| P2SC-ROB-WR-080-20110926 Weekly report #080	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Sep 26 to Sun Oct 2, 2011 Wed 05 Oct 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 26 and October 02 are shown below, with annotated active regions:
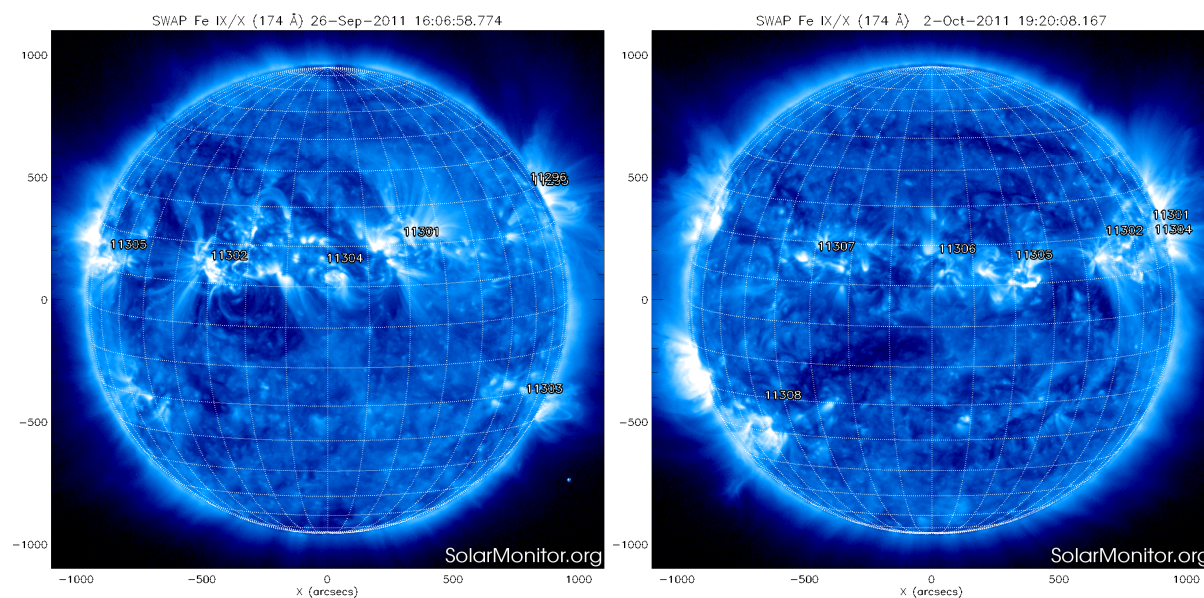
The week started with a moderate activity due to 2 M flares from active region NOAA1302 on Sept.26. This active region, which featured a naked-eye sunspot, was the dominant one early in

the week. It was stable and then decayed slowly as it rotated across the disk, producing only one weak M flare and C flares for the rest of the week. Starting on Sept.29, active region NOAA1305 , an H-type group, started to grow and took a Beta-gamma-delta configuration. It produced a succession of 3 M flares on Sept.30, Oct.1 and 2. The strongest one was an M3.9 flare at 00:40UT Oct.2. Those events occurred near disk center and were associated with rather slow Earth-directed CMEs.
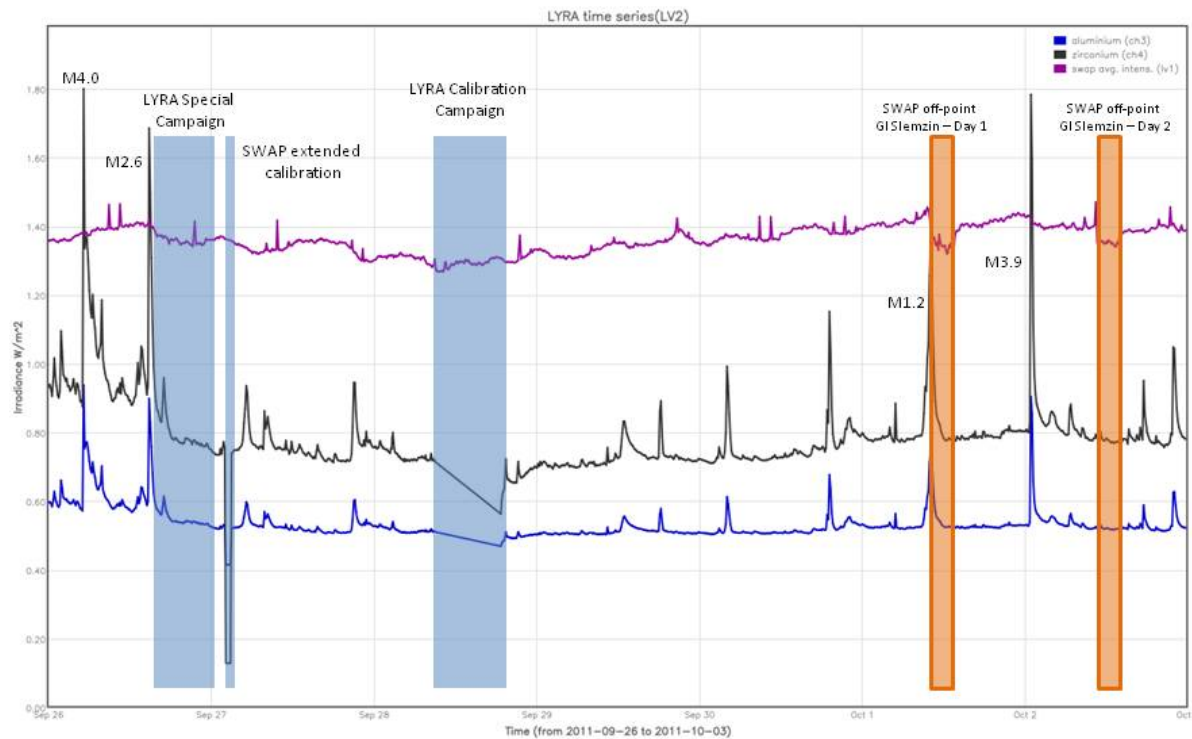
Above we show the weekly overview of LYRA Al/Zr signals and SWAP average intensity (SWAVINT in purple). A LYRA flare hunting campaign was initiated on Monday 13:00, in view of the activity on the Sun, in the week-end before.

