P2SC-ROB-WR-050-20110228 Weekly report #050	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Feb 28 to Sun Mar 06 2011 Wed Mar 09 2011 Joe Zender Marie Dominique	Royal Observatory of Belgium PROBA2 Science Center
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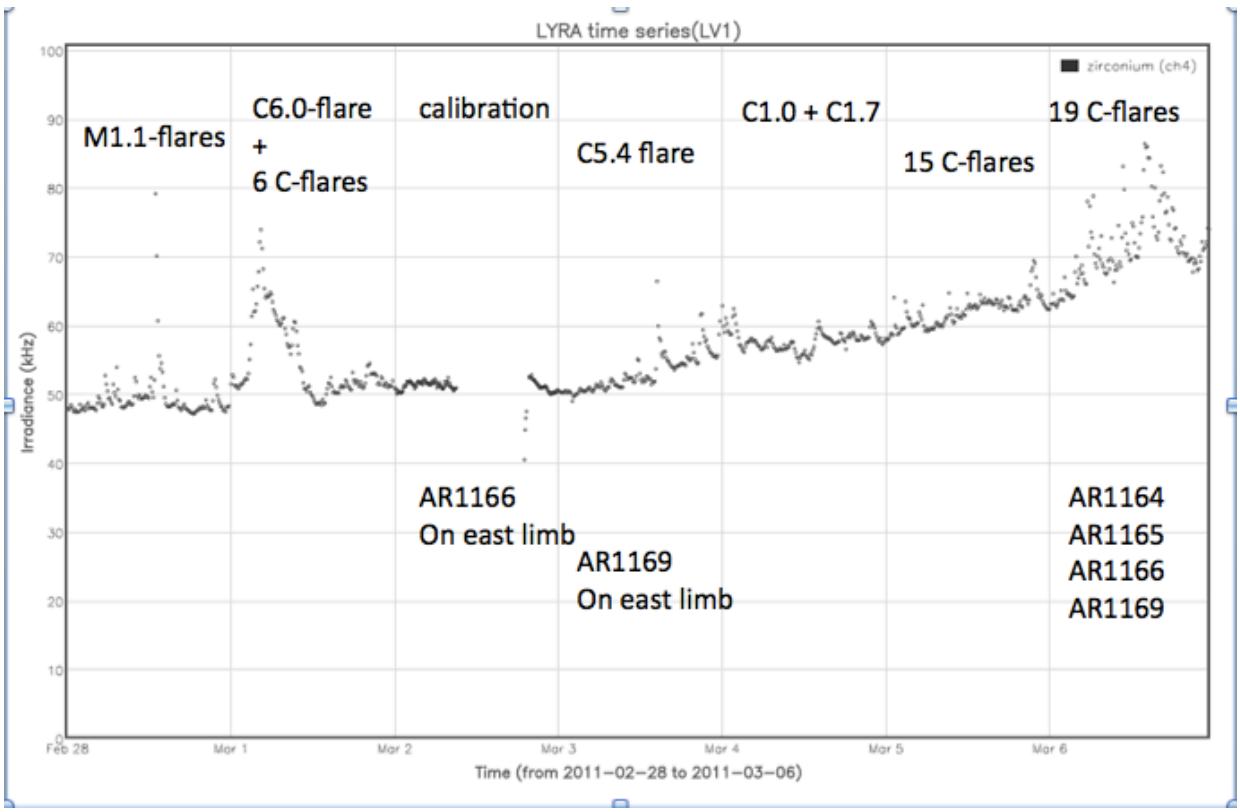
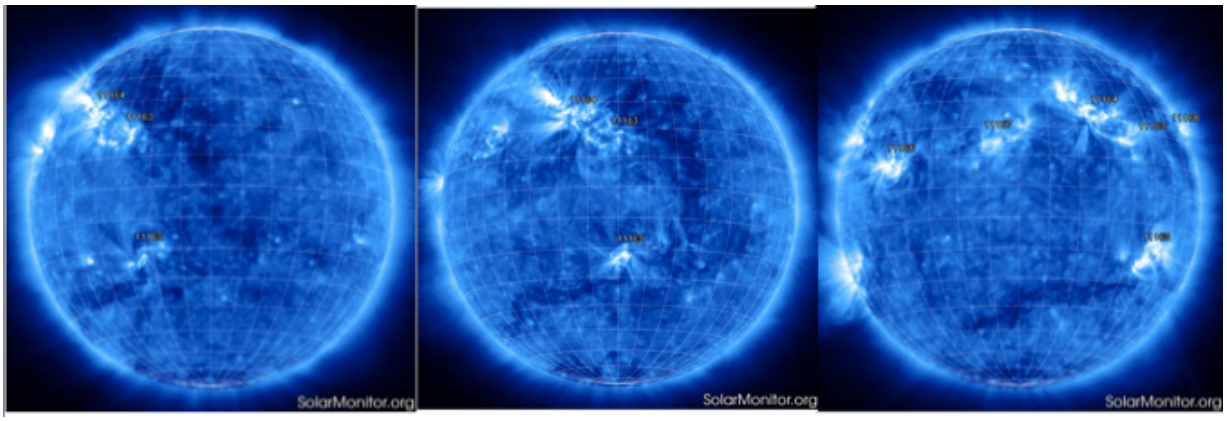
1. Science

