P2SC-ROB-WR-184- 20130930 Weekly report #184	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Sep 30 to Sun Oct 06, 2013 09 Oct 2013 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

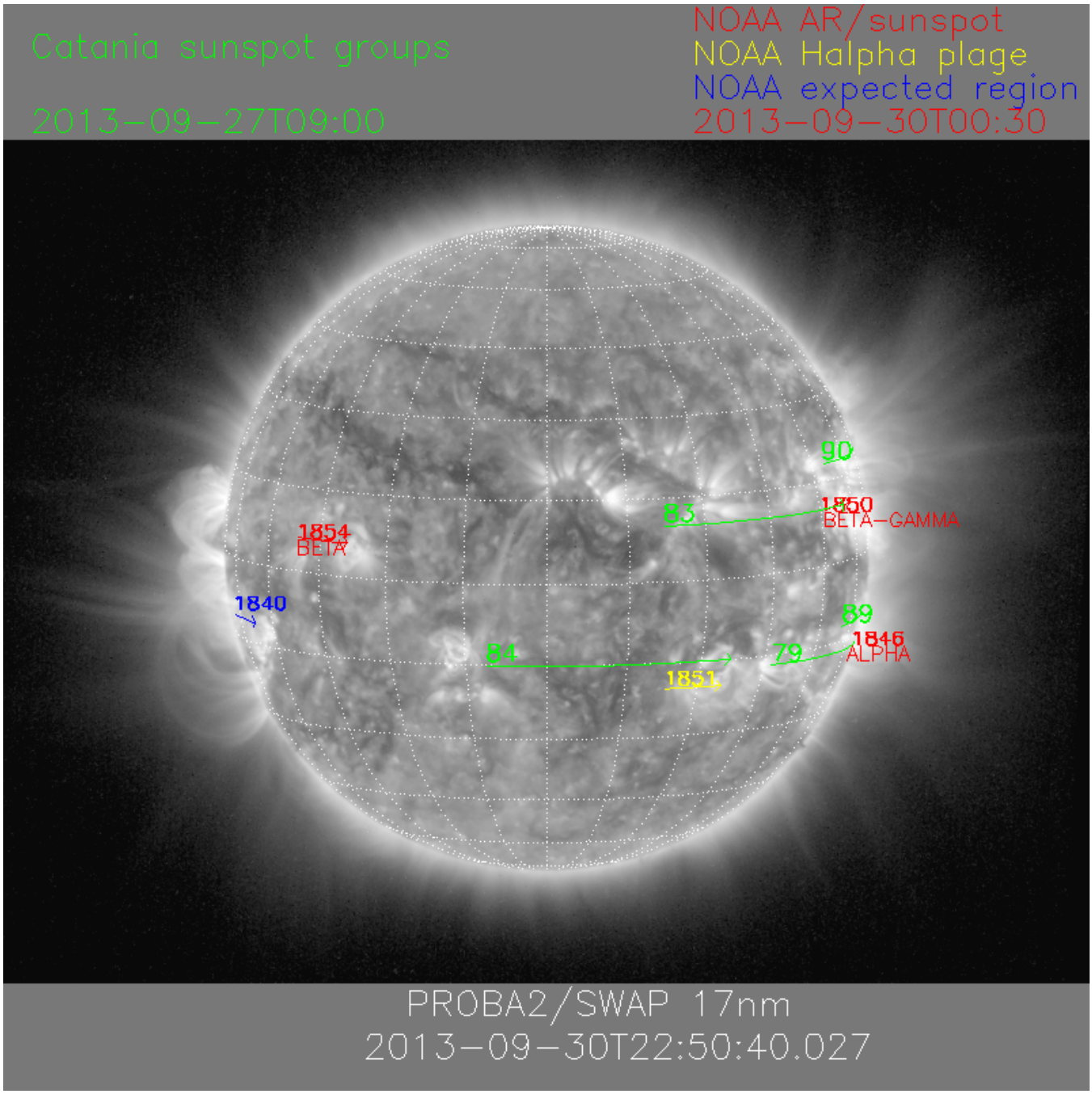
The level of solar activity[1] fluctuated between **very low** and **low** this week.

