P2SC-ROB-WR-180- 20130902 Weekly report #180	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Sep 02 to Sun Sep 08, 2013 11 Sep 2013 Erik Pylyser, Robbe Vansintjan 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	

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1. Science

Solar & Space weather events

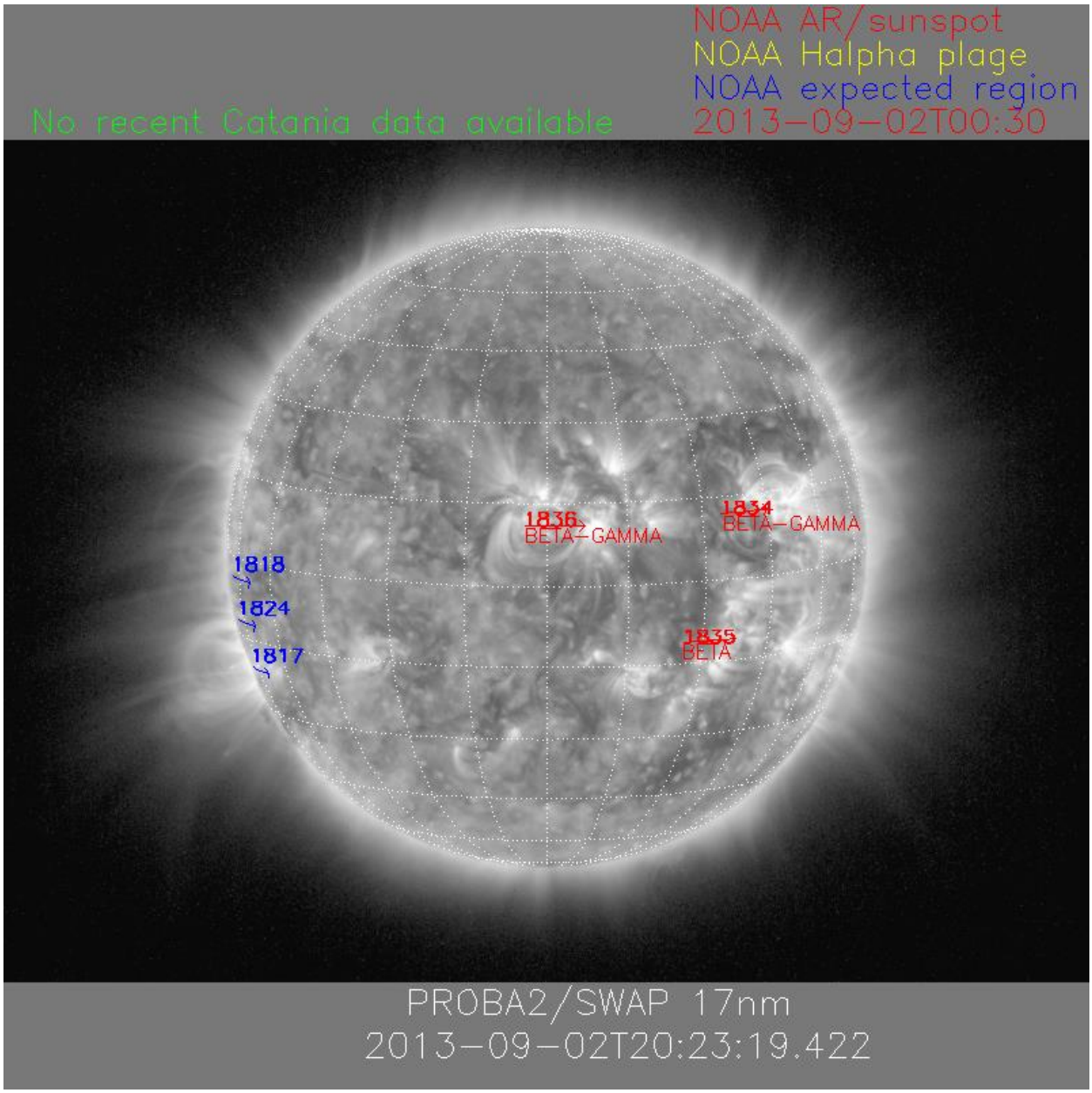
The level of solar activity[1] fluctuated between **very low** and **low** this week.

