


P2SC-ROB-WR-303 - 20160111 Weekly report #303	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jan 11 to Sun Jan 17, 2016 20 Jan 2016 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

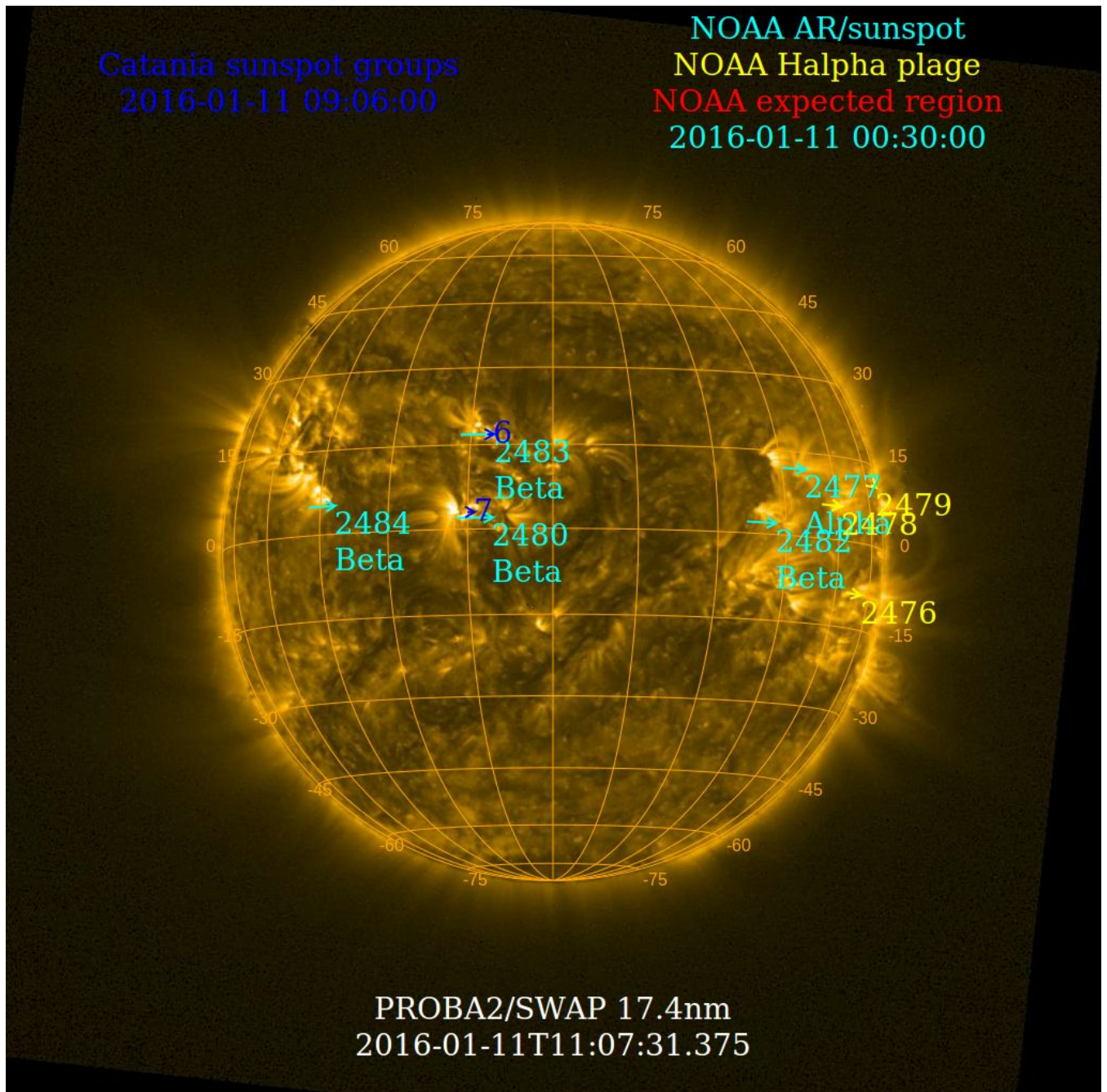
The level of solar activity¹ fluctuated between **very low** and **low** this week.

