P2SC-ROB-WR-179- 20130826 Weekly report #179	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon August 26 to Sun September 01, 2013 04 September 2013 Erik Pylyser Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP Deputy PI, dan.seaton@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 3730559
cc:	ROB DIR, ronald@oma.be ESA REDU, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Stefano.Santandrea@esa.int	

1. Science

Solar & Space weather events

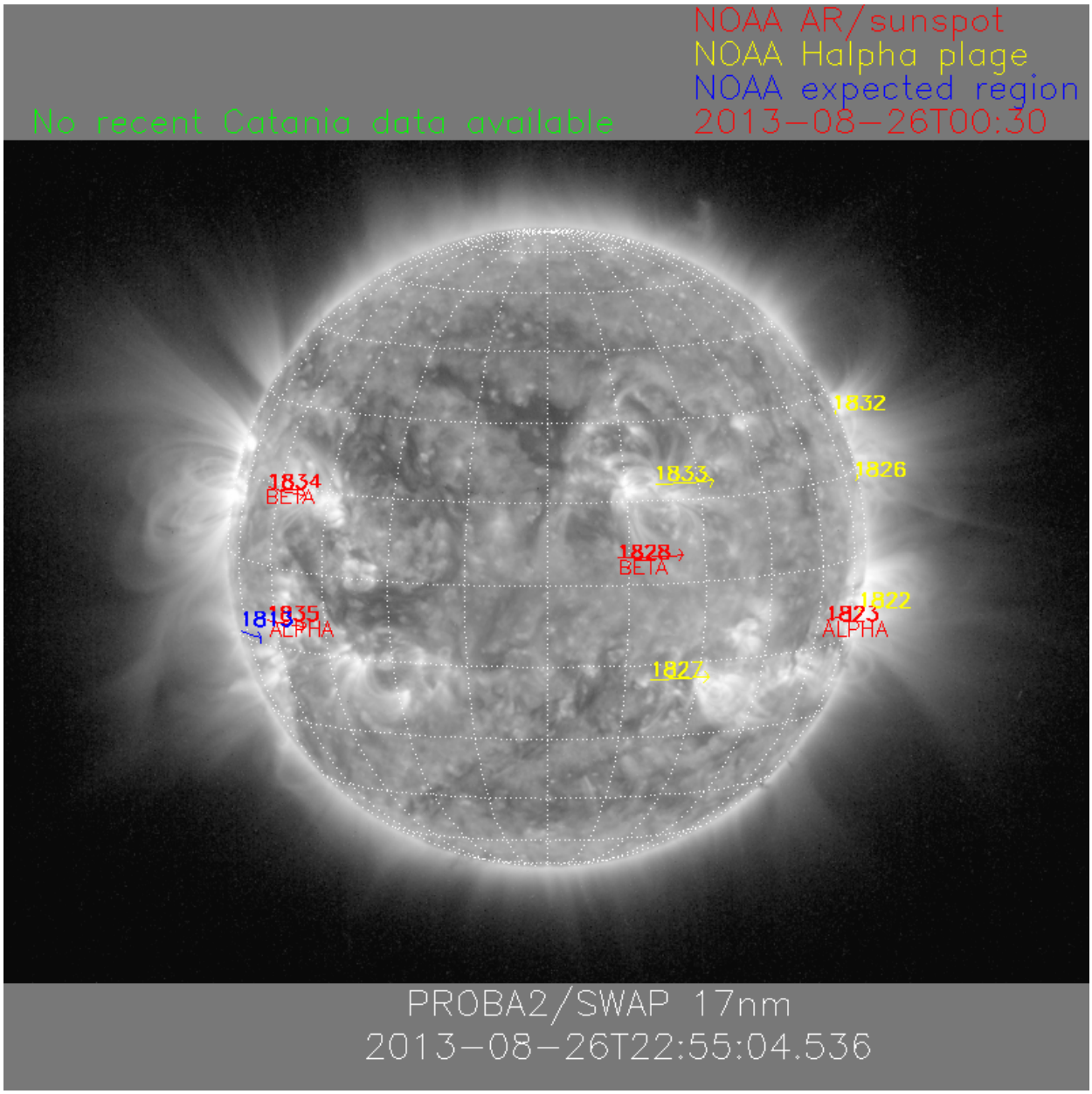
The level of solar activity[1] this week varied between **very low and low** this week.

