STCE Newsletter

27 Aug 2012 - 2 Sep 2012

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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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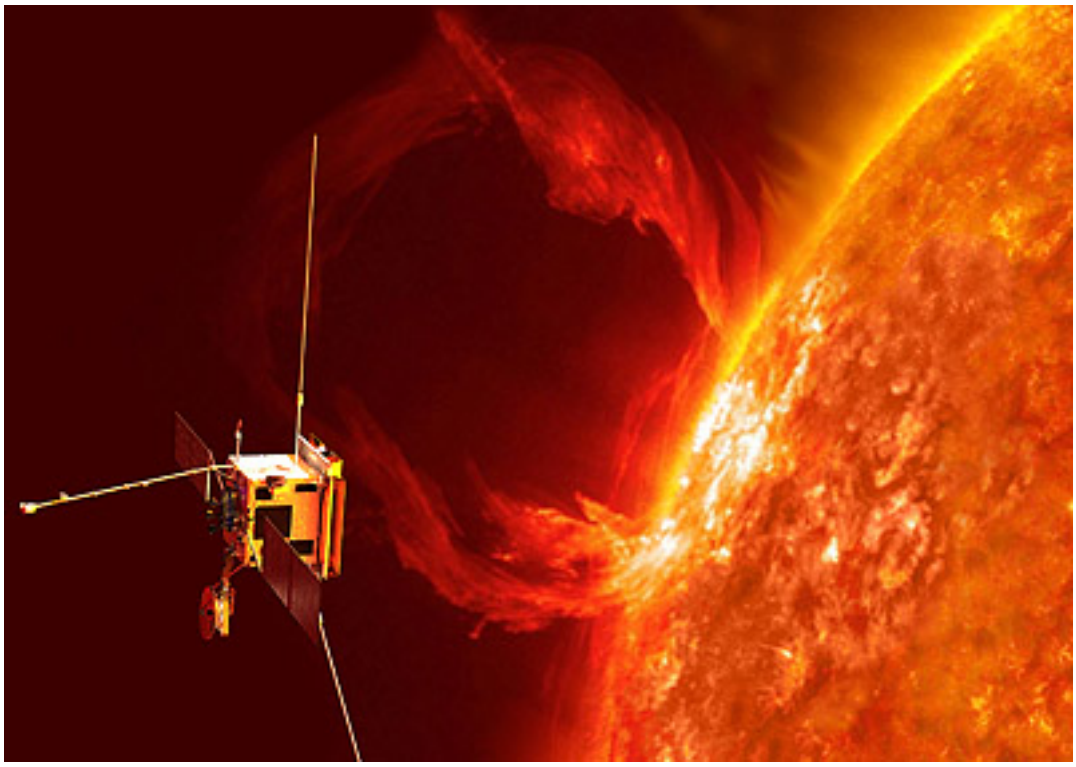
1. Solar Orbiter Workshop 5 (27 Aug 2012 - 2 Sep 2012)

From 10 till 14 September 2012, the 5th Solar Orbiter workshop will take place in Bruges, Belgium.

Solar Orbiter is a spacecraft that will travel closer to the Sun than any satellite to date. It is a partnership between ESA and NASA, with launch planned for 2017 and a nominal lifetime of 7 years.
Several countries, including Belgium, are discussing the science of this mission. The 5th in the series of international Solar Orbiter meetings is being organized by the Royal Observatory of Belgium and the Solar-Terrestrial Centre of Excellence, STCE.

Solar Orbiter is designed to make major breakthroughs in our understanding of how the Sun generates and propels the flow of particles in which the planets are bathed, known as the solar wind.
The Sun itself affects this solar wind, making it very turbulent, thus triggering spectacular auroral displays on Earth and other planets, and disrupting satellite-based communication. This is what space weather is about.

To get a close-up view of the Sun and to observe the solar wind, Solar Orbiter will fly to within 45 million kilometers of the Sun, closer than Mercury and almost 4 times as close to the Sun than the Earth. It will also image the solar poles for the first time, helping us understand how the Sun generates its magnetic field.



Belgium has the leading role in the onboard telescopes that will image the Sun in the extreme ultraviolet. Pierre Rochus from Centre Spatial de Liège is responsible for the construction of these instruments: 'We gained already a lot of expertise from the PROBA2 mission, an ESA micro-satellite. This proves to be very useful for the extreme ultraviolet imagers (EUI) onboard Solar Orbiter'.

David Berghmans and Cis Verbeeck are both working at the ROB, which will do the operations management after the Solar Orbiter launch. They are looking forward to the moment when the satellite will be flying in space: 'Solar Orbiter is the most exciting solar physics mission of our career, promising

to bring far-reaching advances in the understanding of our local star, the Sun. We can't be happier with the important investments Belgium is making in space research.'

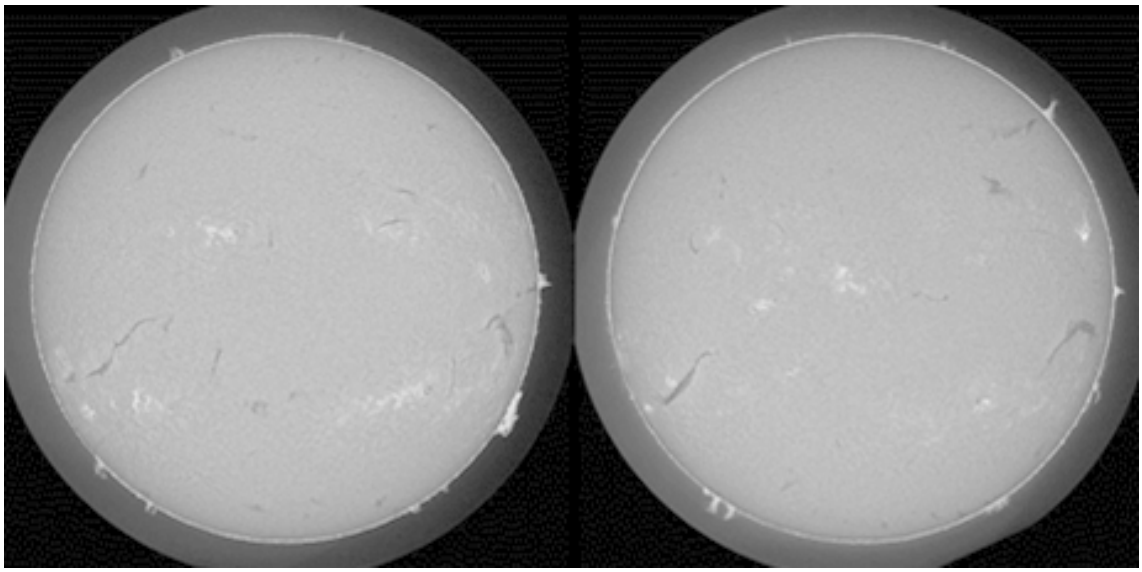
During the upcoming workshop, more than 160 scientists from 17 countries all over the world will address the science questions of this exciting and challenging mission.

