



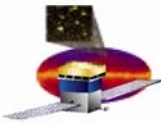
# GLAST Large Area Telescope:

## LAT Project Status Overview

### September, 2004

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Project Manager

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650-926-2726



# CPR Level 3

Total project schedule variance

Cumulative Variance > +/-10%  
(will be reported to DOE/NASA)

Notable current period variances

Cost Performance Report - Work Breakdown Structure													
Contractor: Location:						Contract Type/No:		Project Name/No: LAT		Report Period: 8/31/2004 9/30/2004			
CAPW[3]  Item  (1)	Current Period					Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost Work Performed	Variance		Budgeted Cost		Actual Cost Work Performed	Variance		Budgeted	Latest Revised Estimate	Variance
	Work Scheduled	Work Performed		Schedule	Cost	Work Scheduled	Work Performed		Schedule	Cost			
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
4.1.1 INSTRUMENT MANAGEMENT	386	386	439	0	-53	13,896	13,896	13,920	0	-24	16,911	16,911	0
4.1.2 SYSTEM ENGINEERING	185	185	223	0	-38	5,659	5,659	5,413	0	247	7,047	7,047	0
4.1.4 TRACKER	513	654	1,347	141	-693	15,274	14,699	15,155	-575	-456	16,573	16,573	0
4.1.5 CALORIMETER	616	482	567	-134	-85	19,829	17,933	17,905	-1,896	28	22,022	22,022	0
4.1.6 ANTICOINCIDENCE DETECTOR	471	295	202	-176	93	15,040	14,465	14,508	-574	-42	15,595	15,595	0
4.1.7 ELECTRONICS	461	186	536	-276	-351	20,509	18,121	19,832	-2,388	-1,710	22,055	22,055	0
4.1.8 MECHANICAL SYSTEMS	648	579	765	-69	-186	12,088	11,515	11,634	-573	-119	14,179	14,179	0
4.1.9 INTEGRATION & TEST	419	304	335	-115	-31	5,397	4,902	4,978	-494	-76	7,764	7,764	0
4.1.A PERFORMANCE AND SAFETY ASSURANCE	118	118	142	0	-25	2,324	2,324	2,231	0	93	2,935	2,935	0
4.1.B LAT INSTRUMENT SCIENCE OPERATIONS CENTER	3	3	3	0	0	296	296	296	0	0	328	328	0
4.1.C EDUCATION AND PUBLIC OUTREACH	71	95	64	24	31	1,984	1,984	1,606	0	378	2,448	2,448	0
4.1.D SCIENCE ANALYSIS SOFTWARE	48	48	61	0	-13	2,309	2,309	2,159	0	149	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	3,941	3,337	4,686	-604	-1,350	115,928	109,429	110,961	-6,500	-1,532	132,202	132,202	0
Contingency											3,823	3,823	0
Total	3,941	3,337	4,686	-604	-1,350	115,928	109,429	110,961	-6,500	-1,532	136,025	136,025	0



# Performance Analysis

	WBS	Description	BAC	BCWS	BCWP	ACWP	SV \$	CV \$	%BCWS	%BCWP	%ACWP	SPI	CPI	SPI	CPI	Cpi_Fcst	CpiSpi_Fcst
1	4.1	LAT	132,202	115,928	109,429	110,961	-6,500	-1,532	87.69	82.77	83.93	↔	↓	0.944	0.986	134,053	135,425
2	4.1.1	Instr Mgmt	16,911	13,896	13,896	13,920	0	-24	82.17	82.17	82.31	↑	↓	1.000	0.998	16,940	16,940
3	4.1.2	System Engr	7,047	5,659	5,659	5,413	0	247	80.31	80.31	76.81	↔	↓	1.000	1.046	6,740	6,740
4	4.1.4	Tracker	16,573	15,274	14,699	15,155	-575	-456	92.16	88.69	91.44	↑	↓	0.962	0.970	17,088	17,164
5	4.1.5	Calorimeter	22,022	19,829	17,933	17,905	-1,896	28	90.04	81.43	81.31	↔	↓	0.904	1.002	21,987	22,419
6	4.1.6	ACD	15,595	15,040	14,465	14,508	-574	-42	96.44	92.75	93.02	↓	↑	0.962	0.997	15,641	15,686
7	4.1.7	Electronics	22,055	20,509	18,121	19,832	-2,388	-1,710	92.99	82.16	89.92	↓	↓	0.884	0.914	24,136	24,704
8	4.1.8	Mechanical	14,179	12,088	11,515	11,634	-573	-119	85.26	81.22	82.05	↔	↓	0.953	0.990	14,325	14,459
9	4.1.9	I&T	7,764	5,397	4,902	4,978	-494	-76	69.51	63.14	64.12	↓	↓	0.908	0.985	7,884	8,177
10	4.1.A	PSA	2,935	2,324	2,324	2,231	0	93	79.17	79.17	76.01	↔	↓	1.000	1.042	2,818	2,818
11	4.1.B	ISOC	328	296	296	296	0	0	90.14	90.14	90.12	↔	↑	1.000	1.000	328	328
12	4.1.C	EPO	2,448	1,984	1,984	1,606	0	378	81.02	81.02	65.59	↑	↔	1.000	1.235	1,982	1,982
13	4.1.D	SAS	3,019	2,309	2,309	2,159	0	150	76.47	76.47	71.51	↔	↓	1.000	1.069	2,824	2,824
14	4.1.E	Balloon Flight	1,325	1,325	1,325	1,325	0	0	100.00	100.00	100.00	↔	↓	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