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

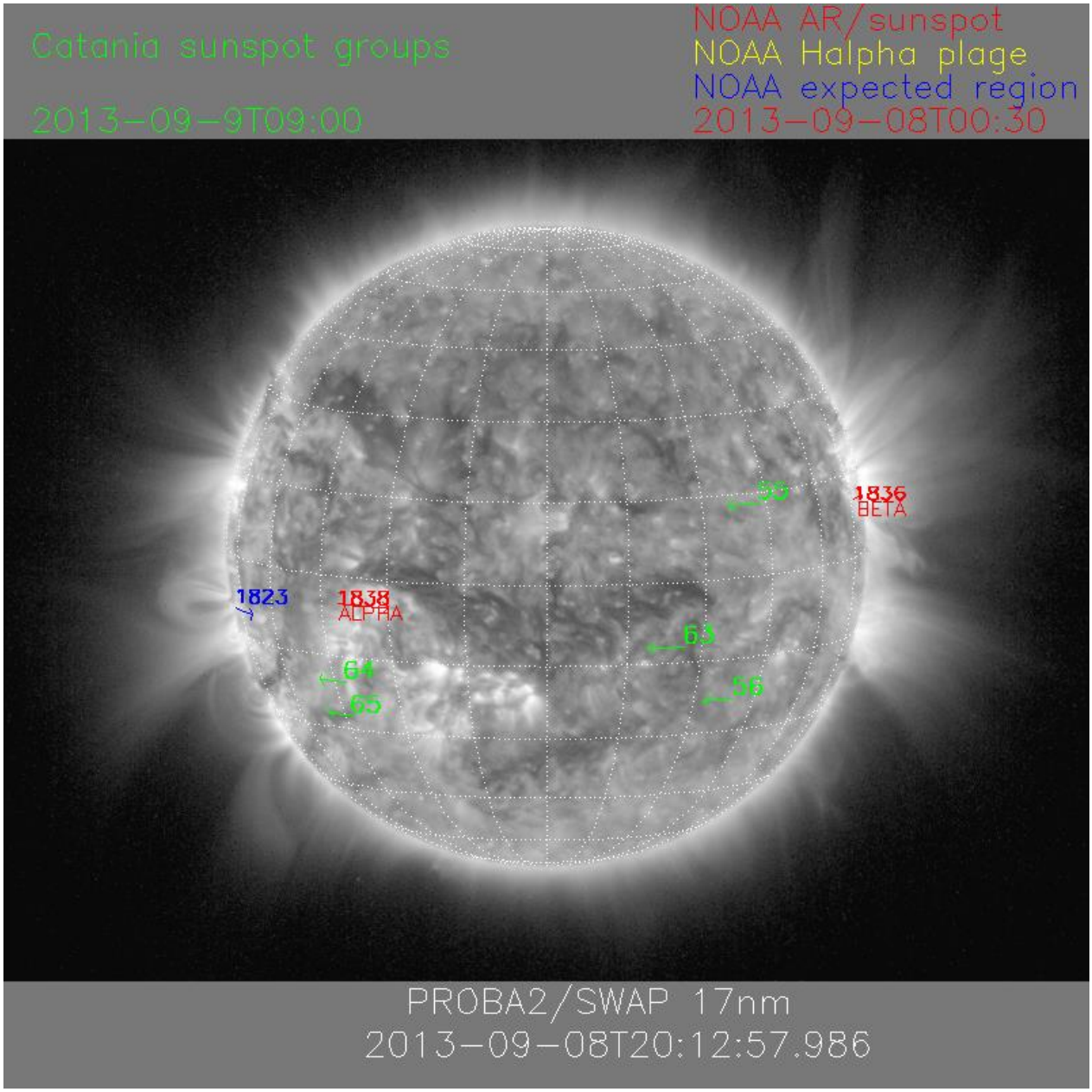
	Monday 02 Sep	Tuesday 03 Sep	Wednesday 04 Sep	Thursday 05 Sep	Friday 06 Sep	Saturday 07 Sep	Sunday 08 Sep
Activity	very low	low	low	low	low	very low	very low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Sep 02 and Sep 08 are shown below, with annotated active regions.



