


P2SC-ROB-WR-144- 20121224 Weekly report #144	<p style="text-align: center;">P2SC Weekly report</p>	
Period covered: Date: Written by: Approved by:	Mon Dec 24 to Sun Dec 30, 2012 07 Jan 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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Between December 24th, 2012 and January 2nd, 2013, P2SC was unmanned. All commanding to ensure the usual regular operations were sent ahead of time. All operations during this period were executed successfully

1. Science

Solar & Space weather events

Overview

The level of solar activity¹ this week. Only M- and X-flares are mentioned:

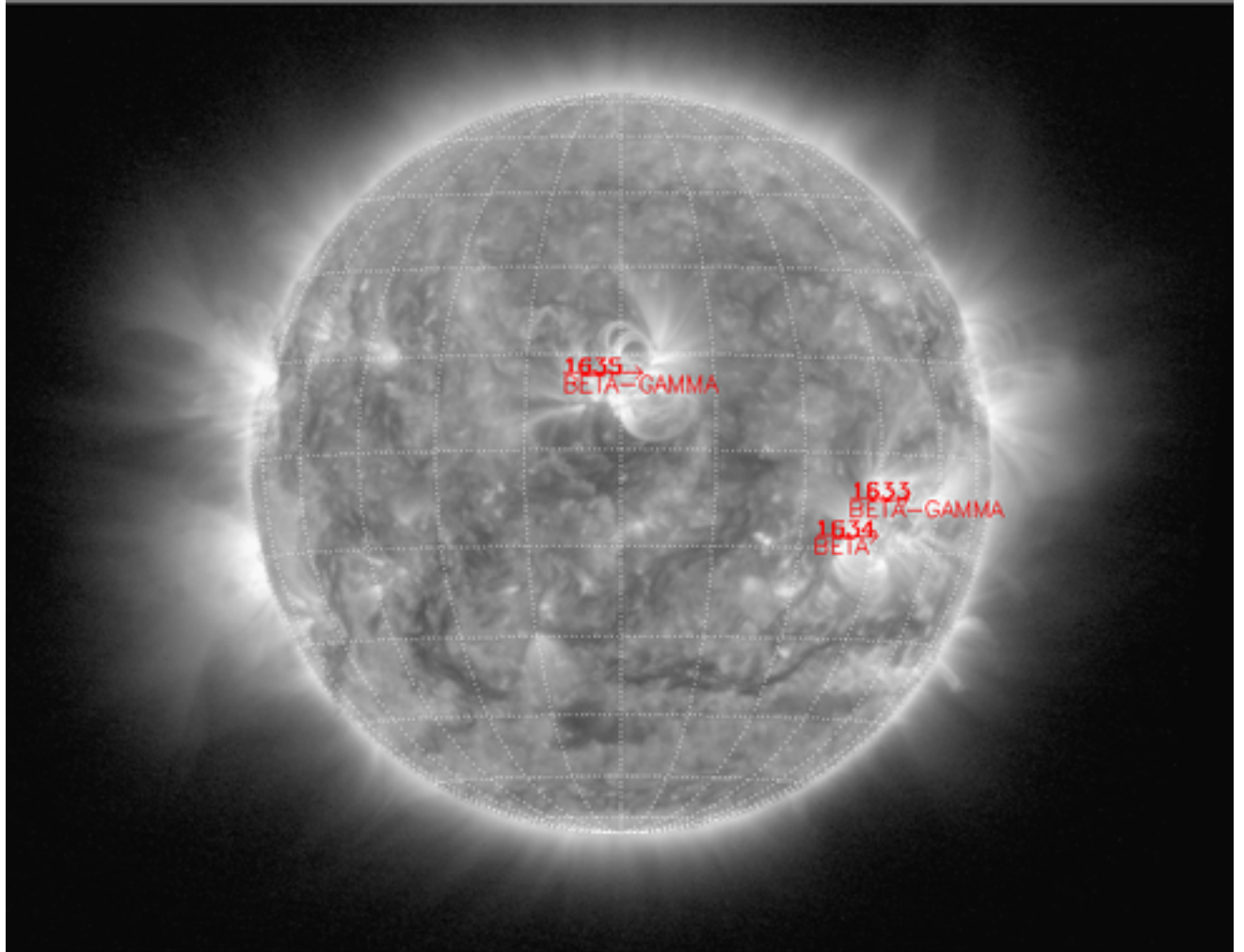
	Monday 24 Dec	Tuesday 25 Dec	Wednesday 26 Dec	Thursday 27 Dec	Friday 28 Dec	Saturday 29 Dec	Sunday 30 Dec
Activity	low	low	low	low	very low	low	very low
Flares	-	-	-	-	-	-	-

