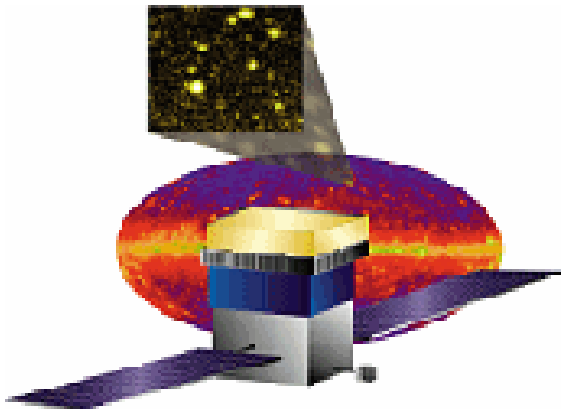
Monthly Progress Report

(Month Ending June 2004)

GLAST Large Area Telescope (LAT)



LAT-MR-04416-01

August 12, 2004

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 June, 2004.

2.0 Recent Progress and Status

4.1.4 Tracker

The new Engineering Model (EM) with flight design and flight interface has been fabricated. Static and vibration tests were conducted, with good results. The alignment procedure will be performed in early July; this is the final validation needed for the Tracker/grid interface. Teledyne has shipped a total of 145 multichip modules (MCMs), which is enough for four towers; 75 have been burned in and passed final testing. An issue with the register readback was discovered; the solution is to replace the 100-ohm clock termination resistors with 75-ohm resistors. Resistors on the existing MCMs are being replaced and future production will include the 75-ohm resistors. The first complete test of the MCM mounting tooling was conducted. Seven trays with tungsten and bias circuits were completed and vibration-tested; however, a delamination problem was discovered during thermal-vacuum testing and the tungsten surface preparation is being improved. Twelve hundred ladders have been assembled, with 1,100 tested (enough for eight towers).

4.1.5 Calorimeter

Over 1,650 (out of 1,950) fully-tested CsI crystals have been delivered to NRL. Approximately 3,400 (out of 4,800) flight PIN photodiode assemblies have been manufactured and tested. Twelve hundred crystal detector elements (CDEs) have been bonded. Of these, 1,037 have been wrapped and capped, and 956 have been tested and delivered to NRL. Production has been increased to 72 CDEs per week. Twelve flight composite structures have been manufactured; nine of these have successfully completed strength verification vibration test. Six Pre-Electronics Modules (PEMs) have been assembled and five have completed cosmic muon verification testing with the Electronics Ground Support Equipment (EGSE) checkout electronics. ASIC quality testing continues, with no issues reported. A vendor was selected and flight analog front-end electronics (AFEE) board manufacture is underway. Twenty assembled boards have been delivered.

4.1.6 Anticoincidence Detector

All tile detector assemblies have been fabricated. All 16 flight Front-End Electronics (FREE) boards have been operated successfully; half have completed functional tests. Seventy one photomultiplier tubes (PMTs) have been assembled; 60 have completed functional testing and conformal coating has been completed on 29. The placement of the PMTs was re-arranged to remove the "worst" tubes found during glass inspection. Match drilling of the ACD base frame assembly and the LAT grid was completed. The ACD mechanical support structure was delivered to ACD Integration & Test.

4.1.7 Electronics, Data Acquisition, and Flight Software

Test and burn-in of Tower Electronics Module (TEM) ASICs was started. The burn-in and test fixture was assembled for the GASU ASICs; the test program is being debugged. The third full GASU box was provided to the ACD group, and a fourth will be shipped in early July. Thirty version-three GASU boards (layout changed to incorporate power-switching/monitoring modifications) have been fabricated. Ten more power distribution unit boards were fabricated and being loaded. Six electronics ground support equipment (EGSE) test stands were supplied to the Calorimeter (five for AFEE testing, one for thermal-vacuum testing). One EGSE test stand was supplied to Tracker for MCM screening, and four to Italy. An EGSE test stand was also supplied to Integration & Test. All eight of the BAE750 boards have been received. All 40 front-end simulators have been installed on the test bed and are being commissioned.

A new feature was added to the secondary boot code, allowing users to selectively mount the EEPROM file system partitions. Improved 1553 and storage & interface board (SIB) drivers were released. The first draft of a LAT command list for the ISIS software system is under review. The LAT Communications Board (LCB) driver was updated, and a comprehensive test procedure for the LCB is being developed. Monte Carlo data is being converted into the format needed by the front-end simulator. Calorimetry calibration code is being exercised on hardware and in simulation. Housekeeping telemetry for TEM, PDU, and AEM environmental quantities and PDU power status registers is being exercised. The housekeeping limit checking code for environmental quantities was completed. Development of the revised flight software schedule was completed and approved.

4.1.8 Mechanical Systems

Match drilling was completed between the grid and base frame assembly. Manufacturing of the first grid is progressing: surfaces have been machined flat, side features incorporated, shear plate match machining completed, and the Calorimeter interface is underway. The manufacturing readiness review was held for the second grid, and machining commenced. Thermal joint trials for the downspout, cross-LAT and radiator heat pipes are nearly complete. The radiator installation trials are underway. Prototyping of the thermal control system electronics box has commenced.

4.1.9 Integration & Test (I&T)

Van de Graaff simulator and cosmic ray data were tested with the engineering model mini-tower, using electronic logbook. Integration readiness peer reviews were held for IFCT (Integration, Facilities, Configuration & Test), MGSE (Mechanical Ground Support Equipment), and Particle Test. Online ACD veto counter support was completed. The majority of the MGSE drawings needed for two-tower integration are completed. A workshop was held to prepare for two-tower data analysis. The minitower was delivered to the Electronics subsystem for use in the test bed.

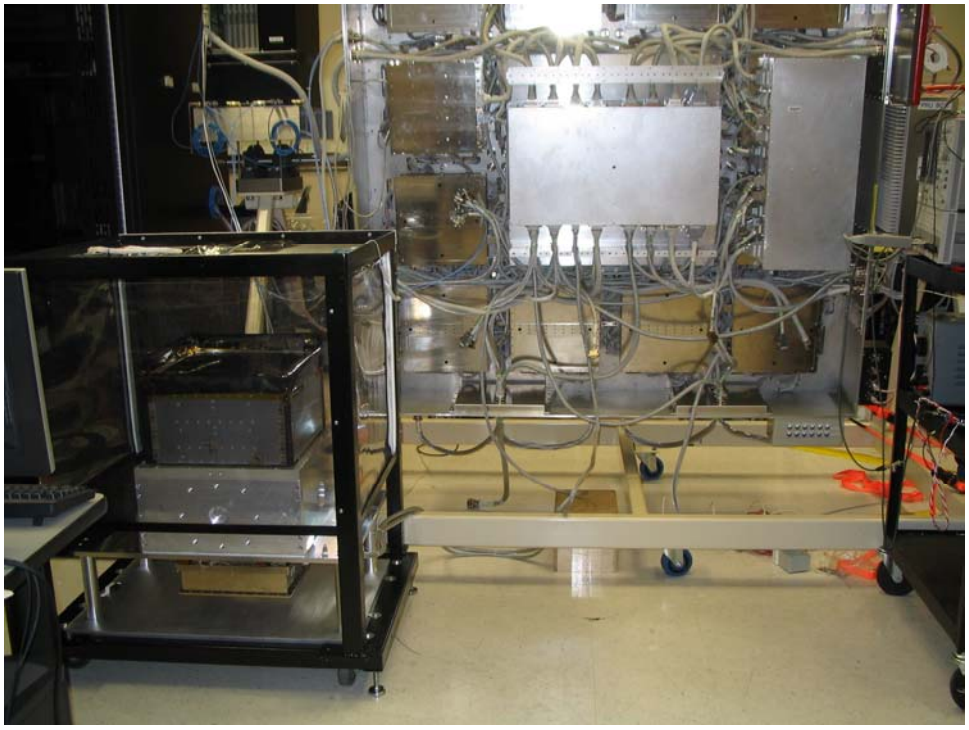


Figure 1: Minitower installed in LAT test bed.

3.0 Schedule Status

There are two equal critical paths for the project, driven by the assembly of Tracker trays and the Tower Electronics Module electronics. There is one day float to the "ready for CD-4 review" milestone (baseline has five weeks' float). Management changes were made in June to address the Tracker schedule, and a road map for system test is being prepared by System Engineering.

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 Level 3 milestones planned to occur during the six months preceding and following the current month. Unfavorable variance projections greater than one week to the future milestones are discussed below.

The start of integration (level 2 milestone 1M1000740) has been delayed by delivery of the flight grid, as discussed below. The completion of the flight grid is also a level 1 milestone (1M1P000060).

Following is discussion of the level 3 milestone variances, by responsible subsystem.

