


P2SC-ROB-WR-111- 20120507 Weekly report #111	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon May 07 to Sun May 13, 2012 25 May 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

Solar & Space weather events

Due to a delay in the weekly reporting, this science section is intentionally kept shorter than usual.

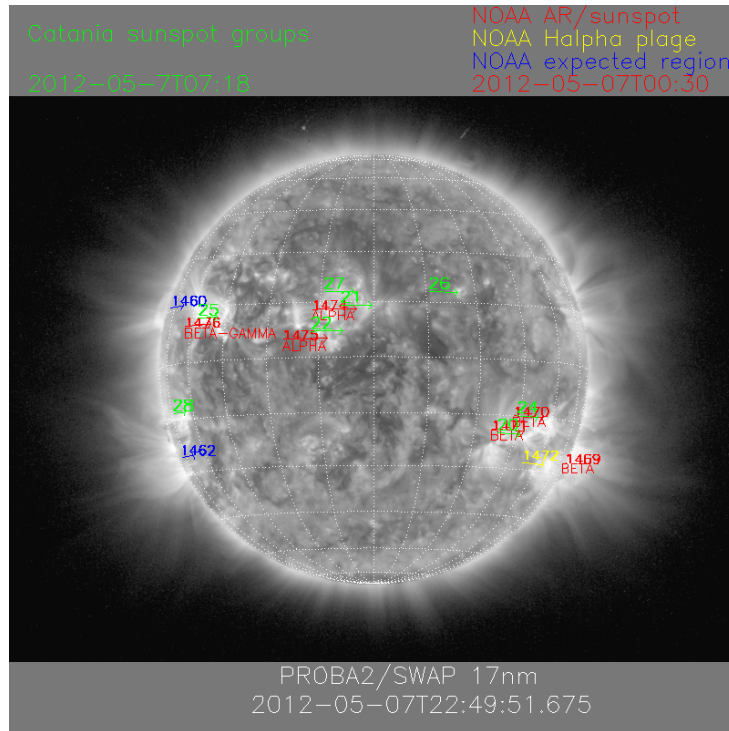
Overview

The level of solar activity this week¹ and associated M- and X-flares (if any):

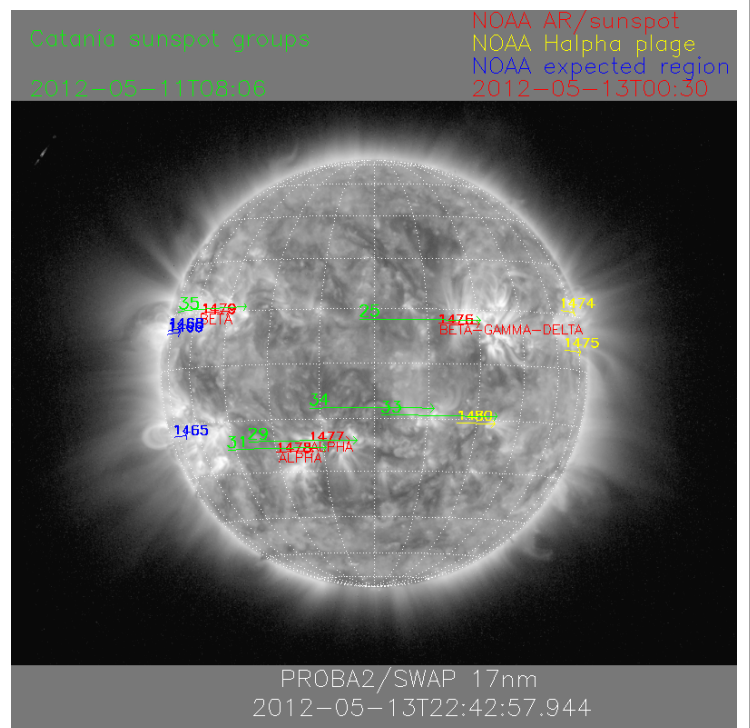
	Monday 07 May	Tuesday 08 May	Wednesday 09 May	Thursday 10 May	Friday 11 May	Saturday 12 May	Sunday 13 May
Activity	moderate	moderate	moderate	moderate	low	low	low
Flares	M1.9@14:03	M1.4@13:02	M4.7@12:21 M1.8@14:02 M4.1@21:01	M1.7@20:20	-	-	-

¹ See appendix.

