

GLAST USERS' COMMITTEE (GUC)

MEETING *Minutes*

June 6-7, 2005
SLAC

Present:

Committee members: Josh Grindlay (chair), Roger Brissenden, Jim Buckley, Wim Hermsen, Don Kniffen, Jim Ling, Rene Ong (by phone), Alan Marscher, Reshmi Mukherjee, Rita Sambruna, Greg Stacy, Mark Strickman, Ann Wehrle

Ex Officio committee members: David Band, Neil Gehrels, Rick Harnden, Julie McEnery, Chip Meegan, Peter Michelson, Steve Ritz

Colleagues: Jim Chiang, Lynn Cominsky, Dave Davis (by phone), Seth Digel, Lowell Klaisner, Roger Romani, Steve Thorsett

June 6, 2005

The meeting agenda is included in the Appendix and is posted online, along with the presentations. Agenda speakers are noted in *italics*

Welcome remarks: *Persis Drell* (Greetings)—High energy physicists are learning to work in a different mode through GLAST.

Peter Michelson (Greetings)

Steve Ritz (Introductory Remarks)—The GUC needs to meet more frequently. Propose having telecons every 2 months in addition to the face-to-face meetings; this will enable the GUC to keep up with the AIs and to keep current with mission status.

Josh Grindlay (Introductory Remarks)—Post-meetings remarks are relevant, but should be received within 2 weeks of receipt of the Minutes. The consensus was that such remarks should be archived internally by the GUC but should not be merged into the minutes and should not be made public. In addition, with the GUC's concurrence Steve is setting up a GUC list-serve that will archive all e-mail.

Rick Harnden (NASA Report—presentation posted)—Everyone is encouraged by the new administrator. GLAST is 5th on the list of the Universe Division's key issues. There will be a review of the Science Centers of missions that are currently in space, probably late in the summer. This review appears to be motivated by a desire to learn what works and what doesn't, and not to cut anyone's budget. GLAST's support is secure, but future missions are problematic. The road map process was terminated abruptly, but the results will be used. GLAST has been rebaselined. The attitude towards GLAST is positive, but there are concerns about the LAT's schedule and budget; the feeling is that, as predicted, there should have been more risk assessment. The progress achieved by the scheduled

LAT completion date (Jan. 2006) will be critical for avoiding the possibility of a future descope.

Steve Ritz (Mission Update—presentation posted)—The rebaseline is complete and launch is scheduled for 8/07. NASA HQ has been very supportive in an extraordinarily difficult budget year. The launch vehicle activities continue. Currently any future descope would reduce testing of the last towers assembled (but no towers would be flown totally untested); however eliminating towers could happen if major problems develop with the existing towers. The CAL is complete, and therefore all CAL units will undoubtedly fly. GLAST is paying careful attention to Swift's 'lessons learned.' The ground system is developing: the MOC is moving into its space; the MOC had its first software release; Ground Readiness Test #1 was successful. The spacecraft's structure is done as are 3/4 of the 'boxes.' There continue to be many little fires, such as uncertainty about the Qwknut units for the release of the solar arrays and antennae. Roger Brissenden asked about the milestones for the flight software, which Steve will provide at the next meeting.

Peter Michelson (LAT Report—presentation posted)—Development of the flight hardware is going well: 4 of the 16 towers are installed. Assembly will be completed in 1/06, the LAT will be tested at NRL, and delivery to Spectrum Astro will be in 6/06. The installed towers have been turned on, and particles and gamma rays have been tracked!

The data challenges (DCs) are end-to-end alpha tests of the analysis software. Three are planned with increasing sophistication. DC1 modeled one day (extended to nearly a full week). DC2 will model 1 month, with source variability, and bursts in both the LAT and the GBM. The committee was happy to hear that the diffuse background in the simulated data and the model used in the analysis tools will differ. DC3 will test the analysis pipelines that will be used during the mission. Roger Brissenden asked about the use of the data challenges for verification of requirements. Steve responded that there is a requirements verification matrix that was developed separately from the planning for the data challenges, but that data challenge plans are then leveraged in the verification planning.

