

P2SC-ROB-WR-095-20120116 Weekly report #095	P2SC Weekly report	
Period covered: Date: Written by: Released by:	Mon Jan 16 to Mon Jan 23, 2012 23 Jan 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

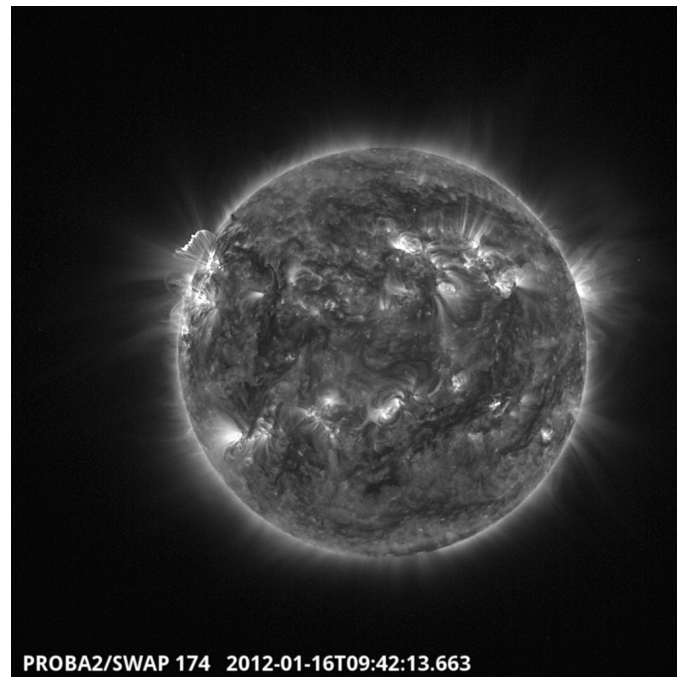
Solar & Space weather events

Overview

The SWAP images of Jan 16 and Jan 22 are shown below, with annotated active regions:

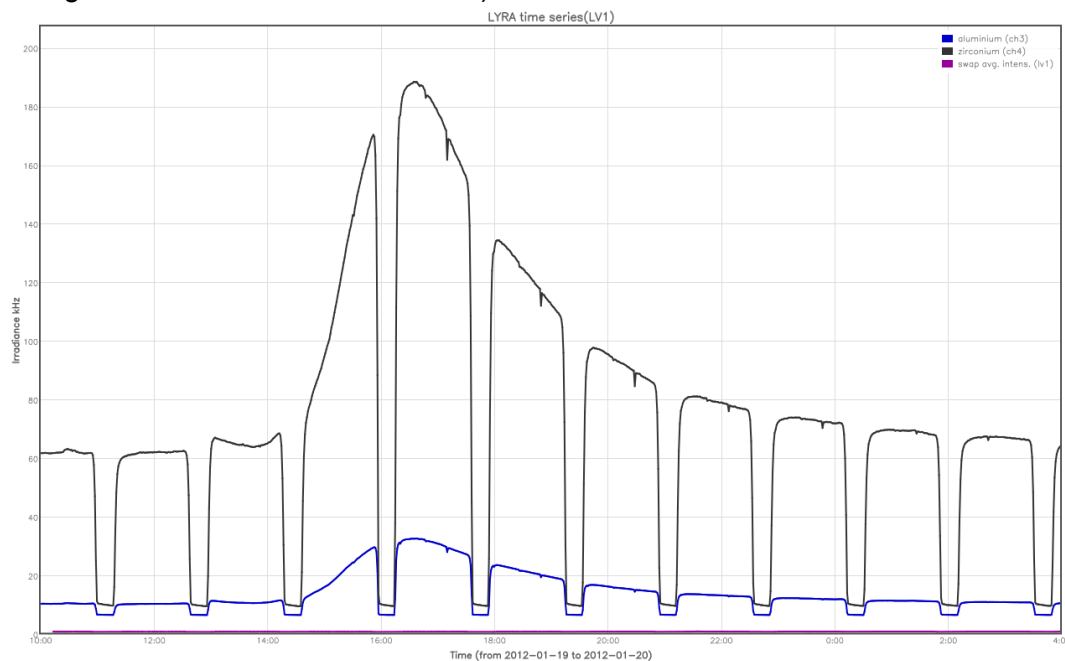
SWAP & LYRA observed, on:

- Mon 16th - North-east limb:

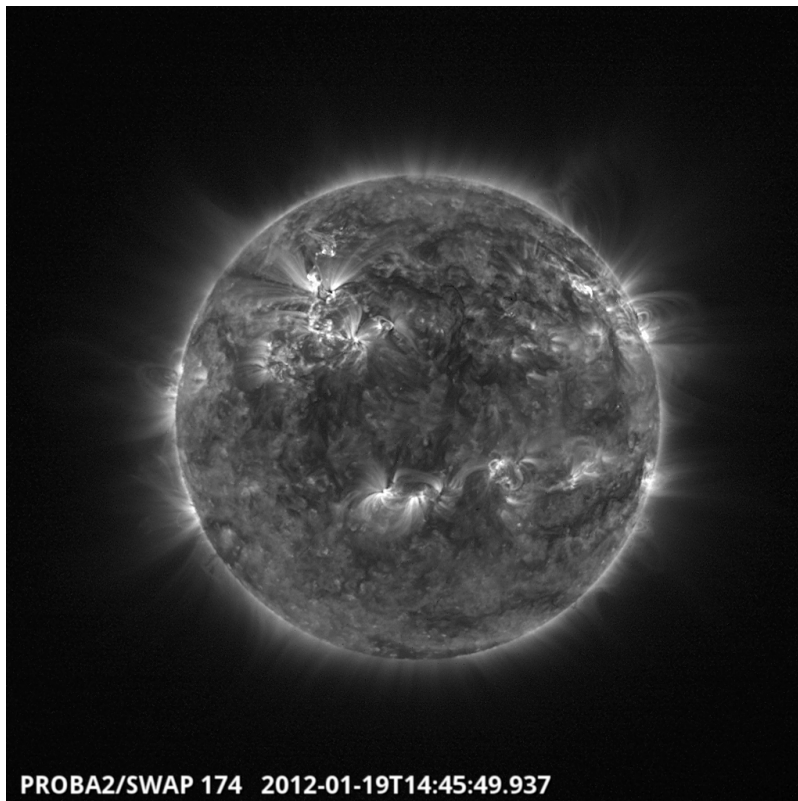


http://proba2.oma.be/swap/data/qlviewer/2012/01/16/swap_01139815518897_9842084c.png

- Thu 19th: long-duration M2.6 flare and arcade build-up, associated with a CME (with limited geomagnetic effects observed on 22nd).

