

GLAST User's Group (GUG)

GSFC, Bldg. 2, Rm. 8
September 17, 2007

Present:

User's Group Members: Josh Grindlay (Chair), Matthew Baring (by phone), Buell Jannuzi, Don Kniffen, Henric Krawczynski, Reshmi Mukherjee, Luigi Piro, Scott Ransom, Jim Ulvestad, Ann Wehrle

Ex Officio Members: David Band, Lynn Cominsky, Neil Gehrels, Rick Harnden, Julie McEnery, Chip Meegan, Peter Michelson, Steve Ritz, Chris Shrader

Colleagues: Sandy Barnes, Analia Cillis, Robin Corbet, Kevin Grady

Meeting called to order at 8:40 am

Introductions & goals for meeting (Josh)—One of the meeting's major goals is to review the submission of Cycle 1 proposals.

News from HQ (Rick)—Steve, Julie and Rick met with Jon Morse (8/22), and Friday Steve and Peter will meet with Associate Administrator Alan Stern. These meetings are to inform the new senior NASA management about GLAST. Stern is interested in SMD's missions' 'turning heads.' Stern is also concerned about adequate support for data analysis.

Project status, schedules (Kevin)—The observatory is nearly totally integrated. The LAT FSW with a burst trigger has been loaded. Almost all the spacecraft components have been integrated (including the Ku band equipment, the LAT radiators and the solar panels). The battery and flight release mechanisms will be installed at the launch site. Environmental testing is currently in progress: EMI testing has been completed, and the sine vibration, acoustics and shock tests are upcoming. Thermal-vac is the final environmental test.

The primary schedule threats are: a DOD program at General Dynamics experienced a hardware failure that slipped their thermal-vac test; consequently the GLAST observatory will undergo the test at NRL. This will result in a schedule slip (see below). Reaction wheels that are similar to GLAST's have failed in orbit; these are lifetime issues, in the worst case so far equivalent to five years of GLAST operation or longer, and they are thought to result from damage due to launch loads. Mitigation of these loads for GLAST by dampers is being developed. The flight battery had an anomaly during a random vibration test; the issue is under investigation. GLAST is in the I&T phase where each step is serial, and minor events (e.g., lightning strikes near the facility) can affect the schedule.

The schedule of upcoming events includes both hardware and ground system tests. NASA HQ initiated a technical review of all the steps in the schedule, looking for ways to increase schedule contingency. One result is that there will be fewer thermal-vac cycles, but the incremental risk is considered to be very small; staying at constant temperature longer is thought to be a better test, and all of the testing at the long temperature soaks has been preserved. Cutting other tests was considered, but rejected. The launch campaign schedule is under discussion with HQ, but is now expected to be in the March-May timeframe. The spacecraft will be transported from NRL directly to the Cape, without being transported back to General Dynamics. The new launch readiness date will be announced after review with HQ.

Mission Science Update & Issues for the GUG (Steve)—We need to consider how GLAST's timeline planning is informed of multi-wavelength campaigns that assume GLAST will be in survey mode. Similarly, we need to consider whether we will have 'target of survey' periods that will ensure that GLAST is in survey mode during observations at other wavebands. These were discussed later.

GUG members (past and present) will be invited to the launch, and need to provide information to be requested in an upcoming e-mail.

Scientific American has solicited an article on GLAST and fundamental physics, currently being drafted by Bill Atwood, Peter Michelson, and Steve Ritz. Expected publication date is December.

LAT News (Peter)—The LAT team has been getting ready to do science. A LAT collaboration meeting was held in early August that furthered software development and analysis techniques. In early September the International Finance Committee met; the international agencies continue to support GLAST. The next collaboration meeting will be at (or near) NRL the week of November 12. Josh asked how software tools developed at different institutions in the LAT collaboration were shared or checked. Julie answered that all software is developed in a coordinated manner by the international collaboration, not separately in each institution. This has been the case since the beginning of the project.

