P2SC-ROB-WR-333 - 20160808 Weekly report #333	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Aug 08 to Sun Aug 14, 2016 18 Aug 2016 Laurence Wauters and Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

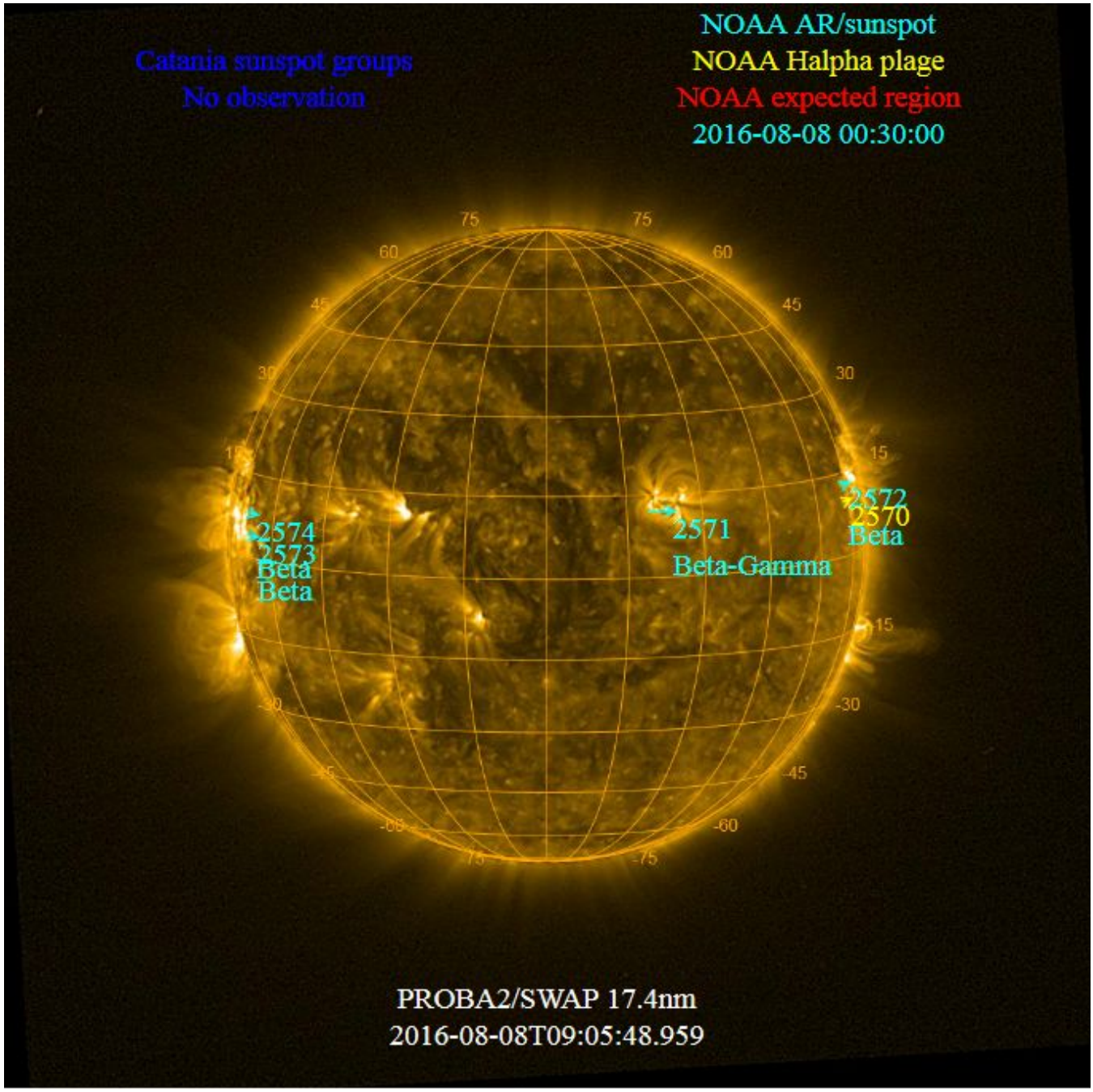
The level of solar activity[1] fluctuated between **very low to low** this week.

