P2SC-ROB-WR-261 - 20150323 Weekly report #261	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Mar 23 to Sun Mar 29, 2015 08 Apr 2015 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

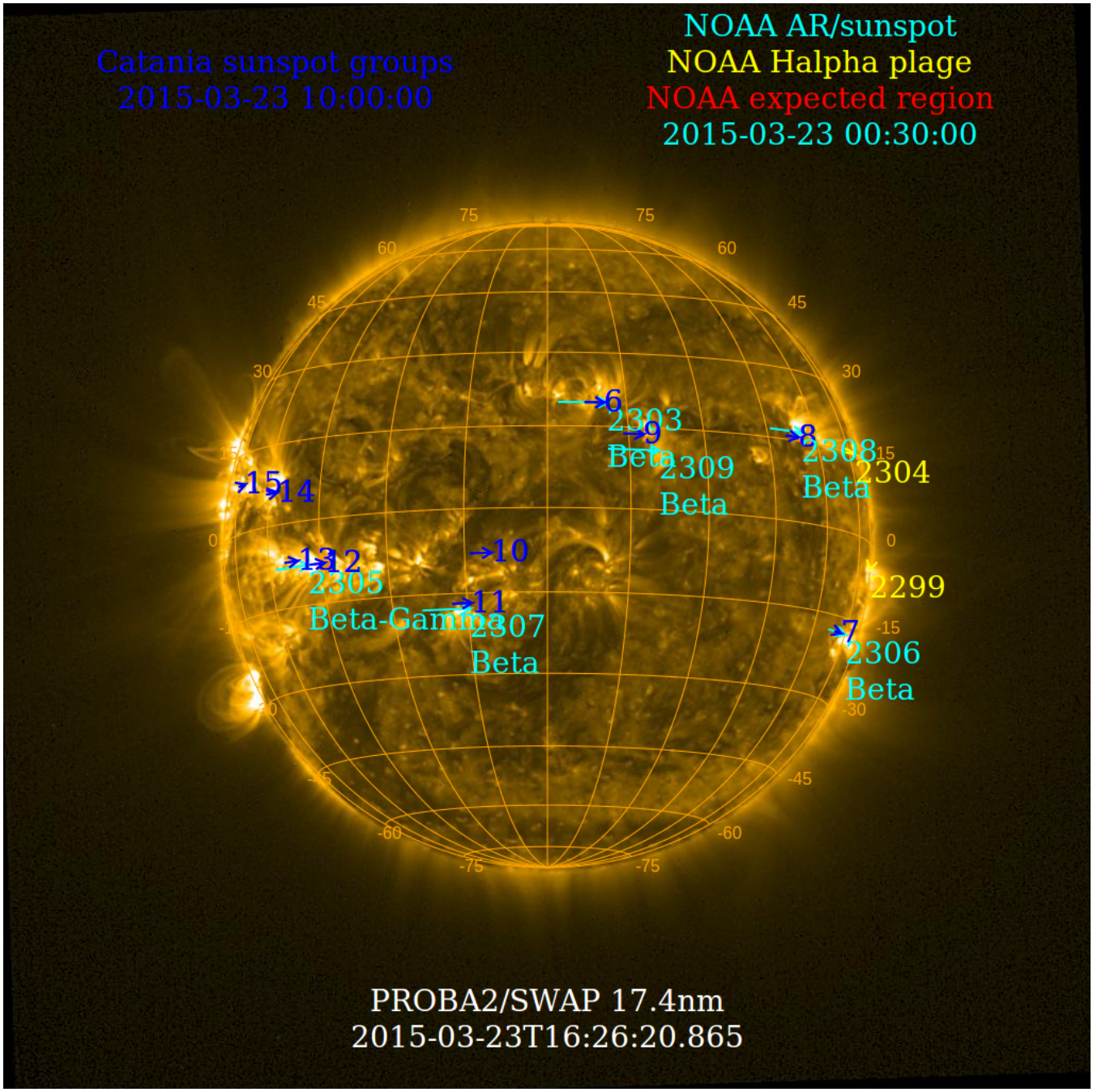
The level of solar activity[1] remained **low** this week.

