


P2SC-ROB-WR-392 - 20170925 Weekly report #332	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 25 to Sun Oct 1, 2017 5 Oct 2017 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

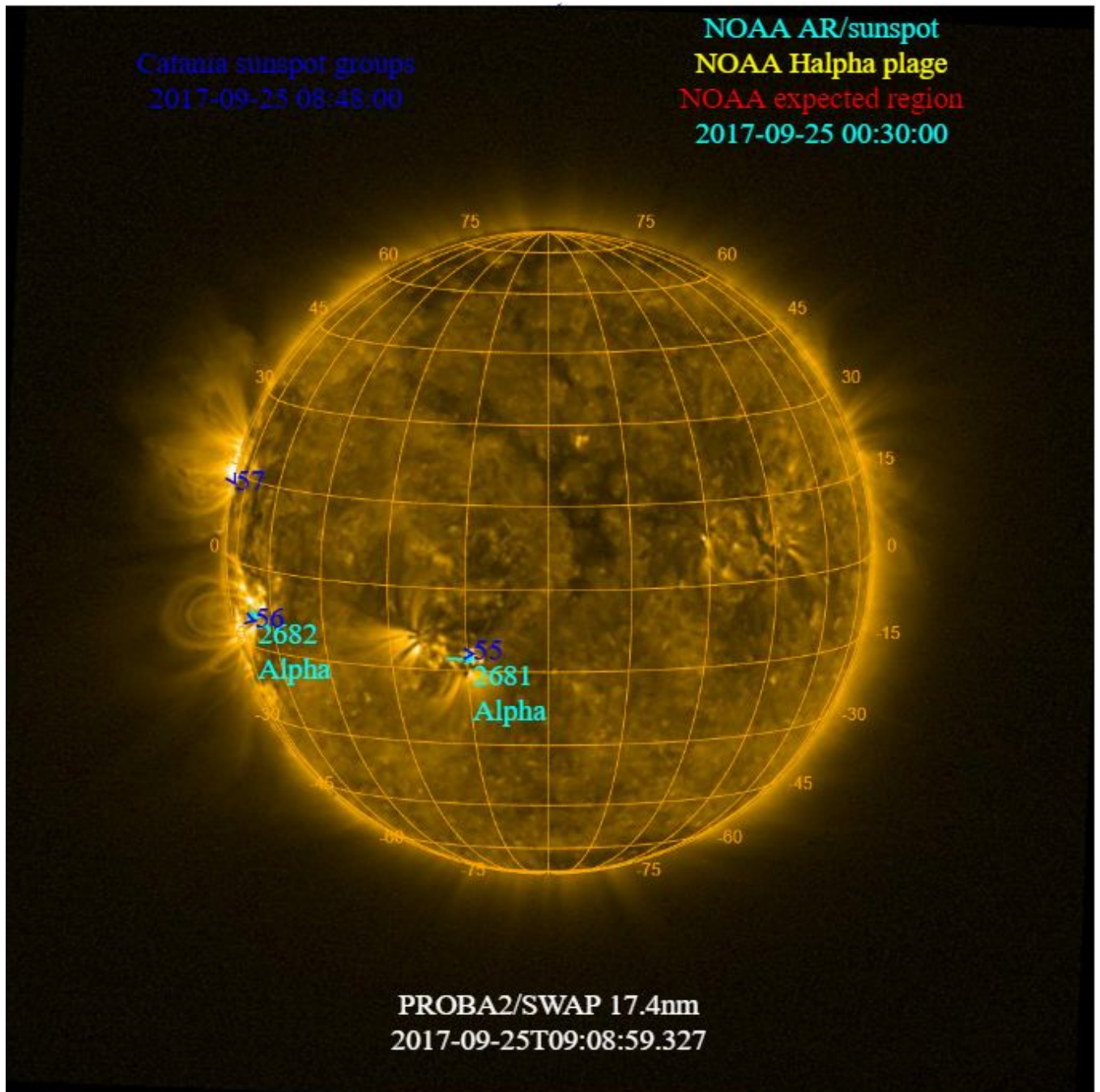
The level of solar activity¹ fluctuated between **very low and low** this week.

