P2SC-ROB-WR-250 - 20150105 Weekly report #250	**P2SC Weekly report**	
Period covered: Date: Written by: Approved by:	Mon Jan 05 to Sun Jan 11, 2015 14 Jan 2014 Robbe Vansintjan Matthew West	Royal Observatory of Belgium - PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, dseaton@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 3730559
cc:	ROB DIR, ronald@oma.be ESA Redu, Etienne.Tilmans@esa.int ESA D/SRE, Joe.Zender@esa.int ESA D/TEC, Juha-Pekka.Luntama@esa.int	

1. Science

Solar & Space weather events

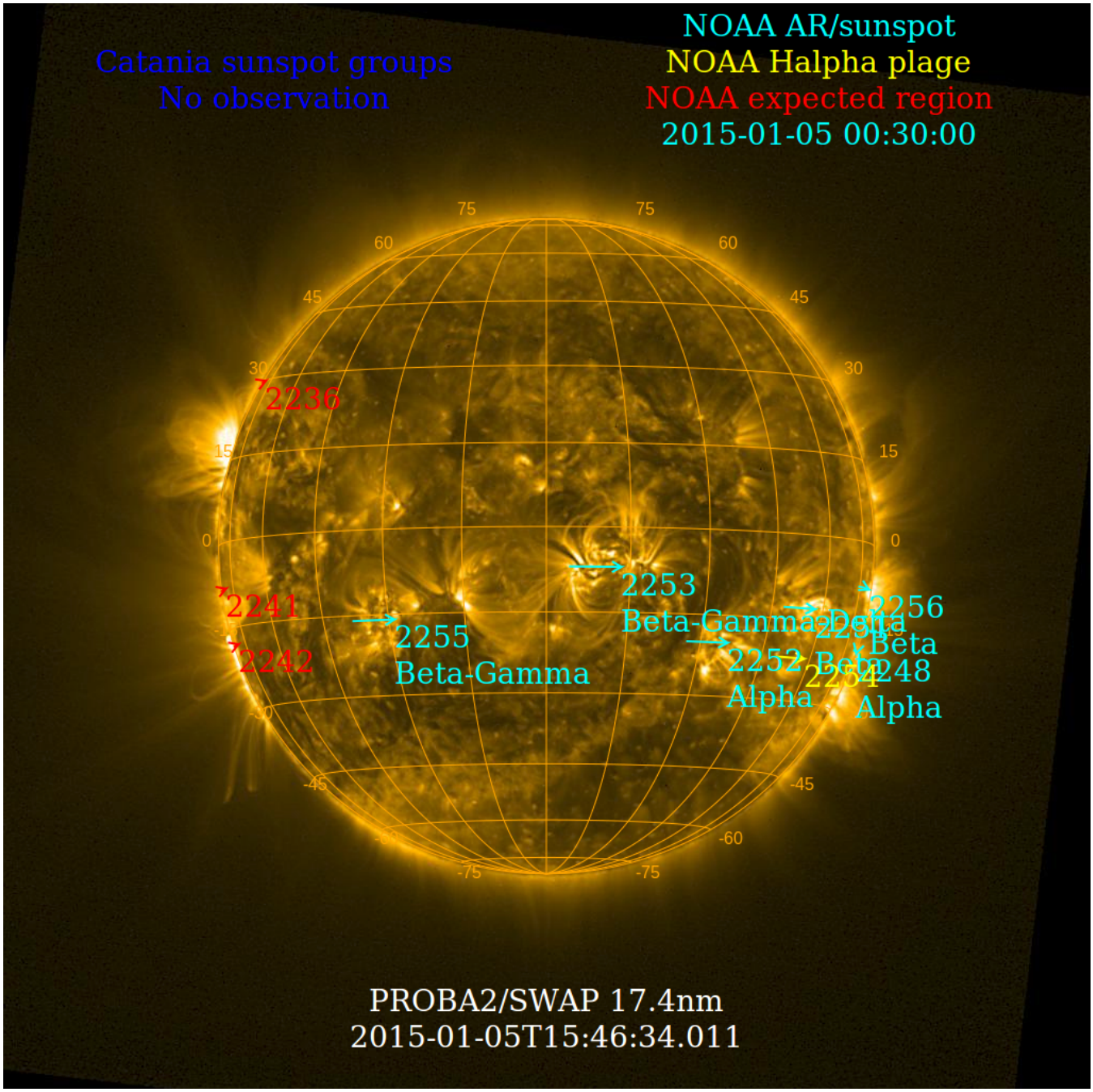
The level of solar activity[1] remained **low** remained this week.

