


P2SC-ROB-WR-307 - 20160208 Weekly report #307	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Feb 08 to Sun Feb 14, 2016 17 Feb 2016 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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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

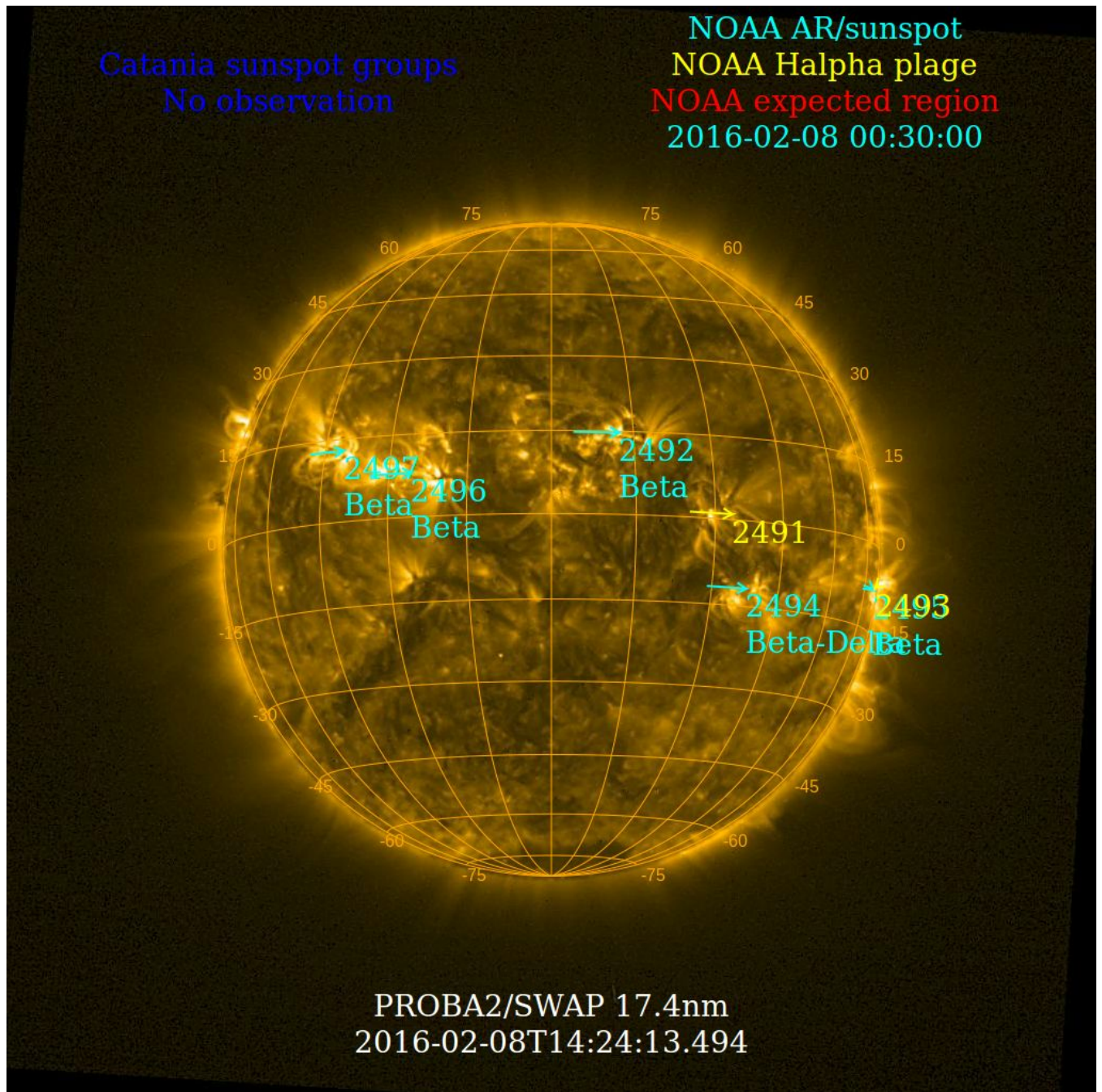
The level of solar activity¹ fluctuated between **low** and **moderate** this week.