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

	Monday 25 Sep	Tuesday 26 Sep	Wednesday 27 Sep	Thursday 28 Sep	Friday 29 Sep	Saturday 30 Sep	Sunday 1 Oct
Activity	very low	low	low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

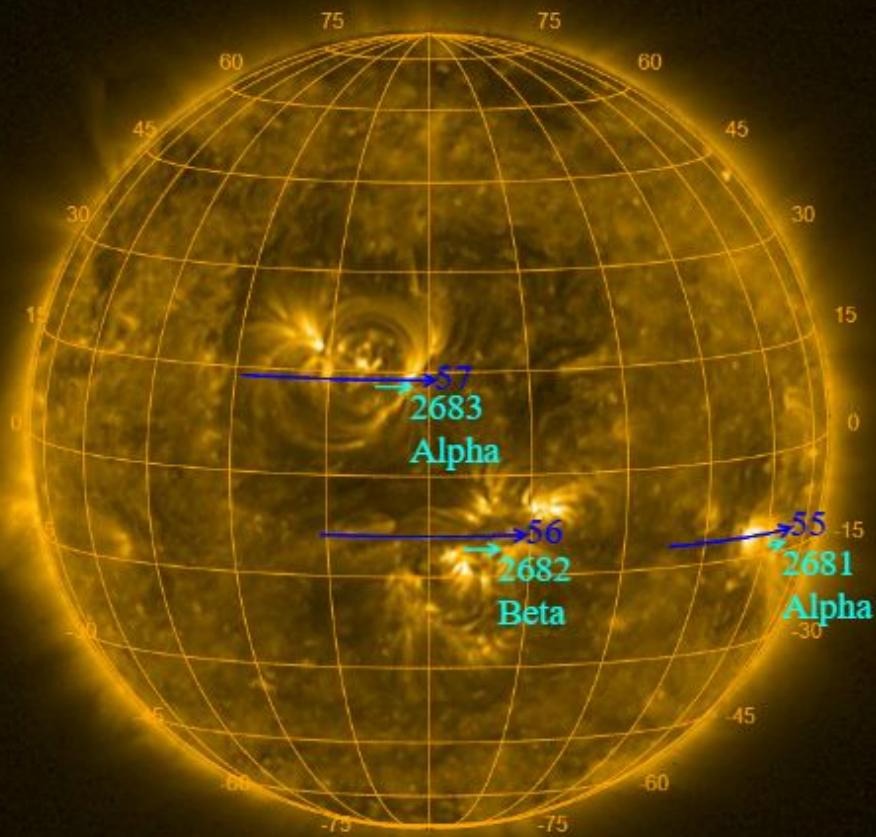
The SWAP images of Sep 25 and Oct 1 are shown below, with annotated active regions.



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

Catania sunspot groups
2017-09-29 07:36:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2017-10-01 00:30:00



