


P2SC-ROB-WR-340 - 20160926 Weekly report #340	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 26 to Sun Oct 2, 2016 15 Oct 2016 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

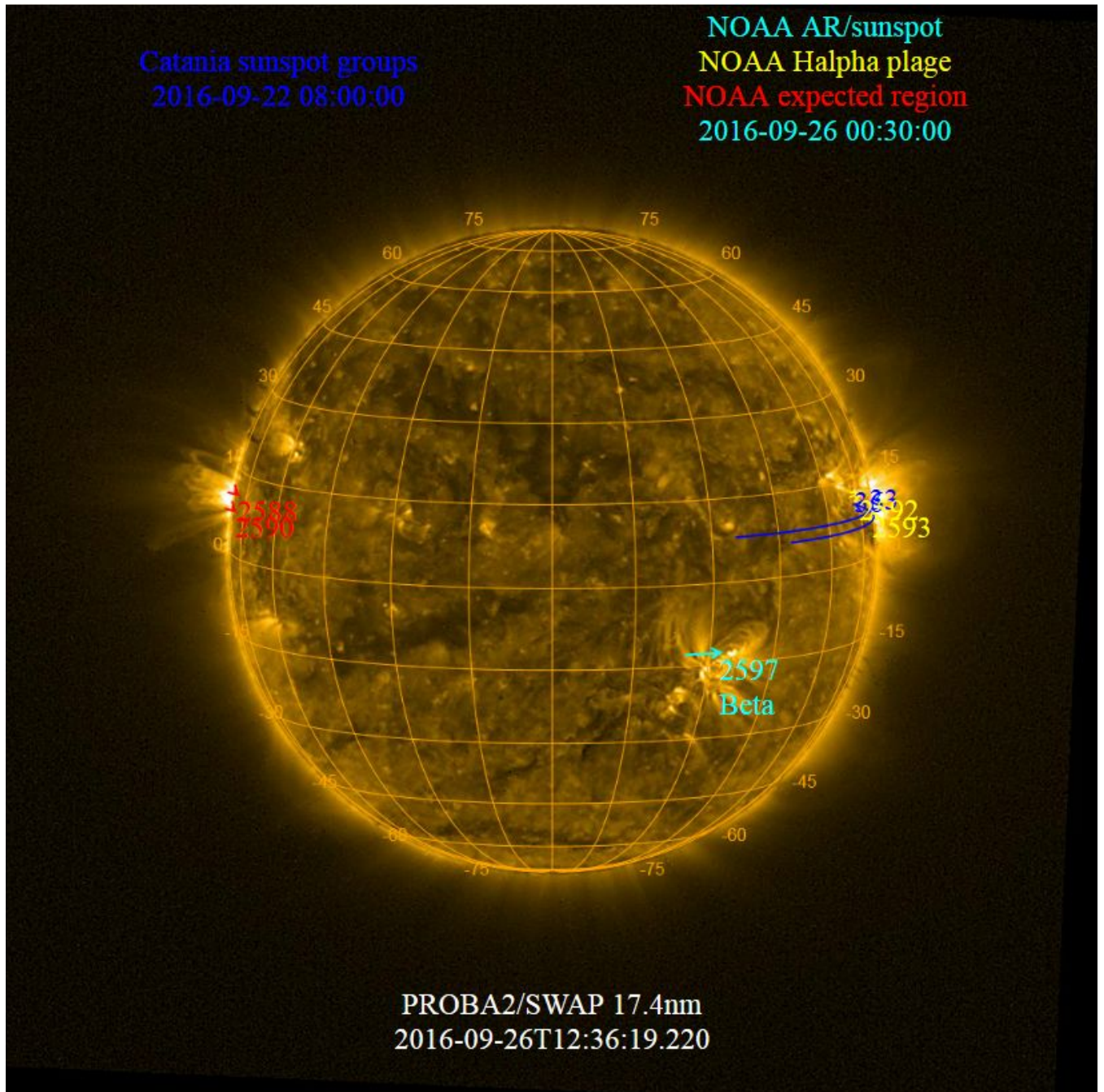
The level of solar activity¹ fluctuated between **very low** and **low** this week.

