


P2SC-ROB-WR-288 - 20150928 Weekly report #288	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 28 to Sun Oct 04, 2015 07 Oct 2015 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

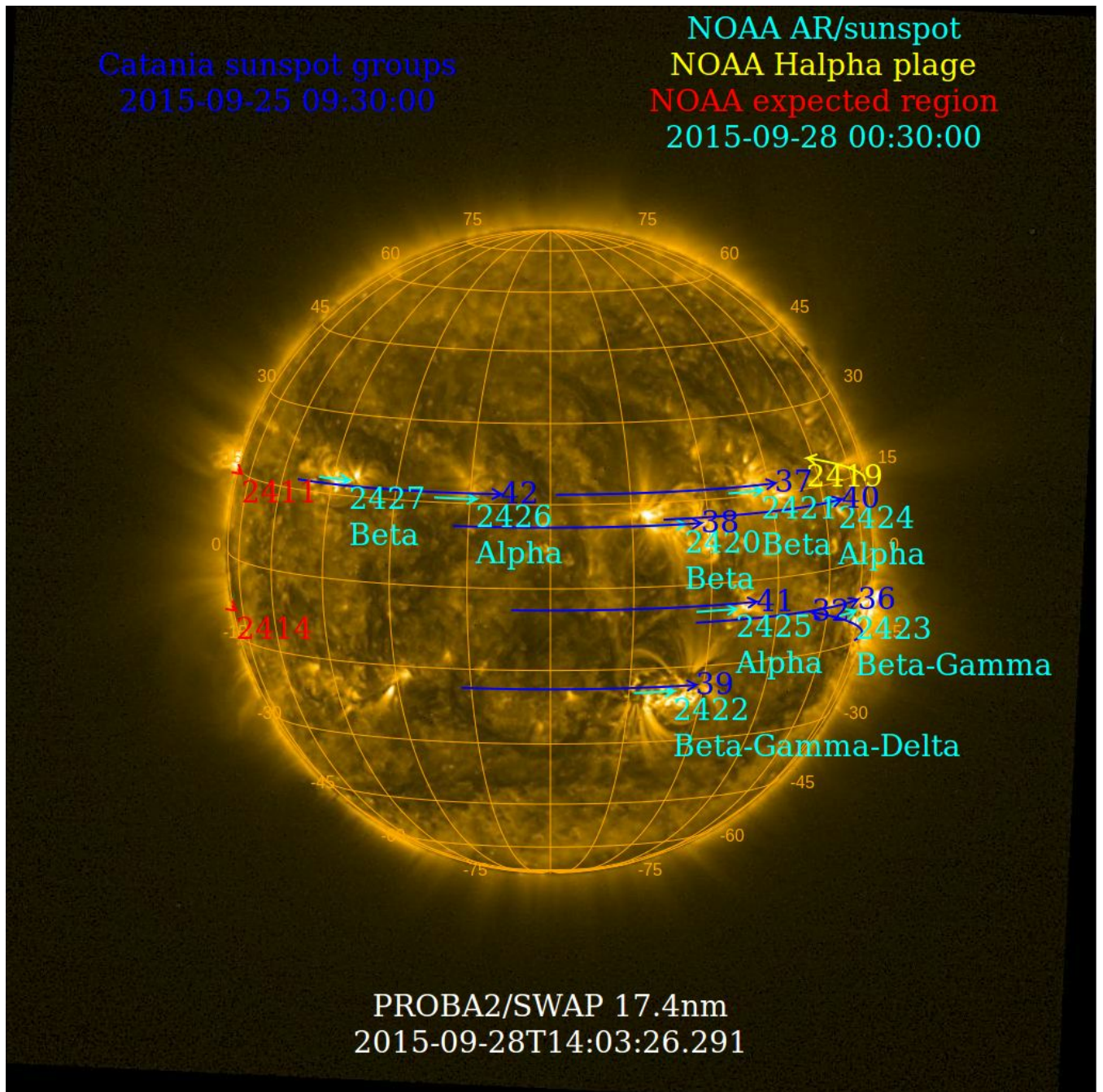
The level of solar activity¹ fluctuated between **low** and **moderate** this week.