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

	Monday 08 Feb	Tuesday 09 Feb	Wednesday 10 Feb	Thursday 11 Feb	Friday 12 Feb	Saturday 13 Feb	Sunday 14 Feb
Activity	low	low	low	low	moderate	moderate	moderate
Flares	-	-	-	-	M1.0@10:47	M1.8@15:24	M1.0@19:26

¹ See appendix. All timings are given in UT.

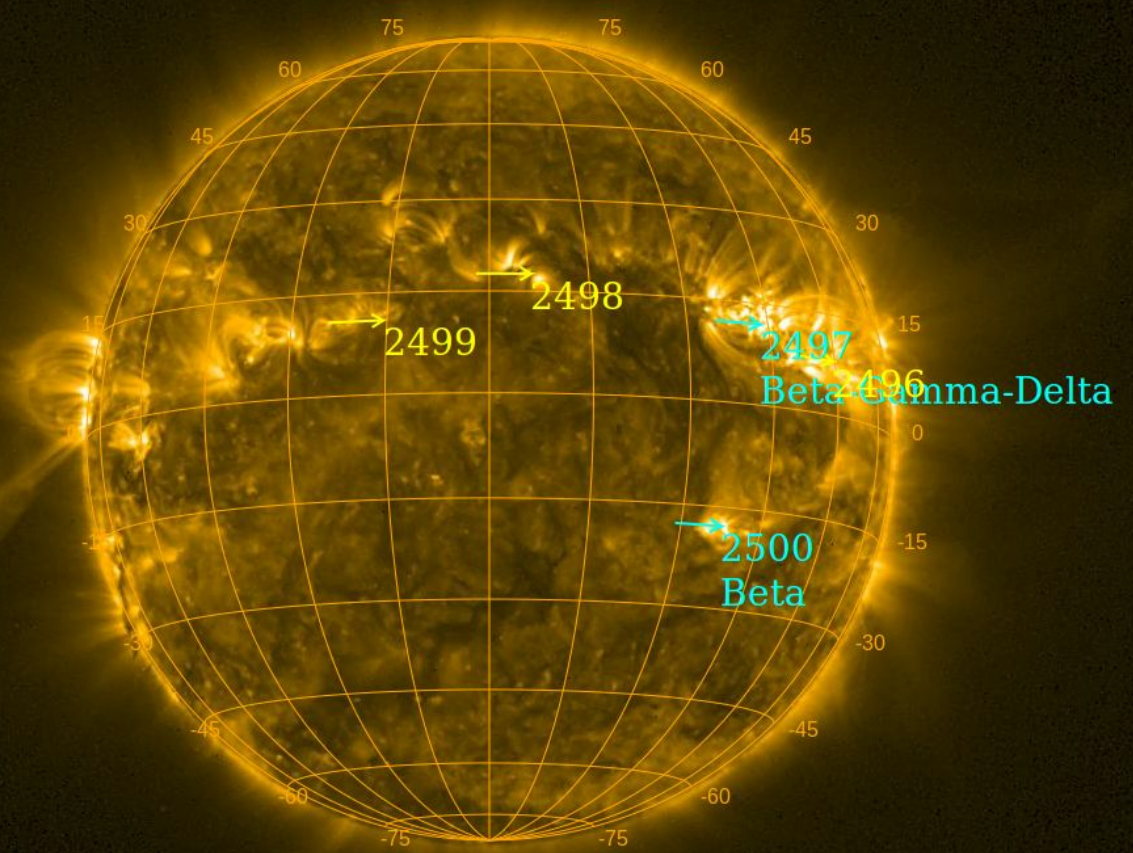
The SWAP images of Feb 08 and Feb 14 are shown below, with annotated active regions.