Lowell Klaisner (LAT Hardware Report—presentation posted)—Currently there are 7 TKRs and 10 CALs at SLAC. The ACD is essentially complete. Four towers have been installed and two more will be this week. Environmental testing of the LAT will be at NRL (Josh asked why not at GSFC: NRL is also part of the team, and a trade study was done that showed costs at NRL would be lower.). There are various threats to the schedules, such as the vendor for the ribbon cables has yield problems. The DAQ has a number of component and process issues. Since it would be difficult to de-integrate the instrument, each component needs to be tested well from beginning. The failure of one won't take out the whole instrument. An electronic testbed exists and will be kept after launch (the committee toured the testbed facility).

Chip Meegan (GBM Report—presentation posted)—The hardware is being delivered. An end-to-end test is planned ASAP. The build 1 flight software is complete, and build 2 is almost complete. A shock test that did not have properly defined test requirements cracked a crystal; consequently a shock absorber will be added to all the detectors. EMI

violations at the receiver frequencies have been solved and the fixes will be tested. The low energy response is uncertain: at 14 keV the required effective area is 100 cm², but the addition of a Si pad lowered the calculated effective area to 75 cm². The measurement of the pad's absorption alone raised the calculated area to 100 cm², but subsequent measurements of the entire system gave an area of 50 cm². The discrepancies are being analyzed. The critical path is the flight software, which is required to be done before environmental testing at MSFC; the scientific functions may be updated subsequently.

Chip reported on the burst working group's discussion of solar flares. A solar flare might be included in DC2. If a solar flare is included, it will not be so intense as to change the instrument response. To catch the prompt emission from a flare from an active area that hasn't flared yet might require a TOO for several days; the criteria for such a TOO is a policy decision. The GUC noted that at the next meeting a presentation by the Solar Working group or a representative (e.g. Gerry Share) should be scheduled to allow discussion of solar science and TOO criteria.

GSSC Report and Demonstration of Tools being Developed:

David Band (GSSC Report—presentation posted)—A summary of development of WebTools for source detection (sensitivity for a given source location) and source spectrum (a web version of XSPEC) was presented. Tools still to be developed include: the posting of GCN Circulars created by GLAST; posting of TOO's and interface to RPS; and Exposure/Sky maps to show current/accumulated view of GLAST skymaps.

Ann Wehrle (and others) expressed concern that the scheduled 2 weeks between the peer review panel and notification of the rejections is insufficient; in general she would like to see a GSSC schedule for launch plus and minus a year. Jim Buckley asked whether the PDMP shows the expected standard latencies or the required values for response to TOOs; David answered that both will be included.

Seth Digel (Science Tools—presentation posted)—Should blind pulsar searches be included in the tools? Although desirable, they will be very computationally intensive. After some discussion, there was general agreement that not including a full-blown blind search tool in the standard set would be fine; some simple tools would still be useful, if only as examples (see new action item below). Don Kniffen asked whether GALPROP will always be the basis of the model of the diffuse background; Seth answered that while there will be a standard model based on GALPROP, investigators will be able to insert their own. Jim Ling would like to see a written description (e.g., in the PDMP or the Science Plan) of the flow from the detection of a gamma ray by the LAT to the astrophysical analysis.

Jim Chiang (Likelihood Tool Demo)—A very nice demonstration of the current status of the Likelihood Tool capabilities was given. Jim Buckley asked whether all analyses performed by users should be archived given how CPU intensive each analysis will be. The consensus was that this would be difficult to do and researchers may not trust the analyses done by others. Josh Grindlay (and others) suggested that the likelihood

analysis be provided with lots of examples for users. There was agreement that substantial workbooks should be provided with the tools by the GSSC.

