


P2SC-ROB-WR-286 - 20150914 Weekly report #286	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 14 to Sun Sep 20, 2015 23 Sep 2015 Robbe Vansintjan D.B. Seaton	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, dseaton@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 3730559
cc:	ROB DIR, ronald@oma.be ESA Redu, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Juha-Pekka.Luntama@esa.int	

1. Science

Solar & Space weather events

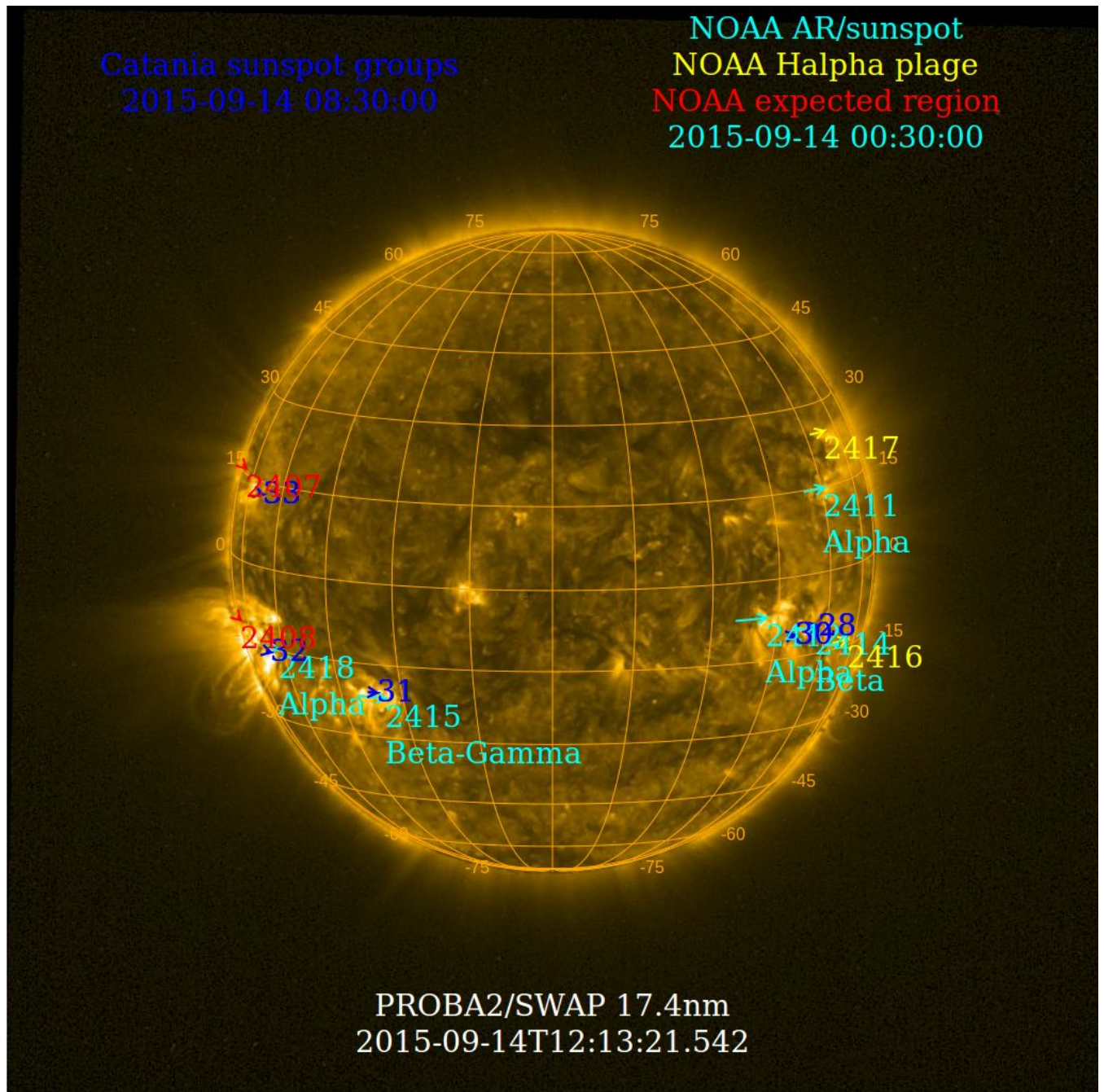
The level of solar activity¹ fluctuated between **very low** and **moderate** this week.

