


P2SC-ROB-WR-298 - 20151207 Weekly report #298	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Dec 07 to Sun Dec 13, 2015 16 Dec 2015 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

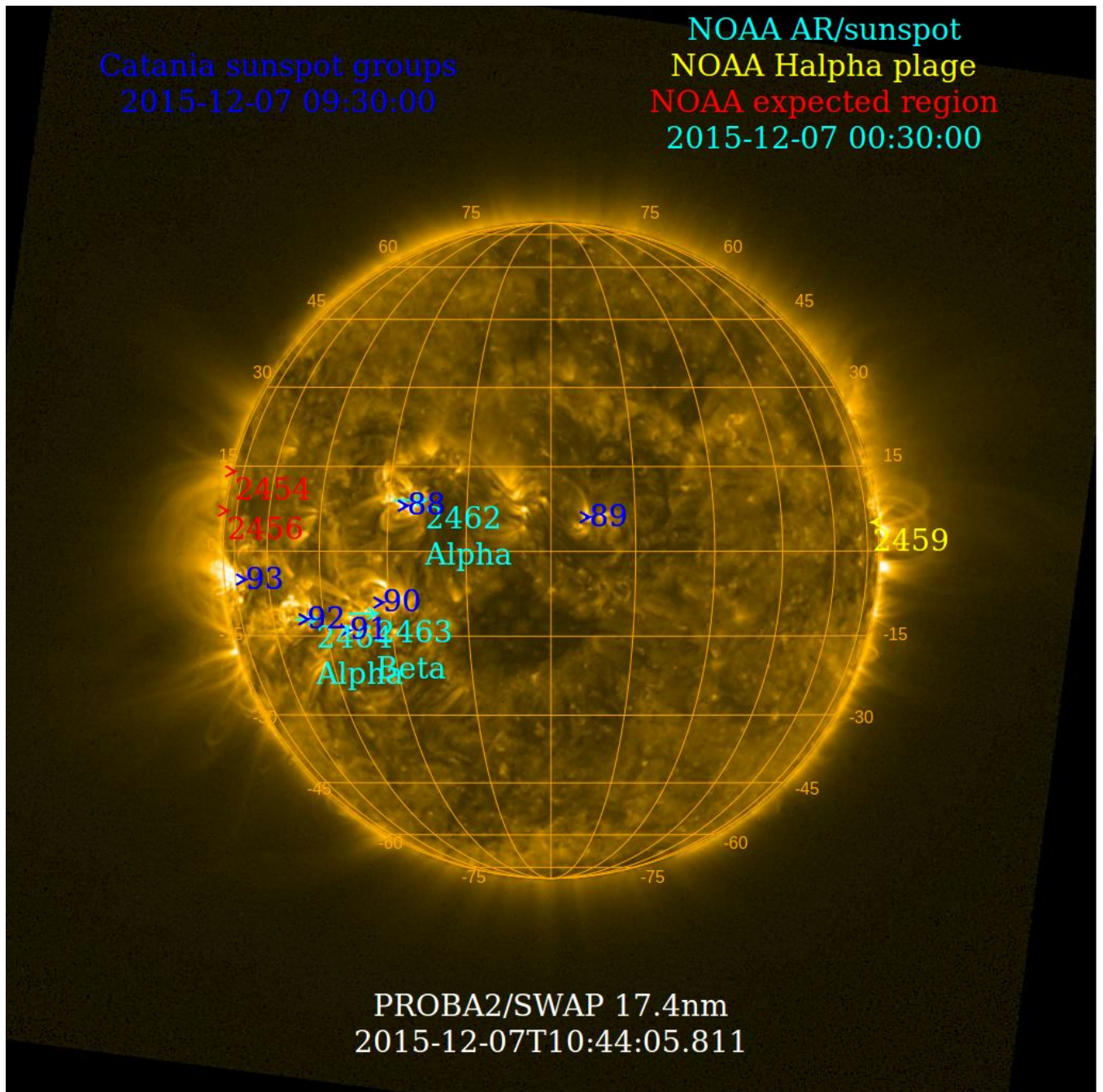
The level of solar activity¹ remained **low** this week.

