

GLAST LAT Instrument

*GLAST Monthly
Mission Review
July 12, 2007*



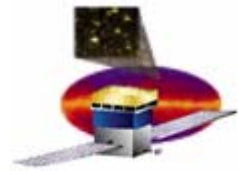
Monthly Mission Review

**TVAC at NRL?
Status**

July 12, 2007

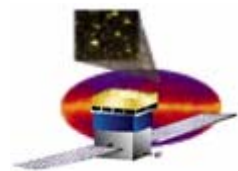
**Neil Johnson
NRL**

neil.johnson@nrl.navy.mil



NRL TVAC of Observatory

- **NRL has reviewed test plan and documentation**
 - **No conflict with facilities usage for foreseeable future.**
 - Depending on exact configuration, could have EGSE conflict which could be mitigated with equipment procurement.
 - **Draft milestones (next chart) and costs have been developed.**
 - **There are no show stoppers – only schedule risk.**
- **Potential unaddressed issues:**
 - **Required turnover of Obs could be done w/ GSFC ransom table at NRL (Clough looking in to this) or NRL has ISS-ICM handling fixture that could be adapted.**
 - **GD chamber port plates won't fit NRL's chamber.**
 - **Bulkhead connector, number and type - potential long lead items**
 - **Network connectivity to GSFC, SLAC – security, bandwidth – ETE, DITL testing.**
 - **RF trailers – ETE, DITL testing.**
- **Need engagement of GLAST TVAC test conductor and more details of the configuration – cabling diagram, heater circuits, chiller circuits, TC placement and routing – to make much more progress**
- **Bernie believes that NRL contract needs to be modified to cover this work, if we proceed.**

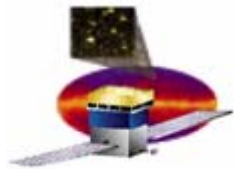


Estimated Milestones

TARGETS: L-Frame Bakeout – 8/15

Obs TVAC Start – 9/15

7/15	Order 4 power supplies
7/30	Order Douglas Connectors
8/01	Start Bake out prep.
8/15-25	L-Frame bakeout
8/07	Turnover fixture – delivery, cleanup, proof test
8/15	Start chamber TCS programming (V. Tai)
8/15	Order Transformer for generator backup system
8/15	Start machining of any new port plates (9 blanks are on hand)
8/31	Order generator
9/4	Clean tent cleaning & startup
9/4	Facility I&T support area secured
9/5	TRR
9/10-14	Chamber configuration for GLAST TVAC
9/10	Chamber checkout (& EGSE bakeout?)



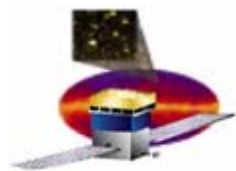
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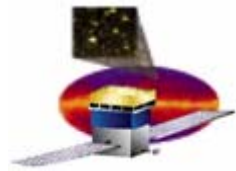
LAT Project Status

6/6 - 28	Supported Observatory EMI Test
6/13	Radiator Removal MGSE arrived at GD
6/17	RS103 sensitivity troubleshooting
6/18	-Y Radiator Removal
6/18	Watt Rod Cage packed and shipped to SLAC
6/19	-Y Radiator Reinstalled
7/6 - 7	ETE 1b & ETE 2
7/10	Repeat ETE 2 LAT Physics Run
7/10	Completion of FSW dFQT – all requirements met
7/11	Begin load LAT FSW 1-0-1

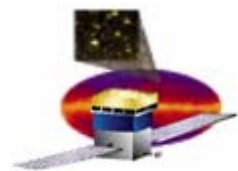


LAT Planned Milestones

<u>Activity</u>	<u>ECD</u>
LAT FSW 1-0-1 Install & Regression Testing	7/14
Post EMI Observatory move	7/14
Post EMI Radiator Removal	7/15
Post EMI CPT	7/18
LAT Radiator Flight Install	7/25

