


P2SC-ROB-WR-431 - 20180625 Weekly report #431	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jun 25 to Sun Jul 01, 2018 02 Jul 2018 Jennifer O'Hara Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

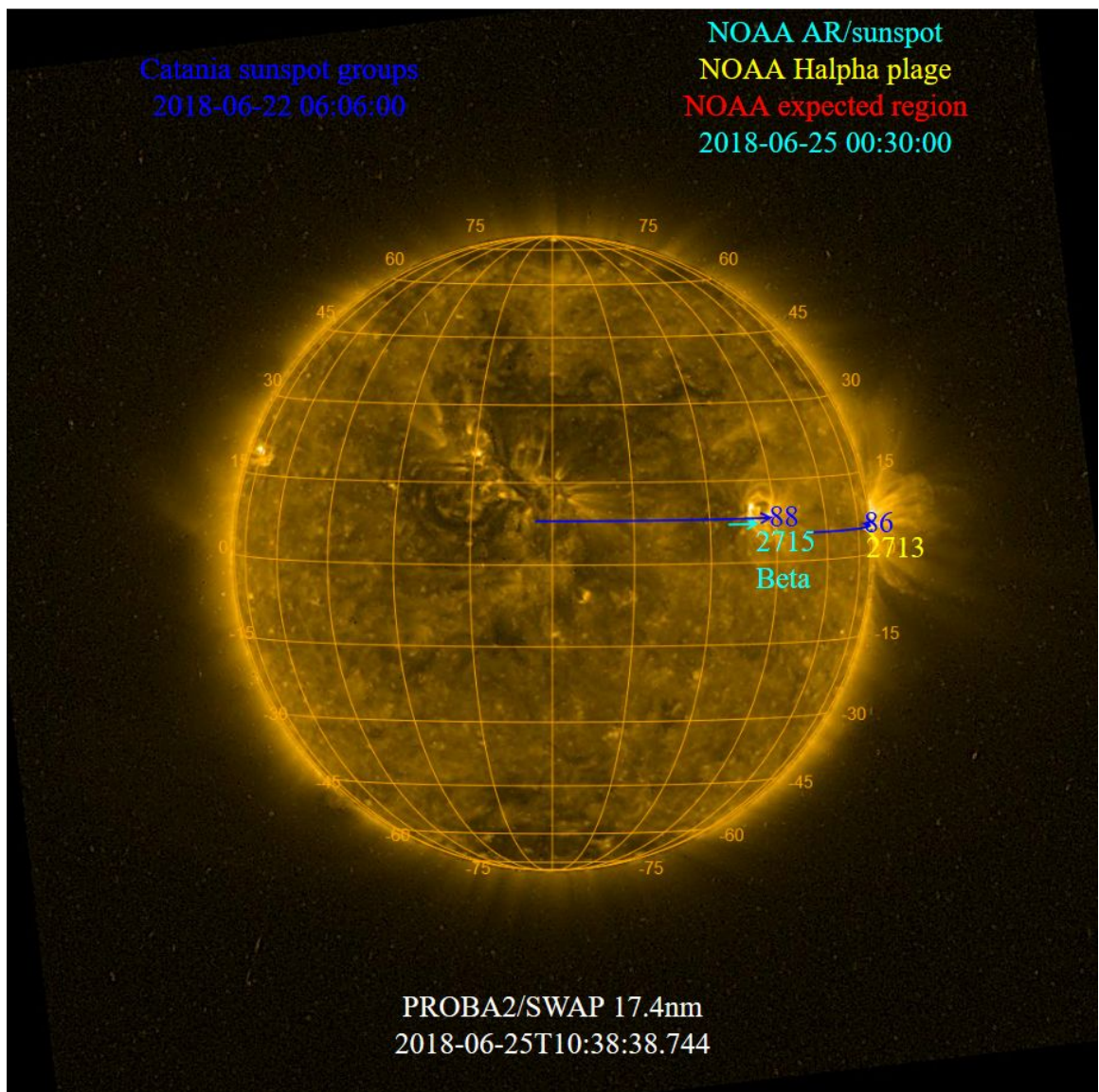
The level of solar activity¹ remained **very low** this week.

