

GLAST LAT I&T

*GLAST Monthly
Mission Review
Mar 2, 2006*

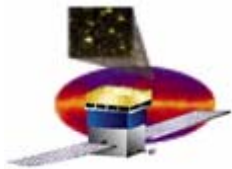


Monthly Mission Review

LAT Shipping and Environmental Test Planning

March 2, 2006

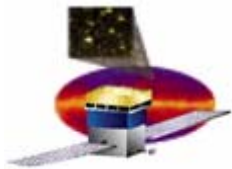
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NEW NEW Baseline LAT Shipping Agreements

- **GLAST Project Office and GSFC Transportation Office will take responsibility for the shipping of LAT to NRL and to Spectrum Astro**
 - GPO will take lead responsibility in developing requirements, documentation, and schedule. **GPO (Coltharp, Clough) will provide draft transportation plan.**
 - Ownership of LAT will temporarily transfer to GSFC during the shipping.
 - Final transfer of LAT to GSFC responsibility will occur at Spectrum Astro after completion of LAT post-ship testing by LAT team
- **Baseline shipping method is via air-ride enclosed truck arranged by GSFC Transportation Office.**
 - GSFC will transport LAT in its shipping container.
 - **GSFC Transportation Office will provide all required instrumentation.**
 - **LAT will be responsible for the ground shipment of all non-flight MGSE / EGSE.**
 - SLAC & NRL will provide Fork Lifts for loading trucks at SLAC/NRL. GPO will provide the Fork Lift at SASS.
 - Demo test ride of Transport Container w/ mass simulator is planned w/ GSFC Transportation office in mid March.
- **Backup shipping method is via C5A arranged by GSFC Transportation.**
 - Currently holding March 10 - 11, 2006 for pickup of LAT at Moffet Field and delivery to Andrews AFB in DC

Revisions from the "NEW Baseline" in Red

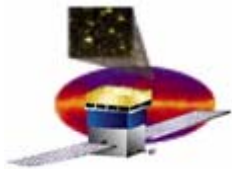


GLAST LAT I&T

Environmental Test: Plan-Level Documents and Status

*GLAST Monthly
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Document	Title	Status	ECD
LAT-MD-02717-01	LAT Environmental Test Sequence		Released
LAT-MD-01196-03	LAT Dynamics Test Plan		Released
LAT-MD-00276-02	LAT EMI/EMC Test Plan		Released
LAT-MD-01600-03	LAT Thermal-Vacuum Test Plan		Released
LAT-SS-06640-01	LAT Environmental Test MGSE/STE Requirements		Released
LAT-PS-06898-01	LAT Environmental Test Implementation Plan	Final draft in work. Need to incorporate recent QA, Safety and Contamination inputs	Draft
LAT-MD-06560-01	Plan for Integrating and Testing the LAT on the Observatory	Content being transferred to SpecAstro ICD ICN-099	Released
LAT-MD-07727-01	LAT Environmental Test Pathfinding	In release, 1/18/06	Draft

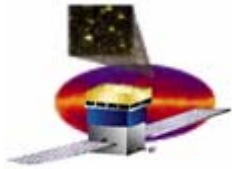


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Environmental Test: Configuration Drawings and Status

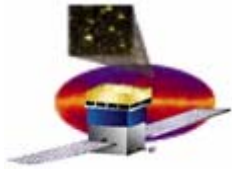
*GLAST Monthly
Mission Review
Mar 2, 2006*

Drawing	Title	Status	ECD
LAT-DS-06188	Acoustic Test Configuration Assembly	Released	
LAT-DS-06185	Thermal-Vacuum Test Configuration Assembly	3 rd draft out for review	Mid Feb
LAT-DS-06187	Horizontal Vibration Test Configuration Assembly	Released	
LAT-DS-06190	Vertical Vibration Test Configuration Assembly	Released	
LAT-DS-06186	Handling Configuration Assembly	Released	
LAT-DS-06184	Transport Configuration Assembly	In release cycle	4/03/06
LAT-DS-06189	EMI/EMC Test Configuration Assembly	Released	
LAT-DS-06191	Mass Properties Configuration Assembly	Draft in Development	Mid Mar