PROBA2/SWAP 17.4nm
2017-10-01T09:07:48.464

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>

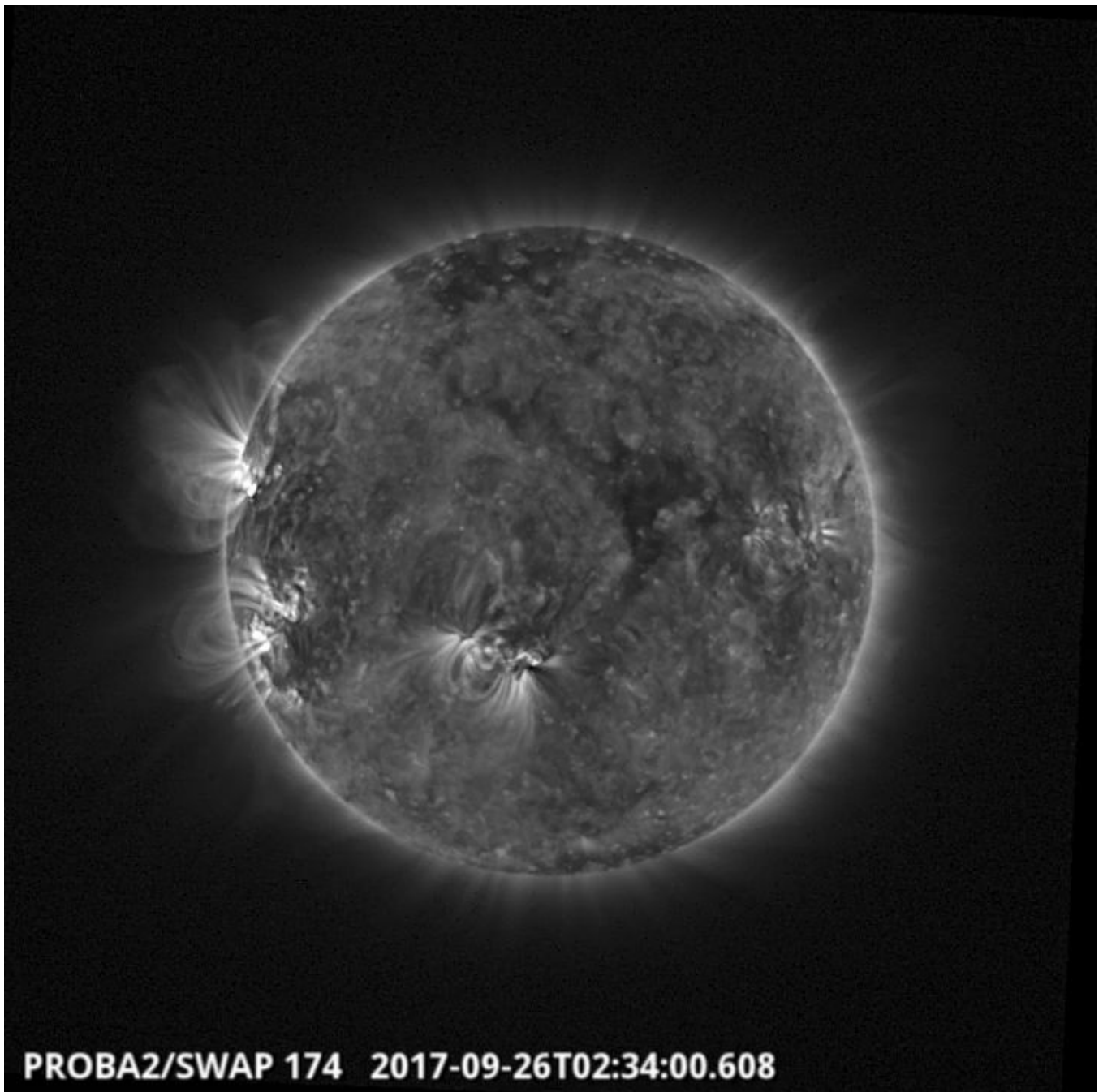
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 392).

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](#)

