

# GLAST Large Area Telescope:

## Electronics, Data Acquisition & Flight Software W.B.S 4.1.7

### Dec 1 Monthly Review

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# TEM/TPS Status

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- **Same status as last month**
  - **Status**
    - **Qual unit review still to occur**
    - **19 flight units delivered to I&T**
    - **2 TPS units removed from Twr A and Twr B were partially modified**
  - **To do (low priority)**
    - **Complete modification**
    - **Vibration**
    - **End data package review**



# PDU Status and Schedule

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- **1st unit (flight)**
  - **Installed on LAT**
- **2<sup>nd</sup> unit (spare)**
  - **Progress since last month**
    - **Box wiring completed**
    - **Sent to SLAC**
    - **In acceptance testing at SLAC**
    - **12-19 expected delivery to I&T**



# GASU Status and Schedule

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- **First Unit**
  - **Progress since last month**
    - **EMI proto-flight testing started/completed**
    - **TV testing started/completed**
    - **Mass and CG completed**
    - **Handed off to I&T**
  
- **Schedule for 2nd unit**
  - **Progress since last month**
    - **Boards were thermal cycled and installed in enclosure with harness**
  - **Expect that box will be sent to SLAC next week for pre-coat testing, followed by conformal coat and environmental testing**
  - **Lower priority compared to SIU/HCB but still progressing**
  - **(End January estimated delivery to I&T)**

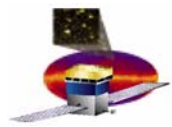


# SIU/EPU Crate

- **Protoflight SIU crate #2508**
  - All testing completed, passed
  - Flight Crates: see below

SIU0	SIU1	EPU0	EPU1	EPU2	spare	spare
crate 1	crate 2	crate 3	crate 4	crate 5	crate 6	crate 7
2513	2527	2522	2523	2524	2425	2526
2207	2208	2206	2209	2210	2211	2212
2227	2226	2228	2229	2230	2231	2232
2235	2238	2239	2240	2243	2234	2241
2414	2415	2420	2419	2418	2416	2417
2428	2429	2433	2434	2431	2430	2435
#14/2516	#15/2517	#17/2518	#18/2519	#31/2520	#13/2528	
<b>Done</b>	<b>Done</b>	<b>Done</b>	<b>Done</b>	<b>*1</b>	<b>*2</b>	<b>*3</b>

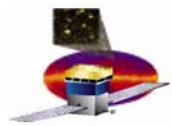
- **\*1: all testing done except TV. TV expected to be finished next Monday.**
- **\*2: Crate to be integrated next week. 2 weeks of testing follow.**
- **\*3: Crate to be integrated in 2 weeks. 2 weeks of testing follow. (Need to use proto-flight CPU)**
- **Some of the modules for crate 6 and 7, marked in green, are still in iteration in respect to xray/touch-up/approval of solder joints**