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

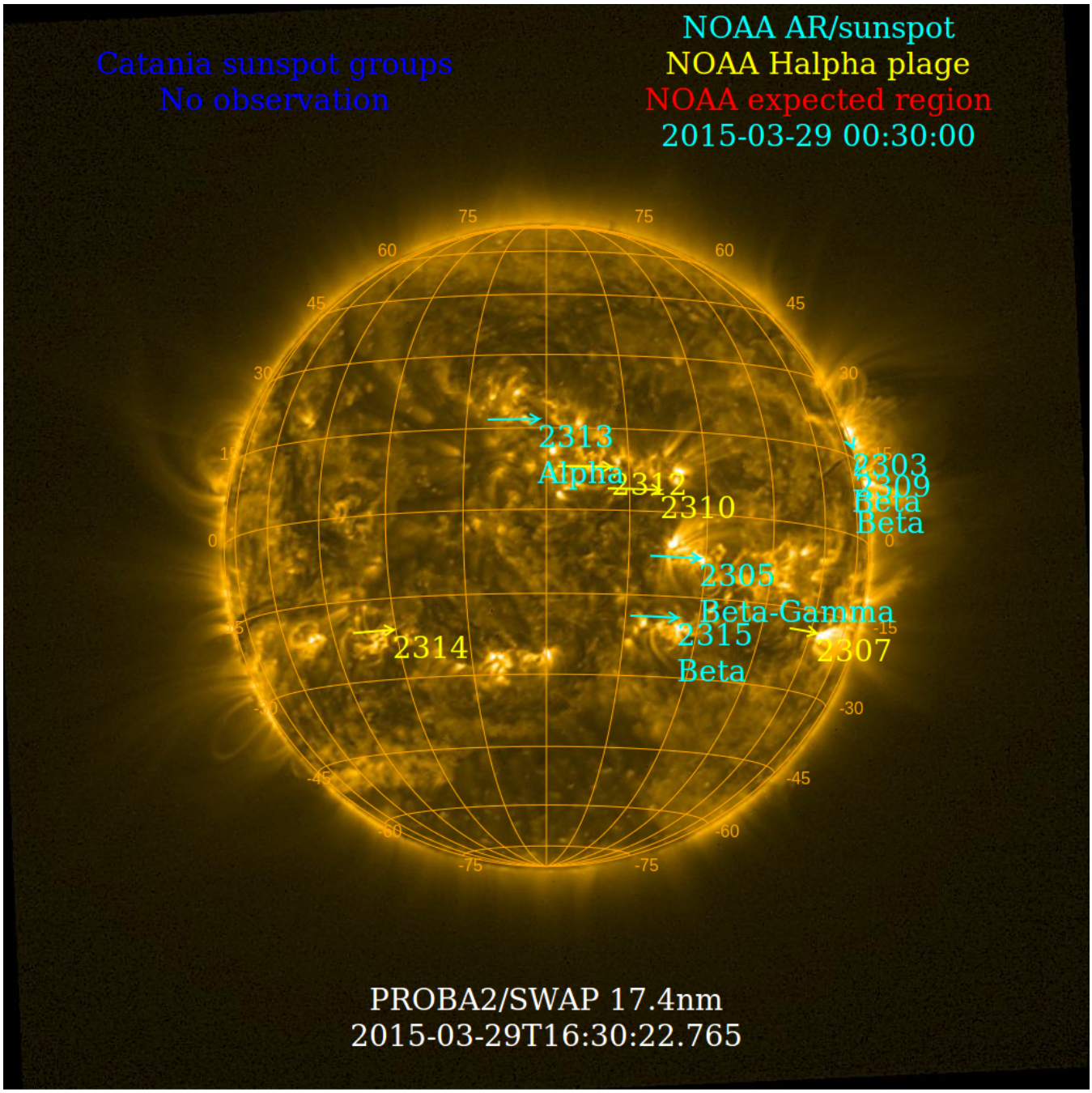
	Monday 23 Mar	Tuesday 24 Mar	Wednesday 25 Mar	Thursday 26 Mar	Friday 27 Mar	Saturday 28 Mar	Sunday 29 Mar
Activity	low	low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

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

The SWAP images of Mar 23 and Mar 29 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
2015-03-29 00:30:00
75
60
45
30
0
-30
-45
-60
-75
2313
Alpha
2312
2310
2303
2309
Beta
Beta
2305
Beta-Gamma
2314
2315
Beta
2307
PROBA2/SWAP 17.4nm
2015-03-29T16:30:22.765