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

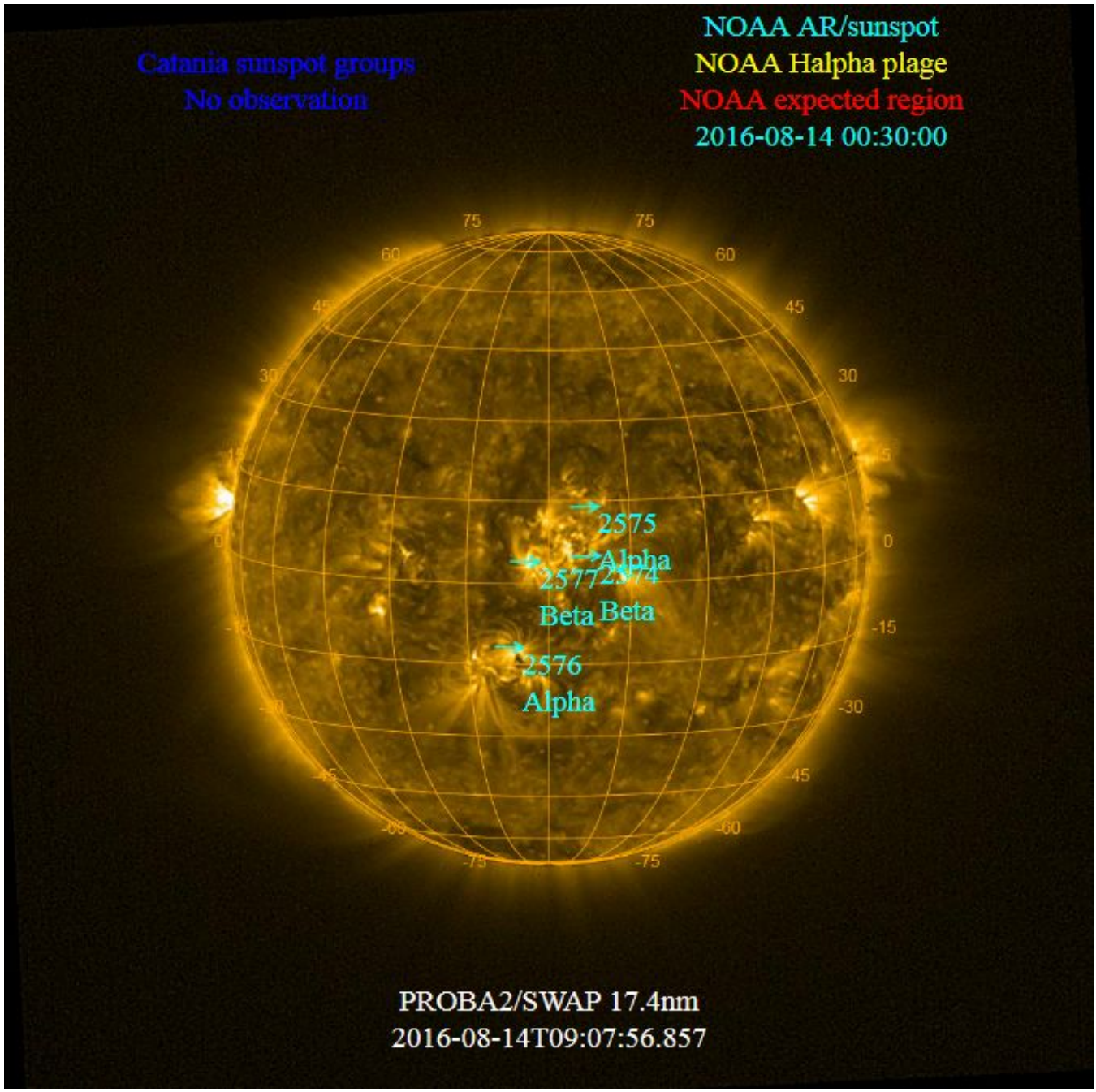
	Monday 08 Aug	Tuesday 09 Aug	Wednesday 10 Aug	Thursday 11 Aug	Friday 12 Aug	Saturday 13 Aug	Sunday 14 Aug
Activity	low	low	very low	low	very low	very low	low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Aug 08 and Aug 14 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
2016-08-14 00:30:00
75
60
45
30
0
-15
-30
-45
-60
-75
2575
Alpha
2577
Beta
2574
Beta
2576
Alpha
PROBA2/SWAP 17.4nm
2016-08-14T09:07:56.857

