

Minutes for the FUG Meeting, November 5, 2010, NASA/GSFC

Attendance (FUG Members): Jamie Holder, Don Kniffen, Pat Slane, Scott Ransom, Savvas Koushiappas, Dieter Hartmann, Alan Marscher, Wei Cui, Dale Frail (phone), Buell Jannuzi (phone), Alicia Soderberg (phone)

Attendance (Other Participants): Elizabeth Ferrara, Elizabeth Hays, Julie McEnery, Dave Davis, Bill Paciesas, Jeremy Perkins, Illana Harrus, Chris Shrader, David Thompson, Neil Johnson, Mike Corcoron, Neil Gherels, Lynne Cominsky, James Chiang, Peter Michelson (phone)

Introduction: AM welcomed everyone and instructed the group that the purpose of this committee is to advise the Fermi team on how they are supporting the community. He also introduced a new meeting feature: the executive discussion session. This is a closed-door session (FUG members only) where the FUG can discuss openly about their concerns and then report these back to the Fermi team. JM suggested this session be held earlier in the day so that the Fermi Team can have ample time to respond to the concerns raised.

NASA Headquarters Update: IH thanked the outgoing members and welcomed those new members in attendance. IH mentioned that the Cycle 5 AO is due right now. CS and IH are putting in Cycle 4's AO as a placeholder and will do an amendment at a later date to update it. One issue with the GI program is that it has a high success rate and is seen as a noncompetitive process (Swift is 28% vs. Fermi's 42%). IH has to counteract a perception that the Fermi papers are written primarily by the instrument team members and that this is a restricted group and not the whole scientific community. The Fermi project is projected to continue beyond 2015 but there is no guarantee of this and the user community is the best resource to show the need for Fermi to continue. Also mentioned that there are new 2-year proposals.

Discussion: AM asked if the success rate was the only determining factor in how competitive a process was and IH said this is true to the 0th order. However, as other missions end, this will naturally increase due to the lack of other available programs. However, the gamma-ray community needs to get these numbers up on their own. AM also asked if there was a limit on the number of 2 year proposals and IH said there wasn't but there is a need to stagger the 2 year proposals and the FSSC reserves the right to downgrade 2-year proposals to 1-year proposals but only those that can be completed in a year. There was a concern that there will only be 2-year proposals submitted. WC said there needs to be a very good reason to downgrade a proposal. DH asked about increasing the money to the postdoctoral fellowships and IH said that the Einstein fellows program is a separate pot of money. JM welcomed input into the Einstein Fellows program and how the ties with the GI program can be increased.

Mission Update: The observatory is operating very smoothly. The flight operations team continues to do a superb job operating the observatory and monitoring performance. The main technical issue we are working through concerns the reaction wheels. There have been several in-orbit failures of the model used on Fermi. The ones on Fermi are fine but the Fermi team is being very careful with the wheels on Fermi so that the risk of an anomaly is minimized. The reason for these failures is not fully understood but there are several risk indicators listed by the manufacturer.

Clarification: AM asked what the Mission Director does. JM explained that this is the main point of contact for the flight operations team and the MD handles the budget and contracting details for the mission's operations center. JM and the MD jointly chair the CCB meetings.

JM also mentioned that the team is trying to be more proactive about communicating with the community about how to use the Fermi tools. The FSSC has expanded the analysis workshops to include science talks to encourage more people to be involved in the GI program (see <http://fermi.gsfc.nasa.gov/workshops/fall2010/>)

Observations Summary: JM mentioned that ARR's are very successful in detecting late-time emission from GRBs. JM wanted to know how the team can better communicate when the team is performing a ToO or if it's in survey mode. One other thing of note is that there have been fewer bright LAT-detected GRBs in the past year compared with the first year of the mission. This is likely just a statistical fluctuation.

Discussion: NG wanted to know what happened to the ToO from a few days ago. JM said that a request had been submitted while the team was confirming the results and that when a confirmation was not forthcoming, the request was withdrawn. JM wants to discuss how this works with the FUG in the TOO specific agenda item later in the users group meeting.

