


P2SC-ROB-WR-276 - 20150706 Weekly report #274	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jul 06 to Sun Jul 12, 2015 15 Jul 2015 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

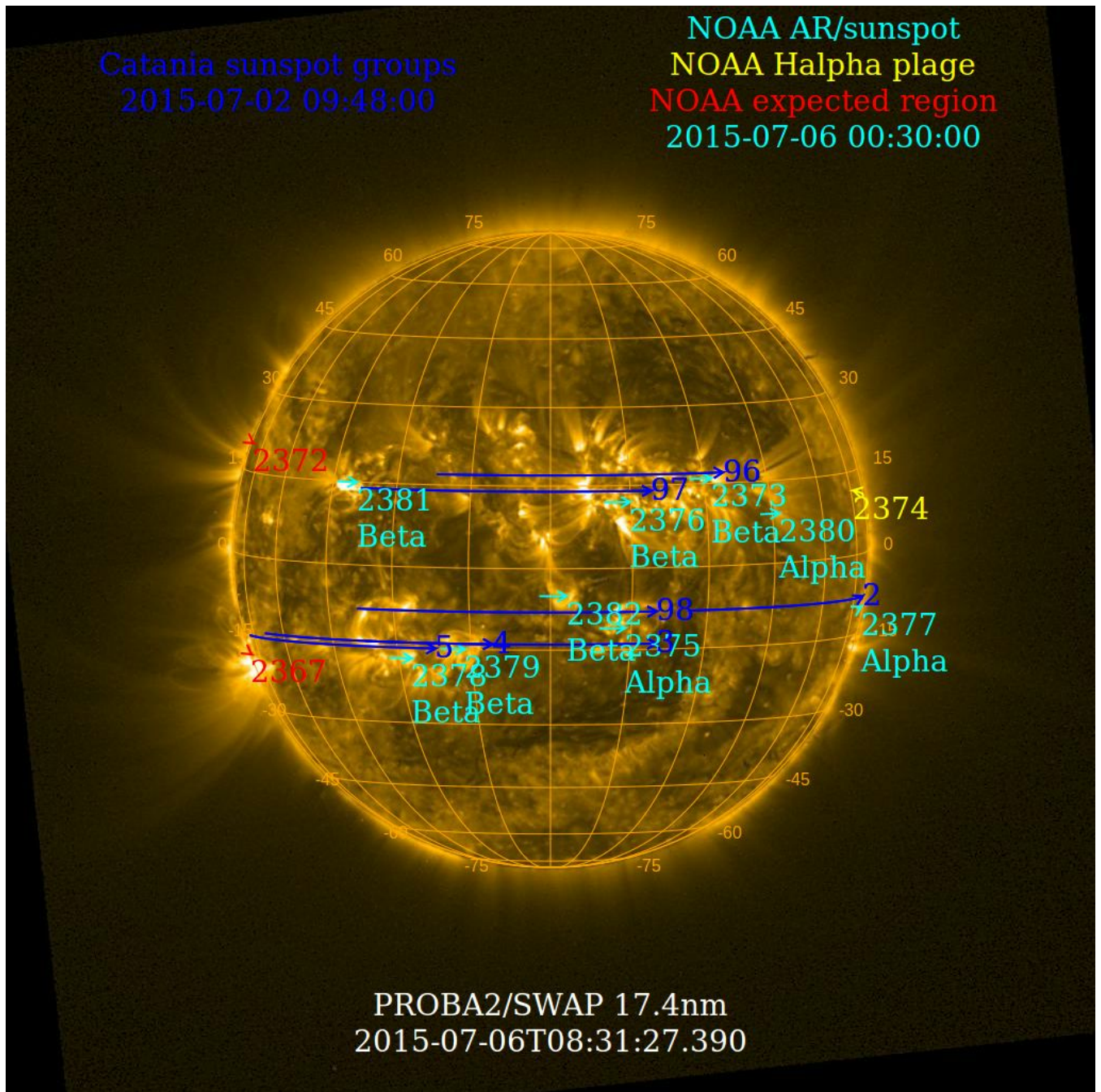
The level of solar activity¹ fluctuated between **very low** and **moderate** this week.