Solar Activity

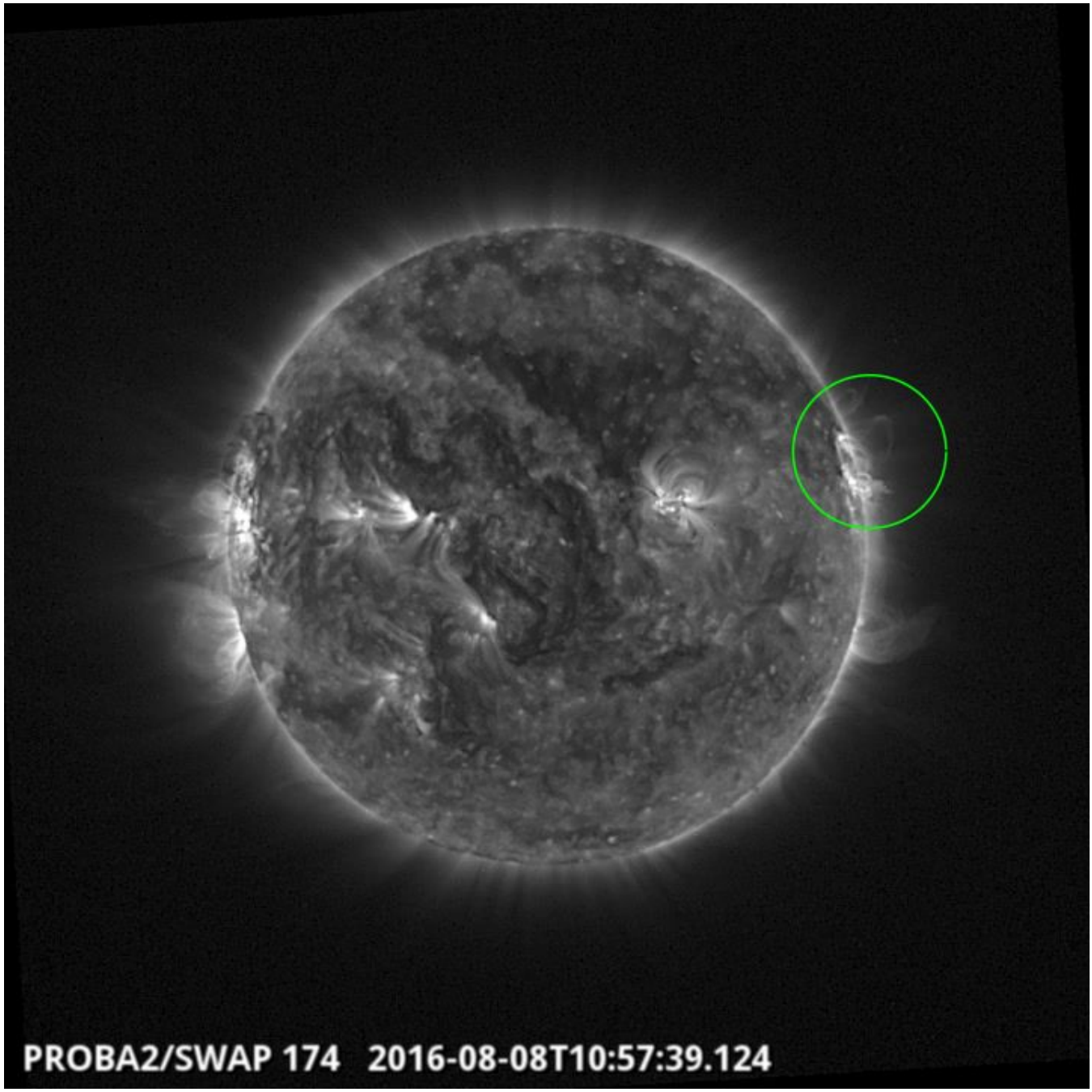
Solar flare activity fluctuated between very low and low during the week.
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: http://proba2.oma.be/ssa
This page also lists the recorded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

A weekly overview movie can be found here (SWAP week 333).

