


P2SC-ROB-WR-542 - 20200810	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Aug 10 to Sun Aug 16, 2020 18 Jun 2020 Laurence Wauters Marie Dominique	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 10 Aug	Tuesday 11 Aug	Wednesday 12 Aug	Thursday 13 Aug	Friday 14 Aug	Saturday 15 Aug	Sunday 16 Aug
Activity	very low	very low	very low	very low	very low	low	very low
Flares	-	-	-	-	-	-	-

¹ See appendix. All timings are given in UT.

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: <https://proba2.oma.be/ssa>

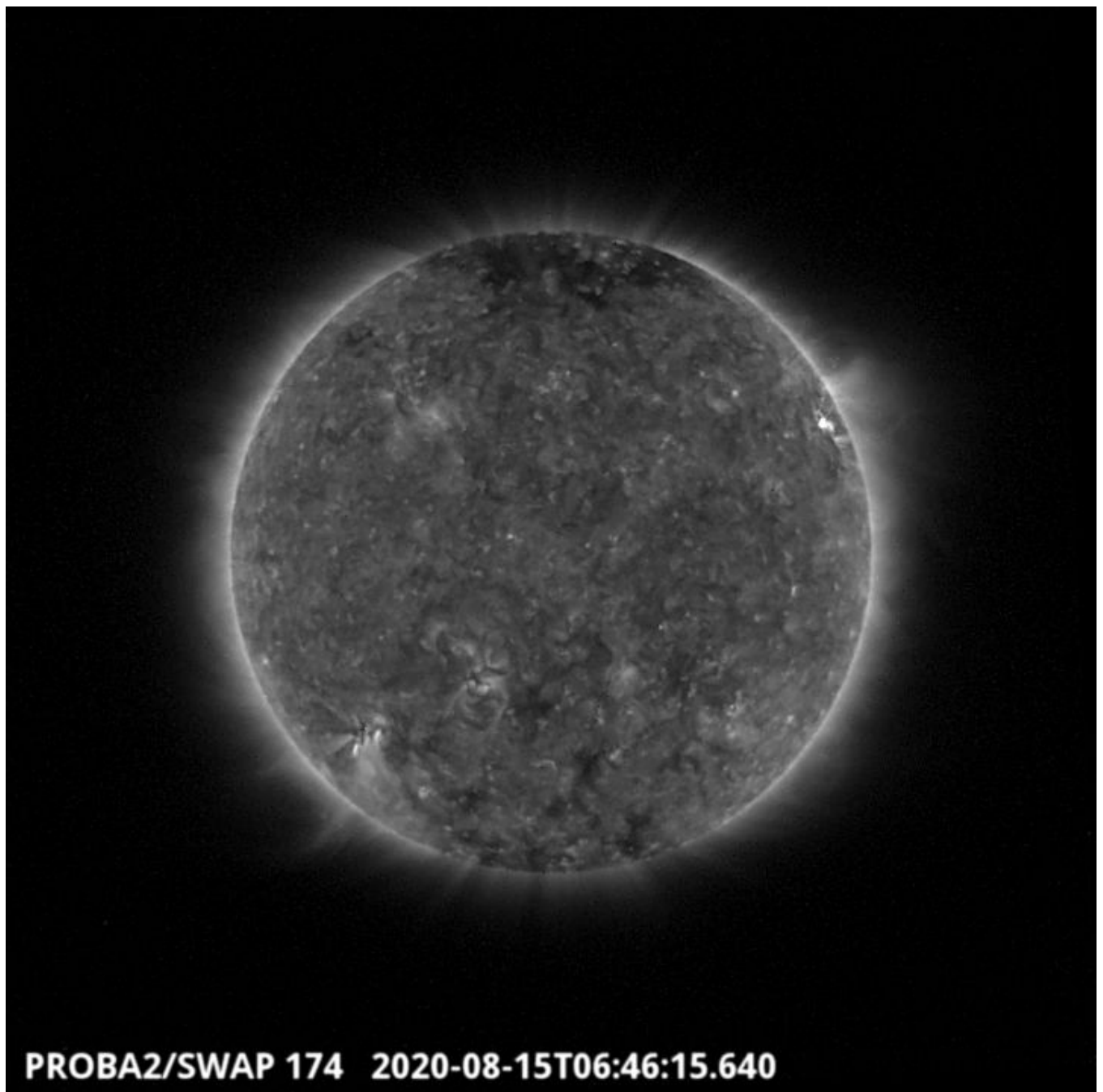
This page also lists the recorded flaring events.

