


P2SC-ROB-WR-433 - 20180709 Weekly report #433	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Jul 09 to Sun Jul 15, 2017 18 Jul 2018 Laurence Wauters Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
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1. Science

Solar & Space weather events

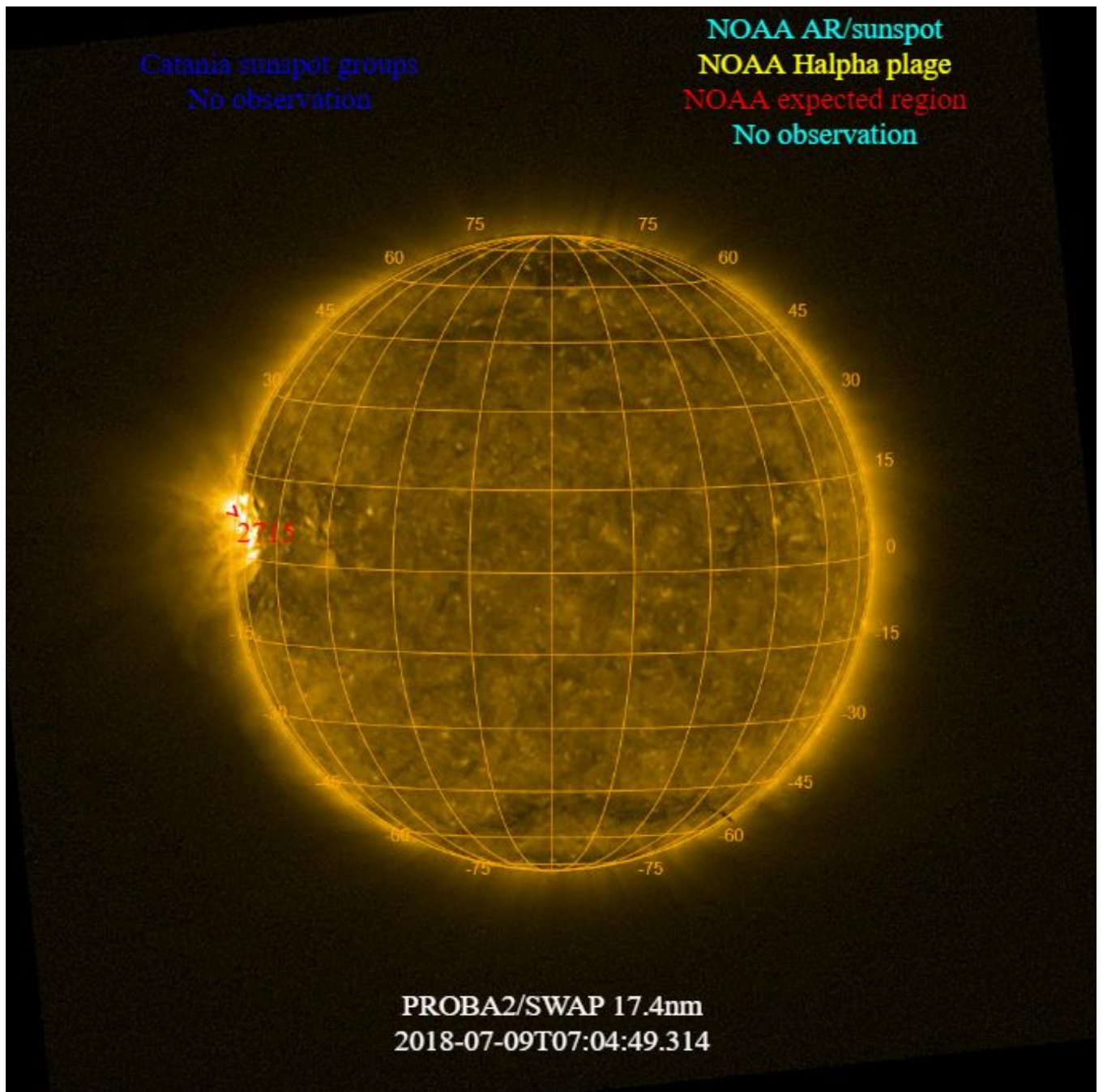
The level of solar activity¹ was **very low** this week.