The SWAP images of May 07 and May 13 are shown below, with annotated active regions.



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

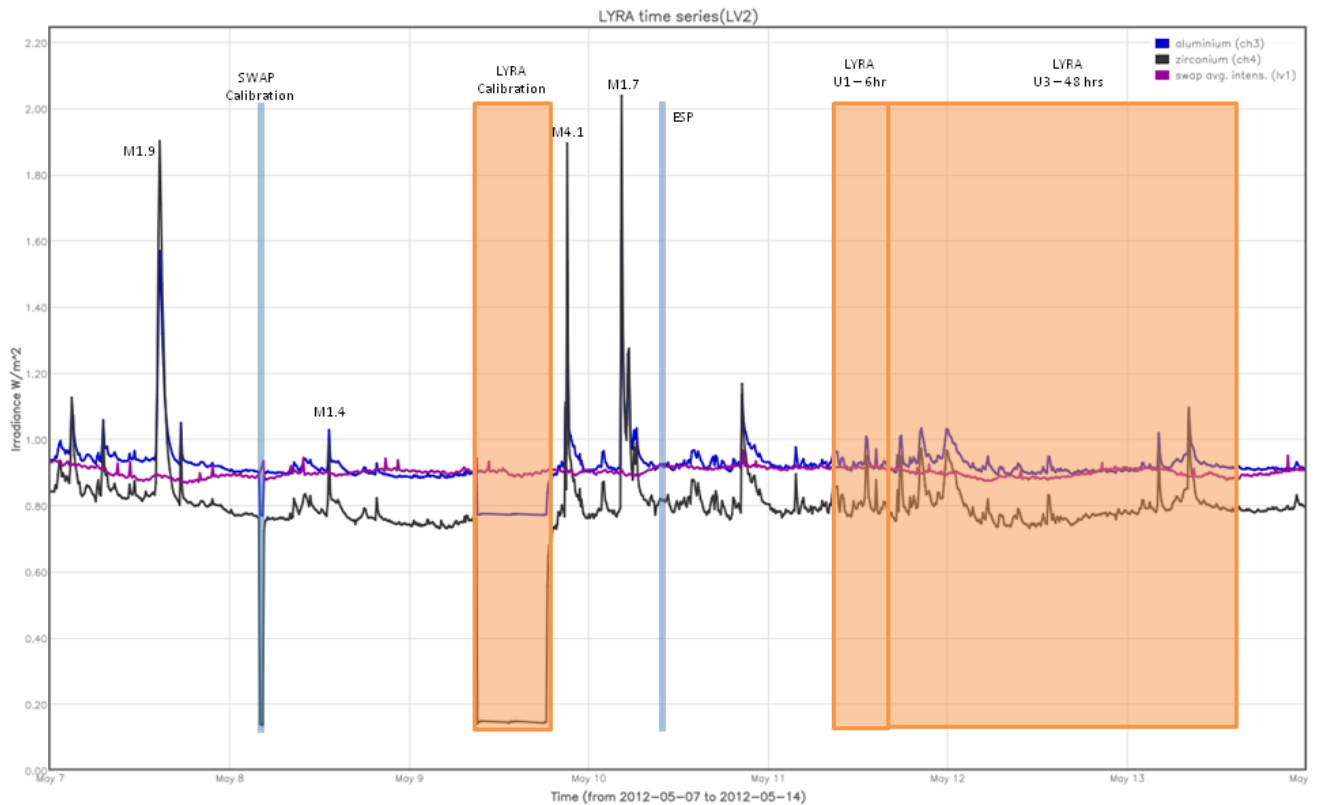


This week, the Sun's activity evolved from moderate to low. 6 M-flares occurred during the week.

