


P2SC-ROB-WR-235 - 20140922 Weekly report #235	P2SC Weekly report	
Period covered: Date:	Mon Sep 22 to Sun Sep 28, 2014 01 Oct 2014	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

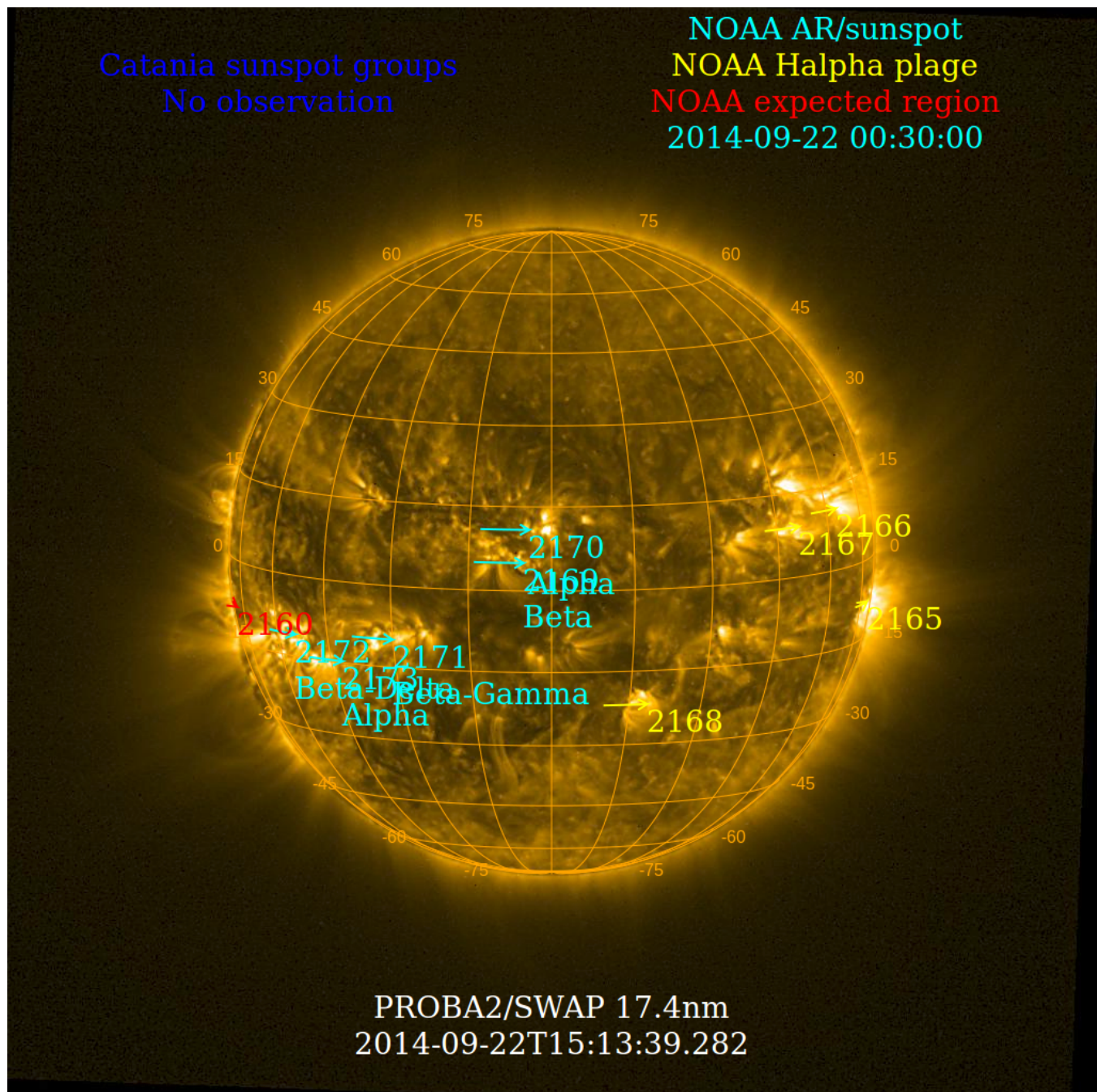
The level of solar activity¹ fluctuated between **low** and **moderate** this week.