Only M- and X-flares are mentioned, the most energetic one(s) per day are presented in **bold**:

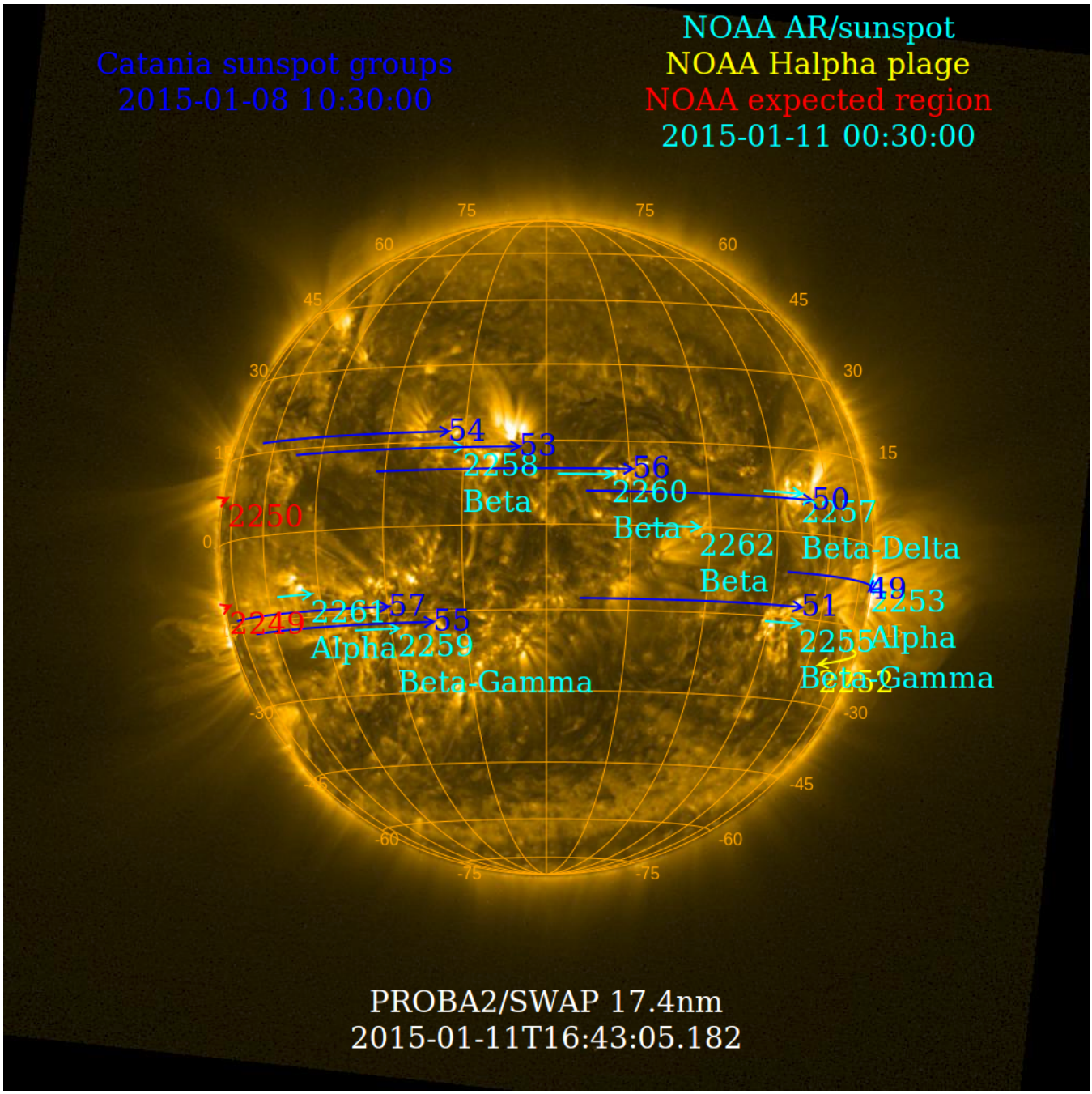
	Monday 05 Jan	Tuesday 06 Jan	Wednesday 07 Jan	Thursday 08 Jan	Friday 09 Jan	Saturday 10 Jan	Sunday 11 Jan
Activity	low	low	low	low	low	low	low
Flares	-	-	-	-	-	-	-

