P2SC-ROB-WR-789 - 20250505	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon May 05 to Sun May 11, 2025 14 May 2025 Dana Talpeanu Marie Dominique	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

The level of solar activity[1] fluctuated between **low and moderate** this week.

Only M- and X-flares are mentioned, the most energetic one(s) per day are presented in **bold**:

	Monday 05 May	Tuesday 06 May	Wednesday 07 May	Thursday 08 May	Friday 09 May	Saturday 10 May	Sunday 11 May
Activity	low	low	low	low	low	low	moderate
Flares	-	-	-	-	-	-	**M1.9**

[1] See appendix. All timings are given in UT.

Solar Activity

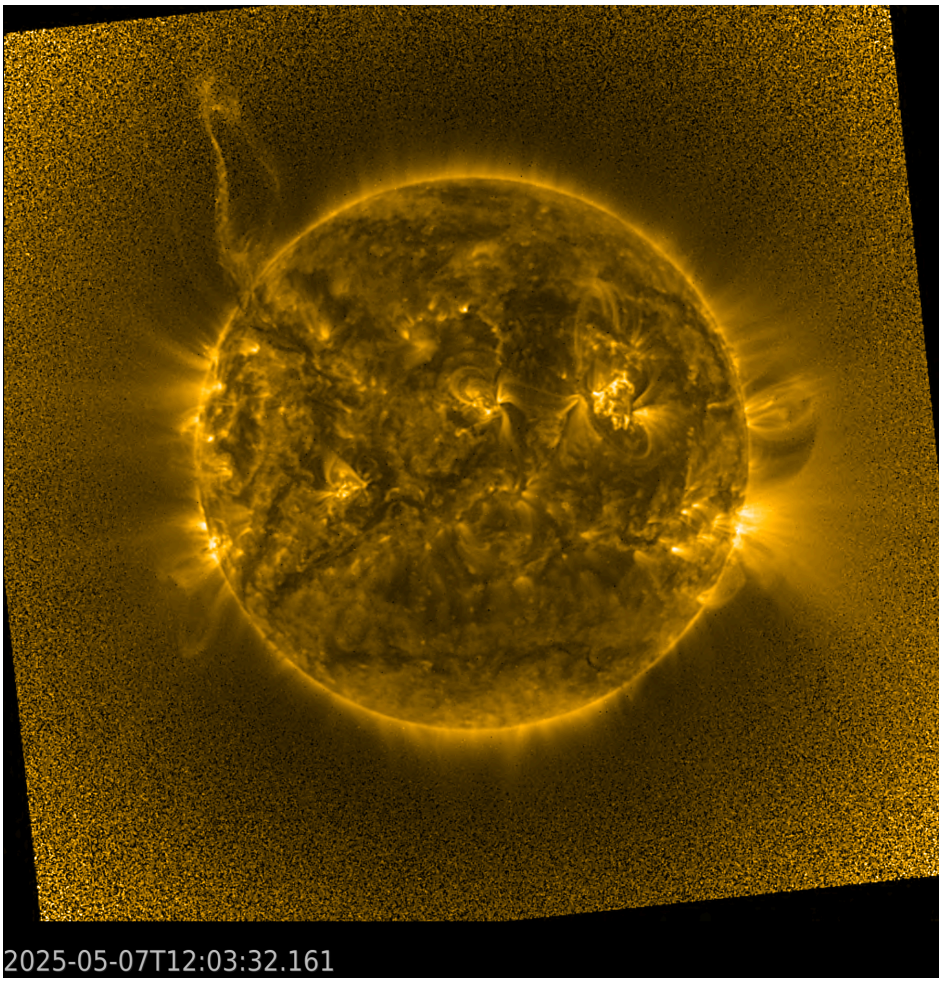
Solar flare activity fluctuated from low to moderate during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: https://proba2.oma.be/ssa
This page also lists the recorded flaring events.

