Write the HE GCN Circular

+ report to the ECLAIRs/GRM teams

Frédéric Daigne (IAP) & Fred Piron (LUPM)

ECL-first or GRM-first

- **The HE GCN Circular is written by the BA-T, using the template available on** SVOM Notices & Circulars@FSC
- **The IS ECLGRM-VHF is in charge of writing the section dedicated to the results of the quicklook analysis ECLAIRs/GRM (lightcurve structure, duration).**
- **If the quicklook analysis is not ready whithin 30 min, the results can be included in a separate circular.**

Template: ECL-first

HIGH-ENERGY CIRCULAR BURST_ID=sb26050405 ×

ECLAIRs | GRM only

TITLE: SVOM CIRCULAR
SUBJECT: GRB 260504# : SVOM detection of a very long burst

Enter 7 names max (BA-T, BA-F, ECLAIRs IS, GRM IS, MXT IS)

report on behalf of the SVOM mission team:

At 2026-05-04T21:06:44 UTC (T0), SVOM/ECLAIRs triggered and located the gamma-ray burst GRB 260504# (SVOM burst-id sb26050405).

+ Other detection

The following trigger information was received on the ground with low latency by the SVOM VHF Alert Network.

The burst was only detected by the Image Trigger (IMT), which produced a sequence of 1 alert. IMT provided the alert with the best signal-to-noise-ratio in the image (SNR) of 11.37 in the [5 - 20] keV energy band over a time window of 20.48 seconds starting at 2026-05-04T21:06:23.

The localization of the best alert is R.A., Dec. 29.2394 , -39.4564 degrees:
R.A. (J2000) = 1h56m57.45s
Dec. (J2000) = -39d27m23.14s
with a 90% confidence level (C.L.) radius of 7.06 arcmin (including systematic error of 2 arcmin added in quadrature).

-

The SVOM/ECLAIRs light curve showed a single/multiple broad/narrow peak structure with a T90 duration of about 181.46 (-0.415 +0.348).

+ ECLAIRs Peak Flux

GRM trigger | GRM on-ground detection | No GRM detection

This burst also triggered SVOM/GRM at 2026-05-04T21:03:00 on a timescale of 1 seconds with an SNR of 7.10

If there is a detection by an other mission, check that the BA-T has this information and help them to fill this section.

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+ ECLAIRs Peak Flux

GRM trigger | GRM on-ground detection | No GRM detection

This burst also triggered SVOM/GRM at 2026-05-04T21:03:00 on a timescale of 1 seconds with an SNR of 7.10

The IS ECLGRM-VHF is in charge of writing this section.

ECLAIRs: GRB lightcurve & duration.

