P2SC-ROB-WR-085-20111031 Weekly report #085	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Oct 31 to Sun Nov 6, 2011 16 Nov 2011 Joe Zender David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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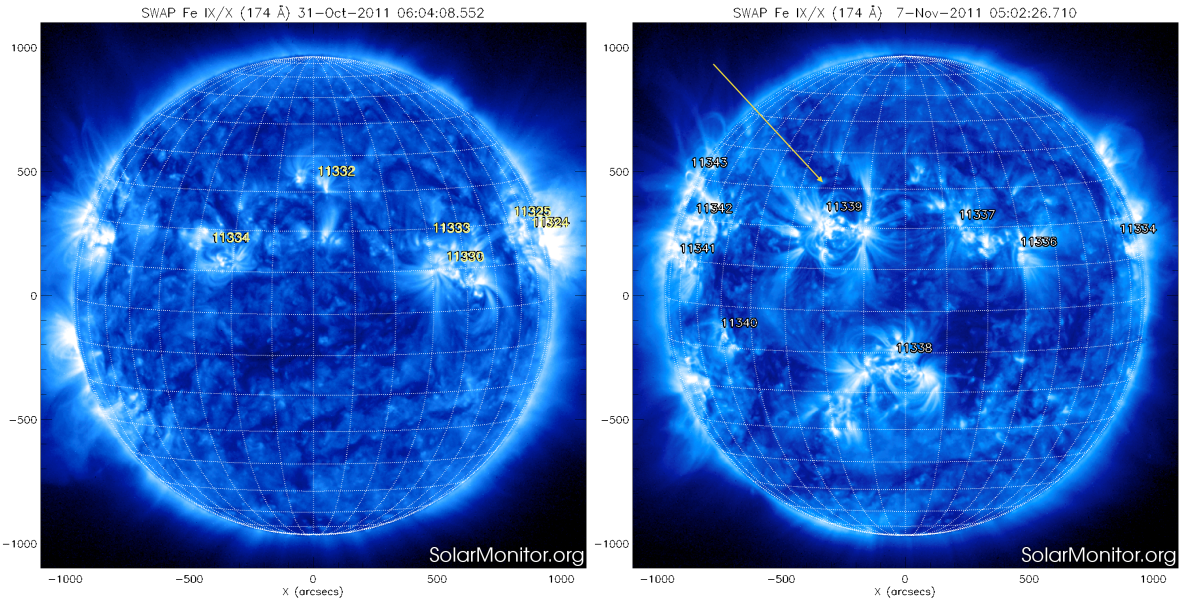
1. Science

Solar & Space weather events

Overview

The SWAP images of October 31 and November 6 are shown below, with annotated active regions:



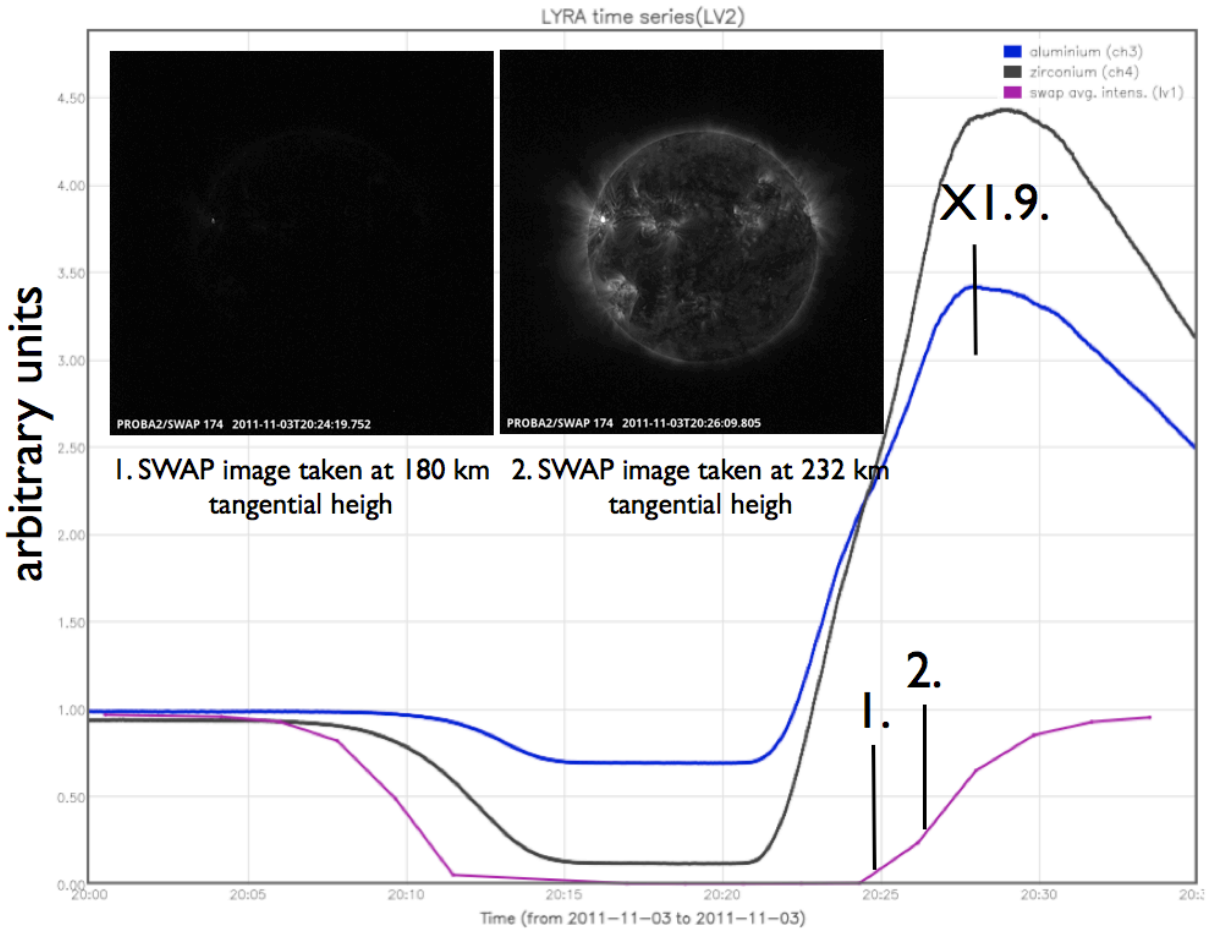
Whereas most of the active regions produced only a small number of low energy flares, the AR11339 got a bit upset this week. The flare turned around the western limb on Monday and is very active since then. The following table gives an overview of the flare bigger than C2.0 throughout the week.

[NOS: no oscillations seen, OS: oscillations seen]

Size	Event Date/Time of Max	SWAP	LYRA
M1.1	20111031T15:27	AR11339 not yet defined; occultation during impulsive phase;	NOS
M1.4	20111031T18:50	AR11339 not yet defined.; double peak; occultation during impulsive phase;	NOS
C2.7	20111101T00:33	occulted	
C3.5	20111101T02:30	fully observed	OS
C4.5	20111101T02:45	-	-
C3.2	20111101T04:45	occulted	-
C4.1	20111101T06:49	fully observed	NOS
C4.3	20111101T10:41	mostly occulted	-
C4.1	20111101T18:36	impulsive phase seen, then occulted	NOS
C2.7	20111101T19:55	impulsive phase seen, then occulted	NOS
C4.7	20111101T22:23	LAR in impulsive phase	NOS
C5.1	20111102T02:52	impulsive phase seen, then occulted	OS
C2.2	20111102T06:59	double peak	
C3.4	20111102T08:54	visible	NOS
C3.2	20111102T10:55	impulsive phase seen, then occulted	NOS
C2.7	20111102T16:00	impulsive phase seen, then occulted	OS
C7.8	20111102T17:10	visible	OS
M4.3	20111102T22:19	double peak	OS
C4.4	20111103T00:05		OS
C3.4	20111103T01:24	LAR in decay phase	NOS
C2.9	20111103T03:18	decay phase occulted	NOS
C3.2	20111103T07:11	impulsive phase occulted	NOS

