P2SC-ROB-WR-097-20120130 Weekly report #097	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Jan 30 to Mon Feb 06, 2012 09 Feb 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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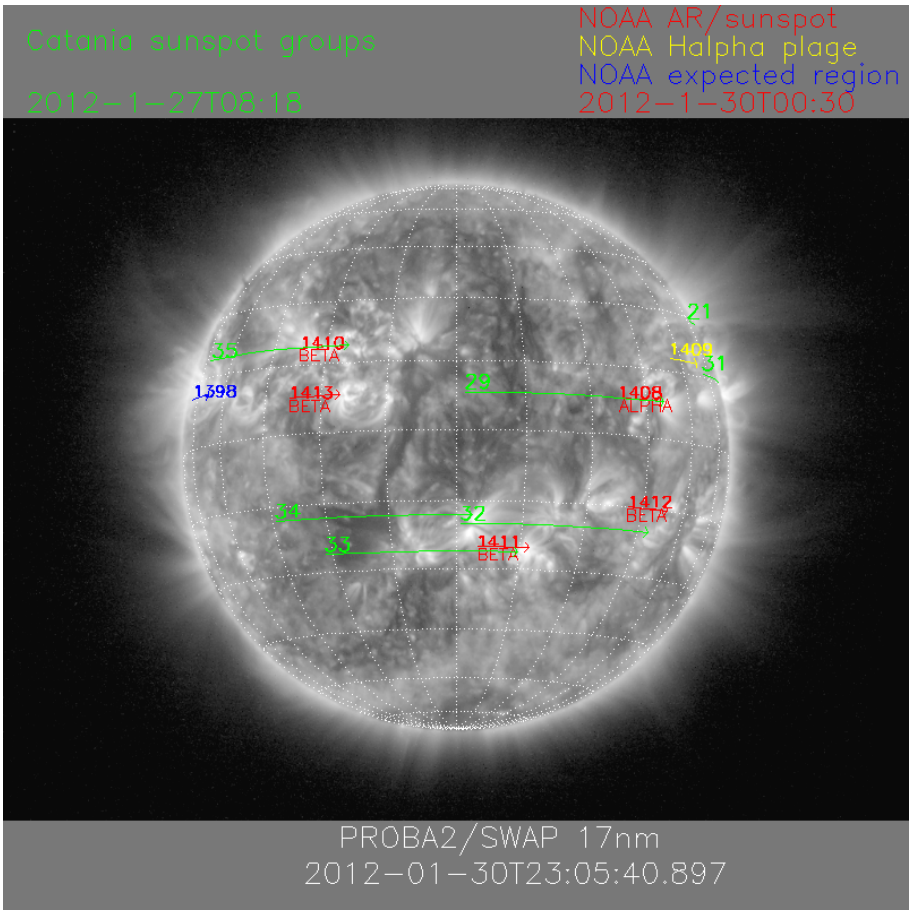
1. Science

Solar & Space weather events

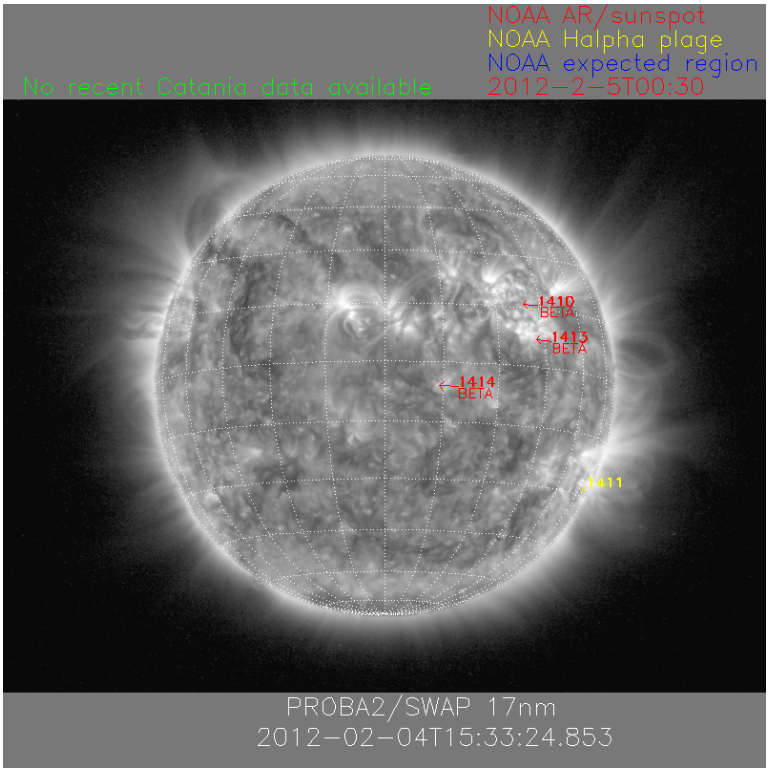
Overview

Solar activity was low this week. Two C1-level flares were reported.

