STCE Newsletter

17 Jun 2013 - 23 Jun 2013

Published by the STCE - this issue : 27 Jun 2013. Available online at http://www.stce.be/newsletter/ .

The Solar-Terrestrial Centre of Excellence (STCE) is a collaborative network of the Belgian Institute for Space Aeronomy, the Royal Observatory of Belgium and the Royal Meteorological Institute of Belgium.

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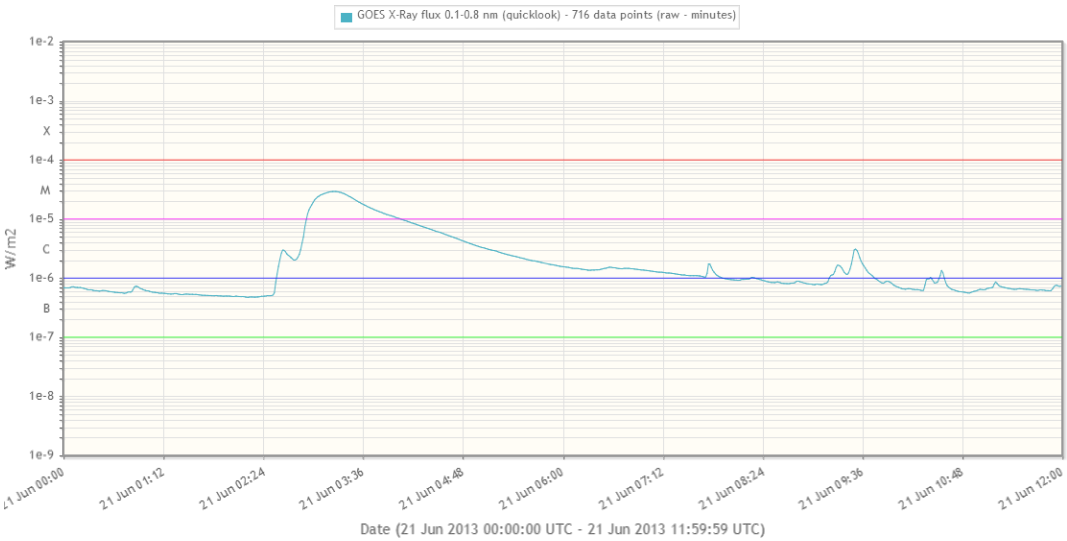
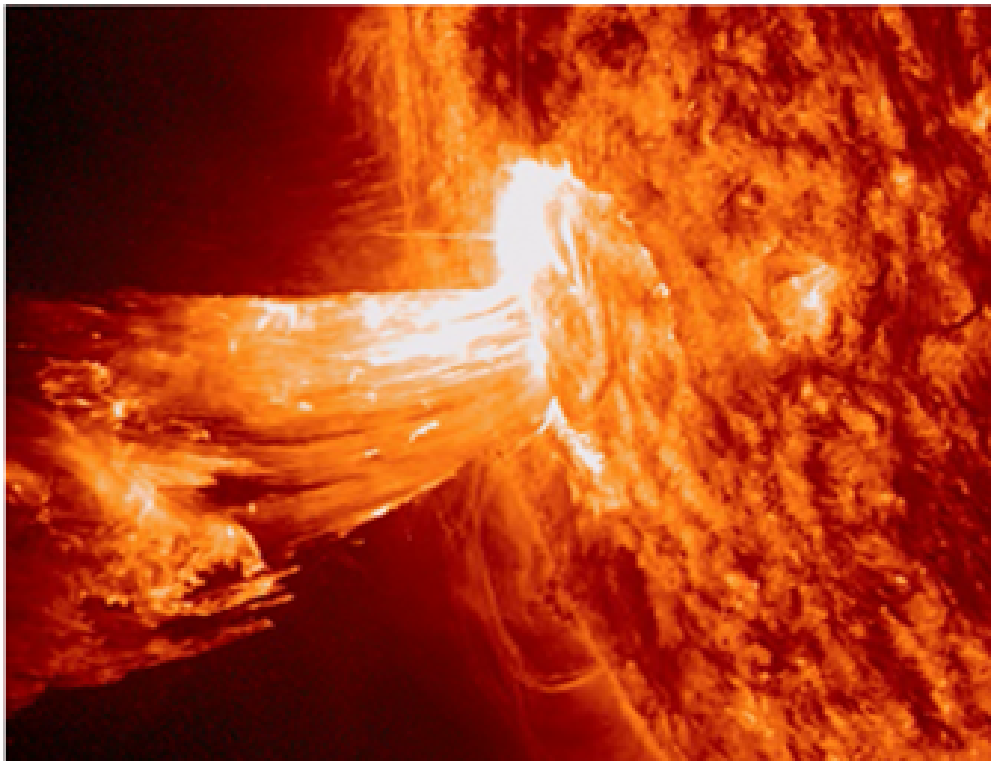
1. Active Region NOAA 1777 (17 Jun 2013 - 23 Jun 2013)

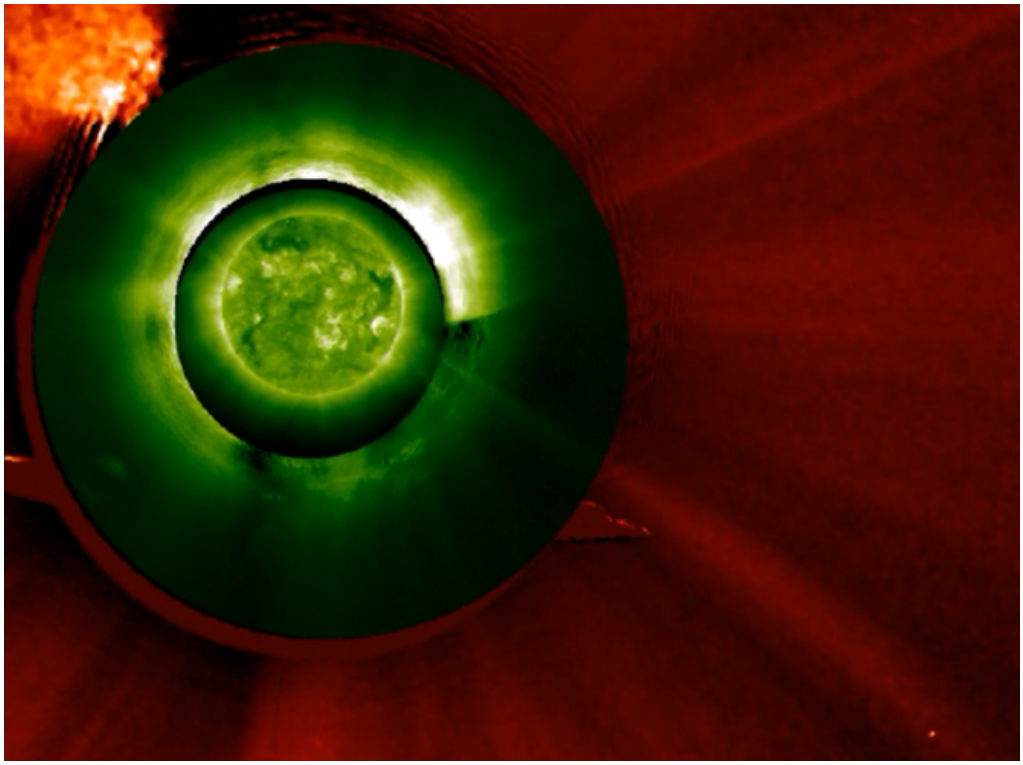
During the early hours of 21 June, the relatively simple sunspot group Catania 10/ NOAA AR 1777 unleashed a medium class solar flare. The M2.9 flare peaked at 03:14UT, and lasted for 73 minutes. Its x-ray signature clearly dominated the x-ray solar activity for that day.



