

P2SC-ROB-WR-815 - 20251103	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Nov 03 to Sun Nov 09, 2025 12 Nov 2025 Laurence Wauters Marie Dominique	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, elke.dhuys@sidc.be	https://proba2.sidc.be ++ 32 (0) 2 3730559
cc:	ROB DIR, ronald@oma.be ESA Redu, Rene.Wittmann@esa.int and Marcus.De.Deus.Silva@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Juha-Pekka.Luntama@esa.int and Melanie.Heil@esa.int	

1. Science

Solar & Space weather events

The level of solar activity¹ fluctuated between **low** and **very high** this week.

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

	Monday 03 Nov	Tuesday 04 Nov	Wednesday 05 Nov	Thursday 06 Nov	Friday 07 Nov	Saturday 08 Nov	Sunday 09 Nov
Activity	moderate	very high	moderate	moderate	moderate	low	high
Flares	M1.5, M2.9, M5.0, M1.3	X1.1, X1.8, M3.5	M8.6, M7.4	M1.1	M1.7	-	X1.7

¹ See appendix. All timings are given in UT.

Solar Activity

Solar flare activity fluctuated from low to very high 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>

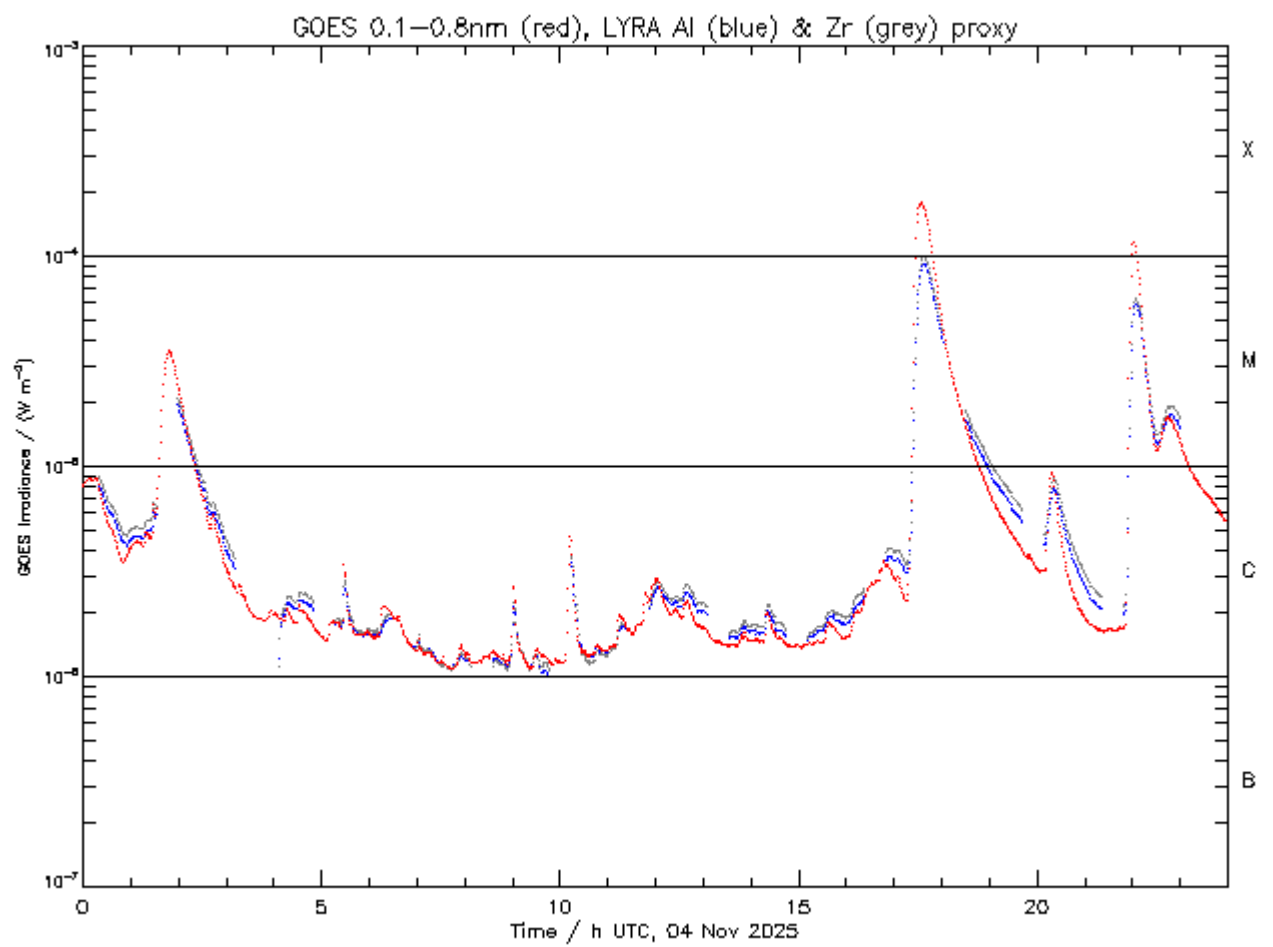
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 815).

