STCE Newsletter

13 Aug 2012 - 19 Aug 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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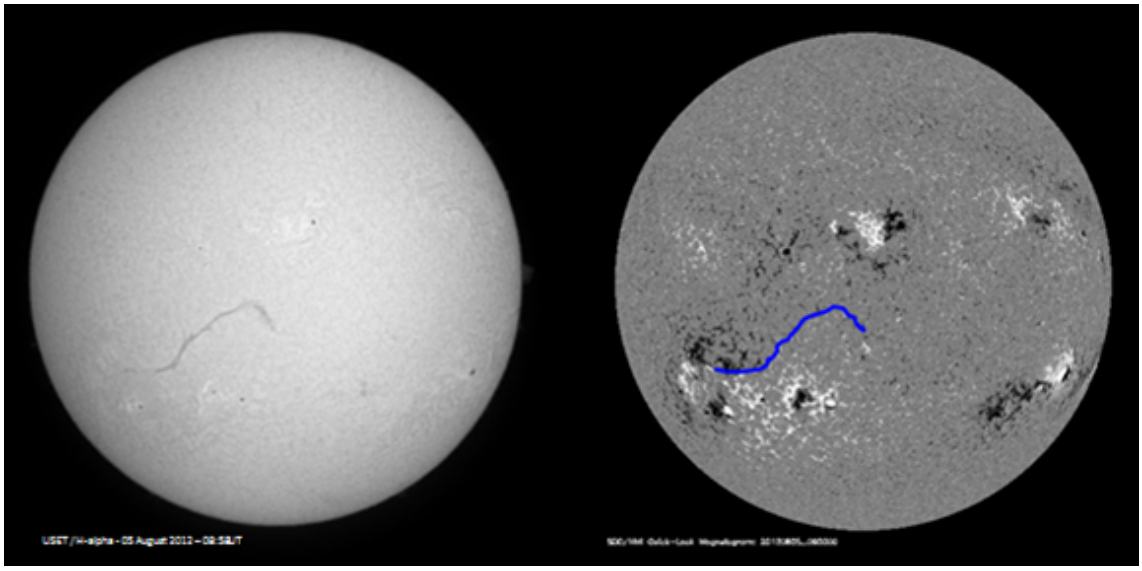
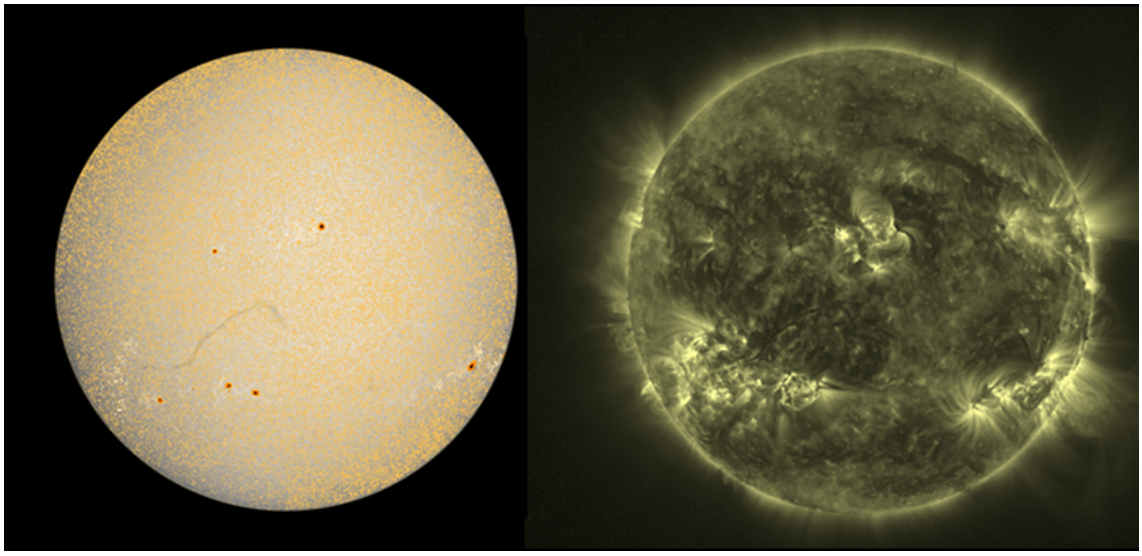
1. A die-hard solar filament (13 Aug 2012 - 19 Aug 2012)

Solar filaments are clouds of ionized gas above the solar surface squeezed between magnetic regions of opposite polarity. Being cooler and denser than the plasma underneath and their surroundings, they appear as dark lines when seen on the solar disk using special filters. The image below shows such a filament (USET/H-alpha, left - http://sidc.be/uset/): the cloud blocks the solar H-alpha radiation leaving a shadow-view of the filament. Its silhouette was added in blue to the magnetogram on the right, clearly marking the borderline between negative (black) and positive (white) magnetic polarities (SDO/HMI, right - http://sdo.gsfc.nasa.gov/).