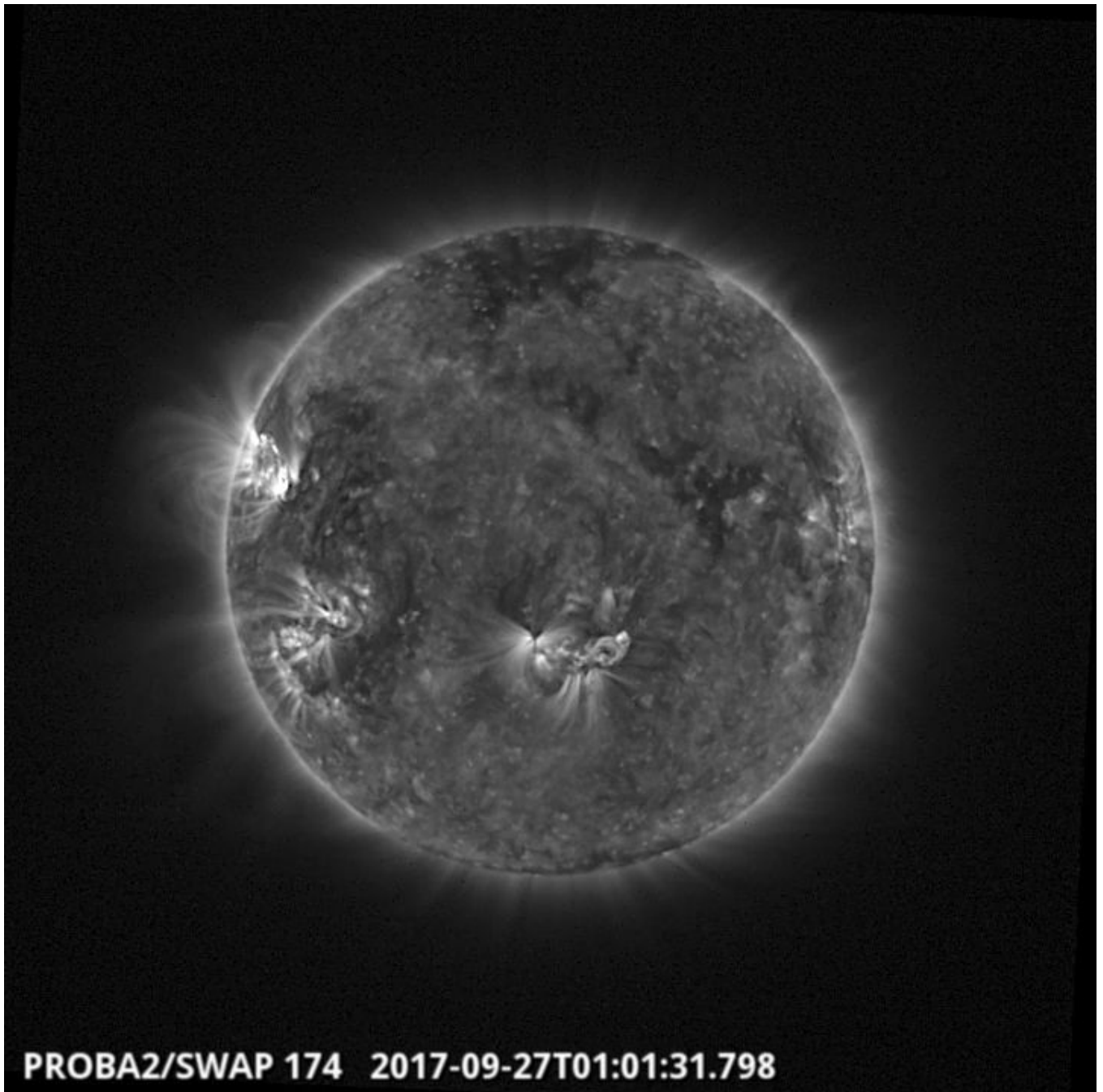
Tuesday Sep 26



The first C-class flare of the week (C1.8) occurred from AR 2683 on 2017-Sep-26. The flare and corresponding eruption can be seen in the North-East part of the Sun at 02:34 UT in the SWAP image above.

