

# The eclgrm user interface



# Goal of this presentation

- **Present the eclgrm UI running at the French Science Center (FSC)**
  - Functionalities, dashboards, manual reprocessing

# 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

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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

Search docs

CONTENTS:

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

Welcome to eclgrm-vhf's documentation!

This documentation explains how to install and use the `eclgrm-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



# The eclgrm UI: functionalities

**1**

**The eclgrm UI is used by the ECLGRM-VHF IS to**

- Monitor the automated processings in the eclgrm pipelines and inspect the analysis results
- Restart some processes manually to refine the results if needed

# Access from the FSC home page

Search fsc.svom.org/home/ 90%

fsc SVOM FR Science Center

HOME COLLABORATION ONLINE UTILS API DEFINITIONS

FAQ

## SVOM French Science Center portal

### Science

Links to pages dedicated to the science of SVOM

- iFSC-Tools *The Burst Advocates dedicated interface*
- GRB Table *SVOM public GRB records*
- Notices & Circulars *SVOM notices and circulars*
- ECLGRM** *ECLAIRs/GRM pipeline runs*
- VTAC *VT Afterglow Candidates pipeline runs*
- ToO-MM *Target Of Opportunity Multi-Messenger server*
- Workplan *SVOM planned and realized observations*

### Documentation

Links to FSGS-related documentation










- FSGS readthedocs *Centralized documentation page*
- Other documentation pages

# Functionalities

- The eclgrm UI displays all the processes executed in the eclgrm VHF and X-band pipelines
  - Each process corresponds to a given SVOM burst-id and to a given eclgrm target
  - In automated mode, each target can be executed several times, as complementary VHF data are received on ground and the eclgrm input SDPs are updated in the SDB
  - The eclgrm-vhf pipeline runs sequentially, queuing each new process until the current one completes
- The eclgrm UI has 4 main functionalities:
  - Access to the full configuration file of each process: all inputs, parameters and outputs in json format
  - Access to the log of each process: filled dynamically so that the IS can know at any time which analysis tasks have been already performed
  - [A dedicated dashboard for each of the 3 eclgrm-vhf targets](#) to visualize the analysis results and their associated control plots
  - [A configuration editor to restart the analysis tasks interactively and to optimize the results with a different choice of parameters](#)















































# Main page

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  ECLGRM User Interface  Attic  Admin     

## Process table

Filter  Last run: sb26050409 Cron queue: 0

Burst id	Trigger time [UTC]	Target	Proc ver	Proc date [UTC]	Proc type	Status	Obs id	AssId	
▼ sb26050409	n.a.	ECLGRM-VHF-GRM	n.a.	2026-05-09T16:33:03	default	Running	3875536939	n.a.	    
		ECLGRM-VHF-GRM	v5	2026-05-04T23:44:45	default	Complete	3875536939	n.a.	   
		ECLGRM-VHF-GRM	v4	2026-05-04T23:41:41	default	Complete	3875536939	n.a.	    
		ECLGRM-VHF-GRM	v3	2026-05-04T23:39:39	default	Complete	3875536939	n.a.	   
		ECLGRM-VHF-GRM	v2	2026-05-04T23:38:09	default	Complete	3875536939	n.a.	   
		ECLGRM-VHF-GRM	v1	2026-05-04T23:36:59	default	Complete	3875536939	n.a.	   
▶ sb26050408	2026-05-04T22:42:29.000	ECLGRM-VHF-GRM	v12	2026-05-04T23:25:36	default	Complete	3875536938	n.a.	    
▶ sb26050407	2026-05-04T21:54:08.000	ECLGRM-VHF-GRM	v5	2026-05-04T22:46:12	default	Complete	3875536937	n.a.	    
▶ sb26050406	2026-05-04T21:10:13.100	ECLGRM-VHF-GRM	v7	2026-05-04T22:17:03	default	Complete	3875536936	n.a.	    
▶ sb26050405	2026-05-04T21:06:44.312	ECLGRM-VHF-ECL	v5	2026-05-04T21:22:47	default	Complete	2566915199	n.a.	    

BurstID filter

Nb of queued processes

Log file

Json results

Dashboard

Reprocessing

Ifsc-tools

A satellite is shown in space, with a large solar panel extended to the left. The satellite's main body is yellow and features various instruments and a red cylindrical component. Below the satellite, a laptop-like device is visible, possibly representing a ground station or a data processing unit. The background is a dark, starry sky with a bright, hazy nebula or galaxy in the upper right. The Earth's horizon is visible at the bottom, showing a thin layer of atmosphere and a bright light source.