Solar Orbiter homepage: http://sci.esa.int/solarorbiter
Solar Orbiter Workshop 5 page: http://www.stce.be/solarorbiter5/

2. Die-Hard 2: The explosive finale (27 Aug 2012 - 2 Sep 2012)

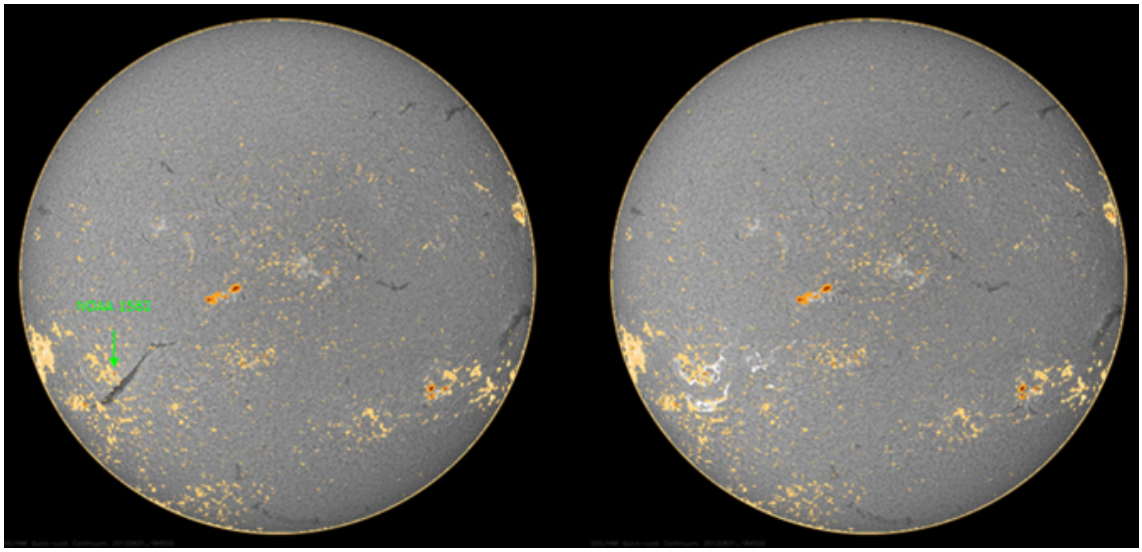
In one of the previous STCE Newsletters (http://stce.be/news/155/welcome.html), a long-living and quite dynamic solar filament was discussed.

This filament was visible on the solar disk during the first two weeks of August, losing only a small part of its structure despite various eruptions. On August 14, it started its backside transit, reappearing again from behind the southeastern solar limb two weeks later. As can be seen from the GONG-images (http://halpha.nso.edu/) taken on 4 and 31 August, the remaining part of the filament still seemed quite solid and ready for an encore performance.

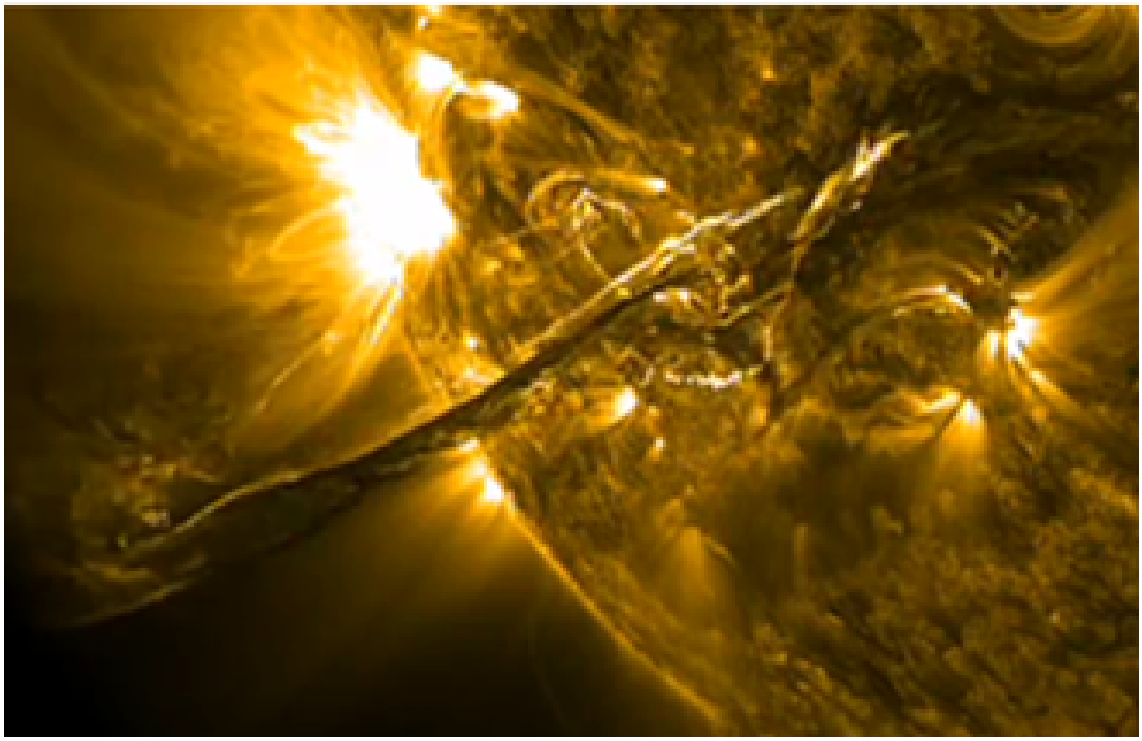


However, the magnetic fields supporting this filament were not stable anymore. Finally, during the evening hours of August 31, they forced the filament into an impressive and final eruption. A movie of this event can be seen at http://www.youtube.com/watch?v=bKz18xwPO44 It consists of 5 parts.

