P2SC-ROB-WR-150-20130204 Weekly report #150	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Feb 04 to Sun Feb 10, 2013 13 Feb 2013 Matthew J. West & Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

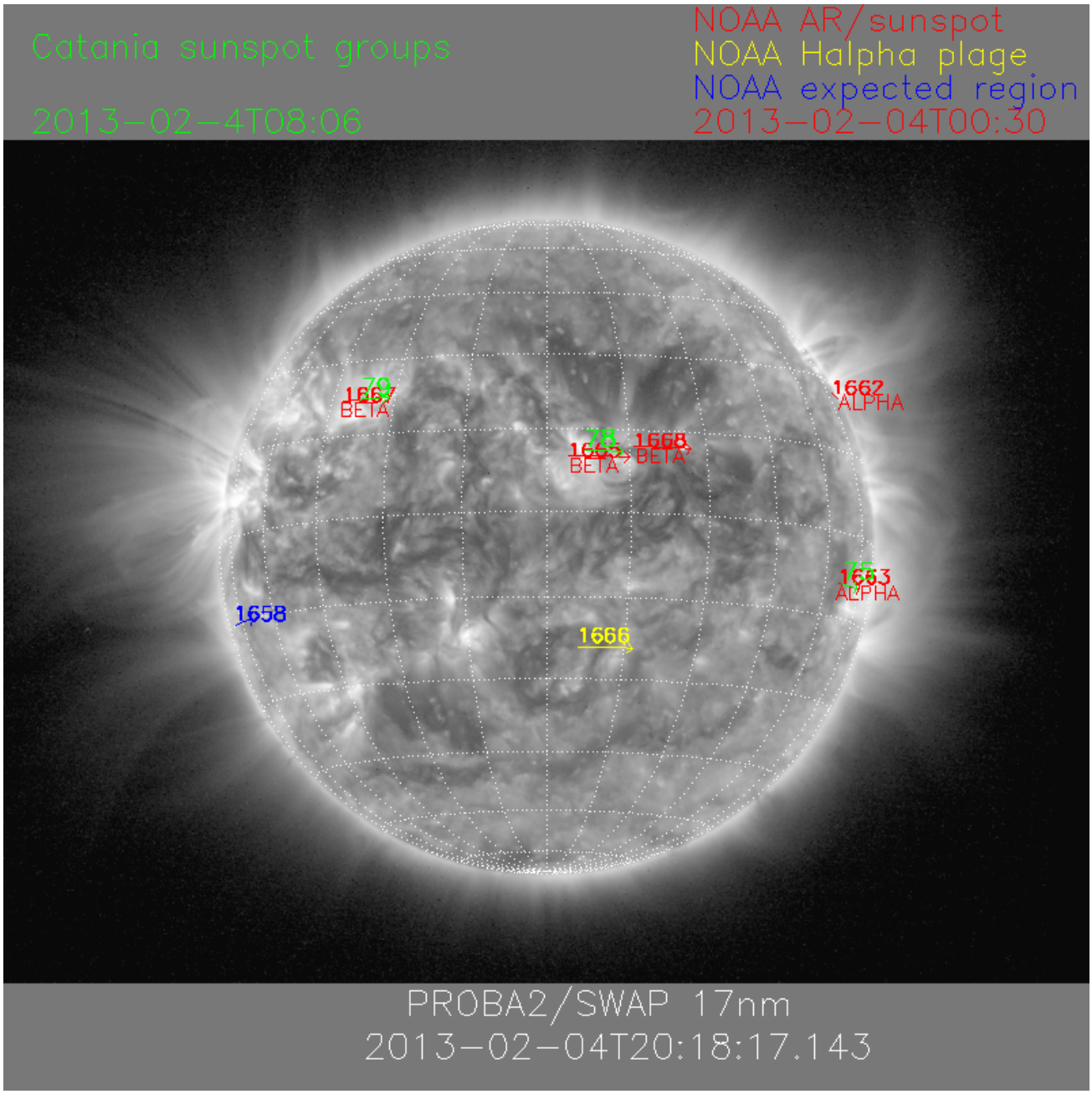
Solar & Space weather events

The level of solar activity[1] this week. Only M- and X-flares are mentioned, the most energetic one(s) are presented in **bold**:

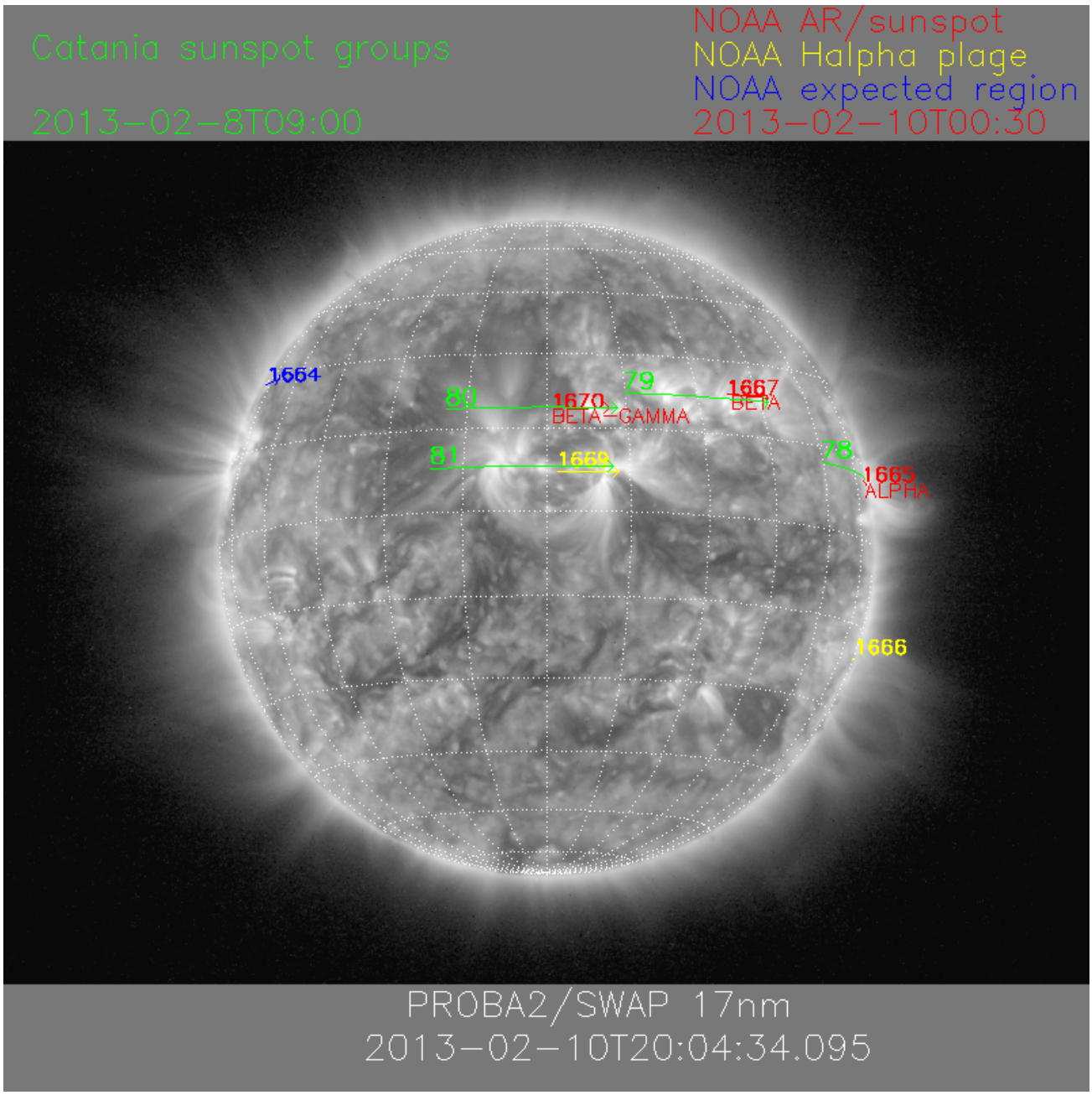
	Monday 04 Feb	Tuesday 05 Feb	Wednesday 06 Feb	Thursday 07 Feb	Friday 08 Feb	Saturday 09 Feb	Sunday 10 Feb
Activity	low	low	low	very low	very low	low	very low
Flares	-	-	-	-	-	-	-

[1] See appendix. All timings are given in UT.

