


P2SC-ROB-WR-130-20120917 Weekly report #130	P2SC Weekly report	
Period covered: Date: Written by: Approved by:	Mon Sep 17 to Sun Sep 23, 2012 26 Sep 2012 Erik Pylyser David Berghmans	Royal Observatory of Belgium PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP Deputy PI, dan.seaton@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 373 0 559
cc:	ROB DIR, ronald@oma.be ESA Redu, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Stefano.Santandrea@esa.int	

1. Science

Solar & Space weather events

Overview

The level of solar activity¹ this week and associated M- and X-flares:

	Monday 17 Sep	Tuesday 18 Sep	Wednesday 19 Sep	Thursday 20 Sep	Friday 21 Sep	Saturday 22 Sep	Sunday 23 Sep
Activity	low	low	low	low	very low	very low	low
Flares	-	-	-	-	-	-	-

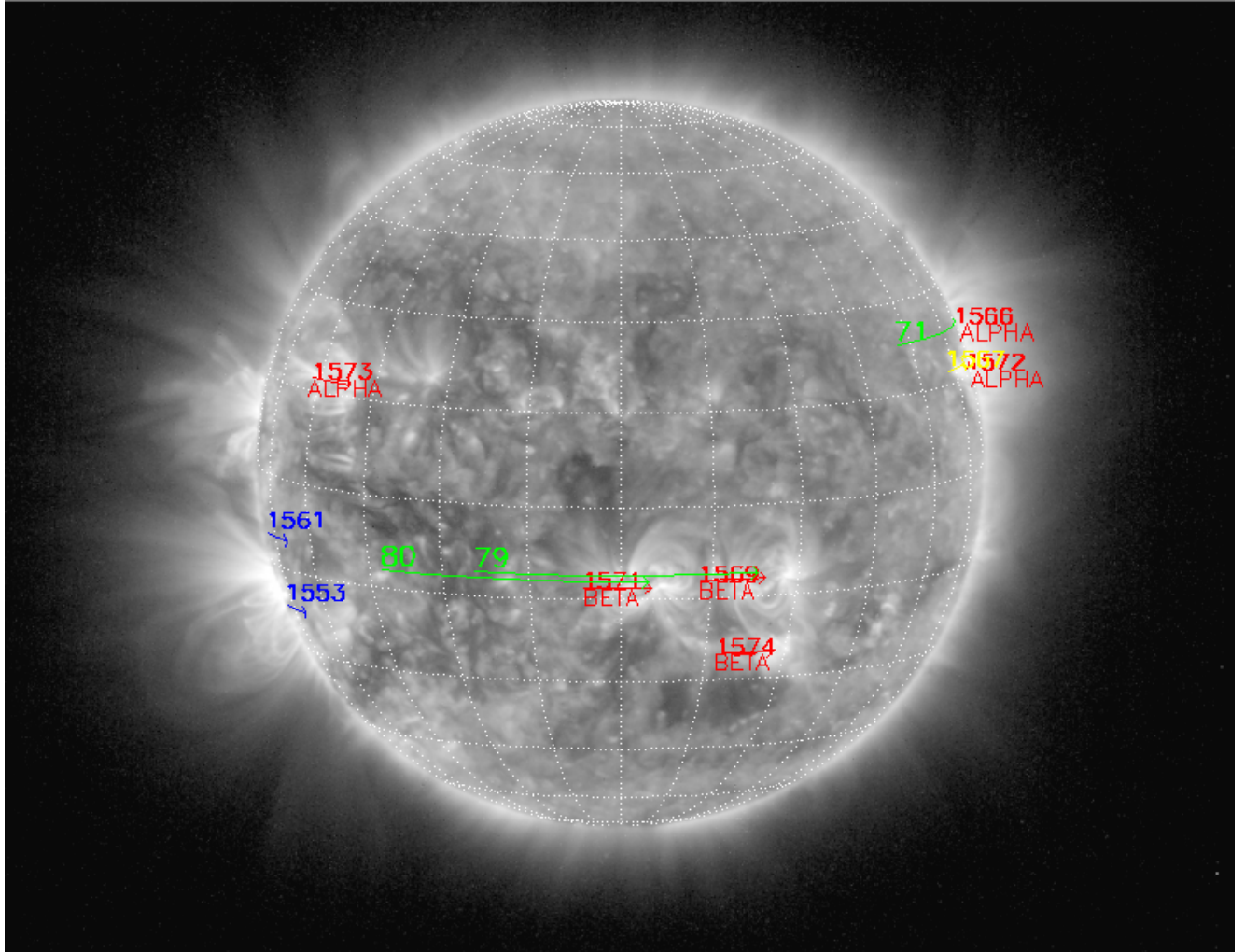
¹ See appendix. All timings are given in UT.