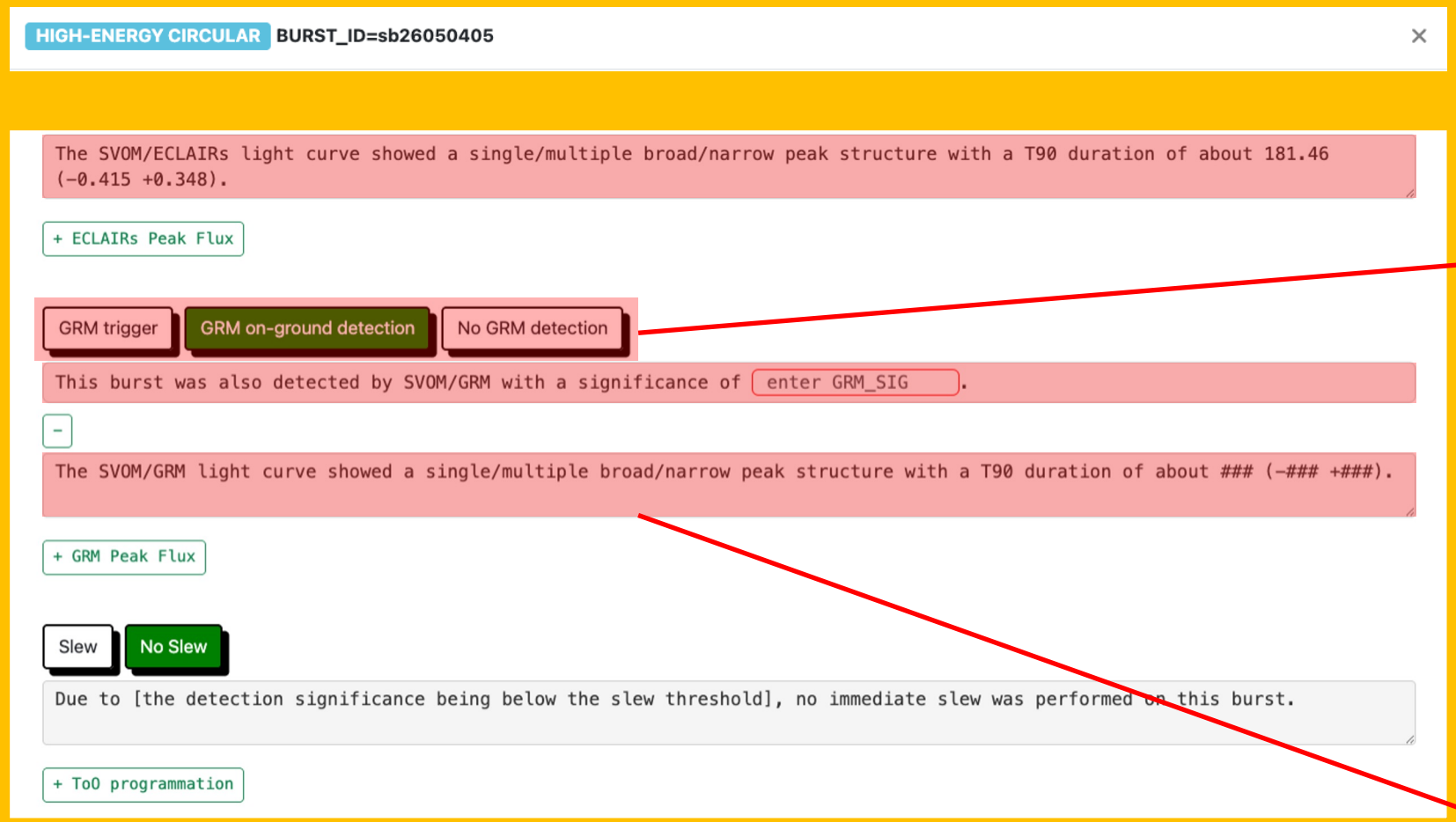
Template: ECL-first

ECL-first trigger: GRM cannot trigger.

Depending on the results of the GRM quicklook analysis, select the correct option:

- **GRM on-ground detection** (i.e. GRB detected in GRM VHF lighcturve on eclgrm-ui)
- or **No GRM detection**.

Template: ECL-first



ECL-first trigger: GRM cannot trigger.

Depending on the results of the GRM quicklook analysis, select the correct option:

- **GRM on-ground detection** (i.e. GRB detected in GRM VHF lighcturve on eclgrm-ui)
- or **No GRM detection**.

If the GRB is detected in GRM, the corresponding section on the lightcurve & duration must be written as for ECLAIRs.

Template: GRM-first

GRM-first trigger: both GRM and ECL have triggered.

- Keep the default option: **GRM trigger**
- **Fill the description on the GRM lightcurve & duration as for ECLAIRs.**

Lightcurve description & duration

- **Default sentence in the template:**

ECLAIRs or GRM

The SVOM/XXX light curve showed a single/multiple broad/narrow peak structure with a T90 duration of about 181.46 (-0.415 +0.348).

Lightcurve description & duration

- **Default sentence in the template:**

ECLAIRs or GRM

The SVOM/XXX light curve showed a single/multiple broad/narrow peak structure with a T90 duration of about 181.46 (-0.415 +0.348).

- **Qualitative description of the lightcurve: don't hesitate to simplify or modify if necessary, e.g. «** a multi-peak lightcurve **», «** two main peaks **», etc.**

Lightcurve description & duration

- **Default sentence in the template:**

ECLAIRs or GRM

The SVOM/XXX light curve showed a single/multiple broad/narrow peak structure with a T90 duration of about 181.46 (-0.415 +0.348).