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

	Monday 22 Sep	Tuesday 23 Sep	Wednesday 24 Sep	Thursday 25 Sep	Friday 26 Sep	Saturday 27 Sep	Sunday 28 Sep
Activity	low	moderate	low	low	low	moderate	moderate
Flares	-	M2.3@23:16	-	-	-	M1.0@08:37	M1.0@17:33 M5.1@02:58

¹ See appendix. All timings are given in UT.

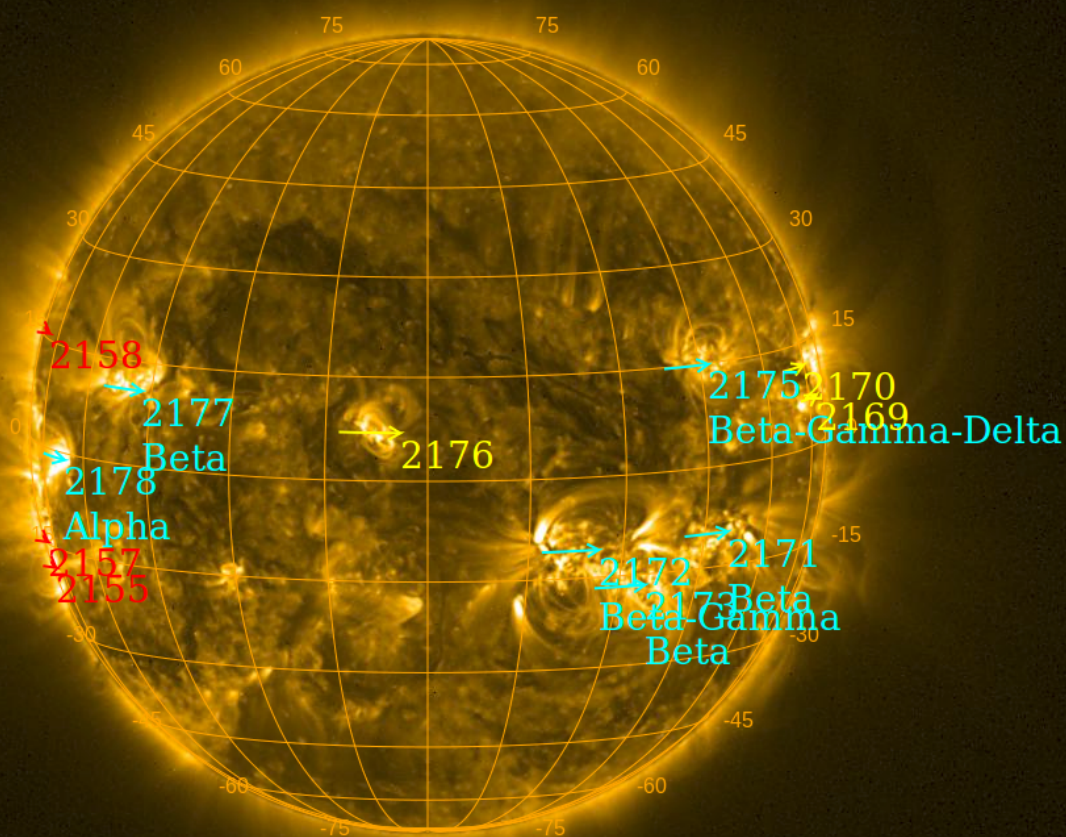
The SWAP images of Sep 22 and Sep 28 are shown below, with annotated active regions.



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

Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2014-09-28 00:30:00



PROBA2/SWAP 17.4nm
2014-09-28T15:17:38.095

Solar Activity

Solar flare activity fluctuated between low and moderate during the week.

