P2SC-ROB-WR-168- 20130610 Weekly report #168	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Jun 10 to Sun Jun 16, 2013 19 June 2013 Erik Pylyser Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

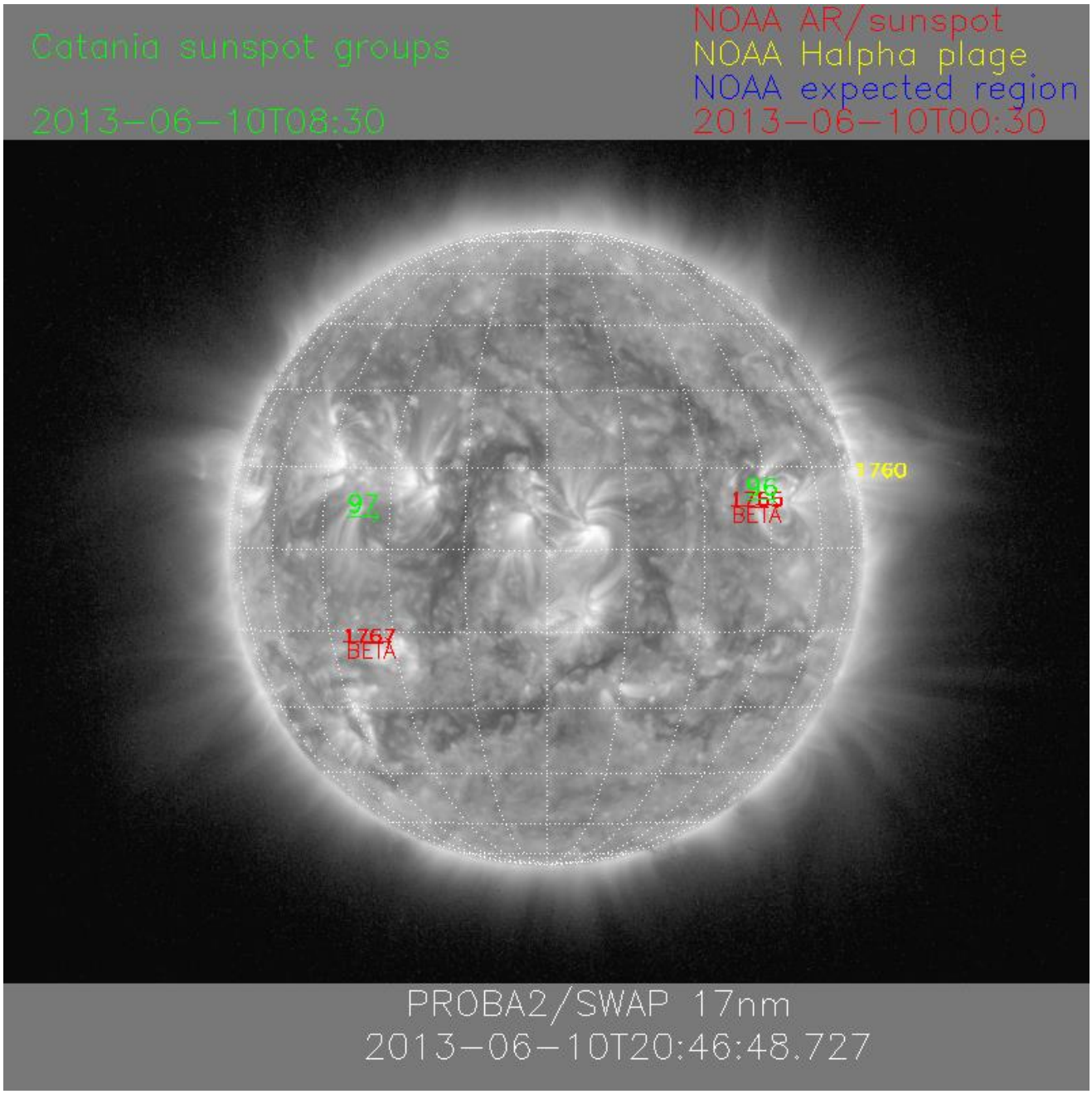
The level of solar activity[1] this week was **very low** to **low**.

