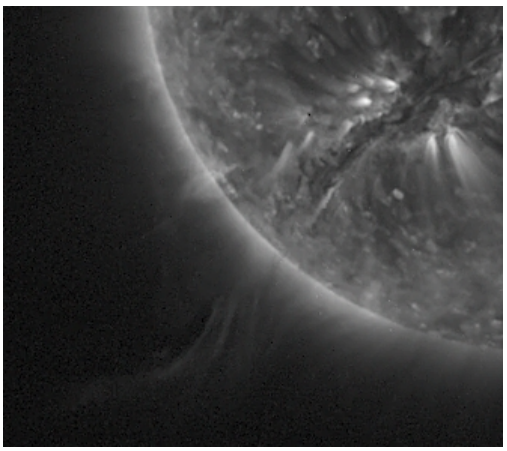
P2SC-ROB-WR-039-20101206 Weekly report #039	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Dec 06 to Sun Dec 12 2010 Thu Dec 16 2010 Marie Dominique Marie Dominique	Royal Observatory of Belgium PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, david@sidc.be	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, Karsten.Strauch@esa.int	

1. Science

Solar & Space weather events

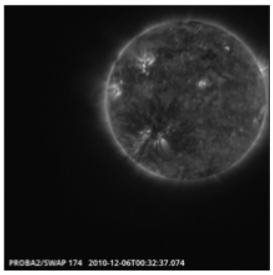
Globally, the week was quiet, with only a few B flares and minor events. The only exception is the eruption of a long filament on Monday 06, that started around 16:30 and lasted till 21:00. Exchange of material with regions behind the East solar limb was observed. The phenomenon expended very far in the corona. The full event can be watched at http://proba2.oma.be/swap/data/mpg/movies/20101206_swap_diff.mp4

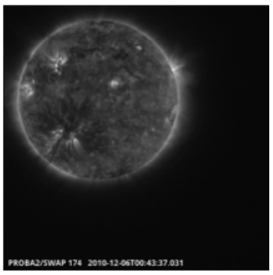


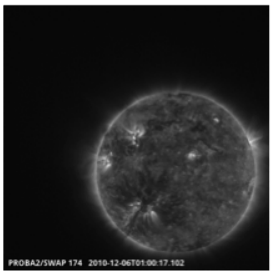
Scientific campaigns
The following SWAP campaign was executed:

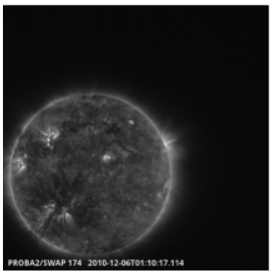
- 2010-12-06T01:23 SWAP short mosaicking, duration 50 min

The campaign was executed successfully.