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

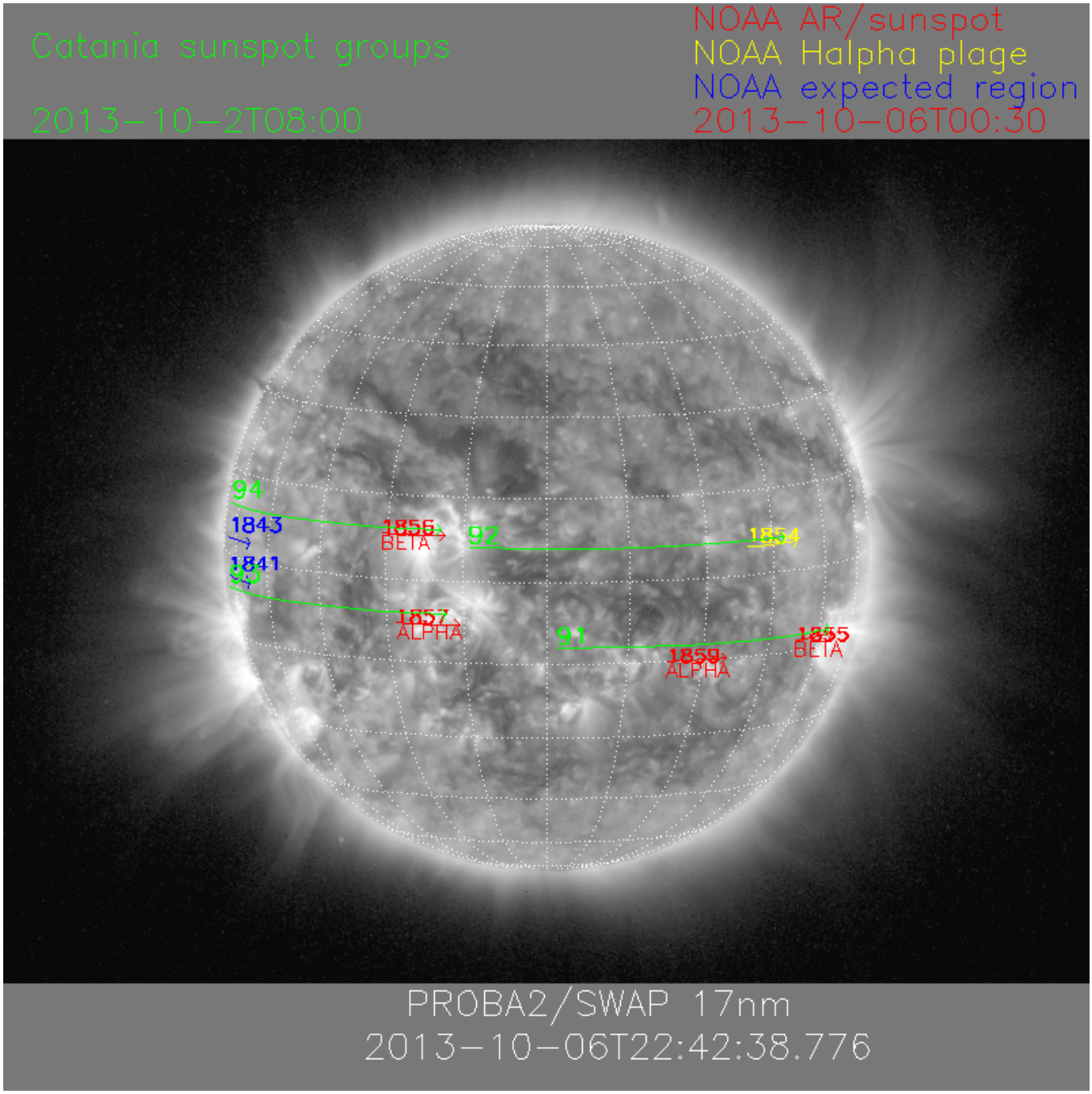
	Monday 30 Sep	Tuesday 01 Oct	Wednesday 02 Oct	Thursday 03 Oct	Friday 04 Oct	Saturday 05 Oct	Sunday 06 Oct
Activity	very low	very low	low	low	low	very low	low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Sep 30 and Oct 06 are shown below, with annotated active regions.



