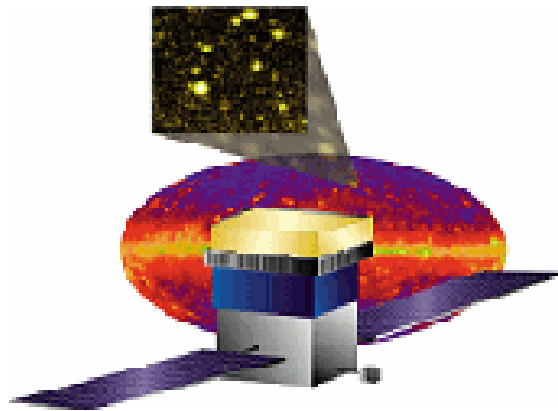


Monthly Progress Report

(Month Ending January 2005)

GLAST Large Area Telescope (LAT)



LAT-MR-05884-01

March 8, 2005

1.0 Introduction

This monthly progress report is submitted to the GLAST Project Office at the Goddard Space Flight Center and the Department of Energy SLAC Site Office. The report summarizes LAT project status as of the end of January, 2005.

2.0 Recent Progress and Status

The reader will note several references to the pending project replan. Development of this plan is underway, and it is anticipated that the next monthly report (status as of February 2005) will be against the new plan.

4.1.4 Tracker

Environmental testing was completed on the first flight tower. It was shipped to SLAC, unpacked, read out, and verified to be in excellent shape. An EMI acceptance test was conducted; the tower is currently undergoing EMI taping. It will be ready for integration in the first week of February. Vibration testing of the second tower was conducted; thermal vacuum testing has been delayed by chamber problems at Alenia. The second tower is expected to be shipped during the second week of February. Trays are being installed into the third tower; tray assembly is underway for the fourth tower.

An intensive effort is underway to understand the issues associated with the pitch adaptor trace cracking discovered upon restart of the multichip module (MCM) production. Eighteen boards failed inspection after bonding the pitch adaptors. Every board had a large number of cracked and open traces, spanning more than half the length of the board in some cases. The root cause has been identified to be an unintended change in the nickel plating process from electrolytic to non-electrolytic.

The cause of the inter-ladder strip breakage on heavy trays is very likely the same effect that broke wirebonds between strips and pitch adaptors. An MRB was held, and heavy tray production has recommenced using ladders without encapsulation. Further analysis of a damaged heavy tray will be conducted to retire risk.

A corrective action plan has been developed for the cable assembly process, and production of new flex circuits restarted. All flight cables are being fully functionally tested before installation in the towers.

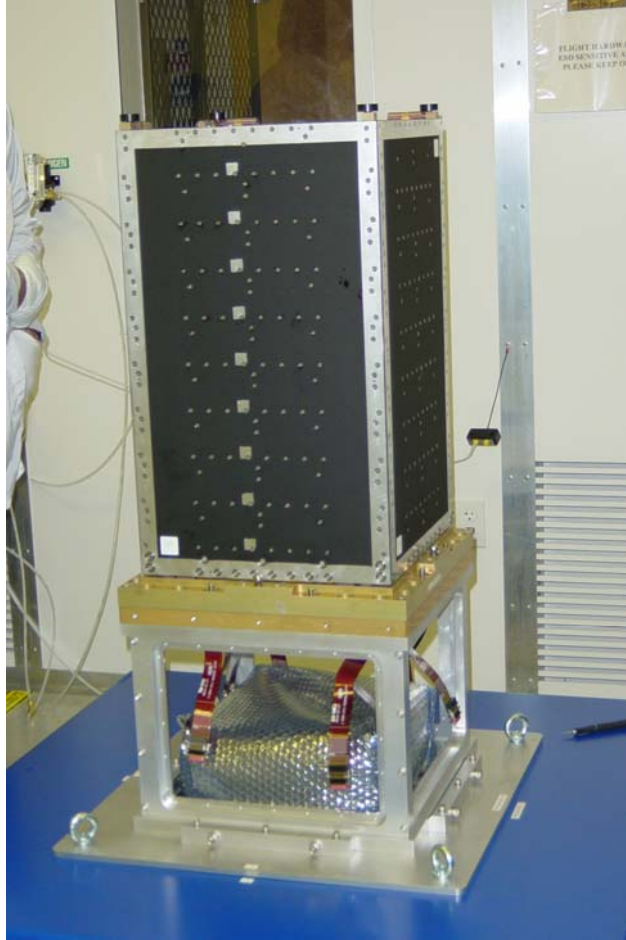


Figure 1: The first Tracker flight tower, shortly after unpacking.

4.1.5 Calorimeter

The first five Calorimeter modules have been shipped to SLAC. Modules 6 and 7 are awaiting pre-ship review; modules 8 through 11 are ready for thermal-vacuum testing. Pre-environmental testing has commenced on module 12. Pre-electronics module (PEM) muon testing has been completed on modules 13-14, and has commenced for module 15.

Curing, wrapping, and acceptance testing of crystal detector elements will be completed in mid-February. All PEM mechanical structures have been assembled and tested. Sixty-four flight analog front-end electronics boards have completed burn-in, three-temperature testing. Boards for the last two modules began burn-in.

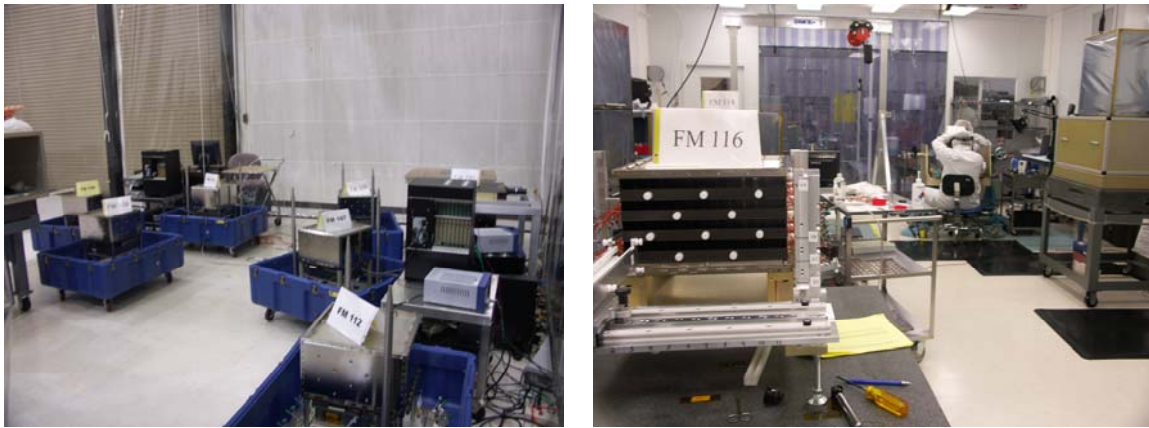


Figure 2: Calorimeter flight modules at NRL.

4.1.6 Anticoincidence Detector

Installation of the second side row tile detector assemblies (TDAs) has been completed, bringing the total number of installed TDAs to 65. ACD performance was simulated, verifying that the ACD meets the efficiency requirement. There are continued quality and delivery rate issues with the photomultiplier tube (PMT) mechanical housings. Thermal-vacuum testing of the qual/spare electronics chassis has commenced. Assembly of the first electronics chassis has been completed. Issues with EGSE continue to be worked.

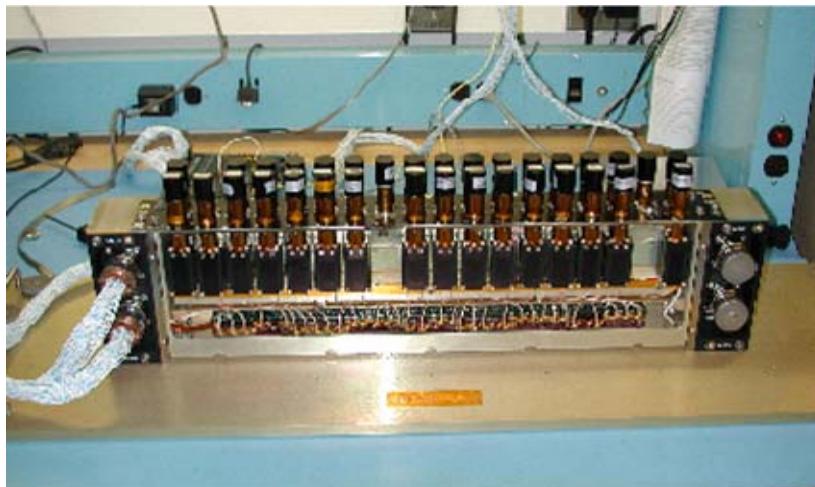


Figure 3: First completed ACD electronics chassis (dual row).

