



**Gamma-ray  
Large Area Space  
Telescope**



# GLAST LAT PROJECT

Cost & Schedule Information  
for the  
GLAST LAT PDR/Baseline Review  
January 8-11, 2001

4.1.D Science Analysis Software  
Subsystem Manager – R. Dubois

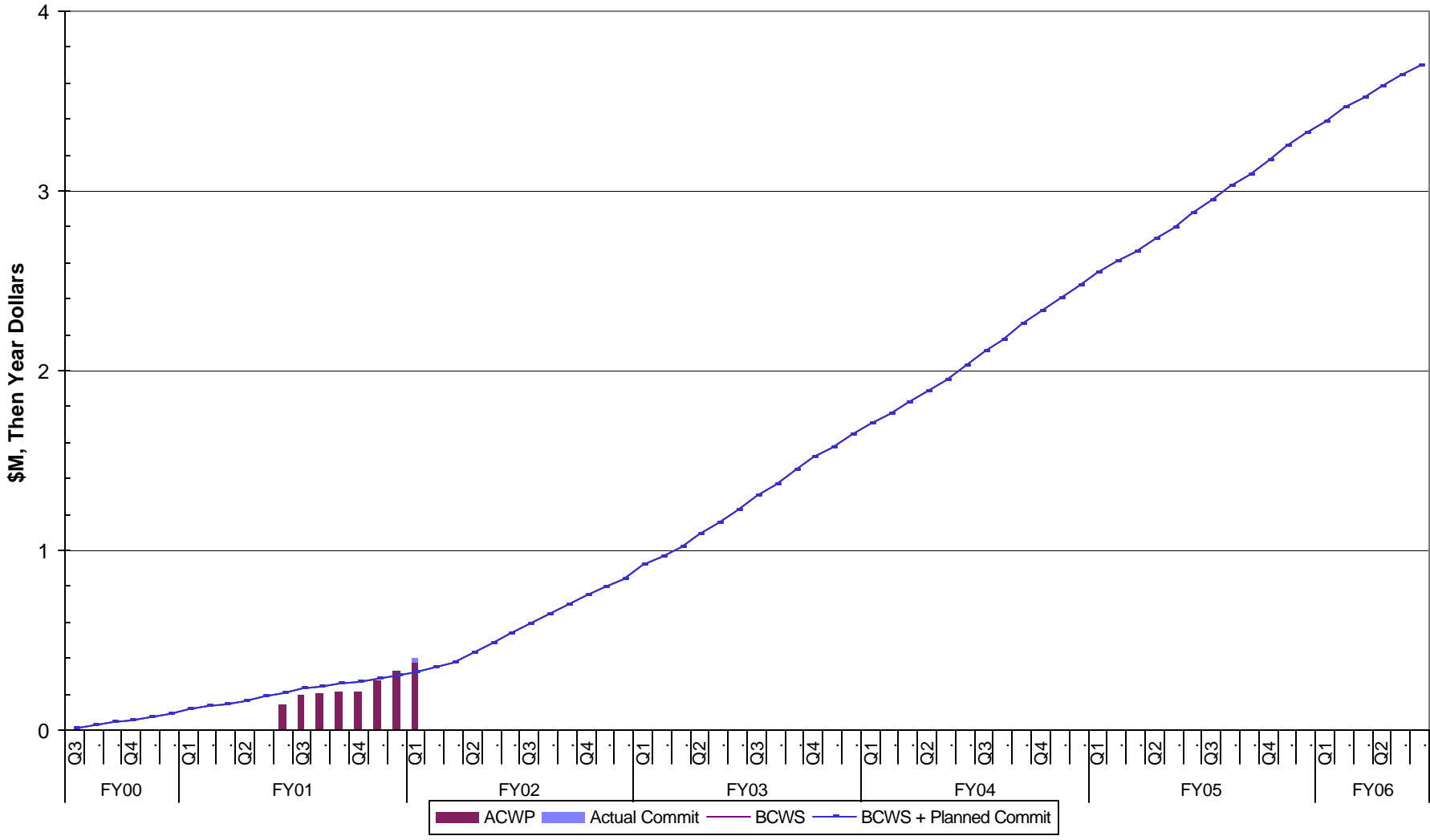


**Gamma-ray  
Large Area Space  
Telescope**

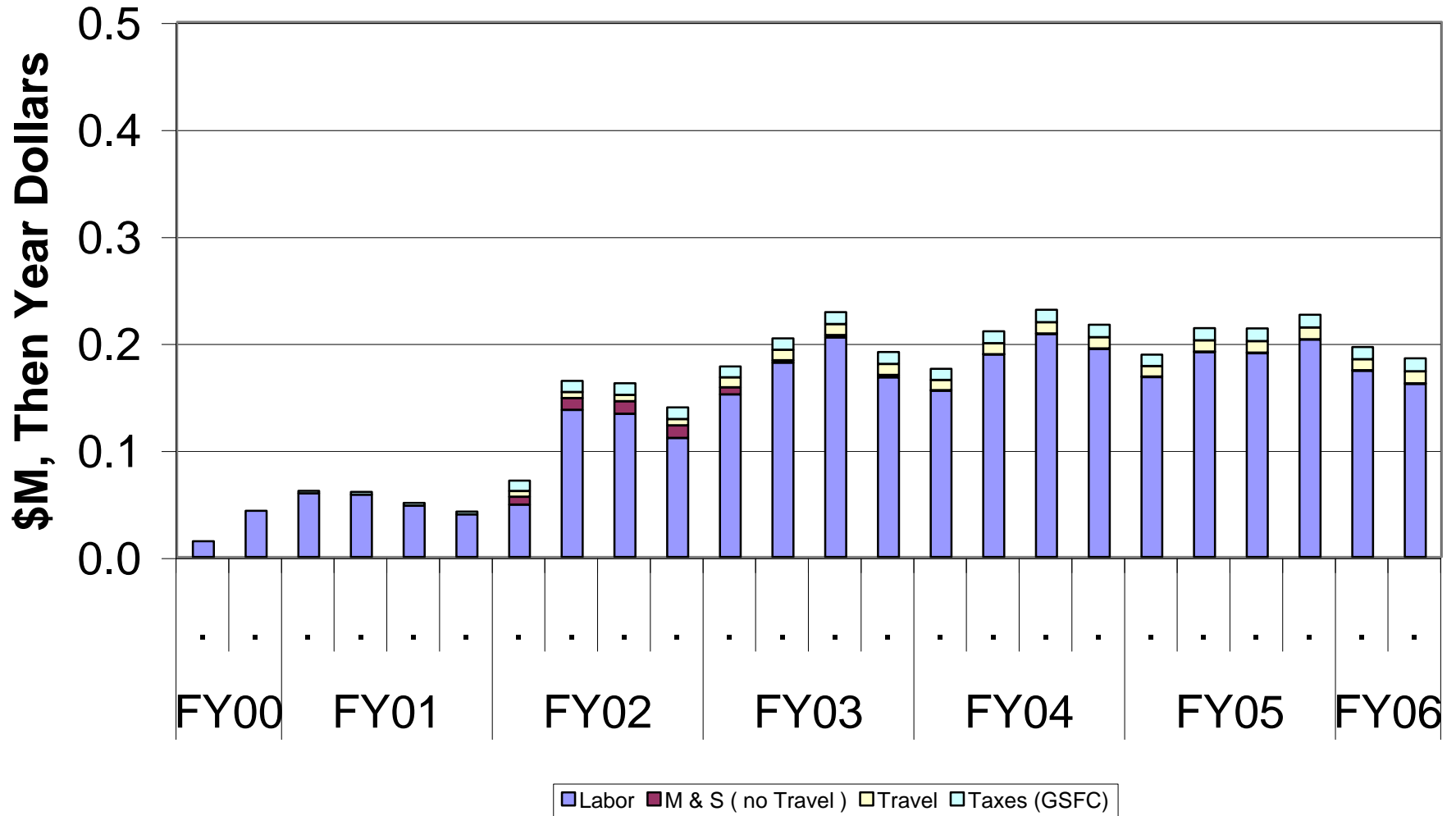


## **Cost & Commitment Profile**

### 4.1.D Science Analysis Software Costs and Commitments



## 4.1.D Science Analysis Software Cost Type





**Gamma-ray  
Large Area Space  
Telescope**



# **Cost Detail @ Work Package Level**

Program: 1001	Description: GLAST LAT Project	Approval: Program Manager Functional Manager Cost Account Manager	
Run Date: 12/12/01	Status Date: 10/31/01		

CAPW[4]	OBS	CPN[1]	WP	FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative
4.1.D SCIENCE ANALYSIS SOFTWARE											
DH SU-HEPL											
NH41D 4.1.D Actuals from HEPL											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:			PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
4.1.D.1 SOURCES, SIMULATION & EVENT RECONSTRUCTION											
DG GSFC											
NG41D12 4.1.D.1.2 Prototype Initial Framework (GSFC)											
		CPN[1] Totals:	PLANNED	1	11	0	0	0	0	0	12
			BUD+COM	1	11	0	0	0	0	0	12
NG41D15 4.1.D.1.5 ACD Simulation (GSFC)											
		CPN[1] Totals:	PLANNED	0	11	10	12	13	8	0	54
			BUD+COM	0	11	10	12	13	8	0	54
NG41D18 4.1.D.1.8 Trigger Simulation (GSFC)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