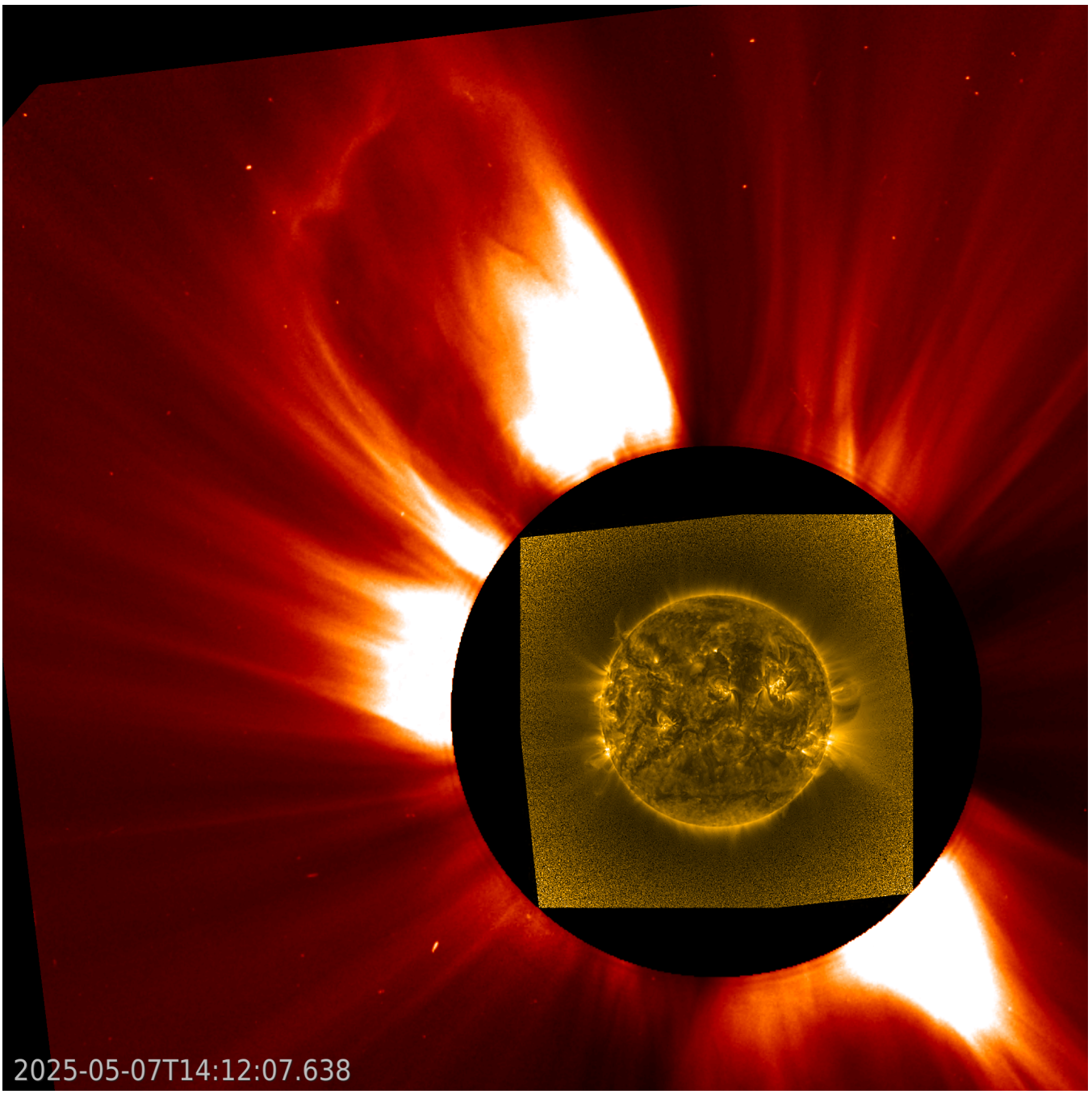
A weekly overview movie can be found here (SWAP week 789).

Details about some of this week's events can be found further below.