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

	Monday 06 Jul	Tuesday 07 Jul	Wednesday 08 Jul	Thursday 09 Jul	Friday 10 Jul	Saturday 11 Jul	Sunday 12 Jul
Activity	moderate	low	low	low	low	low	very low
Flares	M1.7@20:40 M1.0@08:44	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

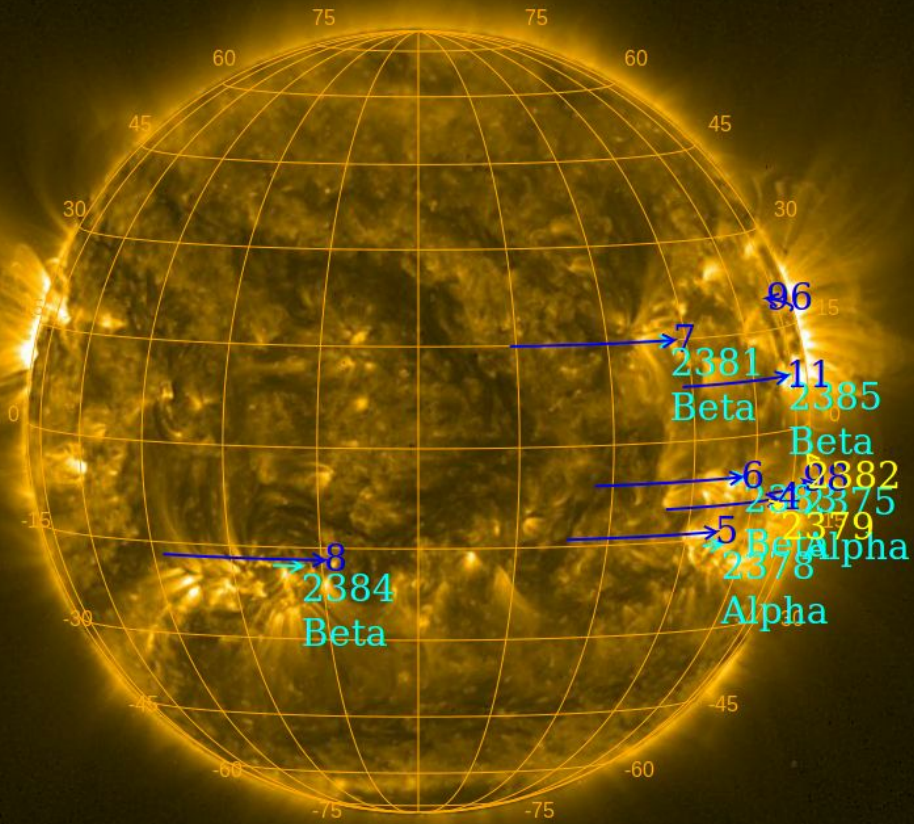
The SWAP images of Jul 06 and Jul 12 are shown below, with annotated active regions.



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

Catania sunspot groups
2015-07-10 09:00:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-07-12 00:30:00