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

Wednesday Sep 27



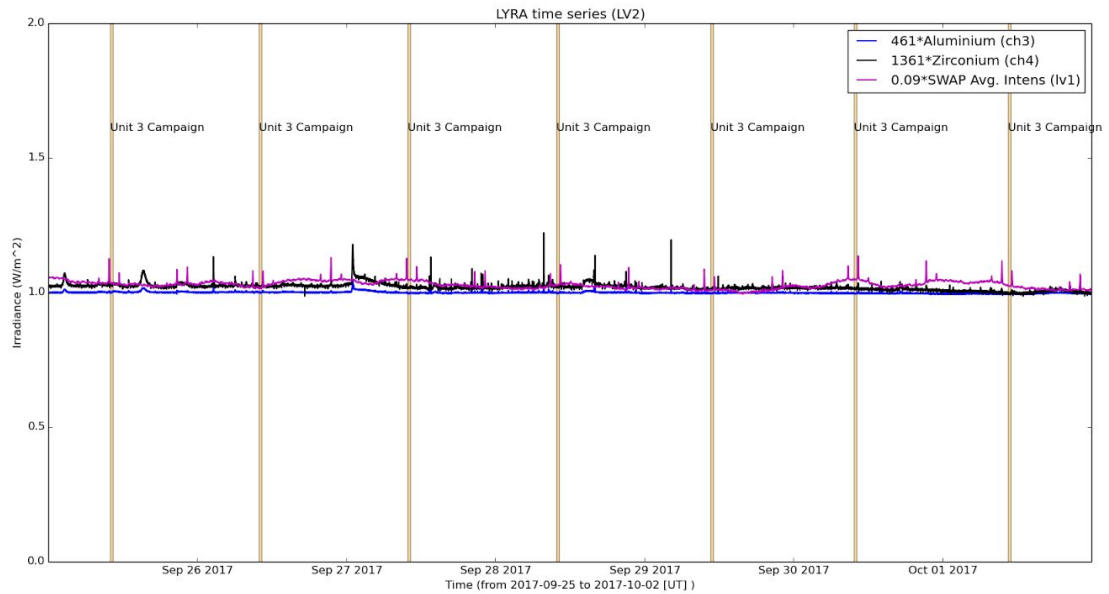
The second C-class flare of the week (C1.7) occurred from AR 2683 on 2017-Sep-27. The flare and corresponding eruption can be seen on the North-East part of the Sun at 01:01 UT in the SWAP image above.

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-Sep-25
- Daily unit 3 campaign, 2017-Sep-26
- Daily unit 3 campaign, 2017-Sep-27
- Daily unit 3 campaign, 2017-Sep-28
- Daily unit 3 campaign, 2017-Sep-29
- Daily unit 3 campaign, 2017-Sep-30
- Daily unit 3 campaign, 2017-Oct-01

The red shaded periods related to other issues corresponds to:

- None

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>).

On 2017-Sep-29, Marie Dominique gave a department seminar entitled “Avoiding the snares in detecting quasi-periodic pulsations (QPPs) in the EUV”.

Guest Investigator Program

- Willow M Reed from the University of Colorado in Boulder

2. LYRA instrument status

Calibration

None

IOS & operations

Monday 25 Sep	Tuesday 26 Sep	Wednesday 27 Sep	Thursday 28 Sep	Friday 29 Sep	Saturday 30 Sep	Sunday 1 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
LYIOS00649	LYIOS00649	LYIOS00649	LYIOS00650	LYIOS00650	LYIOS00650	LYIOS00650

The following science campaigns were performed by LYRA:

- daily U3 observation campaigns.

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.65 and 50.64 °C.

3. SWAP instrument status

Calibration

None

MCPM errors

The number of MCPM recoverable errors increased from 11708 and 11747.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 25 Sep	Tuesday 26 Sep	Wednesday 27 Sep	Thursday 28 Sep	Friday 29 Sep	Saturday 30 Sep	Sunday 1 Oct
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00715 652 images	IOS00715 672 images	IOS00715 665 images	IOS00715 716 images	IOS00716 696 images	IOS00716 707 images	IOS00716 639 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.00999 and 1.18 °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 25276 to 25340) 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 2017 Sep 25 00:00 UT and 2017 Oct 02 00:00 UT: 4821

Highest cadence in this period: 110 seconds

Average cadence in this period: 125.43 seconds

Number of image gaps larger than 300 seconds: 121

Largest data gap: 9.17 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)