4.1.4 Tracker

The delivery of the full Tracker EM (milestone 1M1001430) was delayed by the issues discovered with the interface during the EM vibration test. A workaround plan is in place, enabling integration planning to continue by supplying other hardware and drawings in the interim. Thermal vacuum testing was completed in March; vibration testing was

repeated in June, using a new bottom tray and grid interface. In July, the EM tower was used to validate the alignment procedure. The EM tower will remain in Pisa for further studies and practice leading up to the assembly of the first flight tower.

Variances to the following milestones are due to delays in the MCM and tray assembly processes, as well as the above-mentioned Tracker/grid interface redesign issues. All known issues with tray assembly are resolved, and Module A delivery is projected by the end of September.

- Tracker Modules A through 11 RFI (1M1000200, 1M1000201, 1M1000220, 1M1000221, 1M1000250, 1M1000251, 1M1000260, 1M1000261, 1M1000270, 1M1000271, 1M1000280, 1M1000281, and 1M1000290)

4.1.5 Calorimeter

Variances to the following milestones are due to delayed receipt of Calorimeter ASICs and other flight EEE parts. The schedule impact will be minimized by using parts before completion of screening and qualification. However, continuing problems with the delivery of tantalum capacitors are impacting the schedule. A sufficient number of alternate capacitors have been found to proceed with the first Calorimeter module electronic cards.

- Calorimeter Modules A through 14 RFI (1M1000210, 1M1500, 1M1000230, 1M1510, 1M1000400, 1M1520, 1M1000390, 1M1530, 1M1000380, 1M1540, 1M1000370, 1M1550, 1M1560, 1M1000360, 1M1000350, and 1M1570)
- EM2 TEM/PS for FM9 through FM16 (return FMA through FM6) from I&T to Calorimeter (1M1001790 through 1M1001860)

4.1.6 Anticoincidence Detector

There are several factors slowing the development of the ACD Test Scripts (1M1001000). The G3 test stands have been delayed, the underlying LAT Test Executive software continues to evolve, and the translation of scientific requirements into test scripts has been more complex than planned. The online team is planning to deliver the required software to the ACD in mid-July, and the test scripts are expected to be completed (though not in final form) by the end of September.

Several technical issues have impacted the delivery date of the ACD (1M1000410). The most notable issues have been the late delivery of the ASICs, flaws in the photomultiplier tubes that cause the glass tube to be much weaker than expected, and the delay of the G3 test stands. 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. The drawing release process has been improved, and additional staff has been hired. 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.

- 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)

Variances to the following electronics ground support equipment (EGSE) milestones are due to delayed receipt and quality problems with connectors. Effort has been diverted to the installation of Tower Electronics Modules (TEMs) on the Test Bed.

- EGSE TEM/TEM PS/CTS w/ FE Electronics #1-3 to I&T (1M7941130, 1M7941150, and 1M7941160)
- Updated EGSE Systems (#6-10) to Tracker (1M74000060 through 1M740000100).
- EGSE TEM/TEM PS/CTS/GASU FE Electronics to I&T (1M7941170)
- EGSE Development H/W/FSW 1st Delivery to I&T (1M7941180)
- EGSE TEM/TEM PS/CTS #2 for Bldg. 33 to I&T (1M7941190)
- EGSE TEM/TEM PS/CTS w/ GASU for Bldg. 33 to I&T (1M7941430)
- Final EGSE incl S/C Sim, FSW (1M7941440)

Variances to the following milestones are due to a delay in completion of the Tracker/Calorimeter tower electronics module (TEM) ASIC qualification and screening plan.

- EM2 TEM/PS/CTS for Flight Models B-8 to Calorimeter (1M1001600, 1M1001660, 1M1001680, 1M1001720, 1M1001760, 1M1001770, 1M1001780)

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)

(Update: as of publication of this report, milestones 1M7941130, 1M7941170, and 1M1001260 have been completed.)

4.1.8 Mechanical Systems

The flight grid (1M1000240 and 1M1P000060) has been delayed due to the modifications made to the Tracker/grid interface, adding several weeks' to the manufacturing effort. The schedule savings from adding a second shift to the grid machining have not compensated for the complexity of the machining operations. In

addition, a machine failure resulted in a loss of eleven manufacturing days. The manufacturing sequence is being evaluated to preserve schedule.

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. The vendor has received approval to proceed. This delay is not expected to impact the LAT schedule.

4.1.B Instrument Science Operations Center

The ISOC CDR date (1M005480) was delayed from March to August. This was a recommendation of the ISOC Peer Review held in March, and aligns the review date with the documentation availability. This has been coordinated with the GLAST project office at Goddard to minimize the impact on LAT ground system readiness.

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.

4.1.7 Electronics

The unfavorable schedule variance is due to 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. Additional testing of the qualification and engineering model units has been required in response. The planned receipt of RAD750 CPUs did not occur in June, but these items were received in July.

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-03072-01	Tracker Nanoconnectors	R. Johnson	Approved	$95K
LAT-XR-03073-01	Tracker Bias Circuit Redesign/Refabrication	J. Martin	Approved	$66K
LAT-XR-03452-01	Additional Items for MGSE	E. Bloom	Approved	$243K
LAT-XR-03729-01	Level Two Deadtime Requirement	L. Lee	Approved	N/A
LAT-XR-04094-01	Change Japanese Funding from Estimate to Current Plan	L. Roberson	Approved	$564K
LAT-XR-04100-01	ACD Mass Allocation Increase	K. Segal	Approved	N/A
LAT-XR-04132-01	Tracker GTRC v7	R. Johnson	Approved	$160K
LAT-XR-04168-01	ACD ASIC Delay	T. Johnson	Approved	$400K
LAT-XR-04169-01	ACD Grassroots Estimate	T. Johnson	Approved	$691K
LAT-XR-04181-01	Revised Flight Software Schedule	T. Schalk	Approved	$0K

The fabrication phase cost baseline is $128.0M. Funding applicable to that baseline is $136.0M; the resulting contingency is $8.0M.

[1] A positive number indicates a draw on contingency.

7.0 Staffing

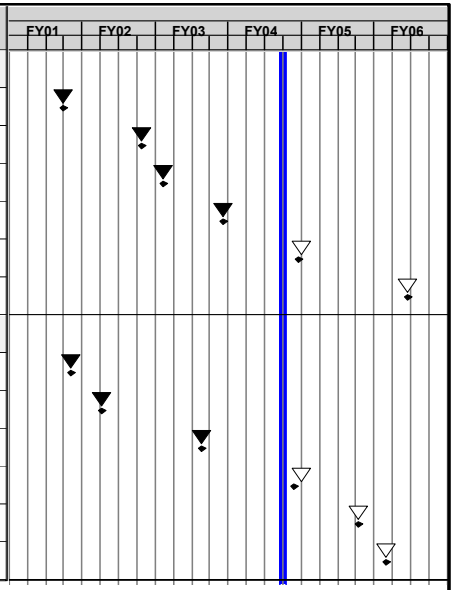
Attachments 9-10 demonstrate the staffing plan, and reports of actual manpower received. Note from Attachment 10 that not all participating organizations are providing manpower data.

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

Goddard manpower was not reported in the months of October, November, and December, 2003. The January and February, 2004, incremental FTE report includes the actual manpower for those months, 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
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*	-12	10/01/04
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*	-27	10/01/04
1M1000700	Pre Environmental Testing Review	07/14/05*	0	07/14/05*
1M1000120	PSR-(Instrument Pre-Ship Review)	12/01/05*	0	12/01/05*



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GLAST LAT PROJECT
Project Milestones (Level 1 and 2)

