P2SC-ROB-WR-228 - 20140804 Weekly report #228	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Aug 04 to Sun Aug 10, 2014 13 Jan 2014 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, dseaton@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, Juha-Pekka.Luntama@esa.int	

---

1. Science

Solar & Space weather events

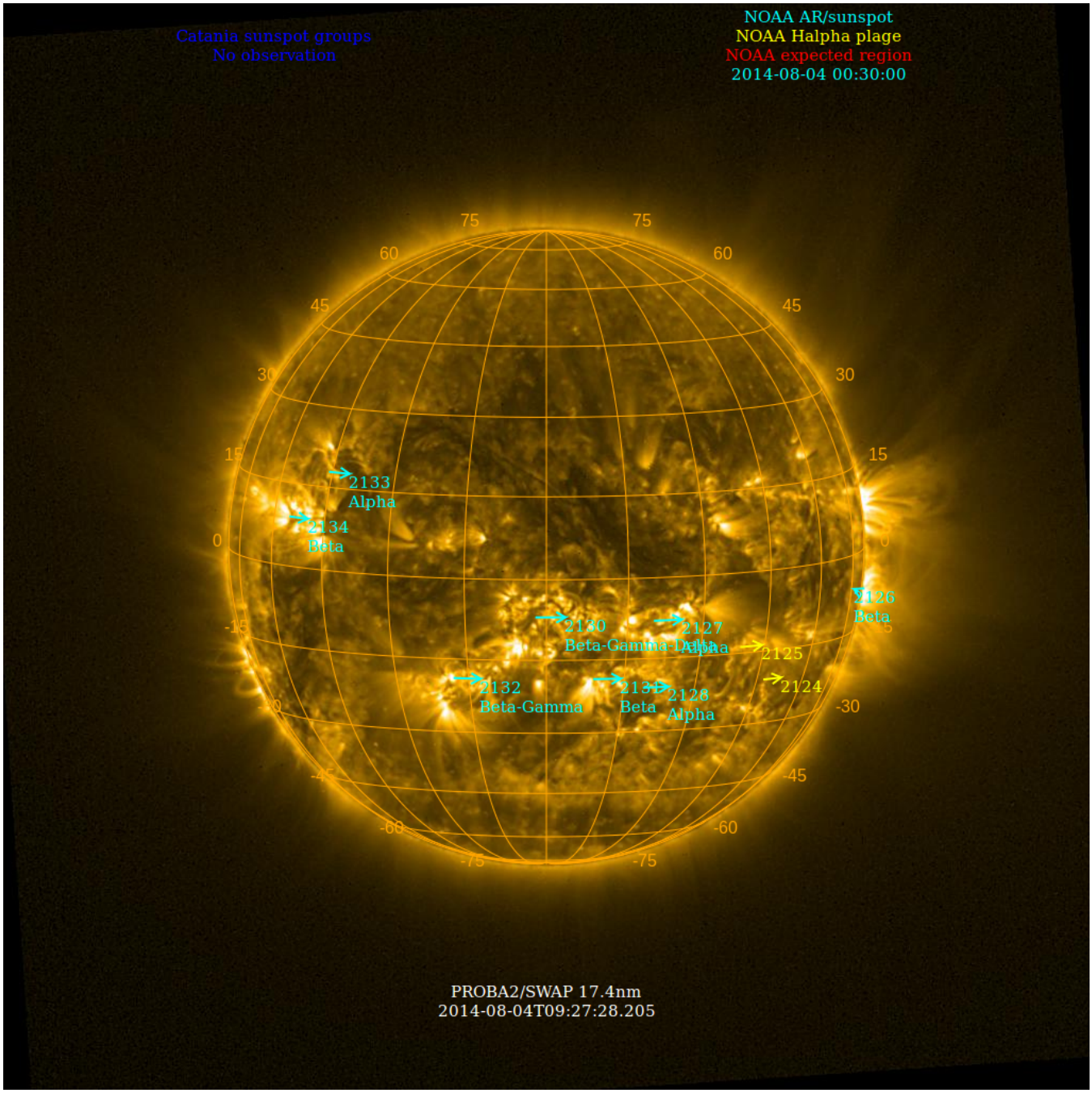
The level of solar activity[1] remained **low** this week.