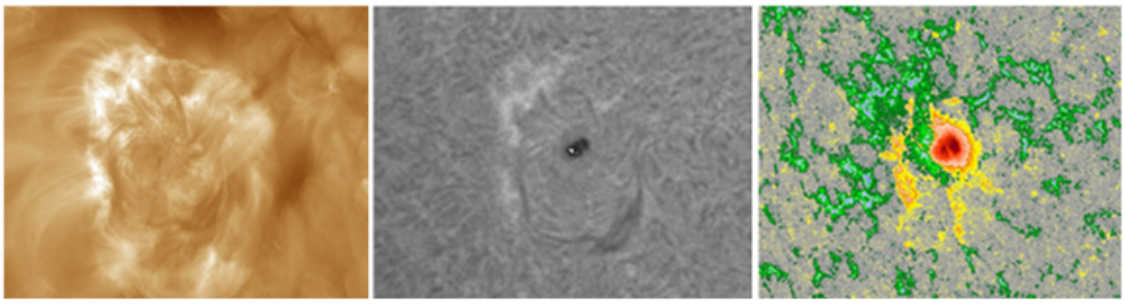
This movie at http://youtu.be/YrqOxlH21Ts gives mainly some SDO/AIA views on the solar flare, the post-flare coronal loops and the ejected material. The ejected material could be observed all the way into the field-of-view of the PROBA2's SWAP-instrument, indicating hot material was involved.



The last clip of the movie contains STEREO-B views on this region on 18 and 19 June, when NOAA 1777 was still behind the east limb as seen from Earth. Clearly, the ejected material can be traced back to the active region displaying a nearly circular bright feature (in the 19.5 nm filter). See the STEREO-B combo image underneath, taken around noon on 19 June.



As NOAA 1777 rounded the east limb, earth-based observatories and earth-orbiting satellites got a better view on this region. The circular feature was still present (SDO/AIA 193, image to the left), and was associated with somewhat stronger magnetic fields. These fields had a magnetic polarity opposite to those closer to the main spot (SDO/AIA magnetogram to the right). H-alpha imagery from the GONG-observatories showed filaments trapped between these opposite magnetic areas (image in the middle).



Interestingly, the leading magnetic polarity of the sunspot group 10/ NOAA AR 1777 is opposite to that of the sunspot regions that appear on the southern hemisphere of the ongoing solar cycle. Indeed, the main spot has a reddish color indicating negative polarity (fields returning to the solar surface), whereas the leading spot of other southern groups has normally a positive polarity. From statistics of previous solar cycles, about 3% of all sunspot groups show this "aberration". So, it's not such an unusual feature, but it may be an intriguing element in the overall activity of this active sunspot group.

Credits - Images were taken from SDO (http://sdo.gsfc.nasa.gov/), SOHO/Lasco (http://sohowww.nascom.nasa.gov/), STEREO-B (http://stereo.gsfc.nasa.gov/), PROBA2/SWAP (http://proba2.oma.be/ssa), and the GONG/H-alpha network (http://halpha.nso.edu/).

2. PROBA2 Observations (17 Jun 2013 - 23 Jun 2013)

Solar (flaring) activity was low to moderate.
The solar activity during the first part of the week was characterized by a large number (> 8) of sizable filament/prominence eruptions in about 2 days, and by two M2.9 flares from newly appeared active regions along the East limb at the end of 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: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/2013_06_17_00_00_31_2013_06_23_20_11_43_SWAP_174__AIA_304-hq.mp4 (SWAP174/AIA304 combination; HelioViewer.org).

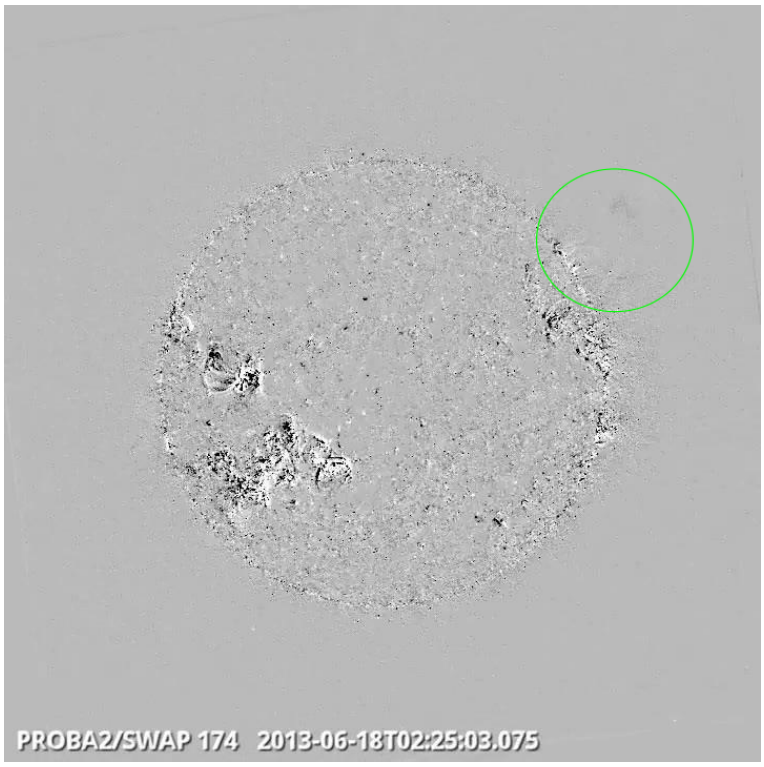
Details about some of this week's events, can be found further below.

Monday June 17th - 2 prominence eruptions:

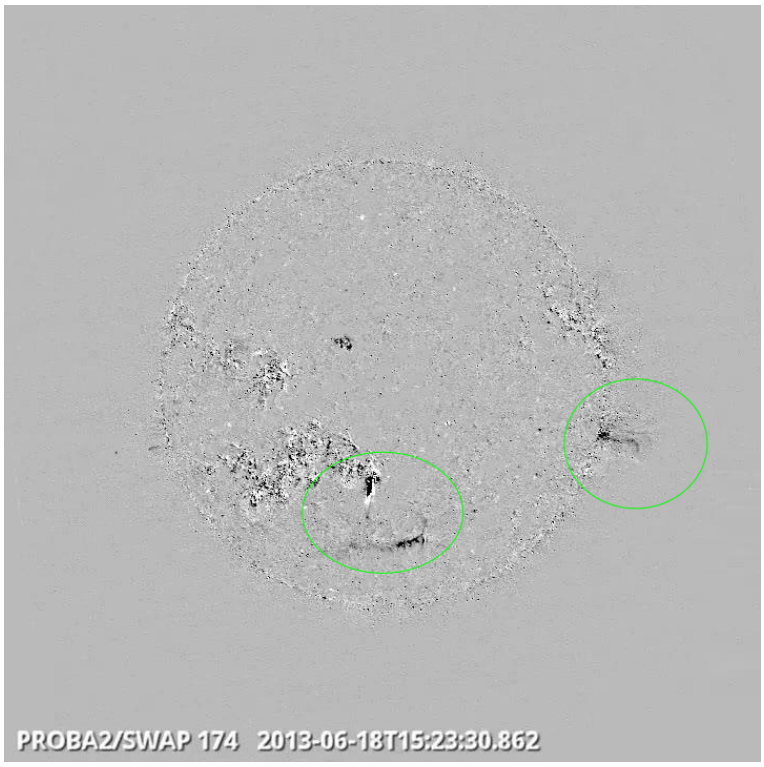
Prominence Eruption North East limb @ 07:14 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130617_PromErupt_NorthEastLimb_MorningLong_swap_diff.mp4 (SWAP difference movie)

Prominence Eruption South South East limb @ 16:46 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130617_PromErupt_NorthEastLimb_MorningLong_swap_diff.mp4 (SWAP difference movie)

Tuesday June 18th - 3 prominence eruptions:

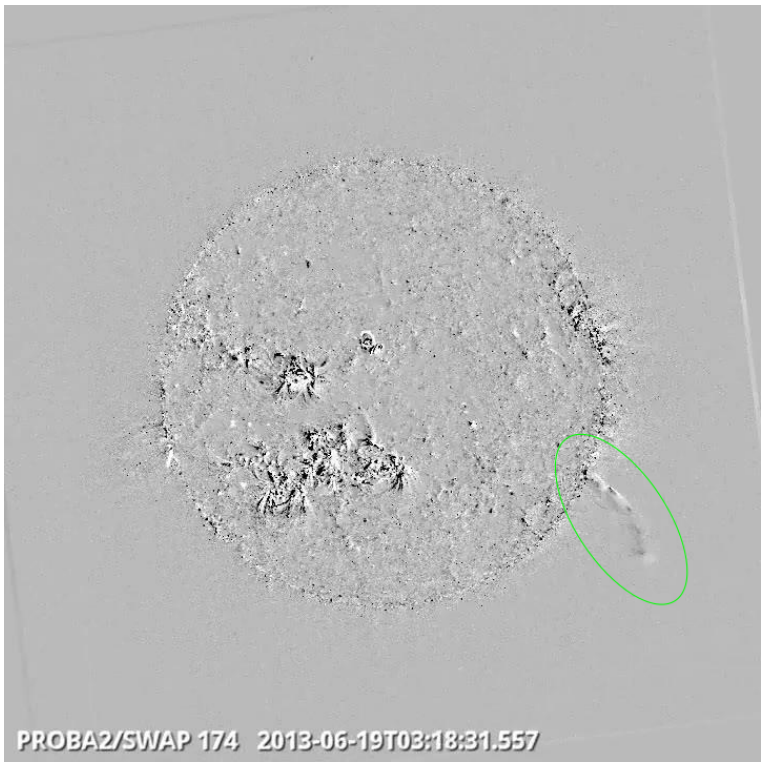


Two prominence eruptions recorded in the early morning.