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

	Monday 09 Jul	Tuesday 10 Jul	Wednesday 11 Jul	Thursday 12 Jul	Friday 13 Jul	Saturday 14 Jul	Sunday 15 Jul
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.

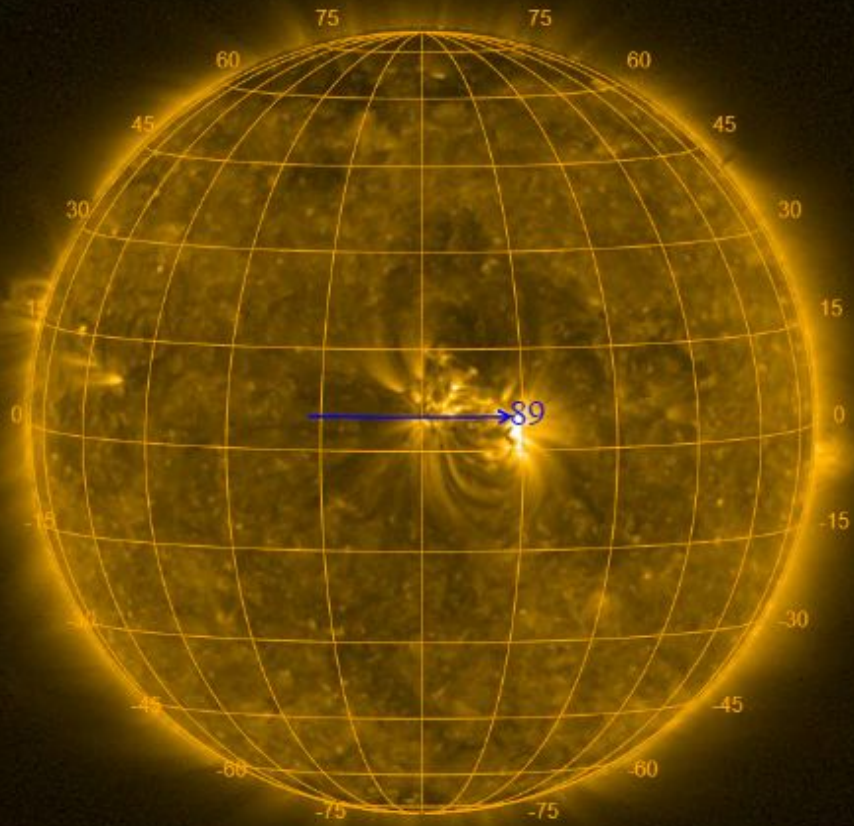
The SWAP images of Jul 09 and Jul 15 are shown below, with annotated active regions.



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

Catania sunspot groups
2018-07-13 06:00:00

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
No observation



PROBA2/SWAP 17.4nm
2018-07-15T07:03:53.268

Solar Activity

Solar flare activity fluctuated 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>