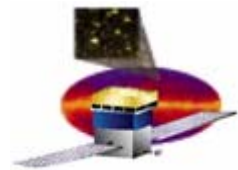


- ❑ **EMI test completed with LICOS 3.0.0**
 - No issues (and people say x.0 releases don't work... hrmph!)
- ❑ **Bent pipe updates**
 - Modified indicators to be clearer about unavailability of command window
 - Added confirmation dialog to handle accidental reconnect requests (can result in loss of tlm or cmd packets)
 - Solved long-standing byte swapping bug
- ❑ **Additional LRS strip charts created and installed at GD for EMI testing**
- ❑ **Released LICOS 3.1 for compatibility with FSW B1-0-1**
 - Prepared configurations using new configuration generation tool
 - LPA and LCI configurations built and verified to the extent possible on the various test stands
 - Some additional configurations generated
 - Prepared roll-back procedure
 - **T&C DB updated**
 - **Script updates**
 - intSeApp, etc.
 - GRB Handling (completion delayed to tomorrow due to testbed contention)
 - Science Modes
 - **No significant procedural changes for operators**
- ❑ **Verified some Online analyses against B1-0-1 data from the testbed**
 - **ACD cable 14 issue found – FSW investigating**
- ❑ **Converting Online analyses to process meta event data**
 - Provides robustness against dropped event packets
- ❑ **Handling of non-event science data**
- ❑ **Various JIRAed bug fixes**



Online JIRA issues (as of 7/10)

Package	Issues opened since 6/4	Issues closed since 6/4	Total # of issues currently open
LICOS	4	14	6
LICOS_Config	3	0	7
LICOS_ETC	8	20	15
LICOS_Scripts	6	11	16
INT	0	4	15
LDF	0	0	1
LSF	0	0	0
E-Logbook	0	0	20
Totals	21	49	80



LAT Issues and Concerns

❑ Data Dropouts

▪ Commands

- Situation confusing, GD has increased focus
- During FSW upload experienced dropped commands on RF and hardline – command decoding errors. Occurred on both A and B sides of S/C.

▪ Science data

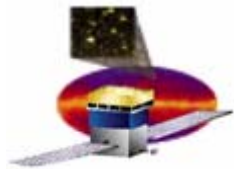
- Situation also improving with increased GD focus

▪ Engineering Telemetry

- Still seeing dropouts induced by routine operations at a rate that could hide an underlying problem
- FRB on Tuesday gave the issue more exposure
- LAT team can support, but GD must take the lead

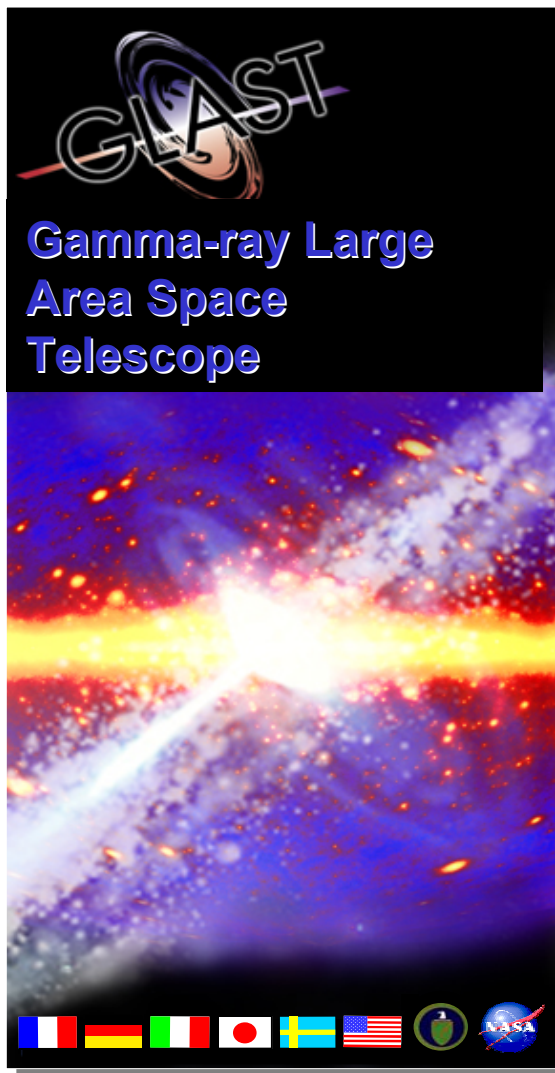
❑ LAT Watt-rod Cage Rework

- **Some minor damage to heater rods in transit.**
- **Shipping container will be improved to prevent damage prior to return.**



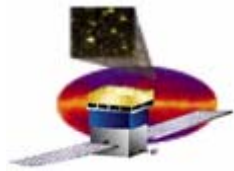
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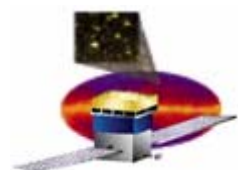
Cost Reports for 4.1 LAT