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

	Monday 28 Sep	Tuesday 29 Sep	Wednesday 30 Sep	Thursday 01 Oct	Friday 02 Oct	Saturday 03 Oct	Sunday 04 Oct
Activity	moderate	moderate	moderate	moderate	moderate	low	moderate
Flares	M7.6@14:58 M1.1@13:18 M1.1@07:35 M3.6@03:55	M1.1@19:24 M1.6@11:15 M1.3@08:51 M1.4@06:43 M1.0@05:56 M1.2@05:37 M2.9@05:16 M1.1@03:43 M1.2@03:16	M1.1@13:20 M1.3@10:59	M4.5@13:10	M1.0@17:18 M1.0@12:26 M5.5@00:13	-	M1.0@02:41

¹ See appendix. All timings are given in UT.

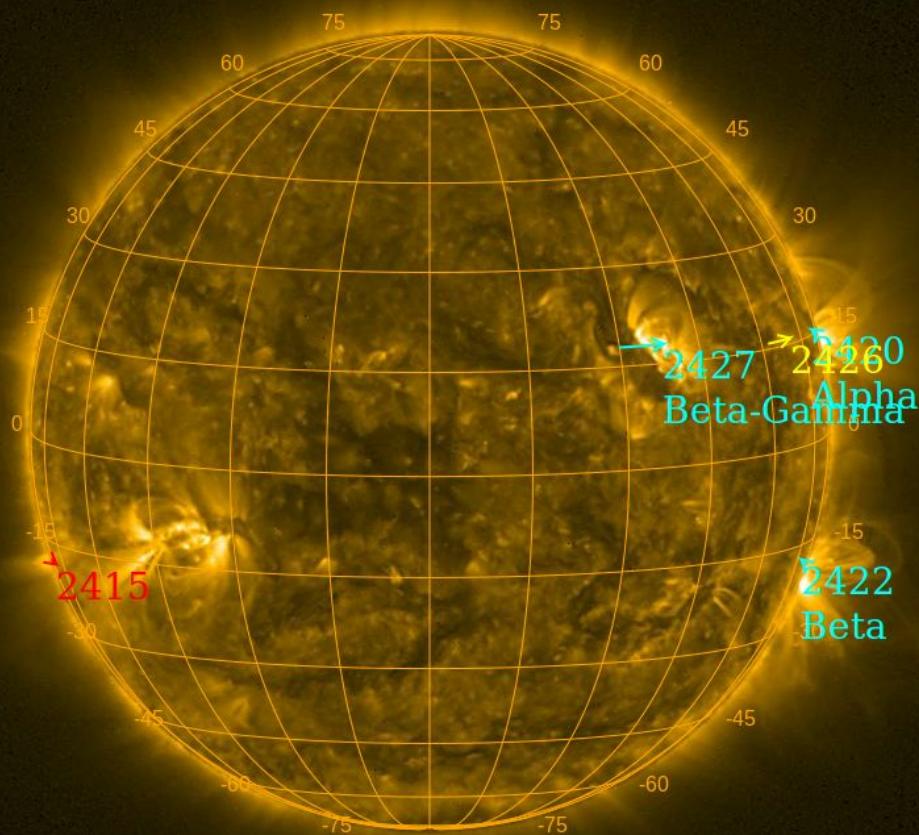
The SWAP images of Sep 28 and Oct 04 are shown below, with annotated active regions.



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

Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-10-04 00:30:00



PROBA2/SWAP 17.4nm
2015-10-04T14:04:45.252

Solar Activity

Solar flare activity fluctuated between low and moderate during the week.

