


P2SC-ROB-WR-335 - 20160822 Weekly report #335	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Aug 22 to Sun Aug 28, 2016 02 Sep 2016 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

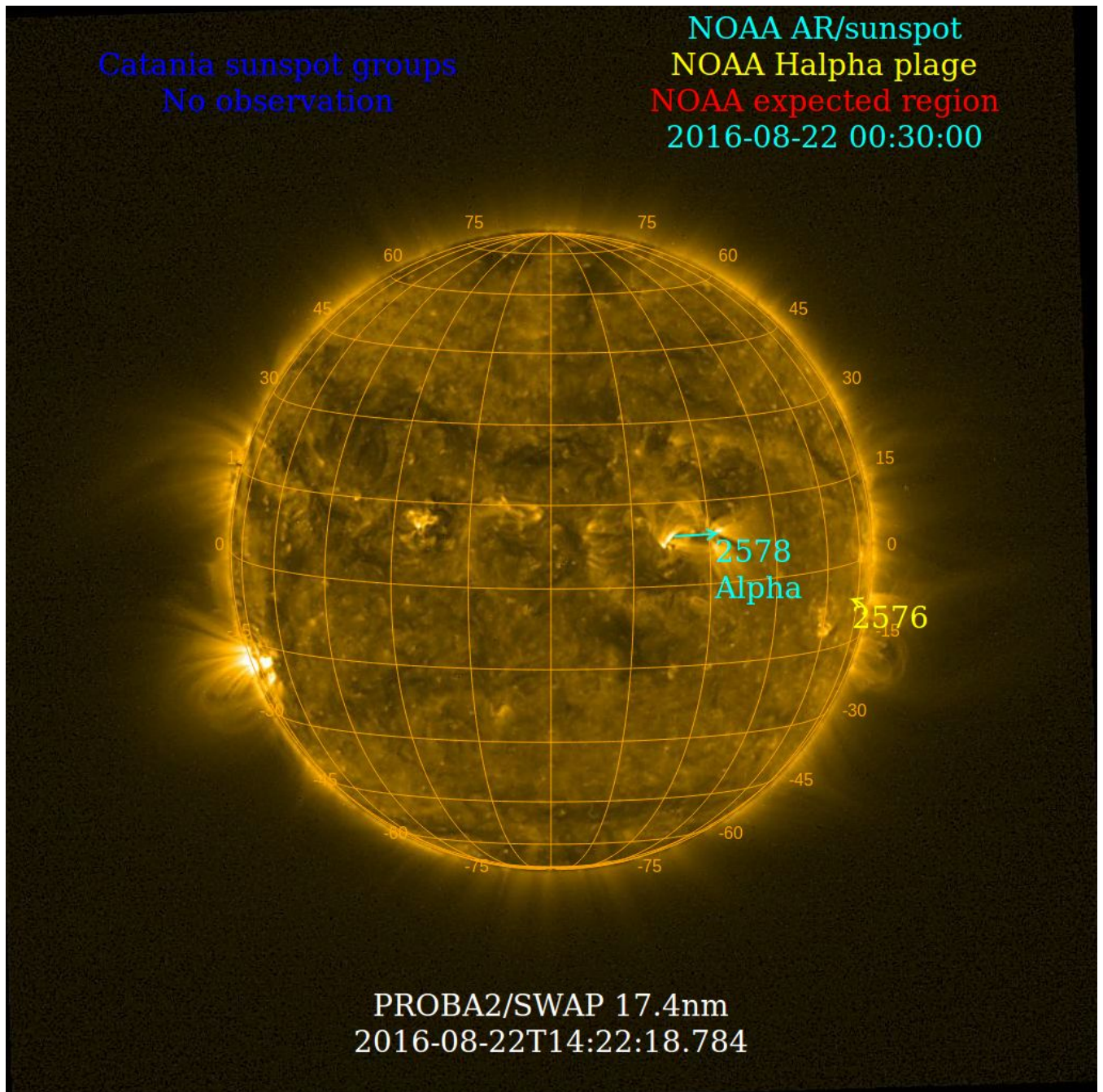
The level of solar activity¹ fluctuated between **very low** and **low** this week.