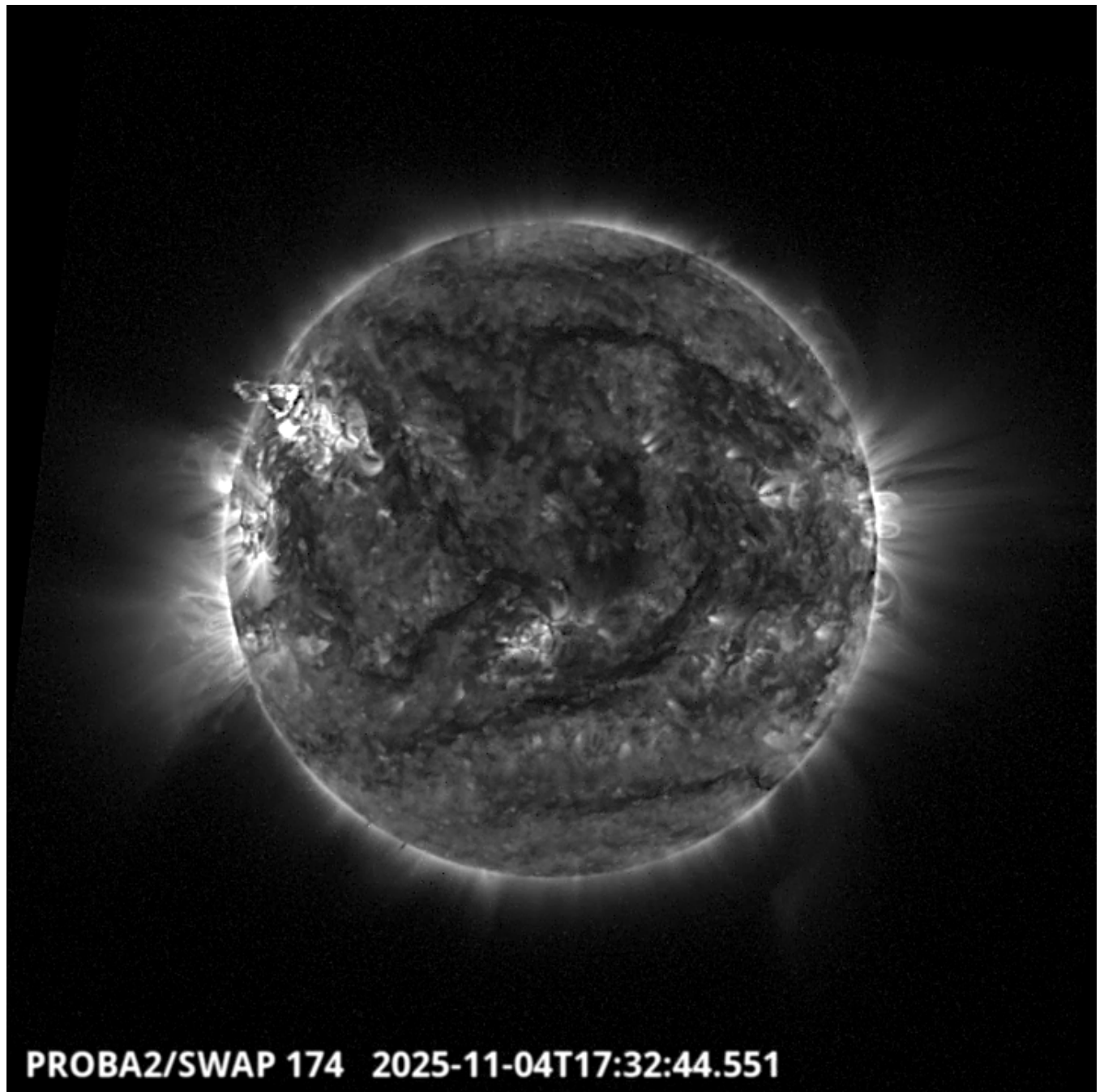
Details about some of this week's events can be found further below.

If any of the linked movies are unavailable they can be found in the P2SC movie repository [here](#)