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

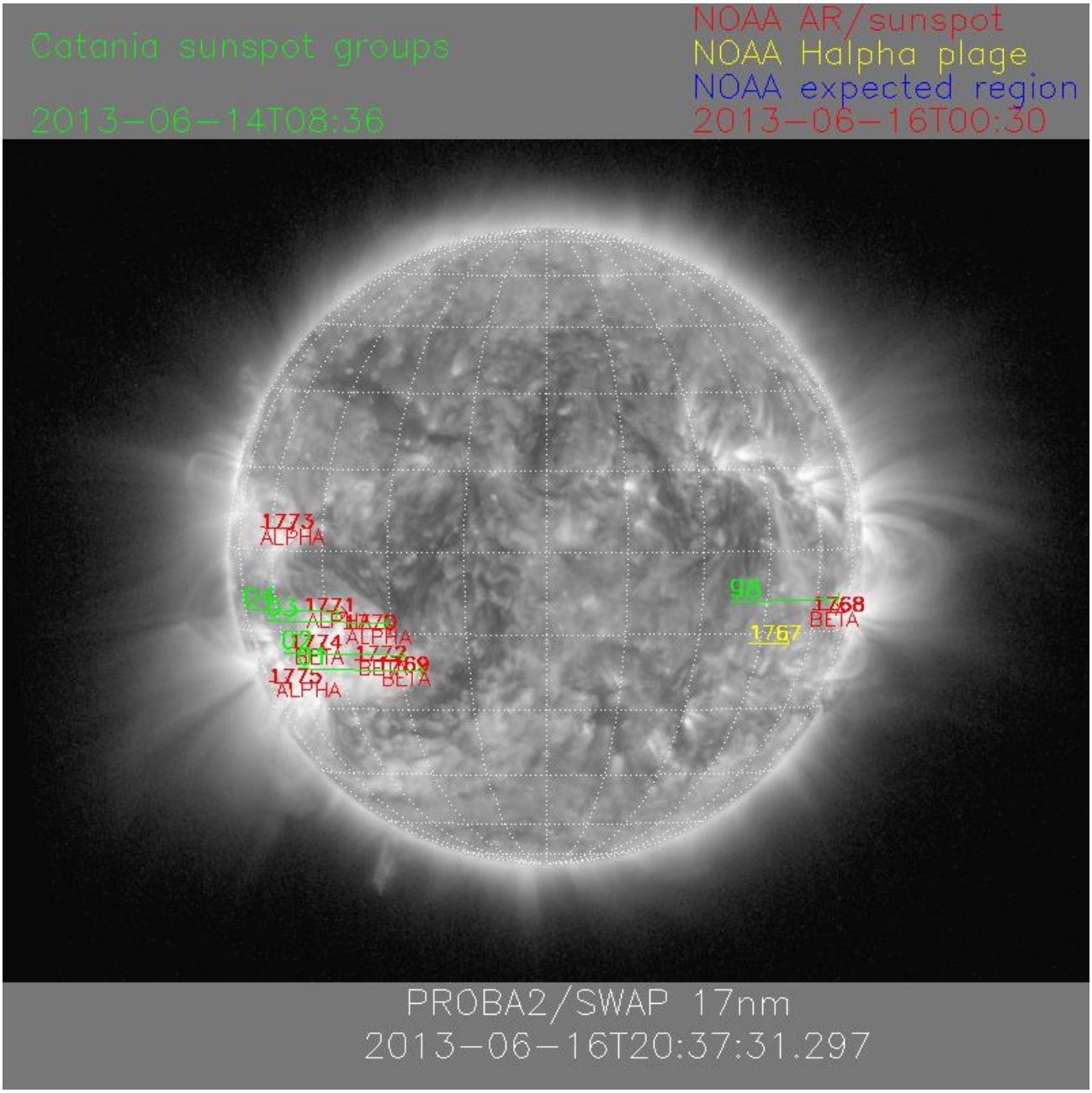
	Monday 10 Jun	Tuesday 11 Jun	Wednesday 12 Jun	Thursday 13 Jun	Friday 14 Jun	Saturday 15 Jun	Sunday 16 Jun
Activity	low	very low	very low	low	very low	low	low
Flares	-	-	-	-	-	-	-