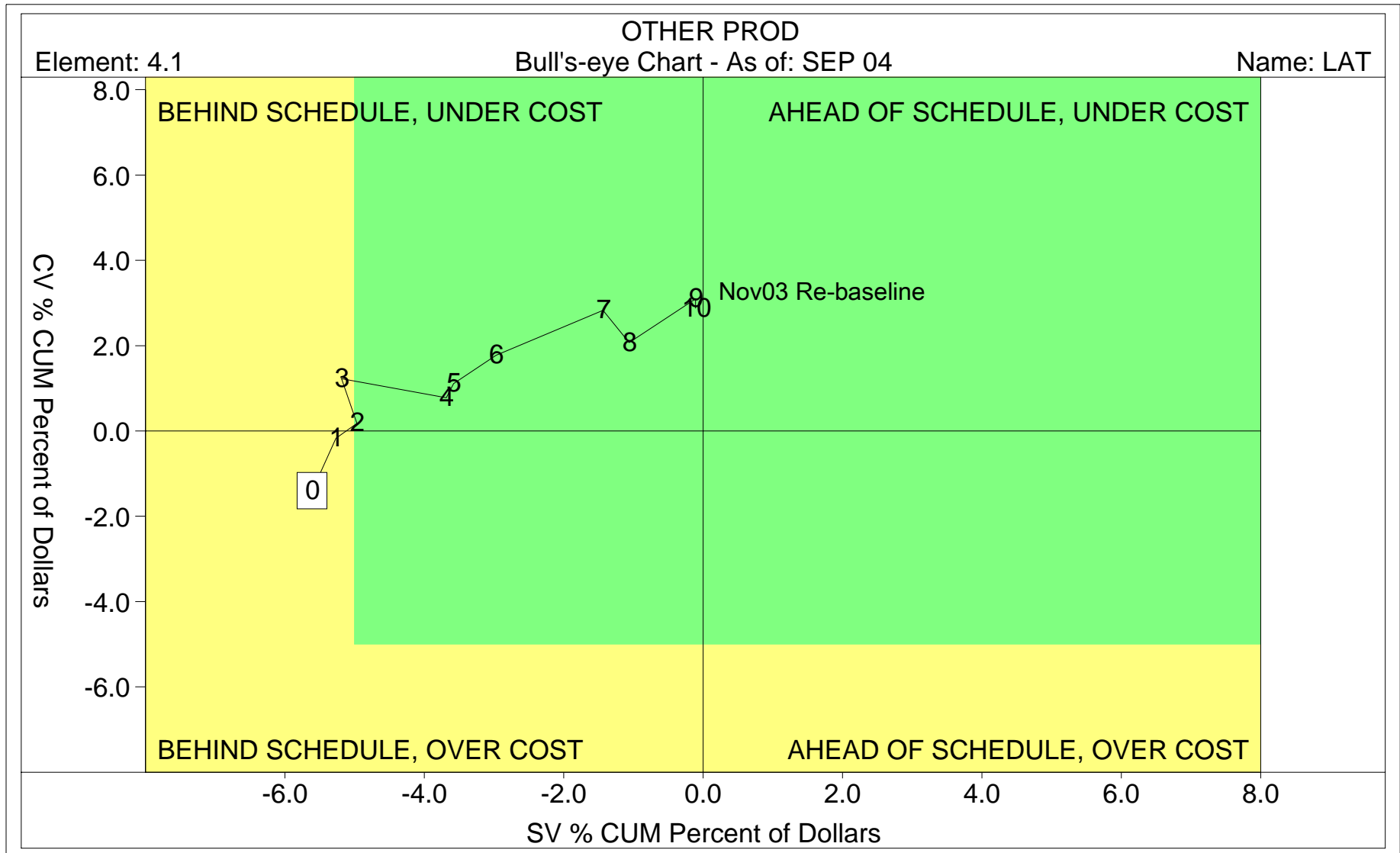
Cpi\_Fcst: CPI (to date) EAC Forecast = BAC / CPI

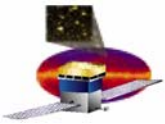
CpiSpi\_Fcst: Combination CPI and SPI EAC Forecast = ACWP + (BAC - BCWP) / (CPI \* SPI)

CPI and SPI Change Thresholds	
<span style="color: red;">█</span>	Worse than 0.85
<span style="color: yellow;">█</span>	Between 0.85 and 0.95
<span style="color: green;">█</span>	Between 0.95 and 1.10
<span style="color: blue;">█</span>	Better than 1.10

