GLAST Guest Investigator Program, Data Policy and Mission Timeline

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Outline

- The Data and Their Analysis
- Data Policy
- GI Program: Overview
- GI Program: Nitty-Gritty
- Proposal Tools

Scientific community supported by GLAST Science Support Center (GSSC); information can be found at GSSC website: http://glast.gsfc.nasa.gov/ssc

GLAST Data

- LAT events—energy, time, and direction of events classified as photons
  - Result of scanning by large FOV detector
  - PSF ~3.5° at E=100 MeV, ~0.15° at E>10 GeV
  - Analysis of spatial region required
- GBM events—energy and time of events from burst

- Fluxes, spectra and lightcurves for ~20 interesting sources and transients (see list on GSSC website)
- Summary GBM and LAT burst information: locations, spectra, durations, peak fluxes
- Preliminary LAT source list @ 6 months, LAT point source catalog @ 1, 2, 5 years and mission

- Auxiliary data

GLAST Analysis Software

- Standard Analysis Environment (SAE)—GLAST-specific tools are FTOOLS to analyze both LAT and GBM data.
  - Major new likelihood tool—spatial-spectral analysis of region
  - GRBs—binned temporal-spectral analysis using XSPEC
  - Pulsars—period analysis

- Tools and documentation will be released through GSSC website; release schedule based on data availability

Basic Data Policy

All Science Data Are Public As Soon As Processed!!!

(But…)

- Cannot isolate LAT events for single source analysis
- Immediate release of data on transients assists followup observations

Cycle 1 Data Policy

- During 1st year LAT event data are proprietary to LAT team
  - Calibration will be required
  - Analysis software will be refined
  - Preparation of source list, point source catalog

- Released data relevant to AGNs:
  - Fluxes, spectra, lightcurves of ~20 sources (mostly blazars)
  - Fluxes, spectra, lightcurves of transients
    - Beginning when flux exceeds threshold
    - Ending when flux falls below 0.1×threshold

- Summary LAT data on GRBs

- All GBM science data

Guest Investigator Program—Overview

- $4M for 40-50 research programs, available starting ~60 days after launch (L > December 14, 2007)

- In Cycle 1 you can propose for:
  - Analysis of data released by GLAST mission
  - Support for correlated observations relevant to GLAST
  - Theory related to GLAST (~10% of funds)
  - Data analysis techniques relevant to GLAST data
  - NRAO observations

- In Cycle 1 you cannot propose for:
  - Changing GLAST's observing plan (possible in Cycles 2+)
  - Analyzing LAT event data (even if you have access)

GI Program, cont.

- Two phase proposal system (details later)
  - Phase 1—Technical proposals submitted through RPS
  - Phase 2—Budgets for approved technical proposals submitted through NSPIRES
- Two types of proposals
  - Regular. 4 page technical justification
  - Large (legacy)—three year research plan, resubmit after 1st and 2nd year. 6 page technical justification
- Foreign scientists:
  - Can propose but cannot receive NASA funding (useful for funding by other agencies)
  - US co-Is—funding consistent with the level of effort

GI Program, cont.

- Notice of Intent (NOI) should be submitted through GSSC website by July 13
- GLAST science team members (instrument teams, GSSC):
  - Can receive funding for research using publicly available data
  - Cannot propose a research program based on their access to LAT event data in Cycle 1
- Collaborators of GLAST science team cannot propose a program based on access to LAT event data in Cycle 1
- Fellows program will be announced and administered separately

Schedule

Date	Months-L	Event
		Cycle 1
Mid June 2007	-6	Proposal materials on GSSC website
7/13/2007	-5	Notice of Intent due date
9/7/2007	-2	GI Cycle 1 proposal deadline
>12/14/2007	0	LAUNCH!!!
January 2008	1	Results of phase 1 evaluation
	2	Release of GBM SAE Tools
	2	GI Cycle 1 Begins
March 2008	3	Funding decision
		Cycle 2
	6	Effective NRA Release; Release 0.9 of SAE
	8	SAE Workshop—Release of preliminary catalog
	9	GI Cycle 2 Proposal Deadline
	14	GI Cycle 2 Begins; Release 1.0 of SAE

Proposal Process

- Submit (optional) Notice of Intent (NOI) by 7/13 at:
  http://glast.gsfc.nasa.gov/ssc/proposals/cycle1/noi/
  Form is currently 'live.'

- Submit first phase proposal—technical justification—by 9/7
  - Details next
  - The peer review will evaluate this first phase proposal
  - Proposal tools will be provided

- PIs and US Co-Is should register with NSPIRES:
  http://nspires.nasaprs.com/external/aboutRegistration.do