Review of Action Items (from the August 2004 meeting):

AI#1 Merits of pointed observations vs. survey mode (Jim Buckley, Julie McEnery—presentation posted)—Alan Marscher suggested that the observability of a source from the ground be included in the figure-of-merit. Jim Buckley described his simulations of Blazar lightcurves to study pointing vs. scanning modes. Steve Ritz state that there may be a very limited source intensity range (corresponding to moderate statistics) for which the difference between pointed and scanning observations will be significant on scientifically interesting timescales; it would be good to rerun the simulations for such sources to quantify the maximum possible benefit. Josh asked what are the practical implications of these results for the GI program? Should we allow proposals specifying that GLAST operate in pointed mode or in “non-standard” survey mode? Should proposals be allowed that will require survey mode during a certain period and not allow pointed mode interruptions? We need to develop clear criteria for the NRA and the peer review panels. The consensus was that this AI should not yet be closed.

AI#2 Policy for Project Scientist discretionary time (Rene Ong, Steve Ritz—presentation posted)—This time allocation would be called ‘Mission Discretionary Time’ (MDT) and would be used for unplanned TOOs, and to study systematics; any remaining time would revert to survey mode. Observations to compensate GIs whose scheduled observations are disrupted might be drawn from this allocation. This time would be managed by the Project Scientist with pre-defined criteria in consultation with the GUC. If needed, the Project Scientist would discuss the use of this time in specific cases with the GUC chair and the Program Scientist. The proposal is for 5 weeks/yr. The consensus is that this AI should be closed, and details will be included in the Science Policy document.

AI#3 GBM sensitivity for BATSE-type sky survey (Jim Ling—presentation posted)—The relative BATSE vs. GBM sensitivity numbers need to be checked, but it appears that the GBM should detect strong sources, particularly when flaring. Converting the BATSE software is estimated at one person-year. Chip stated that this effort is not in the GBM’s budget. It could be done as a GI project, but we cannot guarantee that the peer review panel will approve it. There are no pots of GLAST money for pre-GI funding. However, the NSSTC may fund this project anticipating GI funding in the future. A non-binding statement of the GUC’s support for this project may help, and was drafted (see below). This AI was closed.

AI#4 GSSC-LAT Analysis Software Responsibilities (Dave Davis—presentation posted)—The GSSC and the Instrument teams work together to develop the tools. The basic division of organizational responsibility is that the LAT develops and maintains the analysis Tools while the GSSC is responsible for their packaging, distribution, documentation, and collecting of feedback from the community. The GUC would like to see a release schedule for the tools, particularly after launch, and the plans to notify users

of bugs and changes; such a schedule should address both the LAT and the GBM tools. The AI was closed.

AI#5 The GUC charter (Josh Grindlay—presentation posted)—Some additional issues should be addressed. The GUC chair is appointed by NASA HQ. To whom does the GUC report? The charter states that the GUC reports to both the Program Scientist and the Project Scientist, which is unusual. But other missions (e.g., Chandra) have a Director. The consensus was that the current system works for GLAST. The number of GUC members should be changed from 12 to “about a dozen” (allows some flexibility). The ex officio members should be specified—e.g., the Project Scientist, his/her deputies, GSSC representatives. This AI is closed pending acceptance by HQ and the GUC of a revision of the draft charter, at the next GUC meeting.

AI#6 LAT data release (Peter Michelson—presentation posted)—The LAT’s deliverables are the point source catalog, the diffuse emission model, and Level 1 data.

As guided by the AO, during the first year the LAT will deliver information on: transients—any source with a significant change in flux on a timescale short enough for multiwavelength observations (e.g., GRBs, Blazar flares, solar flares...); and ~20 specific sources. The processed data, but not event data, on these sources will be provided through the ISOC website during year 1. The IDSs will work with the LAT team, as defined by discussions with the PI. The data released during the first year will be high level (e.g., flux, fluence, spectra, source position, errors, etc.) for transients and monitored sources but NOT single event data.

For GRBs the data provided will include LAT detections on board and refined on the ground, upper limits if the GBM triggers, and information on LAT detections. LAT observations of Swift-detected bursts will also be reported. The goal is to give TeV and other observers enough information to guide their followup observations. Based on the discussions, Peter updated the statement about GRB afterglows. A revised Statement of LAT Data Release for GRB Afterglows is attached to these Minutes (please do so, David).