0727
LT_MS1-2

Sheet 1 of 1

Attachment 2
Level 3 Milestones (One-Year View)
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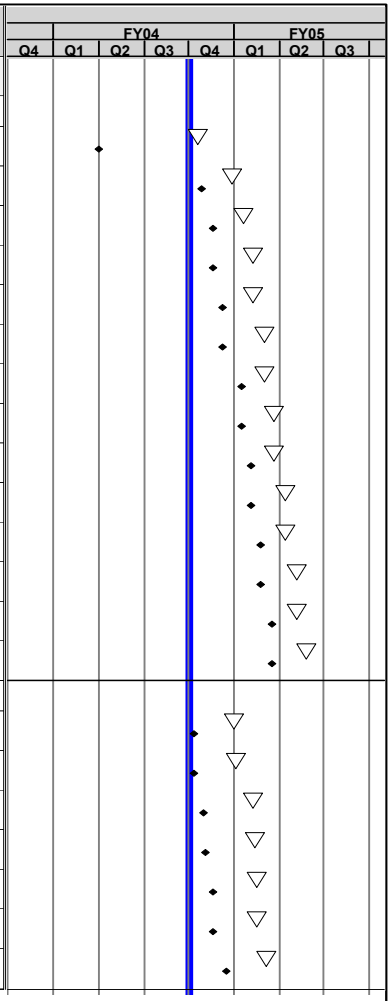
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
Instrument Project Office (Level 3				
4.1.4 Tracker				
1M1001430	Delv of TKR EM to SLAC I&T/MGSE	01/02/04	-138	07/20/04
1M1000200	Tracker Modules A RFI	07/28/04	-41	09/24/04
1M1000201	Tracker Modules B RFI	08/18/04	-42	10/18/04
1M1000220	Tracker Modules 1 RFI	08/18/04	-58	11/09/04
1M1000221	Tracker Modules 2 RFI	09/08/04	-44	11/09/04
1M1000250	Flight Tracker Tower 3 RFI	09/08/04	-57	11/30/04
1M1000251	Flight Tracker Tower 4 RFI	10/14/04	-31	11/30/04
1M1000260	Flight Tracker Tower 5 RFI	10/14/04	-46	12/21/04
1M1000261	Flight Tracker Tower 6 RFI	11/05/04	-30	12/21/04
1M1000270	Flight Tracker Tower 7 RFI	11/05/04	-38	01/10/05
1M1000271	Flight Tracker Tower 8 RFI	11/24/04	-25	01/10/05
1M1000280	Flight Tracker Tower 9 RFI	11/24/04	-41	02/02/05
1M1000281	Flight Tracker Tower 10 RFI	12/17/04	-26	02/02/05
1M1000290	Flight Tracker Tower 11 RFI	12/17/04	-40	02/23/05
4.1.5 Calorimeter				
1M1000210	Calorimeter Modules A RFI	07/09/04	-59	10/01/04
1M1500	Calorimeter Modules B RFI	07/09/04	-61	10/05/04
1M1000230	Calorimeter Modules 1 RFI	07/30/04	-71	11/09/04
1M1510	Calorimeter Modules 2 RFI	08/02/04	-71	11/10/04
1M1000400	Flight Calorimeter Tower 3 RFI	08/17/04	-64	11/16/04
1M1520	Flight Calorimeter Tower 4 RFI	08/17/04	-64	11/16/04
1M1000390	Flight Calorimeter Tower 5 RFI	09/15/04	-55	12/03/04



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	Project Milestones (Level 3)	LTX1 - MS (L3)
	1 Year View (+/- 6mo)	FLX1- MS (L3)

Attachment 2
Level 3 Milestones (One-Year View)
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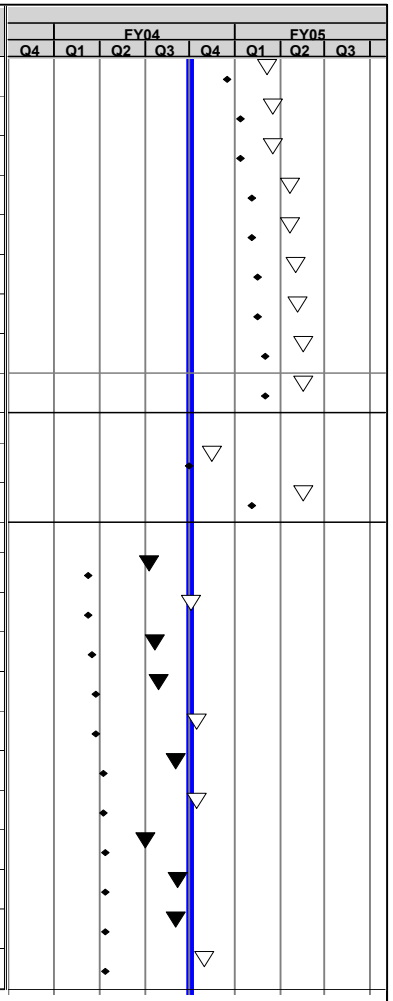
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
1M1530	Flight Calorimeter Tower 6 RFI	09/15/04	-55	12/03/04
1M1000380	Flight Calorimeter Tower 7 RFI	10/11/04	-46	12/16/04
1M1540	Flight Calorimeter Tower 8 RFI	10/11/04	-46	12/16/04
1M1000370	Flight Calorimeter Tower 9 RFI	11/02/04	-47	01/19/05
1M1550	Flight Calorimeter Tower 10 RFI	11/02/04	-47	01/19/05
1M1560	Flight Calorimeter Tower 12 RFI	11/15/04	-47	02/01/05
1M1000360	Flight Calorimeter Tower 11 RFI	11/16/04	-47	02/02/05
1M1000350	Flight Calorimeter Tower 13 RFI	12/02/04	-47	02/16/05
1M1570	Flight Calorimeter Tower 14 RFI	12/02/04	-47	02/16/05
4.1.6 ACD				
1M1001000	ACD Test Scripts (from ACD to I&T)	07/01/04	-30	08/13/04
1M1000410	ACD Flight Unit at SLAC, Tested/Inspected & RFI	11/03/04	-64	02/14/05
4.1.7 Electronics				
1M74000010	Updated EGSE System 1: Elec to TKR	12/08/03	-80	04/09/04A
1M7941130	EGSE TEM/TEM PS/CTS w/ FE Elec #1-Elec to I&T	12/08/03	-139	07/02/04
1M76000020	G3 Test Stand (test 2 FREE Cards): Elec to ACD	12/15/03	-84	04/22/04A
1M74000020	Updated EGSE System 2: Elec to TKR	12/22/03	-82	04/27/04A
1M7941150	EGSE TEM/TEM PS/CTS w/ FE Elec #2-Elec to I&T	12/22/03	-138	07/16/04
1M74000030	Updated EGSE System 3: Elec to TKR	01/07/04	-104	06/04/04A
1M7941160	EGSE TEM/TEM PS/CTS w/ FE Elec #3-Elec to I&T	01/07/04	-133	07/16/04
1M1000920	EM2 TEM: Elec to Tracker	01/12/04	-55	03/31/04A
1M1001900	Test Stations (5) for AFEE: Elec to CAL	01/14/04	-100	06/07/04A
1M74000040	EGSE System 4: Elec to TKR	01/14/04	-99	06/04/04A
1M7941170	EGSE TEM/TEM PS/CTS/GASU FE Elec-Elec to	01/14/04	-138	07/30/04



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GLAST LAT PROJECT
Project Milestones (Level 3)
1 Year View (+/- 6mo)

0727 - 1MGT
LTX1 - MS (L3)
FLX1- MS (L3)

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Attachment 2
Level 3 Milestones (One-Year View)
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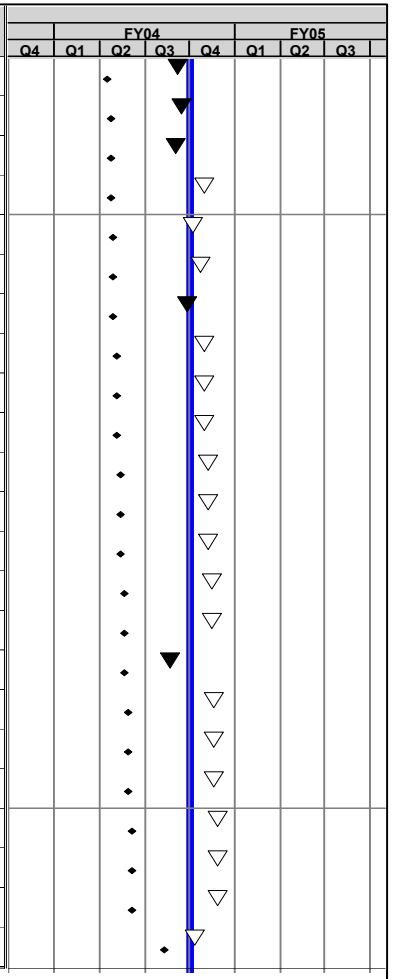
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
1M1001870	5 EM2 TEM/PS for AFEE brd ass & tst: Elec to CAL	01/15/04	-99	06/07/04A
1M1001220	EM2 TEM/PS/CTS for FMA from Elec to CAL	01/22/04	-101	06/15/04A
1M74000050	EGSE System 5: Elec to TKR	01/22/04	-94	06/04/04A
1M7941180	EGSE Development Hrdw/FSW 1st Delivr-Elec to	01/22/04	-133	07/30/04
1M1001260	EM2 TEM/PS/CTS for FMB from Elec to CAL	01/29/04	-110	07/06/04
1M74000060	EGSE System 6: Elec to TKR	01/29/04	-123	07/23/04
1M7941190	EGSE TEM/TEM PS/CTS #1 for Bldg 33-Elec to I&T	01/29/04	-104	06/25/04A
1M1001600	EM2 TEM/PS/CTS for FM1 from Elec to CAL	02/05/04	-123	07/30/04
1M7941420	EGSE TEM/TEM PS/CTS #2 for Bldg 33-Elec to I&T	02/05/04	-123	07/30/04
1M7941430	EGSE TEM/TEM PS/CTS w/ GASU for B33-Elec to	02/05/04	-123	07/30/04
1M1001650	EM2 TEM/PS/CTS for FM2 from Elec to CAL	02/12/04	-123	08/06/04
1M74000070	EGSE System 7: Elec to TKR	02/12/04	-123	08/06/04
1M74000080	EGSE System 8: Elec to TKR	02/12/04	-123	08/06/04
1M74000090	EGSE System 9: Elec to TKR	02/20/04	-123	08/13/04
1M74000100	EGSE System 10: Elec to TKR	02/20/04	-123	08/13/04
1M76000030	G3 Test Stand (Flt-like I/F): Elec to ACD	02/20/04	-64	05/20/04A
1M1001660	EM2 TEM/PS/CTS for FM3 from Elec to CAL	02/27/04	-123	08/20/04
1M1001680	EM2 TEM/PS/CTS for FM4 from Elec to CAL	02/27/04	-123	08/20/04
1M1001720	EM2 TEM/PS/CTS for FM5 from Elec to CAL	02/27/04	-123	08/20/04
1M1001760	EM2 TEM/PS/CTS for FM6 from Elec to CAL	03/05/04	-123	08/27/04
1M1001770	EM2 TEM/PS/CTS for FM7 from Elec to CAL	03/05/04	-123	08/27/04
1M1001780	EM2 TEM/PS/CTS for FM8 from Elec to CAL	03/05/04	-123	08/27/04
1M79003010	Flight Cables Assy A: Elec to I&T	05/10/04	-42	07/09/04