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


Catania sunspot groups
2013-10-2T08:00
NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2013-10-06T00:30
94
1843
1856
BETA
92
1854
1841
1857
ALPHA
91
1859
ALPHA
1855
BETA
PROBA2/SWAP 17nm
2013-10-06T22:42:38.776

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.

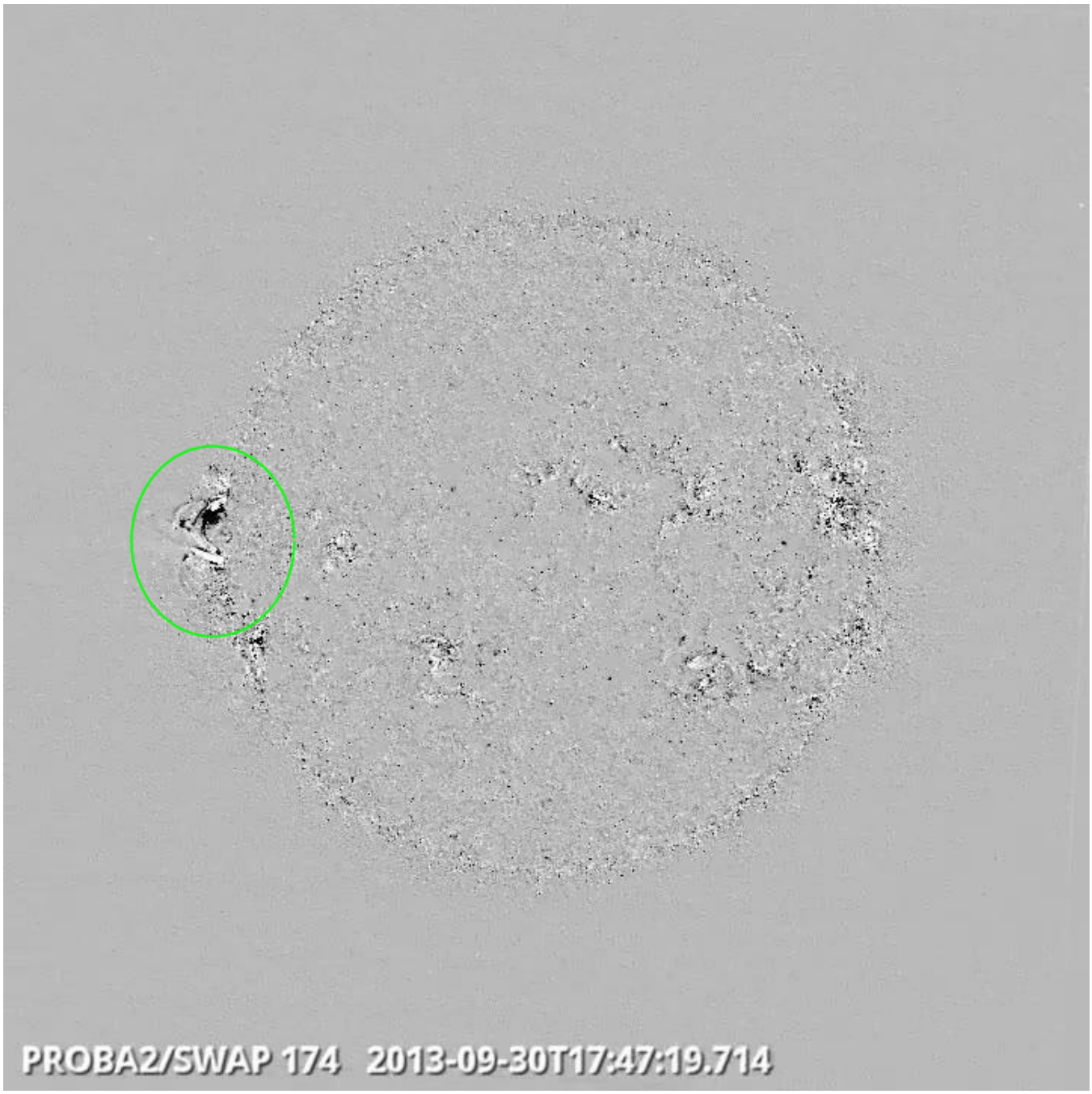
A weekly overview movie can be found here (SWAP184), and includes data from three planned offpoints.

