


P2SC-ROB-WR-154-20130304 Weekly report #154	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Mar 04 to Sun Mar 10, 2013 13 Mar 2013 Erik Pylyser Matthew West	Royal Observatory of Belgium PROBA2 Science Center
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1. Science

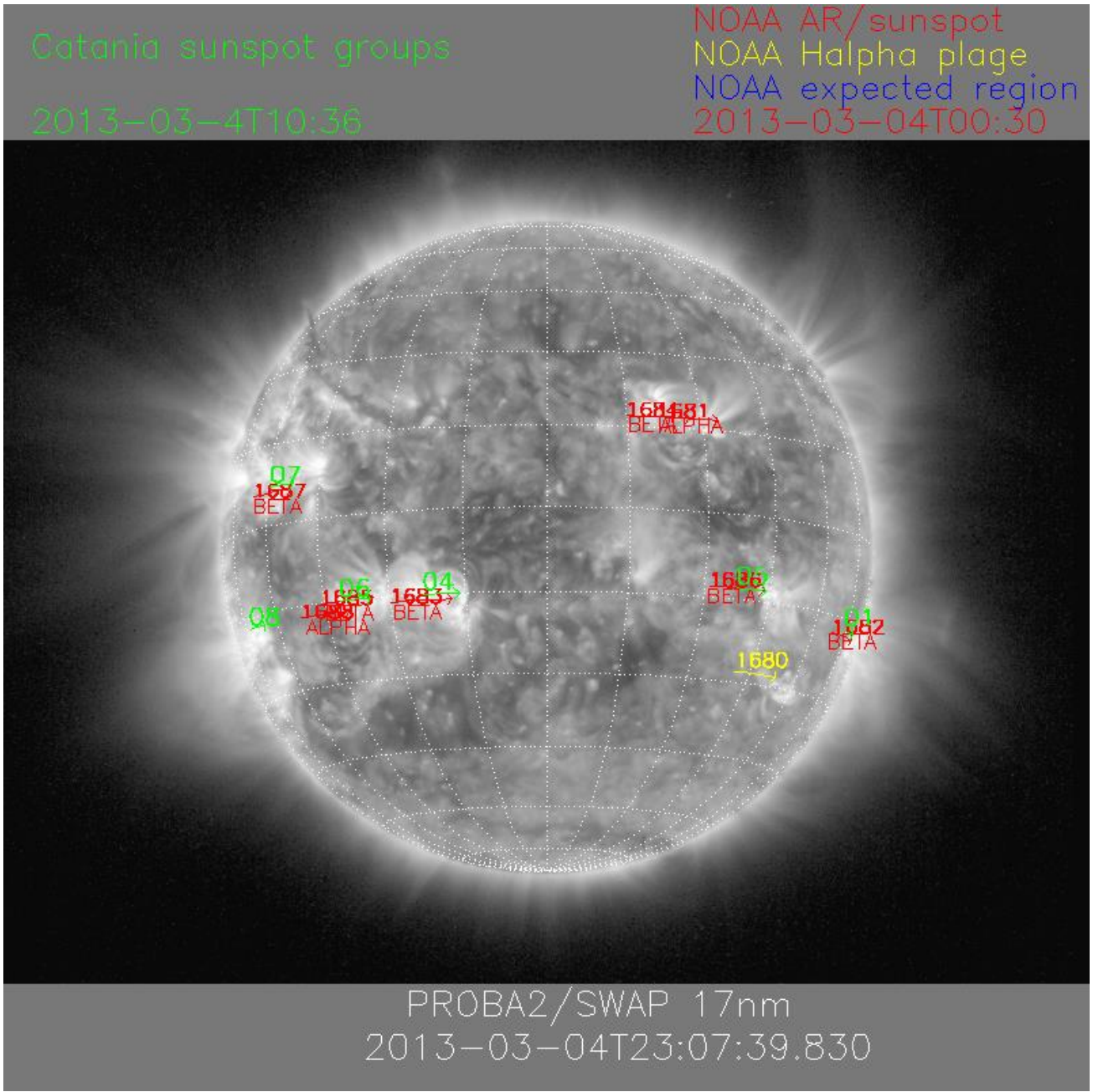
Solar & Space weather events

The level of solar activity¹ this week. Only M- and X-flares are mentioned, the most energetic one(s) are presented in **bold**:

	Monday 04 Mar	Tuesday 05 Mar	Wednesday 06 Mar	Thursday 07 Mar	Friday 08 Mar	Saturday 09 Mar	Sunday 10 Mar
Activity	very low	moderate	very low	low	very low	very low	very low
Flares	-	M1.2@07:47	-	-	-	-	-

¹ See appendix. All timings are given in UT.