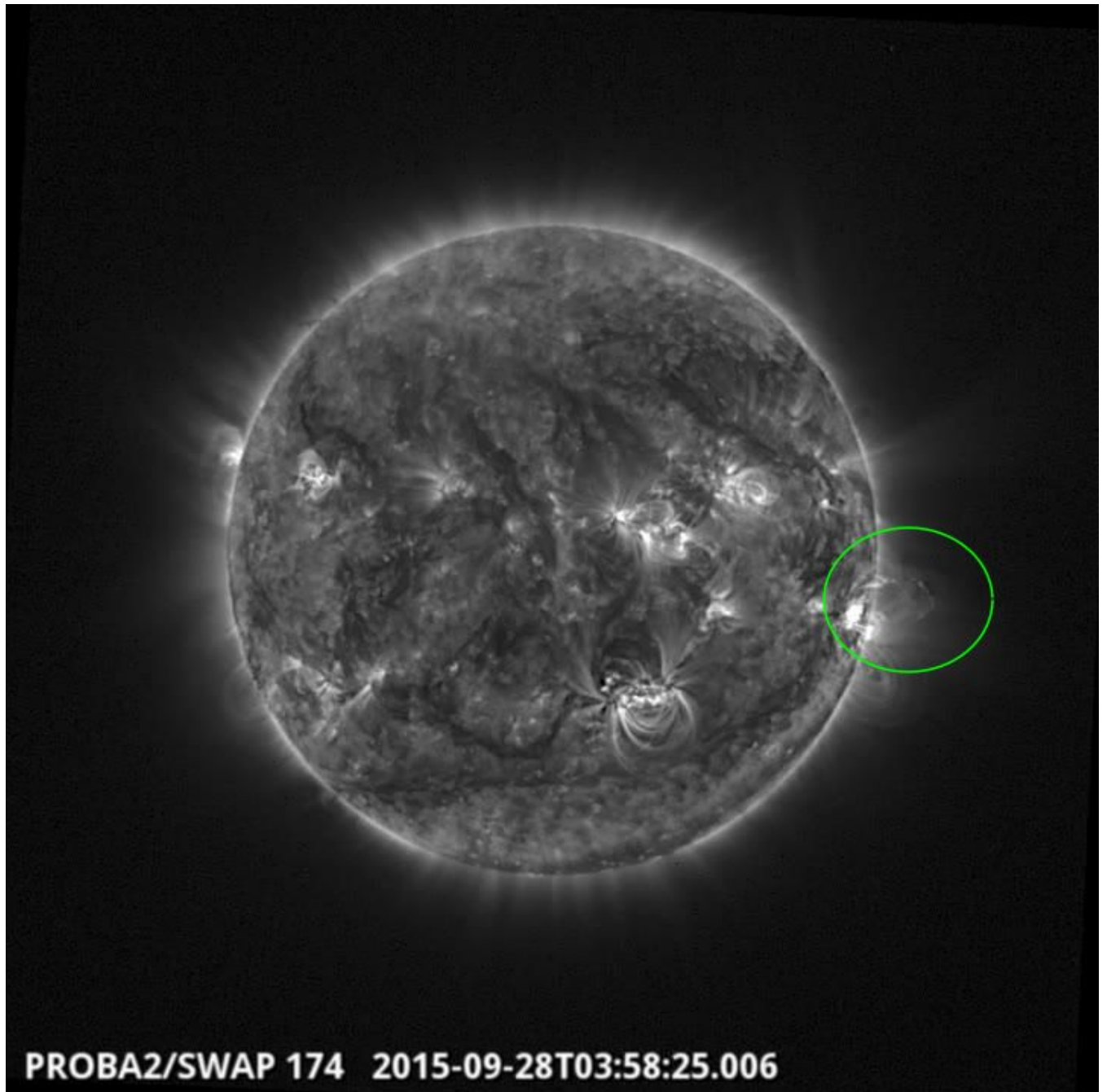
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 288).