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

	Monday 14 Sep	Tuesday 15 Sep	Wednesday 16 Sep	Thursday 17 Sep	Friday 18 Sep	Saturday 19 Sep	Sunday 20 Sep
Activity	very low	low	low	moderate	low	low	moderate
Flares	-	-	-	M1.1@09:40	-	-	M2.1@18:03 M1.5@05:03

¹ See appendix. All timings are given in UT.

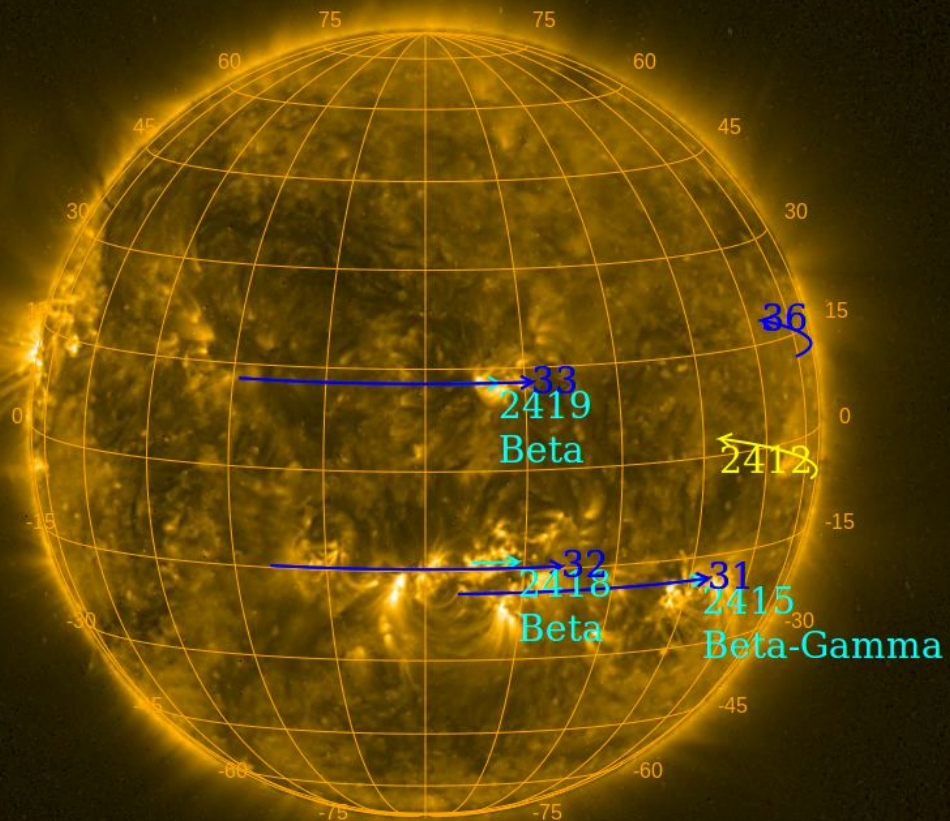
The SWAP images of Sep 14 and Sep 20 are shown below, with annotated active regions.



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

Catania sunspot groups
2015-09-17 09:30:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-09-20 00:30:00