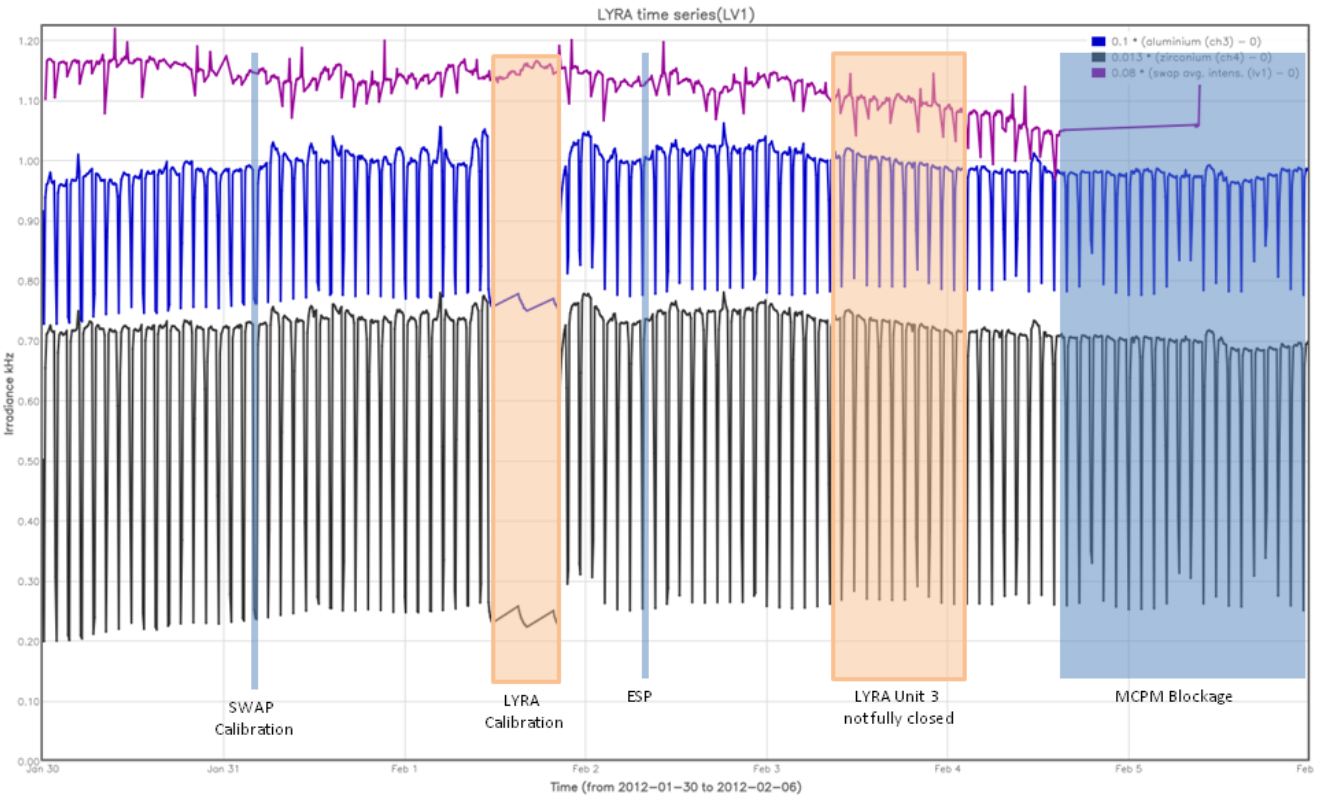
The SWAP images of Jan 30 and Feb 05 are shown below, with annotated active regions.



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



Below is provided an overview of the weekly LYRA & SWAP data:



The blue shaded periods correspond, from left to right, to 1. a SWAP calibration on Tue, 2. the ESP campaign on Thu and 3. the MCPM blockage on Sat/Sun.
The orange shaded period corresponds, from left to right, to 1. LYRA Calibration on Wednesday, and 2. the LYRA Unit 3 anomaly on Fri/Sat.

