P2SC-ROB-WR-100-20120220 Weekly report #100	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Feb 20 to Sun Feb 26, 2012 29 Feb 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, david@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 373 0 559
cc:	ROB DIR, ronald@oma.be ESA Redu, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Stefano.Santandrea@esa.int	

1. Science

Solar & Space weather events

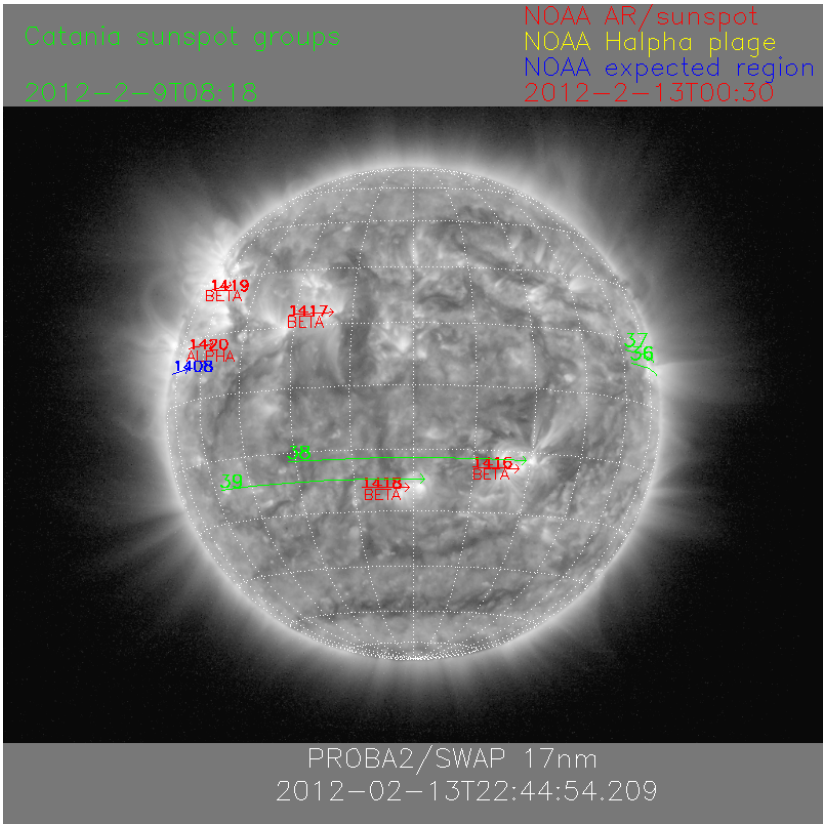
Overview

The level of solar activity this week[1]:

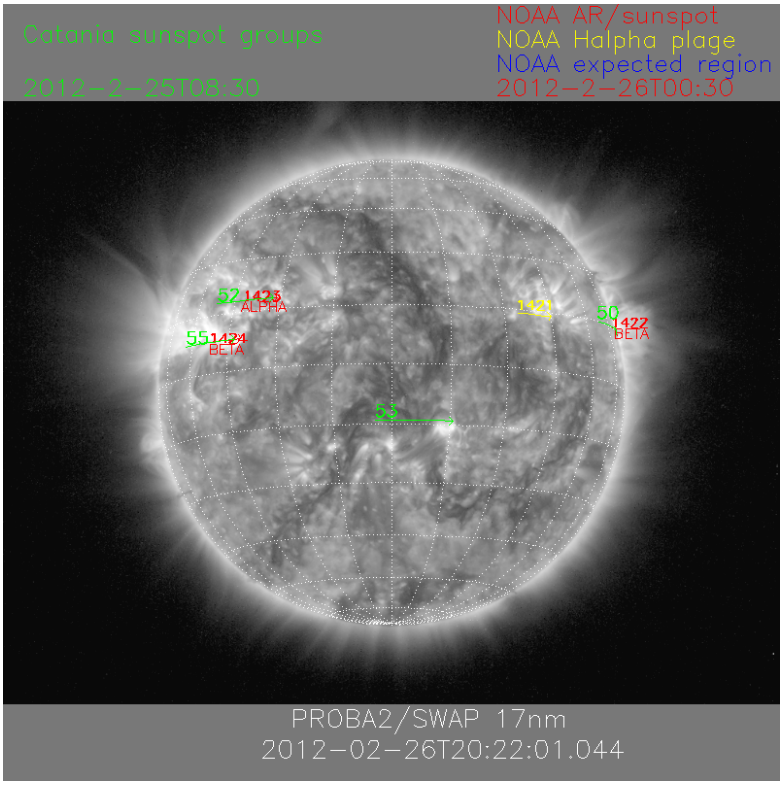
Monday 20 Feb	Tuesday 21 Feb	Wednesday 22 Feb	Thursday 23 Feb	Friday 24 Feb	Saturday 25 Feb	Sunday 26 Feb
low	low	very low	very low	very low	very low	low