For sources of interest the LAT team will provide an update on relevant timescales with fluxes, spectra, positions, and errors. The best-effort data latency will shorten during the first year. The service will be maintained over the mission. The initial list will be augmented by additional sources when they become bright enough.

A preliminary source list (a very preliminary point source catalog) will be released 6 months after the start of Phase 1 with source positions, fluxes, and spectral indices. The upcoming Data Challenge 2 will be evaluated to determine which parameters should be included in the source list and to confirm this overall approach will work effectively. This preliminary catalog will be released to assist investigators prepare cycle 2 GI proposals, but may also form the basis for proposed analysis by Cycle 1 GIs.

This action item is now closed.

The Cycle 1 GI Program—The discussion of AI6 and LAT data release for year 1 led to a general discussion of the GI program during the first year. If no event data will be provided to the GIs, what will they do? NASA support of multiwavelength observations is traditionally limited to 10%. The GUC favored that cross-mission proposals (e.g. GLAST-RXTE) be supported. It would be advantageous if the community learned during Cycle 1 to use the analysis tools with simulated data and through workshops. But Ann Wehrle stated that the community would have little incentive to go up the learning curve without event data that could lead to publishable results. However, Roger Brissenden replied that workshops are good at stimulating grad student interest; analysis software should be provided even before all tools are complete, and the standard analysis environment should include simulated data.

At one point the 1st year GI program would have consisted of 12 GIs working with the instrument teams. Currently a much larger number of GIs is planned for Cycle 1 but in general they will not work with the instrument teams but with the released data discussed above. Some expressed concern whether enough GIs will propose in Cycle 1 when much less data are available and the community waits to see whether the mission is successful. Others remarked that would not likely be a problem. The NRA should emphasize the research possible with the preliminary catalog that will be available half way through Cycle 1. Steve said that the proposal for year 1 data releases only makes sense if enough information is release to make the GO program meaningful. After some discussion of specific examples, there was agreement that this would be the case. Cycle 1 will include the start of the Fellows program, which the GUC continues to support strongly.

The Committee then recessed for a very interesting and informative tour of the LAT fabrication and integration facilities followed by a Committee dinner.

June 7, 2005

Continuation of discussion of AIs:

AI#7 Science Policy document (Roger Brissenden, Steve Ritz—presentation posted)—This should be a level 2 document that includes all the policy statements. The document should include the press plan (which was drafted more than a year ago and is awaiting HQ approval). An issue to be addressed is whether the GSSC or the instrument teams are responsible for the technical review; Chandra has their SSC coordinate the technical review by the instrument teams. An aggressive development schedule for this document was proposed. The Draft Science Policy Document (SPD) outline was circulated to the GUC during the meeting and is now open for comment. ***GUC members should return their comments during the Review of the Minutes or very soon thereafter.*** An initial draft will be reviewed at the next GUC meeting (by telecom).

AI#8 Demonstration of an analysis thread. Jim Chiang demonstrated a likelihood calculation at lunch on June 6; the demonstration was preceded by Seth Digel's presentation on the status of the tools (see posted presentation). This action item is kept open to allow demonstration of progress on Analysis Threads and Tools at subsequent GUC meetings.

AI#9 Size of GI program and possible DOE support (Josh Grindlay, Steve Ritz, and Peter Michelson—presentation posted)—Funding from other agencies, e.g., DOE, is not expected, and therefore the size of the GI program (number of GIs, size of awards) must be justified to NASA HQ. The GUC agreed with the general size and balance of the GI program as presented and will provide final input on the planned program size in preparation for the NRA for Cycle 1. This action item is closed.

AI#10 Revision of PDMP. David Band provided an update in the GSSC report on the revisions based on the comments from the last meeting. The PDMP is still in progress and will be reviewed at the next GUC meeting together with plans for the Science Policy Document.