NG41D19 4.1.D.1.9 Background Rejection (GSFC)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	1	22	10	12	13	8	0	66
			BUD+COM	1	22	10	12	13	8	0	66
DL SU-SLAC											
DL41D12 4.1.D.1.2 Prototype Initial Framework											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DL41D14 4.1.D.1.4 GEANT4 Simulation											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DL41D17 4.1.D.1.7 Tracker Geometry, Sim., & Reconstr'n											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DL41D19 4.1.D.1.9 Background Rejection											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DN NRL											
NN41D16 4.1.D.1.6 Cal. Geometry, Sim., & Reconst. (NRL)											
		CPN[1] Totals:	PLANNED	0	0	109	58	60	62	31	320
			BUD+COM	0	0	109	58	60	62	31	320
	OBS Totals:		PLANNED	0	0	109	58	60	62	31	320
			BUD+COM	0	0	109	58	60	62	31	320
DW UW											
CW41D11 4.1.D.1.1 Sources (UW)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CW41D12 4.1.D.1.2 Prototype Initial Framework (UW)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CW41D13 4.1.D.1.3 GISMO Simulation (UW)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CW41D14 4.1.D.1.4 GEANT4 Simulation (UW)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CW41D18 4.1.D.1.8 Trigger Simulation (UW)											
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:			PLANNED	1	22	119	70	73	70	31	386
			BUD+COM	1	22	119	70	73	70	31	386

Program: 1001	Description: GLAST LAT Project	Approval: Program Manager Functional Manager Cost Account Manager	
Run Date: 12/12/01	Status Date: 10/31/01		

