P2SC-ROB-WR-777 - 20250210	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Feb 10 to Sun Feb 16 19 Feb 2025 Laurence Wauters 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] remained **low** this week.

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

	Monday 10 Feb	Tuesday 11 Feb	Wednesday 12 Feb	Thursday 13 Feb	Friday 14 Feb	Saturday 15 Feb	Sunday 16 Feb
Activity	moderate	moderate	low	moderate	moderate	low	low
Flares	**M1.0**	**M1.6**	-	**M1.0**	**2*M1.2, M1.8**	-	-

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

Solar Activity

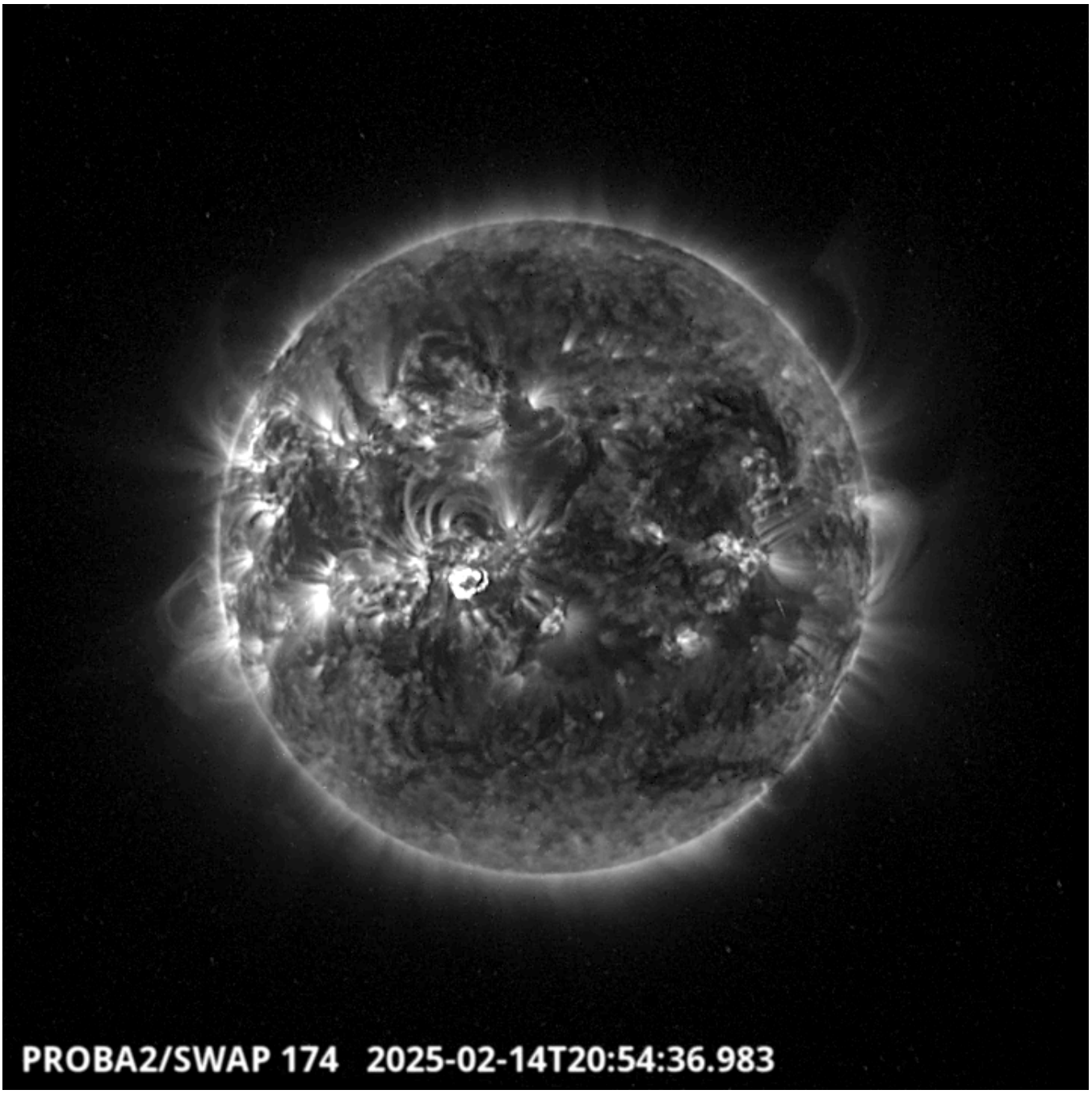
Solar flare activity remained low during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: https://proba2.oma.be/ssa
This page also lists the recorded flaring events.

A weekly overview movie can be found here (SWAP week 777).