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

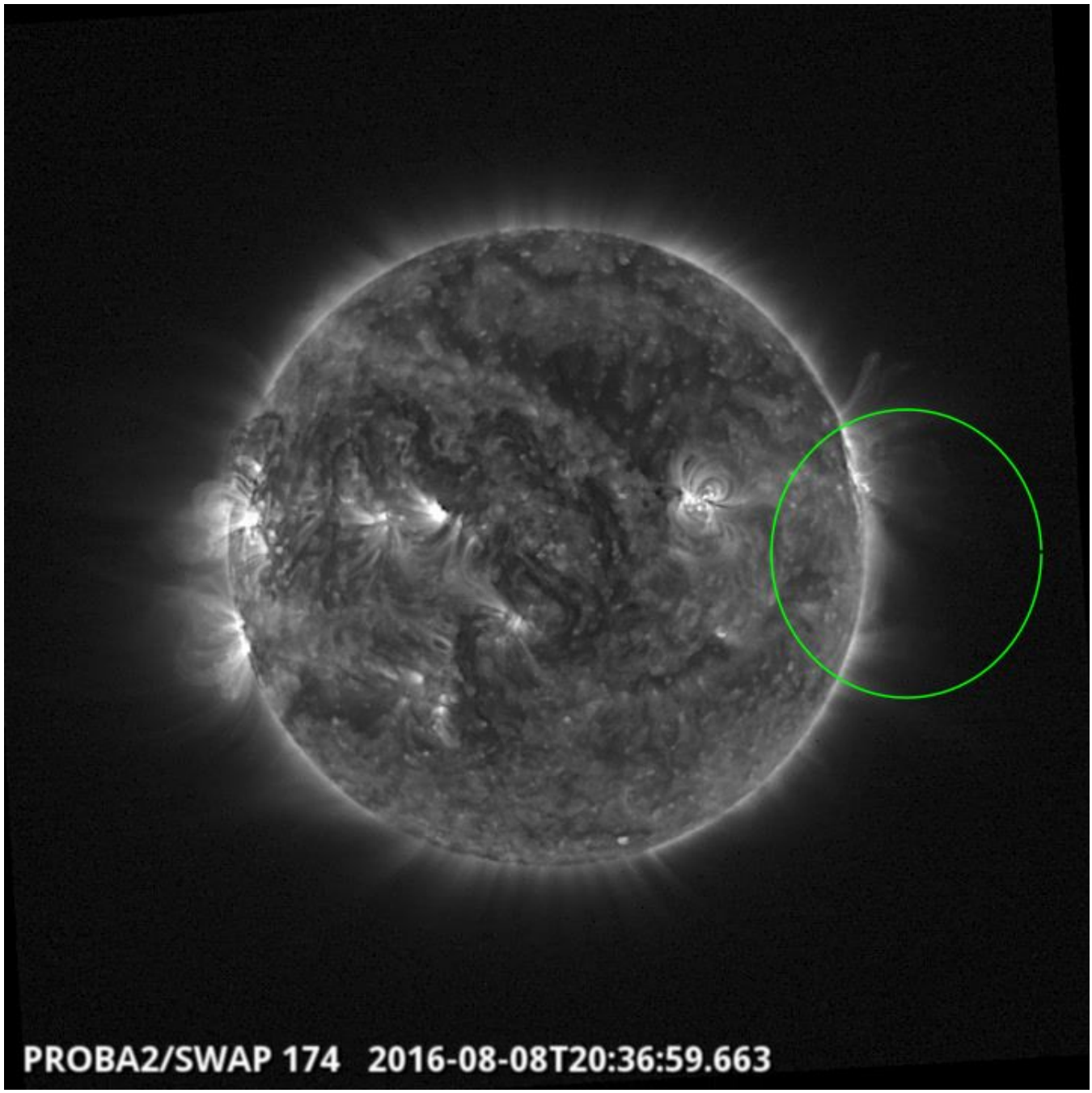
If any of the linked movies are unavailable they can be found in the P2SC movie repository here

Monday Aug 08



An eruption was observed by SWAP on the West limb of the Sun on 2016-Aug-08 at 10:57 UT