# The eclgrm UI: dashboards

2

# Frame #1 : GRB information & navigation (ECL target)

## GRB information & Navigation

Reference time REFT [UTC]: 2026-01-02T04:09:50.670

REFT (since DATAREF) [s]: 284098190.670

Trigger Time T0 [UTC]: 2026-01-02T04:10:03.458

T0 (since DATAREF) [s]: 284098203.458

Onboard RA [deg]: 183.880

**Summary table**

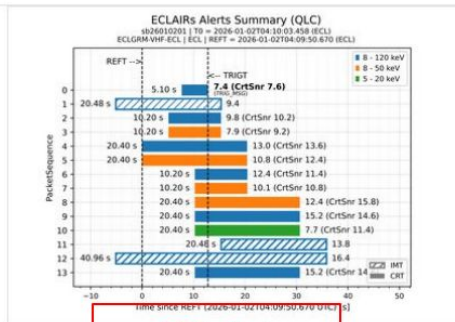
Onboard Dec [deg]: 48.258

Onboard error radius (90%) [arcmin]: 5.09

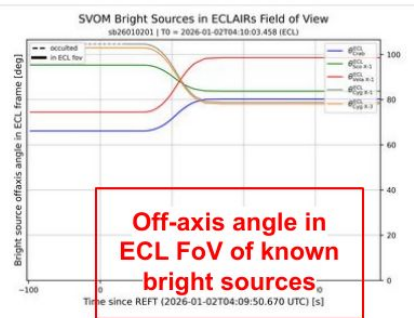
T90 [s]: 34.30 -2.66 / +2.33 (5-120 keV)

Ground significance (in T90): 14.40

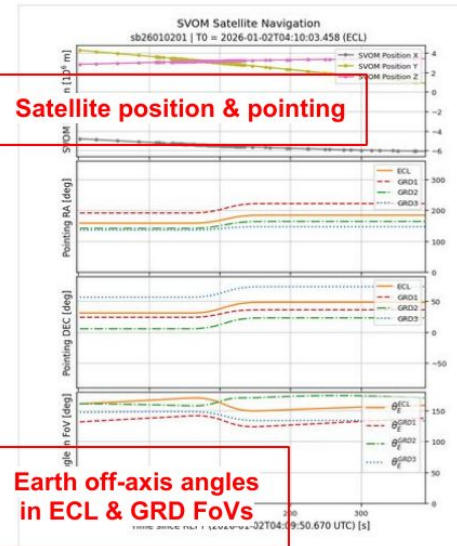
CRCLASS: LONG (98.0%)



**ECL alert summary**

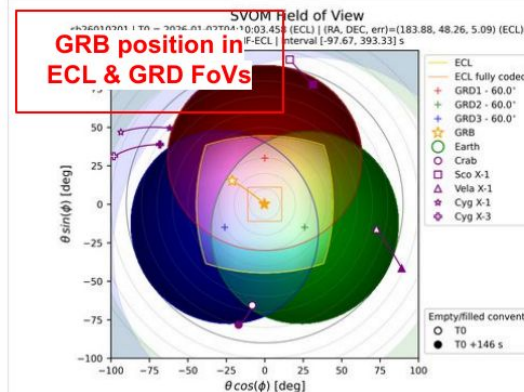


**Off-axis angle in ECL FoV of known bright sources**



**Satellite position & pointing**

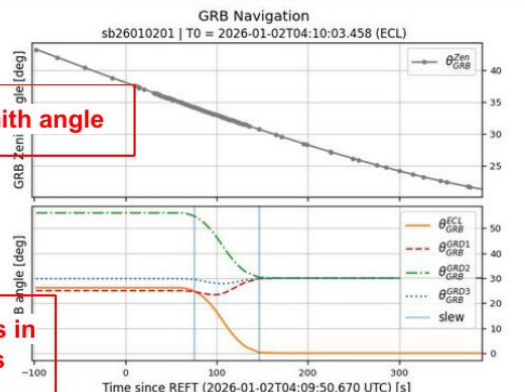
**Earth off-axis angles in ECL & GRD FoVs**



**GRB position in ECL & GRD FoVs**

**GRB zenith angle**

**GRB off-axis angles in ECL & GRD FoVs**



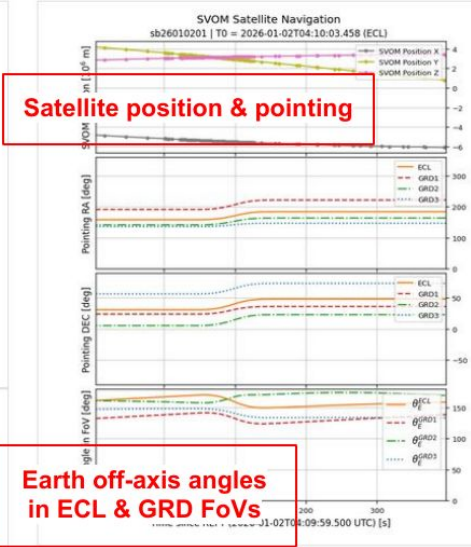
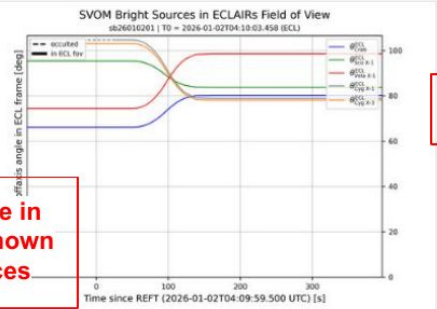
# Frame #1 : GRB information & navigation (GRM target)