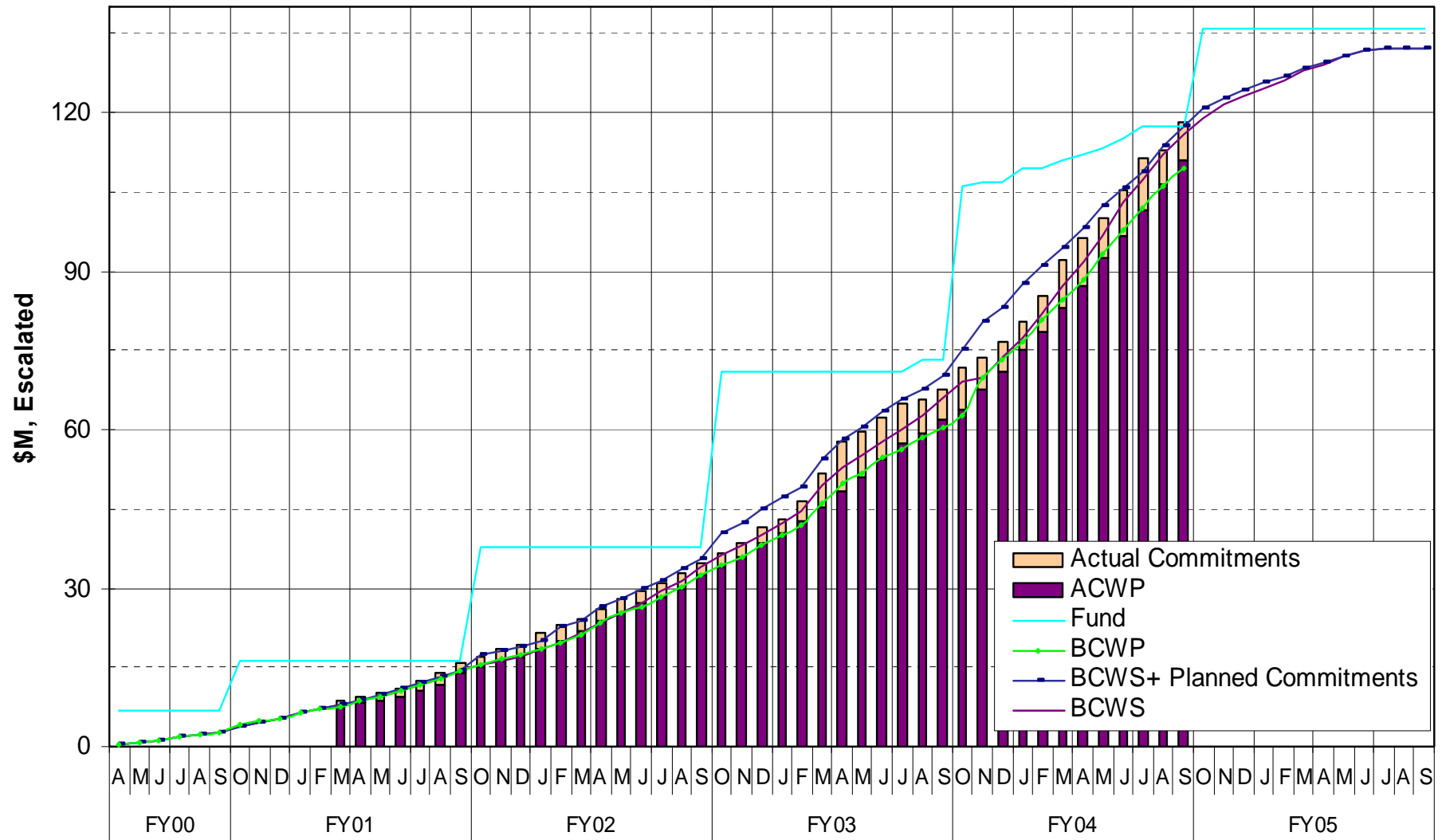


# Variance Analysis



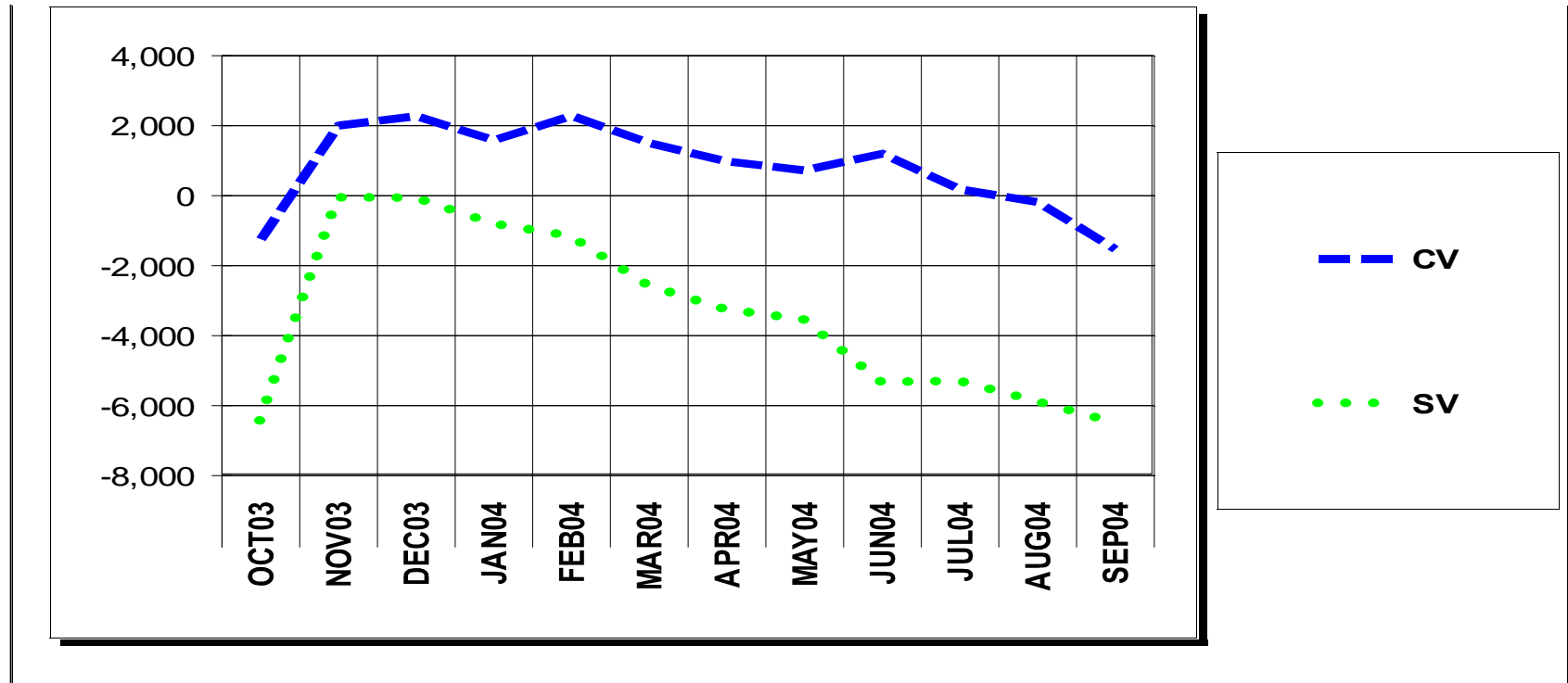


# Budget, Cost, Funding, Performance





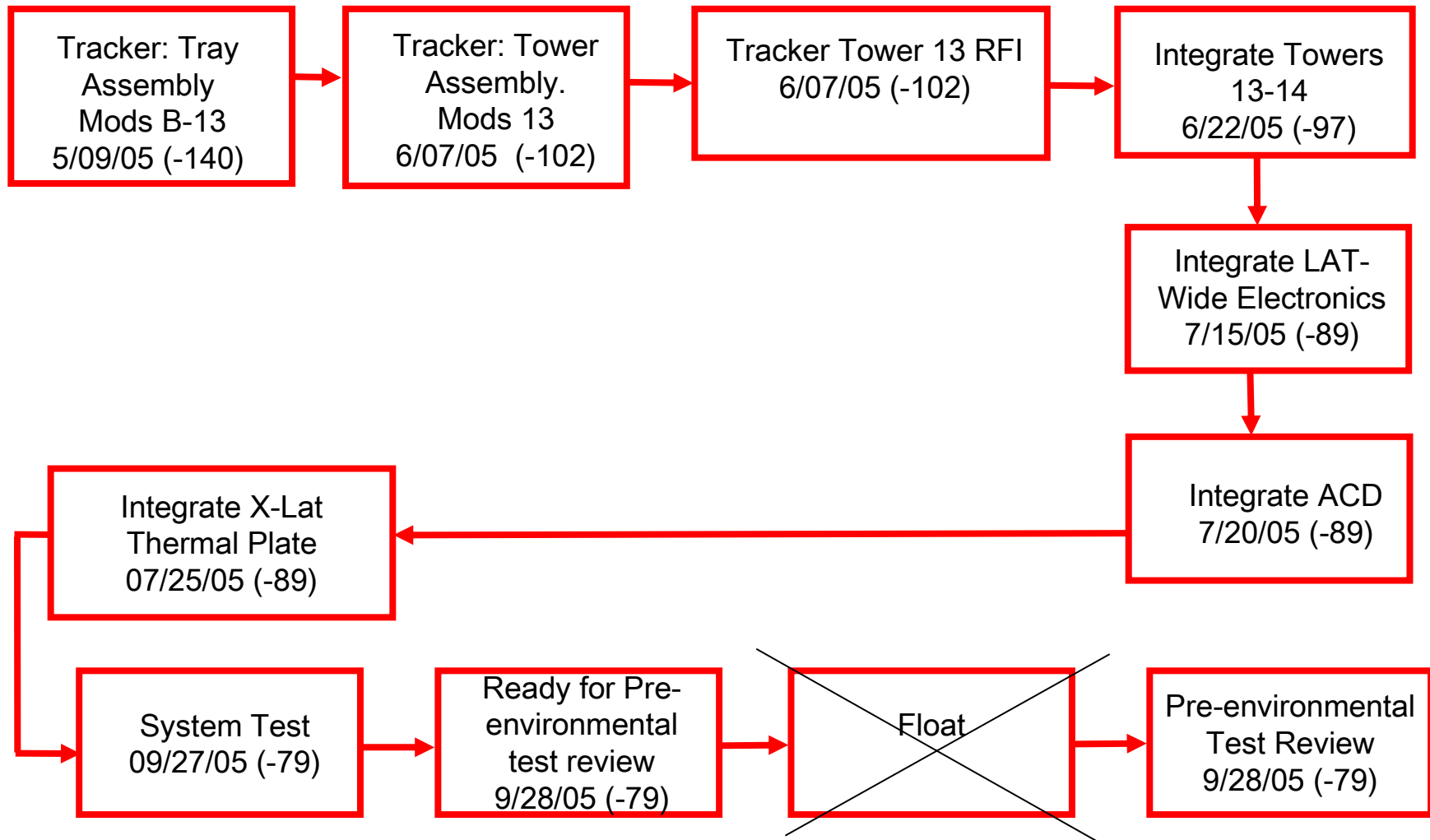
# CV and SV Chart



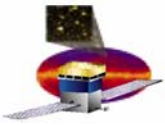
	OCT03	NOV03	DEC03	JAN04	FEB04	MAR04	APR04	MAY04	JUN04	JUL04	AUG04	SEP04
BCWS	69,093	69,801	73,433	77,394	81,916	87,277	91,518	96,621	103,131	107,062	111,988	115,928
BCWP	62,648	69,724	73,353	76,574	80,742	84,687	88,243	93,063	97,784	101,746	106,092	109,429
ACWP	63,894	67,721	71,081	74,989	78,460	83,184	87,264	92,340	96,584	101,567	106,275	110,961
CV	-1,246	2,003	2,271	1,585	2,281	1,503	979	723	1,199	179	-183	-1,532
SV	-6,445	-76	-80	-820	-1,175	-2,590	-3,274	-3,558	-5,348	-5,316	-5,895	-6,499



# Current Critical Path to Pre-environmental Test Review



Completion Dates (Baseline Variance)

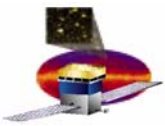


## Current Critical Path to Pre-environmental Test Review

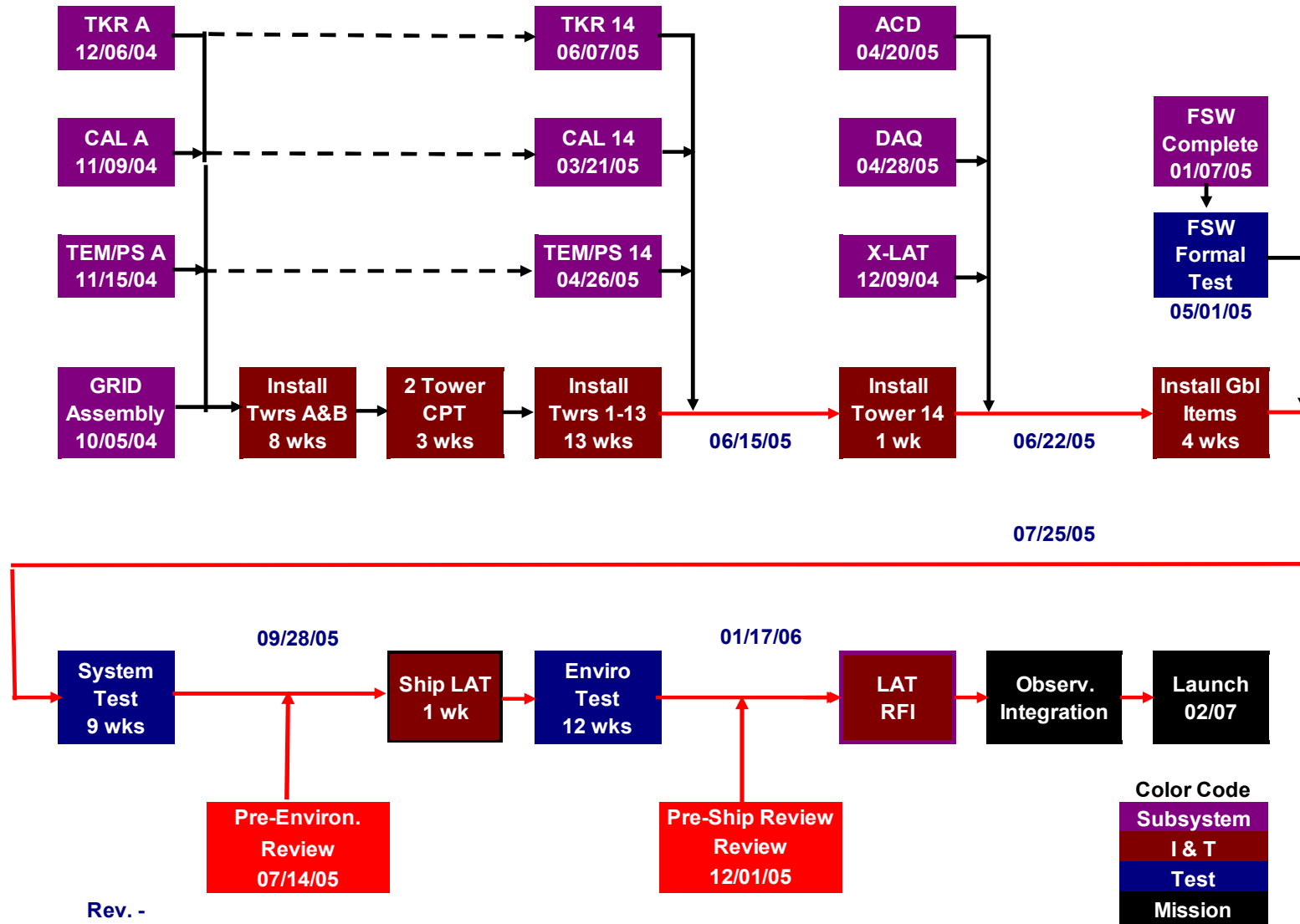
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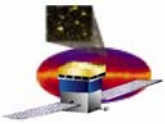
- **1<sup>st</sup> critical path: Tracker Flight Tray Mod B-13 Assembly (INFN)**
  - 79 days float to “Ready for Pre-environmental Test Review”
  - 33 days float to LAT pre-ship review
- **2<sup>nd</sup> critical path: Electronics TEM Power Supply Qual Unit**
  - 21 days behind 1<sup>st</sup> critical path
  - Also critical path to Mod A
- **3<sup>rd</sup> critical path: Tracker Flight Tray Mod A Assembly (INFN)**
  - 1 days behind 2<sup>nd</sup> critical path





# LAT Schedule





# Rescheduled Delivery

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GLAST Team,

It is an exciting time for the GLAST mission as we prepare to begin to integrate LAT, GBM and spacecraft flight hardware. The accomplishments of this Team over the past several years in getting the GLAST mission to this point are very impressive. The dedication of this Team that I have seen thus far, convinces me that this Team will be up to the many challenges that lie ahead over the upcoming instrument and observatory integration. However, as a result of problems encountered over the past several months on the LAT development, we have reached the point where it will be necessary to delay the delivery of the LAT instrument to the observatory integrator. The current projected **delivery date of the LAT instrument is March 2006 with a corresponding launch readiness date of May 2007**. Over the next several weeks, the DOE and NASA will be formalizing the necessary budgetary reprogramming to secure the additional funding required for the rebaselined LAT schedule. We will keep the Team apprised of the rebaseline plan as the budgetary situation converges to closure. Thanks again for your superb support to this point and in the many months ahead as we prepare for a GLAST operational mission. The excitement of watching this mission come together and preparing for launch is what this is all about. The next two years should be a great experience.