4.1.7 Electronics, Data Acquisition, and Flight Software

Three Tower Electronics Modules (TEMs) and Tower Power Supplies (TPSs) were integrated in their enclosures and tested. Three TPSs were mounted onto TEMs and tested. Vibration testing was attempted at the TEM/TPS vendor, but not successful. An alternate facility was identified, so the three TEM/TPS were shipped to SLAC (where incoming electrical tests were successfully performed), and vibration-tested at the new facility. The first electronics tower is expected to be ready for integration in early February. The assembly contracts for the power distribution unit (PDU) and GASU were

awarded. The GASU tester is being designed and assembled. The spacecraft interface unit (SIU) enclosure is being fabricated. A test with the RAD750 flight board revealed misalignment of two mounting holes, requiring modification. The EEPROM lot acceptance was put on hold, due to issues discovered in destructive parts analysis. The heat-sink issue in the RAD750 CPU boards is still being investigated; the boards will be reworked. The LAT communications board firmware/software was validated, using a RAD750 flight board in an engineering SIU crate.

The instrument-to-spacecraft interface simulator (ISIS) was shipped. Charge injection calibration has been used to pulse a Calorimeter module and get calibration data back. Development of the inter-task communications system has been delayed due to ISIS integration and AstroRT testing. The front-end simulator management utilities are complete. The multiple boot code image checksum and selection code are complete. A new thermal control algorithm was received and implemented. Errors encountered during LAT communications board initialization have been corrected. Records from a pre-built attitude data set have been successfully transmitted via 1553 from a simulated spacecraft to a simulated LAT CPU.

4.1.8 Mechanical Systems

A feature to allow temperature sensor wiring in the X-axis purge grooves to pass under the Y-axis heat pipes was added to the grid. The last top flange heat pipe was bonded into the grid.

Lockheed Martin received the cross-LAT (X-LAT) plate detail. An End Item Data Review was successfully held for X-LAT heat pipes, and they are ready to bond into the next assembly. The X-LAT plate bonding tool try was completed. Some minor modifications will be required to improve functionality of the tool. The potting of inserts and spools on the radiator panels is 25% complete. Radiator panel repair techniques (for honeycomb bonding) have been developed and demonstrated.

4.1.9 Integration & Test (I&T)

Four Calorimeter modules and the first Tracker tower were received. Grid rework (addition of purge groove pockets and chamfer of sharp edges) and heat pipe bonding was completed. Test stands and work stations were checked out and validated; the I&T test stand setup procedure was released. The thermal vacuum chamber was checked out and deemed operational. An EMI taping process was developed with the Tracker team. Personnel access platforms were installed on the LAT integration stand. Version 4.6.5 of the LAT Test Executive (LATTE) was released. The pre-release version of LATTE 4.7 was completed. The Science, Verification, Analysis, and Calibration (SVAC) pipeline is running with a new front-end interface. The first Tracker module is being processed with new code.



Figure 4: LAT integration stand with personnel access platforms installed.

3.0 Schedule Status

The critical path for the project is driven by Tracker MCM production. There is no float to the “ready for CD-4 review” milestone (baseline has five weeks’ float). Options are being aggressively pursued to speed up production and resolve technical issues. Project plan reprogramming is underway.

The status of significant milestones is summarized in Attachments 1 and 2. Attachment 1 presents the status of the Level 1 and Level 2 milestones. Attachment 2 shows the status of the remaining Level 3 milestones. Unfavorable variance projections greater than one week to the future milestones are discussed below.

The start of integration (level 2 milestone 1M1000740) is now driven by the grid being ready for integration. The delays in the pre-environmental test review (level 2 milestone 1M1000700) and the instrument pre-ship review (level 2 milestone 1M1000120) are due to the delay in Tracker tray assembly, and is the project critical path. These issues are addressed elsewhere in this report.

The following milestones were completed in this reporting period:

Milestone Number	Description	Date Completed
1M1500	Calorimeter Module B RFI	1/14/05
1M1000230	Calorimeter Module 1 RFI	1/14/05
1M1510	Calorimeter Module 2 RFI	1/14/05
1M1000400	Calorimeter Module 3 RFI	1/14/05
1M79110	Demo: ISIS FQT	1/28/05
1M79160	Demo: File and Memory Management	1/31/05

Following is discussion of the level 3 milestone variances, by responsible subsystem. It is anticipated that these variances will be corrected in the pending rebaseline.

4.1.4 Tracker

Variances to the following milestones are due to technical problems related to in-process test failures and quality-control issues, which have required some design and process modifications and have led to delays in MCM and tray assembly.

- Tracker Modules (1M1000200, 1M1000201, 1M1000220, 1M1000221, 1M1000250, 1M1000251, 1M1000260, 1M1000261, 1M1000270, 1M1000271, 1M1000280, 1M1000281, 1M1000290, 1M1000291, 1M1000300, 1M1000301, 1M1000310, and 1M1000311)

(Editor's note: As of publication of this report, the first two Tracker modules were delivered to I&T).

4.1.5 Calorimeter

Variances to the following milestones are due to delayed receipt of Calorimeter ASICs and other flight EEE parts. All parts are now in hand and AFEE boards have been manufactured. Module assembly and test rate has been accelerated to recover some of the variance.

- Calorimeter Modules 4-16 (1M1520, 1M1000390, 1M1530, 1M1000380, 1M1540, 1M1000370, 1M1550, 1M1560, 1M1000360, 1M1000350, 1M1570, 1M1000340, and 1M1580)
- EM2 TEM/PS (return FMA through FM6) from I&T to Calorimeter (1M1001790 through 1M1001860)

(Editor's note: As of publication of this report, Calorimeter modules 4 and 5 were ready to ship, and five of the EM2 TEM/PSs were returned.)

4.1.6 Anticoincidence Detector

There are several factors slowing the development of the ACD test scripts (1M1001000). The underlying LAT test executive software continues to evolve, and the translation of scientific requirements into test scripts has been more complex than planned. There is a working set of scripts; the final test scripts are expected to be completed in March.

Several technical issues have impacted the delivery date of the ACD (1M1000410). The most notable issues have been flaws in the photomultiplier tubes that cause the glass tube to be much weaker than expected, the late delivery of ASICs, and the delay of the G3 test stands and associated software development. The ACD team continues to mitigate these technical issues to minimize the overall schedule impact.

4.1.7 Electronics

Variances to the following milestones are due to delays in drawing release driving procurement placement. Most of the drawings are now released. Changes in functional requirements with other subsystems, and the functional interface with the spacecraft, as well as flight performance requirements not being satisfied by engineering model testing have impacted the deliveries of these milestones, as well. Additional testing of the qualification and engineering model units has been required in response. There have been several weeks of vendor delays in the assembly of the TEM and TEM power supply boards.

- Flight TEM Power Supply Assemblies to I&T (1M79002010 through 1M79002180)
- Flight TEM Assemblies to I&T (1M79001010 through 1M79001180)
- Flight Cable Assemblies to I&T (1M79003010 through 1M79003180)

(Editor's note: as of publication of this report, the first flight TEM and TEM power supply were delivered to I&T).

The variance to the final EGSE milestone (1M7941440) is due to delayed receipt and quality problems with connectors. Effort has been diverted to the installation of TEMs on the Test Bed.

Fabrication of the following items has been delayed in order to conduct additional system and unit tests, and complete drawing review:

- Flight SIU (1M7941080)
- Flight PDU Box (1M7942000)
- Flight Harness (1M7941110)
- Flight GASU Box (1M7941070)
- Flight Event Processor Units (1M7941090)

Scheduling of the following flight software demonstrations has been delayed, due to problems with the ISIS initialization commanding processes.

- Demo: Inter-task Communications (1M79180)
- Demo: Command & Telemetry Data Dictionary (1M79190)
- Demo: Thermal Control (1M79200)
- Demo: Watchdog (1M79210)

The demonstration of command & telemetry (1M79090) was delayed due the Command and Telemetry/1553 Service software package (CTS) not being completed as planned. The overall schedule for flight software contained sufficient float that the delays to date in completing CTS have not impacted the planned start date for Formal Qualification Test (FQT).