PROBA2/SWAP 17.4nm
2015-07-12T08:30:16.115

Solar Activity

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

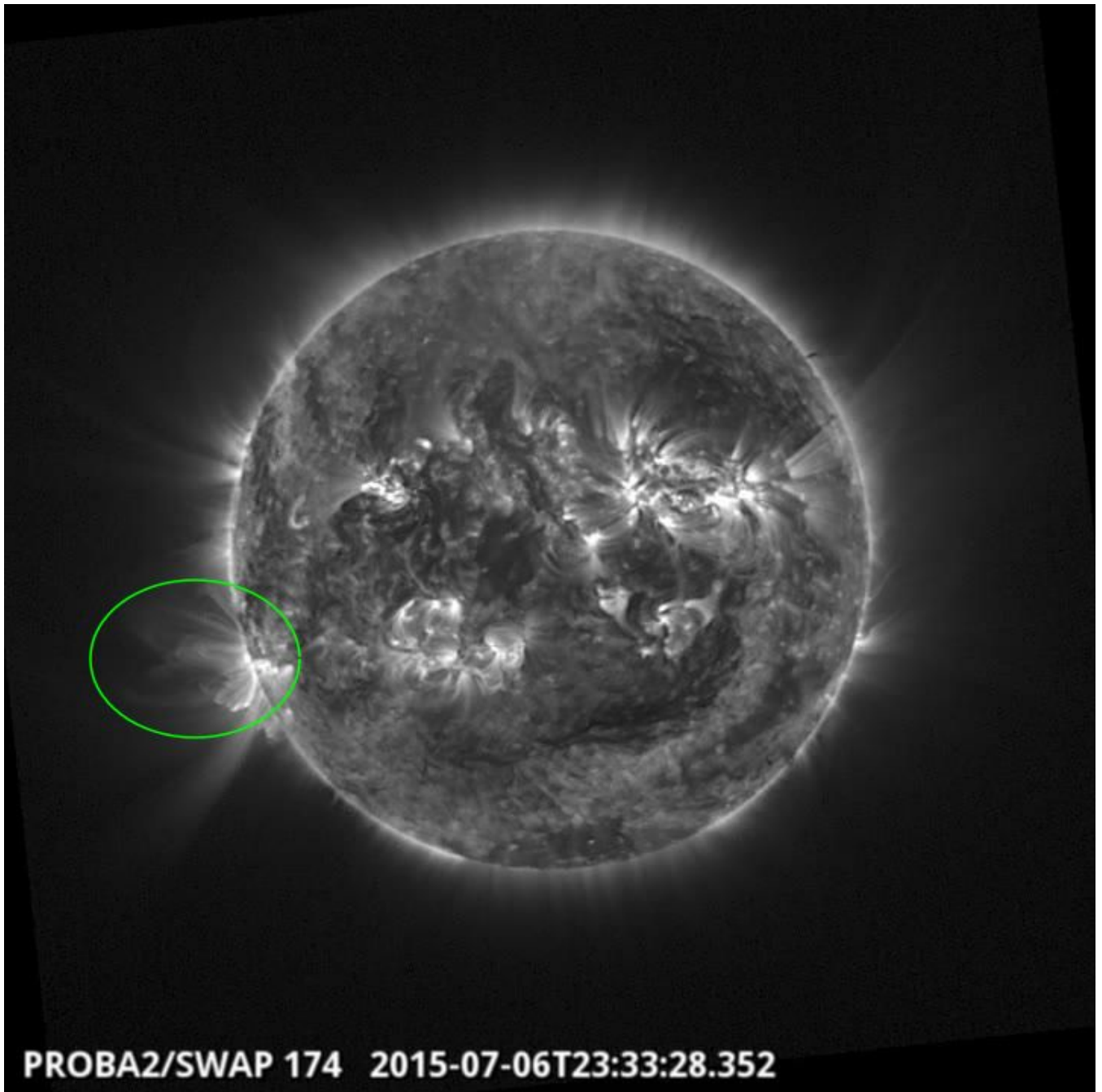
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 276).

