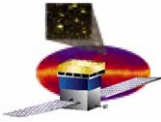**Gamma-ray Large Area Space Telescope**
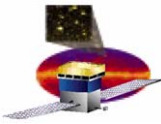
GLAST Large Area Telescope

WBS 4.1.B
Instrument Science Operations Center
Monthly Status Review
27 January 2005

Rob Cameron
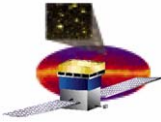**rac@slac.stanford.edu**
650-926-2989

Management

- – **Staffing and budget plans for ISOC being reviewed for FY2005, 2006 and beyond**
- – **Offices in Building 210 almost ready for ISOC occupancy**
- – **First 2 ISOC development workstations have been delivered, and will be installed in 210 in the next week**
- – **2 more offices in 210 will be available in about 1 month, for ISOC use as staff offices: Culp; Bator/Cameron**
- – **Scoping ultimate workstation and other equip needs for ISOC operations area: UPS, firewall, servers.**
- – **Facility space: costing process going ahead for ISOC facility in KAVLI**
  - • **layout details resolved with Stanford Dept. of Capital Planning, who oversee KAVLI project**
  - • **layout will be costed by KAVLI construction contractor; expect result in 2 weeks**
- – **Plan B: working with SLAC management to use office space in Building 84 vacated by KIPAC, plus additional lab space for operations area**
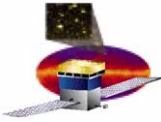
ISOC Ops Facility Concept - KAVLI
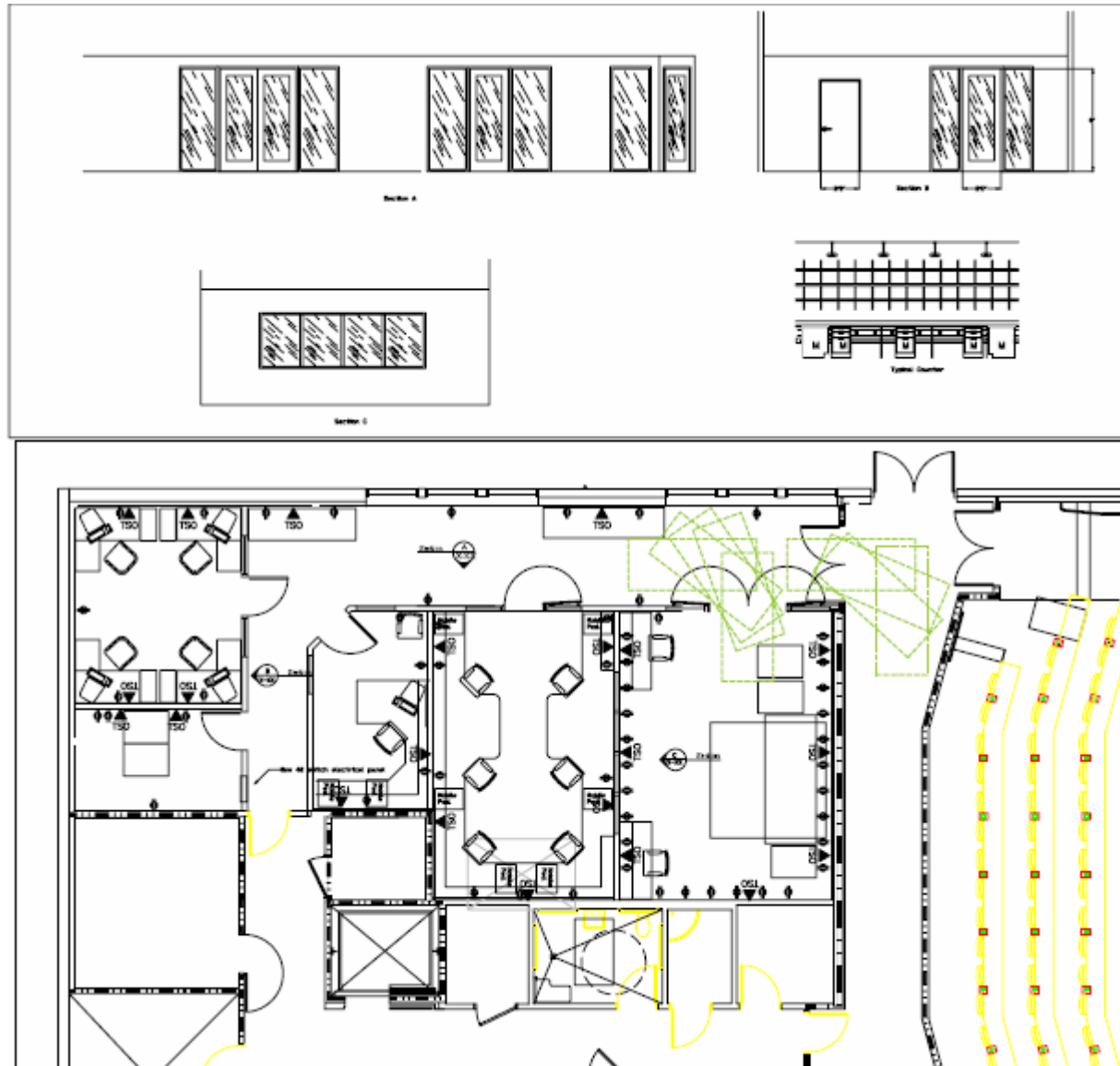
RFAs