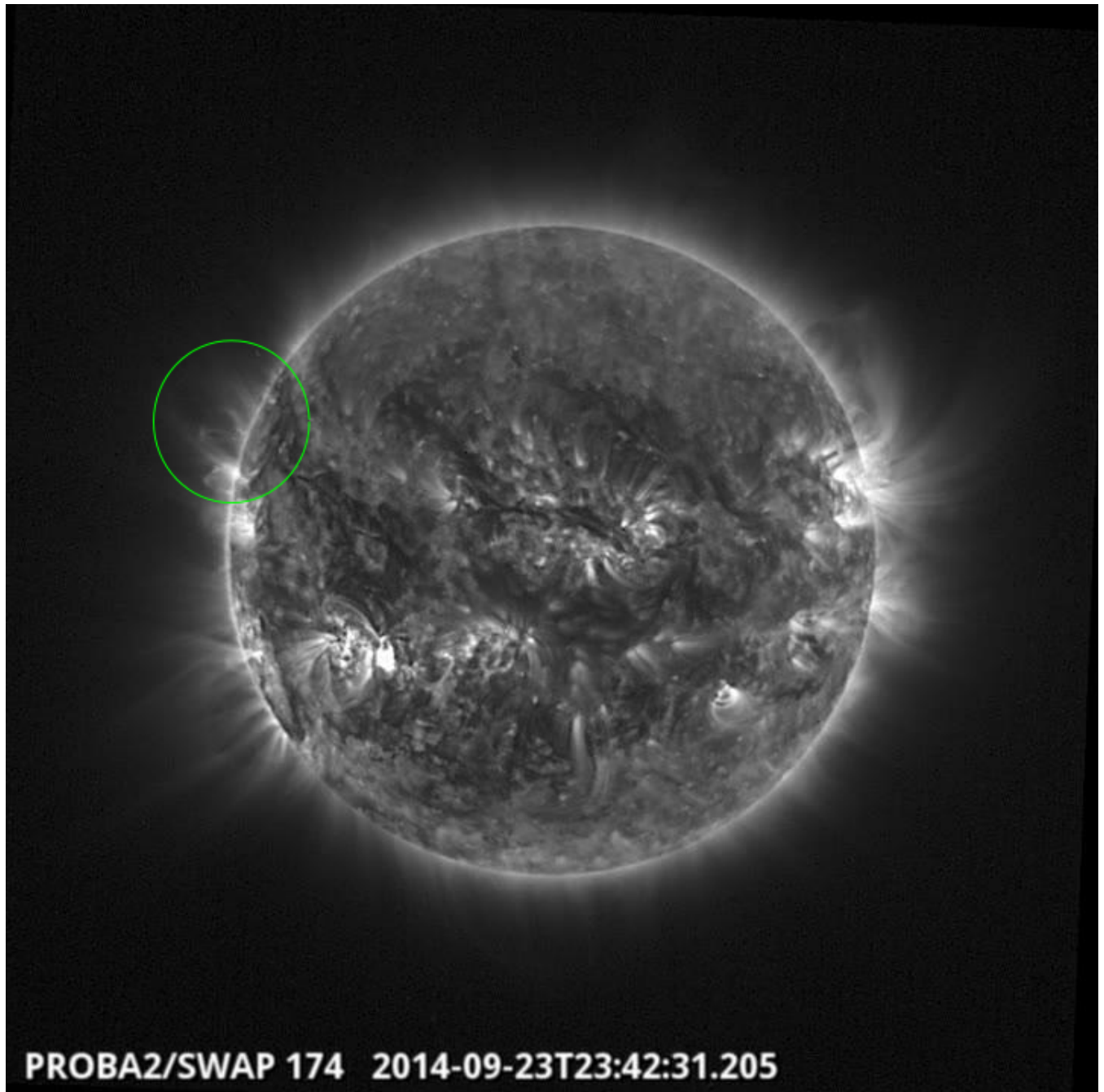
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 235).