PROBA2/SWAP 17.4nm
2015-09-20T12:12:59.252

Solar Activity

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

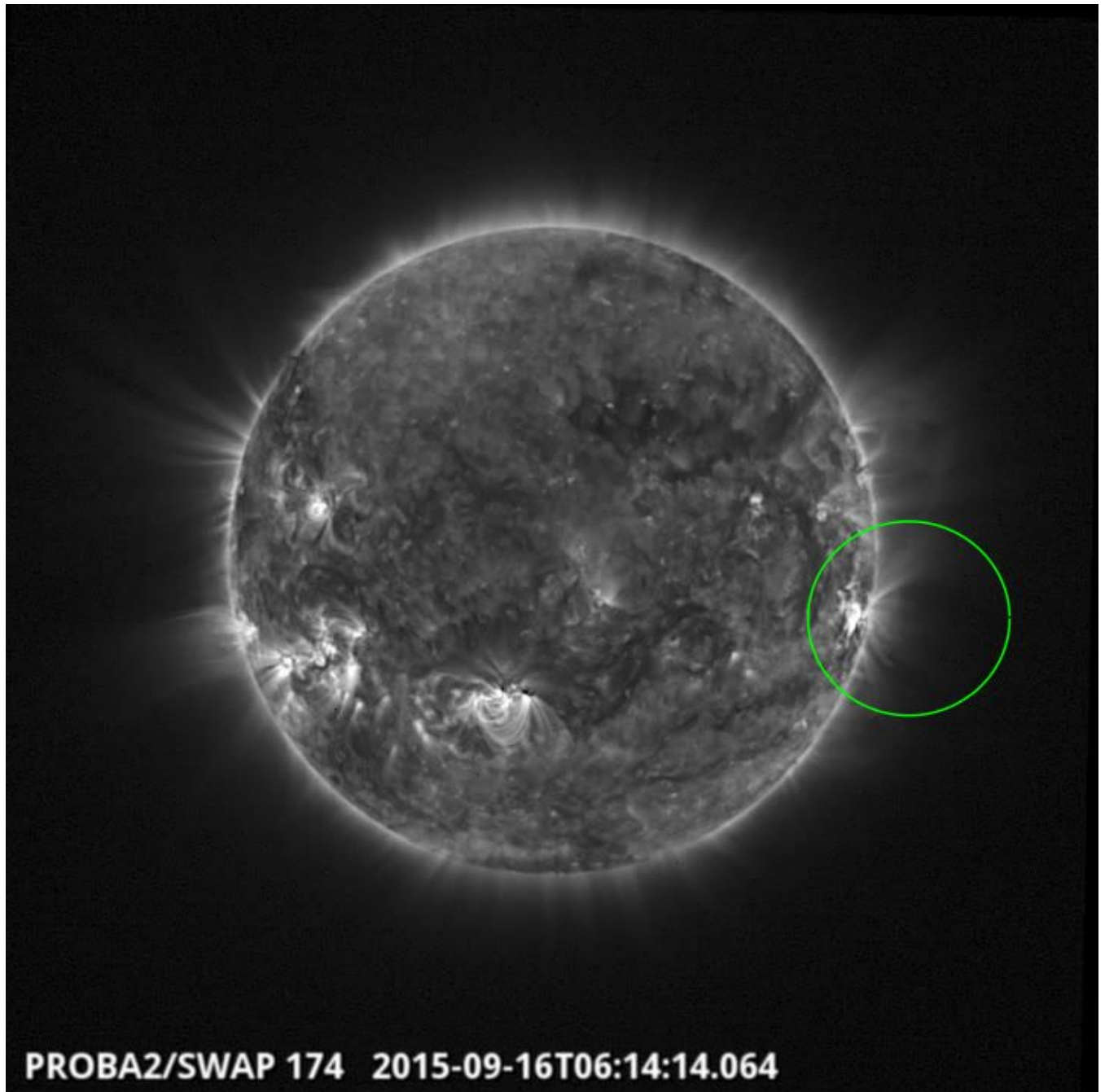
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 286).