CAPW[4]	OBS	CPN[1]	WP	FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative
4.1.D.2 ANALYSIS TOOLS											
DG GSFC											
			NG41D23 4.1.D.2.3 Gaudi Utilities (GSFC)								
		CPN[1] Totals:	PLANNED	0	4	6	6	6	7	3	32
			BUD+COM	0	4	6	6	6	7	3	32
			NG41D25 4.1.D.2.5 Root-To-IDL (GSFC)								
		CPN[1] Totals:	PLANNED	2	5	5	6	6	6	3	33
			BUD+COM	2	5	5	6	6	6	3	33
			NG41D27 4.1.D.2.7 New Geometry mechanism (GSFC)								
		CPN[1] Totals:	PLANNED	0	7	0	0	0	0	0	7
			BUD+COM	0	7	0	0	0	0	0	7
			NG41D28 4.1.D.2.8 PSF/Eff. Area Monitor'g & Opt. (GSFC)								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			NG41D2A 4.1.D.2.A Continuing Tools Development (GSFC)								
		CPN[1] Totals:	PLANNED	36	69	71	73	76	78	39	442
			BUD+COM	36	69	71	73	76	78	39	442
			NG41D2B 4.1.D.2.B Ongoing User Support (GSFC)								
		CPN[1] Totals:	PLANNED	0	0	0	98	102	104	52	356
			BUD+COM	0	0	0	98	102	104	52	356
	OBS Totals:		PLANNED	37	85	83	183	189	195	97	869
			BUD+COM	37	85	83	183	189	195	97	869
DL SU-SLAC											
			DL41D21 4.1.D.2.1 Coding Conventions								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D22 4.1.D.2.2 Static Constants Handling								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D23 4.1.D.2.3 Gaudi Utilities								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D26 4.1.D.2.6 Merit Improvements								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D27 4.1.D.2.7 New Geometry Mechanism								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D28 4.1.D.2.8 PSF/ Eff Area Monitoring & Optimiz'n								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D29 4.1.D.2.9 Code & Release Management								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DW UW											
			CW41D24 4.1.D.2.4 Event Display (UW)								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			CW41D26 4.1.D.2.6 Merit Improvements (UW)								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:			PLANNED	37	85	83	183	189	195	97	869
			BUD+COM	37	85	83	183	189	195	97	869
4.1.D.3 ENGINEERING MODELS											
DG GSFC											
			NG41D32 4.1.D.3.2 Balloon Flight Support (GSFC)								
		CPN[1] Totals:	PLANNED	0	10	0	0	0	0	0	10
			BUD+COM	0	10	0	0	0	0	0	10
	OBS Totals:		PLANNED	0	10	0	0	0	0	0	10
			BUD+COM	0	10	0	0	0	0	0	10
DL SU-SLAC											
			DL41D31 4.1.D.3.1 Test Beam 99 Support								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D32 4.1.D.3.2 Balloon Flight Support								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D33 4.1.D.3.3 4-Module Test Support								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0

Program:	1001	Description:	GLAST LAT Project							
Run Date:	12/12/01	Status Date:	10/31/01							
		Approval:								
		Program Manager								
		Functional Manager								
		Cost Account Manager								

CAPW[4]	OBS	CPN[1]	WP	FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative
	DW										
	UW										
			CW41D31 4.1.D.3.1 Test Beam 99 Support (UW)								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:			PLANNED	0	10	0	0	0	0	0	10
			BUD+COM	0	10	0	0	0	0	0	10
4.1.D.4 SCIENCE SOFTWARE											
DH SU-HEPL											
			2WCA120 4.1.D.4.1 Utilities (HEPL)								
		CPN[1] Totals:	PLANNED	0	0	37	47	31	10	0	126
			BUD+COM	0	0	37	47	31	10	0	126
			2WCA121 4.1.D.4.2 Analysis Software (HEPL)								
		CPN[1] Totals:	PLANNED	0	0	43	83	226	178	87	617
			BUD+COM	0	0	43	83	226	178	87	617
			2WCA122 4.1.D.4.3 Analysis Databases (HEPL)								
		CPN[1] Totals:	PLANNED	0	0	39	7	0	44	0	90
			BUD+COM	0	0	39	7	0	44	0	90
	OBS Totals:		PLANNED	0	0	120	136	257	233	87	833
			BUD+COM	0	0	120	136	257	233	87	833
DL SU-SLAC											
			DL41D41 4.1.D.4.1 Utilities								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D42 4.1.D.4.2 Analysis Software								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D43 4.1.D.4.3 Analysis Databases								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
DN NRL											
			NN41D42 4.1.D.4.2 Analysis Software								
		CPN[1] Totals:	PLANNED	0	0	0	0	62	103	51	216
			BUD+COM	0	0	0	0	62	103	51	216
	OBS Totals:		PLANNED	0	0	0	0	62	103	51	216
			BUD+COM	0	0	0	0	62	103	51	216
CAPW[4] Totals:			PLANNED	0	0	120	136	319	336	138	1,049
			BUD+COM	0	0	120	136	319	336	138	1,049
4.1.D.5 DATA PROCESSING FACILITY											
DH SU-HEPL											
			2WCA123 4.1.D.5.2 Automated Server (HEPL)								
		CPN[1] Totals:	PLANNED	0	0	0	142	18	0	0	160
			BUD+COM	0	0	0	142	18	0	0	160
			2WCA124 4.1.D.5.3 Instrument Diagnostics (HEPL)								
		CPN[1] Totals:	PLANNED	0	0	0	0	4	70	39	113
			BUD+COM	0	0	0	0	4	70	39	113
	OBS Totals:		PLANNED	0	0	0	142	22	70	39	273
			BUD+COM	0	0	0	142	22	70	39	273
DL SU-SLAC											
			DL41D51 4.1.D.5.1 Prototype Data Manager								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
			DL41D52 4.1.D.5.2 Automated Server								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:		PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:			PLANNED	0	0	0	142	22	70	39	273
			BUD+COM	0	0	0	142	22	70	39	273
4.1.D.6 CALIBRATION											
DG GSFC											
			NG41D62 4.1.D.6.2 ACD Calibration (GSFC)								
		CPN[1] Totals:	PLANNED	0	0	4	11	11	12	6	44
			BUD+COM	0	0	4	11	11	12	6	44
			CG41D62 4.1.D.6.2 ACD Calibration								
		CPN[1] Totals:	PLANNED	0	0	0	0	0	0	0	0
			BUD+COM	0	0	0	0	0	0	0	0



Program:	1001	Description:	GLAST LAT Project	Approval:	Program Manager
Run Date:	12/12/01	Status Date:	10/31/01		Functional Manager
					Cost Account Manager