- ❑ **6 of the 8 CDR RFAs now closed**
- ❑ **Remaining RFAs**
  - – **Red and yellow limit definition: ISOC still working with Systems Eng to obtain limits**
  - – **Launch critical support plan: concept has been distributed to Group Ops, and details will be coordinated**

Fastcopy Installation

– **Received 2 Fastcopy licenses for ISOC**

– **Installation on LAT servers GLAST02 and GLAST03 in SCS had problems, perhaps related to dual-processor servers. ISOC had been testing Fastcopy on single processor machines using temporary licenses without problem. Problem has been reported to vendor.**
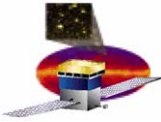
ISOC Design Progress

- ❑ **ISOC Data Flow review**
  - – **Internal ISOC review completed for data flow designs**
  - – **"External" reviews with SLAC staff completed:**
    - • **Mission Planning**
    - • **L0 File Ingest**
    - • **L0 Data Processing**
    - • **Logging**
  - – **Remaining external reviews:**
    - • **LAT Configuration**
    - • **L1 & L2 Data Processing**
    - • **L1 & L2 Transmission to GSSC**
    - • **Telemetry Monitoring**
    - • **Trending**
  - – **These reviews resolve issues between ISOC designs and other related planning**
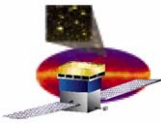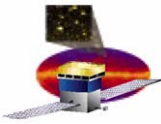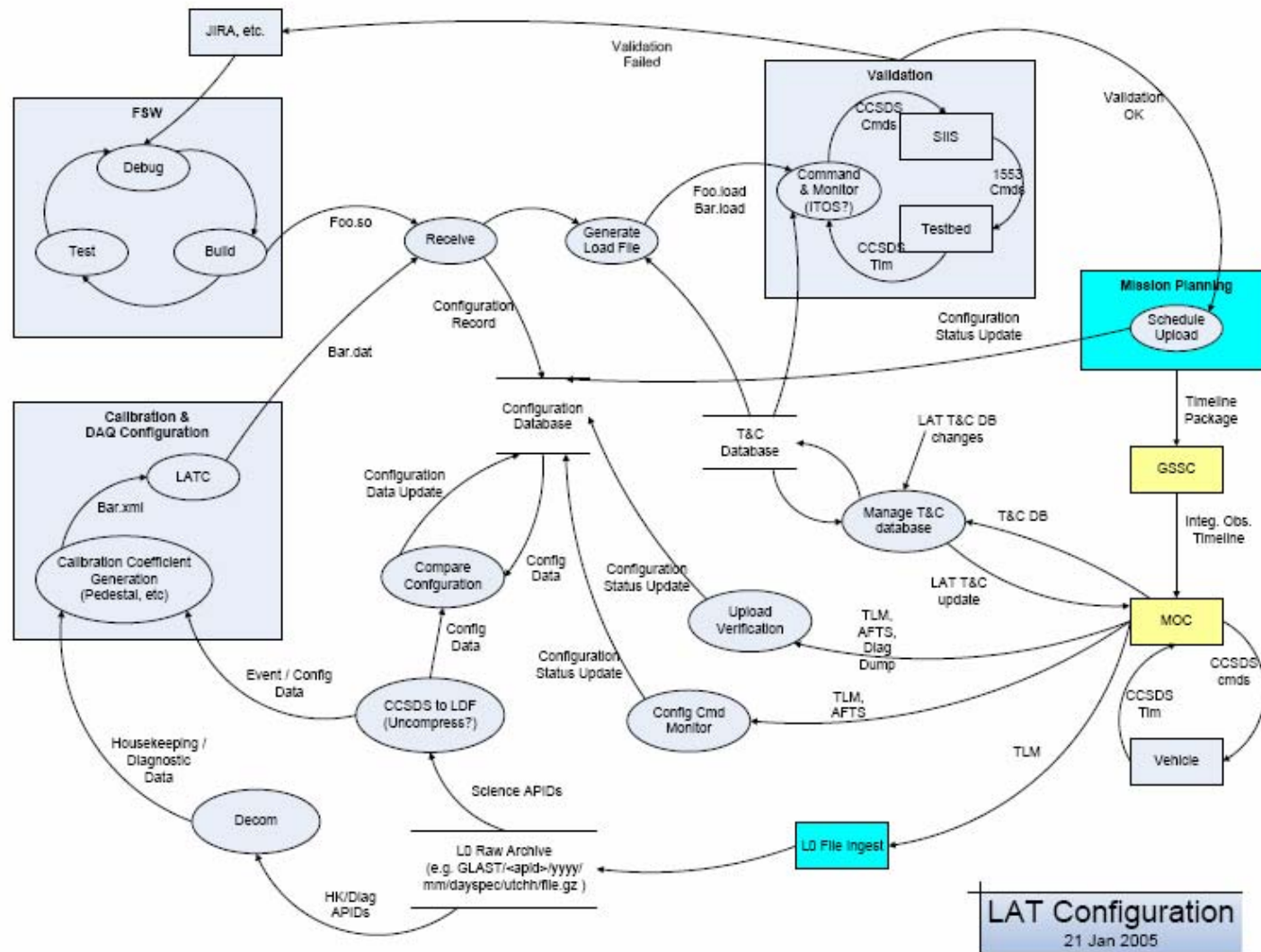
ISOC Data Flows (1)
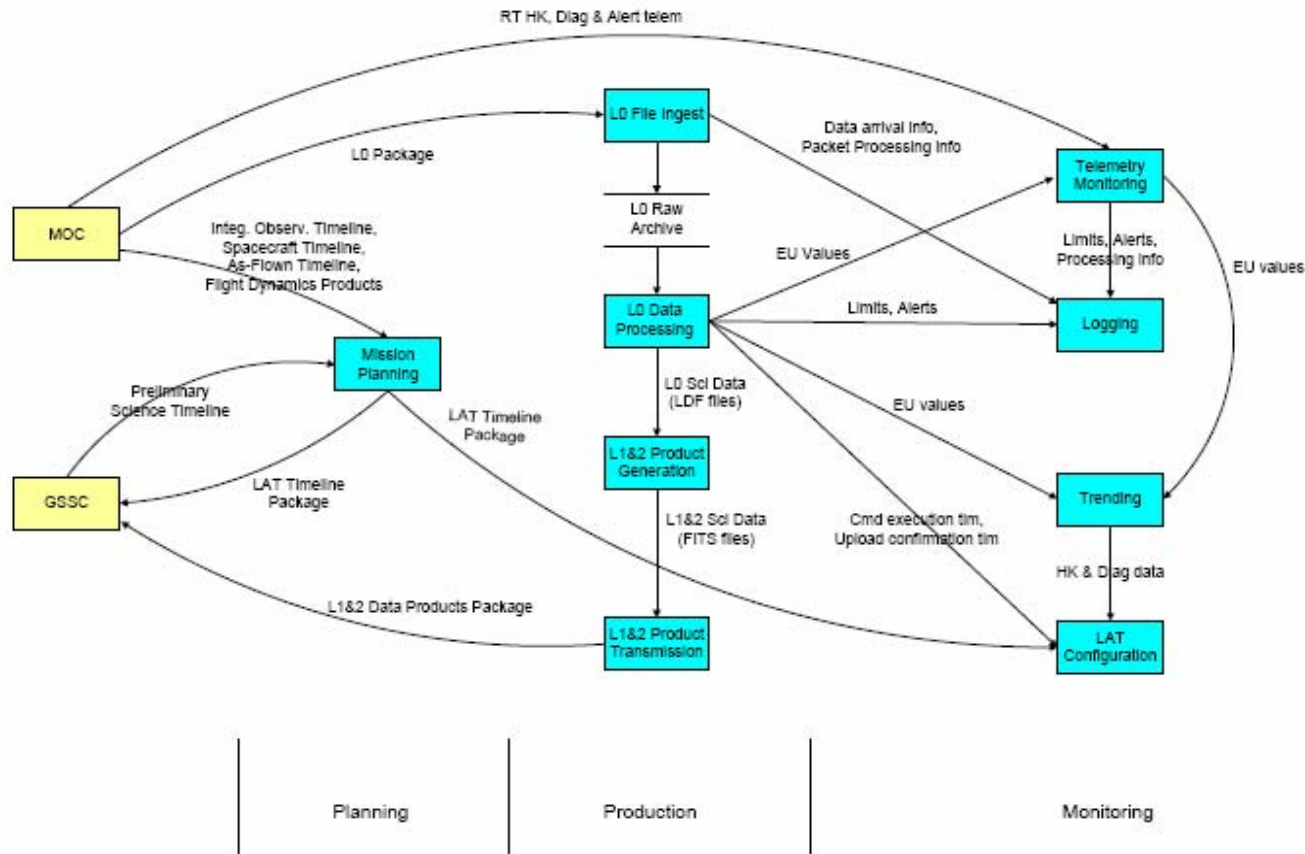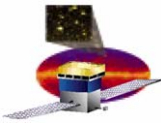

