

P2SC-ROB-WR-256 - 20150216 Weekly report #256	P2SC Weekly report	
Period covered: Date:	Mon Feb 16 to Sun Feb 22, 2015 25 Feb 2015	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

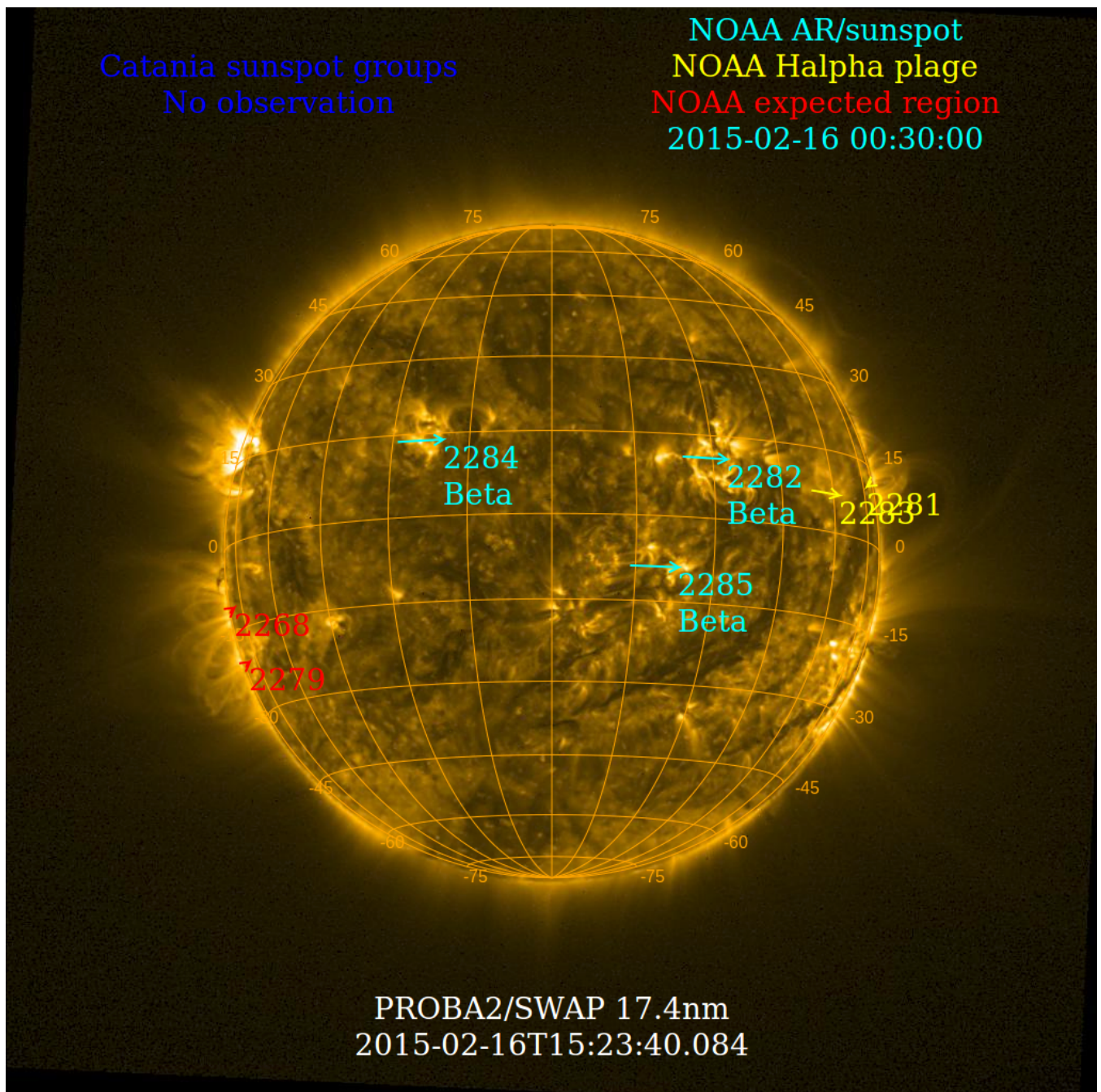
The level of solar activity¹ fluctuated between **very low** and **low** this week.