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

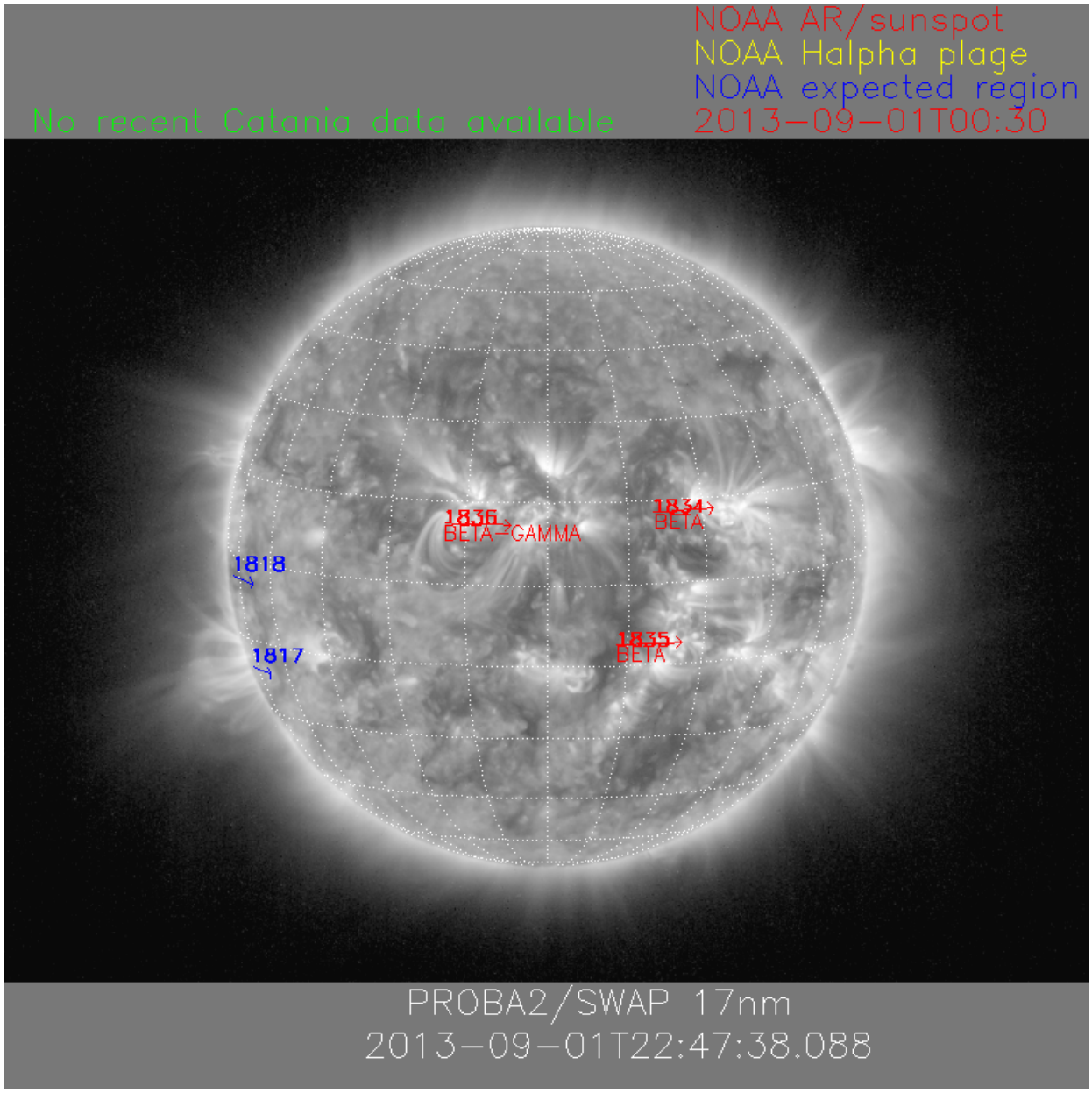
	Monday 26 Aug	Tuesday 27 Aug	Wednesday 28 Aug	Thursday 29 Aug	Friday 30 Aug	Saturday 31 Aug	Sunday 01 Sep
Activity	very low	very low	very low	low	low	low	low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Aug 26 and Sep 01 are shown below, with annotated active regions.



http://sidc.be/html/CmapPage.html


NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2013-09-01T00:30
No recent Catania data available
1836
BETA-GAMMA
1834
BETA
1818
1817
1835
BETA
PROBA2/SWAP 17nm
2013-09-01T22:47:38.088

Solar Activity
Solar (flaring) activity raised slightly from very low to low during the week. The highest level C-flare was a C8.3 on Friday 30th.