GBM News (Chip)—There are no hardware issues. A draft of the GBM instrument paper was circulated to the GUG; comments are solicited. The ground software is now ahead of schedule. Testing at NRL may become an issue because of the difficulty getting the German collaborators into a secure area. One of the tests considered for reduction in the schedule review (see project status above) was the GBM source survey. The GBM team insisted this is a necessary test for them, and both the GLAST project and NASA HQ agreed. Chip continues to be concerned there will be schedule pressure to descope the survey. Giselher Lichti has retired and Jochen Greiner is now the co-PI; Giselher is still involved.

GSSC News (Chris)—The Cycle 1 proposal process has been the main GSSC activity (reported on next). The project held a review of the GSSC; development of the GSSC is considered on schedule. The GSSC will participate in the Flight Operations Review. The GSSC staffing profile is flat through launch plus one year. The GSSC, Steve, Julie, and Neil had a TOO walk-through.

GLAST Cycle 1 (David)—David presented a statistical breakdown of the received Cycle-1 proposals by scientific topic and proposal types. Of some interest (and discussion) to the Committee was that Theory proposals constituted ~25% of the total (whereas the nominal level of support was advertised to be ~10%). David also provided stats on helpdesk requests as well as a few problem areas e.g., maps of source detectability across the sky were available only ~3 weeks before the proposal deadline, and GLASTspec was awkward with its 1keV pivot energy. The committee requested to look at a distribution of the “total estimated budget” requests, but this was deemed inadvisable by HQ. It was stated that the dollar over subscription (based on the total estimated budget figures) was over subscribed by a factor of ~4, and that the distribution of budget requests had a standard deviation equal to about one third of the mean.

The committee (notably Peter) questioned the wisdom of hiding cost information from the review panels given that money will be the only significant resource allocated by the program. Rick steadfastly reiterated that this was NASA HQ policy for the review of all proposals received in response to the ROSES solicitation, and that GLAST could not be an exception.

NRAO Joint Proposal Issues (Jim)—Jim will send David and Chris a sample of the technical reviews written for the Chandra-NRAO joint proposals. Jim plans to attend the Cycle 1 peer review. The EVLA construction will change the VLA array schedule. Three GLAST-NRAO cooperative proposals were received (such proposals are necessary for TOO and very large observations). Implementation of the formal implementation plan will ultimately require flexibility. The NRAO TAC will meet in November, before GLAST’s peer review, but results will be announced in January. Steve and Rick (and the Committee) applauded Jim’s efforts to create this program.

NOAO Joint Proposals Issues (Buell)—Some proposers to the GLAST program did not understand that NOAO TOO observations must also be proposed to NOAO (under the cooperative program). The ReSTAR program (under study by NOAO) is considering more opportunities for remote observing, which should be of interest to GLAST users. Buell will send David (GLAST POC) a NOAO POC for the NOAO technical review. Successful proposers for Gemini observations must send in a full NOAO proposal (in 3/08) to schedule the time. Steve and Rick (and the Committee) applauded Buell’s efforts to create this program.

Comments From GUG on the Cycle 1 Proposal Submissions—Henric circulated comments from the VERITAS collaboration (David addressed many of the issues in his GI program presentation). VERITAS scientists found it difficult to propose for software development when the SAE has not been released. They are interested in the release of

the SAE tools and of simulated data for the preparation of Cycle 2 proposals. GLASTspec's power law model should not have a keV pivot (which correlates the normalization and the spectral index), and fits sometimes did not convert. A GLAST PIMMS would be useful for source detectability. Why do large numbers of targets have to be entered into the RPS form? The GUG required this. Chris noted that it is possible to upload a file with a list of targets. The helpdesk was useful.

Ann appreciated the rapid response of the helpdesk. She pointed out that the launch delay will affect proposals for correlated observations. Perhaps proposers should be allowed to submit a one page update in which the proposers provide fallback dates for observing campaigns. Josh does not understand whether this is a GLAST program review issue. Steve asked that the NOAO and NRAO technical review address scheduling issues, particularly resulting from the likely launch slip. Asking for a proposal update may violate NASA regulations. Chris suggested asking the proposers for an update through a webform; thus proposers would not be getting an additional opportunity to pitch their project. All proposers for correlative proposals could be queried as to whether their proposals would be affected, and whether they could tolerate the slip. Steve and Josh suggested that David and Chris look over the proposals to determine how many proposals are affected by the slip, and Rick should check whether updates are permitted.