Tuesday Nov 04



ROB/SIDC, Brussels, Belgium



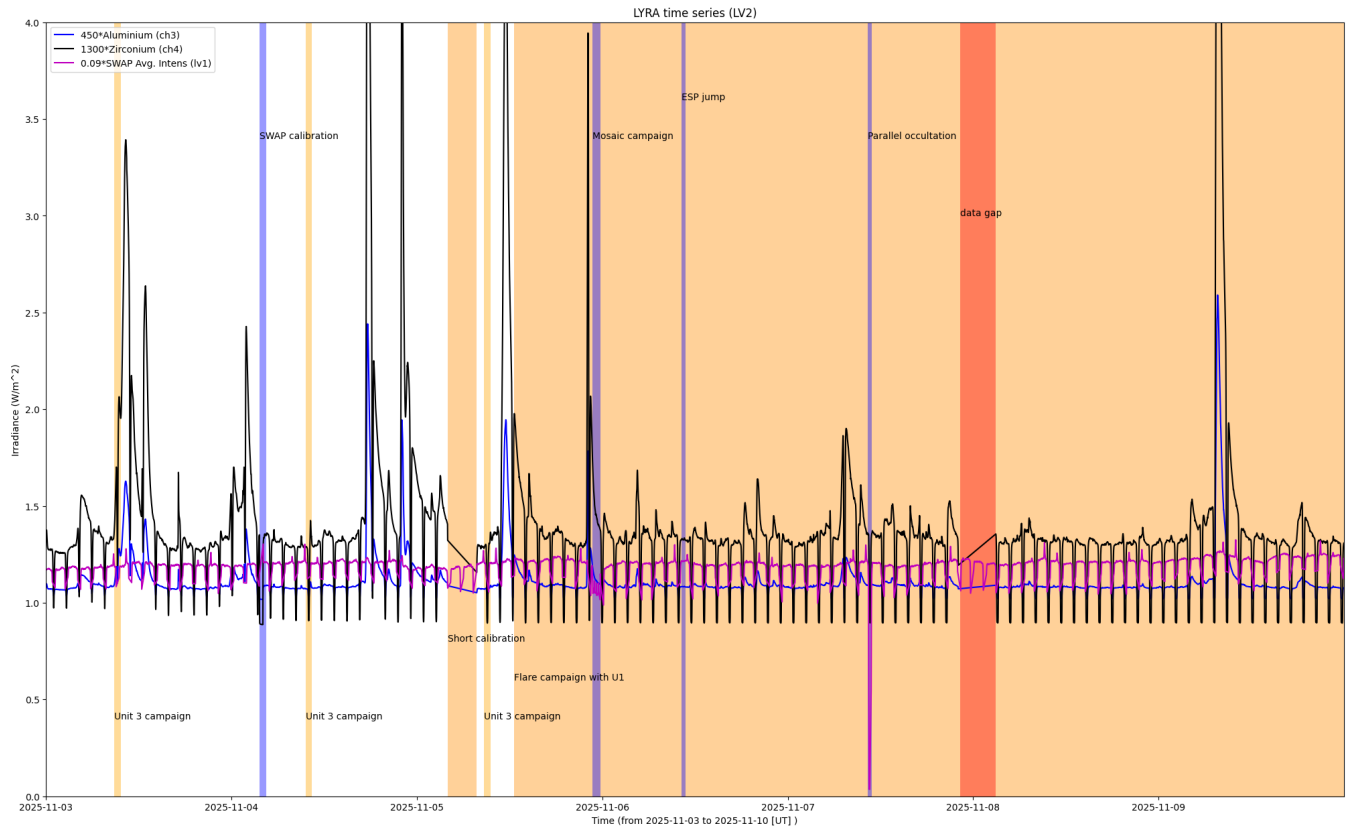
The largest flare of this week was a X1.8, and it was observed by LYRA (top panel) and SWAP (bottom panel). The flare peaked on 2025-Nov-04 at 17:34 UT and occurred on the North East side of the Solar disk, originating from active region NOAA 4274. A halo CME was detected by Lasco-C2 at 17:36 UT.

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 SWAP calibration, 2025-Nov-04
- SWAP mosaic, 2025-Nov-05
- ESP jump, 2025-Nov-06
- SWAP parallel occultation, 2025-Nov-07

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

- Daily Unit 3 campaigns during occultation season until 2025-Nov-05.
- Short bi-weekly calibration, 2025-Nov-05
- Unit 1 flare campaign from 2025-Nov-05 until the end of the week.

The red shaded periods related to other issues corresponds to:

- A LYRA size packet seems corrupted on-board for Pass 51949, 2025-11-08.

2. LYRA instrument status

IOS

Start IOS	Mon Nov 03 2025	LYIOS01209
End IOS	Sun Nov 9 2025	LYIOS01211

LYRA detector temperature

LYRA detector 2 temperature globally varied between 51.35 and 55.93 °C.

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 10907 to 11408.
The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon Nov 03 2025	IOS01317
End IOS	Sun Nov 9 2025	IOS01318

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 1.83 and 3.75 °C.

4. PROBA2 Science Center Status

The following changes were made to the P2SC:

- None.
- P2SC-s2 was rebooted (due to ADP process issue).

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 51904 to 51965) was nominal, except for:

- None.

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.

Total number of images between 2025 Nov 03 00:00 UT and 2025 Nov 10 00:00 UT: 4596

Highest cadence in this period: 30 seconds

Average cadence in this period: 131.60 seconds

Number of image gaps larger than 300 seconds: 104

Largest data gap: 26.27 minutes

Data coverage LYRA

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

- None
- A LYRA size packet seems corrupted on-board for Pass 51949 which provide a data gap for this pass.

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)