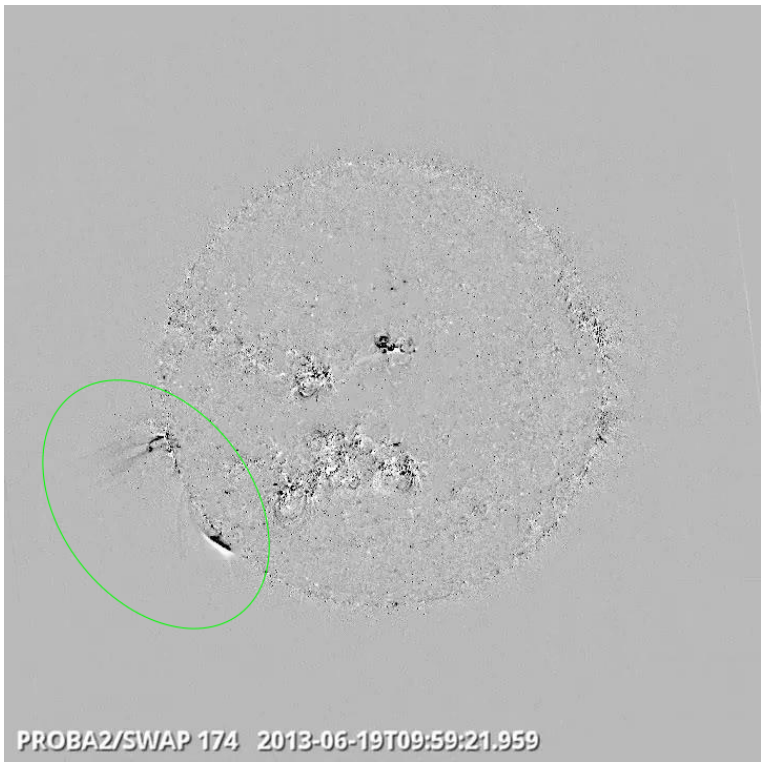


Prominence Eruption West limb, as well as an eruption South Center @ 16:46 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130618_PromErupt_SouthWestLimb_1523_swap_diff.mp4(SWAP difference movie)

Wednesday June 19th

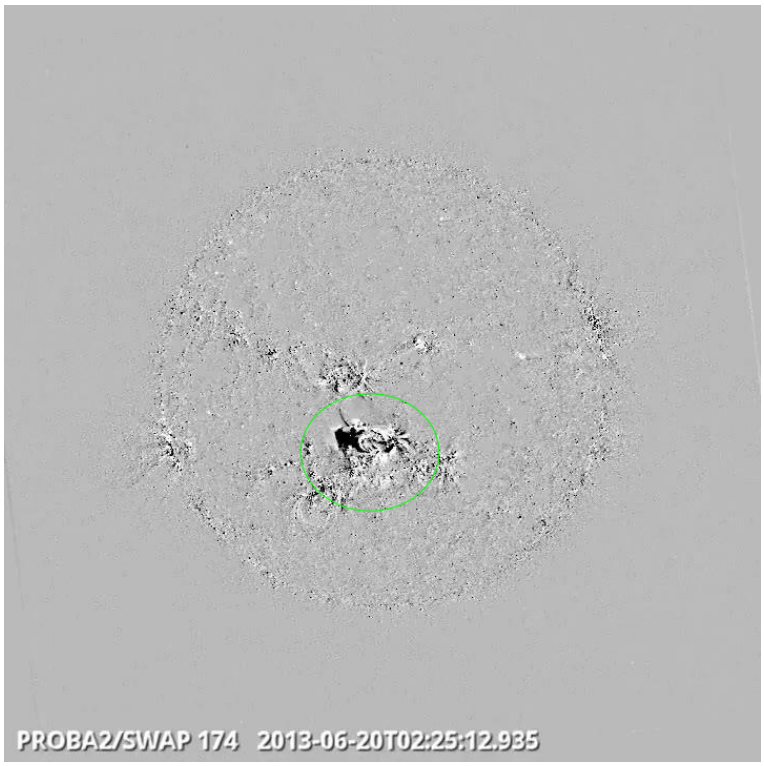


Prominence Eruption South West limb @ 03:18 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130619_PromErupt_SouthWestLimb_0300_swap_diff.mp4 (SWAP difference movie)



Eruption East limb @ 09:59 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130619_Erupt_EastLimb_1000_swap_diff.mp4(SWAP difference movie)

Thursday June 20th:



Eruption Center Disk @ 02:25 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130620_Erupt_CenterDisk_0225_swap_diff.mp4(SWAP difference movie)

Eruption Center Disk @ 11:52 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130620_Erupt_EastLimb_1152_swap_diff.mp4 (SWAP difference movie)

Friday June 21st:

M2.9 Flare on the East limb @ 03:09 - SWAP difference image
Find here movies of this event:

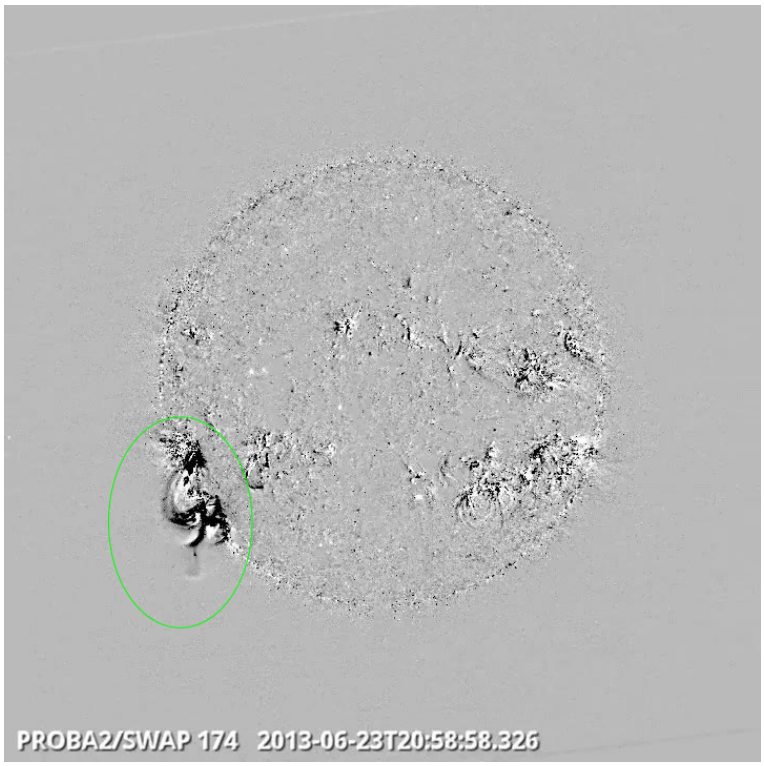
http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130621_M29flare_EastLimb_0309_swap_diff.mp4 (SWAP difference movie),

http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/2013_06_21_01_31_34_2013_06_21_04_27_04_SWAP_174-hq.mp4 (SWAP colored movie; HelioViewer.org),

http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/2013_06_21_00_50_23_2013_06_21_03_49_00_SWAP_174__AIA_171__AIA_304-hq.mp4 (SWAP171/AIA174/AIA304).

The ejected material can be followed practically up the edge of the field of view of SWAP.