If any of the linked movies are unavailable they can be found in the P2SC movie repository here

Wednesday May 07



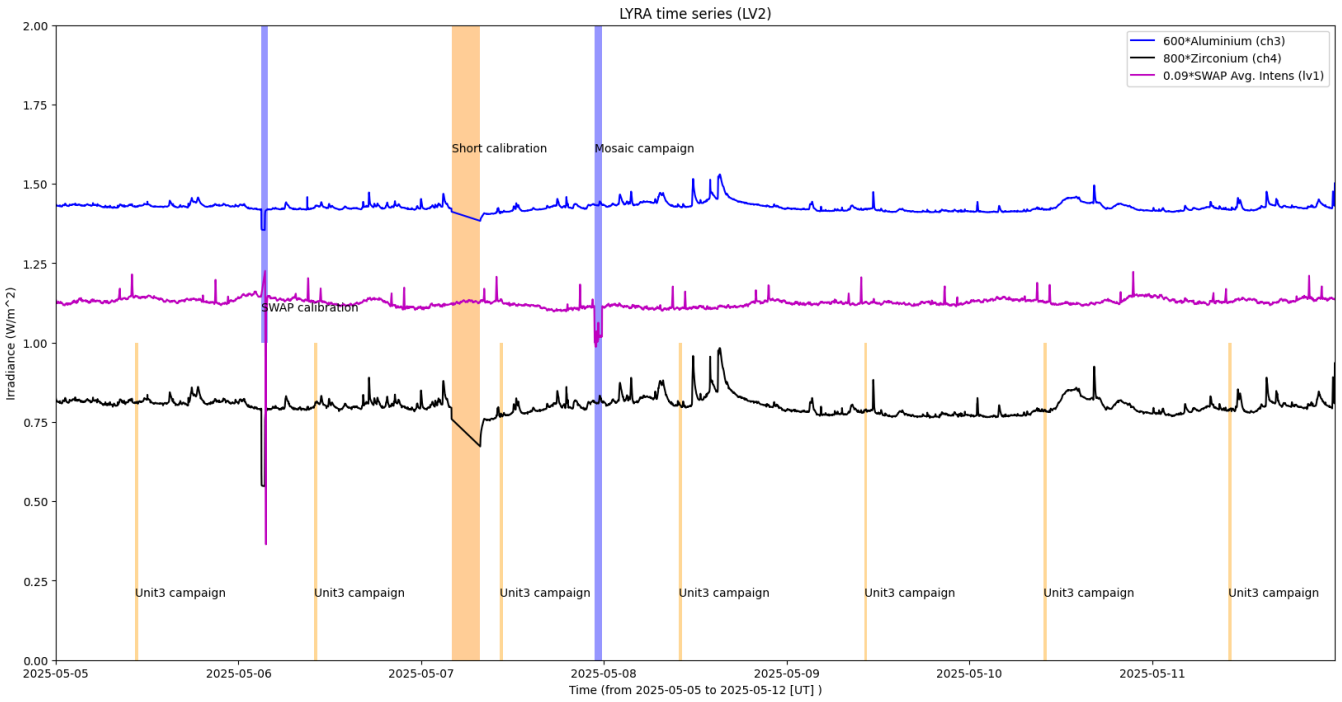


The largest flare of this week was an M1.9, which actually peaked the next day Monday, outside the current reporting period. Apart from many C-class flares throughout the week, on 2025-May-07 there was a large filament eruption which was observed by SWAP at the north-eastern limb of the Sun (top figure). The prominence started lifting off at ~11:00 UT and was later on associated with a coronal mass ejection captured by LASCO-C2 coronagraph onboard SOHO spacecraft (bottom figure).

Find a SWAP movie of the event here.

