

P2SC-ROB-WR-792 - 20250526	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon May 26 to Sun Jun 01, 2025 02 Jun 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 activity¹ 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 26 May	Tuesday 27 May	Wednesday 28 May	Thursday 29 May	Friday 30 May	Saturday 31 May	Sunday 01 Jun
Activity	moderate	low	low	low	moderate	moderate	low
Flares	M1.4 M2.9	-	-	-	M8.1 M1.6 M3.4	M2.9 M4.5 M2.4 M1.0	-

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>

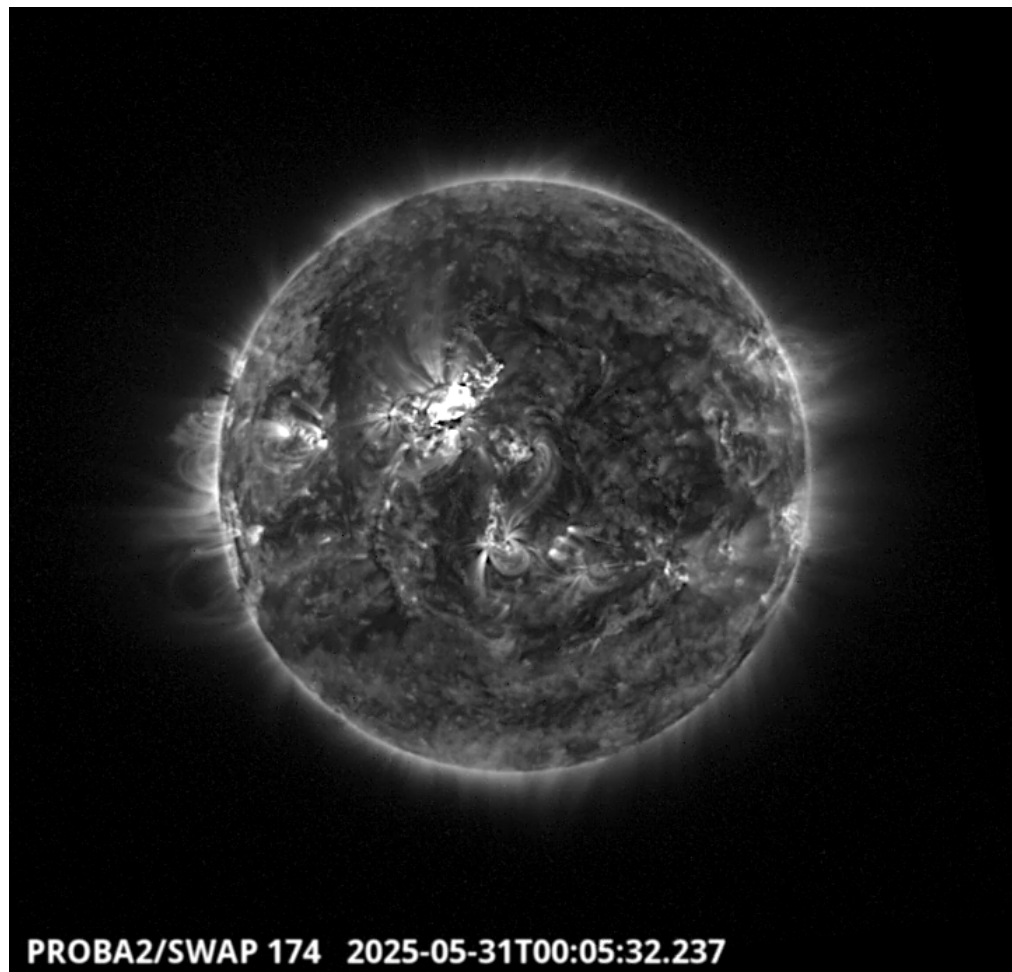
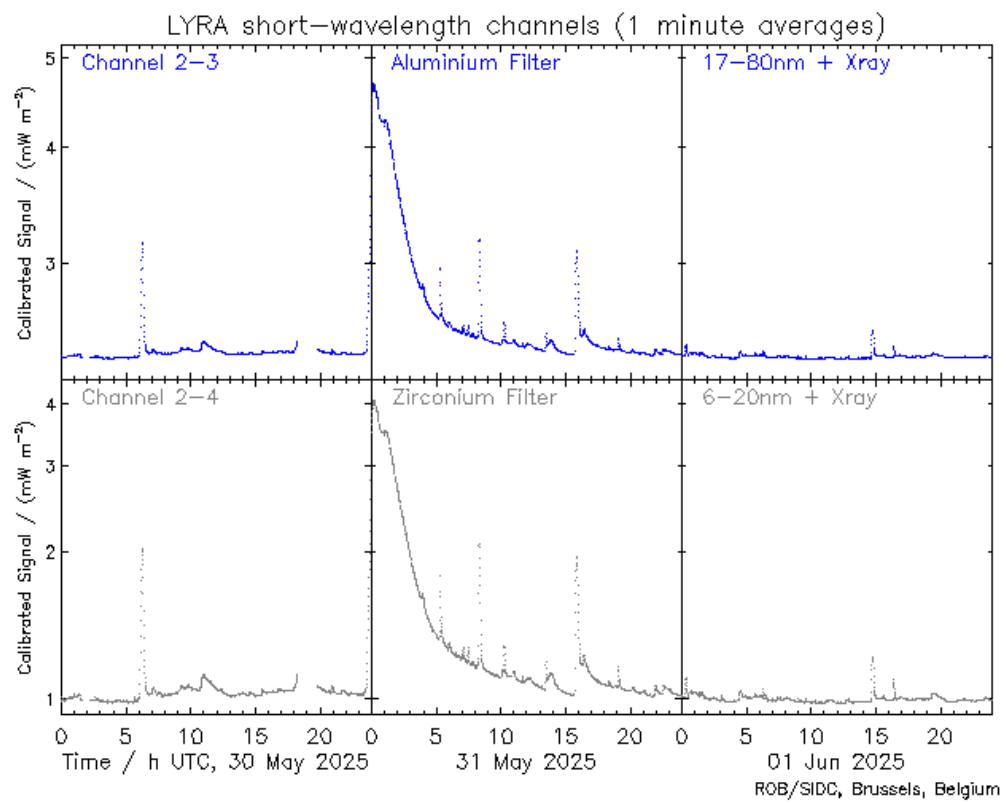
This page also lists the recorded flaring events.