Sunday June 23rd:

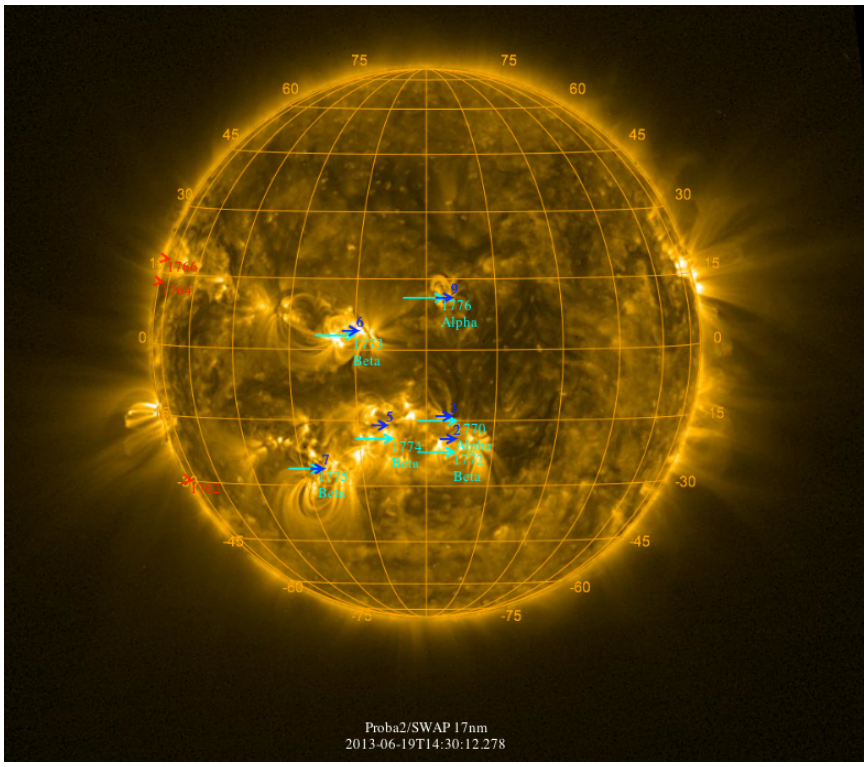


M2.9 Flare on the East limb @ 20:59 - SWAP difference image
Find a movie of this event here: http://proba2.oma.be/swap/data/mpg/movies/WeeklyReportMovies/WR169%20-%20June17-23_2013/Events/20130623_M29flare_EastLimb_2059_swap_diff.mp4 (SWAP difference movie).

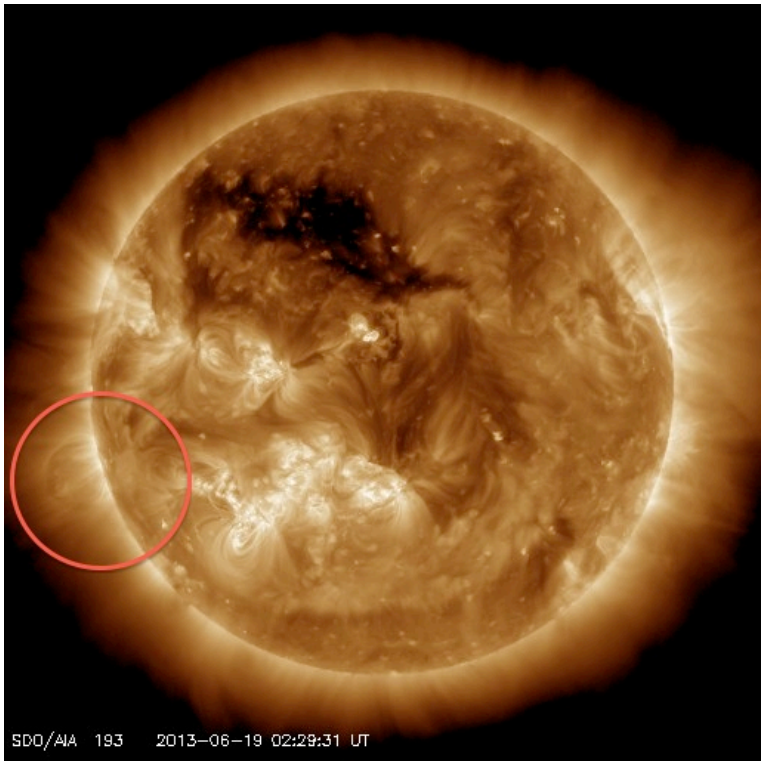
3. Review of solar activity (17 Jun 2013 - 23 Jun 2013)

Solar Activity

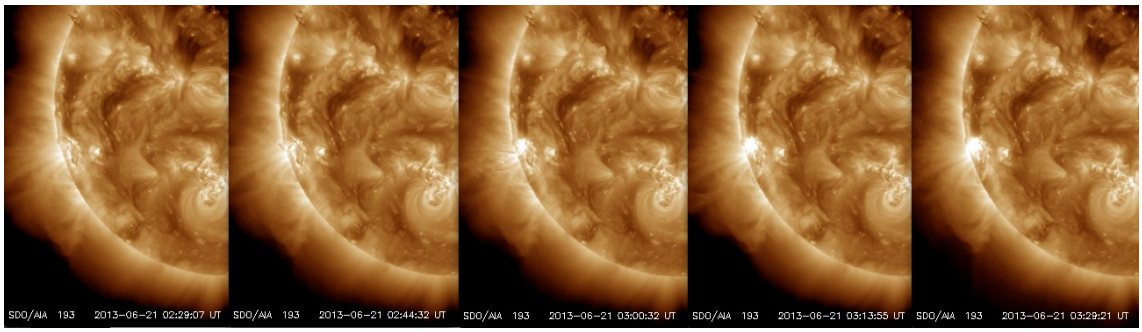
The knot of Catania sunspot groups 1, 2, 3, 5 and 7 (NOAA AR 1769, 1772, 1770, 1774 and 1775 respectively) was responsible for almost all the C-flares from June 17 until June 22. Except on June 18, a new sunspot group, Catania 9 (NOAA AR 1776) that popped up near the central meridian produced instantaneously a C-flare.



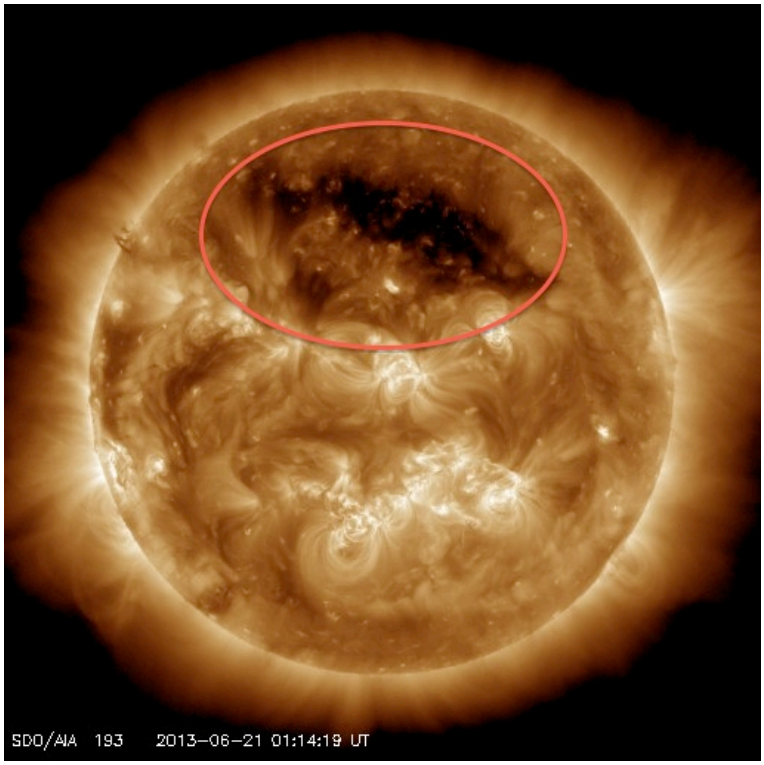
Catania Sunspot group 10 (NOAA AR 1777) was very promising. Even before turning on the solar disk on June 20, it showed off with both flares and energetic plasma eruptions. On June 18, we see stretched loops high in the corona that break open, the eruption is followed by post flare loops that seem to be captivated in a bulb structure.



Early June 21, it was responsible for the M2.9. A CME was associated with this event, but due to the position of the source region, geomagnetic consequences were ruled out.