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

	Monday 26 Sep	Tuesday 27 Sep	Wednesday 28 Sep	Thursday 29 Sep	Friday 30 Sep	Saturday 01 Oct	Sunday 02 Oct
Activity	Very low	low	Very low	Very low	Very low	Very low	Very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

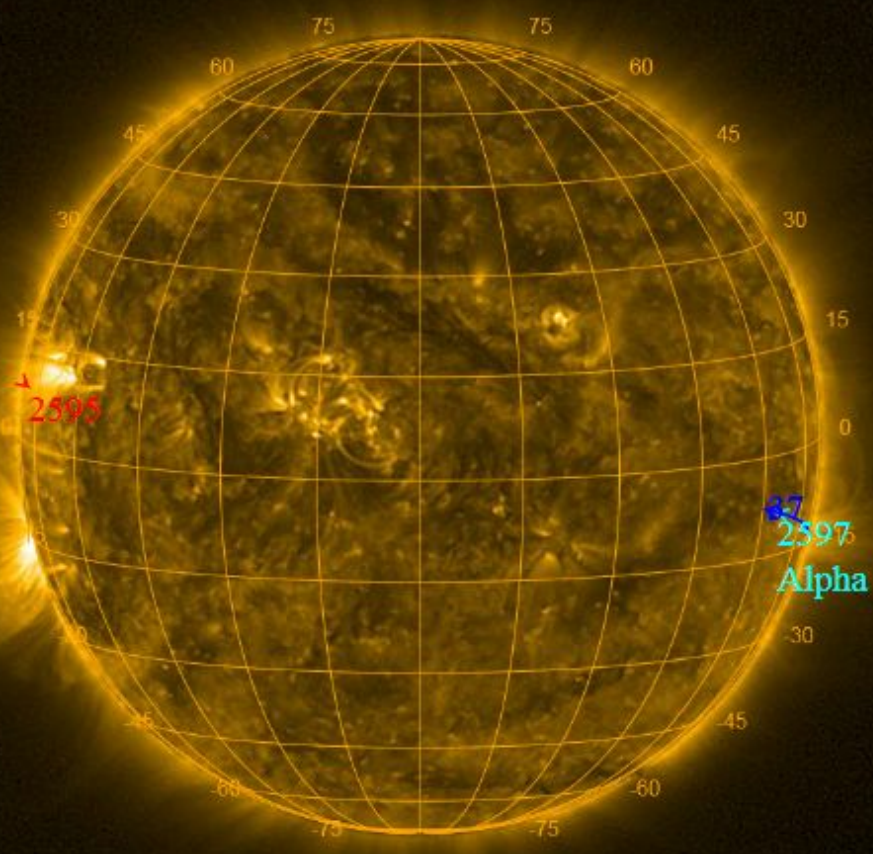
The SWAP images of Sep 26 and Sep 02 are shown below, with annotated active regions.



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

Catania sunspot groups
2016-09-30 06:48:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2016-10-01 00:30:00



PROBA2/SWAP 17.4nm
2016-10-02T12:40:38.833

Solar Activity

Solar flare activity fluctuated between very low and 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>