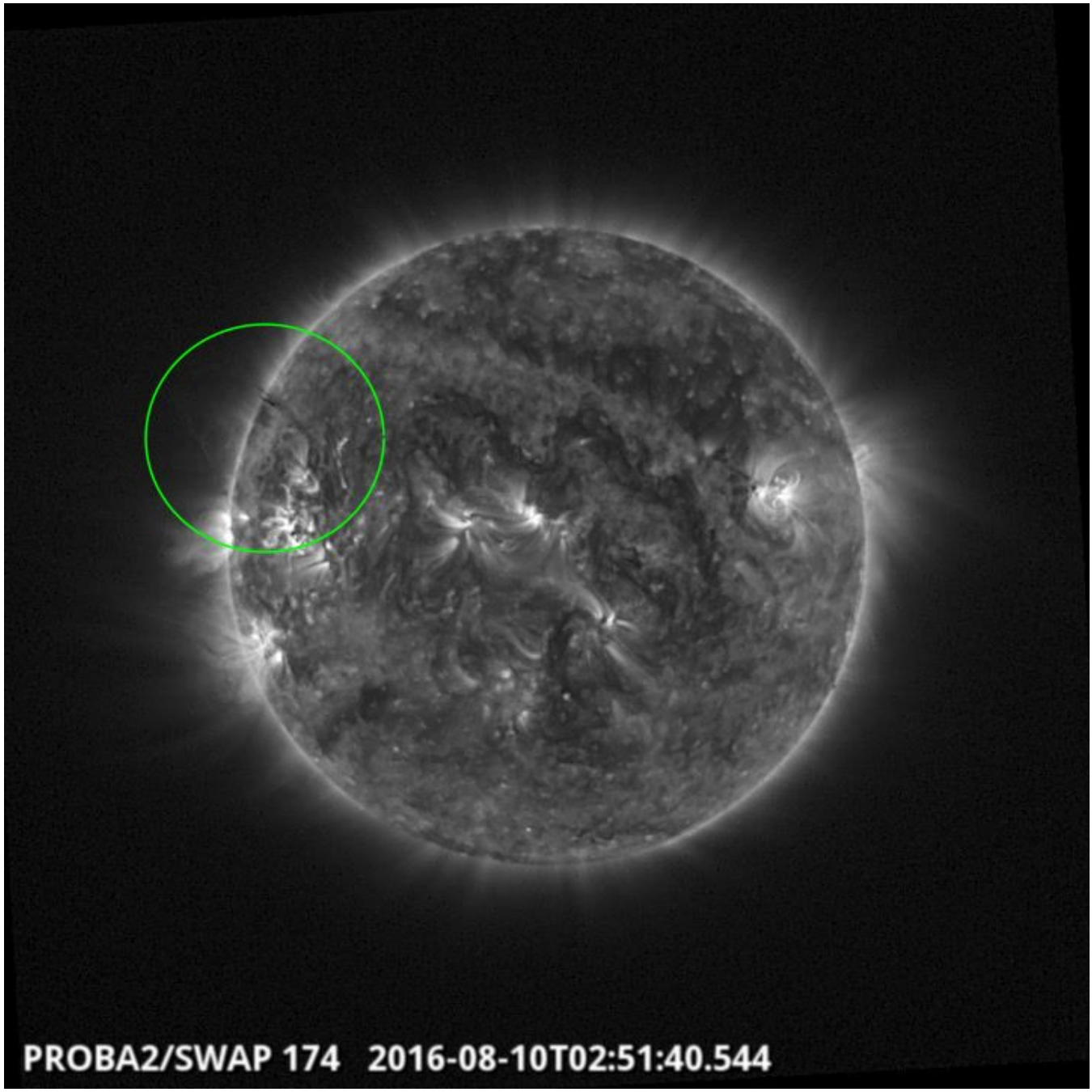
Find a movie of the event here (SWAP movie)



An eruption was observed by SWAP on the West limb of the Sun on 2016-Aug-08 at 20:36 UT

Find a movie of the event here (SWAP movie)