Solar & Space weather events

Starting with three active regions and a modest activity despite the complex magnetic delta configuration of AR 1164, the week ended with 6 active regions of which 3 AR showed a complex magnetic configuration. The following plot sketches the activity of the week based on a LYRA Zirconium plot:



The following plot shows the Active Regions at the begin, mid and end of the week.



Some events of the week:

> 20110303T1930: very nice CME on the east limb. Clearly visible with SWAP far out in the FOV! Detected by CACTUS. C1.2 flare seen by LYRA.
> 20110305T1900 - 1930: eruption on the east limb from within AR1169. This event is not detected in LYRA and CACTUS did not detect a CME, but nicely visible with SWAP.
> 20110305T2145: AR1164, AR1165 and AR1169 show activity at the very same time

Outreach, papers, presentations, etc.
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To be explored
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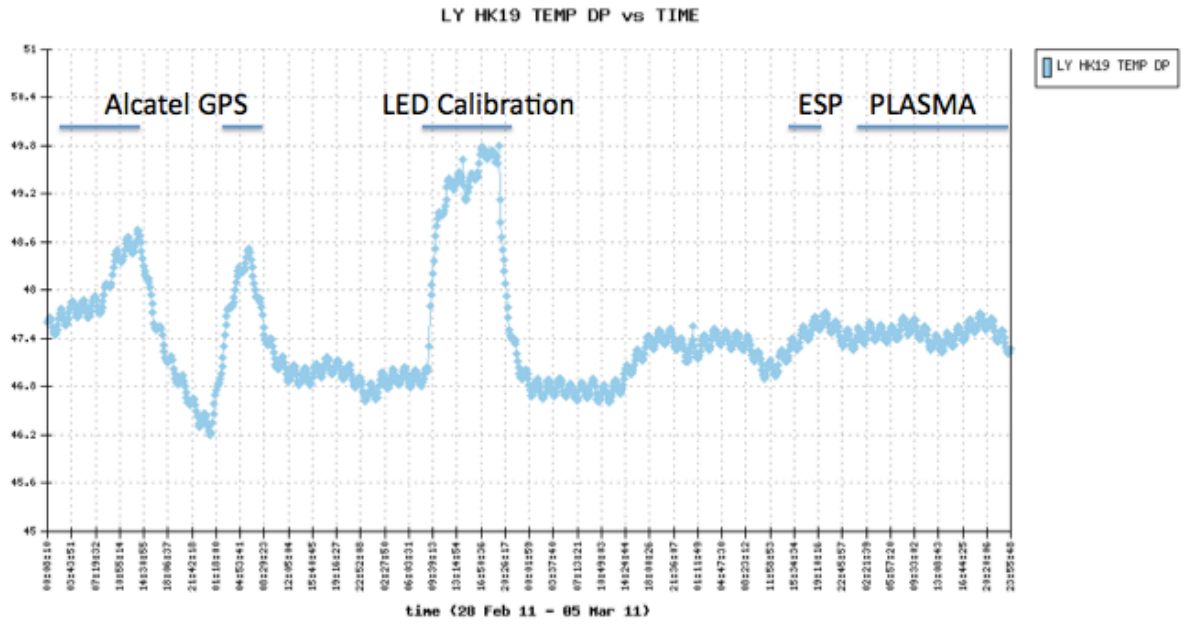
2. LYRA instrument status

