

# Understand the alert context



# Goal of this presentation

- **Present the step-by-step procedure of the ECLGRM-VHF IS during phase 1**
  - Introduced in F. Daigne's presentation "The ECLGRM-VHF IS timeline"
- **Disclaimer: the [shift procedure](#) will be fully updated after this training session**
  - More detailed description of each step, with examples
  - Your comments and suggestions are welcome (directly in the document)

# Useful documents

- Shift procedure: ["Procedure for ECLAIRS / GRM Instrument Scientists on shift: working with VHF data in real time"](#)
- Pipeline article in RAA (SVOM special issue):  
["The GRB joint scientific analysis pipeline of the ECLAIRs and GRM instruments on board SVOM"](#)
- Pipeline full documentation (for experts) – installation, usage, targets, workflow & tasks, algorithms, products:  
[Welcome to eclgrm-vhf's documentation!](#)

Procedure for ECLAIRS / GRM  
Instrument Scientists on shift:  
working with VHF data in real time

Frédéric Piron (version 1.2 – May 9, 2026)

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arXiv > astro-ph > arXiv:2604.24281

Search... Help | A

Astrophysics > High Energy Astrophysical Phenomena

[Submitted on 27 Apr 2026]

## The GRB joint scientific analysis pipeline of the ECLAIRs and GRM instruments on board SVOM

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The study of the prompt high-energy emission of Gamma-Ray Bursts (GRBs) with SVOM relies on the observations performed by ECLAIRs (4-150 keV) and the Gamma-Ray Monitor (GRM, 0.015-5 MeV), the two wide field-of-view instruments on board the satellite. In this article, we introduce the eclgrm pipelines running at the French Science Center of SVOM

The architecture of the pipelines are described by the pipelines are described which allows the scientist

Comments: Accepted for publication

Search docs

## Welcome to eclgrm-vhf's documentation!

This documentation explains how to install and use the `ec1grm-vhf` package.

This package process SVOM ECLAIRs and GRM VHF data for the core program to compute scientific content such as quick light curves, durations (i.e. T90), peak flux and hardness ratios.

### Contents:

- Overview
- Installation
- Usage
- Algorithms
- Package structure description
- For developers
- Contributing
- Contributors
- Changelog

# Step #1 : Understand the trigger scenario

- ECL first, GRM first (joint trigger) or GRM only? Automated slew? iFSC-tools → tab ECL/GRM
- Sb26010210 : ECL first with slew
  - Expected input data: OBALERT\_ECL, OBLC\_ECL/GRM
  - 3 ECLGRM-VHF targets will be activated

The screenshot displays the fsc.svom.org web interface for GRB burst ID sb26010201. The page is divided into several sections:

- GRB Informations - BurstID: sb26010201**: Shows the status as "Confirmed GRB" with a green checkmark. Other details include GRB Name: GRB 260102A, GRB Contact: N/A, and GRB Version: N/A. The user is identified as Wenjun Tan ; Wenjin XIE, with buttons for BA-T and BA-F.
- GRB Slew status**: Shows "Slew Accepted" with a green checkmark. Details include Ecl Obs: Id: 2566914982, Type: 153, Num: 934.
- SAMP access**: A red indicator and a button to "Register to a SAMP-hub".
- GRB-Table added values**: A button to "Create Redshift product".
- Navigation tabs**: ECL Trigger, Space Env., ECL/GRM (active), MXT, VT, Follow-Up, Positions, Products, Packets, Notices.
- ECLAIRS & GRM data products**: A section with a button for "EIC web site".
- Trigger Time**: 14 Pck, Ecl, Tbl[s]: 284098185.548114, TblUTC: 2026-01-02T04.09.45.548. Includes buttons for print, download, and share.
- Confidence Level**: 14 Pck, Ecl, SNR: 16.44, Std: 1.168, SnrDiffMax2: 11.653543472290039.
- Onboard Position**: 14 Pck, Ecl, RA, Dec: 183.880, 48.258, R90: 5.09'. Includes buttons for Deg, HMS, ICRS, and Gal.


# Step #2 : Let the BA-T know that you are on shift

- Mattermost channel #followup-operation
  - Example: thread for sb26050905

Thread followup-operation

vhf-data-monitor BOT 2 days ago

sb26050905 [GRB-INIT-1153]

*pending validation by eclairs trigger team...* 

[\[SVOM-Alerts\]](#) [\[IFSC-Tools\]](#) [\[AlIXCatDB\]](#)



77 replies

○ Dylan ADRIEN 2 days ago

Wake up notice released

○ Diego Götz 2 days ago

Looks real to me.