First comes an H-alpha clip (chromosphere) from the Big Bear Observatory (GONG - http://halpha.nso.edu/), showing that the filament eruption, which may have been caused by magnetic interaction with nearby, but small active region NOAA 1562, was followed by a relatively small flare. As one can see in the picture underneath (SDO-overlay on 2 GONG-images), this flare consisted of two rather large, bright, parallel regions along the inversion line where the filament used to be. Such a flare (a two-ribbon flare that is the result of a filament eruption outside sunspot groups) is usually called a Hyder-flare, after the scientist who first studied this kind of events.

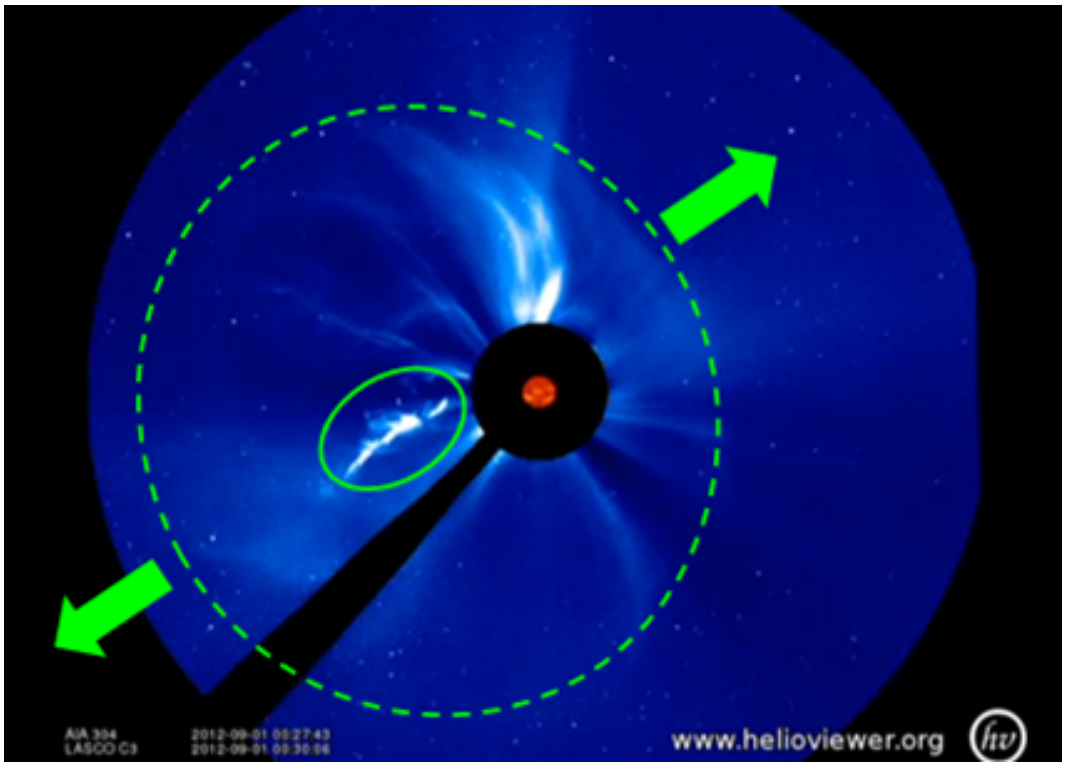


The next two parts show the eruption at increasingly hotter temperatures. SDO/AIA 304 (http://sdo.gsfc.nasa.gov/data/) images the event in the transition region in temperatures around 50.000 degrees. Note the movement of the dark "cloud" over the erupting area after the flare, which is "cold" material trapped in the magnetic cage of the solar atmosphere. PROBA2/SWAP (http://proba2.oma.be/swap/data/) shows the eruption in the hot corona (about 1 million degrees). Note the ejected material and post-flare coronal loops ("arcade").
The SDO/AIA 171 clip zooms in on the eruption and provides a detailed view of this spectacular eruption and the blast region (hot corona; around 650.000 degrees).



The final part consists of a combination of SDO/AIA 304 and SOHO/LASCO C3 (http://sohowww.nascom.nasa.gov/) imagery showing an expanding halo coronal mass ejection (dashed green

ellipse in image underneath) of which the right part is directed towards Earth. The core of the erupted filament, indicated by a solid green ellipse, was directed away.