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

	Monday 22 Aug	Tuesday 23 Aug	Wednesday 24 Aug	Thursday 25 Aug	Friday 26 Aug	Saturday 27 Aug	Sunday 28 Aug
Activity	very low	very low	very low	very low	very low	very low	low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

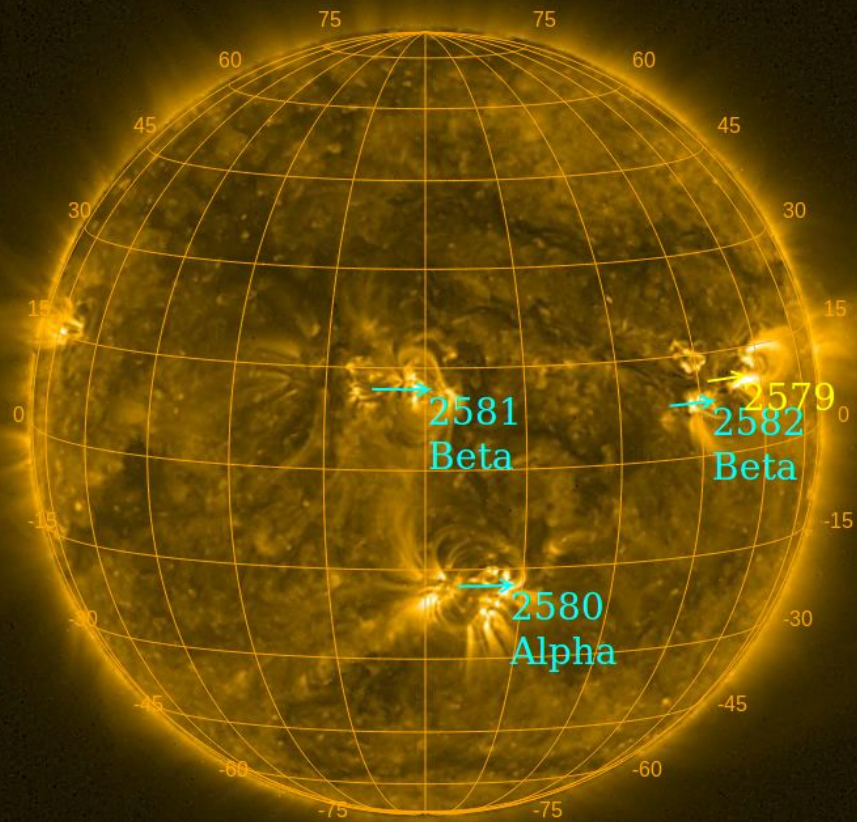
The SWAP images of Aug 22 and Aug 28 are shown below, with annotated active regions.