○ Feliu 2 days ago

I'm ECLGRM IS

○ Dylan ADRIEN yesterday

LCOGT triggered on the wakeup

Dylan ADRIEN yesterday

Slew has been accepted

# Step #3 : Check if the event is detected by another mission

**Fermi Trigger Information**

This page changes after each Trigger/GRB/Notice, so hit the <reload> button NOW.

This table contains information about GRBs (and non-GRBs) detected by Fermi (GBM and LAT). The most recent Notice is listed first (reverse time order).

The 3 left-most columns (TRIGGER) give the ID number and the date/time of the event. These columns contain:

- the Trigger Number (which is a link to all the original full-format email GCN/Fermi Notices on that trigger),
- the Date (yy/mm/dd), and
- the Time (hh:mm:ss.ss) of the start of the GRB (ie the on-board Trigger Time).

The next 5 columns (OBSERVATION) come from the results of the various observations and analyses by the Fermi (GBM and LAT instruments). These columns contain:

- the type of Notice (GBM\_Position or LAT\_Position),
- the RA Dec (J2000) location of the GRB,
- the error (GBM: deg radius, statistical only; LAT: arcmin radius, statistical only) uncertainty in that location, and
- Comments describing the observation results (generated by the GCN processing).

If a column's information is not available or is not applicable, then that entry is listed as "n/a".

There often is multiple rows for a given trigger. This is done to show the different RA,Dec locations contained in the successive notices. However, there is no separate row for the GBM\_ALERT notice type (since there is no RA,Dec values in that type), but you can find the Alert type included in the concatenation files in the links in the 1st column.

- [Fermi Trigger Information](#)
- [Fermi/GBM quick-look light curves](#)
- [Swift Trigger Information](#)
- [Konus-Wind Trigger Information](#)
- [INTEGRAL Trigger Information](#)

- ECL position: compare with external position
- GRM-only trigger: external pos. In ECL FoV? → EIC cartography tab

For more information on the two Fermi instruments: [Fermi](#).

Mail questions/suggestions/complaints to [Scott Barthelmy](#).

**TRIGGER TYPE SUMMARY:**  
The annual occurrence rates for the Fermi-GBM triggers broken down by type is:

YEAR	GRB	SGR	GalBin	TGF	SolFlare	LocalPart	DistPart	Uncertain	COMMENTS
2012	219	2	0	104	186	46	9	30	
2011	216	11	0	86	157	68	8	29	
2010	241	1	0	103	29	47	7	30	
2009	249	131	2	28	5	18	0	20	
2008	124	12	1	8	0	2	0	10	Partial year; launch in 10jun08

**Fermi Trigger Table:**

TRIGGER			OBSERVATION				
TrigNum	Date	Time UT	MsgType GBM LAT	RA (J2000) [deg]	Dec (J2000) [deg]	Error [deg] [arcmin]	Comments
<a href="#">000205354</a>	26/05/11	15:15:49.69	GBM Final Position	219.360	+39.290	14.90	Fermi-GBM Final Position. This Notice was ground-generated -- automated pipeline processing. In the LAT Field-of-view. This is
<a href="#">000205354</a>	26/05/11	15:15:49.69	GBM Ground Position	212.860	+33.700	13.55	Fermi-GBM Ground-calculated Coordinates. In the LAT Field-of-view. This trigger occurred at longitude
<a href="#">000205354</a>	26/05/11	15:15:49.69	GBM Ground Position	234.310	+20.820	14.86	Fermi-GBM Ground-calculated Coordinates. This Notice was ground-generated -- automated pipeline processing. In the LAT Field-of-view. This is
<a href="#">000205354</a>	26/05/11	15:15:49.69	GBM Flight	234.533	+23.017	24.23	Fermi-GBM Flight-calculated Coordinates. This trigger occurred at longitude