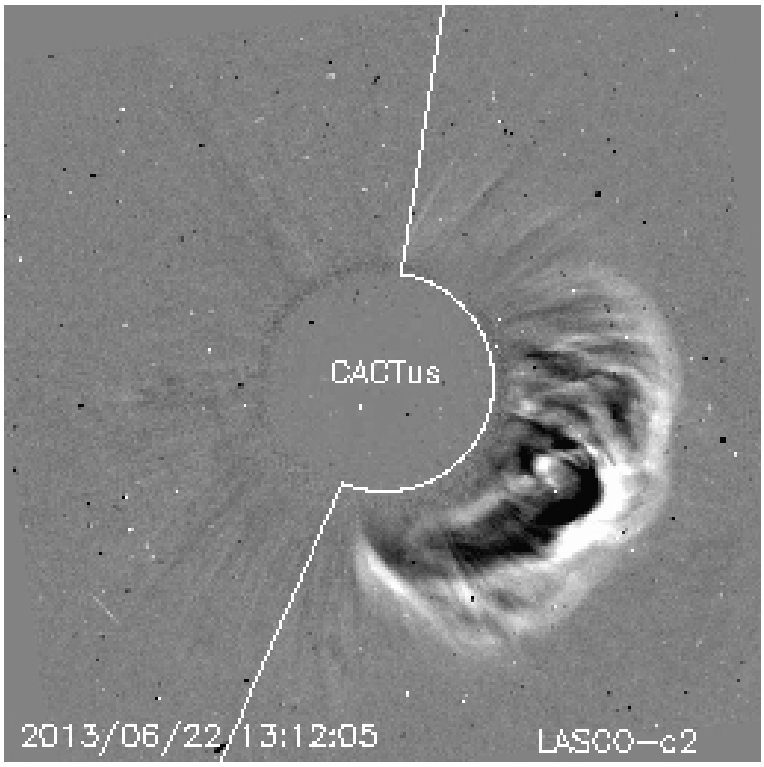


A wide coronal mass ejection was detected by CACTus on June 22, around noon. No solar event on the solar disk facing the Earth could be linked to this eruption. It was seen as a halo CME by STEREO A. We concluded that the CME was back-sided.



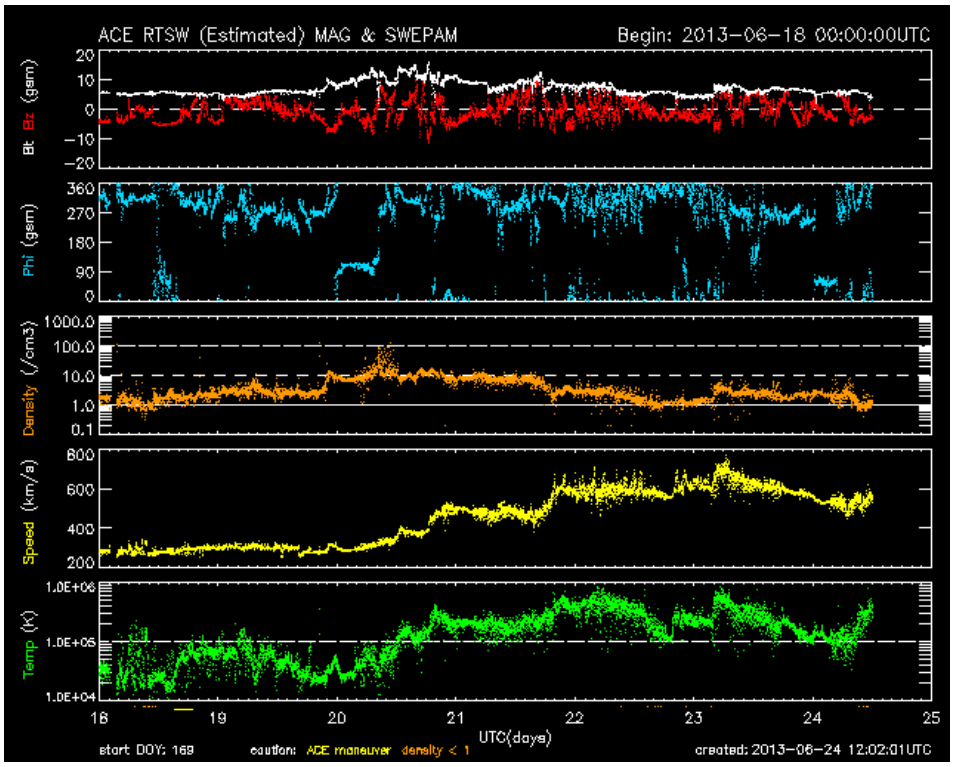
Catania Sunspot group 13 (NOAA AR 1778) in the trail of Catania 10 was responsible for the second M-flare, an M2.9, peaking on June 23, 20:56UT as soon as it rotated on the solar disk.

A large - confined in a box between 15 and 45°N with a width of 75° - coronal hole in the northern hemisphere, reached the central meridian on June 18.



Geomagnetic Activity

The event with an geomagnetic impact was the co-rotating interaction region and the fast wind emanating from the large coronal hole in the northern hemisphere. The co-rotating interaction region with relatively high density and compressed magnetic field reached the L1 point (with ACE measuring in situ the solar wind parameters) on June 20. This structure was followed by the actual fast solar wind emanating from the coronal hole itself. This is a typical lower density plasma. The solar wind speed peaked on June 23 with a value around 750 km/s. The geomagnetic conditions became active on the planetary level from late June 20 until early June 23.



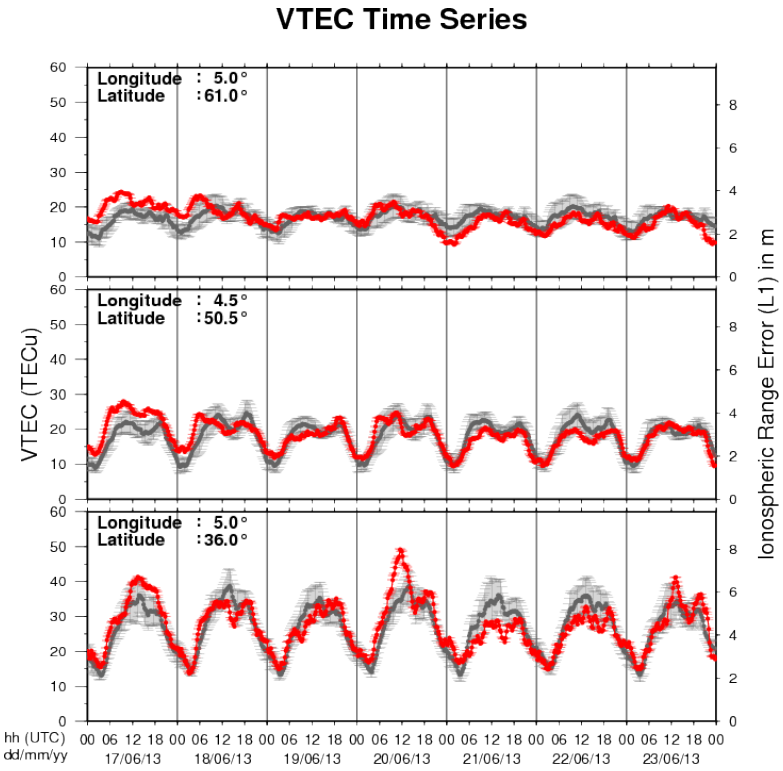
4. Noticeable Solar Events (17 Jun 2013 - 23 Jun 2013)

DAY	BEGIN	MAX	END	LOC	XRAY	OP	10CM	TYPE	Cat	NOAA
21	0230	0314	0343	S16E73	M2.9	1F	6000	VI/1IV/1III/3	10	1777
23	2048	2056	2059	S15E62	M2.9	1N	51	III/1		1778

LOC: approximate heliographic location
XRAY: X-ray flare class
OP: optical flare class
10CM: peak 10 cm radio flux

TYPE: radio burst type
Cat: Catania sunspot group number
NOAA: NOAA active region number