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

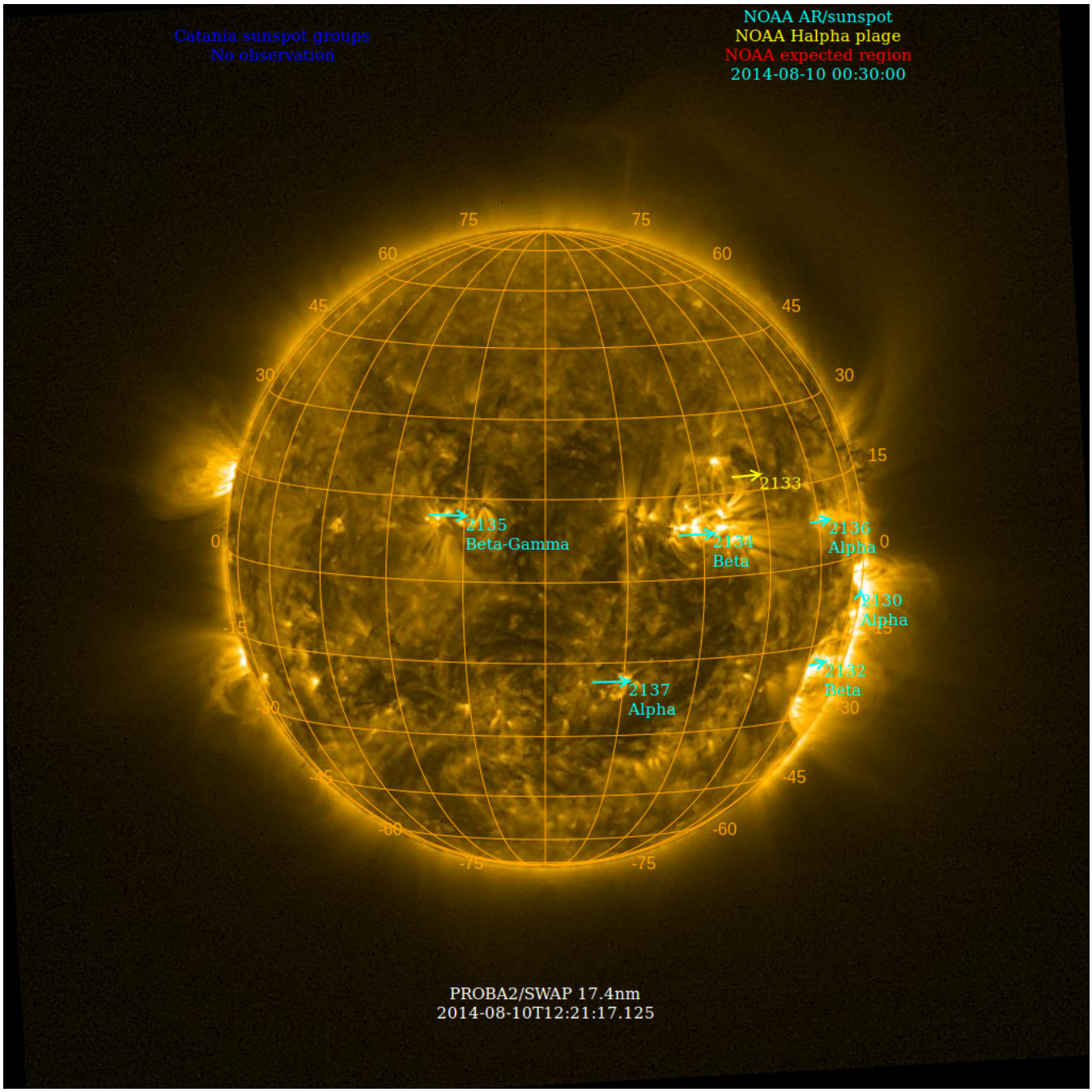
	Monday 04 Aug	Tuesday 05 Aug	Wednesday 06 Aug	Thursday 07 Aug	Friday 08 Aug	Saturday 09 Aug	Sunday 10 Aug
Activity	low	low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Aug 04 and Aug 10 are shown below, with annotated active regions.