An overview of the weekly LYRA & SWAP data is provided below:
The following curves are visible:

- black: Zirconium Channel LYRA Unit 2
- blue: Aluminium Channel of LYRA Unit 2
- purple: SWAVINT (SWAP Average Intensity; integrated solar intensity per SWAP image pixel)



Operations and Calibrations:

The blue shaded periods related to SWAP, correspond to, from left to right:

- Bi-weekly calibration, 2025-May-06
- SWAP weekly mosaic, 2025-May-07

The orange shaded periods related to LYRA correspond to, from left to right:

- Daily Unit 3 campaign, 2025-May-05
- Daily Unit 3 campaign, 2025-May-06
- Short bi-weekly calibration, 2025-May-07
- Daily Unit 3 campaign, 2025-May-07
- Daily Unit 3 campaign, 2025-May-08
- Daily Unit 3 campaign, 2025-May-09
- Daily Unit 3 campaign, 2025-May-10
- Daily Unit 3 campaign, 2025-May-11

The red shaded periods related to other issues corresponds to:

- None

2. LYRA instrument status

IOS

Start IOS	Mon May 05 2025	LYIOS01171
End IOS	Sun May 11 2025	LYIOS01171

LYRA detector temperature

LYRA detector 2 temperature globally varied between 48.567 and 50.66 °C.

3. SWAP instrument status

MCPM errors
The number of MCPM recoverable errors increased from 3582 to 3896.
The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon May 05 2025	IOS01285
End IOS	Sun May 11 2025	IOS01286

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.73 and 0.15 °C.

4. PROBA2 Science Center Status

The following changes were made to the P2SC:

- None.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 50309 to 50365) was nominal, except for:

- 50320

Data coverage HK

All HK data files (LYRA_AD) have been received, except:

- None.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except:

- None.
- small BINSWAP for pass 50320 (May 6) due to blockage during download, but no large data gaps occurred.

Total number of images between 2025 May 05 00:00 UT and 2025 May 12 00:00 UT: 3848
Highest cadence in this period: 0 seconds
Average cadence in this period: 157.17 seconds
Number of image gaps larger than 300 seconds: 286
Largest data gap: 11.00 minutes

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except:

- None

6. APPENDIX: Frequently used acronyms

ADPMS	Advanced Data and Power Management System
AOCS	Attitude and Orbit Control System
APS	Active Pixel image Sensor
ASIC	Application Specific Integrated Circuit
BBE	Base Band Equipment
CME	Coronal Mass Ejection
COGEX	Cool Gas Generator Experiment
CRC	Cyclic Redundancy Check
DAC	Data Acquisition Controller
DBR	Deployment, backup & recovery
DDA	Decommutated data archive
ESP	Experimental Solar Panel
FITS	Flexible Image Transport System
FOV	Field Of View FPA Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HK	Housekeeping
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
LYRA	LYman alpha RAdiometer
LYTMR	LYRA Telemetry Reformatter (software module of P2SC)
LYEDG	LYRA Engineering Data Generator (software module of P2SC)
MCPM	Mass Memory, Compression and Packetisation Module
MOC	Mission Operation Center
NDR	Non Destructive Readout
OBSW	On board Software
PI	Principal Investigator
P2SC	PROBA2 Science Center
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SEU	Single Event Upset
SoFAST	Solar Feature Automated Search Tool
SWAP	Sun Watcher using APS detector and image Processing
SWAVINT	SWAP AVerage INTensity
SWBSDG	SWAP Base Science Data Generator
SWEDG	SWAP Engineering Data Generator (software module of P2SC)
SWTMR	SWAP Telemetry Reformatter (software module of P2SC)
TBC	To Be Confirmed
TBD	To Be Defined
TC	Telecommand
UTC	Coordinated Universal Time
UV	Ultraviolet
VFC	Voltage to Frequency Converter

7. APPENDIX Solar Activity Definitions

In the science section we use the following solar activity standards.

The standard scale for solar activity is:
- very low (almost no flares, only B)
- low (a few C flares)
- moderate (many C flares and at least an M flare)
- high (several M flares and an X flare)
- very high (continuous background of C flares, numerous M flares, more than one X flare)