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

Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2016-02-14 00:30:00



PROBA2/SWAP 17.4nm
2016-02-14T14:23:58.481

Solar Activity

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

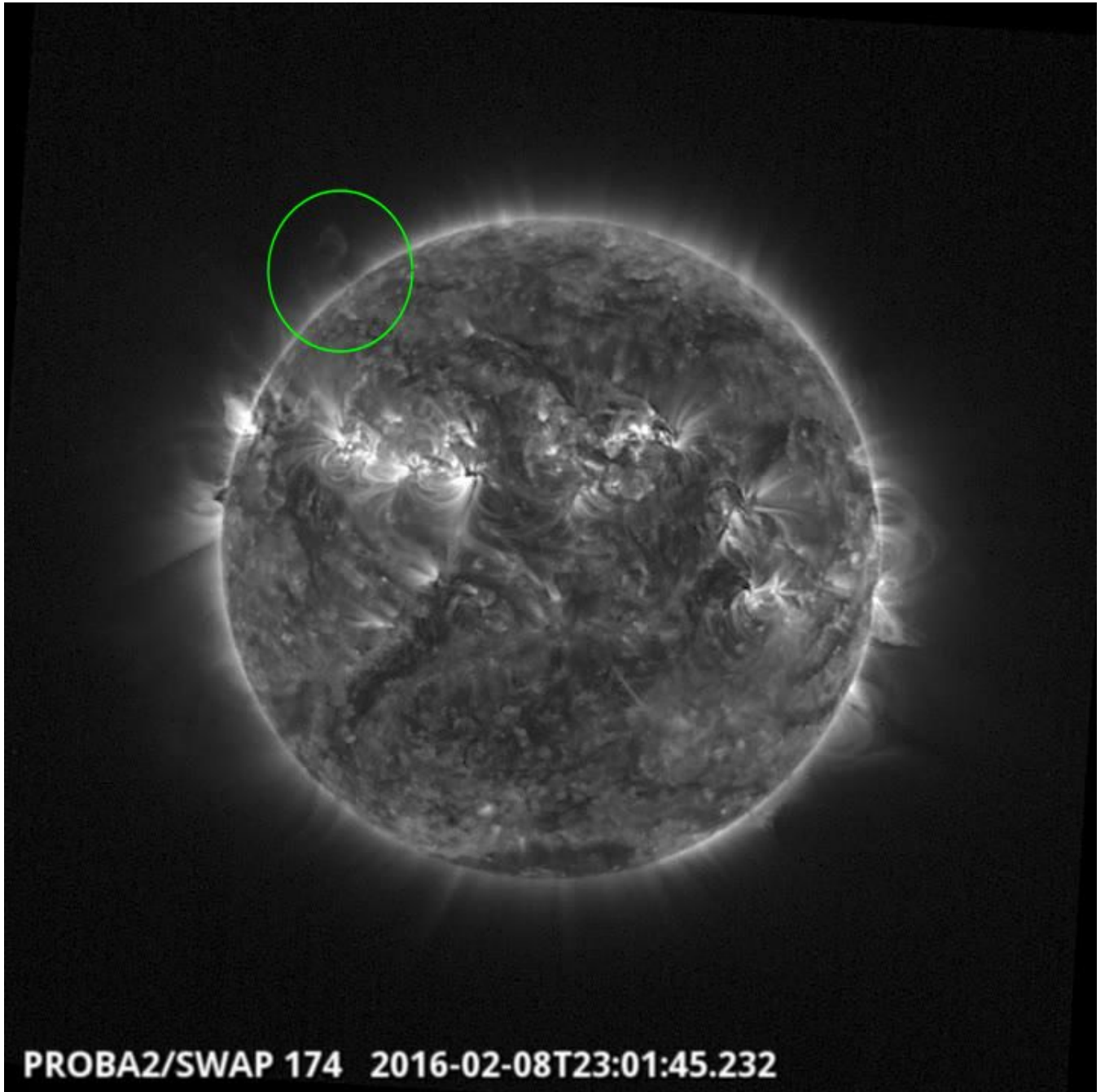
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 307).