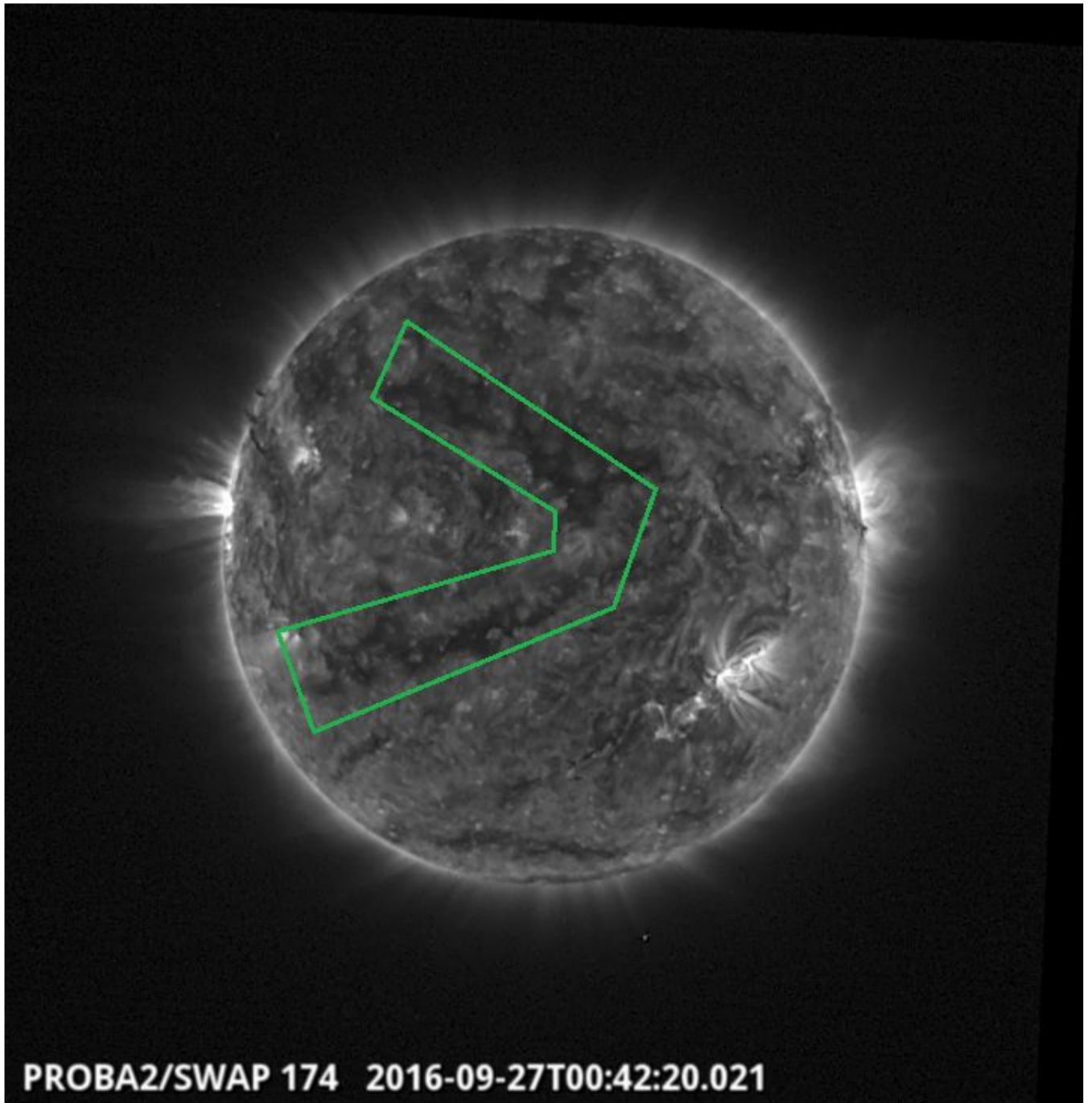
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 340).