http://sidc.be/soteria/soteria.php

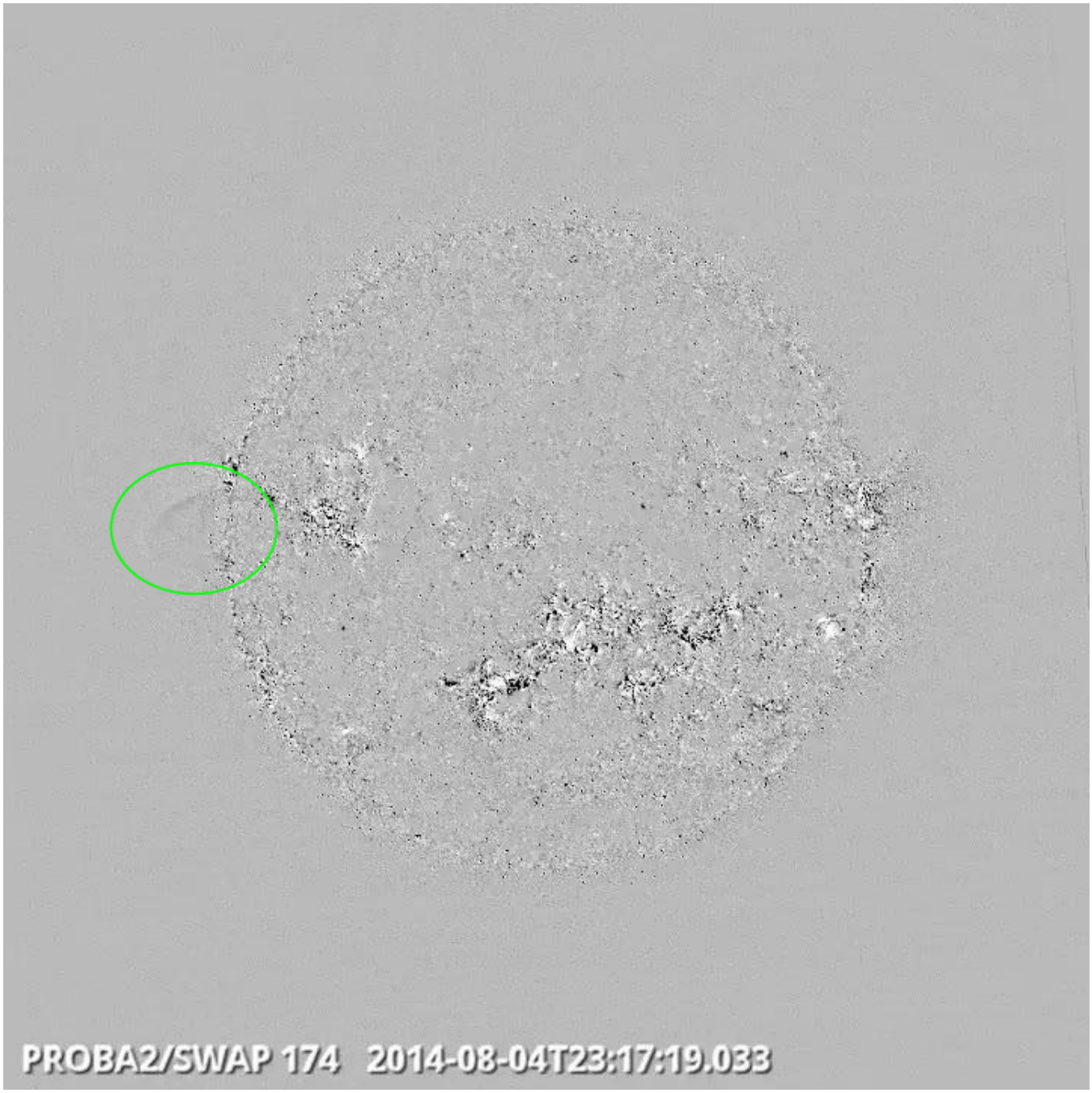

Catania sunspot groups
No observation
NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2014-08-10 00:30:00
75
75
60
60
45
45
30
30
15
0
0
-15
-30
-45
-60
-75
2133
2135
Beta-Gamma
2134
Beta
2136
Alpha
2130
Alpha
2132
Beta
2137
Alpha
PROBA2/SWAP 17.4nm
2014-08-10T12:21:17.125

Solar Activity
Solar flare activity fluctuated between low and moderate 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 (SWAP week 228).

