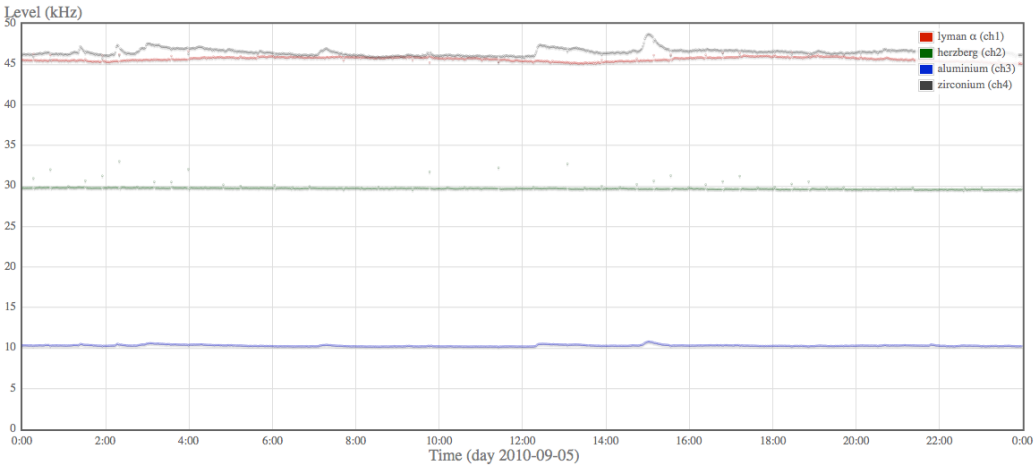
P2SC-ROB-WR-025-20100830 Weekly report #025	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Aug 30 to Sun Sep 05 2010 Mon Sep 06 2010 Marie Dominique Anik De Groof	Royal Observatory of Belgium PROBA2 Science Center
To:	LYRA PI, hochedez@sidc.be SWAP PI, david@sidc.be	http://proba2.sidc.be ++ 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	

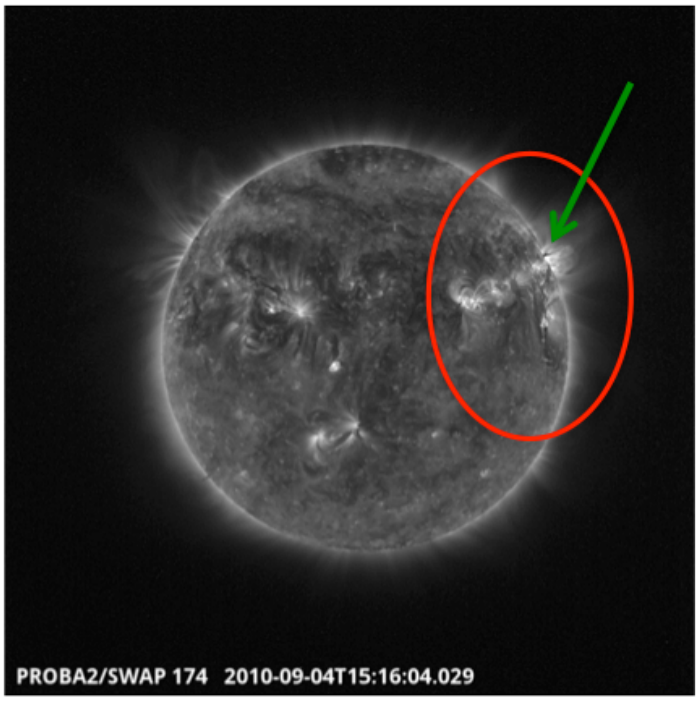
1. Science

Solar & Space weather events

The Sun showed very low activity during the whole week. Although a few B flares were observed with Swap and Lyra. Those flares mostly happened during the week-end and took place in the active regions approaching the west limb (NOAA AR 11101 to 11105). They were often followed by small-size post-flares loops.



On Sep 04, around 15:00, we could observe surges originating from NOAA AR 11102 (green arrow in the picture below).



Scientific campaigns
No scientific campaigns were planned.

