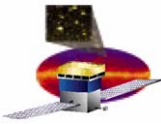


GLAST Large Area Telescope

Instrument Science Operations Center

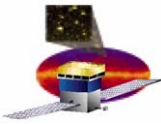
Monthly Status Review 2 March 2006

Rob Cameron
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650-926-2989



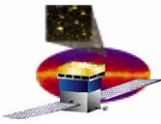
ISOC Management

- ❑ **ISOC Operations Facility**
 - **Planning continues – working schedule and cost**
- ❑ **ISOC office consolidation in Bdg 84/Central Lab Annex**
 - **Updated space request submitted to SLAC**
- ❑ **Events**
 - **Data challenge 2 kickoff meeting is underway: Mar 1-3**
 - **Instrument Analysis workshop #6: Feb 27-28**
 - **ISOC resource review, Feb 15**
- ❑ **ISOC-LAT collaboration cooperation**
- ❑ **Upcoming**
 - **Mission Operations Review, March 15**
 - **Second dryrun completed**
 - **ISOC presentation extended to include instrument activation info, FSW maintenance, science operations**
 - **Final dryrun next week**
 - **ISOC technical review**



CHS Activity

- ❑ **Developed a schedule of procedure/PROC development and PROC validation based on ETE schedule and objectives**
- ❑ **GOWG issues**
 - **VC10 and VC11 LAT data relayed to ISOC: may eliminate VC11 (TDRS MA alert data) and rely on MOC to notify ISOC of alerts**
 - **Provided SASS with a notional concept of the LAT activation timeline during L&EO**
- ❑ **Updates made to ISOC documents in preparation for release**
 - ***ISOC Configuration Management Plan (LAT-MD-04835)***
 - ***ISOC Test Plan (LAT-MD-05150)***
 - ***LAT ISOC Verification and Validation(LAT-MD-02513)***
- ❑ **Began participating in bi-weekly Mission Simulation Working Group meetings**
 - **Combined LAT and GBM instrument sims. First inst sim in April 2007, after ETE3. Nominal LAT activation in first sim.**
 - **Second inst sim after ETE5.**



CHS: Software Development Activity

❑ Software Releases

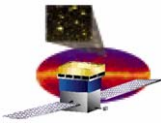
- Completed release 1.3 of the CHS software.
 - Includes EU conversion of CCSDS data, limits checking, logging.
 - Updated Trending & FASTCopy Monitoring web applications.

❑ Data Handling

- Completed initial implementation of merged-stream event extraction code. Supports multi EPU operation.
- Provided intermediate-file interface to Offline digitization.

❑ I&T Support

- Implemented automated delivery of LATTE/LICOS run data and CCSDS packet data from MCR via FASTCopy.
- Developed framework for delivering LICOS event data to SVAC pipeline.

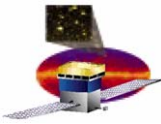


CHS Testing

- ❑ **Wrote new software to create custom level-0 test data**
 - used to verify EU conversion & limit checking
 - these tools will also be needed for future testing

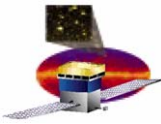
- ❑ **Tested ISOC SW release 1.3**
 - wrote tests to exercise EU conversion, limit checking, logging & trending
 - testing resulted in 5 Jira issues
 - ICS-21, IOT-44, IOT-47, IOT-48, IOT-49
 - all problems fixed by developers, retested, all tests passed
 - Jira ICS-22 also written to suggest future improvements
 - verified 20 level-3 requirements needed for GRT5
 - testing incremental releases (this release & rel 1.4 in April) important for handling the large number of GRT5 requirements

- ❑ **Upcoming testing milestones**
 - April 19: ISOC SW release 1.4
 - late April: engineering test of automatic L1 processing from received L0 data
 - late June: ISOC SW release 2.0
 - July 25-26: GRT5 (next GRT)
 - Sep 28-29: GRT6 (contingency testing, part 1)
 - Oct 17-18: GRT6 (contingency testing, part 2)
 - March '07: GRT7 (level 2 science pipeline testing & regression testing)