A weekly overview movie can be found [here](#) (SWAP week 542).

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](#)

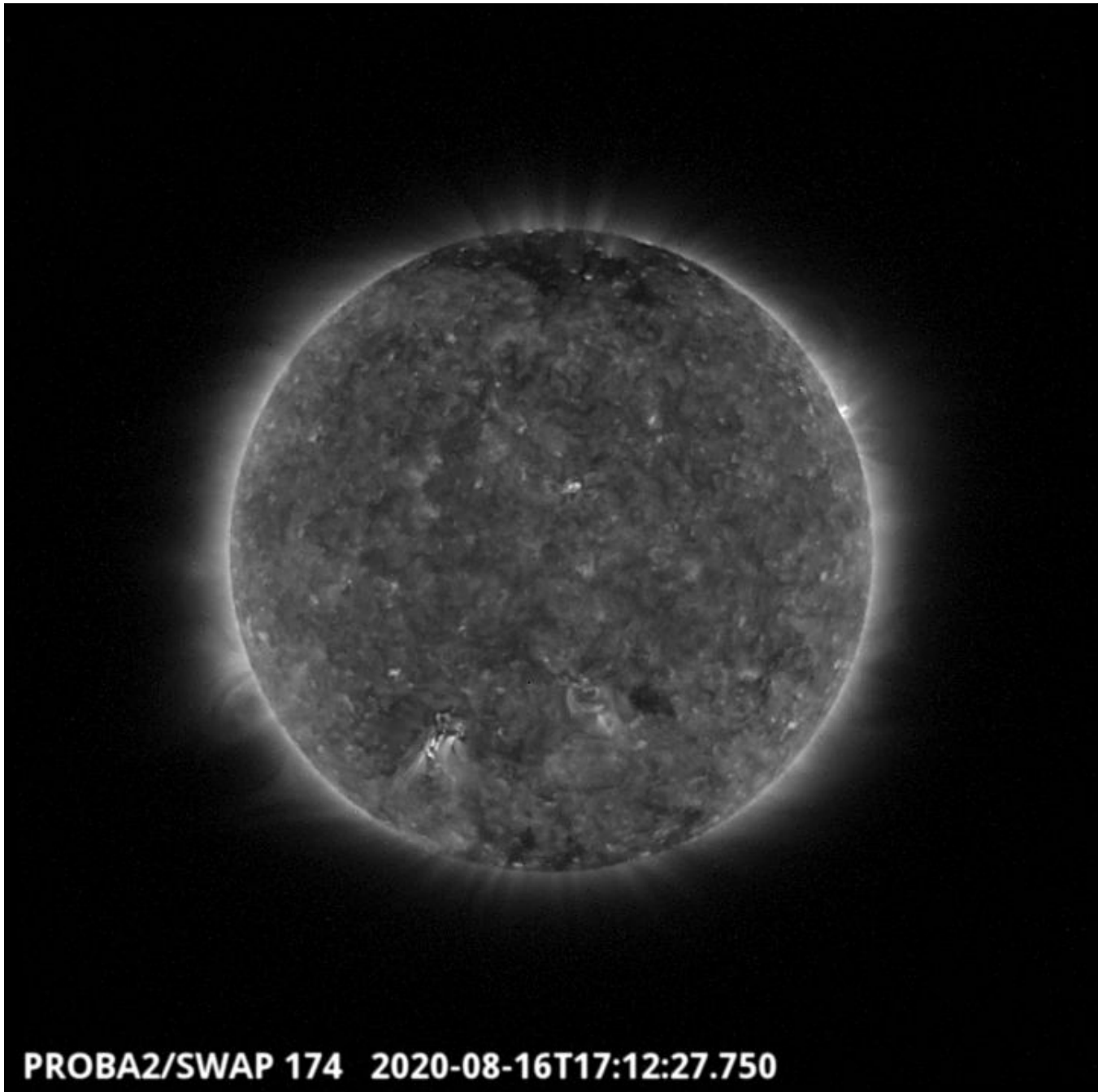
Saturday 15 Aug



The active region which is visible on the North West limb of the SWAP image above is labelled NOAA2770. It has erupted around 6:46 UT in a C2.0 class flare, this is the largest flare of the week.