Outreach, papers, presentations, etc.
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To be explored
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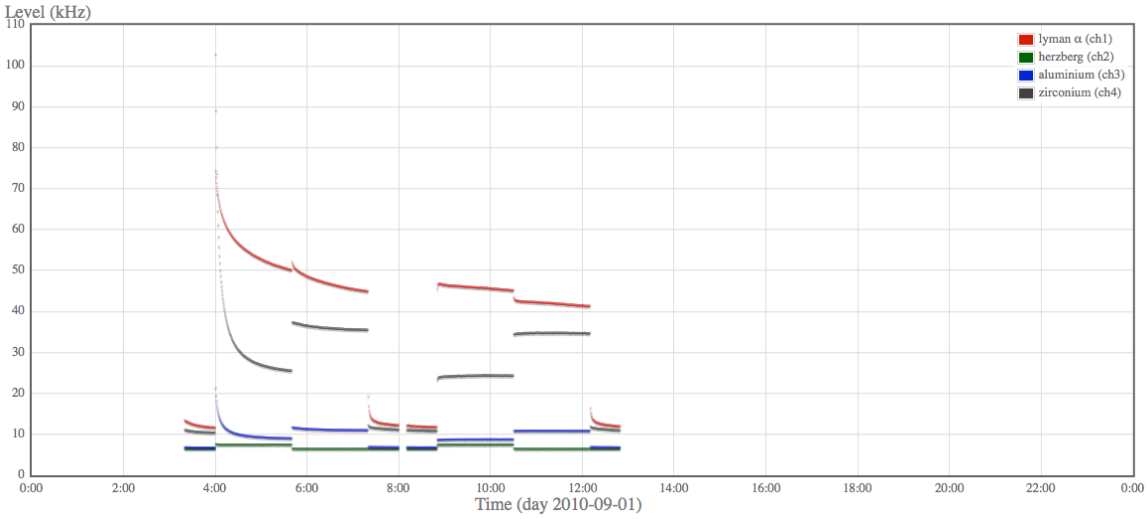
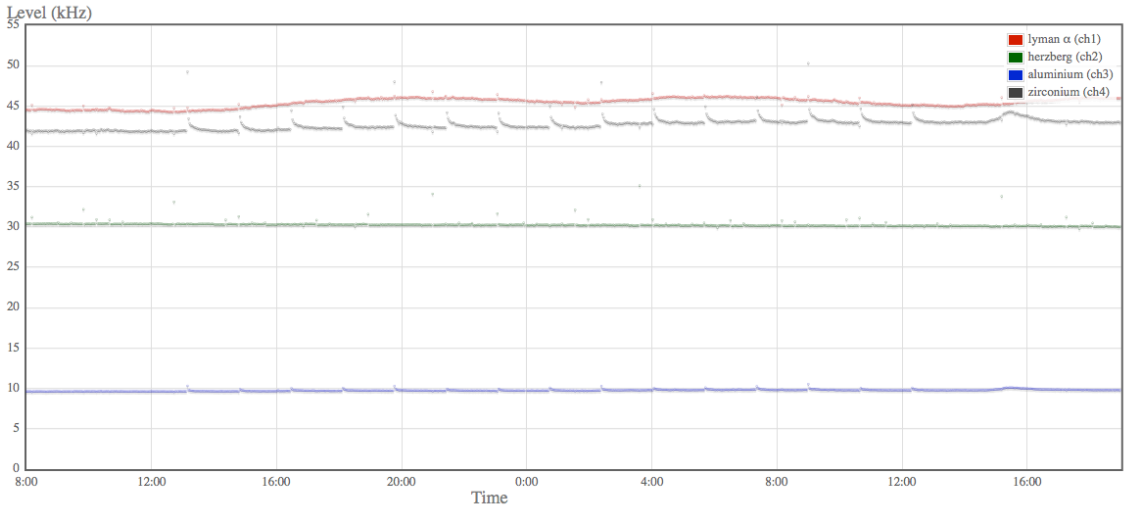
2. LYRA instrument status

Calibration
Although a calibration campaign had been scheduled the previous week, another one took place on Wednesday Sep 01 (IOS 00084). This calibration campaign replaces the one scheduled for week 36, which might be cancelled in case the RESISTOJET experiment is activated. No back-up solar acquisition was performed.



IOS & operations
LYRA IOS00084 commanded the calibration sequence of Sep 01.