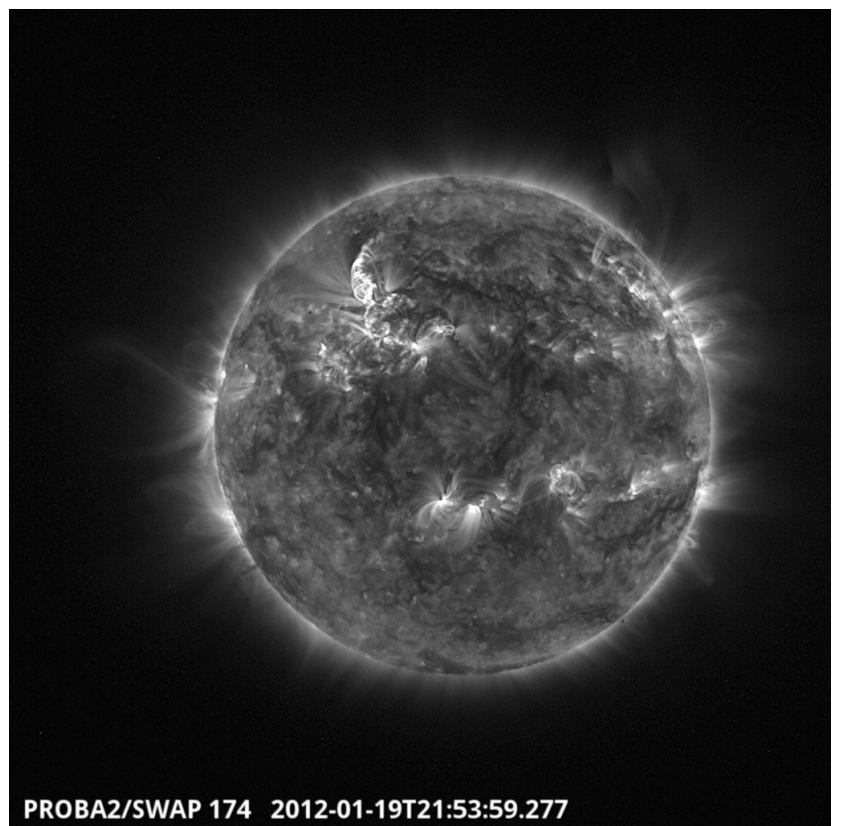


LYRA data related to the long M2.6 flare on Thu 19th.



PROBA2/SWAP 174 2012-01-19T14:45:49.937

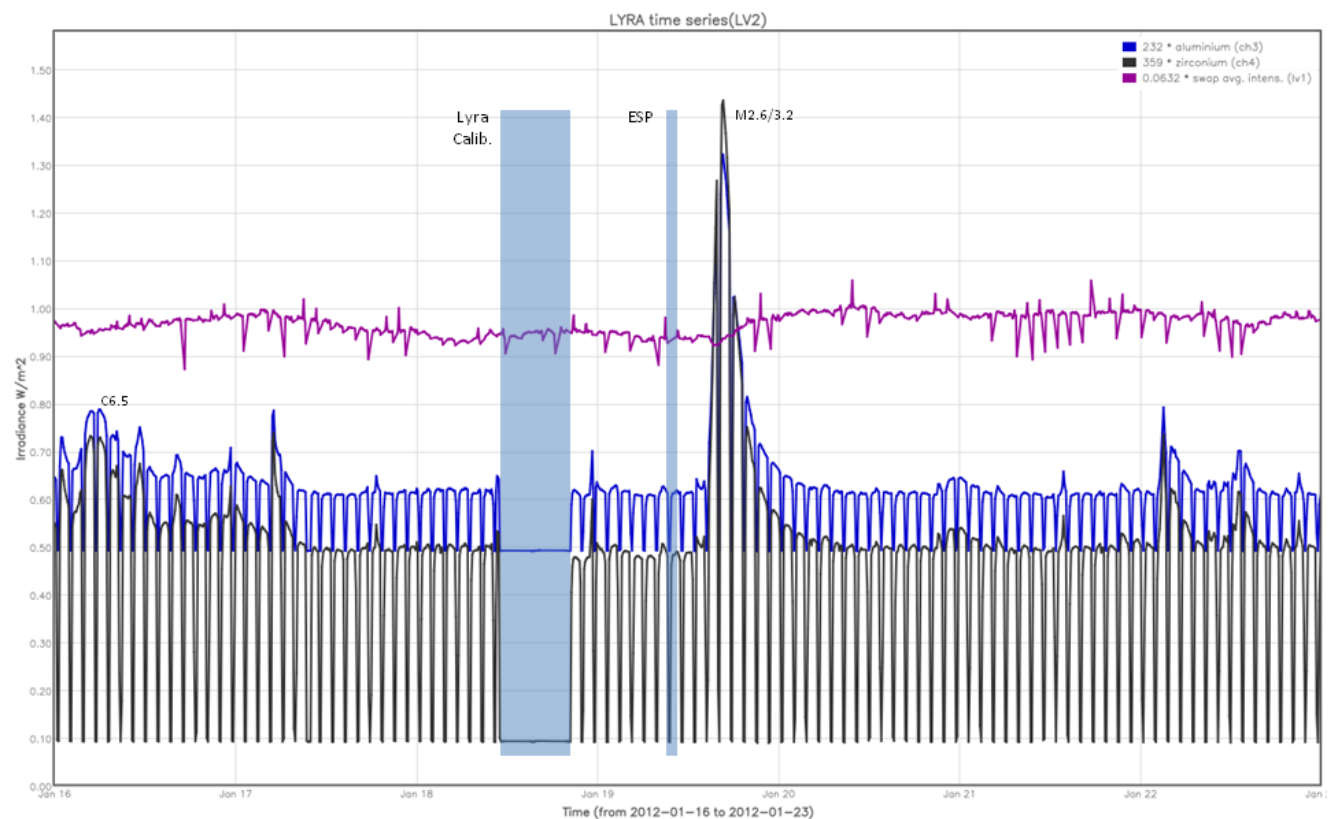
http://proba2.oma.be/swap/data/qlviewer/2012/01/19/swap_01144360657033_a1be1357.png



PROBA2/SWAP 174 2012-01-19T21:53:59.277

http://proba2.oma.be/swap/data/qlviewer/2012/01/19/swap_01144781547493_52ea663a.png

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



The blue shaded periods correspond, from left to right, to a LYRA calibration on Wed, and a SWAP jump, related to an ESP campaign on Thu.