Work on the spacecraft interfaces (1M79170) has been slowed due to resources being diverted to address LAT Communication Board driver firmware changes. The engineer assigned to work on the charge injection calibration (1M79220) has accepted another position; this work has been re-assigned within the remaining group.

The software needed to complete the following demos is delayed. Additional requirements were assigned that needed to be analyzed and solved. AstroRT had bugs which required unplanned characterization and workarounds.

- Demo: Charge Injection Calibration (1M79220)
- Demo: Event Integrity & Delivery (1M79240)
- Demo: Event Filtering (1M79250)
- Demo: GRB Detection & Response (1M79260)
- Demo: Mode Control (1M79270)
- Demo: Diagnostics (1M79280)

4.1.8 Mechanical Systems

There was a missing feature discovered in the Grid (1M1000240). Due to a new requirement to route temperature sensor wiring in the Grid purge grooves, these missing features had to be incorporated. Tooling was developed and proved. This delayed bonding in the final heat pipe approximately three weeks.

The cross-LAT (X-LAT) thermal plate (1M941710) has been delayed due to issues with the electronics box to X-LAT plate interface, the ground cooling design implementation, and heat pipe bending. These have all been resolved; the source control drawing was released and the manufacturing readiness review was held.

Fabrication issues have resulted in a delay in the radiators (1M941720). There were heat pipe assembly weld and bending development problems that resulted in the replacement of two flight pipes. The panel fabrication experienced delays stemming from the tight tolerances and large size of the radiators. Program-specific tools were built for the radiators and there have been problems with these typical of any first use. There were discrepancies during the facesheet to honeycomb core bonding and during the panel drilling or the potted inserts. These anomalies have been evaluated, repairs developed and demonstrated. The final repairs are still underway.

4.1.B Instrument Science Operations Center

The dates for the Mission Operations Review (1M1000112), and the Ground System Interface Test Start (1M7941270) have been adjusted to align with the project level ground data system (GDS) preparation on which these reviews are dependent. Given the

current GLAST GDS schedule, there is no impact due to the date change and no need for mitigation.

4.0 Financial Status

Attachment 3 depicts the costs, commitments, and performance through the end of the current reporting period.

Attachments 4 and 5 summarize the actual costs through the current period, by WBS level 3 and institution, respectively. The hours worked/FTE lines include only DOE/NASA-funded labor.

5.0 Performance Status (Comparison to Project Baseline)

Attachment 6 is a Cost Performance Report (CPR) for the end of the current reporting period, by WBS level 3. The CPR shows the time-phased budget to date (BCWS), the earned value (BCWP), and the actual costs through the end of the month (ACWP). Attachment 7 shows the same information for each participating DOE- and/or NASA-funded institution. The schedule variance is equal to the difference between the budget-to-date and the earned value and represents a measure of the ahead (positive) or behind (negative) schedule position. The cost variance is equal to the difference between the earned value and the actual costs.

Attachment 8 shows performance analysis (by WBS level 3), including trends in the schedule and cost variances from the previous period. Cumulative cost variances exceeding 10% of the BCWP and cumulative schedule variances exceeding 10% of BCWS (favorable and unfavorable) are discussed below.

It is anticipated that these variances will be corrected in the pending rebaseline.

4.1.4 Tracker

Low MCM yields and technical problems have forced unplanned development and parts costs. The bottom tray to Grid interface had to be redesigned due to loosening of the bolted joints during vibration and due to difficulties in ensuring that the Tracker will be within its stayclear when mounted onto the Grid. Additional labor cost was incurred for flex cable modifications, bias circuit modifications and MCM work. Unforeseen purchases of parts and materials had to be made by SLAC in order to support assembly work in Italy.

4.1.7 Electronics

Delays in finalizing the printed-circuit flight boards lead to the late start of flight production. In addition, the flight production of some of the boards is taking much longer due to vendor delays and conflicting priorities at the assembly vendor. More documentation and analysis (e.g. vibration, qualification testing) was required than

planned. These schedule delays have resulted in additional labor cost. Production assembly contracts for the electronics boards are costing much higher than anticipated.

4.1.8 Mechanical Systems

The Lockheed Martin (LM) contract has overrun tasks for X-LAT plate analysis as well as radiator design, analysis, tooling design & fabrication, and thermal controls design. The heat pipe fabrication effort was underquoted, as well as the tooling to produce these parts. There were heat pipe assembly weld and bending development problems, delaying the program and replacing two flight pipes. Panel fabrication has experienced delays stemming from the tight tolerances and large size of the radiators.

4.1.C Education & Public Outreach

The favorable cost variance is due to delayed subcontractor invoice payments, and is not a concern at this time.

6.0 Change Control and Contingency Analysis

A summary of change requests approved during this period (Level 3 and above), including the impacts on the LAT fabrication phase contingency, is below.

Change Request No.	Description	Submitted By	Current Status	Contingency Impact ¹
LAT-XR-05176-01	Pedestal & Tracker Monitoring Functions from FSW to ISOC	M. DeKlotz	Approved	N/A
LAT-XR-05238-01	LAT Environmental Specification Update	L. Lee	Approved	N/A
LAT-XR-05372-01	Consolidate and Update Calorimeter Power, Center of Mass, and Mass Requirements to Specification	R. Bright/	Approved	N/A
LAT-XR-05478-01	Update Tracker-LAT ICD, Mechanical and Thermal	R. Bielawski	Approved	N/A

The fabrication phase cost baseline is \$133.2M. Funding applicable to that baseline is \$136.0M; the resulting contingency is \$2.8M.

7.0 Staffing

Attachments 9-10 demonstrate the staffing plan and reports of actual manpower received. As of this reporting period, non-reporting organizations are no longer included; the cumulative total FTEs has been reset to only include those remaining in the plan.

¹ A positive number indicates a draw on contingency.

The monthly planned FTEs reflect adjustments made so that the cumulative-to-date manpower plan corresponds to the approved changes in that month.

Neither Goddard nor Stanford-HEPL manpower was reported in the month of August, 2004. The September, 2004, incremental FTE report includes a correction, so that the cumulative-to-date actual manpower is correct.

Goddard civil servant manpower was not reported for the months of October or November, 2004. The January, 2005, incremental FTE report includes a correction, so that the cumulative-to-date actual manpower is correct.

