| P2SC-ROB-WR-049-20110221 Weekly report #049	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Feb 21 to Sun Feb 27 2011 March 13 2011 David Berghmans Marie Dominique	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

Solar & Space weather events

At the beginning of the week, AR NOAA 1158, that had produced the first X flares in four years, turned behind the limb. Solar activity was mostly quiet or at C-class flaring level during this week. Returning active region NOAA 1163 produced a M3.5 flare on Feb 24 before it turned onto the disk. A westward directed fast CME was associated with it. A filament from the northern hemisphere erupted on Feb 25.
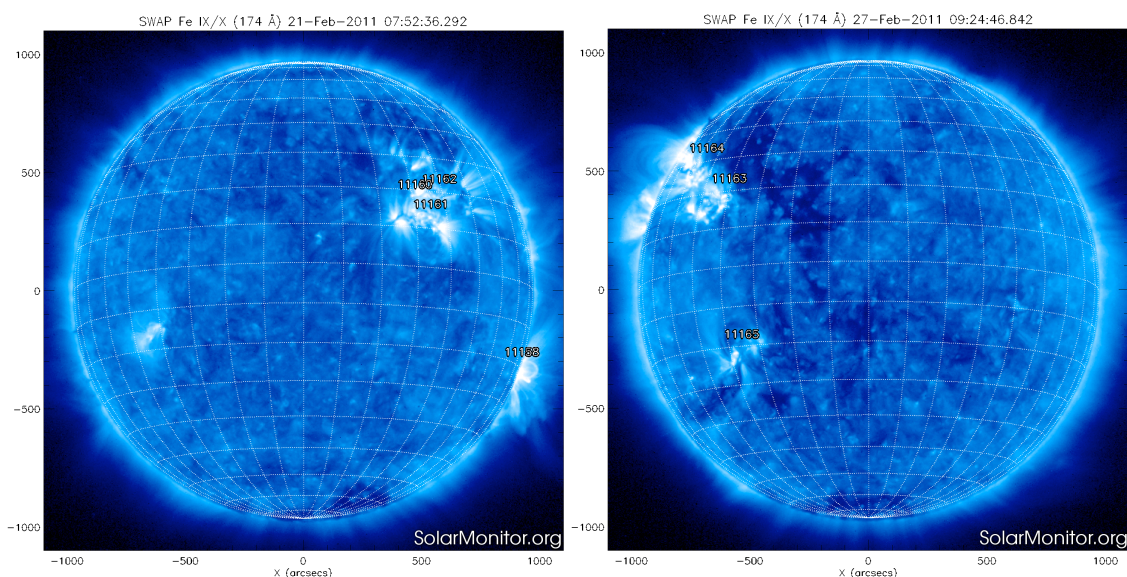
SWAP images showing active regions in the beginning (left) and end (right) of the period.
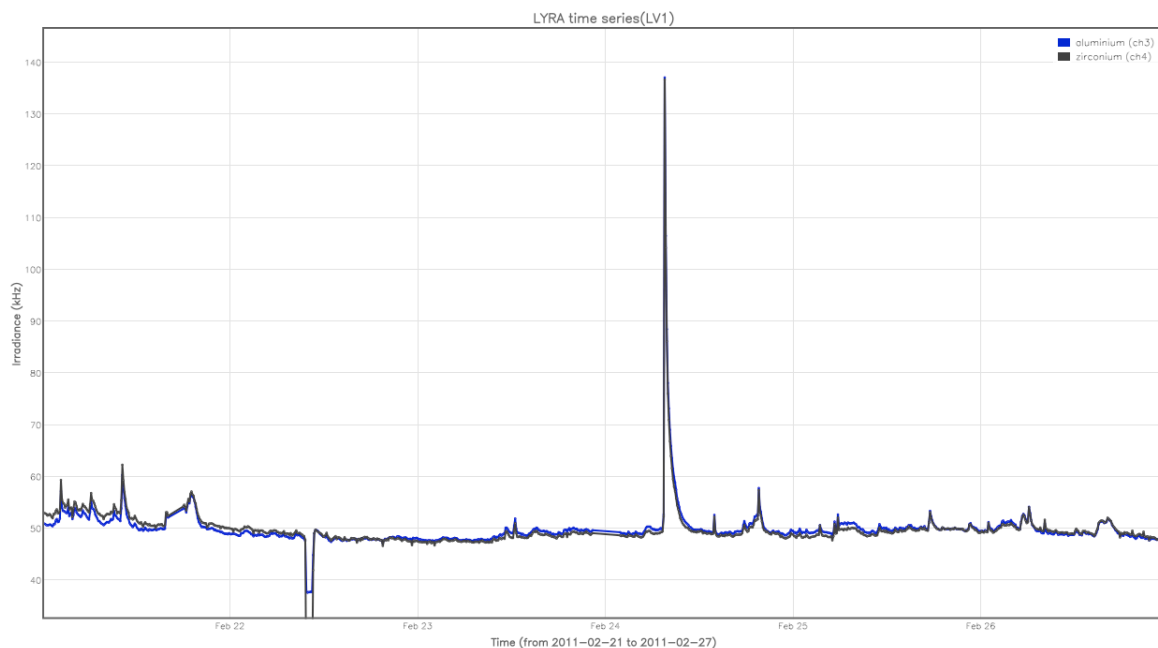
LYRA timelines (Al & Zr) covering the full week and showing in particular the M3.5 flare on Feb 24. The small drop seen on Feb 22 corresponds to the off-pointing of the SWAP calibration sequence.

Scientific campaigns

Nominal operations were only interrupted by the SWAP calibration sequence of Feb 22.