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

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



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



Solar Activity

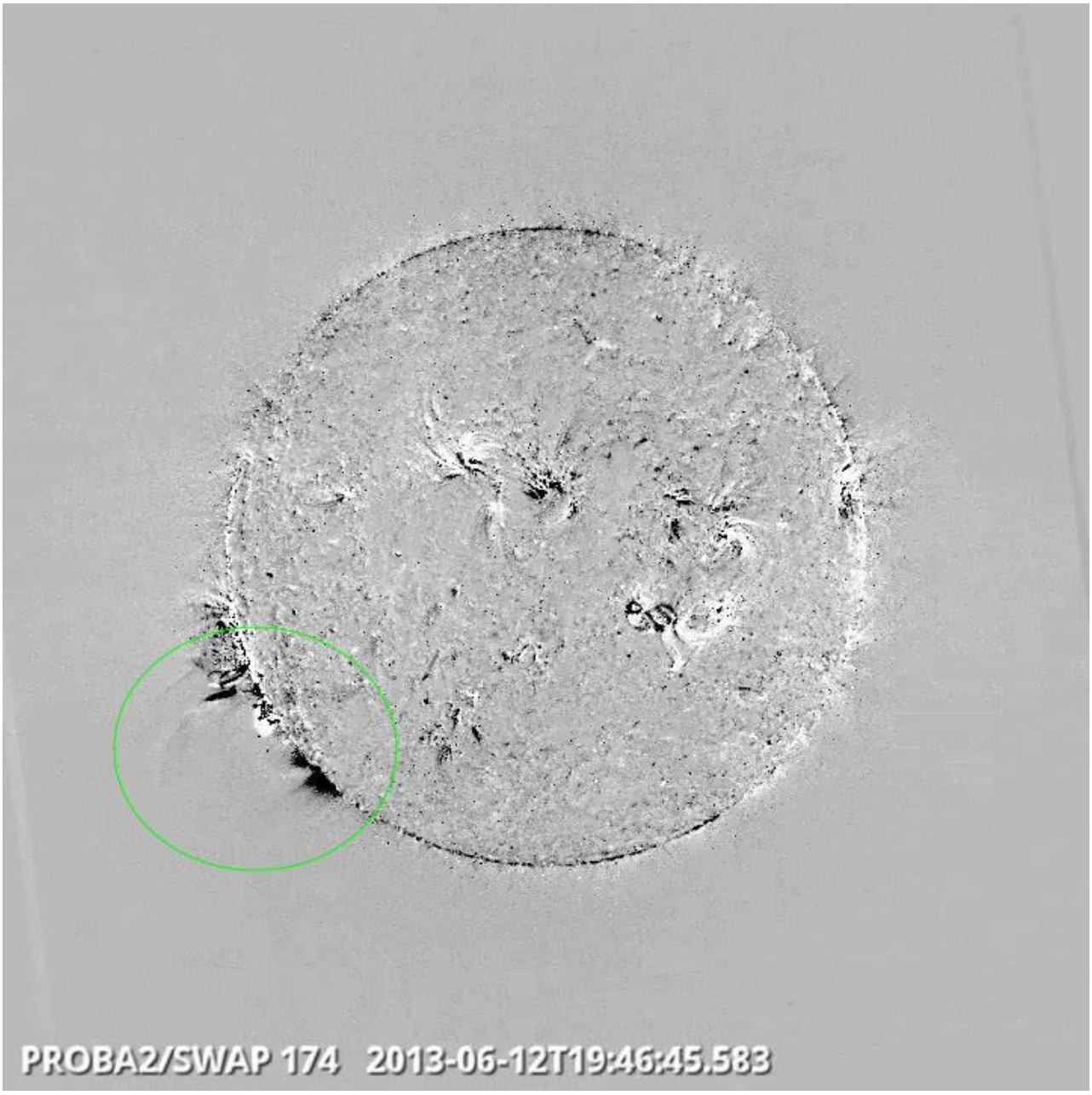
Solar (flaring) activity was very low to low this week. On Wednesday a new set of sunspot groups emerged around the East limb, but not much activity has been seen from those groups..