Attachment 1 Milestones, Levels 1-2

Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	FY01	FY02	FY03	FY04	FY05	FY06	
DOE/NASA Joint Oversight Group (Level 1)											
1M1P000000	DOE Critical Decision (CD) 0 Approval	06/25/01A	0	06/25/01A	▼						
1M1P000010	CD-1 Approval	07/23/02A	0	07/23/02A		▼					
1M1P000020	CD-2 Approval	11/08/02A	0	11/08/02A			▼				
1M1P000030	CD-3 Approval	09/03/03A	0	09/03/03A				▼			
1M1P000060	Flight GRID Complete	09/15/04*	-38	11/08/04A					▼		
1M1P000040	CD-4 Approval	03/15/06*	0	03/15/06*						▼	
DOE/NASA Federal Project Managers (Level 2)											
1M1BF00000	Launch Balloon Flight	08/01/01A	0	08/01/01A	▼						
1M1000100	Instrument Preliminary Design Review	01/08/02A	0	01/08/02A		▼					
1M1000110	I-CDR (Critical Design Review)	05/16/03A	0	05/16/03A			▼				
1M1000740	Start LAT Integration	08/24/04*	-119	02/22/05					▼		
1M1000700	Pre Environmental Testing Review	07/14/05*	-110	12/20/05						▼	
1M1000120	PSR-(Instrument Pre-Ship Review)	12/01/05*	-89	04/17/06						▼	
Run Date					03/02/05 19:14		GLAST LAT PROJECT Project Milestones (Level 1 and 2)			0222 LT_MS1-2	
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**Attachment 2
Future Level 3 Milestones
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Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	FY04			FY05			FY06	
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Instrument Project Office (Level 3)												
4.1.1 Instrument Management												
1M1001920	Pre-Environmental Test Review	06/07/05	-136	12/20/05								▽
4.1.4 Tracker												
1M1000200	Tracker Modules A RFI	07/28/04	-127	02/04/05								
1M1000201	Tracker Modules B RFI	08/18/04	-129	03/02/05								
1M1000220	Tracker Modules 1 RFI	08/18/04	-143	03/22/05								
1M1000221	Tracker Modules 2 RFI	09/08/04	-150	04/20/05								
1M1000250	Flight Tracker Tower 3 RFI	09/08/04	-157	04/29/05								
1M1000251	Flight Tracker Tower 4 RFI	10/14/04	-146	05/20/05								
1M1000260	Flight Tracker Tower 5 RFI	10/14/04	-153	06/01/05								
1M1000261	Flight Tracker Tower 6 RFI	11/05/04	-148	06/16/05								
1M1000270	Flight Tracker Tower 7 RFI	11/05/04	-155	06/27/05								
1M1000271	Flight Tracker Tower 8 RFI	11/24/04	-148	07/06/05								
1M1000280	Flight Tracker Tower 9 RFI	11/24/04	-155	07/15/05								
1M1000281	Flight Tracker Tower 10 RFI	12/17/04	-147	07/26/05								
1M1000290	Flight Tracker Tower 11 RFI	12/17/04	-154	08/04/05								
1M1000291	Flight Tracker Tower 12 RFI	01/11/05	-150	08/15/05								
1M1000300	Flight Tracker Tower 13 RFI	01/11/05	-157	08/24/05								
1M1000301	Flight Tracker Tower 14 RFI	01/25/05	-155	09/02/05								
1M1000310	Flight Tracker Tower 15 RFI	01/25/05	-157	09/07/05								
1M1000311	Flight Tracker Tower 16 RFI	02/08/05	-151	09/13/05								
4.1.5 Calorimeter												
1M1520	Flight Calorimeter Tower 4 RFI	08/17/04	-126	02/24/05								
1M1000390	Flight Calorimeter Tower 5 RFI	09/15/04	-106	02/24/05								
1M1530	Flight Calorimeter Tower 6 RFI	09/15/04	-125	03/23/05								
1M1000380	Flight Calorimeter Tower 7 RFI	10/11/04	-107	03/23/05								
1M1540	Flight Calorimeter Tower 8 RFI	10/11/04	-113	03/31/05								
1M1000370	Flight Calorimeter Tower 9 RFI	11/02/04	-98	04/01/05								
1M1550	Flight Calorimeter Tower 10 RFI	11/02/04	-107	04/14/05								
1M1560	Flight Calorimeter Tower 12 RFI	11/15/04	-104	04/22/05								
1M1000360	Flight Calorimeter Tower 11 RFI	11/16/04	-97	04/14/05								
Run Date	03/03/05 09:54	GLAST LAT PROJECT Project Milestones (Level 3) Planned Milestones			0222 LTX2 - MS3 (planned) FLX2- MS3 (planned)	Sheet 1 of 5						
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Attachment 2
Future Level 3 Milestones
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Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	Timeline											
					FY04			FY05			FY06					
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1M1000350	Flight Calorimeter Tower 13 RFI	12/02/04	-99	05/02/05				•	▼							
1M1570	Flight Calorimeter Tower 14 RFI	12/02/04	-99	05/02/05				•	▼							
1M1000340	Flight Calorimeter Tower 15 RFI (Spare)	01/06/05	-80	05/02/05				•	▼							
1M1580	Flight Calorimeter Tower 16 RFI (Spare)	01/06/05	-91	05/17/05				•	▼							
4.1.6 ACD																
1M1001000	ACD Test Scripts (from ACD to I&T)	07/01/04	-142	02/01/05*					▼							
1M1000410	ACD Flight Unit at SLAC, Tested/Inspected & RFI	11/03/04	-145	06/09/05				•		▼						
4.1.7 Electronics																
1M79003010	Flight Cables Assy A: Elec to I&T	05/10/04	-198	03/01/05		•				▼						
1M79003020	Flight Cables Assy B: Elec to I&T	05/10/04	-200	03/03/05		•				▼						
1M79002010	Flight TEM PS Assy A: Elec to I&T	05/12/04	-189	02/17/05		•				▼						
1M79002020	Flight TEM PS Assy B: Elec to I&T	05/19/04	-189	02/25/05		•				▼						
1M79001010	Flight TEM Assy A: Elec to I&T	06/07/04	-172	02/17/05		•				▼						
1M79003030	Flight Cables Assy 1: Elec to I&T	06/10/04	-180	03/07/05		•				▼						
1M79003040	Flight Cables Assy 2: Elec to I&T	06/10/04	-182	03/09/05		•				▼						
1M79003050	Flight Cables Assy 3: Elec to I&T	06/10/04	-184	03/11/05		•				▼						
1M79003060	Flight Cables Assy 4: Elec to I&T	06/10/04	-186	03/15/05		•				▼						
1M79001020	Flight TEM Assy B: Elec to I&T	06/14/04	-172	02/25/05		•				▼						
1M79003070	Flight Cables Assy 5: Elec to I&T	06/28/04	-176	03/17/05		•				▼						
1M79003080	Flight Cables Assy 6: Elec to I&T	06/28/04	-178	03/21/05		•				▼						
1M79003090	Flight Cables Assy 7: Elec to I&T	06/28/04	-180	03/23/05		•				▼						
1M79003100	Flight Cables Assy 8: Elec to I&T	06/28/04	-182	03/25/05		•				▼						
1M79003110	Flight Cables Assy 9: Elec to I&T	06/28/04	-184	03/29/05		•				▼						
1M79003120	Flight Cables Assy 10: Elec to I&T	06/28/04	-186	03/31/05		•				▼						
1M79002030	Flight TEM PS Assy 1: Elec to I&T	07/01/04	-199	04/22/05		•				▼						
1M79002040	Flight TEM PS Assy 2: Elec to I&T	07/09/04	-199	04/29/05		•				▼						
1M79003130	Flight Cables Assy 11: Elec to I&T	07/15/04	-176	04/04/05		•				▼						
1M79003140	Flight Cables Assy 12: Elec to I&T	07/15/04	-178	04/06/05		•				▼						
1M79003150	Flight Cables Assy 13: Elec to I&T	07/15/04	-180	04/08/05		•				▼						
1M79003160	Flight Cables Assy 14: Elec to I&T	07/15/04	-182	04/12/05		•				▼						
1M79003170	Flight Cables Assy 15: Elec to I&T	07/15/04	-184	04/14/05		•				▼						
1M79003180	Flight Cables Assy 16: Elec to I&T	07/15/04	-186	04/18/05		•				▼						
Run Date		03/03/05 09:54		GLAST LAT PROJECT Project Milestones (Level 3) Planned Milestones			0222 LTX2 - MS3 (planned) FLX2- MS3 (planned)			Sheet 2 of 5						
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Attachment 2
Future Level 3 Milestones
Page 3 of 5

Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	FY04			FY05			FY06	
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1M79002050	Flight TEM PS Assy 3: Elec to I&T	07/16/04	-199	05/06/05								
1M79002060	Flight TEM PS Assy 4: Elec to I&T	07/23/04	-199	05/13/05								
1M79002070	Flight TEM PS Assy 5: Elec to I&T	07/30/04	-199	05/20/05								
1M79001030	Flight TEM Assy 1: Elec to I&T	08/03/04	-177	04/22/05								
1M79002080	Flight TEM PS Assy 6: Elec to I&T	08/06/04	-199	05/27/05								
1M79001040	Flight TEM Assy 2: Elec to I&T	08/10/04	-177	04/29/05								
1M79002090	Flight TEM PS Assy 7: Elec to I&T	08/13/04	-199	06/06/05								
1M79001050	Flight TEM Assy 3: Elec to I&T	08/17/04	-177	05/06/05								
1M79002100	Flight TEM PS Assy 8: Elec to I&T	08/20/04	-199	06/13/05								
1M79001060	Flight TEM Assy 4: Elec to I&T	08/24/04	-177	05/13/05								
1M79002110	Flight TEM PS Assy 9: Elec to I&T	08/25/04	-201	06/20/05								
1M79002120	Flight TEM PS Assy 10: Elec to I&T	08/30/04	-203	06/27/05								
1M79001070	Flight TEM Assy 5: Elec to I&T	08/31/04	-177	05/20/05								
1M79002130	Flight TEM PS Assy 11: Elec to I&T	09/02/04	-205	07/05/05								
1M79001080	Flight TEM Assy 6: Elec to I&T	09/08/04	-177	05/27/05								
1M79002140	Flight TEM PS Assy 12: Elec to I&T	09/08/04	-207	07/12/05								
1M79002150	Flight TEM PS Assy 13: Elec to I&T	09/13/04	-209	07/19/05								
1M79001090	Flight TEM Assy 7: Elec to I&T	09/15/04	-177	06/06/05								
1M79002160	Flight TEM PS Assy 14: Elec to I&T	09/16/04	-211	07/26/05								
1M79002170	Flight TEM PS Assy 15: Elec to I&T	09/21/04	-213	08/02/05								
1M79001100	Flight TEM Assy 8: Elec to I&T	09/22/04	-177	06/13/05								
1M79002180	Flight TEM PS Assy 16: Elec to I&T	09/24/04	-215	08/09/05								
1M79001110	Flight TEM Assy 9: Elec to I&T	09/29/04	-177	06/20/05								
1M79090	Demo: Command and Telemetry	10/01/04	-81	02/04/05								
1M79001120	Flight TEM Assy 10: Elec to I&T	10/06/04	-177	06/27/05								
1M79001130	Flight TEM Assy 11: Elec to I&T	10/13/04	-177	07/05/05								
1M7941080	Flight SIU-Elec to I&T	10/13/04	-210	08/19/05								
1M7942000	Flight PDU Box-Elec to I&T	10/13/04	-176	07/01/05								
1M79001140	Flight TEM Assy 12: Elec to I&T	10/20/04	-177	07/12/05								
1M7941110	Flight Harness-Elec to I&T	10/20/04	-149	06/01/05								
1M79001150	Flight TEM Assy 13: Elec to I&T	10/27/04	-177	07/19/05								
1M7941070	Flight GASU Box-Elec to I&T	11/01/04*	-170	07/13/05								