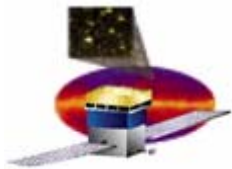
Environmental Test MGSE/STE

- ❑ **Transport Container**
 - Manufacture complete
 - Analyses complete
 - Proof test complete
 - Demo Road Test, GSFC Transportation – ECD: 3/06/06
- ❑ **Test Interface Plate**
 - Complete
- ❑ **Test Stand/Spreader Bars**
 - Complete, used in pathfinding
 - TVAC heaters are being installed – ECD: 3/03/06
- ❑ **TVAC Sink Plates – ACD & S/C Simulator**
 - Manufacture in progress – ECD 3/06/06
 - Heater installation – ECD 3/10/06
- ❑ **TVAC Cal-Rod Cage**
 - Cal-Rods, cage complete
 - Assembly and wiring – ECD 3/03/06
- ❑ **Acoustic Simulator**
 - Contract placed, in manufacture - ECD: 3/13/06
- ❑ **Mass Properties Plate**
 - Load Cell Interface in manufacture – ECD: 4/03/06



Facilities

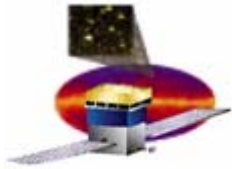
- **Thermal Vacuum Test**
 - Cables and Port Plates – complete
 - Mechanical analyses complete
 - Trolley (cart) – complete, used in pathfinding
 - Chamber rails and pedestal bases (chamber welding) – complete
 - Chamber rail supports (pedestal towers) – ECD: 3/06/06
 - Chamber modification installation – ECD: 3/10/06
 - Proof Load – ECD: 3/13/06
 - Pathfinding, phase 2 – ECD 3/14/06
 - Chamber refurb, cleaning and recommissioning - ECD: 4/17/06
 - GSE bakeout and STE Validation – ECD: 4/27/06
- **Acoustic Test**
 - Ramp manufacture complete
- **Vibration Test**
 - Expander head load frame procurement - delivered
 - Load frame manufacture – complete
 - Installation and proof test – ECD: 3/06/06



Pathfinding – Phase 1

LAT-MD-07727-01

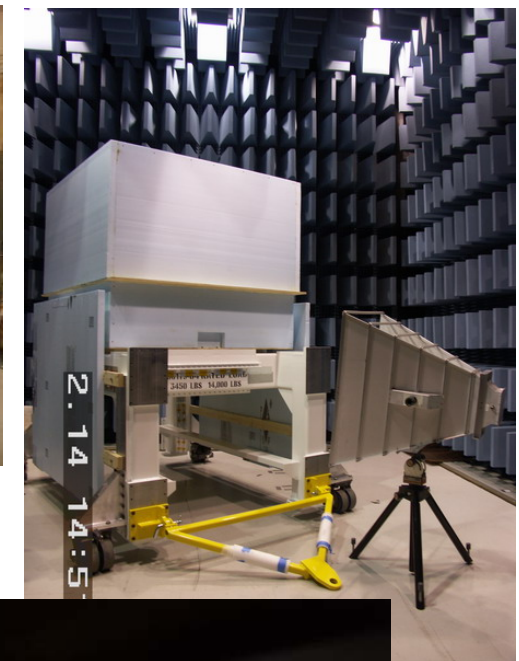
- ❑ Executed Feb 14 – 17, 2006
- ❑ Objectives
 - Familiarize I&T personnel with facilities and critical procedures in handling LAT in the environmental test program at NRL
 - Demonstrate all critical moves and lifts with volumetric or mass models as appropriate to address handling, access and clearance issues
 - Walk thru planned handling procedures and redline for issues and improvements.
 - Engage LAT and Mission safety, contamination and QA elements to identify issues and deficiencies in plans.
- ❑ Key MGSE/STE
 - Test stand and associated cables, spreader bars
 - 1x Mass Simulator
 - Volumetric simulators, LAT and GPR
- ❑ EMI/EMC, Vibe, and Acoustic pathfinding w/ volumetric simulation for paths, lift and handling clearances
- ❑ TVAC pathfinding with mass and volumetric simulator for lifts, moves and installation in the chamber.