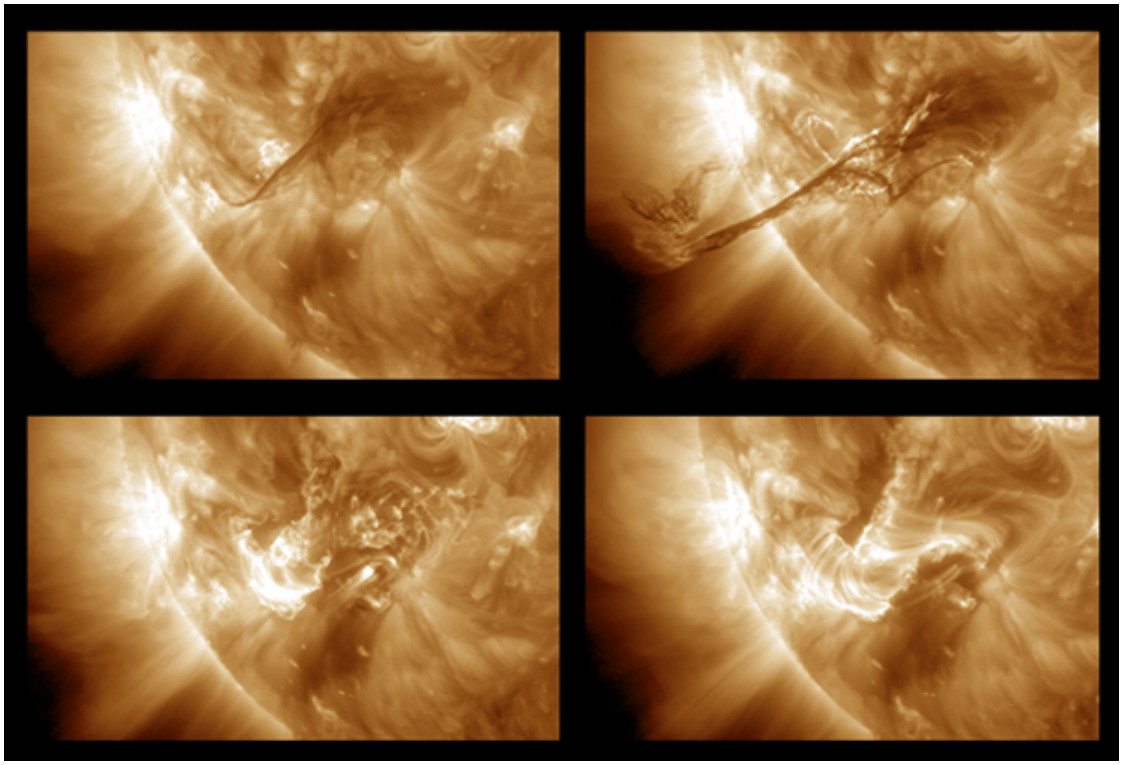


A glancing blow of this relatively slow moving particle cloud (+/- 520 km/s) struck Earth on Monday September 3, at noon, sparking a minor geomagnetic storm. Aurorae were visible in Scandinavia, Scotland, Canada and Alaska.

3. Review of solar activity (27 Aug 2012 - 2 Sep 2012)

The highlight of this week was a filament eruption on August 31. Looking at SDO/AIA 193 imagery, one can see that the filament started to rise around 19:00UT. At 20:15UT, the filament was detached. The plasma eruption was associated with a C8.4 long duration flare, starting at 19:45UT, peaking at 20:43UT and ending at 21:51UT. It was a small proton event as well. Post eruption loops appeared at the location of the filament around 20:30UT, and remained visible until September 1, 08:00UT. Particularly interesting in this event is that the flare is not directly associated with a sunspot group. The filament was situated between NOAA AR 1563 and 1562.

The window underneath is composed of SDO/AIA 193 images made at 19:05UT, 19:47UT, 20:43UT and 23:00UT, showing the various phases of the event as described above.



The NOAA active region 1563 produced the flare with the strongest X-ray radiation intensity of this week. It was a confined M1.3-flare on August 30, peaking at 12:11UT. There were no space weather consequences linked to this flare.

4. Noticeable Solar Events (27 Aug 2012 - 2 Sep 2012)

DAY	BEGIN	MAX	END	LOC	XRAY	OP	10CM	TYPE	Cat	NOAA	NOTE
30	1202	1211	1214	S27E85	M1.3		0		67	1563	

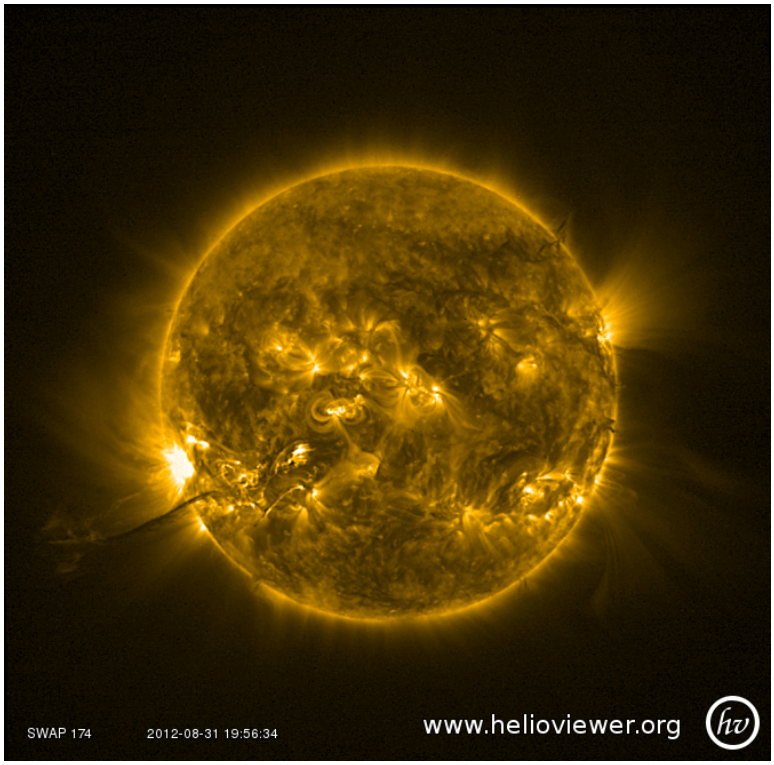
LOC: approximate heliographic location
XRAY: X-ray flare class
OP: optical flare class
10CM: peak 10 cm radio flux
TYPE: radio burst type
Cat: Catania sunspot group number
NOAA: NOAA active region number

5. PROBA2 Observations (27 Aug 2012 - 2 Sep 2012)

Solar Activity
Early this week, the Sun's activity level was *Very Low*. Solar activity started increasing to at the east limb on Tuesday, with the appearance of active regions 11563 and 11564. Many C flares of increasing level occurred (*Low*) up to the end of the week, including a single M flare on Thursday (*Moderate*). On Friday, a huge filament erupted, as the result of a C8.4 flare (see below).