From Sep 02 13h00 to Sep 03 13h00, ASIC reloads were re-activated at the cadence of once per orbit. The objective was twofold: to see whether ASIC reloads have an impact on the signal level of Hz channel, and to get further information on the noise observed in the early life of the instrument. The test was not successful in the sense that the noise did not re-appear, and there was no impact on the Herzberg channel.



To be explored
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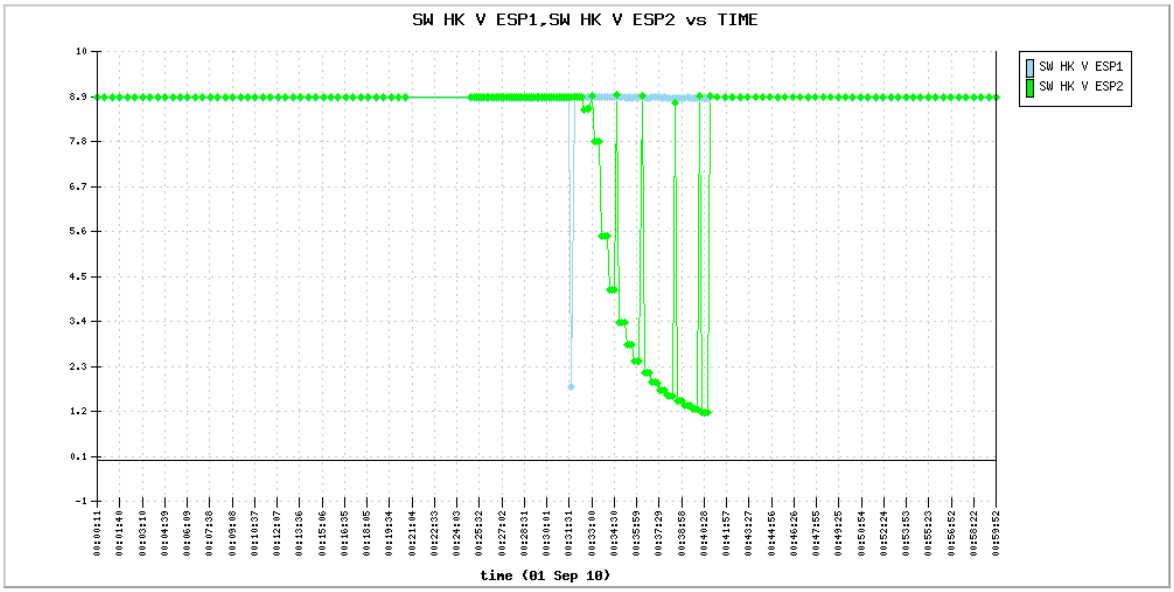
3. SWAP instrument status

MCPM recoverable errors
No change in the number of recoverable errors (still 198).
The number of MCPM unrecoverable errors is still 0.