## GRB information & Navigation

Reference time REFT [UTC]: 2026-01-02T04:09:59.500 HA\_RA [deg]: 183.880  
 REFT (since DATREF) [s]: 284098199.500 HA\_Dec [deg]: 48.258  
 Trigger Time T0 [UTC]: 2026-01-02T04:10:03.458 HA\_ERR (90%) [arcmin]: 5.09  
 T0 (since DATREF) [s]: 284098203.458 HA\_ORI : ECL  
 Onboard RA [deg]: None Involved GRDs: n.a.  
 Onboard Dec [deg]: None Ground significance GRD1: 6.00  
 Onboard error radius (90%) [deg]: None Ground significance GRD2: 8.00  
 T90 [s]: 41.99 -5.88 / +8.57 (4-550 keV) Ground significance GRD3: 9.30  
 Ground significance (in T90): 13.50  
 CRCLASS: LONG (98.0%)

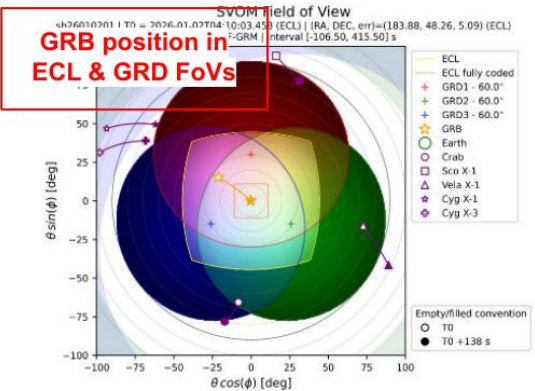