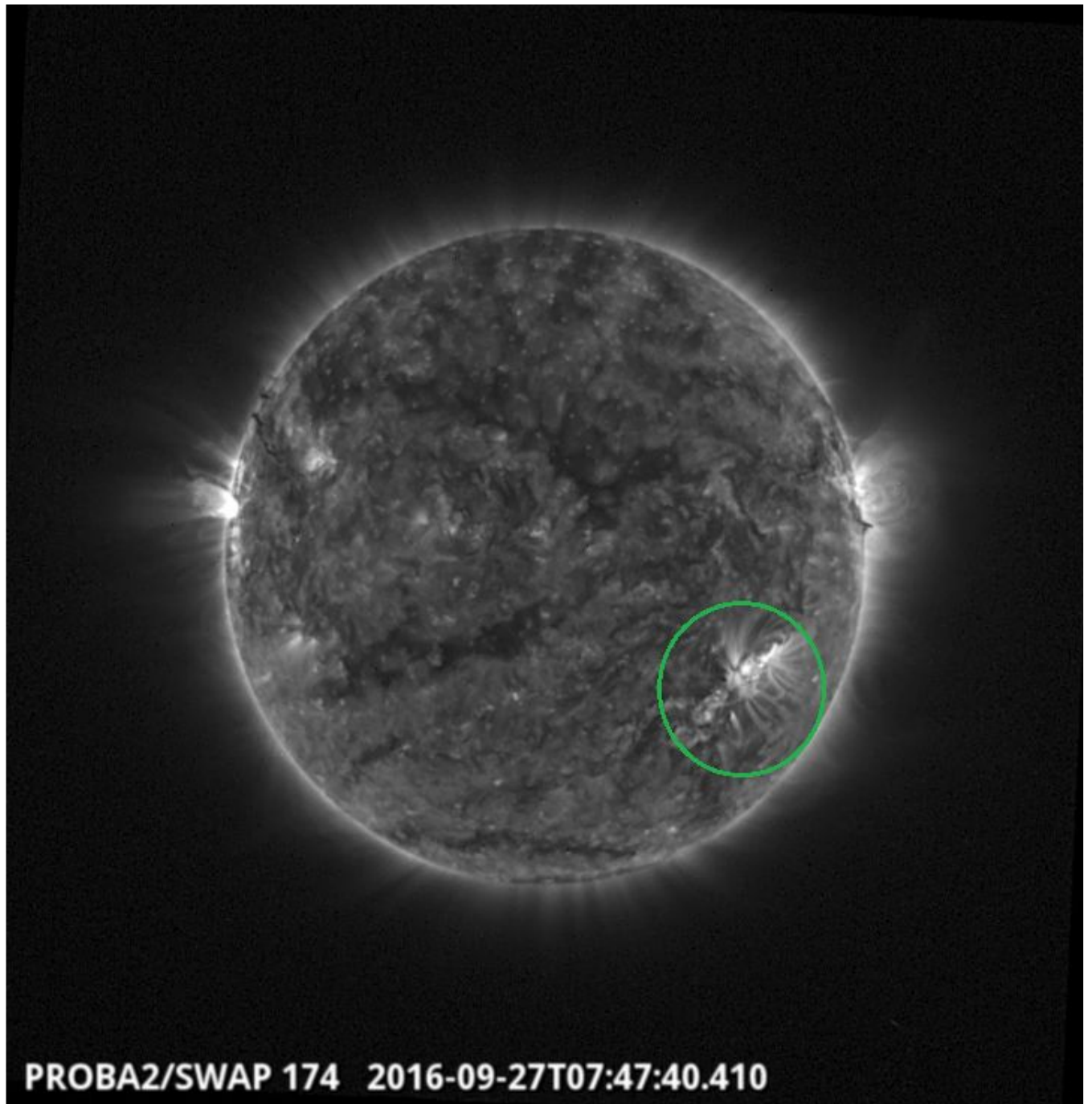
Details about some of this week's events, can be found further below.