The SWAP images of Sep 17 and Sep 23 are shown below, with annotated active regions.

Catania sunspot groups

2012-09-14T08:36

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-09-17T00:30



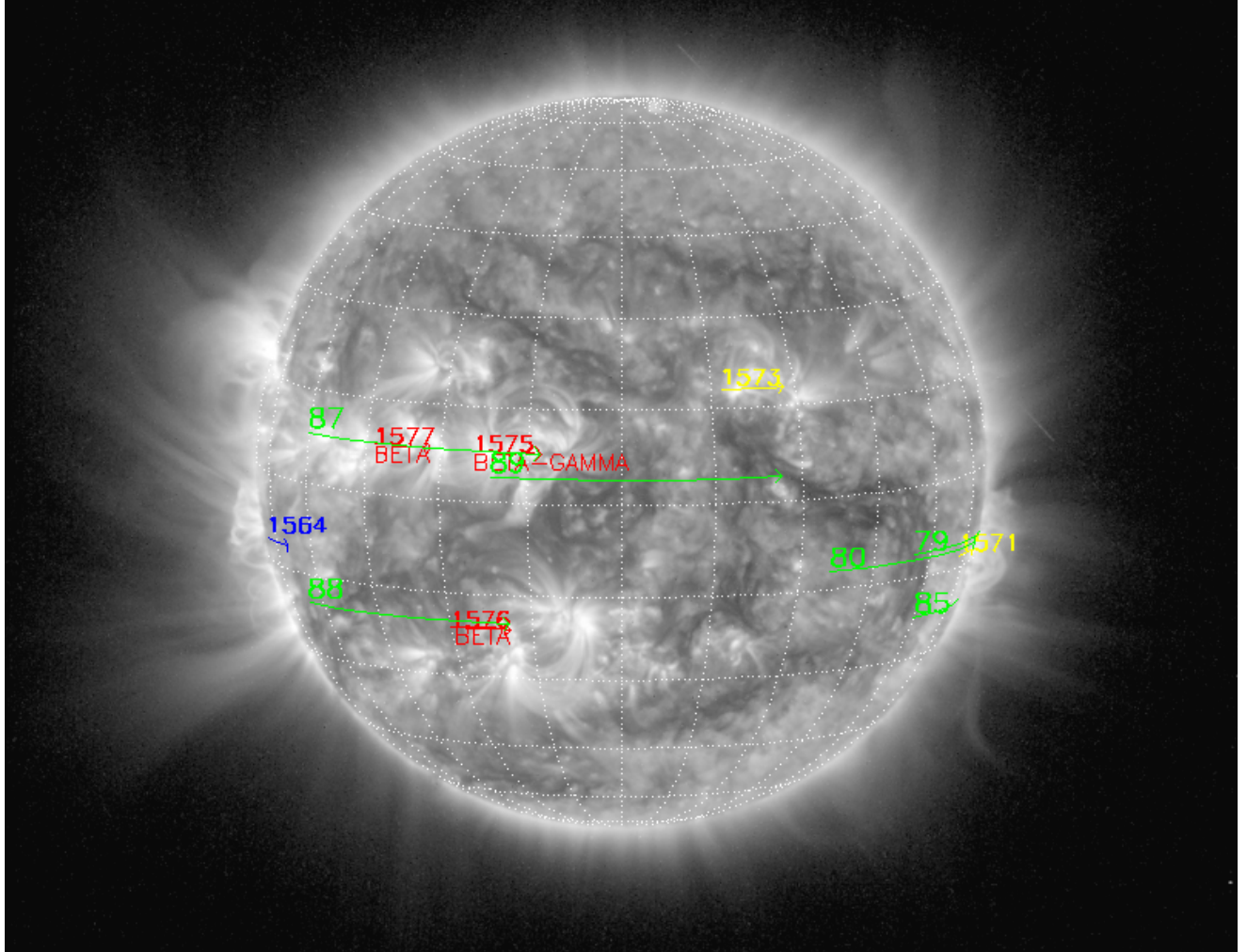
PROBA2/SWAP 17nm
2012-09-17T20:38:09.580