**Summary table**

**Off-axis angle in ECL FoV of known bright sources**



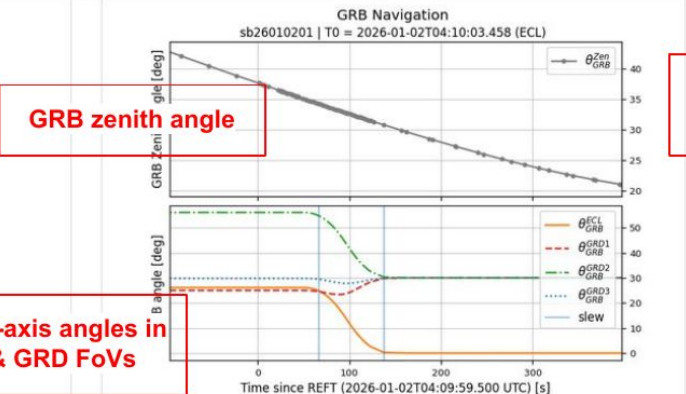
**Satellite position & pointing**

**Earth off-axis angles in ECL & GRD FoVs**



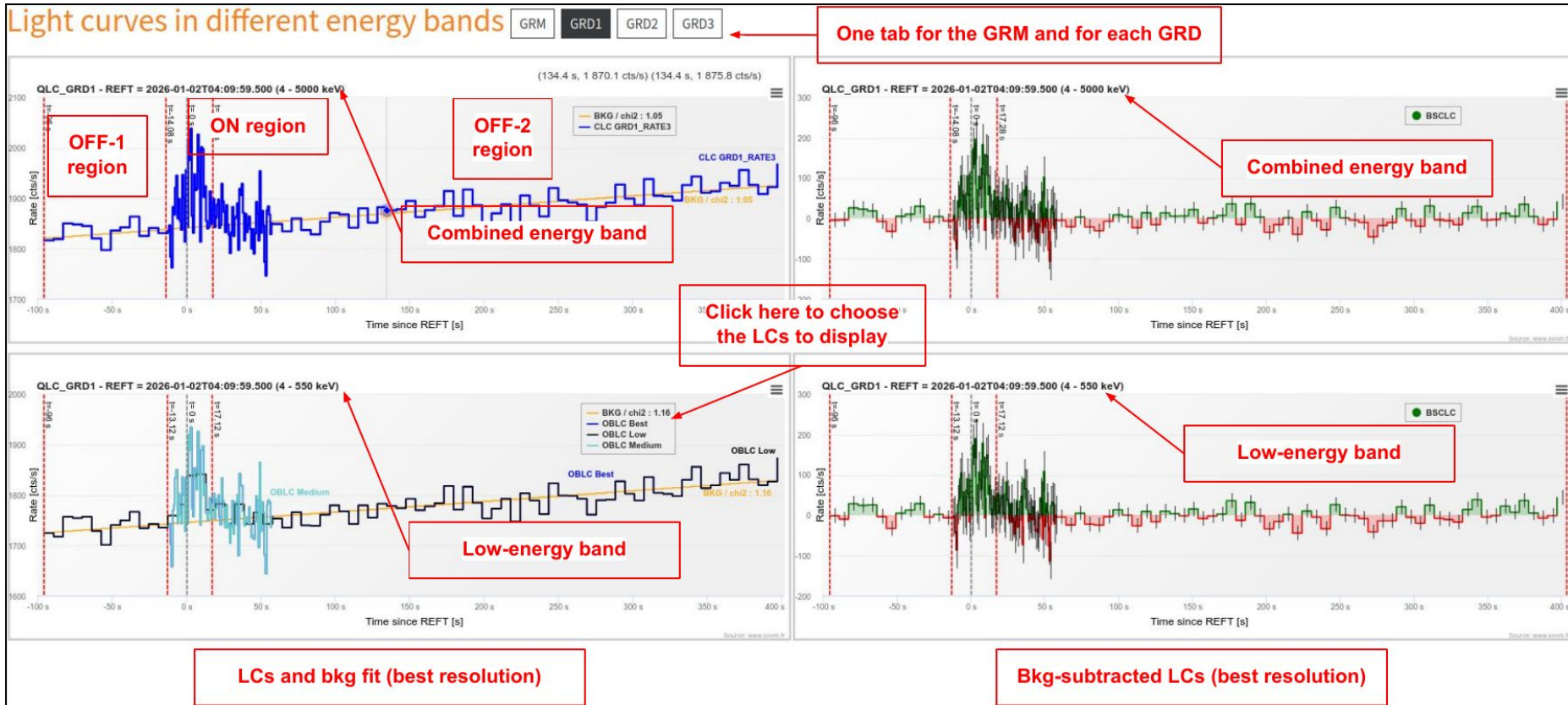
**GRB position in ECL & GRD FoVs**

**GRB off-axis angles in ECL & GRD FoVs**



**GRB zenith angle**

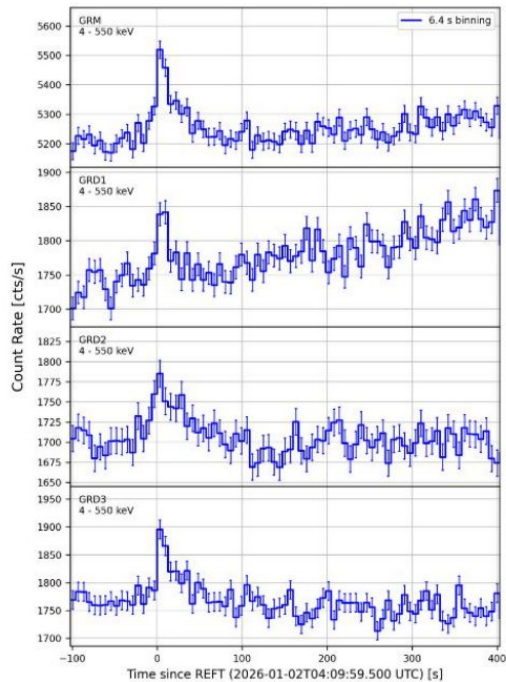
# Frame #2 : dynamic light curves (GRM target)



# Frame #2 : public light curves (GRM target)

SVOM/GRM on-board lightcurve (VHF data)

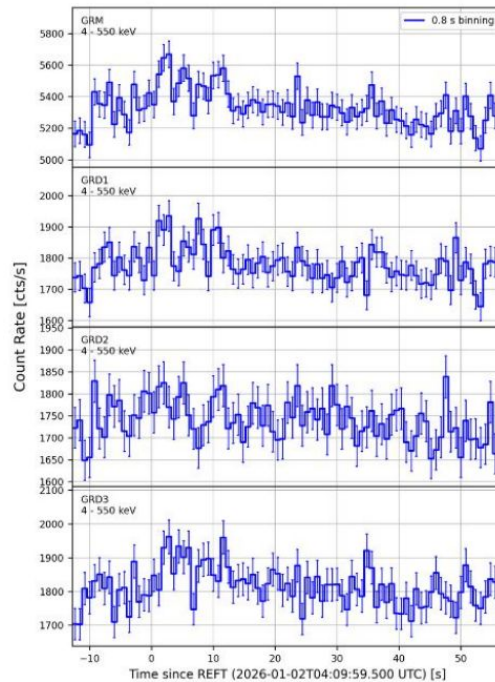
sb26010201



6.4 s resolution

SVOM/GRM on-board lightcurve (VHF data)

