


P2SC-ROB-WR-244 - 20141124 Weekly report #244	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Nov 24 to Sun Nov 30, 2014 03 Dec 2014 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

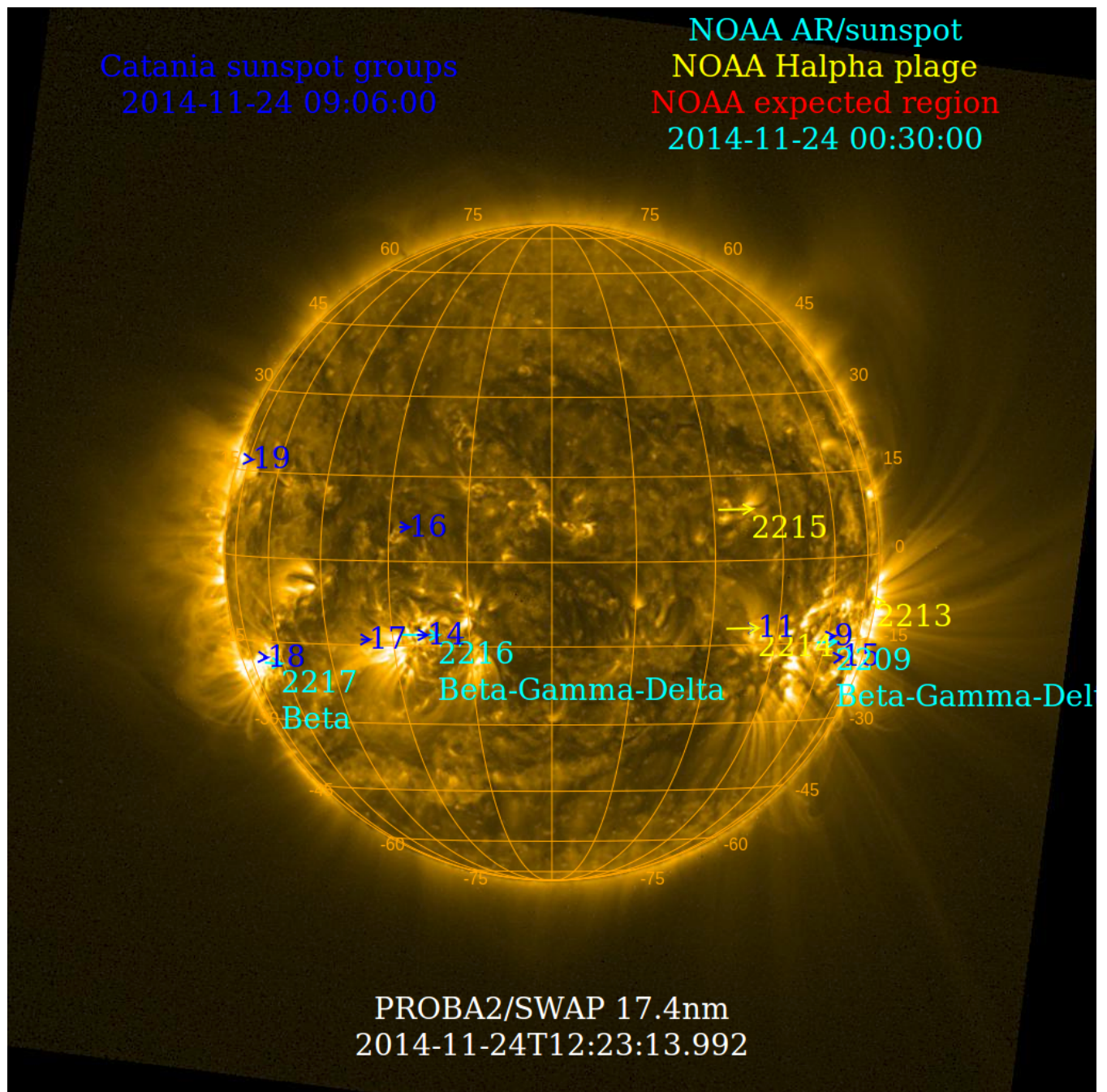
The level of solar activity¹ remained **low** this week.

