

GLAST Large Area Telescope

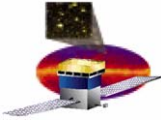
Monthly Mission Review

LAT Flight Software Status

January 11, 2007

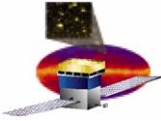
Jana Thayer

Stanford Linear Accelerator Center



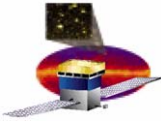
FSW Status

- LAT-SC integration/functional test in progress with B0-6-15 + LSW V0-1-1
- B0-7-1 present on lower bank of LAT (compression)
 - Approximately one week of running with this build prior to holidays
 - Includes fixes to compression/decompression since B0-7-0
 - Continuing testing and debugging of compression
 - Examination of data taken with B0-7-1
 - Run uncompressed LAT data through compression/decompression chain on host machines and perform bit-by-bit comparison of before and after to identify bugs more quickly
 - Run 880,000 uncompressed events through level 1-5 compression/decompression => all bugs fixed in B0-8-0
 - Remaining bugs in level 8 compression/decompression being identified and fixed; most bug fixes will be incorporated in B0-8-0.
- B0-8-0 to be installed when functional test is complete (1/16?)
- Future builds culminating in B1-0-0 will be released as time allows to incorporate approved JIRAs
 - Use third shift for testing of newly uploaded software, trolling for reboots
 - We will maintain the ability to run with B0-6-15+, B0-7-1, B0-8-0



B0-8-0 (install 1/16?)

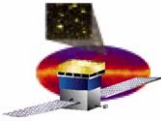
Key	Summary
FSW-846	TAM register destination address field truncated
FSW-845	Change RAD750 Cache Configuration to Write-Through
FSW-840	LHK doesn't always send EpuxStats packet
FSW-839	Documentation of LHK telemetry field description incorrect
FSW-835	FPM_allocITC does not protect itself against inappropriate invocation
FSW-834	Inappropriate invocation of FPM_allocITC
FSW-831	Event packet reassembly code review issues
FSW-830	Fix LPA Processing of Multiple DB Instances
FSW-829	Expansion of LSW facility for diagnosing reboots and monitoring the state of the onboard flight software.
FSW-828	Expose the "repair" flag on the chkdisk utility
FSW-827	Implement a way to use new code temporarily without making a full release
FSW-826	Command and response lists must have exclusive use of 32-byte blocks
FSW-825	Response list allocation uses the wrong routine
FSW-823	Correct write to memory beyond allocated LCB request (a.k.a. command) list structure in LTX
FSW-822	Disable memory controller Maximum Bank Active Timeout
FSW-821	Split memory allocations which allocate I/O buffers and non-I/O memory structures in the same function call
FSW-820	Need unique access to all cache lines of LCB I/O buffers during hardware operation
FSW-809	Stale context in first datagram of some runs
FSW-764	LATC IVV code issues
FSW-716	Implement science data compression



B0-9-0

- **Timescale for completion of these JIRAs (except FSW-843, 847) is approximately one week**
- **Complete these JIRAs within the next two weeks and make them available for testing in slac production**
- **Since overhead for uploading/testing a build to LAT is large, either wait for a critical bug fix or B1-0-0 to roll the build**
- **Survey of signed/unsigned char ongoing**

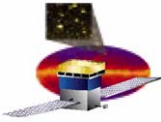
Key	Summary
FSW-851	Typos in telemetry descriptions
FSW-850	In the PL queue routines, inserting a queue element can disable interrupts
FSW-849	LHK does not return a value in the stated enumeration
FSW-848	LHK does not return a value in the stated enumeration
FSW-847	An LHK timer does not reschedule if the routine cannot allocate a packet
FSW-843	Modify LIM behavior to favor ARR over TOO and to always obey LPASTART and LPASTOP
FSW-837	Lack of task pointer check prior to invoking ITC_detachRaw
FSW-833	SIU exception occurs during LAT power down