The SWAP images of February 04 and February 10 are shown below, with annotated active regions.



http://sidc.be/html/CmapPage.html

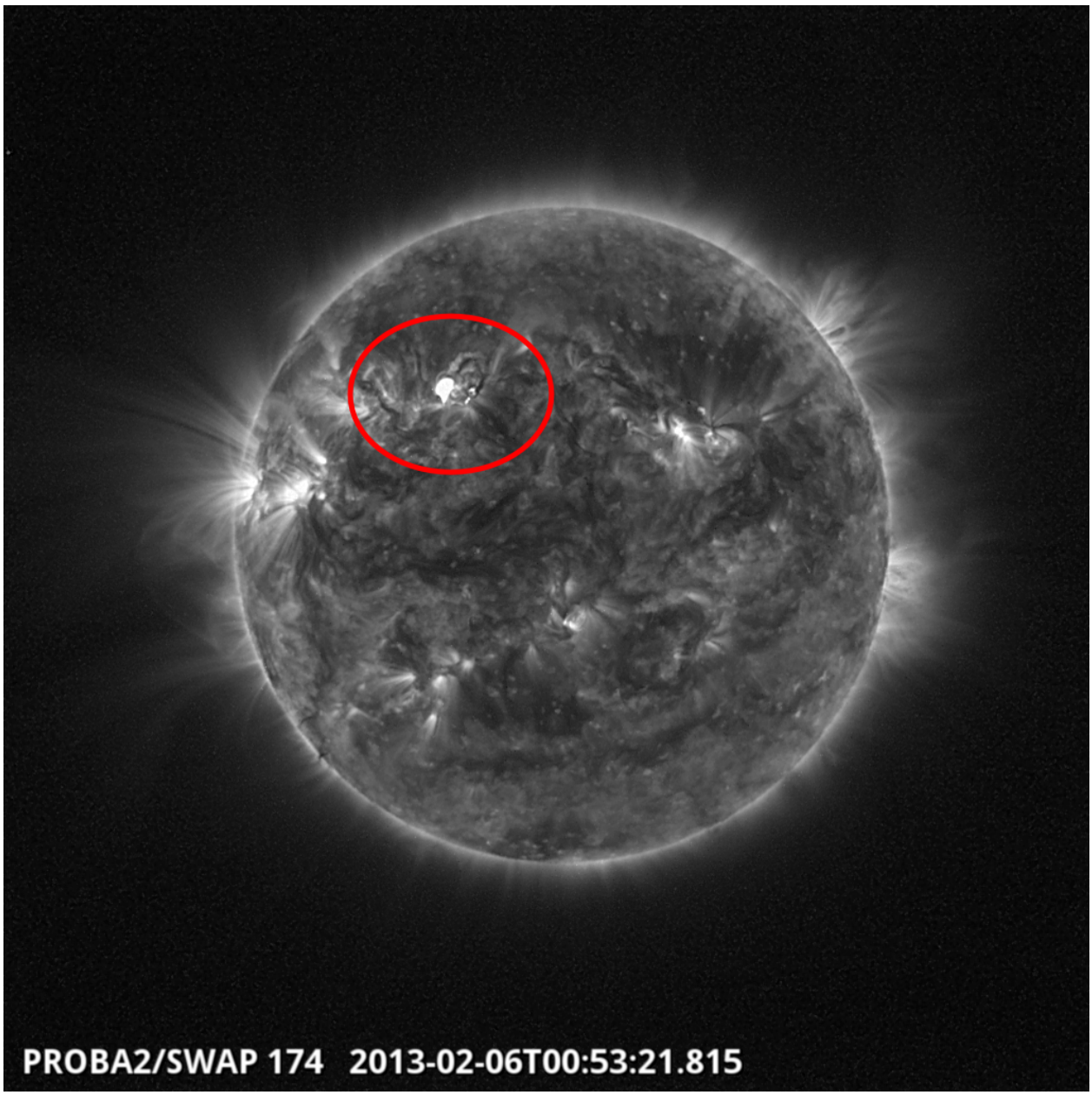


Solar Activity

Solar (flaring) activity was **low** during the whole week. Largest Flare was C8.7 on 2013-02-06. There were 13 B class flares and 6 C class flares recorded between Monday and Sunday

In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: http://proba2.oma.be/ssa. This page also lists the recorded flaring events.