**Index of /FTP/fermi/data/gbm/triggers/2026/**

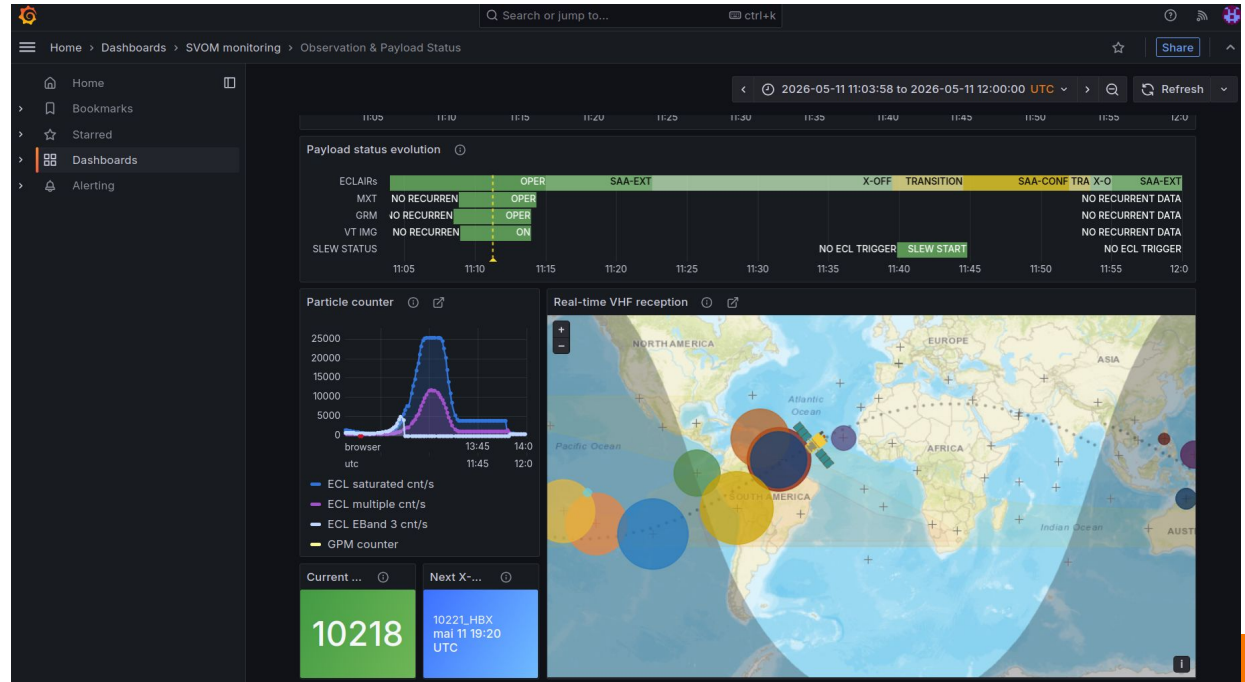
Name	Last modified	Size	Description
<a href="#">Parent Directory</a>		-	
<a href="#">bn260101039/</a>	2025-12-31 21:03	-	
<a href="#">bn260102000/</a>	2026-01-01 20:17	-	
<a href="#">bn260102120/</a>	2026-01-01 22:46	-	
<a href="#">bn260102495/</a>	2026-01-02 08:12	-	
<a href="#">bn260102883/</a>	2026-01-02 17:13	-	
<a href="#">bn260103079/</a>	2026-01-02 21:35	-	
<a href="#">bn260104243/</a>	2026-01-04 02:13	-	
<a href="#">bn260104999/</a>	2026-01-04 20:23	-	
<a href="#">bn260105949/</a>	2026-01-05 20:37	-	
<a href="#">bn260105973/</a>	2026-01-05 20:37	-	

# Step #4 : Check the SVOM observation context

- [Grafana: SVOM observation and payload status](#) (especially for GRM-only trigger)
  - Satellite position w.r.t. SAA and SAA-EXT
  - Instrument status (ECL OPER? XOFF?)
  - ECLAIRs saturate & multiple event rate, GPM rate

