


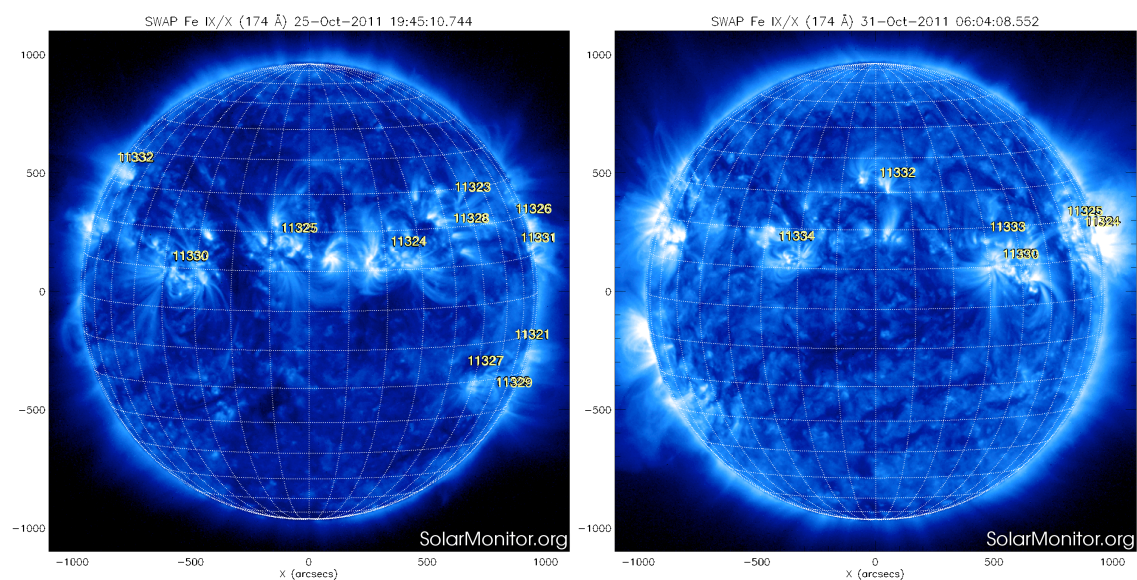
P2SC-ROB-WR-084- 20111024 Weekly report #084	P2SC Weekly report	
Period covered: Date: Written by: Released by:	Mon Oct 24 to Sun Oct 30, 2011 Wed 31 Oct 2011 Joe Zender David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

Solar & Space weather events

Overview

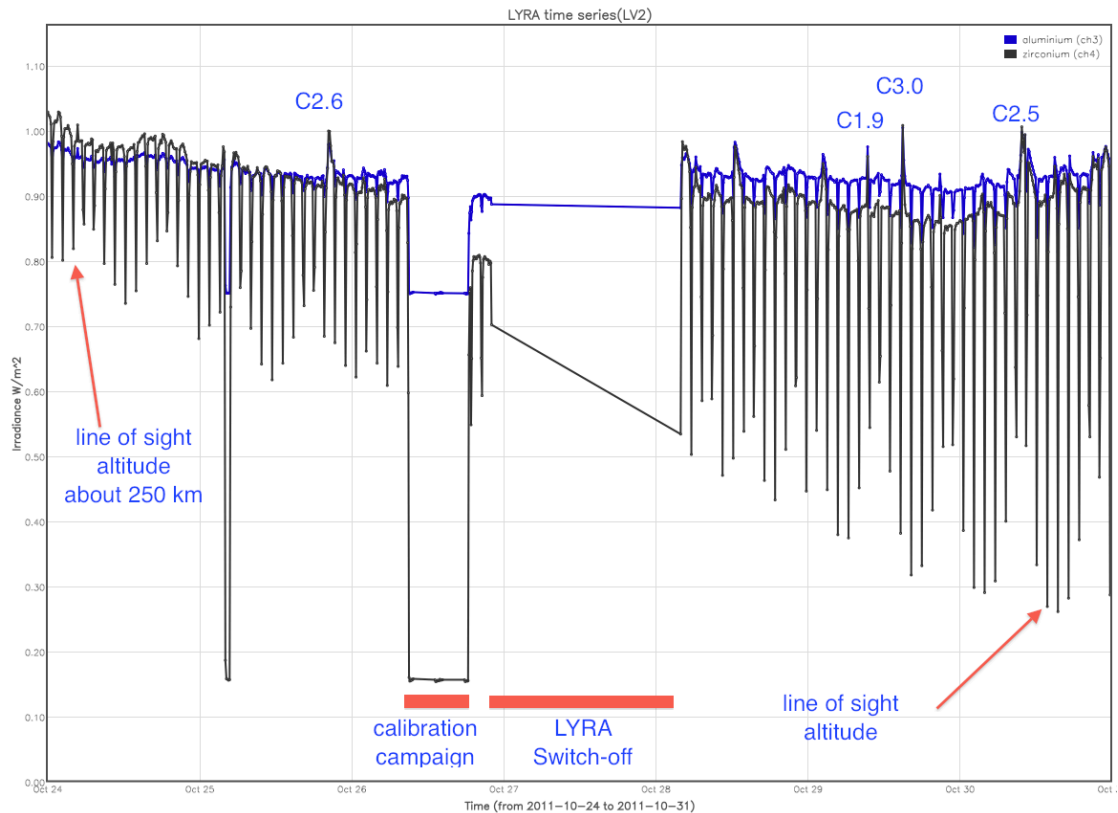
The SWAP images of October 24 and October 30 are shown below, with annotated active regions:



Overall, the solar activity was modest. Active regions AR11333, AR11324 and AR11330 produced most of the C-flares during the week. The magnetic setup of AR11330 changed throughout the week

from mixed, to e-type/beta-gamma to f-type/beta-gamma, however without major flaring activity.

