

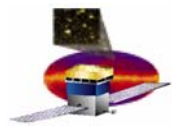
GLAST

**Gamma-ray Large
Area Space
Telescope**



Test Definition Planning

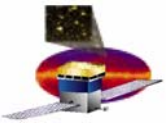
**Pat Hascall
SLAC
System Engineering**



LAT Level Verification / Test Planning Status

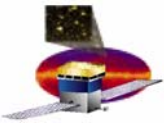
Category	Verification Method					Requirements		
	Test	Demonstration	Analysis	Inspection	Children	# Comp	Total	% Comp
	# Complete	# Complete	# Complete	# Complete	# Complete			
Requirement Identified	-	-	-	-	-	416	416	100.0%
Flow Down Complete	-	-	-	-	-	413	416	99.3%
Draft Verification Plan	128	93	122	38	32	413	416	99.3%
Final Verification Plan	0	0	20	0	32	52	416	12.5%
Verification Plan Executed	0	0	2	0	32	34	416	8.2%
Requirement Sold	0	0	2	0	32	34	416	8.2%

- Verification items mapped to test cases (with a few exceptions, mainly mechanical)
- Test cases documented in the Performance and Operations Test plan to finalize the verification plans
 - Performance and Operations Test Plan out for signature by Nov 10
- In parallel, the test cases have been passed to I&T to start script generation
 - Started a series of tabletops (with Systems, FSW and I&T) to refine the definition of the test cases and to enable efficient transfer of information to I&T
- Verification flowdown work done in Excel will be ported back into Doors to complete the Verification Plan, and relevant specifications will be updated after the test plan is complete



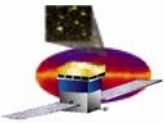
Phase 0 Tests

- **Phase 0 testing is defined under the integration tests as defined in the Performance and Operations Test Plan (and approved CRs)**
 - **Based on LATTE 4x test environment and scripts**
 - **Cal, Tracker and ACD CPTs**
 - **Trigger timing**
 - **Muon runs**



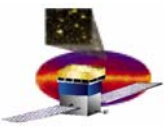
Phase 0 Test List

- **ACD Integration (safe to mate)**
- **LAT CPT**
 - Register tests
 - ACD clock phase
 - ACD, Cal and TKR CPTs
- **Trigger tests**
 - ACD Map Uniformity w/ charge injection
 - ACD TREQ timing w/ external trigger
 - FLE Threshold minimization
 - tower TREQ scan using ACD trigger
 - ACD hit delay and stretch scans
 - ACD TACK scan
 - tower TACK scan (last 8 towers)
 - Muon Run w/ ACD veto
- **Calibrations**
 - Calorimeter (CalibDac, CalibGen, MuTrg)
 - Tracker (TE601, TE602, TE604)
- **Tracker test (trigger jitter)**
- **Muon Runs (B2, B10 and B13)**



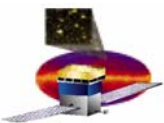
Phase 1 Test Priorities

- **The plan for Phase 1 starts with a subset of the planned tests that will demonstrate a substantial portion of LAT functionality using FSW and LICOS**
 - **Power on**
 - **Power off**
 - **Configuration upload**
 - **Charge injection for the Cal, Tracker and ACD**
 - **Muon collection**
- **Will continue with completed scripts for the remainder of the test phase**
- **Test case/script status follows**



LICOS Scripts

Power On	Well underway
Power Off	About to start work
Reinitialization	Table-top discussion 11/1
Baseline Science Ops Config	
File & Memory Management	Table-top discussion 11/1
Safe Modes	Just started work
Science Modes	
LAT/SC I/F Functional	
Thermal Control	
Survival Heater Test	
Conducted & Radiated Emissions	
Conducted & Radiated Susceptibility	
Science Performance Diagnostics	
Timing Measure & Adjust	



LICOS Scripts (2)

Event Handling	
GRB Handling	
ACD CPT	Well underway
ACD LPT	Well underway
CAL CPT	Well underway
CAL LPT	Well underway
TKR CPT	Well underway
TKR LPT	Well underway
LAT Config 1 Light Tight Test	
T&DF False Triggers	
T&DF Data Transport Errors	
SVAC – E2E Tests	Well underway