New AI: Rick will check whether NASA HQ whether permits updates of submitted proposals. David and Chris will review the submitted proposals to determine how many may be affected by a launch slip.

Should the limit on accepted theory proposals of no more than 10% be lifted given that 25% of the submitted proposals are in theory? Rick suggested that the proposals be ranked by merit independent of type. However, NASA does have a 10% guideline. If the theory proposals are particularly meritorious, the GUG and the peer panel can recommend that more than 10% theory should be funded. Josh pointed out that Cycle 1 is special in its size, the data available, and the potential service to the mission. Don stated that the community was informed of the limited theory fraction, and this might have guided decisions about preparing proposals. Rick pointed out that missions are expected to fund theory related to their missions. Josh summarized that there should be flexibility but the proposals should be judged on the science.

Coordination with Spitzer (Ann)—The last proposal deadline is likely in November because the cryogen will run out in April, 2009. The director's discretionary time allocations have been generous to blazer observers. The over-subscription last year was ~4:1, and only the top 25% of the accepted observations are put in the top priority class. The Spitzer proposal review team should be updated with the GLAST launch date. The GLAST project should discuss the possible use of Spitzer discretionary time given the GLAST launch slip.

Report on Swift/GLAST overlap and planning (David)—See posted slides.

GLAST Fellows Program Planning, AI 44 (Don)—Steve reported that the program was discussed by a sub-group (Don, Matthew, Roger, Buell and Janice Lee, a Hubble Fellow). Fellows will be employees of the host institution. The applicant does not need a PhD while applying, but must when he/she assumes the position.

Don summarized the program. There is no limit on the years post-PhD but the competition and salary probably bias the program to young scientists. The fellows program will be run by CRESST. In a given year only one fellow can be hosted by an institution (different departments in the same university are considered different institutions). Institutions cannot collect indirect charges against salary and benefits. Both laboratories and universities are equally acceptable host institutions. Buell stated that US institutions have a common post-doc notification and response date; Steve agreed that we should honor these dates. Ann mentioned the fellowship salary is \$2-3K below the other fellowships. The consensus is that the salary should be the same as the others; the small difference can make the GLAST program appear less prestigious.

The announcement will be posted Oct. 1, and will be sent out to a number of e-mail lists, after the CRESST Fellows website is live.

Plans for Gamma Test of Software Tools (Chris)—The second beta test (the gamma test) is scheduled for mid-December. GUG members and some additional scientists will be provided with the tools and data, and asked to test them. Testers will be assumed to focus on their scientific specialties. The goal is a total of ~25 testers. The conclusions from these tests will be discussed at the GUG's subsequent F2F meeting. Henric asked about the data that will be provided, and Julie stated that an updated version of the DC2 sky (from SC2) will be provided. This schedule will allow fixes and revisions to be implemented by L+6 months, with an SAE release in the middle of Cycle 1. Josh asked about the state of the documentation, and Chris stated that some holes are being plugged.

Action Items

AI36—The closure date of AI36 needs to be corrected.

AI38—Threads from DC2 (Julie)—Julie had been asked how data points could be calculated for a spectral energy distribution. Julie said that the LAT team is being encouraged to write analysis threads based on the service challenge. Josh asked about the mechanism of creating new threads. Julie said that team members are encouraged to work with Chuck Patterson, the LAT team's technical writer. Josh asked how the GSSC decides what threads should be provided to the world. Peter said that the LAT team should not be responsible for all the threads. Steve said that threads from the non-team community should be encouraged and accepted. The AI remains open, at least until after the gamma-test.

