


P2SC-ROB-WR-396 - 20171023 Weekly report #396	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Oct 23 to Sun Oct 29, 2017 31 Aug 2017 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

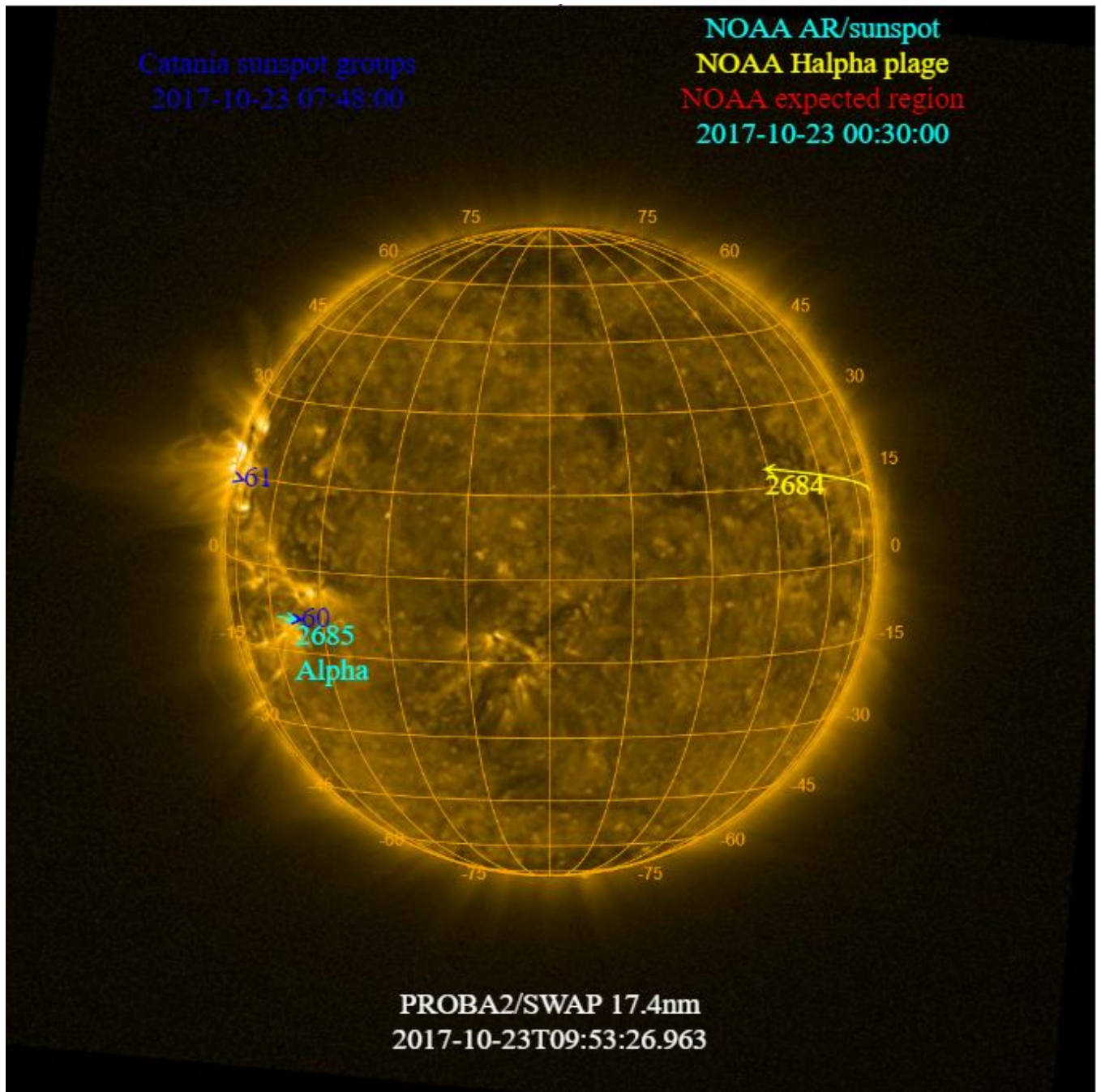
The level of solar activity¹ fluctuated was **very low** this week.

