P2SC-ROB-WR-044-20110117 Weekly report #44	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon January 17 to Sun January 23 2011 Mon January 23 Joe Zender Carlos Cabanas	Royal Observatory of Belgium PROBA2 Science Center
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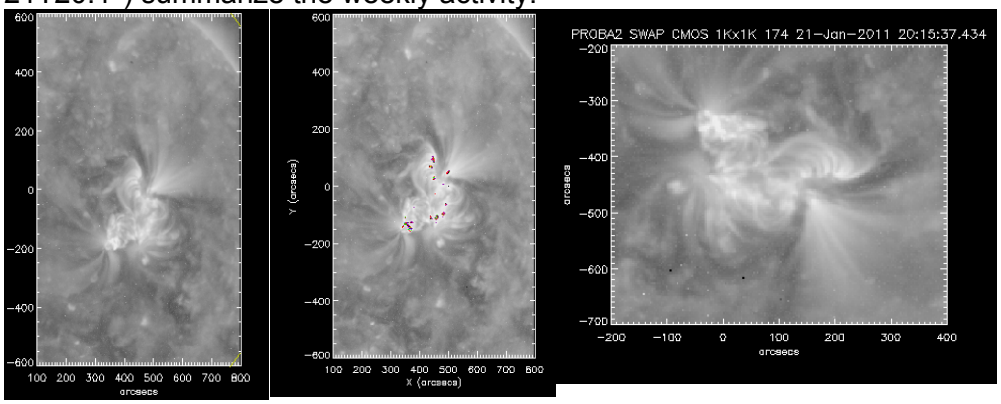
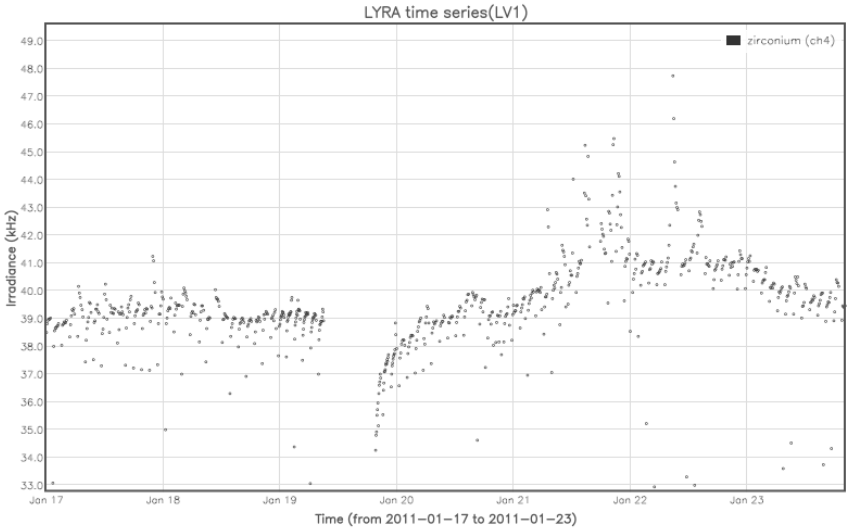
1. Science

Solar activity

The week started quietly with AR11145 and AR11146 at West and AR11147 near the East limb. The active region AR11148 was born on Tuesday in the South-West, but without producing major activity during the week. AR11147 became more and more active and together with a new active region in its neighborhood, the flare activity increased on Friday producing 5 C-flares. During Saturday and Sunday the activity reduced, still producing a considerable number of B-flares and one C-flare.
The following LYRA weekly plot for the Zirconium channel and a few SWAP images (all from 2011-01-21T20:1*) summarize the weekly activity:





Scientific campaigns

- LYRA occultation campaigns with unit 2&3/1 :
  - Jan 17 cover 3 open at 07:25, close at 08:07
  - Jan 18 cover 3 open at 08:14, close at 08:53
  - Jan 19 cover 1 open at 07:23, close at 08:05
  - Jan 20 cover 3 open at 08:11, close at 08:53
  - Jan 21 cover 3 open at 07:21, close at 08:02

Outreach, papers, presentations, etc.

Dan Seaton and Ingolf Dammasch gave presentations about SWAP and LYRA to the new guest investigatior: Martin Snow.