5. Review of ionospheric activity (17 Jun 2013 - 23 Jun 2013)

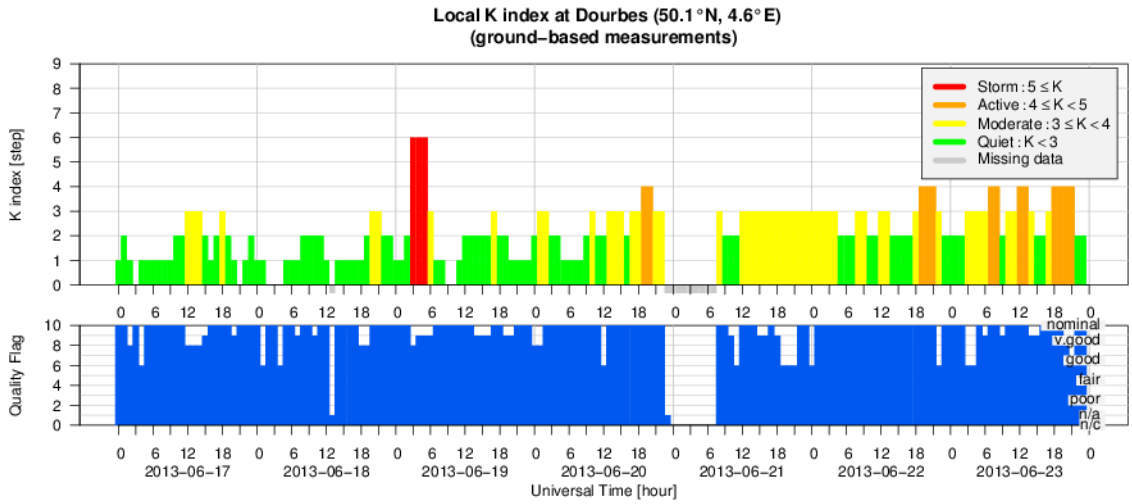


The figure shows the time evolution of the Vertical Total Electron Content (VTEC) (in red) during the last week at three locations:
a) in the northern part of Europe(N61°, 5°E)
b) above Brussels(N50.5°, 4.5°E)
c) in the southern part of Europe(N36°, 5°E)
This figure also shows (in grey) the normal ionospheric behaviour expected based on the median VTEC from the 15 previous days.

The VTEC is expressed in TECu (with TECu=10^16 electrons per square meter) and is directly related to the signal propagation delay due to the ionosphere (in figure: delay on GPS L1 frequency).
The Sun's radiation ionizes the Earth's upper atmosphere, the ionosphere, located from about 60km to 1000km above the Earth's surface.The ionization process in the ionosphere produces ions and free electrons. These electrons perturb the propagation of the GNSS (Global Navigation Satellite System) signals by inducing a so-called ionospheric delay.

See http://stce.be/newsletter/GNSS_final.pdf for some more explanations ; for detailed information, see http://gnss.be/ionosphere_tutorial.php

6. Geomagnetic Observations at Dourbes (17 Jun 2013 - 23 Jun 2013)



7. New documents in the European Space Weather Portal Repository

See http://www.spaceweather.eu/en/repository

COST ES0803 Space weather asset catalogue

http://www.spaceweather.eu/en/repository/show?id=463

eHEROES : PROBA2 - ontwikkeling, lancering en exploitatie

Workshop given on March 26 at the high school 'Klein seminarie', Hoogstraten, Belgium in the frame of PROBA2@school.
http://www.spaceweather.eu/en/repository/show?id=461

STCE - La recherche en Antarctique

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=464

STCE - PROBA2 et l'activité solaire

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=465

STCE - Pourquoi mesurer la pesanteur g?

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=466

STCE - Waarom meten we de valversnelling g?

Presentation, in Dutch given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=467

STCE - La météorologie spatiale

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.

http://www.spaceweather.eu/en/repository/show?id=468

STCE - Ruimteweer: de impact van zonnestormen op aarde

Presentation, in Dutch given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=469

STCE - Les grands tremblements de terre dans nos régions

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=470

STCE - Exploration de la planète Mercure

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=471

STCE - Habiter sur Mars?

Presentation, in French given at the open doors of the Space Pole, Brussels, Belgium, 2013.
http://www.spaceweather.eu/en/repository/show?id=472

eHEROES - Zonnewaarnemingen

This lecture was given at MIRA Public Observatory on 5 June. It is an introduction to solar observations both in white light as in H-alpha. It gives a general overview on telescopes and filters to be used, observation methods, know-how of a solar observation, solar features to be monitored, data exploitation, internet links,... (15 attendees; in Dutch).
http://www.spaceweather.eu/en/repository/show?id=473

8. Future Events

For more details, see http://www.spaceweather.eu/en/event/future

2013 Radiation Belts Workshop at Island of Santorini, Greece

Start : 2013-06-30 - End : 2013-07-04
The 2013 Radiation Belts Workshop is the first of a series of radiation belt meetings that are planned to be held in the Aegean islands.
As its title conveys, this first workshop includes sessions on radiation belt research and specification. The workshop focuses, in particular, on the properties of low frequency electromagnetic waves and their effects on radiation belts dynamics. The other highlight of the workshop is the ongoing international effort on improvement of the AE9/AP9 Next Generation Radiation Specification Models. These sessions will be complemented with presentations of the progress achieved by a most relevant FP7-Space project titled MAARBLE (Monitoring, Analyzing and Assessing Radiation Belt Loss and Energization).
Website:
http://www.space.noa.gr/rbw13/

Solar Activity and its Manifestations in the Whole Heliosphere in Logomo, Turku, Finland

Start : 2013-07-08 - End : 2013-07-09
The goal of the symposium is to present and discuss new results on solar activity and its manifestations in the entire heliosphere, including geospace and other planetary environments. The new space-borne solar observatories (SDO, Hinode, STEREO) have recently made important new discoveries on the dynamics of the magnetized solar atmosphere and solar wind, and on solar eruptive events that are the main driver of variable conditions in geospace and other planetary environments.
We now also better understand the changes of long-term solar activity, from the low levels of 100 years ago to the all-time maximum in the late 1950s, and to the very weak activity of the recent minimum.

Although solar and geomagnetic activity during the ongoing cycle 24 has remained abnormally low, the increasing activity after the long solar quiescence has recovered the attention to space weather.
We solicit presentations covering the entire domain from the solar surface (and below) to the heliopause, covering all time scales of variations from a fraction of a second to millenia. The practical aspects of solar-driven variability in space environments (space weather) and the long-term changes in the solar activity and its effects in the heliosphere (space climate) will be covered as well.
Website:
http://theory.physics.helsinki.fi/~ravainio/ewass-13/

2013 Heliophysics Summer School in Boulder, Colorado (USA)

Start : 2013-07-12 - End : 2013-07-19
Applications are invited for the 2013 Heliophysics Summer School, which will be held in beautiful Boulder, Colorado. We are seeking students and undergraduate level teachers and instructors to join us this coming summer for a unique professional experience. Students and teachers will learn about the exciting science of heliophysics as a broad, coherent discipline that reaches in space from the Earth's troposphere to the depths of the Sun, and in time from the formation of the solar system to the distant future. At the same time, a goal of the Summer School is for the group of instructors to develop materials from Heliophysics that can be applied in their classes.
The Heliophysics Summer School focuses on the physics of space weather events that start at the Sun and influence atmospheres, ionospheres and magnetospheres throughout the solar system. The solar system offers a wide variety of conditions under which the interaction of bodies with a plasma environment can be studied: there are planets with and without large-scale magnetic fields and associated magnetospheres; planetary atmospheres display a variety of thicknesses and compositions; satellites of the giant planets reveal how interactions occur with subsonic and sub-Alfvenic flows whereas the solar wind interacts with supersonic and super-Alfvenic impacts.
Encompassed under a general title of comparative magnetospheres are processes occurring on a range of scales from the solar wind interacting with comets to the interstellar medium interacting with the heliosphere. The school will address not only the physics of all these various environments but will also go into the technologies by which these various environments are being observed. The program is complemented with considerations of the societal impacts of space weather that affects satellites near Earth and elsewhere in the solar system.
The school will be based on lectures, laboratories, and recitations from world experts, and will draw material from the three textbooks Heliophysics I-III, published by Cambridge University Press.
Several teachers along with about 35 students will be selected through a competitive process organized by the UCAR Visiting Scientist Programs. The school lasts for eight days, and each participant receives full travel support for airline tickets, lodging and per diem costs.
Website:
http://www.vsp.ucar.edu/Heliophysics/