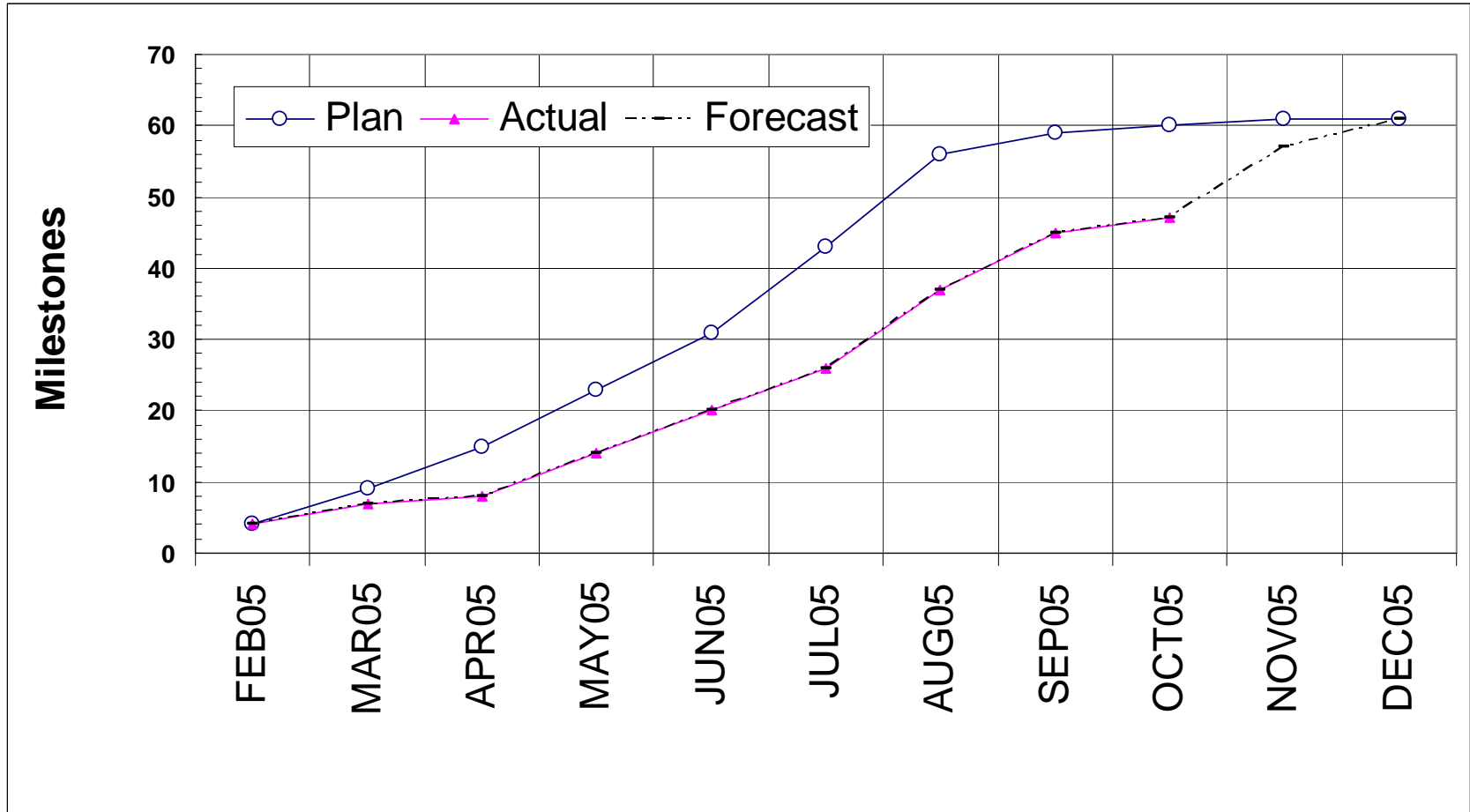
# HIB & HCB

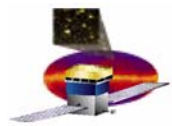
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- **4 Harness Interconnect Boxes (HIB's) handed off to I&T, one spare to follow next week.**
- **Heater Control Boxes**
  - **2 modules thermal-cycled, vibrated**
  - **Performed proto-flight EMI/EMC for one module**
  - **Mass/CG measurement performed**
  - **First box will be in TV early next week**
  - **Delivery of boxes to I&T: Dec 8 and Dec 15**
  - **Spare to follow one week later**