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

	Monday 23 Oct	Tuesday 24 Oct	Wednesday 25 Oct	Thursday 26 Oct	Friday 27 Oct	Saturday 28 Oct	Sunday 29 Oct
Activity	very low	very low	very low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

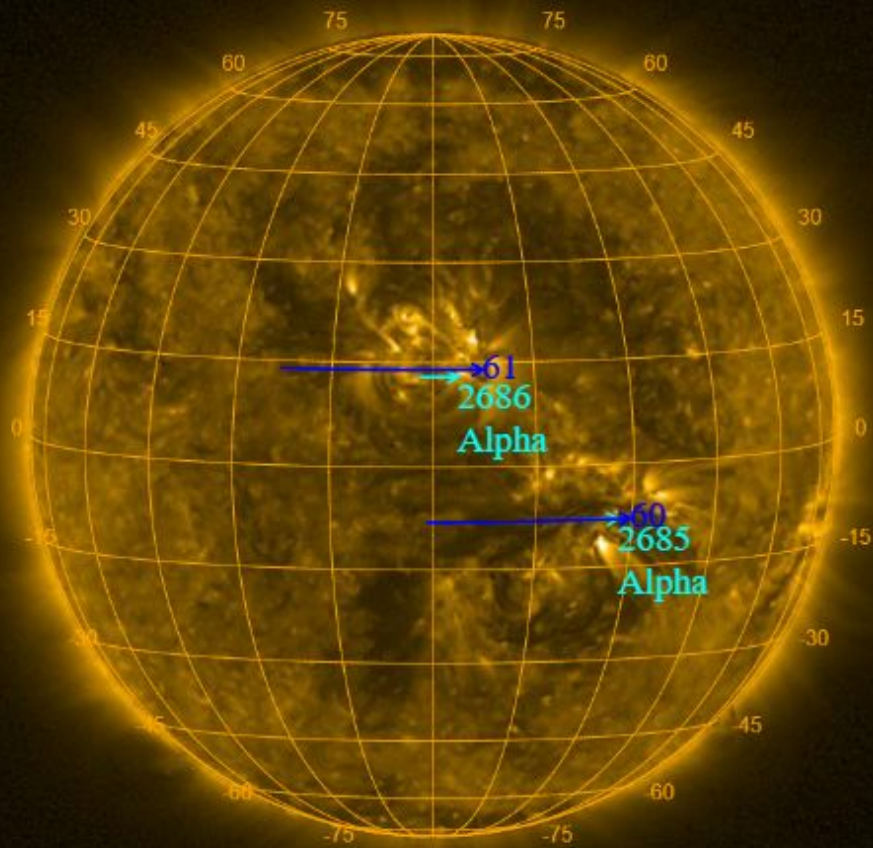
The SWAP images of Oct 23 and Oct 29 are shown below, with annotated active regions.



<http://sidc.be/soteria/soteria.php>

Catania sunspot groups
2017-10-27 07:30:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2017-10-29 00:30:00



PROBA2/SWAP 17.4nm
2017-10-29T09:52:05.186

Solar Activity

Solar flare activity was very 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: <http://proba2.oma.be/ssa>