The lower figure shows the (low) solar activity throughout the week. Due to the eclipses, the LYRA signal drops down every orbit reflecting the solar energy still reaching the detector depending on the line-of-sight (LOS) altitude. The LOS dropped from 250km to about 150km during this week.



The weekly calibration campaign on Wednesday was executed successfully, unfortunately followed by a autonomous LYRA switch-off (see discussion later).

Scientific campaigns

No scientific campaigns were executed during the week.

Outreach, papers, presentations, etc.

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To be explored

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2. LYRA instrument status

Calibration

Weekly LED calibration campaign plus backup acquisition using unit3 and unit2 was executed on Tuesday.

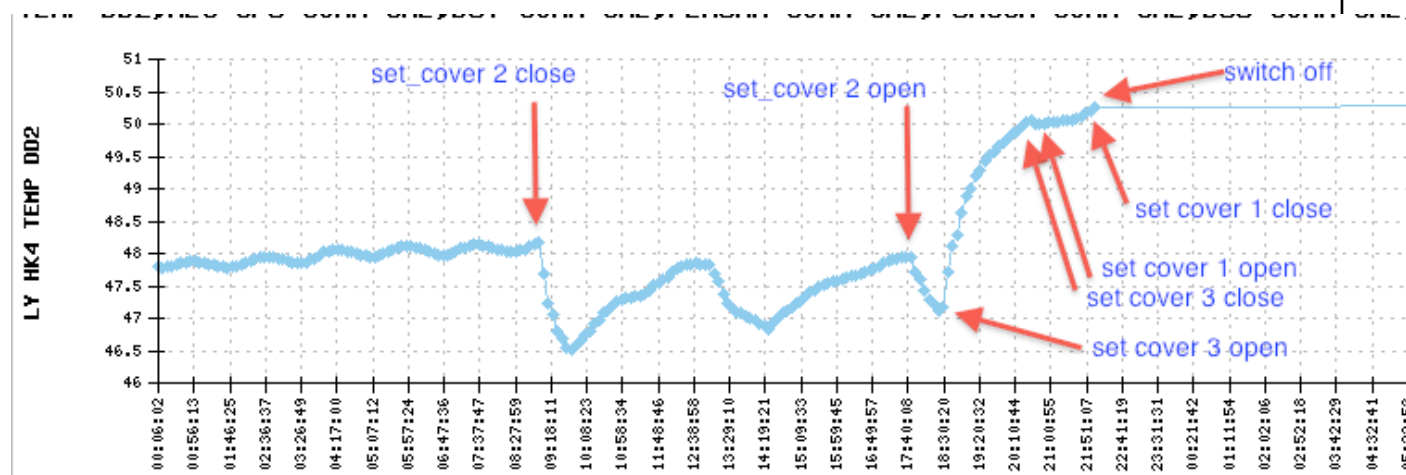
IOS & operations

Monday 24 Oct	Tuesday 25 Oct	Wednesday 26 Oct	Thursday 27 Oct	Friday 28 Oct	Saturday 29 Oct	Sunday 30 Oct
Nominal acquisition	Nominal acquisition	Nominal acquisition + Calibration campaign and switch-off at 22:30	switch-off until 03:45, then nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
LYIOS00197	LYIOS00197	LYIOS00197	LYIOS00198	LYIOS00198	LYIOS00198	LYIOS00198

Due to a temperature overrun, the LYRA instrument was switched off from 20111026T22:30 until 20111027T03:45. The threshold of one of the LYRA thermistors was out of limit (EVT_LYRA_TEMP_DIODE_DETECTOR_2_OUT_OF_LIMIT) and caused the automatic instrument switch-off. The limit was increased from 50degrees C to 55 degrees C, as already agreed earlier this year. Unfortunately, the increased threshold was not re-initialized on-board after the previous reboot procedure.

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 47.7 and 50.0 (see above) degrees Celsius during nominal operations. The following image shows the temperature evolution during the calibration until switch-off:



The overall evolution is normal.

To be explored

The reason for the temperature increase from 20111026T18:30 to 22:30 is still to be determined.

3. SWAP instrument status

Calibration

No calibration campaign was executed this week.

MCPM recoverable errors

Increased from 739 to 855 this week.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 24 Oct	Tuesday 25 Oct	Wednesday 26 Oct	Thursday 27 Oct	Friday 28 Oct	Saturday 29 Oct	Sunday 30 Oct
Nominal acquisition 110s cadence IOS00338 493 images	Nominal acquisition IOS00338 703 images	Nominal acquisition IOS00338 554 images	Nominal acquisition + ESP campaign IOS00338 653 images	Nominal acquisition IOS00338 642 images	Nominal acquisition IOS00338 699 images	Nominal acquisition IOS00338 677 images

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between 0.2 and 2.2 degrees Celsius. Temperature evolution is normal.

To be explored

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4. PROBA2 Science Center Status

Erik Pylyser was operator during this week.

5. Data reception & discussions with MOC

Passes

All data were received.

Data coverage HK

The HK data were complete this week.

Data coverage SWAP

All data was received.

Statistics for complete week:

Total number of images between 2011 Oct 24 0UT and 2011 Oct 31 0UT: 4445

Average cadence in this period: 136.04 seconds

Number of image gaps larger than 300 seconds: 36 (eclipse jumps)

Largest data gap: 29.00 minutes (ESP jump)

Data coverage LYRA

The LYRA data has a gap from 2011-10-26T22:30 until 2011-10-28T03:45. All other data (science and calibration) were received and processed successfully.

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
IU	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)
MCMP	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