Kevin



# Draft Increase By Subsystem

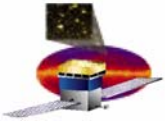
WBS		Baseline Sep-04	Liens	Schedule Delay	Schedule Float	Total Increase	New Estimate
<b>4.1</b>	<b>LAT Budget at Completion</b>	<b>\$132,202</b>	<b>\$7,219</b>	<b>\$9,254</b>	<b>\$2,807</b>	<b>\$19,280</b>	<b>\$151,482</b>
4.1.1	Instrument Management	16,911	50	870	549	1,469	18,380
4.1.2	System Engineering	7,047	239	382	180	801	7,849
4.1.4	Tracker	16,573	1,114	880	89	2,082	18,655
4.1.5	Calorimeter	22,022	0	1,625	317	1,942	23,964
4.1.6	Anticoincidence Detector	15,595	275	544	152	971	16,566
4.1.7	Electronics, Data Acquisition, Flight Software	22,055	4,102	2,364	400	6,866	28,921
4.1.8	Mechanical Systems	14,179	202	1,443	363	2,009	16,187
4.1.9	Integration & Test	7,764	962	402	480	1,843	9,607
4.1.A	Performance & Safety Assurance	2,935	275	340	30	644	3,579
4.1.B	Instrument Science Operations Center	328	0	0	0	0	328
4.1.C	Education & Public Outreach	2,448	0	235	103	338	2,787
4.1.D	Science Analysis Software	3,019	0	169	145	315	3,334
4.1.E	Suborbital Flight Test	1,325	0	0	0	0	1,325
	Contingency	3783				1428	5211
	<b>Total Fabrication Phase Funding</b>	<b>\$135,985</b>				<b>\$20,708</b>	<b>\$156,693</b>



# Draft Plan

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- Add two months float to the current LAT plan
  - **Pre-environmental Test Review** **November 30, 2005**
- CD-4 Approval milestone remains **March 15, 2006**
- Keep the 12 weeks for Environmental test
  - **Preship review** **March 31, 2005**
- Add one month float to the Observatory Integration
  - **Launch** **May 2007**
- Add funding to the LAT Fabrication Phase **\$20 Million**
- The most significant risk to this plan is further schedule erosion



# Backup Material



# Level 1 & 2 Milestones

Activity ID	Activity Description	Baseline Finish	Bsln Var	Early Finish	Timeline											
					FY01	FY02	FY03	FY04	FY05	FY06						
<b>DOE/NASA Joint Oversight Group (Level 1)</b>																
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*	-27	10/22/04					▼							
1M1P000040	CD-4 Approval	03/15/06*	0	03/15/06*										▼		
<b>DOE/NASA Federal Project Managers (Level 2)</b>																
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*	-71	12/06/04					▼							
1M1000700	Pre Environmental Testing Review	07/14/05*	-53	09/28/05						▼						
1M1000120	PSR-(Instrument Pre-Ship Review)	12/01/05*	-26	01/17/06							▼					
Run Date: 10/25/04 09:16					<b>GLAST LAT PROJECT</b>					LT-T1: Level 1 && 2 Milestones					Sheet 1	
Data Date: 10/01/04					<b>Level 1&amp;&amp;2 Milestones</b>					FL-T1: Level 1 && 2 Milestones						
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# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Instrument Project Office (Level 3)</b>														
<b>4.1.1 Instrument Management</b>														
1	1M1001920		Pre-Environmental Test Review	06/07/05	-79	09/28/05								
<b>4.1.4 Tracker</b>														
4	1M1001430	9	Delv of TKR EM to SLAC I&T/MGSE	01/02/04	-200	10/15/04		♦					▽	
4	1M1000200	9	Tracker Modules A RFI	07/28/04	-90	12/06/04							▽	
4	1M1000201	9	Tracker Modules B RFI	08/18/04	-90	01/04/05							▽	
4	1M1000220	9	Tracker Modules 1 RFI	08/18/04	-112	02/04/05							▽	
4	1M1000221	9	Tracker Modules 2 RFI	09/08/04	-98	02/04/05							▽	
4	1M1000250	9	Flight Tracker Tower 3 RFI	09/08/04	-98	02/04/05							▽	
4	1M1000251	9	Flight Tracker Tower 4 RFI	10/14/04	-91	03/04/05							▽	
4	1M1000260	9	Flight Tracker Tower 5 RFI	10/14/04	-91	03/04/05							▽	
4	1M1000261	9	Flight Tracker Tower 6 RFI	11/05/04	-75	03/04/05							▽	
4	1M1000270	9	Flight Tracker Tower 7 RFI	11/05/04	-98	04/06/05							▽	
4	1M1000271	9	Flight Tracker Tower 8 RFI	11/24/04	-85	04/06/05							▽	
4	1M1000280	9	Flight Tracker Tower 9 RFI	11/24/04	-85	04/06/05							▽	
4	1M1000281	9	Flight Tracker Tower 10 RFI	12/17/04	-92	05/06/05							▽	

Run Date 10/25/04 09:14  
 Data Date 10/01/04  
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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on  
 Sheet 1



# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.4 Tracker</b>																
4	1M1000290	9	Flight Tracker Tower 11 RFI	12/17/04	-92	05/06/05										
4	1M1000291	9	Flight Tracker Tower 12 RFI	01/11/05	-81	05/06/05										
4	1M1000300	9	Flight Tracker Tower 13 RFI	01/11/05	-102	06/07/05										
4	1M1000301	9	Flight Tracker Tower 14 RFI	01/25/05	-93	06/07/05										
4	1M1000310	9	Flight Tracker Tower 15 RFI	01/25/05	-113	07/06/05										
4	1M1000311	9	Flight Tracker Tower 16 RFI	02/08/05	-103	07/06/05										
<b>4.1.5 Calorimeter</b>																
5	1M1000210	9	Calorimeter Modules A RFI	07/09/04	-87	11/10/04										
5	1M1500	9	Calorimeter Modules B RFI	07/09/04	-99	11/30/04										
5	1M1000230	9	Calorimeter Modules 1 RFI	07/30/04	-88	12/06/04										
5	1M1510	9	Calorimeter Modules 2 RFI	08/02/04	-93	12/14/04										
5	1M1000400	9	Flight Calorimeter Tower 3 RFI	08/17/04	-87	12/21/04										
5	1M1000390	9	Flight Calorimeter Tower 5 RFI	09/15/04	-70	01/03/05										
5	1M1520	9	Flight Calorimeter Tower 4 RFI	08/17/04	-90	01/03/05										
5	1M1000380	9	Flight Calorimeter Tower 7 RFI	10/11/04	-62	01/18/05										
5	1M1530	9	Flight Calorimeter Tower 6 RFI	09/15/04	-80	01/18/05										

