


P2SC-ROB-WR-493 - 20190902	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 02 to Sun Sep 08, 2019 10 Apr 2019 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

The level of solar activity¹ was **very low** this week.

Only M- and X-flares are mentioned, the most energetic one(s) per day are presented in **bold**:

	Monday 02 Sep	Tuesday 03 Sep	Wednesday 04 sep	Thursday 05 Sep	Friday 06 Sep	Saturday 07 Sep	Sunday 08 Sep
Activity	very low	very low	very low	very low	very low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

Solar Activity

Solar flare activity was very low during the week.

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>

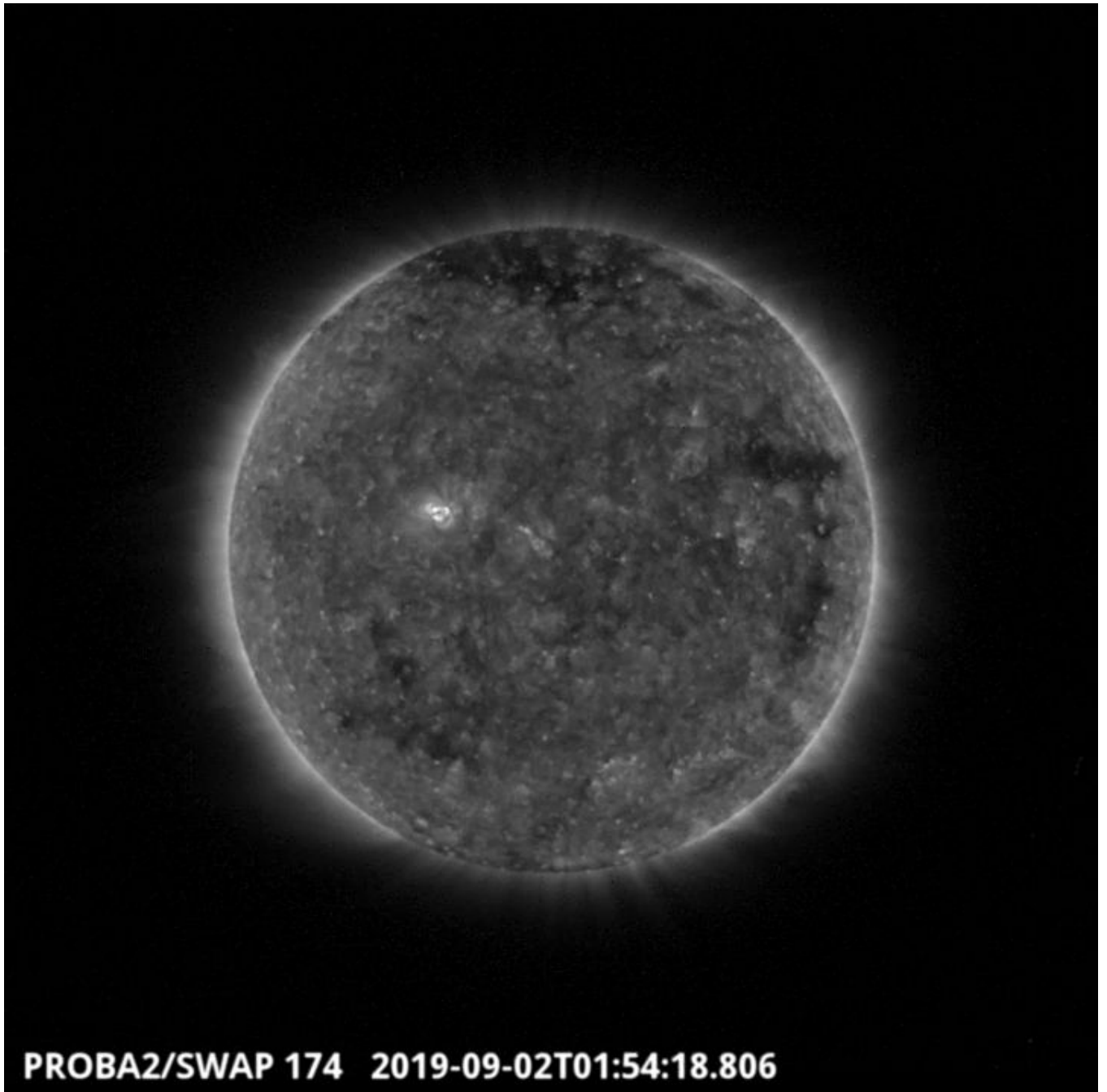
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 493).

