


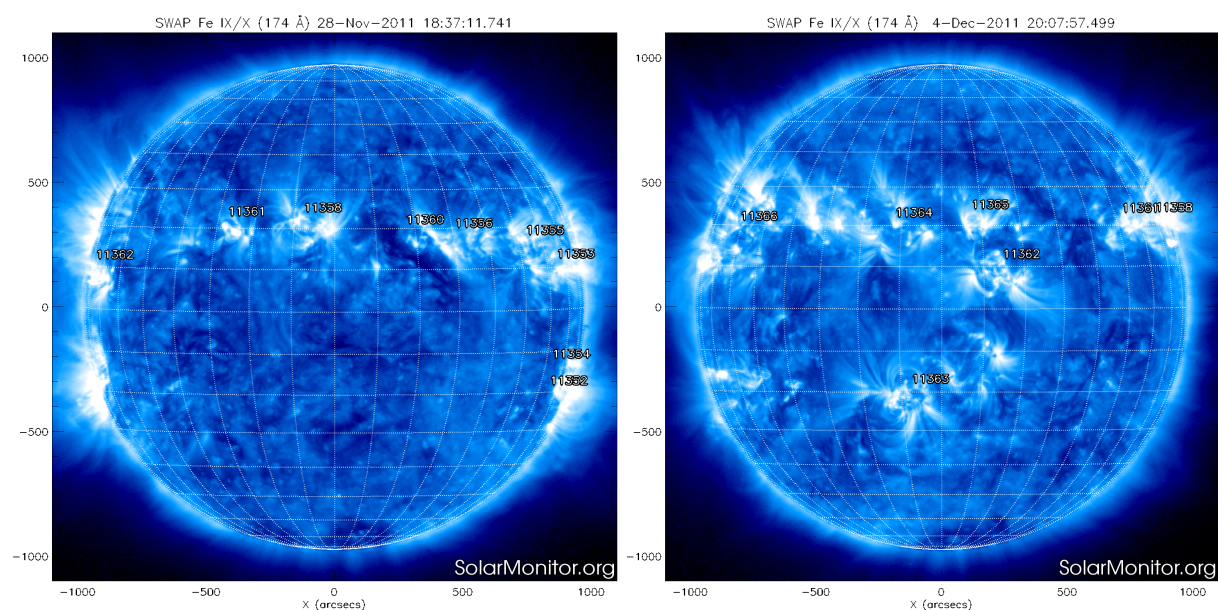
P2SC-ROB-WR-089- 20111128 Weekly report #089	<b>P2SC Weekly report</b>	
Period covered: Date: Written by: Released by:	Mon Nov 28 to Sun Dec 04, 2011 09 Dec 2011 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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## 1. Science