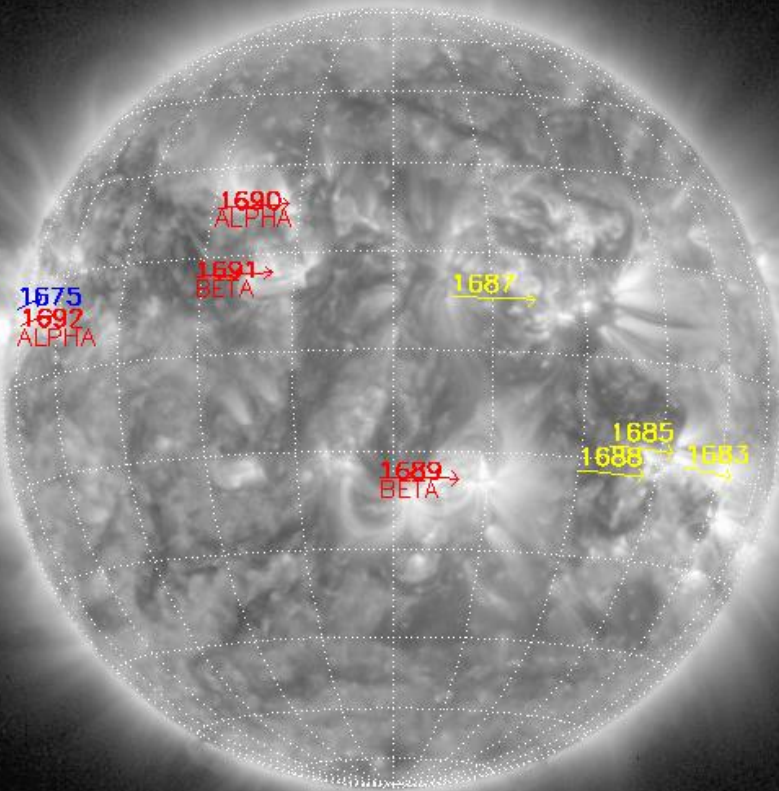
The SWAP images of March 04 and March 10 are shown below, with annotated active regions.



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

No recent Catania data available

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2013-03-10T00:30



PROBA2/SWAP 17nm
2013-03-10T23:01:38.649

Solar Activity

Solar (flaring) activity was **very low** during most of the week, except on Tuesday and Thursday. On Tuesday an M1.2 flare occurred, and on Thursday a single C flare. These two flares originated from AR 11686.

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/AIA304 combination; HelioViewer.org).

Details about some of the events in this movie can be found further below (limited to SWAP imaging).



