

# GLAST User's Group (GUG)

GSFC, Bldg. 2, Rm. 8  
June 4-5, 2007

Present:

User's Group Members: Josh Grindlay (Chair), Matthew Baring, Roger Brissenden, Wim Hermsen, Buell Jannuzi, Don Kniffen, Henric Krawczynski, Reshmi Mukherjee, and Scott Ransom

Ex Officio Members: David Band, Rick Harnden, Chip Meegan, Peter Michelson, Steve Ritz, and Chris Shrader

Colleagues: Sandy Barnes, Padi Boyd, Mike Corcoran, Dave Davis, Frank Marshall, and Al Vernacchio

## **Meeting called to order at 9:15am**

**Introduction (Josh):** Meeting agendas will be e-mailed to all GUG members in the future, in addition to web posting.

**Mission Update—the view from HQ (Rick):** The new leadership at HQ is making things happen and staff morale is up. Support for GLAST is high but the funds are not infinite. GLAST's schedule and costs are an issue, and the reserves are eroding.

**Project update, including update on launch schedule (Al Vernacchio):** The observatory is integrated, except for the multi-mode transponders; an engineering unit is being used for initial tests and the flight box will soon be reinstalled. The battery and solar arrays are scheduled for later integration, as originally planned. The environmental testing is underway, and is going well. Simulations of operations and ground test preparations are in progress.

The Launch Readiness Date remains 12/14/07. There are delays in completing the launcher, and KSC is requesting United Launch Alliance (the launcher provider) to provide information indicating how they will meet the 12/14 date. GD has some technical issues that are eroding the schedule reserve and is projecting a 1/08 launch date, but NASA is requesting a recovery plan from GD that will preserve the current launch date. No cuts in testing are planned in response to the schedule erosion.

The schedule threats are:

- Reworking the transponders
- The environmental testing has to continue on schedule and not find any issues
- The parts audit must be successful
- The reaction wheels on TIMED have had on-orbit failures, which may have resulted from over-testing. We are checking whether GLAST had similar over-testing.

Both the project and GD are managing the schedule aggressively. In a couple of weeks a new schedule will be released to resolve these threats to the current launch date.

**Mission Issues (Steve):** Steve wanted to bring up issues that will be discussed later in this meeting, and update the status of various mission activities of interest to the GUG.

As reported in an email to the GUG, and as discussed, the LAT team has agreed to add to the list of sources whose fluxes and lightcurves the LAT team will post the 5 additional posted sources discussed at the last telecon, based on input from different groups.

GLAST outreach is active with telecons, and is producing materials for science writers. There are talks at conferences and meetings, messages in the AAS and HEAD newsletters, and a planned visit to GD by HQ and GSFC management.

The NRAO MOU has been signed. The NOAO MOU and various other documents will be discussed later in the meeting.

CRESST has proposed to run the GLAST Fellows Program. HQ has seen the proposal, and the mission has iterated the proposal with CRESST. We are planning to accept it. Steve asked the GUG form a sub-group to advise the Project on the Fellows program, including comments on the first draft call for applications, which should be ready soon. Former Fellows from other missions will also be consulted. The call for GLAST Fellows proposals will be posted by Sept.-Oct.

Steve asked for any additional suggestions on how to get the word out about the NRAO-GLAST joint proposal opportunity.

We will discuss the handling of non-compliant Cycle 1 proposals, particularly proposals that mention access to the LAT proprietary data.

**LAT status and schedule, upcoming milestones (Peter):** The LAT Instrument and Science Operations Center (LISOC) is fully engaged in preparing for operations; their staffing is nearly complete. Release 1.0 of the flight software will be released 6/26; this release will include burst trigger, localization and telemetry software. The root cause of the resets was identified and the software was modified to handle the issue; there have been no subsequent resets, and the LAT team looks forward to more hours of operation to verify that no additional problems exist. The service challenges are spurring software development. The next collaboration meeting at SLAC (during the 1<sup>st</sup> week of August) will discuss analysis tasks. SLAC is outgrowing the facilities housing its computing resources, but GLAST is OK for now.