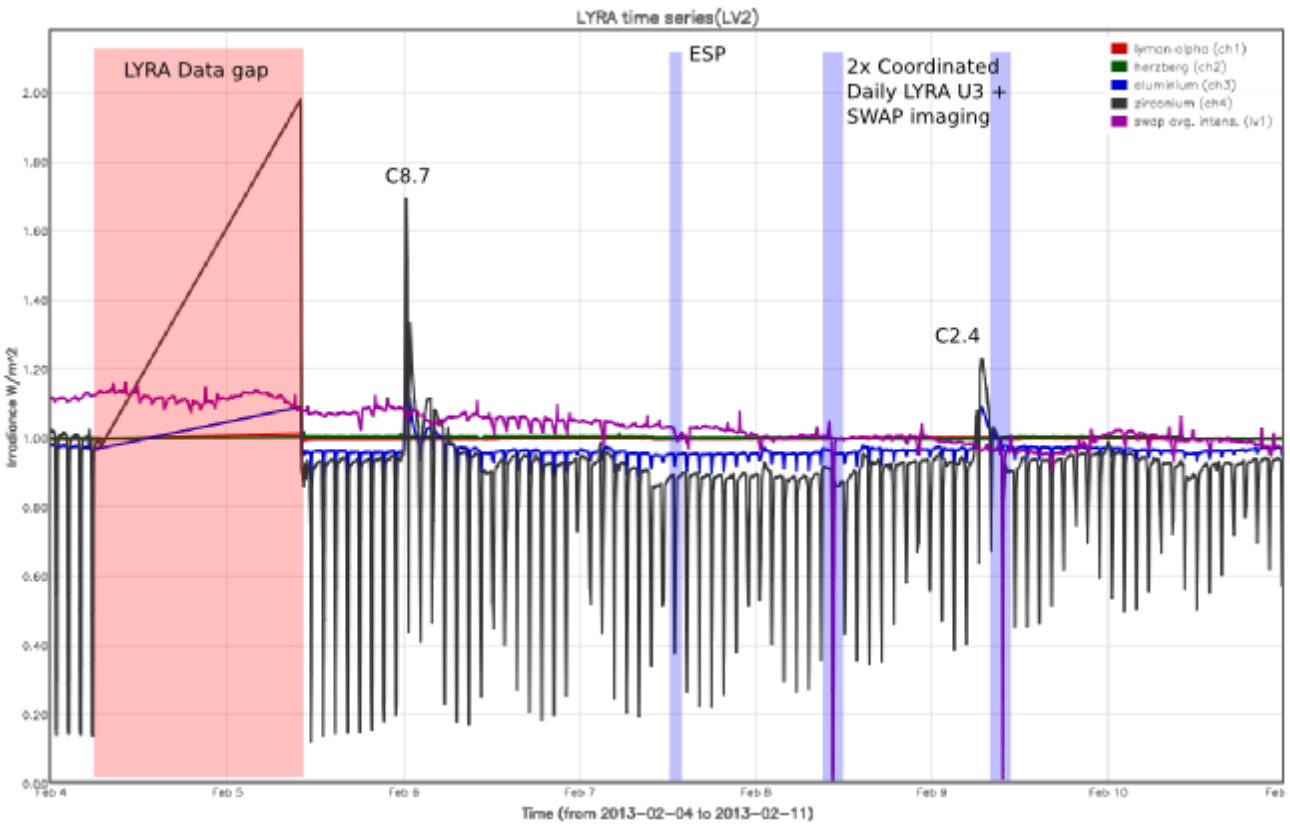
A weekly overview movie can be found here (SWAP174/AIA304 combination; HelioViewer.org). Details about some of the events in this movie can be found further below.



C8.7 flare on February 6th.

An overview of the weekly LYRA & SWAP data is provided below:
The following curves are visible:

- black: Zirconium Channel LYRA Unit 2
- blue: Aluminium Channel of LYRA Unit 2
- purple: SWAVINT (solar intensity derived from ‘integrated’ SWAP images)



The blue shaded periods correspond to, from left to right:
- ESP experiment on Thursday
- Coordinated imaging campaign with LYRA daily U3 campaign on Friday and Saturday.