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

	Monday 16 Feb	Tuesday 17 Feb	Wednesday 18 Feb	Thursday 19 Feb	Friday 20 Feb	Saturday 21 Feb	Sunday 22 Feb
Activity	very low	very low	low	low	low	low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

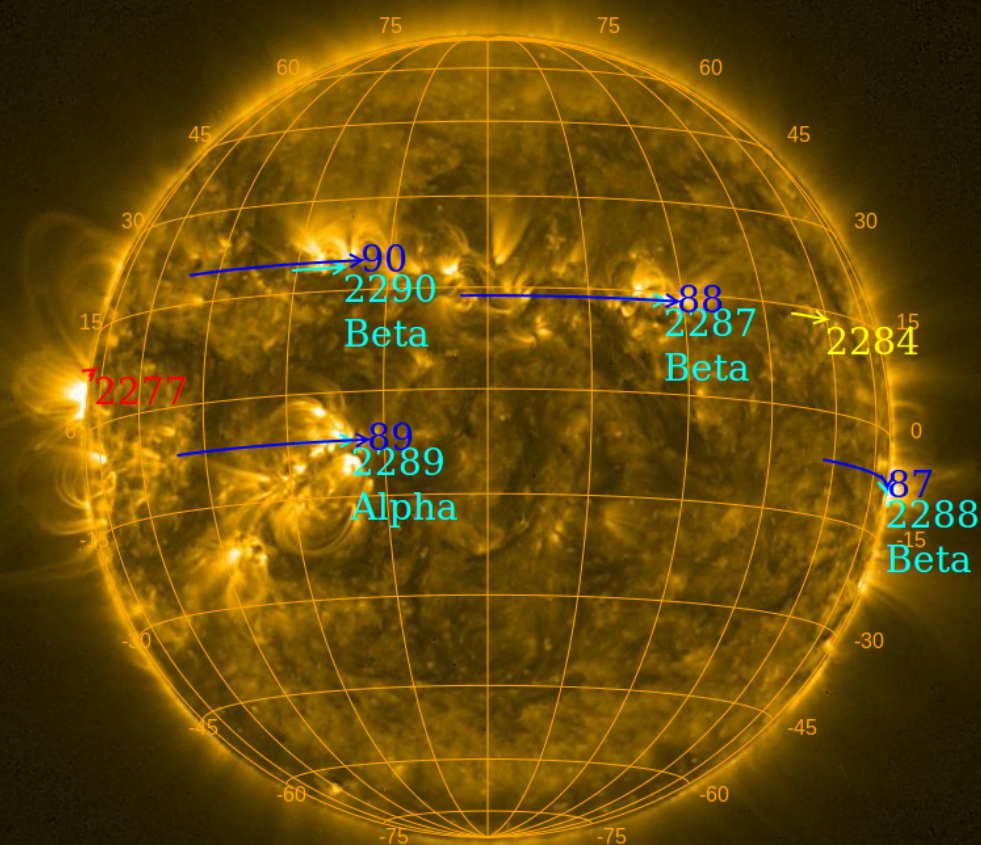
The SWAP images of Feb 16 and Feb 22 are shown below, with annotated active regions.



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

Catania sunspot groups
2015-02-20 08:30:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-02-22 00:30:00