Run Date 08/09/04 13:56	**GLAST LAT PROJECT**	0727 - 1MGT
	Project Milestones (Level 3)	LTX1 - MS (L3)
	1 Year View (+/- 6mo)	FLX1- MS (L3)
		Sheet 3 of 7

Attachment 2
Level 3 Milestones (One-Year View)
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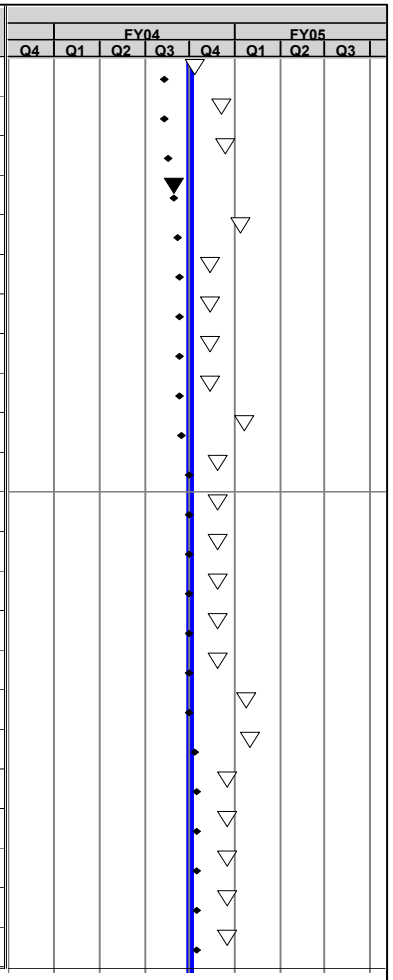
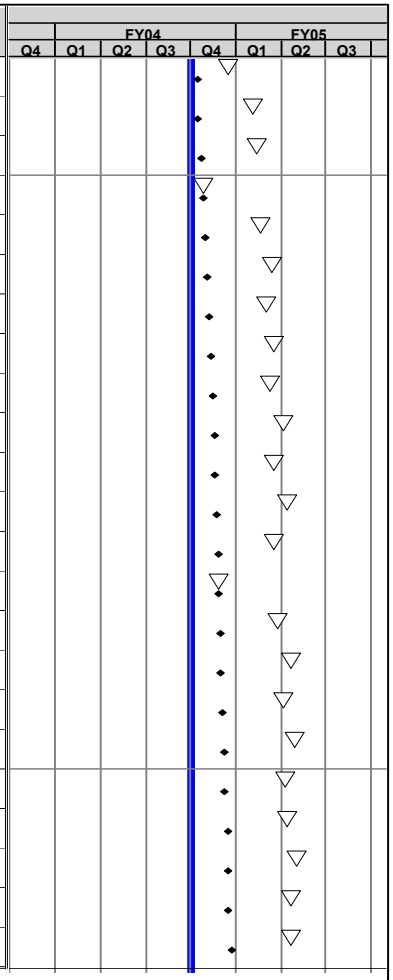
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
1M79003020	Flight Cables Assy B: Elec to I&T	05/10/04	-42	07/09/04
1M79002010	Flight TEM PS Assy A: Elec to I&T	05/12/04	-79	09/02/04
1M79002020	Flight TEM PS Assy B: Elec to I&T	05/19/04	-79	09/10/04
1M79010	Demo: SI Functionality - Elec to MO	05/28/04*	0	05/28/04A
1M79001010	Flight TEM Assy A: Elec to I&T	06/07/04	-90	10/13/04
1M79003030	Flight Cables Assy 1: Elec to I&T	06/10/04	-42	08/10/04
1M79003040	Flight Cables Assy 2: Elec to I&T	06/10/04	-42	08/10/04
1M79003050	Flight Cables Assy 3: Elec to I&T	06/10/04	-42	08/10/04
1M79003060	Flight Cables Assy 4: Elec to I&T	06/10/04	-42	08/10/04
1M79001020	Flight TEM Assy B: Elec to I&T	06/14/04	-90	10/20/04
1M79003070	Flight Cables Assy 5: Elec to I&T	06/28/04	-43	08/27/04
1M79003080	Flight Cables Assy 6: Elec to I&T	06/28/04	-43	08/27/04
1M79003090	Flight Cables Assy 7: Elec to I&T	06/28/04	-43	08/27/04
1M79003100	Flight Cables Assy 8: Elec to I&T	06/28/04	-43	08/27/04
1M79003110	Flight Cables Assy 9: Elec to I&T	06/28/04	-43	08/27/04
1M79003120	Flight Cables Assy 10: Elec to I&T	06/28/04	-43	08/27/04
1M79002030	Flight TEM PS Assy 1: Elec to I&T	07/01/04	-79	10/22/04
1M79002040	Flight TEM PS Assy 2: Elec to I&T	07/09/04	-79	10/29/04
1M79003130	Flight Cables Assy 11: Elec to I&T	07/15/04	-43	09/15/04
1M79003140	Flight Cables Assy 12: Elec to I&T	07/15/04	-43	09/15/04
1M79003150	Flight Cables Assy 13: Elec to I&T	07/15/04	-43	09/15/04
1M79003160	Flight Cables Assy 14: Elec to I&T	07/15/04	-43	09/15/04
1M79003170	Flight Cables Assy 15: Elec to I&T	07/15/04	-43	09/15/04



Run Date 08/09/04 13:56	**GLAST LAT PROJECT**	0727 - 1MGT
	Project Milestones (Level 3)	LTX1 - MS (L3)
	1 Year View (+/- 6mo)	FLX1- MS (L3)
		Sheet 4 of 7

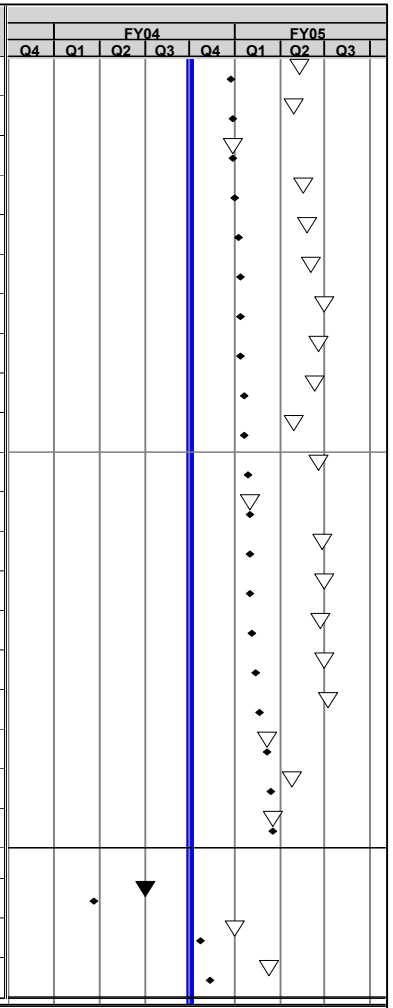
Attachment 2
Level 3 Milestones (One-Year View)
Page 5 of 7

Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
1M79003180	Flight Cables Assy 16: Elec to I&T	07/15/04	-43	09/15/04
1M79002050	Flight TEM PS Assy 3: Elec to I&T	07/16/04	-79	11/05/04
1M79002060	Flight TEM PS Assy 4: Elec to I&T	07/23/04	-79	11/12/04
1M79020	Demo: Thermal Control & Deadtime - Elec to MO	07/26/04*	0	07/26/04
1M79002070	Flight TEM PS Assy 5: Elec to I&T	07/30/04	-79	11/19/04
1M79001030	Flight TEM Assy 1: Elec to I&T	08/03/04	-90	12/10/04
1M79002080	Flight TEM PS Assy 6: Elec to I&T	08/06/04	-79	11/30/04
1M79001040	Flight TEM Assy 2: Elec to I&T	08/10/04	-90	12/17/04
1M79002090	Flight TEM PS Assy 7: Elec to I&T	08/13/04	-79	12/07/04
1M79001050	Flight TEM Assy 3: Elec to I&T	08/17/04	-90	01/03/05
1M79002100	Flight TEM PS Assy 8: Elec to I&T	08/20/04	-79	12/14/04
1M79001060	Flight TEM Assy 4: Elec to I&T	08/24/04	-90	01/10/05
1M79002110	Flight TEM PS Assy 9: Elec to I&T	08/25/04	-79	12/17/04
1M79030	Demo: Multi-Tower Config & Filter - Elec to MO	08/27/04*	0	08/27/04
1M79002120	Flight TEM PS Assy 10: Elec to I&T	08/30/04	-79	12/22/04
1M79001070	Flight TEM Assy 5: Elec to I&T	08/31/04	-90	01/18/05
1M79002130	Flight TEM PS Assy 11: Elec to I&T	09/02/04	-79	01/04/05
1M79001080	Flight TEM Assy 6: Elec to I&T	09/08/04	-90	01/25/05
1M79002140	Flight TEM PS Assy 12: Elec to I&T	09/08/04	-79	01/07/05
1M79002150	Flight TEM PS Assy 13: Elec to I&T	09/13/04	-79	01/12/05
1M79001090	Flight TEM Assy 7: Elec to I&T	09/15/04	-90	02/01/05
1M79002160	Flight TEM PS Assy 14: Elec to I&T	09/16/04	-79	01/18/05
1M79002170	Flight TEM PS Assy 15: Elec to I&T	09/21/04	-79	01/21/05



Run Date 08/09/04 13:56	**GLAST LAT PROJECT**	0727 - 1MGT
	Project Milestones (Level 3)	LTX1 - MS (L3)
	1 Year View (+/- 6mo)	FLX1- MS (L3)
		Sheet 5 of 7

Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
1M79001100	Flight TEM Assy 8: Elec to I&T	09/22/04	-90	02/08/05
1M79002180	Flight TEM PS Assy 16: Elec to I&T	09/24/04	-79	01/26/05
1M79040	Demo: EPO Boot & Commanding - Elec to MO	09/24/04*	0	09/24/04
1M79001110	Flight TEM Assy 9: Elec to I&T	09/29/04	-90	02/15/05
1M79001120	Flight TEM Assy 10: Elec to I&T	10/06/04	-90	02/23/05
1M79001130	Flight TEM Assy 11: Elec to I&T	10/13/04	-90	03/02/05
1M7941080	Flight SIU-Elec to I&T	10/13/04	-108	03/28/05
1M7942000	Flight PDU Box-Elec to I&T	10/13/04	-102	03/18/05
1M79001140	Flight TEM Assy 12: Elec to I&T	10/20/04	-90	03/09/05
1M7941110	Flight Harness-Elec to I&T	10/20/04	-62	01/27/05
1M79001150	Flight TEM Assy 13: Elec to I&T	10/27/04	-90	03/16/05
1M79050	Demo: Inst. Calibration - Elec to MO	10/29/04*	0	10/29/04
1M7941070	Flight GASU Box-Elec to I&T	11/01/04*	-93	03/24/05
1M7941090	Flight Event Processor Units-Elec to I&T	11/01/04	-96	03/29/05
1M79001160	Flight TEM Assy 14: Elec to I&T	11/03/04	-90	03/23/05
1M79001170	Flight TEM Assy 15: Elec to I&T	11/10/04	-90	03/30/05
1M79001180	Flight TEM Assy 16: Elec to I&T	11/17/04	-90	04/06/05
1M79060	Demo: Full 1553 & Full Towers Cmnds - Elec to MO	12/03/04*	0	12/03/04
1M7941440	Final EGSE incl S/C Sim, FSW-Elec to I&T	12/13/04	-23	01/24/05
1M79070	Demo: FU Build - Elec to MO	12/17/04*	0	12/17/04
4.1.8 Mechanical				
1M1001380	Delivery of EM (1X4) Grid to I&T/MSGE	12/19/03	-64	03/31/04A
1M1000240	Flight Grid RFI-Mech to I&T	07/22/04	-50	10/01/04
1M941710	X-LAT Thermal Plate RFI from Mech to I&T	08/12/04	-82	12/09/04



Run Date 08/09/04 13:56

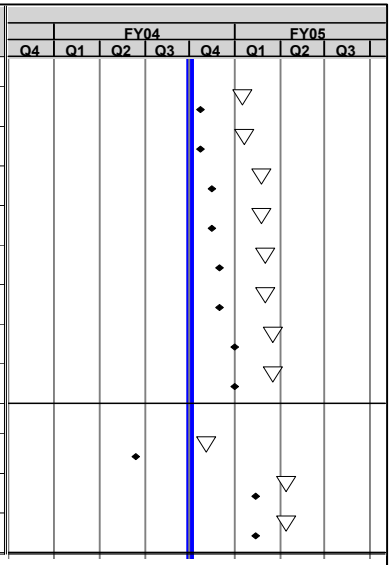
GLAST LAT PROJECT
Project Milestones (Level 3)
1 Year View (+/- 6mo)

0727 - 1MGT
LTX1 - MS (L3)
FLX1- MS (L3)

