Gamma-ray Large Area Space Telescope

GLAST Large Area Telescope

Instrument Science Operations Center
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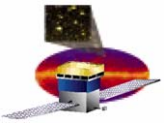**WBS 4.1.D**
Science Analysis Software

Monthly Status Review
**26 January 2006**

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ISOC Management

- ❑ **ISOC Operations Facility**
  - – **Planning is in progress. Construction to start in mid-year.**
- ❑ **ISOC office consolidation in Bdg 84/Central Lab Annex**
  - – **Space request submitted to SLAC. Negotiations starting.**
- ❑ **I&T coordination**
  - – **Supported I&T Face-to-Face at SASS, on Jan 17. Plus splinter meeting on I&T networks at SASS with NASA & SASS.**
    - • **Further definition of APID filtering/format translation on ISOC workstation.**
- ❑ **Upcoming events**
  - – **ISOC review, Feb 15**
  - – **Data Challenge 2 kickoff meeting at SLAC, March 1-3**
    - • **follows Instrument Analysis workshop at SLAC, Feb 27-28**
 - – **Mission Operations Review, March 15**
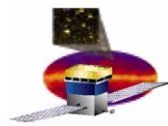
CHS Activity

- ❑ **Housekeeping data issues**
  - – **Drafted CCR to *Ops Data Products ICD* to add new data product, which is an extraction of the LAT 96-analog data from spacecraft telemetry packets**
  - – **ISOC plans to remotely access spacecraft data via Integrated Trending and Plotting System (ITPS) hosted at the MOC – replaces the DTAS system**
  - – **Finalized mnemonics for the 96-analog data with GD/SASS**
- ❑ **On-orbit procedures**
  - – **MOC generated a PROC based on *SIU Memory Dump* narrative procedure supplied by ISOC**
  - – **Created an initial list of 66 LAT on-orbit procedures**
  - – **Drafts of *ToO Observation* and *File Upload* narrative procedures in work**
- ❑ **Documentation**
  - – **CCB held: approved updates to the *Ops Data Product ICD*, baselined *Mission Operations Agreement* (pending final signatures), and baselined *GLAST Instrument Simulator Requirements***
  - – **Provided description of ISOC conformance to *Mission Assurance Requirements for NASA***
  - – **Work continues on *ISOC Configuration Management* document**
- ❑ **GOWG and GIMGOM meetings**
  - – **Reviewed outline of *ToO Operations Agreement***
  - – **Discussed MOR preparations**
- ❑ **Operations TIM at SASS**
  - – **Jan 18-19**
  - – **9 AIs received by ISOC**
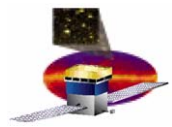
CHS Testing

- ❑ **GRT3 Successful**
  - – **major CHS functions verified**
    - • **exchanged 10 (of 11) mission planning products with MOC & GSSC**
      - – **the one that was *not* exchanged (TDRSS Forecast Schedule) was due to problem with another system (SWSI) → will be verified in GRT5**
    - • **received level 0 data**
      - – **included three 1Gbyte science data sets**
      - – **overlap between data sets was used to test CHS overlap processing**
    - • **received realtime data into ITOS**
  - – **no externally-visible ISOC/CHS problems identified**
  - – **two minor problems uncovered locally (Jira issues ICS-19 & ICS-20)**
  - – **checked received data products against ICD**
    - • **reported discrepancies to GSFC (all minor)**
      - – **extra fields included in GLAST Ephemeris**
      - – **a couple of Ops data product ICD changes needed**
- ❑ **Upcoming testing milestones**
  - – **April: engineering test of automatic L1 processing from received L0 data**
  - – **July 25-26: GRT5 (next GRT)**
  - – **Sep 28-29: GRT6 (contingency testing, part 1)**
  - – **Oct 17-18: GRT6 (contingency testing, part 2)**
  - – **Dec 12-14: GRT7 (regression testing)**
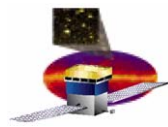
# CHS: Software Development Activity

❑ **Trending**

– **Implemented limit checking for telemetry mnemonics per Systems Engineering limit definitions.**

– **Implemented database structures to support derived parameter definitions from Systems Engineering.**

❑ **Data Handling**

– **Continued development of run-boundary extraction software.**

– **Began development of software to merge event streams from multiple EPU's as input to Offline's digitization step.**
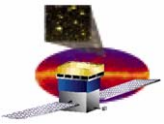
❑ **I&T Support**

– **Verified NRL-SLAC network connectivity for FASTCopy / MySQL / CVS via VPN and SSH tunnels.**

– **Assisted in migrating the ELogbook database mirroring function to the MCR.**
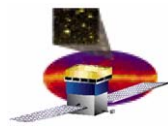
SAS: December/January

❑ **Focused on DC2 prep with I&T stable**

– **Training samples analyzed**
  - **ready for final backgrounds dataset**
  - **100000 batch jobs run in SLAC pipeline – 5 Billion events generated – routinely using 350 CPUs simultaneously.**

– **first round of Instrument Response Functions started in earnest**

– **background interleave with DC2 tested**
  - **Using rate dependence vs geomagnetic latitude**

– **Final skymodel due 1/26**
  - **Setting up to use it. Hidden details in secure area**
  - **Found and fixed a few problems; ready to go.**

– **Hoping to generate DC2 sky this weekend. Should take a day or two**
  - **We expect to expand to a 55 day period instead of 30**

– **Now working on post-processing and data handling of the final dataset: ~0.75 TB of 'telemetered' data!**

SAS: More December/January

❑ **Core software meeting was help in January to examine the many external code upgrades needed (among other things).**

❑ **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**

❑ **Attracted software developer from BABAR/SCS to a 50% tryout for next 6 months; used to be a GLAST postdoc at UCSC, so well known (and loved) quantity**

❑ **Met with PVO folks to discuss Data Diagnostics**
  – **They will create plots which can be generated in the pipeline**
  – **We'll adapt web interface from System Tests to suit**
  – **First prototype of high level diagnostics**

❑ **Assisting in process of creating requirement doc for QuickLook**
  – **Starting to look at how much/where to get manpower to implement it**
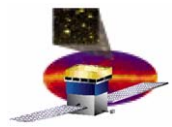
SAS: Upcoming

- ❑ **Create DC2 sky; first round IRFs ready.**

- ❑ **Beamtest Support**
  - – **Will start addressing how we include ancillary data with datastream and through recon (eg beam parameters)**
  - – **Finalize concept for support (like EngineeringModel for I&T?)**

- ❑ **DataCatalogue integrated with DataServer**

- ❑ **Astro Server ready for DC2**

- ❑ **Pipeline II requirements/design agreed to**