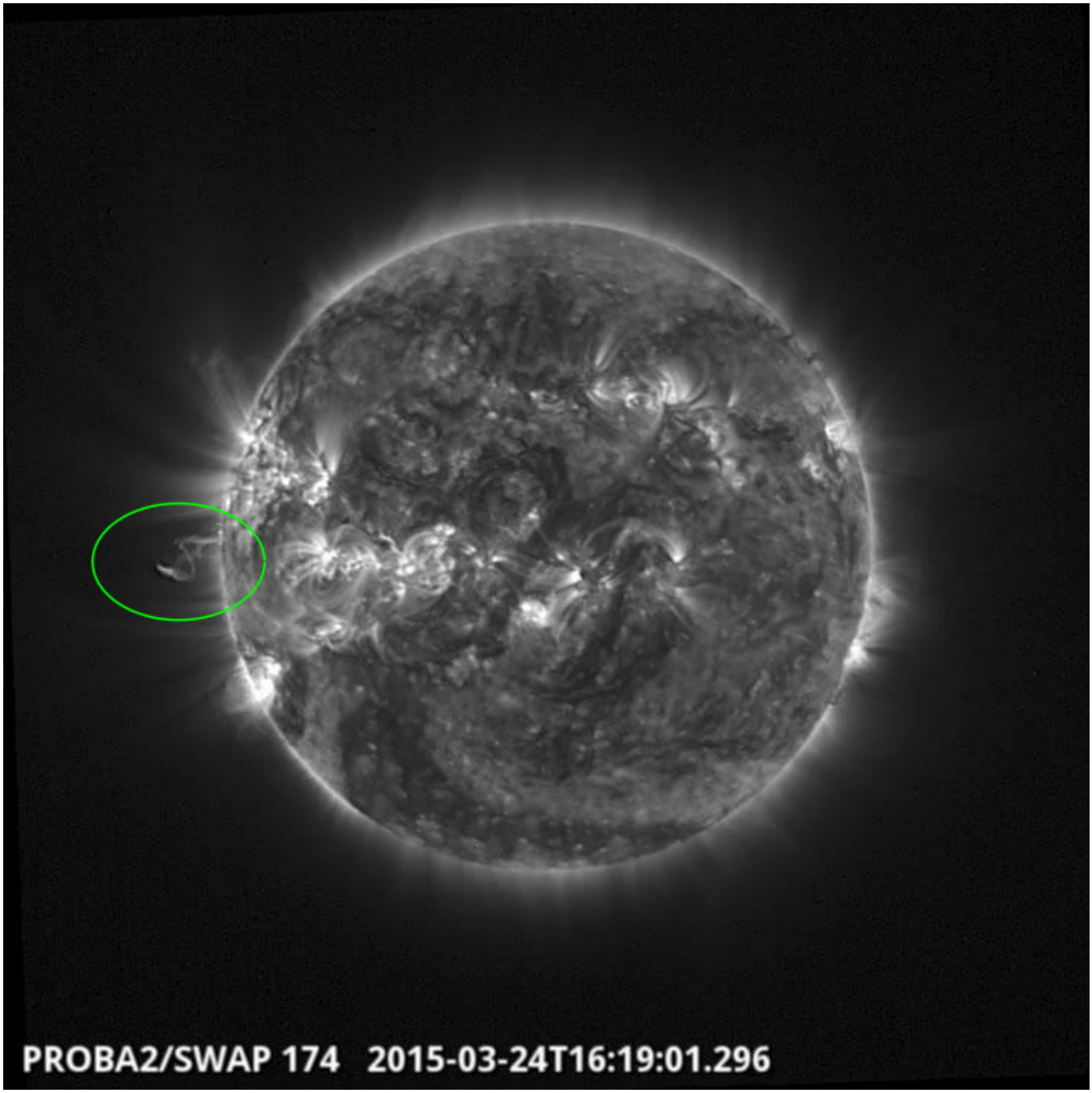
Solar Activity

Solar flare activity remained 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 261).