M1.2 Flare; Tuesday 05 @ 07:47; SWAP difference image



Prominence Eruption - North East limb; Tuesday 05 @ 23:15; SWAP difference image

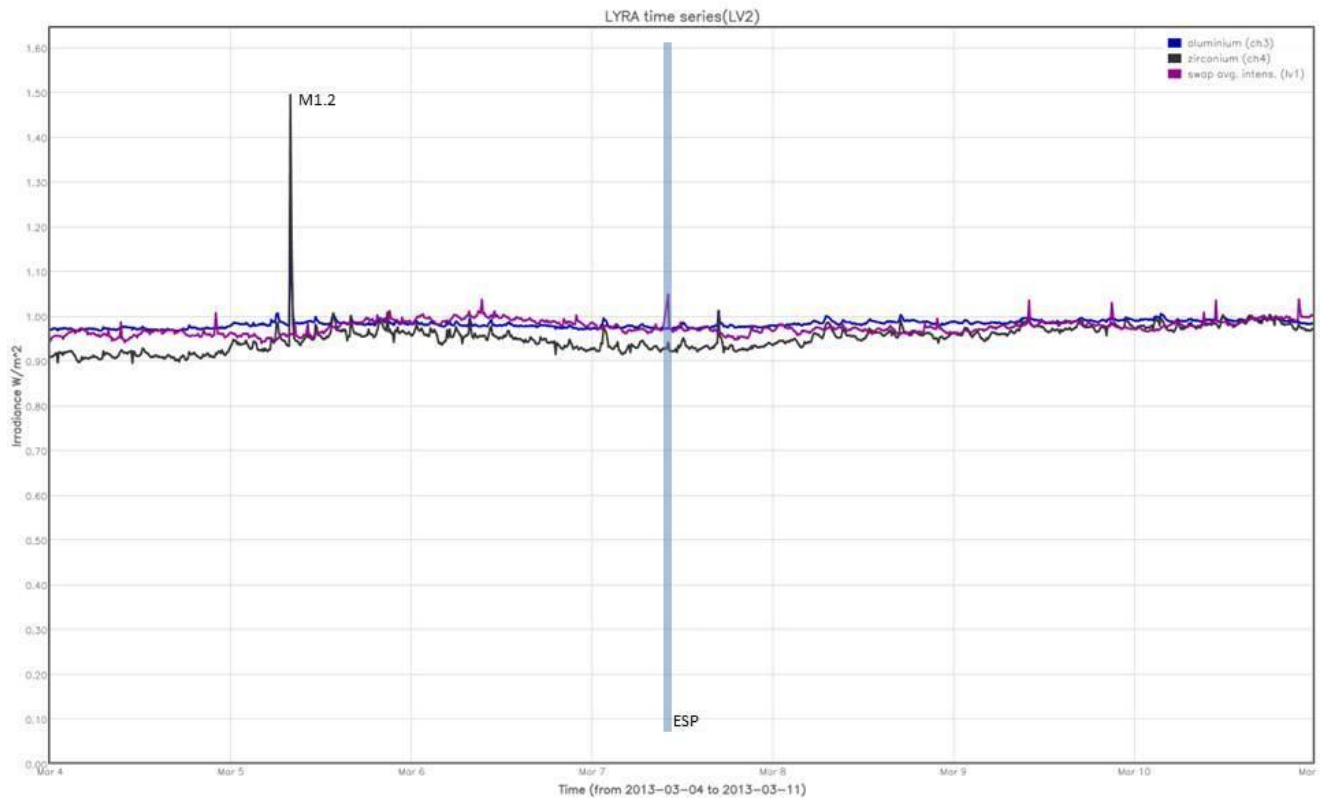


Prominence Eruption - North West limb; Saturday March 09; SWAP difference image

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:

- ESP experiment on Thursday

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

- None

The red shaded period corresponds to:

- None

Outreach, papers, presentations, etc.

- The scientific part of the contents of the “Solar Activity” section above is published in this week’s STCE Bulletin (see <http://www.stce.be/newsletter/newsletter.php>)

- ‘The LYRA Instrument Onboard PROBA2: Description and In-Flight Performance’; Marie Dominique et al., 2013; <http://arxiv.org/abs/1302.6525>

Please also 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.

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No LYRA calibration this week.

IOS & operations

Monday 04 Mar	Tuesday 05 Mar	Wednesday 06 Mar	Thursday 07 Mar	Friday 08 Mar	Saturday 09 Mar	Sunday 10 Mar
Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3	Nominal acquisition + daily U3
LYIOS00314	LYIOS00314	LYIOS00314	LYIOS00314	LYIOS00314	LYIOS00315	LYIOS00315

The following science campaigns were performed by LYRA:

- daily U3 observations campaign

LYRA detector temperature

LYRA detector 2 temperature globally varied between 49.0 to 50.0 degrees C, taking into account the daily U3 activation periods; the latter result in a temperature increase of about 0.6 degrees C. On Tuesday 05, between about 10:00 and 15:00, an unexpected temperature drop of max 0.4 degrees occurred. The cause of this drop is currently under investigation.

To be explored

- None

3. SWAP instrument status

Calibration

No SWAP calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 6953 to 6999.

The number of MCPM unrecoverable errors remained at 1127.

IOS & operations

Monday 04 Mar	Tuesday 05 Mar	Wednesday 06 Mar	Thursday 07 Mar	Friday 08 Mar	Saturday 09 Mar	Sunday 10 Mar
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + ESP	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00456 594 images	IOS00456 561 images	IOS00456 664 images	IOS00457 650 images	IOS00457 662 images	IOS00457 602 images	IOS00457 509 images

Special operations for SWAP, this week:

- ESP jump

SWAP detector temperature

The SWAP Cold Finger Temperature, globally varied between 0.4 and 1.26 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 10396 to 10457) 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 2013 Mar 04 0UT and 2013 Mar 11 0UT: 4309
Highest cadence in this period: 130 seconds
Average cadence in this period: 140.32 seconds
Number of image gaps larger than 300 seconds: 1
Largest data gap: 34.33 minutes

The large gap is due to the ESP experiment on Thursday.

Data coverage LYRA

All LYRA Science data files (BINLYRA) have been received, except for:
- 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
EIT	Extreme ultraviolet Imaging Telescope
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

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?)