Sheet 6 of 7

Attachment 2
Level 3 Milestones (One-Year View)
Page 7 of 7

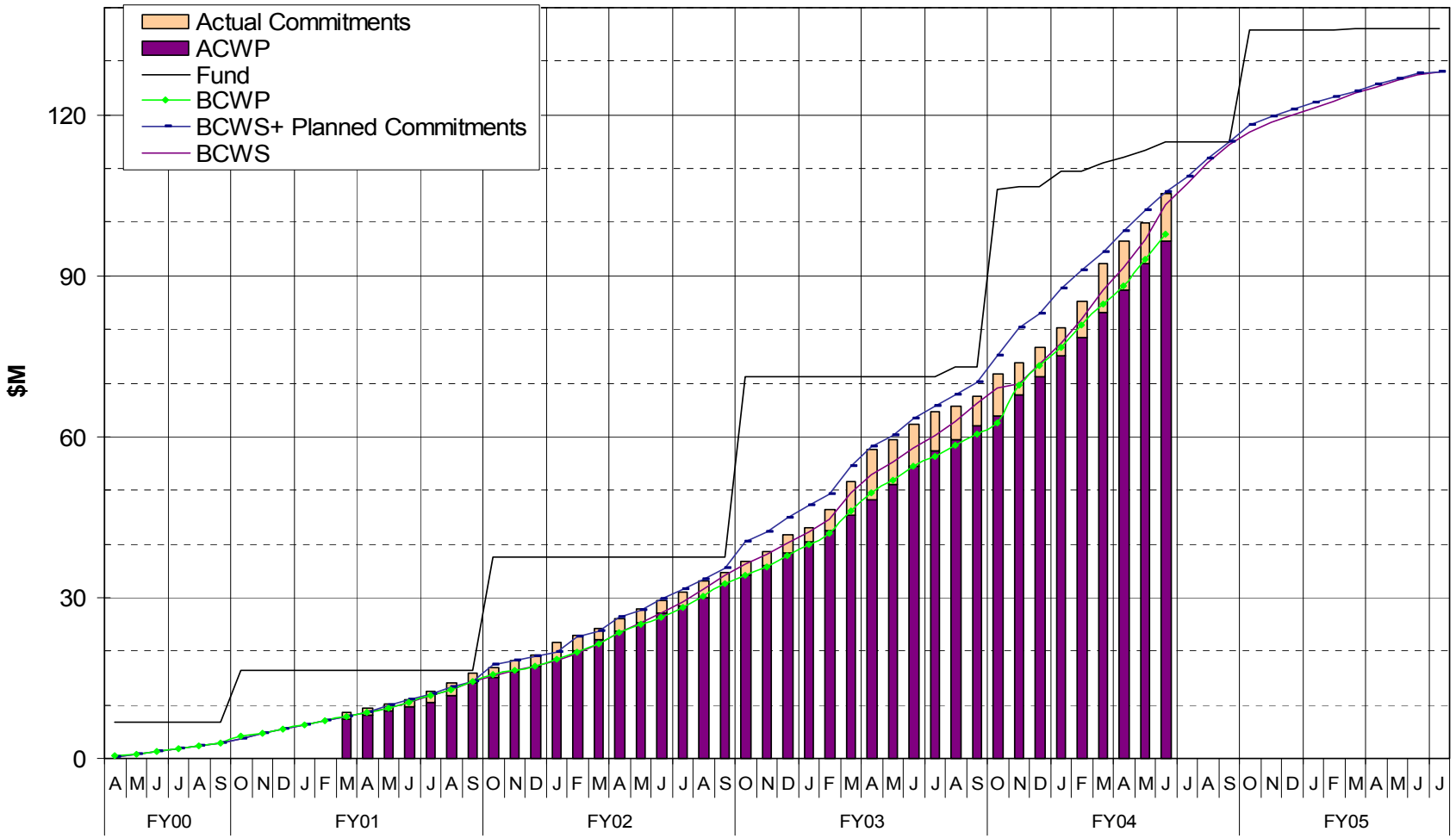
Activity ID	Activity Description	Target Finish Date	Variance	Scheduled Finish Date
4.1.9 I&T				
1M1001790	EM2 TEM/PS for FM9 (return FMA) from I&T to CAL	07/23/04	-59	10/15/04
1M1001800	EM2 TEM/PS for FM10 (return FMB)from I&T to CAL	07/23/04	-61	10/19/04
1M1001810	EM2 TEM/PS for FM11 (return FM1) from I&T to CAL	08/13/04	-71	11/23/04
1M1001820	EM2 TEM/PS for FM12 (return FM2) from I&T to CAL	08/16/04	-71	11/24/04
1M1001830	EM2 TEM/PS for FM13 (return FM3) from I&T to CAL	08/31/04	-64	12/02/04
1M1001840	EM2 TEM/PS for FM14 (return FM4) from I&T to CAL	08/31/04	-64	12/02/04
1M1001850	EM2 TEM/PS for FM15 (return FM5) from I&T to CAL	09/29/04	-55	12/17/04
1M1001860	EM2 TEM/PS for FM16 (return FM6) from I&T to CAL	09/29/04	-55	12/17/04
4.1.B ISOC				
1M005480	ISOC CDR	03/12/04	-101	08/04/04
1M1000112	Mission Operations Review (L-21mo.)	11/10/04	-35	01/10/05
1M7941270	Ground System Interface Test start	11/10/04	-35	01/10/05



Run Date 08/09/04 13:56	**GLAST LAT PROJECT**	0727 - 1MGT
	Project Milestones (Level 3)	LTX1 - MS (L3)
	1 Year View (+/- 6mo)	FLX1- MS (L3)
		Sheet 7 of 7

Attachment 3

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



Attachment 4
LAT Costs, through June 2004, by WBS

Monthly Contractor Financial Management Report								Report for Month Ending: 6/30/2004	
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 Estimated Final Cost	Billing Unfilled Orders Outstanding
	During Month		Cum. to Date		Detail		Balance of Budget	Project Estimate	Budget Value
	Actual	Planned	Actual	Planned	JUL04	AUG04			
4.1.1 INSTRUMENT MANAGEMENT	559	356	12,787	12,379	359	377	2,345	15,868	15,868
4.1.2 SYSTEM ENGINEERING	278	140	5,010	5,134	149	156	1,286	6,601	6,601
4.1.4 TRACKER	-215	652	12,898	13,773	364	355	1,750	15,367	15,367
4.1.5 CALORIMETER	599	960	16,061	17,866	701	727	4,614	22,103	22,103
4.1.6 ANTICOINCIDENCE DETECTOR	597	1,027	13,223	13,791	247	250	1,289	15,008	15,008
4.1.7 ELECTRONICS	1,252	1,771	15,878	18,050	906	738	4,164	21,685	21,685
4.1.8 MECHANICAL SYSTEMS	499	824	9,708	10,082	636	788	2,974	14,106	14,106
4.1.9 INTEGRATION & TEST	302	497	4,177	4,553	296	321	2,822	7,616	7,616
4.1.A PERFORMANCE AND SAFETY ASSURANCE	258	123	1,817	1,966	117	123	413	2,469	2,469
4.1.B LAT INSTRUMENT OPERATIONS CENTER	0	4	295	286	3	4	25	328	328
4.1.C EDUCATION AND PUBLIC OUTREACH	55	74	1,443	1,768	71	74	860	2,448	2,448
4.1.D SCIENCE ANALYSIS SOFTWARE	59	83	1,963	2,162	81	85	988	3,117	3,117
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	4,244	6,510	96,584	103,131	3,930	3,998	23,529	128,042	128,042

Attachment 5
LAT Costs, through June 2004, by Organization and Cost Code

Monthly Contractor Financial Management Report			Report for Month Ending: 6/30/2004	
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		
								Estimated Final Cost		Unfilled Orders Outstanding
	During Month		Cum. to Date		Detail		Balance of Budget	Project Estimate	Budget Value	
	Actual	Planned	Actual	Planned	JUL04	AUG04				
DG *** GSFC	681	1,066	14,452	15,365	283	288	2,011	17,035	17,035	
DH *** HEPL	112	193	5,164	5,633	222	233	1,549	7,168	7,168	
DL *** SLAC	2,603	4,038	53,770	56,625	2,476	2,515	13,036	71,797	71,797	
DN *** NRL	748	1,096	19,395	21,282	837	845	5,508	26,585	26,585	
DO *** Financial Plan Transfer/Sub Out	0	0	59	54	0	0	-5	54	54	
DS *** SSU	55	71	1,438	1,737	68	71	823	2,401	2,401	
DT *** Texas A&M	0	0	15	16	0	0	0	16	16	
DU *** UCSC	32	38	2,152	2,267	36	38	500	2,726	2,726	
DW *** UW	13	9	138	152	9	9	104	260	260	
Total	4,244	6,510	96,584	103,131	3,930	3,998	23,529	128,042	128,042	

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	JUL04	AUG04				
RL LABOR	2,047	2,154	48,759	49,980	1,864	1,833	12,064	64,520	64,520	
FTE (DOE/NASA)	*188.4*	*175.4*	*4,500.0*	*4,256.0*	*160.0*	*153.0*	*646.4*	*5,459.4*	*5,459.4*	
HOURS (DOE/NASA)	*33,156*	*30,870*	*749,057*	*705,182*	*26,927*	*26,908*	*101,539.8*	*904,432*	*904,432*	
RT TRAVEL	110	62	1,272	1,925	63	66	1,308	2,709	2,709	
RM MATERIAL & SERVICES	2,087	4,321	44,246	48,751	2,000	2,095	9,872	58,213	58,213	
RX MPS & LAB TAX	0	-26	2,307	2,475	3	4	285	2,599	2,599	
Total (not incl FTE/Hours)	4,244	6,510	96,584	103,131	3,930	3,998	23,529	128,042	128,042	

Attachment 6
LAT Performance, through June 2004, by WBS

Cost Performance Report - Work Breakdown Structure													
Contractor: Location:					Contract Type/No:			Project Name/No: GLAST LAT Project		Report Period: 5/31/2004	6/30/2004		
Quantity 1	Negotiated Cost 0		Est. Cost Authorized Unpriced Work 0		Tgt. Profit/ Fee % 0	0	Tgt. Price 0	Est Price 0	Share Ratio	Contract Ceiling 0	Estimated Contract Ceiling 0		
CAPW[3]	Current Period					Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost	Variance		Budgeted Cost		Actual Cost	Variance			Latest	
Item	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Budgeted	Revised Estimate	Variance
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
4.1.1 INSTRUMENT MANAGEMENT	356	356	559	0	-203	12,379	12,379	12,787	0	-408	15,868	15,868	0
4.1.2 SYSTEM ENGINEERING	140	140	278	0	-138	5,134	5,134	5,010	0	123	6,601	6,601	0
4.1.4 TRACKER	652	697	-215	45	912	13,773	13,114	12,898	-659	216	15,367	15,367	0
4.1.5 CALORIMETER	960	534	599	-426	-65	17,866	16,512	16,061	-1,353	451	22,103	22,103	0
4.1.6 ANTICOINCIDENCE DETECTOR	1,027	1,051	597	23	453	13,791	13,366	13,223	-425	143	15,008	15,008	0
4.1.7 ELECTRONICS	1,771	653	1,252	-1,119	-599	18,050	15,773	15,878	-2,277	-105	21,685	21,685	0
4.1.8 MECHANICAL SYSTEMS	824	646	499	-177	148	10,082	9,791	9,708	-290	84	14,106	14,106	0
4.1.9 INTEGRATION & TEST	497	358	302	-138	56	4,553	4,232	4,177	-321	54	7,616	7,616	0
4.1.A PERFORMANCE AND SAFETY ASS	123	123	258	0	-135	1,966	1,966	1,817	0	149	2,469	2,469	0
4.1.B LAT INSTRUMENT OPERATIONS (	4	4	0	0	4	286	286	295	0	-10	328	328	0
4.1.C EDUCATION AND PUBLIC OUTREA	74	76	55	2	21	1,768	1,746	1,443	-22	303	2,448	2,448	0
4.1.D SCIENCE ANALYSIS SOFTWARE	83	83	59	0	24	2,162	2,162	1,963	0	199	3,117	3,117	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	6,510	4,720	4,244	-1,790	477	103,131	97,784	96,584	-5,348	1,199	128,042	128,042	0
Contingency											7,983	7,983	0
Total	6,510	4,720	4,244	-1,790	477	103,131	97,784	96,584	-5,348	1,199	136,025	136,025	0