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

	Monday 24 Nov	Tuesday 25 Nov	Wednesday 26 Nov	Thursday 27 Nov	Friday 28 Nov	Saturday 29 Nov	Sunday 30 Nov
Activity	low	low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

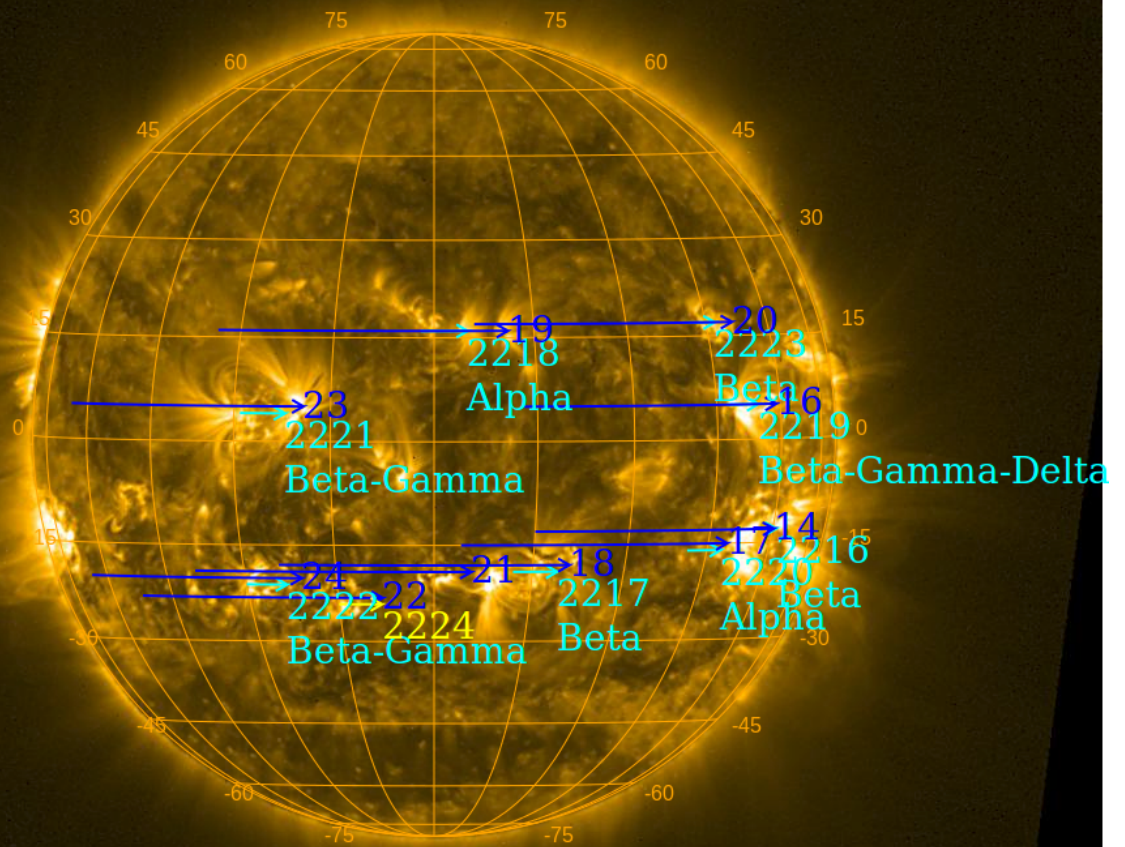
The SWAP images of Nov 24 and Nov 30 are shown below, with annotated active regions.



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

Catania sunspot groups
2014-11-27 09:06:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2014-11-30 00:30:00



PROBA2/SWAP 17.4nm
2014-11-30T12:10:10.167

Solar Activity

Solar flare activity remained low during the week.