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

Monday Sep 30

Eruption on the east limb @ 05:58 - SWAP difference image

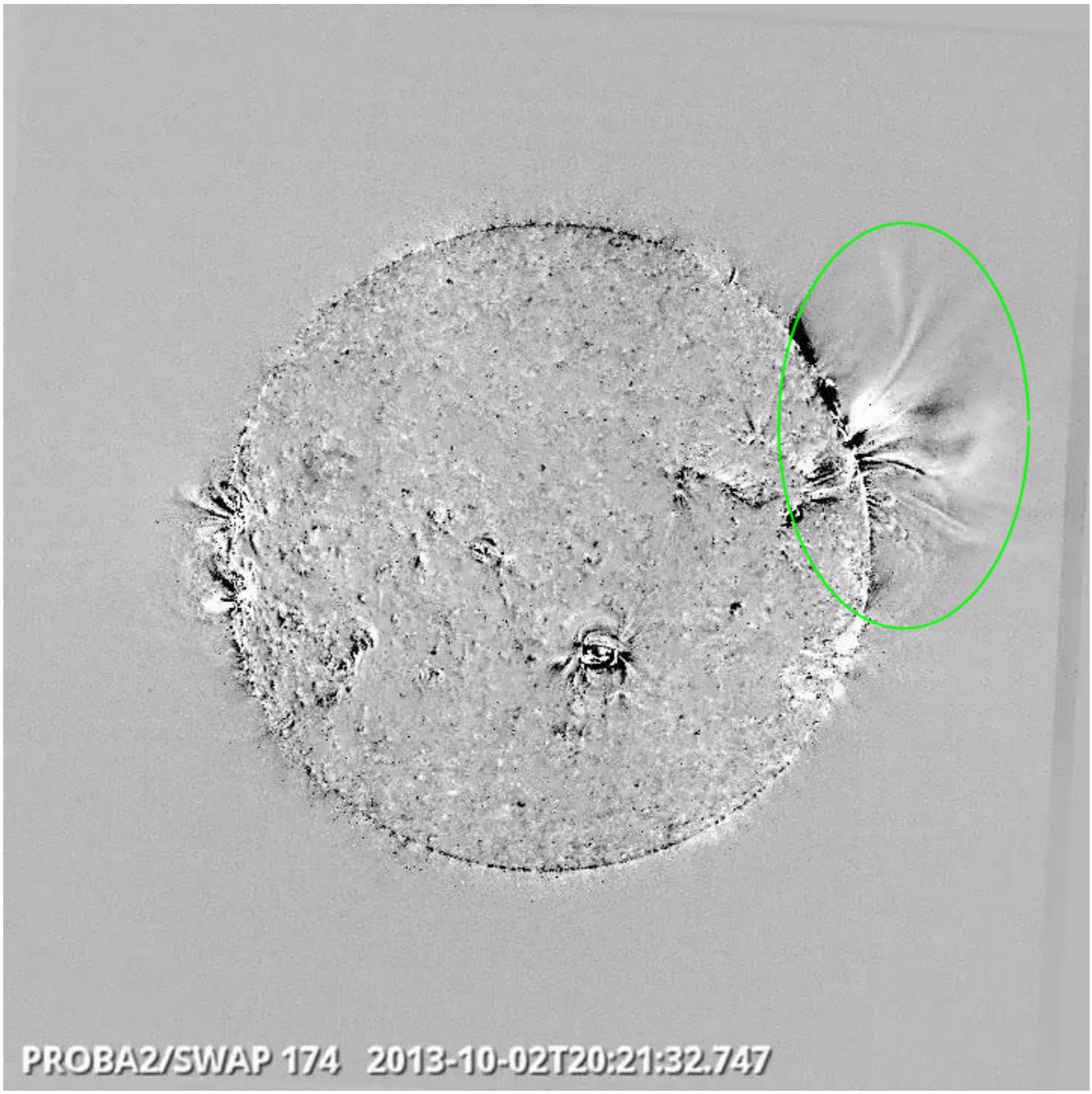
Find a movie of the events **here** (SWAP difference movie)



