


P2SC-ROB-WR-416 - 20180312 Weekly report #416	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Mar 12 to Sun Mar 18, 2018 21 Mar 2018 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, david.berghmans@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 3730559
cc:	ROB DIR, ronald@oma.be ESA Redu, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Juha-Pekka.Luntama@esa.int	

1. Science

Solar & Space weather events

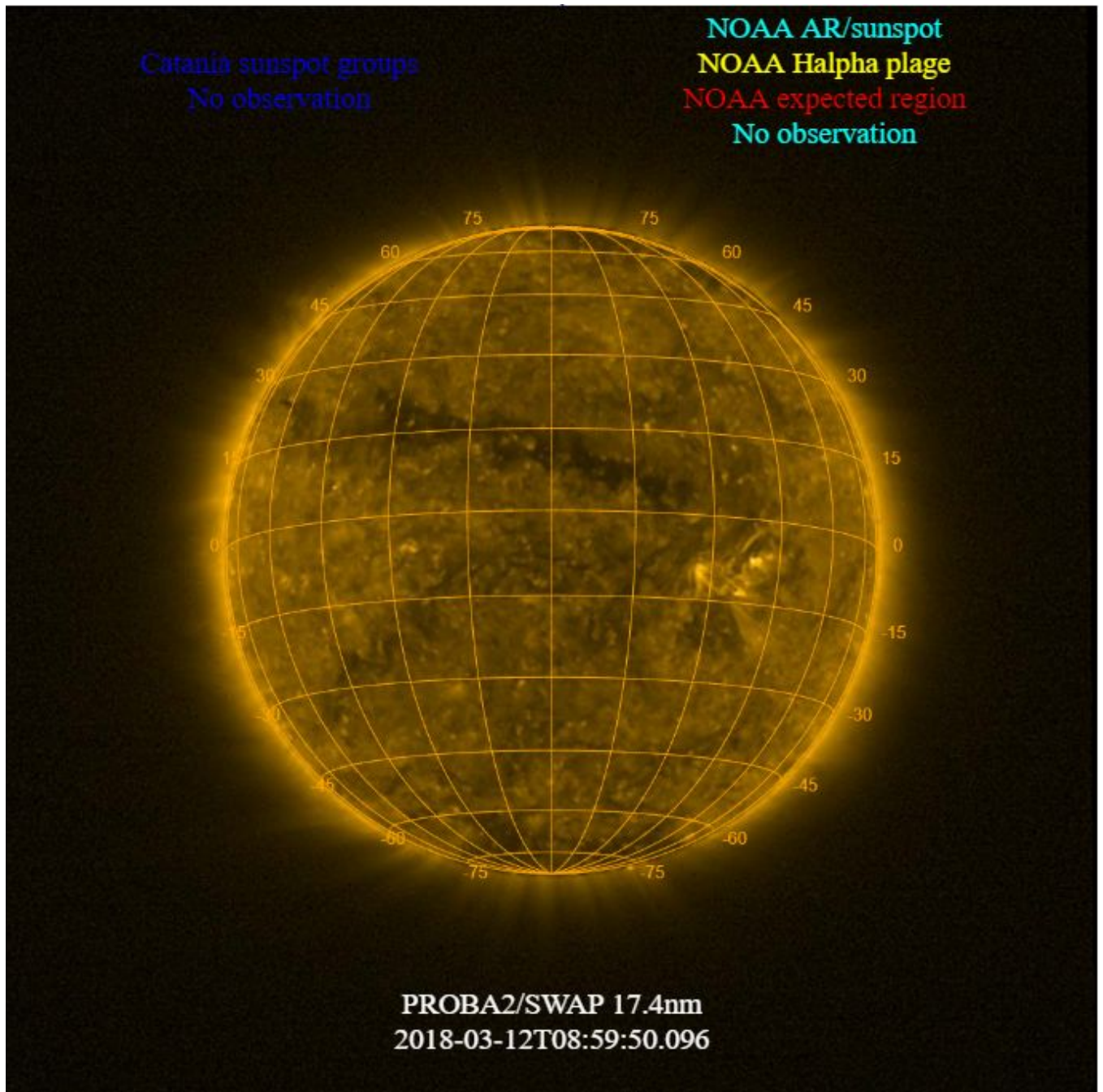
The level of solar activity¹ was **very low** this week.