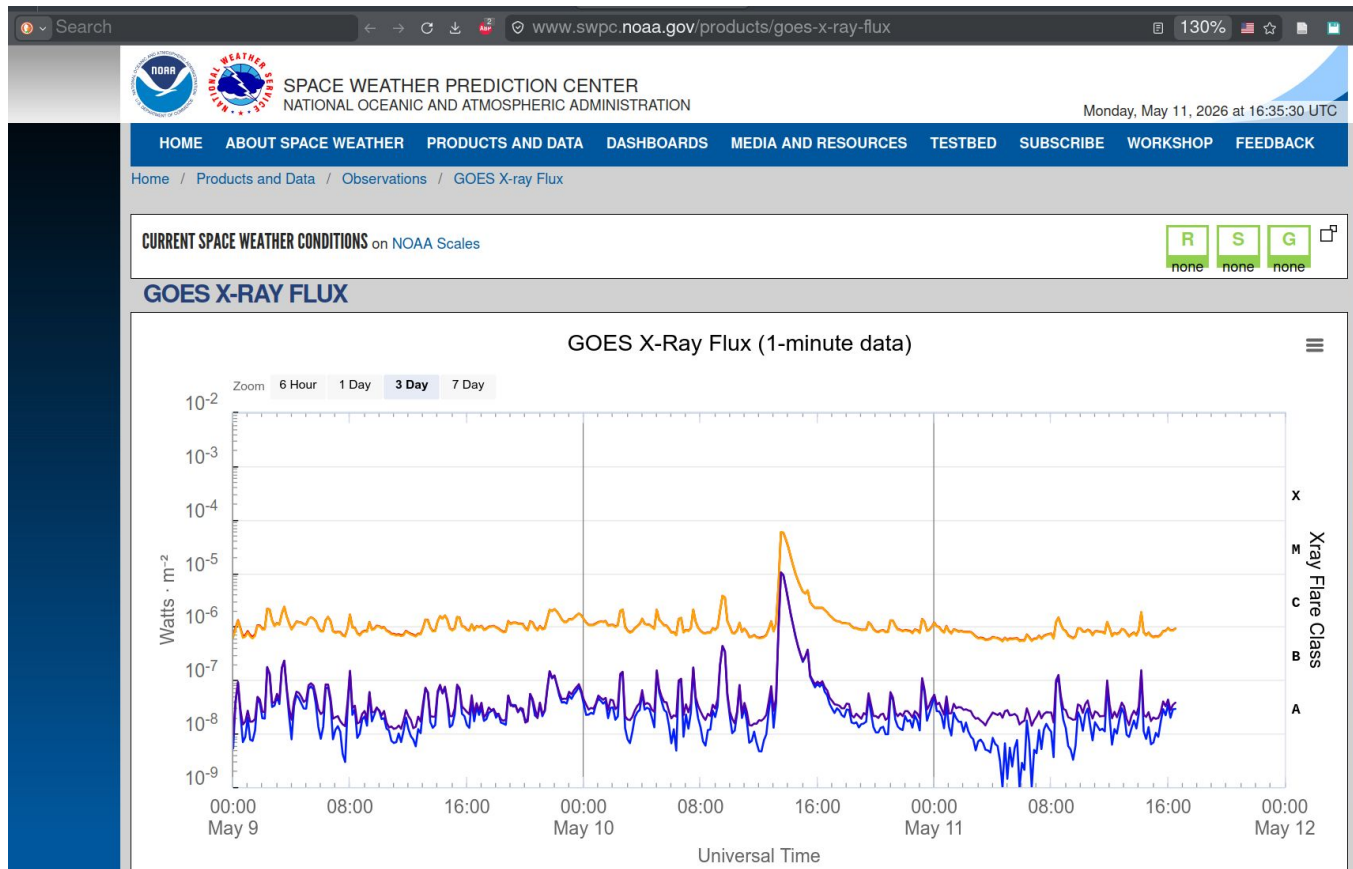
• iFSC-tools → tab Mission

• [Planetary K-index](#)