CAPW[4]	OBS	CPN[1]	WP		FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative
	OBS Totals:			PLANNED	0	0	4	11	11	12	6	44
				BUD+COM	0	0	4	11	11	12	6	44
	DL SU-SLAC											
				DL41D61 4.1.D.6.1 Tools for Accessing Constants								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
				DL41D64 4.1.D.6.4 Tracker Calibration								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
				DL41D65 4.1.D.6.5 High Level Calibrations								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
	DN NRL											
				NN41D63 4.1.D.6.3 Calorimeter Calibration (NRL)								
	CPN[1] Totals:			PLANNED	0	0	75	107	83	20	0	286
				BUD+COM	0	0	75	107	83	20	0	286
				DN41D65 4.1.D.6.5 High Level Calibrations								
	CPN[1] Totals:			PLANNED	0	0	30	56	49	50	25	210
				BUD+COM	0	0	30	56	49	50	25	210
	OBS Totals:			PLANNED	0	0	106	163	132	71	25	496
				BUD+COM	0	0	106	163	132	71	25	496
CAPW[4] Totals:				PLANNED	0	0	109	174	144	82	31	540
				BUD+COM	0	0	109	174	144	82	31	540

4.1.D.7 MANAGEMENT

DG GSFC

				NG41D71 4.1.D.7.1 Sci. Analysis Software Mgmt. (GSFC)								
	CPN[1] Totals:			PLANNED	0	11	55	70	72	74	38	320
				BUD+COM	0	11	55	70	72	74	38	320
				NG41D72 4.1.D.7.2 Sci. Analysis Software Req'ts. (GSFC)								
	CPN[1] Totals:			PLANNED	0	5	0	0	0	0	0	5
				BUD+COM	0	5	0	0	0	0	0	5
	OBS Totals:			PLANNED	0	15	55	70	72	74	38	324
				BUD+COM	0	15	55	70	72	74	38	324

DH SU-HEPL

				2WCA126 4.1.D.7.1 HEPL Materials & Services								
	CPN[1] Totals:			PLANNED	0	0	42	13	2	2	1	59
				BUD+COM	0	0	42	13	2	2	1	59
				2WCA115 4.1.D.7.1 HEPL Support FY '00 - FY '01								
	CPN[1] Totals:			PLANNED	47	83	0	0	0	0	0	130
				BUD+COM	47	83	0	0	0	0	0	130
				2WCA125 4.1.D.7.1 HEPL Travel								
	CPN[1] Totals:			PLANNED	0	0	3	7	7	7	4	28
				BUD+COM	0	0	3	7	7	7	4	28
	OBS Totals:			PLANNED	47	83	45	20	9	9	5	217
				BUD+COM	47	83	45	20	9	9	5	217

DL SU-SLAC

				DL41D71 4.1.D.7.1 Sci. Analysis Software Management								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
				DL41D72 4.1.D.7.2 Sci. Analysis Software Requirements								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
				DL41D73 4.1.D.7.3 PDR Support								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0

DN NRL

				NN41D71 4.1.D.7.1 Sci. Analysis Software Mgmt. (NRL)								
	CPN[1] Totals:			PLANNED	0	0	7	7	7	7	4	32
				BUD+COM	0	0	7	7	7	7	4	32
	OBS Totals:			PLANNED	0	0	7	7	7	7	4	32
				BUD+COM	0	0	7	7	7	7	4	32

DW UW

				CW41D71 4.1.D.7.1 Science Analysis Software Management								
	CPN[1] Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0

Program:	1001	Description:	GLAST LAT Project								Approval:	Program Manager	
Run Date:	12/12/01	Status Date:	10/31/01								Functional Manager		
											Cost Account Manager		

CAPW[4]	OBS	CPN[1]	WP		FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative
				CW41D72 4.1.D.7.2 Sci. Analysis Software Req'ts (UW)								
		CPN[1] Totals:		PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
	OBS Totals:			PLANNED	0	0	0	0	0	0	0	0
				BUD+COM	0	0	0	0	0	0	0	0
CAPW[4] Totals:				PLANNED	47	98	107	97	88	90	46	573
				BUD+COM	47	98	107	97	88	90	46	573



**Gamma-ray  
Large Area Space  
Telescope**



# **Work Package Planning (Resource Loaded Schedule @ Work Package Level)**

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06	
<b>D 4.1.D SCIENCE ANALYSIS SOFTWARE</b>													
Subtotal		1,484	04/03/00A	03/31/06		3,700,415.79							
<b>D 4.1.D SCIENCE ANALYSIS SOFTWARE</b>													
Subtotal		1,484	04/03/00A	03/31/06	C	0.00							
<b>DH SU-HEPL</b>													
Subtotal		1,484	04/03/00A	03/31/06	C	0.00							
<b>+ NH41D 4.1.D Actuals from HEPL</b>													
		1,484	04/03/00A	03/31/06	C	0.00							
<b>D1 4.1.D.1 SOURCES, SIMULATION &amp; EVENT RECONSTRUCT</b>													
Subtotal		1,362	09/25/00A	03/31/06		385,590.13							
<b>DG GSFC</b>													
Subtotal		1,141	09/25/00A	05/09/05		65,640.16							
<b>+ NG41D12 4.1.D.1.2 Prototype Initial Framework (GSFC)</b>													
		40	09/25/00A	11/17/00A	E	12,000.00							
<b>+ NG41D15 4.1.D.1.5 ACD Simulation (GSFC)</b>													
		1,093	12/04/00A	05/09/05		53,640.16							
<b>+ NG41D18 4.1.D.1.8 Trigger Simulation (GSFC)</b>													
		247	04/02/01A	04/01/02	A	0.00							
<b>+ NG41D19 4.1.D.1.9 Background Rejection (GSFC)</b>													
		103	06/22/01A	11/15/01	A	0.00							
<b>DL SU-SLAC</b>													
Subtotal		1,347	10/16/00A	03/31/06		0.00							
<b>+ DL41D12 4.1.D.1.2 Prototype Initial Framework</b>													
		69	10/16/00A	01/31/01A	E	0.00							
<b>+ DL41D14 4.1.D.1.4 GEANT4 Simulation</b>													
		5	12/04/00A	12/08/00A	E	0.00							
<b>+ DL41D17 4.1.D.1.7 Tracker Geometry, Sim., &amp; Reconstr'n</b>													
		1,279	01/31/01A	03/31/06		0.00							
<b>+ DL41D19 4.1.D.1.9 Background Rejection</b>													
		1,076	11/16/01	03/31/06	A	0.00							
Run Date	12/12/01 15:25	GLAST - LAT PROJECT WorkPackagePlanningSummary (WBS4xOBSxWP)					Sheet 34						
© Primavera Systems, Inc.													