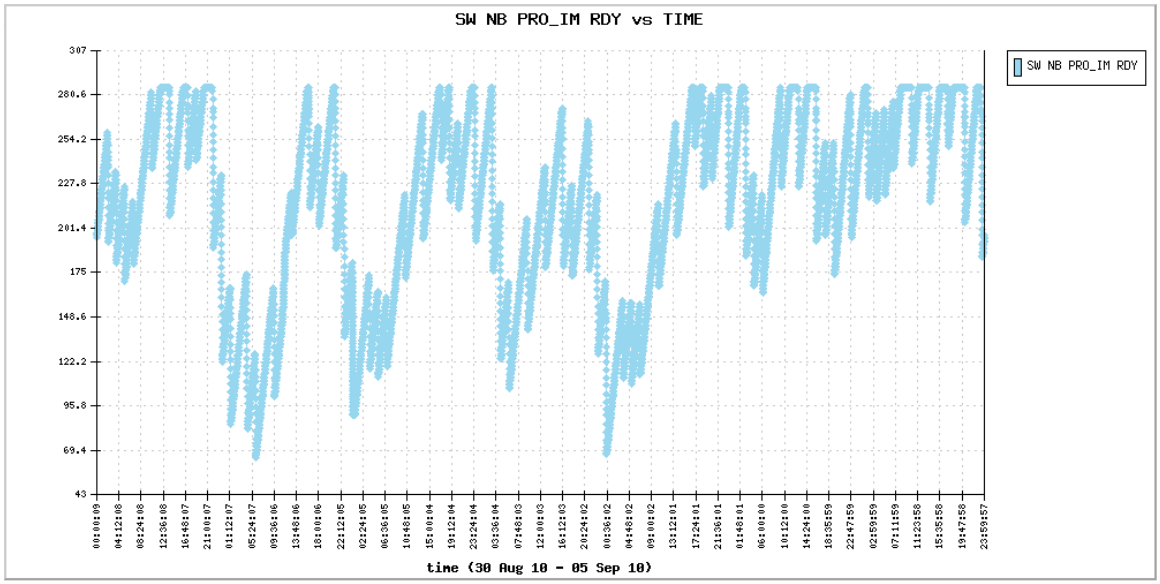
IOS & operations

A LED calibration was performed on Aug 31 (IOS00161).

On Sep 01, an ESP sequence took place between 00:19 and 00:44 (IOS00162), during which SWAP stopped imaging (using a very low acquisition cadence). This ESP sequence was not fully successful, in the sense that the HK packet corresponding to the ESP1 activation phase was corrupted. The test was not rescheduled.