Run Date 10/25/04 09:14  
 Data Date 10/01/04  
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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

Sheet 2





# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.5 Calorimeter</b>																
5	1M1000370	9	Flight Calorimeter Tower 9 RFI	11/02/04	-74	02/28/05					◆	▽				
5	1M1540	9	Flight Calorimeter Tower 8 RFI	10/11/04	-90	02/28/05					◆	▽				
5	1M1000360	9	Flight Calorimeter Tower 11 RFI	11/16/04	-94	04/11/05					◆		▽			
5	1M1550	9	Flight Calorimeter Tower 10 RFI	11/02/04	-104	04/11/05					◆		▽			
5	1M1000350	9	Flight Calorimeter Tower 13 RFI	12/02/04	-93	04/22/05					◆		▽			
5	1M1560	9	Flight Calorimeter Tower 12 RFI	11/15/04	-104	04/22/05					◆		▽			
5	1M1000340	9	Flight Calorimeter Tower 15 RFI (Spare)	01/06/05	-84	05/06/05						◆		▽		
5	1M1570	9	Flight Calorimeter Tower 14 RFI	12/02/04	-103	05/06/05					◆			▽		
5	1M1580	9	Flight Calorimeter Tower 16 RFI (Spare)	01/06/05	-90	05/16/05						◆			▽	
<b>4.1.6 ACD</b>																
6	1M1001000	9	ACD Test Scripts (from ACD to I&T)	07/01/04	-82	10/27/04				◆		▽				
6	1M1000990	9	ACD Calibration Test Unit at SLAC, Tested & RFI	01/18/05	0	01/18/05						◆	▽			
6	1M1000410	9	ACD Flight Unit at SLAC, Tested/Inspected & RFI	11/03/04	-110	04/20/05						◆			▽	
<b>4.1.7 Electronics</b>																
7	1M76000010	6	3rd G2 Test Stand: Elec to ACD	12/08/03	0	12/08/03A	▼									
7	1M1000920	4	EM2 TEM: Elec to Tracker	01/12/04	-55	03/31/04A		◆	▼							
Run Date 10/25/04 09:14							<b>GLAST LAT PROJECT</b>				LT-T3: Level 3 sort by Subsystem (tb)				Sheet 3	
Data Date 10/01/04							<b>Level 3 Milestones</b>				FL-T3: L3 Milestones from Oct03 on					
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# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics</b>																
7	1M74000010	4	Updated EGSE System 1: Elec to TKR	12/08/03	-80	04/09/04A	◆		▼							
7	1M76000020	6	G3 Test Stand (test 2 FREE Cards): Elec to ACD	12/15/03	-84	04/22/04A	◆		▼							
7	1M74000020	4	Updated EGSE System 2: Elec to TKR	12/22/03	-82	04/27/04A	◆		▼							
7	1M76000030	6	G3 Test Stand (Fit-like I/F): Elec to ACD	02/20/04	-64	05/20/04A		◆	▼							
7	1M79010		Demo: SI Functionality - Elec to MO	05/28/04*	0	05/28/04A			▼							
7	1M74000030	4	Updated EGSE System 3: Elec to TKR	01/07/04	-104	06/04/04A	◆		▼							
7	1M74000040	4	EGSE System 4: Elec to TKR	01/14/04	-99	06/04/04A	◆		▼							
7	1M74000050	4	EGSE System 5: Elec to TKR	01/22/04	-94	06/04/04A	◆		▼							
7	1M1001870	5	5 EM2 TEM/PS for AFEE brd ass & tst: Elec to CAL	01/15/04	-99	06/07/04A	◆		▼							
7	1M1001900	5	Test Stations (5) for AFEE: Elec to CAL	01/14/04	-100	06/07/04A	◆		▼							
7	1M1001220	5	EM2 TEM/PS/CTS for FMA from Elec to CAL	01/22/04	-101	06/15/04A	◆		▼							
7	1M7941190	9	EGSE TEM/TEM PS/CTS #1 for Bldg 33-Elec to I&T	01/29/04	-104	06/25/04A	◆		▼							
7	1M1001260	5	EM2 TEM/PS/CTS for FMB from Elec to CAL	01/29/04	-128	07/30/04A	◆			▼						
7	1M79020		Demo: Inter-task Communications	07/30/04	0	07/30/04A				▼						
7	1M7941130	9	EGSE TEM/TEM PS/CTS w/ FE Elec #1-Elec to I&T	12/08/03	-158	07/30/04A	◆			▼						
7	1M7941170	9	EGSE TEM/TEM PS/CTS/GASU FE Elec-Elec to I&T	01/14/04	-138	07/30/04A	◆			▼						

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

Sheet 4



# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics</b>																
7	1M74000060	4	EGSE System 6: Elec to TKR	01/29/04	-138	08/13/04A		◆			▼					
7	1M74000070	4	EGSE System 7: Elec to TKR	02/12/04	-128	08/13/04A			◆			▼				
7	1M74000080	4	EGSE System 8: Elec to TKR	02/12/04	-128	08/13/04A			◆				▼			
7	1M7941150	9	EGSE TEM/TEM PS/CTS w/ FE Elec #2-Elec to I&T	12/22/03	-158	08/13/04A	◆							▼		
7	1M7941160	9	EGSE TEM/TEM PS/CTS w/ FE Elec #3-Elec to I&T	01/07/04	-153	08/13/04A		◆							▼	
7	1M7941420	9	EGSE TEM/TEM PS/CTS #2 for Bldg 33-Elec to I&T	02/05/04	-133	08/13/04A			◆							▼
7	1M1001600	5	EM2 TEM/PS/CTS for FM1 from Elec to CAL	02/05/04	-141	08/25/04A				◆						▼
7	1M1001650	5	EM2 TEM/PS/CTS for FM2 from Elec to CAL	02/12/04	-136	08/25/04A				◆						▼
7	1M1001660	5	EM2 TEM/PS/CTS for FM3 from Elec to CAL	02/27/04	-126	08/25/04A					◆					▼
7	1M1001680	5	EM2 TEM/PS/CTS for FM4 from Elec to CAL	02/27/04	-126	08/25/04A						◆				▼
7	1M1001720	5	EM2 TEM/PS/CTS for FM5 from Elec to CAL	02/27/04	-126	08/25/04A							◆			▼
7	1M1001760	5	EM2 TEM/PS/CTS for FM6 from Elec to CAL	03/05/04	-121	08/25/04A								◆		▼
7	1M7941180	9	EGSE Development Hrdw/FSW 1st Delivr-Elec to I&T	01/22/04	-154	08/30/04A			◆							▼
7	1M79030		Demo: Preliminary ISIS	09/01/04	-2	09/03/04A										▼
7	1M79080		Demo: LAT Communication Board Driver	10/01/04	0	10/01/04										▼
7	1M79090		Demo: Command and Telemetry	10/01/04	0	10/01/04										▼