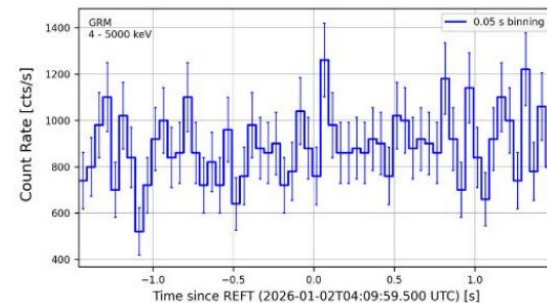
sb26010201



0.8 s resolution

SVOM/GRM on-board lightcurve (VHF data)

sb26010201



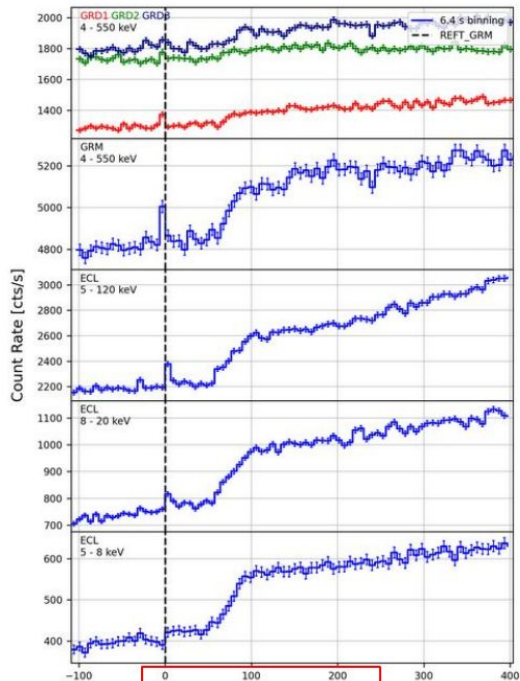
0.1 s resolution

# Frame #2 : public light curves (ECLGRM target)

## Light curves in different energy bands

SVOM/ECLGRM on-board lightcurve (VHF data)

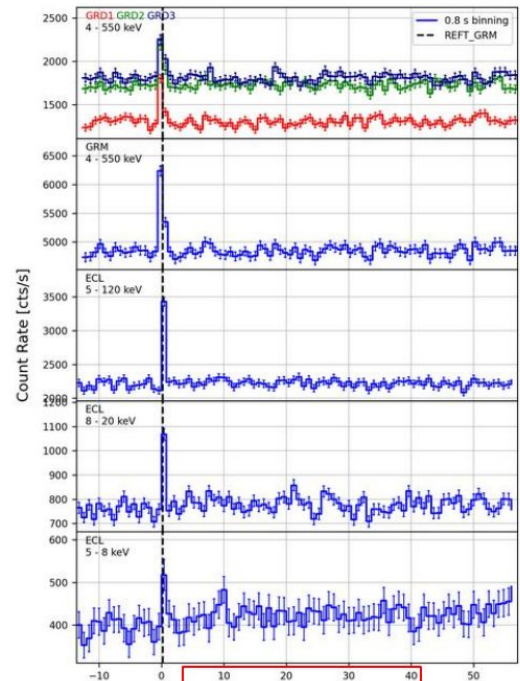
sb26050402



6.4 s resolution

SVOM/ECLGRM on-board lightcurve (VHF data)