The SWAP images of Feb 20 and Feb 26 are shown below, with annotated active regions.

[1] See http://p2wiki.oma.be:8000/p2ops_wiki/wiki/P2SCWeeklyReport for a definition of the above-used solar activity standards.



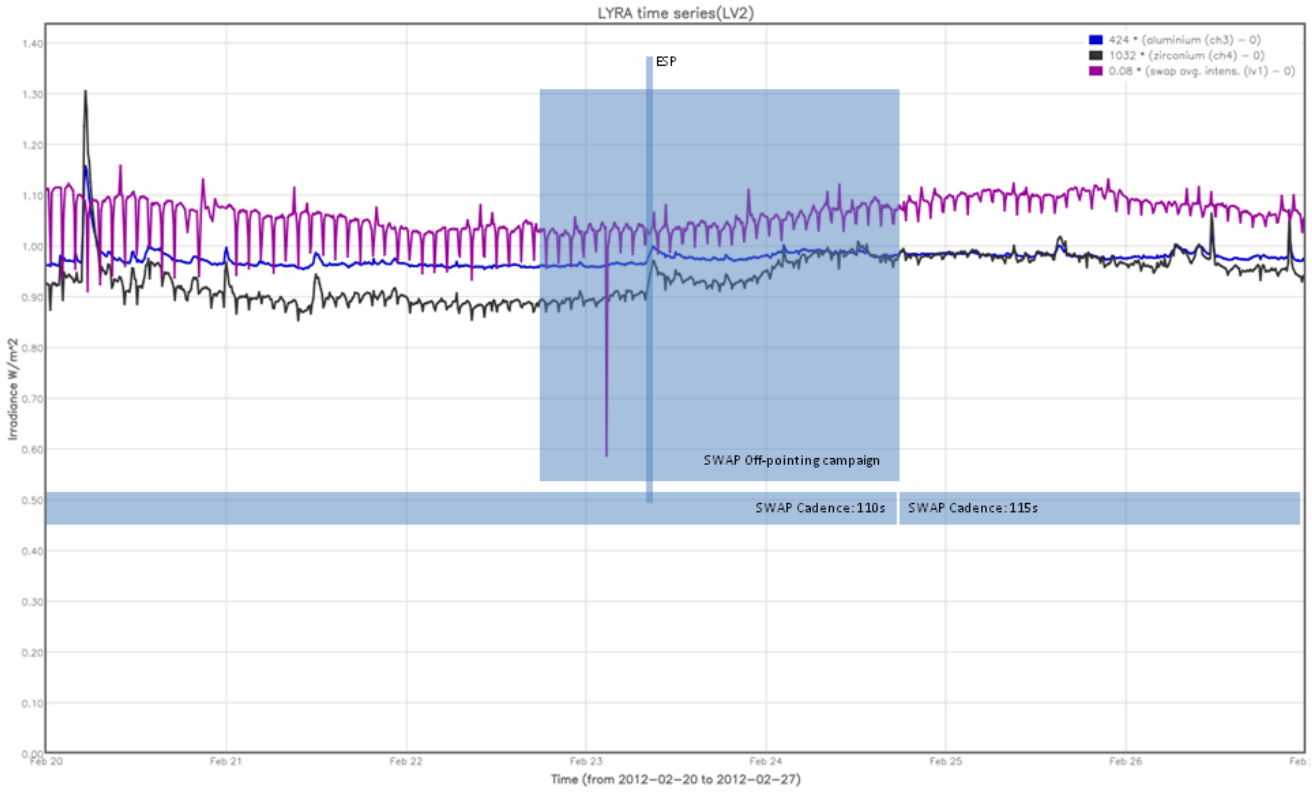
http://sidc.be/html/CmapPage.html



A filament eruption in the North-East quadrant on Thu 23/02 -> Fri 24/02 was quite spectacular. During that period SWAP was slightly off-pointing, in anticipation of a potential filament eruption (however, the eruption did not happen in a distinct east-ward direction).