Note that the depth of the occultations slowly indicates that the occultation season is coming to an end at the end of February.

Scientific campaigns

The following LYRA and SWAP specific scientific campaigns are on-going:
- daily LYRA occultation ingress & egress (planned around 10:00 every day), with channel 3,
- bi-weekly, on Monday, a LYRA occultation ingress & egress with channel 1, right after the channel 3 occultation of that Monday (not performed this week),
- the weekly SWAP occultation ingress & egress imaging (planned on Mon, in parallel to the 10:00 LYRA occultation) was not performed this week - the occultations are currently overlapping too much with Large Angle Rotations, which render the SWAP images unusable.

Outreach, papers, presentations, etc.

- A section of the weekly STCE bulletin covers the weekly results of SWAP & LYRA

2. LYRA instrument status

Calibration

LYRA calibration this week was performed on Wednesday - it was extended with a back-up acquisition with unit 2 & 1:
- LYRA calibration on Wednesday at 11:00
- LYRA backup acquisition with unit 2 & 3 on Wednesday at 20:25
- LYRA backup acquisition with unit 2 & 1 on Wednesday at 22:30

IOS & operations

Monday 30 Jan	Tuesday 31 Jan	Wednesday 01 Feb	Thursday 02 Feb	Friday 03 Feb	Saturday 04 Feb	Sunday 05 Feb
Nominal acquisition LYIOS00216	Nominal acquisition LYIOS00216	Nominal acquisition LYIOS00217	Nominal acquisition LYIOS00217	Nominal acquisition LYIOS00217	Nominal acquisition LYIOS00218	Nominal acquisition LYIOS00218

For the whole week, the daily occultation campaign continued this week.

On Friday, LYRA unit 3 did not 'completely' close, after the daily occultation campaign. Both 'LYRA COV3 OPEN' and 'LYRA COV3 CLOSED' were found to be '0'. An IOS was sent to ensure complete closure of the unit - the commanding was executed on Saturday, the next morning at 04:00.