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

Sheet 5



# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics:</b>																
7	1M79100		Demo: 1553 Service	10/01/04	0	10/01/04					▽					
7	1M74000090	4	EGSE System 9: Elec to TKR	02/20/04	-162	10/08/04*		◆			▽					
7	1M74000100	4	EGSE System 10: Elec to TKR	02/20/04	-162	10/08/04*		◆			▽					
7	1M1001770	5	EM2 TEM/PS/CTS for FM7 from Elec to CAL	03/05/04	-156	10/14/04*		◆			▽					
7	1M1001780	5	EM2 TEM/PS/CTS for FM8 from Elec to CAL	03/05/04	-156	10/14/04*		◆			▽					
7	1M79120		Demo: Primary Boot	10/29/04	0	10/29/04					▽	◆				
7	1M79130		Demo: Secondary Boot	10/29/04	0	10/29/04					▽	◆				
7	1M79140		Demo: LCB Service	10/29/04	0	10/29/04					▽	◆				
7	1M79150		Demo: Power/Initialize GASU	10/29/04	0	10/29/04					▽	◆				
7	1M79110		Demo: ISIS FQT	10/08/04	-21	11/08/04					◆	▽				
7	1M7941430	9	EGSE TEM/TEM PS/CTS w/ GASU for B33-Elec to I&T	02/05/04	-197	11/12/04*		◆			▽					
7	1M79003010	9	Flight Cables Assy A: Elec to I&T	05/10/04	-132	11/15/04				◆	▽					
7	1M79003020	9	Flight Cables Assy B: Elec to I&T	05/10/04	-132	11/15/04				◆	▽					
7	1M79003030	9	Flight Cables Assy 1: Elec to I&T	06/10/04	-110	11/15/04				◆	▽					
7	1M79003040	9	Flight Cables Assy 2: Elec to I&T	06/10/04	-110	11/15/04				◆	▽					
7	1M79003050	9	Flight Cables Assy 3: Elec to I&T	06/10/04	-110	11/15/04				◆	▽					

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

Sheet 6



# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics</b>																
7	1M79003060	9	Flight Cables Assy 4: Elec to I&T	06/10/04	-110	11/15/04				◆		▽				
7	1M79003070	9	Flight Cables Assy 5: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003080	9	Flight Cables Assy 6: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003090	9	Flight Cables Assy 7: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003100	9	Flight Cables Assy 8: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003110	9	Flight Cables Assy 9: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003120	9	Flight Cables Assy 10: Elec to I&T	06/28/04	-98	11/15/04					◆		▽			
7	1M79003130	9	Flight Cables Assy 11: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79003140	9	Flight Cables Assy 12: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79003150	9	Flight Cables Assy 13: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79003160	9	Flight Cables Assy 14: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79003170	9	Flight Cables Assy 15: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79003180	9	Flight Cables Assy 16: Elec to I&T	07/15/04	-90	11/19/04					◆		▽			
7	1M79160		Demo: File and Memory Management	12/03/04	0	12/03/04							▽	◆		
7	1M79170		Demo: Spacecraft Interfaces	12/03/04	0	12/03/04							▽	◆		
7	1M79180		Demo: Inter-task Communications	12/03/04	0	12/03/04							▽	◆		

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

Sheet 7



# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics</b>																
7	1M79001010	9	Flight TEM Assy A: Elec to I&T	06/07/04	-127	12/07/04			◆			▽				
7	1M79001020	9	Flight TEM Assy B: Elec to I&T	06/14/04	-122	12/07/04				◆		▽				
7	1M79002010	9	Flight TEM PS Assy A: Elec to I&T	05/12/04	-144	12/07/04			◆			▽				
7	1M79002020	9	Flight TEM PS Assy B: Elec to I&T	05/19/04	-139	12/07/04				◆		▽				
7	1M79190		Demo: Command and Telemetry Data Dictionary	01/07/05	0	01/07/05						▽	◆			
7	1M79200		Demo: Thermal Control	01/07/05	0	01/07/05						▽	◆			
7	1M79210		Demo: Watchdog	01/07/05	0	01/07/05						▽	◆			
7	1M79220		Demo: Charge Injection Calibration	01/07/05	0	01/07/05						▽	◆			
7	1M79001030	9	Flight TEM Assy 1: Elec to I&T	08/03/04	-118	01/28/05					◆		▽			
7	1M79002030	9	Flight TEM PS Assy 1: Elec to I&T	07/01/04	-140	01/28/05				◆			▽			
7	1M79230		Demo: Housekeeping	01/28/05	0	01/28/05							▽	◆		
7	1M79240		Demo: Event Integrity and Delivery	01/28/05	0	01/28/05							▽	◆		
7	1M79250		Demo: Event Filtering	01/28/05	0	01/28/05							▽	◆		
7	1M79260		Demo: GRB Detection and Response	01/28/05	0	01/28/05							▽	◆		
7	1M79001040	9	Flight TEM Assy 2: Elec to I&T	08/10/04	-118	02/04/05					◆		▽			
7	1M79002040	9	Flight TEM PS Assy 2: Elec to I&T	07/09/04	-140	02/04/05				◆			▽			