PROBA2/SWAP 17.4nm
2015-02-22T15:19:11.177

Solar Activity

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

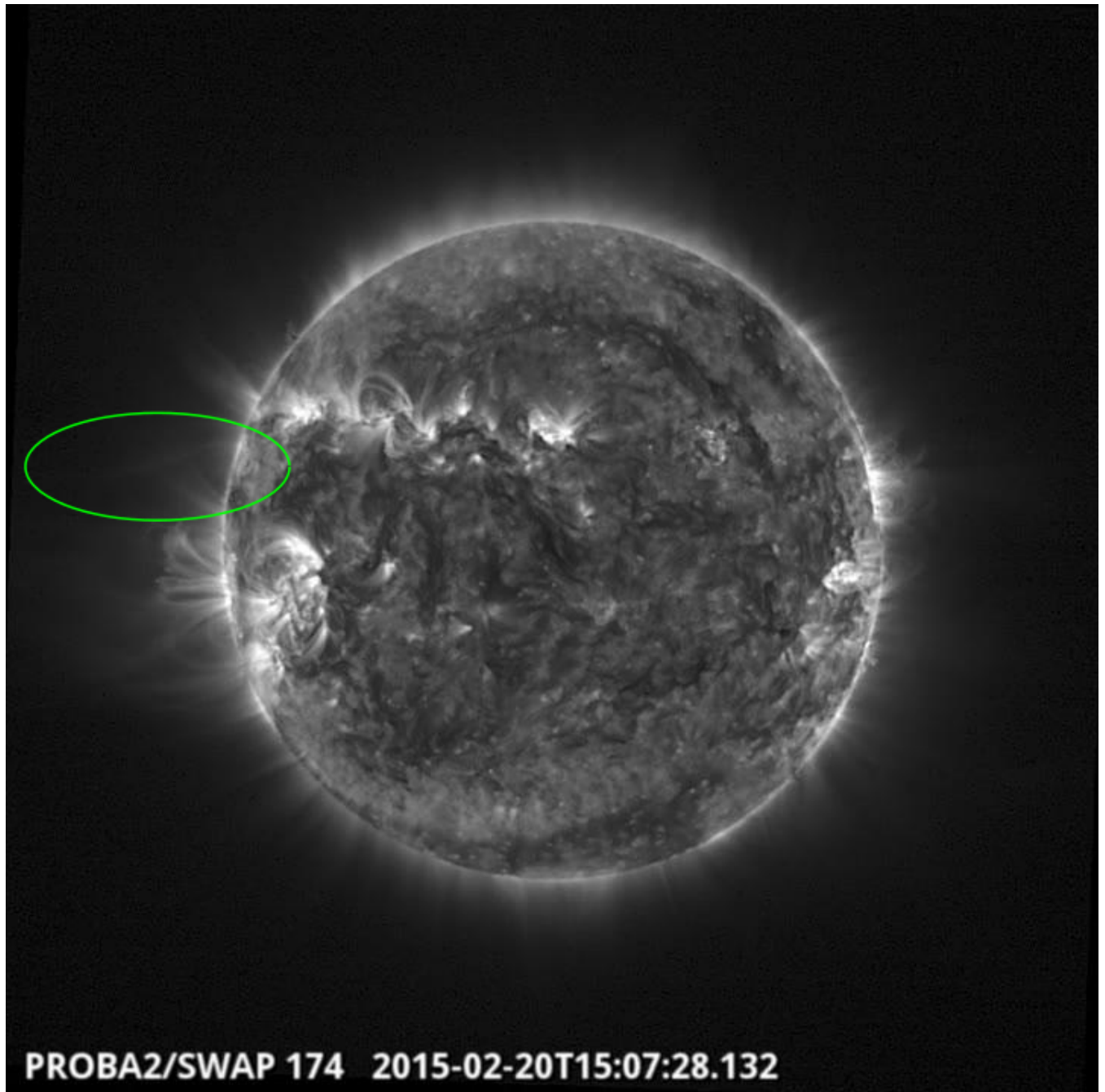
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 256).