# Level 3 Milestone Count





# Level 3 Milestone List

Activity Description	Baseline Finish	-2m Var	-1m Var	Bsn Var	Early Finish	2005												2006				
						FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
<b>4.1.7 Electronics</b>																						
Elex Ground Support Equipment																						
Final EGSE incl S/C Sim, FSW-Elec	04/01/05	-128	-169	-169	12/01/05													▽				
TEM/PS A																						
Flight TEM Assy A: Elec to I&T	02/17/05	0	0	0	02/17/05A	▼																
Flight TEM PS Assy A: Elec to I&T	02/17/05	0	0	0	02/17/05A	▼																
TEM/PS B																						
Flight TEM Assy B: Elec to I&T	03/07/05*	-2	-2	-2	03/09/05A	▼																
Flight TEM PS Assy B: Elec to I&T	03/07/05*	-2	-2	-2	03/09/05A	▼																
TEM/PS 1																						
Flight TEM Assy 1: Elec to I&T	04/22/05	-19	-19	-19	05/19/05A			▼	▼													
Flight TEM PS Assy 1: Elec to I&T	04/22/05	-19	-19	-19	05/19/05A			▼	▼													
TEM/PS 2																						
Flight TEM Assy 2: Elec to I&T	04/29/05	-14	-14	-14	05/19/05A			▼	▼													
Flight TEM PS Assy 2: Elec to I&T	04/29/05	-14	-14	-14	05/19/05A			▼	▼													
TEM/PS 3																						
Flight TEM Assy 3: Elec to I&T	05/06/05	-18	-18	-18	06/02/05A			▼	▼													
Flight TEM PS Assy 3: Elec to I&T	05/06/05	-18	-18	-18	06/02/05A			▼	▼													
TEM/PS 4																						
Flight TEM Assy 4: Elec to I&T	05/13/05	-15	-15	-15	06/06/05A			▼	▼													
Flight TEM PS Assy 4: Elec to I&T	05/13/05	-15	-15	-15	06/06/05A			▼	▼													
TEM/PS 5																						
Flight TEM Assy 5: Elec to I&T	05/20/05	-10	-10	-10	06/06/05A			▼	▼													
Flight TEM PS Assy 5: Elec to I&T	05/20/05	-10	-10	-10	06/06/05A			▼	▼													
TEM/PS 6																						
Flight TEM Assy 6: Elec to I&T	05/27/05	-38	-38	-38	07/22/05A			▼	▼													
Flight TEM PS Assy 6: Elec to I&T	05/27/05	-38	-38	-38	07/22/05A			▼	▼													
TEM/PS 7																						
Flight TEM Assy 7: Elec to I&T	06/06/05	-33	-33	-33	07/22/05A			▼	▼													
Flight TEM PS Assy 7: Elec to I&T	06/06/05	-33	-33	-33	07/22/05A			▼	▼													

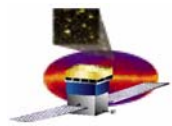
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 Data Date 10/01/05

GLAST LAT PROJECT  
 Level 3 Milestones  
 Baseline Variance (Organized by Subsystem)

LT-DZ: Baseline Variance  
 FL-D4: AV: Level 3 Milestones  
 Report #10  
 Sheet 5







# Level 3 Milestone List

Activity Description	Baseline Finish	-2m Var	-1m Var	Bsln Var	Early Finish	2005												2006				
						FE	MA	AP	MA	JU	JU	AU	SE	OC	NO	DE	JA	FE	MA	AP	MA	JU
Elex Global Items																						
LCB Flight Units - Elec to Elec	07/20/05	-68	-55	-55	10/06/05																	
Flight Event Processor Units-Elec to	08/19/05	-70	-52	-52	11/02/05																	
1st Flight EPU/SIU-Elec to I&T	08/19/05	-70	-52	-52	11/02/05																	
2nd Flight EPU/SIU-Elec to I&T	08/24/05	-72	-57	-57	11/14/05																	
3rd Flight EPU/SIU-Elec to I&T	08/26/05	-75	-62	-62	11/23/05																	
4th Flight EPU/SIU-Elec to I&T	08/30/05	-78	-67	-67	12/06/05																	
5th Flight EPU/SIU-Elec to I&T	09/02/05	-113	-108	-108	12/20/05																	
Flight Software																						
Demo: Spacecraft Interfaces	02/14/05	0	0	0	02/14/05A	▼																
Demo: Thermal Control	02/16/05	0	0	0	02/16/05A	▼																
Demo: Inter-task Communications	03/11/05	-25	-25	-25	04/15/05A		▼															
Demo: Housekeeping	03/18/05	-37	-37	-37	05/10/05A		▼															
Demo: Event Filtering	03/23/05	9	9	9	03/10/05A		▼															
Demo: Watchdog	04/15/05	-15	-15	-15	05/06/05A		▼															
Science Test Data Output	08/08/05	-22	-22	-22	09/08/05A																	
FSW Test Peer Review Complete	08/15/05	0	0	0	08/15/05A																	
Release FSW for FQT	08/29/05	-15	-34	-34	10/17/05																	
FQT Scripts Complete	08/30/05	-11	-38	-38	10/24/05																	
FQT Readiness Review	09/01/05	-15	-10	-10	09/16/05A																	
FQT Complete	09/15/05	-11	-32	-32	10/31/05																	
FSW RFI to I&T	10/03/05	0	-41	-41	12/01/05																	
Delta Test Readiness Review	11/18/05	0	-13	-13	12/09/05																	