To be explored

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2. LYRA instrument status

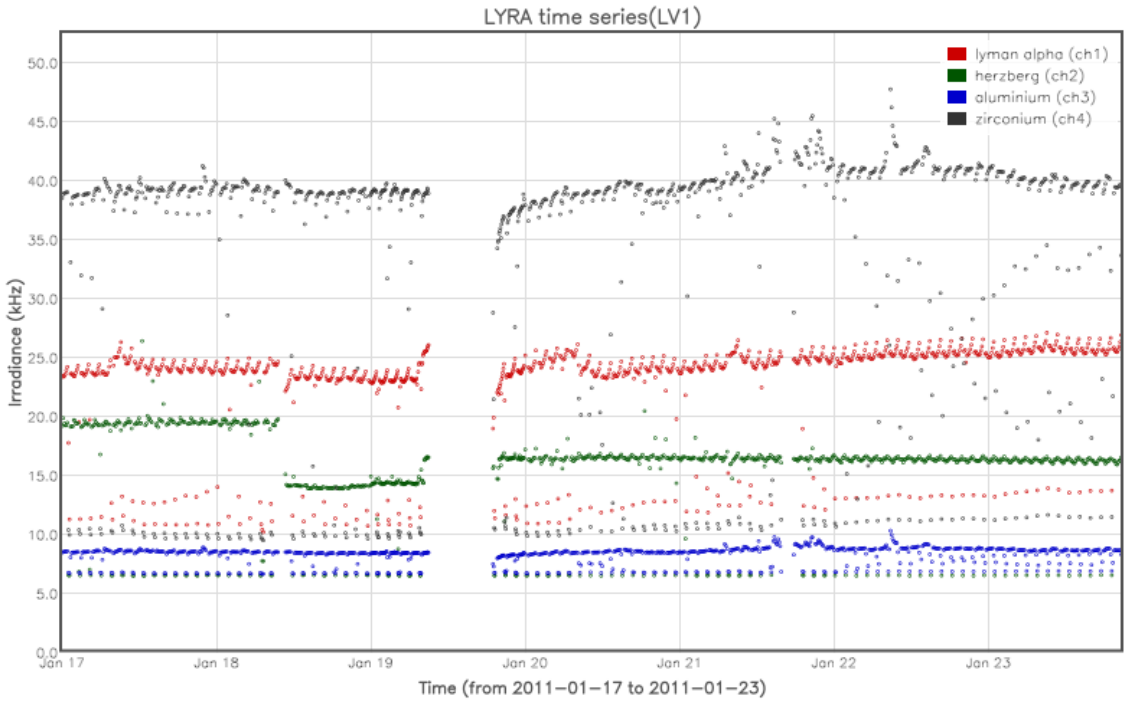
Calibration
LYRA calibration campaign LREP_02 (LED calibration) combined with LREP_03 (unit3 backup) on Wednesday, 09:00 - 18:50.

IOS & operations

- LYIOS138: commanding of the LREP_02 and LREP_03, occultation experiments and resistojet firing for Friday. (Resistojet campaign: 3min burn in anti-flight mode. SWAP and LYRA were commanded via IOS respectively in IDLE mode and OFF on January 18 from 09:45 to 10:20.)
- LYIOS139: identical to 138 but the deletion of the commands to support the resistojet campaign, as this campaign was cancelled.
- LYIOS140: commanding for next week, including
    - occultations for all days
    - LREP_02 from 2011.01.25T05:00 until 15:07
    - Bakeout from 2011-01-25T16:00 until 2011-01-26T16:17
    - LREP_02 from 2011-01-27T05:00 until 14:57

An ASIC reload (automatically scheduled onboard every 100 orbits) took place on Jan 21, at 08:07.

To be explored
- Jumps in Herzberg and Lyman-a:



3. SWAP instrument status

MCPM recoverable errors

The MCPM_NB_RECOV_ER increased from 238 to 338 during 2011-01-17T08:23 and 2011-01-18T05:42. The value stayed constant for the rest of the week.
The problem is under investigation by Qinetiq.

The number of MCPM unrecoverable errors remained 0.

Calibration
SWAP LED calibration on Jan 18.

IOS & operations

- IOS236: SWAP LED campaign & eclipse jumping & resistoject campaign (SWAP off from 09:40 to 10:24)
- IOS237**:** supporting the eclipse jumping, the LOCOOS campaign executed from 2011-01-20T00:00 until 2011-01-21T03:00 and the resistojet firing on Friday.
- IOS238: as IOS237 with the deletion of the commands supporting the resistojet firing and the addition of all eclipse jumping until 2011-01-26.

SWAP detector and IIU temperature
The SWAP Cold Finger Temperature globally fluctuated between 0 and 2.7 degrees Celsius and is now slowly, but continuously rising.
But there were two peaks outside this range:

- Jan 18 at 10:26 until 11:00 when switching the instrument back on after the resistojet campaign (temperature up to 3.5°)

To be explored
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4. PROBA2 Science Center Status

Joe Zender was operator during this week.
All tools were running automatically. The LYRA preliminary calibration (dark current subtraction and degradation compensation) was running on a test server in parallel.

Tool updated

- none

5. Data reception & discussions with MOC

Date	Pass	HK	LYRA	SWAP
2011-01-17	3505	redelivery of data		
2011-01-17	3534			1 image missing
2011-01-17	3535			1 image missing

2011-01-18	3538			1 image missing
2011-01-18	3539			2 images missing
2011-01-19	3546			2 images missing
2011-01-19	3548	redelivery of pass data, all data arrived		
2011-01-19	3552			1 image missing
2011-01-19	3553			1 image missing
2011-01-20	3555			1 image missing
2011-01-20	3557			2 images missing
2011-01-21	3565			1 image missing
2011-01-21	3572		size of received file not ok, untarred filenames not ok	1 image missing
2011-01-21	3573			1 image missing
2011-01-22	3584	temp values missing		2 images missing
2011-01-22	3582			1 image missing
2011-01-22	3577			1 image missing
2011-01-23	3585			2 images missing
2011-01-23	3586	temp values missing		1 image missing
2011-01-23	3595			image missing

Data coverage SWAP

The default commanded cadence in between the eclipses was 85s.

Statistics for complete week: [values from last week in brackets]

Total number of images between 2011 Jan 17 0UT and 2011 Jan 24 01UT: 4474 [4460]
-> about 26 images were downloaded both as raw (taken during LOCOOS) and processed image
Highest cadence in this period: 30 seconds [20] (during SWAP LED campaign)
Average cadence in this period: 135.99 seconds [135.58]
-> this was affected by eclipses and the low cadence (200 and 400s during the LOCOOS campaign)
Number of image gaps larger than 300 seconds: 214 [231] (most of them are eclipses)
Largest data gap: 45.83 minutes [48.82]

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