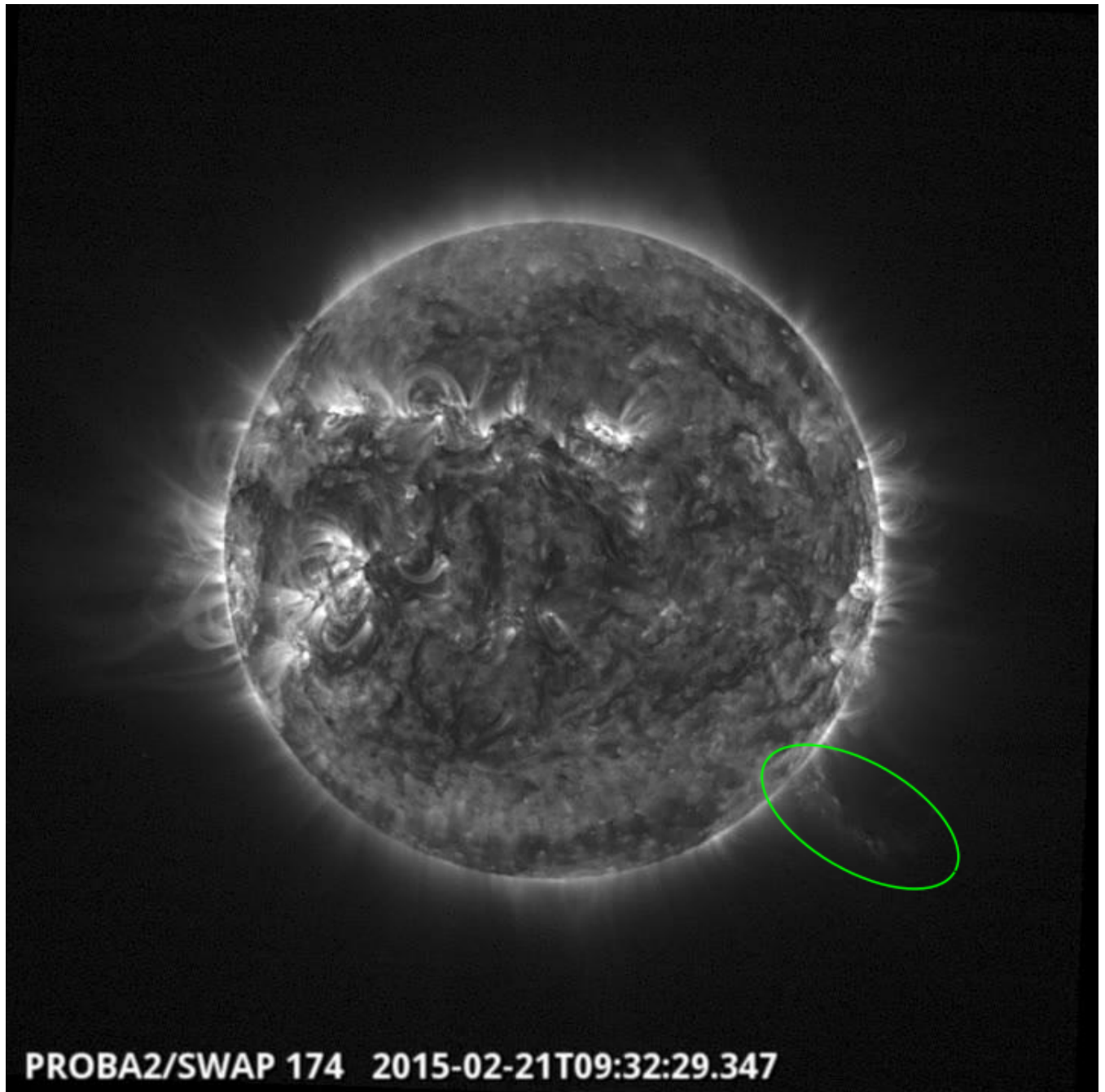
Details about some of this week's events, can be found further below.