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


Catania sunspot groups
2013-09-9T09:00
NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2013-09-08T00:30
1836
BETA
1823
1838
ALPHA
63
64
65
66
PROBA2/SWAP 17nm
2013-09-08T20:12:57.986

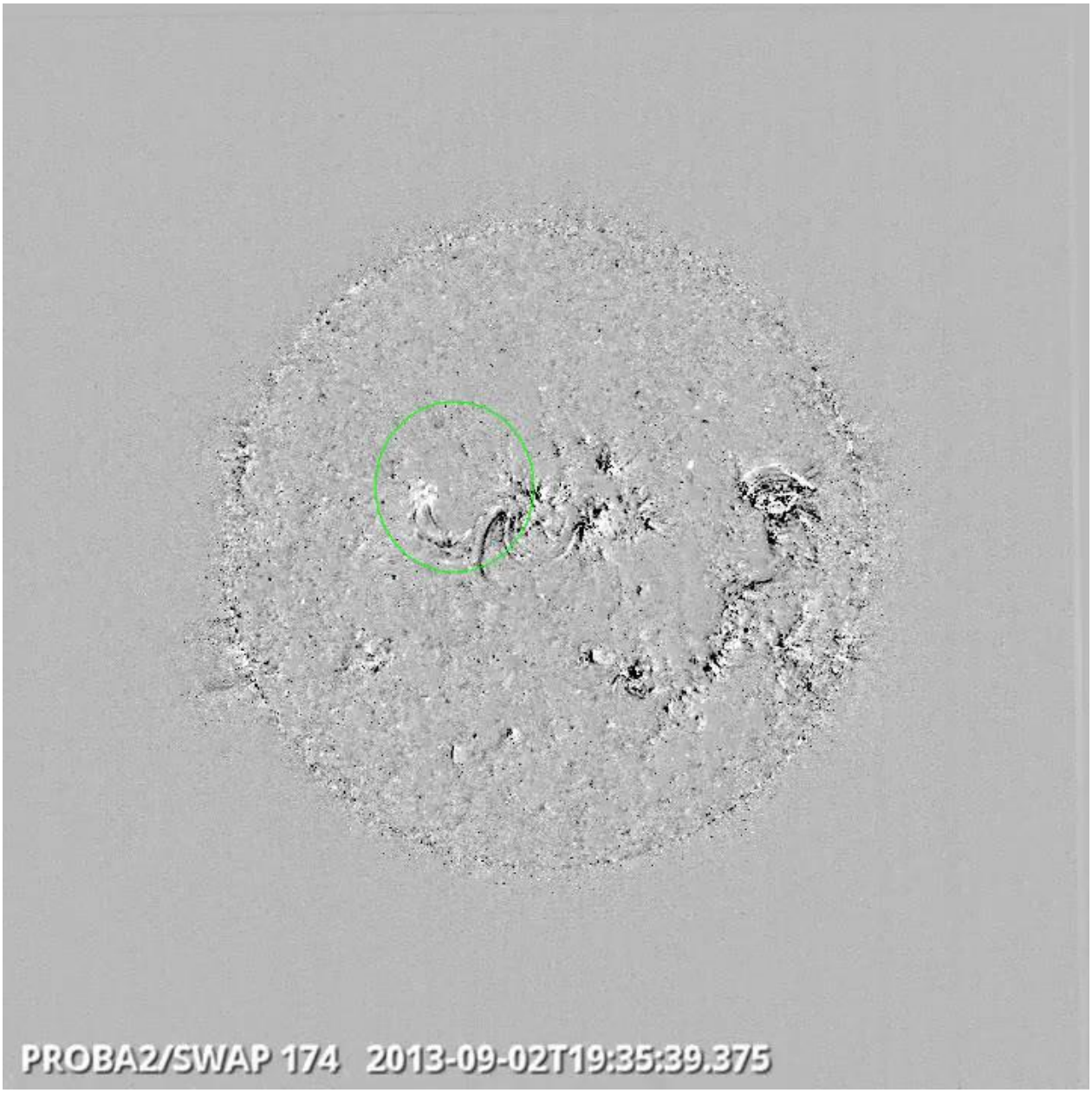
Solar Activity
Solar (flaring) activity fluctuated between low and very low during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: http://proba2.oma.be/ssa.
This page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

A weekly overview movie can be found here (SWAP174; HelioViewer.org).