The orange shaded periods correspond to, from left to right:
- None

The red shaded period corresponds to:
- Data gap in LYRA data

Outreach, papers, presentations, etc.

- None

Please also consult http://proba2.oma.be/science/publications for a list of interesting articles using SWAP & LYRA data, as well as a link to the complete article list.

Guest Investigator Program

Currently, no Guest Investigators at the P2SC.

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 04 Feb	Tuesday 05 Feb	Wednesday 06 Feb	Thursday 07 Feb	Friday 08 Feb	Saturday 09 Feb	Sunday 10 Feb
Nominal acquisition + daily U3 LYIOS00305	Nominal acquisition + daily U3 LYIOS00305	Nominal acquisition + daily U3 LYIOS00305	Nominal acquisition + daily U3 LYIOS00306	Nominal acquisition + daily U3 LYIOS00306 -> LYIOS00308	Nominal acquisition + daily U3 LYIOS00308	Nominal acquisition + daily U3 LYIOS00308

The following science campaigns were performed by LYRA:
- the daily U3 campaign.

LYRA detector temperature

LYRA detector 2 temperature globally decreased from 51.7 to 50.8 degrees C, including the daily U3 activation periods. The latter result in a temperature increase of about 0.6 degrees C.

To be explored

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 6489 to 6780.

The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 04 Feb	Tuesday 05 Feb	Wednesday 06 Feb	Thursday 07 Feb	Friday 08 Feb	Saturday 09 Feb	Sunday 10 Feb
Nominal acquisition IOS00449 607 images	Nominal acquisition IOS00449 626 images	Nominal acquisition IOS00449 617 images	Nominal acquisition + ESP IOS00450 649 images	Nominal acquisition + SWAP/LYRA coord. camp. IOS00450 607 images	Nominal acquisition + SWAP/LYRA coord. camp. IOS00451 566 images	Nominal acquisition IOS00451 564 images

Special operations for SWAP, this week:
- Occultation jumps
- ESP jump
- Coordinated imaging campaign with LYRA daily U3 campaign on Friday and Saturday.

SWAP detector temperature

The SWAP Cold Finger Temperature, under nominal operations, increased overall, fluctuating between 3.5 and 2.2 degrees Celsius.

To be explored

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4. PROBA2 Science Center Status

The main operator is Koen Stegen.

The following changes were made to the P2SC:
- None

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 10157 to 10218) was nominal, except for:
- Due to a synchronization problem on board, LYRA data stopped at 2013-02-04T06:45:42Z. BINLYRA_10162 through BINLYRA_10170 were not received, as the instrument did not produce data. LYRA data resumed at 2013-02-05T09:58:56.

Data coverage HK

All HK data files (LYRA_AD) have been received, except for:
- None

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except for:
- None

Total number of images between 2013 Feb 04 0UT and 2013 Feb 11 0UT: 4236
Highest cadence in this period: 19 seconds
Average cadence in this period: 142.76 seconds
Number of image gaps larger than 300 seconds: 103
Largest data gap: 33.67 minutes

The large gap is due to the ESP experiment on Thursday.
The number of (smaller) gaps is due to the implementation of the SWAP occultation jumps.

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except for:
- Due to a synchronization problem on board, LYRA data stopped at 2013-02-04T06:45:42Z.

BINLYRA_10162 through BINLYRA_10170 were not received, as the instrument did not produce data. LYRA data resumed at 2013-02-05T09:58:56.

6. APPENDIX Frequently used acronyms

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
EIT	Extreme ultraviolet Imaging Telescope
ESP	Experimental Solar Panel
FITS	Flexible Image Transport System
FOV	Field Of View FPA Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HK	Housekeeping
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
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
OBSW	On board Software
PI	Principal Investigator
P2SC	PROBA2 Science Center
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SEU	Single Event Upset
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
TC	Telecommand
UTC	Coordinated Universal Time
UV	Ultraviolet

7. APPENDIX Solar Activity Definitions

In the science section we use the following solar activity standards.

The standard scale for solar activity is:
- very low (almost no flares, only B)
- low (a few C flares)
- moderate (many C flares and at least an M flare)
- high (several M flares and an X flare)
- very high (continuous background of C flares, numerous M flares, more than one X flare)
(+ extreme?)