AI#11 Legacy program (Josh Grindlay and Rita Sambruna—presentation posted)—The GLAST Legacy Program (GLP – yet another acronym?!) is defined as a large project (e.g., a survey) that is typically a multi-team effort and may involve multi-wavelength studies. GLP projects may be multi-year, but would be re-proposed each year for continuation. The proposed plan is for ~3 projects at any time funded at the level of ~\$250K/yr. NASA allows multiyear projects but they are rare. The consensus was that the peer review panels would be encouraged to consider projects that would require more than one GI cycle, but that such projects would be reviewed and funded only a year at a time. The peer review panel would be instructed to balance short term and long term benefits. The criteria for the GLP will be clearly defined in the Science Policy Document as well as the Cycle 1 (and subsequent) NRA.

The GUC considered the legacy programs of other missions. Because Spitzer has a short lifetime, legacy projects are a major component of the GI program to ensure a long lasting, public dataset. Six projects have been allocated approximately half the observing time and \$1M/yr/project (for a total of ~\$20M/3yr). There are no TOOs, and only preplanned followup observations are allowed. The largest Chandra legacy project is \$350K/yr.

The discussion then shifted to the utility of a GLAST legacy program. More reliable science results from well-formed teams. A legacy project that started in the first year could maximize the use and publication of survey data. Or, should legacy projects start in the second year when photon data are public and the mission performance is better known? But what do the proposers actually propose? GLAST probably will be in survey mode and thus targeted legacy observations are not required. Legacy projects should not duplicate LAT key projects. So what is the ‘legacy’ to be maximized?

The discussion then focused on simultaneous ground based observations as the ‘legacy’ relevant to GLAST’s design. Traditionally NASA does not devote a large fraction of a GI program’s funding to ground based observations, but here it is probably necessary.

A legacy workshop should be held to stimulate interest and provide information; such a workshop should not be devoted to organizing legacy projects. Rather, the community should be encouraged to form these on the basis of the information given. The workshop could be held in conjunction with the first GLAST Science Symposium.

The discussion concluded with Steve Ritz asking whether the legacy projects could simply be the high end of the distribution of GI project sizes, justified on the basis of their value to the mission and broader GLAST user community.

Although general agreement was reached on the scope of the GLP, this action item is not closed until final discussion at the next GUC meeting.

Steve Ritz (SWG Report—presentation posted)—The SWG reports to the Project on the management of the science requirements; eventually the SWG will be merged with the GUC. Steve showed recent SWG agendas and summarized SWG activities since the last GUC meeting. Josh is ex-officio on the SWG to facilitate communication and coordination. The major SWG issue that Steve brought to the GUC is the control over operations parameters.

The policy on controlling the operations parameters will go into the policy document. For example, can GI's request changes in the operations parameters, and if so, which? The instrument teams' flexibility to change parameters will differ between year 1 and subsequent years. Some parameters will be under project control, while others under the control of the instrument teams, with transparency.

The general policy will be that the elements will take responsibility for their parameters, while the GUC and SWG will provide overall policy guidance. A Science Operations Oversight Group (SOOG), with membership defined as: Project Scientist (or delegate), two Instrument PIs (or delegates), GUC chair (or delegate), GSSC lead, MOC lead and 2 Instrument ISOC leads, will meet weekly to review performance, and approve changes to the more tightly controlled parameters.

Roger Brissenden pointed out that the SOOG is essentially a CM board and perhaps could be the same as the Project CCB. Steve replied that the SOOG is a science-based group. There will also be a weekly ground system meeting to ratify the weekly command load, etc; however, he agreed the relationship of the SOOG to this group needs to be established.

Data taken with different parameters has to be tracked. Steve will work with the instrument teams and the Project to compile parameter lists.

During year 1 the GLAST Project and the LAT team will mainly determine parameters, in consultation with the GUC; during year 2 there will be set parameters (for a stable survey), included in the NRA; but during subsequent years there will be greater flexibility. Thus after the second year the issue of GIs proposing changes to the mission's parameters will be relevant.