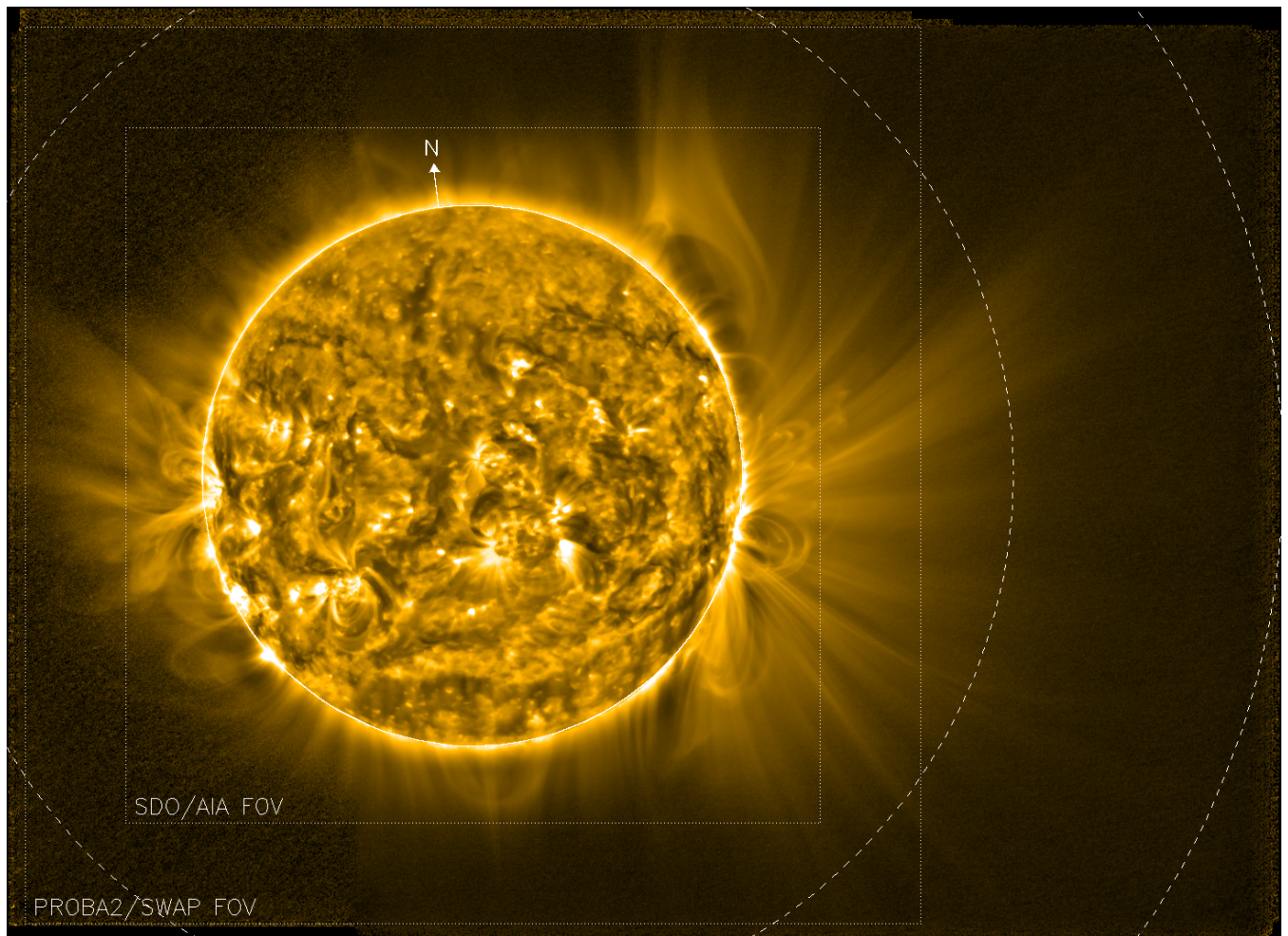
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 244). Note that several satellite off-points result in the Sun center location moving around.