Run Date 03/03/05 09:54

GLAST LAT PROJECT
Project Milestones (Level 3)
Planned Milestones

0222
LTX2 - MS3 (planned)
FLX2- MS3 (planned)

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Future Level 3 Milestones
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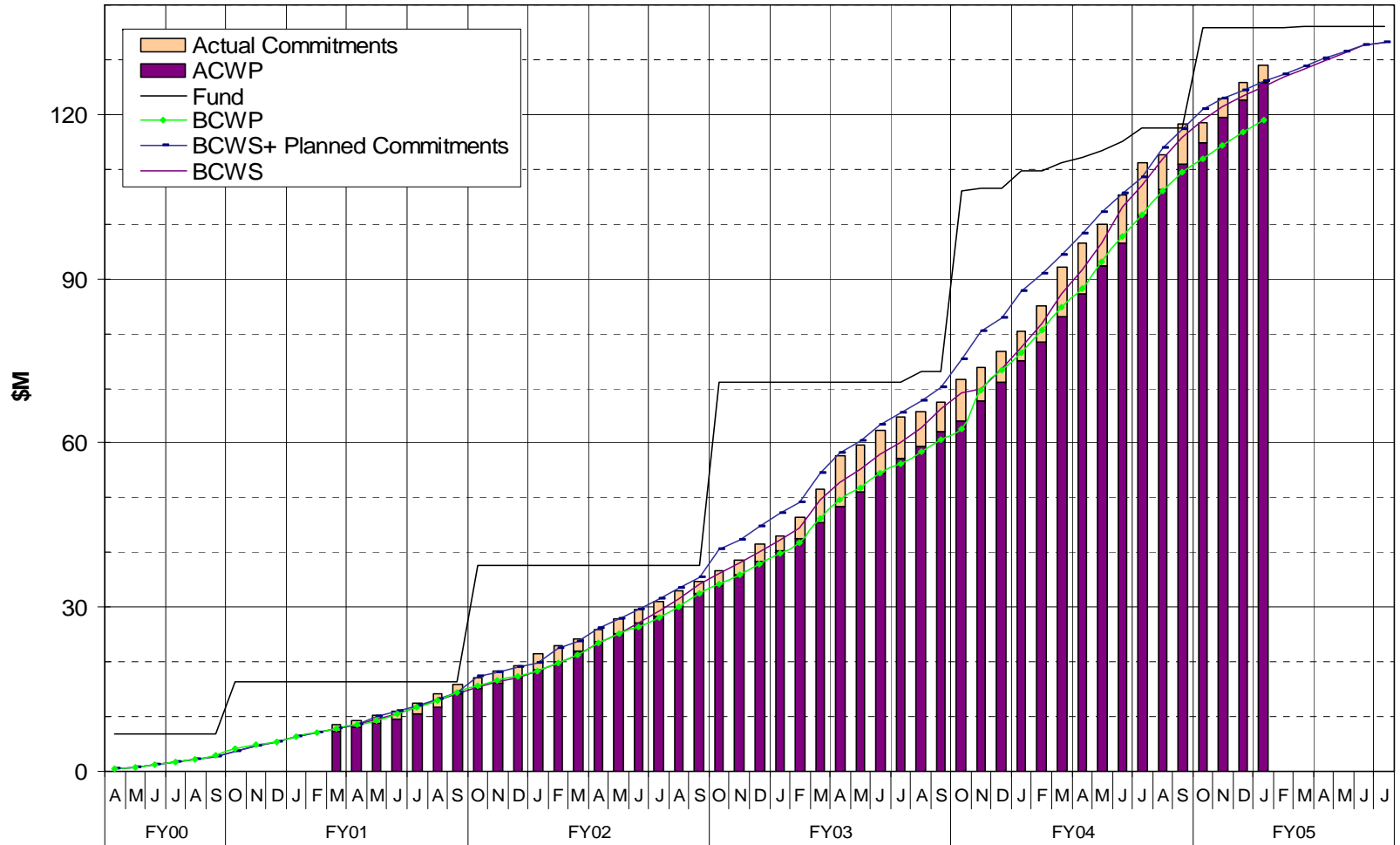
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	Gantt Chart											
					FY04			FY05				FY06				
					Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1				
1M7941090	Flight Event Processor Units-Elec to I&T	11/01/04	-197	08/19/05				•	▼							
1M79001160	Flight TEM Assy 14: Elec to I&T	11/03/04	-177	07/26/05				•	▼						▼	
1M79001170	Flight TEM Assy 15: Elec to I&T	11/10/04	-177	08/02/05				•	▼						▼	
1M79001180	Flight TEM Assy 16: Elec to I&T	11/17/04	-177	08/09/05				•	▼						▼	
1M79170	Demo: Spacecraft Interfaces	12/03/04	-44	02/14/05				•	▼							
1M79180	Demo: Inter-task Communications	12/03/04	-38	02/04/05				•	▼							
1M7941440	Final EGSE incl S/C Sim, FSW-Elec to I&T	12/13/04	-71	04/01/05				•	▼						▼	
1M79190	Demo: Command and Telemetry Data Dictionary	01/07/05	-19	02/04/05				•	▼							
1M79200	Demo: Thermal Control	01/07/05	-27	02/16/05				•	▼							
1M79210	Demo: Watchdog	01/07/05	-43	03/11/05				•	▼							
1M79220	Demo: Charge Injection Calibration	01/07/05	-33	02/25/05				•	▼							
1M79230	Demo: Housekeeping	01/28/05	-2	02/01/05*				•	▼							
1M79240	Demo: Event Integrity and Delivery	01/28/05	-16	02/22/05				•	▼							
1M79250	Demo: Event Filtering	01/28/05	-36	03/22/05				•	▼							
1M79260	Demo: GRB Detection and Response	01/28/05	-64	04/29/05				•	▼							
1M79270	Demo: Mode Control	02/25/05	-12	03/15/05				•	▼							
1M79280	Demo: Diagnostics	02/25/05	-12	03/15/05				•	▼							
4.1.8 Mechanical																
1M1000240	Flight Grid RFI-Mech to I&T	07/22/04	-142	02/22/05				•	▼							
1M941710	X-LAT Thermal Plate RFI from Mech to I&T	08/12/04	-168	04/20/05				•	▼							
1M941720	Radiators ready for I&T (from Mech to I&T)	03/17/05	-89	07/22/05					•	▼					▼	
4.1.9 I&T																
1M1001790	EM2 TEM/PS (return FMA) from I&T to CAL	07/23/04	-130	02/04/05*				•	▼							
1M1001800	EM2 TEM/PS (return FMB)from I&T to CAL	07/23/04	-135	02/11/05*				•	▼							
1M1001810	EM2 TEM/PS (return FM1) from I&T to CAL	08/13/04	-125	02/18/05*				•	▼							
1M1001820	EM2 TEM/PS (return FM2) from I&T to CAL	08/16/04	-114	02/04/05*				•	▼							
1M1001830	EM2 TEM/PS (return FM3) from I&T to CAL	08/31/04	-108	02/11/05*				•	▼							
1M1001840	EM2 TEM/PS (return FM4) from I&T to CAL	08/31/04	-126	03/10/05*				•	▼							
1M1001850	EM2 TEM/PS (return FM5) from I&T to CAL	09/29/04	-106	03/10/05*				•	▼							
1M1001860	EM2 TEM/PS (return FM6) from I&T to CAL	09/29/04	-125	04/06/05*				•	▼							
1M1000130	LAT Ready to Ship to NRL for Env Test	06/08/05	-135	12/20/05						•	▼				▼	
Run Date: 03/03/05 09:54					GLAST LAT PROJECT Project Milestones (Level 3) Planned Milestones					0222 LTX2 - MS3 (planned) FLX2- MS3 (planned)					Sheet 4 of 5	
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Attachment 2
Future Level 3 Milestones
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Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date	FY04		FY05			FY06	
					Q2	Q3	Q4	Q1	Q2	Q3	Q4
4.1.B ISOC											
1M1000112	Mission Operations Review (L-21mo.)	11/10/04	-177	08/02/05				◆			▽
1M7941270	Ground System Interface Test start	11/10/04	-177	08/02/05				◆			▽
Run Date	03/03/05 09:54	GLAST LAT PROJECT Project Milestones (Level 3) Planned Milestones			0222	LTX2 - MS3 (planned)		FLX2- MS3 (planned)		Sheet 5 of 5	
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Attachment 3