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06	
<b>DN NRL</b>													
Subtotal		1,085	11/05/01	03/31/06		319,949.97	319,949.97						
<b>+ NN41D16 4.1.D.1.6 Cal. Geometry, Sim., &amp; Reconst. (NRL)</b>													
		1,085	11/05/01	03/31/06		319,949.97	319,949.97						
<b>DW UW</b>													
Subtotal		1,301	12/21/00A	03/31/06		0.00						0.00	
<b>+ CW41D11 4.1.D.1.1 Sources (UW)</b>													
		146	06/01/01A	01/07/02	E	0.00		0.00					
<b>+ CW41D12 4.1.D.1.2 Prototype Initial Framework (UW)</b>													
		16	12/21/00A	01/24/01A	E	0.00	0.00						
<b>+ CW41D13 4.1.D.1.3 GISMO Simulation (UW)</b>													
		1,279	01/31/01A	03/31/06		0.00						0.00	
<b>+ CW41D14 4.1.D.1.4 GEANT4 Simulation (UW)</b>													
		21	11/16/01	12/18/01	E	0.00		0.00					
<b>+ CW41D18 4.1.D.1.8 Trigger Simulation (UW)</b>													
		1,198	05/25/01A	03/31/06		0.00						0.00	
<b>FF French Collaborators</b>													
Subtotal		1,362	09/25/00A	03/31/06		0.00						0.00	
<b>+ CF41D12 4.1.D.1.2 Prototype Initial Framework (Fr)</b>													
		10	09/25/00A	10/06/00A	E	0.00	0.00						
<b>+ CF41D16 4.1.D.1.6 Cal. Geometry, Sim., &amp; Reconst'n (Fr)</b>													
		1,360	09/27/00A	03/31/06		0.00						0.00	
<b>FI Italian Collaborators</b>													
Subtotal		1,250	03/14/01A	03/31/06		0.00						0.00	
<b>+ CI41D14 4.1.D.1.4 GEANT4 Simulation (Ital)</b>													
		1,250	03/14/01A	03/31/06		0.00						0.00	
<b>+ CI41D17 4.1.D.1.7 Trkr Geometry, Sim., &amp; Reconst. (Ital)</b>													
		1,237	04/02/01A	03/31/06	A	0.00						0.00	
<b>FJ Japanese Collaborators</b>													
Subtotal		1,048	01/08/02	03/31/06	A	0.00						0.00	

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost						
							FY01	FY02	FY03	FY04	FY05	FY06
<b>+ CJ41D11 4.1.D.1.1 Sources (Jap)</b>												
		1,048	01/08/02	03/31/06	A	0.00						0.00
<b>D2 4.1.D.2 ANALYSIS TOOLS</b>												
Subtotal		1,484	04/03/00A	03/31/06		868,898.77						868,898.77
<b>DG GSFC</b>												
Subtotal		1,484	04/03/00A	03/31/06		868,898.77						868,898.77
<b>+ NG41D23 4.1.D.2.3 Gaudi Utilities (GSFC)</b>												
		1,241	03/27/01A	03/31/06	A	31,911.01						31,911.01
<b>+ NG41D25 4.1.D.2.5 Root-To-IDL (GSFC)</b>												
		1,442	06/01/00A	03/31/06	A	32,557.10						32,557.10
<b>+ NG41D27 4.1.D.2.7 New Geometry mechanism (GSFC)</b>												
		15	02/01/01A	02/21/01A	E	6,720.00						6,720.00
<b>+ NG41D28 4.1.D.2.8 PSF/Eff. Area Monitor'g &amp; Opt. (GSFC)</b>												
		127	06/01/01A	11/30/01	A	0.00						0.00
<b>+ NG41D2A 4.1.D.2.A Continuing Tools Development (GSFC)</b>												
		1,484	04/03/00A	03/31/06	A	441,585.56						441,585.56
<b>+ NG41D2B 4.1.D.2.B Ongoing User Support (GSFC)</b>												
		863	10/01/02	03/31/06	A	356,125.10						356,125.10
<b>DL SU-SLAC</b>												
Subtotal		1,424	06/27/00A	03/31/06		0.00						0.00
<b>+ DL41D21 4.1.D.2.1 Coding Conventions</b>												
		0	06/27/00A	06/30/00A	E	0.00						0.00
<b>+ DL41D22 4.1.D.2.2 Static Constants Handling</b>												
		25	09/25/00A	10/27/00A	E	0.00						0.00
<b>+ DL41D23 4.1.D.2.3 Gaudi Utilities</b>												
		32	02/08/01A	03/26/01A	E	0.00						0.00
<b>+ DL41D26 4.1.D.2.6 Merit Improvements</b>												
		5	02/28/01A	03/06/01A	E	0.00						0.00
<b>+ DL41D27 4.1.D.2.7 New Geometry Mechanism</b>												
		1,295	01/08/01A	03/31/06		0.00						0.00
<b>+ DL41D28 4.1.D.2.8 PSF/ Eff Area Monitoring &amp; Optimiz'n</b>												
		1,067	12/03/01	03/31/06	A	0.00						0.00

