P2SC-ROB-WR-073-20110808 Weekly report #073	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Aug 08 to Sun Aug 15 2011 2011/08/21 D. Berghmans A. De Groof	Royal Observatory of Belgium PROBA2 Science Center
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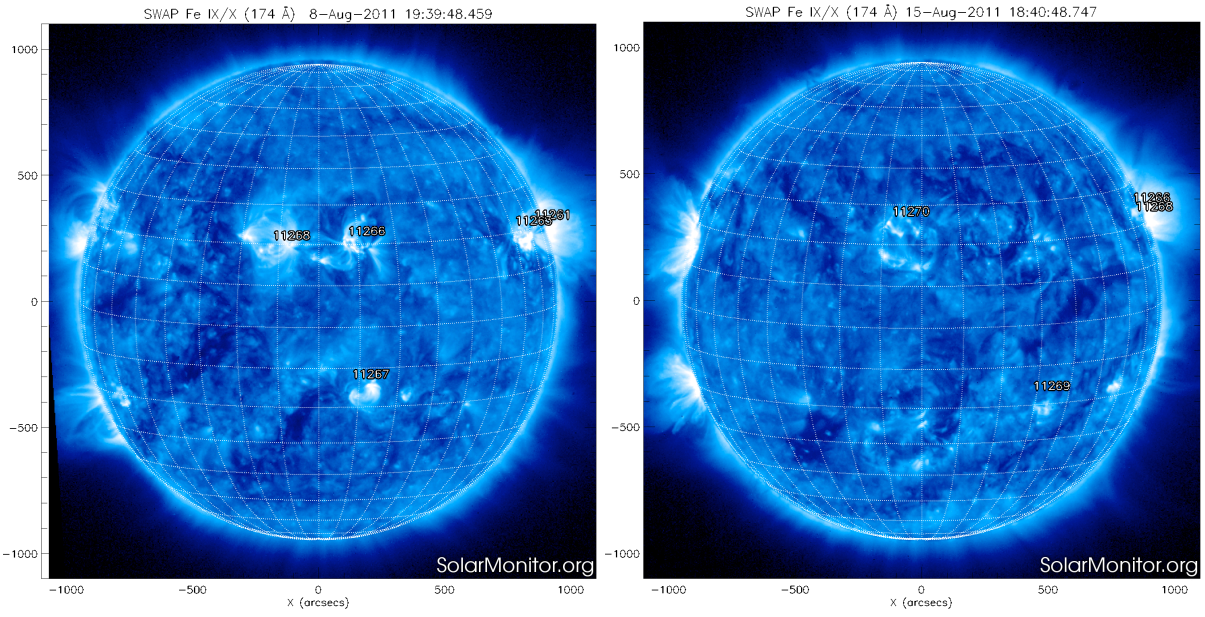
1. Science

Solar & Space weather events

The SWAP images of Aug 8 and Aug 15 are shown below, with annotated active regions:



The string of active regions (AR 1260, 1261, 1263) in the northern hemisphere that already

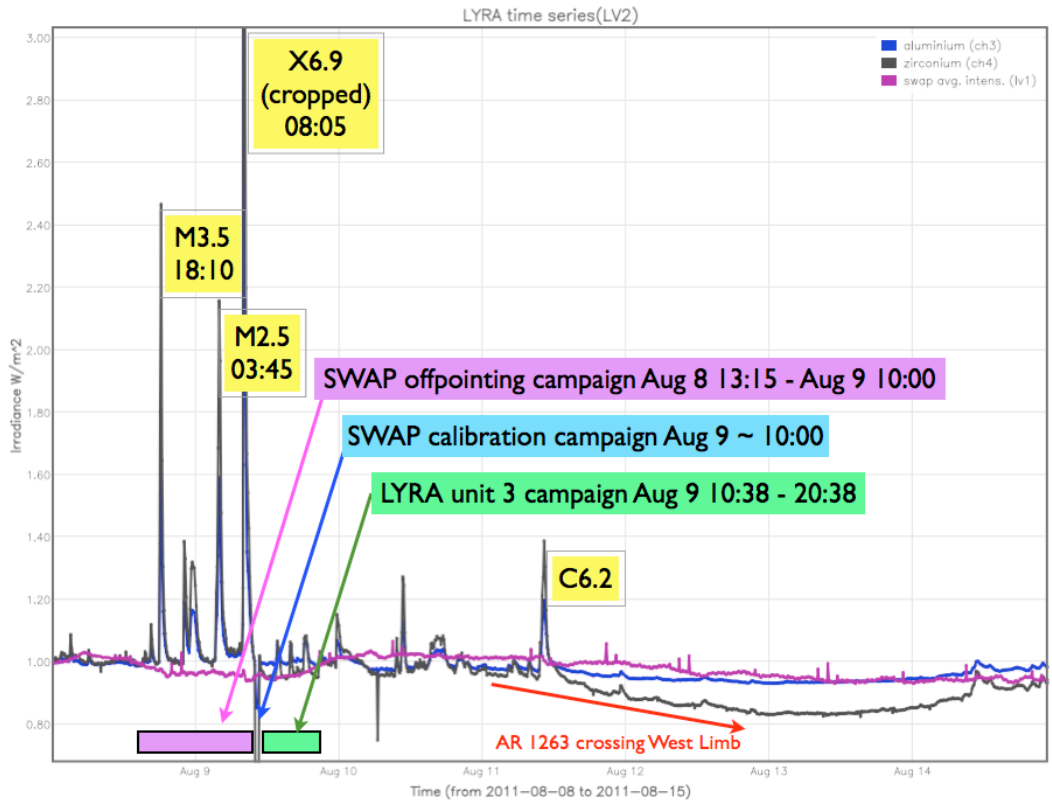
produced firework last week, continued to dominate solar activity. In particular the last in the series (AR 1263) showed significant flux emergence at its trailing side.