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

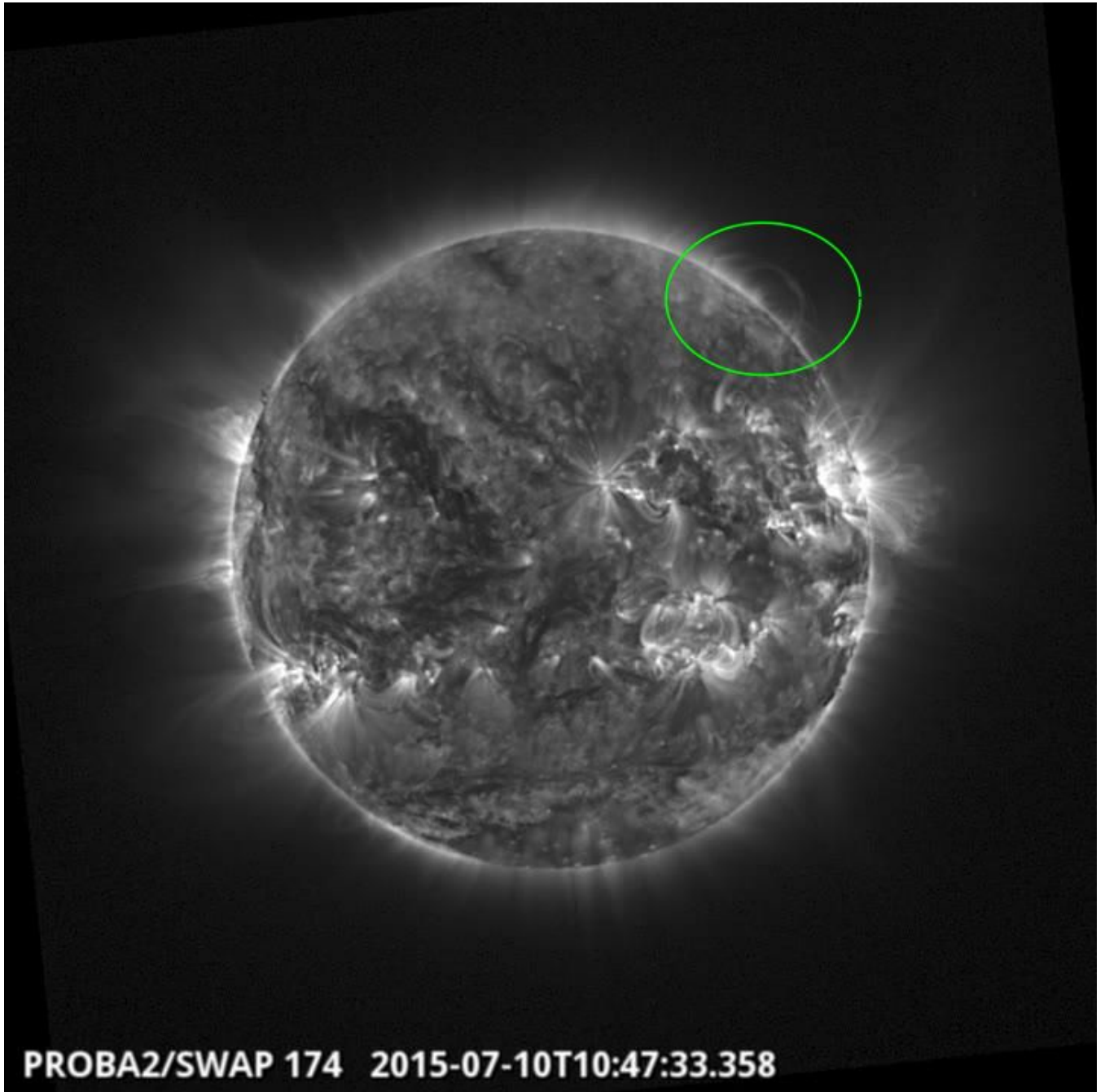
Monday Jul 06



PROBA2/SWAP 174 2015-07-06T23:33:28.352

Post eruption loops growing on the east limb @ 23:33 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