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

Tuesday Sep 23



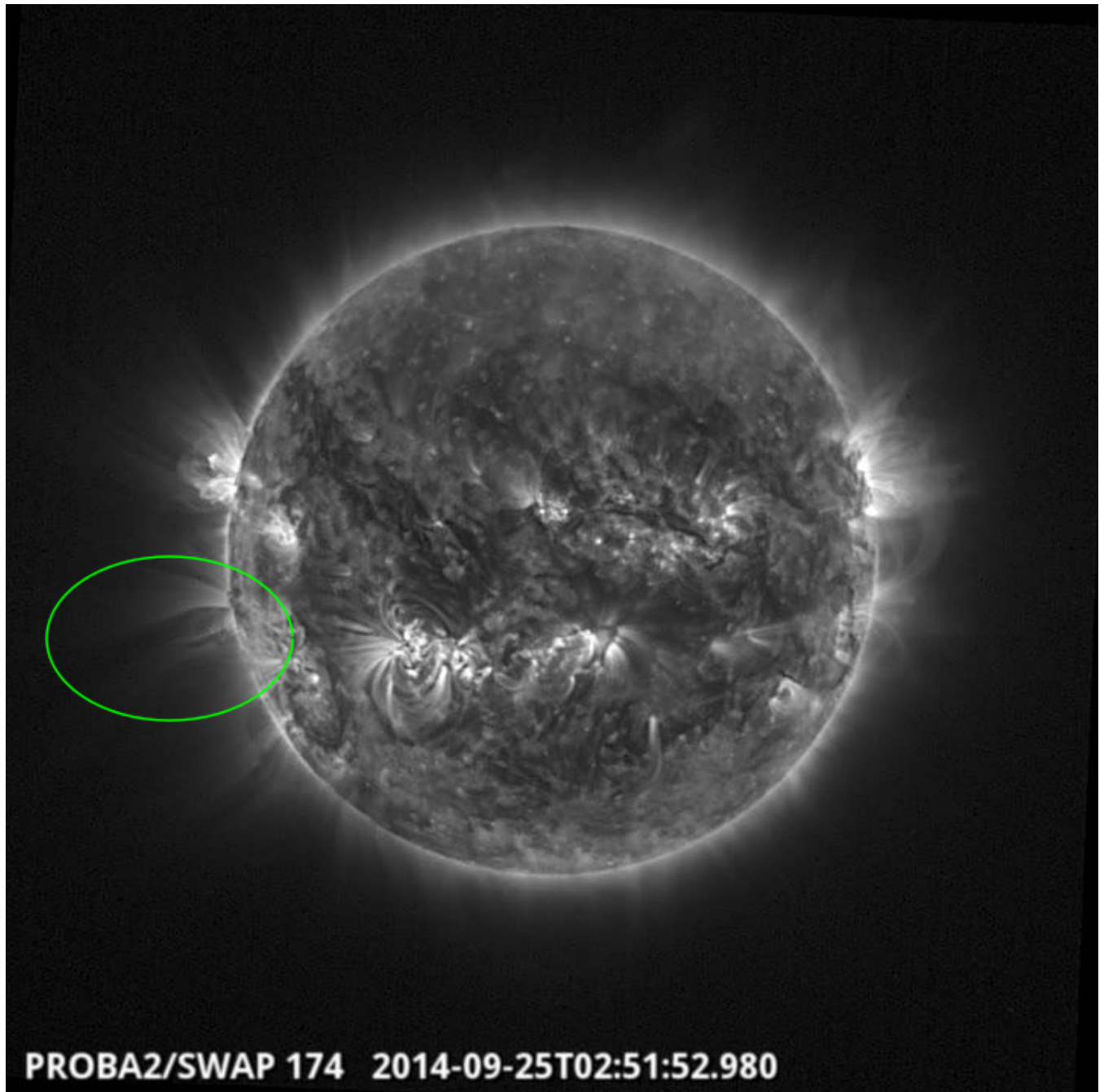
Eruption on east limb @ 23:42 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Wednesday Sep 24