AI43—Pointing vs. scanning considerations (Julie)—Julie's simulations used for comparing pointing vs. scanning were near-optimal for uniformity during pointing mode, and therefore additional studies to increase the uniformity during pointings are

unnecessary. Also, with the new understanding of visibility constraints, the time-on-target in pointing mode will be less than initially projected. Julie wants to update the pointing vs. scanning document by quantifying the increase in exposure for pointing observations, but does not want to expand the scope to include the scientific value of pointing observations. Josh said that the issue was whether pointing at some high value fields (e.g., the Galactic Center) might be useful. Could the objective of sky survey be achieved through a series of pointings? Peter said that the Cycle 2 peer review should decide whether there were pointings that satisfied a number of proposals. Luigi said that the uniformity of survey mode appears to be affected by pointing for 10-20% of the observing time, and therefore the criteria that should be the value of pointing on this timescale. Steve said that we should decide and post soon the information that would be required for pointed observation proposals to be successful. We should also consider the advantages of mixing survey and pointed observations on the timescale of one day. Survey mode could be tuned using different criteria (e.g., uniformity of sensitivity). Josh pointed out that the AI stated that the document should be updated for Cycle 2 proposal preparations. This document should not presuppose the readers' knowledge of details of GLAST's observing modes. It is not crucial to get this information out in the next few months, but the information should go out as soon as possible – it will take some time for the community to digest – and certainly well in advance of the Cycle 2 proposal preparation period. Thus Julie will update the document. Scott will put together a few summary statements and figures, which may be posted on the GSSC FAQ. The AI remains open.

We need an internal website to post drafts of GUG documents that not ready for release to the community. **New Action Item:** J.D. will set up a password-protected GUG website.

AI44—Closed above

AI45—Check list for GI proposals (David)—Closed

AI46—GSSC plans/progress for SOOG param. Tracking (Chris)—Steve said that the purpose is presenting to the community changes in the SOOG parameters and their scientific meaning. A simple list of the parameters would not be useful. The AI remains open.

AI47—Draft instructions for GI Peer Reviewers (David, Rick)—David presented an outline of these instructions in his GI program presentation. AI closed.

AI48—GLAST-NOAO MOU—The MOU is signed, and thus the AI is closed. Many thanks to Buell!

AI49—Clarify GBM science projects vs. GI program (Don, Steve, Chip)—Rick will write a letter to the GBM team stating the team's science projects. The peer review committees and the GI community should know what science projects GBM team is

doing, but GI proposals are not restricted from proposing the same science. The AI is closed.

New AI: The GBM team science projects will be described in GLAST's Cycle 2 ROSES text.

Josh asked whether creating a LAT point source catalog should be off-limits for GI funding, as is the current policy. Peter suggested that not permitting GI funding for creating point source catalogs in Cycle 2 makes sense since the first year catalog (and an assessment of its quality) will not be available during the Cycle 2 proposal period. Don stated that we need to define what is a catalog. Josh summarized the consensus that an alternative source catalog (positions, fluxes in different energy bands, tentative identifications) based on LAT data may be funded by the GI program in Cycle 3 or later.

Next GUG telecom—Friday, Nov. 30, 11:30 EST

Next GUG F2F—Friday, Feb. 1, at GSFC. Topics will include the wrap up of the gamma test. This will be the meeting for the rotation of old members off and new members onto the GUG.

Peer review panels—Buell questioned whether 4 panels are necessary; NOAO TAC members typically review many more than ~40 proposals, and the recommendations of fewer panels would be easier to merge. The GLAST science for the topics covered by some panels may be more compelling than for others. Given that the panels only produce a ranked list, some questioned whether a merging session was necessary, but the consensus was that a merging session would be useful. Chris stated that multiple panels would help with resolving conflicts of interest. Rick described the review process as instructing the panels that the breakpoint would be ~25% down the ranked list of proposals, and the merging session would then compare the proposals near the breakpoint. Jim agrees that 4 panels makes sense, but the panels may require less than 8 reviewers each.

EPO updates and news (Lynn)—Online games are under development. GLAST is on MySpace, and has 194 friends. Press releases are posted on the MySpace site. GLAST will join Facebook. The AGN popup book has been approved. The Night Sky Network joins ~200 amateur astronomy clubs; the EPO program is creating a toolkit about supernovae for this network. The Planetarium program is showing in 27 places around the world, and is also available on the SpaceRip channel (www.joost.com—requires a free subscription). GTN observed 3C454.3 during the recent campaign.