[1] See appendix. All timings are given in UT.

The SWAP images of Jan 05 and Jan 11 are shown below, with annotated active regions.



http://sidc.be/soteria/soteria.php


Catania sunspot groups
2015-01-08 10:30:00
NOAA AR/sunspot
NOAA Halpha plage
NOAA expected region
2015-01-11 00:30:00
75
60
45
30
15
0
-30
-45
-60
-75
54
53
2258
Beta
56
2260
Beta
50
2257
Beta-Delta
2250
2262
Beta
49
2253
Alpha
51
2255
Beta-Gamma
2252
2249
2261
57
55
Alpha
2259
Beta-Gamma
PROBA2/SWAP 17.4nm
2015-01-11T16:43:05.182

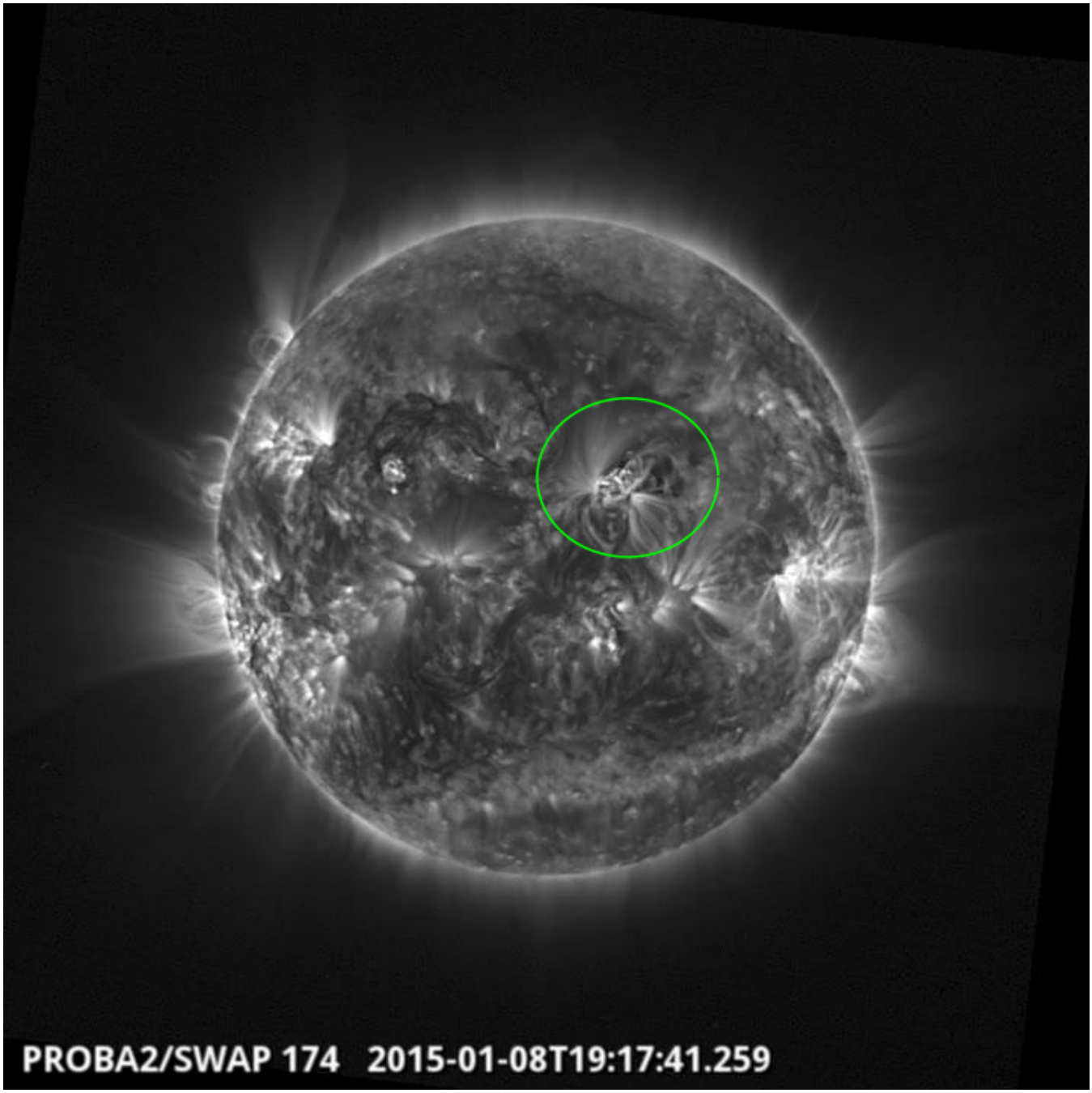
Solar Activity

Solar flare activity remained 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: http://proba2.oma.be/ssa
This page also lists the recorded flaring events.

A weekly overview movie can be found here (SWAP week 250).

Details about some of this week's events, can be found further below.