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

Monday Sep 02

Flows on the Equator in Western Hemisphere, followed by a filament eruption in the North East Quadrant @ 15:35 - SWAP difference image
Find a movie of the events **here** (SWAP difference movie)



Flows in North Western Quadrant @ 19:35 - SWAP difference image

Find a movie of the events **here** (SWAP difference movie)

Wednesday Sep 04

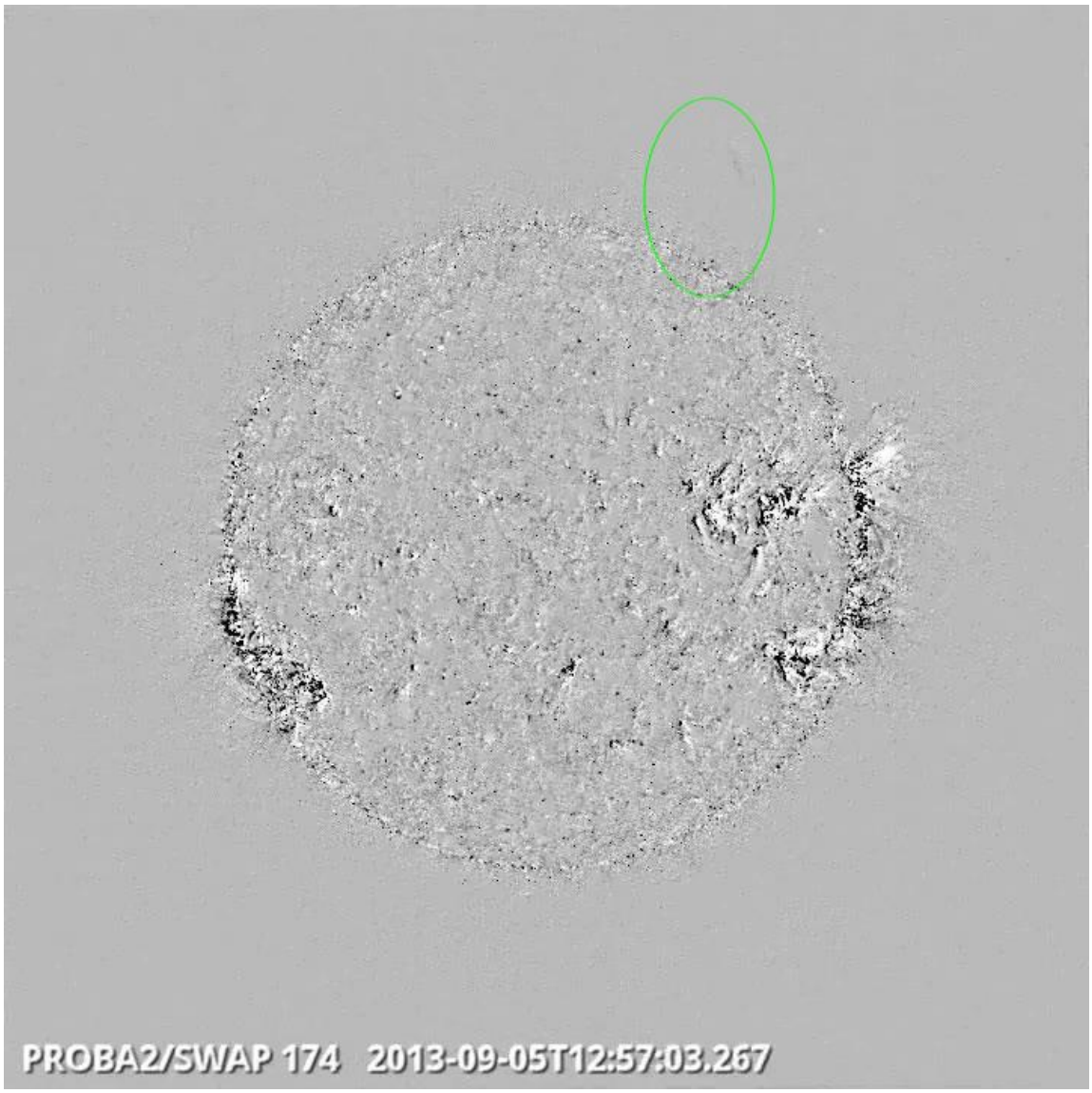
Flow on South East Limb @ 05:08 - SWAP difference image