Outreach, papers, presentations, etc.

Ines Kienreich was guest investigator during the period (last week of her stay).

To be explored

N/A.

2. LYRA instrument status

Calibration
There was no LYRA calibration campaign during the period.

IOS & operations
LYRA was operated throughout the period on the basis of IOS 148 which was issued on Feb 16: non-stop 20Hz sampling of unit 2.

To be explored
N/A

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 802 to 864 during the period.
The number of MCPM unrecoverable errors is still 0.

IOS & operations
- **IOS 00251:** scheduled the SWAP biweekly calibration sequence. On request of Jean-Philippe Halain, the sequence was extended with extra LED images with variable integration time for testing of response linearity.
- **IOS 00252:** scheduling of ESP sequence on Feb 24.
- **IOS 00253, 254, 255:** failed attempts to upload an off-pointing sequence.

It was remarkable that the extended SWAP calibration sequence was followed by a data gap of 3h. This was probably caused by the fact that we entered the calibration sequence with a buffer *full* of images with priority 131-132-133 (as specified by the preceding IOS 250). The calibration sequence itself had a priority 0, and could thus overwrite the previous images. However, following the calibration sequence, the table imaging at the end of IOS 251 specified a priority switching between 250-251-252. These images could only be brought to the ground once all the old priority 131-132-133 images were brought to the ground, which lasted a few hours.

SWAP detector and IIU temperature
The SWAP Cold Finger Temperature fluctuated between 4.2 and 6.2 degrees Celsius.
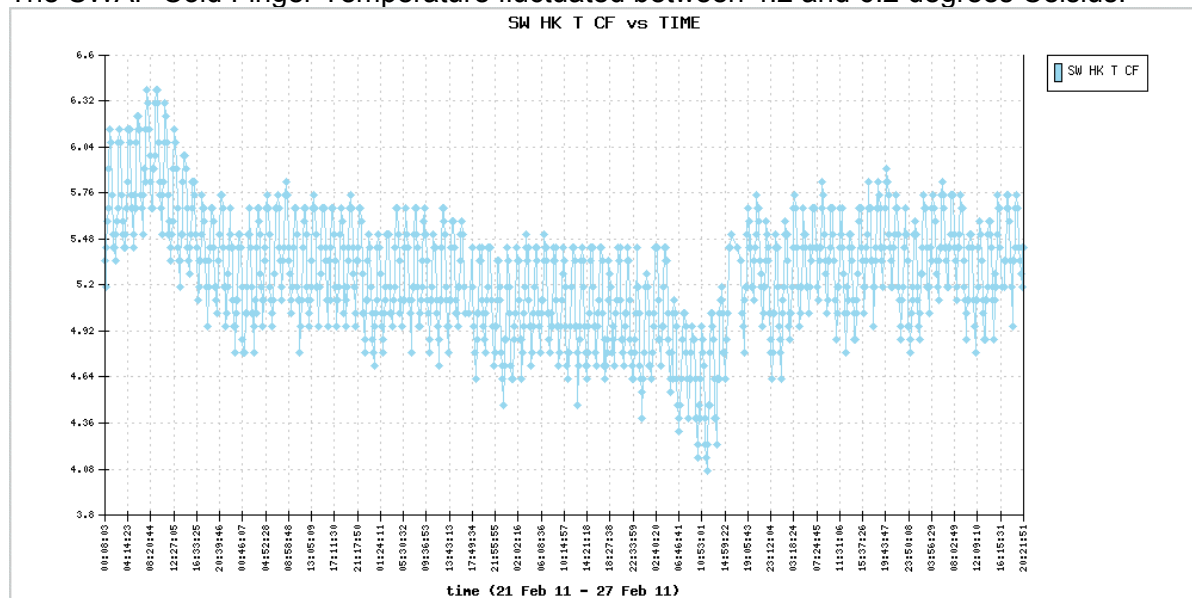
4. PROBA2 Science Center Status

David Berghmans was operator during this week.

The following tools were updated on the operational server:

Software name	Update	Date	Comment
PPT	3937	Feb 23	update Earth Orientation Kernel

PPT (TLE)	3913	Feb 23	update Astro-SpaceTrack

5. Data reception & discussions with MOC

Data coverage HK

Housekeeping data coverage was complete except unexplained data gaps each time between 16:00 and 18:00 on the following days:
- Feb 23,
- Feb 25
- Feb 27

These gaps could possibly be explained by the many lost images on these days due to perturbed signals at the ground stations (see PROBA-2 Operations Status Report #48)

Data coverage SWAP

Number of images per day:

Feb 21 Monday: 760

Feb 22 Tuesday: 642   ! data gap of 3h between 11:01 and 14:18: consequence of
                                        extended SWAP calibration sequence (see above)

Feb 23 Wednesday: 851

Feb 24 Thursday: 695   ! data gap of 30 min between 14:04 and 14:34: ESP sequence

Feb 25 Friday: 746

Feb 26 Saterday: 717

Feb 27 Sunday: 855

Statistics for complete week:
> *Total number of images between 2011 Feb 21 0UT and 2011 Feb 28 0UT: 5266*
> *Highest cadence in this period: 30 seconds*
> *Average cadence in this period: 114.84 seconds*
> *Number of image gaps larger than 300 seconds: 2*
> *Largest data gap: 196.67 minutes*

Data coverage LYRA

LYRA data coverage was complete except for 2 data gaps that were a consequence of the failing of the processing of the BINLYRA pass data (LYTMR error 4306)
- Feb 21: pass 3857
- Feb 24: pass 3879

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
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