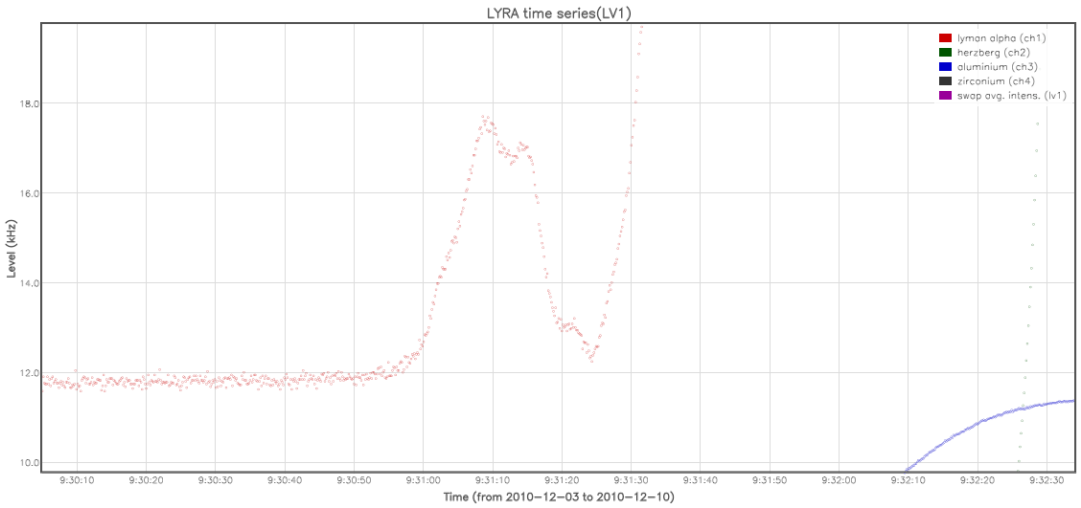


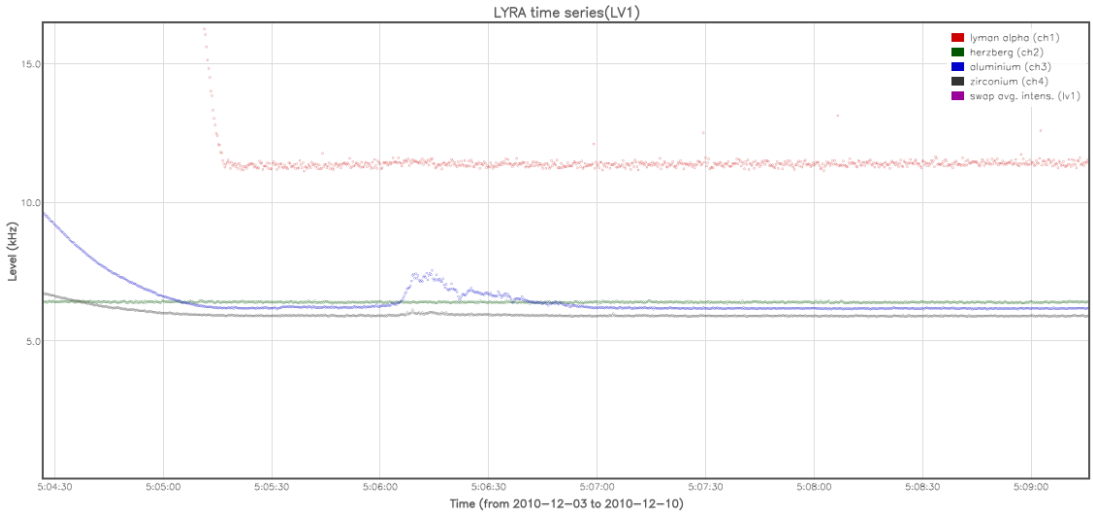
The following LYRA campaigns were executed:

- 2010-12-06, occultation measurements U2/U3 from 09:50 to 10:43, 50msec integration
- 2010-12-07, occultation measurements U2/U3 from 09:00 to 09:53, 50msec integration
- 2010-12-08, occultation measurements U2/U3 from 04:45 to 05:52, 50msec integration
- 2010-12-09, occultation measurements U2/U3 from 10:30 to 11:29, 50msec integration
- 2010-12-10, occultation measurements U2/U3 from 09:45 to 10:38, 50msec integration