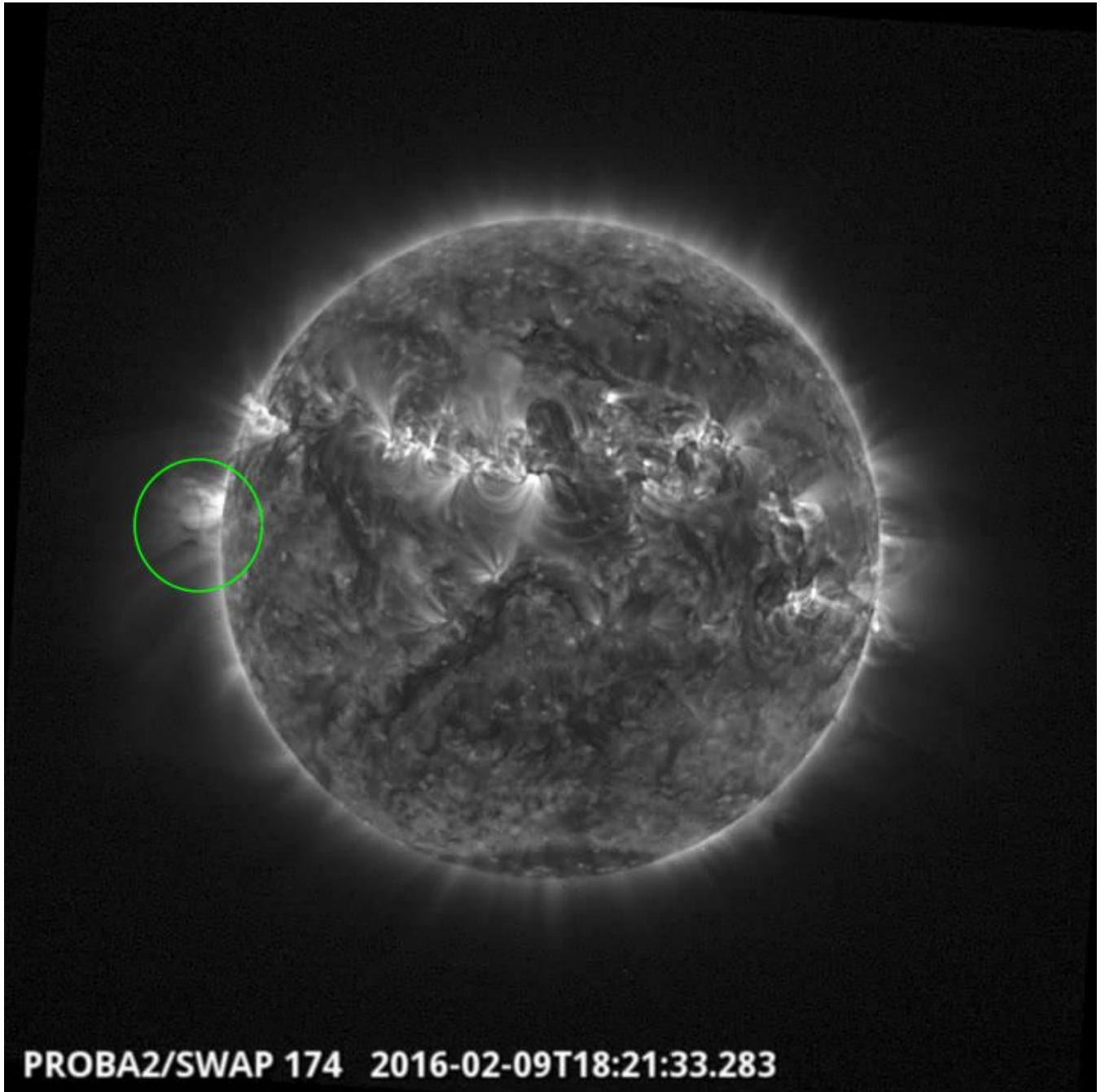
Details about some of this week's events, can be found further below.

Monday Feb 08



There was an eruption observed by SWAP in the North East at 23:01 UT on 08-Feb-2016
Find a movie of the events [here](#) (SWAP movie)