Eruption on the east limb @ 17:47 - SWAP difference image

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

Wednesday Oct 02



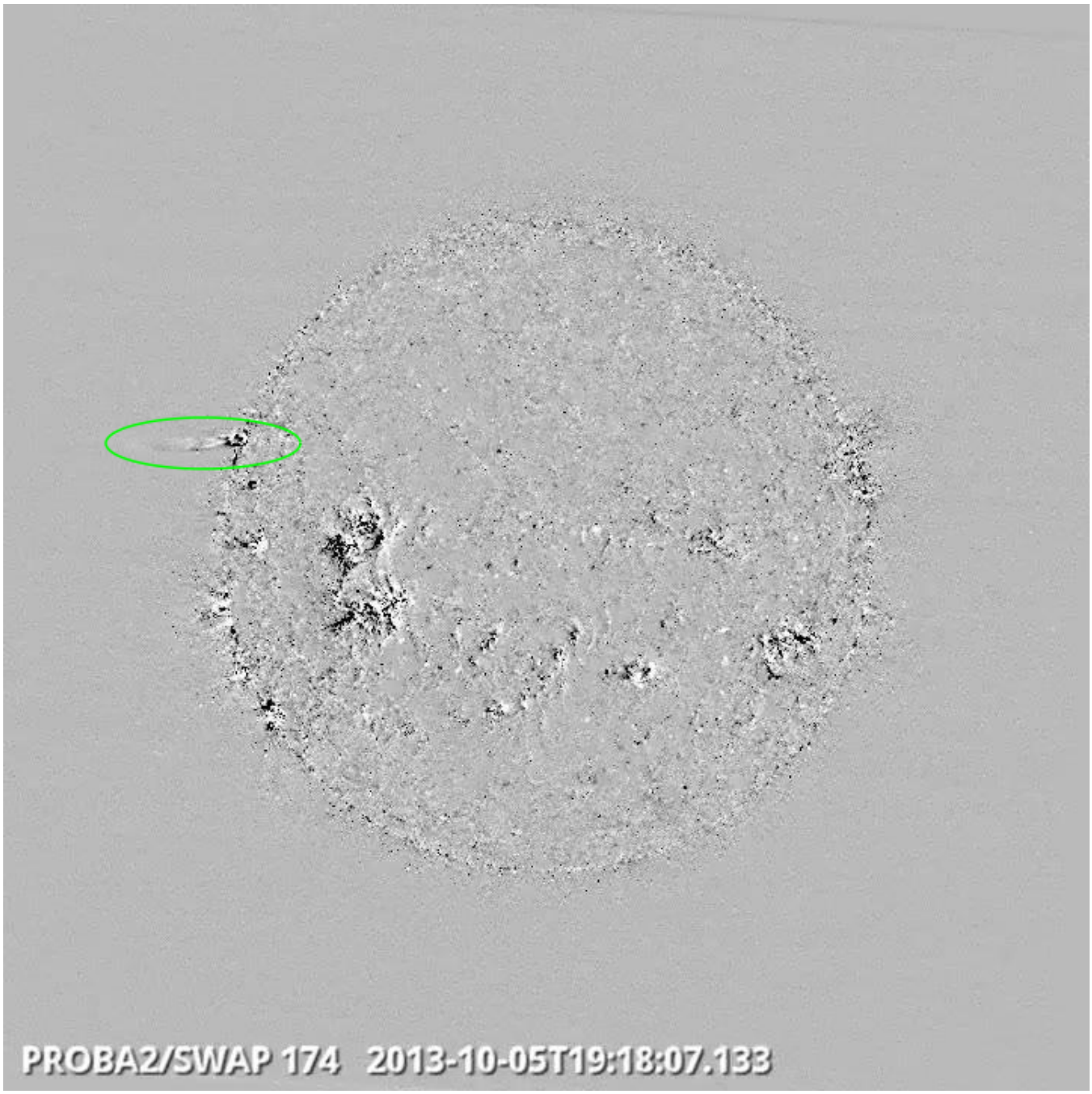
Eruption on the northwest limb @ 20:21 - SWAP difference image