Details about some of this week's events can be found further below.

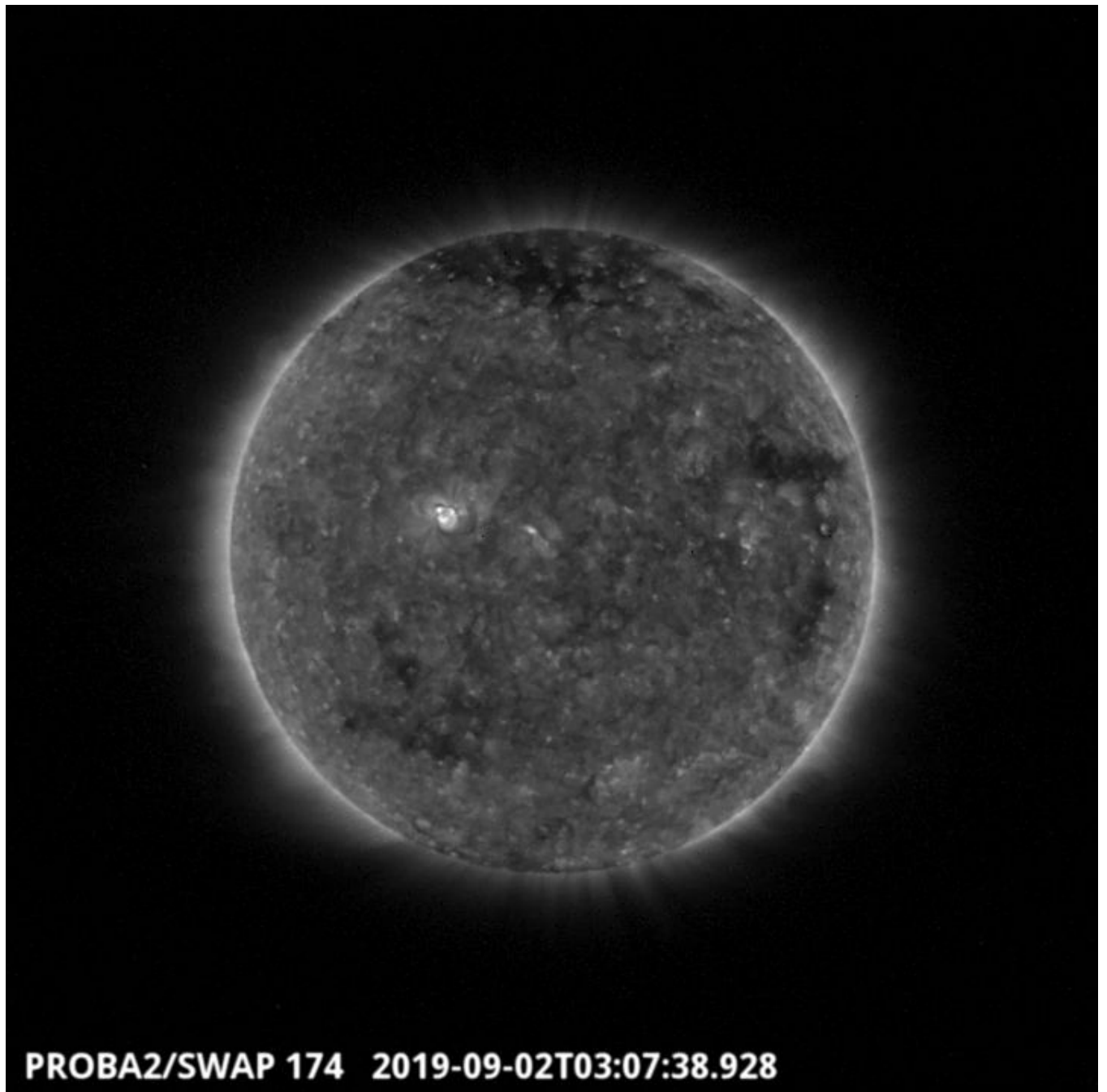
If any of the linked movies are unavailable they can be found in the P2SC movie repository [here](#)

Monday Sep 02



A coronal hole which is visible in the SWAP image of 2019-Sep-02 around 01:54UT near the Western limb. Find a movie of the day [here](#) (SWAP movie)