C3.4	20111103T10:03	impulsive phase occulted	NOS
C4.5	20111103T18:47		OS
M2.5	20111103T10:58	LAR in impulsive phase	OS
X1.9	20111103T20:16	LAR + occultation at impulsive phase (see graph below)	OS
C3.8	20111104T00:01	nice, impulsive phase occulted	NOS
C2.9	20111104T19:25	occulted	-
C4.6	20111104T22:25	decay phase occulted	OS
M1.0	20111104T20:31	LAR during impulsive phase	OS
C9.2	20111104T22:56	occulted	-
C4.3	20111105T15:07	mostly occulted	NOS
M3.7	20111105T03:08	occulted during peak	NOS
M1.1	20111105T11:10	very slow increase or two events	OS
M1.8	20111105T20:31	impulsive phase occulted	-
C2.9	20111105T19:25	triple peak	NOS
C4.6	20111105T22:25	occulted	-
C8,8	20111106T09:52		OS
C5.3	20111106T14:30	flare onset occulted	OS
M1.2	20111106T00:46	peak occulted	NOS
M1.4	20111106T06:14	flare onset occulted	NOS
C4.3	20111106T15:07		NOS
M3.7	20111106T03:08	impulsive phase occulted	
M1.1	20111106T11:10	occulted	
M1.8	20111106T20:31		NOS

In the evening of the 4th and early morning of the 5th, a filament at the North pole erupted and is nicely visible in the SWAP daily movie.



Scientific campaigns

SWAP off-pointing campaigns have been run to catch coronal signals far out in the corona. The campaigns were run at:
2011.11.03T20:49 - 2011.11.03T22:49
2011.11.04T21:37- 2011.11.04T22:37
2011.11.05T20:46 - 2011.11.05T21:46
2011.11.06T21:35 - 2011.11.06T22:35

LYRA occultation campaigns with unit3/unit2 were run at:
2011.11.03T10:07
2011.11.04T09:16 for a during of 30-45 minutes.

All campaigns were executed successfully.

Outreach, papers, presentations, etc.

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To be explored
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2. LYRA instrument status

Calibration

There was no calibration campaign this week.

IOS & operations

Monday 31 Oct	Tuesday 1 Nov	Wednesday 2 Nov	Thursday 3 Nov	Friday 4 Nov	Saturday 5 Nov	Sunday 6 Nov
Nominal acquisition LYIOS00199	Nominal acquisition LYIOS00199	Nominal acquisition LYIOS00199	Nominal acquisition + occultation LYIOS00199	Nominal acquisition +occultation LYIOS00199	Nominal acquisition LYIOS00199	Nominal acquisition LYIOS00199

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 48.2 and 49.8 degrees Celsius during nominal operations. During occultation campaigns (unit3+unit2) the temperature increased to 50.2 degrees.

To be explored
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3. SWAP instrument status

Calibration
LED calibration campaign executed on 1 November.

MCPM recoverable errors
Increased from 874 to 1032 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 31 Oct	Tuesday 1 Nov	Wednesday 2 Nov	Thursday 3 Nov	Friday 4 Nov	Saturday 5 Nov	Sunday 6 Nov

Nominal acquisition 110s cadence IOS00338 613 images	Nominal acquisition + LED calibration IOS00339 689 images	Nominal acquisition+ off-pointing IOS00340 665 images	Nominal acquisition + ESP campaign off-pointing IOS00341 676 images	Nominal acquisition off-pointing IOS00341 716 images	Nominal acquisition off-pointing IOS00341 720 images	Nominal acquisition off-pointing IOS00341 703 images

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between 0.95 and 2.7 degrees Celsius.

To be explored
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4. PROBA2 Science Center Status

Joe Zender was operator during this week.

The following tools were updated on the operational server:
- LYEDG was updated to r4260 (bug fixes)
- LMAT databases were backuped and size reduced by archiving of data older than 2 months.

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 31 0UT and 2011 Nov 07 0UT: 4870
Highest cadence in this period: 30 seconds
Average cadence in this period: 124.17 seconds
Number of image gaps larger than 300 seconds: 10
Largest data gap: 61.28 minutes

The data gap of 61 minutes was caused by the off-pointing on the 2 November using a very low priority with the result that none of the images was downloaded.

Another large data gap of 29 min was commanded to allow for an ESP test. Corrupted images in pass (< 4 images) 2 November 2011: 6144 4 November 2011: 6164 5 November 2011: 6174 6 November 2011: 6178
Data coverage LYRA The LYRA data were complete this week.

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