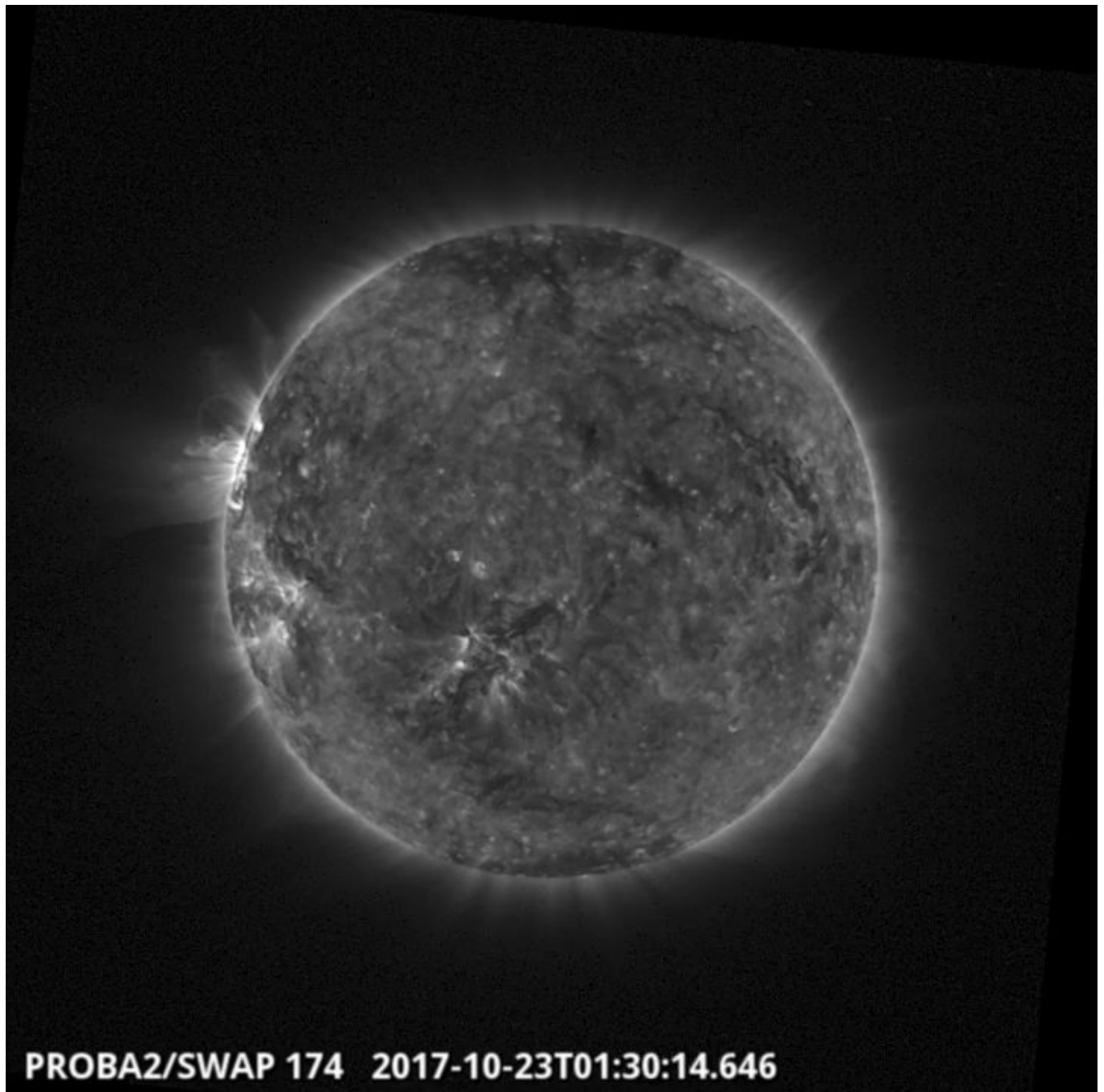
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 396).

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](#)

