P2SC-ROB-WR-415 - 20180305 Weekly report #415	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Mar 05 to Sun Mar 11, 2018 12 Mar 2018 Jennifer O'Hara Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

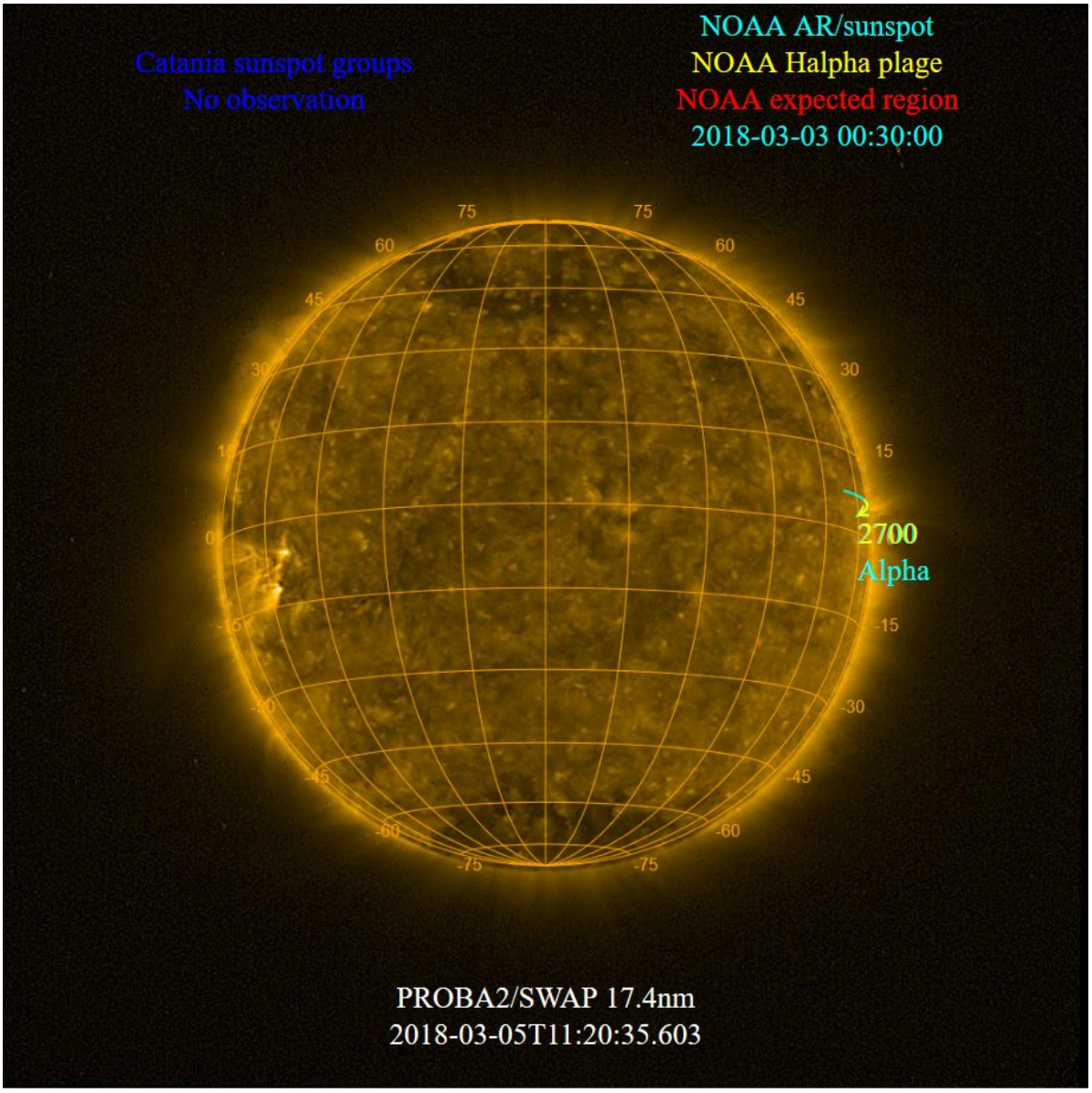
The level of solar activity[1] remained **very low** this week.