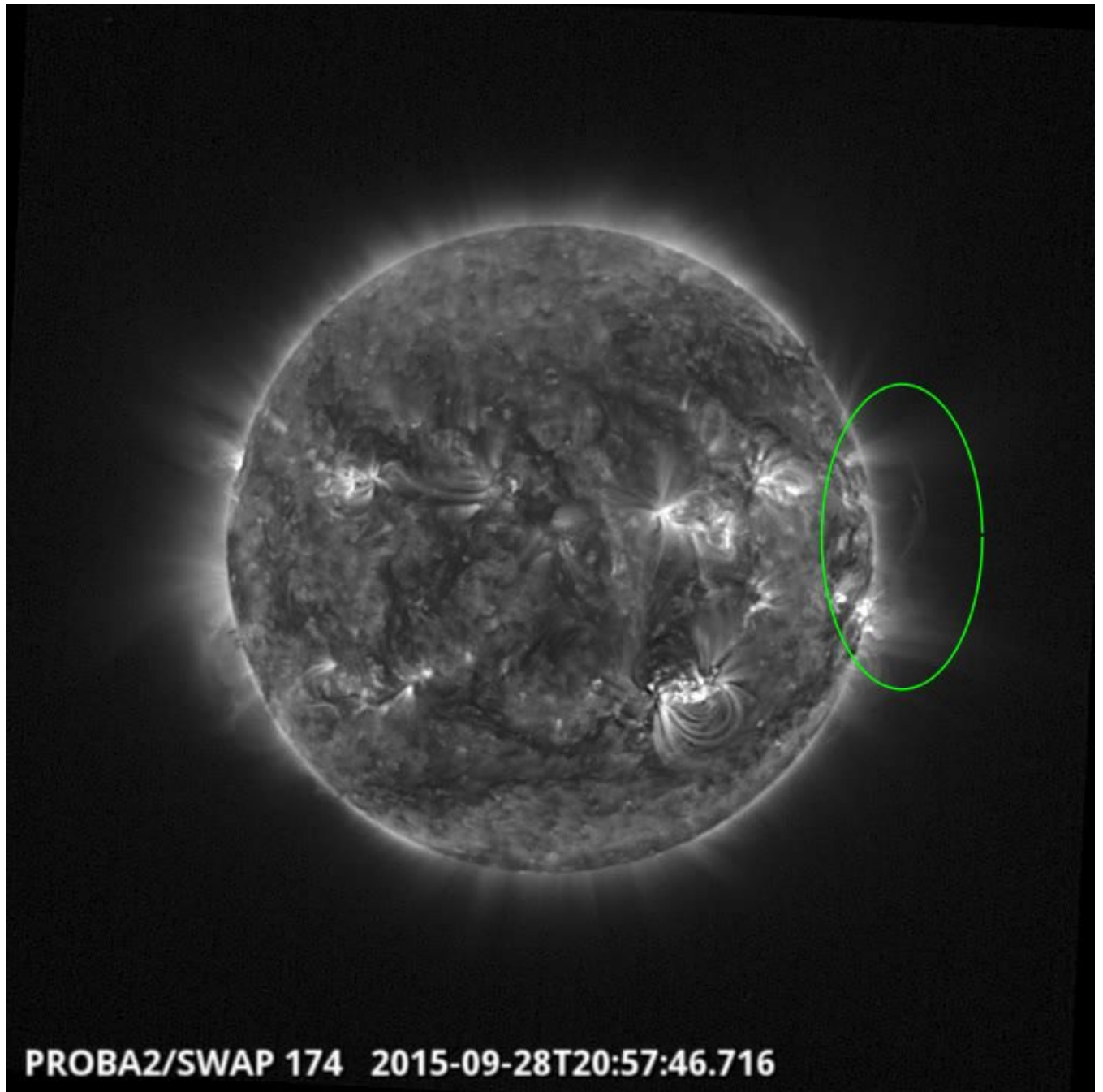
Details about some of this week's events, can be found further below.