Adler Planetarium is interested in doing a webcast of GLAST's launch. EPO is working on GLAST-related content for AstronomyCast (a podcast). A GLAST launch goodie bag is being assembled; bags will also be sent to GLAST institutions for those who cannot get to the launch. The soon-to-be-released GLAST litho has a mission description and pulsar activity on the reverse (as required by NASA policy).

Media day is at GSFC 9/19; a dozen writers will be here.

The official NASA website—www.nasa.gov/glast—is live. Rob Gutro is responsible; comments should be sent to him.

Knowledge of Dependence on Survey Mode (Steve)—Steve raised the issue is how GLAST will know that a multiwavelength campaign is relying on GLAST's survey mode observations. If a campaign in progress is sufficiently high priority, GLAST may not approve a requested TOO observation that would disrupt the campaign. Julie stated that proposals for guaranteed survey mode should be encouraged in Cycle 2 and afterwards, to allow the peer review to rank the science. Ann suggested that GLAST be informed of upcoming campaigns. Peter proposed that GLAST host a webform that would populate a database of multiwavelength campaigns. Steve mentioned that some observing teams might not wish details of their observing campaigns to be public. Julie stated that the LAT team has collected information on correlated observations, and there are observations for every day during the 1st 3 months, and therefore ranking is necessary. Steve agreed that proposing through the GI proposal process should be encouraged, but we still need a webform through which observers can report their upcoming campaigns. Josh suggested that a continuous movie be available of where GLAST will point, which will be updated when a TOO has been approved. Josh agreed that a webform is necessary.

New AI: A webform and related database should be created for the observing community to provide to the GLAST mission their planned intensive campaign information.

Meeting adjourned at 4:30 pm.

Closed Action Items: 44, 45, 47, 48, 49

Actions Items remaining open: 36, 38, 43, 46

New Action Items:

AI 50—Rick will check whether NASA HQ permits updates of submitted proposals to determine whether proposed multiwavelength campaigns can be rescheduled if they are affected by a launch slip. David and Chris will review the submitted proposals to determine how many may be affected by a launch slip. Assigned to Rick, David and Chris.

AI 51—J.D. will set up a password-protected GUG website. Assigned to David and J.D.

AI 52—The GBM team science projects will be described in GLAST's Cycle 2 ROSES text. Assigned to David and Rick

AI 53—A webform and related database should be created for the observing community to provide to the GLAST mission their planned intensive campaign information. Assigned to GSSC.

Monday, September 17:

- 8:00 Coffee, conversation
- 8:30 Introductions & goals for meeting Josh
- 8:35 News from HQ Rick
- 8:40 Project status, schedules Kevin
- 9:00 Mission Science Update & Issues for GUG Steve
- 9:15 LAT news Peter
- 9:25 GBM news Chip
- 9:30 GSSC news Chris, David
- 9:35 GSSC & cycle 1 David, Chris, others(?)
- proposal stats
- Help desk stats
- problems needing attention
- 9:55 NRAO joint proposals - issues? Jim
- 10:00 NOAO joint proposals - issues? Buell
- 10:10 Cycle 1 comments from GUG all, e.g.:
- GLASTspec problems, need GLASTPimms, software tools? Henric
- others?
- GENERAL DISCUSSION
- 10:30 Break
- 11:00 Coordination with Spitzer Ann
- 11:20 Report on Swift/GLAST overlap and planning David
- 11:40 GLAST Fellows planning Steve, Don, Matthew, Roger, Buell (AI 44)

- 12:00 Lunch and general discussions (no science talk this mtg.)
- 1:00 Plans for Gamma Test of software tools Chris, David
- 1:30 Discuss/resolve open AIs:
- 38: threads from DC2? Julie
- 43: pointing vs. scanning considerations Julie
- 44: check list for GI proposals David
- 46: GSSC plans/progress for SOOG param. tracking Chris
- 47: draft instructions for GI Peer Reviewers David, Rick
- 49: clarify GBM science projects vs. GI program Don, Steve, Chip
- 2:30 Break
- 3:00 New Action Items: general discussion of open issues
- 3:30 EPO updates and news Lynn
- 4:00 Schedule for upcoming meetings (vs. launch?) Steve, Josh
- 4:15 Any final discussion needed?
- 4:30 Adjourn