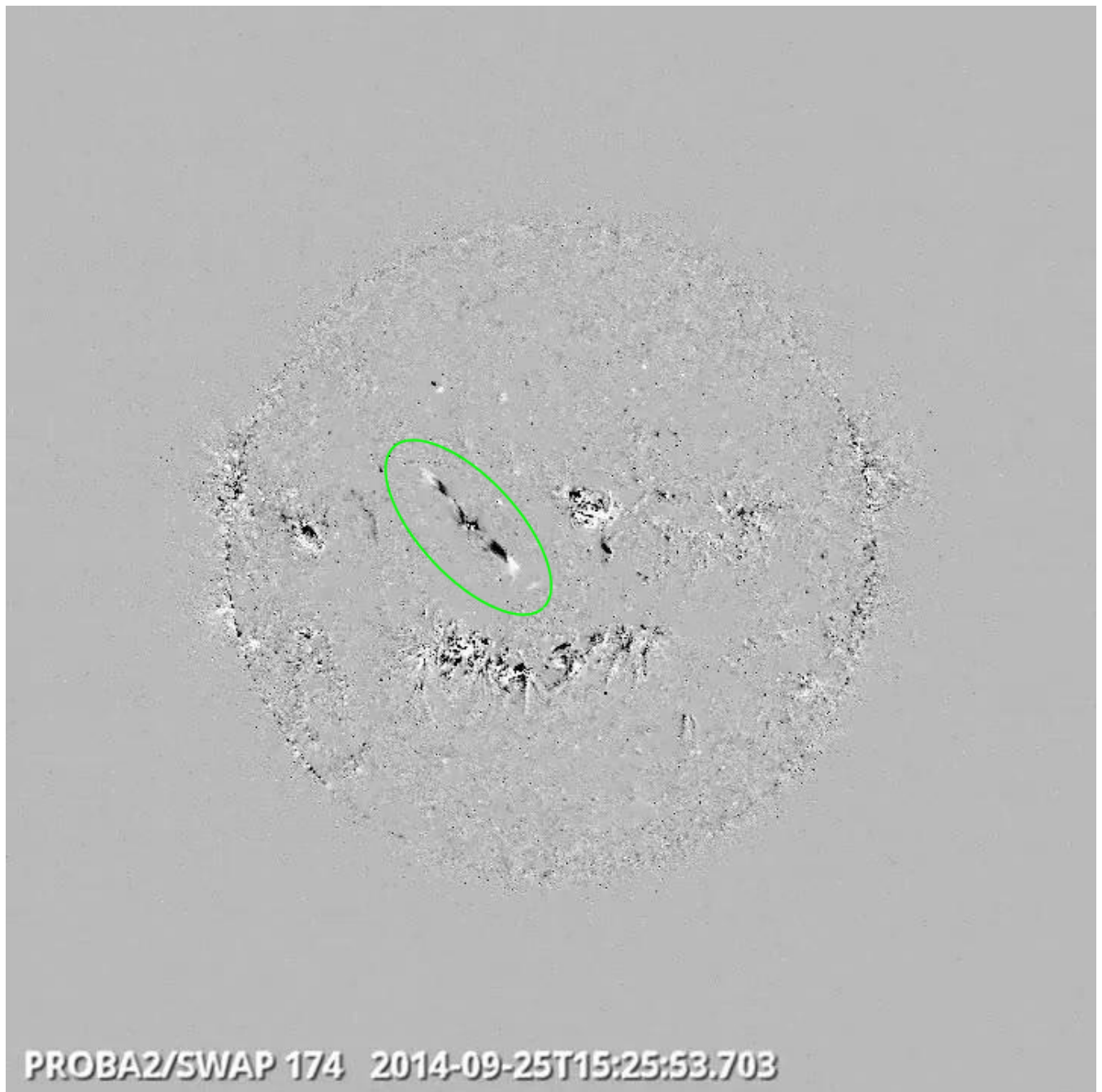


Eruption on south east quad @ 16:19 - SWAP difference image
Find a movie of the event [here](#) (SWAP difference movie)