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/AIA304 combination; HelioViewer.org).

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

Wednesday June 12th:



B4.4 flare + Prominence Eruption South West limb @ 19:46 - SWAP difference image

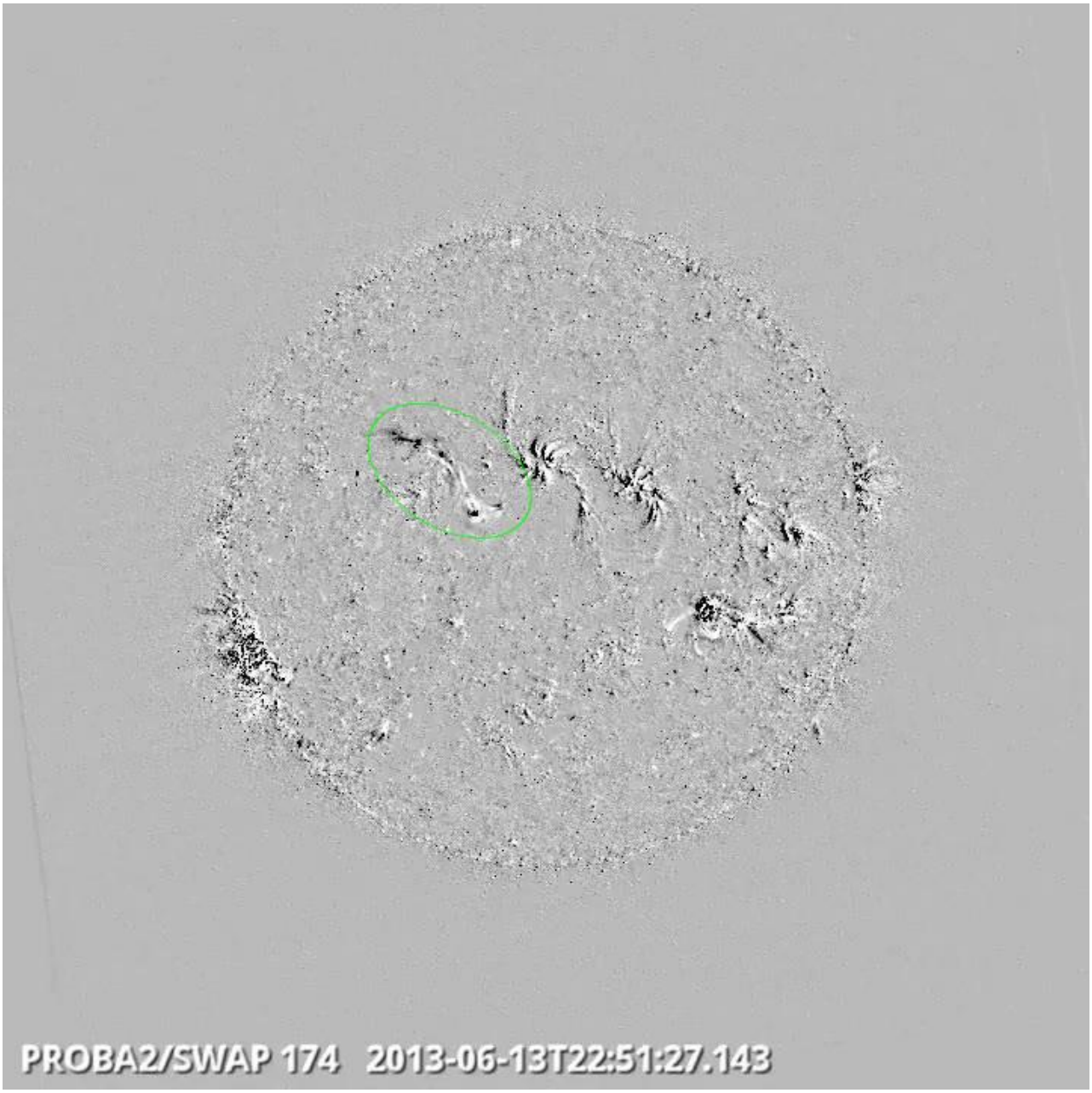
Prominence Eruption on West limb @ 21:37 - SWAP difference image