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

	Monday 11 Jan	Tuesday 12 Jan	Wednesday 13 Jan	Thursday 14 Jan	Friday 15 Jan	Saturday 16 Jan	Sunday 17 Jan
Activity	very low	very low	very low	very low	low	very low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

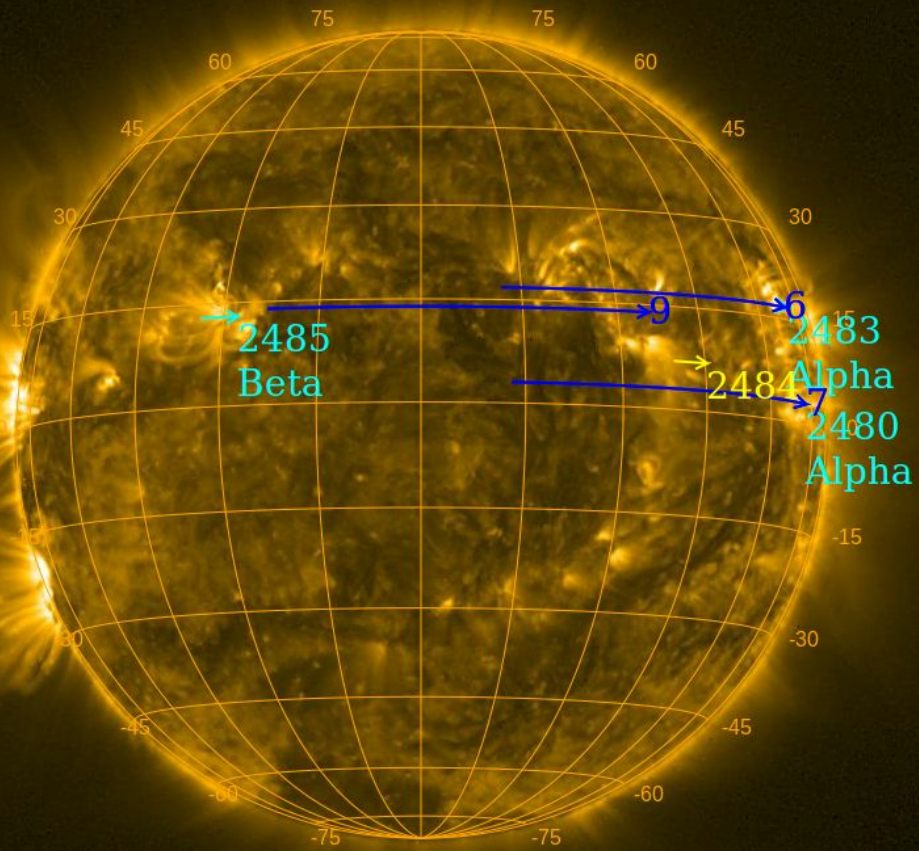
The SWAP images of Jan 11 and Jan 17 are shown below, with annotated active regions.



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

Catania sunspot groups
2016-01-13 10:06:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2016-01-17 00:30:00



PROBA2/SWAP 17.4nm
2016-01-17T11:01:07.519

Solar Activity

Solar flare activity fluctuated between very low and low during the week.