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.

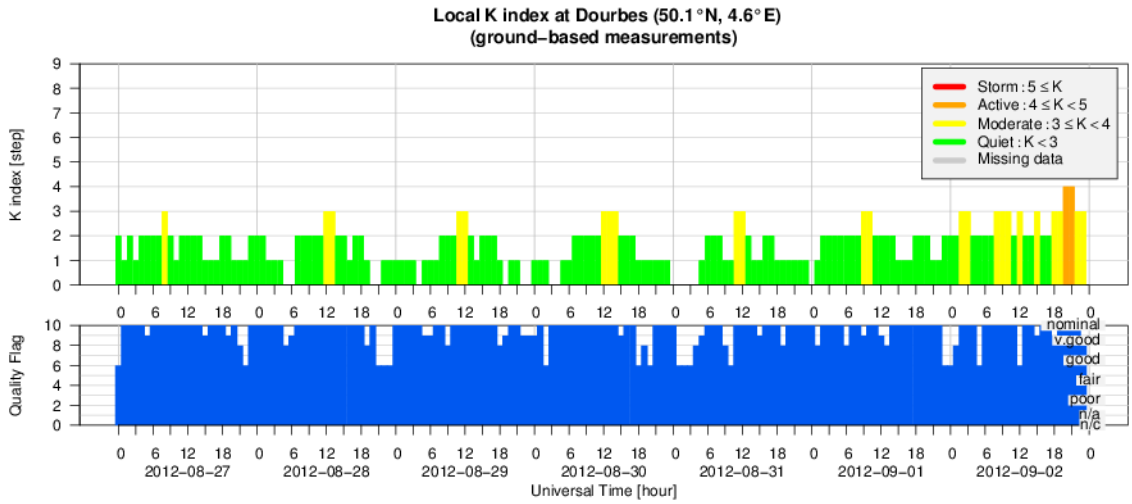
A magnificent filament eruption occurred on Friday 31st around 19:40 (see picture below; movies of the whole eruption can be found at this location: http://proba2.oma.be/swap/data/mpg/movies/campaign_movies/2012_08_31_FilamentEruption/). The erupting filament can be seen traveling in the South East direction. At the time of this image, the erupting filament is extending out of the SDO/AIA field of view.



6. Review of geomagnetic activity (27 Aug 2012 - 2 Sep 2012)

The geomagnetic conditions were very quiet until September 02. On September 01, the interplanetary magnetic field turned to southward direction and the strength increased suddenly, while the solar wind speed stayed the same. This boundary section crossing caused unsettled to active conditions on September 2.

7. Geomagnetic Observations at Dourbes (27 Aug 2012 - 2 Sep 2012)



8. New documents in the European Space Weather Portal Repository

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

Bright point study with SWAP

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=242

Time delays in quasi-periodic pulsations observed during the X2.2 solar flare on 2011 February 15

http://www.spaceweather.eu/en/repository/show?id=243

Impact of the Particle Environment on LYRA Data

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=244

Energetic particle environment as seen by SphinX

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=245

Two studies with LYRA: Ly-alpha flare observations and Long-term trend

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=246

Impact of particles on SEM and EVE data

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=247

Energetic particle environment as seen by RESIK

PROBA2 Science Days May 2012

http://www.spaceweather.eu/en/repository/show?id=248

The Venus Transit

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=249

Observing “EIT waves” with SWAP, EIS and AIA

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=250

Using Proba2 for coronal seismology

PROBA2 Science Days May 2012
http://www.spaceweather.eu/en/repository/show?id=251

ESWW9 SWWT SALE abstracts

The SALE Executive is pleased to announce that a set of high level talks on various aspects of the energetic particle radiation hazard to aviation crews and personnel aboard spacecraft in LEO will be presented at a meeting of the Spacecraft, Aircraft and Launcher Environments group during Space Weather Week in Brussels, Belgium (8 November, 2012). Abstracts of these talks are attached and EVERYONE is cordially invited to attend on this very special occasion.
http://www.spaceweather.eu/en/repository/show?id=252

9. Future Events

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

TRANSMIT Summer School 2012 in Neustrelitz, Germany

Start : 2012-09-10 - End : 2012-09-14
The Summer school is part of the training program of the Marie Curie Initial Training Network TRANSMIT, funded by the European Commission. Young scientists involved in TRANSMIT shall be trained and educated for being aware and getting basic understanding of ionospheric threats in different fields of application. Awareness and knowledge of ionospheric threats is the starting point of subsequent work to reduce or mitigate them in practical applications.
Well recognized experts in their fields will give lectures to better understand/learn about:
* Physical nature of ionospheric perturbations at all scales
* Ionospheric impact on radio wave propagation
* Detection/Monitoring of ionospheric perturbations
* Estimation the degree of ionospheric perturbation
* Mitigation techniques for avoiding threats in technical systems
It is expected that lectures and discussions at the summer school will help in particular early stage researchers to improve their scientific work.
Website:
http://www.transmit-ionosphere.net/

Fifth Solar Orbiter Workshop in Brugge, Belgium

Start : 2012-09-10 - End : 2012-09-14
We are pleased to announce that the fifth Solar Orbiter Workshop will take place in Brugge, Belgium from Monday September 10 to Thursday September 13. Friday September 14 will be dedicated to a Science Working Team (SWT) meeting. The workshop will focus on the science questions addressed by this exciting and recently approved mission, which is a partnership between ESA and NASA . The scientific synergy of Solar Orbiter with Solar Probe Plus and other missions will also be highlighted.
Website:
http://www.stce.be/solarorbiter5/

International School of Astrophysics 'F. Lucchin' in Vulcano, Sicily (Italy)

