# GBM Trigger, Calibration, & Response Review

♠ **Review team consisted of Burst Working Group (Lichti, Gehrels, Dingus, Band, Norris) plus Ed Fenimore, Scott Barthelmy, Julie McEnery, Steve Ritz**

♠ **Held in two telecons, Aug. 31 and Sept. 2**

♠ **Topics reviewed:**

  λ **Burst trigger, location, classification algorithms**

  λ **Requirements on sensitivity and FoV**

  λ **Calibration plans (pre-launch and on-orbit)**

  λ **Detector Response Matrices**

  λ **Spectral Deconvolution**

♠ **Fifteen suggestions submitted**

♠ **Review Website is http://f64.nsstc.nasa.gov/gbm/temp/bwgreview/**
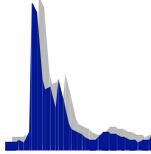
1) Need a way to test the trigger algorithms. Particular concern is trends on background, as for example entering or exiting the SAA. A closed-loop simulator is very beneficial.

2) A GRB rate of 200 yr-1 for GBM seems too large given the 300 yr-1 rate of BATSE.

3) Need to define the criteria for the on-board decision to perform a s/c slew for a GRB.

4) Need plan for choosing trigger parameters.

5) Investigate if corrections for changing atmospheric scattering component due to s/c rocks and rolls can improve the GBM localization performance.
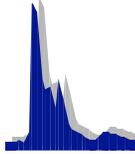
6) Think ahead of flight if the quadratic background fits will improve the trigger and work on-orbit.

7) Please send report on Bayesian trigger classification to S. Ritz.

8) Consider doing an end-to-end "imaging" test with a radioactive source burst simulator and multiple detectors.

9) Consider having a radioactive source that can be used during thermal vac testing for ease of instrument characterization.

10) Investigate if non-linearities at low energies and across the iodine K-edge vary from detector to detector.

11) **Determine what calibrations are really needed.**

12) **Provide documentation on on-board gain stabilization system.**

13) **Consider feeding GRB simulation output into the response simulation software system to check if the output matches the input.**

14) **Consider effects of continuous roll of GLAST observatory on GBM observations.**

15) **Provide a list of the on-board trigger parameters.**