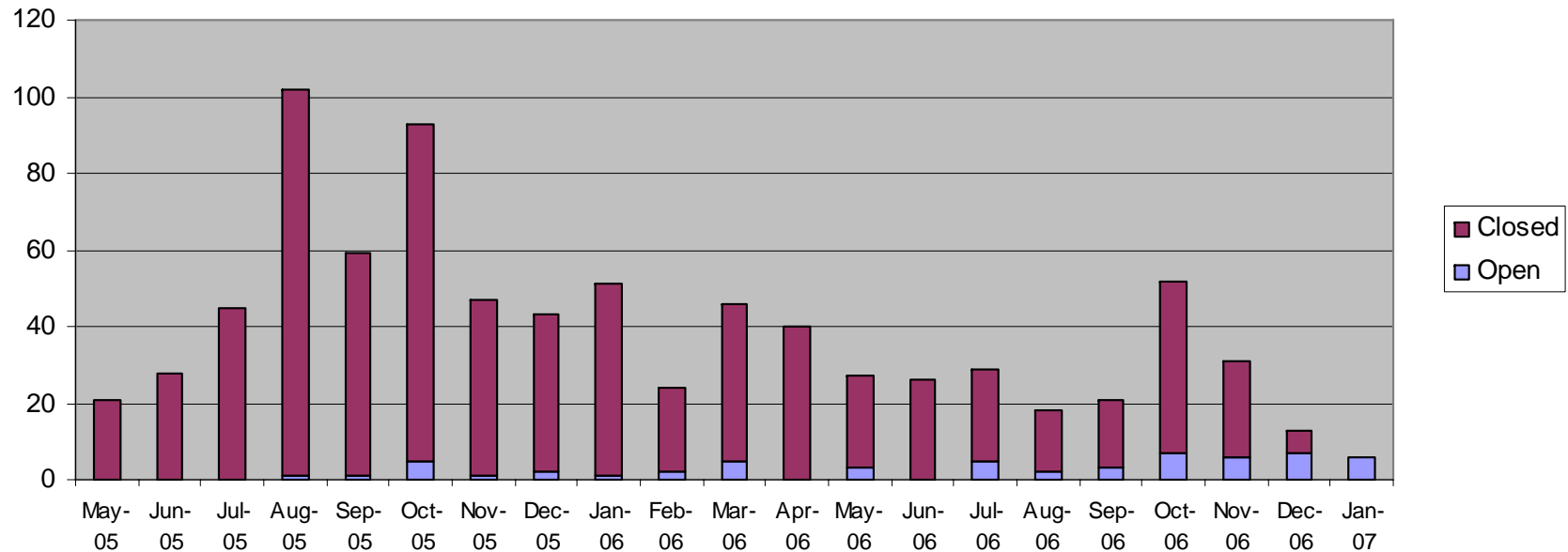
B1-0-0

- **Build 1-0-0**
 - **GRB algorithm or compression with asymmetric splits**
 - **Timescale for either one is two months + testing**
 - **FSW Standards (units, coordinate system, resource margin)**

Key	Summary
FSW-841	Implement enumerations in LCAT so they're part of the T&C database
FSW-814	Coredump from DFI with compressed data
FSW-811	Modify the sample parameters of the Gamma, MIP, and Heavy Ion filters
FSW-808	Problem enabling periodic triggers
FSW-789	LCI event data is inconsistent if TEM errors or diagnostics present
FSW-747	Correct two separate errors with the extended counters
FSW-732	Task messaging configuration report
FSW-723	LATC (and RIM) XML contains duplicate tag names
FSW-693	Command confirmation configuration report
FSW-623	CLONE -Documentation for several apids needs to be added to standard webpage
FSW-582	Capture of layer splits in LATC does not consider the FE mode registers
FSW-576	Bug in CAL data compression algorithm
FSW-456	EMP and LCM do zlib compress with malloc/free, should use MBA_alloc/free
FSW-292	Implement GRB detection algorithm
FSW-164	Add LATC Telecommand Interface to LIM
FSW-794	Update compression code to handle asymmetric splits



JIRA Metrics as of 9 January 2006



- **Open issues are divided as follows**

- 6 planned for B0-9-0
- 14 planned for B1-0-0
- 7 planned for B2-0-0 (post L+60)
- 14 deferred indefinitely
- 16 unscheduled (being assessed by FSW team or awaiting Project CCB adjudication)