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

Thursday June 13th:

Prominence Eruption North West limb @ 13:58 - SWAP difference image

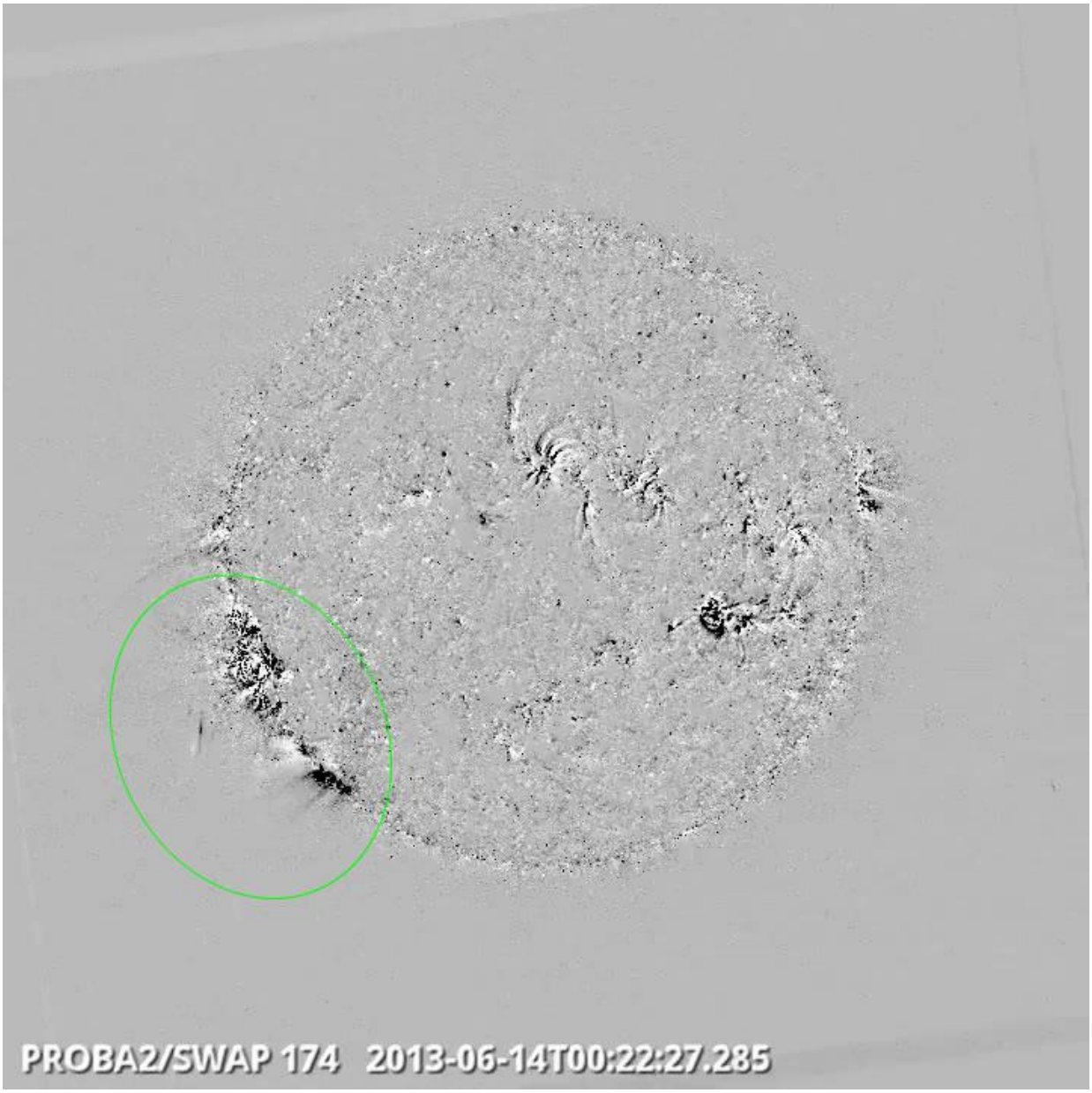
Find a movie of this event **here** (SWAP difference movie)