Start : 2012-09-17 - End : 2012-09-22
The School of Astrophysics 'Francesco Lucchin' is addressed to PhD students in Astronomy and Physics, as well as to interested young researchers. The school aims at providing a comprehensive background in Astronomy and Astrophysics, from both a theoretical and an observational point of view.
The main purpose of the school is to provide common cultural ground on hot topics of research, both observational and theoretical, to young astronomers. This will reveal the potential links between the various projects in which the PhD students and young researchers are involved, and encourage collaborative research for the future.
The school is open to students and young researchers of all backgrounds (experimental, observational, theoretical).
The topics of the school are:
* The Sun: a Plasma Physics Laboratory (Chair: Francesca Zuccarello)
* Formation of the solar system: clues from exploration (Chair: Priscilla Cerroni)
Website:
http://www.iasf-roma.inaf.it/IAPS/AstroSchool/

International Space Weather Initiative (ISWI) School, in Bandung, Indonesia

Start : 2012-09-17 - End : 2012-09-26
The International Space Weather Initiative (ISWI) is a program of international cooperation to advance the space weather science by a combination of instrument deployment, analysis and interpretation of space weather data from the deployed instruments in conjunction with space data, and communicate the results to the public and students. ISWI is a follow-up activity to the successful IHY 2007, but focusing exclusively on space weather . The goal of the ISWI is to develop the scientific insight necessary to understand the science, and to reconstruct and forecast near-Earth space weather . This includes instrumentation, data analysis, modeling, education, training, and public outreach. ISWI has conducted many programs not only to popularise space science all over the world but also to create favorable conditions for joint research and training in some sort of global framework. In the framework of IHY and ISWI, some research groups have been established in several countries. In order to establish the strong space research group, particularly in Asia-Oceania countries, a training to the young students and researchers is necessary. In the framework of this program, the Space Science Center of National Institute of Aeronautics and Space (LAPAN) is honored to host the 2012 ISWI and MAGDAS School in Space Science, the school to young solar physicists and geophysicists, to be held on 17-26 September 2012 in Bandung Indonesia.
Website:
http://iswimagdas2012.dirgantara-lapan.or.id/

Solar Radiation and Climate Experiment (SORCE) Science Meeting in Annapolis, Maryland (USA)

Start : 2012-09-18 - End : 2012-09-19
The 2012 Solar Radiation and Climate Experiment (SORCE) Science Meeting examines modeling efforts to understand solar spectral irradiance (SSI) variability, in terms of both its origins in the solar atmosphere and its impact on Earth's climate and atmosphere. In solar physics, advancements in radiative transfer, surface feature identification, dynamics and how observations of solar magnetic fields and irradiance all lead to an improved understanding of the mechanisms of irradiance change. Earth-atmospheric general circulation models (GCM) incorporating sophisticated codes for chemistry, radiation, dynamics, and feedback mechanisms associated with clouds, aerosols, and ocean processes are able to address the role of SSI variability in climate. In both cases, comparisons with observations lead to a deeper understanding of the dynamic solar atmosphere and our complex Earth climate system.
Website:
http://lasp.colorado.edu/sorce/news/2012ScienceMeeting/

In-situ Heliospheric Science Symposium in Maryland, MD (USA)

Start : 2012-09-18 - End : 2012-09-20
In-situ observations by spacecraft provide [note in no particular order] the ground truth for comparison and constraining models, have transformed our ideas of the heliosphere , provide a natural laboratory for plasma physics, have challenged our pre-conceived ideas, and have discovered completely unexpected phenomena. This workshop will focus on in-situ observations of the heliosphere made by the unprecedented suite of instruments currently returning observations, including the STEREO spacecraft, near-Earth spacecraft (ACE,WIND , SOHO) and the Voyager spacecraft that are probing the region approaching the heliopause. It is a follow on from the ACE/WIND /STEREO ... workshop held in Kennebunkport in June 2010. The program will include an overview of recent results from current missions, invited presentations, and splinter sessions with a heavy emphasis on discussion. These sessions will focus on the solar cycle variations, solar wind , solar energetic particles, suprathermal ions, coronal and interplanetary transients, and anomalous and galactic cosmic rays.
Website:
http://stereo.ssl.berkeley.edu/meetings/Sept.2012meeting/

International Meteor Conference in La Palma, Spain

Start : 2012-09-20 - End : 2012-09-23
Every year, the International Meteor Organization (IMO) organizes the International Meteor Conference (IMC). This conference deals with all aspects of meteor observation as well as the underlying physics and is aimed at both amateurs and professionals.
The International Meteor Organization (IMO) will hold the 31st annual International Meteor Conference (IMC) on La Palma, Canary Islands, Spain, from 20 till 23 September, 2012. The conference will be organized by the Astro Travels agency in collaboration with the Cabildo of La Palma island authority which will sponsor this event.
Website:
http://www.imo.net/imc2012/

RADECS 2012 in Biarritz, France

Start : 2012-09-24 - End : 2012-09-28
The 21st European Conference on RADIATION AND ITS EFFECTS ON COMPONENTS AND SYSTEMS will be held in Biarritz, France, on September 24-28, 2012.
The aim of RADECS conferences is to provide an annual European forum for the presentation and discussion of the latest advances in the field of radiation effects on electronic and photonic materials, devices, circuits, sensors, and systems. The scope of the conference encompasses technological processes and design techniques for producing radiation tolerant systems for space, aeronautical or terrestrial applications, as well as relevant methodologies for their characterization and qualification. The conference features a technical program, an Industrial Exhibit, and one day meeting on ground effects offered on September 24 (RADGROUND). The technical program includes oral and postersessions.
The areas of interest for contributions to be submitted to RADECS 2012 include, but are not limited to:
* Basic mechanisms of radiation effects in electronic and optical materials
* Space, atmospheric and terrestrial environments
* Radiation effects on electronic and photonic devices, circuits and systems
* Radiation effects on sensors and emerging devices
* Technology and design hardening
* Radiation hardness assurance
* Irradiation facilities and testing
Website: http://radecs2012.org