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

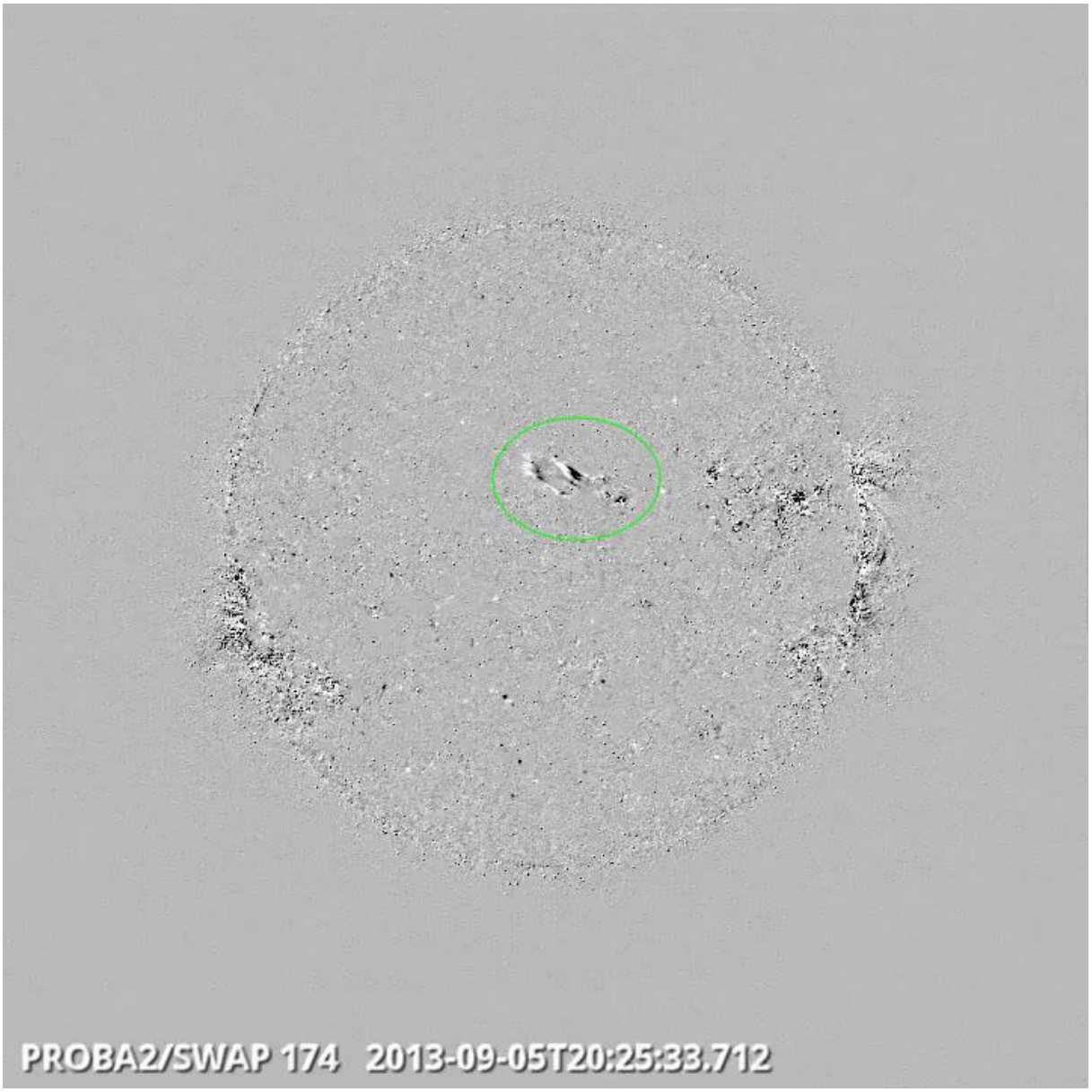
Eruption on South East Limb @ 22:43 - SWAP difference image

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

Thursday Sep 05:

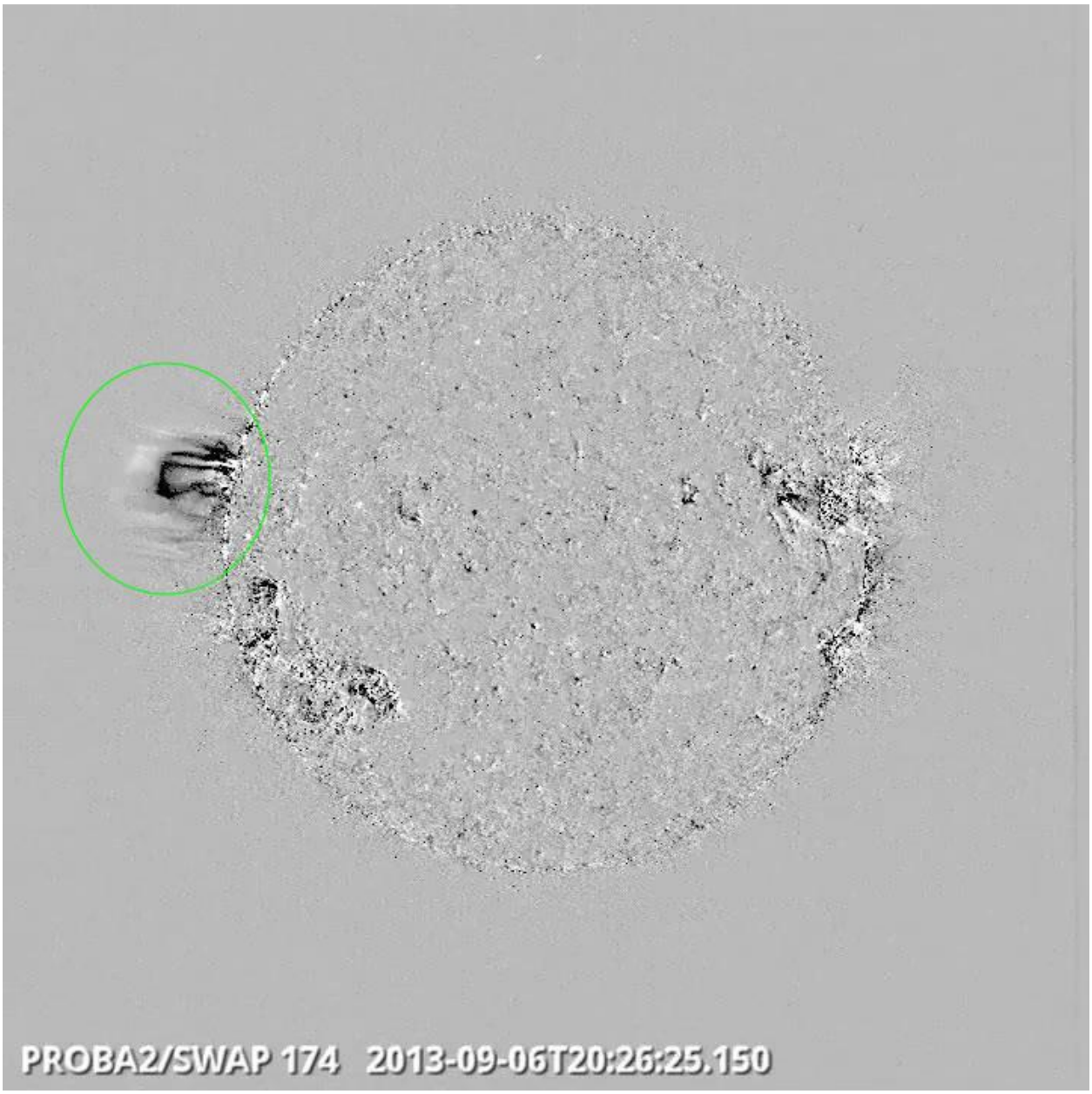


Prominence Eruption on North West Limb @ 12:57 - SWAP difference image
Find a movie of the event **here** (SWAP difference movie)



Eruption in Centre of North Hemisphere @ 20:25 - SWAP difference image

Friday Sep 06:

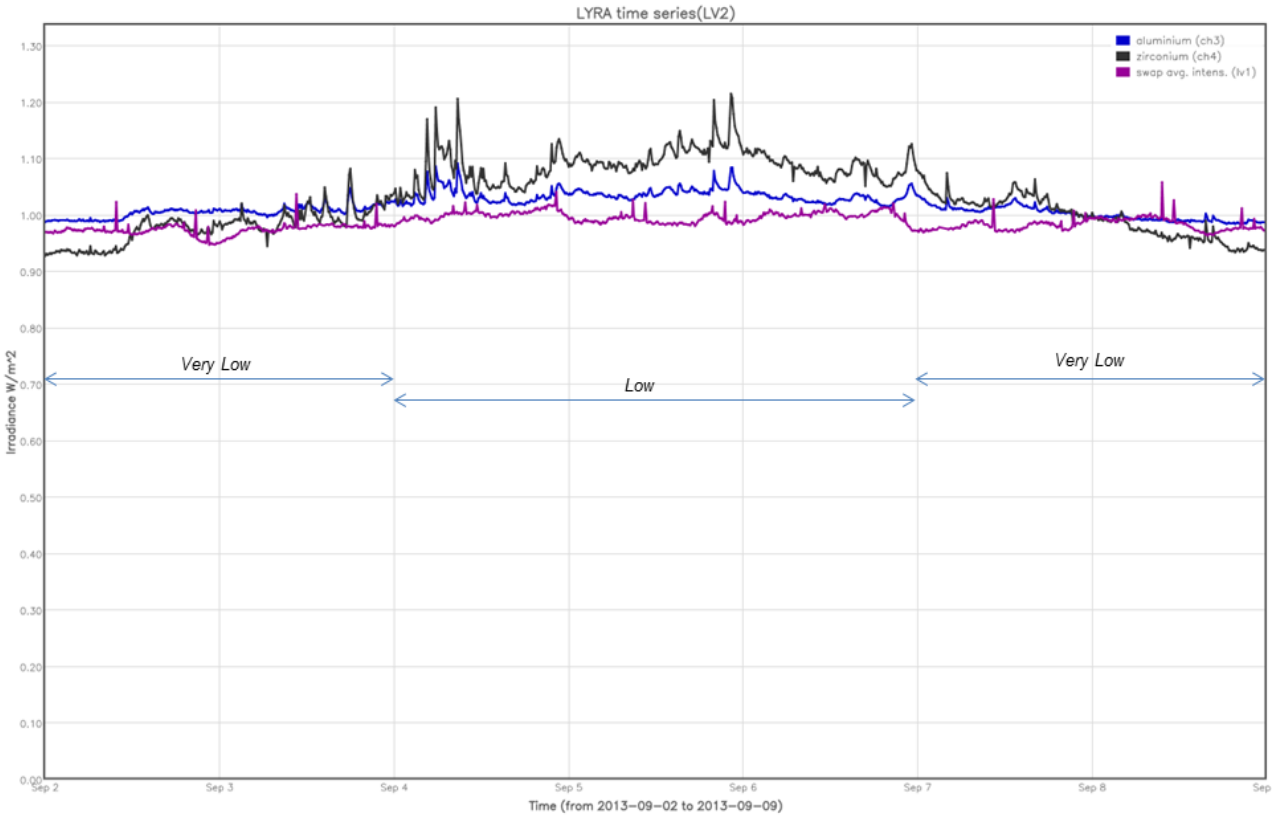


Eruption on North East Limb @ 20:26 - SWAP difference image
Find a movie of the event **here** (SWAP difference movie)

A few less violent eruptions occurred in that area, before and after this eruption.

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:

- ESP campaign on Thursday

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

- None

The red shaded period corresponds to:

- None

Activity level periods are indicated per day by horizontal arrows.

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).

'SWAP Observations of the Long-Term, Large-Scale Evolution of the EUV Solar Corona', Dan Seaton et al., Accepted in Ap.J., http://arxiv.org/abs/1309.1345.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 02 Sep	Tuesday 03 Sep	Wednesday 04 Sep	Thursday 05 Sep	Friday 06 Sep	Saturday 07 Sep	Sunday 08 Sep
Nominal acquisition + daily U3 LYIOS00340	Nominal acquisition + daily U3 LYIOS00340	Nominal acquisition + daily U3 LYIOS00340	Nominal acquisition + daily U3 LYIOS00340	Nominal acquisition + daily U3 LYIOS00340	Nominal acquisition + daily U3 LYIOS00340	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 47.16 and 48.02 degrees C, taking into account the daily U3 activation periods; the latter result in a temperature increase of about 0.6 degrees C.

To be explored

- None

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 11525 to 11761.
The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 02 Sep	Tuesday 03 Sep	Wednesday 04 Sep	Thursday 05 Sep	Friday 06 Sep	Saturday 07 Sep	Sunday 08 Sep
Nominal acquisition IOS00475 610 images	Nominal acquisition IOS00475 608 images	Nominal acquisition IOS00475 664 images	Nominal acquisition IOS00475 564 images	Nominal acquisition IOS00475 608 images	Nominal acquisition IOS00475 498 images	Nominal acquisition IOS00475 590 images

Special operations for SWAP, this week:

- ESP campaign on Thursday

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.34 and -0.64 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 11967 to 12025) 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 Sep 02 0UT and 2013 Sep 09 0UT: 4195
Highest cadence in this period: 0 seconds
Average cadence in this period: 144.16 seconds
Number of image gaps larger than 300 seconds: 5
Largest data gap: 36.50 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
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)