


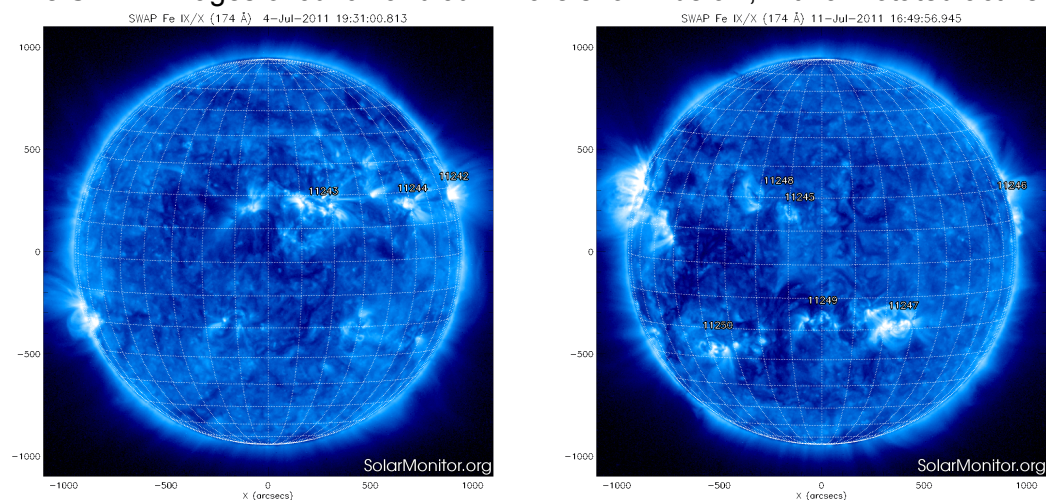
P2SC-ROB-WR-068- 20110704 Weekly report #068	P2SC Weekly report	
Period covered: Date: Written by: Released by:	Mon July 04 to Sun Jul 10 2011 2011/07/11 M. Dominique M. Dominique	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

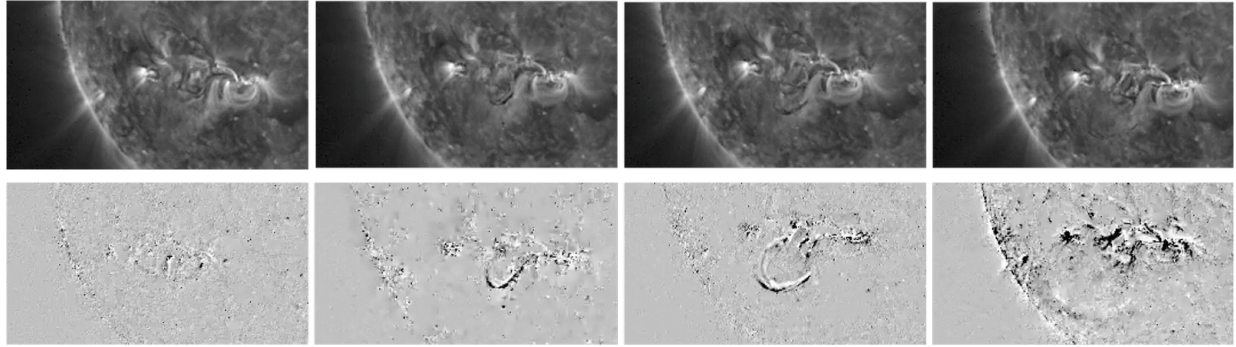
Solar & Space weather events

Overview

The SWAP images of Jul 04 and Jul 11 are shown below, with annotated active regions:

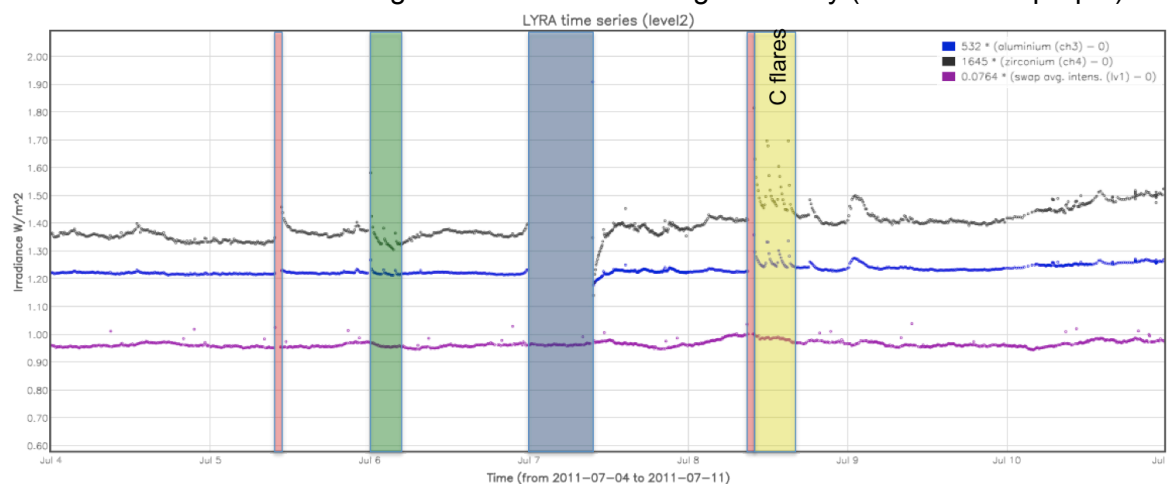


In general, the Sun was not very active. On LYRA, the only noticeable activity was a series of C flares on Jul 08. Nevertheless, Swap observed 7 small filament eruptions that were associated to CME (none of which was directed toward Earth).



