


P2SC-ROB-WR-428 - 20180604 Weekly report #428	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jun 04 to Sun Jun 10, 2018 13 Jun 2018 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

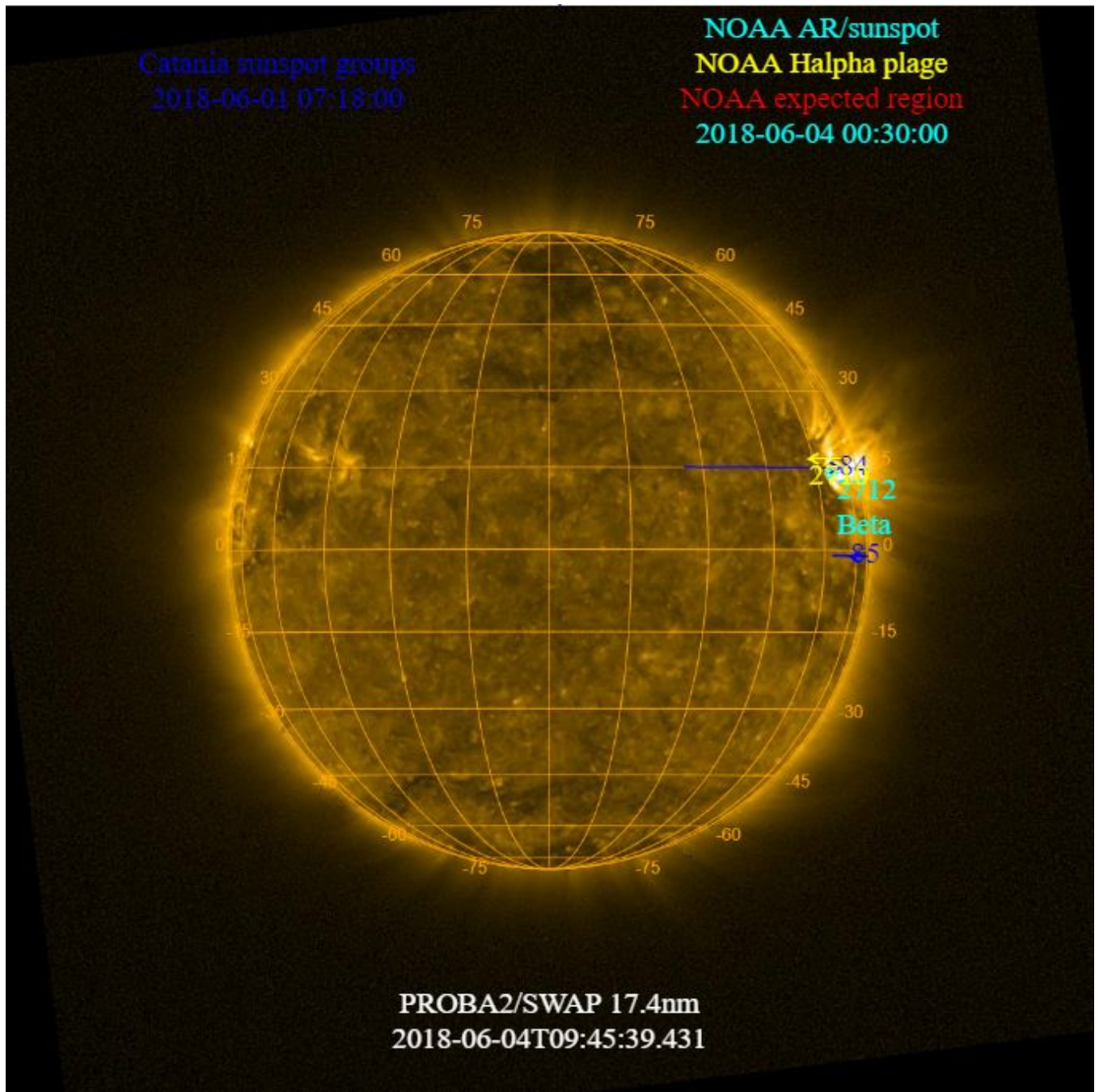
The level of solar activity¹ fluctuated between **very low and low** this week.