Monday Sep 28



PROBA2/SWAP 174 2015-09-28T03:58:25.006

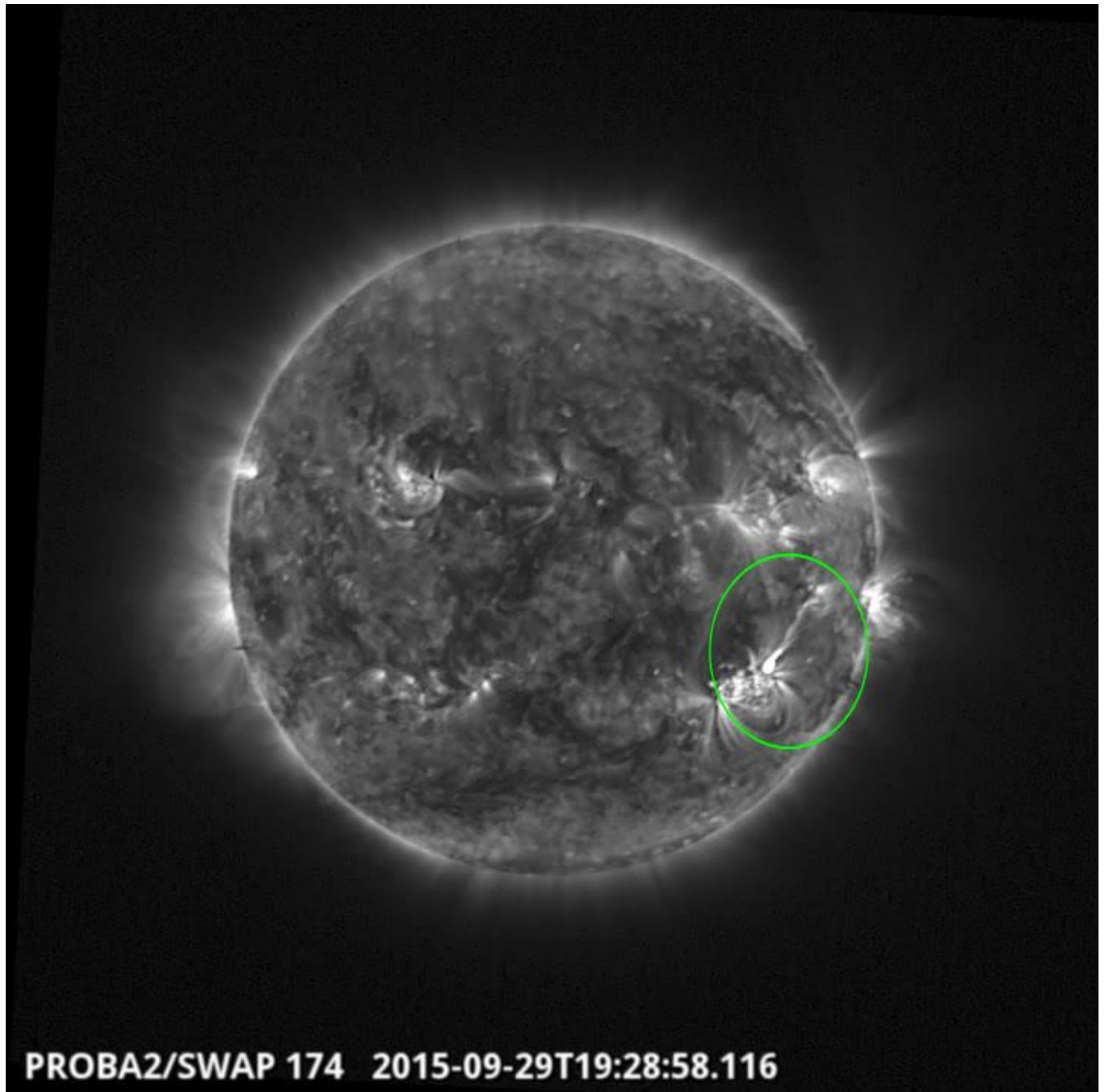
Failed eruption on the west limb @ 03:58 - SWAP image
Find a movie of the events [here](#) (SWAP movie)



PROBA2/SWAP 174 2015-09-28T20:57:46.716

Prominence flow on the west limb @ 20:57 - SWAP image
Find a movie of the events [here](#) (SWAP movie)