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

Thursday Sep 27

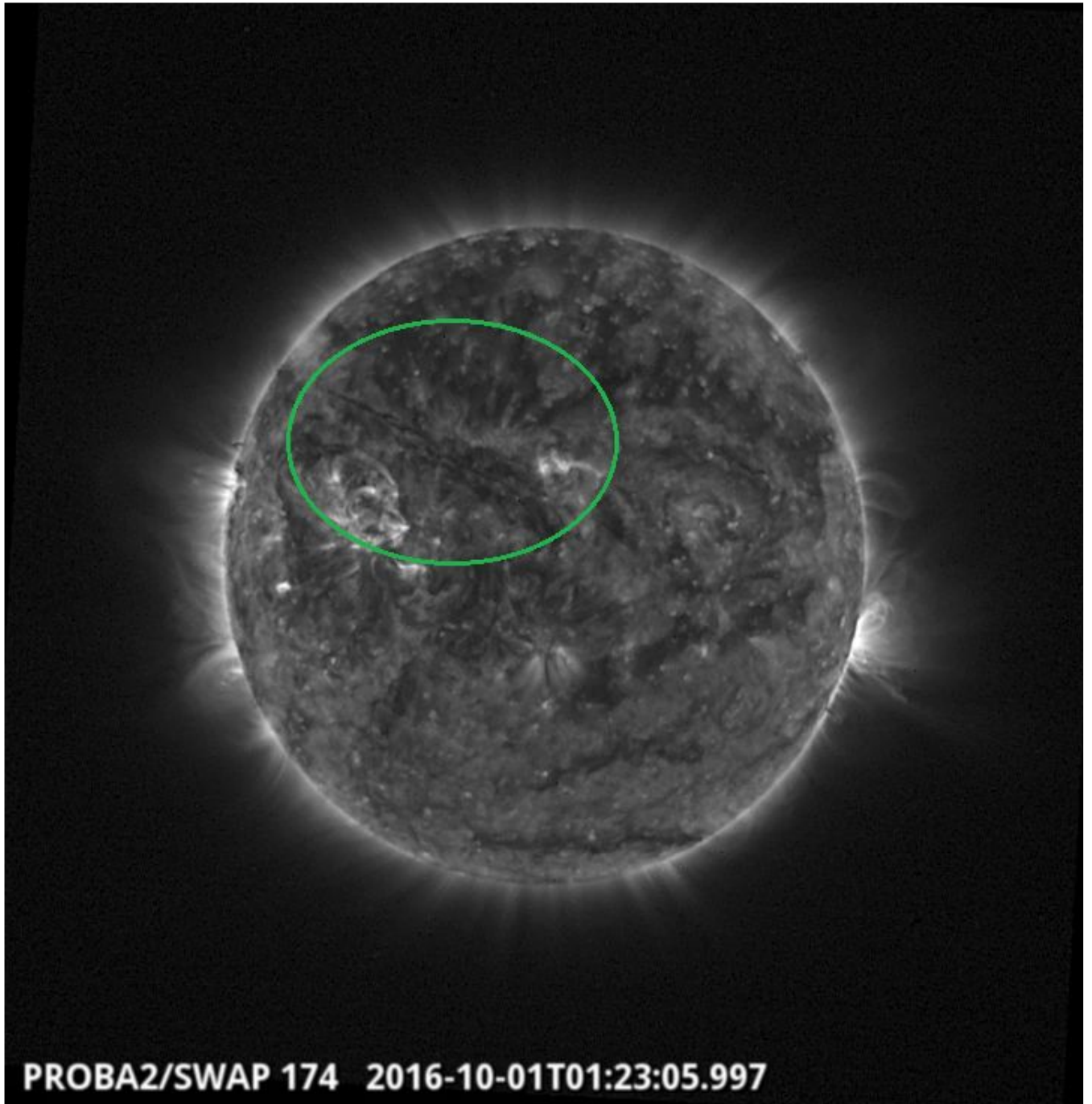


A thin centrally located coronal hole dominated the solar disk throughout the week
Find a movie of the events [here](#) (SWAP movie)