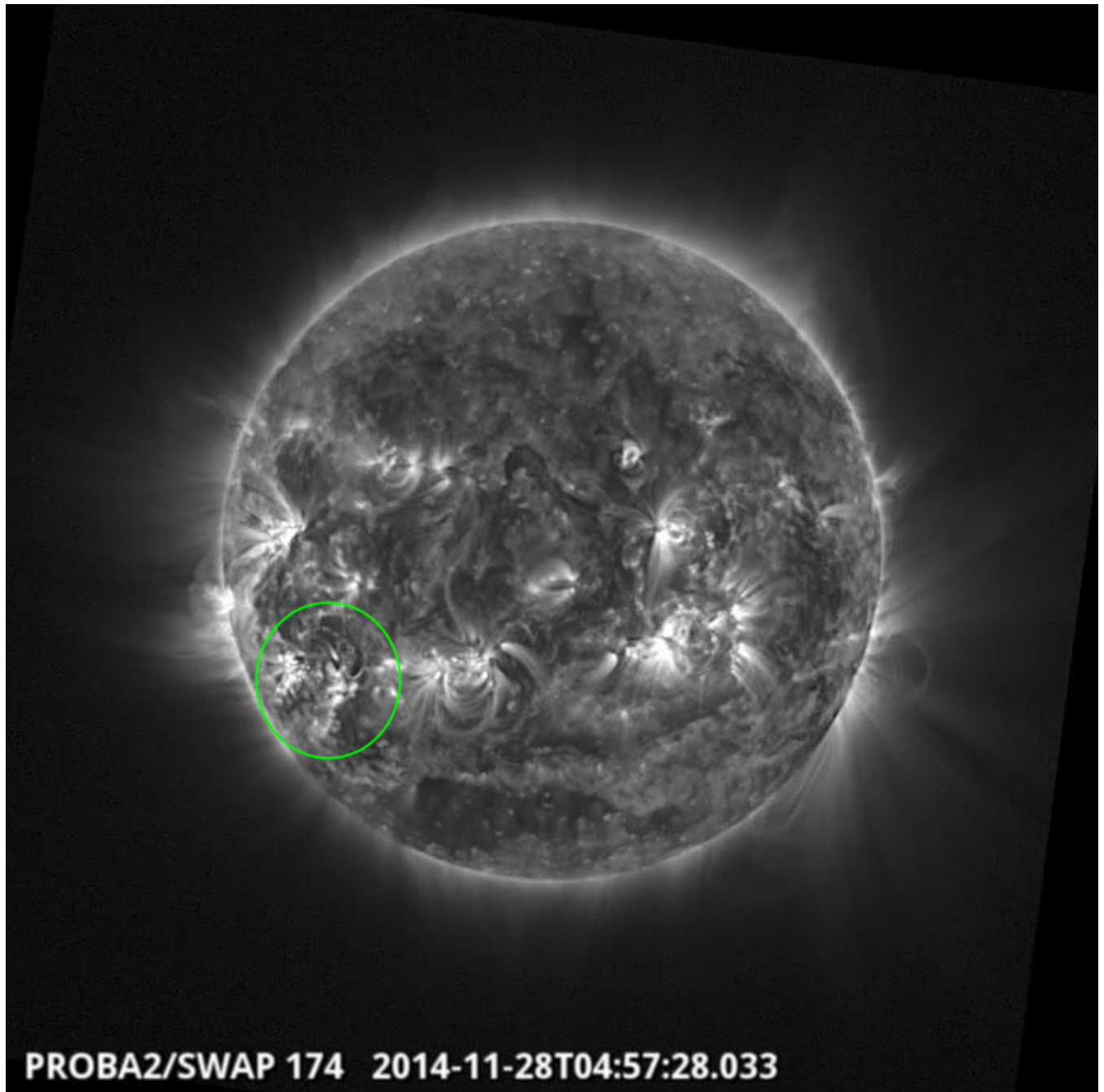
Details about some of this week's events, can be found further below.

Wednesday Nov 26



Mosaic of the images taken during an off-point to the Sun's West focusing on the big active region. Images taken between 19:25 until 20:35