63rd International Astronautical Congress in Naples, Italy

Start : 2012-10-01 - End : 2012-10-05

At the forthcoming 63rd International Astronautical Congress in Naples a special session on the theme 'Effects of Space Weather on GEO Satellites' will be held as part of the 25th Symposium on Space Policy, Regulations and Economics.
This session will discuss case histories and mechanisms of effects of space weather on GEO satellites, models for prediction, and mitigation approaches. We would like to invite you to consider submitting abstracts for this session.
The call for papers can be found at The deadline for abstract submission is 29 February 2012.
http://www.iafastro.org/docs/2012/iac/IAC2012_CallForPapers.
Website: http://www.iac2012.org/

UN/Ecuador Workshop on the International Space Weather Initiative in Ecuador

Start : 2012-10-08 - End : 2012-10-12
Initiated in 1990, the United Nations Basic Space Science Initiative (UNBSSI) has contributed to the international and regional development of astronomy and space science through annual workshops organized under the umbrella of the United Nations, focusing specifically on the International Heliophysical Year 2007 (IHY, 2005-2009) and the International Space Weather Initiative (ISWI, 2010-2012). UNBSSI has led to the establishment of planetariums, astronomical telescope facilities, and IHY/ISWI instrument arrays worldwide, particularly in developing nations. ISWI is envisioned to continue the tradition of IHY in the worldwide deployment of space weather monitoring instrument arrays. To date, ISWI contributes to the observation of space weather through 18 instrument arrays with close to 1000 operating instruments in more than 100 nations supported by designated national ISWI coordinators.
The first workshop on ISWI was held in Helwan, Egypt and hosted by the Helwan University, Egypt, in 2010, particularly for the benefit of nations in Western Asia. In 2011 the United Nations/Nigeria Workshop on ISWI was hosted by the Centre for Basic Space Science of the University of Nigeria at Nsukka, Nigeria, particularly for the benefit of nations in Africa. The third ISWI workshop will be hosted by Ecuador in 2012 for the region of Latin America and the Caribbean.
Website:
http://iswiecuador.epn.edu.ec/

Space Weather and Challenges for Modern Society in Oslo, Norway

Start : 2012-10-22 - End : 2012-10-24
2012 - 2013 is expected to be years with high solar activity. This can trigger larger solar storms which can generate geomagnetic induced currents (GIC) on the earth. GIC can affect the normal operation of specific industrial operations and critical infrastructure (e.g power grids, telecom, navigation systems, etc).
During space weather events, like solar storms, electric currents in the magnetosphere and ionosphere experience large variations, which manifest also in the earth's magnetic field. These variations induce currents (GIC) in conductors operated on the surface of the earth. Electric transmission grids and buried pipelines are common examples of such conductor systems. GIC can cause problems, such as increased corrosion of pipeline steel and may disturb and possible damaged high-voltage power transformers and it can also have damaging effects on communication systems, navigation systems and oil and gas operations.
Vulnerable industries are the oil and gas industry, railways, telecommunication industry, navigation industry and not at least the society, which is very vulnerable concerning short or long term interruption of critical infrastructure.
The conference will focus on increasing the general knowledge of solar storms, space weather and GIC and the possible consequences for different industries and critical infrastructure, and look into reasonable means of protection, and consider possible early warning solutions.
Website:
http://www.tiems.info/about-tiems/oslo-conference-2012.html

Ninth European Space Weather Week in Brussels, Belgium

Start : 2012-11-05 - End : 2012-11-09

We are pleased to announce that the Ninth European Space Weather Week will take place at the AcadÃ©mie Royale de Belgique, Brussels, Belgium between 5 and 9 November 2012.
This meeting is being jointly organised by the Solar-Terrestrial Centre of Excellence (STCE), ESA , the SWWT and the COST ES0803 communities. The local organisation is done by the STCE. This event will continue to build on the advances made during the first eight European Space Weather Weeks held between 2004 and 2011.
Website:
http://www.sidc.be/esww9/

International Symposium on Solar-Terrestrial Physics in Pune, India

Start : 2012-11-06 - End : 2012-11-09
The International Symposium on Solar-Terrestrial Physics will be held during November 6 - 9, 2012 at the Indian Institute of Science, Education and Research, Pune, India. This meeting under the aegis of the SCOSTEP is expected to draw leading scientists from around the world in the increasingly important, interdisciplinary fields of Solar activity and its impact on geospace and life on the Earth. With major observational solar facilities being planned in India, this meeting is especially pertinent in the Indian context.
The meeting is expected to involve professional scientists as well as graduate students, and will have a mixture of invited and contributed talks and posters. There will also be a one-day tutorial for the benefit of young people beginning work in the field of solar-terrestrial physics.
Website:
http://www.iiserpune.ac.in/~isstp2012/

Eclipse on the Coral Sea: Cycle 24 Ascending in Palm Cove, Queensland (Australia)

Start : 2012-11-12 - End : 2012-11-16
As we emerge from one of the deepest and longest solar minima on record, with a new and powerful eye on the Sun -SDO- we invite all those with an interest is solar activity to gather in beautiful Palm Cove, Australia to review and assess our current knowledge and understanding of our magnetic star , and to experience the awe and wonder of a total solar eclipse on November 14, 2012.
Website:
http://moca.monash.edu/eclipse/

Total solar eclipse

Start : 2012-11-13 - End : 2012-11-13
For more information:
http://eclipse.gsfc.nasa.gov/OH/OH2012.html#SE2012Nov13T

EC Space Conference in Larnaca, Cyprus

Start : 2012-11-15 - End : 2012-11-16
The European Commission will organise the 'Let's embrace space - FP7 Space Conference 2012', in cooperation with the Cypriot EU Presidency, on 15 and 16 November 2012 in Larnaca, Cyprus.
This scientific conference will present the current status and results of the 3rd call of FP7 space research, and also discuss future options for European research in the space field. In doing so, the conference will aim at demonstrating the evolution and use of space tools for a sustainable economic and environmental development in a European and global context.
Website:
http://www.fp7-space.eu/news-119.phtm