Chip Meegan—The GUC statement of support for a GBM survey: "The GLAST Users' Committee recognizes the scientific value of implementing the earth occultation technique for the GBM to conduct an all-sky monitor capability. This capability would allow rapid notification to the user community of high-energy transients, enabling a range of GLAST Guest Investigations as well as non-proprietary target-of-opportunity observations." This (draft) Statement was accepted by the GUC as a simple statement of

fact, without implied obligation of support. There was some concern expressed over the precedent set by this statement (what work being done doesn't have value?), but it was agreed that we should deal with these issues on an *ad hoc* basis for now.

Steve Thorsett. Pulsar monitoring for GLAST (presentation posted). GLAST will be important for studying pulsar emission and for population studies because νf_ν peaks at hard X-ray/gamma-ray energies and because the gamma rays are thought to be beamed into a larger angle than the radio emission. Radio observations are required to identify likely gamma-ray sources, for ephemerides (synchronous), to identify unidentified gamma-ray sources, and for pulsar distances. The followup of unidentified gamma-ray sources at large telescopes will be easy to arrange. Determination of the pulsar distance scale (through dispersion models and VLBA parallax) will also be easy. The difficulty will be that, relative to EGRET, GLAST will observe an older, more distant pulsar population for which surveys are less complete and there are more targets. The database of known pulsars is already 5 times larger than when EGRET flew. Follow-up timing for p-dot, E-dot, and binary motion can be done, but a baseline of a year is required to separate position from p-dot. In the current monitoring project, the total radio allocation is 2.6hr/pulsar. Young pulsars have glitches and timing noise. Thus the strategy is to monitor the best pulsars. The monitoring for EGRET was a major effort involving most of the community and its radio telescopes. Currently Jodrell Bank monitors 500 pulsars regularly, and Parkes is doing a followup survey. However, the US facilities are oversubscribed. Thus the question is whether the commitment of Jodrell Bank and Parkes will be as great as it was for EGRET. Most likely a comparable set of pulsars will be studied for GLAST as for EGRET, but a smaller fraction will be "interesting" sources. There is an advisory group for monitoring. Timing will start a few months before launch. At the moment US telescopes are reluctant to commit to this monitoring as a priority. In the past NASA supported this effort through equipment and joint mission-telescope time. If no GLAST resources are devoted to this work then 80% of work will be done (by ongoing surveys), but the other 20% will have to be supported elsewhere (e.g., 3 groups at \$200K/group).

Lynn Cominsky (EPO—presentation posted)—The NOVA show is proceeding; however it can't explicitly 'plug' GLAST. New NASA guidelines enforcing the uniformity of NASA publications and websites result in ugly products that are not appropriate for educational purposes. Chandra was unable to get a waiver, but universities are still exempt. The GUC asked Rick Harnden how we should lobby for changes in these policies. Rick replied this was already being discussed at HQ and that change was possible. Steve asked Lynn to write a brief summary of the problems to give to Rick.

Peter Michelson—Additional sentence about bursts for LAT data release policy: "On-board detections released immediately. Notification of LAT detection of significant afterglow emission (including estimate of range of energy emission and timescale) and subsequent updates to be released as soon as available after processing on the ground. "

New Action Items:

Discussion of new Action Items followed. In order to identify AIs uniquely (independent of GUC meeting), AIs will be numbered consecutively.

Should the GUC participate in DC2? Steve noted that GUC input into the tools will be extremely important and is expected. He suggested, however, that the DCs should be 'messy' tests by the developers (i.e., tools will 'break') and are not the appropriate venue for the GUC, representing the community, to test partially-developed tools. The GUC should beta-test the tools in a workshop; this would NOT be one of the workshops for the general community, since feedback is needed sooner. After discussion, the consensus is that after DC2, about a year from now, there will be a special GUC workshop using the tools, perhaps with a few additional outsiders participating.

Action Item 12: The GSSC and LAT team will plan a GUC beta-test of the analysis tools after DC2. A 3 day GUC meeting will consist of one day for GUC business and two days for the GUC to learn the analysis system. GUC review of the tools should occur no later than 10/06.