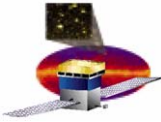
Requirements Tracking

Requirement Category	GRT					total
	2	3	5	6	7	
Misc (Facility, Redundancy, Security, Doc, etc.)	2	3	19	37	2	63
Mission Planning	1	1	56	5		63
Telemetry Processing	5	3	20	12	1	41
Science Data Processing		1	14	14	6	35
Telemetry Monitoring		1	44	2		47
Logging			10			10
Trending			22			22
Anomaly Tracking & Notification			4	13		17
totals	8	9	189	83	9	298



Science Operations

- ❑ **Highlights from the Instrument Analysis Workshop 6**
 - no major degradation seen in the performance and calibration data (from trending analysis from partially populated LAT up to full LAT)
 - ramping up work on inter-tower alignment
 - Italian collaborators volunteered to help
 - **Data Analysis indicated LAT is timed in properly**
 - used cosmic rays and “photon” candidates in the sample
 - **Web based Data monitoring tool**
 - prototype developed by SAS now under testing
 - gathering inputs for calibrations and performance data
- ❑ **I&T support**
 - developing code (with SAS) to support multiple trigger engine tests
 - developing code (with SAS) to support FSW data taking with muons (LPA)
 - Finalized test matrix for full LAT Testing (SVAC runs)
- ❑ **Work from SVAC group in supporting data analysis of I&T data feeds directly into ISOC Science Operations**
 - data analysis results (performance and calibration)
 - tool development
 - operations experience

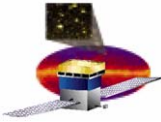


SAS

- **DC2 prep**
 - **Kickoff meeting started 1 March**
 - **We seem to have got it all done in time:**
 - **Background rejection analysis done**
 - **5B (1 day!) background events generated**
 - **Backgrounds interleaved with 55 days sky “signal” photons**
 - **irfs done**
 - **ScienceTools released for linux, windows, mac**
 - **Dataservers populated at GSSC and SLAC**
 - **Exercised FastCopy transfer of L1 to GSSC**
 - **Documentation updated**

<http://www-glast.slac.stanford.edu/software/DataChallenges/DC2/MarchWorkshop/>

<http://glast-ground.slac.stanford.edu/dc2/animation/>



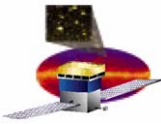
SAS Status (cont.)

- ❑ **Started beamtest support**
 - Can now model CU and beam line with two step process
 - Standalone G4 sim of beamline creating particles which hit CU
 - Standard sim/recon of CU from this particle list

- ❑ **Continue to meet with PVO folks to discuss Data Diagnostics**
 - Adapted web interface from System Tests
 - First version now links to eLog database and allows browsing of SVAC Reports
 - First prototype of high level diagnostics

- ❑ **Working with SVAC/Online to ingest FSW formatted data**
 - Had to create an intermediate file to avoid mixing FSW code with offline (issues with Windows support)
 - Using FastCopy transfer from Clean Room to initiate offline pipeline
 - Now working and about to be tested

- ❑ **Post-DC2 External Library Upgrades**
 - Major upgrades of Root, Geant4 etc after the DC2 code freeze
 - Big effort, but essentially done and needs to be scheduled



SAS: Upcoming

- ❑ Analyze DC2 sky
- ❑ Beamtest Support
 - Organizational meeting at Pisa 3/21-22
 - Pipeline II targeted to be ready for beamtest with MC testing initially
- ❑ Leverage DC2 dataset (55 days of “science downlink”) for ISOC development
- ❑ Complete External Library upgrade
- ❑ Ordered 60 TB disk to support NRL, Beamtest and DC3 operations
 - 2-month lead time from order for installation