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GLAST LAT PROJECT  
 Level 3 Milestones  
 Baseline Variance (Organized by Subsystem)

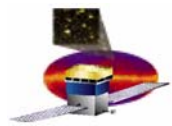
LT-DZ: Baseline Variance  
 FL-D4: AV: Level 3 Milestones  
 Report #10  
 Sheet 7



# Milestone Variance Explanation

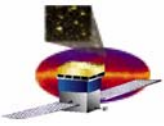
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- **Schedule supports current project plan**



# Cost Report

Reporting Category	Cost Incurred/Hours Worked				Estimated Cost/Hours to Complete			Estimated Final Cost/Hours		Unfilled Orders Outstanding
	During Month		Cum. to Date		Detail		Balance of Contract	Contractor Estimate	Contract Value	
	Actual	Planned	Actual	Planned	NOV05	DEC05				
4.1.7 ELECTRONICS										
4.1.7 ELECTRONICS	0	0	353	354	0	0	1	354	354	
4.1.7.1 ELECTRONICS MANAGEMENT	29	54	2,092	2,302	55	30	602	2,779	2,779	
4.1.7.2 RELIABILITY & QUALITY ASSURANCE	0	0	223	220	0	0	-3	220	220	
4.1.7.3 ELECTRONICS SYSTEM DESIGN	0	0	733	733	0	0	0	733	733	
4.1.7.4 DATAFLOW ELECTRONICS (TEMs + PROCESSOR FARM)	111	97	10,767	10,997	99	62	231	11,158	11,158	
4.1.7.5 SPACECRAFT INTERFACE UNIT	137	19	1,963	2,184	20	12	221	2,216	2,216	
4.1.7.6 POWER CONDITIONING	66	11	2,325	2,461	12	0	136	2,473	2,473	
4.1.7.7 ENCLOSURES	1	0	706	680	0	0	-27	680	680	
4.1.7.8 CABLE HARNESS	0	0	487	649	0	0	163	649	649	
4.1.7.9 FLIGHT SOFTWARE	41	25	6,185	6,220	25	16	35	6,261	6,261	
4.1.7.A EGSE & OPERATIONS	0	0	2,491	2,579	0	0	87	2,579	2,579	
4.1.7.C INSTRUMENT INTEGRATION & TEST	116	43	606	575	43	27	-31	646	646	
4.1.7.D MISSION SYSTEMS INTEGRATION & TEST	0	0	0	0	0	0	1,388	1,388	1,388	
<b>CAPW[3]Totals:</b>	<b>502</b>	<b>249</b>	<b>28,931</b>	<b>29,953</b>	<b>254</b>	<b>149</b>	<b>2,802</b>	<b>32,135</b>	<b>32,135</b>	