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

	Monday 07 Dec	Tuesday 08 Dec	Wednesday 09 Dec	Thursday 10 Dec	Friday 11 Dec	Saturday 12 Dec	Sunday 13 Dec
Activity	low	low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

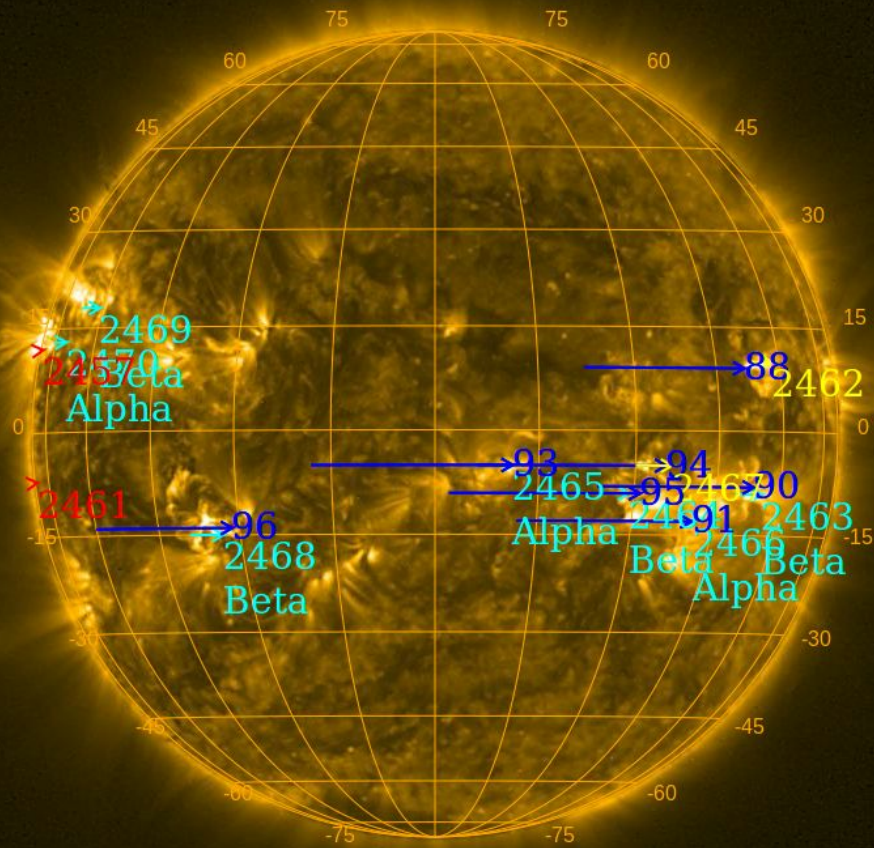
The SWAP images of Dec 07 and Dec 13 are shown below, with annotated active regions.



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

Catania sunspot groups
2015-12-11 11:00:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-12-13 00:30:00



PROBA2/SWAP 17.4nm
2015-12-13T10:40:26.891

Solar Activity

Solar flare activity remained low during the week.

