The GLAST Science Support Center
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Abstract
The GLAST Science Support Center (GSSC) will serve as the mission’s primary interface to the scientific community. The GSSC will support the planning and scheduling of science observations, as well as establishing and maintaining a publicly accessible archive of all GLAST data products. Data analysis software and documentation will also be maintained and disseminated by the GSSC. In addition, the GSSC will administer the guest investigator program for NASA HQ and provide proposal preparation tools, documentation as well as technical and scientific support. We describe our plans for each of these activities, as well as offering a preview of the forthcoming NASA Research Announcement (NRA) for the Cycle-1 GLAST Guest Investigator Program.

GLAST Mission Overview
The Gamma-ray Large Area Space Telescope (GLAST) is an international and multi-agency space mission that will study the cosmos in the energy range 10 keV – 300 GeV. The main instrument, the Large Area Telescope (LAT), with an energy range from 20 MeV to 300 GeV, will, compared to previous missions, have superior area (>4000 cm²), angular resolution (<0.5° @ 100 MeV – <0.15° @ >10 GeV), field of view of ~2×, and deadtime (<100 μs) that together will provide a factor of 30 or more advance in sensitivity, as well as provide capability for study of transient phenomena. The GLAST Burst Monitor (GBM) will have a field of view several times larger than the LAT and will provide spectral coverage of gamma-ray bursts that extends from the lower limit of the LAT down to 10 keV.

The GLAST mission is scheduled for launch in late 2007 into a low earth orbit and has a nominal mission life of 5 years with an expected lifetime of 10+ years. It is primarily a sky survey mission and is capable of observing the entire celestial sphere with the LAT instrument.

User Support
The GLAST Science Support Center (GSSC), managed by the NASA Goddard Space Flight Center, will serve as the primary interface to the user community throughout the lifetime of the GLAST mission. This includes providing access to all science data products, analysis software and documentation. It also will assist in using the provided tools and education about the capabilities of the GLAST instruments and the nature of the data. The GSSC will also provide individual user support regarding software and data issues as well as managing the Guest Investigator Program for NASA HQ.

The GSSC website http://glast.gsfc.nasa.gov/ will provide a central information repository on the status of the mission as well as provide a gateway for users to access the data and tools. The GSSC website will also host a variety of tutorials and a help desk and FAQ to assist users in analyzing the data and provide support for problem encountered.

Observation Scheduling
The GSSC is responsible for generating the scientific observing plan for the GLAST mission based on the accepted proposals from the Guest Investigator Program and the sky survey requirements. This is done at two levels, a long-term schedule for the entire cycle (1 year), and a detailed weekly timeline that is used by the GLAST Mission Operations Center (MOC) to generate the spacecraft commands. Both of these schedules are available to the scientific community as they become available to allow for planning of multi-wavelength and simultaneous source campaigns.

Long-term Schedule
The long-term schedule is generated before the beginning of the cycle from all the accepted GI proposals. Observations are scheduled with a time resolution of five minutes for the entire cycle. This timeline will be posted on the GSSC website and the GI will be notified of the expected observation dates for their targets. The long-term schedule will be updated during the cycle as necessary to account for deviations caused by Target of Opportunity (ToO) observations or Autonomous Requests (ARs). ARs are expected to occur one to two times a month.

Weekly Timeline
The weekly timeline contains the detailed information about the specific observations to be made during a given week with a time resolution of one minute. This timeline is used by the MOC to generate the actual commands sent to the observatory.

A preliminary weekly timeline is generated and available ~3 months before the week for which it is to be used. The GSSC generates a final weekly timeline that takes into account any necessary changes from the MOC or Instrument operations centers (IOCs) and uses an updated spacecraft ephemeris to refine the observation schedule. This final timeline is used by the MOC to generate the observatory commands, and it will be publicly available through the GSSC WWW site.

GLAST Guest Investigator Program

Synopsis:
Yearly cycle—begins ~2 months after launch. Funding (approximate and subject to change) typically $50-100K per investigation. Cycle 1 (first year)—50 proposals accepted; subsequent years—100 proposals accepted.

Cycle 1 funding for:
• Analysis of released GLAST data (see data policy below).
• Correlated multiwavelength observations.
• GLAST-related theory.
• GLAST-relevant data analysis methodology.

Funding in subsequent years for:
• All the above plus detailed analysis of LAT event lists and pointed observations.

Two stage proposal process:
Stage 1—scientific justification submitted through RPS.
Stage 2—funding request for successful stage 1 proposals, submitted through NSPIRES.

Data policy:
• In Cycle 1 (and afterwards) the LAT team will post the lightcurves and spectra of ~20 sources of interest to the community; see http://glast.gsfc.nasa.gov/central/ps/policy/LAT_Monitored_Sources.html.
• In Cycle 1 (and afterwards) the LAT team will release lightcurves and spectra of intense transient sources (includes flaring AGN), several new transients expected per month.
• GBM data released as soon as processed. GBM data will be released as soon as processed, along with Cycle 1 LAT event lists.
• Gamma-ray burst alerts, localizations, and lightcurves will be circulated as Gamma-ray burst Coordination Network (GCN) Notices and Circulars.

The GLAST Follows Program will award three three-year fellowships every year.