P2SC-ROB-WR-113- 20120521 Weekly report #113	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon May 21 to Sun May 27, 2012 01 June 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

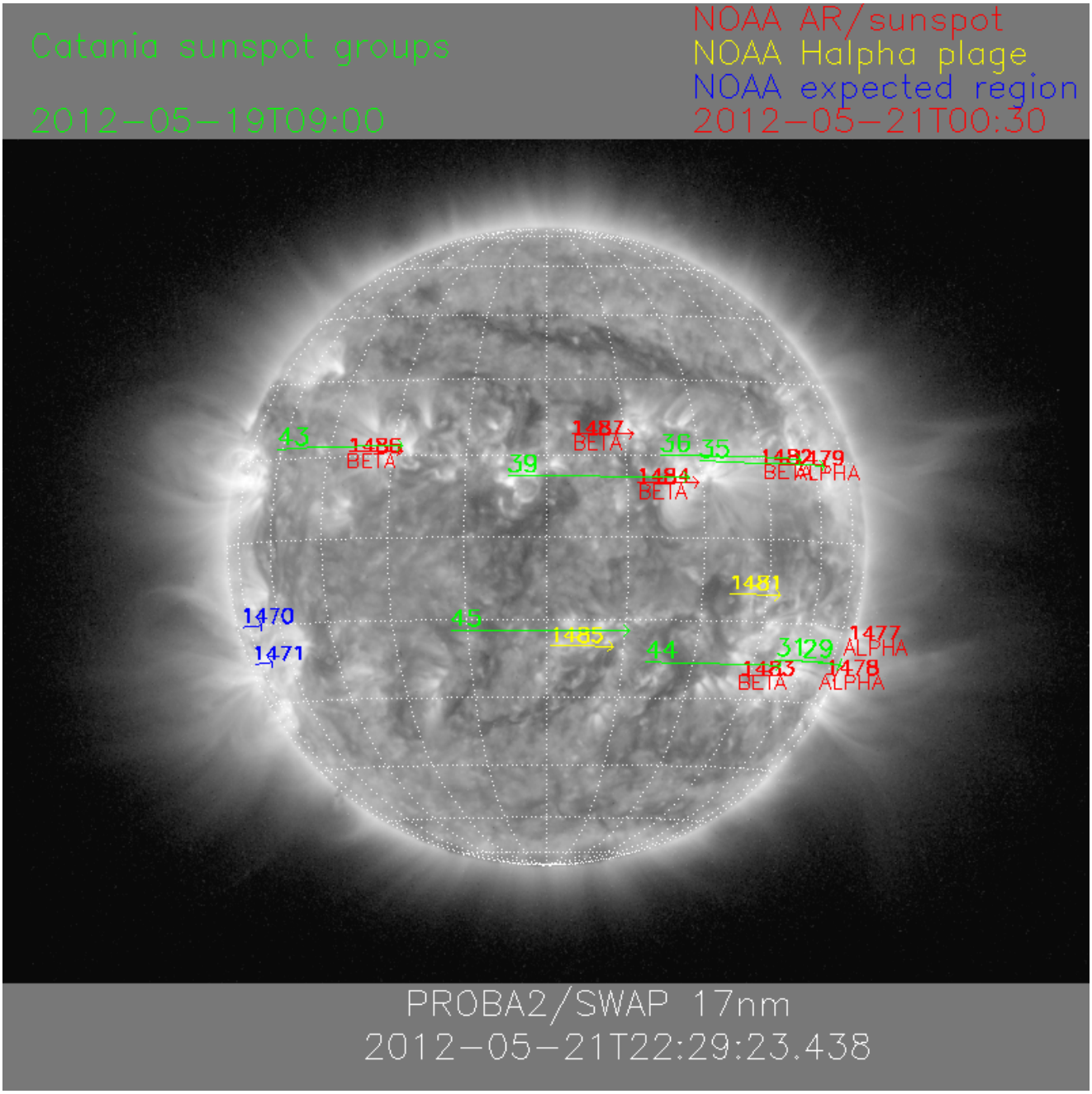
Overview

The level of solar activity this week[1] and associated M- and X-flares (if any):