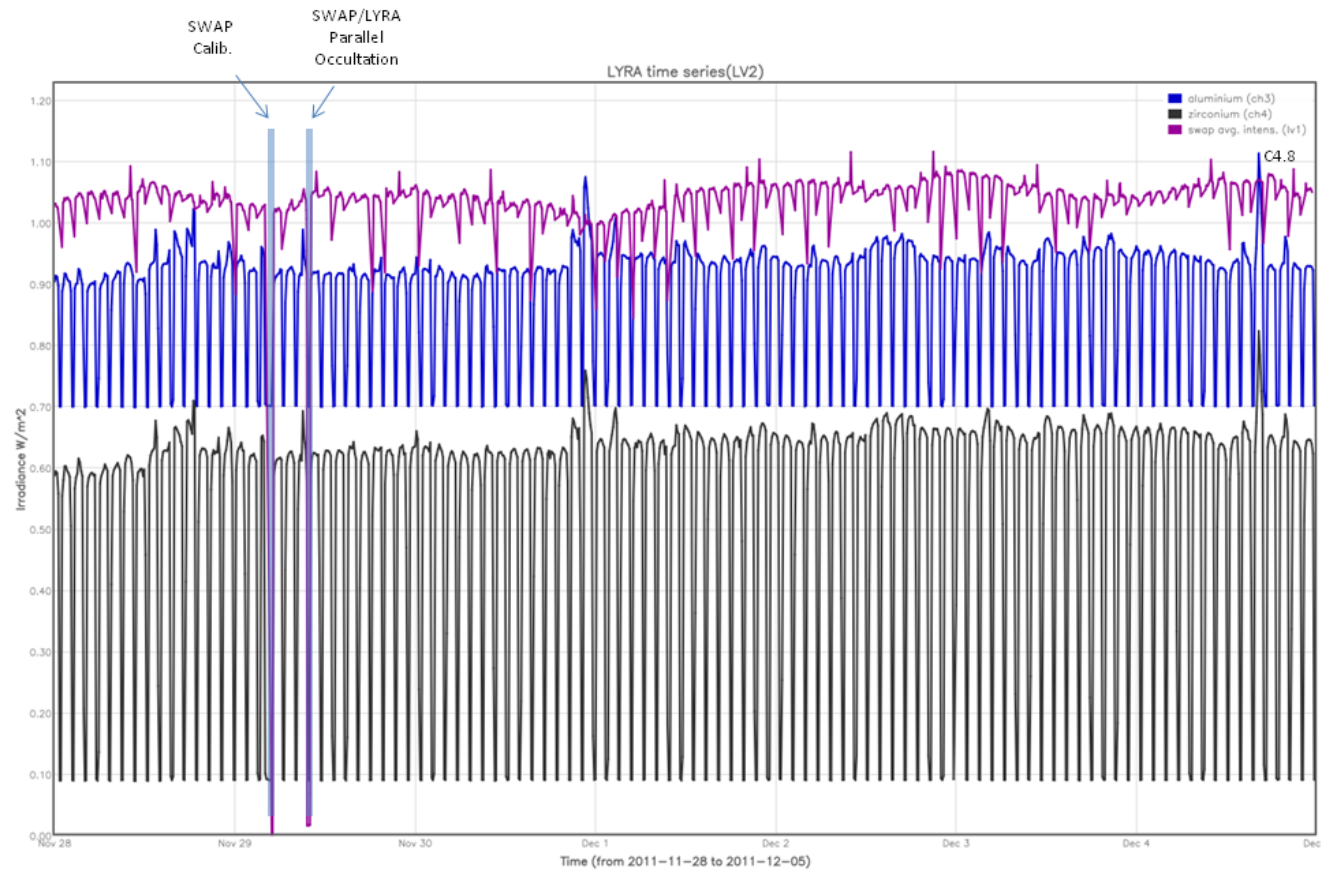
### Solar & Space weather events

#### Overview

The SWAP images of November 28 and December 4 are shown below, with annotated active regions:



Solar activity was at MEDIUM level this week, until Saturday and Sunday, where Solar Activity was LOW. The strongest flare of the week (C4.8), occurred on Sunday 4th.



Above is shown the weekly overview of LYRA Al/Zr signals and SWAP average intensity (SWAVINT in purple). The 'intensity' levels have been 'spread' to allow a better presentation of the curves. SWAVINT as well as the LYRA channels exhibit luminosity dips, due to the occultation season. The blue areas indicate, from left to right, the weekly SWAP calibration campaign (on Tue) and the weekly LYRA/SWAP parallel occultation campaign, respectively.

### Scientific campaigns

The following science campaigns are on-going:

- daily occultation campaign of LYRA
- weekly LYRA/SWAP parallel occultation campaign

No specific science campaigns were performed.

All scientists involved in the Proba 2 solar science instruments were attending the ESWW8 Meeting.

### Outreach, papers, presentations, etc.

During the ESWW8, the SWAP and/or LYRA related presentation below were given. Most of them can be downloaded from <http://proba2.sidc.be/Presentations/20111128-ESWW8/>