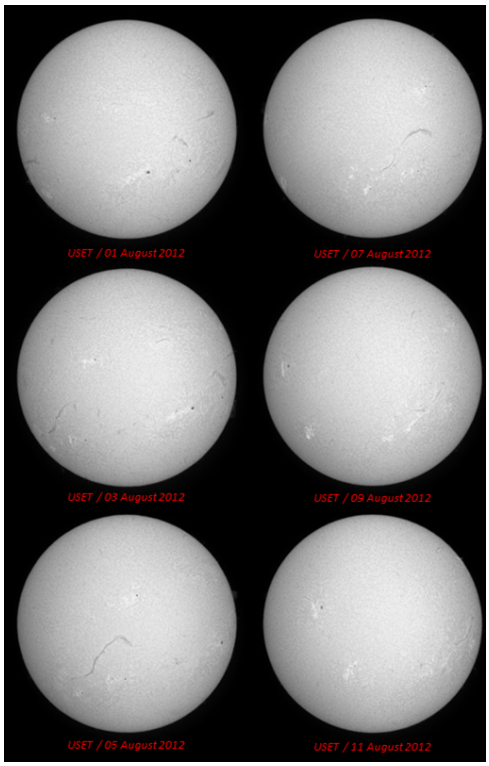


Space weather forecasters keep an eye on these filaments. Indeed, as the magnetic regions suspending the filament may become unstable, the filament can erupt and throw a cloud of ionized particles towards the Earth where it can cause geomagnetic disturbances. These eruptions are more likely to occur as the filament grows longer, typically around 200.000 km. Such long filaments usually develop outside sunspot groups.

So, when early August a long filament appeared from behind the Sun's southeastern solar limb, it immediately grabbed the attention of the solar observers. The figure underneath shows the Sun on 5 August 2012 at 09:00UT. On the left is a H-alpha view through the USET-telescope, overlaid with a transparent SDO/HMI image (photosphere) showing the location of the filament outside the sunspot regions. The image on the right is made by PROBA2 (http://proba2.oma.be/) and shows the same filament as a thin, dark line snaking its way through the much hotter corona.

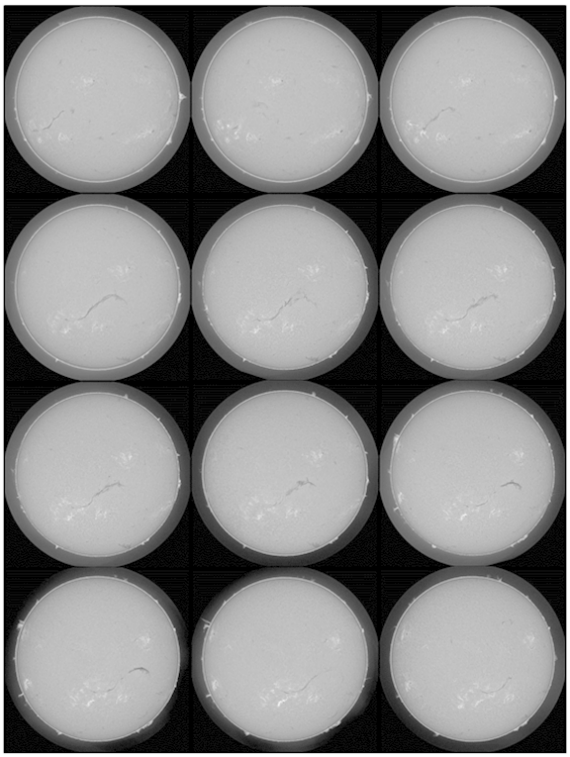


At first sight, this filament seems to have been quite stable during its transit. The mosaic underneath was assembled from images made by the USET/H-alpha telescope (http://www.sidc.oma.be/uset/index.php) and shows the evolution of the filament during its 2 weeks visibility. Maximum length was reached on August 6 and 7, and was around 700.000 km. That's nearly long enough to fit in the entire orbit of the Moon around the Earth!



As expected, the filament erupted… a couple of times! Indeed, as amazing as the filament eruptions were, it was even more amazing that the filament was able to rise from its ashes again and again – it simply refused to die! The images below show the major eruptions: August 4 around noon, August 6 in the afternoon, same day during the evening, and finally during the early morning hours of August 8. For

each event, there is an image before the eruption, one showing how much of the filament disappeared, and a final image showing how well the filament restored itself.



