P2SC-ROB-WR-078-20110912 Weekly report #078	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Sep 12 to Sun Sep 18 2011 Wed 21 Sep 2011 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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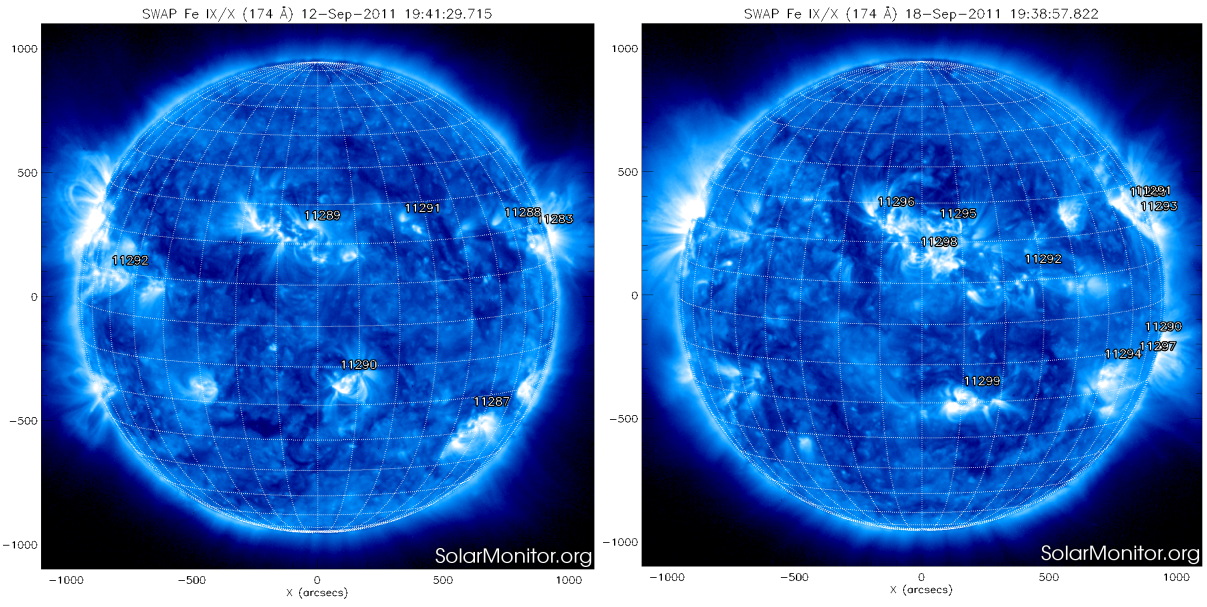
1. Science

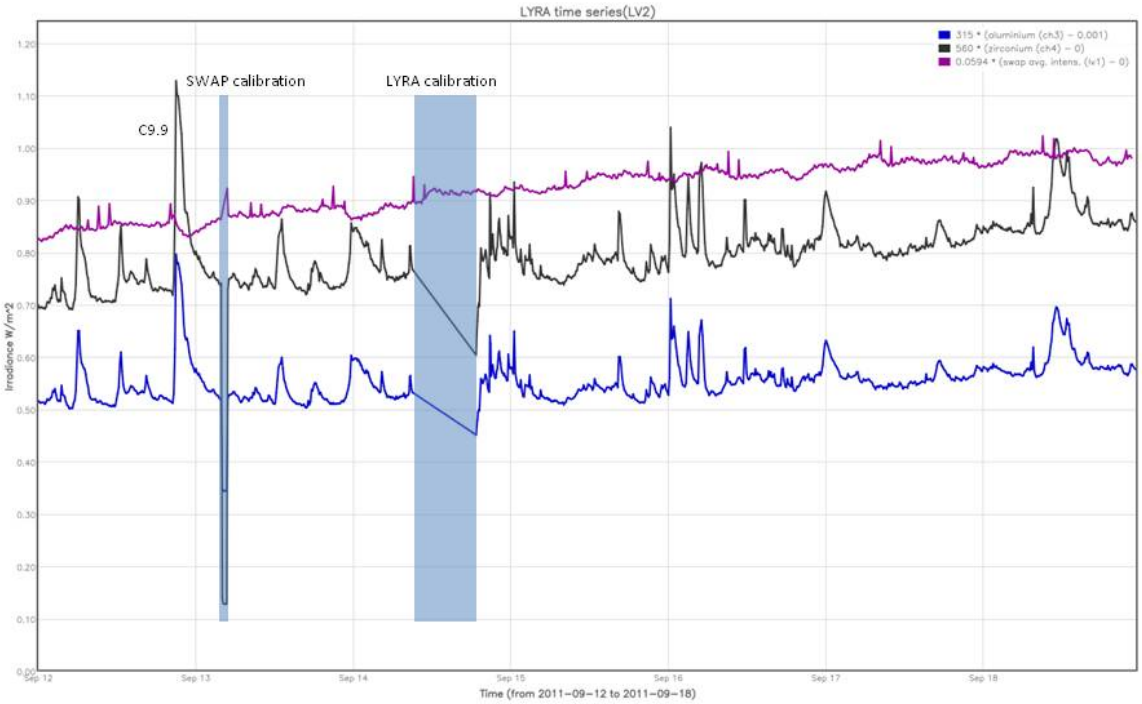
Solar & Space weather events

Overview

The SWAP images of September 12 and September 18 are shown below, with annotated active regions:



Despite a copious amount of sunspots and groups, solar activity on the Sun remained MEDIUM during the week. Lots of C-flares, but none exceeding C9.9 (on Tue 13th). The latter flare generated a halo CME, which arrived at Earth on Saturday, without significant geomagnetic consequences.