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

	Monday 4 Jun	Tuesday 5 Jun	Wednesday 6 Jun	Thursday 7 Jun	Friday 8 Jun	Saturday 9 Jun	Sunday 10 Jun
Activity	very low	very low	low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

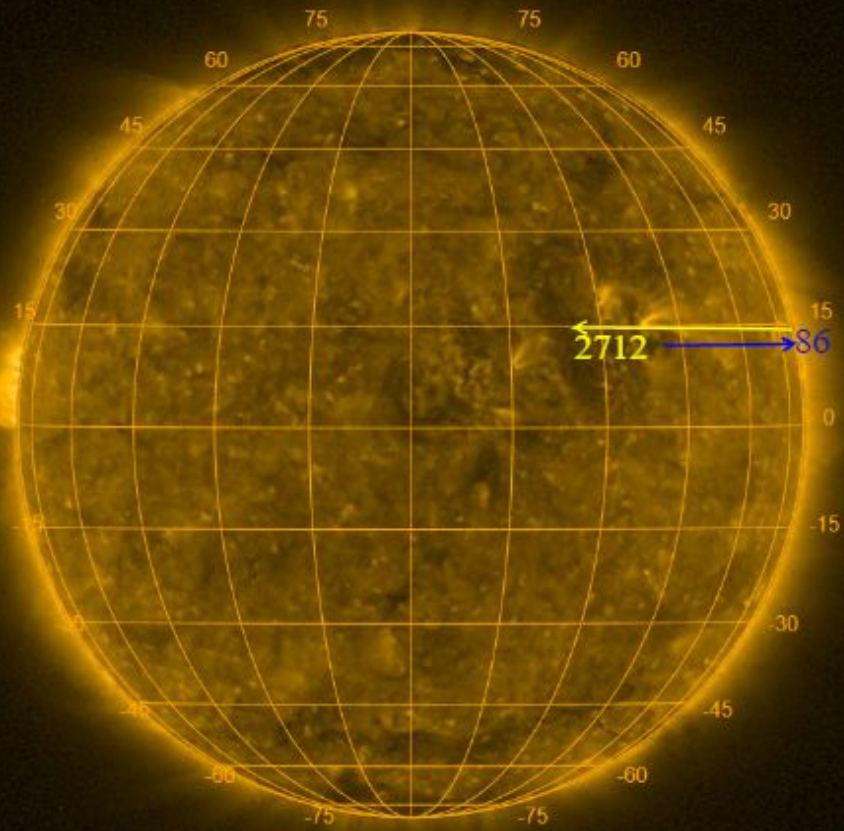
The SWAP images of Jun 4 and Jun 10 are shown below, with annotated active regions.



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

Catania sunspot groups
2018-06-07 08:18:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
No observation