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

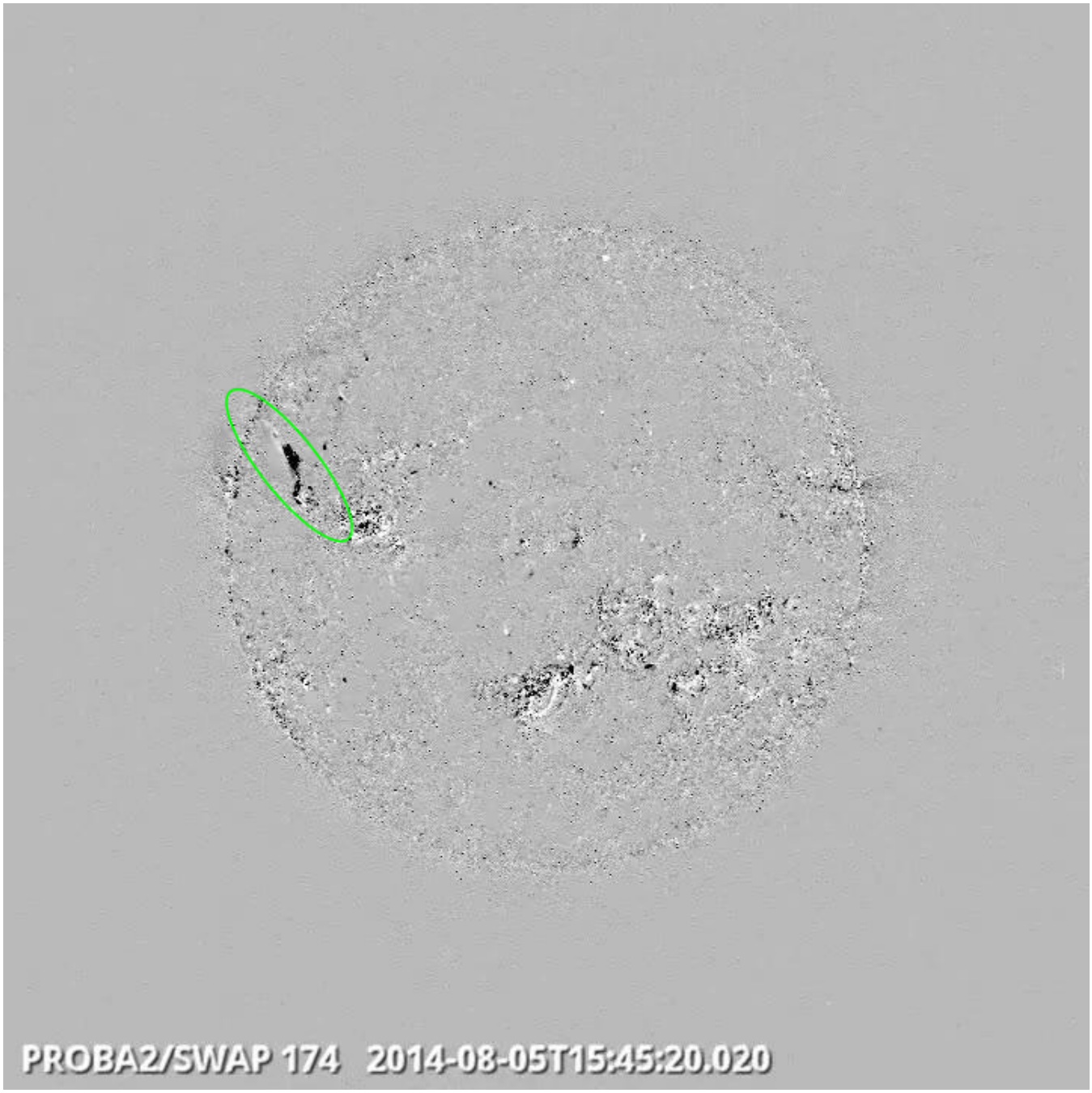
Monday Aug 04:



Loop expansion on the east limb @ 23:17 - SWAP difference image

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

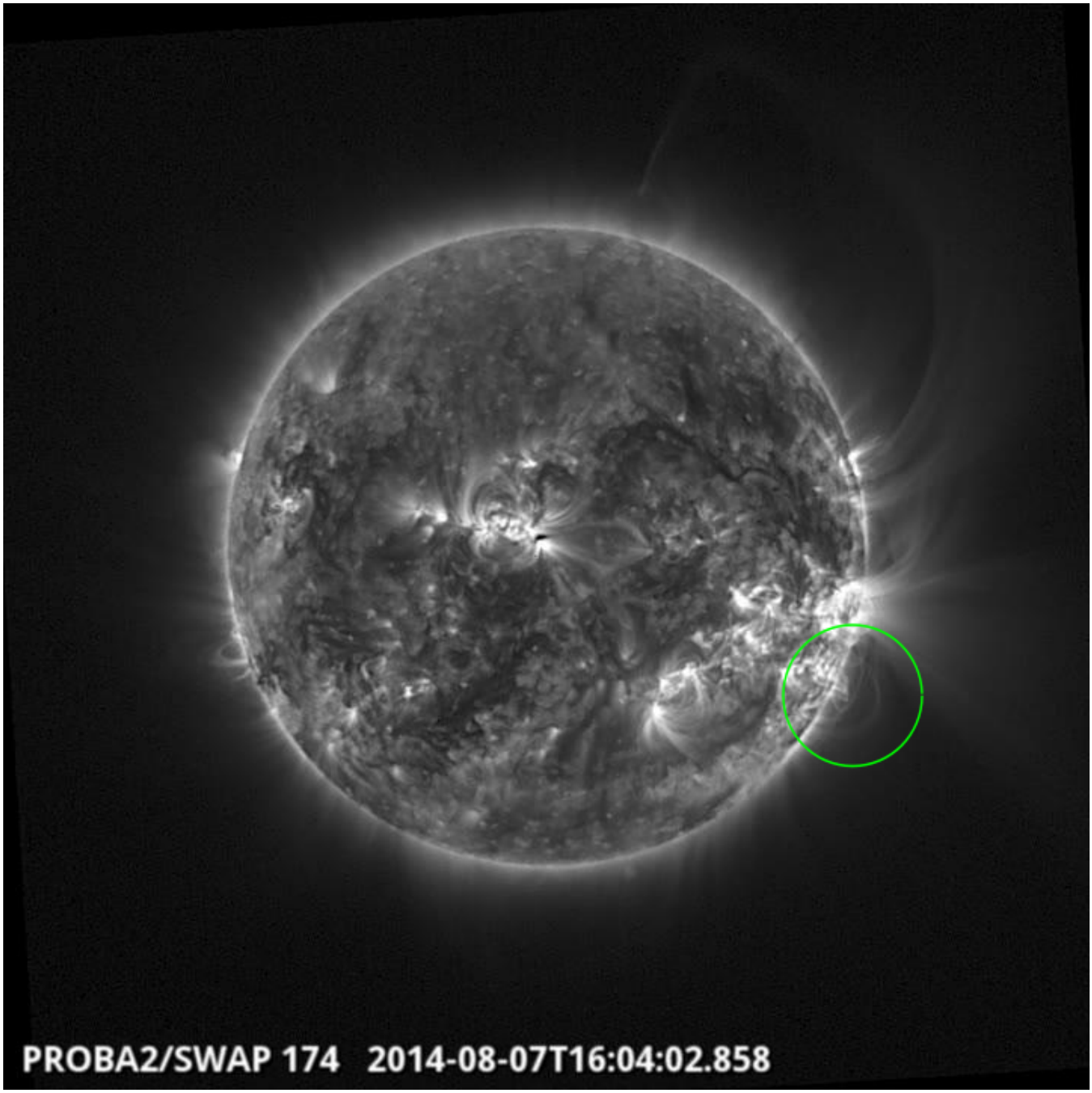
Tuesday Aug 05:



Jet in the north east quadrant @ 15:45 - SWAP difference image

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

Thursday Aug 07:



Loop expansion on the west limb @ 16:04 - SWAP image

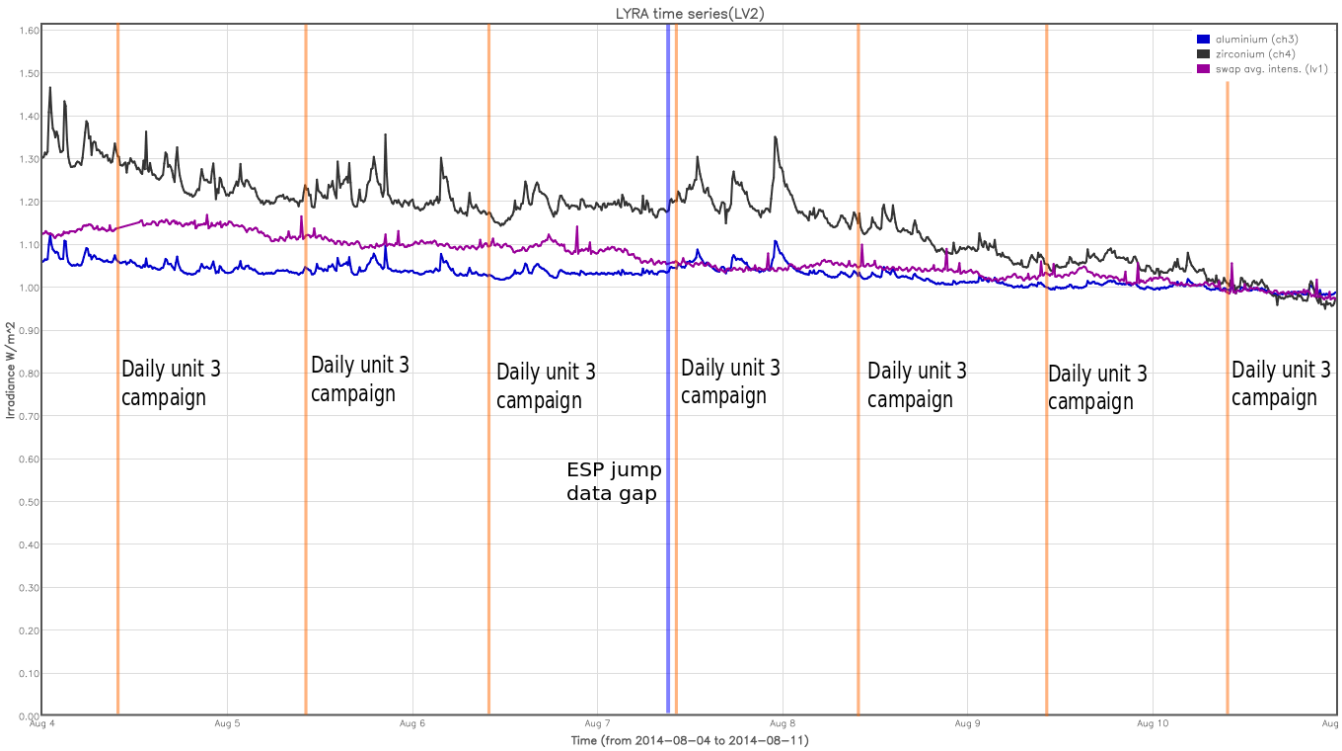
Find a movie of the event **here** (SWAP movie)

Sunday 10:

Jet on the south half @ 02:44 - SWAP difference image
Find a movie of the events **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 (SWAP Average Intensity; integrated solar intensity per SWAP image pixel)



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

- ESP experiment

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

- Daily unit 3 campaigns, seven times

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 following talks were given at COSPAR

- “Two kinematical classes of CMEs observed by SDO/AIA, PROBA2/SWAP, and coronographs on board SOHO and STEREO” by Ewa Chmielewska
- “The SWAP EUV imager onboard PROBA2: 3 years of observations” by Matthew West
- “Long-term irradiance observation and short-term flare prediction with LYRA on PROBA2” by Ingolf Dammasch

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 04 Aug	Tuesday 05 Aug	Wednesday 06 Aug	Thursday 07 Aug	Friday 08 Aug	Saturday 09 Aug	Sunday 10 Aug
Nominal acquisition + daily U3 LYIOS00412	Nominal acquisition + daily U3 LYIOS00413	Nominal acquisition + daily U3 LYIOS00413	Nominal acquisition + daily U3 LYIOS00413	Nominal acquisition + daily U3 LYIOS00413	Nominal acquisition + daily U3 LYIOS00413	Nominal acquisition + daily U3 LYIOS00413

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 46.68 and 47.5 °C, taking into account the daily U3 activation periods.

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 21000 to 21190.
The number of MCPM unrecoverable errors remained at 1657.

IOS & operations

Monday 04 Aug	Tuesday 05 Aug	Wednesday 06 Aug	Thursday 07 Aug	Friday 08 Aug	Saturday 09 Aug	Sunday 10 Aug
Nominal acquisition IOS00528 618 images	Nominal acquisition IOS00529 657 images	Nominal acquisition IOS00529 664 images	Nominal acquisition + ESP jump IOS00529 641 images	Nominal acquisition IOS00529 664 images	Nominal acquisition IOS00529 634 images	Nominal acquisition IOS00529 600 images

Special operations for SWAP, this week:

- ESP jump

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.6 and -0.96 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

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 14869 to 14927) 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 2014 Aug 04 0UT and 2014 Aug 11 0UT: 4542
Highest cadence in this period: 130 seconds
Average cadence in this period: 133.17 seconds
Number of image gaps larger than 300 seconds: 1
Largest data gap: 34.33 minutes

The data gap is due to the 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)