- **T90 duration: (1) add the unit (s) and the energy band ; (2) adapt to the quality of the measurement, e.g.**

with a duration T90 = 18.2 (-0.4 +0.3) s — *Very precise (2%)*

with a duration T90 = 18 (-2 +3) s — *Precise (10%)*

with a T90 duration of about 20 s — *Approximate*

Lightcurve description & duration

- **If the GRB seems to belong to a rare class, this should appear in the formulation, e.g.**

  The SVOM/XXX light curve showed a first short spike of less than 2 s followed with a weak extended emission, with a total T90 duration of about 60 s (5-120 keV).

  (for short GRB: title)

  or

  The signal in the lightcurve was detected only below 20 keV in SVOM/XXX. It showed two main peaks, with a total duration T90 = 43 (-3 +5) s (5-20 keV).

Recent examples

- **sb26051102 = GRB 260511B (GRM-first)**

The SVOM/ECLAIRs light curve showed a multiple peak structure with a T90 duration of about 41.2 -0.6/+1.0 (5-120 keV).

This burst also triggered SVOM/GRM at 2026-05-11T11:00:31 on a timescale of 0.10 seconds with an SNR of 7.

The SVOM/GRM light curve showed a multiple peak structure with a T90 duration of about 54.2 -5.2/+5.1 s (8-1100 keV).

Recent examples

- **sb26051101 = GRB 260511A (GRM-first)**

The SVOM/ECLAIRs light curve showed a multiple peak structure with a T90 duration of about 13.5 (-0.4/ +0.6) s in the 5-120 keV.

This burst also triggered SVOM/GRM at 2026-05-11T06:13:30 on a timescale of 1 seconds with an SNR of 12.10.

The SVOM/GRM light curve showed a multiple peak structure with a T90 duration of about 14.3 (-0.4 / +0.8) s in the 8-1100 keV.

Recent examples

- **sb26051004 = GRB 260510C (ECL-first)**

The SVOM/ECLAIRs light curve showed a double peaked structure with a total duration of about 150 s.

This burst was also detected by SVOM/GRM with a significance of 7.50.

The SVOM/GRM light curve showed two separated peaks with a total duration of about 150 s.

Recent examples

- **sb26050402 = GRB 260504B (GRM-first)**

The SVOM/ECLAIRs light curve shows a single narrow peak structure with a T90 duration of 0.5 +/- 0.1 s (5-120 keV).

This burst also triggered SVOM/GRM at 2026-05-04T09:31:19 on a timescale of 0.10 seconds with an SNR of 31.30.

The SVOM/GRM light curve shows a single narrow peak structure with a T90 duration of 0.22 +/- 0.02 s (8-1100 keV).

The SVOM/GRM light curve can be found here:
https://www.bursthub.cn//admin/static/svgrb260504B.png

ECL-first or GRM-first: reporting

- **The IS ECLGRM-VHF must also report to the ECLAIRs and GRM teams.**
- **This is done on #eclgrm-is on the SVOM Mattermost.**

- **Create one thread per day and then provide a short comment for each trigger.**

ECL-first or GRM-first: reporting

- **Example:**

fred last week

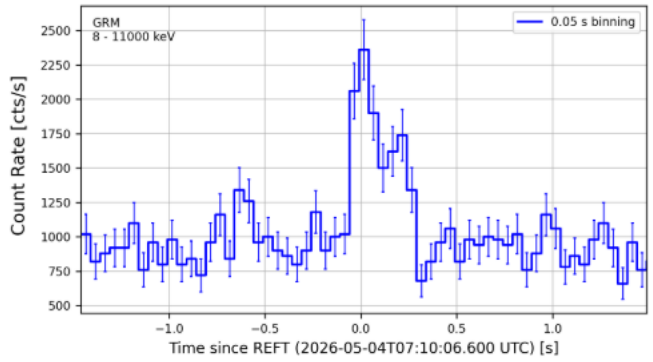
May 4 summary [FR]