Friday Feb 20



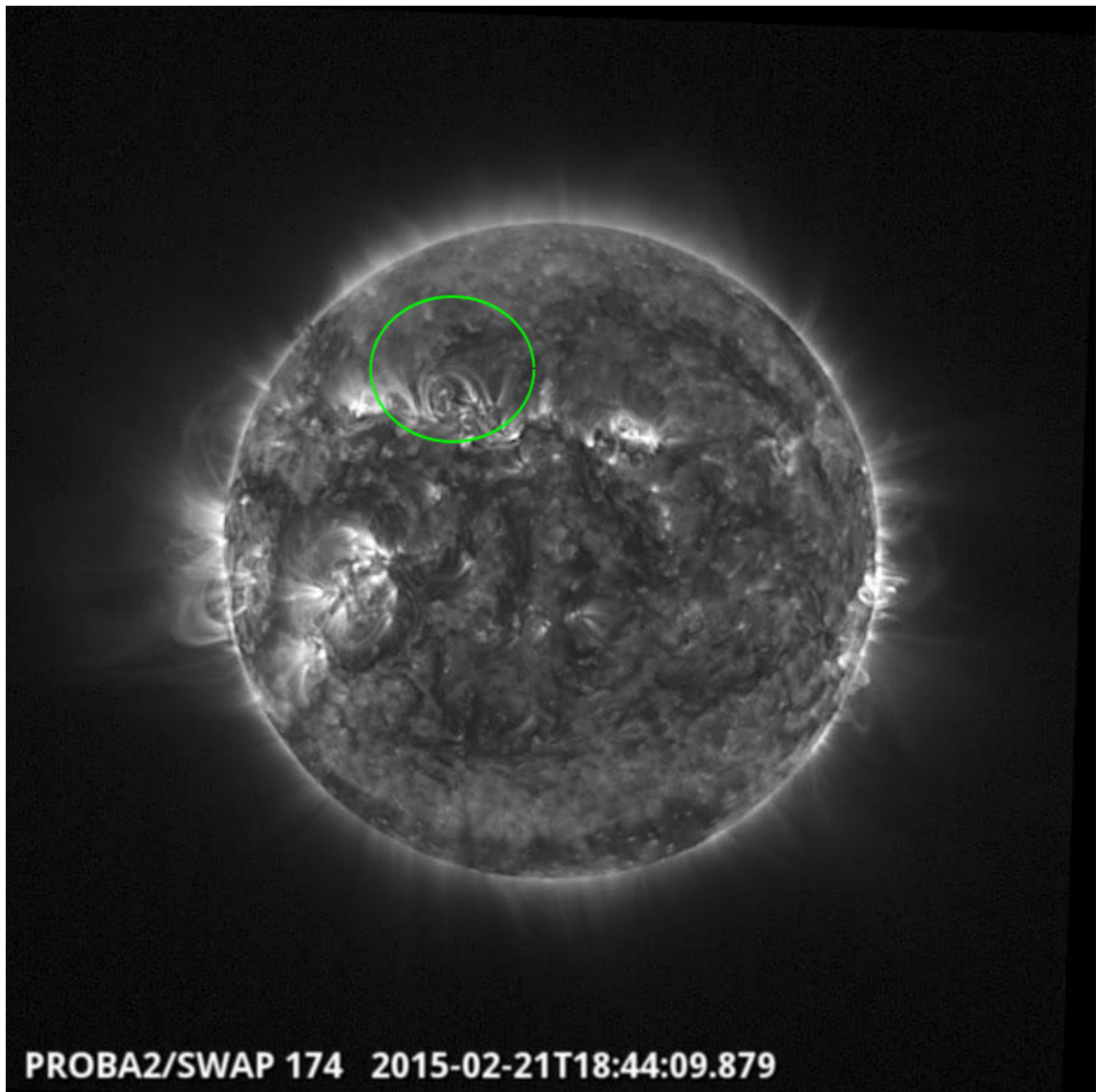
Eruption on the east limb @ 15:07 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Saturday Feb 21



PROBA2/SWAP 174 2015-02-21T09:32:29.347

Eruption on the west limb @ 09:32 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