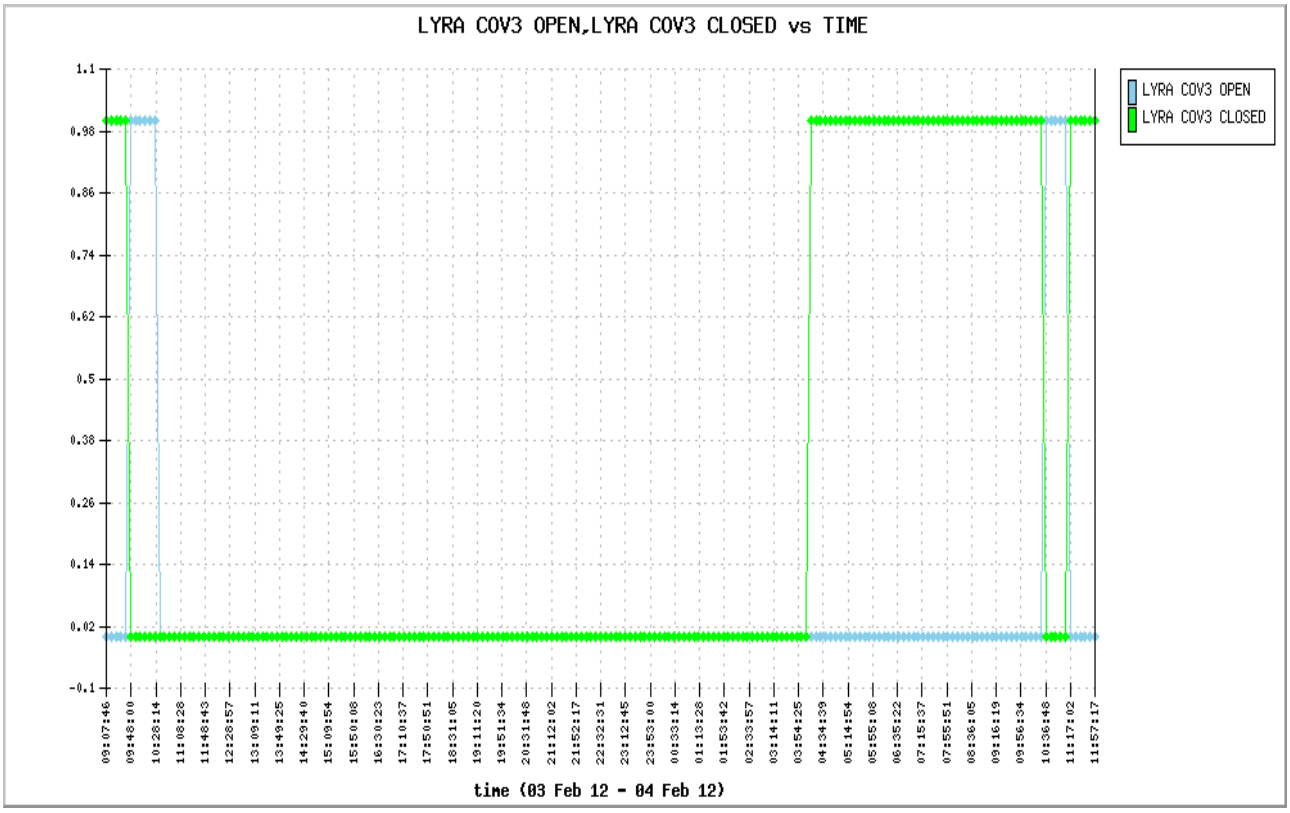


Figure: Both LYRA open and LYRA close are '0'.

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 47.9 and 52.1 (peak) degrees during nominal operations.

From Thursday on, temperatures are slowly dropping.

To be explored
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3. SWAP instrument status

Calibration

SWAP calibration was performed on Tuesday.

MCPM errors
The number of MCPM recoverable errors increased from 1598 to 1761.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 30 Jan	Tuesday 31 Jan	Wednesday 01 Feb	Thursday 02 Feb	Friday 03 Feb	Saturday 04 Feb	Sunday 05 Feb
Nominal acquisition 80s cadence + occult. jumps IOS00363 642 images	Nominal acquisition + occult campaign + occult. jumps IOS00363 593 images	Nominal acquisition + + occult. jumps IOS00364 715 images	Nominal acquisition + + occult. jumps IOS00364 633 images	Nominal acquisition + + occult. jumps IOS00364 635 images	Nominal acquisition + occult. jumps IOS00364 309 images	Nominal acquisition + occult. jumps IOS00364 90 images

Occultation imaging jumps are commanded and performed during each orbit.

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between 0.9 to 3.5 degrees Celsius, under nominal operations. From the current curve, it looks like the maximum temperature for the season was achieved, and is now slowly dropping.

To be explored
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4. PROBA2 Science Center Status

The main operator is Koen Stegen; Erik Pylyser provides support, when needed.

The weekly ‘P2SC Operations meeting’ was held on 01/02/2012.

Updates to P2SC, this week:
- None.

5. Data reception & discussions with MOC

Passes

The delivery of the following passes for this week (passes 6920 till 6979) was not nominal:
- due to the on-board MCPM blockage, BINSWAP files were not delivered for passes 6969 -> 6982.

Data coverage HK
The HK data were complete over this period.

Data coverage SWAP

Due to the MCPM blockage on Saturday, no BINSWAP files were received during the following passes: 6969 -> 6982.

On-board preserved SWAP data from Sunday 5th entered on Monday 6th AM (see SWAVINT curve in section 1. above).

Statistics for the week:

Total number of images between 2012 Jan 30 0UT and 2012 Feb 06 0UT: 3640
Highest cadence in this period: 30 seconds
Average cadence in this period: 160.36 seconds
Number of image gaps larger than 300 seconds: 91
Largest data gap: 1034.92 minutes

The large gap is due to the MCPM blockage.

Data coverage LYRA
The LYRA data were complete.

6. APPENDIX Frequently used acronyms

ADP	Ancillary Data Processor
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
DR	Destructive Readout
DSLP	Dual Segmented Langmuir Probe
EIT	Extreme ultraviolet Imaging Telescope
FITS	Flexible Image Transport System
FOV	Field Of View FPA Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HAS	High Accuracy Star tracker
HK	Housekeeping
ICD	Interface Control Document
IIU	Instrument Interface Unit
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
LEO	Low Earth Orbit
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
PE	Proximity Electronics
PGA	Programmable Gain Amplifier
PI	Principal Investigator
P2SC	PROBA2 Science Center
PPT	Pointing, Positioning and Time (software module of P2SC)
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