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

	Monday 12 Mar	Tuesday 13 Mar	Wednesday 14 Mar	Thursday 15 Mar	Friday 16 Mar	Saturday 17 Mar	Sunday 18 Mar
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.

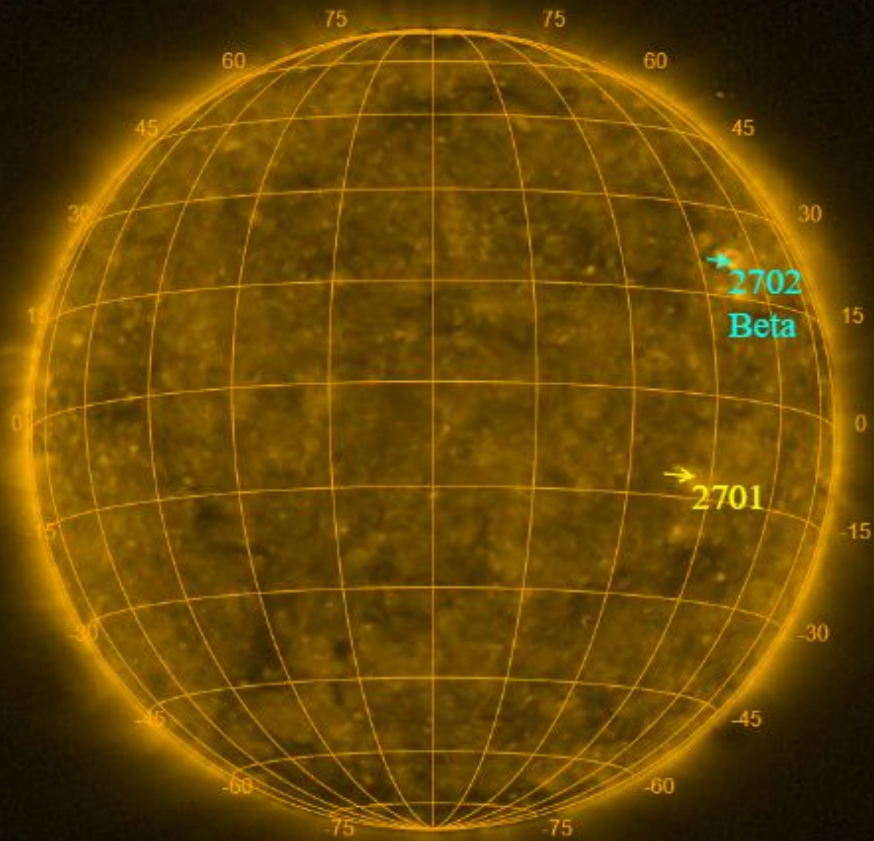
The SWAP images of Mar 12 and Mar 18 are shown below, with annotated active regions.