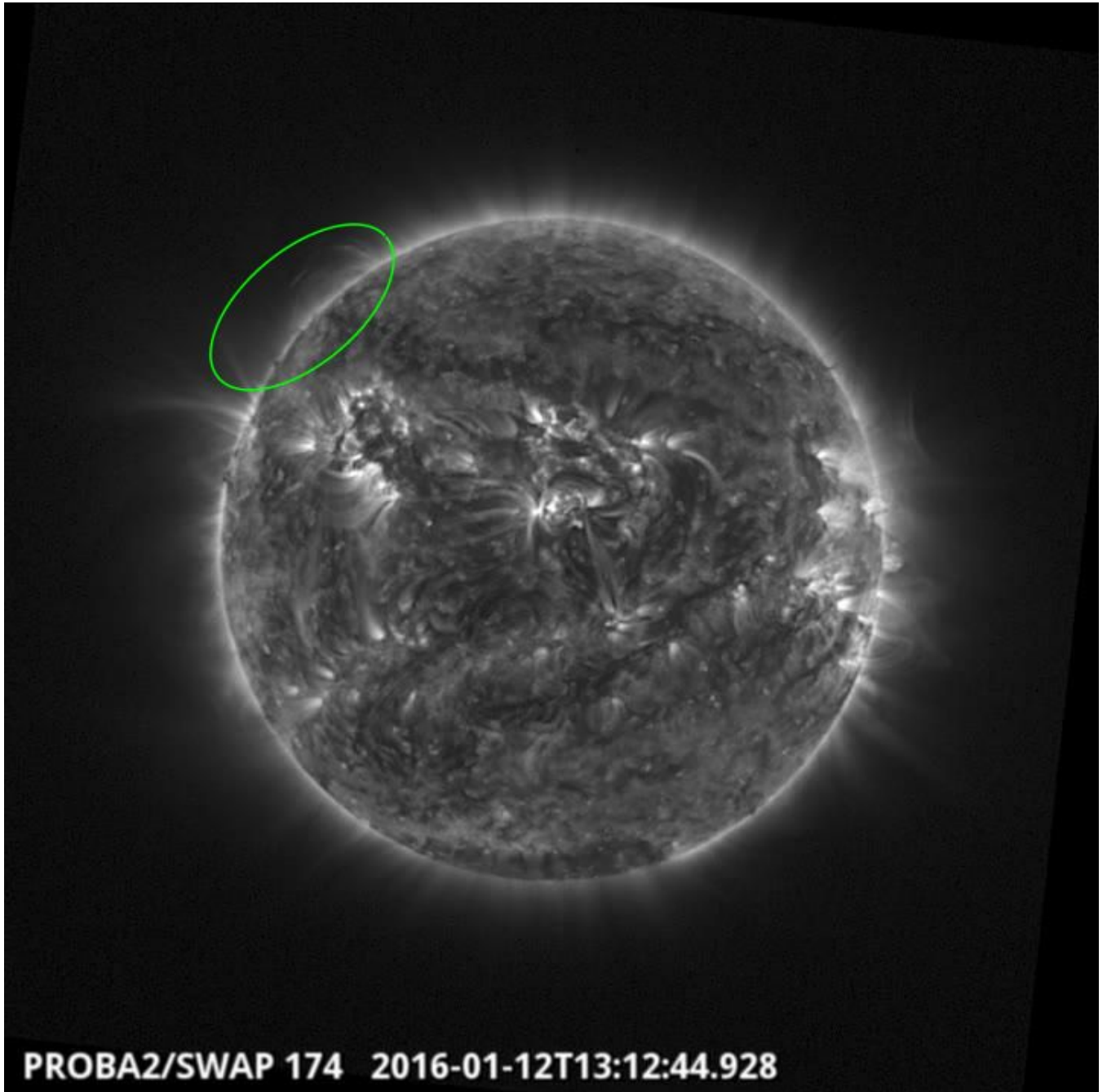
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>

This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 303).

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

Tuesday Jan 12



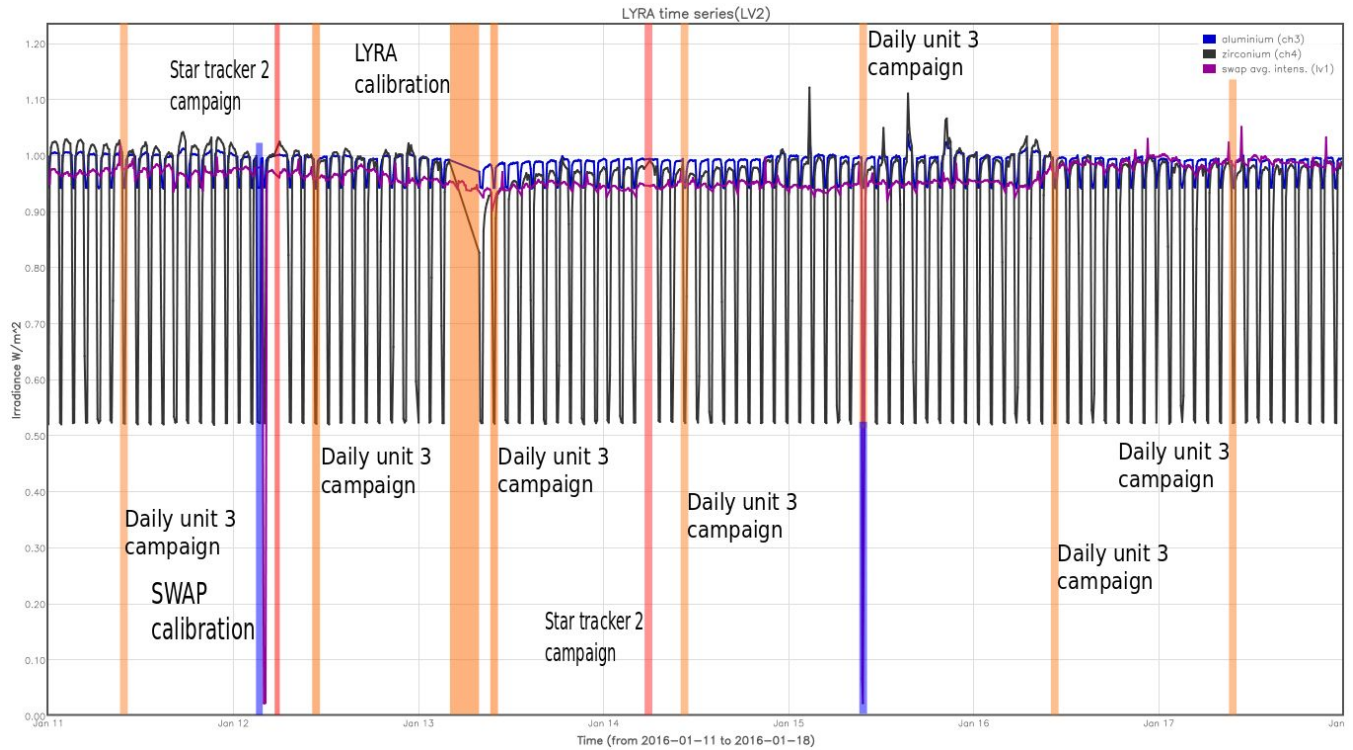
**A series of flows and brightenings were seen on the east solar limb in SWAP images on
2016-Jan-12 at 13:12 UT**