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

	Monday 25 Jun	Tuesday 26 Jun	Wednesday 27 Jun	Thursday 28 Jun	Friday 29 Jun	Saturday 30 Jun	Sunday 01 Jul
Activity	very low	very low	very low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

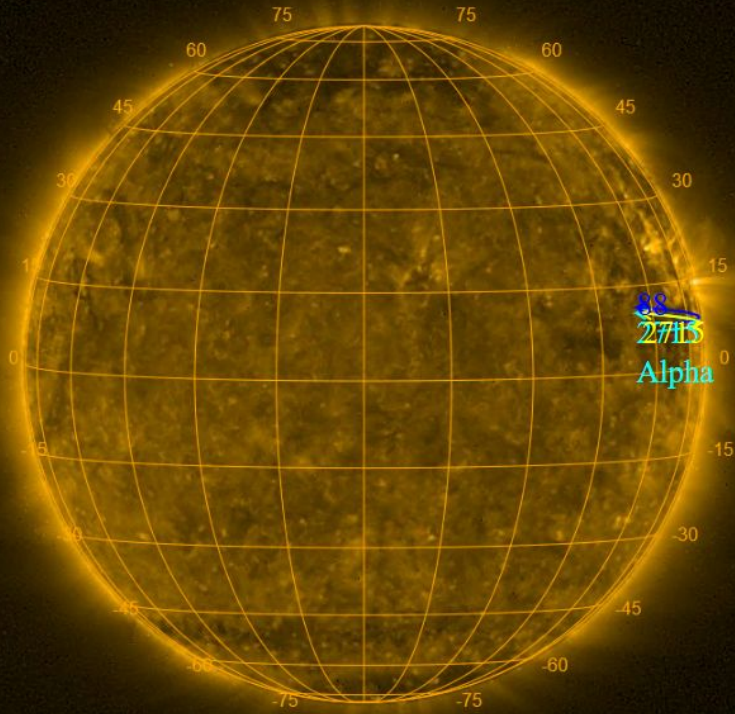
The SWAP images of Jun 25 and Jul 01 are shown below, with annotated active regions.



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

Catania sunspot groups
2018-06-27 07:18:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2018-06-27 00:30:00



PROBA2/SWAP 17.4nm
2018-07-01T10:37:47.658

Solar Activity

Solar flare activity remained very 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>