Pathfinding Summary

- ❑ **Phase 1 was very successful and beneficial to all involved.**
 - **No major handling or operations issues identified.**
 - **Minor mods to MGSE and procedures will improve safety and or execution efficiency.**
- ❑ **Environmental Test Implementation Plan needs to be updated for safety, contamination control and QA implementation issues and responsibilities.**
- ❑ **Phase 2 testing, week of March 13, includes operations into the TVAC chamber and placement of heater cages and sink plates. (Chamber rail system was not complete for Feb testing.)**

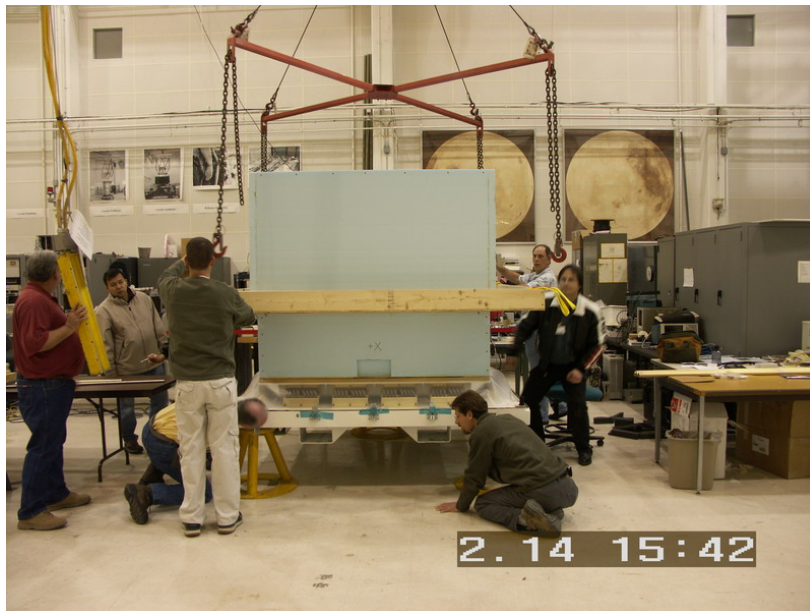
EMI Move and Positioning



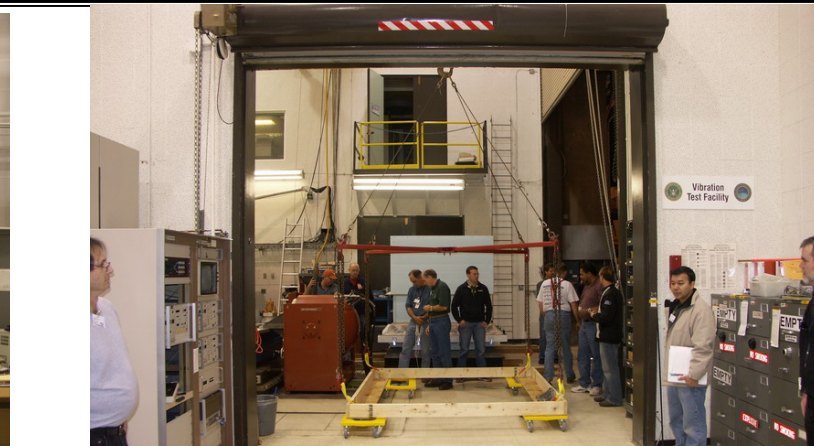
1. Mass simulator on test stand & Volume Simulators
2. Move to EMI chamber
3. General EMI test configuration
4. Issue – chamber door height clearance – 3 inches.