Friday Jul 10

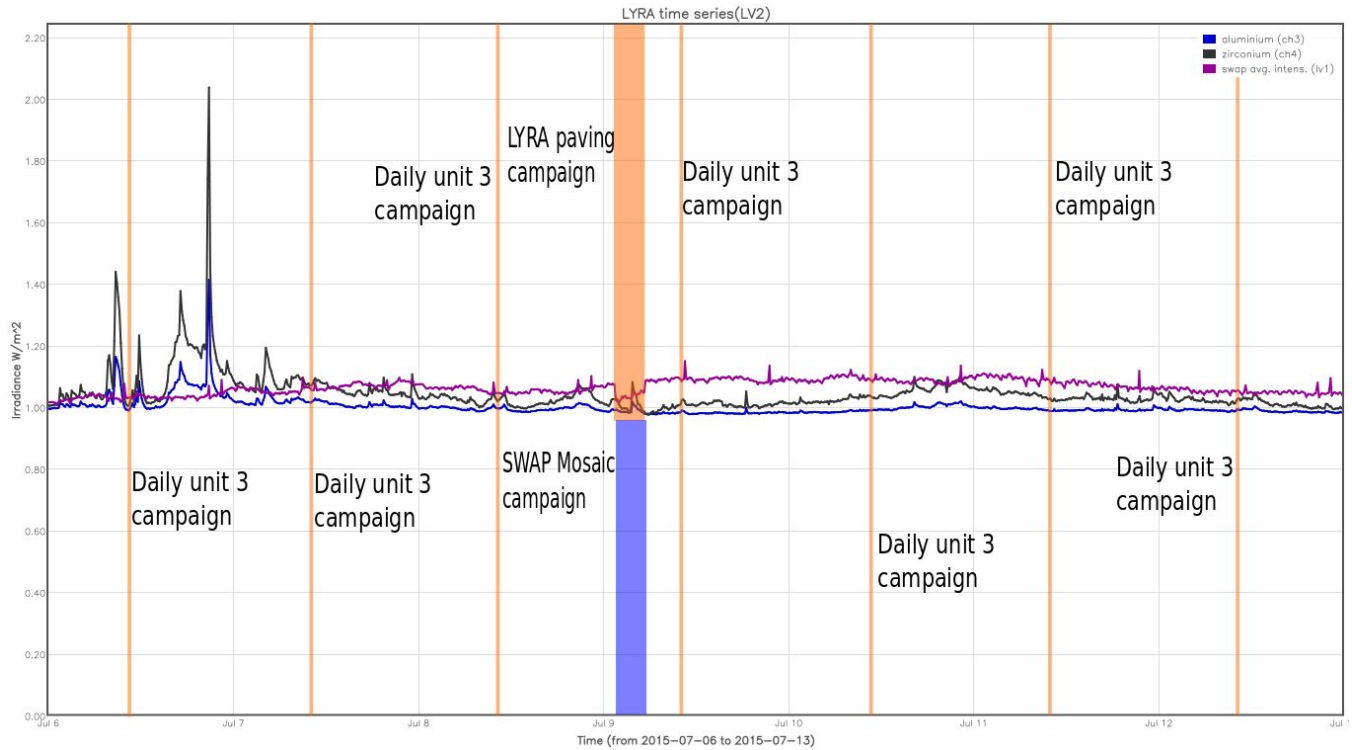


Plasma dynamics on the north west limb @ 10:47 - SWAP image
Find a movie of the event [here](#) (SWAP movie)

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 mosaic campaign, 2015-07-19

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

- Daily unit 3 campaign, 2015-07-06
- Daily unit 3 campaign, 2015-07-07
- Daily unit 3 campaign, 2015-07-08
- LYRA paving campaign, 2015-07-09
- Daily unit 3 campaign, 2015-07-09
- Daily unit 3 campaign, 2015-07-10
- Daily unit 3 campaign, 2015-07-11
- Daily unit 3 campaign, 2015-07-12

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>).

- Rachmeler, L. A. presented “Southern Polar Field Reversal as revealed by a pseudostreamer” at the SHINE 2015 Workshop in Stowe, VT, USA from 2015-Jul-06-10. The work relies heavily on observations of pseudostreamers seen by PROBA2.
- Guest Investigator C. S. Arridge presented “The upstream solar wind at Venus: The accuracy of ENLIL simulations compared with data from Venus Express and PROBA-2” at the UK National Astronomy Meeting 2015 on 2015-Jul-05.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 06 Jul	Tuesday 07 Jul	Wednesday 08 Jul	Thursday 09 Jul	Friday 10 Jul	Saturday 11 Jul	Sunday 12 Jul
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + paving campaign	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00482	LYIOS00482	LYIOS00482	LYIOS00483	LYIOS00483	LYIOS00483	LYIOS00483

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- paving campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.3 and 49.7 °C.

3. SWAP instrument status

Calibration

No calibration campaigns this week.

MCPM errors

The number of MCPM recoverable errors increased from 124 to 126.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 06 Jul	Tuesday 07 Jul	Wednesday 08 Jul	Thursday 09 Jul	Friday 10 Jul	Saturday 11 Jul	Sunday 12 Jul
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + mosaic campaign	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00587 668 images	IOS00587 672 images	IOS00587 674 images	IOS00588 658 images	IOS00588 656 images	IOS00588 583 images	IOS00588 558 images

Special operations for SWAP, this week:

- Mosaic campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1 and -0.23 °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 17846 to 17908) 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 Jul 06 0UT and 2015 Jul 13 0UT: 4469

Highest cadence in this period: 0 seconds

Average cadence in this period: 135.33 seconds

Number of image gaps larger than 300 seconds: 172

Largest data gap: 9.17 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)