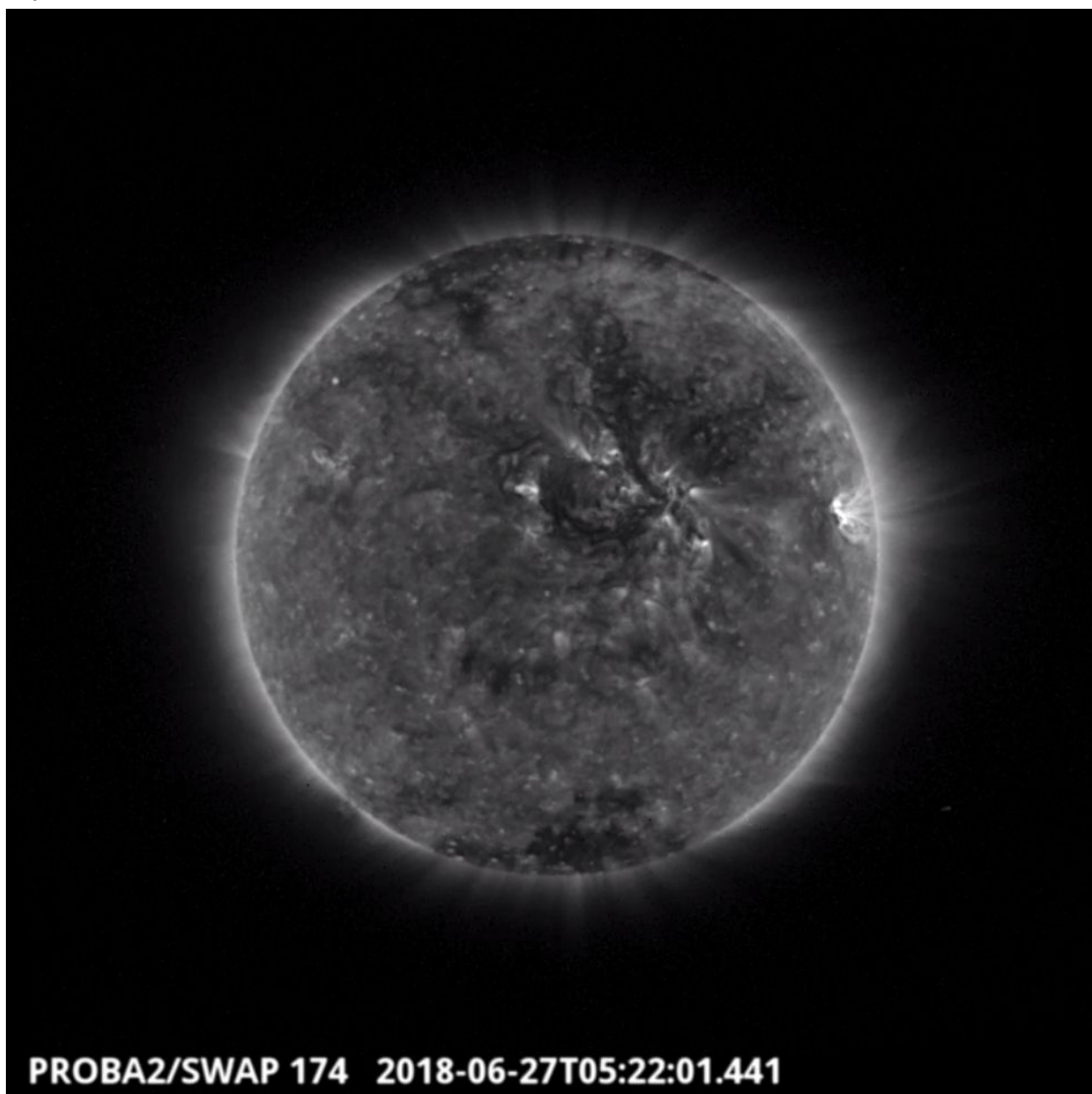
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 431).

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 27



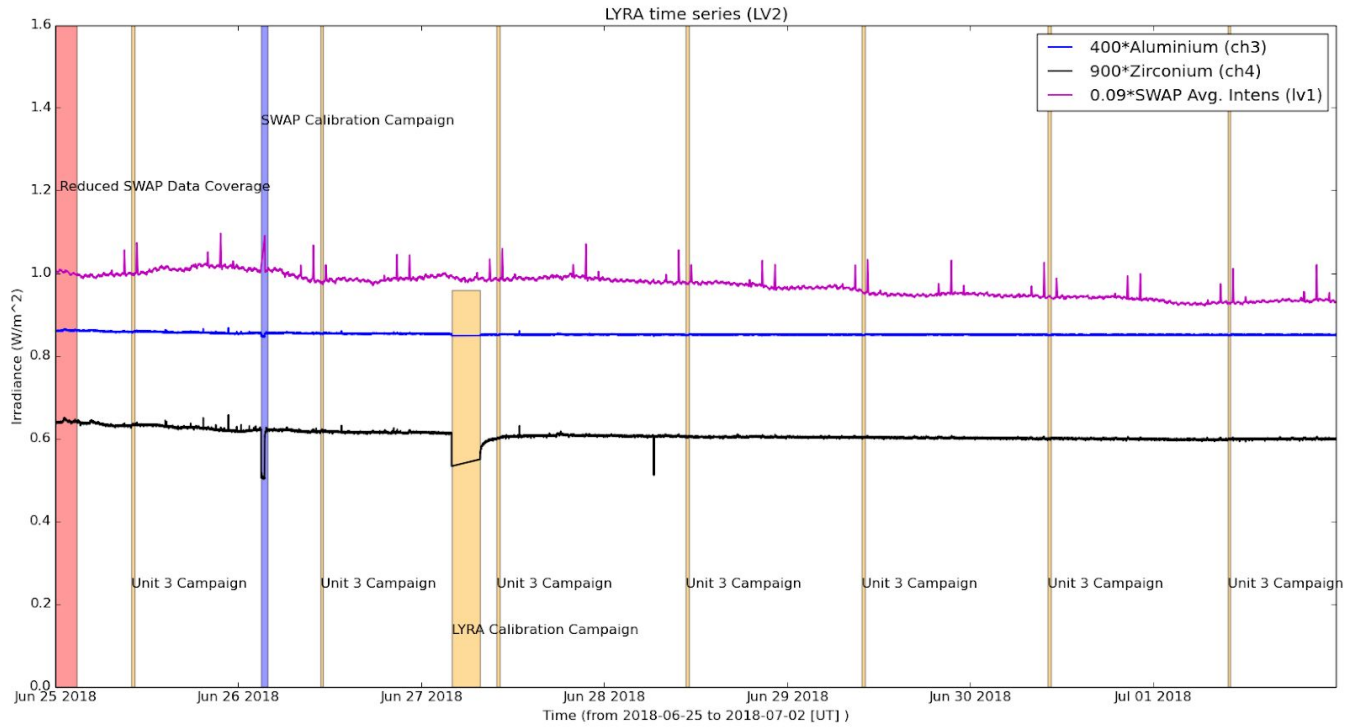
A B2.3 flare was observed by SWAP near the west limb of the Sun on 2018-Jun-27. This is shown in the SWAP image above at 05:22 UT.