DATA/Software: JM reported that a steering group was formed between the project, the LAT and the FSSC, which gives a forum for requests from the users community to get discussed by the relevant people. This includes both data and software updates and improvements. The FSSC work hard to provide the community with the tools they need but can't promise to make all software developed by any Fermi user publicly available. JM also mentioned that as the mission matures, the team is learning more about the instrument and how to use the data and these ideas are getting passed along to the community. In addition to the project/LAT/FSSC group there is a corresponding GBM/LAT FSSC group exploring joint LAT-GBM analysis software.

LAT 'burst mode' data: A new loose event selection is being developed for GRB analysis (LLE data) that has a very high background rate (100Hz trigger rate). The project, the FSSC and the LAT team are working on how best to make these data available to the community.

Upcoming Activities: ARR durations are being reduced from 5 to 2.5 hours which allows the satellite to miss fewer data contacts, and thus reduce data latency and is still in line with what is seen from GRB emission (i.e. the high energy emission is usually over by then).

Conjunction Assessment: A team was commissioned at GSFC to model possible interactions with the largest debris fields. The conclusion was that orbital drag tends to

circularize the debris so that the rate of close approaches will be stable or have a mild decrease over the life of the mission. The choice was made not to test the positioning thrusters.

Reaction Wheels: The manufacturer provided a list of risk factors. Based on this, the wheel speed and peak slew speed were reduced during the rock maneuver. This gives a slight improvement in exposure uniformity.

Discussion: AM wanted to know exactly how the exposure changes and JM said that it precesses. BP wanted to know how slow you have to go until you don't see any more improvement and JM said that if you go too slowly you get a strip of overexposure since the time of the rocking maneuver is based on the sun location. If the speed is reduced to 0.1 the strip might become visible. NG wanted to know if there were any signs of trouble with our wheels and JM said that there wasn't. When the wheels have failed on other missions they have observed large drags the wheels shortly before failure. Fermi has four wheels and could operate in nominal science modes with three with at slightly reduced capabilities. If there are less than three available then the mission would switch to a modified slew mode.

Battery Status: Good

ToOs: JM reiterated that it is imperative that the community communicate with the team if there's something interesting going on in the sky relevant to Fermi so that the project can act as an advocate for follow-up observations. Fermi is also waiting on a second flare from the lensed quasar PKS 1830-211 to initiate a ToO on this exciting object. These observations need to be balanced with several other objects. Another option is to go into a modified survey mode. JM stated that there are other options besides survey and pointed mode and that if the community wants some special type of observing, they should contact the team to discuss the possibilities.

Discussion: PS wanted to know the integration time for detection during the original flare. JM said that it could be detected in 10-12 hours but that the second flare will be fainter than the first. There will be indicators of the start of the flare so that the ToO can be initiated when it is most needed. PS asked if there were multiwavelength indicators and LH said that it's mostly just seen in the gamma-ray band.

Science Impact: There is a rise in publications related to the data release and a sustained level after the release. There is clear evidence that the community is using the Fermi data.

2-Year Sky Map: This is very sharp and well resolved above 1 GeV. If you play with the data you can see the high galactic latitude bubbles. These lobes will be the subject of the second Fermi media telecon. The spectrum of the bubbles is harder than the background and the paper by Su et al measured a definite spatial edge to them. These could be the result of some activity from the galactic center in the past.

Discussion: (phone) asked if this was a dark matter signature. JM responded that it's probably some type of starburst activity since it has well defined sharp edges. WC asked if the LAT team confirm the external author's result. JM said that yes, the LAT team see similar features. There's no doubt that they exist but

there's not a good explanation as to where they come from. (phone) says that there's an old paper that mentions radio lobes on the same scale.

Einstein Fellowships: The Fermi fellows merged with the Chandra fellows to form the Einstein fellows and expanded to contain all of the topics of NASA's physics of the Cosmos. This program has a multiple mission focus and is more orientated towards the science and not the individual missions. The result is that there are fewer programs to apply to. The Chandra X-ray team has done an admirable job of including the Fermi mission in this program. Suggestions on how to make this program better for the Fermi mission are appreciated.