1. 'Components of soft X-ray and extreme ultraviolet in flares observed by LYRA on PROBA2' (by I.E.Dammasch, M.Dominique, M.Kretzschmar, P.C.Chamberlin) - Session 1 Poster,
2. 'Components of soft X-ray and extreme ultraviolet in flares observed by LYRA on PROBA2' (by I.E.Dammasch, M.Dominique, M.Kretzschmar, P.C.Chamberlin) - talk by I. Dammasch in the SCSL / PROBA2 splinter meeting.
3. 'Monitoring Solar Flares: a Comparison of Observations from GOES and PROBA2/LYRA', Kretzschmar, Matthieu; Dammasch, Ingolf, and Dominique, Marie - Session 1 Poster.
4. 'Solar Irradiance Variations as observed by the LYRA Radiometer Onboard PROBA2', Kretzschmar, Matthieu; Dominique, Marie; Dammasch, Ingolf - talk by Kretzschmar Matthieu.
5. 'Signatures of the slow solar wind streams from active regions in the inner corona' - V. Slemzin, L. Harra, A. Urnov, S. Kuzin, F. Goryaev, D. Berghmans.
6. 'LYRA Occultation Data Analysis in Search for Ablation Signals from the GEMINID meteor shower 2010' - J. Zender, D. Koschny, A. Knoefel, F. Bettonvil, M. Dominique
7. 'LYRA observations and seismology of two oscillation modes in a single flare' - Tom Van Doorselaere
8. 'Signature of the rotational cycle in the LYRA observations' - A. V. Shapiro, A. I. Shapiro, M. Dominique,
9. I. E. Dammasch, C. Wehrli, E. Rozanov, W. Schmutz
10. 'Eclipses observed by LYRA - a sensitive tool to test the models for the solar irradiance' - Alexander Shapiro
11. 'ESIO: EUV Solar Imager for Operations' - Bogdan Nicula
12. "Deep imaging using the SWAP: coronal cavities, plasmoids, jets and rays" - Serge Koutchmy, Cyril Bazin, Boris Filippov and Ehsan Tavabi
13. 'SWAP Calibration' - Jean-Philippe Halain
14. 'Status of LYRA after two years in orbit' - Marie Dominique + LYRA team
15. 'Flare tracking campaigns with LYRA' - Marie Dominique + LYRA team
16. 'Components of soft X-ray and extreme ultraviolet in flares observed by LYRA' - I. E. Dammasch, M. Dominique, M. Kretzschmar (ROB/SIDC), P. C. Chamberlin (NASA/GSFC)
17. 'Solar UV & EUV Variability and Activity Monitoring of Flares & CMEs: EUV, Lyman- and H-Alpha Indicators' - Luc Damé, & J.-F. Hochedez, S. Khaled, S. UeNo, R. Kariyappa, S.T. Kumara, M. Dominique, D. Berghmans, I. Dammasch & M. Kretzschmar
18. 'WUSV: a Space Weather Microsatellite Program to Investigate the Influence of Solar UV Variability on Space Climate' - Luc Damé, Eric Quémerais, Philippe Kechkut, Mustapha Meftah, Emmanuel Ducourt, Thierry Dudok de Wit, Amal Zaki, Ahmed Hady, Ayman, Mahrous, Safinaz Khaled, Ahmed Ghitass, Beshier Marzouk.
19. 'Flare Reporting with Proba2' - David Berghmans
20. 'Automated flare detection and localization with PROBA2' - Berghmans, David; Bonte, Katrien, De Groof, Anik; Dominique, Marie.
21. 'SWAP Status' - David Berghmans

## 2. LYRA instrument status

### Calibration

No calibration this week.

## IOS & operations

Monday 28 Nov	Tuesday 29 Nov	Wednesday 30 Nov	Thursday 01 Dec	Friday 02 Dec	Saturday 03 Dec	Sunday 04 Dec
Nominal acquisition  + occultation  LYIOS00201	Nominal acquisition  + occultation  LYIOS00201	Nominal acquisition  + occultation  LYIOS00201	Nominal acquisition  + occultation  LYIOS00202	Nominal acquisition  + occultation  LYIOS00202	Nominal acquisition  + occultation  LYIOS00202	Nominal acquisition  + occultation  LYIOS00202

## LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 40.1 and 37.9, during nominal operations.

**To be explored**  
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## 3. SWAP instrument status

### Calibration

Weekly extended LED calibration campaign executed on 29 November.

### MCPM recoverable errors

Increased from 1409 to 1471 this week.

The number of MCPM unrecoverable errors is still 0.

## IOS & operations

Monday 28 Nov	Tuesday 29 Nov	Wednesday 30 Nov	Thursday 01 Dec	Friday 02 Dec	Saturday 03 Dec	Sunday 04 Dec
Nominal acquisition 110s cadence + occult. jumps	Nominal acquisition + LED calibration + occult. jumps + parallel occult w/ LYRA	Nominal acquisition + occult. jumps	Nominal acquisition + ESP campaign + occult. jumps	Nominal acquisition + occult. jumps	Nominal acquisition + occult. jumps	Nominal acquisition + occult. jumps
IOS00346 561 images	IOS00346 691 images	IOS00346 555 images	IOS00347 553 images	IOS00347 554 images	IOS00347 567 images	IOS00347 552 images

Occultation jumps occur during every orbit.

On Tuesdays SWAP images the entry & exit of one particular occultation in parallel with LYRA.

### SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between -5.2 and - 3.3 degrees Celsius, under nominal operations.

### To be explored

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## 4. PROBA2 Science Center Status

Erik Pylyser was operator during this week.

## 5. Data reception & discussions with MOC

### Passes

All data were received.

### Data coverage HK

The HK data were complete this week.

### **Data coverage SWAP**

All data was received.

Statistics for complete week:

*Total number of images between 2011 Nov 28 00UT and 2011 Dec 05 00UT: 4033*

*Highest cadence in this period: 0 seconds*

*Average cadence in this period: 149.55 seconds*

*Number of image gaps larger than 300 seconds: 101*

*Largest data gap: 30.40 minutes*

The data gap of 30.40 min was commanded to allow for an ESP test on Thu.

### **Data coverage LYRA**

The LYRA data were complete this week.

## **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
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
SWAVINT	SWAP AVerage INTensity
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