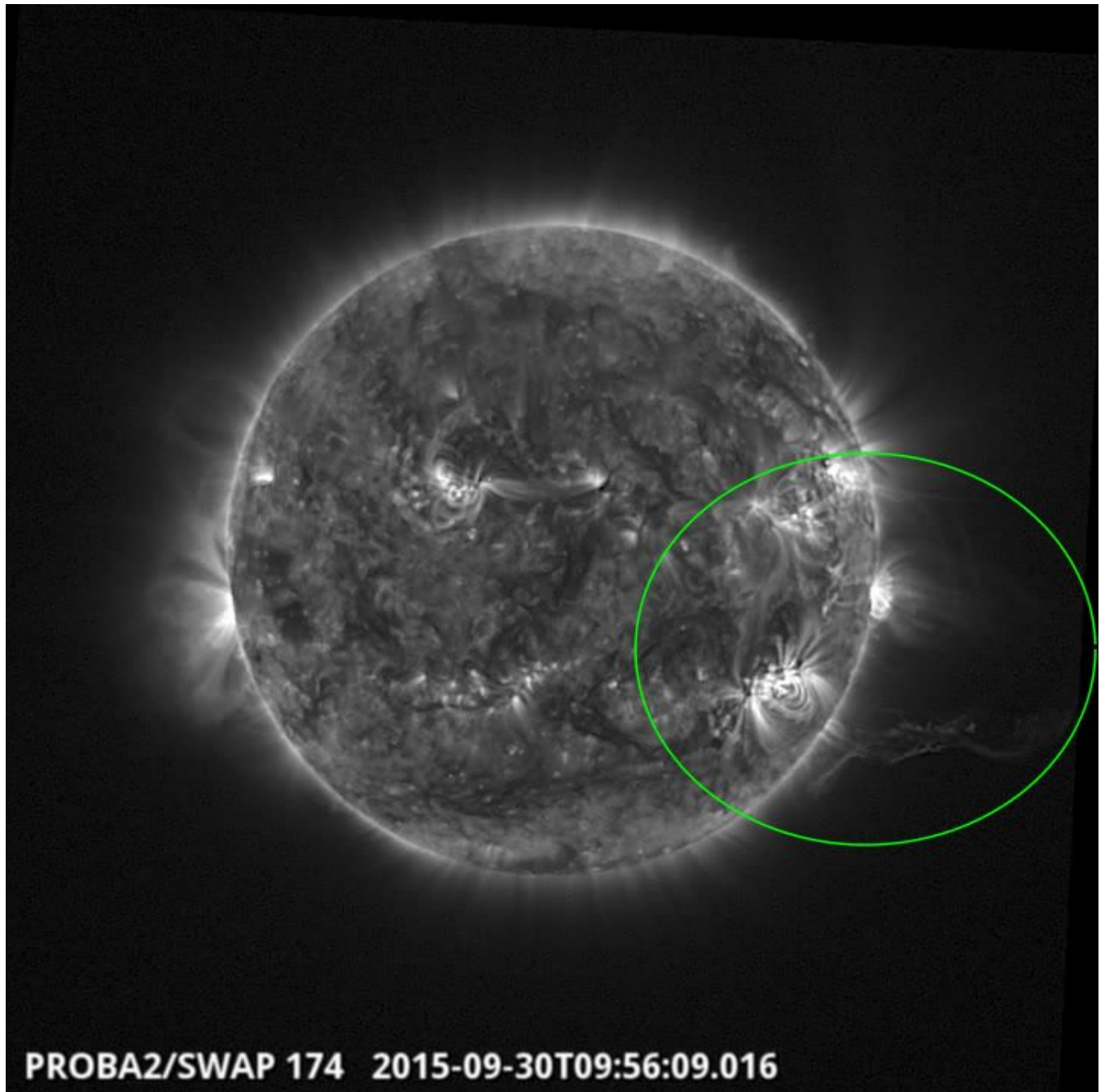
Tuesday Sep 29



PROBA2/SWAP 174 2015-09-29T19:28:58.116

M-flare on the south west quadrant @ 19:28 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Wednesday Sep 30