Temperature evolution

The following plot shows the temperature evolution of the LYRA Digital Print over the week. The effect of other instruments is clearly visible. As the threshold of this sensor is currently set to 55 degrees, the limit was not reached during the week due to the sequential operations of the subunits.



Calibration

A LYRA calibration + back-up campaign was executed on Wednesday 2nd March 2011.

IOS & operations

Monday 28 Feb	Tuesday 1 Mar	Wednesday 2 Mar	Thursday 3 Mar	Friday 4 Mar	Saturday 5 Mar	Sunday 6 Mar
Nominal acquisition (LYRA00148)	Nominal acquisition (LYRA00148)	Nominal acquisition + LREP_03 Calibration campaign (LYRA00149)	Nominal acquisition (LYRA00149)	Nominal acquisition (LYRA00149)	Nominal acquisition (LYRA00149)	Nominal acquisition (LYRA00149)

To be explored

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3. SWAP instrument status

MCPM errors
The MCPM recoverable errors did not increase during the week and is constant at 864.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday Feb 28	Tuesday Mar 01	Wednesday Mar 02	Thursday Mar 03	Friday Mar 04	Saturday Mar 05	Sunday Mar 06
extremely long cadence Cadence:1700 #images: 449 IOS00257	Nominal Cadence:1700/ 100 #images: 568 IOS00258	Nominal Cadence:100 #images: 685 IOS00258	Nominal + ESP test Cadence:100 #images:797 IOS00259	Nominal Cadence:100 #images: 575 IOS00259	Nominal Cadence:100 #images: 718 IOS00259	Nominal Cadence:100 #images:629 IOS00259

Due to a misunderstanding of the currently uploaded table configuration, IOS257 included a cadence for the ESP operations jump, that is the time between two Large Angle Rotations. The cadence was corrected on Tuesday morning from 09:30 UT onwards.
The rest of the week, nominal operations were performed without any further anomalies.

SWAP detector and IIU temperature
The SWAP Cold Finger Temperature was fluctuating around 5C with the exception for the Alcatel GPS switch-on time during which the sensor increased to 7.5C max.

4. PROBA2 Science Center Status

Joe Zender was operator on Monday Feb 28 till Sunday March 06.

On Tuesday, all LYRA related pipeline parts were de-activated, due to the software updates on the LY-EDG necessary for the integration of the LYRA calibration pipeline into the system. For the rest of the week, the LY-EDG and LY-BSDG were triggered manually.

5. Data reception & discussions with MOC

Passes
The following passes had problems with at least one packet missing: (either SWAP or HK)
20110301 3930 1
20110301 3932 9
20110302 3935 1
20110301 3936 10
20110301 3939 1
20110301 3941 1
20110302 3947 1
20110302 3951 2
20110303 3953 2
20110303 3955 1

20110304 3963 1
20110304 3968 1
20110304 3969 1
20110305 3971 1
Note that the number of missing SWAP images is totally based on missing image numbers, so more images might have missed at the ground stations (due to problems with downlink stability for instance).

Data coverage HK
complete

Data coverage SWAP

Statistics for complete week:

Total number of images between 2011 Feb 28 0UT and 2011 Mar 07 0UT: 4421
Highest cadence in this period: 100 seconds
Average cadence in this period: 136.80 seconds
Number of image gaps larger than 300 seconds: 45
Largest data gap: 32.33 minutes

The 45 gaps larger than 300 seconds are actually 44 ‘jumps’ of 1700s due to the commanded cadence of 1700s on Monday and early Tuesday. The 45th gap was meant for the ESP test.

Data coverage LYRA
complete

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