P2SC-ROB-WR-058-20110425 Weekly report #058	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Apr 25 to Sun May 01 2011 Mon May 02 2011 Joe Zender David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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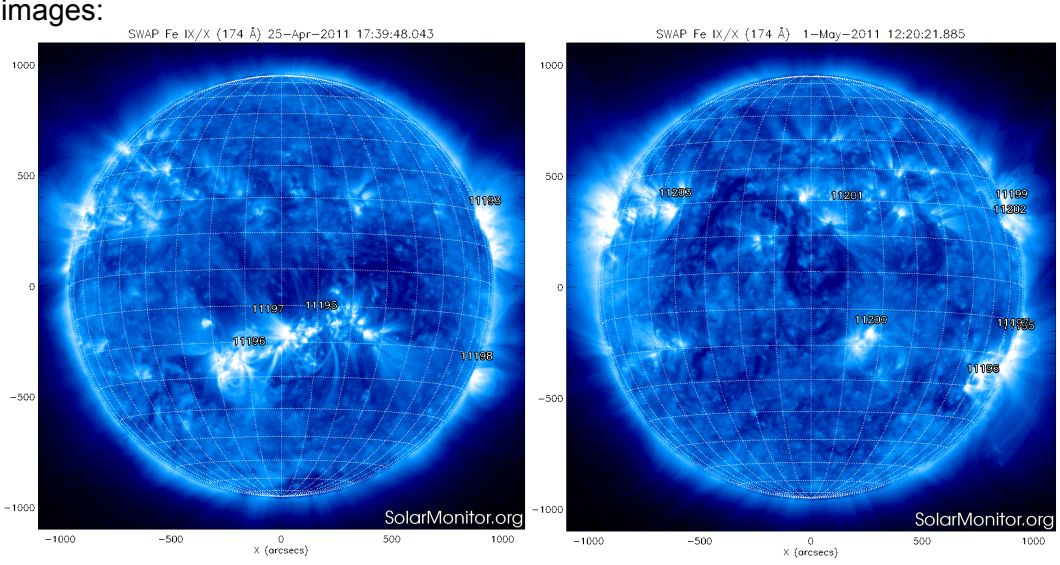
1. Science

Solar & Space weather events
The solar activity remained at low level during the whole week. AR11193 and AR11198 early in the week, AR11200 appeared near the disk centre on Wednesday, AR11201 was born on Thursday and AR11203 appeared on the East limb on Friday.

Below the active region numbers at the start and the end of this week are overlaid on SWAP images:



Below an overview of solar activity this week (source: SolarSoft events & SWAP movies):

Day	B flares	C flares	M flares	X flares	CME in SWAP	other	Max flare
01/05	B9.9, B6.6	C1.6			12:52		C1.6
30/04	B7.6, B6.8 B6.4, B6.6	C1.5, C1.7 C3.2, C1.0 C3.2					C3.2
29/04	B8.9, B4.9 B6.6	C3.8, C1.8 C1.5				jet at 22:50	C3.8
28/04	B4.4, B6.7 B8.3, B8.0 B8.2	C1.0, C2.4 C1.1					C2.4
27/04	B8.7, B4.5 B8.0	C2.0			02:11		C2.0
26/04	B4.4						
25/05	B8.7 B8.1, B9.3						

Scientific campaigns
There was no scientific campaign planned for this week.

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

Calibration
LED calibration and backup acquisition campaign were executed twice this week. None of the LED campaigns were successful, the backup acquisition campaign from 30 April was executed nominally.

IOS & operations
The following IOSs were sent this week:

IOS 156: 2011.04.27T08:43 - 2011.04.28T02:27, LED calibration and backup campaign, interrupted at 10:44 due to spacecraft BDOT

IOS 157: 2011.04.27T17:45, LYRA back to 50msec nominal acquisition after BDOT
IOS 158: 2011.04.29T04:11 - 2011.04.29T20:58, LED calibration and backup campaign, IOS was not uploaded
IOS 159: identical to IOS 160
IOS 160: 2011.04.29T19:21 - 2011.04.30T12:08, LED cal campaign commands erroneous (cover open!) and backup campaign successful.