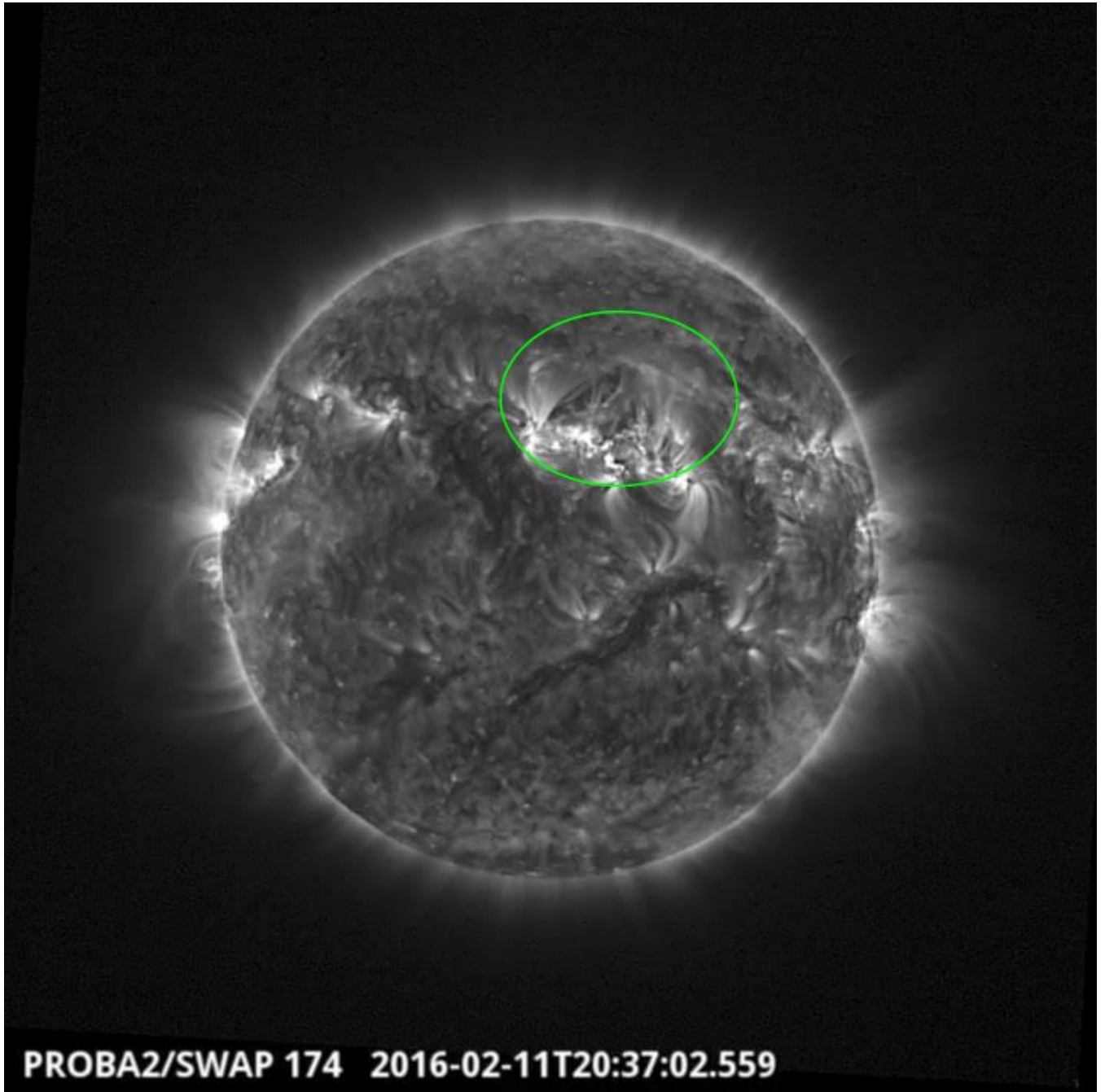
Tuesday Feb 09



PROBA2/SWAP 174 2016-02-09T18:21:33.283

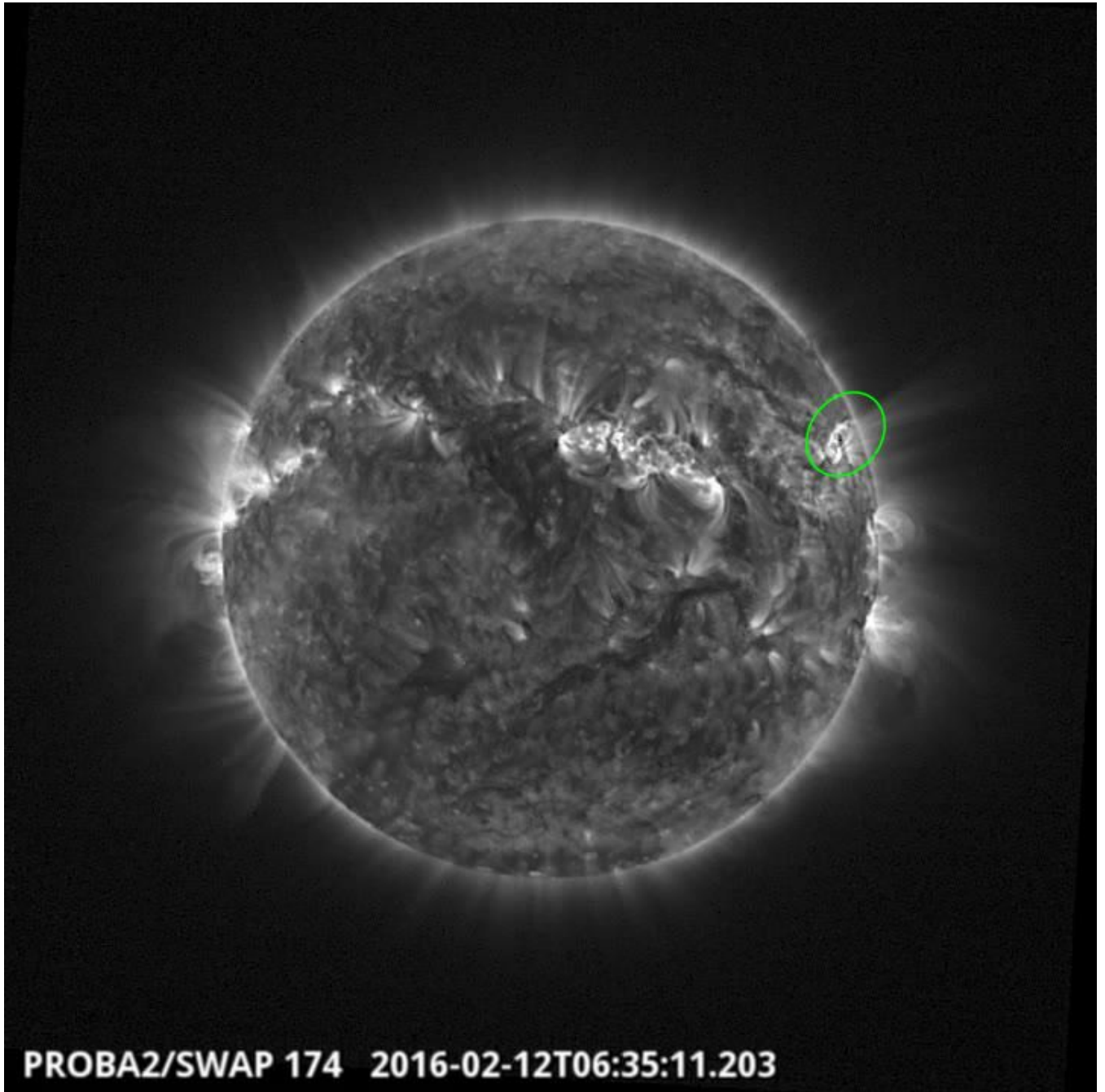
There was a filament eruption observed by SWAP on the East limb at 18:21 UT
Find a movie of the events [here](#) (SWAP movie)