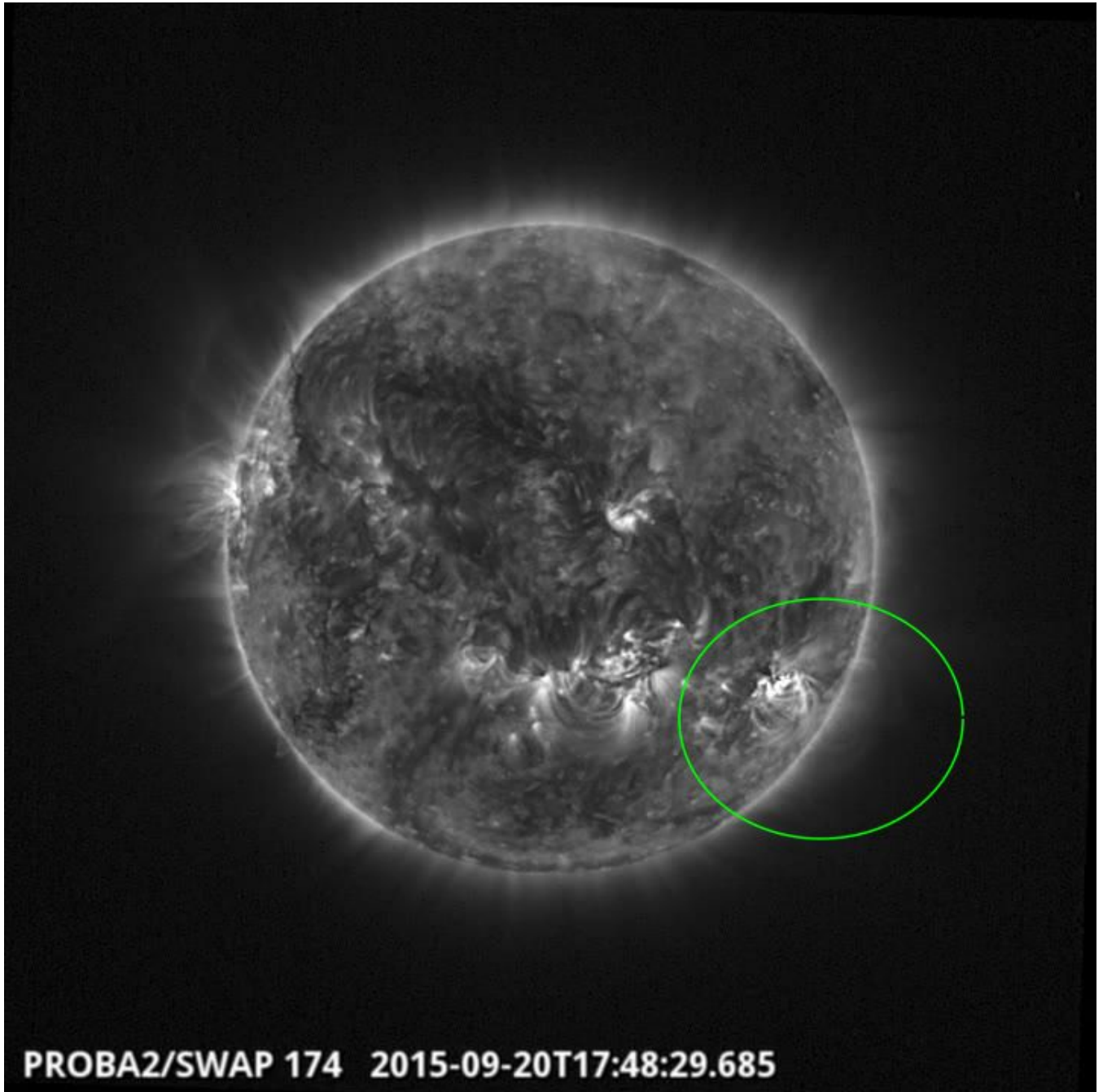
Details about some of this week's events, can be found further below.

Wednesday Sep 16



Eruption on the west limb @ 06:14 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Sunday Sep 20