May 2007 Month End



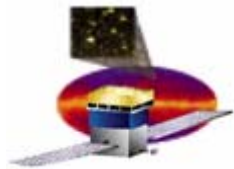
Cost Status by Organization

May 07 Month-End By Institution K\$	Current Period			Cumulative to Date			Budgeted at Completion
	Budgt'd Cost Work Scheduled	Actual Cost Work Performed	Cost Variance	Budgt'd Cost Work Scheduled	Actual Cost Work Performed	Cost Variance	
DG *** GSFC	59	85	-25	21,198	20,636	562	21,489
DH *** HEPL	116	114	2	11,181	10,684	497	11,797
DL *** SLAC	611	394	217	106,716	105,816	900	109,489
DN *** NRL	187	210	-23	34,557	34,543	14	35,456
DO *** Financial Plan Transfer/Sub Out	0	0	0	59	59	0	59
DS *** SSU	55	30	25	3,682	3,404	278	3,937
DT *** Texas A&M	0	0	0	15	15	0	15
DU *** UCSC	29	32	-3	2,883	2,829	55	3,034
DW *** UW	11	5	6	481	375	106	538
Sub Total	1,067	869	198	180,772	178,360	2,412	185,813
Contingency							2,242
Total	1,067	869	198	180,772	178,360	2,412	188,055



Cost by Orgs with Variances ≥\$100K

May 07 Month-End By Institution & WBS Level 3 K\$	Current Period			Cumulative to Date			Budgeted at Completion
	Budgt'd Cost Work Scheduled	Actual Cost Work Performed	Cost Variance	Budgt'd Cost Work Scheduled	Actual Cost Work Performed	Cost Variance	
	DG *** GSFC						
4.1.1 INSTRUMENT MANAGEMENT	31	73	-42	1,987	1,612	375	2,139
4.1.6 ANTICOINCIDENCE DETECTOR	0	0	0	17,479	17,482	-3	17,479
4.1.D SCIENCE ANALYSIS SOFTWARE	28	11	17	1,354	1,164	189	1,493
4.1.E SUBORBITAL FLIGHT TEST	0	0	0	378	378	0	378
OBSTotals:	59	85	-25	21,198	20,636	562	21,489
DH *** HEPL							
4.1.1 INSTRUMENT MANAGEMENT	82	91	-9	3,592	3,400	192	4,051
4.1.2 SYSTEM ENGINEERING	0	0	0	2,681	2,638	43	2,681
4.1.4 TRACKER	0	0	0	1,475	1,475	0	1,475
4.1.7 ELECTRONICS	0	0	0	1,021	1,019	2	1,021
4.1.A PERFORM & SAFETY ASSURANCE	0	0	0	263	248	16	263
4.1.B INSTRUMENT SCIENCE OPS CENTER	0	0	0	258	257	0	258
4.1.D SCIENCE ANALYSIS SOFTWARE	34	22	11	1,431	1,186	245	1,588
4.1.E SUBORBITAL FLIGHT TEST	0	0	0	460	461	0	460
OBSTotals:	116	114	2	11,181	10,684	497	11,797
DL *** SLAC							
4.1.1 INSTRUMENT MANAGEMENT	35	23	11	14,341	14,305	36	14,495
4.1.2 SYSTEM ENGINEERING	158	15	143	8,762	8,551	211	9,643
4.1.4 TRACKER	0	0	0	18,144	18,097	47	18,144
4.1.5 CALORIMETER	0	0	0	721	718	2	721
4.1.6 ANTICOINCIDENCE DETECTOR	0	0	0	685	683	3	685
4.1.7 ELECTRONICS	107	111	-5	28,256	28,323	-67	28,605
4.1.8 MECHANICAL SYSTEMS	0	0	0	17,441	17,417	25	17,441
4.1.9 INTEGRATION & TEST	262	188	74	13,345	12,617	728	14,566
4.1.A PERFORM & SAFETY ASSURANCE	50	57	-7	4,956	5,046	-89	5,124
4.1.B INSTRUMENT SCIENCE OPS CENTER	0	0	0	59	59	0	59
4.1.C EDUCATION & PUBLIC OUTREACH	0	0	0	5	0	5	5
OBSTotals:	611	394	217	106,716	105,816	900	109,489
DS *** SSU							
4.1.C EDUCATION & PUBLIC OUTREACH	55	30	25	3,682	3,404	278	3,937
OBSTotals:	55	30	25	3,682	3,404	278	3,937
DW *** UW							
4.1.D SCIENCE ANALYSIS SOFTWARE	11	5	6	481	375	106	538
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FTE Report

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