Attachment 7
LAT Performance, through June 2004, by Organization

Cost Performance Report - Work Breakdown Structure													
Contractor: Location:					Contract Type/No:			Project Name/No: GLAST LAT Project		Report Period: 5/31/2004		6/30/2004	
Quantity 1	Negotiated Cost 0		Est. Cost Authorized Unpriced Work 0		Tgt. Profit/ Fee % 0	0	Tgt. Price 0	Est Price 0	Share Ratio	Contract Ceiling 0		Estimated Contract Ceiling 0	
OBS[1]	Current Period					Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost	Variance		Budgeted Cost		Actual Cost	Variance			Latest	
Item	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Work Scheduled	Work Performed	Work Performed	Schedule	Cost	Budgeted	Revised Estimate	Variance
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
DG *** GSFC	1,066	1,089	681	23	407	15,365	14,940	14,452	-425	487	17,035	17,035	0
DH *** HEPL	193	193	112	0	81	5,633	5,627	5,164	-6	463	7,168	7,168	0
DL *** SLAC	4,038	2,652	2,603	-1,386	49	56,625	53,140	53,770	-3,485	-630	71,797	71,797	0
DN *** NRL	1,096	657	748	-439	-91	21,282	19,883	19,395	-1,400	488	26,585	26,585	0
DO *** Financial Plan	0	0	0	0	0	54	54	59	0	-5	54	54	0
DS *** SSU	71	73	55	2	18	1,737	1,715	1,438	-22	277	2,401	2,401	0
DT *** Texas A&M	0	0	0	0	0	16	16	15	0	0	16	16	0
DU *** UCSC	38	47	32	9	16	2,267	2,258	2,152	-9	106	2,726	2,726	0
DW *** UW	9	9	13	0	-4	152	152	138	0	14	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	6,510	4,720	4,244	-1,790	477	103,131	97,784	96,584	-5,348	1,199	128,042	128,042	0
Contingency											7,983	7,983	0
Total	6,510	4,720	4,244	-1,790	477	103,131	97,784	96,584	-5,348	1,199	136,025	136,025	0

Attachment 8
LAT Performance Analysis, June 2004

	WBS	BAC	BCWS	BCWP	ACWP	SV $	CV $	% BCWS	% BCWP	% ACWP	SPI Trend	CPI Trend	SPI	CPI	Cpi_Fcst	CpiSpi_Fcst
1	4.1	128,042	103,131	97,784	96,584	-5,348	1,200	80.55	76.37	75.43	↓	↑	0.948	1.012	126,471	128,105
2	4.1.1	15,868	12,379	12,379	12,787	0	-408	78.01	78.01	80.58	↔	↓	1.000	0.968	16,391	16,391
3	4.1.2	6,601	5,134	5,134	5,010	0	123	77.77	77.77	75.90	↔	↓	1.000	1.025	6,442	6,442
4	4.1.4	15,367	13,772	13,114	12,898	-659	216	89.63	85.34	83.93	↑	↑	0.952	1.017	15,114	15,225
5	4.1.5	22,103	17,866	16,512	16,061	-1,353	451	80.83	74.71	72.67	↓	↓	0.924	1.028	21,499	21,944
6	4.1.6	15,008	13,791	13,366	13,223	-425	143	91.89	89.05	88.10	↑	↑	0.969	1.011	14,848	14,900
7	4.1.7	21,685	18,050	15,773	15,878	-2,277	-105	83.23	72.73	73.22	↓	↓	0.874	0.993	21,830	22,689
8	4.1.8	14,106	10,082	9,791	9,708	-290	84	71.47	69.41	68.82	↓	↑	0.971	1.009	13,986	14,113
9	4.1.9	7,616	4,553	4,232	4,177	-321	54	59.78	55.56	54.85	↓	↑	0.929	1.013	7,519	7,772
10	4.1.A	2,469	1,966	1,966	1,817	0	149	79.60	79.60	73.56	↔	↓	1.000	1.082	2,282	2,282
11	4.1.B	328	286	286	295	0	-10	87.13	87.13	90.14	↔	↑	1.000	0.967	339	339
12	4.1.C	2,448	1,768	1,746	1,443	-22	303	72.21	71.32	58.95	↑	↔	0.988	1.210	2,024	2,031
13	4.1.D	3,117	2,162	2,162	1,963	0	199	69.36	69.36	62.97	↔	↑	1.000	1.101	2,830	2,830
14	4.1.E	1,325	1,325	1,325	1,325	0	0	100.00	100.00	99.98	↔	↔	1.000	1.000	1,325	1,325

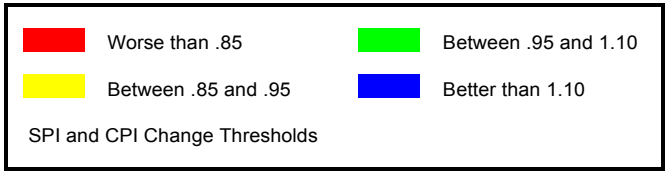
LEGEND

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)

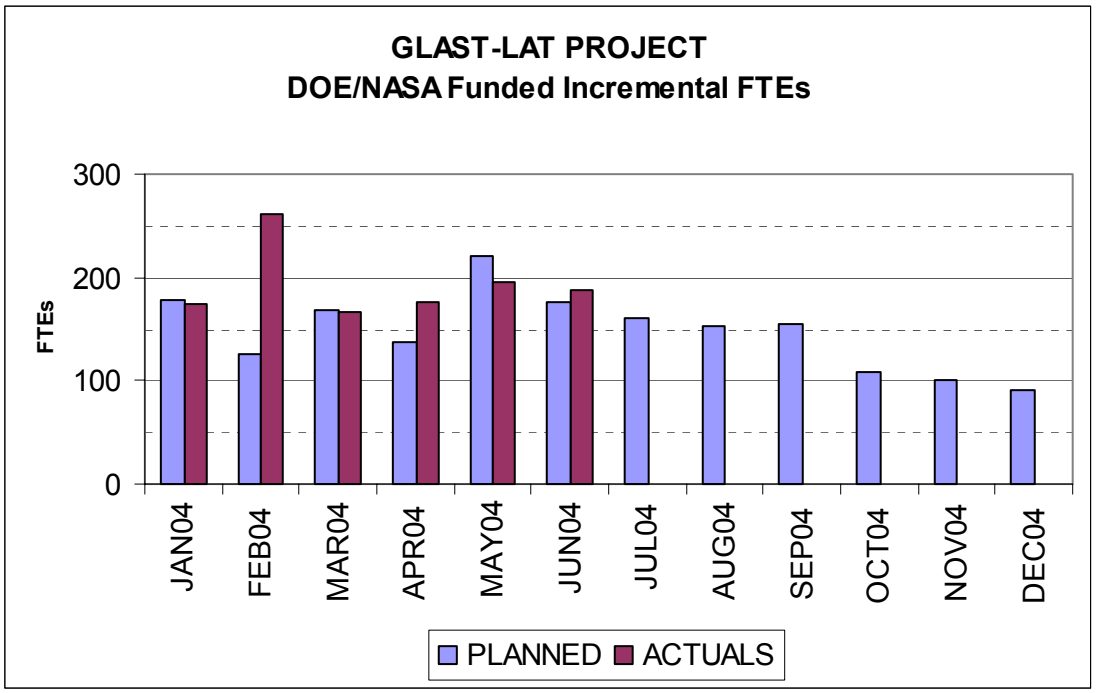
SV $: Schedule Variance = BCWP - BCWS
CV $: Cost Variance = BCWP - ACWP
SPI: Schedule Performance Index = BCWP/BCWS
CPI: Cost Performance Index = BCWP/ACWP