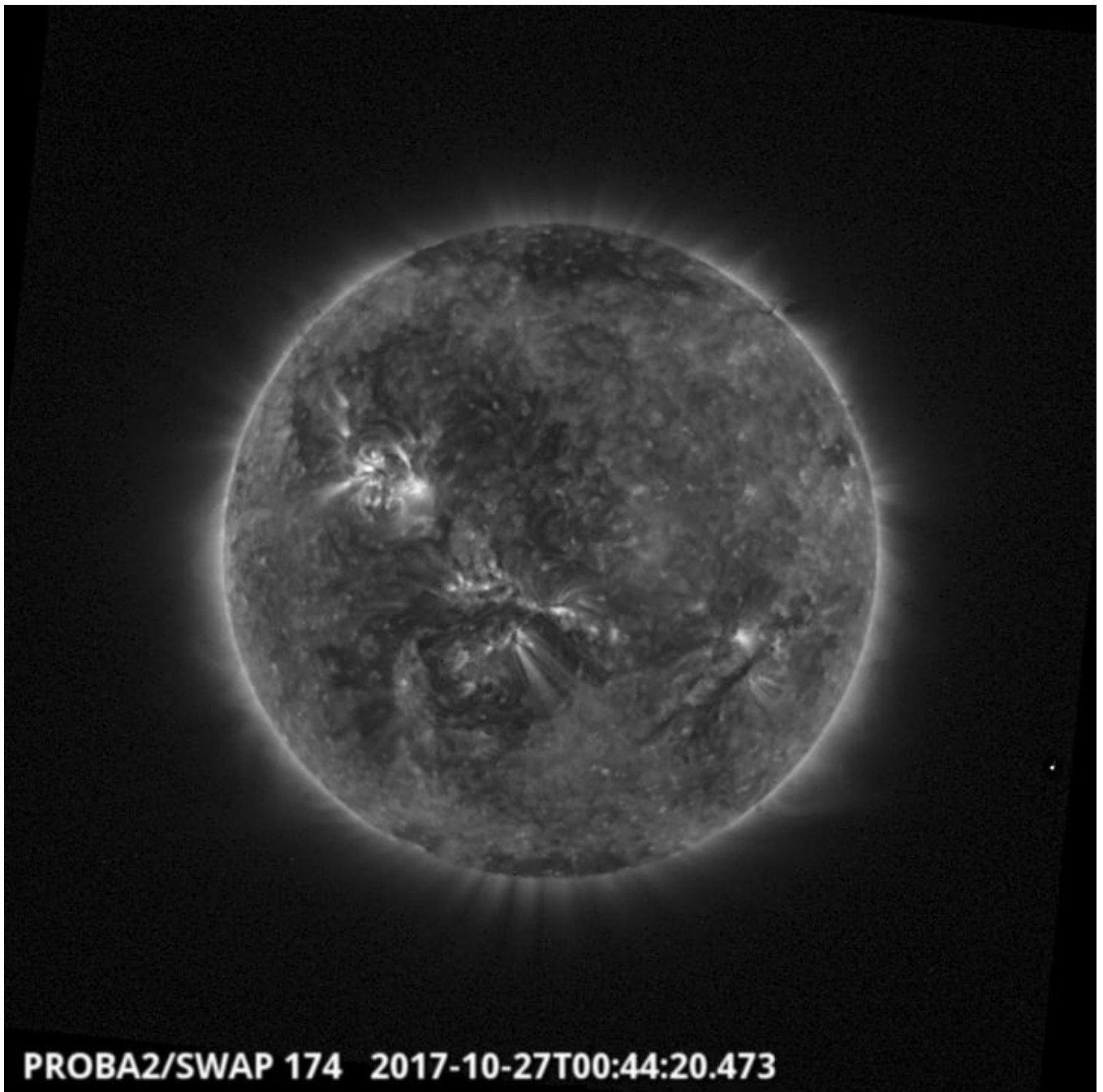
Monday Oct 23



A low latitude extension of the northern polar coronal hole that started transiting the central meridian around October 20 is visible on SWAP image above of 2017-Oct-23. It remained visible until 2017-Oct-26