Budget vs Actuals vs Performance DOE + NASA Project Expenditures 4.1 LAT



**Attachment 4
LAT Costs, through January 2005, by WBS**

Monthly Contractor Financial Management Report								Report for Month Ending: 1/31/2005		
To: Kevin Grady, GLAST Project Manager (NASA) Ev Valle, LAT Project Manager (DOE)					From: Tanya Boysen, LAT Project Controls Manager			Budget Value		
								Cost: 0	Fee: 0	
LAT3 GLAST LAT Project		Type:							Fund Limitation: 0	
Reporting Category	Cost Incurred				Estimated Cost			4/3/2000	Billing	
	During Month		Cum. to Date		Detail		Balance of Budget	Estimated Final Cost		Unfilled Orders Outstanding
	Actual	Planned	Actual	Planned	FEB05	MAR05		Project Estimate	Budget Value	
4.1.1 INSTRUMENT MANAGEMENT	266	329	15,047	15,215	303	367	1,194	16,911	16,911	
4.1.2 SYSTEM ENGINEERING	119	152	6,102	6,245	154	186	605	7,047	7,047	
4.1.4 TRACKER	572	129	17,182	16,523	100	121	-277	17,126	17,126	
4.1.5 CALORIMETER	375	215	19,801	21,178	159	161	1,900	22,022	22,022	
4.1.6 ANTICOINCIDENCE DETECTOR	300	103	15,884	15,455	23	28	-339	15,595	15,595	
4.1.7 ELECTRONICS	841	220	23,206	21,626	193	149	-1,309	22,238	22,238	
4.1.8 MECHANICAL SYSTEMS	318	163	13,827	13,213	152	182	17	14,179	14,179	
4.1.9 INTEGRATION & TEST	204	254	6,162	6,398	400	306	1,145	8,013	8,013	
4.1.A PERFORMANCE AND SAFETY ASSURANCE	159	135	2,856	2,850	14	17	48	2,935	2,935	
4.1.B LAT INSTRUMENT OPERATIONS CENTER	1	3	301	309	3	4	20	328	328	
4.1.C EDUCATION AND PUBLIC OUTREACH	44	43	1,804	2,158	41	60	543	2,448	2,448	
4.1.D SCIENCE ANALYSIS SOFTWARE	50	74	2,365	2,598	71	85	498	3,019	3,019	
4.1.E SUBORBITAL FLIGHT TEST	0	0	1,325	1,325	0	0	0	1,325	1,325	
Gen. and Admin.	0	0	0	0	0	0	0	0	0	
Total	3,250	1,821	125,863	125,090	1,613	1,666	4,044	133,187	133,187	

Attachment 5
LAT Costs, through January 2005, by Organization and Cost Code

Monthly Contractor Financial Management Report								Report for Month Ending: 1/31/2005	
To: Kevin Grady, GLAST Project Manager (NASA) Ev Valle, LAT Project Manager (DOE)				From: Tanya Boysen, LAT Project Controls Manager				Budget Value	
								Cost:	Fee:
								0	0
LAT3 GLAST LAT Project		Type:						Fund Limitation: 0	
Reporting Category	Cost Incurred				Estimated Cost			4/3/2000	Billing
	During Month		Cum. to Date		Detail		Balance of Budget	Estimated Final Cost	Unfilled Orders Outstanding
	Actual	Planned	Actual	Planned	FEB05	MAR05		Project Estimate	
DG *** GSFC	317	139	17,265	17,196	57	69	150	17,541	17,541
DH *** HEPL	82	191	6,558	7,029	192	232	1,113	8,094	8,094
DL *** SLAC	2,365	1,089	73,810	70,552	1,034	998	-426	75,416	75,416
DN *** NRL	429	316	23,866	25,399	248	256	2,309	26,679	26,679
DO *** Financial Plan Transfer/Sub Out	0	0	59	54	0	0	-5	54	54
DS *** SSU	44	42	1,790	2,115	40	59	511	2,401	2,401
DT *** Texas A&M	0	0	15	16	0	0	0	16	16
DU *** UCSC	3	36	2,311	2,518	34	41	340	2,726	2,726
DW *** UW	10	8	189	211	8	10	53	260	260
Total	3,250	1,821	125,863	125,090	1,613	1,666	4,044	133,187	133,187

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 Budget	Project Estimate	Budget Value	
	Actual	Planned	Actual	Planned	FEB05	MAR05				
RL LABOR	1,420	1,016	60,851	60,213	940	1,032	2,426	65,248	65,248	
<i>FTE (DOE/NASA)</i>	<i>160.1</i>	<i>77.6</i>	<i>5,657.4</i>	<i>5,134.4</i>	<i>80.0</i>	<i>74.0</i>	<i>-283.2</i>	<i>5,528.2</i>	<i>5,528.2</i>	
<i>HOURS (DOE/NASA)</i>	<i>25,619</i>	<i>12,415</i>	<i>934,977</i>	<i>849,520</i>	<i>12,219</i>	<i>13,614</i>	<i>-44,923.4</i>	<i>915,887</i>	<i>915,887</i>	
RT TRAVEL	27	53	1,511	2,166	50	65	855	2,481	2,481	
RM MATERIAL & SERVICES	1,796	669	61,123	60,133	620	564	551	62,858	62,858	
RX MPS & LAB TAX	8	83	2,379	2,578	3	4	213	2,599	2,599	
Total (not incl FTE/Hours)	3,250	1,821	125,863	125,090	1,613	1,666	4,044	133,187	133,187	

Attachment 6
LAT Performance, through January 2005, by WBS

Cost Performance Report - Work Breakdown Structure													
Contractor: Location:						Contract Type/No:			Project Name/No: GLAST LAT Project		Report Period: 12/31/2004 1/31/2005		
Quantity	Negotiated Cost		Est. Cost Authorized Unpriced Work		Tgt. Profit/ Fee %	Tgt. Price	Est Price	Share Ratio	Contract Ceiling	Estimated Contract Ceiling			
1	0		0		0	0	0		0	0			
CAPW[3]	Current Period					Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost Work	Variance		Budgeted Cost		Actual Cost Work	Variance		Budgeted	Latest Revised Estimate	Variance
	Work Scheduled	Work Performed		Schedule	Cost	Work Scheduled	Work Performed		Schedule	Cost			
Item	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
4.1.1 INSTRUMENT MANAGEMENT	329	329	266	0	63	15,215	15,215	15,047	0	167	16,911	16,911	0
4.1.2 SYSTEM ENGINEERING	152	152	119	0	33	6,245	6,245	6,102	0	142	7,047	7,047	0
4.1.4 TRACKER	129	139	572	10	-433	16,523	15,477	17,182	-1,046	-1,706	17,126	17,126	0
4.1.5 CALORIMETER	215	464	375	249	89	21,178	20,141	19,801	-1,036	340	22,022	22,022	0
4.1.6 ANTICOINCIDENCE DETECTOR	103	150	300	47	-150	15,455	15,040	15,884	-415	-844	15,595	15,595	0
4.1.7 ELECTRONICS	220	526	841	306	-315	21,626	19,391	23,206	-2,235	-3,815	22,238	22,238	0
4.1.8 MECHANICAL SYSTEMS	163	161	318	-2	-158	13,213	12,484	13,827	-729	-1,343	14,179	14,179	0
4.1.9 INTEGRATION & TEST	254	197	204	-56	-7	6,398	5,858	6,162	-540	-304	8,013	8,013	0
4.1.A PERFORMANCE AND SAFETY ASS	135	135	159	0	-25	2,850	2,850	2,856	0	-7	2,935	2,935	0
4.1.B LAT INSTRUMENT OPERATIONS O	3	3	1	0	2	309	309	301	0	8	328	328	0
4.1.C EDUCATION AND PUBLIC OUTRE	43	46	44	3	1	2,158	2,160	1,804	3	356	2,448	2,448	0
4.1.D SCIENCE ANALYSIS SOFTWARE	74	74	50	0	24	2,598	2,598	2,365	0	233	3,019	3,019	0
4.1.E SUBORBITAL FLIGHT TEST	0	0	0	0	0	1,325	1,325	1,325	0	0	1,325	1,325	0
Gen. and Admin.	0	0	0	0	0	0	0	0	0	0	0	0	0
Undist. Budget											0	0	0
Sub Total	1,821	2,376	3,250	555	-874	125,090	119,092	125,863	-5,999	-6,772	133,187	133,187	0
Contingency											2,798	2,798	0
Total	1,821	2,376	3,250	555	-874	125,090	119,092	125,863	-5,999	-6,772	135,985	135,985	0