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 (SWAP174; HelioViewer.org).

Details about some of this week's events, can be found further below.

Tuesday August 27th:

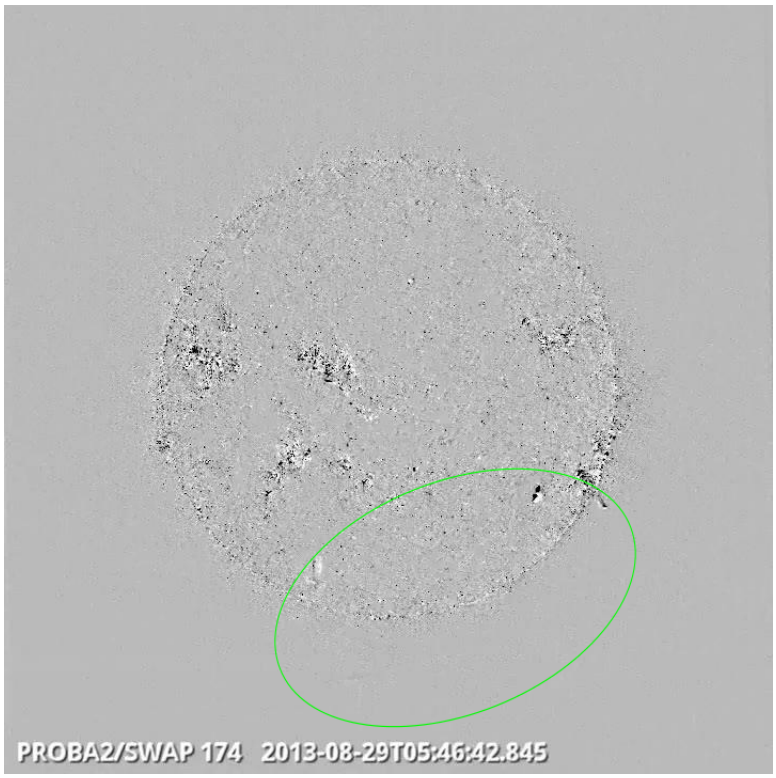
Eruption on West Limb @ 16:06 - SWAP difference image
Find a movie of the event **here** (SWAP difference movie)

Wednesday August 28th:

Prominence Eruption on South East Limb @ 15:30 - SWAP difference image

Between Wednesday and Thursday afternoon, the South West limb exhibited continuous activity, including a big filament eruption (see on Thursday).
A movie of this activity can be found here.

Thursday August 29th:



Prominence Eruption on South East Limb @ 05:46 - SWAP difference image

Prominence Eruption on South East Limb @ 06:43 - SWAP difference image

Find a movie of the complete event **here** (SWAP difference movie)