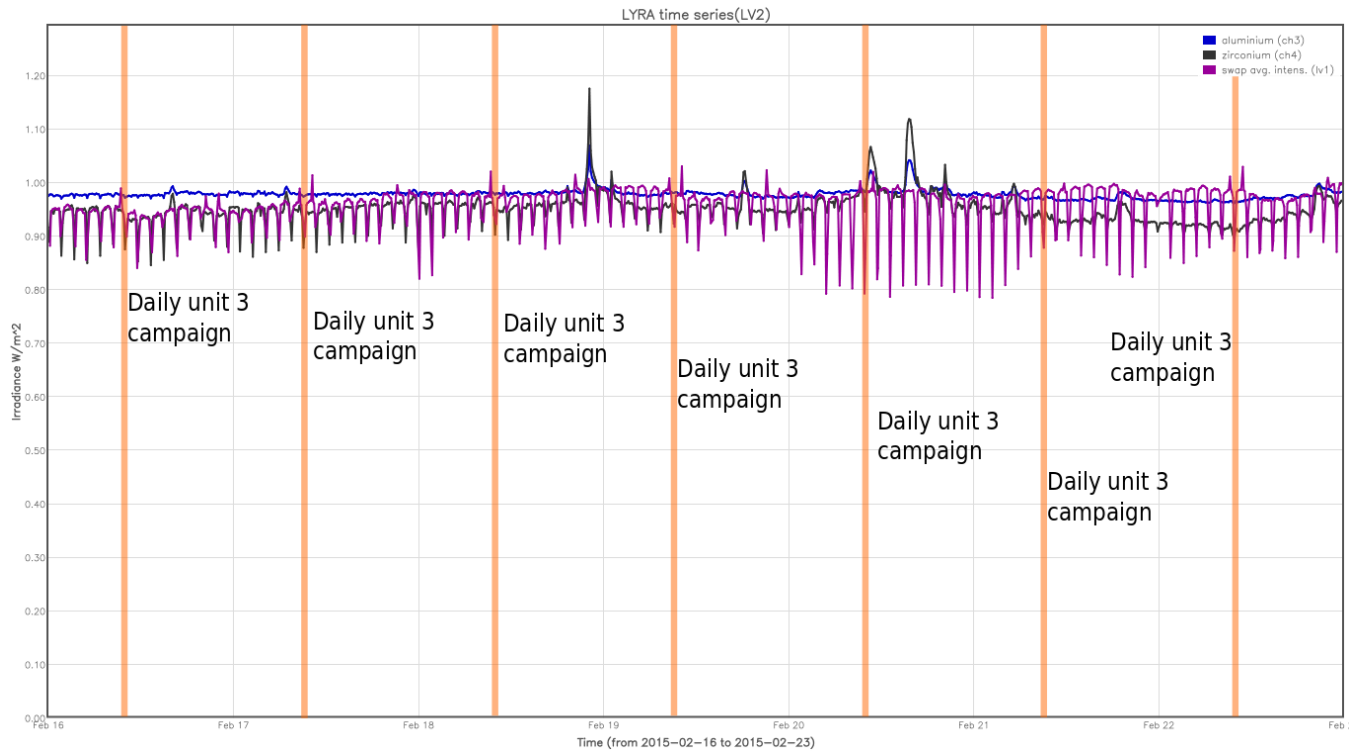


Eruption on the west limb @ 18:44 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

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 orange shaded periods correspond to, from left to right:

- Daily unit 3 campaign, 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>).

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 16 Feb	Tuesday 17 Feb	Wednesday 18 Feb	Thursday 19 Feb	Friday 20 Feb	Saturday 21 Feb	Sunday 22 Feb
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00451	LYIOS00451	LYIOS00451	LYIOS00451	LYIOS00452	LYIOS00452	LYIOS00452

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 51.2 and 53 °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 26388 to 26507.

The number of MCPM unrecoverable errors increased from 4589 to 4757.

IOS & operations

Monday 16 Feb	Tuesday 17 Feb	Wednesday 18 Feb	Thursday 19 Feb	Friday 20 Feb	Saturday 21 Feb	Sunday 22 Feb
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00566 599 images	IOS00566 692 images	IOS00566 624 images	IOS00566 578 images	IOS00567 636 images	IOS00567 576 images	IOS00567 577 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 1.8 and 3.32 °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 16591 to 16653) was nominal, except for:

- 16630.

During pass 16630 BBE5 blocked at 09:44:36 data have been dumped from 09:43:21 to 09:44:36

Data coverage HK

All HK data files (LYRA_AD) have been received, except:

- 16630 which was incomplete due to BBE5 blockage. The data was re-extracted on 2015-02-23.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except:

- 16630 which was incomplete due to BBE5 blockage

Total number of images between 2015 Feb 16 0UT and 2015 Feb 23 0UT: 4333

Highest cadence in this period: 0 seconds

Average cadence in this period: 139.43 seconds

Number of image gaps larger than 300 seconds: 61

Largest data gap: 16.55 minutes

The data gap is caused by occultation jumps

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except:

- 16630

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)