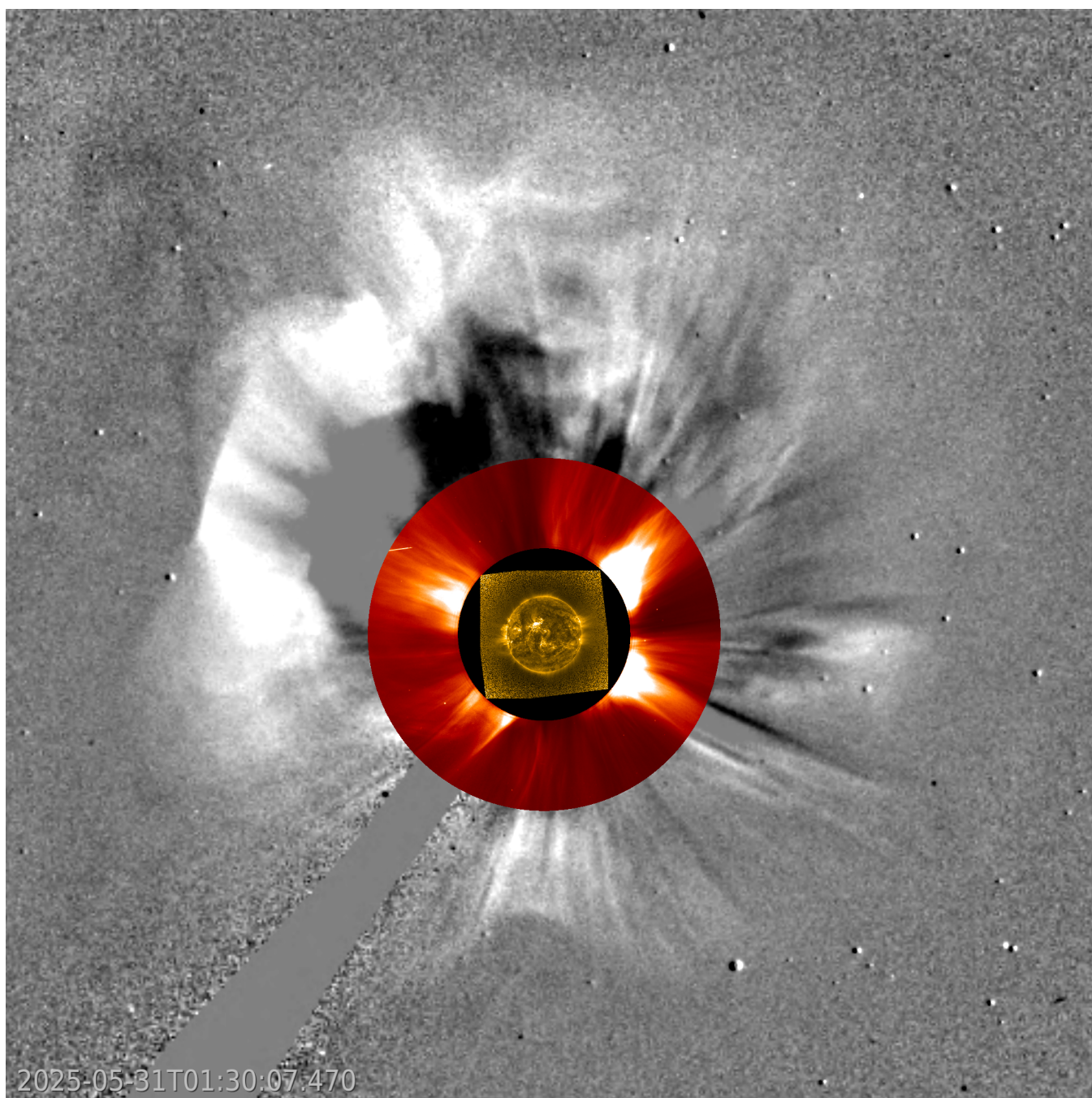
A weekly overview movie can be found [here](#) (SWAP week 792).