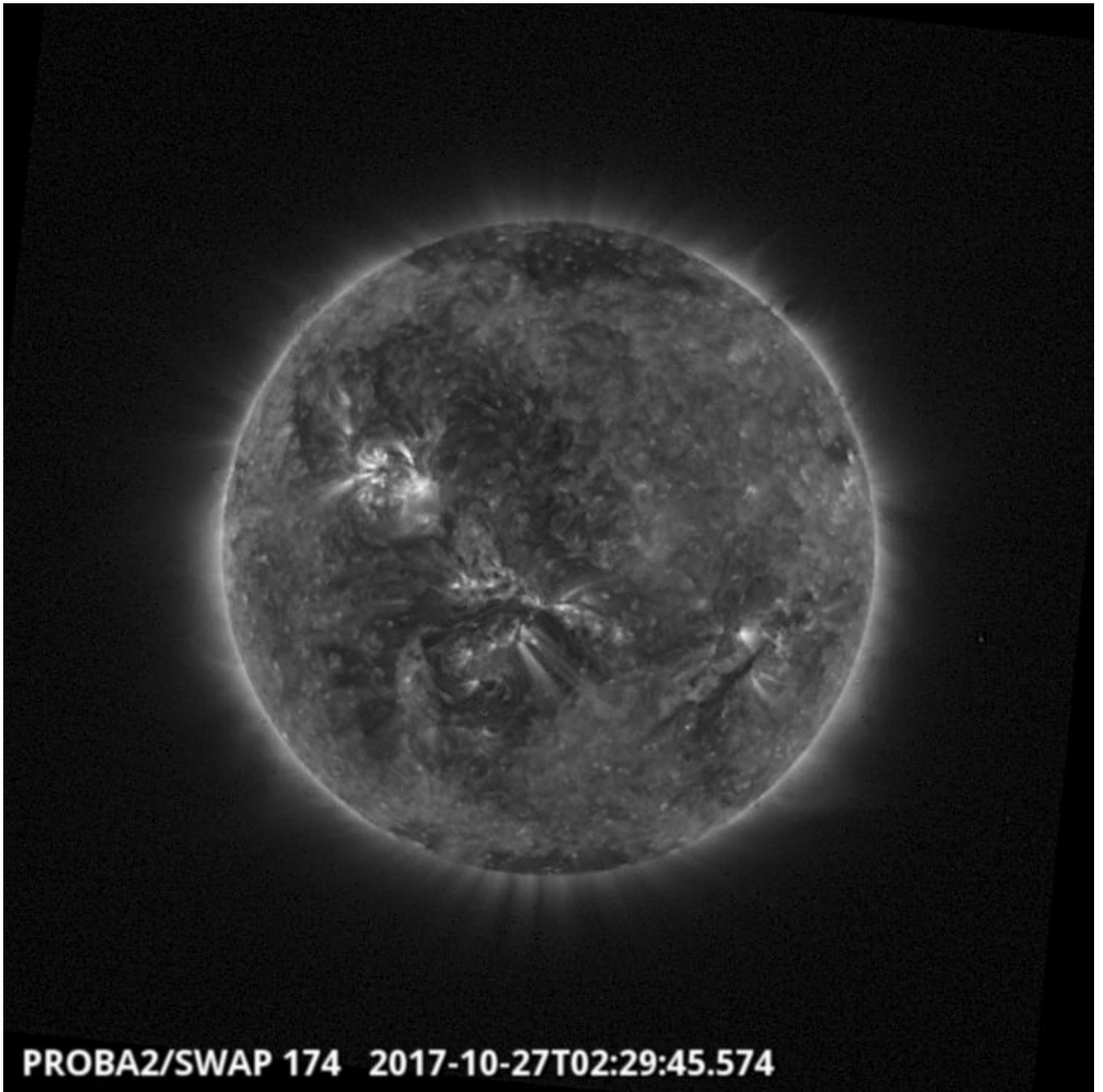
Find a movie of the event [here](#) (SWAP movie)

Friday Oct 27



The only flare of the week was a B-class flare (B1.8), it was peaking on 2017-Oct-27 at 00:44 UT from NOAA region 2686. It was observed by SWAP (image above) on the North-East part of the Sun.

Find a movie of the event [here](#) (SWAP movie)



