


P2SC-ROB-WR-117-20120618 Weekly report #117	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jun 18 to Sun Jun 24, 2012 27 June 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

Solar & Space weather events

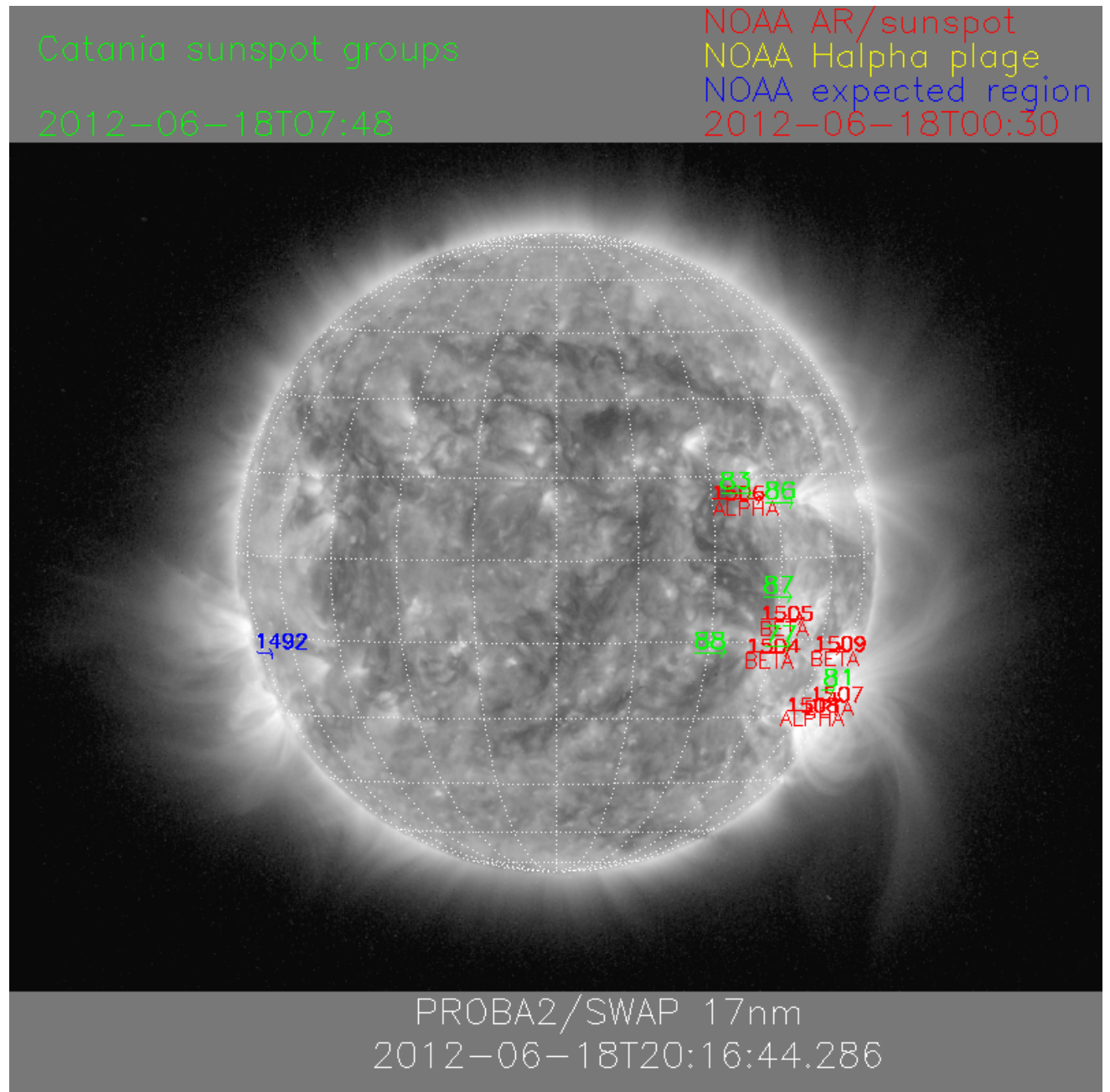
Overview

The level of solar activity this week¹ and associated M- and X-flares (if any):

	Monday 18 Jun	Tuesday 19 Jun	Wednesday 20 Jun	Thursday 21 Jun	Friday 22 Jun	Saturday 23 Jun	Sunday 24 Jun
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 Jun 18 and Jun 24 are shown below, with annotated active regions.