Thursday Jan 08

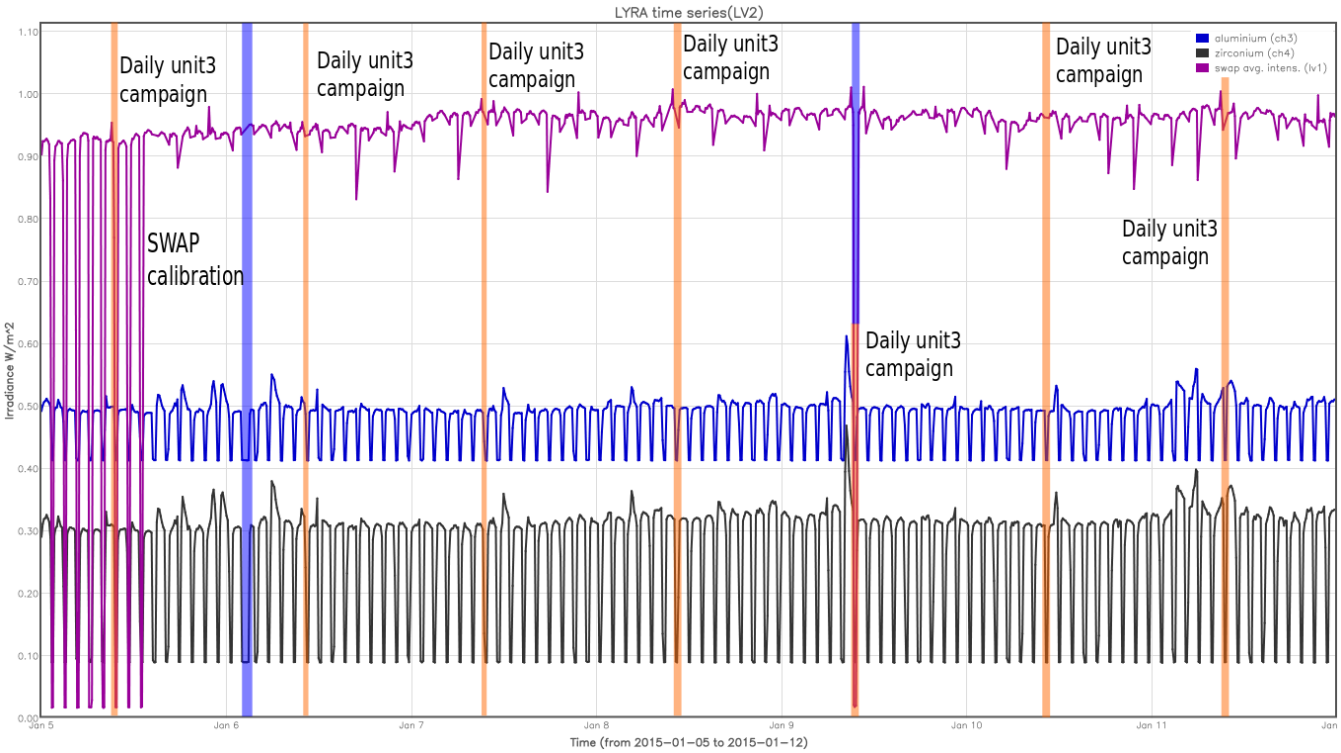


Failed eruption on the north west quad @ 19:17 - SWAP image

Find a movie of the event **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)



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

- SWAP calibration + extra darks
- Parallel occultation campaign between SWAP and LYRA

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

- Daily unit 3 campaign, seven times

Outreach, papers, presentations, etc.

Please 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.

The science section of this weekly report is also published in the weekly STCE newsletter (http://www.stce.be/newsletter/newsletter.php).

- Elke D'Huys gave a talk on Space weather and PROBA2 at KUleuven in the frame of Junior college

Guest Investigator Program

- None

2. LYRA instrument status

Calibration

No calibration this week.

IOS & operations

Monday 05 Jan	Tuesday 06 Jan	Wednesday 07 Jan	Thursday 08 Jan	Friday 09 Jan	Saturday 10 Jan	Sunday 11 Jan
Nominal acquisition + daily U3 LYIOS00443	Nominal acquisition + daily U3 LYIOS00444	Nominal acquisition + daily U3 LYIOS00444	Nominal acquisition + daily U3 LYIOS00444	Nominal acquisition + daily U3 LYIOS00445	Nominal acquisition + daily U3 LYIOS00445	Nominal acquisition + daily U3 LYIOS00445

The following science campaigns were performed by LYRA:

- daily U3 observations campaign
- Dark current measurements with unit 3

LYRA detector temperature

LYRA detector 2 temperature globally varied between 42.4 and 45 °C, taking into account the daily U3 activation periods.

