


P2SC-ROB-WR-183 - 20130923 Weekly report #183	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 23 to Sun Sep 29, 2013 02 October 2013 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

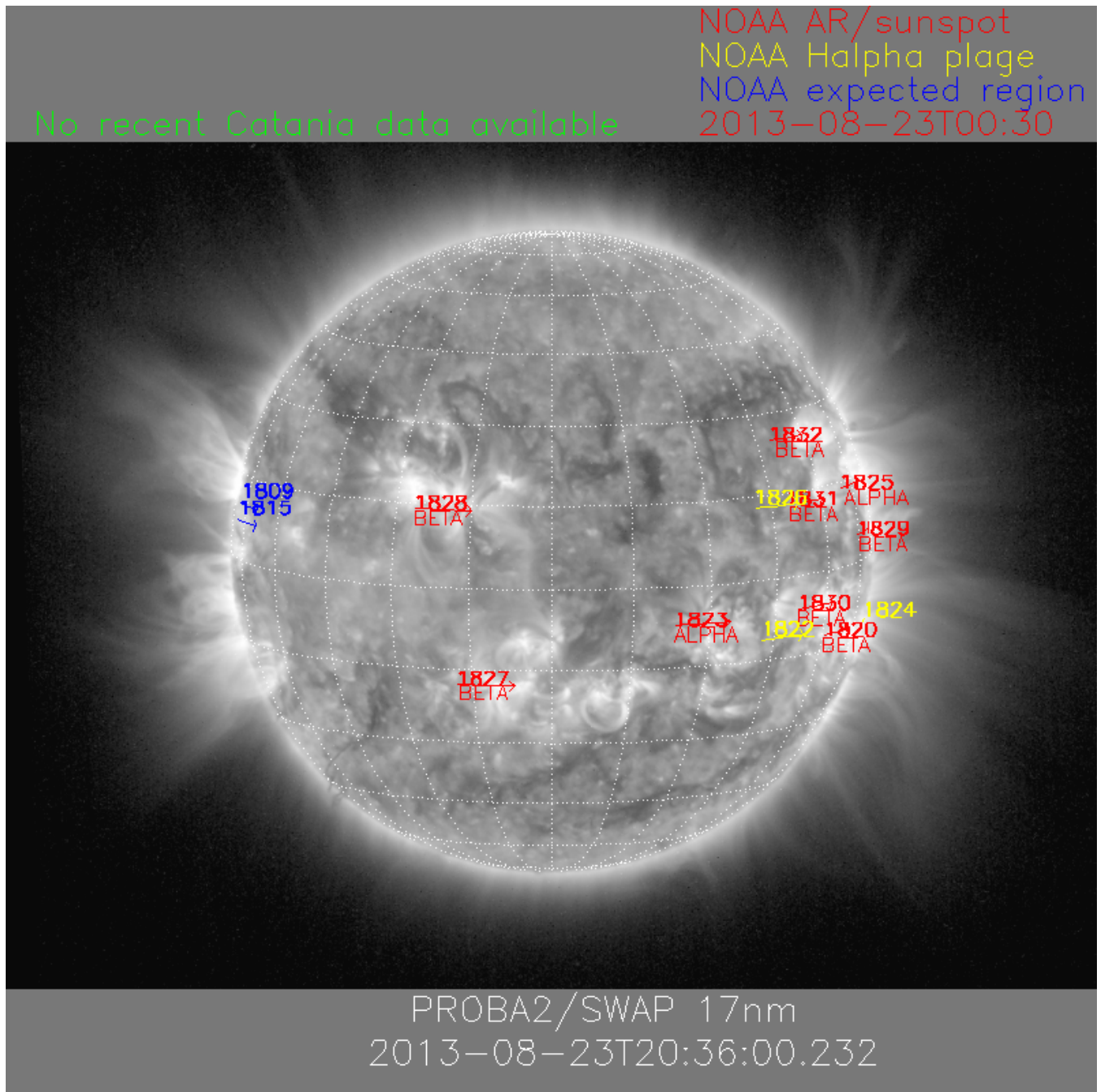
The level of solar activity¹ this week varied between **very low and low** this week.