**GBM status and schedule, upcoming milestones (Chip):** The GBM Instrument Operations Center (GIOC) review (5/14) showed that software development is behind schedule; there were 14 recommendations. The LAT and GBM teams are developing policies for joint analysis and publication. The GBM team is about to release an

instrument paper draft. The mission and LAT papers are being drafted. The GBM's two pressing issues are: German participation in I&T (complications from ITAR issues are being worked with the GLAST project and General Dynamics); and the ground software schedule.

**GSSC status and response to Beta Test (Chris):** A programmer was added to the GSSC. The GSSC is participating in ground test simulations. A GBM tool will be released for the beginning of Cycle 1. For Cycle 2 proposals we will provide (on a website and in the Handbook) a list of the tools that will be available for analyzing the LAT events. We need to discuss and then announce when tools will actually be released (now scheduled for Launch + 6mos.).

**GSSC preparations for GI proposals and cycle 1 (David):** For proposals that incorporate the new NRAO joint agreement, proposers will report the proposed NRAO observations on both the RPS webform and the scientific justification. Buell stated that NOAO finds the Chandra-NOAO joint program gives the most problems because NOAO sometimes cannot find sufficient information in the scientific justification to plan the observation; in one case an approved proposal requested a non-existent capability. Consequently, the details of the proposed observation should be grouped together in the text. This should be less of a problem for the GLAST-NRAO program, since the implementation plan includes a technical evaluation by NRAO and the presence of NRAO experts when the peer review panels meet.

Steve stated that Julie will provide source sensitivity maps to the GSSC in the near future.

David reported that the helpdesk has been receiving spam. Steve and Padi asked whether the helpdesk e-mail address is compromised. Padi mentioned that David Friedlander could install spam filters; David responded that he already has, and they appear to be working. Henric asked how much people-power is available for answering helpdesk queries. David responded that he was uncertain. David was asked whether the helpdesk queries get a ticket ID, and he responded that not only does each query get an ID number, but each query begins an e-mail thread in the helpdesk archive. Matthew asked about the response time, and David responded that less than a day is planned. Roger reported that the Chandra helpdesk load varies dramatically over the GI program cycle.

David stated that the proposal and source types are requested on the RPS form to assist the GSSC assign the proposals to review panels. Matthew asked whether the proposal schedule could be changed as a result of a launch slip, and the answer is "no" for any small (~few month) slips for now.

**Discussion of Survey vs. Pointing (AI#34) and Obs. Modes memo (Julie, not present):** We should consider this issue after a year of survey mode observations. Wim felt that the loss of exposure away from the pointing direction during a pointed observation was not extreme.

Scott Ransom described the reason pulsar scientists would want pointed observations for blind pulsar searches. A pointed observation will increase the count accumulation rate by a factor of  $\sim 3$  over survey mode. Young pulsar timing instabilities can be on the timescale of accumulating the  $\sim 300$  counts needed for a period determination in survey mode (approximately a few months). Pointed observations will typically need to be about a month long; scheduling a few such observations every year is feasible. The pulsar position needs to be known to a few arcminutes.

Wim pointed out that a truly blind pulsar period search in the flux of a GLAST gamma-ray source will be carried out only after a search for a pulsing radio or X-ray source in the GLAST error box.

Nonetheless, the consensus is that the current draft of the document focuses too much on the drawbacks of pointed observations, and may not discuss the benefits sufficiently. Josh feels that the survey should probably last 2 years, so that pointed observations should be considered more seriously in Cycle 3. However, he pointed out that pointed observations of obviously high priority regions (e.g., the galactic center) could be scheduled to accommodate a variety of different investigations and maximize planning for joint observations (e.g., be conducted in June for maximum optical/IR coverage). In Cycle 2 GIs will have access to pulsar events for the first time. On the other hand, Wim thinks that the first year's observations may reveal candidates for pointed observations. A proposed Action Item (see below) is that Scott should join the observations strategies subgroup (Julie, Scott, Peter, Luigi, Reshmi). It is also possible that sky survey orbits could be periodically inserted into a pointed observation to maintain the sky monitoring functions (albeit at poorer sensitivity) for bright flares and other transients. This should be considered by the subgroup. The document should be posted when ready, but no later than the preparations for Cycle 2. This will be discussed at the next telecon.

