


P2SC-ROB-WR-281 - 20150810 Weekly report #281	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Aug 10 to Sun Aug 16, 2015 20 Aug 2015 Katrien Bonte Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

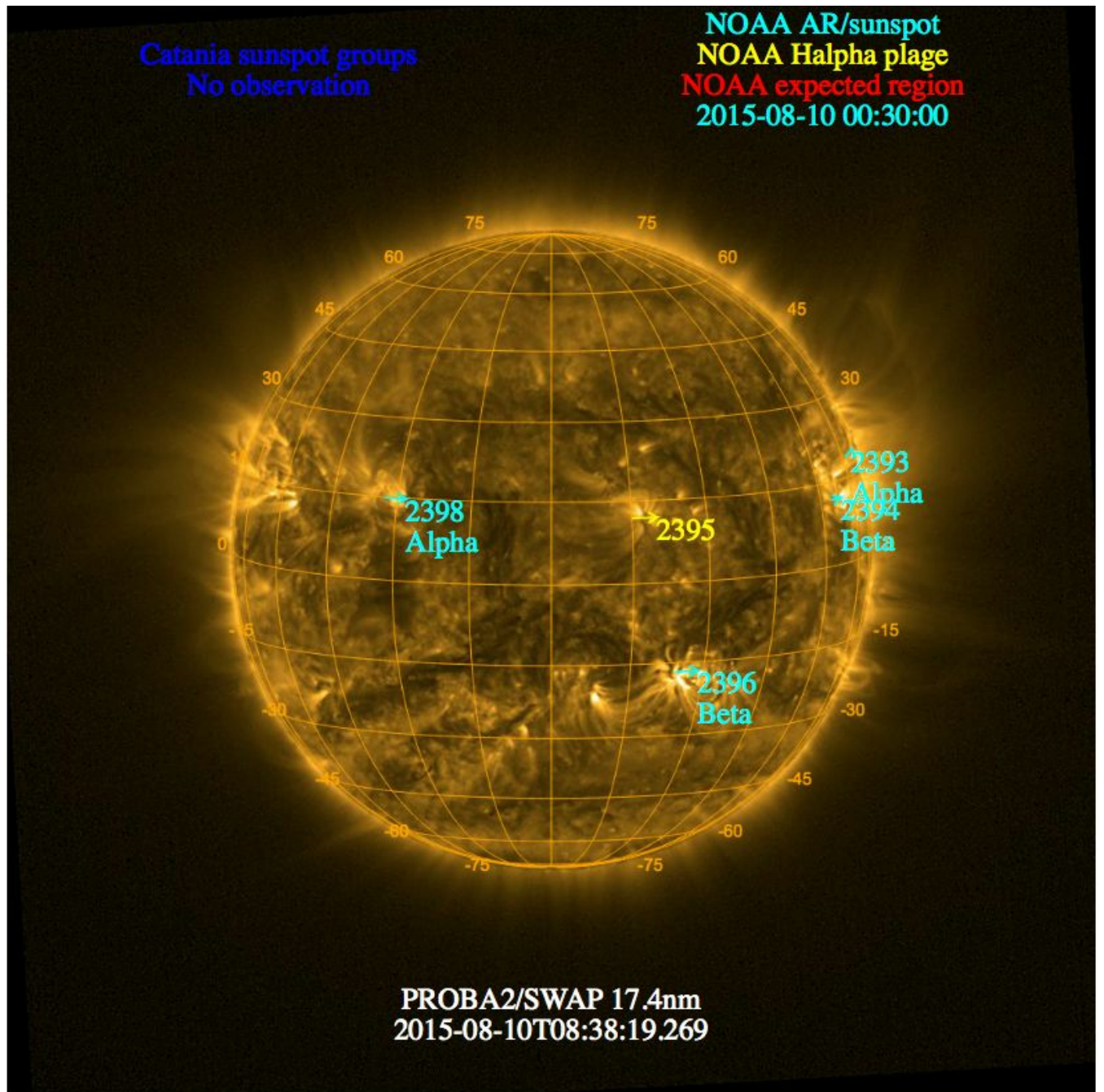
The level of solar activity¹ fluctuated between **very low** and **low** this week.