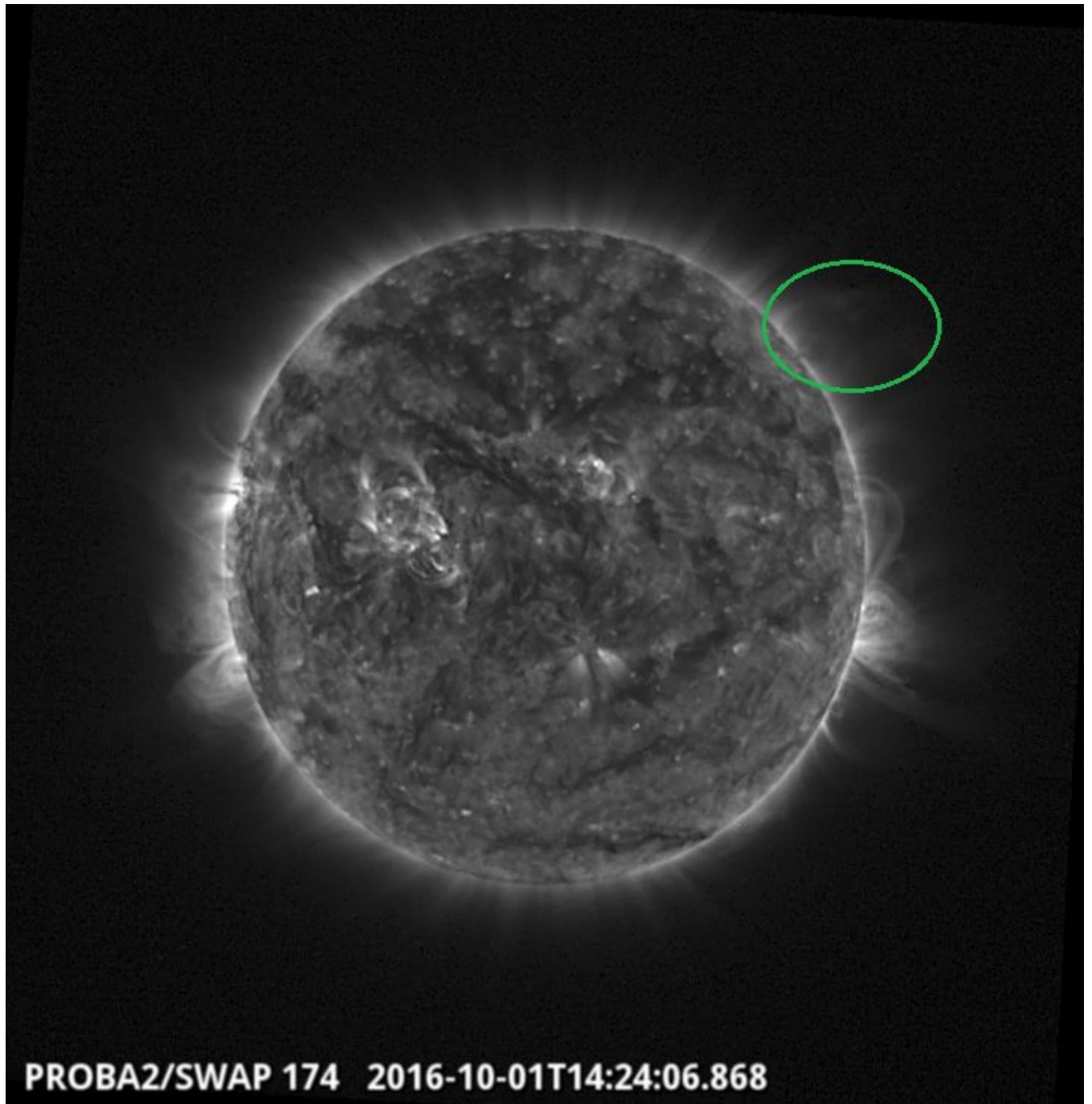


NOAA AR 2597 produced the largest flare of the week, a C1.0 class flare, which peaked at 07:48 UT. This group was most active throughout the week producing several B-class flares. Find a movie of the events [here](#) (SWAP movie)

Saturday Oct 1



**A large filament located in the northern hemisphere erupted
On Oct 1 at about 01:20 UT. The eruption was associated with a coronal
dimming, EUV wave and CME. Find a movie of the events [here](#) (SWAP movie)**