Discussion: DH mentioned that it would be good to add graduate students in their last year of study to this program. JM welcomed this suggestion and added that this wouldn't add that much cost and this could come from the GI program. IH said this would work. JM said that for this to move forward it would require explicit endorsement by the FUG. (phone) said that this is already being covered by the GI program since many of the proposals fund graduate students and that this might skew the Einstein program towards Fermi. SK clarified that this would be a program that graduate students would apply to as opposed to professors. Several people requested that this be a two year program instead of 1.

3rd Fermi Symposium: Plans are moving along, including social activities.

Funding: Funding is not yet available for PI's for FY2011. AM wanted to know if the PI's had been informed of this and JM said that most of them weren't expecting the money yet anyway but that if the money won't be available by the start date, notes will be sent. Half of the Fermi budget is the GI program and the other half is for operations. If the GI money is not spent, then the project looks bad so it is imperative that the money is spent promptly. The Fermi project is working with NASA HQ to modify these budget numbers in the extended phase of the mission to reasonable values for a baseline mission. This is important due to the public nature of these budgets and the importance of coordinating the extended phase of the mission with the Fermi international and agency partners.

Discussion: IH emphasized that in five years Fermi might not have as big of an impact as it does currently and that it is now time to start thinking about the long term goals of the mission. What is Fermi's Legacy program? AM said that budget cuts could impact the long term (2 year) grants. There needs to be a definition of a baseline mission and that any cuts should come from operations, if possible, and not from the GI program. IH said that cutting the GI program would be a mistake. JM reiterated that Fermi is a multiagency international mission and it is important to show that NASA has a commitment to fund the mission during the extended phase. NG said that in 2012 – 2016 the team will need to propose an in-guide and an over-guide. DK asked if you could operate Fermi for a few months only. JM said that you could ramp down the mission to only the LAT team and the mission. However, the current numbers are just place holders and no one at NASA HQ is saying anything other than that. JM said that we are in the process of defining the budget allocations that accurately represent NASA's commitment and Fermi mission requirements. IH said that the

intention of the HQ is not bad and that the commitment to the Fermi mission is there. JM stated that the team will be asking for support from the FUG on the budget issue if there are any issues or problems.

Fermi Summer School: Very little about this has been set except the data and location. See the slides for more details (the date on the slide should be 2011, not 2010). This school will be two weeks long and feedback is needed on the core of the planning and the content. This school is based on a model that was done in Bangalore. JH said that the location used to be a marine research center and that it's environmentally friendly. It can house about 40 people on site and the cost will be about 1000 USD. The plan is to have dinner in town and wireless is available on site. JP asked about financial support and JM said that discussions are ongoing with the DOE for US student support. PS asked if postdocs were welcome and EH confirmed this.

LAT Status: (see the slides for more details). The all-sky monitoring capabilities of the LAT are very important in supporting broad-band multiwavelength work. The monitored source list initially included 23 sources and has now expanded to more than 70. There's a LAT team member designated as a contact person for each source in the catalog and the FSSC provides light-curves and other information for each of the monitored sources. AM requested feedback from the FUG on the multiwavelength products produced by the LAT team. There have been 114 Astronomer's telegrams and 28 GCN alerts. JM clarified that there has been 20 GRBs detected by the LAT. The flare and burst advocate program is supported by the LAT collaboration as a whole (including the foreign members) and is made up mostly of young post-docs and students.

Discussion: AM congratulated PM about the speed of the data turn around and PM said this is due to a lot of effort up front and that the team is very integrated even though there are separate responsibilities.

Clarification: wrt the plot, purple is the time to process the data by the MOC at GSFC, blue is the time to process by the ISOC and green is the total time. The 10 hour latency that is quoted is the time to get the data from the satellite to the scientific community.