Attachment 7
LAT Performance, through January 2005, by Organization

Cost Performance Report - Work Breakdown Structure													
Contractor: Location:				Contract Type/No:				Project Name/No: GLAST LAT Project		Report Period: 12/31/2004 1/31/2005			
Quantity	Negotiated Cost		Est. Cost Authorized Unpriced Work		Tgt. Profit/ Fee %	Tgt. Price	Est Price	Share Ratio	Contract Ceiling	Estimated Contract Ceiling			
1	0		0		0	0	0		0	0			
OBS[1]	Current Period					Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost Work	Variance		Budgeted Cost		Actual Cost Work	Variance		Budgeted	Latest Revised Estimate	Variance
	Work Scheduled	Work Performed		Schedule	Cost	Work Scheduled	Work Performed		Schedule	Cost			
Item	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
DG *** GSFC	139	186	317	47	-131	17,196	16,782	17,265	-415	-483	17,541	17,541	0
DH *** HEPL	191	191	82	0	109	7,029	7,023	6,558	-6	465	8,094	8,094	0
DL *** SLAC	1,089	1,364	2,365	275	-1,001	70,552	66,216	73,810	-4,336	-7,594	75,416	75,416	0
DN *** NRL	316	546	429	230	117	25,399	24,170	23,866	-1,229	304	26,679	26,679	0
DO *** Financial Plan	0	0	0	0	0	54	54	59	0	-5	54	54	0
DS *** SSU	42	45	44	3	1	2,115	2,117	1,790	3	327	2,401	2,401	0
DT *** Texas A&M	0	0	0	0	0	16	16	15	0	0	16	16	0
DU *** UCSC	36	36	3	0	34	2,518	2,503	2,311	-16	192	2,726	2,726	0
DW *** UW	8	8	10	0	-2	211	211	189	0	22	260	260	0
Gen. and Admin.	0	0	0	0	0	0	0	0	0	0	0	0	0
Undist. Budget											0	0	0
Sub Total	1,821	2,376	3,250	555	-874	125,090	119,092	125,863	-5,999	-6,772	133,187	133,187	0
Contingency											0	0	0
Total	1,821	2,376	3,250	555	-874	125,090	119,092	125,863	-5,999	-6,772	133,187	133,187	0

Attachment 8 LAT Performance Analysis, January 2005

	WBS	Description	BAC	BCWS	BCWP	ACWP	SV \$	CV \$	%BCWS	%BCWP	%ACWP	SPI	CPI	SPI	CPI	Cpi_Fcst	CpiSpi_Fcst
1	4.1	LAT	133,187	125,090	119,092	125,863	-5,999	-6,772	93.92	89.42	94.50	↔	↓	0.952	0.946	140,760	141,510
2	4.1.1	Instr Mgmt	16,911	15,215	15,215	15,047	0	167	89.97	89.97	88.98	↔	↑	1.000	1.011	16,725	16,725
3	4.1.2	System Engr	7,047	6,245	6,245	6,102	0	142	88.61	88.61	86.59	↔	↑	1.000	1.023	6,887	6,887
4	4.1.4	Tracker	17,126	16,523	15,477	17,182	-1,046	-1,706	96.48	90.37	100.33	↔	↓	0.937	0.901	19,013	19,137
5	4.1.5	Calorimeter	22,022	21,178	20,141	19,801	-1,036	340	96.17	91.46	89.92	↑	↑	0.951	1.017	21,650	21,745
6	4.1.6	ACD	15,595	15,455	15,040	15,884	-415	-844	99.10	96.44	101.85	↑	↓	0.973	0.947	16,470	16,487
7	4.1.7	Electronics	22,238	21,626	19,391	23,206	-2,235	-3,815	97.25	87.20	104.35	↑	↔	0.897	0.836	26,613	27,006
8	4.1.8	Mechanical	14,179	13,213	12,484	13,827	-729	-1,343	93.19	88.05	97.52	↔	↓	0.945	0.903	15,704	15,814
9	4.1.9	I&T	8,013	6,398	5,858	6,162	-540	-304	79.84	73.11	76.90	↔	↔	0.916	0.951	8,429	8,638
10	4.1.A	PSA	2,935	2,850	2,850	2,856	0	-7	97.09	97.09	97.32	↔	↓	1.000	0.998	2,942	2,942
11	4.1.B	ISOC	328	309	309	301	0	8	94.12	94.12	91.71	↔	↑	1.000	1.026	320	320
12	4.1.C	EPO	2,448	2,158	2,160	1,804	3	356	88.13	88.24	73.69	↔	↔	1.001	1.197	2,045	2,044
13	4.1.D	SAS	3,019	2,598	2,598	2,365	0	233	86.05	86.05	78.34	↔	↔	1.000	1.098	2,749	2,749
14	4.1.E	Balloon Flight	1,325	1,325	1,325	1,325	0	0	100.00	100.00	99.98	↔	↔	1.000	1.000	1,325	1,325

LEGEND

BAC: Budget At Complete

BCWS: Budgeted Cost of Work Scheduled (to date)

BCWP: Budgeted Cost of Work Performed (to date)

ACWP: Actual Cost of Work Performed (to date)