<http://sidc.be/soteria/soteria.php>

Catania sunspot groups
No observation

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2018-03-18 00:30:00



PROBA2/SWAP 17.4nm
2018-03-18T09:04:09.216

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>

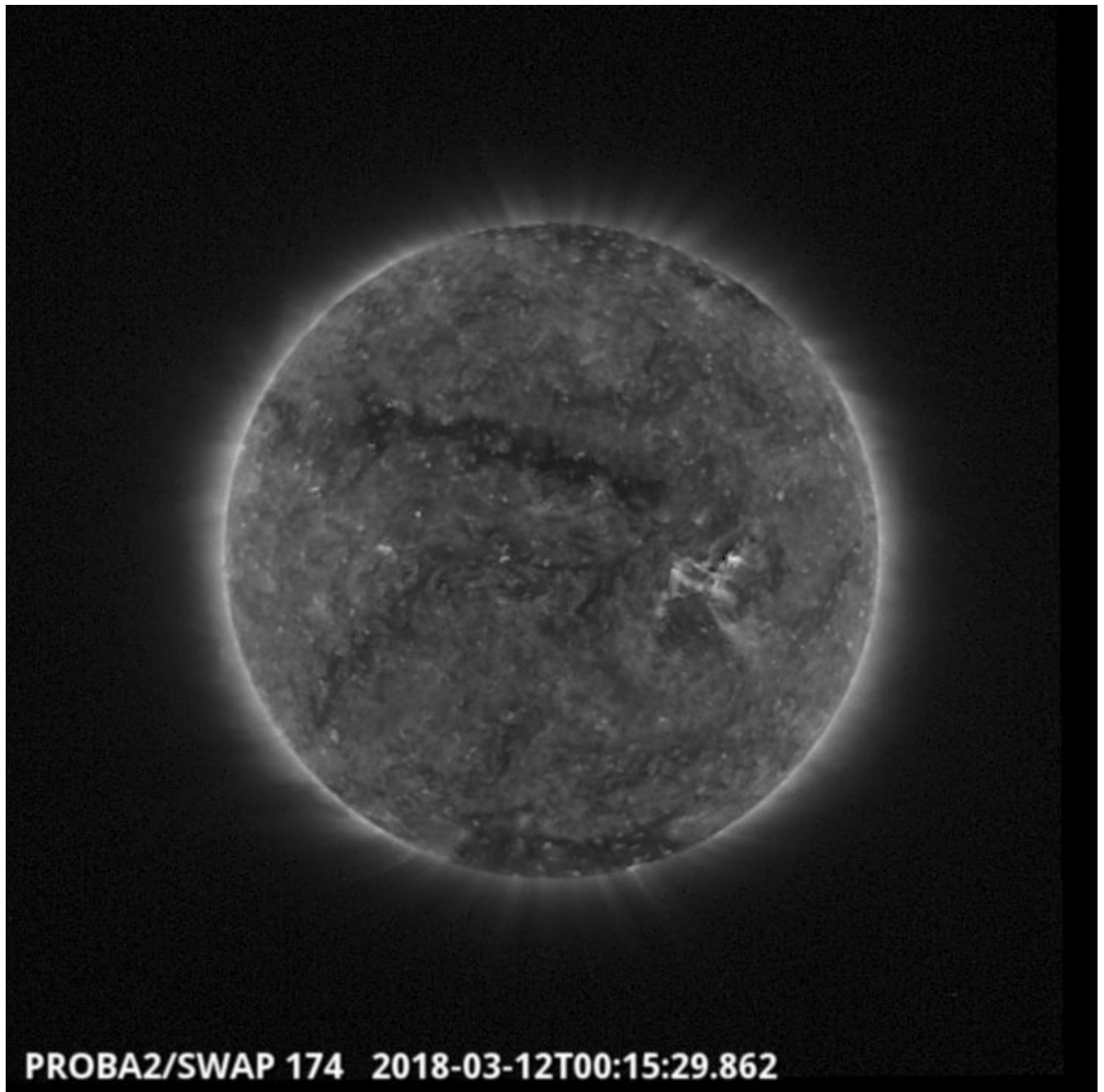
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 416).

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 Mar 12



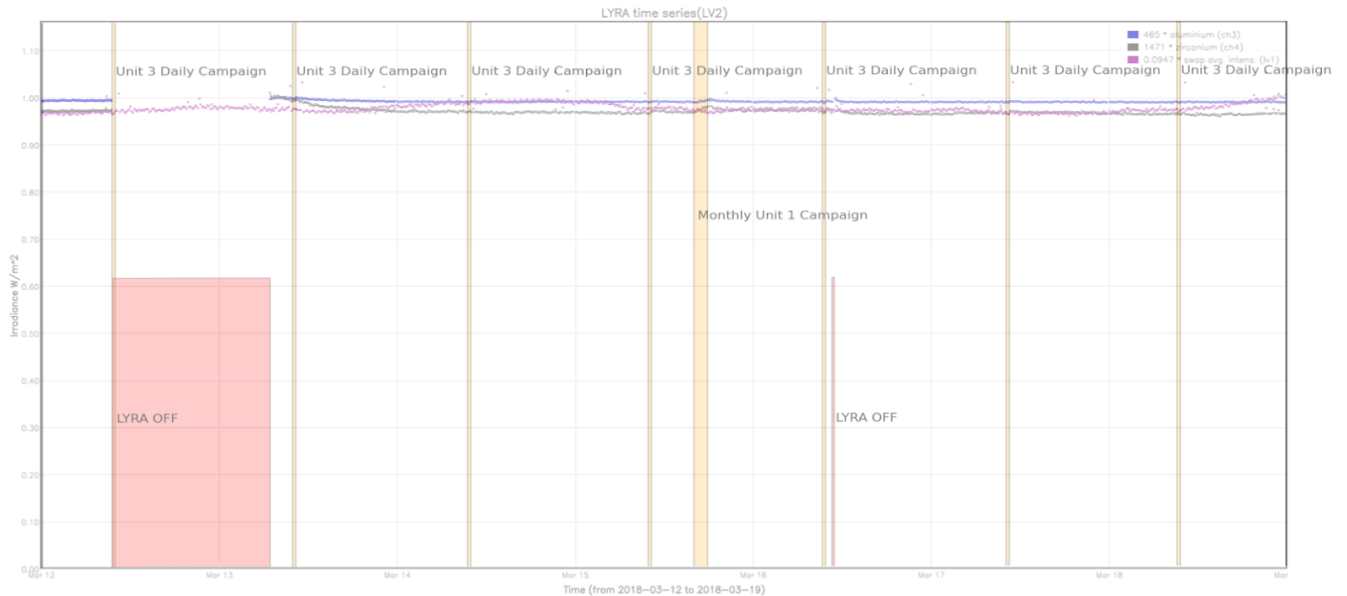
The image above shows an elongated coronal hole which transited the central meridian - SWAP
image