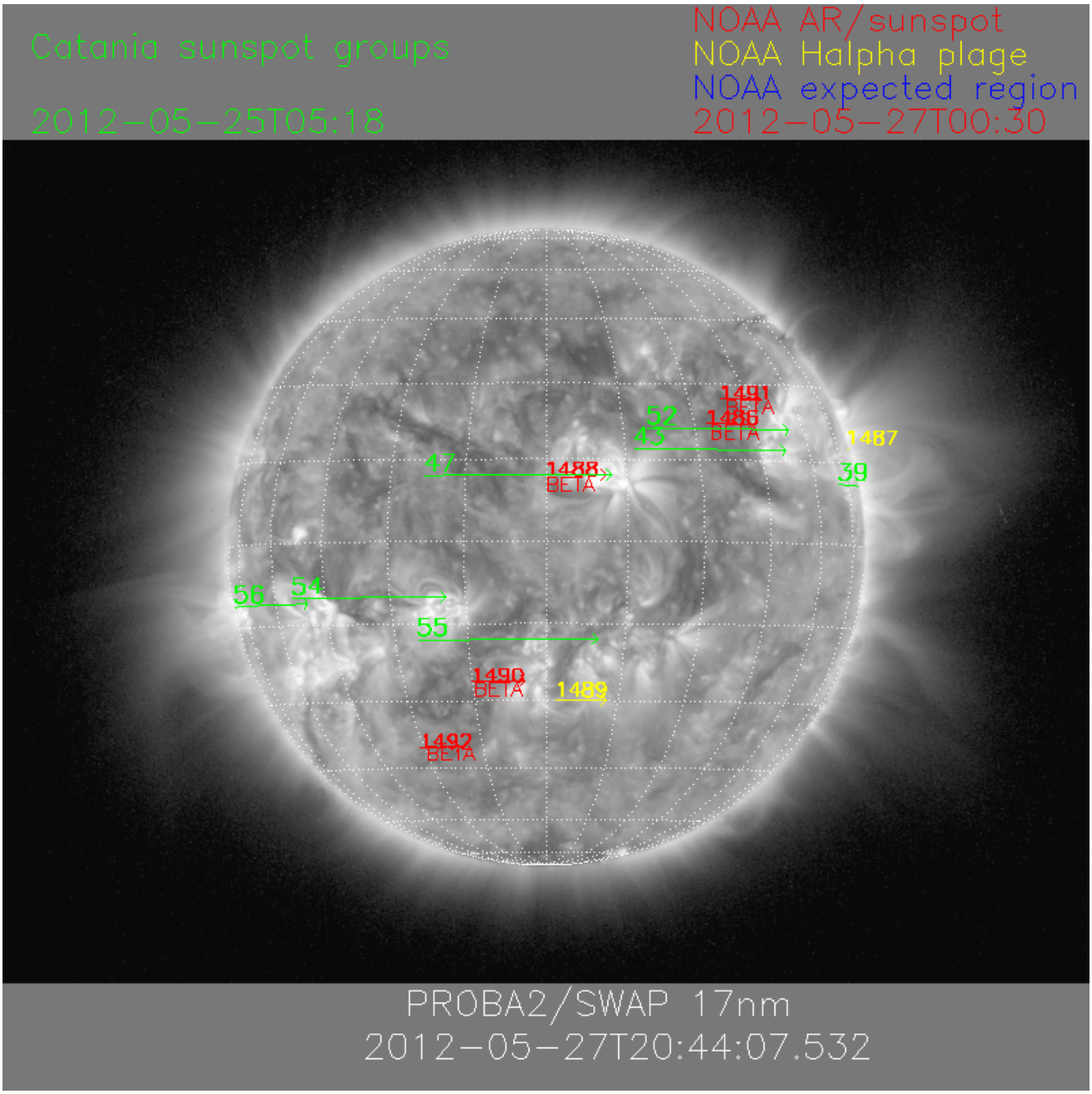
	Monday 21 May	Tuesday 22 May	Wednesday 23 May	Thursday 24 May	Friday 25 May	Saturday 26 May	Sunday 27 May
Activity	very low	very low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

[1] See appendix.

The SWAP images of May 21 and May 27 are shown below, with annotated active regions.