Top-Level ISOC Data Flows
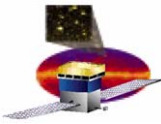7 Jan 2005
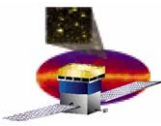
ISOC Data Flows (2)

SAA Boundary Definition for LAT

❑ **Recap from last month**
- **Uses AP8MIN trapped radiation model from NSSDC**
- **SAA boundary defined by 12-segment polygon hand fit to proton flux = 1 p/cm^2/s for protons with E > 10MeV. This roughly corresponds to ~doubled LAT background rate of 10kHz, for Aeff = 10,000cm^2**
- **Based on IGRF for 2005 epoch**
- **study details at http://www.slac.stanford.edu/~rac/SAA**

❑ **This month**
- **Obtained and installed TPM radiation model from SEE group at MSFC**
  - **Reported as providing improved trapped proton modeling**
  - **source code not available; executables designed for calculating orbit dosages, not well structured for boundary mapping**
  - **latest IGRF epoch still 2005**
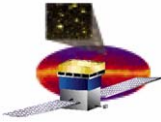- **Coefficients for 2005-2010 epoch IGRF now available at http://www.ngdc.noaa.gov/IAGA/vmod/igrf.html**

SAA region boundary

SAA, AP8MIN, proton flux (P>10MeV, /cm2/s)
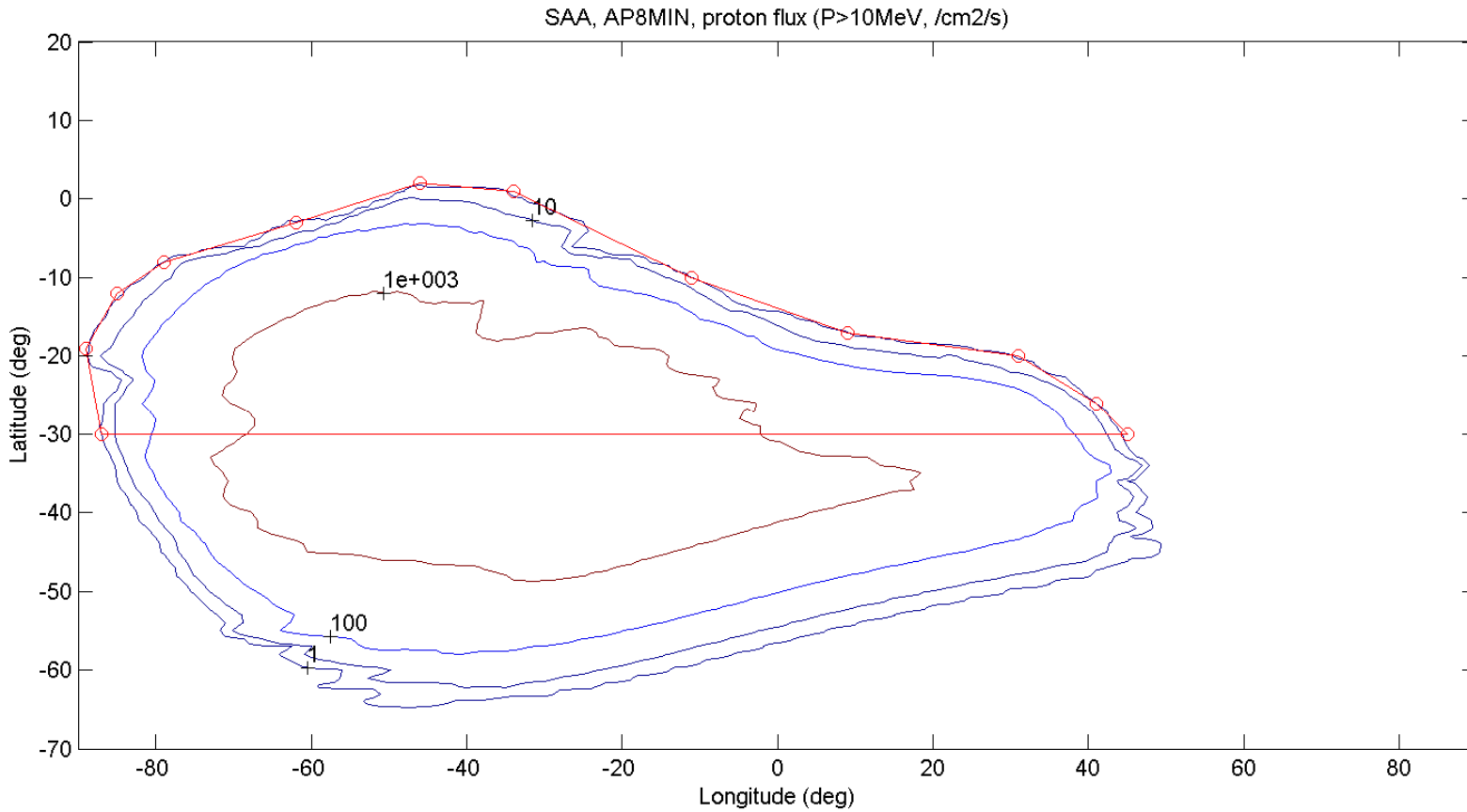
Database Development

❑ **Interface improvements**

– **Static trending web pages generated from Perl replaced with dynamic ColdFusion pages**

– **Now can use JAS3/AIDA tags in ColdFusion web pages, to include better plotting and graphics capability (ColdFusion graphics are too primitive for LAT needs)**

❑ **I&T support**

– **Still waiting for real data from Flight Calorimeter testing to appear**