The orange indicators show SWAP - east pointed - off-point periods, commanded for a Guest Investigator campaign (Vladimir Slemzin) - see below for more details.

Solar activity evolved from High early in the week, to Medium for the rest of the week. Four M-flares were observed, 2 early and 2 late in the week.

Scientific campaigns

A Guest Investigator campaign was started this week (Oct 1; Vladimiar Slemzin). For this campaign, we follow a specific AR during its passage on the solar surface, i.e. during 14 days. The first two days of this campaign (day 1 & 2) are indicated. The next 10 days of this campaign are covered by nominal SWAP operation sequences. The last 2 days (day 13 & 14) will be covered by 2 - west

pointed - off-point periods.

Outreach, papers, presentations, etc.

Guest Investigator Nandita Srivastava and a student from the University of Liege (Maxime Devogele) visited the P2SC. The latter will do his master thesis on space weather events observed by SWAP.

To be explored
New flare figures are produced that use LYRA short wavelength timelines as a proxy for the GOES X-ray flare monitoring. These figures are available at http://solwww.oma.be/users/dammasch/GoesVsLyra.html and an example (from the previous week) is shown below. Note in particular the GOES data gap (Earth occultation) around 06:00 (with a missed M-flare) that is well covered by the LYRA proxies.
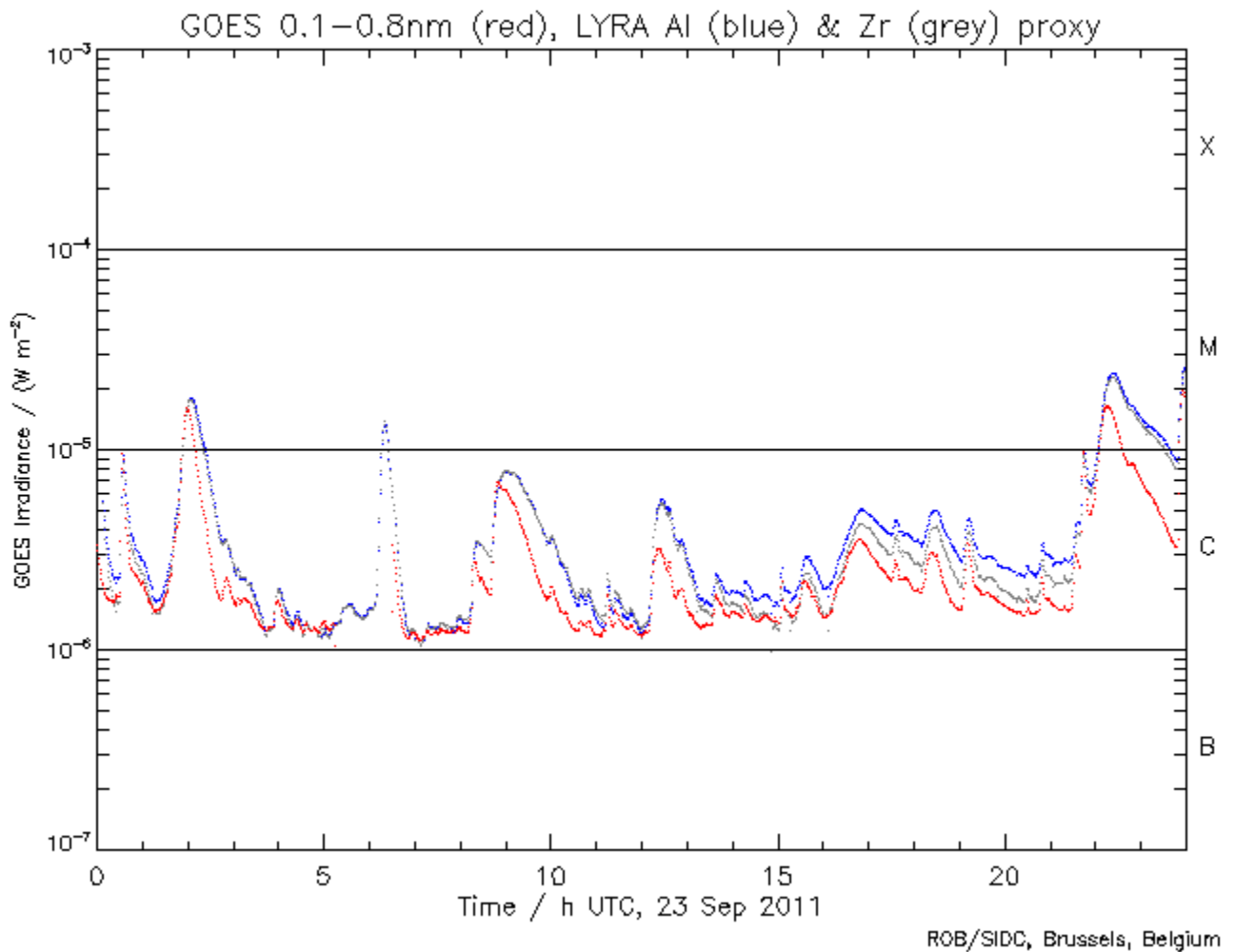
2. LYRA instrument status

Calibration

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

IOS & operations

Monday 26 Sep	Tuesday 27 Sep	Wednesday 28 Sep	Thursday 29 Sep	Friday 30 Sep	Saturday 01 Oct	Sunday 02 Oct
Nominal acquisition + LYRA flare hunting campaign	Nominal acquisition	Nominal acquisition + LYRA calibration campaign & b/u acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
LYIOS00193	LYIOS00193	LYIOS00193	LYIOS00193	LYIOS00193	LYIOS00193	LYIOS00193