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

Catania sunspot groups

2012-09-20T08:18

NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-09-23T00:30



PROBA2/SWAP 17nm
2012-09-23T20:34:18.128

Solar Activity

This week, the Sun's activity level was *Low* to *Very low*.

During the week, new active regions appeared on the East limb, increasing the back-ground EUV radiation.

On Sunday 23rd, a big eruption could be seen on the East limb.

Below is a difference image of that eruption:



The movie of this occurrence can be found [here](#).

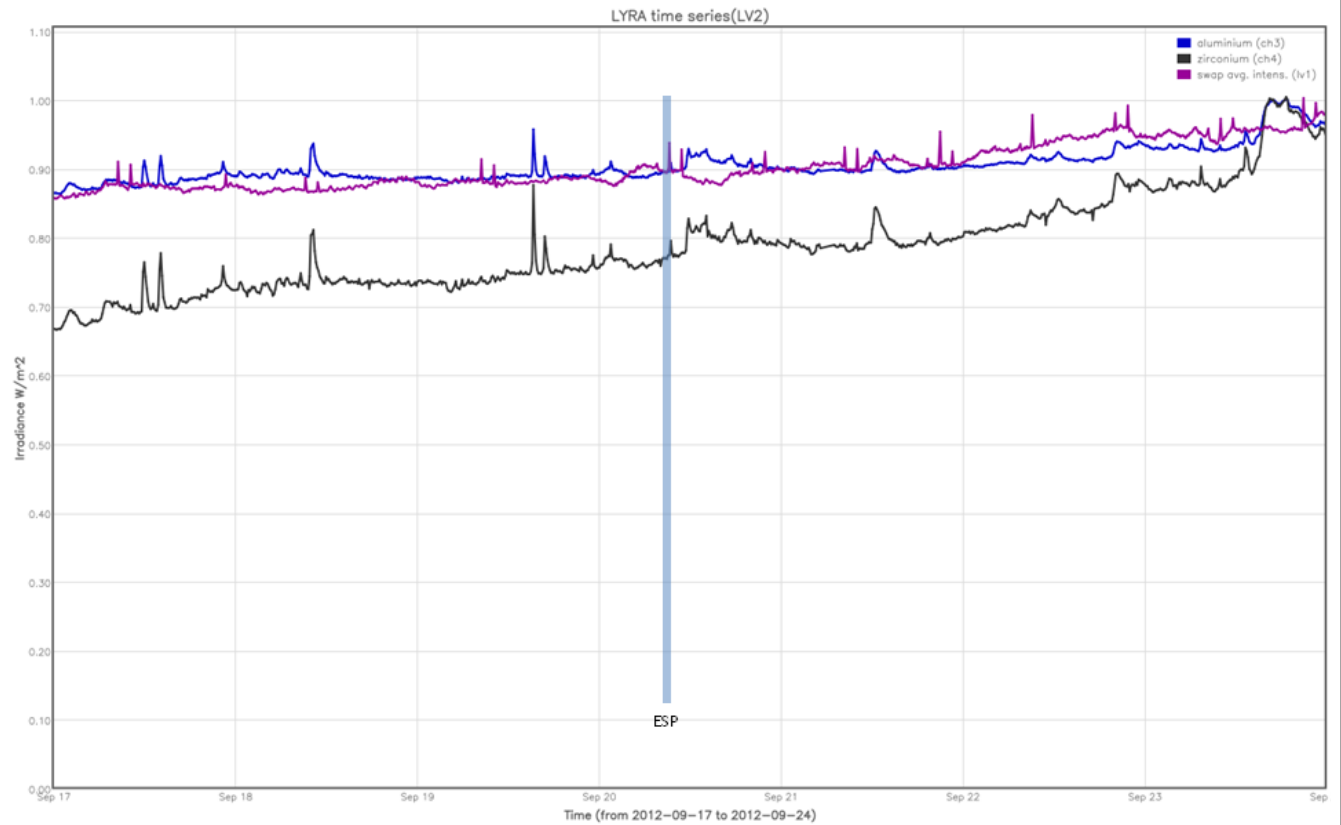
In order to view the activity of this week in more detail, we suggest to go to the following website from which all the daily (normal and difference) movies can be accessed: <http://proba2.oma.be/ssa>.