There is broad interest in Fermi publications in both physics and astrophysics. This is a reflection of the nature of the LAT team, which is made up of member of both the particle physics and astrophysics communities. There are 23 new ms radio pulsars discovered in the LAT data and not quite a hundred pulsars total. PM continued to talk about the EBL and about the Eta Carinae results. PS wanted clarification about the burst seen from Eta Carinae from Agile. PM said that Fermi and Agile weren't looking at the same place at the same time and that could explain the discrepancy and PS asked if the burst was short. PM thinks it was but would have to double check. However, there have been a number of times when this type of discrepancy has occurred. There are periods of a couple of hours when Fermi could miss something and that the results are not entirely inconsistent with the results obtained with Agile. PM continued on to talk about upcoming improvements in the data processing. The LAT team is going back to the event reconstruction to fix some known issues, including the PSF. The team is using

this opportunity to really understand the response of the instrument. In particular, a known issue was traced to an incorrect parameterization of the calorimeter edges. Pulsar studies are being used to determine the PSF. Any new tool release is being coordinated with the FSSC to minimize the impact on the community. In the short term, improved IRFs are to be released and in the long term more accurate simulations will be available to the community. Parallel to this, there is an ongoing effort to improve the galactic diffuse model and the 3rd galactic model is getting ready for a public release around the same time as the second LAT catalog. This model is derived using the same method as the 2nd model but there are some differences which are detailed in the slides. There is a very tight connection between the galactic model and the second LAT catalog. JM noted that the model is designed to be used for point source analysis and that the analysis of large extended sources like the lobes have been incorporated in the model so you won't be able to study these types of features after subtraction of the diffuse model.

E/PO: The chronicles web comic is still being published weekly. LH, DT, JM and JP helped at the science and engineering festival. Extra funding was obtained from the NASA EPO ESS program that, together with the Fermi funding, is supporting the development of a cosmology course for college students. The project is behind schedule because the publishing right had to go out to bid due to California state regulations. The original publishing partner was the only one that completed the bid process so there is a question on how to proceed. DH wanted to know how this project is different than what's available and LC said that there is nothing like it out there. This project is based on the research put into the effort before the project started. The first third of the course is an astronomy review, which can be skipped if the course is offered as a second semester astronomy course. LC demonstrated one of the interactive flash tools that is included in the course and this was well received by the group. Similar flash tools are being developed. Two of the after school clubs supported by the Fermi E/PO group took first and second place in a robotics competition. The club is held at a high school that graduates more students that go on to college than all of the other high schools in Mesa County combined. JM was requested to be on a pod-cast to discuss what it's like to be a project scientist. There is a pipeline for GTN that can be used by high school students. This was developed because most of the current science tools are too hard to use. The GTN results are available via XML files and have already been used to create customized web aps by external scientists. The tools use the GCN to generate information about each GRB going back to 2004. The E/PO summer interns prepared a 'rap' that can be found online. There are plans to create a new Fermi Sky Map banner and information is needed for the border which will describe objects in the field of view.

Discussion: DH wanted to know about assessment of the projects and which project is the most efficient. LC said they have an external evaluator that follows the teacher training. However, these types of longitudinal studies take a long time. They assess the teachers at all levels from training to teaching and they need a sufficient number of responders before they can say anything statistically meaningful. The problem is that NASA HQ only wants reports of numbers and

not results. However, the Fermi E/PO group is doing more assessment of more products than anyone else. The external assessor is assessing the cosmology class and has just reported on the GRB website. DH wanted to have a qualitative sense of what's working and LC said that the most effect things are those programs which fit within state teaching requirements and that many of the modules are designed with this in mind. Posters on Newton's laws are the most popular. There's also a push at NASA to use space math examples. One of the struggles is how to get more people to use the tools offered by the E/PO group.

GBM: (see the slides for more details). Slightly more than half of the GBM detected GRBs were in the LAT field of view. There were more soft gamma repeaters early on but there has only been 1 in the last year. There is an increase in terrestrial gamma-ray flashes (TGFs) due to improving the onboard detection algorithms. A new TTE mode allows for a ground based search for short timescale TGFs. Solar activity has also increased. JM wanted to know how many extra TGF candidates are seen. BP replied that they are seeing 1 a day resulting in 90 new TGFs, which is a huge increase. There will be two separate TGF regions in the winter, including Africa and Northern Australia. The African region extends very far north to try to catch the electron-positron TGFs that are detectable at latitudes extending far from the thunderstorm activity. The electron-positron pairs are shunted along field lines which extend up to Northern Africa. The short GRBs are showing up in the large opening angle part of the opening angle distribution.