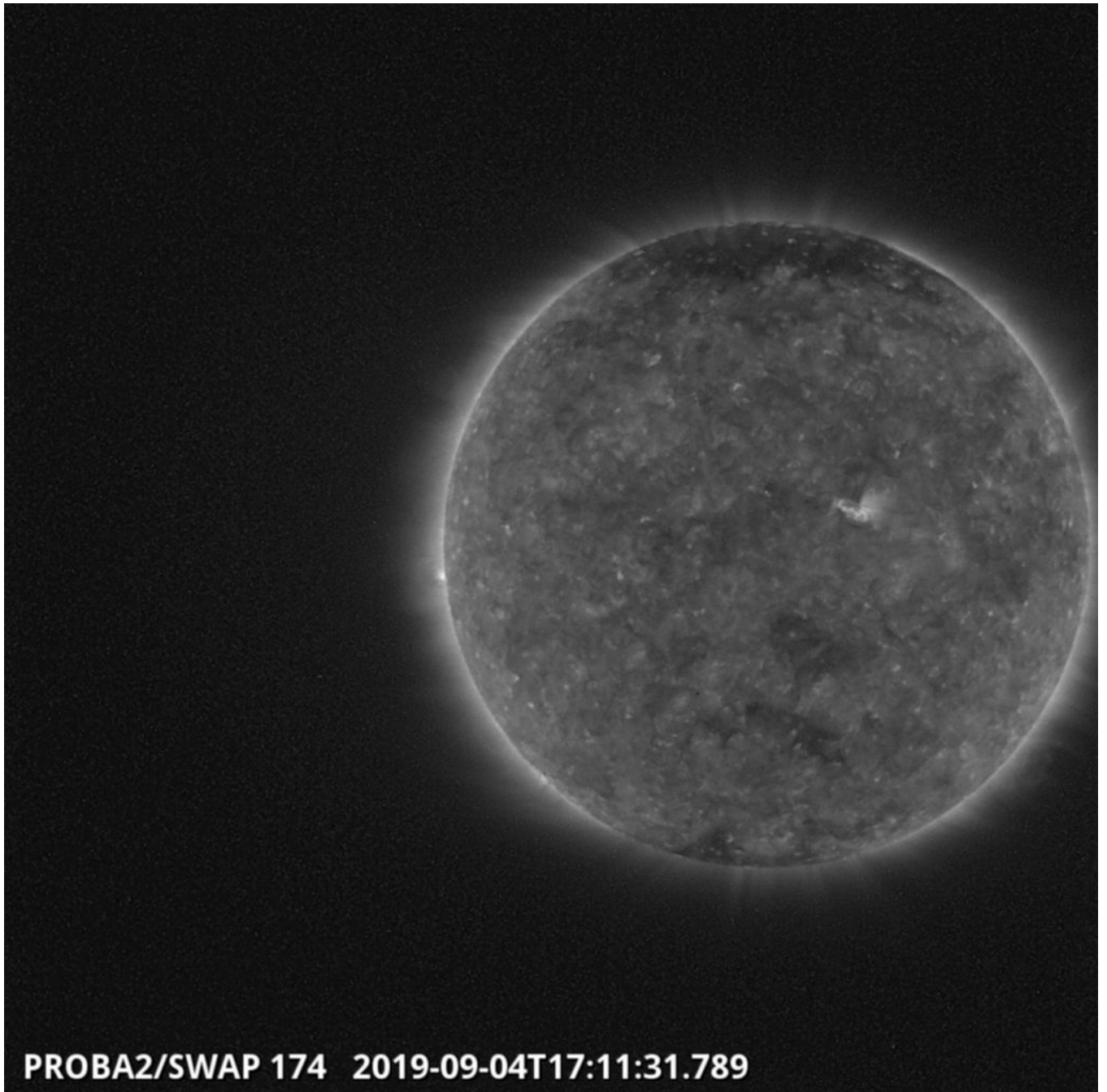
Monday Sep 02



PROBA2/SWAP 174 2019-09-02T03:07:38.928

There was one small active region visible throughout the week, in the Northern hemisphere of the solar disk. It corresponds to the NOAA AR 12748 which emerged last week. Find a movie of the day [here](#) (SWAP movie)