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

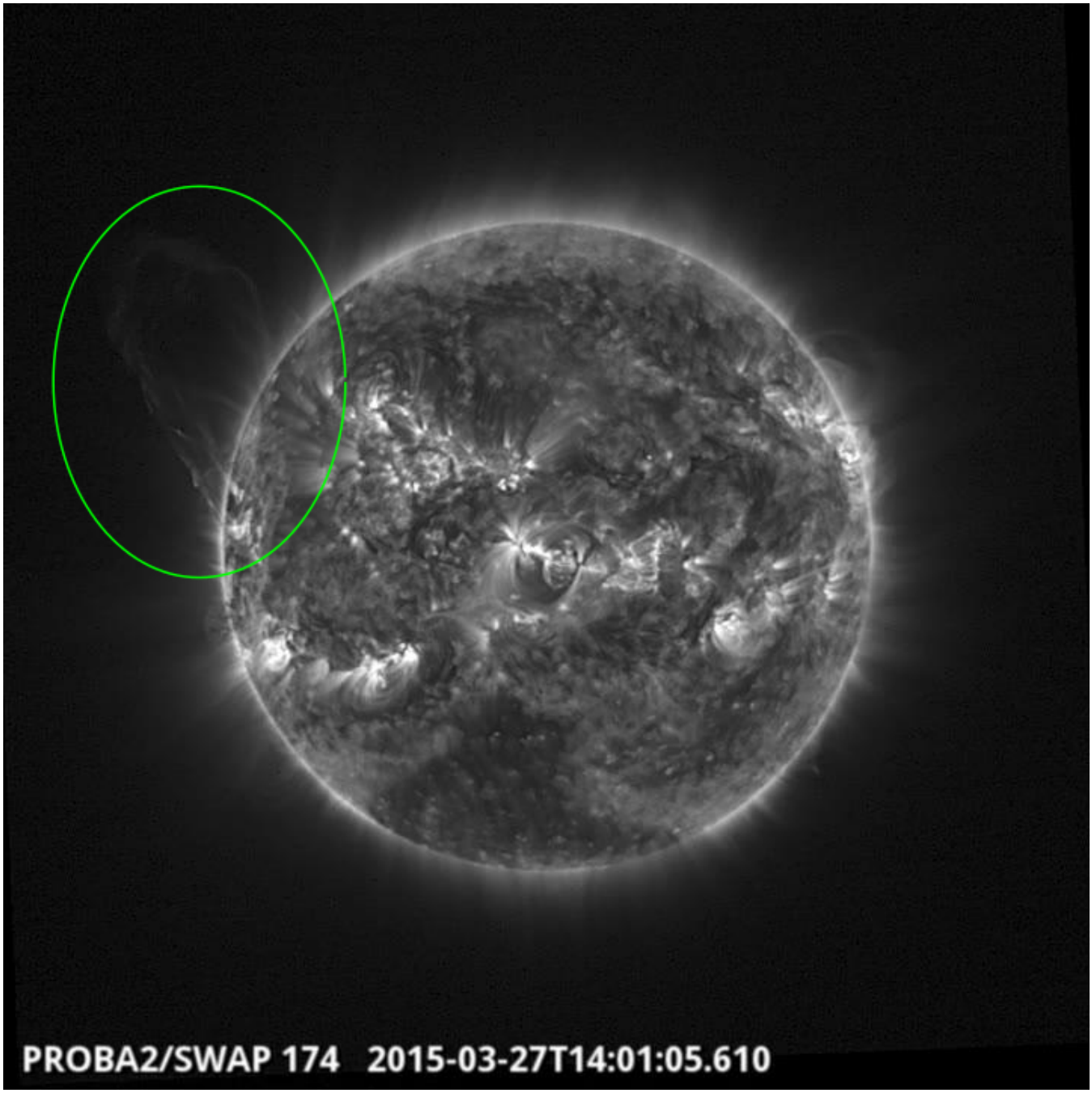
Tuesday Mar 24