– **To assist this process and help SVAC and other LAT elements, ISOC is cooperating with I&T/Online to have I&T data transferred in flight-like CCSDS format, to exercise realistic data ingest and distribution. This process is just starting: requires LATTE mods and additional pipeline tasks, but has payoff of producing flight-like tools for flight-like data**

Other January Activity

- ❑ **Ops Data Products ICD**
  - – **FITS message builder developed and used to deliver prototype LAT timeline package to GSSC: several ICD issues revealed**
  - – **ICD scrubbed and comments submitted**
- ❑ **Supported Pipeline and Data Server workshop**
- ❑ **ISOC test planning**
  - – **Supporting I&T planning for EGSE needs**
  - – **Draft developed for ISOC test environment phases, to help alleviate schedule pressure on LAT testbed, for FSW benefit**
  - – **ISOC sees a real benefit in VSC model for EGSE interface, and supports a VSC-based test environment**
    - • **A dedicated VSC test-stand for the ISOC?**
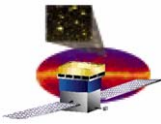
Near Future Activities

- ❑ **Ground Operations TIM at GSFC, 1-2 February 2005**
  - – **Some topics:**
    - • **Ground system test plan and schedule review**
    - • **Data flow**
    - • **Network security**
    - • **PROC development and test**
    - • **MOC facilities and L&EO planning**
    - • **Fastcopy**
    - • **ITOS**
    - • **Data integrity**
- ❑ **Key near-term milestones for ISOC:**
  - – **ISOC s/w release 1: 28 April 2005**
  - – **GRT#2: 15 June 2005**