4 replies

- sb26050401 : GRM-only trigger (public notice), likely short GRB
  - eclgrm-vhf auto analysis OK
  - short peak consistent with trigger time scale of 0.1 s
  - low GPM rate & Kp index
  - satellite over India
  - ECLAIRs in OPER
  - no external trigger
  - no solar flare coinciding with the trigger
  - eclgrm-vhf reprocessing needed to refine the QT90 and significance
    - T90 [s]: 2.12 -0.73 / +0.65 (8-1100 keV)
    - Ground significance (in T90): 6.10
  - summary posted to etog-GRM-validation

Edited

SVOM/GRM on-board lightcurve (VHF data)
sb26050401



fred last week

(message deleted)

fred last week

- sb26050402 : joint ECL / GRM trigger on a short GRB. See discussion in https://svack.lal.in2p3.fr/svom/pl/whtt6qf11tg53b641hrrpo578h

> **vhf-data-monitor** May 4
>
> **sb26050402 [GRB-INIT-1149]**
>
> *pending validation by eclairs trigger team...*
> [SVOM-Alerts] [iFSC-Tools] [AliXCatDB]
>
> Only visible to users in ~followup-operation

fred last week

- sb26050403 : GRM-only trigger (preliminary notice), likely particle event
  - trigger timescale of 1.0 s but no signal in the VHF LC
  - ECLAIRs in SAA-EXT and XOFF
  - no external trigger

fred last week

- sb26050404-05 : ECL false triggers
- sb26050406-08 : GRM-only trigger (preliminary notice), likely particle event

ECLAIRs triggers during the shift:
one GRB and one false trigger.

GRM-only: reporting

- **Example:**

fred last week

May 4 summary [FR]

4 replies

- sb26050401 : GRM-only trigger (public notice), likely short GRB
  - eclgrm-vhf auto analysis OK
  - short peak consistent with trigger time scale of 0.1 s
  - low GPM rate & Kp index
  - satellite over India
  - ECLAIRs in OPER
  - no external trigger
  - no solar flare coinciding with the trigger
  - eclgrm-vhf reprocessing needed to refine the QT90 and significance
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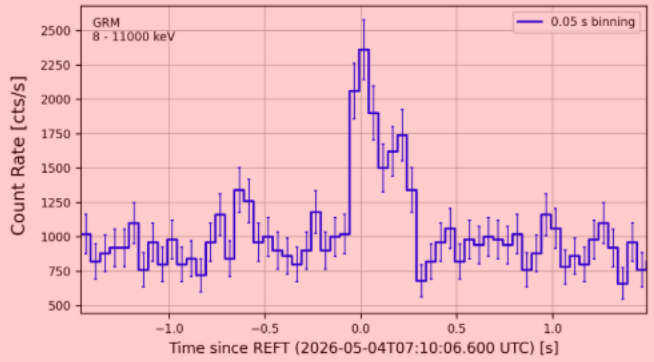
    - Ground significance (in T90): 6.10
  - summary posted to etog-GRM-validation

Edited

SVOM/GRM on-board lightcurve (VHF data)
sb26050401



fred last week
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fred last week

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> **vhf-data-monitor** May 4
> **sb26050402 [GRB-INIT-1149]**
> *pending validation by eclairs trigger team...*
> [SVOM-Alerts] [iFSC-Tools] [AliXCatDB]
> Only visible to users in ~followup-operation

fred last week

- sb26050403 : GRM-only trigger (preliminary notice), likely particle event
  - trigger timescale of 1.0 s but no signal in the VHF LC
  - ECLAIRs in SAA-EXT and XOFF
  - no external trigger

fred last week

- sb26050404-05 : ECL false triggers
- sb26050406-08 : GRM-only trigger (preliminary notice), likely particle event

GRM-only triggers: one likely short GRB and two particle events.