How should information about GLAST be disseminated and how should GLAST communicate with the community? The consensus is that an e-mail list (in addition to website postings) would be best. The HEAD list would be a good beginning. GLAST talks should be presented at conferences such as the Chandra conference. The major GLAST science symposium was planned for the end of '06 but the consensus is that it should be held in Feb. '07, 6 months before launch, during the Cycle 1 proposal period. The symposium's program should be a mix of science and information on the instrument and analysis system.

Action Item 13: The Project Scientist will schedule the GLAST Science Symposium taking into consideration the Cycle 1 proposal schedule. Actual planning for the Symposium (e.g. appointment of the SOC) will be done with participation by the GUC. The GSSC will develop a plan for communicating with the scientific community. (Steve Ritz and David Band)

Should the GSSC's support for data analysis by the community be based on intensive human contact (e.g., visits by GIs to the GSSC) or through written documentation? The consensus was the GSSC's plan for online documentation and an e-mail helpdesk will suffice. No action item resulted.

How will the overall description of GLAST data analysis, in an overview sense, be communicated to prospective users and those contemplating proposed investigations?

Action Item 14: The GSSC will develop text describing the end-to-end process from the detection of a photon flux until the resulting photons are analyzed. This text can be included in the PDMP. (David Band)

Action Item 15: The GSSC will present a plan for the proposal tools that will be ready by the GLAST Science Symposium and the Cycle 1 NRA. (David Band)

Action Item 16: The list of ~20 sources that the LAT team will monitor will be reviewed by the GUC . The list will be e-mailed to the GUC along with a reminder of the deadline for any comments. Comments are due with GUC members Review of these Minutes. This list will be posted before launch to initiate multiwavelength observations (All GUC members)

Action Item 17: The mission's science schedule (NRA, software releases, etc.) for launch plus and minus one year will be compiled and presented. (David Band)

What type of pulsar searches should be supported by the standard analysis environment? The consensus is that a simple search of a small part of phase space (period, p-dot, position) but not a full-blown blind search should be supported.

Action Item 18: The methodology will be described for the simple pulsar search tool provided by the standard analysis environment. (Masa Hirayama)

Action Item 19: All GUC members will offer their comments on the current draft Outline of the Science Policy Document (SPD) with their comments on these Minutes. Comments are due no later than early August so that a first draft SPD can be prepared by Steve Ritz and Roger Brissenden in time for discussion by the GUC during the Telecon planned for mid-September. (All GUC members)

Action Item 20: The instrument and spacecraft operations parameters maintained at different levels of configuration control will be defined. (Steve Ritz)

Action Item 21: The GUC shall discuss with HQ (Rick Harnden and others) the need for changes to, or exemptions from, NASA's new restrictive publication and website uniformity guidelines. (Steve Ritz and Lynn Cominsky)

Action Item 22: A GUC list-serve will be set up to distribute e-mail to all GUC members (i.e. Committee-wide emails, not individual exchanges) and archive all such correspondence. (Steve Ritz)

Action Item 23: The GUC should receive a list of flight software milestones. (Steve Ritz)

Action Item 24: Propose the responsible organization (Instrument Teams or GSSC) for running the technical feasibility evaluation of GI proposals. (David Band and Steve Ritz)

Action Item 25: GUC members should comment on the justification, as summarized in the presentation of AI#5, posted on the website) for the size of the GLAST GI program. (All GUC members)

Additional Discussion: Several broad areas were discussed that did not result in AIs. These include:

- What is the range of acceptable relationships of the GSSC scientists (who are expected to devote ~30% of their effort to research) to the instrument teams? The GUC consensus is that GSSC scientists can become affiliated team members on a case-by-case basis.
- Should we identify users of GLAST as Guest Observers (GO Program) or Guest Investigators (GI Program)? Chandra and HST use GO. And GI program has other connotations...(!). BUT do we want to implicitly call GLAST research programs and participants Observers (what about theorists?) or Investigators?
- GUC members are invited to suggest or recall any other broad areas of discussion not resulting in (or requiring) AIs. These will be inputs for further discussion at upcoming meeting(s).