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06	
<b>+ DL41D29 4.1.D.2.9 Code &amp; Release Management</b>													
		1,348	10/13/00A	03/31/06		0.00						0.00	
<b>DW UW</b>													
Subtotal		23	01/25/01A	02/27/01A	E	0.00	0.00						
<b>+ CW41D24 4.1.D.2.4 Event Display (UW)</b>													
		3	01/25/01A	01/29/01A	E	0.00	0.00						
<b>+ CW41D26 4.1.D.2.6 Merit Improvements (UW)</b>													
		10	02/14/01A	02/27/01A	E	0.00	0.00						
<b>FF French Collaborators</b>													
Subtotal		10	11/27/00A	12/08/00A	E	0.00	0.00						
<b>+ CF41D27 4.1.D.2.7 New Geometry Mechanism (Fr)</b>													
		10	11/27/00A	12/08/00A	E	0.00	0.00						
<b>FI Italian Collaborators</b>													
Subtotal		1,281	01/29/01A	03/31/06		0.00						0.00	
<b>+ CI41D24 4.1.D.2.4 Event Display (Ital)</b>													
		1,281	01/29/01A	03/31/06		0.00						0.00	
<b>+ CI41D27 4.1.D.2.7 New Geometry Mechanism (Ital)</b>													
		18	02/15/01A	03/13/01A	E	0.00	0.00						
<b>D3 4.1.D.3 ENGINEERING MODELS</b>													
Subtotal		972	09/25/00A	08/30/04		10,080.00						10,080.00	
<b>DG GSFC</b>													
Subtotal		60	01/29/01A	04/23/01A	E	10,080.00	10,080.00						
<b>+ NG41D32 4.1.D.3.2 Balloon Flight Support (GSFC)</b>													
		60	01/29/01A	04/23/01A	E	10,080.00	10,080.00						
<b>DL SU-SLAC</b>													
Subtotal		958	10/13/00A	08/30/04		0.00						0.00	
<b>+ DL41D31 4.1.D.3.1 Test Beam 99 Support</b>													
		11	10/13/00A	10/27/00A	E	0.00	0.00						
<b>+ DL41D32 4.1.D.3.2 Balloon Flight Support</b>													
		163	04/09/01A	11/28/01	E	0.00	0.00						

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06
<b>+ DL41D33 4.1.D.3.3 4-Module Test Support</b>												
		247	09/02/03	08/30/04	A	0.00					0.00	
<b>DW UW</b>												
Subtotal		25	10/09/00A	11/10/00A	E	0.00	0.00					
<b>+ CW41D31 4.1.D.3.1 Test Beam 99 Support (UW)</b>												
		25	10/09/00A	11/10/00A	E	0.00	0.00					
<b>FJ Japanese Collaborators</b>												
Subtotal		95	09/25/00A	02/15/01A	E	0.00	0.00					
<b>+ CJ41D32 4.1.D.3.2 Balloon Flight Support (Jap)</b>												
		95	09/25/00A	02/15/01A	E	0.00	0.00					
<b>D4 4.1.D.4 SCIENCE SOFTWARE</b>												
Subtotal		1,062	12/10/01	03/31/06		1,049,703.23	1,049,703.23					
<b>DH SU-HEPL</b>												
Subtotal		1,038	12/10/01	02/27/06		833,662.63	833,662.63					
<b>+ 2WCA120 4.1.D.4.1 Utilities (HEPL)</b>												
		732	12/10/01	11/23/04	E	126,149.55				126,149.55		
<b>+ 2WCA121 4.1.D.4.2 Analysis Software (HEPL)</b>												
		918	06/10/02	02/27/06		617,435.25	617,435.25					
<b>+ 2WCA122 4.1.D.4.3 Analysis Databases (HEPL)</b>												
		855	12/10/01	05/27/05	E	90,077.83				90,077.83		
<b>DL SU-SLAC</b>												
Subtotal		1,062	12/10/01	03/31/06		0.00					0.00	
<b>+ DL41D41 4.1.D.4.1 Utilities</b>												
		120	05/28/02	11/13/02	E	0.00				0.00		
<b>+ DL41D42 4.1.D.4.2 Analysis Software</b>												
		1,062	12/10/01	03/31/06		0.00					0.00	
<b>+ DL41D43 4.1.D.4.3 Analysis Databases</b>												
		120	12/10/01	06/07/02	E	0.00				0.00		
<b>DN NRL</b>												
Subtotal		520	02/27/04	03/31/06	A	216,040.60				216,040.60		



Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06
<b>+ NN41D42 4.1.D.4.2 Analysis Software</b>												
		520	02/27/04	03/31/06	A	216,040.60			216,040.60			
<b>FF French Collaborators</b>												
Subtotal		616	10/01/03	03/31/06	A	0.00						0.00
<b>+ CF41D42 4.1.D.4.2 Analysis Software</b>												
		616	10/01/03	03/31/06	A	0.00						0.00
<b>D5 4.1.D.5 DATA PROCESSING FACILITY</b>												
Subtotal		1,249	03/15/01A	03/31/06		273,337.40						273,337.40
<b>DH SU-HEPL</b>												
Subtotal		863	10/01/02	03/31/06		273,337.40		273,337.40				
<b>+ 2WCA123 4.1.D.5.2 Automated Server (HEPL)</b>												
		863	10/01/02	03/31/06		160,431.75		160,431.75				
<b>+ 2WCA124 4.1.D.5.3 Instrument Diagnostics (HEPL)</b>												
		373	09/24/04	03/31/06		112,905.65			112,905.65			
<b>DL SU-SLAC</b>												
Subtotal		1,249	03/15/01A	03/31/06		0.00						0.00
<b>+ DL41D51 4.1.D.5.1 Prototype Data Manager</b>												
		197	03/15/01A	12/21/01	E	0.00		0.00				
<b>+ DL41D52 4.1.D.5.2 Automated Server</b>												
		853	10/15/02	03/31/06		0.00						0.00
<b>D6 4.1.D.6 CALIBRATION</b>												
Subtotal		1,110	10/01/01A	03/31/06		540,045.26	540,045.26					
<b>DG GSFC</b>												
Subtotal		1,052	01/02/02	03/31/06		43,878.27	43,878.27					
<b>+ CG41D62 4.1.D.6.2 ACD Calibration</b>												
		120	01/02/02	06/21/02	E	0.00		0.00				
<b>+ NG41D62 4.1.D.6.2 ACD Calibration (GSFC)</b>												
		932	06/24/02	03/31/06	A	43,878.27	43,878.27					
<b>DL SU-SLAC</b>												
Subtotal		1,062	12/10/01	03/31/06		0.00						0.00