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

Eruption in the southeast quad @ 23:32 - SWAP difference image

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

Saturday Oct 05:



Eruption on the northeast limb @ 19:18 - SWAP difference image

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

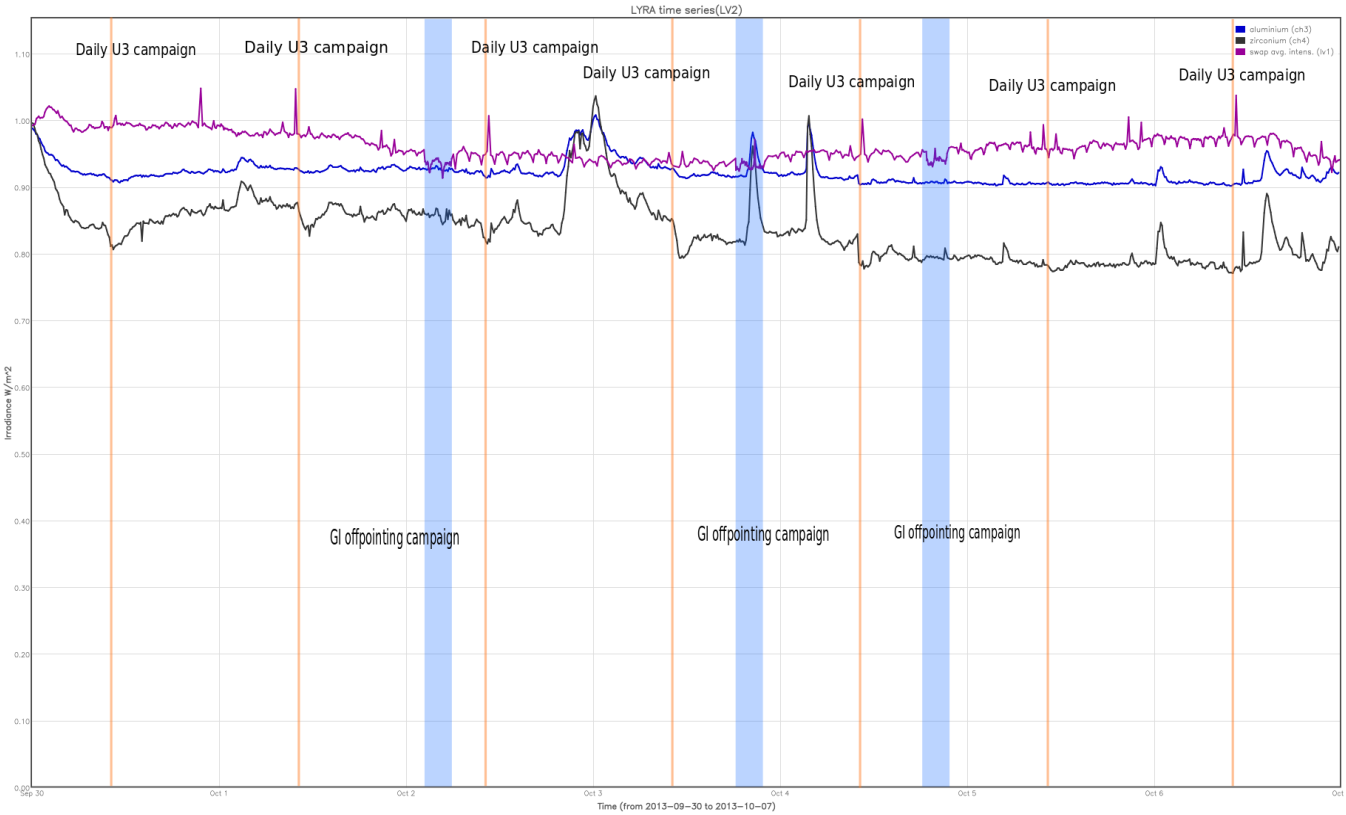
Sunday Oct 06

Eruption with a two ribbon flare on the south west quad @ 13:56 - 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:

- GI off pointing campaign, 3 times

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

- Daily U3 campaign, 7 times

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).

- Presentation of proba 2 science center at the solar orbiter science working team meeting.

Guest Investigator Program

- Maria Madjarska & Klaus Galsgaard stayed from September 30 till October 04: 'EUV/Xray jets from coronal holes and the origin of the solar wind'
    - Three off point campaigns were done between Wednesday (Oct 02) and Friday (Oct 04).

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 30 Sep	Tuesday 01 Oct	Wednesday 02 Oct	Thursday 03 Oct	Friday 04 Oct	Saturday 05 Oct	Sunday 06 Oct
Nominal acquisition + daily U3 LYIOS00342	Nominal acquisition + daily U3 LYIOS00342	Nominal acquisition + daily U3 + GI off pointing LYIOS00342	Nominal acquisition + daily U3 + GI off pointing LYIOS00342	Nominal acquisition + daily U3 + GI off pointing LYIOS00342	Nominal acquisition + daily U3 LYIOS00342	Nominal acquisition + daily U3 LYIOS00342

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- GI off pointing