Find a movie of the event [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 correspond to, from left to right:

- SWAP bi-weekly calibration, 2016-01-12
- SWAP occultation campaign, 2016-01-15

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

- Daily unit 3 campaign, 2016-01-11
- Daily unit 3 campaign, 2016-01-12
- LYRA bi-weekly calibration, 2016-01-13
- Daily unit 3 campaign, 2016-01-13
- Daily unit 3 campaign, 2016-01-14
- Daily unit 3 campaign, 2016-01-15
- Daily unit 3 campaign, 2016-01-16
- Daily unit 3 campaign, 2016-01-17

The red shaded period corresponds to:

- Star Tracker 2 campaign, 2016-01-12
- Star Tracker 2 campaign, 2016-01-15

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

- None

2. LYRA instrument status

Calibration

Calibration campaign on Wednesday this week.

IOS & operations

Monday 11 Jan	Tuesday 12 Jan	Wednesday 13 Jan	Thursday 14 Jan	Friday 15 Jan	Saturday 16 Jan	Sunday 17 Jan
Nominal acquisition + daily U3	Nominal acquisition + daily U3 + Star tracker 2	Nominal acquisition + daily U3 + calibration	Nominal acquisition + daily U3 + Star Tracker 2	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00520	LYIOS00520	LYIOS00520	LYIOS00520	LYIOS00522	LYIOS00522	LYIOS00522

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- LYRA was set to IDLE for the Star Tracker 2 campaigns
- bi weekly calibration campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 40.7 and 44.5 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 1094 to 1095.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 11 Jan	Tuesday 12 Jan	Wednesday 13 Jan	Thursday 14 Jan	Friday 15 Jan	Saturday 16 Jan	Sunday 17 Jan
Nominal acquisition	Nominal acquisition + Star Tracker 2 + calibration	Nominal acquisition	Nominal acquisition + Star tracker 2	Nominal acquisition + occultation	Nominal acquisition	Nominal acquisition
IOS00520 599 images	IOS00520 703 images	IOS00520 714 images	IOS00520 683 images	IOS00522 712 images	IOS00522 666 images	IOS00522 646 images

Special operations for SWAP, this week:

- SWAP was set to IDLE for the Star Tracker 2 campaign
- bi-weekly calibration
- occultation campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -4.3 and -1.4 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

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 19521 to 19586) was nominal, except for:

- None.

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 2016 Jan 11 00:00 UT and 2016 Jan 18 00:00 UT: 4723

Highest cadence in this period: 30 seconds

Average cadence in this period: 127.92 seconds

Number of image gaps larger than 300 seconds: 127

Largest data gap: 36.25 minutes

Data coverage LYRA

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

- None

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
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)