Besides a handful of C-flares, this led on Aug 8 to an M3.5 flare (18:10), and on Aug 9 to an M2.5 flare (03:45) and an X6.9 flare (08:05). This was the largest flare in the present solar cycle. The already enhanced proton flux levels were pushed across the event threshold.

The event was associated with a Type II burst (1550km/s). STEREO & LASCO confirmed the presence of a CME at a speed larger than 1000km/s. The CME or shock was however later not observed by the ACE spacecraft.

On Aug 11, while already mostly behind the West limb, AR 1263 released another large flare, from Earth visible as C6.2 event. Proton fluxes did not react to this event. After that, the X-ray background dropped significantly.

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



The calibration campaigns are annotated in blue, data gaps 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

- From Aug 08 13:15 to Aug 09 10:00, SWAP off-pointed to try capturing the development of a CME
- On Aug 09, from 10:00 to 10:52, there was a SWAP LED calibration
- On Aug 09, from 10:30 to 20:38, LYRA cover 3 was open in the frame of a flare hunting

campaign.

- On Aug 11, from 09:30 to 10:00, the ESP campaign took place

Outreach, papers, presentations, etc.

Guest investigator Spiros Patsourakos was visiting this week.

To be explored
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2. LYRA instrument status

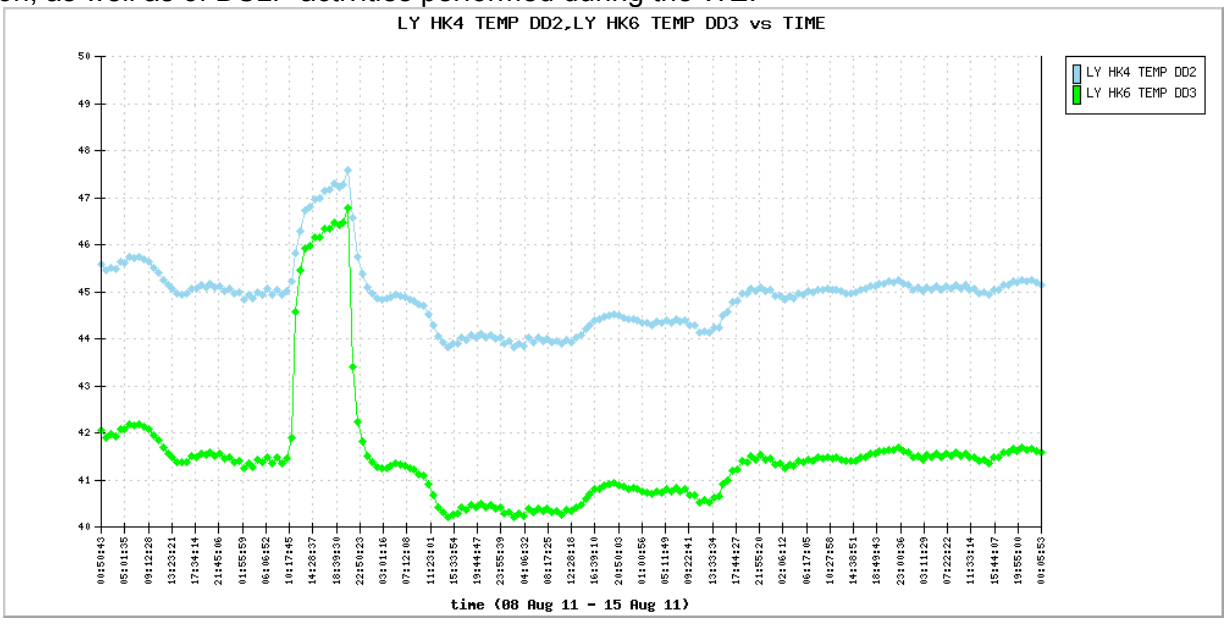
Calibration
No campaign scheduled for this week.