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),
- weekly (but not this week) SWAP occultation ingress & egress imaging (planned on Mon, in parallel to the 10:00 LYRA occultation)

No other specific science campaigns have been executed.

Outreach, papers, presentations, etc.

*** The role of photospheric shearing motions in a filament eruption related to the 2010 April 3 coronal mass ejection;** F. P. Zuccarello et al.; <http://www.aanda.org/10.1051/0004-6361/201117563>

2. LYRA instrument status

Calibration

The bi-weekly standard LYRA calibration was performed on Wednesday.

IOS & operations

Monday 16 Jan	Tuesday 17 Jan	Wednesday 18 Jan	Thursday 19 Jan	Friday 20 Jan	Saturday 21 Jan	Sunday 22 Jan
Nominal acquisition	Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
LYIOS00212	LYIOS00212	LYIOS00212	LYIOS00213	LYIOS00213	LYIOS00213	LYIOS00213

The daily occultation campaign continued this week. It will continue after the (visual and UV) occultation season, until further notice.

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 40.5 and 43.8 degrees during nominal operations.

To be explored

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3. SWAP instrument status

Calibration

A (back to) standard SWAP calibration was performed on Tue. This standard calibration will, until further notice, be executed every 2 weeks.

MCPM errors

The number of MCPM recoverable errors increased from 1502 to 1536.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 16 Jan	Tuesday 17 Jan	Wednesday 18 Jan	Thursday 19 Jan	Friday 20 Jan	Saturday 21 Jan	Sunday 22 Jan
Nominal acquisition 80s cadence + occult. jumps	Nominal acquisition + occult campaign + occult. jumps	Nominal acquisition + + occult. jumps	Nominal acquisition + ESP + occult. jumps	Nominal acquisition + + occult. jumps	Nominal acquisition + occult. jumps	Nominal acquisition + occult. jumps
IOS00361 618 images	IOS00361 601 images	IOS00361 651 images	IOS00361 606 images	IOS00362 751 images	IOS00362 563 images	IOS00362 670 images

Occultation jumps are commanded and performed during each orbit.

On Tuesdays, SWAP participates in the LYRA daily occultation campaign, by 'not jumping' over the same occultation as the chosen LYRA occultation on Tue. This week, this campaign was not included.

The calibration sequence for SWAP returned to 'normal', i.e. the original sequence of commands is reinstated AND the calibration sequence will occur every two weeks.

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between -3.5 and -1.3 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.

During the week, at regular occasions, P2SC experienced problems with the timely processing of the incoming data. In particular, DCVC (but also other routines) lasted too long, and conflicted thereby with the processing of newly incoming passes. The problem was being analysed by the end of the week.

Updates to P2SC, this week:

- ADP/PPT_ADG: 18/01/2012: [r4317](#)

5. Data reception & discussions with MOC

Passes

The delivery of the following passes for this week (passes 6799 till 6858) was not nominal:

- none.

Data coverage HK

The HK data were complete over this period.

Data coverage SWAP

The SWAP data were complete over this period.

For the following passes, BINSWAP processing failed, due to packet CRC corruption:

- 6827 (Thu 19/01)

Statistics for the week:

Total number of images between 2012 Jan 16 0UT and 2012 Jan 23 0UT: 4501

Highest cadence in this period: 0 seconds

Average cadence in this period: 134.39 seconds

Number of image gaps larger than 300 seconds: 102

Largest data gap: 57.78 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
DSLIP	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
SCOS	Spacecraft Operation System
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
TBW	To Be Written
TC	Telecommand
TPMU	Thermal Plasma Measurement Unit
UTC	Coordinated Universal Time
UV	Ultraviolet