Thursday Feb 11



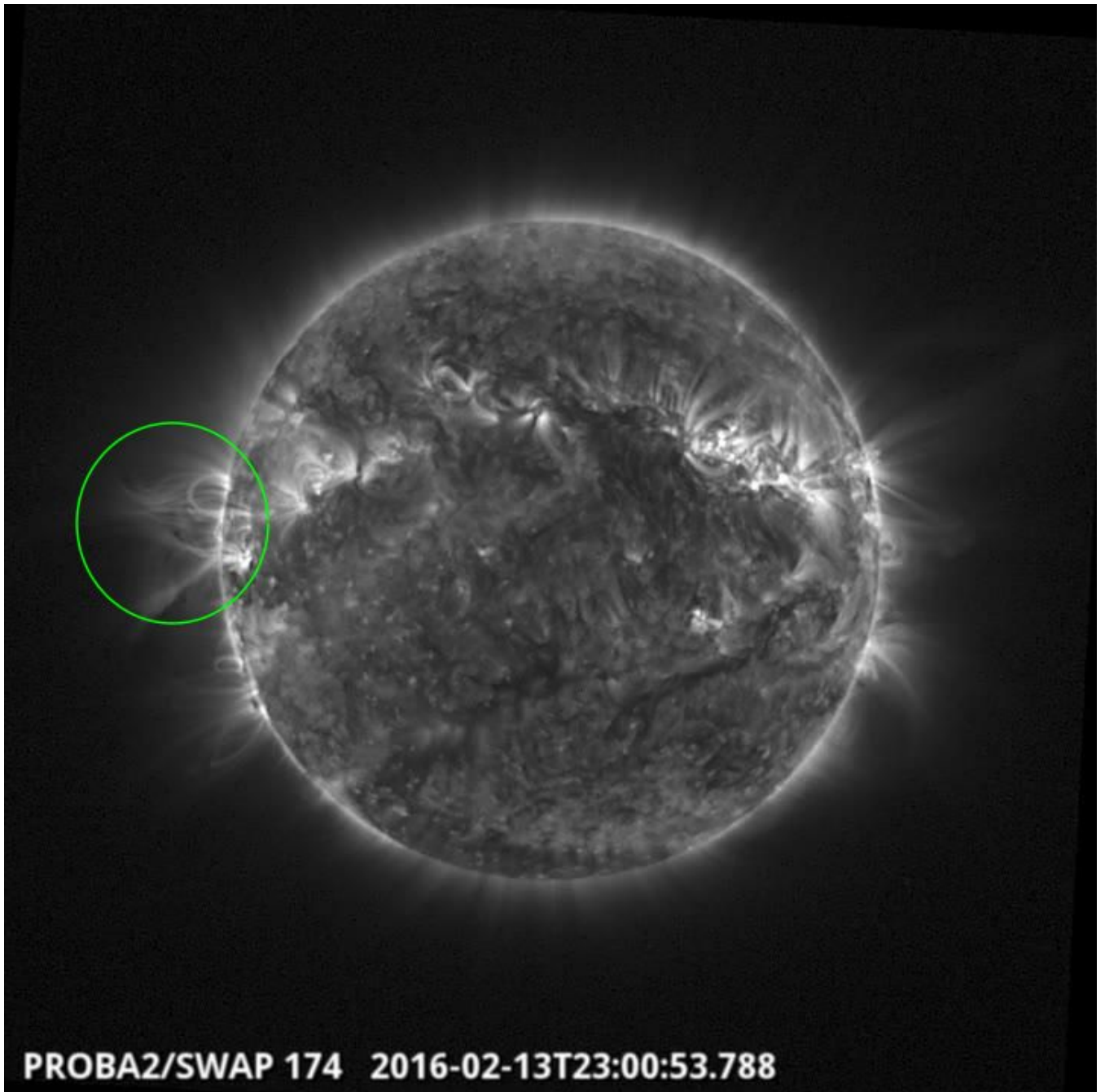
There was an eruption observed by SWAP near solar disk centre at 20:37 UT
Find a movie of the event [here](#) (SWAP movie)

Friday Feb 12



There was an eruption observed by SWAP in the North West at 06:35 UT
Find a movie of the event [here](#) (SWAP movie)