Thursday Sep 25

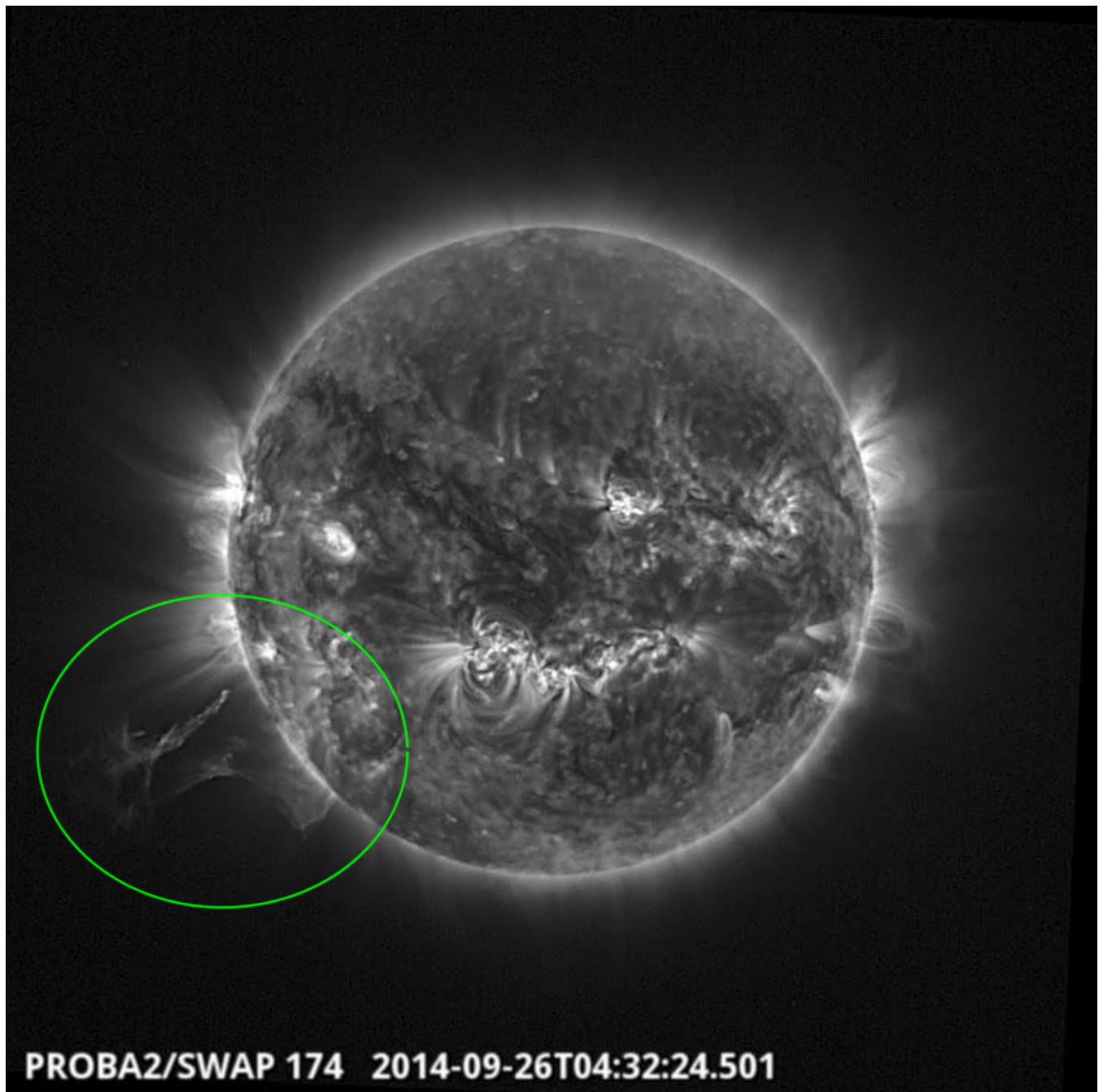


Eruption on the east limb @ 02:51 - SWAP image
Find a movie of the event [here](#) (SWAP movie)