Discussion: JM asked what about the human guided analysis that's better than the automated one and BP said it's the background subtraction and the time selection. This analysis takes tens of minutes to finish.

There is now evidence in the GBM data of a thermal component in GRBs. This was predicted but not seen to date. PS asked if there might be a normalization problem between the BGO and NaI detectors and BP says that care is taken and there isn't. JM wanted to know how the energy calibration is performed. BP said that they look at other GRBs and at the TGF spectra. There is also an ongoing calibration with Swift. The GBM detected a solar flare recently and detected nuclear lines. A paper on this detection is forthcoming. This was a weak M2.0 class solar flare which means there is a good chance of detecting more of these types of events. DH wanted to know what was learned from this event and BP said it was mainly that the GBM could detect a flare. Also, you can use the nuclear lines to calibrate the instrument. The GBM submitted the TGF annihilation line paper to Science but it wasn't accepted. It has been re-submitted to a geophysics journal. Another interesting result is that the GBM has detected a downward trend in the flux coming from the Crab. There is correlated variability seen from other instruments. A search of old BATSE data is ongoing to see if similar variability can be found.

Discussion: (phone) asked how many people are in the GBM team. BP responded that there are about 30. (phone) asked how many papers this group has published. BP responded that there are about 3 or 4 if he doesn't count the joint LAT papers. There are about that same number in press or submitted. (phone)

asked if there was a coherent publication policy and BP said there wasn't and that they are in the process of clarifying the details. DH wanted to know how many afterglows had been detected based on the GBM and BP said there is one ROTSE detection. DH stated that one of the cornerstones of current GRB thinking is that there are two populations of bursts (short and long) but that it doesn't look like the GBM is confirming this and that it is important to work on why this is (statistics problem?). BP responded that there are technical problems analyzing short bursts, especially wrt their durations and that the results shown in the slides are preliminary. JM made the comment that BP's statement that there are 30 GBM members is probably an overestimate (it's definitely not 30 FTE, this number probably includes technical persons and students). Also the total number of papers that have at least one GBM author is much higher than 3 or 4 and that it's not out of scale with the LAT publication rate per collaborator.

Catalog: (see the slides for more details). Huge sources like the Galactic lobes will not be included in the catalog but some extended sources will. Sources with spectral breaks (like pulsars) will be better modeled. Inclusion in the second catalog will be more conservative. The first catalog had many sources with 'flags' so there won't be a dramatic increase in the number of sources. The catalog production is an iterative process between the diffuse model and the source models. There is no arbitrary deadline for release of the catalog so that the final catalog can be as good as possible.

Discussion: AM asked if sources that were in the first catalog might be dropped from the second and DT confirmed this. AM mentioned that the diffuse model has embedded point sources and wanted to know if this might corrupt point source analysis. DT responded by saying that the diffuse emission is so dominant in the model that this will not be a problem. JM added that when a fit is done, the diffuse model is left free so that the fitting routine will adjust for the baseline. AM asked if the point source data is smoothed and DT responded by saying that point sources don't appear in the residuals map. AM then asked if the point sources weren't included and DT confirmed this. WC remarked that the catalog will be of great use during the next GI process and DT said that it can't be done correctly before the deadline and that the first catalog is good enough for the next round of GI proposals. CS also commented that it is detrimental to users to have data or model releases very close to the GI deadline and that we would avoid letting this happen.

Multiwavelength Efforts: (see the slides for more details). There are many more pulsars (71). There is an email list (gammamw) to disperse information about extraordinary events that need more emphasis than an Atel or GCN. The FSSC has a webpage that lists multiwavelength partner's results. There's also a similar page hosted by the LAT team. There are funding issues wrt NRAO that might affect the availability of VLBA time for the GI program. AM, DT, and JM will attend the NRAO meeting to discuss this. There was good multiwavelength coverage of the recent Crab flare and it looks like the flare was isolated to gamma-rays. (phone) wanted to know if this was a structural change in the

nebula and DT said that HST/Chandra observations didn't seem to confirm this. More follow-up studies with Chandra and HST are ongoing to see if there is a change. The GBM saw a decrease along with some X-ray instruments. Another interesting object right now is the lensed blazar 1830-211 that is flaring on the level of the Vela pulsar and if the first flare was from the lensed object, then a second flare is forthcoming and the team is waiting for it.