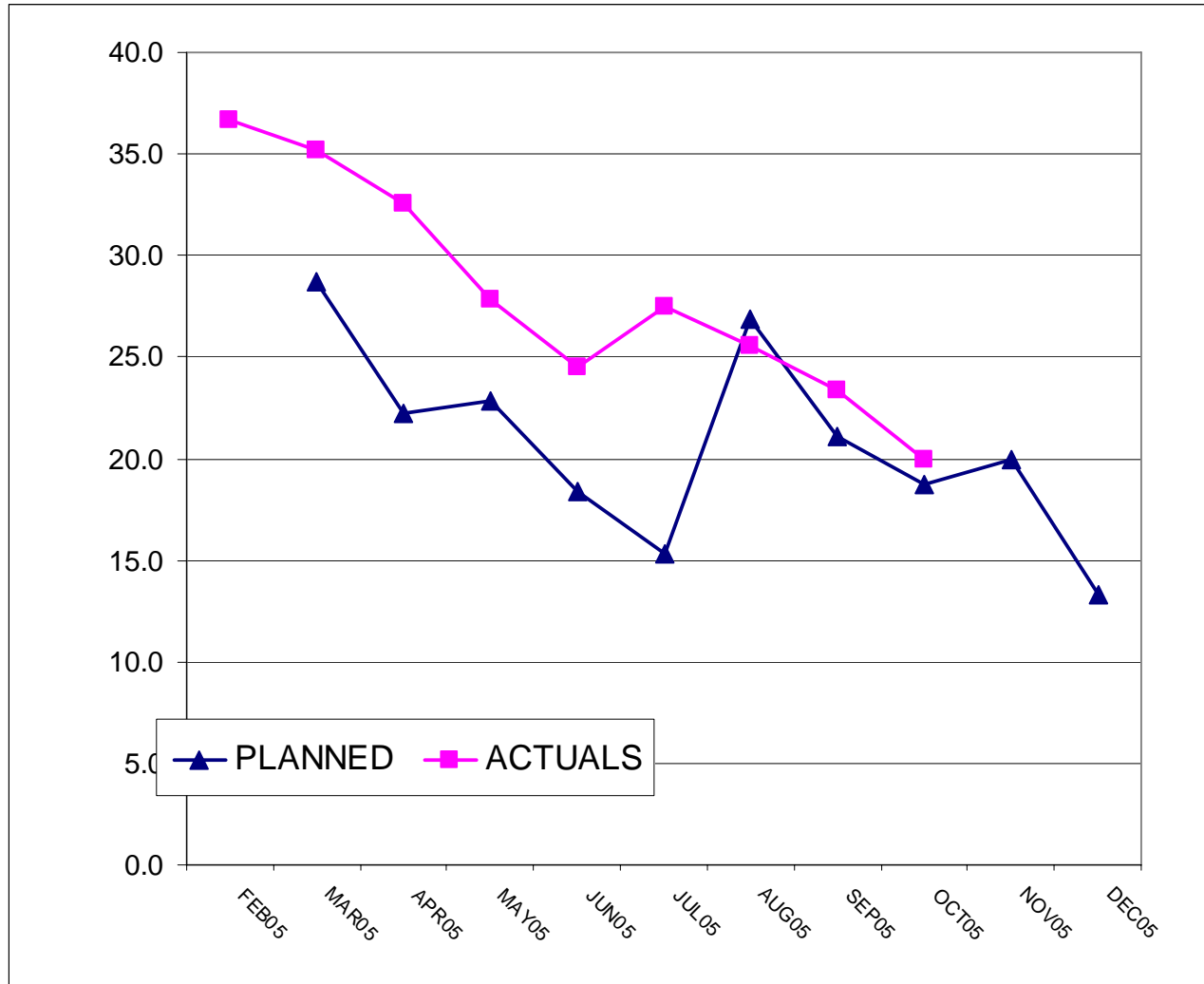
# Cost Variance Explanation

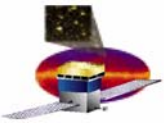
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- **Planned under run/contingency re-allocated**



# FTE Report (DOE/NASA-funded only)





# FTE Variance Explanation

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- **On target**