LYRA detector temperature

LYRA detector 2 temperature globally varied between 48.6 and 50.2 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 12580 to 12821.
The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 30 Sep	Tuesday 01 Oct	Wednesday 02 Oct	Thursday 03 Oct	Friday 04 Oct	Saturday 05 Oct	Sunday 06 Oct
Nominal acquisition IOS00475 618 images	Nominal acquisition IOS00475 475 images	Nominal acquisition + GI off pointing IOS00476 740 images	Nominal acquisition + GI off pointing IOS00476 -> IOS00477 656 images	Nominal acquisition + GI off pointing IOS00477 644 images	Nominal acquisition IOS00477 537 images	Nominal acquisition IOS00477 534 images

Special operations for SWAP, this week:

- observing campaign for guest investigator Maria Madjarska on Wednesday October 2nd from 02:20 until 05:50, on Thursday October 3rd from 18:15 until 21:50 and on Friday October 4th from 18:45 until 21:25, in parallel with Hinode/EIS
- monthly ESP jump on Thursday 3rd of October from 10:18 until 10:48.

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 0.015 and 1.25 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 12206 to 12265) 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 30 0UT and 2013 Oct 06 0UT: 3670
Highest cadence in this period: 40 seconds
Average cadence in this period: 141.23 seconds
Number of image gaps larger than 300 seconds: 19
Largest data gap: 36.50 minutes

The 19 image gaps are due to the GI campaigns. The large data gap is caused by the monthly ESP jump.

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)