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](#)

Friday-Saturday May 30-31





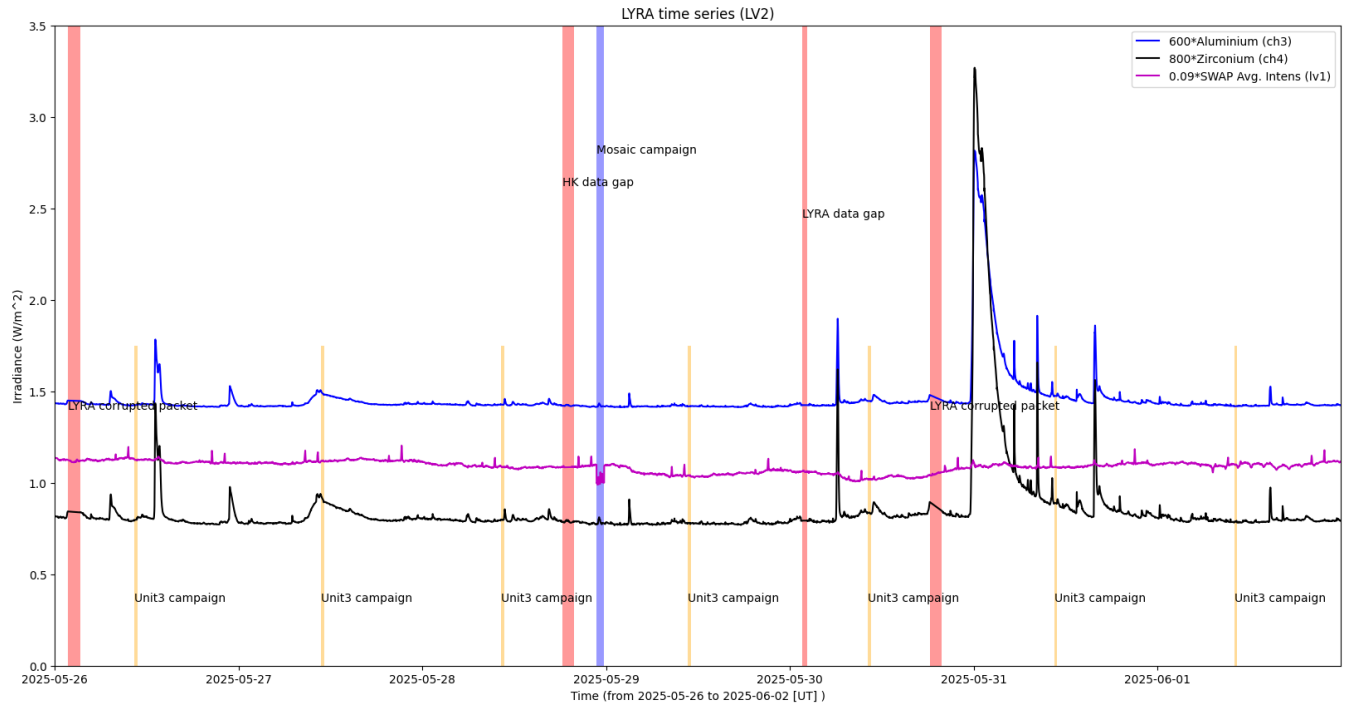
The largest flare of this week was an M8.1, and it was observed by LYRA (top panel) and SWAP (middle panel). The flare started on 2025-May-30 at 23:31 and it peaked the next day at 00:05 UT. It occurred close to the central meridian of the Sun, originating from active region NOAA4100. This large duration flare was also associated with a very fast full halo CME (~1500 km/s), as well as a large dimming on disk. The CME was Earth-directed (see bottom panel, LASCO-C2 and C3 images with SWAP in the center), and it was observed as an ICME at as early as 05:30 UT on June 1.