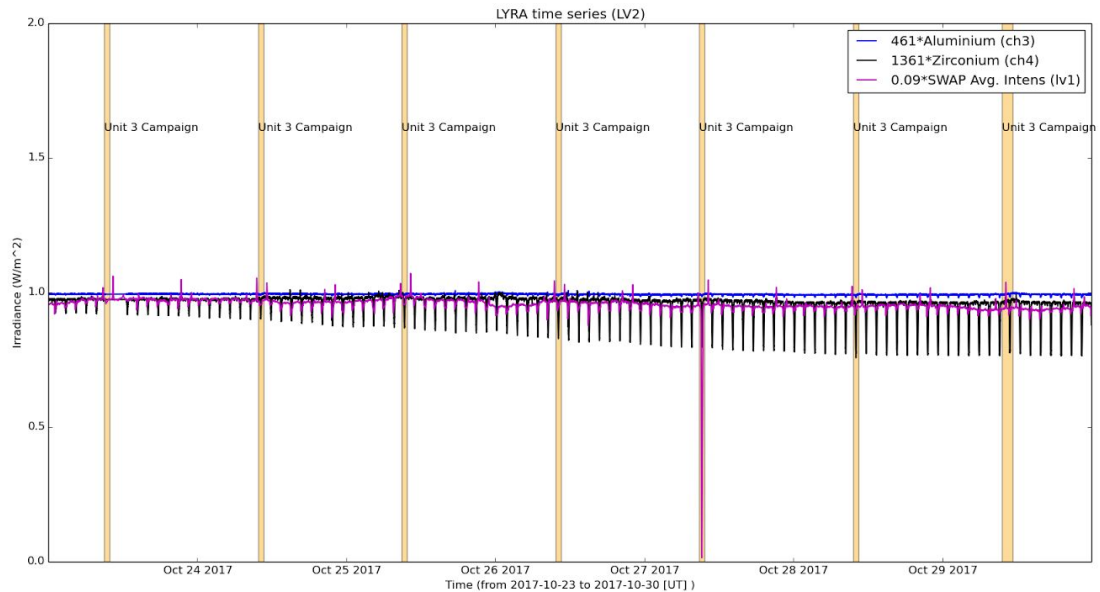
A negative polarity low latitude coronal hole stretching in both North and South hemisphere on 2017-Oct-27 is visible on SWAP image above and is visible until the end of the week.

Find a movie of the event [here](#) (SWAP movie)

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)



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

- None

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

- Daily unit 3 campaign, 2017-Oct-23
- Daily unit 3 campaign, 2017-Oct-24
- Daily unit 3 campaign, 2017-Oct-25
- Daily unit 3 campaign, 2017-Oct-26
- Daily unit 3 campaign, 2017-Oct-27
- Daily unit 3 campaign, 2017-Oct-28
- Daily unit 3 campaign, 2017-Oct-29

The red shaded periods related to other issues corresponds to:

- Pass 25543: Due to network problem at Svalbard, there is no Swap and Lyra data available(2017-10-23).

Outreach, papers, presentations, etc.

Please consult <http://proba2.oma.be/science/publications> for a list of interesting articles using SWAP & LYRA data, as well as a link to the complete article list.

The science section of this weekly report is also published in the weekly STCE newsletter (<http://www.stce.be/newsletter/newsletter.php>).

Guest Investigator Program

- Willow M Reed from the University of Colorado in Boulder as part of Marty Snow's GI team.

2. LYRA instrument status

Calibration

None

IOS & operations

Monday 23 Oct	Tuesday 24 Oct	Wednesday 25 Oct	Thursday 26 Oct	Friday 27 Oct	Saturday 28 Oct	Sunday 29 Oct
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00653	LYIOS00653	LYIOS00653	LYIOS00653	LYIOS00653	LYIOS00654	LYIOS00654

The following science campaigns were performed by LYRA:

- daily U3 (occultation) observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 51.14 and 53.64 °C.

3. SWAP instrument status

Calibration

None

MCPM errors

The number of MCPM recoverable errors increased from 12389 to 12606.

The number of MCPM unrecoverable errors remained at 45.

IOS & operations

Monday 23 Oct	Tuesday 24 Oct	Wednesday 25 Oct	Thursday 26 Oct	Friday 27 Oct	Saturday 28 Oct	Sunday 29 Oct
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition+ LYRA parallel occultation	Nominal acquisition	Nominal acquisition
IOS00719 658 images	IOS00719 694 images	IOS00720 697 images	IOS00721 759 images	IOS00722 820 images	IOS00722 601 images	IOS00722 653 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 1.67 and 3.19 °C.

4. PROBA2 Science Center Status

The main operator is Laurence Wauters.

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 25539 to 25604) was nominal, except for:

- Pass 25543: Due to network problem at Svalbard, there is no Swap and Lyra data available.(2017-10-23 12:34:16)

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:

- Pass 25543

Total number of images between 2017 Oct 23 0UT and 2017 Oct 30 0UT: 4882

Highest cadence in this period: 0 seconds

Average cadence in this period: 123.84 seconds

Number of image gaps larger than 300 seconds: 117

Largest data gap: 23.47 minutes

Data coverage LYRA

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

- Pass 25543

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)