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

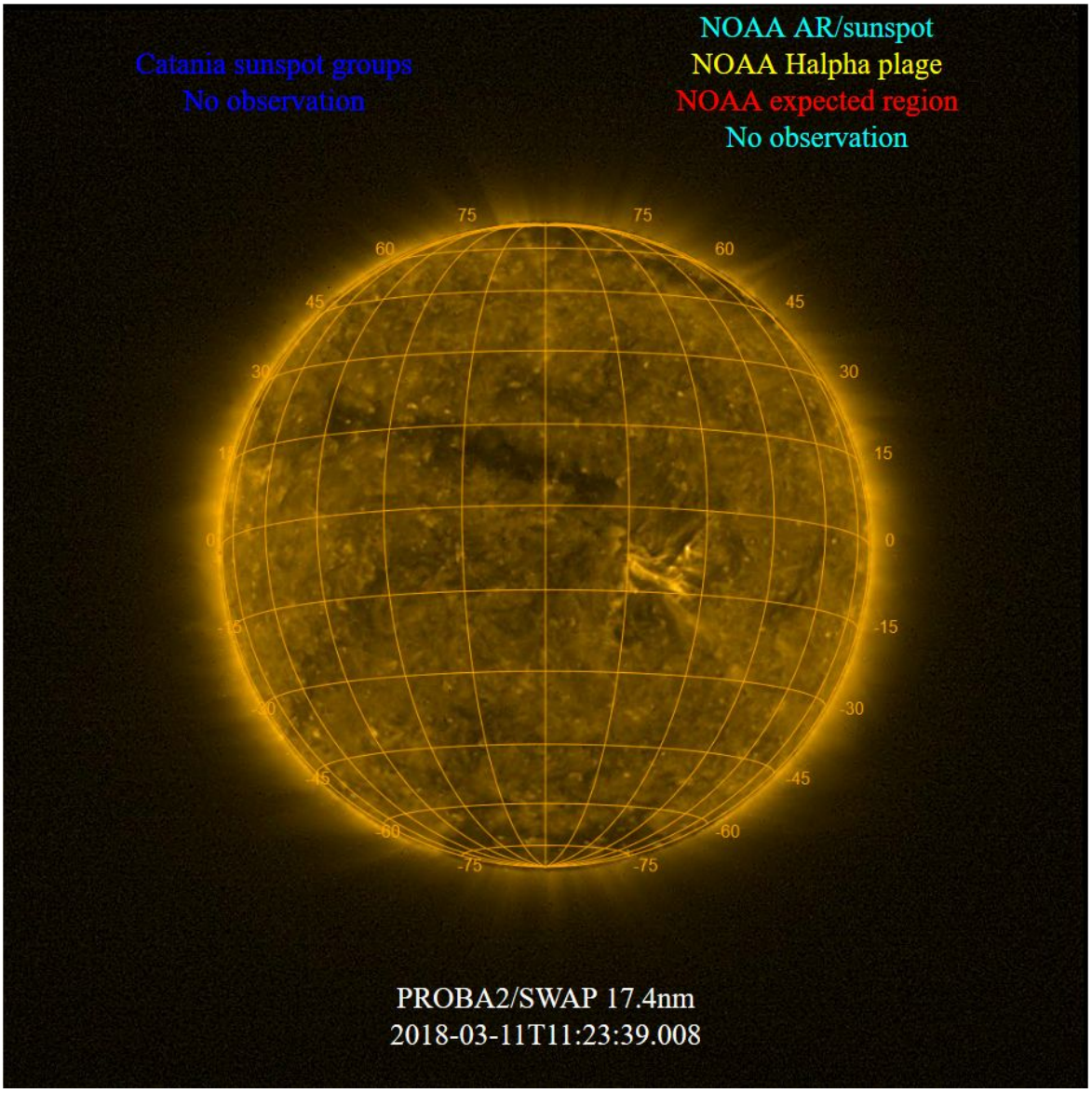
	Monday 05 Mar	Tuesday 06 Mar	Wednesday 07 Mar	Thursday 08 Mar	Friday 09 Mar	Saturday 10 Mar	Sunday 11 Mar
Activity	very low	very low	very low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

[1] See appendix. All timings are given in UT.

The SWAP images of Mar 05 and Mar 11 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
No observation
75
75
60
60
45
45
30
30
15
0
-15
-30
-45
-60
-75
-75
PROBA2/SWAP 17.4nm
2018-03-11T11:23:39.008

