First Progress Report: LAT Gamma-Ray Burst – Solar Flare Science Team

LAT Team: (co-organizers) J. Norris, G. Barbiellini, B. Dingus, G. Share, R. Svensson
W. Atwood, R. Bellazzini, G. Bogaert, J. Bonnell, A. Chekhtman, J. Cohen-Tanugi, N. Gehrels, T. Kamae, P. Michelson, F. Longo, N. Omodei, J. Ormes, V. Petrosian, S. Ritz, J. Scargle, P. Spinelli, G. Tosti

GBM team: V. Connaughton, M. Kippen, G. Lichti, C. Meegan, R. Preece, B. Paciesas

SSC: D. Band

Theory: D. Kazanas

GRB-SF Team: Purposes

One of five designated LAT science working groups, the GRB-SF team also has representation from the GBM, SSC, and interested theorists —

Assembled to help study LAT-specific science questions, some requiring input from beyond the LAT.

- ✓ Perform GRB simulations across GBM+LAT energy range.
- ✓ Use simulations "to perfect" LAT on-board trigger, alerts.
- ✓ Study GRB questions — how to constraint models — and …
- ✓ Advise on scope and design of LAT science analysis tools.

☺ Think about GRB multi-wavelength connections.

GRB-SF Team: Work Plan Summary

- ✓ Implement observation-based GRB simulation program:
  - ✓ Mimic BATSE bursts, but with observables' distributions extending across combined GBM and LAT energy range.
  - ✓ Include LAT background, detection by GLEAM.
  - ✓ Include GBM background, detection by GBM algorithm.
- ✓ Implement model-based GRB simulation program(s):
  - – Especially, use to help develop science analysis tools.
- • Use simulations for LAT trigger study:
  - – Seek optimal LAT trigger implementable in flight SW; consider temporal, spatial, spectral information.
- • Use simulations for alert studies:
  - – Determine which GBM burst measurements may be useful for on-board LAT decisions concerning the GRB alert.
  - – Formulate and optimize LAT alert contents.

GRB-SF Team

Contributing GRB Workers — Triggers, Alerts:

Sandhia Bansal, Jerry Bonnell, Johann Cohen-Tanugi, David Band, Marc Kippen, Francesco Longo, Jay Norris, Nicola Omodei, Jeff Scargle