


P2SC-ROB-WR-018- 20100712 Weekly report #018	P2SC Weekly report	
Period covered: Date: Written by: Released by:	Mon July 12 to Sun July 19 Mon July 12 2010 Joe Zender Carlos Cabanas	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

Space weather events

A calm space weather week. Several B flares and 4 C flares were observed during the week. On Saturday, 17 July, a flare at N-E-N can be seen in the SWAP image around 06:00, but no increase in the LYRA signal is observed. No other remarkable events were seen.

Outreach, papers, presentations, etc.

David Berghmans presented PROBA2 at the COSPAR meeting in Bremen.

2. LYRA instrument status

Calibration

2010-07-14: LYRA IOS00074 weekly calibration campaign

IOS & operations

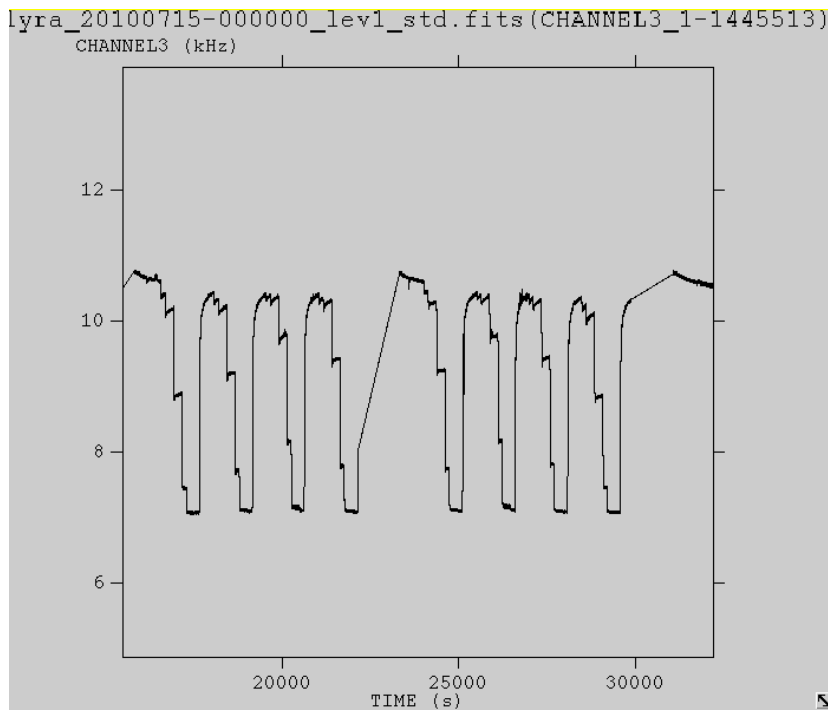
2010-07-15: LYRA IOS00075 off-pointing campaign

The goal of the campaign is to characterize the spectral response of the LYRA detectors over the spatial area of the detector. This is achieved by off-pointing in steps of 0.5 degrees from 0 degrees to 3 degrees in direction WEST within two large angle rotations. After a large angle rotation, the operations are repeated and as such another area on the detector is stepped over. This is repeated 4 times.

This whole exercise is repeated again, now with pointing in NORTH-WEST direction.

Unfortunately, due to missed passes, the data until 02:20 were missed and as such the first part (WEST pointing) is incomplete.

The figure below illustrates the different responses due to the offsets.

**LYRA anomalies**

none

To be explored

n/a

3. SWAP instrument status**MCPM recoverable errors**

The number of MCPM recoverable errors did not increase. It remained fixed at 189 errors.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

2010-07-12: IOS00140 off-pointing campaign

2010-07-15: IOS00141 off-pointing in support of the LYRA IOS00075

2010-07-17: IOS00142 debug campaign

The following image gives a good example on the images obtained in case the time between an IDLE command and the SPECIFIC_ACQUISITION command is less than 1 minute - at least this is the assumption. To prove this, a series of IDLE commands is executed with different time intervals between the IDLE and the SPECIFIC_ACQUISITION.



During the first run, the instrument was operated in CORRELATED_DOUBLE_SAMPLING. Some images seem incorrect. During the second run, the instrument was operated in DOUBLE_SAMPLING mode, and the effect similar to the upper shown image can be observed for all delta times. This needs further investigations.

SWAP detector and IIU temperature

The SWAP detector and IIU temperature were nominal during the week.

4. PROBA2 Science Center Status

Joe Zender was operator during this week.

The LYRA EDG was operated manually. SWAP daily movies were also created manually.

The following tools were updated on the operational server:

- ADP_PPT, r3430 and r3442
- CLOG, r3431
- libp2sc, r3432
- LY-QLV, r3444
- PPT, r3446
 - New PPT module allowing retrieval of data from SPENVIS trapped particles models

- PTI, r3449
 - New PTI functionality: SWAP off-pointing facilities and SAA/LAR interfaces.
- SWBSDG, r3420
 - The SWBSDG was modified so that it no longer sends error messages when it processes calibration images. When these images are identified, only info messages are sent to LMAT. Additionally, the BSDG now accepts files with numeric extensions such as .001 in the case that the SWEDG produces files with duplicate names.

5. Data reception & discussions with MOC

Passes

Svalbard passes 1817 and 1819 missed and the bounded stores dumped over passes 1817 and 1818 are definitively lost.

Data coverage HK

Nominal

Due to missed passes, data gap between 2010-07-14T20:31 until 2010-07-15T00:26

Data coverage SWAP

Date	Passes	Remarks
12-7-2010	1791-1799	ok
13-7-2010	1800-1807	ok
14-7-2010	1808 1809 1910-1813 1814 1816-1816	ok CRC packet error ok CRC packet error ok
15-7-2010	1817-1818 1819-1824 1825 1826	passes missed ok CRC packet error ok
16-7-2010	1827 1828-1829 1830 1831-1835	corrupted first packet ok CRC packet error
17-7-2010	1836-1843	
18-7-2010	1844 1845-1853	CRC packet error

Data coverage LYRA

Nominal

Due to missed passes, data gaps between 2010-07-14T20:20 until 2010-07-15T02:50

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
DSLIP	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
IU	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	
PPT	
ROB	
SAA	

SCOS	PROBA2 Science Center
SEU	Pointing, Positioning and Time (software module of P2SC)
SOHO	Royal Observatory of Belgium
SWAP	South Atlantic Anomaly
SWBSDG	Spacecraft Operation System
SWEDG	Single Event Upset
SWTMR	Solar and Heliospheric Observatory
TBC	Sun Watcher using APS detector and image Processing
TBD	SWAP Base Science Data Generator
TBW	SWAP Engineering Data Generator (software module of P2SC)
TPMU	SWAP Telemetry Reformatter (software module of P2SC)
UTC	To Be Confirmed
UV	To Be Defined
	To Be Written TC Telecommand
	Thermal Plasma Measurement Unit
	Coordinated Universal Time
	Ultraviolet