Above we show the weekly overview of LYRA Al/Zr signals and SWAP average intensity (SWAVINT in purple).

Scientific campaigns

A campaign for the acquisition of SWAP darks was initiated on Tue 13/09. The aim of this campaign is to modify the darks being used to generate the SWAP pictures, in accordance with the new temperature environment of SWAP, resulting from the LAR delays.
This 'darks acquisition campaign' is embedded in the originally bi-weekly SWAP calibration activities. Until mid of November this new (calibration) campaign will be performed weekly.

Outreach, papers, presentations, etc.

Monday 12 Sep 2011:
'PROBA2/SWAP & LYRA: First results and opportunities for solar physics and space weather' presented by Anik De Groof at the 13th European Solar Physics Meeting in Greece

Monday 12 Sep 2011:
'Status and Last Results from the PROBA2/LYRA Solar Radiometer", presented by Matthieu Kretschmar at the at the 2011 SORCE science meeting in Sedona, Arizona, USA.

To be explored
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2. LYRA instrument status

Calibration
LYRA calibration campaigns occurred on Wednesday at 09:00, followed by a back-up acquisition campaign on 19:20.

IOS & operations

Monday 12 Sep	Tuesday 13 Sep	Wednesday 14 Sep	Thursday 15 Sep	Friday 16 Sep	Saturday 17 Sep	Sunday 18 Sep
Nominal acquisition LYIOS00191	Nominal acquisition LYIOS00191	Nominal acquisition + LYRA calibration campaign & b/u acquisition LYIOS00191	Nominal acquisition LYIOS00191	Nominal acquisition LYIOS00191	Nominal acquisition LYIOS00191	Nominal acquisition LYIOS00191

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 44.9 and 46.3 degrees Celsius during nominal operations.

The overall evolution is normal.

To be explored
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3. SWAP instrument status

Calibration
A first of a series of 'extended' SWAP calibration campaigns was initiated on Tue 13/09, at 04:00. This series is expected to last until middle of November and includes 17:20 minutes of extra darks acquisition to respond to the lower temperature of SWAP, resulting from the LAR delays.

MCPM recoverable errors
Increased from 321 to 379 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 12 Sep	Tuesday 13 Sep	Wednesday 14 Sep	Thursday 15 Sep	Friday 16 Sep	Saturday 17 Sep	Sunday 18 Sep
Nominal acquisition 110s cadence IOS00329 619 images	Nominal acquisition + calibration campaign, including extra darks acquisition IOS00329 765 images	Nominal acquisition IOS00329 702 images	Nominal acquisition + ESP campaign IOS00329 590 images	Nominal acquisition IOS00329 683 images	Nominal acquisition IOS00329 686 images	Nominal acquisition IOS00329 663 images

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between -2,23 and -0,95 degrees Celsius. Temperature evolution is normal.

To be explored
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4. PROBA2 Science Center Status

Erik Pylyser, supported by Joe Zender and David Berghmans, was operator during this week.

The redundant physical server of P2SC was taken out of the nominal P2SC configuration since 2011/07/11 due to a crash. After diagnosing the problem, no permanent problem could be spotted. This Monday (Sept 12th) the server was rebooted. Since then all is working normally. This means that the full redundancy of P2SC is again available.

On Wed PM (18:00), and well into Thu, the following problem was identified:
 * Significant delays in DCVC and LYQLK execution were noticed.
 * The root cause was identified as rsync processes that were manually inserted to move the SWAP archive to new storage disks.
 * The rsync was therefore halted and postponed to more quiet times in between the passes.
 * The ongoing DCVC process (runID 142735) was killed (kill -9 32603).
 * LYRA_ADs 5709, 5710, 5711, 5716 had been locked out of the database in the past 2 days. They were put back in the dropbox and processed quickly.

No tools were updated on the operational server.

5. Data reception & discussions with MOC

Passes

Pass 5748, on Sunday 18/09, 23:30, was not received (see below).
The LYRA_AD file was regenerated successfully.

Dear Anik and Erik,

We didn't receive any data on the Svalbard downlink pass 5748. It seems the pass was not executed by KSAT.
All cyclic stores have been redumped on the Redu pass 5751 and sent to ROB.
The LYRA bounded store is lost.

The LYRA_AD for pass 5748 have been regenerated and also sent to ROB.

Best Regards,
Philippe

Data coverage HK
The HK data were complete this week.

Data coverage SWAP

BINSWAP_5721 failed to execute properly at P2SC.
BINSWAP_5748 (see above) was not received and caused a gap in SWAP data between 18 Sep 22:53 and 19 Sep 02:05 and reduced cadence around this period.

Statistics for complete week:

Total number of images between 2011 Sep 12 0UT and 2011 Sep 19 0UT: 4771
Highest cadence in this period: 30 seconds
Average cadence in this period: 125.94 seconds
Number of image gaps larger than 300 seconds: 1
Largest data gap: 29.00 minutes

The one large data gap of 29 min was commanded to allow for an ESP test.

Data coverage LYRA
BINLYRA_5748 (see above) was not received. The cyclic store was redumped at pass 5751, the bounded store was lost. As a consequence the original data gap (approx. 18 Sep 20:40 to 19 Sep 2UT) was filled with half cadence data (100ms).

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
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