**GI vs. Team proposals and Policy issues (Steve, Rick, David):** GI proposals are for publicly released data, and should not propose to use proprietary LAT data. People can (and are encouraged to) propose to observe sources at other wavelengths that will most likely be LAT sources without access to proprietary data. How should proposals that do say they will use proprietary LAT data be treated? Rick says that if a proposal is non-compliant—the proposal states that proprietary LAT data will be used—then the peer review panel will be told to disregard the non-compliant part of the proposal; NASA HQ might disregard a panel's recommendation if it appears the panel did not follow these recommendations.

How panels should regard proposals that have team members as investigators was discussed.

Peter was asked to remind LAT team members about the rules of the GI program to help prevent non-compliant proposals.

**Discussion of signed NRAO MOU (Steve):** The MOU has been signed, and a press release has been issued. An implementation agreement is being iterated, and is being

implemented in the proposal process. An upcoming HEAD newsletter will announce the program, and we will try to get it into the NRAO newsletter (done).

**Update on NOAO MOU discussions and draft (Buell, Steve):** The draft NOAO-GLAST MOU is based on the NRAO-GLAST MOU. The MOU will include examples of how such observations will be useful. TOOs will go through the NOAO TAC. The MOU may be concluded for some telescopes for the GLAST Cycle 1 proposal period. The allocation will be ~5% on a number of telescopes; the time unit is 'nights.' Simultaneous observations are historically difficult to schedule, but might be easier for the GLAST program because of GLAST's survey mode. The GUG is enthusiastic about implementing such an agreement for Cycle 1; a draft MOU hopefully will be available in ~2 weeks.

### **Consideration of Open Action Items**

• **AI 7. Science Policy Document (Steve, Roger):** The current draft's revisions, which address previous GUG inputs, are:

- The GUG rename is implemented throughout the document.
- The text now describes the plan for how the SWG functions will be continued by the GUG later in the mission (§2.6).
- The predominance of survey mode is mentioned in the first paragraph of §4.
- The data levels were corrected in §5.1.1.
- Large proposals should produce key results. 'Large' means either a large budget or a multi-year program. Four, not five, such proposals will be accepted per year (§6.2). Only progress reports need to be submitted each year for the research program in a Large proposal (§6.2.1). There was a long discussion about how the progress reports should be reviewed. There was also concern about the financial impact of the large proposals on the rest of the GI program. The size of the overall large proposal category will be monitored, and the number of proposals accepted in a given year will be adjusted to keep the category from overwhelming the GI funding; the SPD will say no more than 30% of all the GI program will be allocated to all concurrent multi-year programs. The final consensus is that the progress report will be reviewed by the program scientist, the project, and a possible external reviewer (e.g., the chair of the panel that originally selected it) when deemed necessary.
- Typos were fixed.

This AI is considered closed, and the SPD will be released and posted on the GSSC site.

• **AI 20. Observatory parameters and SOOG (Steve):** The Science Operations Oversight Group (SOOG) will oversee the instruments' and spacecraft's adjustable parameters that affect science. The instrument and mission Change Control Board (CCBs) will administer the parameters, but the SOOG will disseminate, discuss and approve the changes. The mission elements and the SOOG must have good communications among and within themselves. The categories of parameters that will be under SOOG control were presented. Currently the SOOG will focus on the onboard operating parameters, but eventually the ground processing will be included.

Roger concurred that this process is important. He pointed out that changes ripple through the system: a change in one organization may require other CCBs to respond. Chandra has a flight director's board that functions as a CCB for a set of parameters.

Don asked whether there will be a log of changes; Steve pointed out that since the GSSC is a member, the GSSC should post the changes. Chandra includes changes in the users' guide. The GSSC website should include this information, either directly or by mirroring IOC websites. The GUG chair will represent the GUG, and the GUG will discuss the changes, at least initially.

This action item is closed.

- **AI 36. RPS forms: "GUG will 'try out' RPS forms" - need quick demo/trial (David):** The RPS forms that are to be demonstrated to satisfy this AI are relevant to Cycle 2, and will be presented before the Cycle 2 proposal period. This action item remains open.

- **AI 38. Incorporate analysis threads developed for DC2 into Tools (Julie, David):** This AI was opened to capture in analysis threads the DC2 lessons Julie reported, but Julie is not present. This action item remains open.