GRM-only: reporting

- **Example:**

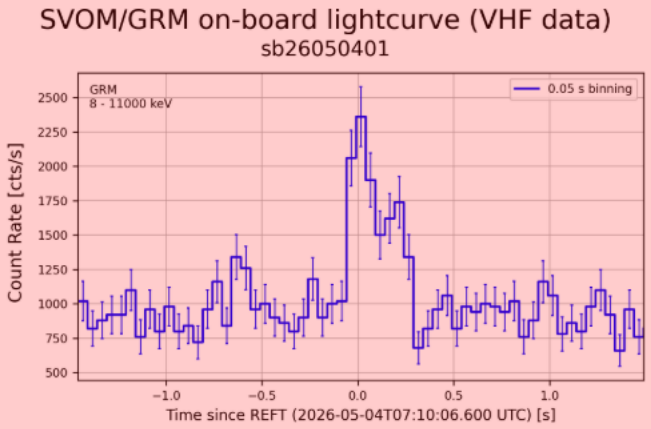
fred last week

May 4 summary [FR]

4 replies

- sb26050401 : GRM-only trigger (public notice), likely short GRB
  - eclgrm-vhf auto analysis OK
  - short peak consistent with trigger time scale of 0.1 s
  - low GPM rate & Kp index
  - satellite over India
  - ECLAIRs in OPER
  - no external trigger
  - no solar flare coinciding with the trigger
  - eclgrm-vhf reprocessing needed to refine the QT90 and significance
    - T90 [s]: 2.12 -0.73 / +0.65 (8-1100 keV)
    - Ground significance (in T90): 6.10
  - summary posted to etog-GRM-validation

Edited



fred last week

(message deleted)

`Summary posted to etog-GRM-validation`

GRM-only triggers: for GRB candidate, a message on #etog-grm-validation is necessary to inform the IS GRM and prepare the HE GCN Circular

GRM-only

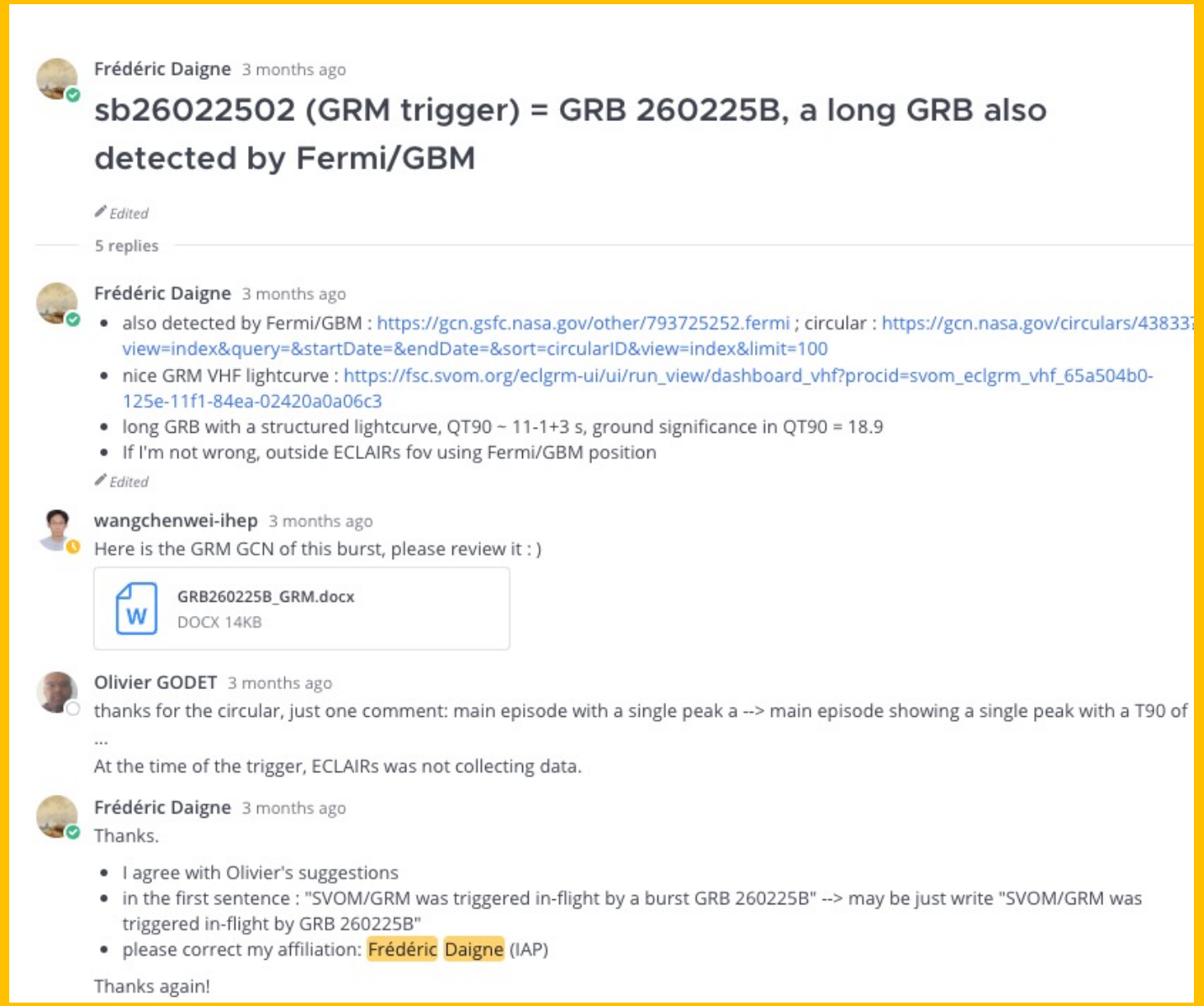
- **The GRM refined Circular is written by the IS GRM, after receiving X band data, confirming the trigger validation and performing the refined analysis.**