No ASIC reload took place this week.

LYRA detector temperature
The LYRA detector 2 temperature (nominal unit) fluctuated between 43.0 and 49.5 degrees Celsius.

To be explored

- The LYRA IOS 158 was sent to MCC on 2011-04-28T14:56 with an IOS Start Time set to 2011-04-29T04:10 and the first command execution time at 2011-04-29T04:11. The first upload pass was pass 4458 ending at 2011-04-29T04:04. This IOS was rejected as reported in TC_LYRA_Report_4458.log:

  First TC processed : tcsend LYHWUPPR executiontime 2011.119.04.10.58.000000 userrequestid 158 {VFC1STAT 2} {VFC2STAT 1} {LED_STAT 0} {U1C_STAT 0} {U2C_STAT 0}
  Last TC processed : tcsend LYHSETMD executiontime 2011.119.20.58.00.000000 userrequestid 158 {LY_MODE 2}
  Last TC uploaded : None
  First TC failed : tcsend LYHWUPPR executiontime 2011.119.04.10.58.000000 userrequestid 158 {VFC1STAT 2} {VFC2STAT 1} {LED_STAT 0} {U1C_STAT 0} {U2C_STAT 0}
  Number of TC successfully uploaded : 0
  Number of TC failed to upload : 48

  STACK_TIME_ERROR : the new stack time, 2011-04-29 04:10:00, cannot be uploaded before the next pass. A minimum delay of 5 minutes shall be available.

3. SWAP instrument status

MCPM recoverable errors
increased from 1092 to 1136 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 25 Apr	Tuesday 26 Apr	Wednesday 27 Apr	Thursday 28 Apr	Friday 29 Apr	Saturday 30 Apr	Sunday 01 May
Nominal acquisition	Nominal acquisition	Nominal acquisition + IDLE + back to nominal	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition

(IOS00282) 697 images	(IOS00282) 718 images	(IOS00283,284, 285) 491 images	(IOS00285) 641 images	(IOS00285) 570 images	(IOS00285) 656 images	(IOS00285) 714 images

Calibration campaigns
no calibration campaigns

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between 1.5 and 2.6 degrees Celsius, with one peak at 4.3 deg C.

To be explored
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4. PROBA2 Science Center Status

Joe Zender was operator during this week.

5. Data reception & discussions with MOC

Passes

- 4455: data were played back to ensure completeness
- 4458+4459: dump store losses were refilled during pass 4460.
- 4472: 2 images missing (packet corruption)
- 4474: 2 images missing (packet corruption)
- 4476: 2 images missing (packet corruption)

Data coverage HK
Except for the BDOT period on 20110427, the HK data is complete.

Data coverage SWAP
Data gap from 20110427T08:43 to 20110427T17:45, that is the period from the propulsion experiment to the time getting out of the BDOT.

Statistics for complete week:
Start checking all images between 2011 Apr 25 0UT and 2011 May 02 0UT
Total number of images between 2011 Apr 25 0UT and 2011 May 02 0UT: 4487
Highest cadence in this period: 120 seconds
Average cadence in this period: 134.80 seconds
Number of image gaps larger than 300 seconds: 35

Largest data gap: 422.65 minutes (BDOT)

From the 35 data gaps larger than 300 seconds, one was of 1710 seconds in support of the ESP test, one of 2357 seconds in support of the propulsion experiment and 33 smaller gaps of 360 seconds caused by the problem passes 4457 and 4458 (corrupted prediction file prevented the RED3/RED4 antennas to track the satellite).

Data coverage LYRA

Data coverage was complete with the exception of the 20110427T08:43 to 20110427T17:45, that is the period from the propulsion experiment to the time getting out of the BDOT.

One packet of BINLYRA_4476_RED3_2011.05.01T04.17.15 (BINLYRA20110501033836000265028 4RAW_____00000000072011050104101 4) was corrupted on-board.

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