PROBA2/SWAP 17.4nm
2018-06-10T09:45:08.414

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>

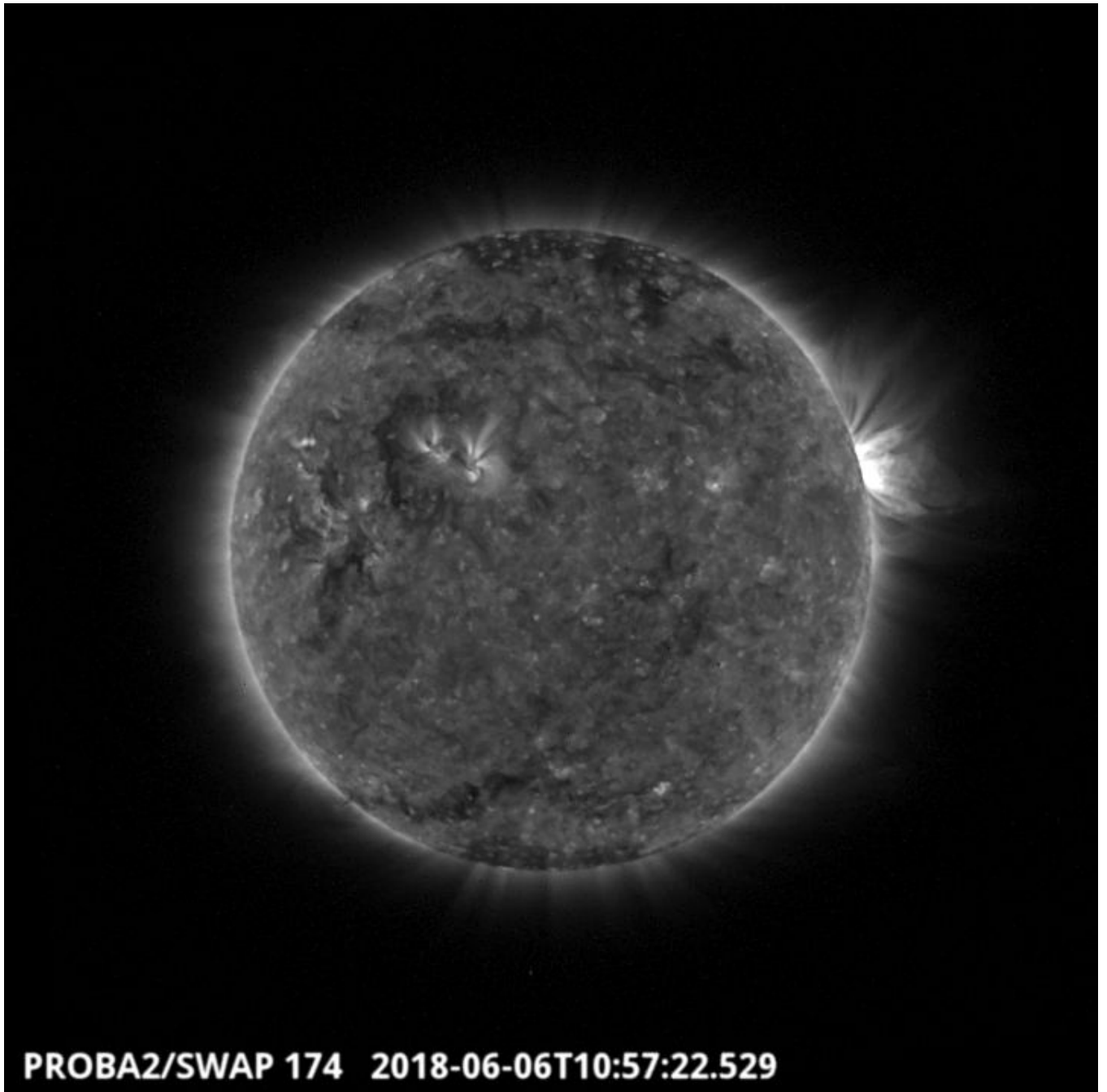
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 428).

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](#)