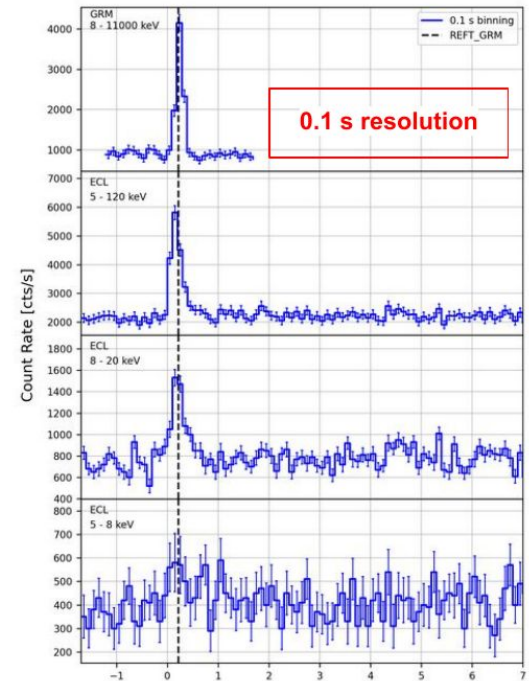
sb26050402



0.8 s resolution

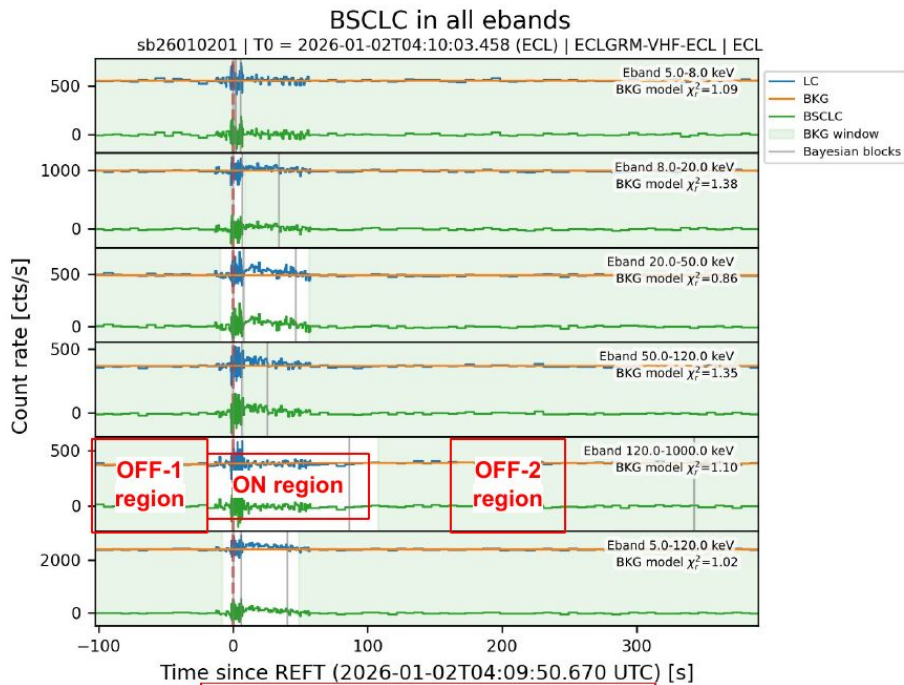
SVOM/ECLGRM on-board lightcurve (VHF data)

sb26050402

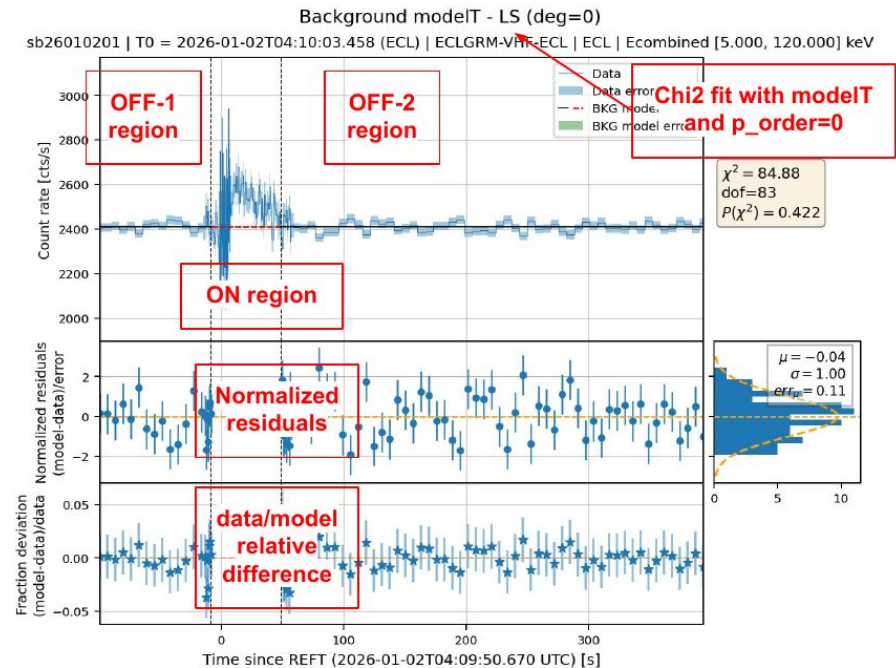


0.1 s resolution

# Frame #3 : background subtraction (ECL target)



Background fit summary plot (ECL)