Space weather summer school in Alpbach, Austria

Start : 2013-07-16 - End : 2013-07-25
The Summer School Alpbach enjoys 36 years of tradition in providing in-depth teaching on different topics of space science & technology, featuring lectures and concentrated working sessions on mission studies in self-organised working groups. 60 young highly qualified European science and engineering students converge annually for stimulating 10 days of work in the Austrian Alps. 4 teams compete to design a space mission judged by a jury of experts. Students learn how to approach the design of a satellite mission and explore new and startling ideas supported by experts. The Summer School 2013 will focus on Space Weather .
The purpose of the Summer School is to foster the practical application of knowledge derived from lectures, to develop organisational and team-work skills and to encourage creativity. Teams will compete to design the best project, judged by an independent jury. The teams themselves are responsible for the selection of the subject of the project and for the team structure and working methods.
Website:

http://www.summerschoolalpbach.at/

2013 CISM Summer School, in Boulder, Colorado, USA

Start : 2013-07-22 - End : 2013-08-02
The CISM Summer School is intended to give students a comprehensive immersion in the subject of space weather: what it is, what it does, and what can be done about it. Space weather is many things: beautiful when seen through the eyes of a sun-viewing telescope, fascinating when studied for its alien worlds of magnetic structures and phenomena, awesome when witnessed as a solar eruption or auroral storm, and devastating to the users of services it disrupts. Space weather links the Sun, the Earth, and the space in between in a branching chain of consequences. Weather systems on the Sun can spawn interplanetary storms of colossal size and energy that envelop the whole planet in electrical hurricanes. Such storms attack high-tech, complex, and expensive technological systems that provide much of the infrastructure that allows modern society to function.
Website:
https://www2.hao.ucar.edu/docs/2013-cism-summer-school

1st SOLARNET - 3rd EAST/ATST meeting in Oslo, Norway

Start : 2013-08-05 - End : 2013-08-08
The goal of this workshop is to foster collaborations between ground and space solar projects. This workshop is expected
* to provide a forum to discuss the use of current and future observational solar facilities, and how to optimise their scientific returns;
* to identify the potentially paradigm-shifting observations that will become possible with the next generation ground- and space-based solar telescopes and their advanced instrumentation;
* to foster collaborations between researchers working at the development of ground- and space-based projects and creation of synergies between research programs at different wavelength bands.
Website:
http://folk.uio.no/matsc/oslo-13/info.html

1st SOLARNET Workshop, 3rd EAST/ATST meeting: 'Synergies between ground- and space-based solar research', in Oslo, Norway

Start : 2013-08-05 - End : 2013-08-08
The goal of this workshop is to foster collaborations between ground and space solar projects. This workshop is expected 1) to provide a forum to discuss the use of current and future observational solar facilities, and how to optimise their scientific returns; 2) to identify the potentially paradigm-shifting observations that will become possible with the next generation ground- and space-based solar telescopes and their advanced instrumentation; 3) to foster collaborations between researchers working at the development of ground- and space-based projects and creation of synergies between research programs at different wavelength bands.
A workshop webpage and more information will follow shortly - the purpose of this pre-announcement is to enable early bookings in your calendar.

XIIth IAGA Scientific Assembly in Merida, Yucatan, Mexico

Start : 2013-08-16 - End : 2013-08-31
The Local Organising Committee and the Mexico National Committee of IUGG have the great pleasure to welcome you to the 11th Scientific Assembly of the International Association of Geomagnetism and Aeronomy (IAGA) which is held in MÃ©rida YucatÃ¡n, Mexico from 26 to 31 August 2013 with the motto: "Living on a Magnetic Planet". Our Magnetic Planet Capricious (Changeable or Unpredictable) Field.
In order to increase the visibility and attractiveness of IAGA to young researchers, to motivate them to play active role within IAGA and to create (and enhance) their awareness of IAGA and sense of belonging to IAGA, the first IAGA Summer School will be organized just prior the Assembly. The summer school will provide overview of the activities carried out within all the IAGA divisions, with subjects from paleomagnetism and magnetic anisotropy through observatories and geomagnetic field modeling to

ionospheric and aeronomic research. At least 20 young scientists from all around the world will be invited based on the nominations from Working Groups and Divisions. Special call and more information will be published before the end of 2012.
Website: http://iaga2013.org.mx/

Solar Physics and Space Weather Instrumentation V in San Diego, CA (USA)

Start : 2013-08-25 - End : 2013-08-29
This conference will focus on instrumentation, observatories, space missions, and programs for observations from the Sun to Earth's upper atmosphere and space environment. The aim is to bring together diverse communities working on all elements of solar physics and space weather instrumentation.
Studying solar phenomena and monitoring space weather requires observations using both space- and ground-based instrumentations covering the different regions of the Sun-Earth system, the Sun, interplanetary medium, magnetosphere, ionosphere, and thermosphere. Papers are solicited concerning all instrumentation-supporting solar physics and space weather. This includes, but is not limited to, concepts, designs, fabrication processes, calibration, data trending, information technologies, solar data mining, instrument modeling, and satellite lifetime prediction modeling. We are also interested in all past, current, and future solar space missions and satellite and ground constellations of space weather instrumentation with a strong focus on Space Situational Awareness.
This conference is intended to provide the solar physics community and that of Earth's space environment with a forum for discussing the latest updates on instrumentation, observation techniques, and programs in their respective fields, and for proposing innovative ideas for future Sun-Earth coordinated observations.
Website: http://spie.org/op423

2013 Meeting of the Italian Community in Solar and Heliospheric Physics in Catania, Italy

Start : 2013-09-04 - End : 2013-09-06
The purpose of the meeting is to provide a forum for the italian scientists in the field (some of which are abroad) to consolidate on-going collaborations and establish new ones, for example in future projects such as Solar Orbiter and EST, where several of us are involved.
The meeting is obviously open to scientists from all the countries!
Website:
http://www.oact.inaf.it/weboac/SoHe2013/

14th European Solar Physics Meeting in Dublin, Ireland.

Start : 2013-09-08 - End : 2013-09-12
The European Solar Physics Meetings aim to highlight all aspects of modern solar physics, including observation and theory that span from the interior of the Sun out into the wider heliosphere. These meetings provide a broad, yet stimulating, environment for European and international scientists to share their research in solar physics.
The meeting will mostly comprise of contributed talks and poster presentations, with several invited review talks (typically one per session). Posters will be on display for the whole meeting in close proximity to the lecture theatre. Refreshments will be served in the poster viewing area during two dedicated coffee/poster breaks on each full day.
Website: http://www.espm14.ie/

7th International Workshop on Solar Polarization in Kunming, China

Start : 2013-09-09 - End : 2013-09-14
We gain information about the universe through analysis of the spectra from celestial objects. However, while the intensity spectrum represents a scalar quantity but electromagnetic radiation occurs in the form of transverse waves, the polarized spectrum provides us with a 4-vector, the Stokes vector. The increased amount of information space opens new windows to the universe, in particular for the

exploration of magnetic fields. It is well recognized that the magnetic field is a primary agent responsible for structuring and the source of all variability on intermediate time scales, which manifests itself in all forms of solar and stellar activity.
It is therefore not surprising that every year there are many scientific meetings organized with the objective of studying the role of magnetic fields in cosmic objects. What is largely missing in these meetings is however an in-depth investigation of the fundamental aspects of how magnetic fields can be determined by the means of spectro-polarimetry, our main gateway to cosmic magnetism. The primary aim of our series of Workshops is to address these fundamental aspects, with less emphasis on the morphological and physical properties of cosmic magnetic fields.
Website: http://spw7.ynao.ac.cn/

2nd UK-Ukraine meeting on Solar Physics and Space Science (UKU SPSS) in Kiev, Ukraine

Start : 2013-09-16 - End : 2013-09-20
The meeting will cover a broad range of aspects of solar physics, space science and solar-terrestrial relations. We aim to include every side of solar and space research, including observations, theory, and numerical modelling. The main idea behind the meeting is to treat the entire solar-terrestrial domain as one system, rather than each region independently.
The topics to be covered are:
* advanced solar observations
* waves and flows in the Solar atmosphere
* structure and dynamics of solar magnetic fields
* connecting analytical theory and modern numerical simulations to observations
* new physics in numerical modelling
* linking solar interior with heliosphere
* particle acceleration in the Sun and heliosphere
* non-linear phenomena in space plasmas
* physics of magnetosphere and ionosphere
Website:
http://swat.group.shef.ac.uk/Conferences/Ukraine_UK_2013/index.html