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

	Monday 23 Sep	Tuesday 24 Sep	Wednesday 25 Sep	Thursday 26 Sep	Friday 27 Sep	Saturday 28 Sep	Sunday 29 Sep
Activity	very low	low	very low	very low	very low	very low	low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

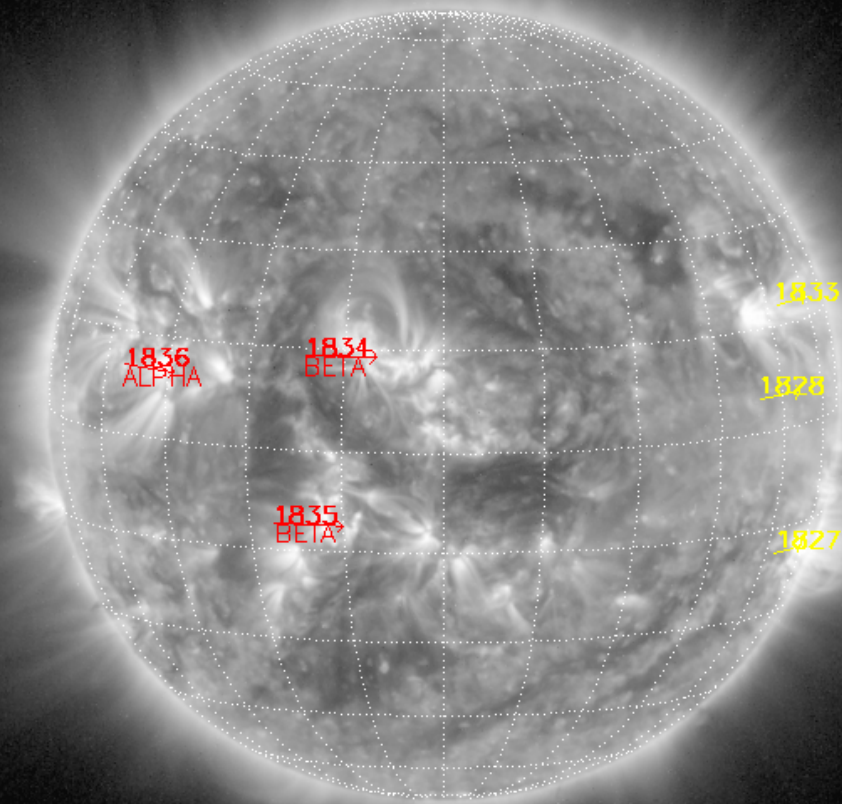
The SWAP images of Sep 23 and Sep 29 are shown below, with annotated active regions.



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

No recent Catania data available

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2013-08-29T00:30



PROBA2/SWAP 17nm
2013-08-29T20:28:33.776

Solar Activity

Solar (flaring) activity was low to very low throughout 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](#) (SWAP174; HelioViewer.org).

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

Monday September 23th:



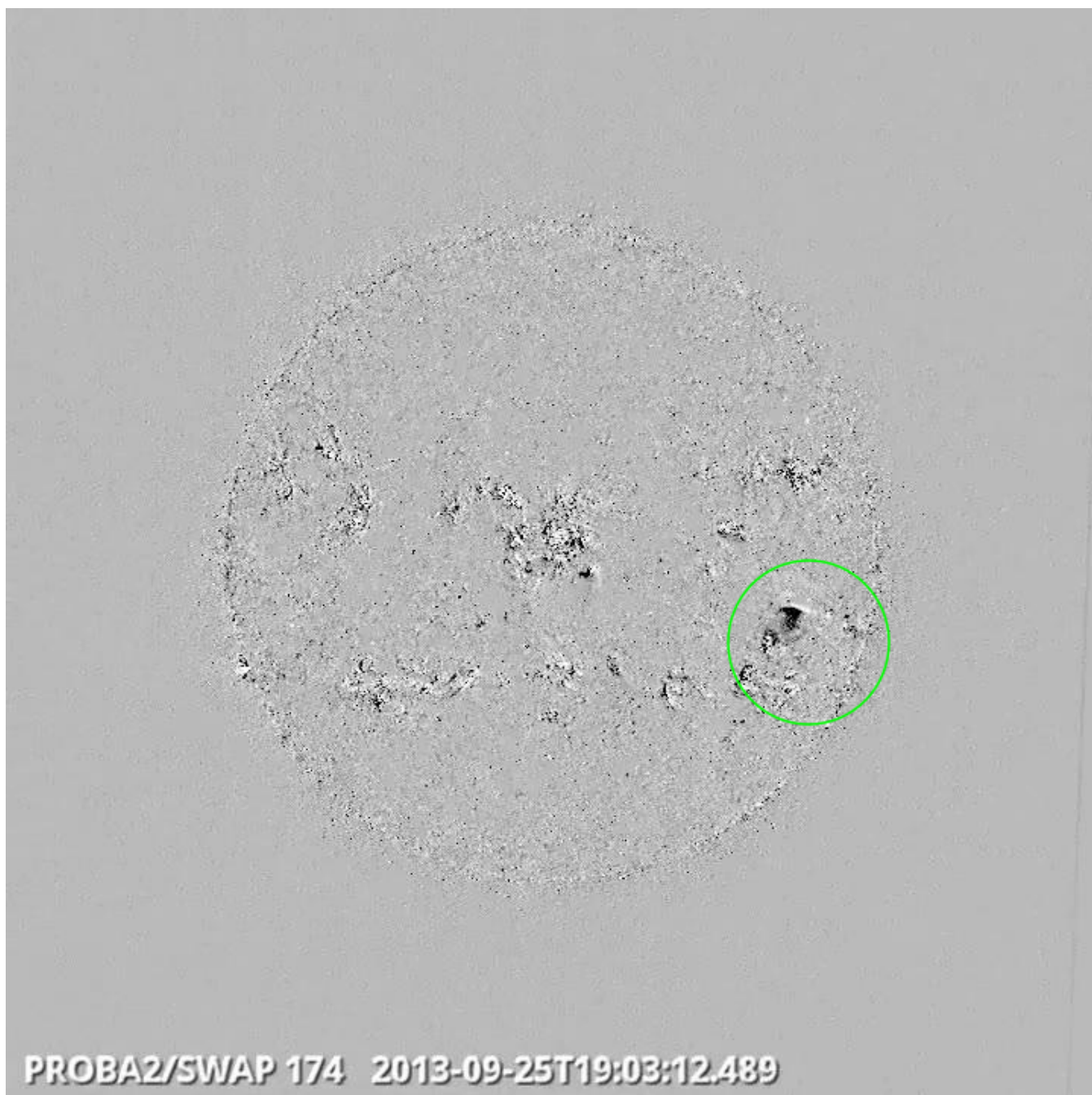
Eruption on North East limb @ 06:37 - SWAP difference image

Tuesday September 24th:



Eruption on North East quad @ 20:31 - SWAP difference image
Find a movie of the complete event [here](#) (SWAP difference movie)

Wednesday September 25th:



Eruption on South West quad @ 19:03 - SWAP difference image

Saturday September 28th



Prominence eruption on East limb @ 10:36 - SWAP difference image

Find a movie of the complete event [here](#) (SWAP difference movie) The movie also contains a small Eruption preceding this event

Sunday September 29th



Prominence eruption on East limb @ 07:20 - SWAP difference image
Find a movie of the complete event [here](#) (SWAP difference movie)



Prominence eruption on East Limb @ 11:05 - SWAP difference image
Find a movie of the complete event [here](#) (SWAP difference movie)