3. SWAP instrument status

Calibration

Calibration campaign on Tuesday this week.

MCPM errors

The number of MCPM recoverable errors increased from 25212 to 25454.
The number of MCPM unrecoverable errors increased from 3581 to 3749.

IOS & operations

Monday 05 Jan	Tuesday 06 Jan	Wednesday 07 Jan	Thursday 08 Jan	Friday 09 Jan	Saturday 10 Jan	Sunday 11 Jan
Nominal acquisition IOS00559 662 images	Nominal acquisition + calibration IOS00559 717 images	Nominal acquisition IOS00559 695 images	Nominal acquisition IOS00559 607 images	Nominal acquisition + parallel occultation IOS00560 657 images	Nominal acquisition IOS00560 597 images	Nominal acquisition IOS00560 535 images

Special operations for SWAP, this week:

- calibration + half an hour of extra darks.
- parallel occultation campaign

SWAP detector temperature

The SWAP Cold Finger Temperature globally varied between -3.5 and -1.8 °C.

4. PROBA2 Science Center Status

The main operator is Robbe Vansintjan.

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 16224 to 16284) 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 2015 Jan 05 0UT and 2015 Jan 12 0UT: 4525
Highest cadence in this period: 29 seconds
Average cadence in this period: 133.67 seconds
Number of image gaps larger than 300 seconds: 95
Largest data gap: 33.67 minutes

The data gap is caused by the occultations jumps.

Data coverage LYRA

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

- 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
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)