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	FY01	FY02	FY03	FY04	FY05	FY06
<b>+ DL41D61 4.1.D.6.1 Tools for Accessing Constants</b>												
		60	01/07/02	04/02/02	E	0.00		0.00				
<b>+ DL41D64 4.1.D.6.4 Tracker Calibration</b>												
		381	01/02/02	07/14/03	A	0.00		0.00				
<b>+ DL41D65 4.1.D.6.5 High Level Calibrations</b>												
		1,062	12/10/01	03/31/06	A	0.00		0.00				
<b>DN NRL</b>												
Subtotal		1,110	10/01/01A	03/31/06		496,166.99	496,166.99					
<b>+ DN41D65 4.1.D.6.5 High Level Calibrations</b>												
		942	06/10/02	03/31/06	A	210,461.91	210,461.91					
<b>+ NN41D63 4.1.D.6.3 Calorimeter Calibration (NRL)</b>												
		986	10/01/01A	09/26/05		285,705.08				285,705.08		
<b>FF French Collaborators</b>												
Subtotal		1,030	02/04/02	03/31/06		0.00				0.00		
<b>+ CF41D65 4.1.D.6.5 High Level Calibrations</b>												
		942	06/10/02	03/31/06	A	0.00				0.00		
<b>+ NN41D63 4.1.D.6.3 Calorimeter Calibration (NRL)</b>												
		1,030	02/04/02	03/31/06		0.00				0.00		
<b>FI Italian Collaborators</b>												
Subtotal		240	02/01/02	01/22/03	A	0.00				0.00		
<b>+ CI41D64 4.1.D.6.4 Tracker Calibration (Ital)</b>												
		240	02/01/02	01/22/03	A	0.00				0.00		
<b>D7 4.1.D.7 MANAGEMENT</b>												
Subtotal		1,484	04/03/00A	03/31/06		572,761.00						572,761.00
<b>DG GSFC</b>												
Subtotal		1,357	10/02/00A	03/31/06		324,422.23						324,422.23
<b>+ NG41D71 4.1.D.7.1 Sci. Analysis Software Mgmt. (GSFC)</b>												
		1,357	10/02/00A	03/31/06	A	319,622.23						319,622.23
<b>+ NG41D72 4.1.D.7.2 Sci. Analysis Software Req'ts. (GSFC)</b>												
		10	02/26/01A	03/09/01A	E	4,800.00	4,800.00					

Act ID	Activity Description	Dur	Start	Finish	PMT	Budgeted Cost	Fiscal Year					
							FY01	FY02	FY03	FY04	FY05	FY06
<b>DH SU-HEPL</b>												
Subtotal		1,484	04/03/00A	03/31/06		216,784.77						216,784.77
<b>+ 2WCA115 4.1.D.7.1 HEPL Support FY '00 - FY '01</b>												
		374	04/03/00A	09/28/01A		129,704.22		129,704.22				
<b>+ 2WCA125 4.1.D.7.1 HEPL Travel</b>												
		1,110	10/01/01A	03/31/06	A	28,218.00	28,218.00					
<b>+ 2WCA126 4.1.D.7.1 HEPL Materials &amp; Services</b>												
		1,110	10/01/01A	03/31/06	A	58,862.55	58,862.55					
<b>DL SU-SLAC</b>												
Subtotal		1,484	04/03/00A	03/31/06		0.00						0.00
<b>+ DL41D71 4.1.D.7.1 Sci. Analysis Software Management</b>												
		1,484	04/03/00A	03/31/06		0.00						0.00
<b>+ DL41D72 4.1.D.7.2 Sci. Analysis Software Requirements</b>												
		125	02/15/01A	08/13/01A	E	0.00	0.00					
<b>+ DL41D73 4.1.D.7.3 PDR Support</b>												
		135	05/29/01A	12/07/01	E	0.00	0.00					
<b>DN NRL</b>												
Subtotal		1,110	10/01/01A	03/31/06	A	31,554.00	31,554.00					
<b>+ NN41D71 4.1.D.7.1 Sci. Analysis Software Mgmt. (NRL)</b>												
		1,110	10/01/01A	03/31/06	A	31,554.00	31,554.00					
<b>DW UW</b>												
Subtotal		1,484	04/03/00A	03/31/06		0.00						0.00
<b>+ CW41D71 4.1.D.7.1 Science Analysis Software Management</b>												
		1,484	04/03/00A	03/31/06	A	0.00						0.00
<b>+ CW41D72 4.1.D.7.2 Sci. Analysis Software Req'ts (UW)</b>												
		10	02/26/01A	03/09/01A	E	0.00	0.00					
<b>FJ Japanese Collaborators</b>												
Subtotal		10	02/26/01A	03/09/01A	E	0.00	0.00					
<b>+ CJ41D72 4.1.D.7.2 Sci. Analysis Software Req'ts (Jap)</b>												
		10	02/26/01A	03/09/01A	E	0.00	0.00					