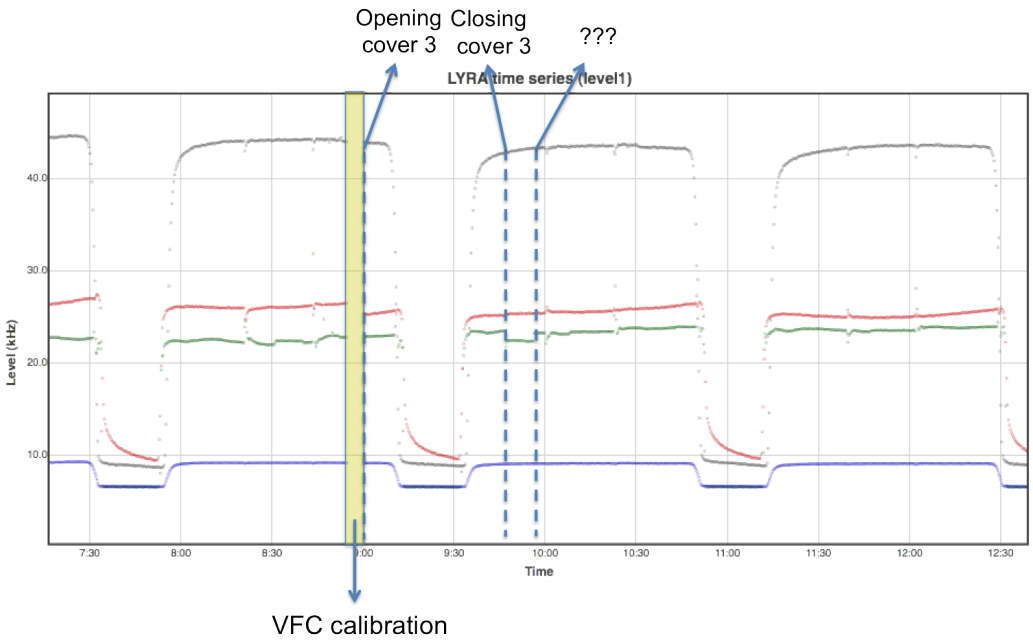
All LYRA campaigns were executed successfully. They will be used in the frame of an ESA Geminid Meteor Campaign.

When zooming on the bottom edge of the occultation curves some strange structures were observed in the signal, while the instrument is in the “visible eclipse” zone and should therefore see nothing from the Sun. Such structures did not follow the exact same pattern from one day to the other, and were most of the time observed in Ly alpha (although we have an example in Al and Zr channel). This phenomenon is still under investigation.





The jumps in the channels as reported in the previous reporting period were observed this week too. Most of the time they are linked to the opening/closing of cover3 or to LAR. Only one jump (occurring on Dec 07) was not explained. To be noted that the most important jump (~6kHz) happened when switching on after the off mode corresponding to the resistojet campaign.



On Dec 08, the resistojet campaign took place from 09:40 to 10:25. LYRA and SWAP were switched respectively in off and idle modes.

Outreach, papers, presentations, etc.
Arrival of guest investigator Gael Cessateur from the university of Orléans.