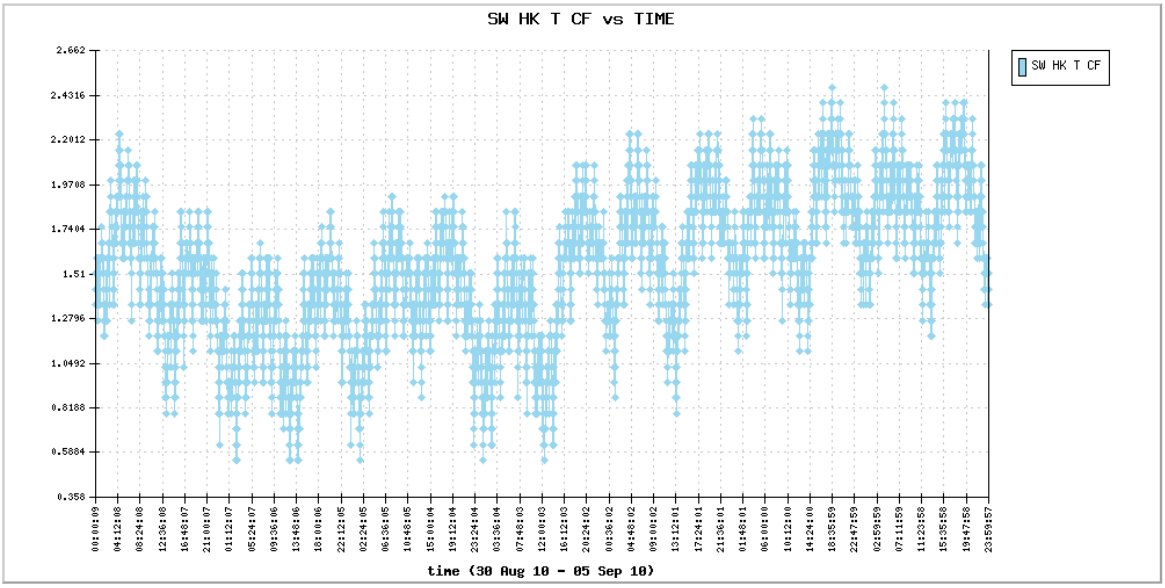


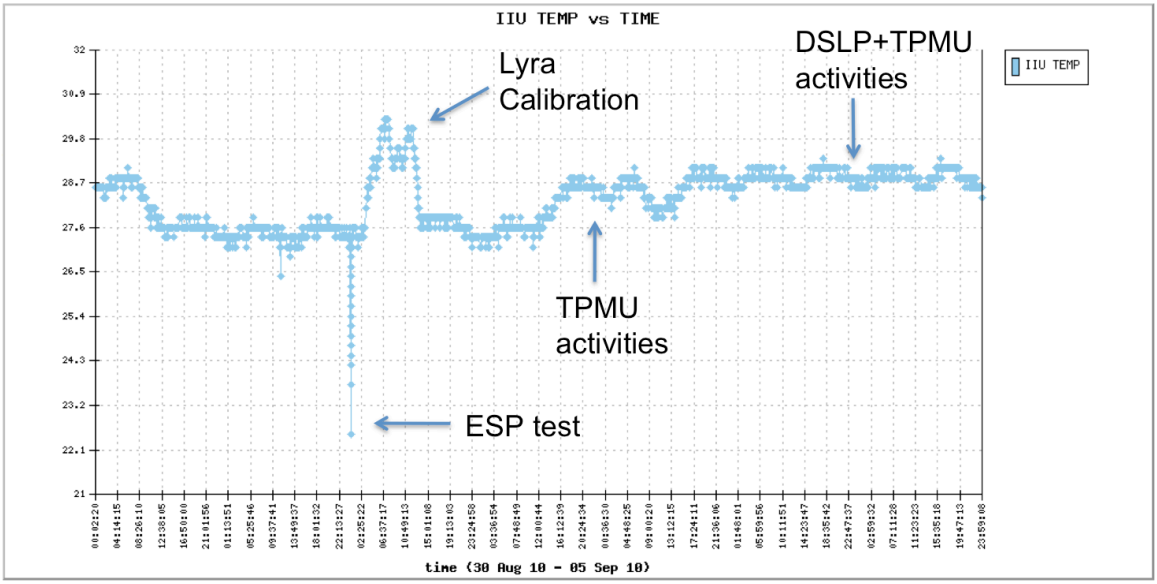
The quality of the passes at the beginning of the week was such that very few SWAP images were overwritten on-board. On Sep 03, the SWAP acquisition cadence was therefore increased from 120s to 100s. A first IOS was sent (IOS00163), but was rejected because of a start time in the past (wrt the time of the pass when it was uploaded). The change of acquisition cadence was finally applied through IOS00164.



TIME SW NB PRO_IM RDY

The SWAP Cold Finger Temperature most of the time fluctuated between 0 and 2.5 degrees Celsius. Effects were seen of DSLP & TPMU acquisitions, both in the CF temperature as in the IIU temperature. IIU temp also senses the LYRA calibration and the TPMU-DSLP campaigns.





To be explored
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4. PROBA2 Science Center Status

Marie Dominique was operator during this week.

SWAP daily movies were created manually.

Most of the warnings/errors of the P2SC this week were expected. They were due to

- LYRA ASIC reloads (warning on the first HK measurement, which is always corrupted)
- SWAP reprocessing one day later (erroneous warning about missing images)

- Corrupted HK packet (SWAP IDLE mode not appearing in the HK)
- ...

No major error was encountered.

The following tools were updated on the operational server:

Software name	Update	Date	Comment
LY-QLV	rev3636	Aug 31	viewing multiple fits files and storing png files
LY-QLV	rev3638	Sep 01	bug to be fixed
LY-QLV	rev3645	Sep 02	unsuccessful attempt to fix the problem of not being able to zoom into the milliseconds with the default version.

5. Data reception & discussions with MOC

Passes
There were no missed passes observed during the period.
Data from pass 2233 and 2237 were sent twice (first extraction of data was incomplete)
Data from pass 2257 were received after those of pass 2258.

Data coverage HK
There was a data gap in SW HK during the beginning of ESP test, between Sep 01 from 00:20:41 to 00:25:01. From 00:19:41 till 00:31:41 SW HK were actually invalid.

Data coverage SWAP
On Sep 01, Swap stopped imaging from 00:22:20 to 00:44:00 for the ESP sequence to take place.

Some statistics:
Gap of 407 seconds, just before image BINSWAP20100831110906000139850PROCESSED in BINSWAP_2245_SVA1_2010.08.31T13.25.35.tar

Total number of images between 2010 Aug 30 0UT and 2010 Sep 06 0UT: 4710
Highest cadence in this period: 30 seconds
Average cadence in this period: 128.40 seconds
Number of image gaps larger than 300 seconds: 3
Largest data gap: 28.98 minutes (ESP test)

We switched from 120s cadence to 100s cadence on Sep 3. The average cadence achieved this week was definitely better than the last weeks.

Data coverage LYRA
The LYRA data is 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
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