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 45.6 and 47.1 degrees Celsius during nominal operations. During the special LYRA campaign, the temperature reached 48.5 degrees.

The overall evolution is normal.

To be explored
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3. SWAP instrument status

Calibration
The weekly 'extended' SWAP calibration campaigns was executed on Tuesday.

MCPM recoverable errors
Increased from 442 to 476 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 26 Sep	Tuesday 27 Sep	Wednesday 28 Sep	Thursday 29 Sep	Friday 30 Sep	Saturday 01 Oct	Sunday 02 Oct

Nominal acquisition 110s cadence	Nominal acquisition + calibration campaign, including extra darks acquisition	Nominal acquisition	Nominal acquisition + ESP campaign	Nominal acquisition	Nominal acquisition + Day 1 of GI campaign (Vladimir Slemzin)	Nominal acquisition + Day 2 of GI campaign (Vladimir Slemzin)
IOS00333 761 images	IOS00332 708 images	IOS00332 719 images	IOS00332 661 images	IOS00333 637 images	IOS00334 615 images	IOS00334 646 images

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between -1,27 and -0,11 degrees Celsius. Temperature evolution is normal.

To be explored
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4. PROBA2 Science Center Status

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

No tools were updated on the operational server.

5. Data reception & discussions with MOC

Passes
All passes, except pass 5813 (see below) were received nominally.

Data coverage HK
The HK data were complete this week.

Data coverage SWAP
BINSWAP_5813 was not processed successfully at P2SC. This did not result in significant data loss.   Statistics for complete week: *Total number of images between 2011 Sep 26 0UT and 2011 Oct 03 0UT: 4802* *Highest cadence in this period: 29 seconds* *Average cadence in this period: 125.92 seconds* *Number of image gaps larger than 300 seconds: 3* *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
The HK 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