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:

- SWAP calibration, 2018-Jun-26

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

- Daily U3 observations campaign, 2018-Jun-25
- Daily U3 observations campaign, 2018-Jun-26
- LYRA calibration, 2018-Jun-27
- Daily U3 observations campaign, 2018-Jun-27
- Daily U3 observations campaign, 2018-Jun-28
- Daily U3 observations campaign, 2018-Jun-29
- Daily U3 observations campaign, 2018-Jun-30
- Daily U3 observations campaign, 2018-Jul-01

The red shaded periods related to other issues corresponds to:

- SWAP reduced data coverage, 2018-Jun-25 00:00 to 02:50, due to the KSAT scheduler not executing pass 27843.

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

Calibration campaign on Wednesday this week.

IOS & operations

Monday 25 Jun	Tuesday 26 Jun	Wednesday 27 Jun	Thursday 28 Jun	Friday 29 Jun	Saturday 30 Jun	Sunday 01 Jul
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00711	LYIOS00711	LYIOS00711	LYIOS00711	LYIOS00711	LYIOS00712	LYIOS00712

The following science campaigns were performed by LYRA:

- Daily U3 observations campaign

On 2018-Jun-27

- LYRA Bi-Weekly Calibration

LYRA detector temperature

LYRA detector 2 temperature globally varied between 46.67 and 49.01 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 493 to 567.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 25 Jun	Tuesday 26 Jun	Wednesday 27 Jun	Thursday 28 Jun	Friday 29 Jun	Saturday 30 Jun	Sunday 01 Jul
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00777 638 images	IOS00777 706 images	IOS00777 686 images	IOS00777 699 images	IOS00777 749 images	IOS00778 688 images	IOS00778 689 images

Special operations for SWAP, this week:

On 2018-Jun-26

- SWAP Bi-Weekly Calibration

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.13 and 0.07 °C.

4. PROBA2 Science Center Status

The main operator is Jennifer O'Hara

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 27843 to 27907) was nominal, except for:

- 27843: The KSAT scheduler did not execute the pass. No data was recorded for this pass. The HK store has been re-dumped on the next Redu pass and the LYRA cyclic was re-dumped on the next Svalbard pass at 09:30z. The SWAP data are lost.

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:

- 27843: The KSAT scheduler did not execute the pass. The SWAP data are lost.

Total number of images between 2018 Jun 25 00:00 UT and 2018 Jul 02 00:00 UT: 4871

Highest cadence in this period: 30 seconds

Average cadence in this period: 124.14 seconds

Number of image gaps larger than 300 seconds: 130

Largest data gap: 16.50 minutes

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except:

- 27843

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)