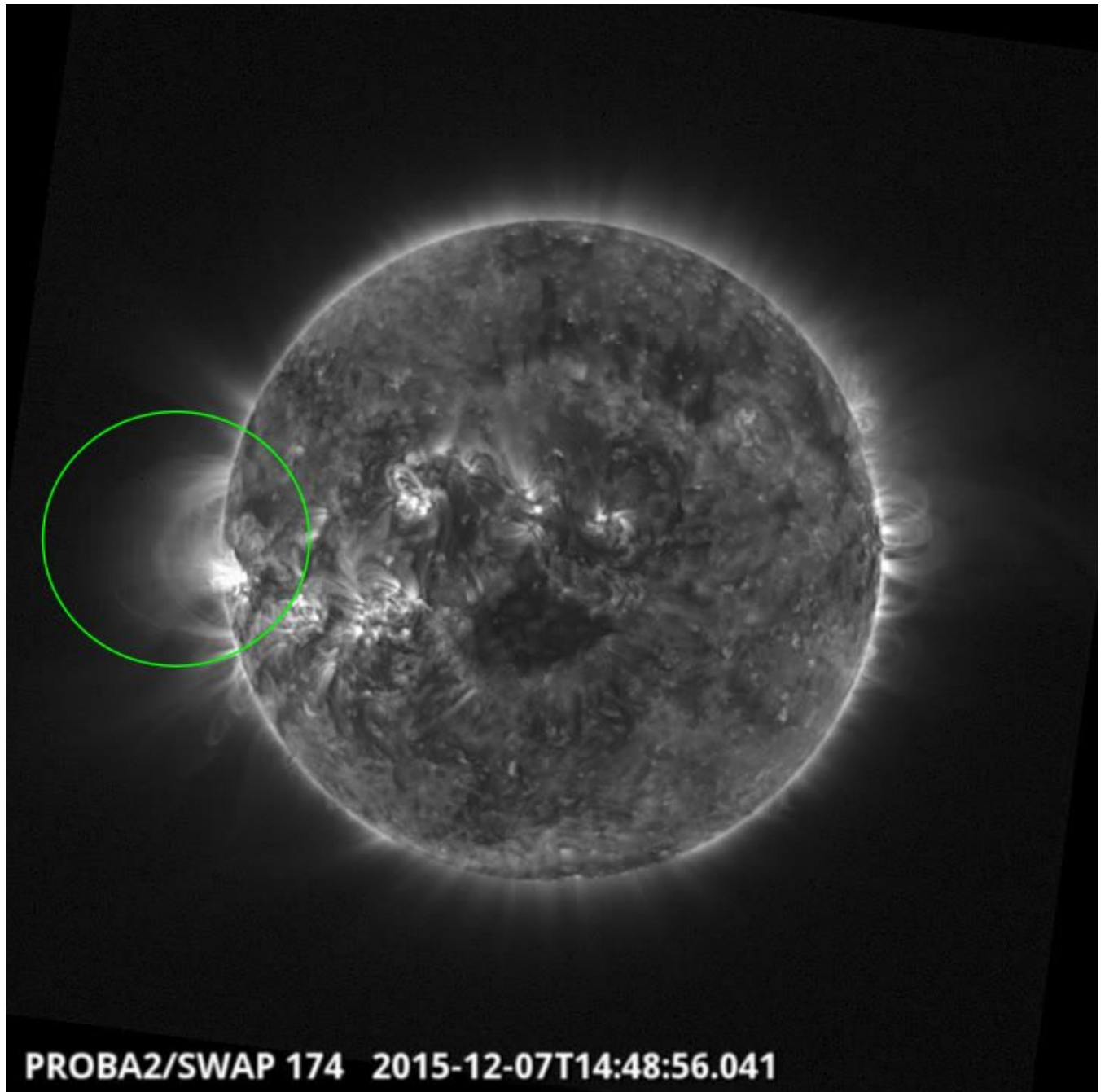
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 298).