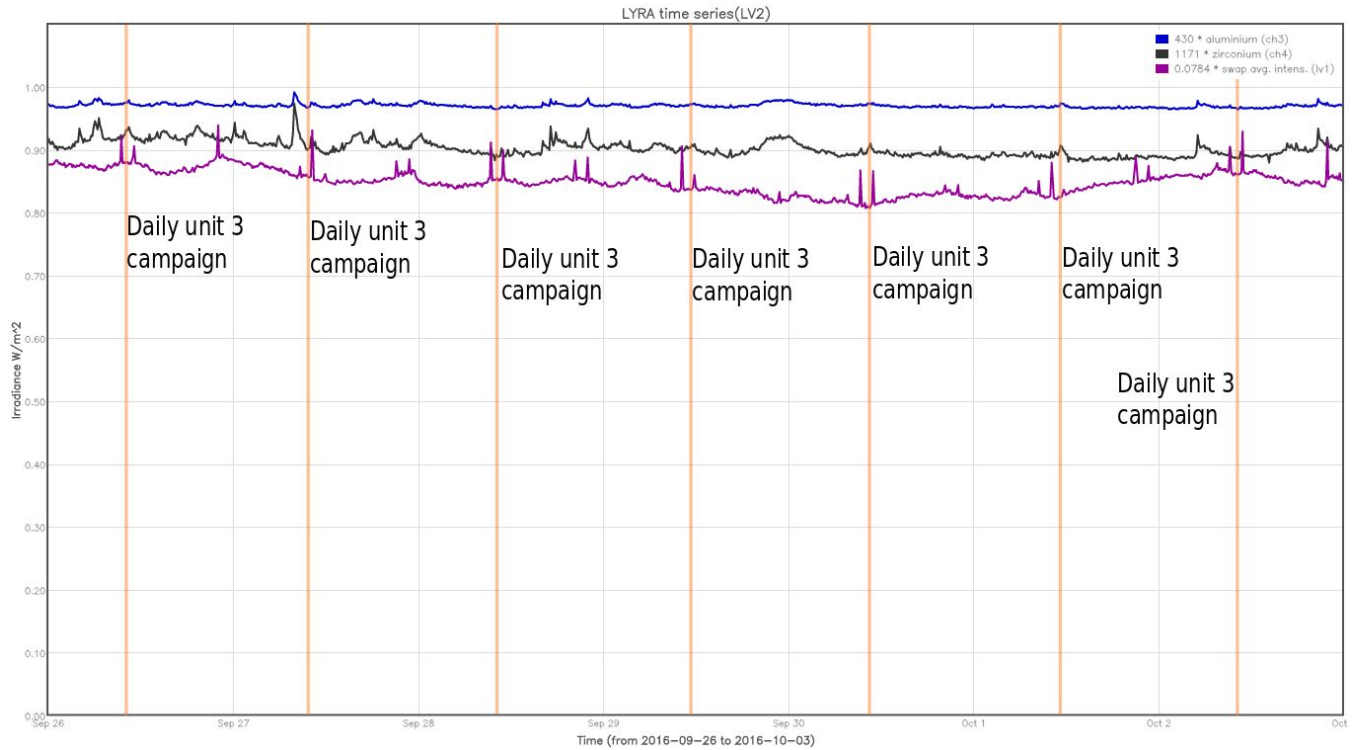


A small CME erupted off of the the north-east limb at 14:24 UT on 01 October.
Find a movie of the events [here](#) (SWAP movie)

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 orange shaded periods correspond to, from left to right:

- Daily unit 3 campaign, 2016-Sep-26
- Daily unit 3 campaign, 2016-Sep-27
- Daily unit 3 campaign, 2016-Sep-28
- Daily unit 3 campaign, 2016-Sep-29
- Daily unit 3 campaign, 2016-Sep-30
- Daily unit 3 campaign, 2016-Oct-01
- Daily unit 3 campaign, 2016-Oct-02

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>).

- The Proba2 GI Larisza Krista presented her work about dimmings and CMEs at the PROBA2 science meeting on the Sep 29.

Guest Investigator Program

- The Proba2 GI Larisza Krista visited the P2SC from 2016-Sep 25 to 2016-Oct-01 to work on her GI project looking at “The structural and footpoint evolution of CMEs.”

2. LYRA instrument status

Calibration

No Calibration campaign during this week.

IOS & operations

Monday 26 Sep	Tuesday 27 Sep	Wednesday 28 Sep	Thursday 29 Sep	Friday 30 Sep	Saturday 01 Oct	Sunday 02 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
LYIOS00579	LYIOS00579	LYIOS00579	LYIOS00579	LYIOS00580	LYIOS00580	LYIOS00580

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49 and 50.3 °C.

3. SWAP instrument status

Calibration

No Calibration campaign during this week.

MCPM errors

The number of MCPM recoverable errors increased from 3800 to 3968.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 26 Sep	Tuesday 27 Sep	Wednesday 28 Sep	Thursday 29 Sep	Friday 30 Sep	Saturday 01 Oct	Sunday 02 Oct
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00662 596 images	IOS00662 574 images	IOS00662 627 images	IOS00664 705 images	IOS00664 634 images	IOS00664 535 images	IOS00664 507 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.08 and 0.87 °C.

4. PROBA2 Science Center Status

The main operators are Laurence Wauters and Robbe Vansintjan.

The following changes were made to the P2SC:

- Revision 5282 from the svn system was installed on the p2sc-s2 (2016-Sep 26), which solves the LYRA-Quick-look-viewer responsiveness issues LY-QLV responsiveness.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 21872 to 21935) 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 2016 Sep 26 0UT and 2016 Oct 03 0UT: 4178

Highest cadence in this period: 110 seconds

Average cadence in this period: 144.76 seconds

Number of image gaps larger than 300 seconds: 210

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)