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

Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2016-08-28 00:30:00



PROBA2/SWAP 17.4nm
2016-08-28T14:23:17.516

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>

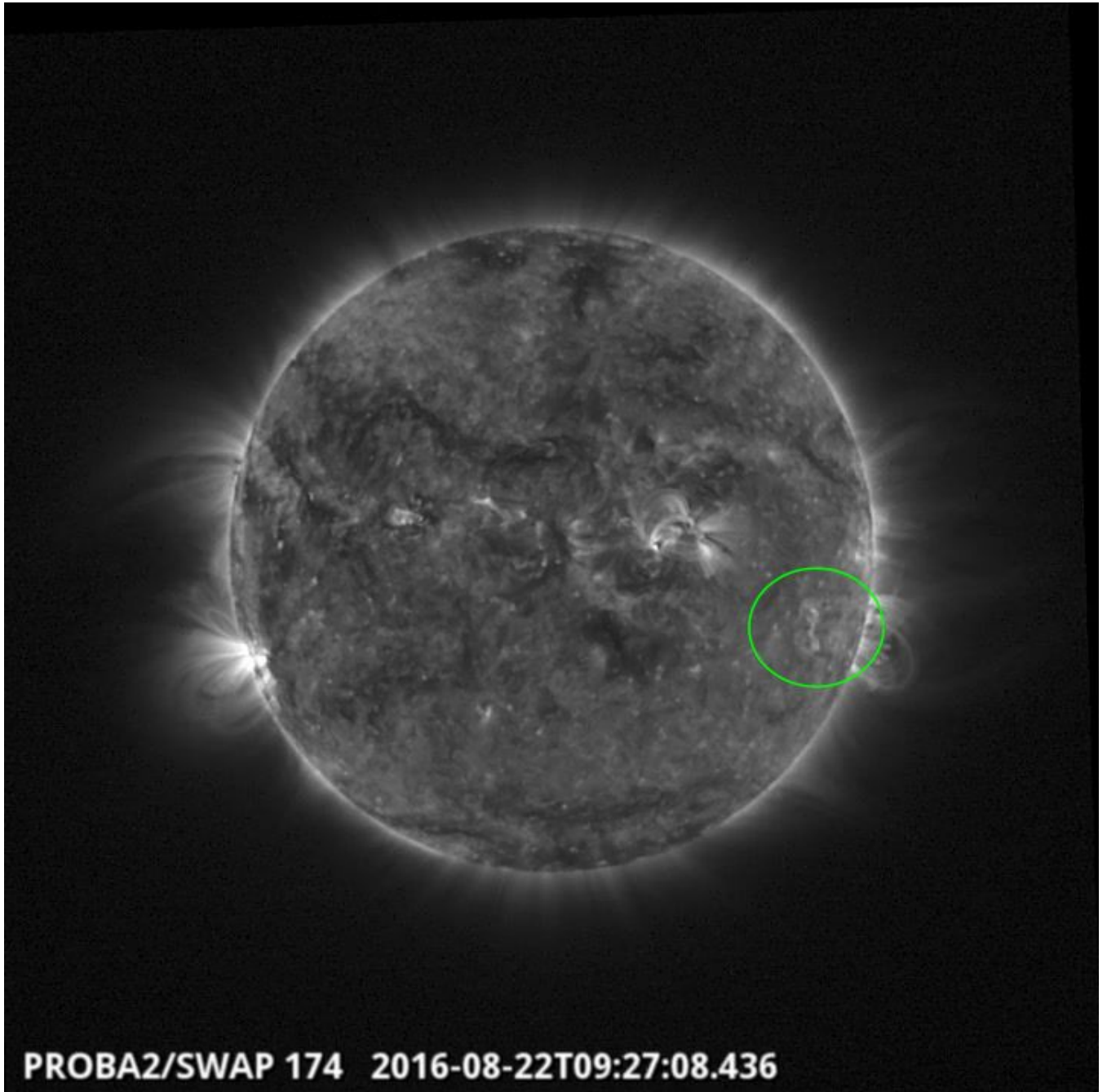
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 335).

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

If any of the linked movies are unavailable they can be found in the P2SC movie repository [here](#)