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

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# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>4.1.7 Electronics</b>														
7	1M79001050	9	Flight TEM Assy 3: Elec to I&T	08/17/04	-117	02/10/05								▽
7	1M79002050	9	Flight TEM PS Assy 3: Elec to I&T	07/16/04	-139	02/10/05								▽
7	1M79001060	9	Flight TEM Assy 4: Elec to I&T	08/24/04	-116	02/16/05								▽
7	1M79002060	9	Flight TEM PS Assy 4: Elec to I&T	07/23/04	-138	02/16/05								▽
7	1M7941110	9	Flight Harness-Elec to I&T	10/20/04	-77	02/17/05								▽
7	1M79001070	9	Flight TEM Assy 5: Elec to I&T	08/31/04	-115	02/23/05								▽
7	1M79002070	9	Flight TEM PS Assy 5: Elec to I&T	07/30/04	-137	02/23/05								▽
7	1M79270		Demo: Mode Control	02/25/05	0	02/25/05								▽
7	1M79280		Demo: Diagnostics	02/25/05	0	02/25/05								▽
7	1M79001080	9	Flight TEM Assy 6: Elec to I&T	09/08/04	-114	03/01/05								▽
7	1M79002080	9	Flight TEM PS Assy 6: Elec to I&T	08/06/04	-136	03/01/05								▽
7	1M79001090	9	Flight TEM Assy 7: Elec to I&T	09/15/04	-114	03/08/05								▽
7	1M79002090	9	Flight TEM PS Assy 7: Elec to I&T	08/13/04	-136	03/08/05								▽
7	1M79001100	9	Flight TEM Assy 8: Elec to I&T	09/22/04	-114	03/15/05								▽
7	1M79002100	9	Flight TEM PS Assy 8: Elec to I&T	08/20/04	-136	03/15/05								▽
7	1M79001110	9	Flight TEM Assy 9: Elec to I&T	09/29/04	-114	03/22/05								▽

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on

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# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>4.1.7 Electronics</b>														
7	1M79002110	9	Flight TEM PS Assy 9: Elec to I&T	08/25/04	-138	03/22/05								
7	1M79001120	9	Flight TEM Assy 10: Elec to I&T	10/06/04	-114	03/29/05								
7	1M79002120	9	Flight TEM PS Assy 10: Elec to I&T	08/30/04	-140	03/29/05								
7	1M79001130	9	Flight TEM Assy 11: Elec to I&T	10/13/04	-114	04/05/05								
7	1M79002130	9	Flight TEM PS Assy 11: Elec to I&T	09/02/04	-142	04/05/05								
7	1M79001140	9	Flight TEM Assy 12: Elec to I&T	10/20/04	-114	04/12/05								
7	1M79002140	9	Flight TEM PS Assy 12: Elec to I&T	09/08/04	-144	04/12/05								
7	1M79001150	9	Flight TEM Assy 13: Elec to I&T	10/27/04	-114	04/19/05								
7	1M79002150	9	Flight TEM PS Assy 13: Elec to I&T	09/13/04	-146	04/19/05								
7	1M7942000	9	Flight PDU Box-Elec to I&T	10/13/04	-128	04/25/05								
7	1M79001160	9	Flight TEM Assy 14: Elec to I&T	11/03/04	-114	04/26/05								
7	1M79002160	9	Flight TEM PS Assy 14: Elec to I&T	09/16/04	-148	04/26/05								
7	1M7941080	9	Flight SIU-Elec to I&T	10/13/04	-130	04/27/05								
7	1M7941090	9	Flight Event Processor Units-Elec to I&T	11/01/04	-117	04/27/05								
7	1M7941440	9	Final EGSE incl S/C Sim, FSW-Elec to I&T	12/13/04	-89	04/27/05								
7	1M79001170	9	Flight TEM Assy 15: Elec to I&T	11/10/04	-114	05/03/05								

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**GLAST LAT PROJECT**  
**Level 3 Milestones**  
**Sort by Subsystem**

LT-T3: Level 3 sort by Subsystem (tb)  
 FL-T3: L3 Milestones from Oct03 on  
 Sheet 10





# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.7 Electronics</b>																
7	1M79002170	9	Flight TEM PS Assy 15: Elec to I&T	09/21/04	-150	05/03/05									▽	
7	1M7941070	9	Flight GASU Box-Elec to I&T	11/01/04*	-121	05/03/05									▽	
7	1M79001180	9	Flight TEM Assy 16: Elec to I&T	11/17/04	-114	05/10/05									▽	
7	1M79002180	9	Flight TEM PS Assy 16: Elec to I&T	09/24/04	-152	05/10/05									▽	
<b>4.1.8 Mechanica</b>																
8	1M1001380	9	Delivery of EM (1X4) Grid to I&T/MSGE	12/19/03	-64	03/31/04A	◆	▼								
8	1M1000240	9	Flight Grid RFI-Mech to I&T	07/22/04	-84	11/18/04								▽		
8	1M941710	9	X-LAT Thermal Plate RFI from Mech to I&T	08/12/04	-119	02/09/05								▽		
8	1M941720	9	Radiators ready for I&T (from Mech to I&T)	03/17/05	-25	04/21/05									▽	
<b>4.1.9 I&amp;T</b>																
9	1M1001520	5	EM CAL Returned to NRL (arrives on dock)	10/16/03	-1	10/17/03A	▼									
9	1M1001790	5	EM2 TEM/PS for FM9 (return FMA) from I&T to CAL	07/23/04	-104	12/21/04								▽		
9	1M1001800	5	EM2 TEM/PS for FM10 (return FMB)from I&T to CAL	07/23/04	-104	12/21/04								▽		
9	1M1001810	5	EM2 TEM/PS for FM11 (return FM1) from I&T to CAL	08/13/04	-120	02/11/05								▽		
9	1M1001820	5	EM2 TEM/PS for FM12 (return FM2) from I&T to CAL	08/16/04	-124	02/18/05								▽		
9	1M1001830	5	EM2 TEM/PS for FM13 (return FM3) from I&T to CAL	08/31/04	-117	02/25/05								▽		
Run Date							10/25/04 09:14	<b>GLAST LAT PROJECT</b>				LT-T3: Level 3 sort by Subsystem (tb)				Sheet 11
Data Date							10/01/04	<b>Level 3 Milestones</b>				FL-T3: L3 Milestones from Oct03 on				
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# Level 3 Milestones by Subsystem

AV	Activity ID	ND	Activity Description	Baseline Finish	Bsln Var	Early Finish	FY04				FY05					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>4.1.9 I&amp;T</b>																
9	1M1001840	5	EM2 TEM/PS for FM14 (return FM4) from I&T to CAL	08/31/04	-121	03/03/05										
9	1M1001850	5	EM2 TEM/PS for FM15 (return FM5) from I&T to CAL	09/29/04	-105	03/09/05										
9	1M1001860	5	EM2 TEM/PS for FM16 (return FM6) from I&T to CAL	09/29/04	-109	03/15/05										
9	1M1000130	2	LAT Ready to Ship to NRL for Env Test	06/08/05	-78	09/28/05										
<b>4.1.B ISOC</b>																
B	1M005480	B	ISOC CDR	03/12/04	-101	08/04/04A										
B	1M1000112	B	Mission Operations Review (L-21mo.)	11/10/04	-99	04/12/05										
B	1M7941270	B	Ground System Interface Test start	11/10/04	-99	04/12/05										
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Data Date							10/01/04	<b>Level 3 Milestones</b>				FL-T3: L3 Milestones from Oct03 on				
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