On the following pages, the SWAP images of Dec 24 and Dec 30 are shown, with annotated active regions.

¹ See appendix. All timings are given in UT.

No recent Catania data available

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-12-24T00:30

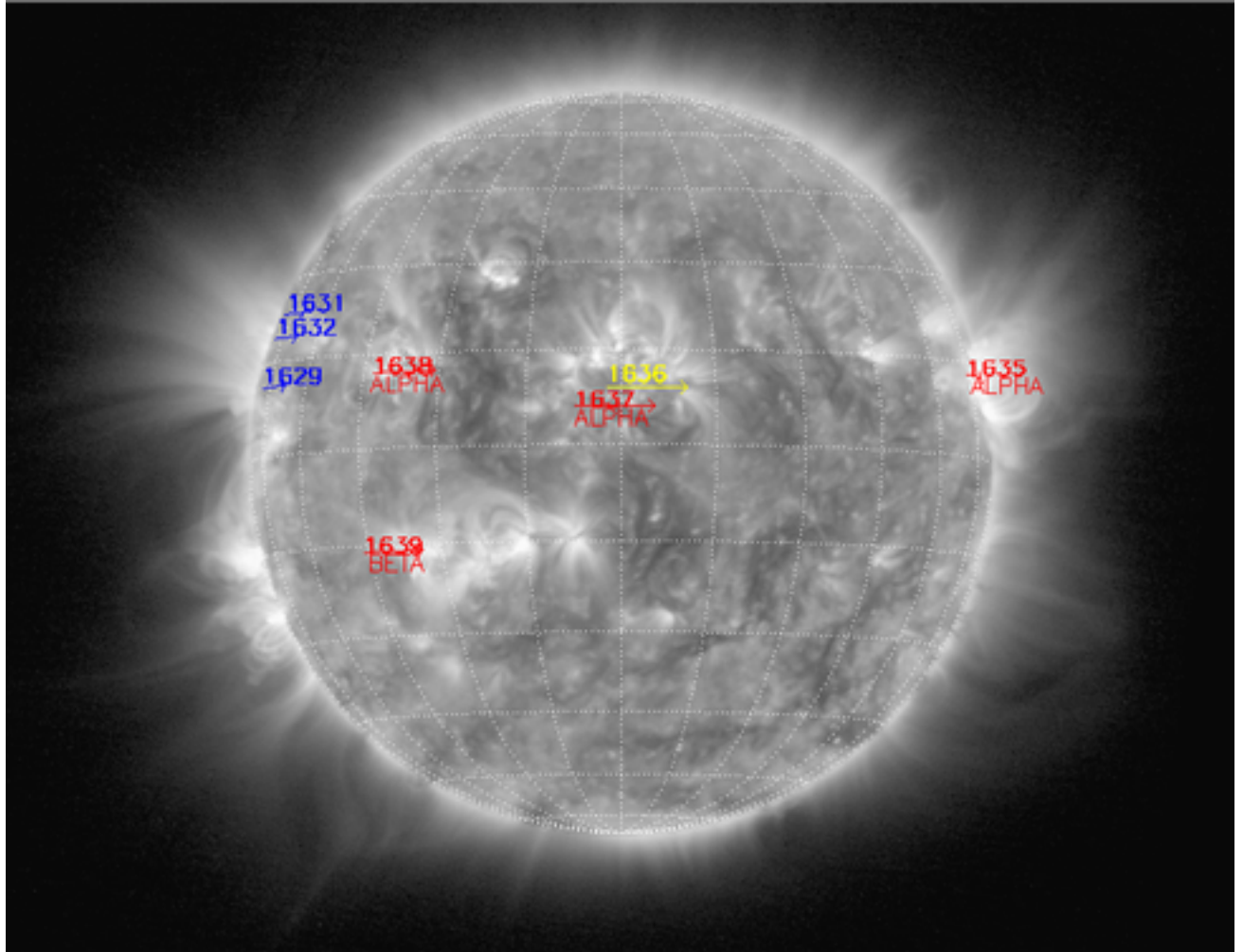


PROBA2/SWAP 17nm
2012-12-24T22:56:21.180

<http://sidc.be/html/CmapPage.html>

No recent Catania data available

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-12-30T00:30



PROBA2/SWAP 17nm
2012-12-30T22:47:55.121

Solar Activity

It was again a calm week on the Sun. Regular C-class flaring originated from NOAA AR 1635 on Dec 24 and Dec 25, the largest event being a C4.1 flare on Dec 25. One additional flare originated from NOAA AR 1638 on Dec 29.