**GI Workshops: progress report and plans for Boston (Steve, Josh):** The workshops at GSFC, Argonne and UCLA were successful, and differed from each other as a result of the people who were present. The websites for the workshops archive the slides from the talks. The next workshop will be at Harvard on 6/21. An attempt is made to bring together scientists in the region, and encourage them to plan GLAST-related research projects. Another workshop will be held here at GSFC before the proposals are due, and an additional one may occur in Northern California. Scientists are coming from a greater distance than anticipated. Buell suggests that we tape and post presentations. The Boston workshop should be posted on the GSSC website. The GI program is discussed at both the beginning and end of the workshops since people come and go during the day.

**Reflections on GLAST Sci. Symp.; future meetings GLAST rep. (Steve, Peter, all):** ~275 abstracts were received and more than 333 registrants were present. Steve felt that the attendees showed great cross-disciplinary interest. 213 conference proceedings papers were submitted, which will result in 610 large format pages. The editors checked over the format and the comprehensibility of the text. The proceedings will be released in the Fall. All the papers will be linked to ADS; SLAC would also like the papers linked to SPIRES. Many authors added their posters to the meeting website.

**Upcoming talks/posters (all):** The GBM team plans to resurrect the Huntsville GRB meeting in Fall, '08; the meeting will be co-sponsored by Swift. The second GLAST symposium will be in the DC area; policymakers will read about the scientific results in the Washington media. A concert in association with the symposium is being considered (a GLAST-related piece may be composed). The meeting will be in Spring '09. At the

January AAS, 2009, the LAT team can discuss the preliminary list of detected sources. The next HEAD meeting will be April, 2008.

The SAE workshop will be in August, 2008 (tentatively).

There has been discussion of an earlier release of the analysis tools. A first release of the tools during Cycle 1 needs to include data on which the tools can be run; should these data be real or simulated? Josh would like real data. Steve pointed out that simulated data could in some important ways be more representative of the actual data, since they will cover the whole sky. Discussion will continue as the time approaches. The consensus is that the tools should be released 6 months after Cycle 1 begins.

The GUG gamma-test of the analysis tools should include additional testers outside of the GUG.

**Announcing the NRAO program:** A notice can go out on the NSPIRES mailing list.

**Fellows program subgroup:** This sub-group will provide input and feedback. The sub-group will 'meet' by telecon ~3 times per year. Matthew and Buell were fellows (CGRO and Hubble, respectively), and volunteered; Roger will also serve. In the future, former GLAST Fellows may also be recruited. Former fellows of other missions will also be consulted. Buell suggested □ the name of a current Hubble fellow □ to □ be consulted about fellows programs.

**INTEGRAL (Wim):** GLAST is often mentioned in connection with INTEGRAL. A review considered the continued operation of INTEGRAL. XMM was also reviewed, resulting in a sense of competition between the two missions, but the review recommended that both missions continue. INTEGRAL faces another review in the near future. The INTEGRAL team has been emphasizing the synergies between GLAST and INTEGRAL: GLAST can indicate when a source is in outburst, triggering an INTEGRAL observation.

**Other:** Steve expressed a concern that our workshops and conferences have been USA-centric; we need to increase the international meetings. Holding the 3<sup>rd</sup> GLAST symposium in Europe should be considered.

**Tuesday, June 5:**

**New AIs:**

**AI 43:** Scott will join the observation strategies subgroup (Julie, Scott, Peter, Luigi, Reshmi), which will consider the optimum use of pointed observations to meet multiple science goals as well as survey objectives. The document should be posted when ready, but no later than the Cycle 2 proposal preparation period. The document should assist

potential Cycle 2 GI proposers and guide the drafting of the Cycle 2 ROSES text. Julie will lead the effort. Expected closure: 11/07.

In discussing observing strategies, both a pointed observation covering many sources and a scan mode along the Galactic plane were suggested.

**AI 44:** Buell, Matthew and Roger will advise Steve regarding the definition of the Fellows program. Assigned to Steve. Expected closure 9/07.

**AI 45:** David will add a proposal checklist for the GI proposals. Expected closure well in advance of 9/07.

**AI 46:** The GSSC will report on the plan to track and post the SOOG parameters. Assigned to Chris. Expected closure 9/07.

**AI 47:** David and Rick will circulate within the GUG the slides with the instructions to the peer reviewers that will be shown at the beginning of the review. Expected closure 9/07.