Solar Activity

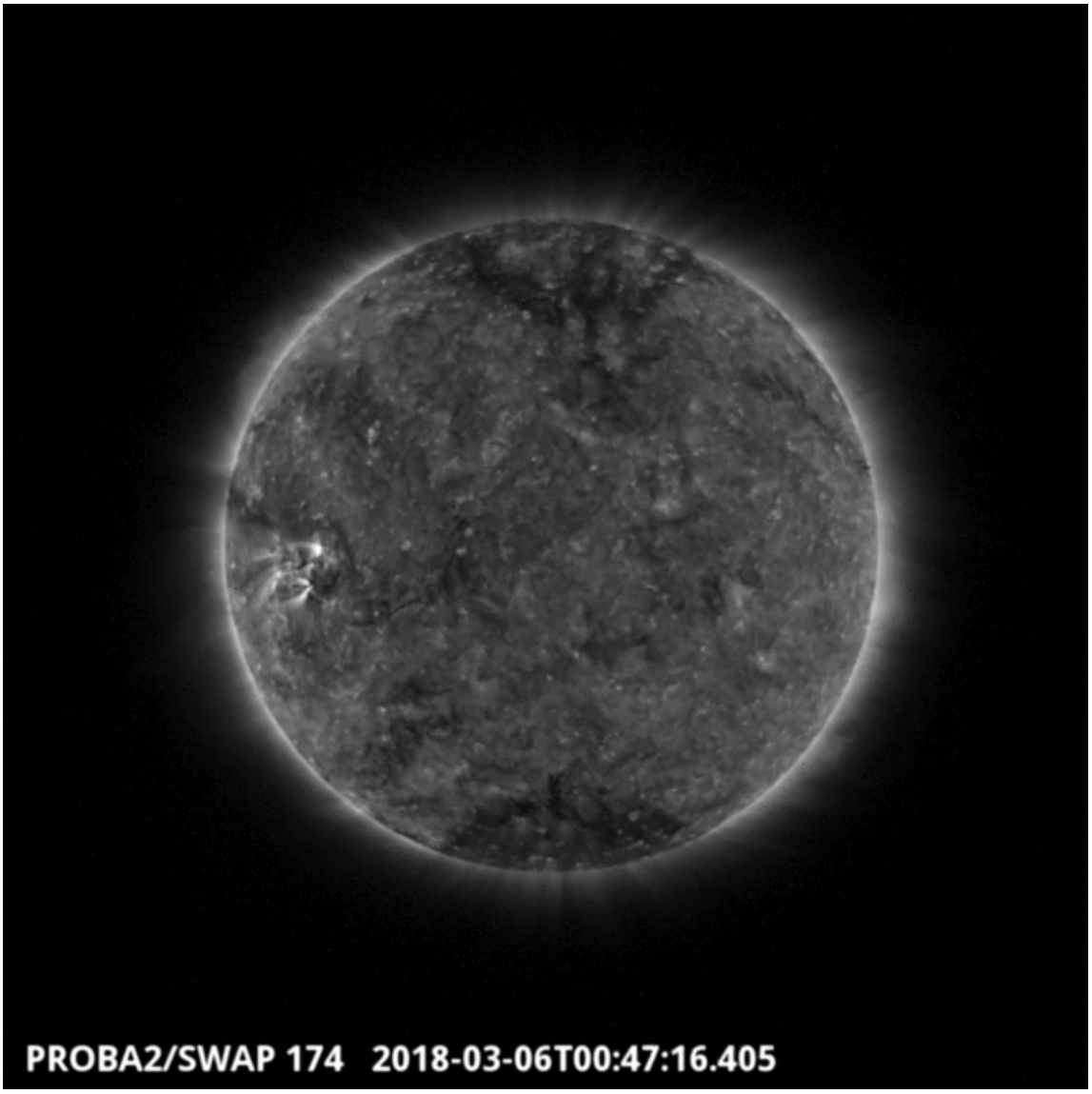
Solar flare activity remained very low during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: http://proba2.oma.be/ssa
This page also lists the recorded flaring events.

A weekly overview movie can be found here (SWAP week 415).