Eruption and material transfer in North East quadrant @ 22:51 - SWAP difference image

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

Friday June 14th:



C1.2 eruption on the East limb@ 00:22 - SWAP difference image

A movie of this event is also seen in the previous movie above (Thu 13)

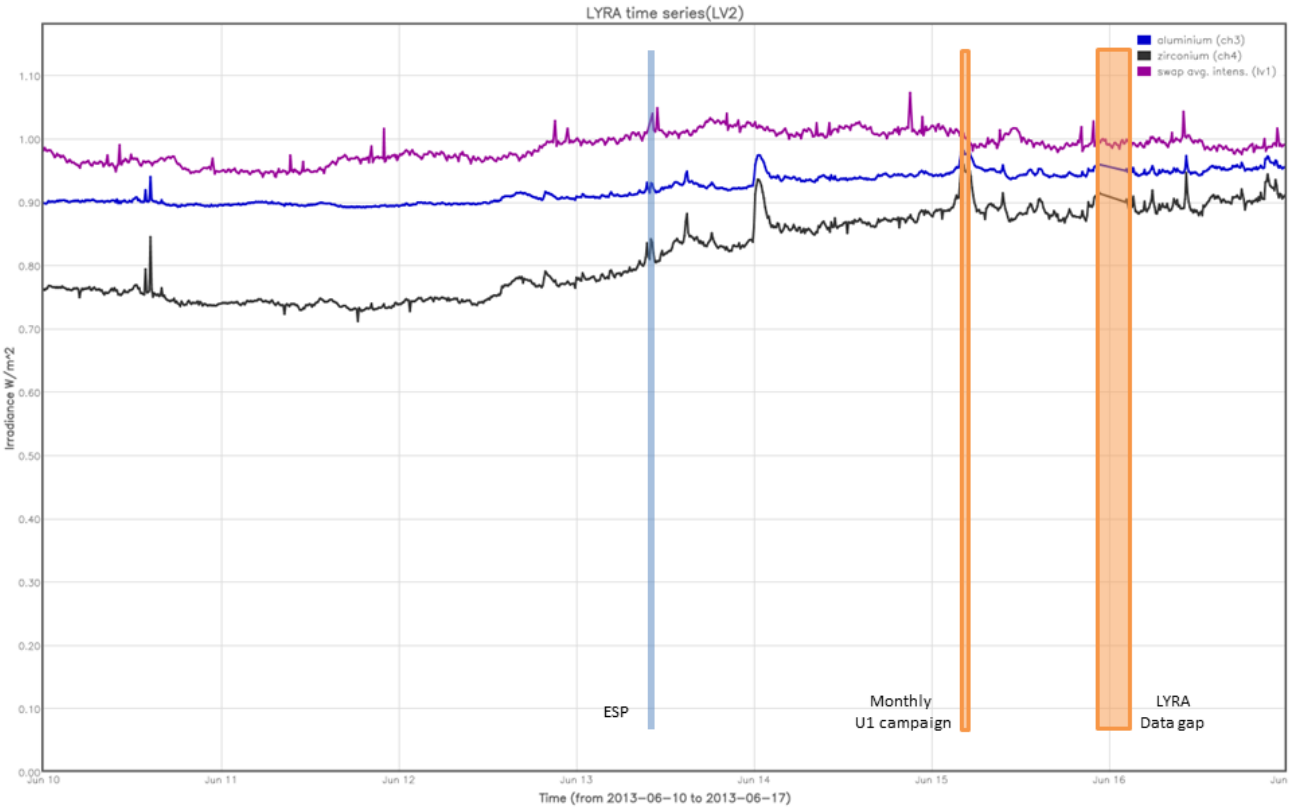
Sunday June 16th:

Prominence eruption on the NW limb @ 06:10 - SWAP difference image

Find a movie of this 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:

- ESP experiment on Thursday

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

- LYRA Unit 1 monthly campaign
- LYRA data gap (see section 4).

The red shaded period corresponds to:

- None

Note the generally increasing nature of the LYRA curves, corresponding with the appearance of new sunspot groups over the East limb.

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).

The french Belgian television (RTBF) visited the SSCC room on Wednesday. At this occasion, Koen Stegen was interviewed, and he demonstrated the workings of the P2SC.
It is not yet known when this interview will be aired.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 10 Jun	Tuesday 11 Jun	Wednesday 12 Jun	Thursday 13 Jun	Friday 14 Jun	Saturday 15 Jun	Sunday 16 Jun
Nominal acquisition + daily U3 LYIOS00333	Nominal acquisition + daily U3 LYIOS00333	Nominal acquisition + daily U3 LYIOS00333	Nominal acquisition + daily U3 LYIOS00333	Nominal acquisition + daily U3 LYIOS00333	Nominal acquisition + daily U3 + monthly U1 LYIOS00333	Nominal acquisition + daily U3 LYIOS00334

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- monthly U1 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 46.60 and 47.42 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 8400 to 8641.
The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 10 Jun	Tuesday 11 Jun	Wednesday 12 Jun	Thursday 13 Jun	Friday 14 Jun	Saturday 15 Jun	Sunday 16 Jun
Nominal acquisition IOS00467 586 images	Nominal acquisition IOS00467 486 images	Nominal acquisition IOS00467 586 images	Nominal acquisition + ESP IOS00467 546 images	Nominal acquisition IOS00467 601 images	Nominal acquisition IOS00467 518 images	Nominal acquisition IOS00468 493 images

Special operations for SWAP, this week:

- ESP jump on Thursday

This week, SWAP image download was blocked at 16:29:23z during pass 11254, due to an on-board contingency. REDU executed the usual contingency procedure, and image download was resumed at 19:56:33z during pass 11256 (from 2013-06-11T19:54:19z to 20:01:05z).

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.44 and -0.40 degrees C.

To be explored

- None

4. PROBA2 Science Center Status

The main operator is Koen Stegen.

Due to a (known) LYTMR bug at P2SC, BINLYRA_11292 was not processed.
This caused a data gap between Saturday 15/06 22:56 and Sunday 16/06 02:12.
Once the bug is solved, a re-run will make all these data available.

The following changes were made to the P2SC:

LY-TAF

- 13/06/2013: r4826; Add recovery event type.
- 13/06/2013: r4828; Add Temp > 50 event type.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 11240 to 11301) 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 Jun 10 0UT and 2013 Jun 17 0UT: 3946
Highest cadence in this period: 130 seconds
Average cadence in this period: 153.28 seconds
Number of image gaps larger than 300 seconds: 1
Largest data gap: 34.33 minutes

The largest gap is due to the ESP campaign on Thursday.

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)
(+ extreme?)