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
- an ESP campaign on Thursday

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

- LYRA Calibration on Wednesday
- U1 campaign (6hrs) on Friday
- U3 campaign (48hrs) on Friday/Saturday/Sunday

The red shaded period corresponds:

- None.

Two of the M-flares on Wednesday were not observed by LYRA, due to its two-weekly calibration

campaign.

Scientific campaigns

The following LYRA and SWAP specific scientific campaigns have been performed this week:

- Flare hunting campaign with LYRA backup units:

- U1 campaign (6hrs) on Friday
- U3 campaign (48hrs) on Friday/Saturday/Sunday

The unit 3 campaign was successful in the sense that several C-flares were observed in those 48 hours. The largest one was classified by GOES as C7.

Outreach, papers, presentations, etc.

- None

2. LYRA instrument status

Calibration

Calibration occurred on Wednesday.

IOS & operations

Monday 07 May	Tuesday 08 May	Wednesday 09 May	Thursday 10 May	Friday 11 May	Saturday 12 May	Sunday 13 May
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + calibration	Nominal acquisition + daily U3	Nominal acquisition + daily U3 + 6h U1 + 48h U3 campaigns	Nominal acquisition + 48 h U3 campaign	Nominal acquisition
LYIOS00240	LYIOS00240	LYIOS00240	LYIOS00241 -> 242	LYIOS00242	LYIOS00242	LYIOS00242

Specific LYRA campaigns were performed:

- U1 acquisition during 6 hours on Friday 11th
- U3 acquisition during 48 hours on Friday, Saturday and Sunday, after U1 acquisition.
- daily U3 campaign except during the above U1/U3 campaigns.

LYRA detector temperature

LYRA detector 2 temperature was around 46.2 degrees Celsius under nominal circumstances, but rose to 48.4 during the U1 and U3 campaigns on Friday, Saturday and Sunday.

To be explored

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3. SWAP instrument status**Calibration**

Calibration occurred on Tuesday.

MCPM errors

The number of MCPM recoverable errors increased from 251 to 399.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 07 May	Tuesday 08 May	Wednesday 09 May	Thursday 10 May	Friday 11 May	Saturday 12 May	Sunday 13 May
Nominal acquisition	Nominal acquisition + calibration	Nominal acquisition	Nominal acquisition + ESP	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00390 552 images	IOS00390 -> 391 659 images	IOS00391 648 images	IOS00391 -> 392 649 images	IOS00392 659 images	IOS00392 664 images	IOS00392 633 images

The weekly ESP campaign was performed on Thursday.

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between -0.75 and -1.75 degrees Celsius, under nominal operations.

To be explored

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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 7789 to 7851) was nominal, except for:

- None.

Data coverage HK

All HK data files (LYRA_AD) have been received, except for:

- None.

Data coverage SWAP

All SWAP Science data files (BINSWAP) have been received, except for:

- None.

Total number of images between 2012 May 07 0UT and 2012 May 14 0UT: 4596

Highest cadence in this period: 30 seconds

Average cadence in this period: 131.57 seconds

Number of image gaps larger than 300 seconds: 1

Largest data gap: 32.17 minutes (ESP test)

Data coverage LYRA

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

- None.

6. APPENDIX Frequently used acronyms

ADP	Ancillary Data Processor
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
DR	Destructive Readout
DSLPL	Dual Segmented Langmuir Probe
EIT	Extreme ultraviolet Imaging Telescope
FITS	Flexible Image Transport System
FOV	Field Of View FPA Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HAS	High Accuracy Star tracker
HK	Housekeeping
ICD	Interface Control Document
IIU	Instrument Interface Unit
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
LEO	Low Earth Orbit
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
OBET	On board Elapsed Time
OBSW	On board Software
PE	Proximity Electronics
PGA	Programmable Gain Amplifier
PI	Principal Investigator
P2SC	PROBA2 Science Center
PPT	Pointing, Positioning and Time (software module of P2SC)
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SEU	Single Event Upset
SOHO	Solar and Heliospheric Observatory
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 UV	Coordinated Universal Time Ultraviolet
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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)
- (+ extreme?)