This page also lists the recorded flaring events.

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.

- None

Guest Investigator Programme

- PROBA2 GI Paul Shearer is visiting P2SC from Sept 16 till Sept 28 to work on an assessment of the SWAP PSF and a stray-light correction for SWAP.

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 17 Sep	Tuesday 18 Sep	Wednesday 19 Sep	Thursday 20 Sep	Friday 21 Sep	Saturday 22 Sep	Sunday 23 Sep
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
LYIOS00268	LYIOS00269	LYIOS00269	LYIOS00269	LYIOS00269	LYIOS00269	LYIOS00269

- Except for the daily U3 campaign, no particular science campaigns this week.

LYRA detector temperature

LYRA detector 2 temperature fluctuated between 46.82 and 47.92 degrees, including the daily U3 activation periods. The latter result in a temperature increase of about 0.4 degrees.

To be explored

/

3. SWAP instrument status

Calibration

No calibration this week.

MCPM errors

The number of MCPM recoverable errors increased from 3457 to 3593.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 17 Sep	Tuesday 18 Sep	Wednesday 19 Sep	Thursday 20 Sep	Friday 21 Sep	Saturday 22 Sep	Sunday 23 Sep
Nominal acquisition	Nominal acquisition	Nominal acquisition	Nominal acquisition + ESP	Nominal acquisition	Nominal acquisition	Nominal acquisition
IOS00413 659 images	IOS00413 489 images	IOS00413 593 images	IOS00414 550 images	IOS00414 655 images	IOS00414 556 images	IOS00414 630 images

No special operations for SWAP, this week.

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between - 0.15 and - 1.03 degrees Celsius, under nominal operations. A short-duration peak up to 0.22 degrees was observed on Saturday evening, around 22:30 (due to a missed LAR delay).

LAR delays were missed on the following occasions:

- Saturday 22/09, 22:11

causing each time a temporary increase of temperature of an estimated 0.6-0.7 degrees.

The cause of this LAR delay is - as yet - unknown, but not linked to the usual GPS latch-up.

To be explored

/

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 8963 to 9024) 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 Sep 17 0UT and 2012 Sep 24 0UT: 4132

Highest cadence in this period: 130 seconds

Average cadence in this period: 146.36 seconds

Number of image gaps larger than 300 seconds: 2

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
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
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
OBET	On board Elapsed Time
OBSW	On board Software
PE	Proximity Electronics
PI	Principal Investigator
P2SC	PROBA2 Science Center
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	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?)