**AI 48:** Steve and Buell will circulate to the GUG the draft GLAST-NOAO MOU and will discuss the program at the next GUG telecom. Expected closure 9/07.

Two activities of the LAT team are included in the ROSES text as projects for which GIs will not be funded. Chip said that there were GBM projects that were similarly proposed in the GBM proposal, and should be off-limits for GI funding. David said that he was never instructed that GBM projects were off-limits. This needs to be resolved.

**AI 49:** Don, Steve, Rick and Chip will clarify how the GBM scientific projects (e.g., the burst spectroscopy catalog) should be treated by the GI program. Expected closure 9/07.

Roger said that Chandra had a pre-launch exercise defining people's relations to the data; everyone involved had to sign a document stating how they will use the data. Since the GLAST instrument team collaborations are more diffuse than Chandra's team, the PIs are responsible for communicating the policies to their teams. Buell related a case where such a document was used to resolve a dispute within a collaboration. A LAT team member may propose to other programs (e.g., for observing time) based on access to proprietary LAT data.

**Summary of SWG Activities (Steve):** The SWG was formed after the mission was started, and includes the PIs, the IDSs, project scientists and project members (ex officio). The SWG advises the project on issues related to the science requirements. Steve described, and the GUG then discussed briefly, the role of the IDSs on the SWG as well as the likely post-launch role of the SWG.

Future meetings: Monday-Tuesday 9/24-25, at GSFC. Meeting changed to 9/17-18 pending polling members who are not present. Telecon at 11:30 EDT 8/9.



Adjourned at 10:15 am

A tour of the GLAST MOC followed

Science talk during lunch: the Swift "fill-in" pointing program and implications for GLAST (Stefan Immler)

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## Agenda

### Monday, June 4:

Welcome and Introductions (Josh, Steve)

Review February '07 meeting and April '07 Telecon Minutes (Josh)

Mission Update - the view from HQ (Rick)

Project update, including update on launch schedule (Al Vernacchio)

LAT status and schedule, upcoming milestones (Peter)

GBM status and schedule, upcoming milestones (Chip)

GSSC status and response to Beta Test (Chris)

Break

GSSC preparations for GI proposals and cycle 1 (David)

GI vs. Team proposals and Policy issues (Steve, Rick, David)

- disposition of "non-compliant" proposals (e.g. LAT team GI proposals making indirect use of photon data)
- multi-year proposals and language in cycle 1 NRA; instructions to Peer Review

Discussion of Survey vs. Pointing (AI#34) and Obs. Modes memo (Julie)

Lunch (in conference room) - pick up lunch and munch over GSSC tools:

Brief Demo of cycle 1 proposal prep. tools (e.g. sens. maps, etc.) (David)

Multiwavelength observations and planning/coordination

- Brief discussion of signed NRAO MOU (Steve)
- Update on NOAO MOU discussions and draft (Buell, Steve)
- General discussion of how to further engage the Community in MWObs (all)

Consideration of Open Action Items (hold-overs from April Telecon)

- 7. Science Policy Document: current draft (Steve, Roger)
- 20. Observatory parameters and SOOG (Steve)
- 36. RPS forms: "GUG will 'try out' RPS forms" - need quick demo/trial (David)
- 38. Incorporate analysis threads developed for DC2 into Tools (Julie, David)

Break

GI Workshops: progress report and plans for Cambridge (Steve, Josh)

Reflections on GLAST Sci. Symp. ; future meetings GLAST rep. (Steve, Peter, all)

- Upcoming talks/posters (all)
- How to further increase GLAST awareness & community (all)

Discussion session of Committee - general discussion and possible new action items

Adjourn

GUC Dinner at local restaurant. Directions will be provided

**Tuesday, June 5**

Coffee, rolls to feed conversation/collaboration

Continued discussion of possible new AIs (Josh)

Summary of SWG Activities (Steve)

Hands-on GUG-Beta Testing of RPS or proposal Tools (David, ALL)

Break

Tour of GLAST MOC (or preparations for this?) (Steve, ...?)

Lunch (in conference room) and Science Talk (continued, GUG day2 lunches): Swift "fill-in" pointing program and implications for GLAST (Stefan Immler)

Open discussion by Committee: what have we missed? (all)

NEW business; what else should we be focusing on?

Date for next GUC meeting

Adjourn