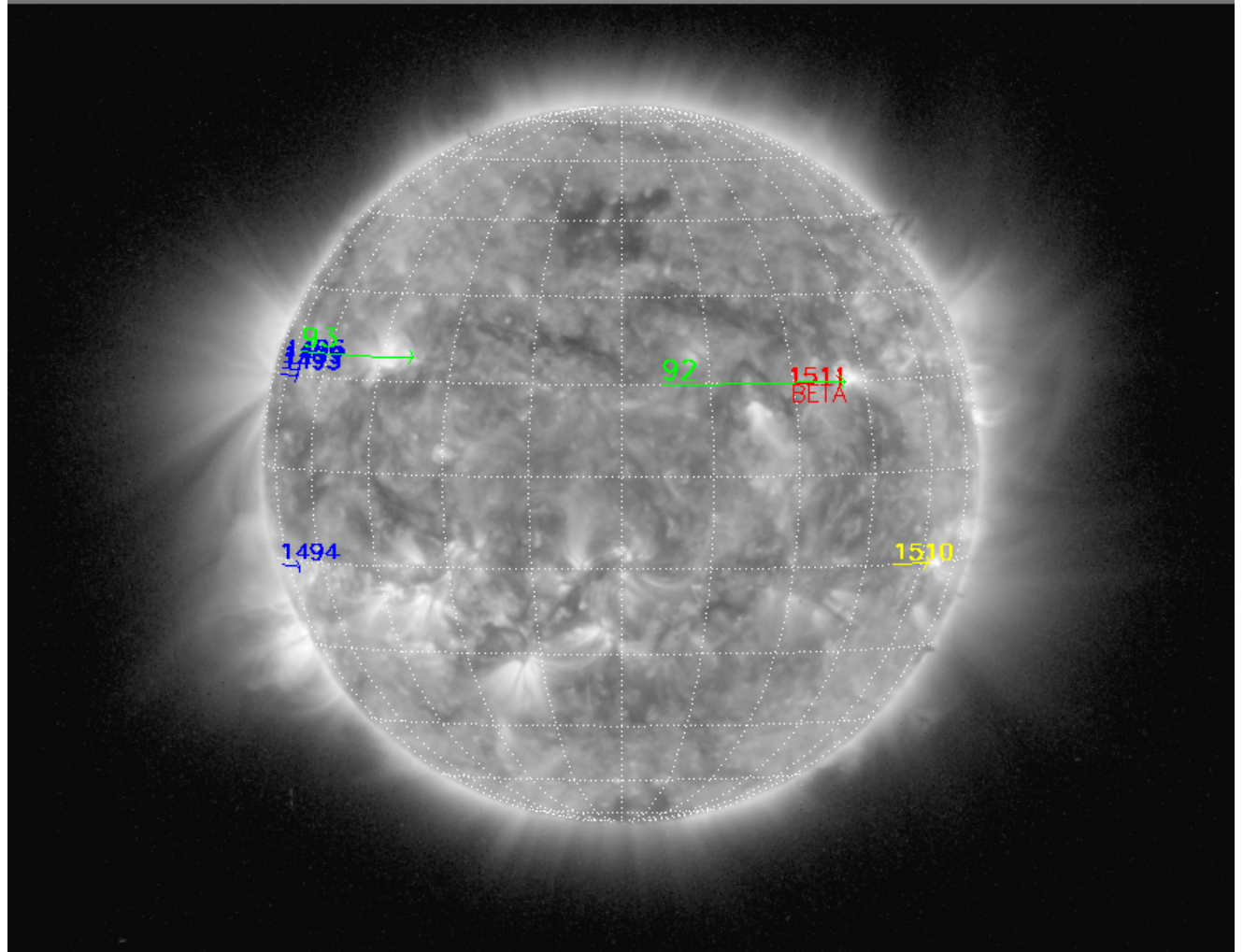


<http://sidc.be/html/CmapPage.html>

Catania sunspot groups

2012-06-22T07:30

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-06-24T00:30



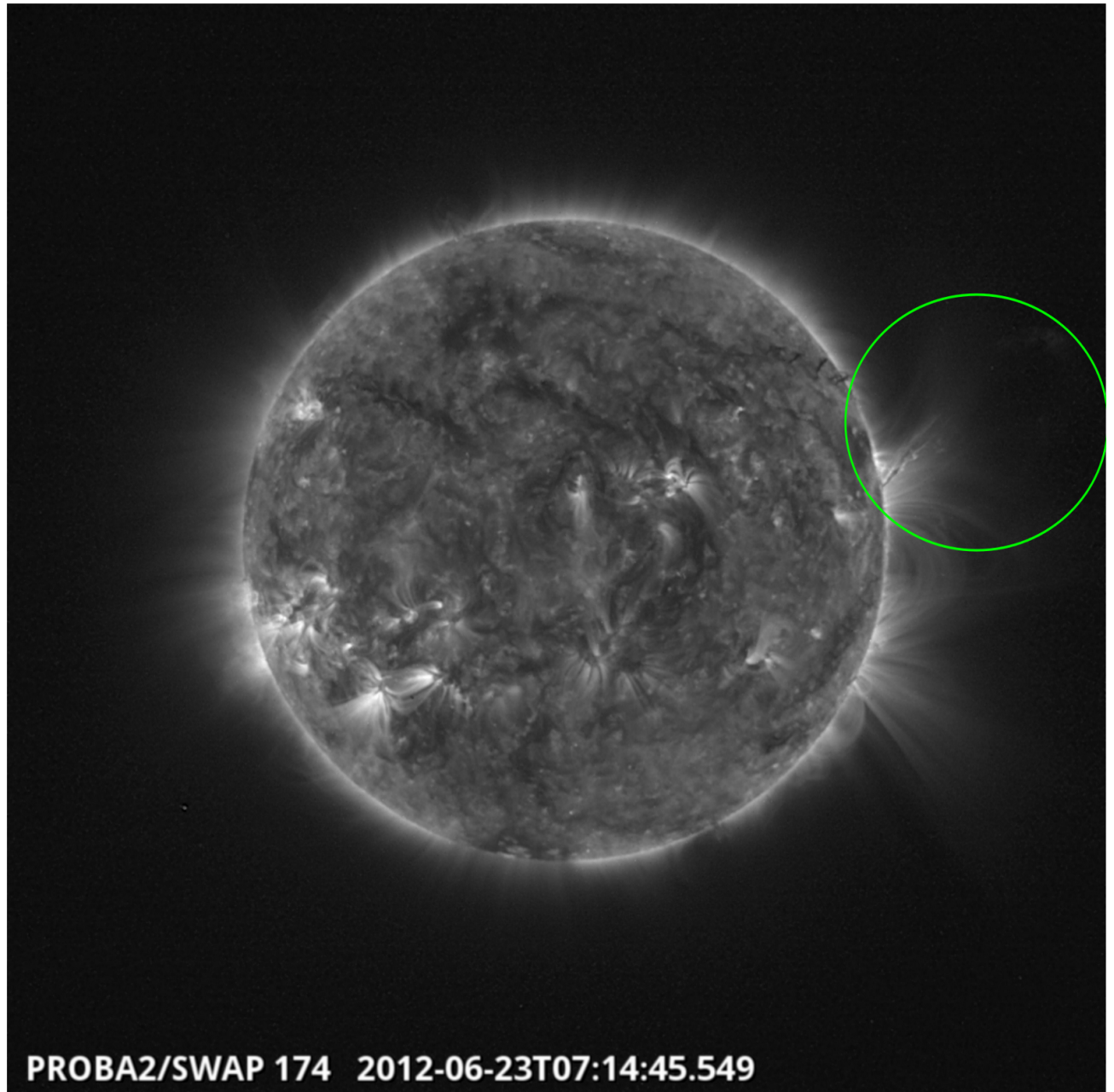
PROBA2/SWAP 17nm
2012-06-24T20:06:57.667

Solar Activity

This week, the Sun's activity level was **low** to **very low**. Only flares of B- to C-type were recorded.

During the last days of the week, solar EUV/SXR irradiance - as observed by GOES and by LYRA channels 3 and 4 (see the week-overview below) - has dropped rapidly, below levels observed since at least September 2011.