Friday Nov 28

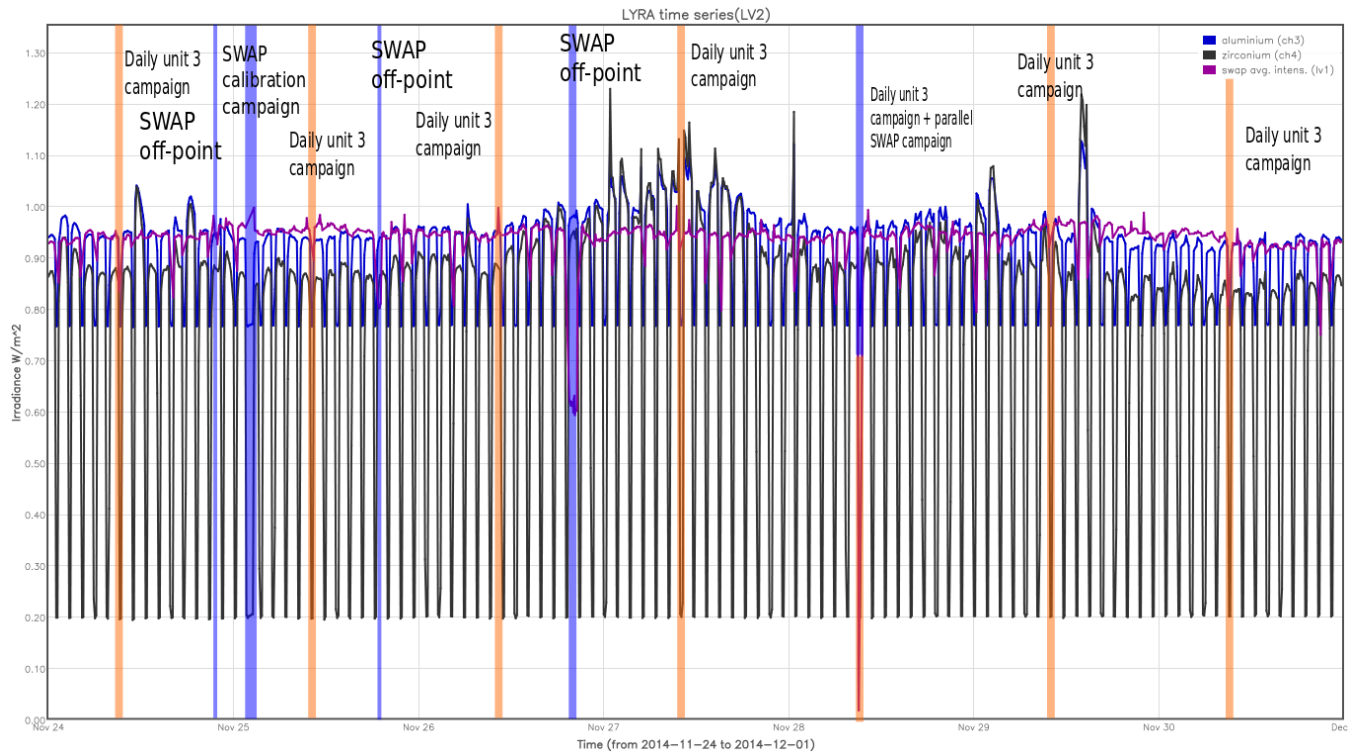


Eruption on the south east quad @ 04:57 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

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 off-point to the west
- SWAP calibration plus extra darks
- SWAP off-point, two times
- SWAP and LYRA parallel occultation campaign

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

- LYRA 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

- Judith de Patoul SWAP “Morphology of evolution of plume and inter-plume regions.”
- Janet Machol LYRA “Investigation of solar flares at the Lyman-alpha wavelength with LYRA & GOES data”

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 24 Nov	Tuesday 25 Nov	Wednesday 26 Nov	Thursday 27 Nov	Friday 28 Nov	Saturday 29 Nov	Sunday 30 Nov
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
LYIOS00438	LYIOS00438	LYIOS00438	LYIOS00438	LYIOS00439	LYIOS00439	LYIOS00439

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 42.4 and 45 °C, taking into account the daily U3 activation periods.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 24047 to 24239.

The number of MCPM unrecoverable errors increased from 2573 to 2741.

IOS & operations

Monday 24 Nov	Tuesday 25 Nov	Wednesday 26 Nov	Thursday 27 Nov	Friday 28 Nov	Saturday 29 Nov	Sunday 30 Nov
Nominal acquisition + off-point	Nominal acquisition + off-point + calibration	Nominal acquisition + off-point	Nominal acquisition	Nominal acquisition + occultation campaigning	Nominal acquisition	Nominal acquisition
IOS00550 -> IOS00551 586 images	IOS00551 -> IOS00552 618 images	IOS00552 -> IOS00553 599 images	IOS00553 557 images	IOS00554 653 images	IOS00554 614 images	IOS00554 617 images

Special operations for SWAP, this week:

- Off-point campaign to the Sun's west, three times
- calibration campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -3.6 and -2 °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 15858 to 15909) 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 Nov 24 0UT and 2014 Dec 01 0UT: 4244

Highest cadence in this period: 29 seconds

Average cadence in this period: 142.34 seconds

Number of image gaps larger than 300 seconds: 102

Largest data gap: 30.18 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
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)