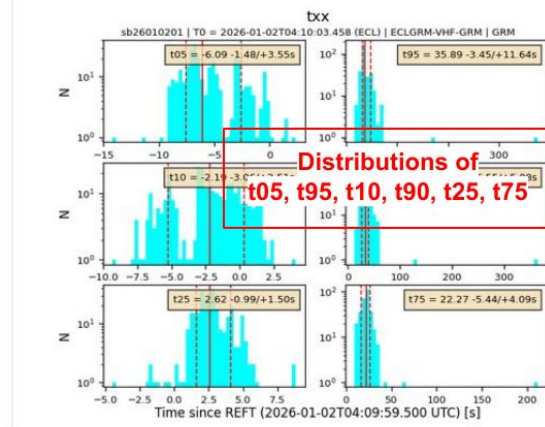
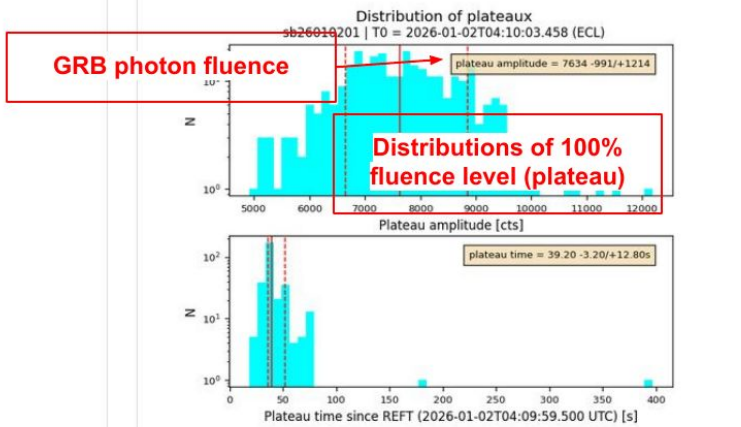
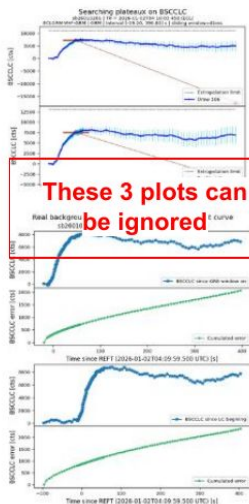
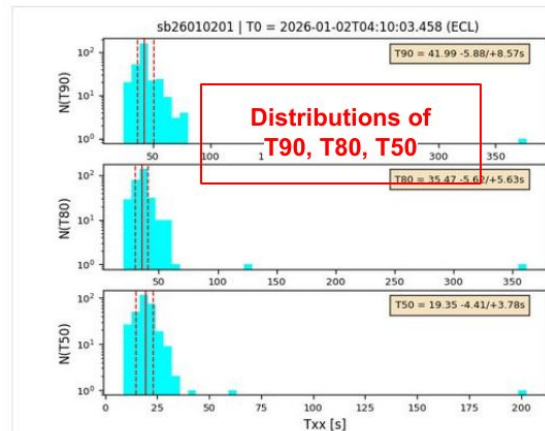
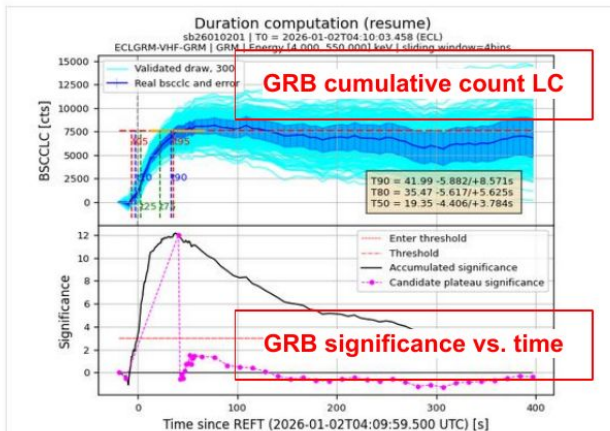
Background fit details (ECL, combined energy band)

# Frame #4 : duration (ECL target)

## Duration

### Summary table

Quantity	Value	Neg. error	Pos. error
t05 [s]	-6.094	1.484	3.546
t95 [s]	35.889	3.454	11.638
T90 [s]	41.993	5.882	8.571
t25 [s]	2.615	0.992	1.495
t75 [s]	22.273	5.444	4.090
T50 [s]	19.351	4.406	3.784



# Frame #5 : peak count fluxes & hardness ratios (ECL target)

## Peak count fluxes – Hardness Ratios – Event classification

Emin, Emax (keV)	TIME (since T0) [s]	TIME_DEL [s]	PCF [cts/s]	PCF_ERR [cts/s]
5 - 8	5.9500	0.1000	184.2	86.0
8 - 20	-0.9500	0.1000	226.8	110.5
20 - 50	4.7500	0.1000	223.4	84.9
50 - 120	1.4500	0.1000	151.7	72.1
120 - 1000	6.8500	0.1000	204.3	76.8
5 - 120	5.9500	0.1000	530.5	171.5

High [Emin, Emax] / Low [Emin, Emax]	HR	ERR
[50 - 120] / [5 - 8]	3.4593	1.8373
[50 - 120] / [8 - 20]	0.6769	0.1254
[50 - 120] / [5 - 20]	0.5661	0.1072

A satellite with a yellow body and a long grey boom is shown in space. The background features a dark starry sky with the Milky Way galaxy visible. The satellite has a red cylindrical component and a blue cylindrical component. The boom has three rectangular panels.