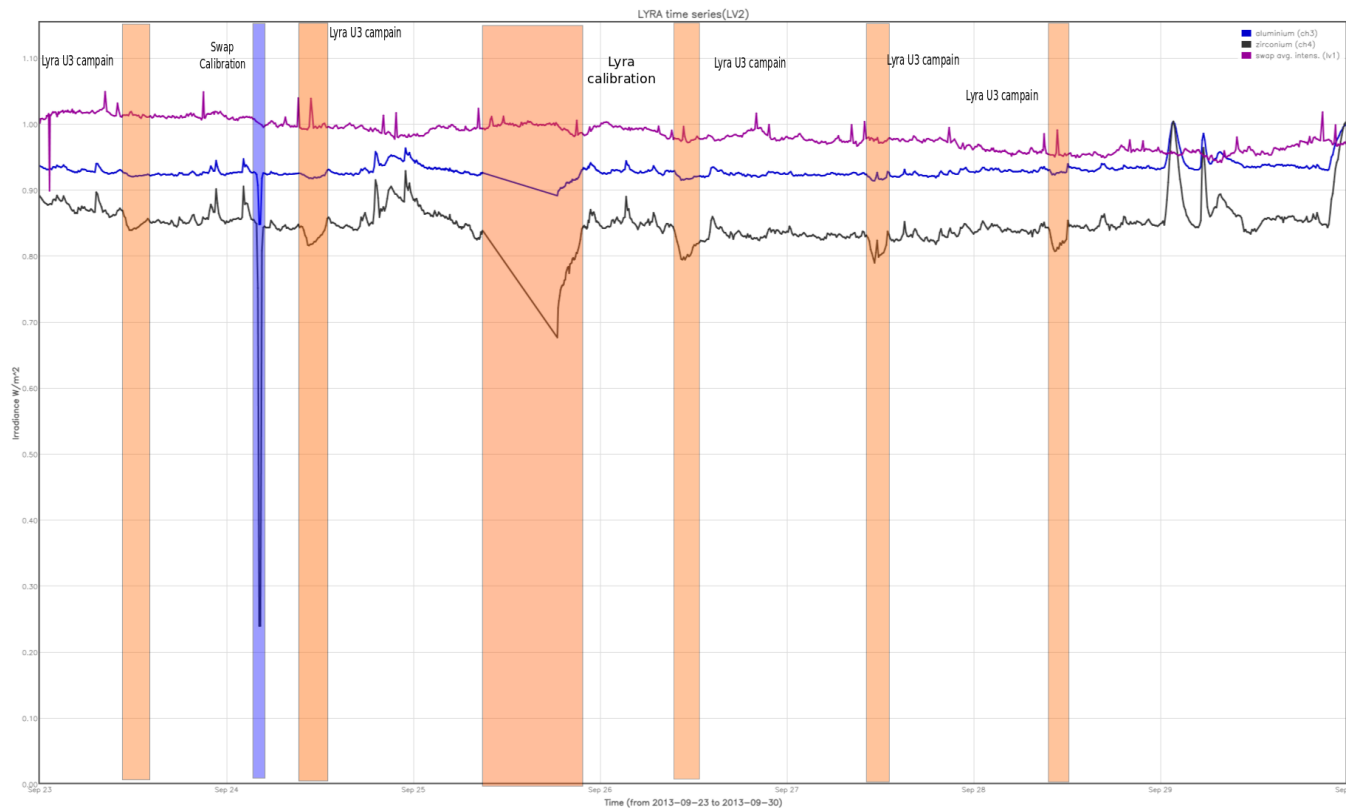
Filament eruption on North West quad @ 21:57 - SWAP difference image

Find a movie of the complete event [here](#) (SWAP difference 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 (solar intensity derived from 'integrated' SWAP images)



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

- SWAP calibration on Tuesday

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

- LYRA calibration on Wednesday
- Daily U3 campaign indicated every day except Wednesday.

The red shaded period corresponds to:

- None

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

LYRA calibration on Wednesday.

IOS & operations

Monday 23 Sep	Tuesday 24 Sep	Wednesday 25 Sep	Thursday 26 Sep	Friday 27 Sep	Saturday 28 Sep	Sunday 29 Sep
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00341	LYIOS00341	LYIOS00341	LYIOS00341	LYIOS00341	LYIOS00341	LYIOS00341

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- new daily U3 observations campaign, between 10:00 UT and 10:20 UT, as a pre-campaign for the occultation season

LYRA detector temperature

LYRA detector 2 temperature globally varied between 47.1 and 49.8 degrees C, taking into account the daily U3 activation periods; the latter result in a temperature increase of about 0.7 degrees C. During calibration, temperature decreased to 47.1 degrees.

To be explored

- None

3. SWAP instrument status

Calibration

SWAP calibration on Tuesday.

MCPM errors

The number of MCPM recoverable errors increased from 12360 to 12580.

The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 23 Sep	Tuesday 24 Sep	Wednesday 25 Sep	Thursday 26 Sep	Friday 27 Sep	Saturday 28 Sep	Sunday 29 Sep
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00475 509 images	IOS00475 623 images	IOS00475 658 images	IOS00475 597 images	IOS00475 601 images	IOS00475 533 images	IOS00475 527 images

Special operations for SWAP, this week:

- None

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.60 and 0.6 degrees C.

To be explored

- None

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 12085 to 12144) 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 2013 Sep 23 0UT and 2013 Sep 30 0UT: 4048

Highest cadence in this period: 30 seconds

Average cadence in this period: 149.42 seconds

Number of image gaps larger than 300 seconds: 0

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
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)