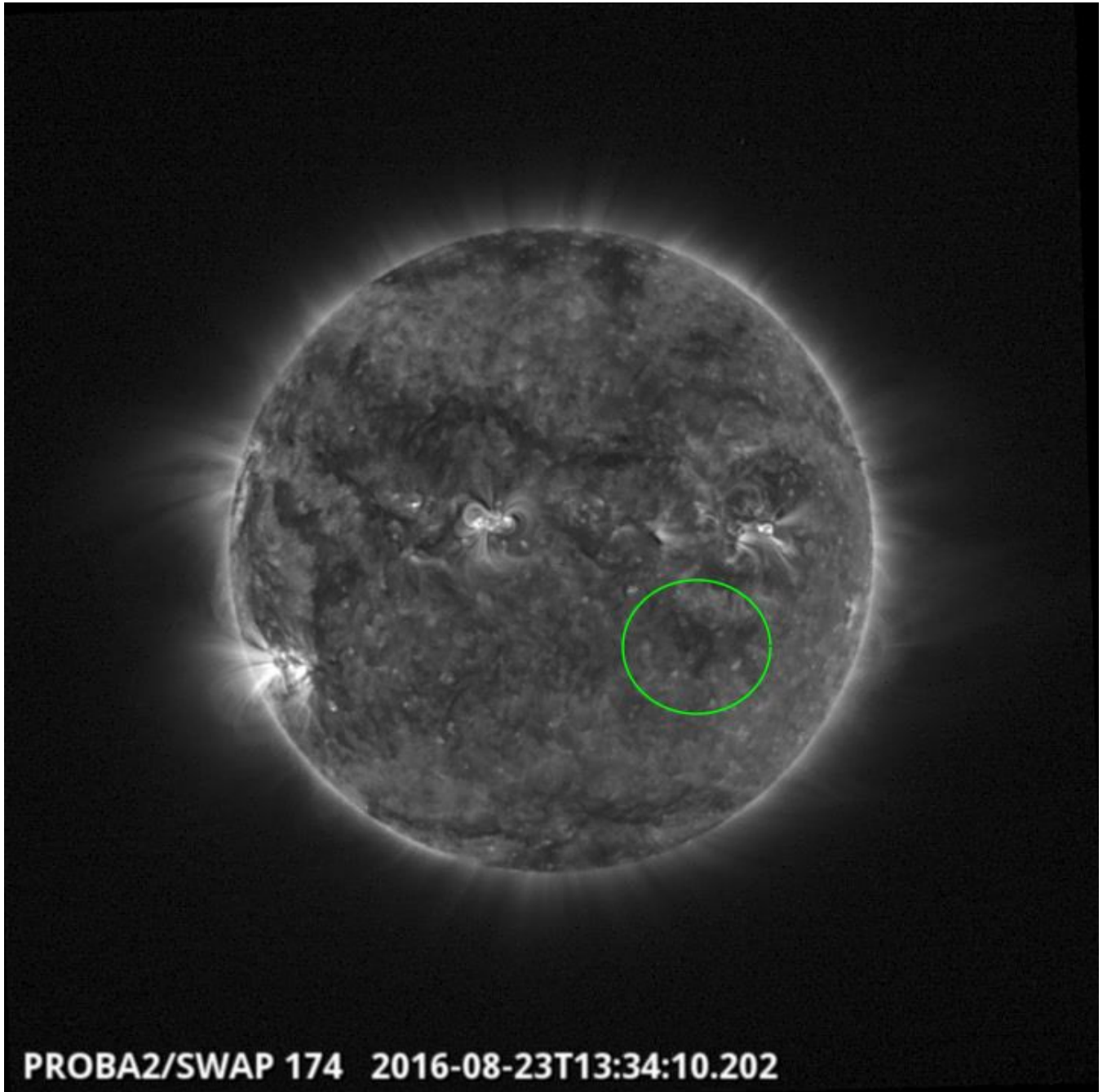
Monday Aug 22



**An eruption was observed by SWAP in the western hemisphere of the Sun on 2016-Aug-22 at
09:27 UT**

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

Tuesday Aug 23



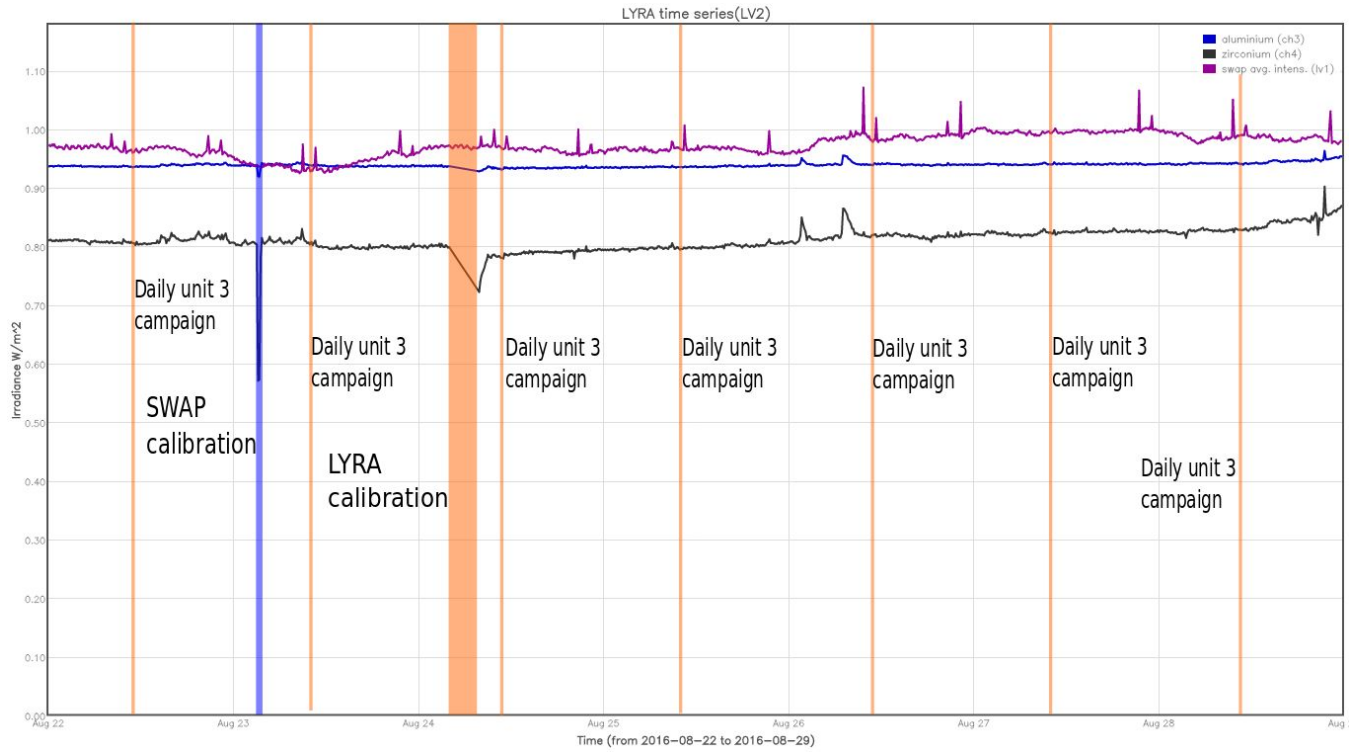
A coronal hole was observed by SWAP in western hemisphere of the Sun on 2016-Aug-23 at 13:34 UT, the associated High Speed Stream increased the ambient solar wind speed at Earth enhancing geomagnetic activity.

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:

- Bi-weekly SWAP calibration, 2016-Aug-23

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

- Daily unit 3 campaign, 2016-Aug-22
- Daily unit 3 campaign, 2016-Aug-23
- Bi-weekly calibration campaign, 2016-Aug-24
- Daily unit 3 campaign, 2016-Aug-24
- Daily unit 3 campaign, 2016-Aug-25
- Daily unit 3 campaign, 2016-Aug-26
- Daily unit 3 campaign, 2016-Aug-27
- Daily unit 3 campaign, 2016-Aug-28

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>).

F. Goryaev, PROBA2 GI, presented his research using the SWAP instrument in the weekly PROBA2 meeting. The work is titled: "Study of properties of the inner corona and search of solar wind flows by illumination from backside solar flares."

Guest Investigator Program

- F. Goryaev SWAP Study of properties of the inner corona and search of solar wind flows by illumination from backside solar flares.

