GLGTRIGGER - GLAST Burst Monitor (GBM) Trigger Catalog

Overview

This table lists all of the triggers observed by one or more of the 14 GBM detectors (12 NaI and 2 BGO). Note that there are two Browse catalogs resulting from GBM triggers. All GBM triggers are entered into the Trigger Catalog, while only those triggers classified as bursts are entered in to Burst Catalog. Thus a burst will be found in both the Trigger and Burst Catalogs. The Burst Catalog analysis requires human intervention and so GRBs will be entered into the trigger catalog before the burst catalog. The latency requirements are 1 day for triggers and 3 days for bursts.

The GBM consists of an array of 12 sodium iodide (NaI) detectors which cover the lower end of the energy range up to 1 MeV. The GBM triggers off of the rates in the NaI detectors. These detectors are placed around the GLAST spacecraft with different orientations to provide the required sensitivity and FOV. The cosine-like angular response of the thin NaI detectors is used to localize burst sources by comparing rates from detectors with different viewing angles. To cover higher energies, the GBM also includes two bismuth germanate (BGO) detectors.

The signals from all 14 GBM detectors are collected by a central Data Processing Unit (DPU). This unit digitizes and time-tags the detectorsÕ pulse height signals, packages the resulting data into several different types for transmission to the ground (via the GLAST spacecraft), and performs various data processing tasks such as autonomous burst triggering.

References

See The GLAST Science Data Product Interface Control Document (http://glast.gsfc.nasa.gov/ssc/dev/current_documents/Science_DP_ICD_RevA.pdf).

Provenance

GLAST Burst Monitor Instrument Operations Center (GIOC) and the GLAST Science Support Center (GSSC). The information in this table comes from a trigger catalog entry file or a burst catalog entry file provided by the GIOC. These are FITS files which may contain additional data in extensions for bursts (see the spectrum_flag and fit_flag columns) and are available for download.

Parameters

Version

This parameter specifies the current version of the catalog entry file. New versions are provided by the GIOC as additional data are added or further analysis done. Thus the early versions might have only basic burst quantities such as duration in the header, while later versions will have spectra in extensions (which are not provided in earlier versions).

Trigger_Name

This parameter contains the GLAST trigger designation that is assigned for each new trigger detected. The naming scheme used is bnyymmddfff, where yymmdd is the date of the burst (yy, the year minus 2000; mm, the two-digit month; and dd, the two-digit day of the month) and fff = fraction of day.

Name

The designation of the source of the trigger. The name will initially be GRByymmddfff, where yymmdd is the 2-digit year, month and day of the burst and fff the fraction of the day, as assigned by pipeline processing. The name will eventually be changed to the GRByymmddx format, where x is null or 'A' or 'B' etc. Re-naming to this format requires human intervention, noting whether another burst was detected on the same day.

RA

Right Ascension

Dec

Declination

LII

Galactic Longitude

BII

Galactic Latitude

Error_Radius

This parameter contains the uncertainty in the position, in degrees.

Time

Observation Start Time

End_Time

Observation End Time

Trigger_Time

Observation Trigger Time

Trigger_Type

The classification of the trigger. The following trigger types are given in the GLAST File Format Document for this file (GS-105):

```
            ERROR      Error
            UNRELOC    Unreliable location
            LOCLPAR    Local particles
```

```
        BELOWHZ     Source below the horizon
        GRB                 Gamma-ray burst
        SGR                 Generic soft gamma repeater
        TRANSNT     Generic transient
        DISTPAR     Distance particle event
        SFL                 Solar flare
        CYGX1       Variation of Cyg X-1
        SGR1806     Burst from SGR1806+20
        GROJ422     Variation of GRO J0422+32
```

Reliability
Reliability of the Classification

Trigger_Timescale
Triggered Timescale (milliseconds)

Trigger_Algorithm
Triggered Algorithm Number

Channel_Low
Trigger Channel: Low

Channel_High
Trigger Channel: High

Adc_Low
Trigger Channel: low (ADC: 0 - 4095)

Adc_High
Trigger Channel: high (ADC: 0 - 4095)

Detector_Mask
This field contains a series of flags which indicate which NaI detectors (0-11) were triggered. The value 1 at a particular position indicates that that detector was triggered. Similarly, the value 0 indicates that that dectector was not triggered.

Contact Person

Questions regarding the GLGTRIGGER database table can be addressed to the [HEASARC User Hotline](#).

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http://heasarcdev.gsfc.nasa.gov/W3Browse/glast/glgtrigger.html　　　　　　　　　　　　　　Page 3 of 4

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