IOS & operations

Monday Aug 8	Tuesday Aug 9	Wednesday Aug 10	Thursday Aug 11	Friday Aug 12	Saturday Aug 13	Sunday Aug 14
Nominal acquisition LYIOS00185	Nominal acquisition + flare hunting campaign LYIOS00186	Nominal acquisition LYIOS00186	Nominal acquisition LYIOS00186	Nominal acquisition LYIOS00186	Nominal acquisition LYIOS00186	Nominal acquisition LYIOS00186

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 43.5 and 47.5 degrees Celsius. Effects were seen of the LYRA flare hunting campaign, in which unit 3 was switched on, as well as of DSLP activities performed during the WE.



To be explored
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3. SWAP instrument status

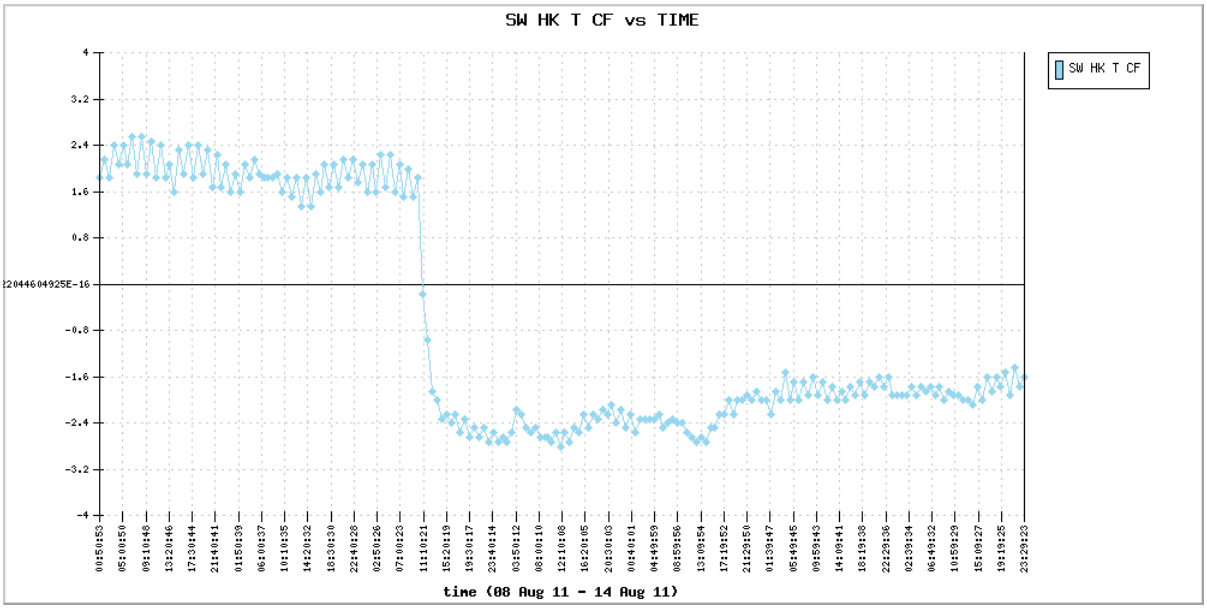
Calibration:
SWAP performed a LED calibration campaign on Aug 09 from 10:00 to 10:52.

MCPM recoverable errors
increased from 183 to 226 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday Aug 8	Tuesday Aug 9	Wednesday Aug 10	Thursday Aug 11	Friday Aug 12	Saturday Aug 13	Sunday Aug 14
Nominal acquisition + off-pointing: CME tracking IOS00322 609 images	Nominal acquisition + LED Calibration IOS00322 686 images	Nominal acquisition IOS00322 727 images	Nominal acquisition + ESP campaign IOS00322 663 images	Nominal acquisition IOS00322 649 images	Nominal acquisition IOS00322 641 images	Nominal acquisition IOS00322 642 images

SWAP detector temperature
The SWAP Cold Finger Temperature dropped from above 2.4C in the beginning of the week, down to below -2.4C after Aug 10 10:15 when the LAR delay of 7 min was commanded permantently, or at least untill further notice.



To be explored /

4. PROBA2 Science Center Status

David Berghmans and Erik Pylyser were operators during this week.

The following tools were updated on the operational server:

Software name	Update	Date	Comment
LY-QLV	4160	Aug 08	Make the autoscale function default

5. Data reception & discussions with MOC

Passes In general the data reception this week was good. Pass 5931 was received twice. The following passes contained corrupted or truncated data: 5405 and 5415.
Data coverage HK The HK data were complete this week.
Data coverage SWAP The overall data coverage was acceptable, with an average cadence of 130 sec instead of 110 sec. Statistics for complete week: *Total number of images between 2011 Aug 08 0UT and 2011 Aug 15 0UT: 4617* *Highest cadence in this period: 30 seconds* *Average cadence in this period: 130.99 seconds* *Number of image gaps larger than 300 seconds: 33* *Largest data gap: 29.00 minutes, corresponding to the ESP campaign* On Aug 08, we had 32 small gaps of max 5.5 min. Those gaps can probably be explained by the images with higher priority that were commanded in the previous days.
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