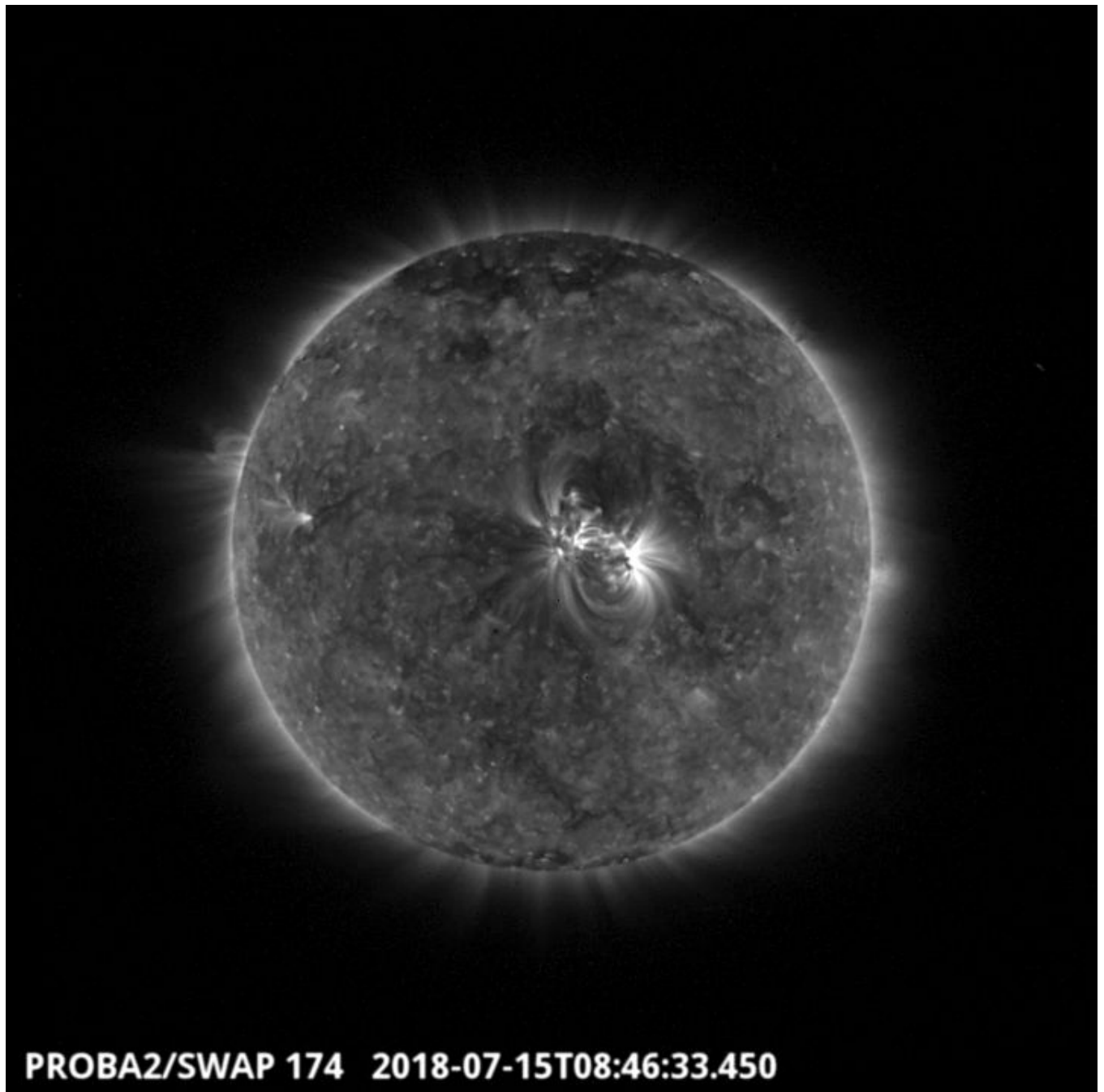
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 433).

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](#)

Sunday Jul 15



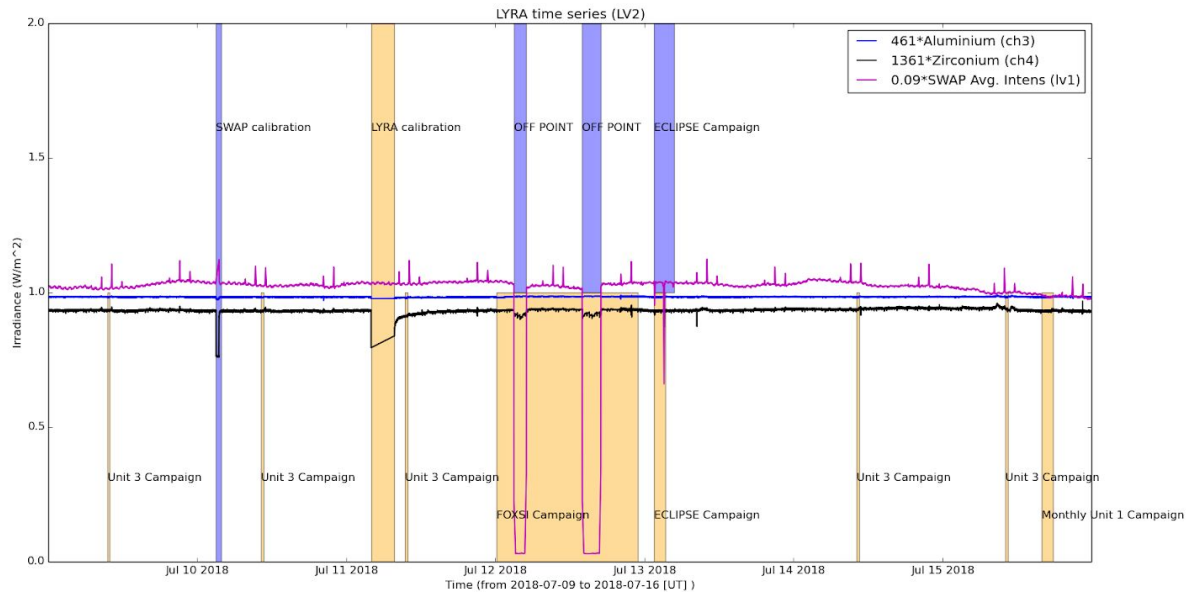
The largest flare of the week was a B1.5 class flare. The flare is visible on the central part of the SWAP image above at 08:46 UT on 2018-Jul-15.