Solar Physics with Radio Observations in Aichi, Japan

Start : 2012-11-20 - End : 2012-11-23
Nobeyama Radioheliograph (NoRH) has been observing the Sun since 1992. This year is the 20th year of science operation. Instruments are still in good shape and producing images of the Sun every day with

the same quality as the beginning. Due to the nature of the instrument and long and uniform observations, data can be used for wide variety of solar physics and also for solar terrestrial physics. To mark the 20 years of operation, we will organize a symposium to summarize what has been done with NoRH and to discuss what we should do in the future. Papers to be presented in the meeting will be mainly concerned with the results from NoRH and future plans.
Website:
http://st4a.stelab.nagoya-u.ac.jp/SPRO2012/

Tracing the Connections in Solar Eruptive Events in Petaluma, CA, USA

Start : 2012-11-30 - End : 2012-12-05
The overarching objective of the conference is to examine the connections amongst the phenomena that lead to solar eruptive events. The current state of themes includes:
* Measuring the Coronal Magnetic Field;
* Connections to, and Reactions of, the Large-Scale Corona;
* Large-scale Magnetic Connectivity of Active Regions;
* Transfer of Energy to, and Storage of Energy in, the Corona;
* The High-Energy Particle - Flare - CME connection.
Working groups will address topics such as:
* Energy Transfer throughout a Solar Eruptive Event;
* Global Energetics of an Ensemble of Events;
* Coronal Influences to the Lower Atmosphere;
* CME Initiation and Type II Bursts;
* The Release of Energetic Particles in the Low Corona;
* Flows vs. Waves;
* Microflares/Nanoflares.
Website:
http://hessi.ssl.berkeley.edu/petaluma/index.shtml

Earth-Sun System Exploration 5 in Kona, Hawai'i USA

Start : 2013-01-13 - End : 2013-01-19
Information coming soon!
Website:
http://sd-www.jhuapl.edu/Aurora/ESSE/index.html

2013 LWS Solar Dynamics Observatory Science Workshop in Cambridge, MD (USA)

Start : 2013-03-03 - End : 2013-03-08
Living With a Star 's Solar Dynamics Observatory invites you to its 2013 Science Workshop to be held March 3-8, 2013 at the Hyatt Regency Chesapeake Bay in Cambridge, MD (http://chesapeakebay.hyatt.com/). The workshop is a follow-on to the 'Many Spectra of Solar Activity' workshop held May 1-5, 2011 in Squaw Valley, CA.
Scientific sessions will feature a broad spectrum of science topics fundamental to SDO's science investigations: Atmospheric Imaging Assembly (AIA), EUV Variability Experiment (EVE), and Helioseismic and Magnetic Imager (HMI), as well as the overlap between SDO and other scientific missions and activities.
Website:
http://lws-sdo-workshops.org/

Chapman Conference on Fundamental Properties and Processes of Magnetotails in Reykjavik, Iceland

Start : 2013-03-10 - End : 2013-03-15
Spacecraft observations have established that all magnetized planets in our solar system interact strongly with the solar wind and possess well-developed magnetotails. Magnetotails are the site for many

dynamic processes critical to the circulation of mass, energy and magnetic flux. The great differences in solar wind conditions, planetary rotation rates, ionospheric conductivity, and physical dimensions from Mercury's small magnetosphere to the giant magnetospheres of Jupiter and Saturn provide an outstanding opportunity to extend our understanding of the influence of these factors. Therefore, this Chapman conference will provide a forum in which various communities can come together and discuss recent achievements of observational, theoretical, and modeling studies with the objective to develop a deeper understanding of fundamental properties and processes of planetary magnetotails through a comparative examination.

Annular solar eclipse

Start : 2013-05-10 - End : 2013-05-10
For more information:
http://eclipse.gsfc.nasa.gov/SEplot/SEplot2001/SE2013May10A.GIF

IAU Symposium: Nature of prominences and their role in space weather in Paris, France

Start : 2013-06-10 - End : 2013-06-16
Topics:
* Prominences : formation, dynamics
* Prominence plasma properties, including prominence seismology
* Magnetic field : measurements, topology, support
* Large-scale patterns and cyclic evolution
* Prominence destabilization, CMEs, reconstruction in 3D
* ICMEs in the heliosphere, magnetic clouds; their impact on the Earth environment
* Stellar quiescent and eruptive prominences and stellar CME
* Requirements for future instrumentation and prospects for future missions
Website:
http://www.iau.org/science/meetings/future/symposia/1065/

CESRA Workshop 2013: New eyes looking at solar activity: Challenges for theory and simulations in Prague, Czech Republic.

Start : 2013-06-24 - End : 2013-06-29
Solar cycle 24 has opened a new era in solar radio physics as we now have instruments that can probe solar processes from sub-millimeter to kilometer waves. ALMA and LOFAR are entering full-operation state and observations of the Sun will be made in the near future.
At the same time extensive use is being made of radio spectrometers in space, STEREO /WAVES and Wind -WAVES, and existing and upgraded ground-based instruments like Nobeyama Radioheliograph, Nancay Radioheliograph, Ratan, SSRT, and many others. These instruments provide data that enable studies of both energetic particles and thermal plasma , enhancing our knowledge of solar eruptions and acceleration and propagation of particles, all through the solar chromosphere and corona and into interplanetary space.
The CESRA 2013 Workshop will highlight these new observational capabilities and discuss the theoretical issues connected to solar radio emission and interplanetary radio physics.
Website:
http://wave.asu.cas.cz/cesra2013/

2013 Meeting of the Solar Physics Division of the AAS

Start : 2013-07-08 - End : 2013-07-11
The 2013 meeting of the AAS/SPD will be July 8-11 (and possibly July 12), hosted by the Solar Physics Group of Montana State University, in Bozeman, Montana.
Website:
http://solar.physics.montana.edu/SPD/

Hybrid solar eclipse

Start : 2013-11-03 - End : 2013-11-03
For more information:
http://eclipse.gsfc.nasa.gov/SEplot/SEplot2001/SE2013Nov03H.GIF