Wednesday Aug 10

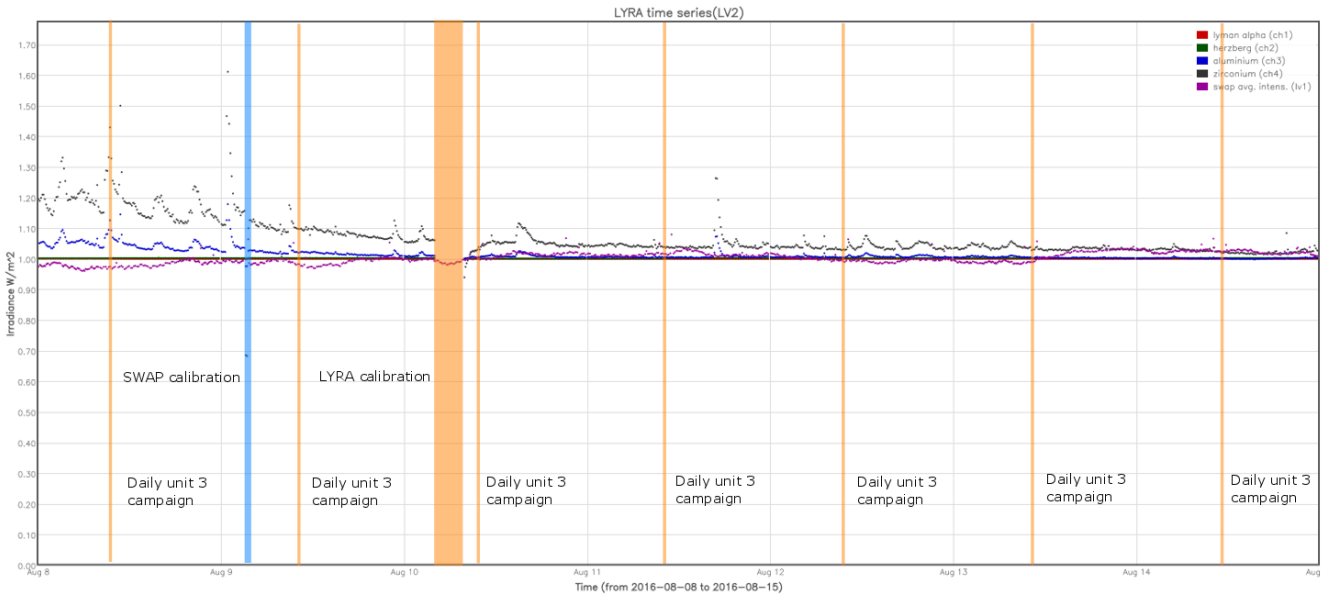


A small filament eruption was observed by SWAP on the North East limb of the Sun on 2016-Aug-10 at 02:51 UT

Find a movie of the event here (SWAP 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:

- SWAP bi-weekly calibration campaign, 2016-Aug-09

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

- Daily unit 3 campaign, 2016-Aug-08
- Daily unit 3 campaign, 2016-Aug-09
- LYRA bi-weekly calibration, 2016-Aug-10
- Daily unit 3 campaign, 2016-Aug-10
- Daily unit 3 campaign, 2016-Aug-11
- Daily unit 3 campaign, 2016-Aug-12
- Daily unit 3 campaign, 2016-Aug-13
- Daily unit 3 campaign, 2016-Aug-14

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).

Guest Investigator Program

Guest Investigator E. Thiemann has been visiting the P2SC since 2016-Aug-10, and will be there until 2016-Aug-20; E. Thiemann will work on “Inversion of LYRA Occultations with the Onion Peel Method” .

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 08 Aug	Tuesday 09 Aug	Wednesday 10 Aug	Thursday 11 Aug	Friday 12 Aug	Saturday 13 Aug	Sunday 14 Aug
Nominal acquisition + daily U3 LYIOS00573	Nominal acquisition + daily U3 LYIOS00573	Nominal acquisition + daily U3 + calibration LYIOS00575	Nominal acquisition + daily U3 LYIOS00575	Nominal acquisition + daily U3 LYIOS00575	Nominal acquisition + daily U3 LYIOS00575	Nominal acquisition + daily U3 LYIOS00575

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

On 2016-Aug-10

- bi-weekly calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.05058 and 48.58178 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors was 3638 for the whole week.
The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 08 Aug	Tuesday 09 Aug	Wednesday 10 Aug	Thursday 11 Aug	Friday 12 Aug	Saturday 13 Aug	Sunday 14 Aug
Nominal acquisition IOS00656 532 images	Nominal acquisition + Calibration IOS00656 557 images	Nominal acquisition IOS00656 709 images	Nominal acquisition IOS00656 662 images	Nominal acquisition IOS00656 688 images	Nominal acquisition IOS00656 580 images	Nominal acquisition IOS00656 659 images

Special operations for SWAP, this week:

On 2016-Aug-09

- Bi-weekly calibration

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.69001 and -0.49 °C.

4. PROBA2 Science Center Status

The main operator is Laurence Wauters.

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 21431 to 21489) 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 2016 Aug 08 0UT and 2016 Aug 15 0UT: 4511
Highest cadence in this period: 0 seconds
Average cadence in this period: 134.07 seconds
Number of image gaps larger than 300 seconds: 165
Largest data gap: 9.17 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
DAC	Data Acquisition Controller
DBR	Deployment, backup & recovery
DDA	Decommutated data archive
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
SoFAST	Solar Feature Automated Search Tool
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)