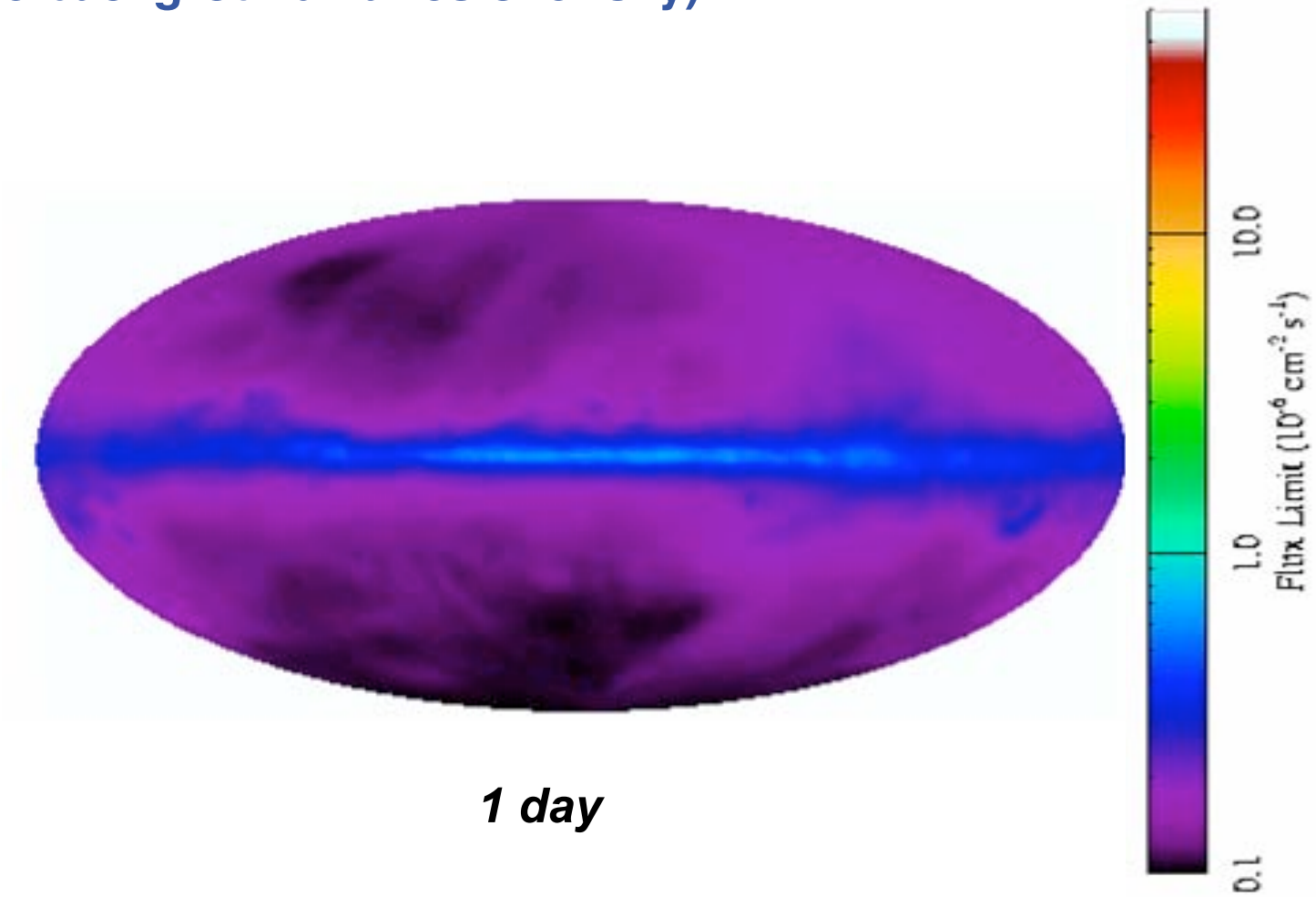
- Proposers who are successful in the first phase will submit budgets through NSPIRES. Instructions will be provided.

First Phase Proposals

- Register with AKBAR: http://heasarc.gsfc.nasa.gov/akbar/
- Join 'GLAST Guest Investigator RPS (GLAST)' group; also join the 'GLAST Target of Opportunity RPS (GLASTTOO)' to submit TOO requests.
- Fill out proposal form at: http://heasarc.gsfc.nasa.gov/akbar/glast/
  - Include maximum budget request
  - No detailed budget
  - No institutional signatures
  - Target form (only source name, type and coordinates)
    - Must be filled out for proposals that deal with sources
    - MUST be filled out for 'correlative' observation types
  - The technical proposal uploaded as PDF file
- Will become 'live' in June

Source Detectability Tool

- **Proposers will be provided with source detectability maps (diffuse background varies over sky)**



1 day

Source Detectability Tool, cont.

- Detectability is calculated for a power law source sitting on a uniform diffuse background. Inputs are:
  - Background (calculated from source position)
  - Spectral index
  - Flux (e.g., above 100 MeV)
  - Exposure time, assuming survey mode
  - Energy band
- Webtool created to present significance as a function of these inputs

GLASTspec

- Tool is GLAST version of WebSpec, a tool that runs XSPEC's fakeit command from a website. Location: http://heasarc.gsfc.nasa.gov/webspec/GLASTspec.html
- Result is webpage with plot of simulated spectrum, fit of simulated spectrum, fluxes, etc.
- Nine detector/observation type/background cases:
  - LAT survey mode at Galactic pole, 45° latitude, plane.
  - GBM NaI and BGO detectors at 0°, 30° and 60° to detectors.
- Models are appropriate to GLAST (but energies are in keV)
- Response and background files can be downloaded and used in XSPEC for more detailed modeling.

Other Tools

- **Time system conversions:**

http://heasarc.gsfc.nasa.gov/cgi-bin/Tools/xTime/xTime.pl

- **Object locations and coordinate conversions:**

http://heasarc.gsfc.nasa.gov/cgi-bin/Tools/convcoord/convcoord.pl

- **Other HEASARC tools:**

http://heasarc.gsfc.nasa.gov/Tools/generaltools.html

Proposal Documentation

- ROSES-2007 is basic legal description of program (links at http://glast.gsfc.nasa.gov/ssc/proposals/).
- Detailed instructions will be posted by mid-June on GSSC website (proposal section at http://glast.gsfc.nasa.gov/ssc/proposals/).
- Technical handbook (similar to Swift's handbook and CGRO's Appendix G) will be posted by mid-June. Currently PDF from LaTeX, may also be webpages.
- GSSC website (http://glast.gsfc.nasa.gov/ssc/) is always best place to start.
- Helpdesk at http://glast.gsfc.nasa.gov/ssc/help/

Source of All (GLAST GI Program) Knowledge

http://glast.gsfc.nasa.gov/ssc