Failed eruption on the east limb @ 16:19 - SWAP image

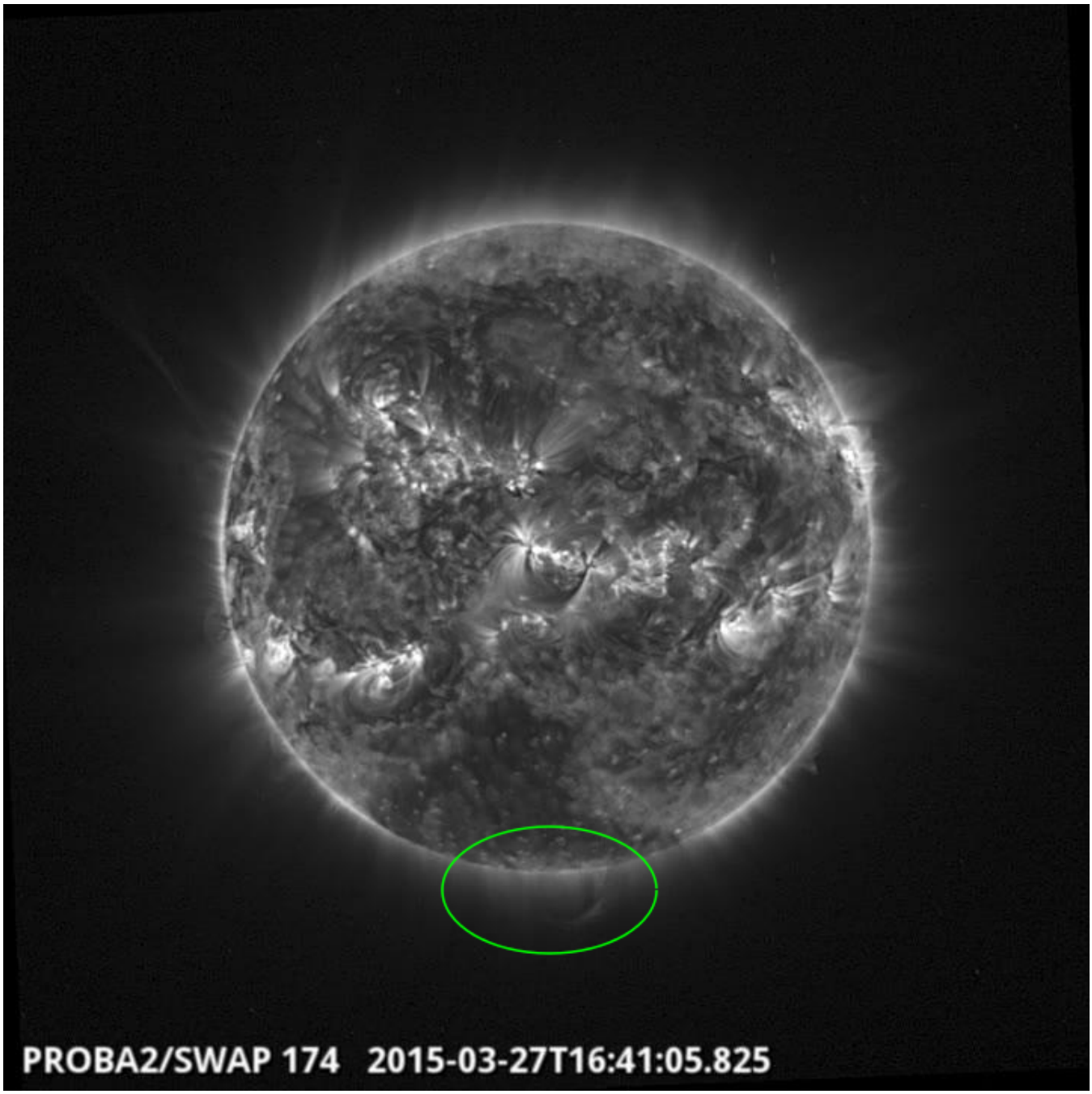
Find a movie of the event **here** (SWAP movie)