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

	Monday 10 Aug	Tuesday 11 Aug	Wednesday 12 Aug	Thursday 13 Aug	Friday 14 Aug	Saturday 15 Aug	Sunday 16 Aug
Activity	very low	low	very low	very low	low	low	very low
Flares	-	-	-	-	-	-	-

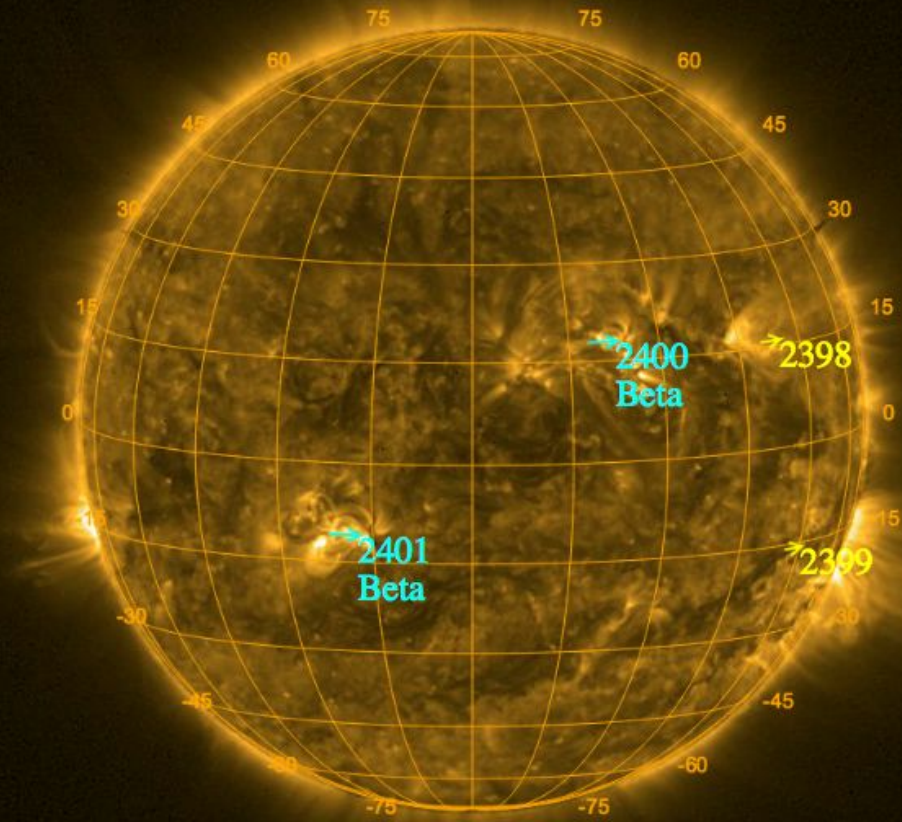
¹ See appendix. All timings are given in UT.

The SWAP images of Aug 10 and Aug 16 are shown below, with annotated active regions.



Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-08-16 00:30:00



PROBA2/SWAP 17.4nm
2015-08-16T08:36:46.991

Solar Activity

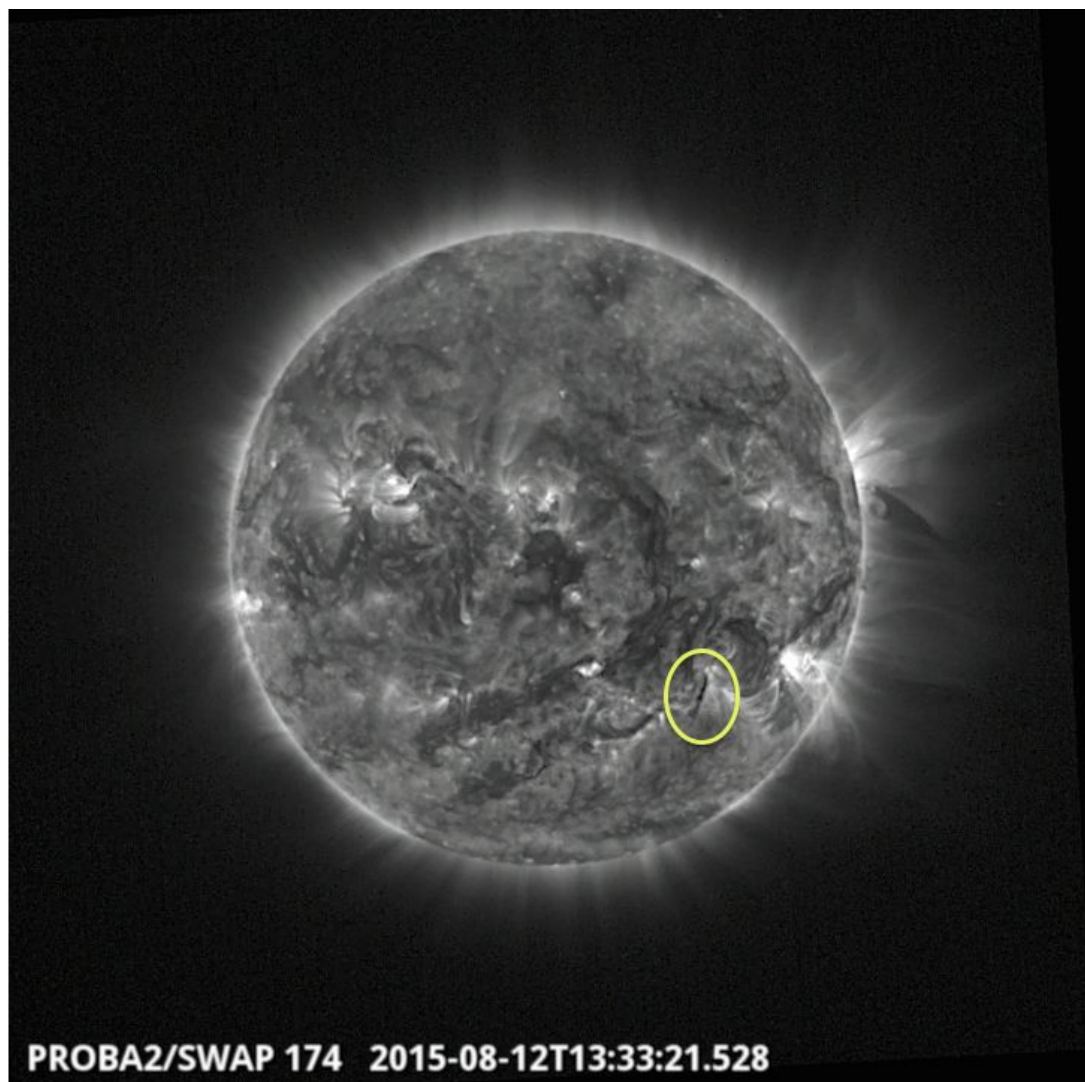
Solar flare activity fluctuated between very low and low during the week.

To view the the weeks activity in more detail, we suggest you visit: <http://proba2.oma.be/ssa> from which all the daily (normal and difference) movies can be accessed. This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 281).