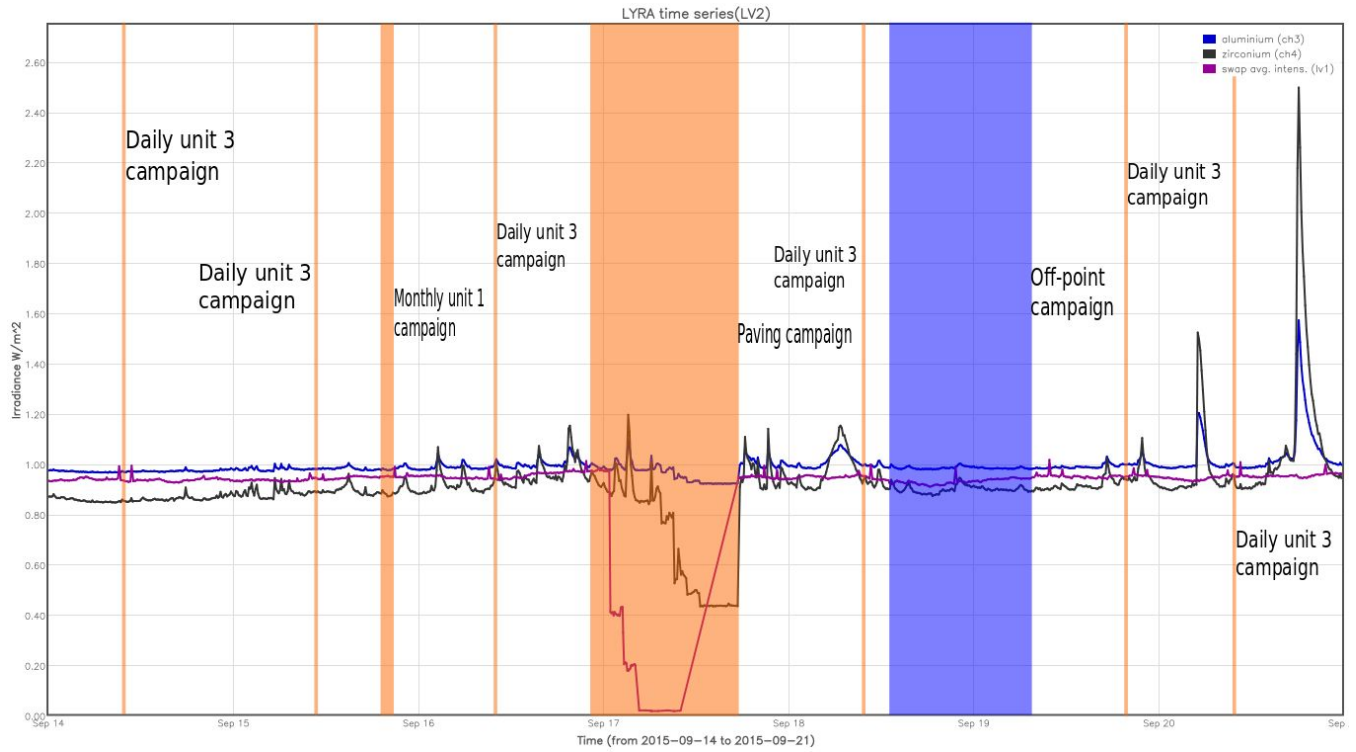


Eruption on the west limb @ 17:48 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

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 correspond to, from left to right:

- Off point campaign to the east limb, 2015-09-18

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

- Daily unit 3 campaign, 2015-09-14
- Daily unit 3 campaign, 2015-09-15
- Monthly unit 1 campaign, 2015-09-15
- Daily unit 3 campaign, 2015-09-16
- LYRA and SWAP paving campaign, 2015-09-17
- Daily unit 3 campaign, 2015-09-18
- Daily unit 3 campaign, 2015-09-19
- Daily unit 3 campaign, 2015-09-20

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 14 Sep	Tuesday 15 Sep	Wednesday 16 Sep	Thursday 17 Sep	Friday 18 Sep	Saturday 19 Sep	Sunday 20 Sep
Nominal acquisition + daily U3	Nominal acquisition + daily U3 + monthly U1	Nominal acquisition + daily U3 + U3 calibration	Nominal acquisition + paving campaign	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00492	LYIOS00492	LYIOS00492	LYIOS00493	LYIOS00493	LYIOS00494	LYIOS00494

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- monthly U1 observations campaign
- paving campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 48.4 and 51.3 °C.

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 136 to 137.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 14 Sep	Tuesday 15 Sep	Wednesday 16 Sep	Thursday 17 Sep	Friday 18 Sep	Saturday 19 Sep	Sunday 20 Sep
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + paving campaign	Nominal acquisition + off-point campaign	Nominal acquisition + off-point campaign	Nominal acquisition
IOS00595 694 images	IOS00595 650 images	IOS00595 726 images	IOS00596 464 images	IOS00596 -> IOS00597 712 images	IOS00597 680 images	IOS00597 593 images

Special operations for SWAP, this week:

- A paving campaign in support of the LYRA instrument
- Off-point campaign to the east limb

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.47 and 0.7 °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 18463 to 18525) 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 14 0UT and 2015 Sep 21 0UT: 4519

Highest cadence in this period: 90 seconds

Average cadence in this period: 133.82 seconds

Number of image gaps larger than 300 seconds: 128

Largest data gap: 24.00 minutes

Note that due to the paving campaign there was no sun in the SWAP images between 04:10 and 17:23 on 2015-Sep-17.

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)