# The eclgrm UI: manual reprocessing 3

# Automated vs. manual mode

## “Proc type” column (execution mode)

- “default” = automated processing activated by the orchestrator
- “user” = manual reprocessing by a specific user
  - The user name is visible when hovering the mouse over “user”
  - The user name is stored in the eclgrm-ui internal database only (i.e. not in the SDP FITS file)

































## “Proc ver” column: v[i]u[jj] indicates that the SDPs have not been sent to SDB

### Process table



Filter

Last run: sb26051005 Cron queue: 0

Burst id	Trigger time [UTC]	Target	Proc ver	Proc type	Status	Obs-id	Pass-id	
▼ sb26051005	2026-05-10T19:20:07.000	ECLGRM-VHF-GRM	v6	user	Complete			   
		ECLGRM-VHF-GRM	v5u01	user	Complete	5536922	n.a.	   
		ECLGRM-VHF-GRM	v5	default	Complete	3875536922	n.a.	   
		ECLGRM-VHF-GRM	v4	default	Complete	3875536922	n.a.	   
		ECLGRM-VHF-GRM	v3	default	Complete	3875536922	n.a.	   
		ECLGRM-VHF-GRM	v2	default	Complete	3875536922	n.a.	   
		ECLGRM-VHF-GRM	v1	default	Complete	3875536922	n.a.	   
		ECLGRM-VHF-GRM	n.a.	default	Incomplete	3875536922	n.a.	   

User reprocessing (outputs sent to SDB): type

User reprocessing (no output to SDB):

Hovering the mouse here gives the name of the user who launched the reprocessing

Automated processings v1 to v5 complete

Automated process failed (no enough packets)

# Configuration editor

**Parameter editor**

▼ QLC\_GRM: (object)

- ▼ twindow\_min: (object)
  - type: (string) sec\_since\_ref
  - ▼ params: (object)
    - default: (undefined) undefined
    - sec\_since\_ref: (number) -50
    - sec\_since\_dateref: (number) 241036455.27
- ▼ twindow\_max: (object)
  - type: (string) sec\_since\_ref
  - ▼ params: (object)
    - default: (undefined) undefined
    - sec\_since\_ref: (number) 300
    - sec\_since\_dateref: (number) 241036855.27
- resolution: (object)
- time\_interval\_selection: (object)
- background: (object)

▼ QT90\_GRM: (object)

- eband\_qt90: (number) 1
- n\_candidate: (number) 3
- n\_current: (number) 3
- n\_current\_up: (number) 3
- delta\_tw\_n: (number) 4
- n\_draw: (number) 100
- n\_loop: (number) 1000

SDB  
Frédéric Piron

Resume from  
svom\_eclgrm\_vhf\_868bd9fe-2f08-11f0-bccd-02420a0a09c1

Updated parameters

path	Default	Update
QLC_GRM twindow_min type	default	sec_since_ref
QLC_GRM twindow_min params sec_since_ref	-102.4	-50.
QLC_GRM twindow_max type	default	sec_since_ref
QLC_GRM twindow_max params sec_since_ref	409.6	300
QT90_GRM n_draw	300	100

**To send to SDB**

**To run with the current default configuration**

**To get the full configuration file**

**History of the modifications of the configuration parameters**

Run Default Runtime Process Cancel

# Manual reprocessing

- Do not try to fit the background over the ~500 s of available data if not needed!
- Fit the background right before/after the GRB to predict it correctly in the ON region
  - To ensure reliable SDPs (T90 & ground significance, etc.)
- In general, the results can be improved by playing with very few parameters:

Task	Parameter	Default	Reproc	Purpose
QLC	twindow_min twindow_max	sec_since_reft = -108.8 / +403.2	Choose start and/or stop times of the analysis window	To restrict the overall analysis around the GRB, for example to discard late data when GRB emission stops before the slew starts.
QLC	time_interval_selection	Method = bayesian_blocks_auto	Set Method = fixed and choose t_left and t_right	To define OFF-1,2 regions for bkg fit
QLC	background	model = modelAuto porder = -1 (tries from 0 to 4)	Choose modelE or modelT, and/or choose porder = n (for all energy bands)	To adapt the bkg model (e.g. modelT usually enough if no slew)
QT90	n_draw	300	100 for tests  1000 once the results are SDB ready (top right button in the configuration editor)	100 to speed up resampling (less accurate QT90 error)

**MERCI DE VOTRE ATTENTION**