Most of the activity was associated AR 11247, which started to be visible on the East limb on Jul 04.

Week overview of LYRA Al/Zr signals and SWAP average intensity (SWAVINT in purple):



The calibration campaign is annotated in blue, the back-up campaign in green, and data gaps due to propulsion campaigns in red. The peaks in LYRA signals are due to solar flares. The tiny, periodical peaks in SWAVINT were caused by crossing over the SAA.

Scientific campaigns

- Jul 05: propulsion experiment 09:53 - 10:31
- Jul 06: back-up acquisition units 3 and 1 (LREP_03 a and b) 00:00-03:44
- Jul 07: ESP experiment 09:13 - 09:42 + Lyra calibration LREP_02 00:00-09:37
- Jul 08: propulsion experiment 09:00 - 09:38

Outreach, papers, presentations, etc.

Dr. Matthieu Kretschmar joins the LYRA team. He will be involved in the scientific exploitation of the data. His main fields of investigation relate to irradiance, flares and occultations.

To be explored

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2. LYRA instrument status

Calibration

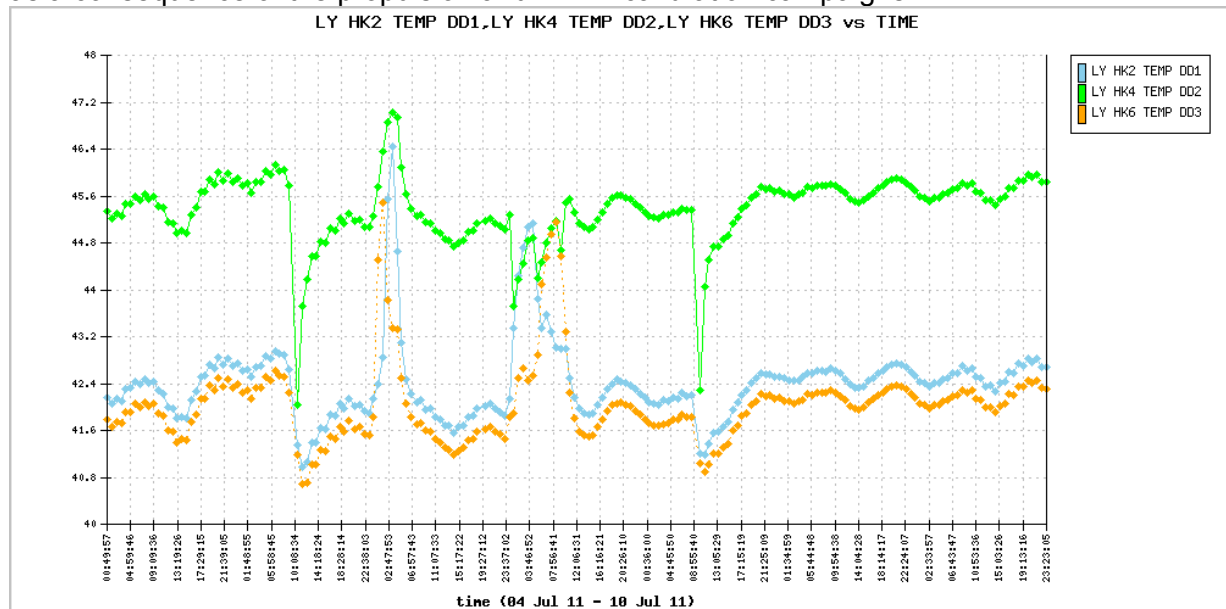
- A back-up campaign took place on Jul 06 for both units 3 and 1 (LREP_03 a and b) from 00:00 to 03:44
- On Jul 07, we scheduled the usual calibration sequence LREP_02 00:00-09:37

IOS & operations

Monday 04 Jul	Tuesday 05 Jul	Wednesday 06 Jul	Thursday 07 Jul	Friday 08 Jul	Saturday 09 Jul	Sunday 10 Jul
Nominal acquisition	Nominal acquisition + propulsion campaign	Nominal acquisition + back-up campaign	Nominal acquisition + calibration campaign	Nominal acquisition + propulsion campaign	Nominal acquisition	Nominal acquisition
LYIOS00177	LYIOS00178	LYIOS00179	LYIOS00179	LYIOS00179	LYIOS00179	LYIOS00179

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 44.5 and 46 degrees Celsius. The peak of Jul 06 is due to the back-up acquisition. Downward excursions were seen as a consequence of the propulsion and LYRA calibration campaigns.



To be explored

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3. SWAP instrument status

Calibration: /

MCPM recoverable errors

increased from 5 to 70 this week.