**Gamma-ray  
Large Area Space  
Telescope**



## **Subsystem Milestones**



Act ID	Activity Description	Start	Finish	Timeline													
				FY00	FY01	FY02	FY03	FY04	FY05	FY06							
DS211040	run flight data through recon		04/25/01A		▼												
DS210980	Define instrument output format		05/04/01A		▼												
DS212200	perform First code release		06/01/01A		▼												
DS211070	balloon flies		08/04/01A		▼												
DS210690	Data Entry for All Subsystems Complete		08/15/01A		▼												
DS000240	Science Analysis Software PDR		08/17/01A		▼												
DS211970	ready for SAS PDR		08/17/01A		▼												
DS000270	Science Analysis Software Work Complete		10/31/01		▼												
DS212270	LAT PDR - 1 month		12/07/01*		▼												
DS000230	LAT Instrument PDR		01/07/02		▼												
DS100970	GEANT4 Validation Complete		04/09/02		▼												
DS212780	AV: Calibration Prototype Coding for I & T		05/15/02		▼												
DS212770	AV: ACD Pulse Height Histograms for I & T		06/21/02		▼												
DS212790	AV: Tracker Dead/Noisy Strips for I & T		06/21/02		▼												
DS211980	ready for SAS CDR		07/31/02*		▼												
DS000260	LAT Instrument CDR		08/05/02		▼												
DS101350	Second Major Code Release		10/25/02		▼												
DS212800	AV: Tracker Tower & Tray Alignment		01/22/03		▼												
DS212710	Completed Instrument Response function		05/29/03		▼												
DS212280	Mock Data Challenge I		09/30/03		▼												
DS900200	Ongoing Support of (HEPL)		03/31/06														▼



**Gamma-ray  
Large Area Space  
Telescope**



## **Critical Activities with Total Float Less Than 80 Days**







Act ID	Activity Description	Dur	Start	Finish	Total Float	Fiscal Year															
						FY01	FY02	FY03	FY04	FY05	FY06										
<b>4.1.D.1 SOURCES, SIMULATION &amp; EVENT RECONSTRUCT</b>																					
DS101305	Create Prototype Design for Iter. Recon (NRL)	30	01/22/02	03/05/02	4																
DS101310	Create Prototype Design for Iter. Recon (Fr)	30	01/22/02	03/05/02	4																
DS101315	Implement Prototype Design for Iter. Recon (NRL)	60	03/06/02	05/29/02	4																
DS101320	Implement Prototype Design for Iter. Recon (Fr)	60	03/06/02	05/29/02	4																
<b>8</b>																					
<b>4.1.D.1 SOURCES, SIMULATION &amp; EVENT RECONSTRUCT</b>																					
DS100480	use Gaudi random number service	3	01/28/02	01/30/02	8																
<b>9</b>																					
<b>4.1.D.1 SOURCES, SIMULATION &amp; EVENT RECONSTRUCT</b>																					
DS100470	use FluxSvc as 'gun'	2	01/28/02	01/29/02	9																
<b>24</b>																					
<b>4.1.D.4 SCIENCE SOFTWARE</b>																					
DS211550	Create Point Source Database - Design	30	12/10/01*	01/30/02	24																
DS211610	Create Point Source Database - Implement	30	01/31/02	03/14/02	24																
DS211620	Create Point Source Database - Test	60	03/15/02	06/07/02	24																
DS211300	Create Likelihood Analysis - Design	63	06/10/02	09/06/02	24																
DS211330	Create Likelihood Analysis - Implementation	63	09/09/02	12/06/02	24																
DS211340	Create Likelihood Analysis - Test (HEPL)	119	12/09/02	06/05/03	24																
DS211345	Create Likelihood Analysis - Test (SLAC)	119	12/09/02	06/05/03	24																
DS211240	Create Interstellar Emission Model-Design (HEPL)	63	06/06/03	09/04/03	24																
DS211245	Create Interstellar Emission Model-Design (SLAC)	63	06/06/03	09/04/03	24																
DS211350	Create Interstellar Emission Mod-Implem'nt (HEPL)	63	09/05/03	12/04/03	24																
DS211355	Create Interstellar Emission Mod-Implem'nt(SLAC)	63	09/05/03	12/04/03	24																
DS211360	Create Interstellar Emission Model - Test	121	12/05/03	06/04/04	24																
DS211160	Create Map & Image Displays - Design	30	06/07/04	07/19/04	24																
DS211170	Create Map & Image Displays - Implement	30	07/20/04	08/30/04	24																
Run Date	12/12/01 13:58	GLAST - LAT PROJECT Critical Activities (TF < 80 days)										Sheet 125									
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Act ID	Activity Description	Dur	Start	Finish	Total Float	Fiscal Year					
						FY01	FY02	FY03	FY04	FY05	FY06
<b>66</b>											
<b>4.1.D.1 SOURCES, SIMULATION &amp; EVENT RECONSTRUCT</b>											
DS100320	write Gismo geometry interpreter	10	02/06/02	02/20/02	66						
DS100330	Generate Hits (with volume IDs)	5	02/21/02	02/27/02	66						



**Gamma-ray  
Large Area Space  
Telescope**



**FTEs**

Program: 1001	Description: GLAST LAT Project	Approval: Program Manager Functional Manager Cost Account Manager
Run Date: 12/13/01	Status Date: 10/31/01	

CAPW[3] OBS[3]		START	FY00	FY01	FY02	FY03	FY04	FY05	FY06	Cumulative	
4.1.D SCIENCE ANALYSIS SOFTWARE											
DG GSFC											
	FY_FTE	PLANNED	0.0	0.3	1.4	1.4	1.8	1.8	1.7	0.8	9.2
DH SU-HEPL											
	FY_FTE	PLANNED	0.0	0.2	0.4	1.1	2.1	2.1	2.2	1.0	9.1
DL SU-SLAC											
	FY_FTE	PLANNED	0.0	0.4	3.3	9.1	11.7	9.7	8.5	5.3	48.0
DN NRL											
	FY_FTE	PLANNED	0.0	0.0	0.0	1.0	1.0	1.1	1.0	0.5	4.7
DW UW											
	FY_FTE	PLANNED	0.0	0.4	1.2	1.0	0.9	0.9	0.9	0.5	5.8
FF France											
	FY_FTE	PLANNED	0.0	0.1	0.3	2.3	2.2	2.3	1.5	0.8	9.5
FI Italy											
	FY_FTE	PLANNED	0.0	0.0	0.9	2.4	1.8	1.5	1.5	0.7	8.7
FJ Japan											
	FY_FTE	PLANNED	0.0	0.1	0.3	0.3	0.5	0.5	0.5	0.2	2.3
CAPW[3] Totals:		PLANNED	0.0	1.5	7.8	18.6	21.9	19.9	17.8	9.8	97.2