Find a movie of the events [here](#) (SWAP movie)

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)



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

- None

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

- daily U3 observations campaign, 2018-Mar-12
- daily U3 observations campaign, 2018-Mar-13
- daily U3 observations campaign, 2018-Mar-14
- daily U3 observations campaign, 2018-Mar-15
- Monthly Unit 1 campaign on 2018-Mar-15
- daily U3 observations campaign, 2018-Mar-16
- daily U3 observations campaign, 2018-Mar-17
- daily U3 observations campaign, 2018-Mar-18

The red shaded periods related to other issues corresponds to:

- LYRA OFF MODE due to LY HK19 DP which exceeded its threshold on 2018-Mar-12 at 9:35 UT. LYRA PI asked to Increase the LY HK19 TEMP DP threshold (60°C) before bringing LYRA back to life on 2018-Mar-13 at 6:48 UT
- LYRA has been Switch OFF on 2018-Mar-16 at 10:42:16 and the LY HK19 DP threshold has been put to its nominal value. LYRA was back to life on 2018-Mar-16 at 10:58 UT.

Outreach, papers, presentations, etc.

Please 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.

The science section of this weekly report is also published in the weekly STCE newsletter (<http://www.stce.be/newsletter/newsletter.php>).

Guest Investigator Program

- Alexandros Koukras continued his visit to the P2SC working on his project entitled “A unique opportunity of observing and modeling a CME event from the low to the outer corona”.

2. LYRA instrument status

Calibration

No calibration campaign on this week.

IOS & operations

Monday 12 Mar	Tuesday 13 Mar	Wednesday 14 Mar	Thursday 15 Mar	Friday 16 Mar	Saturday 17 Mar	Sunday 18 Mar
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3+ Monthly U1	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00682	LYIOS00683	LYIOS00683	LYIOS00683	LYIOS00684	LYIOS00684	LYIOS00684

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- Monthly Unit 1 campaign on 2018-Mar-15

LYRA detector temperature

LYRA detector 2 temperature globally varied between 42.40 to 52.21 °C.

3. SWAP instrument status

Calibration

No Calibration campaign on this week.

MCPM errors

The number of MCPM recoverable errors increased from 2668 to 2907.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 12 Mar	Tuesday 13 Mar	Wednesday 14 Mar	Thursday 15 Mar	Friday 16 Mar	Saturday 17 Mar	Sunday 18 Mar
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00765 633 images	IOS00765 724 images	IOS00765 729 images	IOS00765 703 images	IOS00765 746 images	IOS00766 706 images	IOS00766 663 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -0.09 and 1.35 °C.

4. PROBA2 Science Center Status

The main operator is Laurence Wauters.

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 26865 to 26931) was nominal, except for:

- passes 26870 to 26877 due to LYRA being OFF.

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:

- None.

Total number of images between 2018 Mar 12 00:00UT and 2018 Mar 19 00:00UT: 5167

Highest cadence in this period: 110 seconds

Average cadence in this period: 117.05 seconds

Number of image gaps larger than 300 seconds: 53

Largest data gap: 5.50 minutes

Data coverage LYRA

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

- For passes 26870 to 26877 due to LYRA being OFF.

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)