Space science training week: data driven modeling and forecasting in Leuven, Belgium

Start : 2013-09-16 - End : 2013-09-19
This summer school targets to introduce a generation of young researchers (advanced master students, PhDs, and junior postdoctoral researchers) to the diverse aspects of space weather related research.
It will introduce theoretical approaches to space weather and its drivers, present modern solar data analysis tools, and cover state-of-the-art solar and space science simulations. Participants will learn about forecasting aspects and their quality control for space weather events, but also experience hands-on training in scientific proposal writing and receive do-and-don't tips for scientific presentations.
The scientific program is enriched by a public evening lecture on the solar influence on our climate, and the lecturers are invariably expert scientists with international standing.
The school is open to a maximum of 40 participants, and can benefit from its embedding within two international research network activities: an Interuniversity Attraction Pole P7/08 CHARM connecting heliospheric to astrophysical communities with 7 partner institutes, and a European FP7 Project eHeroes with 15 different partner institutes. Participation from outside both network activities is strongly encouraged. Within Belgium, the school links up expertise from universities (KU Leuven, ULB, Gent University) to federal research institutes (the Solar-Terrestrial Centre of Excellence, the Royal Observatory of Belgium and the Belgian Institute for Space Aeronomy).
Website:
http://wis.kuleuven.be/CHARM/events/school/SSTW2013/

STEREO/WAVES & WIND/WAVES workshop on Solar Radio Emissions on Santorini, Greece

Start : 2013-10-07 - End : 2013-10-11
The aim of the workshop is to review the "state of the art" theories about generation and propagation of Solar radio burst and discuss the observational constrains and results that have been provided in this area by the WIND & STEREO missions during the last 20 years. Furthermore the STEREO & WIND observations will be put in the context of other missions such as RHESSI and ground based observatories. Finally, the preparation for the future explorations foreseen with Solar Orbiter and Solar Probe Plus will be discussed.
Website:
http://type3stereo.sciencesconf.org/

2nd Asian-Pacific Solar Physics Meeting, in Hangzhou, China

Start : 2013-10-24 - End : 2013-10-26
Initiated by Profs. Fang and Choudhury, the first Asian-Pacific Solar Physics Meeting (APSPM) was held in Bangalore two years ago. During the meeting, a consensus was achieved that it might be a good idea to have the APSPM every three years. Somehow the second APSPM was proposed to be held by mainland China in 2013. APSPM is aimed to exchange the recent research results in solar physics in the emerging asian-pacific region.
Asian-pacific regions are getting more and more active in solar physics, as signified by the construction of big facilities, including the Hinode satellite (Japan), SOXS (India), Chinese Solar Radio Heliogragh, and Optical & Near-Infrared Solar Eruption Tracer (ONSET). Therefore, colleagues have agreed to hold regional solar physics meetings regularly. The first Asian-Pacific Solar Physics Meeting (APSPM) was held in Bangalore during March 22-24 2011. During the meeting, a consensus was achieved that it might be a good idea to have the APSPM every three years. Somehow the second APSPM was proposed to be held by mainland China in 2013. APSPM is aimed to exchange the recent research results in solar physics in the emerging asian-pacific region.
Website:
http://sdac.nju.edu.cn/~solar/

Helicity Thinkshop on Solar Physics in Beijing, China

Start : 2013-10-27 - End : 2013-10-31
Magnetic helicity has been intensively studied from observational, theoretical, and many other aspects of solar physics. For this meeting we would like to invite solar physicists who are interested in the observational and theoretical studies of the helicity, to encourage thorough discussions on the relevant hot issues. The 1st Helicity Thinkshop was held successfully in 2009, and now the 2nd one will be held on October 27-31, 2013 in Beijing, China.
Website:
http://sun.bao.ac.cn/meetings/HT2013/

25th Winter School of Astrophysics: Cosmic Magnetic Fields, in La Laguna, Tenerife, Spain.

Start : 2013-11-11 - End : 2013-11-22
Magnetic fields play an important role in many astrophysical processes. But magnetic are difficult to detect and to model or understand, since the fundamental equations describing the behavior of magnetized plasmas are highly non-linear. Hence, magnetic fields are often an inconvenient subject which is overlooked or simply neglected. Such difficulty burdens the research on magnetic fields, which has evolved to become a very technical subject, with many small disconnected communities studying specific aspects and details.
The school tries to amend the situation by providing a unifying view of the subject. The students would have a chance to understand the behavior of magnetic fields in all astrophysical contexts, from cosmology to the Sun. From star-bursting regions to AGNs in galaxies. The school will present a

balanced yet complete review of our knowledge. Extensions into the unknown are also important to indicate present and future lines of research.
The Winter School will bring together in a relaxed working atmosphere a number of the leading scientists in this field, PhD students and recent postdocs. The conditions for a successful interaction will be granted, including two special sessions for those students that want to present their own work.
Website:
http://www.iac.es/winterschool/2013/

7th Hinode science meeting in Takayama, Japan

Start : 2013-11-12 - End : 2013-11-15
Since its launch in Sep-2006, more than 600 refereed papers have been published based on Hinode observations, presenting many new and important findings to the scientific community. However, due to the unexpectedly low levels of solar activity, until now the focus has mainly been on the more quiescent aspects of the solar cycle. With the solar maximum expected this year, through cooperative observations with SDO, IRIS, and ground based observatories, Hinode observations should lead to our understanding of active Sun phenomena, such as solar flares and CMEs, to be greatly improved. Making Hinode-7 an excellent opportunity to discuss solar activity in the current solar cycle and the related science through the use Hinode data, as well as other solar/space weather data. It will also be interesting to use this meeting to broaden our focus to include the solar-stellar connection as a means to deepen our understanding of solar activity.
Momentum is also gaining for Solar-C, which is being developed as an international collaboration between Japan, US and Europe. To further discuss this mission, the Solar-C science meeting will be held on 11-Nov.
Website:
http://www.kwasan.kyoto-u.ac.jp/hinode-7/

International CAWSES-II Symposium in Nagoya, Japan

Start : 2013-11-18 - End : 2013-11-22
This International CAWSES-II Symposium hosted by SCOSTEP (Scientific Committee on Solar-Terrestrial Physics) will provide an excellent opportunity to discuss the scientific accomplishments of CAWSES-II and look forward to SCOSTEP's future programs at a moment toward the end of its five-year period. The symposium will cover the six major themes of CAWSES-II tasks: 1) What are the solar influences on the Earth's climate?, 2) How will geospace respond to an altered climate?, 3) How does short-term solar variability affect the geospace environment?, 4) What is the geospace response to variable inputs from the lower atmosphere?, 5) Capacity Building, 6) Informatics and eScience. The main functions of CAWSES-II are to help coordinate international activities in observations, modeling, and applications crucial to achieving this understanding, to involve scientists in both developed and developing countries, and to provide educational opportunities for students of all levels. The symposium offers keynotes/lectures that will be interesting for all participants every morning and more specific sessions of presentations in the afternoon. We welcome all those who are involved and/or interested in CAWSES-II to Nagoya in the autumn when we will have the pleasure of being surrounded by beautiful colorful leaves of this season.
Website:
http://www.cawses.org/CAWSES/leaflet_CAWSES-II_120229.pdf

European Space Weather Week in Belgium

Start : 2013-11-18 - End : 2013-11-22
The 10th Edition of the European Space Weather Week will take place on 18-22nd November 2013 in Belgium. The venue will be confirmed early next year, but mark your calendars now for the 10th Anniversary of this growing European event.
The ESWW will again adopt the central aim of bringing together the diverse groups in Europe working on different aspects of Space Weather . This includes but isn't limited to the scientific community, the engineering community, applications developers, service providers and service end users. The meeting

organisation will again be coordinated by the Belgian Solar-Terrestrial Centre of Excellence (STCE), ESA and the Space Weather Working Team. The local organisation will be done by the STCE.
Website:
http://www.stce.be/esww10/

40th COSPAR Scientific Assembly in Moscow, Russia

Start : 2014-08-02 - End : 2014-08-10
The 40th COSPAR Scientific Assembly will be held in Moscow, Russia from 2 - 10 August 2014. This Assembly is open to all bona fide scientists.
Website:
http://www.cospar-assembly.org/