Discussion: JM noted that there is no mechanism to report the observing mode of the satellite to the community and mentioned that since Fermi is in survey mode, ToO's are a big deal. However, the project doesn't push this information to the community. JM proposed that if the instrument is switched from survey to pointed mode, a flag is placed on the FSSC webpage noting this and that this flag is left there for a period after the satellite is back in survey mode to let people know that the ToO happened. Links from this announcement to the multiwavelength page will also be provided since it's not trivial to get to that page and it's not clear how important the information found on that page can be. There also needs to be a mechanism to report the duration and pointing of the ToO and allow the community to respond to the request. The open question is how to push the information out to the community. Should this be noted on the Fermi-news list or another method used? JM wanted the FUG's recommendation. *JSP: There was a long discussion following this request. The conclusion was to make an initial announcement to the Fermi-news mailing list of the upcoming ToO as soon as the MOC decides to do the ToO and then direct people to the mission status page for updates.* Someone on the phone asked if there is a flare seen at other wavelengths, how quickly can the LAT team look into the past data to determine if the LAT saw the event. DT said that if you contact the LAT team, it can be done quickly and that it's easy for the team to do these kinds of things. There's a paper on some Catalina monitored flares that's an example of this. There's also an ongoing effort with the Pan-STARRS group to look for coordinated events. The LAT team is very responsive to requests like this. In regards to this, JM noted that there are very few follow-ups to GBM GRBs and wanted to know how to encourage more follow-up. BP noted that this is mainly due to the systematic errors and even though there are some methods that can improve this, there is no clear cut answer. Also, the localization is limited by statistics for many of the GRBs. AS wanted to know about Gravitational Wave follow up. DT noted that there is an agreement in place with LIGO and VIRGO and that the LAT also has contact with the neutrino groups. DH wanted to know what has been learned from blazar studies. DT said that even though there are some exciting individual results that have been published, there's not a single result that changes our understanding. AM said this is due to the relatively low number of events followed so far. DH responded that the senior review will care about these results.

FSSC: (see slides for more details). One of the FSSC programmers resigned but there are plans to find a replacement. The LAT-FSSC group that JM talked about is working well.

The LAT team has developed and uses a couple of tools that are not in the most recent FSSC release. There are discussions about including these tools in the public release, but it is not as simple as just dropping in some new code: there are compatibility, expertise and portability issues to consider. Since these new tools were not part of the originally agreed suite of jointly developed public analysis tools, they had been created for the research needs of individual LAT scientists and not been coded with portability in mind. There was a question on why this new code is called 'pointlike' when it seems to be used for extended sources. JC replied that it was originally developed for point-source analysis but has now grown to include extended source capabilities as well. CS continued to show a data download plot that has spikes and valleys related to specific events like the holiday season. There has not been major difficulty in changing operating modes (from survey to ToO for example). There are several upcoming data analysis meetings that will have topics useful for all levels including graduate students, postdocs and higher level scientists. There will be talks about specific subjects and then time for one-on-one tutorials. PS noted that this was the first time he had heard of these and JM replied that the delay was due to not having finalized dates. PS was concerned that the time was too short for the east coast meetings and this was unfortunate.

GI Program Discussion: AM asked if there will be more foreign PIs due to the new Suzaku time coming available. CS said this might happen but was not sure. CS clarified that the 2-year proposals are for incremental projects that have a cap of 200k. JM said that the wording of the announcement suggests that the high range of the typical funding level is 80k/year. WC was concerned that there are inconsistencies in the announcement since proposers can ask for a two year project even though the effort could be done in one year. AM replied that peer review will catch these and be able to down-size such proposals to one year. SR was concerned that everyone will by default apply for 2 years since they can. AM reminded the FUG that this is a trial run and can be modified if needed. JM said that this is just like asking for one year of funding for a project that will take 4 -6 months and that the proposers funding requests usually reflect this. WC said all of this needs to be made very clear to the GI review panel chairs. SR was concerned that this introduces a judgment call into the review process and AM replied that the ADAP program does the same thing. CS replied that the panel is instructed to evaluate the science first and then NASA can determine if the project is feasible. SR reiterated that their judgment goes into this process. CS also mentioned that the proposals must include a simplified budget, which will help the panel determine feasibility. These budgets do not need to be endorsed by the home institutions. JM mentioned that the FUG needs to be prepared to evaluate the 2-year proposal program in the future. CS also said that the overlap between the GI PIs and the FUG is invaluable. DH said that the FSSC needs to set the expectations for the 2-year program from the outset and not try to evaluate it retroactively. There was a discussion between SR and JM about interagency money transfers and JM said that most of the slowdown was out of NASA's