- **The IS ECLGRM must inform the IS GRM with a message on #etog-grm-validation: short summary (including detection by an other mission if any) + information on ECLAIRs that will be required for wirting the circular.**
  - **Was ECLAIRs in Xon or Xoff (check on Grafana)**
  - **Was the GRB in ECLAIRs field of view (check on the cartography webpage at EIC)**

- **The IS GRM writes the GRM refined circular, then posts the draft on #etog-grm-validation. The IS ECLGRM-VHF checks the circular and co-authors it.**

GRM-only

- **Example:**



Frédéric Daigne 3 months ago

sb26022502 (GRM trigger) = GRB 260225B, a long GRB also detected by Fermi/GBM

Edited

5 replies

Frédéric Daigne 3 months ago

- also detected by Fermi/GBM : https://gcn.gsfc.nasa.gov/other/793725252.fermi ; circular : https://gcn.nasa.gov/circulars/43833?view=index&query=&startDate=&endDate=&sort=circularID&view=index&limit=100
- nice GRM VHF lightcurve : https://fsc.svom.org/eclgrm-ui/ui/run_view/dashboard_vhf?procid=svom_eclgrm_vhf_65a504b0-125e-11f1-84ea-02420a0a06c3
- long GRB with a structured lightcurve, QT90 ~ 11-1+3 s, ground significance in QT90 = 18.9
- If I'm not wrong, outside ECLAIRs fov using Fermi/GBM position

Edited

wangchenwei-ihep 3 months ago

Here is the GRM GCN of this burst, please review it :)

GRB260225B_GRM.docx
DOCX 14KB

Olivier GODET 3 months ago

thanks for the circular, just one comment: main episode with a single peak a --> main episode showing a single peak with a T90 of ...

At the time of the trigger, ECLAIRs was not collecting data.

Frédéric Daigne 3 months ago

Thanks.

- I agree with Olivier's suggestions
- in the first sentence : "SVOM/GRM was triggered in-flight by a burst GRB 260225B" --> may be just write "SVOM/GRM was triggered in-flight by GRB 260225B"
- please correct my affiliation: Frédéric Daigne (IAP)

Thanks again!

Summary: important messages

- **ECL-first: don't forget to mention GRM, with the right option (on-ground detection or no detection).**
- **ECL-first and GRM-first: don't forget the GRM lightcurve description & duration measurement in case of a GRM on-ground detection.**
- **Lightcurve description: if necessary, adapt the default sentence proposed in the template.**
- **T90 duration: adapt to the quality and precision of the measurement.**
- **All trigers: report on #eclgrm-is on the SVOM Mattermost.**
- **GRM-only triggers: report GRB candidates on #etog-grm-validation to inform the IS GRM.**