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.

As for last week, a few filament eruptions occurred during this week, which were hardly or not visible in the SWAP images. No further particularly noteworthy events could be identified in the SWAP movies.

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 (solar intensity derived from 'integrated' SWAP images)

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

- ESP experiment on Thursday
- Coordinated imaging campaign with LYRA daily U3 campaign on Friday.

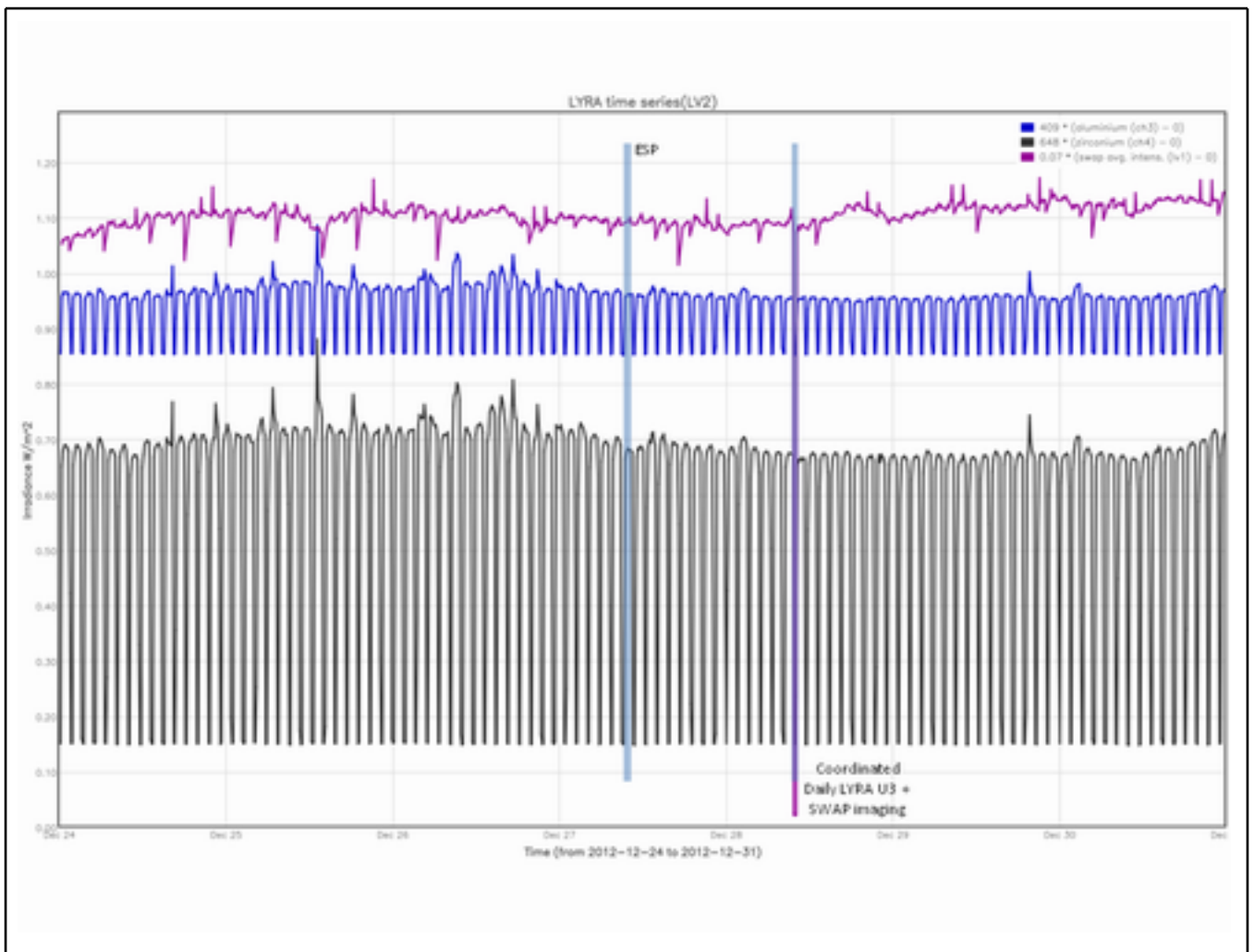
The orange shaded periods correspond to, from left to right:

- None

The red shaded period corresponds to:

-

None



Outreach, papers, presentations, etc.

- None

Please also 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.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No LYRA calibration this week.

IOS & operations

Monday 24 Dec	Tuesday 25 Dec	Wednesday 26 Dec	Thursday 27 Dec	Friday 28 Dec	Saturday 29 Dec	Sunday 30 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
LYIOS00296	LYIOS00296	LYIOS00296	LYIOS00296	LYIOS00296	LYIOS00296	LYIOS00296

The following science campaigns were performed by LYRA:
- the daily U3 campaign.

LYRA detector temperature

LYRA detector 2 temperature fluctuated between 38.6 and 41.5 degrees C, including the daily U3 activation periods. The latter resulted in a temperature increase of about 0.4 degrees.

To be explored

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3. SWAP instrument status

Calibration

No SWAP calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 5572 to 5639.

The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 24 Dec	Tuesday 25 Dec	Wednesday 26 Dec	Thursday 27 Dec	Friday 28 Dec	Saturday 29 Dec	Sunday 30 Dec
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + ESP	Nominal acquisition + SWAP/LYRA coordination	Nominal acquisition	Nominal acquisition
IOS00436 552 images	IOS00436 555 images	IOS00437 556 images	IOS00437 537 images	IOS00437 612 images	IOS00437 555 images	IOS00438 556 images

Special operations for SWAP, this week:

- Occultation jumps
- ESP jump
- Coordinated imaging campaign with LYRA daily U3 campaign on Friday.

SWAP detector temperature

The SWAP Cold Finger Temperature, under nominal operations, increased generally, fluctuating between - 3.0 and - 4.8 degrees Celsius.

To be explored

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4. PROBA2 Science Center Status

The main operator is Koen Stegen.

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 9803 to 9862) was nominal, except for:

- None

Data coverage HK

All HK data files (LYRA_AD) have been received, except for:

- None

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except for:

- None

Total number of images between 2012 Dec 24 0UT and 2012 Dec 31 0UT: 3922

Highest cadence in this period: 29 seconds

Average cadence in this period: 153.93 seconds

Number of image gaps larger than 300 seconds: 102

Largest data gap: 31.83 minutes

The large gap is due to the execution of the ESP experiment on Thursday.

The number of (smaller) gaps is due to the implementation of the SWAP occultation jumps.

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except for:

- 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	BaseBand Equipment
CME	Coronal Mass Ejection
COGEX	Cool Gas Generator Experiment
CRC	Cyclic Redundancy Check
EIT	Extreme ultraviolet Imaging Telescope
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
OBET	On board Elapsed Time
OBSW	On board Software
PI	Principal Investigator
P2SC	PROBA2 Science Center
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SEU	Single Event Upset
SOHO	Solar and Heliospheric Observatory
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

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)
- (+ extreme?)