control but those parts under the control of the project that could be optimized, have been.

Data and Software: (see slides for more details). The FSSC release is essentially up-to-date with the LAT version of the tools and the FSSC is supporting the newest operating systems.

Discussion: PS and AM asked for the development of an ABC guide and DD agreed to this and noted that this effort is ongoing. WC mentioned that there were reports of an inability to reproduce the Crab results. The consensus from the group was that this was very difficult and that the analyzers needed an up-to-date ephemeris. There was a suggestion to use Vela instead of the Crab as a first effort. DH said that the community needs to be comfortable with asking for help from the team. WC asked about analyzing extended sources and JP responded that the current tools are capable of doing this and a tutorial is forthcoming.

Post-Executive Session Discussion:

- Communication is important. Use the Fermi-news list and don't worry about spamming the community.
- There needs to be a way to track people using the Fermi data so this can be reported to NASA.
- There should be some type of internet based workshop.
 - This can walk people through a point and diffuse source analysis and maybe be interactive.
 - Should be ~3 hours long
- ABC guide is needed
- Column on the user contributed tools page describing their purpose is needed
- How much GI money is going to the LAT team?
 - JM doesn't have the exact number but about 30% of the proposals have an instrument team PI or co-I. The original intent was that the instrument team could receive money through the GI program. Almost all of these proposals also have non-instrument team members as PI or co-I suggesting that the instrument teams are well integrated with the broader community.
- Can known features in the diffuse model be separated out?
 - JM suggested providing a standard galprop model to analyze large diffuse sources included in the Fermi galactic model. PM said this would make it a black box and galprop is open to the community anyway. PS asked if the team members run galprop or if they use internal models, and PM said it's largely the former.
 - The user community needs to be able to modify the models published by the LAT team in their own analysis.

- If the model is a sum-of-pieces, those pieces can be separated out. If the community doesn't know what's in the model then it looks like black magic. Providing the pieces would give the community a better handle on what is going on internally. Documentation is also key because you need to tell the community when the model works and when it doesn't.
- What is the relationship between the LAT community and the user community? There's a feeling that the LAT team has software and models not available to the user community. This will not look good at the senior review.
 - PM stated that the paper on the Fermi bubbles is a counter example of this since this result came from scientists outside of the LAT team. The main thing that the LAT team has that the user community doesn't is expertise.
 - PM reiterated that there needs to be a balance between the community's needs and the responsibilities of the team.
 - The user community needs to be able to duplicate results published by the LAT team. PS stated that it's not clear if a tool is developed by the LAT team automatically needs to be published. This is definitely not the case for a non-LAT team member. JM noted that the FSSC has the capability to add to the software as well and has so in the past and that the instrument teams have been responsive to making additional software available in response to community requests or need. WC said no one is obligated to release private tools.
- There needs to be an effort over the next few months to develop documentation.
 - PS said that it seems like the team is saying that Galactic analysis can't be done but this is not communicated very well. AM stated that the to-be-developed ABC guide should mention this.
 - JM stated that there is a document describing the diffuse model that talks about the limits of its use. This might be an insufficient way of distributing this information and the team needs to be more explicit about the use of the diffuse model.
 - Need Published data examples. You don't need to get the exact answer but one that is close. CS stated that the tool used to analyze IC443 will be released soon.

END: There will be a telecon in February plus a face-to-face meeting in May. JM will Doodle-poll the group to figure out when. Meeting adjourned.