SV \$: Schedule Variance = BCWP - BCWS

CV \$: Cost Variance = BCWP - ACWP

SPI: Schedule Performance Index = BCWP/BCWS

CPI: Cost Performance Index = BCWP/ACWP

% BCWS: Percent Scheduled = BCWS/BAC

% BCWP: Percent Complete = BCWP/BAC

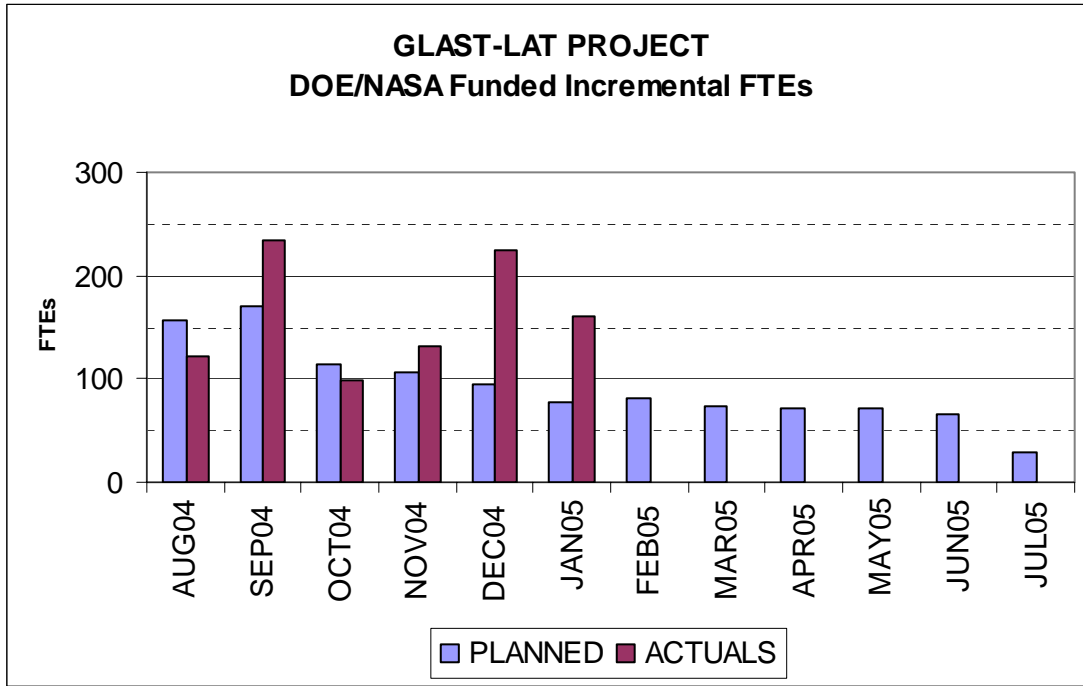
% ACWP: Percent Spent = ACWP/BAC

Cpi_Fcst: CPI (to date) EAC Forecast = BAC / CPI

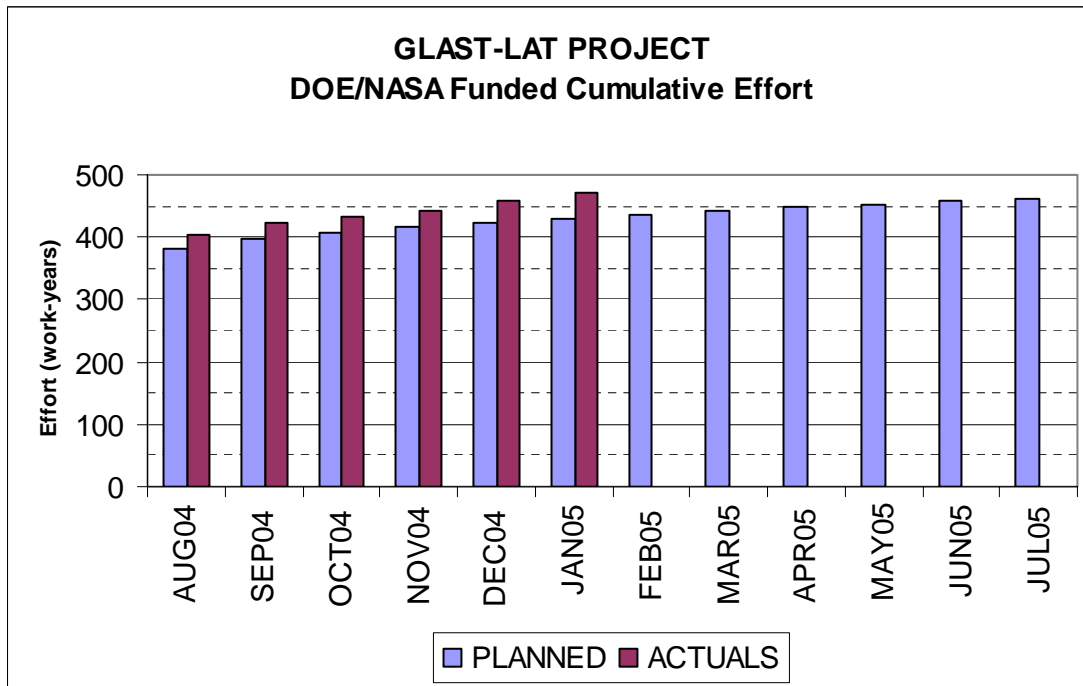
CpiSpi_Fcst: Combination CPI and SPI EAC Forecast = ACWP + (BAC - BCWP) / (CPI * SPI)

	Worse than .85		Between .95 and 1.10
	Between .85 and .95		Better than 1.10
SPI and CPI Change Thresholds			

**Attachment 9
LAT Manpower (DOE/NASA-Funded)**



Note: Neither Goddard nor Stanford-HEPL manpower was reported in the month of August, 2004, and Goddard civil servant manpower was not reported in the months of October and November, 2004. . The September and January, 2005, incremental FTE reports include corrections, so that the cumulative-to-date actual manpower is correct.



Attachment 10

LAT Manpower Data, through January 2005, by Organization

As of this reporting period, non-reporting organizations are no longer included; the cumulative total FTEs has been reset to only include those remaining in the plan.

Program:	Description:	Approval:														
LAT3	GLAST LAT Project	Program Manager														
Run Date:	Status Date:	Functional Manager														
3/1/2005	1/31/2005	Cost Account Manager														
			PRIOR	AUG04	SEP04	OCT04	NOV04	DEC04	JAN05	Cum-to-Date	FEB05	MAR05	APR05	MAY05	JUN05	JUL05
OBS																
DG *** GSFC																
FTE	PLANNED	981.3	54.1	55.3	13.3	17.8	13.0	7.7	1142.5	7.7	7.7	7.7	7.7	7.7	3.4	
	ACTUALS	1162.7	0.0	69.7	0.0	16.4	100.6	53.1	1402.5	0.0	0.0	0.0	0.0	0.0	0.0	
DH *** HEPL																
FTE	PLANNED	274.3	-0.9	2.0	3.8	3.8	3.7	3.8	290.4	3.8	3.8	3.7	3.6	3.7	1.8	
	ACTUALS	268.0	0.0	5.9	2.4	4.8	1.6	2.4	285.0	0.0	0.0	0.0	0.0	0.0	0.0	
DL *** SLAC																
FTE	PLANNED	2372.1	85.4	94.3	80.2	77.3	77.5	70.7	2857.5	66.0	63.4	60.9	60.7	56.8	25.1	
	ACTUALS	2229.9	105.6	124.1	70.9	93.6	82.8	95.4	2802.3	0.0	0.0	0.0	0.0	0.0	0.0	
DN *** NRL																
FTE	PLANNED	1052.4	41.4	31.9	29.4	21.0	17.6	15.9	1209.7	12.8	10.7	11.1	11.2	9.8	2.9	
	ACTUALS	1056.2	31.8	41.1	36.1	29.4	47.5	20.8	1262.9	0.0	0.0	0.0	0.0	0.0	0.0	
DS *** SSU																
FTE	PLANNED	102.6	3.2	3.2	2.0	2.0	1.9	1.9	116.6	1.9	1.9	1.9	1.9	1.9	0.8	
	ACTUALS	120.4	4.6	4.9	3.2	3.9	4.1	4.0	145.2	0.0	0.0	0.0	0.0	0.0	0.0	
DU *** UCSC																
FTE	PLANNED	218.5	3.7	3.7	3.7	3.7	3.7	-4.5	232.4	3.7	3.7	3.7	3.7	3.7	1.7	
	ACTUALS	308.1	5.0	4.7	2.4	0.0	0.2	0.0	320.2	0.0	0.0	0.0	0.0	0.0	0.0	
DW *** UW																
FTE	PLANNED	4.6	0.2	0.2	0.2	0.2	0.2	0.2	6.0	0.2	0.2	0.2	0.2	0.2	0.1	
	ACTUALS	17.2	1.0	1.1	1.0	0.1	1.2	1.0	22.5	0.0	0.0	0.0	0.0	0.0	0.0	
Grand Totals:		5005.9	187.1	190.6	132.6	125.9	117.6	95.7	5855.2	96.1	91.4	89.2	89.0	83.7	35.8	
		5162.4	148.0	251.4	115.9	148.2	237.9	176.7	6240.5							

4.1 GLAST LAT																
Contributed	PLANNED	589.6	31.0	20.1	18.9	19.9	23.2	18.1	720.7	15.7	17.4	17.4	17.2	17.4	7.1	
	ACTUALS	476.7	26.2	16.5	17.0	16.5	13.6	16.6	583.0	0.0	0.0	0.0	0.0	0.0	0.0	
Funded	PLANNED	4416.3	156.1	170.5	113.6	106.0	94.4	77.6	5134.5	80.4	74.0	71.8	71.8	66.3	28.7	
	ACTUALS	4685.8	121.8	234.9	98.8	131.7	224.3	160.1	5657.5	0.0	0.0	0.0	0.0	0.0	0.0	
Grand Totals:	PLANNED	5005.9	187.1	190.6	132.6	125.9	117.6	95.7	5855.2	96.1	91.4	89.2	89.0	83.7	35.8	
	ACTUALS	5162.4	148.0	251.4	115.9	148.2	237.9	176.7	6240.5	0.0	0.0	0.0	0.0	0.0	0.0	