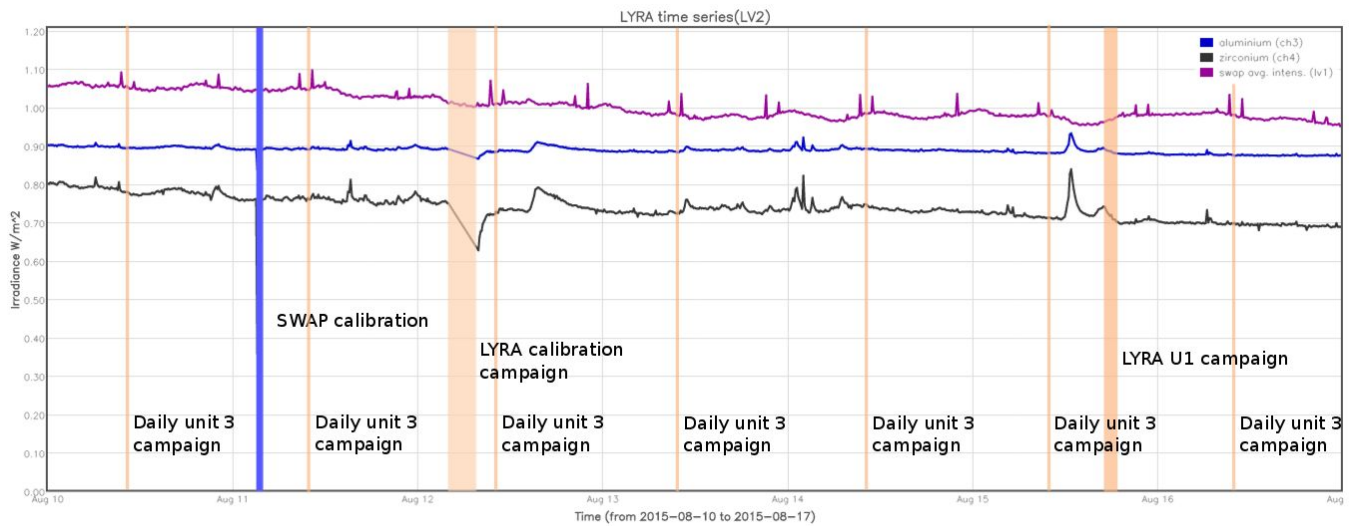
No major flares occurred this week, the strongest flare was a C1.9 flare on 2015-08-14 at 02:00 UT. However, a well observed filament eruption occurred in the South-West quadrant, on 2015-08-12 around 13:30 UT. Below we provide an annotated SWAP image highlighting the event.

Wednesday Aug 12



Filament eruption in the South-West quadrant between 13:00 and 14:30 UT.
Find a movie of the events [here](#) (SWAP daily 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:

- SWAP bi-weekly calibration campaign on 2015-08-11

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

- LYRA daily U3 campaigns on 2015-08-10
- LYRA daily U3 campaigns on 2015-08-11
- LYRA short bi-weekly calibration on 2015-08-12
- LYRA daily U3 campaigns on 2015-08-12
- LYRA daily U3 campaigns on 2015-08-13
- LYRA daily U3 campaigns on 2015-08-14
- LYRA daily U3 campaigns on 2015-08-15
- LYRA monthly unit 1 campaign on 2015-08-15
- LYRA daily U3 campaigns on 2015-08-16

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>).

- M.J. West presented 2 oral presentations regarding PROBA2 at the AOGS conference, Singapore from 2015-Aug-02 to 2015-Aug-07

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 10 Aug	Tuesday 11 Aug	Wednesday 12 Aug	Thursday 13 Aug	Friday 14 Aug	Saturday 15 Aug	Sunday 16 Aug
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 + U1 campaign	Nominal acquisition + daily U3
LYIOS00487	LYIOS00487	LYIOS00487	LYIOS00487	LYIOS00488	LYIOS00488	LYIOS00488

The following science campaigns were performed by LYRA:

- daily unit 3 observations campaign
- bi-weekly calibration campaign on 2015-08-12T04:00:00
- monthly unit 1 campaign on 2015-08-15T17:00:00

LYRA detector temperature

LYRA detector 2 temperature globally varied between 43.84 and 48.36 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors remained at 129.

The number of MCPM unrecoverable errors remained 0.

IOS & operations

Monday 10 Aug	Tuesday 11 Aug	Wednesday 12 Aug	Thursday 13 Aug	Friday 14 Aug	Saturday 15 Aug	Sunday 16 Aug
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00591 661 images	IOS00591 679 images	IOS00591 581 images	IOS00591 666 images	IOS00591 576 images	IOS00591 561 images	IOS00591 571 images

Special operations for SWAP, this week:

- bi-weekly calibration campaign on 2015-08-11T03:00:00

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.45 and -0.49 °C.

4. PROBA2 Science Center Status

The main operator is Katrien Bonte.

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 18158 to 18216) 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 Aug 10 00:00 UT and 2015 Aug 17 00:00 UT: 4358

Highest cadence in this period: 30 seconds

Average cadence in this period: 138.75 seconds

Number of image gaps larger than 300 seconds: 198

Largest data gap: 11.00 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
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)