Link to the movie:
http://proba2.oma.be/swap/data/mpg/movies/campaign_movies/20120223_23_offpoint.mp4

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



The blue shaded periods correspond, from left to right, to 1. SWAP off-pointing on Wed (18:00)/Thu/ Fri (18:00), 2. the ESP campaign on Thu.
The down-peak in the SWAVINT curve (purple) on Thu is due to a single blurry and displaced image, resulting in a low intensity image.

Scientific campaigns

The following LYRA and SWAP specific scientific campaigns have been performed this week:
- LYRA occultation ingress & egress (planned around 10:00 every day), with Unit 3.
  (however, see section 2 for more details this week)
- LYRA occultation campaign on Monday, with Unit 1, bi-weekly.
- 48 hour off-pointing campaign with SWAP (Wed 18:00 -> Fri 18:00), hunting filament eruption(s) on the East side of the Sun.

Outreach, papers, presentations, etc.

- "LYRA as a flare monitor"; Talk given by Marie Dominique @ AFFECTS meeting 21/02/2012 @ ROB.

- "Variations in EUV Irradiance: Comparison between LYRA and SWAP Integrated Flux", submitted (Topical Issue); Mehmet Sarp Yalim, Ph.D., Ingolf E. Dammasch, Anik De Groof, Ph.D., David Berghmans, Ph.D., Marie Dominique, Stefaan Poedts, Prof. Dr.

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 20 Feb	Tuesday 21 Feb	Wednesday 22 Feb	Thursday 23 Feb	Friday 24 Feb	Saturday 25 Feb	Sunday 26 Feb
Nominal acquisition + occultation U1 LYIOS00222	Nominal acquisition + occultation U3 LYIOS00222	Nominal acquisition LYIOS00222	Nominal acquisition LYIOS00222	Nominal acquisition LYIOS00222	Nominal acquisition LYIOS00222	Nominal acquisition LYIOS00222

On Monday, Unit 1 was activated (according to its bi-weekly occultation campaign). This week, the daily occultation campaign with Unit 3 was only executed on Tuesday. On Wed/Thu/Fri, SWAP was off-pointing and thus the daily LYRA campaign was not possible.
During the week-end, no occultation campaign was performed. Next week the daily Unit 3 campaign will be slightly re-defined.

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 49.86 (peak values during Unit 3 activation) and 48.75 degrees.

To be explored
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3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 1995 to 2118.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 20 Feb	Tuesday 21 Feb	Wednesday 22 Feb	Thursday 23 Feb	Friday 24 Feb	Saturday 25 Feb	Sunday 26 Feb
Nominal acquisition 110 s cadence IOS00366->367 613 images	Nominal acquisition IOS00367 711 images	Nominal acquisition IOS00367->368 696 images	Nominal acquisition IOS00368->369 686 images	Nominal acquisition IOS00369->370 668 images	Nominal acquisition 115s IOS00370 611 images	Nominal acquisition 115s IOS00370 566 images

The new on-board image priority concept was uploaded and executed successfully since Mon.

Also, a campaign was started to tweek the SWAP imaging cadence, such as to ensure that we do not hit the maximum allowed images in the buffer (283), as well as ensuring that the buffer is not completely emptied during a downlink.
This optimisation will ensure that the downlinked images actually have the cadence as they were taken on-board - as close as possible.
In practice, the cadence will be increased progressively (e.g. from 110 -> 115 -> 120 ->...) until the maximum buffer value is no longer attained.

SWAP detector temperature

The SWAP Cold Finger Temperature diminished from 1.82 to 0.81 degrees Celsius, under nominal operations.

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 22/02/2012.

Updates to P2SC, this week:
- None.

5. Data reception & discussions with MOC

Passes

The delivery of the following passes for this week (passes 7104 till 7167) was nominal, except for:
- None

Data coverage HK

All data was received.

Data coverage SWAP

Total number of images between 2012 Feb 20 0UT and 2012 Feb 27 0UT: 4596
Highest cadence in this period: 80 seconds
Average cadence in this period: 131.57 seconds
Number of image gaps larger than 300 seconds: 3
Largest data gap: 33.67 minutes

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