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

Sunday 16 Aug



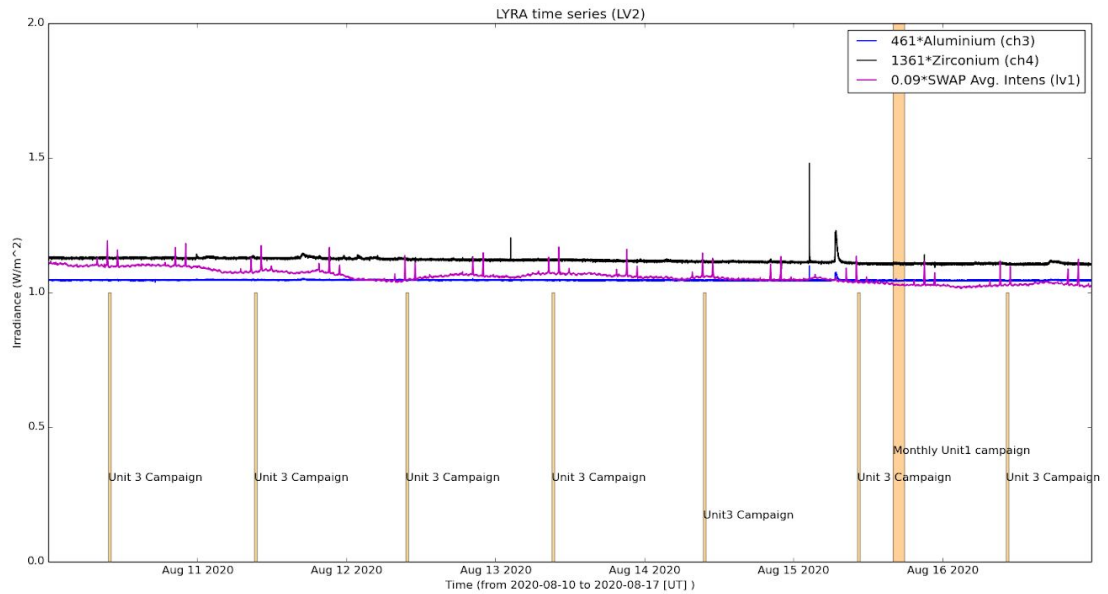
The southern East active region has produced a B1.2 two-ribbon flare around 17:12 UT, which was associated with a filament eruption and accompanied by a CME.

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)



Operations and Calibrations:

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 Unit 3 Campaign, 2020-Aug-10
- Daily Unit 3 Campaign, 2020-Aug-11
- Daily Unit 3 Campaign, 2020-Aug-12

- Daily Unit 3 Campaign, 2020-Aug-13
- Daily Unit 3 Campaign, 2020-Aug-14
- Daily Unit 3 Campaign, 2020-Aug-15
- Monthly Unit 1 Campaign, 2020-Aug-15
- Daily Unit 3 Campaign, 2020-Aug-16

The red shaded periods related to other issues corresponds to:

- None

2. LYRA instrument status

IOS

Start IOS	Mon Aug 10 2020	LYIOS00847
End IOS	Sun Aug 16 2020	LYIOS00848

LYRA detector temperature

LYRA detector 2 temperature globally varied between 48.50 and 50.37 °C.

3. SWAP instrument status

MCPM errors

The number of MCPM recoverable errors increased from 10211 to 10296.

The number of MCPM unrecoverable errors remained at 0.

IOS

Start IOS	Mon Aug 10 2020	IOS00919
End IOS	Sun Aug 16 2020	IOS00920

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -1.37 and -0.49 °C.

4. PROBA2 Science Center Status

The following changes were made to the P2SC:

- All software changes following the new P2SC operationnel server have been tagged as revision 5408.

5. Data reception & discussions with MOC

Passes

The delivery of the passes for this week (passes 35069 to 35130) 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 2020 Aug 10 0UT and 2020 Aug 17 0UT: 4688

Highest cadence in this period: 110 seconds

Average cadence in this period: 129.01 seconds

Number of image gaps larger than 300 seconds: 146

Largest data gap: 14.67 minutes

Data coverage LYRA

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

- Pass 35104, due to a ground segment issue, the dump of the stores were not scheduled onboard. The LYRA data have been re-dumped on pass 35109 on 2020-08-14 13:08:59 UT.

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)