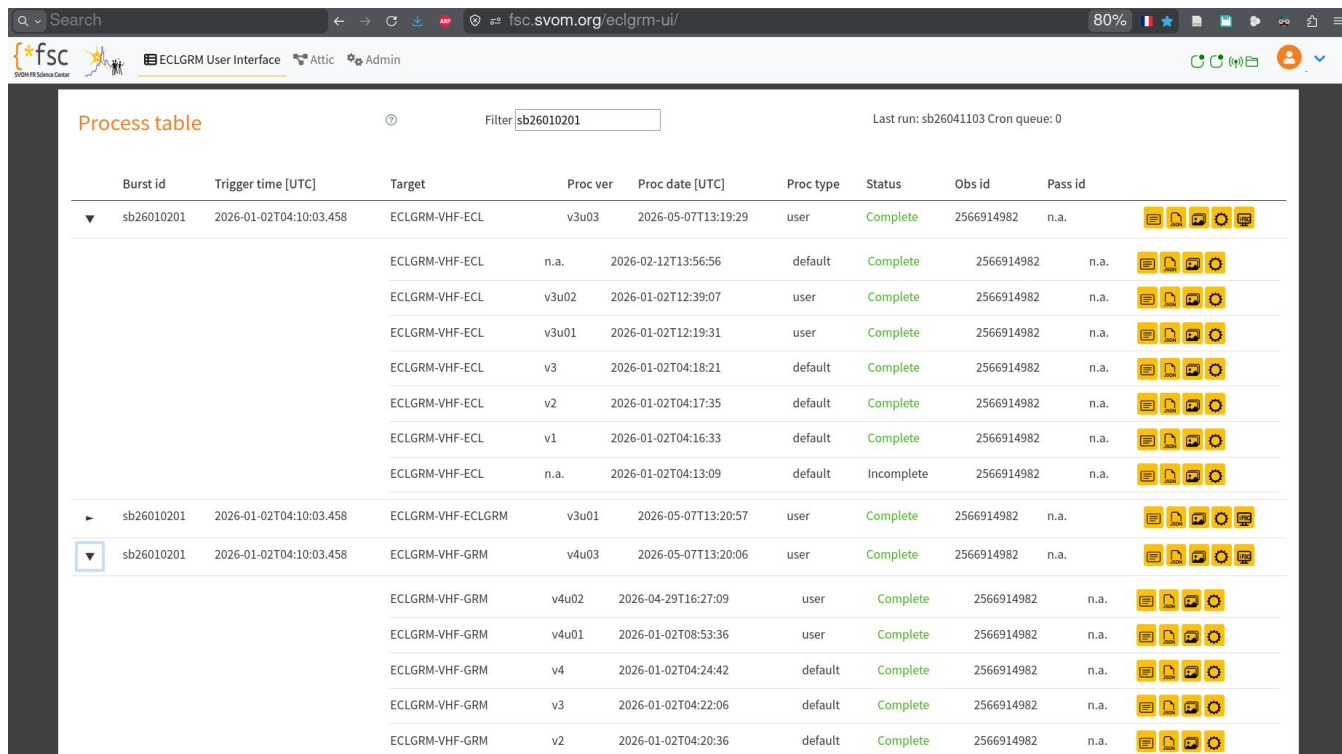
# Step #5 : Check the solar activity

- In case of GRM-only trigger
  - Possible solar flare?
- [GOES X-ray Flux](#)



# Step #6 : Check the first pipeline process with status "complete"

- The eclgrm-vhf pipeline requires more than 60% of the VHF LC packets to be available in the [-50 s, +100 s] time interval to ensure a proper background fit
- If this condition is not fulfilled, the pipeline does not perform any analysis and returns a status "Incomplete", waiting for more data



Process table

Filter: sb26010201

Last run: sb26041103 Cron queue: 0

Burst id	Trigger time [UTC]	Target	Proc ver	Proc date [UTC]	Proc type	Status	Obs id	Pass id	
▼ sb26010201	2026-01-02T04:10:03.458	ECLGRM-VHF-ECL	v3u03	2026-05-07T13:19:29	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	n.a.	2026-02-12T13:56:56	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	v3u02	2026-01-02T12:39:07	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	v3u01	2026-01-02T12:19:31	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	v3	2026-01-02T04:18:21	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	v2	2026-01-02T04:17:35	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	v1	2026-01-02T04:16:33	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-ECL	n.a.	2026-01-02T04:13:09	default	Incomplete	2566914982	n.a.	
▶ sb26010201	2026-01-02T04:10:03.458	ECLGRM-VHF-ECLGRM	v3u01	2026-05-07T13:20:57	user	Complete	2566914982	n.a.	
▼ sb26010201	2026-01-02T04:10:03.458	ECLGRM-VHF-GRM	v4u03	2026-05-07T13:20:06	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-GRM	v4u02	2026-04-29T16:27:09	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-GRM	v4u01	2026-01-02T08:53:36	user	Complete	2566914982	n.a.	
		ECLGRM-VHF-GRM	v4	2026-01-02T04:24:42	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-GRM	v3	2026-01-02T04:22:06	default	Complete	2566914982	n.a.	
		ECLGRM-VHF-GRM	v2	2026-01-02T04:20:36	default	Complete	2566914982	n.a.	

# Step #7 : If processing too long, check the VHF packet reception

- iFSC-tools → tab Packets
- Grafana, [vhf-ui@FSC](mailto:vhf-ui@FSC)

The screenshot displays the iFSC-tools web interface for GRB sb26010201. The interface includes a navigation bar with tabs for ECL Trigger, Space Env., ECL/GRM, MIXT, VT, Follow-Up, Positions, Products, Packets, and Notices. The 'Packets' tab is active, showing a 'Packets reception' section with a dropdown menu set to 'ECLAIRS' and a 'Refresh the Eclairs list' button. Below this, a table titled 'ECLAIRS Packets reception' shows the status of three message types:

Messages	Packets reception
TmVhfEclairsAlert	1 / 1
TmVhfEclairsHighPriorityLightCurve	22 / 22
TmVhfEclairsLowPriorityLightCurve	42 / 42

**MERCI DE VOTRE ATTENTION**