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 Mar 06

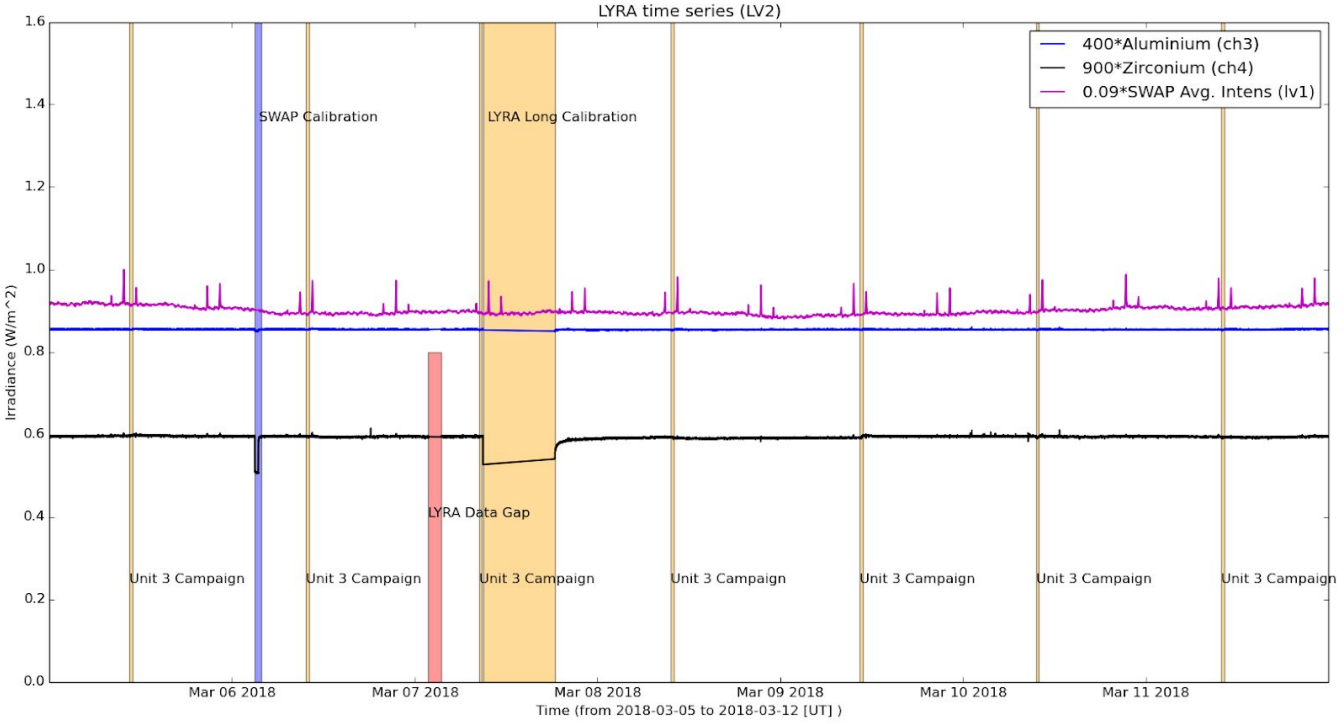


A filament was observed by SWAP on 2018-Mar-06, this is shown in the SWAP image above at 00:47, where the filament appears to the east of the centre of the solar disk.

Find a movie of the feature **here** (SWAP difference 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:

- Bi-weekly calibration, 2018-Mar-06

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

- Daily Unit 3 campaign, 2018-Mar-05
- Daily Unit 3 campaign, 2018-Mar-06
- Daily Unit 3 campaign, 2018-Mar-07
- Long calibration campaign, 2018-Mar-07
- Daily Unit 3 campaign, 2018-Mar-08
- Daily Unit 3 campaign, 2018-Mar-09
- Daily Unit 3 campaign, 2018-Mar-10
- Daily Unit 3 campaign, 2018-Mar-11

The red shaded periods related to other issues corresponds to:

- LYRA data gap due to the pass not being able to be processed due to one corrupted packet due poor signal, 2018-Mar-07

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

- Alexandros Koukras continued his visit to the P2SC working on his project entitled “A unique opportunity of observing and modeling a CME event from the low to the outer corona”.

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 05 Mar	Tuesday 06 Mar	Wednesday 07 Mar	Thursday 08 Mar	Friday 09 Mar	Saturday 10 Mar	Sunday 11 Mar
Nominal acquisition + daily U3 LYIOS00679	Nominal acquisition + daily U3 LYIOS00679 LYIOS00680 LYIOS00681	Nominal acquisition + daily U3 + Long calibration LYIOS00681	Nominal acquisition + daily U3 LYIOS00681	Nominal acquisition + daily U3 LYIOS00681	Nominal acquisition + daily U3 LYIOS00682	Nominal acquisition + daily U3 LYIOS00682

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

On 2017-Mar-06

- Long calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.57 and 51.66 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 2433 to 2668.
The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 05 Mar	Tuesday 06 Mar	Wednesday 07 Mar	Thursday 08 Mar	Friday 09 Mar	Saturday 10 Mar	Sunday 11 Mar
Nominal acquisition IOS00765 580 images	Nominal acquisition + calibration IOS00765 714 images	Nominal acquisition IOS00765 663 images	Nominal acquisition IOS00765 723 images	Nominal acquisition IOS00765 708 images	Nominal acquisition IOS00765 700 images	Nominal acquisition IOS00765 699 images

Special operations for SWAP, this week:
On 2017-Mar-05

- Bi-weekly calibration campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 0.79 and 1.59 °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 26798 to 26864) 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 2018 Mar 05 00:00 UT and 2018 Mar 11 00:00 UT: 4172
Highest cadence in this period: 30 seconds
Average cadence in this period: 124.25 seconds
Number of image gaps larger than 300 seconds: 103
Largest data gap: 9.17 minutes

Data coverage LYRA

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

- A LYRA packet for pass 26818 is corrupted (size issue) due to poor signal, pass cannot be processed at this time.

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)