Saturday Feb 13

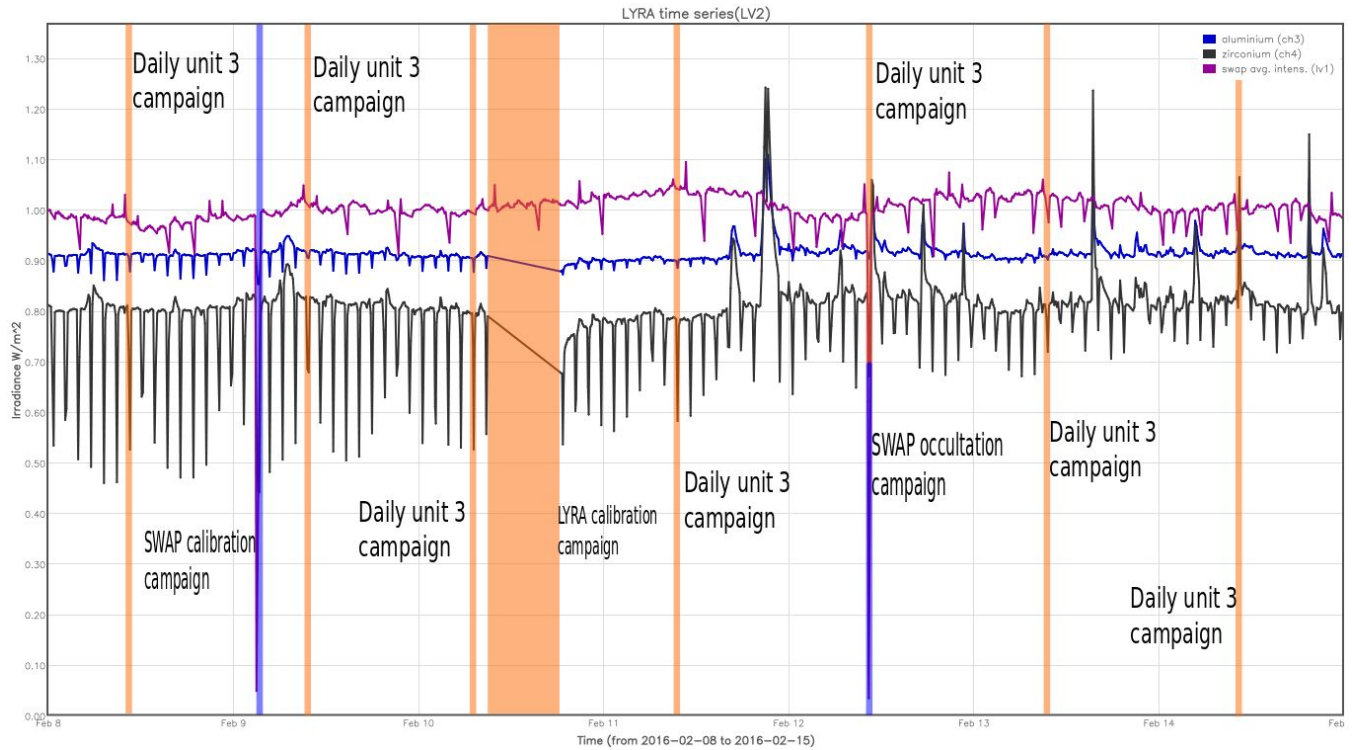


There was an eruption observed by SWAP on the East limb at 23:00 UT
Find a movie of the event [here](#) (SWAP movie)

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 calibration campaign, 2016-Feb-09
- SWAP occultation campaign, 2016-Feb-12

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

- Daily unit 3 campaign, 2015-Feb-08
- Daily unit 3 campaign, 2015-Feb-09
- Daily unit 3 campaign, 2015-Feb-10
- Bi-weekly calibration campaign, 2015-Feb-10
- Daily unit 3 campaign, 2015-Feb-11
- Daily unit 3 campaign, 2015-Feb-12
- Daily unit 3 campaign, 2015-Feb-13
- Daily unit 3 campaign, 2015-Feb-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

- None

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 08 Feb	Tuesday 09 Feb	Wednesday 10 Feb	Thursday 11 Feb	Friday 12 Feb	Saturday 13 Feb	Sunday 14 Feb
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00525	LYIOS00525	LYIOS00525	LYIOS00525	LYIOS00526	LYIOS00526	LYIOS00526

The following science campaigns were performed by LYRA:

- Daily U3 observations campaign
- Bi-weekly calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 51.3 and 53.9 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 1299 to 1507.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 08 Feb	Tuesday 09 Feb	Wednesday 10 Feb	Thursday 11 Feb	Friday 12 Feb	Saturday 13 Feb	Sunday 14 Feb
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition + occultation	Nominal acquisition	Nominal acquisition
IOS00626 511 images	IOS00626 665 images	IOS00626 630 images	IOS00626 707 images	IOS00627 574 images	IOS00627 598 images	IOS00627 568 images

Special operations for SWAP, this week:

- Bi weekly calibration campaign
- SWAP and LYRA parallel occultation campaign.

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between 2.8 and 3.9 °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 19779 to 19841) 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 Feb 08 00:00 UT and 2016 Feb 15 00:00 UT: 4253

Highest cadence in this period: 29 seconds

Average cadence in this period: 142.22 seconds

Number of image gaps larger than 300 seconds: 147

Largest data gap: 29.93 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
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)