Wednesday Sep 04

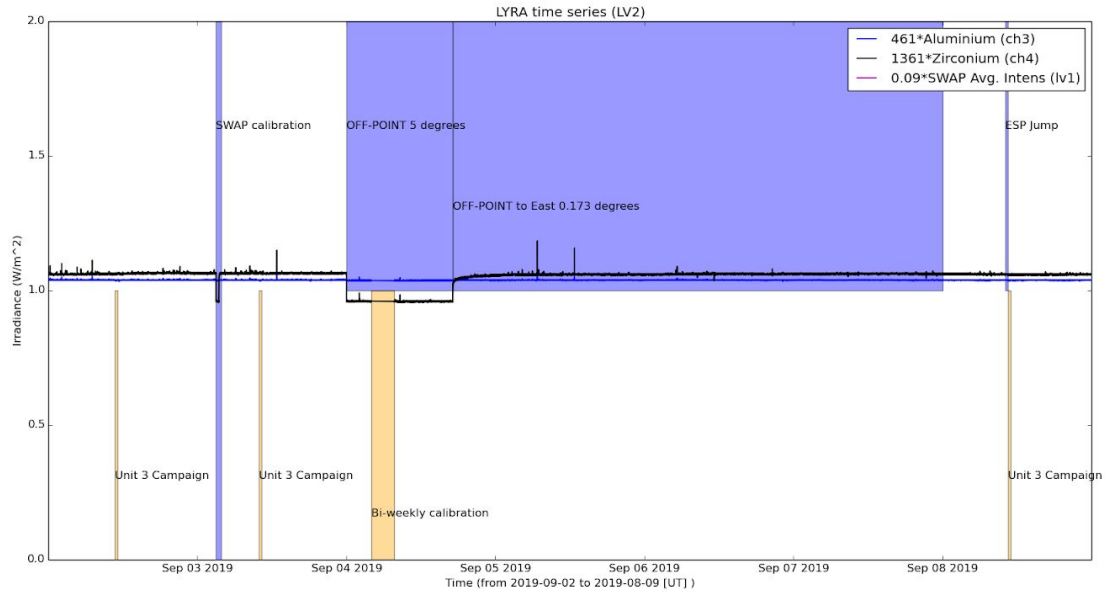


SWAP performed an off-point campaign through the last part of the week to support Parker Solar Probe WHISPR observations. A large coronal hole is visible on the Southern part disk of the SWAP image above.

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 (SWAP Average Intensity; integrated solar intensity per SWAP image pixel)



Operations and Calibrations:

The blue shaded periods related to SWAP, correspond to, from left to right:

- Bi-weekly calibration, 2019-Sep-03
- SWAP off point of 5° to solar East (To big off-point), 2019-Sep-04 since 00:00 UT until 17:09:59 UT
- SWAP OFF-POINT to solar East (with a quaternion of 0.0015 - 0.173 °-, the Sun is still in the FOV) for LASCO-SWAP Campaign in support of WISPR E3 perihelion, since 2019-Sep-03 17:10 until 2019-Sep-07 23:59
- ESP jump, 2019-Sep-08

The orange shaded periods related to LYRA correspond to, from left to right:

- Daily Unit 3 campaign, 2019-Sep-02
- Daily Unit 3 campaign, 2019-Sep-03
- Bi-weekly calibration, 2019-Sep-04
- Daily Unit 3 campaign, 2019-Sep-08

The red shaded periods related to other issues corresponds to:

- None

2. LYRA instrument status

IOS

Start IOS	Mon Sep 02 2019	LYIOS00798
End IOS	Sun Sep 08 2019	LYIOS00799

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.43 and 49.48 °C.

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 3669 to 3738.

The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon Sep 02 2019	IOS00862
End IOS	Sun Sep 08 2019	IOS00864

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.53 and -0.33 °C.

4. PROBA2 Science Center Status

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 31899 to 31966) was nominal, except for:

- No data has been received during the support 31923 (2019-09-04T10:09:42 UT). Power was lost to the antenna shortly before the support. Data has been dumped on the following support 31924.

Data coverage HK

All HK data files (LYRA_AD) have been received, except:

- None.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except:

- 31923 received in 31924 pass

Total number of images between 2019 Sep 02 00:00 UT and 2019 Sep 09 00:00 UT: 4949

Highest cadence in this period: 30 seconds

Average cadence in this period: 122.19 seconds

Number of image gaps larger than 300 seconds: 106

Largest data gap: 35.50 minutes

Data coverage LYRA

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

- 31923
- Data received with 31924 pass

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
DAC	Data Acquisition Controller
DBR	Deployment, backup & recovery
DDA	Decommutated data archive
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
SoFAST	Solar Feature Automated Search Tool
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
VFC	Voltage to Frequency Converter

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)