Vibe and Acoustic Issues



1. Removing LAT from shipping container base
2. Room for LAT and GPR in Vibe lab
3. Hook height clearance to vibe expander head
4. Move into Acoustic chamber

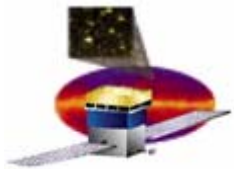


Turnover Preparation



1. LAT on test stand w/ radiators
2. Install test stand extension beams
3. Install turnbuckle – safety mod
4. Completed test stand and extensions ready for turnover





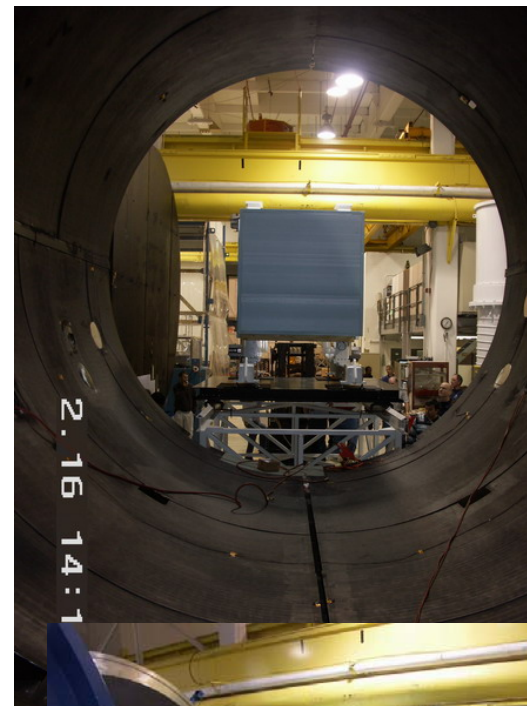
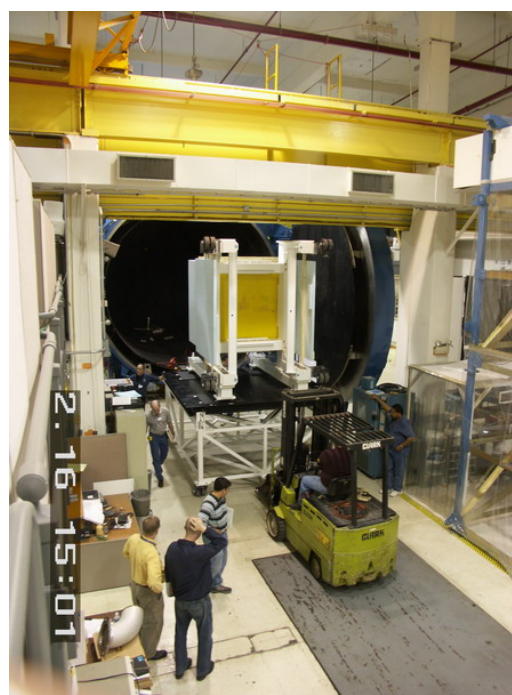
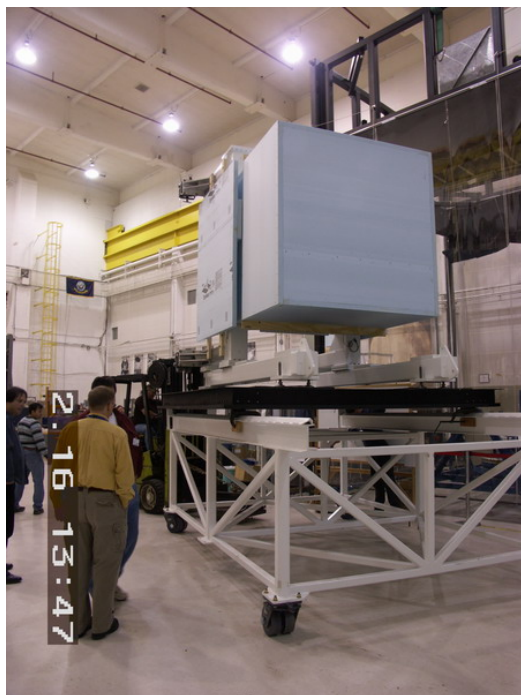
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LAT Turnover Operation

GLAST Monthly
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Move to TVAC



1. LAT onto Table and Trolley
2. Move to Chamber
3. Install in chamber (not complete, rails missing)
4. Issue – overhead beam clearance – 13”