% BCWS: Percent Scheduled = BCWS/BAC
% BCWP: Percent Complete = BCWP/BAC
% ACWP: Percent Spent = ACWP/BAC

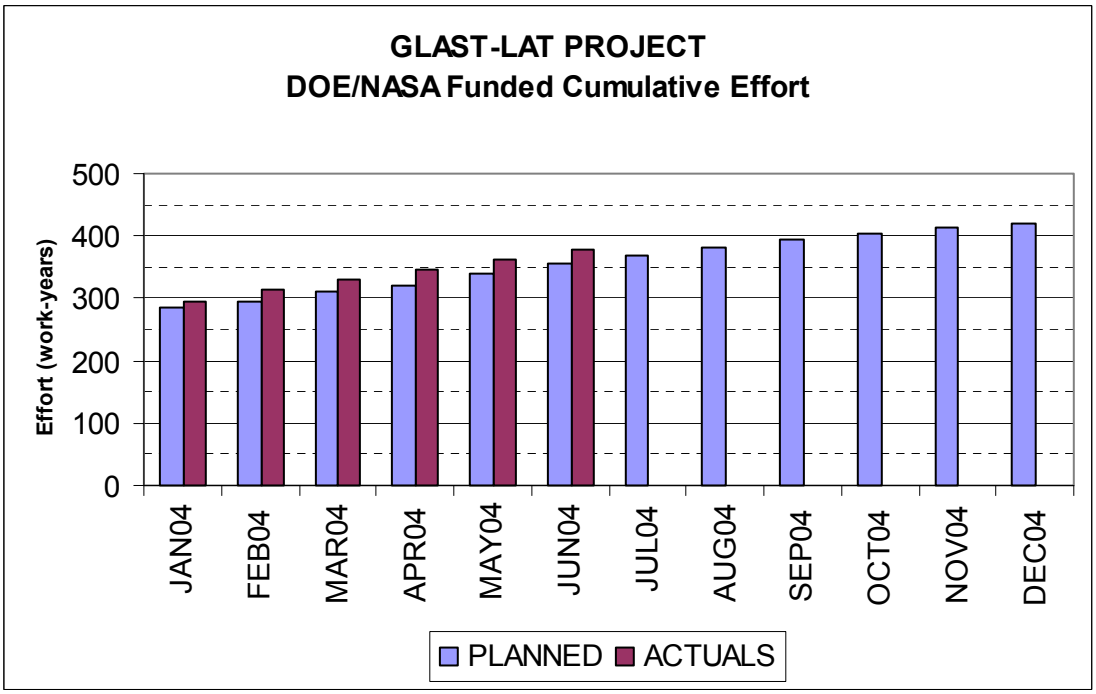
Cpi_Fcst: CPI (to date) EAC Forecast = BAC / CPI
CpiSpi_Fcst: Combination CPI and SPI EAC Forecast = ACWP + (BAC - BCWP) / (CPI *SPI)



Attachment 9
LAT Manpower (DOE/NASA-Funded)



Note: Monthly planned manpower reflects adjustments so that the cumulative-to-date plan corresponds to the approved changes for that month.



Attachment 10
LAT Manpower Data, through June 2004, by Organization

Program: LAT3	Description: GLAST LAT Project	Approval: Program Manager
Run Date: 8/2/2004	Status Date: 6/30/2004	Functional Manager
		Cost Account Manager

OBS		PRIOR	JAN04	FEB04	MAR04	APR04	MAY04	JUN04	**Cum-to-Date**	JUL04	AUG04	SEP04	OCT04	NOV04	DEC04
DG *** GSFC															
FTE	PLANNED	717.8	27.8	29.9	61.0	58.3	28.6	38.3	**961.5**	31.6	33.1	44.3	13.3	17.8	13.0
	ACTUALS	694.9	65.6	153.4	48.7	45.4	61.1	47.3	**1116.4**	0.0	0.0	0.0	0.0	0.0	0.0
DH *** HEPL															
FTE	PLANNED	252.7	0.0	3.2	3.2	2.4	3.4	4.5	**269.3**	4.9	4.9	4.9	3.8	3.8	3.7
	ACTUALS	243.1	11.7	-2.5	4.0	2.7	3.6	3.9	**266.4**	0.0	0.0	0.0	0.0	0.0	0.0
DL *** SLAC															
FTE	PLANNED	1673.9	117.4	77.1	79.7	78.1	158.4	98.2	**2282.7**	89.4	81.7	81.6	72.5	68.8	68.9
	ACTUALS	1606.1	69.1	77.5	84.7	91.0	95.2	101.4	**2124.9**	0.0	0.0	0.0	0.0	0.0	0.0
DN *** NRL															
FTE	PLANNED	792.8	37.6	22.2	36.9	17.1	49.4	52.2	**1008.2**	44.2	41.4	31.9	29.2	20.9	17.1
	ACTUALS	802.1	30.1	34.8	35.0	35.4	42.6	39.8	**1019.8**	0.0	0.0	0.0	0.0	0.0	0.0
DS *** SSU															
FTE	PLANNED	78.9	4.8	3.2	3.2	3.2	3.2	3.2	**99.5**	3.2	3.2	3.2	2.0	2.0	1.9
	ACTUALS	93.7	5.1	3.3	3.0	6.0	3.4	2.7	**117.1**	0.0	0.0	0.0	0.0	0.0	0.0
DU *** UCSC															
FTE	PLANNED	226.7	6.3	6.9	4.7	4.4	4.4	4.4	**257.8**	4.4	4.4	4.4	4.4	4.4	4.4
	ACTUALS	280.8	4.7	5.2	3.3	6.7	1.0	5.5	**307.3**	0.0	0.0	0.0	0.0	0.0	0.0
DW *** UW															
FTE	PLANNED	38.1	0.4	0.4	0.4	0.4	0.4	0.4	**40.5**	0.4	0.4	0.4	0.4	0.4	0.4
	ACTUALS	10.6	0.0	1.7	0.9	1.0	1.1	1.0	**16.2**	0.0	0.0	0.0	0.0	0.0	0.0
FF *** France															
FTE	PLANNED	1062.7	14.8	15.2	15.2	15.2	15.2	15.2	**1153.2**	15.2	15.2	15.2	14.2	13.9	10.8
	ACTUALS								**0.0**						
FI *** Italy															
FTE	PLANNED	371.6	9.1	9.1	9.4	15.6	15.2	14.9	**444.9**	12.8	14.6	15.2	9.1	9.1	7.1
	ACTUALS	332.3	10.9	10.9	10.9	10.9	10.9	10.9	**397.4**	0.0	0.0	0.0	0.0	0.0	0.0
FJ *** Japan															
FTE	PLANNED	96.4	1.0	1.0	0.9	0.5	0.5	0.5	**100.6**	0.5	0.5	0.5	0.5	0.5	0.5
	ACTUALS	75.5	1.8	1.8	1.8	1.8	1.8	1.8	**86.0**	0.0	0.0	0.0	0.0	0.0	0.0
FK *** Sweden															
FTE	PLANNED	113.5	3.5	3.6	3.6	3.6	3.6	3.6	**134.8**	3.6	3.6	3.6	3.6	3.6	2.7
	ACTUALS								**0.0**						
Grand Totals:															
	PLANNED	5425.1	222.6	171.6	218.1	198.6	282.1	235.1	**6753.2**	210.0	202.8	205.1	152.9	145.2	130.4
	ACTUALS	4139.0	198.9	286.0	192.2	200.8	220.5	214.2	**5451.6**	0.0	0.0	0.0	0.0	0.0	0.0

4.1 GLAST LAT															
Contributed	PLANNED	2174.8	45.1	45.9	49.8	60.8	61.1	59.7	**2497.1**	49.7	49.9	50.8	45.0	44.8	40.0
	ACTUALS	801.7	24.1	24.3	26.4	24.8	24.5	25.8	**951.6**	0.0	0.0	0.0	0.0	0.0	0.0
Funded	PLANNED	3250.3	177.5	125.7	168.3	137.8	221.0	175.4	**4256.0**	160.3	152.9	154.4	107.9	100.4	90.4
	ACTUALS	3337.3	174.8	261.7	165.8	176.0	196.1	188.4	**4500.0**	0.0	0.0	0.0	0.0	0.0	0.0
Grand Totals:	PLANNED	5425.1	222.6	171.6	218.1	198.6	282.1	235.1	**6753.1**	210.0	202.8	205.1	152.9	145.2	130.4
	ACTUALS	4139.0	198.9	286.0	192.2	200.8	220.6	214.2	**5451.6**	0.0	0.0	0.0	0.0	0.0	0.0