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 Feb 14

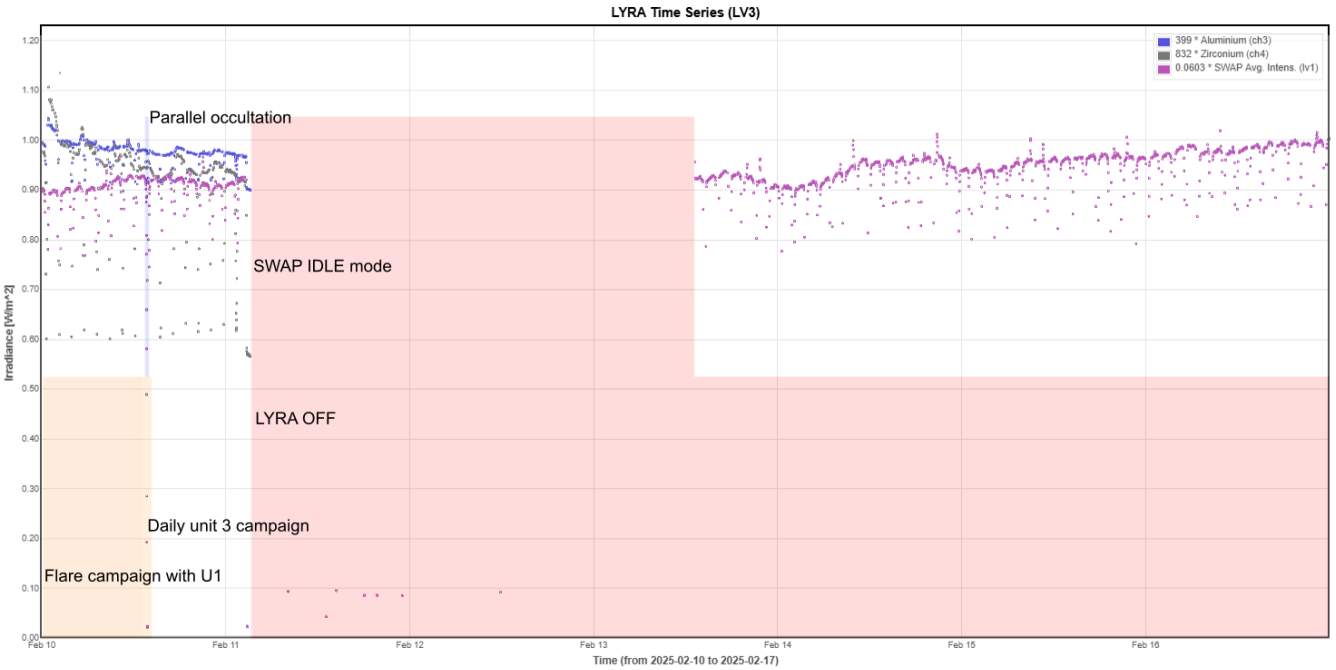


The largest flare of the week is a M1.8. It was produced by the active region 3990 located on the Meridional-East part of the solar disk.

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:

- Parallel occultation, Feb 10
- SWAP IDLE mode since Feb 11 3:14, returned to nominal mode on Feb 13

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

- Flare campaign with Unit 1, Feb 10
- Daily Unit 3 campaign, Feb 10
- LYRA OFF, since Feb 11 3:14 until the end of the week.

The red shaded periods related to other issues corresponds to:

- PROBA2 has been in safe mode since Feb 11. Redu explained to us that a Large Angle Rotation was performed before the expected time. The temperature of the Star tracker increased leading to a loss of control.PROBA2 was back in Sun mode on Feb 13. SWAP came back to nominal mode. Nevertheless, the LYRA re-activation failed and was OFF until the end of the week.

2. LYRA instrument status

IOS

Start IOS	Mon Feb 10 2025	LYIOS01144
End IOS	Sun Feb 16 2025	LYIOS01145

LYRA detector temperature

LYRA detector 2 temperature globally varied between -3.29 and 56.2 °C.

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 2198 to 3028.
The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon Feb 10 2025	IOS01266
End IOS	Sun Feb 16 2025	IOS01268

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -3.29 and 9.59 °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 49580 to 49638) was nominal, except for:

- Feb 11 pass 49590 until Feb 17 pass 49642.

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:

- 49594 until 49598: small tar file size

Total number of images between 2025 Feb 10 0UT and 2025 Feb 17 0UT: 3352
Highest cadence in this period: 29 seconds
Average cadence in this period: 180.46 seconds
Number of image gaps larger than 300 seconds: 113
Largest data gap: 1520.67 minutes

Data coverage LYRA

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

- Missing passes: Feb 11, pass 49590 until Feb 17 pass 49642.

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)