Friday Mar 27



Failed eruption on the east limb @ 16:19 - SWAP image

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

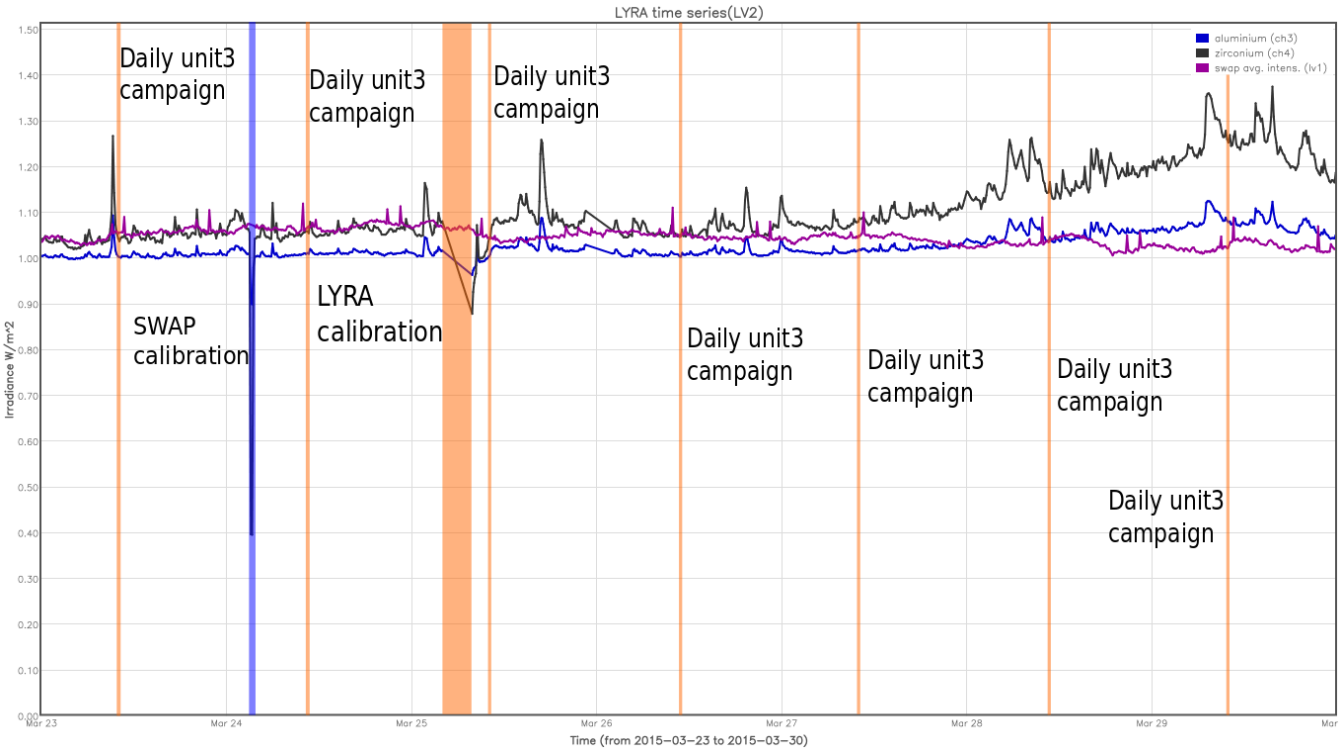


Eruption on the south limb @ 16:41 - SWAP image

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:

- SWAP bi weekly calibration, 2015-03-24

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

- Daily unit 3 campaign, 2015-03-23
- Daily unit 3 campaign, 2015-03-24
- LYRA bi weekly calibration, 2015-03-25
- Daily unit 3 campaign, 2015-03-25
- Daily unit 3 campaign, 2015-03-26
- Daily unit 3 campaign, 2015-03-27
- Daily unit 3 campaign, 2015-03-28
- Daily unit 3 campaign, 2015-03-29

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).

K, Stegen gave a presentation on PROBA2 to high school students at Klein seminarie in Hoogstraten.

B, Thompson worked with the PROBA2 team, combining SWAP and SDO data to look at coronal dimmings and CMEs.

D, McMullin, worked with the PROBA2 team, to discuss the LYRA spectral degradation.

Guest Investigator Program

- J. Machol used LYRA to study: “Investigation of solar flares at the Lyman-alpha wavelength with LYRA & GOES data”
- C. Guennou used SWAP to investigate: “Performing tomographic reconstruction, in order to study the geometrical properties of coronal streamers”.

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 23 Mar	Tuesday 24 Mar	Wednesday 25 Mar	Thursday 26 Mar	Friday 27 Mar	Saturday 28 Mar	Sunday 29 Mar
Nominal acquisition + daily U3 LYIOS00460	Nominal acquisition + daily U3 LYIOS00460	Nominal acquisition + daily U3 + calibration LYIOS00460	Nominal acquisition + daily U3 LYIOS00460	Nominal acquisition + daily U3 LYIOS00460	Nominal acquisition + daily U3 LYIOS00460	Nominal acquisition + daily U3 LYIOS00460

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- bi-weekly calibration

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.4 and 50.1 °C, taking into account the daily U3 activation periods and the bi weekly calibration.

3. SWAP instrument status

Calibration

Calibration campaign on 2015-Mar-24 this week.

MCPM errors

The number of MCPM recoverable errors increased from 26544 to 26549.
The number of MCPM unrecoverable errors increased from 5429 to 5597

IOS & operations

Monday 23 Mar	Tuesday 24 Mar	Wednesday 25 Mar	Thursday 26 Mar	Friday 27 Mar	Saturday 28 Mar	Sunday 29 Mar
Nominal acquisition IOS00571 681 images	Nominal acquisition + calibration IOS00571 707 images	Nominal acquisition IOS00571 661 images	Nominal acquisition IOS00571 493 images	Nominal acquisition IOS00571 543 images	Nominal acquisition IOS00571 635 images	Nominal acquisition IOS00571 568 images

Special operations for SWAP, this week:

- bi-weekly calibration campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.4 and 0.62 °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 16907 to 16969) 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 2015 Mar 23 00:00UT and 2015 Mar 30 00:00UT: 4604
Highest cadence in this period: 30 seconds
Average cadence in this period: 131.34 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
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)