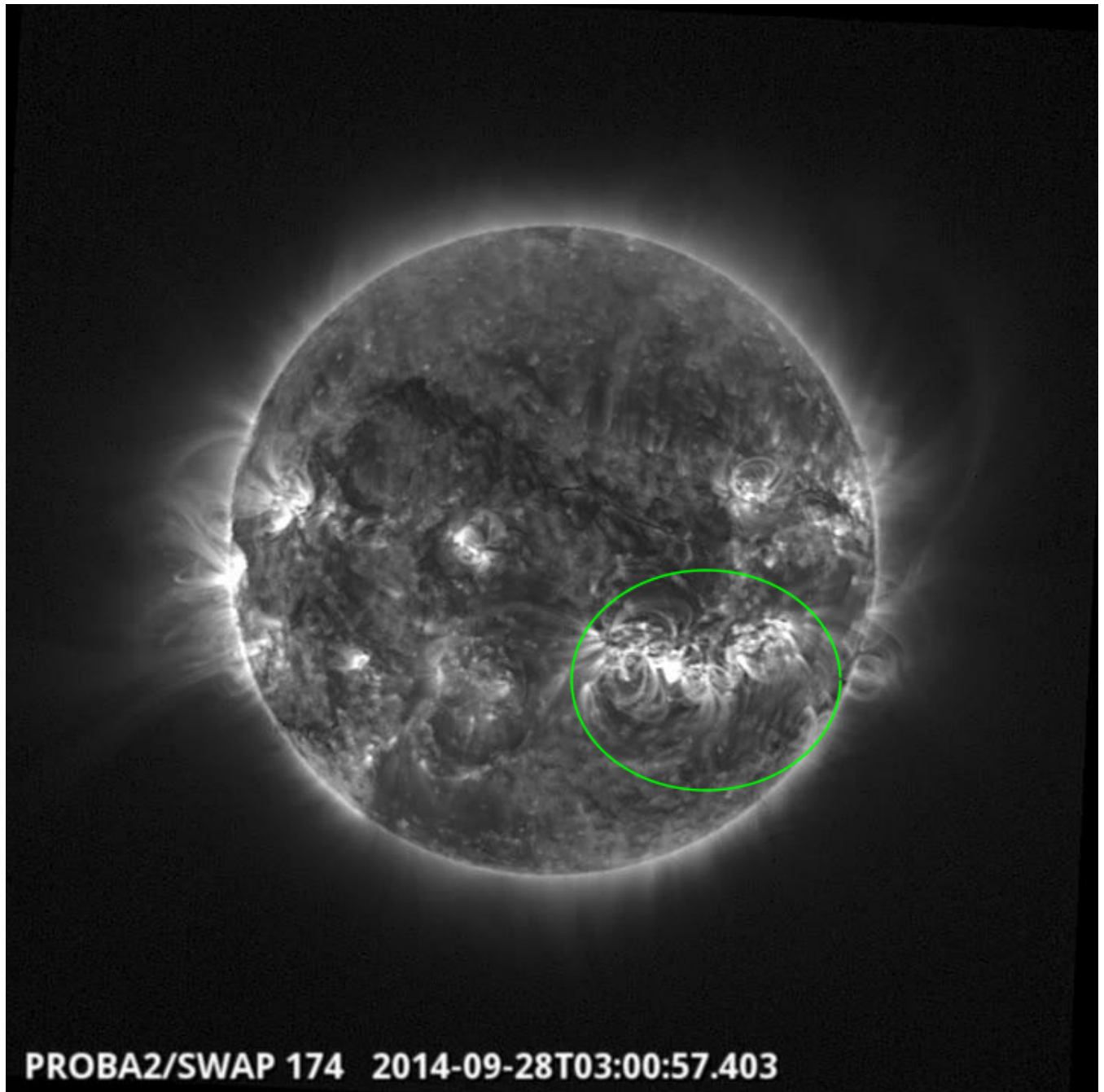
Flows on the north east quad @ 15:25 - SWAP difference image
Find a movie of the event [here](#) (SWAP difference movie)

Friday Sep 26



Eruption on the east limb @ 04:32 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Sunday Sep 28