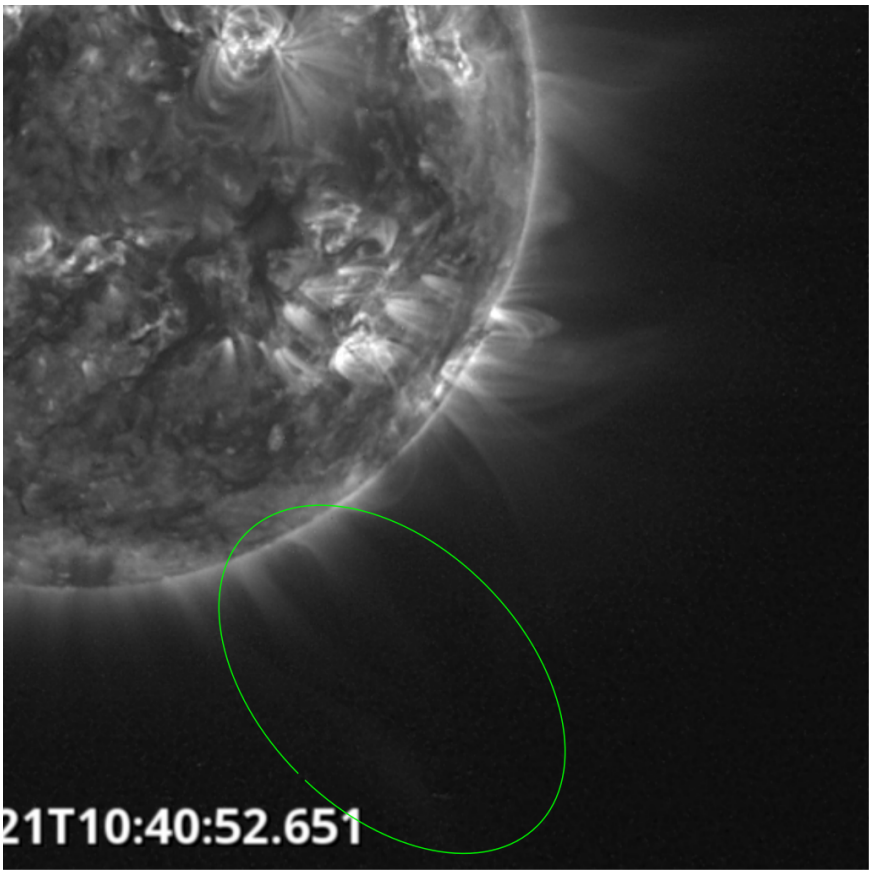


http://sidc.be/html/CmapPage.html

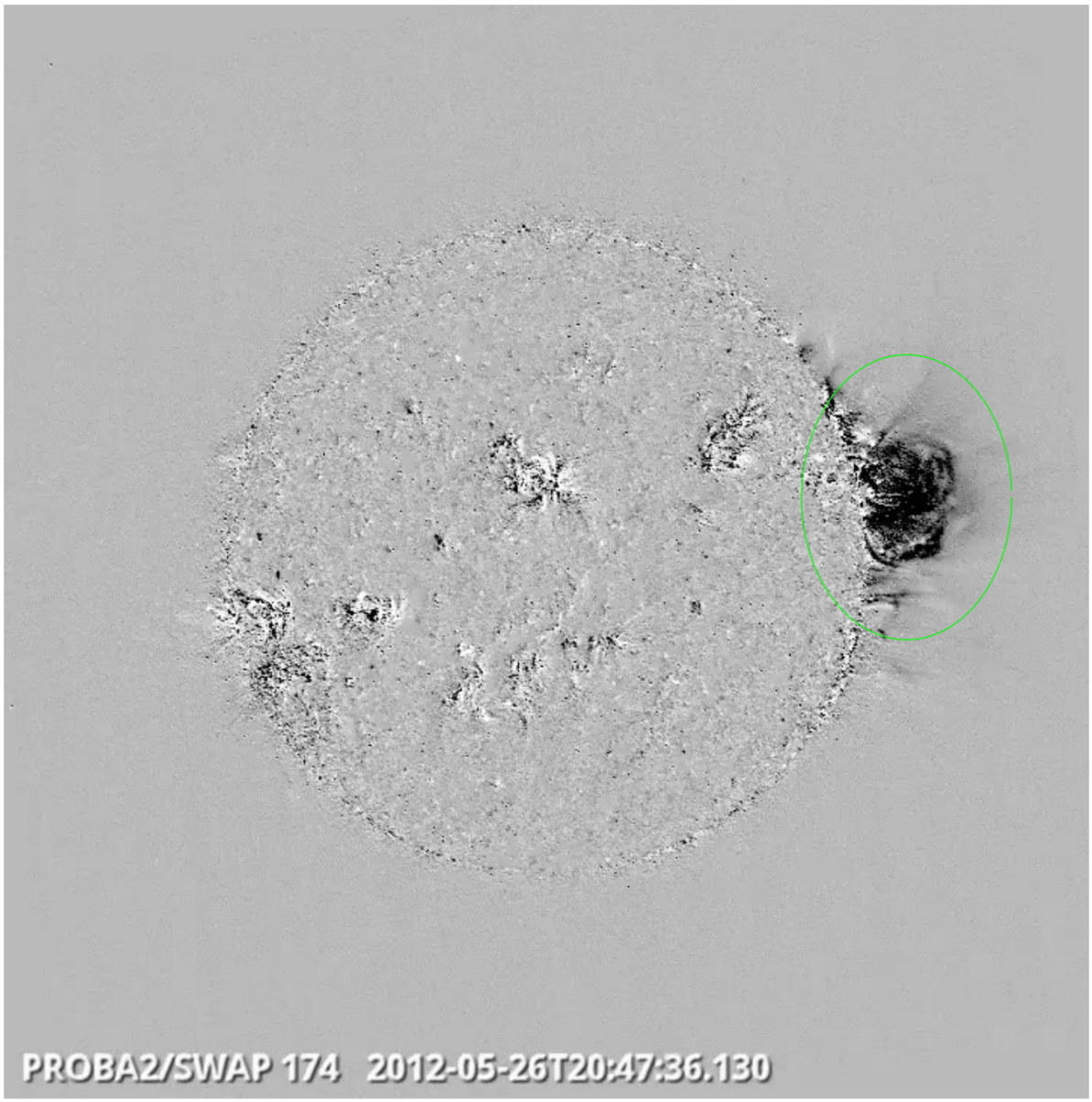

Catania sunspot groups
2012-05-25T05:18
NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2012-05-27T00:30
1491
BETA
52
1486
BETA
43
1487
39
47
1488
BETA
56
54
55
1490
BETA
1489
1492
BETA
PROBA2/SWAP 17nm
2012-05-27T20:44:07.532

This week, the Sun’s activity was very low to low.

Some interesting phenomena happened and are mentioned below:

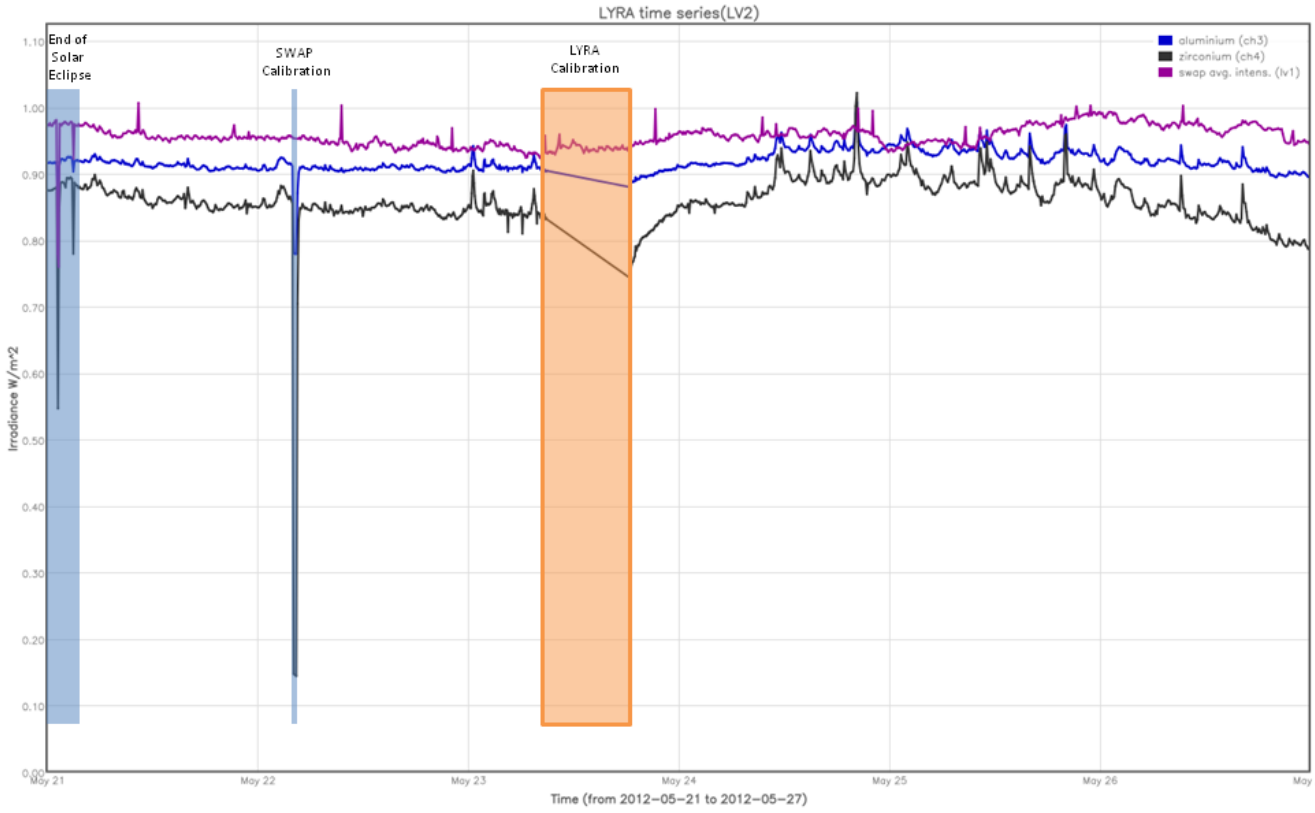


Filament Eruption, SSW limb, 21/05 @ 10:40 - normal SWAP image



Eruption - West limb, 26/05 @ 20:47 - 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:
- the end of the eclipse (which started on the previous Sunday)
- the SWAP calibration on Tuesday

The orange shaded period corresponds to:
- the LYRA calibration on Wednesday

The red shaded period corresponds to:
- None.

Scientific campaigns

The following LYRA and SWAP specific scientific campaigns have been performed this week:
- None

Outreach, papers, presentations, etc.

Presentation by Maxime Devogele (student ULg) @ Royal Observatory of Belgium - "SWAP image analysis and assessment of the diamond detectors onboard LYRA " on Friday 25/05/2012.

2. LYRA instrument status

Calibration

Calibration performed on Wednesday.

IOS & operations

Monday 21 May	Tuesday 22 May	Wednesday 23 May	Thursday 24 May	Friday 25 May	Saturday 26 May	Sunday 27 May
Nominal acquisition + daily U3 LYIOS00244	Nominal acquisition + daily U3 LYIOS00244	Nominal acquisition + daily U3 LYIOS00244	Nominal acquisition + daily U3 LYIOS00245	Nominal acquisition + daily U3 LYIOS00245	Nominal acquisition + daily U3 LYIOS00245	Nominal acquisition + daily U3 LYIOS00245

LYRA detector temperature

LYRA detector 2 temperature fluctuated between 46.2 to 47.0 degrees Celsius.

To be explored

/

3. SWAP instrument status

Calibration

Calibration performed on Tuesday.

MCPM errors

The number of MCPM recoverable errors increased from 607 to 751.

The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 21 May	Tuesday 22 May	Wednesday 23 May	Thursday 24 May	Friday 25 May	Saturday 26 May	Sunday 27 May
Nominal acquisition IOS00393 541 images	Nominal acquisition IOS00393 687images	Nominal acquisition IOS00393 657 images	Nominal acquisition + ESP IOS00393 639 images	Nominal acquisition IOS00393 624 images	Nominal acquisition IOS00393 556 images	Nominal acquisition IOS00393 651 images

The following SWAP campaign was performed this week:
- Bi-weekly calibration on Tuesday
- weekly ESP campaign on Thursday.

SWAP detector temperature

The SWAP Cold Finger Temperature fluctuated between -0.65 and -1.99 degrees Celsius, under nominal operations.

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 7913 to 7971) 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 21 0UT and 2012 May 28 0UT: 4394
Highest cadence in this period: 30 seconds
Average cadence in this period: 137.64 seconds
Number of image gaps larger than 300 seconds: 1
Largest data gap: 6.50 minutes

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
DSLP	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	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?)