Eruptions on the west limb @ 09:56 - SWAP image

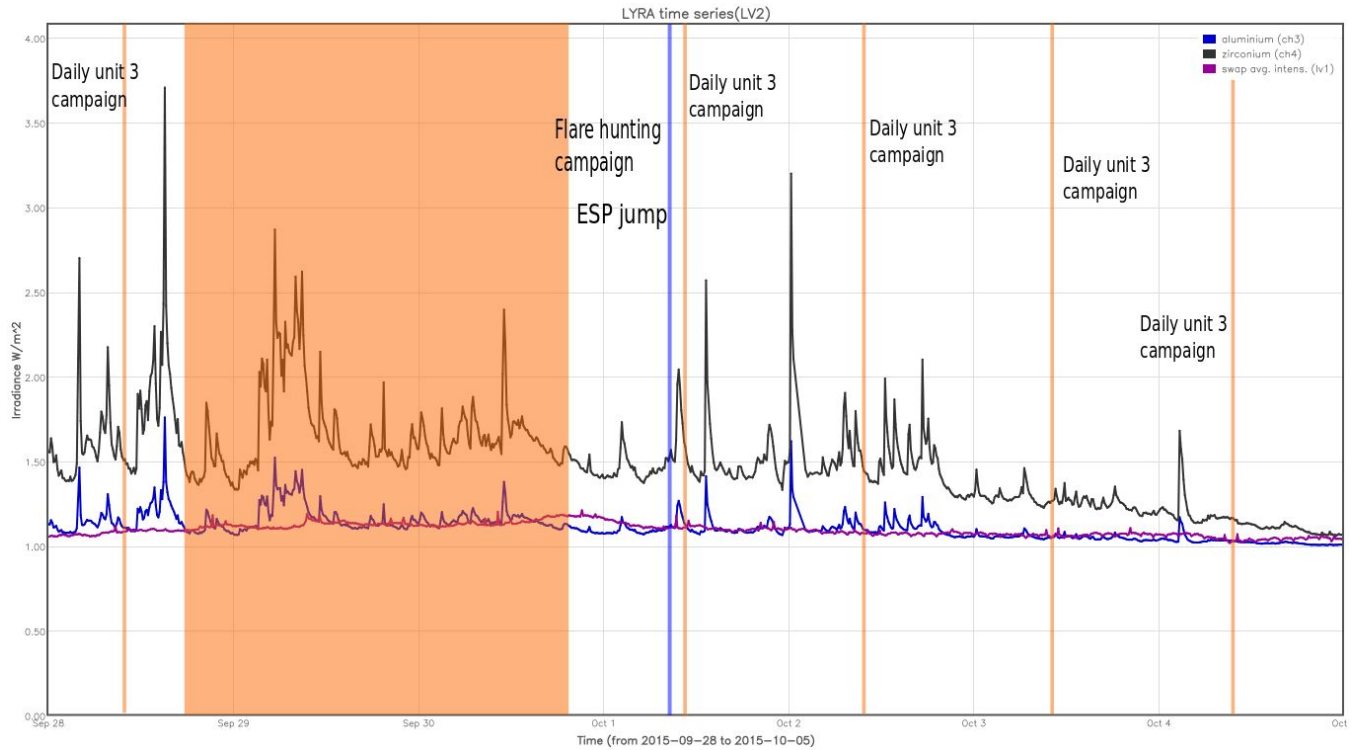
Find a movie of the event [here](#) (SWAP movie)

The initial erupting prominence from the limb was apparently linked to a second prominence near AR 12422, which itself subsequently erupted at the end of the day.

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 correspond to, from left to right:

- ESP jump

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

- Daily unit 3 campaign, 2015-09-28
- Flare hunting campaign, 2015-09-28
- Daily unit 3 campaign, 2015-10-01
- Daily unit 3 campaign, 2015-10-02
- Daily unit 3 campaign, 2015-10-03
- Daily unit 3 campaign, 2015-10-04

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

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 28 Sep	Tuesday 29 Sep	Wednesday 30 Sep	Thursday 01 Oct	Friday 02 Oct	Saturday 03 Oct	Sunday 04 Oct
Nominal acquisition + daily U3 + flare hunting	Nominal acquisition + flare hunting	Nominal acquisition + flare hunting	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00497 -> LYIOS00498	LYIOS00498	LYIOS00499	LYIOS00499	LYIOS00500	LYIOS00500	LYIOS00500

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- flare hunting campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.1 and 51.9 °C.

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 137 to 138.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 28 Sep	Tuesday 29 Sep	Wednesday 30 Sep	Thursday 01 Oct	Friday 02 Oct	Saturday 03 Oct	Sunday 04 Oct
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + ESP jump	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00599 584 images	IOS00599 576 images	IOS00599 614 images	IOS00599 594 images	IOS00600 607 images	IOS00600 521 images	IOS00600 570 images

Special operations for SWAP, this week:

- ESP jump

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 0.32 and 1.28 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

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 18583 to 18640) 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 2015 Sep 28 00 UT and 2015 Oct 05 00 UT: 4066

Highest cadence in this period: 110 seconds

Average cadence in this period: 148.73 seconds

Number of image gaps larger than 300 seconds: 235

Largest data gap: 33.67 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
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)