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

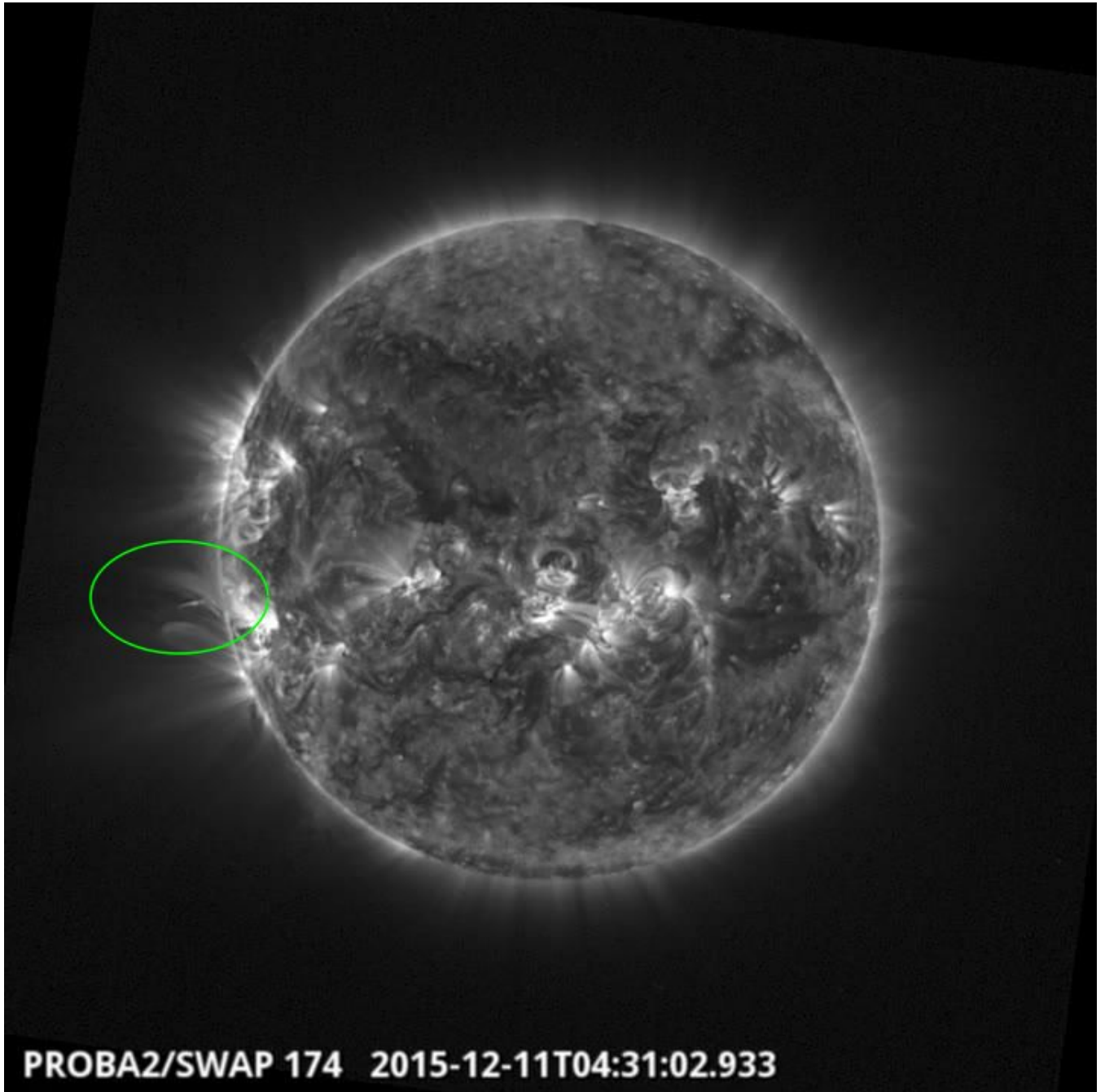
Monday Dec 07



There was an eruption off of the East limb @ 14:48 UT on 2015-Dec-07 - The above SWAP image shows the eruption initiation

Find a movie of the events [here](#) (SWAP movie)