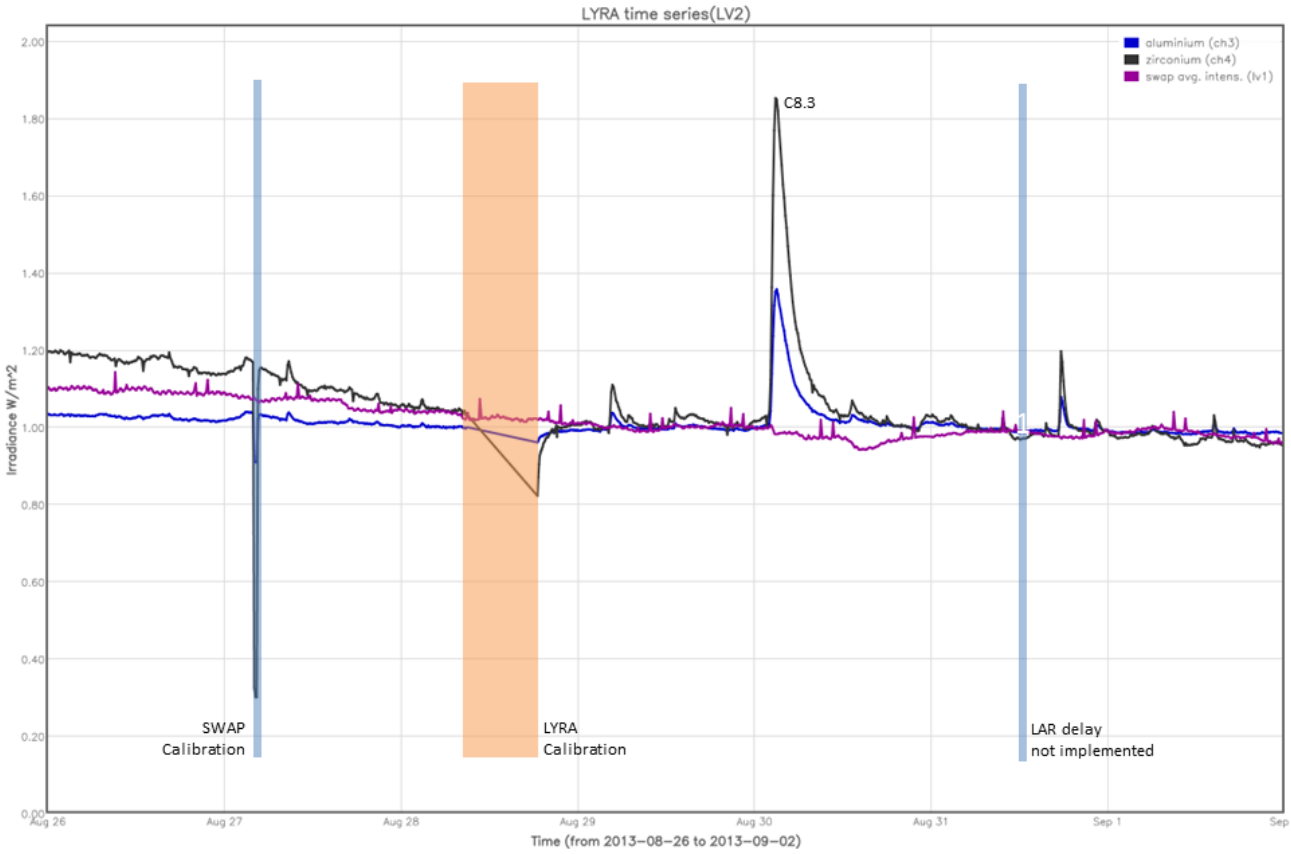
Friday August 30th:

C8.3 Flare Eruption in North East Quadrant @ 02:34 - SWAP difference image

Find a movie of the event **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 (solar intensity derived from ‘integrated’ SWAP images)



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

- SWAP calibration on Tuesday
- LAR delay not implemented on Saturday (11:30)

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

- LYRA calibration on Wednesday

The red shaded period 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).

“P2SC Development”, David Berghmans, seminar at ROB, Friday 30th, 14:30.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

LYRA calibration on Wednesday.

IOS & operations

Monday 26 Aug	Tuesday 27 Aug	Wednesday 28 Aug	Thursday 29 Aug	Friday 30 Aug	Saturday 31 Aug	Sunday 01 Sep
Nominal acquisition + daily U3 LYIOS00339	Nominal acquisition + daily U3 LYIOS00339	Nominal acquisition + daily U3 + calibration LYIOS00339	Nominal acquisition + daily U3 LYIOS00339	Nominal acquisition + daily U3 LYIOS00339	Nominal acquisition + daily U3 LYIOS00339	Nominal acquisition + daily U3 LYIOS00340

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.0 and 47.8 degrees C, taking into account the daily U3 activation periods; the latter result in a temperature increase of about 0.6 degrees C.
During calibration, temperature decreased to 45.9 degrees.

To be explored

- None

3. SWAP instrument status

Calibration

SWAP calibration on Tuesday.

MCPM errors

The number of MCPM recoverable errors increased from 11211 to 11525.
The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 26 Aug	Tuesday 27 Aug	Wednesday 28 Aug	Thursday 29 Aug	Friday 30 Aug	Saturday 31 Aug	Sunday 01 Sep
Nominal acquisition IOS00474 547 images	Nominal acquisition + calibration IOS00474 636 images	Nominal acquisition IOS00474 639 images	Nominal acquisition IOS00474 638 images	Nominal acquisition IOS00474 624 images	Nominal acquisition IOS00474 630 images	Nominal acquisition IOS00475 551 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.60 and -0.71 degrees C. Due to the missing LAR delay on Saturday 31, temperature of SWAP went up to -0.50 degrees C.

To be explored

- None

4. PROBA2 Science Center Status

The main operator is Koen Stegen.

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 11905 to 11966) 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 2013 Aug 26 0UT and 2013 Sep 02 0UT: 4371
Highest cadence in this period: 30 seconds
Average cadence in this period: 138.36 seconds
Number of image gaps larger than 300 seconds: 0

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
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)