Find a SWAP movie of the event starting [here](#) and continuing [here](#). For an uninterrupted view of the event, see the weekly SWAP video [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: WAVINT (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:

- SWAP weekly mosaic, 2025-May-28

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

- Daily Unit 3 campaign, 2025-May-26
- Daily Unit 3 campaign, 2025-May-27
- Daily Unit 3 campaign, 2025-May-28
- Daily Unit 3 campaign, 2025-May-29
- Daily Unit 3 campaign, 2025-May-30
- Daily Unit 3 campaign, 2025-May-31
- Daily Unit 3 campaign, 2025-Jun-01

The red shaded periods related to other issues corresponds to:

- Corrupted packet for pass 50492, which resulted in a LYRA data gap on 2025-May-26 between 01:41-03:21 UT.
- Small LYRA_AD file for pass 50516, resulting in HK and SWAP calibrated data gap on 2025-May-28 between 18:30-19:39 UT.
- Small BINLYRA for pass 50528, hence a data gap on 2025-May-30 between 01:37-02:16 UT.
- Corrupted LYRA packet for pass 50535, resulting in a data gap on 2025-May-30 between 18:16 - 19:50 UT.

2. LYRA instrument status

IOS

Start IOS	Mon May 26 2025	LYIOS01176
End IOS	Sun Jun 01 2025	LYIOS01177

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.41 and 50.48 °C.

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 4619 to 4926.
The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon May 26 2025	IOS01288
End IOS	Sun Jun 01 2025	IOS01289

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.05 and 0.39 °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 50491 to 50554) was nominal, except for:

- 50492, 50516, 50528, 50535

Data coverage HK

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

- None.
- Small LYRA_AD file for pass 50516, resulting in HK and SWAP calibrated data gap on 2025-May-28 between 18:30-19:39 UT.

Data coverage SWAP

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

- None.

Total number of images between 2025 May 26 00:00 UT and 2025 Jun 02 00:00 UT: 4363

Highest cadence in this period: 18 seconds

Average cadence in this period: 138.59 seconds

Number of image gaps larger than 300 seconds: 213

Largest data gap: 11.00 minutes

Data coverage LYRA

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

- None
- Corrupted packet for pass 50492, which resulted in a LYRA data gap on 2025-May-26 between 01:41-03:21 UT.
- Small BINLYRA for pass 50528 due to bad signal, resulting in a data gap on 2025-May-30 between 01:37 - 02:16 UT.
- Corrupted LYRA packet for pass 50535, resulting in a data gap on 2025-May-30 between 18:16 - 19:50 UT.

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)