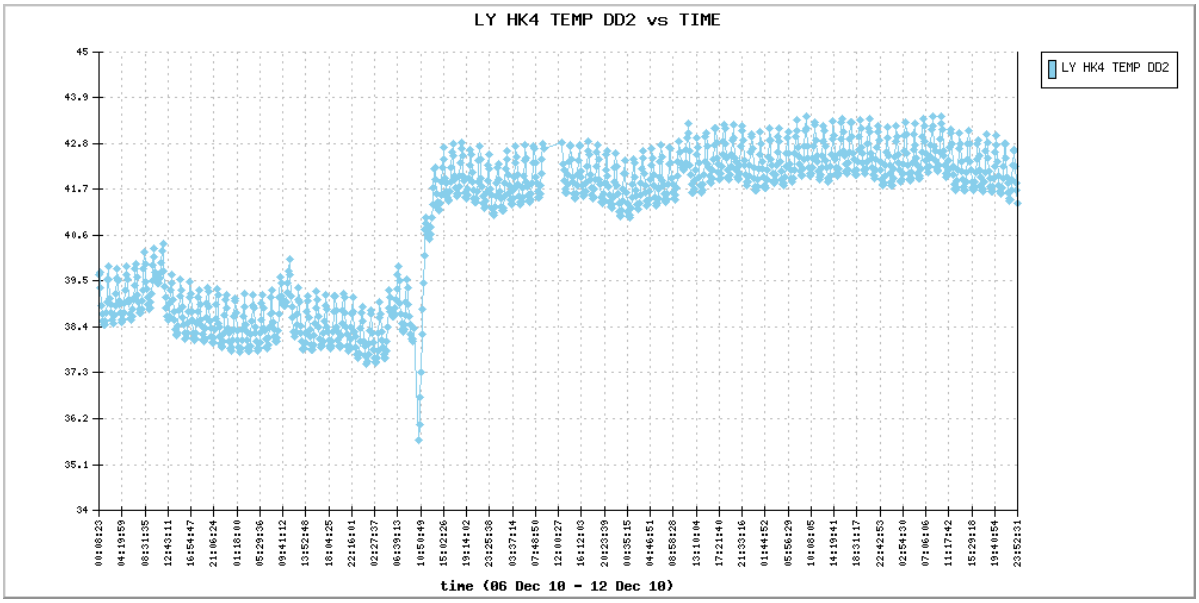
2. LYRA instrument status

Calibration
No calibration campaign was run this week.

IOS & operations
IOS120 up to IOS122 were uploaded onboard, IOS122 overwriting IOS121.

LYRA activities consisted in occultation campaigns + a transition to off mode during the resistojet campaign.

Temperatures
Besides the expected orbital and instrumental temperature variations, LYRA saw its temperatures significantly increasing after the resistojet campaign.



3. SWAP instrument status

MCPM errors
The number of MCPM errors increased from 210 to 211 on 2010-12-10T22:24:51.

IOS & operations
SWAP operations consisted in a mosaicking on Dec 06, in acquisitions with a lower cadence to jump over the eclipses and in an off-mode during the resistojet campaign of Dec 08.
SWAP IOS215 up to IOS217 were sent to Redu.

SWAP data download was blocked twice this week (during pass 3173 on Dec 09, and after pass 3191 on Dec 11), which resulted in a loss of data.The problem only happened three times in the past. A new unblocking test procedure has been proposed by QS. It will be exercised at the next occurrence of the problem. In parallel, QS and SPB are further investigating possible way of work around

The SWAP download blocking had a side-effect: it perturbed the operation of jumping over eclipses. Indeed, SWAP was temporarily switched to idle mode during the recovery procedure, which interrupted the acquisition of the low cadence image. This resulted in a second acquisition of the low cadence image when SWAP was back in acquisition mode.

SWAP detector and IIU temperature

The variations of SWAP detector temperatures are the ones expected, considering the activities of the other instruments.

4. PROBA2 Science Center Status

Marie Dominique was operator during this week.
The LY-QLV was updated to include the SWAVINT channel and to be able to handle the new FITS keyword UNITS.

5. Data reception & discussions with MOC

The LYRA occultation measurements were supported by the MOC operator by opening and closing the unit3 doors via control procedures.

Data coverage HK

Pass 3174 was missed at Svalbard. We therefore have a gap in housekeeping data on Dec 09 from 09:21 to 12:34.

Data coverage SWAP

Because of the blocking of SWAP download, we have data missing

- from Dec 09, 06:17 to Dec 10, 14:29
- from Dec 11, 03:29 to Dec 13, 12:52

With real gaps :

- from Dec 09, 06:39 to Dec 09, 13:45
- from Dec 09, 15:08 to Dec 09, 16:44
- from Dec 11, 09:02 to Dec 12, 15:12
- from Dec 12, 16:52 to Dec 12, 17:22

Outside those gaps, only one image out of three was downloaded.

Besides this,

- pass 3146, 2010-12-06, corrupted package received
- pass 3147, 2010-12-06, corrupted packages received, 11 images lost
- pass 3191, 2010-12-11, truncated package received

Data coverage LYRA

Pass 3174 was missed at Svalbard. From 9h10 to 12h37, we therefore only have one LYRA

sample out of two.

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
SCOS	Spacecraft Operation System
SEU	Single Event Upset
SOHO	Solar and Heliospheric Observatory
SWAP	Sun Watcher using APS detector and image Processing
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