Wednesday Jun 06



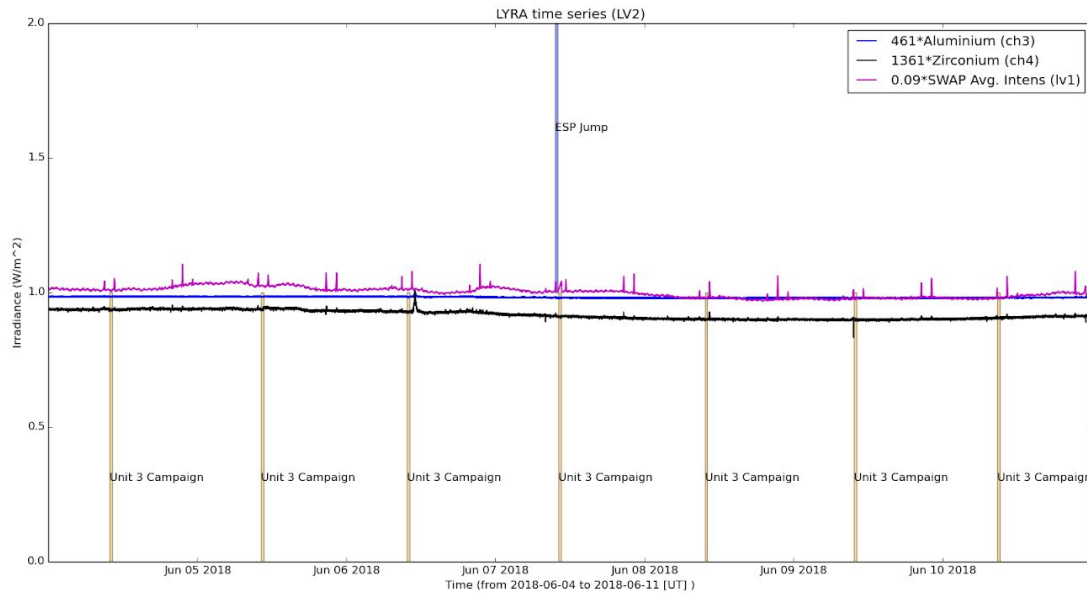
The largest flare of the week was a C1.0 class flare, the flare is visible on the West limb in the SWAP image above at 10:57 UT on 2018-Jun-06.

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:

- ESP Jump, 2018-Jun-07

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

- Daily Unit 3 observation campaign, 2018-Jun-04
- Daily Unit 3 observation campaign, 2018-Jun-05
- Daily Unit 3 observation campaign, 2018-Jun-06
- Daily Unit 3 observation campaign, 2018-Jun-07
- Daily Unit 3 observation campaign, 2018-Jun-08
- Daily Unit 3 observation campaign, 2018-Jun-09
- Daily Unit 3 observation campaign, 2018-Jun-10

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>).

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration campaign on Wednesday this week.

IOS & operations

Monday 4 Jun	Tuesday 5 Jun	Wednesday 6 Jun	Thursday 7 Jun	Friday 8 Jun	Saturday 9 Jun	Sunday 10 Jun
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
LYIOS00706	LYIOS00706	LYIOS00706	LYIOS00706	LYIOS00706	LYIOS00707	LYIOS00707

The following science campaigns were performed by LYRA:

- daily U3 observations campaigns

LYRA detector temperature

LYRA detector 2 temperature globally varied between 48.26 and 49.38 °C.

3. SWAP instrument status

Calibration

No Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 186 to 285.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 4 Jun	Tuesday 5 Jun	Wednesday 6 Jun	Thursday 7 Jun	Friday 8 Jun	Saturday 9 Jun	Sunday 10 Jun
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + ESP Jump	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00775 687 images	IOS00775 648 images	IOS00775 626 images	IOS00775 624 images	IOS00775 693 images	IOS00775 700 images	IOS00775 607 images

Special operations for SWAP, this week:

- ESP jump, 2018-Jun-07

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.89 and 0.23 °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 27648 to 27712) was nominal, except for:

- None

Data coverage HK

All HK data files (LYRA_AD) have been received, except:

- Two small HK data gaps occurred during passes 27711 and 27712. This was due to the satellite not receiving the command to go back to the nominal HK rate at the end of the pass 27711, therefore the HK high rate remained active up to the Redu pass #27717 when the nominal rate was set back. This caused the telemetry store to be filled too fast and overwrote the HK store between the passes, creating small HK gaps.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except:

- None.

Total number of images between 2018 Jun 04 00:00 UT and 2018 Jun 11 00:00 UT: 4718

Highest cadence in this period: 110 seconds

Average cadence in this period: 128.20 seconds

Number of image gaps larger than 300 seconds: 148

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
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)