Friday Dec 11

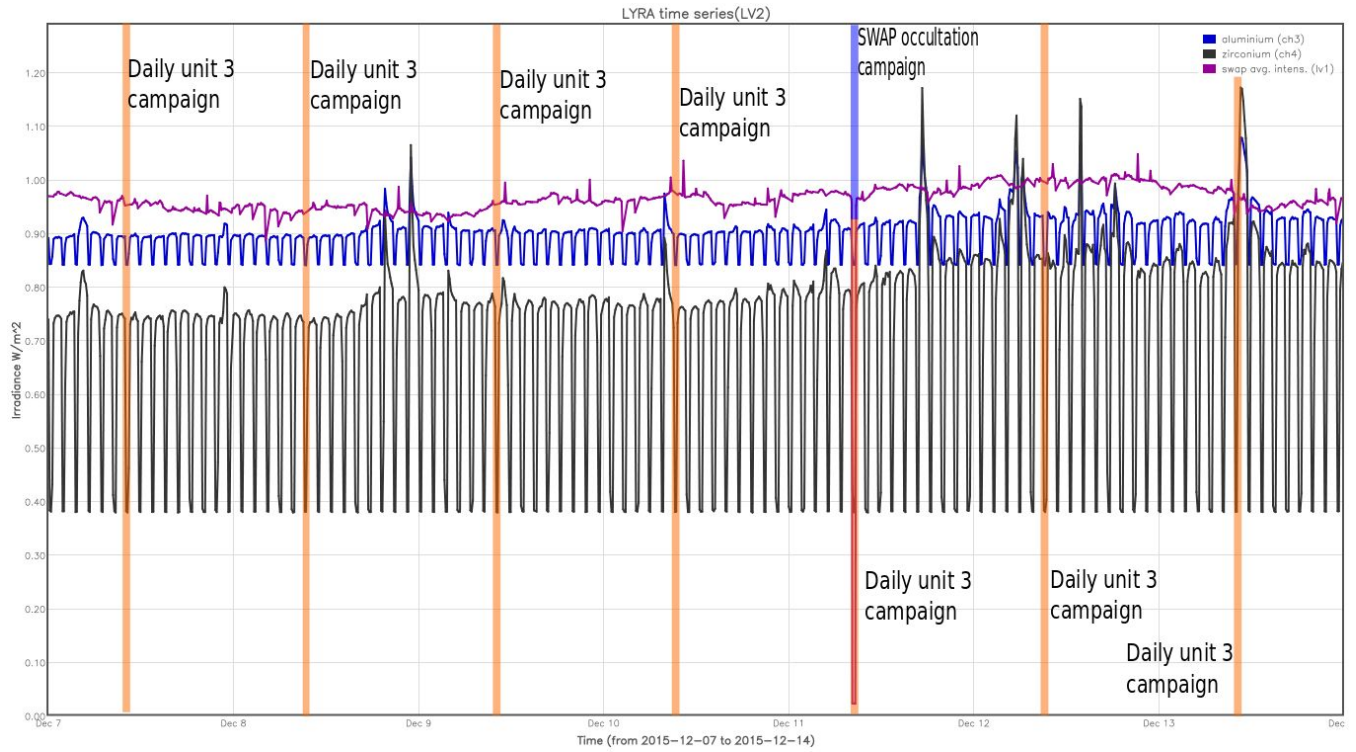


There was an eruption observed by SWAP off of the East limb @ 04:31 UT on 11-Dec-2015
Find a movie of the event [here](#) (SWAP movie)

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 parallel occultation campaign, 2015-12-11

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

- Daily unit 3 campaign, 2015-12-07
- Daily unit 3 campaign, 2015-12-08
- Daily unit 3 campaign, 2015-12-09
- Daily unit 3 campaign, 2015-12-10
- Daily unit 3 campaign, 2015-12-11
- Daily unit 3 campaign, 2015-12-12
- Daily unit 3 campaign, 2015-12-13

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>).

- R.Vansintjan gave a presentation at the SOLARNET FAS meeting “Progress and status on the SOLARNET VO”, data access was demonstrated with PROBA2 data.

Guest Investigator Program

- P. Bryans worked with SWAP observations on his GI project: “Studying the Origins of the Fast Solar Wind.”

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 07 Dec	Tuesday 08 Dec	Wednesday 09 Dec	Thursday 10 Dec	Friday 11 Dec	Saturday 12 Dec	Sunday 13 Dec
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
LYIOS00514	LYIOS00514	LYIOS00514	LYIOS00514	LYIOS00515	LYIOS00515	LYIOS00515

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 40 and 42.6 °C.

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 1058 to 1092.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 07 Dec	Tuesday 08 Dec	Wednesday 09 Dec	Thursday 10 Dec	Friday 11 Dec	Saturday 12 Dec	Sunday 13 Dec
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + occultation campaign	Nominal acquisition	Nominal acquisition
IOS00612 681 images	IOS00612 696 images	IOS00612 745 images	IOS00612 697 images	IOS00613 -> IOS00614 709 images	IOS00614 691 images	IOS00614 675 images

Special operations for SWAP, this week:

- SWAP occultation campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -4.4 and -2.7 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

The following changes were made to the P2SC:

- An update to the pass planning database was made to correct for a bug.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 19207 to 19268) 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 Dec 07 00:00 UT and 2015 Dec 14 00:00 UT: 4894

Highest cadence in this period: 30 seconds

Average cadence in this period: 123.59 seconds

Number of image gaps larger than 300 seconds: 105

Largest data gap: 34.65 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)