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:

- Bi-weekly calibration, 2018-Jul-10
- 2 OFF-POINT of 1.65 ° for LYRA FOXSI campaign (High cadence 90 outside OFF point during the campaign), 2018-Jul-12
- Eclipse campaign, 2018-Jul-13

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

- Daily Unit 3 campaign, 2018-Jul-09
- Daily Unit 3 campaign, 2018-Jul-10
- Bi-weekly calibration, 2018-Jul-11
- Daily Unit 3 campaign, 2018-Jul-11
- FOXSI campaign, 2018-Jul-12
- Eclipse campaign, 2018-Jul-13
- Daily Unit 3 campaign, 2018-Jul-14
- Daily Unit 3 campaign, 2018-Jul-15
- Monthly Unit 1 campaign, 2018-Jul-15

The red shaded periods related to other issues 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

Calibration campaign on Wednesday this week.

IOS & operations

Monday 09 Jul	Tuesday 10 Jul	Wednesday 11 Jul	Thursday 12 Jul	Friday 13 Jul	Saturday 14 Jul	Sunday 15 Jul
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration	Nominal acquisition + FOXSI campaign	Nominal acquisition + Eclipse Campaign	Nominal acquisition + daily U3	Nominal acquisition + daily U3+ Monthly Unit 1 Campaign
LYIOS00713	LYIOS00713	LYIOS00713	LYIOS00714	LYIOS00714	LYIOS00714	LYIOS00714

The following science campaigns were performed by LYRA:

- daily U3 observations campaign (except 2018-Jul-12 and 2018-Jul-13)
- Bi-weekly calibration, 2018-Jul-11
- FOXSI campaign, 2018-Jul-12
- Eclipse campaign, 2018-Jul-13
- Monthly Unit 1 Campaign, 2018-Jul-15

LYRA detector temperature

LYRA detector 2 temperature globally varied between 46.60 and 50.86 °C.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 669 to 792.

The number of MCPM unrecoverable errors remained at 0.

IOS & operations

Monday 09 Jul	Tuesday 10 Jul	Wednesday 11 Jul	Thursday 12 Jul	Friday 13 Jul	Saturday 14 Jul	Sunday 15 Jul
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition+ OFF points	Nominal acquisition+ Eclipse campaign	Nominal acquisition	Nominal acquisition
IOS00779 601 images	IOS00779 710 images	IOS00779 698 images	IOS00781 661 images	IOS00781 801 images	IOS00781 687 images	IOS00781 646 images

Special operations for SWAP, this week:

- Bi-weekly calibration, 2018-Jul-10
- Two off-points for FOXSI LYRA campaign (with low cadence), 2018-Jul-12
- Increased cadence to 90 outside of off-points during FOXSI campaign, 2018-Jul-12
- High cadence eclipse campaign campaign, 2018-Jul-13

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.29 and 0.07 °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 27972 to 28039) 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 2018 Jul 09 00:00 UT and 2018 Jul 16 00:00 UT: 4900

Highest cadence in this period: 18 seconds

Average cadence in this period: 123.43 seconds

Number of image gaps larger than 300 seconds: 140

Largest data gap: 15.00 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
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)