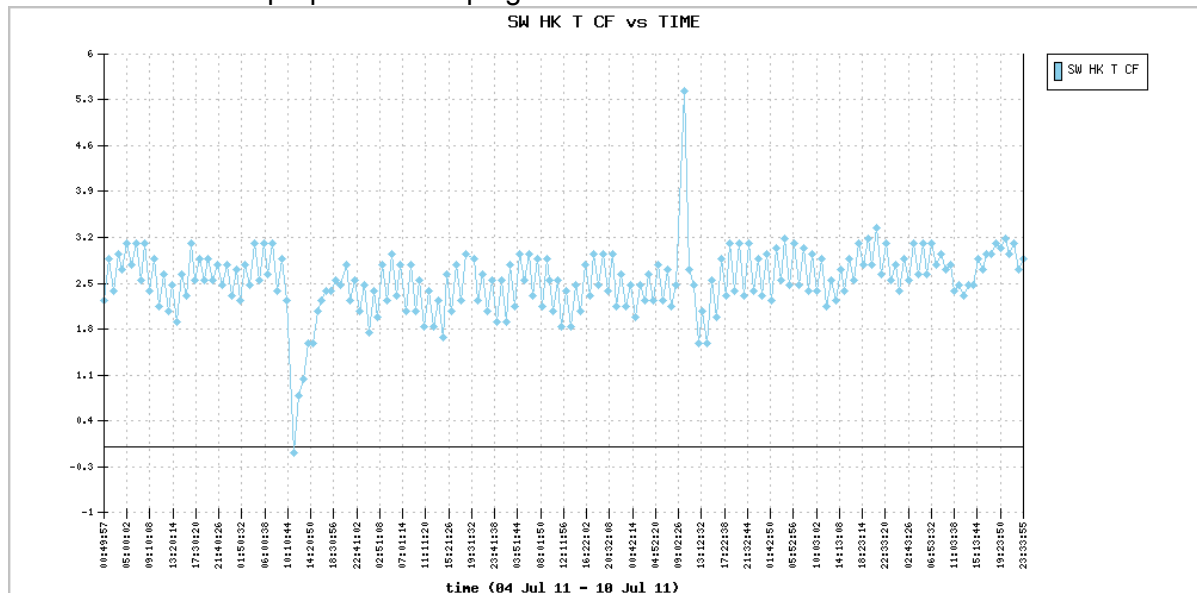
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 04 Jul	Tuesday 05 Jul	Wednesday 06 Jul	Thursday 07 Jul	Friday 08 Jul	Saturday 09 Jul	Sunday 10 Jul
Nominal acquisition	Nominal acquisition + propulsion campaign	Nominal acquisition	Nominal acquisition + ESP campaign	Nominal acquisition + propulsion campaign	Nominal acquisition	Nominal acquisition
IOS00314 782 images	IOS00315 761 images	IOS00315 774 images	IOS00315 711 images	IOS00315 672 images	IOS00315 682 images	IOS00315 722 images

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between 1.5 and 3.5 degrees Celsius. Effects were seen of the two propulsion campaigns.



To be explored

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4. PROBA2 Science Center Status

M. Dominique was operator during this week.

The following tools were updated on the operational server:

Software name	Update	Date	Comment
ADP	r4138	2011/07/05	enhancement of performances

5. Data reception & discussions with MOC

Passes

The data reception this week was perturbed by a wrong configuration of SVA antenna. After the replacement of the SG40 GPS receiver on 01/07/2011, the signal reception has been limiting to an elevation higher than 5 deg while the KSAT XML reply did not cut the pass.

As the signal reception was expected up to the horizon mask, many packets were lost on almost all downlink passes from 2011-07-01 till the end of the week.

As a result, passes 5114, 5117 and 5121 contained multiple small gaps of 330 sec in SWAP data and some other passes contained one image corrupted or truncated. Nevertheless, no pass can be considered as totally failing.

The P2SC has been unavailable from Jul 10 00:30 to Jul 11 13:31 due to the crash of one server.

Data coverage HK

The HK data were not complete this week. All packets have been received, but data gaps remained

- on Jul 05 from 19:55:59 to 20:07:59, right before pass 5074
- on Jul 06 from 07:12:30 to 07:21:00 (pass 5079) and from 18:47:30 to 19:29:00 (pass 5083)

Data coverage SWAP

Many images are missing this week because of the wrong configuration setting of the SVA antenna mentioned before. Thanks to the prioritizing of SWAP image download, this never resulted in any significant gap, but well in multiple small gaps of 330s (like in pass 5114 where 7 such gaps were observed).

Statistics for complete week:

Total number of images between 2011 Jul 04 OUT and 2011 Jul 11 OUT: 5108

Highest cadence in this period: 110 seconds

Average cadence in this period: 118.38 seconds
Number of image gaps larger than 300 seconds: 17
Largest data gap: 39.37 minutes

Most of the gaps are short gaps of 330s, the longer gaps correspond to ESP and propulsion campaigns.

Data coverage LYRA

The LYRA data were complete this week (see overview in Sect.1).

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