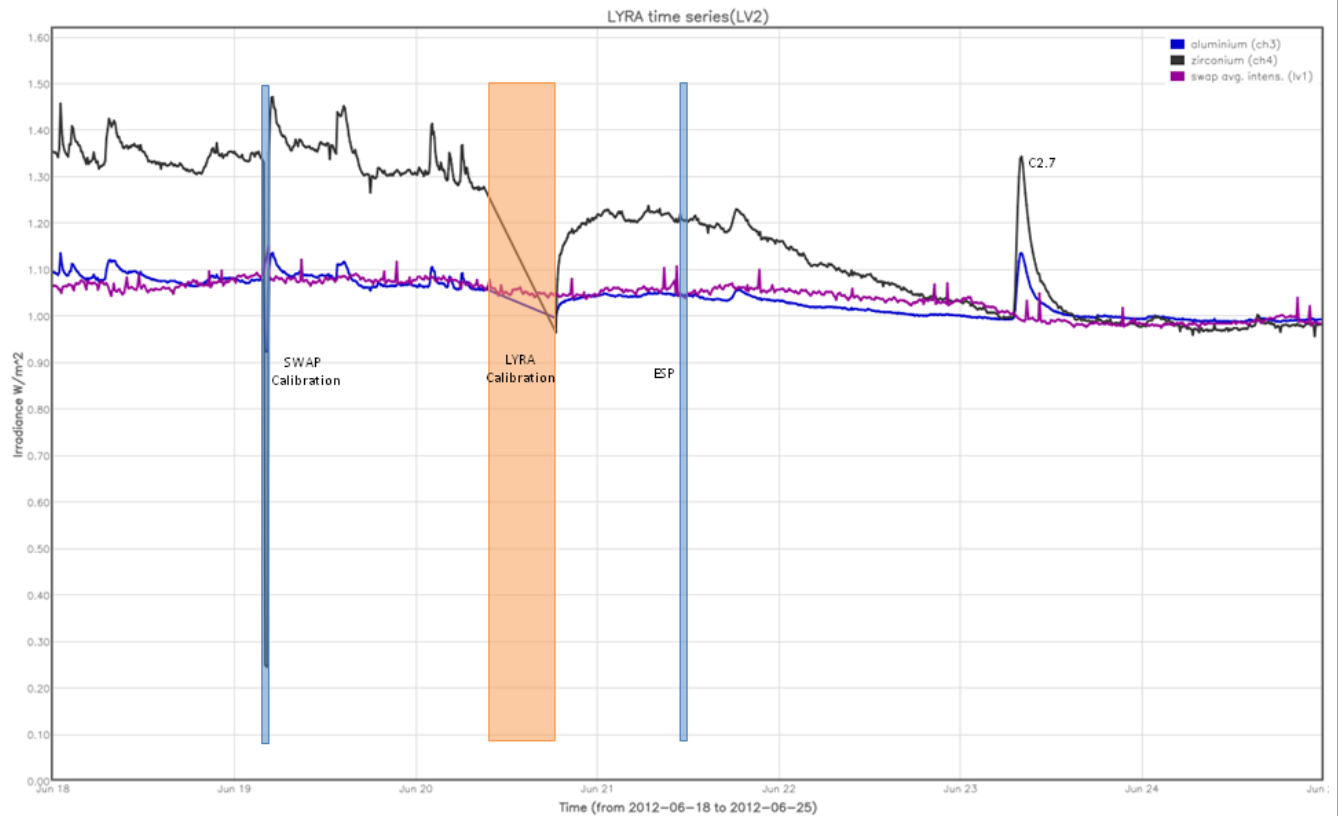
On Saturday 23rd, a beautiful filament eruption associated to a C2.7 flare occurred on the NW limb:



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, LYRA data acquisition campaigns for.

- SWAP calibration
- ESP campaign support (SWAP data gap)

The orange shaded periods correspond to, from left to right, LYRA data acquisition campaigns for:

- LYRA Calibration.

The red shaded period corresponds to:

- none.

Scientific campaigns

The following LYRA and SWAP specific scientific campaigns have been performed this week:

- Daily LYRA Unit 3 campaign

Outreach, papers, presentations, etc.

- none.

2. LYRA instrument status

Calibration

Calibration of LYRA on Wednesday.

IOS & operations

Monday 18 Jun	Tuesday 19 Jun	Wednesday 20 Jun	Thursday 21 Jun	Friday 22 Jun	Saturday 23 Jun	Sunday 24 Jun
Nominal acquisition + daily U3	Nominal acquisition	Nominal acquisition	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition	Nominal acquisition
LYIOS00250	LYIOS00250	LYIOS00250	LYIOS00251	LYIOS00251	LYIOS00251	LYIOS00251

The following LYRA campaign was performed this week:

- Daily Unit 3 campaign (on Mon, Thu, Fri).
- Calibration on Wednesday.

LYRA detector temperature

LYRA detector 2 temperature fluctuated between 45.3 and 46.2 during nominal operations.

To be explored

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3. SWAP instrument status

Calibration

SWAP calibration on Tuesday.

MCPM errors

The number of MCPM recoverable errors increased from 1272 to 1381.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 18 Jun	Tuesday 19 Jun	Wednesday 20 Jun	Thursday 21 Jun	Friday 22 Jun	Saturday 23 Jun	Sunday 24 Jun
Nominal acquisition IOS00401 563 images	Nominal acquisition IOS00402 671 images	Nominal acquisition IOS00402 682 images	Nominal acquisition IOS00402 611 images	Nominal acquisition IOS00402 655 images	Nominal acquisition IOS00402 506 images	Nominal acquisition IOS00402 550 images

The following specific SWAP campaign was performed this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between -0.72 and -1.70 degrees Celsius, under nominal operations.

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 8172 to 8234) was nominal, except for:

- none

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

All SWAP Science data files (BINSWAP) have been processed successfully, except for:

- BINSWAP_8228 - Corrupted first packet

Total number of images between 2012 Jun 18 00:00 and 2012 Jun 25 00:00: 4258

Highest cadence in this period: 30 seconds

Average cadence in this period: 142.04 seconds

Number of image gaps larger than 300 seconds: 1

Largest data gap: 34.33 minutes

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except for:

- none

* Following a first delivery on Sunday 24th, LYRA_AD_8229 was regenerated at and resend by Redu, on Monday 25th.

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	PROBA2 Science Center
PPT	Pointing, Positioning and Time (software module of P2SC)
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
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
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?)