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 22 Aug	Tuesday 23 Aug	Wednesday 24 Aug	Thursday 25 Aug	Friday 26 Aug	Saturday 27 Aug	Sunday 28 Aug
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
LYIOS00576	LYIOS00576	LYIOS00576	LYIOS00576	LYIOS00576	LYIOS00576	LYIOS00576

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

On 2016-08-24

- Bi-weekly calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 46.5 and 48.6 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 3644 to 3650.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 22 Aug	Tuesday 23 Aug	Wednesday 24 Aug	Thursday 25 Aug	Friday 26 Aug	Saturday 27 Aug	Sunday 28 Aug
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00657 551 images	IOS00657 670 images	IOS00657 599 images	IOS00657 638 images	IOS00657 656 images	IOS00657 573 images	IOS00657 654 images

Special operations for SWAP, this week:

On 2016-Aug-23

- Bi-weekly calibration campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.2 and -0.6 °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 21558 to 21619) 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 Aug 22 0UT and 2016 Aug 29 0UT: 4341

Highest cadence in this period: 0 seconds

Average cadence in this period: 139.30 seconds

Number of image gaps larger than 300 seconds: 187

Largest data gap: 11.00 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
DAC	Data Acquisition Controller
DBR	Deployment, backup & recovery
DDA	Decommutated data archive
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)