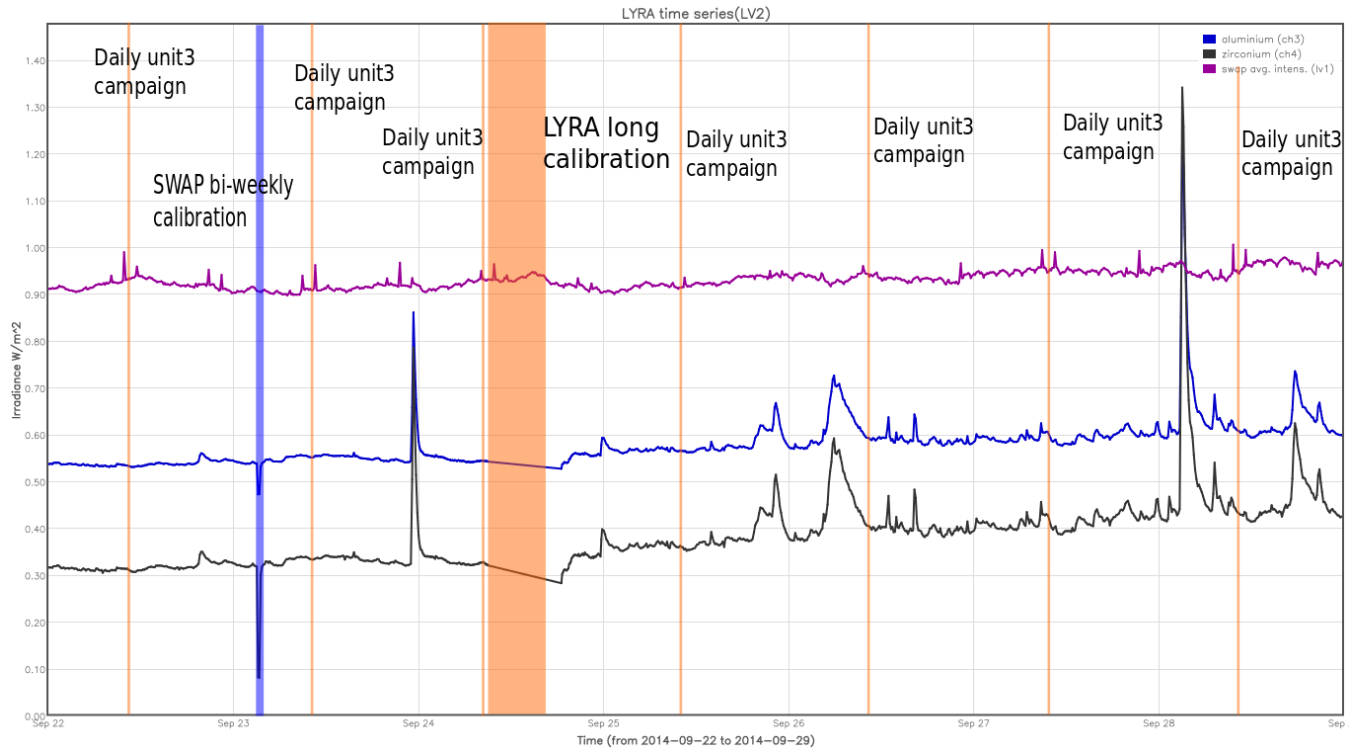
PROBA2/SWAP 174 2014-09-28T03:00:57.403

Eruption on the south west quad @ 03:00 - SWAP image
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:

- bi-weekly SWAP calibration

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

- Daily unit 3 campaigns, three times
- LYRA long calibration
- Daily unit 3 campaigns, four 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>).

On the 26th of September Katrien Bonte gave a workshop at ROB on working with SWAP images in the framework of junior college.

On the 26th of September Katrien Bonte gave a presentation at ROB on the PROBA2 satellite and other PROBA missions in the framework of junior college.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 22 Sep	Tuesday 23 Sep	Wednesday 24 Sep	Thursday 25 Sep	Friday 26 Sep	Saturday 27 Sep	Sunday 28 Sep
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + long calibration	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00419	LYIOS00420	LYIOS00420	LYIOS00420	LYIOS00420	LYIOS00420	LYIOS00420

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- LYRA long calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.4 and 49 °C, taking into account the daily U3 activation periods and the long calibration campaign.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 22039 to 22201.

The number of MCPM unrecoverable errors remained at 1657.

IOS & operations

Monday 22 Sep	Tuesday 23 Sep	Wednesday 24 Sep	Thursday 25 Sep	Friday 26 Sep	Saturday 27 Sep	Sunday 28 Sep
Nominal acquisition	Nominal acquisition + bi-weekly calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00536 662 images	IOS00537 690 images	IOS00537 663 images	IOS00537 665 images	IOS00537 663 images	IOS00537 655 images	IOS00537 574 images

Special operations for SWAP, this week:

- bi-weekly calibration

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.5 and 0.54 °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 15300 to 15360) 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 Sep 22 0UT and 2014 Sep 29 0UT: 4627

Highest cadence in this period: 30 seconds

Average cadence in this period: 130.69 seconds

Number of image gaps larger than 300 seconds: 0

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)