Future Meetings:

November 8-9 (Tuesday-Wednesday)—A face-to-face meeting will be held at GSFC

September 14 (Wednesday)—telecon at 11:30am

Note: September 1 at SLAC, GLAST mini-symposium on Galactic Center Region Observations. GUC member attendance is not necessary but is welcome. Contact Peter and Steve if you plan to attend and/or would like more information.

APPENDIX: Meeting Agenda

(see also <http://glast.gsfc.nasa.gov/ssc/resources/guc/050606/> , where presentations are posted)

June 6, 2005

- 8:00 Coffee and Sustenance and Pre-Meeting Consultations
- 9:00 Welcome and Introductions (Persis Drell, SLAC; Josh, Steve)
- 9:05 Review August 2004 Minutes (Josh)
• Inputs for Minutes preparation; archiving "extra inputs"?
- 9:10 [Mission Update](#) - the view from HQ (Rick)
• How HQ has dealt with the descope; overall HQ issues
- 9:25 [Project Overview](#), including Spacecraft progress (Steve)
- 9:45 [LAT Overview and Science Update](#) (Peter)
• overall progress; new science opportunities
- 10:10 [LAT Schedule](#) (Lowell Klaisner)
• current status, upcoming milestones
- 10:30 Break
- 11:00 [GBM Overview and Schedule](#) (Chip)
• detector threshold(s); overall schedule
- 11:20 [GSSC Report](#) (David and Jay, by telecon)
• PDMP (review); Tools for mission and obs. planning, posting science obs.
- 11:45 Lunch (in conference room) pick up lunch and munch over demos...
- 12:00 [Demonstration \(over lunch\) of Likelihood and other Tools](#) (David, Seth D., Jim C. and others)
- 1:00 Review/close-out Action Items from last meeting
(Items likely requiring significant discussion) vs. [info item only]
1. [Merits of pointed observations vs. Survey](#) (Jim B. et al)
 2. [Policy for Proj. Scientist discretionary time](#) (Rene, Steve)
 3. [GBM sensitivity for BATSE-type Sky Survey](#) (Jim L., Chip)
 4. GSSC-LAT responsibilities (Jay, Peter)
 5. [GUC Charter](#) (Josh, Don, Rick)
 6. [LAT data release in year 1](#) (Peter, Steve)
 7. [Science Policy Document](#) (Steve, Roger)
 8. [[Analysis Thread using SAE](#) (Jay)]
 9. [Size of GI program and possible DOE support](#) (Josh, Steve, Peter)
 10. [Update on PDMP (David, Don)]
 11. [Policy for GLAST Legacy Proposals](#) (Josh, Rita) -

- 3:30 Break
- 4:00 LAT Tour
- 5:30 Executive Session of Committee
 - review discussion and possible action items
- 5:45 Adjourn
- 6:30 GUC Dinner at local restaurant, *Nolas*
Directions will be provided

Tuesday, June 7:

- 8:00 Coffee, rolls and free conversation/collaboration...
- 9:00 Remaining discussion on any open AIs (Josh)
 - GUC convergence on possibly contentious issues (e.g. AI's 1, 3, 6?)
- 9:45 [Summary of SWG Activities](#) (Steve)
 - discussion: configuration control of operations parameters
- 10:30 Break
- 11:00 Multiwavelength observations & monitoring (Steve Thorsett, others?)
 - how to start and maintain monitoring pre-launch
- 11:30 [Report on GLAST E/PO](#) (Lynn)
- 12:00 Lunch (in conference room) and Science Talk (new for GUC day 2 lunches):
[Blazar program and plans for GLAST](#), Roger Romani (Stanford)
- 1:00 Executive Session of Committee
 - action items; writing assignments; issues raised for Project/GSSC
- 2:00 Discussion with Project and GSSC
 - planning for DC2
 - next GUC meeting
- 3:00 Adjourn