is slipping. 	<ul style="list-style-type: none"> • Monitor flight panel construction. Placed GSFC representative at TRW with LMMS reps. (CLOSE)
4.	<p>Solid State Recorder</p> <p>Technical problems will affect schedule (8/2/96)</p>	<p>J. Rende</p>	<p>PSR 10/3/96</p>	<p><u>STATUS AS OF 9/30/96</u></p> <ul style="list-style-type: none"> • There remains about 30 tasks to complete the h/w-s/w integration of the EDM. With parallel effort this can be done in approx. a month. • Note already some FPGA mods have been identified - 	<ul style="list-style-type: none"> • Utilizing HST EDAC ships from University of New Mexico. Additional spares to be fabricated by UNM. • HSI problems delineated and plan exists for disposition.. • Fabricating new lot of ASICs.

				<p>affects change-out of flight FPGAs on flight boards already completed.</p> <ul style="list-style-type: none"> • EDAC chips are no problem, Camden has enough (no spares) but going ahead with procurement of additional parts. • Complete HSI problem fixes by 9/30/96 is slipping 	<ul style="list-style-type: none"> • Take HRDTE, ETM SFE and OSC test eng. to Camden to final test SSR flight unit before environs.
5.	<p>MISR System Electronics (4/15/96)</p> <p>- Problem is inconsistency between FPGA timing simulations and in-circuit performance</p>	T. Anderson	11/96	<p><u>STATUS AS OF 9/19/96</u></p> <ul style="list-style-type: none"> • FPGA redesigns complete. • EM versions of SYSPWR & SYSLOG functionally verified. • SYSPWR & SYSLOG flight boards in unit test. • EM SYSCOM in functional checkout. • SYSCOM is final electronics subsystem to be functionally verified. • Initial SYSCOM end-to-end test with a single simulated camera compl. 9/27. 	<ul style="list-style-type: none"> • Complete redesign & prototyping activity by 10/96. • Retrofit flight electronics into PFM & complete ambient functional test by mid - November.

6.	High Separation Shock Input to Spacecraft (8/2/96)	T. Venator	Give Lewis Impact on 10/30/96	<u>STATUS AS OF 9/30/96</u> <ul style="list-style-type: none"> • Separation System Shock tests at LMA and LMMS confirm levels exceed IRD Spectrum. • Give Lewis impact by 10/30/96. • No change to separation system expected. 	<ul style="list-style-type: none"> • LMMS presented impact on S/C particularly Prop. module and proposed options to mitigate. • Evaluate proposed options and implement accordingly. • Consider doing component test.
7.	Impact of ASTER MOU ASTER delivery delay & I&T impacts	T. Anderson Lambros		<u>STATUS AS OF 9/30/96</u> <ul style="list-style-type: none"> • Confirm ASTER export license requirements/options with GSFC & HQ legal. • Advise HDQ's legal of AM Program impacts & projected schedule delays. • Confirm with ADQ's legal GSFC findings for ASTER export license. • Met w/HQ & confirmed licensing requirements, advised HQ of schedule threats. • Determined signed 	<ul style="list-style-type: none"> • Met with HQ and establish their plan for resolution. • Advise ASTER to apply for license immediately. • Monitor progress of MOU w/HQ & MITI.

				MOU not necessary for license application.	
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8.	Transponder Schedule -Up-converter phase noise	D. Nguyen		<u>STATUS AS OF 9/30/96</u> <ul style="list-style-type: none"> • Phase noise on the N 101 up-converter module is extremely high. Was not this high before. Motorola investigating. 	<ul style="list-style-type: none"> • Use N101 in 4th unit destined for Landsat-7 now, to give time to fix.
9.	MOPITT LMC Bearing (9/4/96) Potential threat to MOPITT delivery schedule.	J. Gervin T. Anderson	Meeting until 10/2/96	<u>STATUS AS OF 9/30/96</u> <ul style="list-style-type: none"> • 3 of 4 rescreened LMC bearing sets received, 4th set in 200-400 hour run-in. 	<ul style="list-style-type: none"> • Receive final rescreened bearing set. • Determine whether to use new NHBB bearing received week of Sept. 16.
10.	Impact on End-to-End Testing caused by a greater than 20 week slip of ESDIS production software.	P. Westmeyer F. Bordi	Meet with Code 400 10/4/96	<u>STATUS AS OF 9/13/96</u> <ul style="list-style-type: none"> • Reviewing revised schedule (s) from Code 505. • Details are not available as to how to resolve at this time. 	<ul style="list-style-type: none"> • Verify that end-to-end testing elements are still meeting the AM-1 time line. • Receive confirmation from Code 505 that those "resources" assigned to end-to-end testing are not being diluted or redirected to assist the production software team.

EOS AM-2 STATUS

- **PARTICIPATING IN PAYLOAD PANEL AND CODE 170 SPONSORED STUDIES FOR DETERMINING THE SECOND SERIES**
- **SUPPORTING IMAGER STUDIES ON NPOESS**
- **STARTED EARLY MISSION DESIGN AND PLANNING**
- **EVALUATING IF SCIENCE REQUIREMENTS CAN BE MET THROUGH A COMBINATION OF ADVANCED AND ALTERNATIVE TECHNOLOGIES**
- **TECHNOLOGY INVESTIGATIONS DEMONSTRATED ABILITY TO SHRINK MISSION SIZE**
- **EVALUATING COST DRIVERS**
- **ASSESSING POTENTIAL TECHNOLOGIES**
- **DEVELOPING OPTIONS**

SUMMARY

- **MODIS IS A QUALITY INSTRUMENT**
- **UNCERTAINTY REMAINS IN AREAS WHERE TESTING OR CHARACTERIZATION HAS NOT YET BEEN PERFORMED**
- **NEED CONTINUED SCIENCE TEAM SUPPORT TO ENSURE EFFICIENT AND ON-TIME DELIVERY**
- **HAVE SPECIFICALLY INCENTIVIZED SBRS TO DELIVER MODIS AND COMPLETE IDENTIFIED TESTS**
- **NEED CONTINUED SCIENCE TEAM SUPPORT TO ASSURE FUTURE MODIS OR MODIS LIKE INSTRUMENTS FOR MTPE**

**MUST PICK UP THE PACE ON MODIS DEVELOPMENT
TO AVOID IMPACTING LAUNCH DATE**