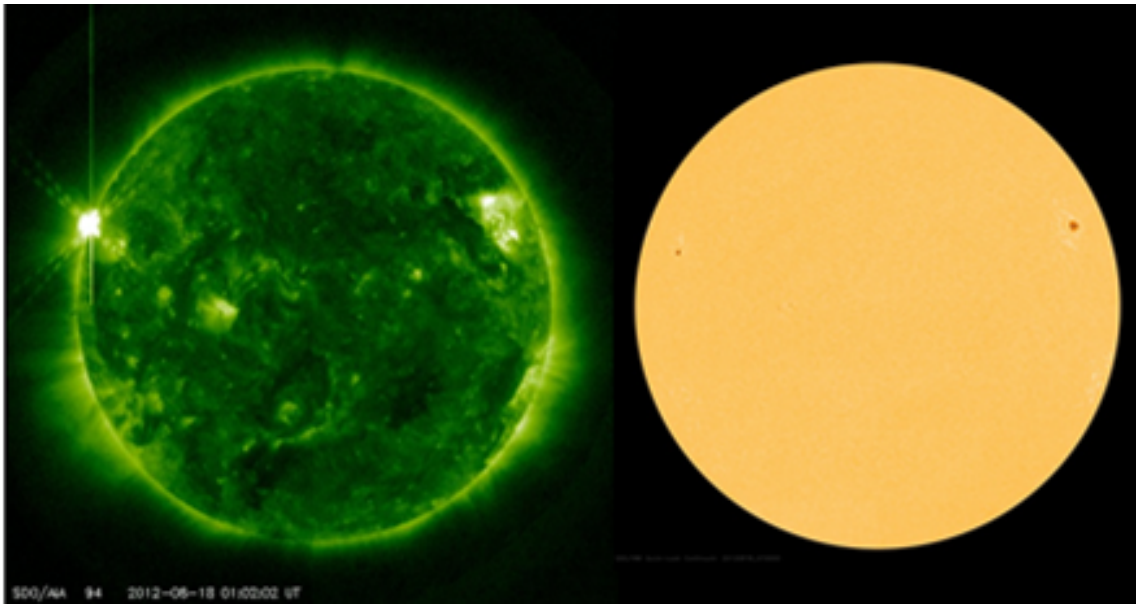
Most impressive was the first eruption on August 4 during which almost the entire filament disappeared. The eruption was probably initiated by a small C3-flare in an active region at the bottom left of the filament. It ejected a cloud of charged particles towards Earth which caused active geomagnetic conditions on August 7-8. Only a few hours later, the filament was already completely restored. This PROBA2-movie shows all the phases of this highly dynamical event (between 11:00 and 18:00UT - http://proba2.oma.be/swap/movies/20120804_swap_movie.mp4).

During the afternoon of August 6, first the northern half erupted, restoring itself in the next few hours. Later that day, it was followed by the eruption of the southern part of the filament, which would also restore itself but needing a lot more time to do so. Then, on August 8, the northern part was permanently ejected. All three events were accompanied by weak and slow-moving coronal mass ejections that did not trigger geomagnetic disturbances.

The remaining half of the filament started its 2 weeks solar backside transit on August 14, leaving solar observers wondering if they have to prepare themselves for a sequel to this die-hard solar filament. Coming soon to a telescope near you!

2. Review of solar activity (13 Aug 2012 - 19 Aug 2012)

Solar activity was moderate for most of the week with only C-class flares from August 13 till August 17, taking place in active regions NOAA 1542 and 1543. From August 17 till August 19, 7 M-flares (medium class) occurred as active region NOAA 1548 began its transit on the East limb. The strongest event was a M5.5 flare, which happened on August 18, 01:02 UT (peak time). Underneath images made by the Solar Dynamics Observatory (SDO - http://sdo.gsfc.nasa.gov/) clearly show that this flare took place while the sunspot region NOAA 1548 was still behind the Sun's limb.



3. Noticeable Solar Events (13 Aug 2012 - 19 Aug 2012)

DAY	BEGIN	MAX	END	LOC	XRAY	OP	10CM	TYPE	Cat	NOAA	NOTE
17	1312	1319	1323		M2.4		59	III/2		1548	partially occulted flare
17	1708	1720	1727		M1.0		140	III/2		1548	partially occulted flare
18	0024	0102	0107	N19E86	M5.5	SF	150			1548	
18	0317	0323	0330	N19E86	M1.8	SN	100			1548	
18	1602	1607	1609	N19E80	M2.0	1N	56	III/2		1548	
18	2246	2254	2300	N19E78	M1.0	SF	0	III/1		1548	
18	2315	2322	2332	N21E76	M1.3	SN	0	VI/1		1548	

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

4. PROBA2 Observations (13 Aug 2012 - 19 Aug 2012)

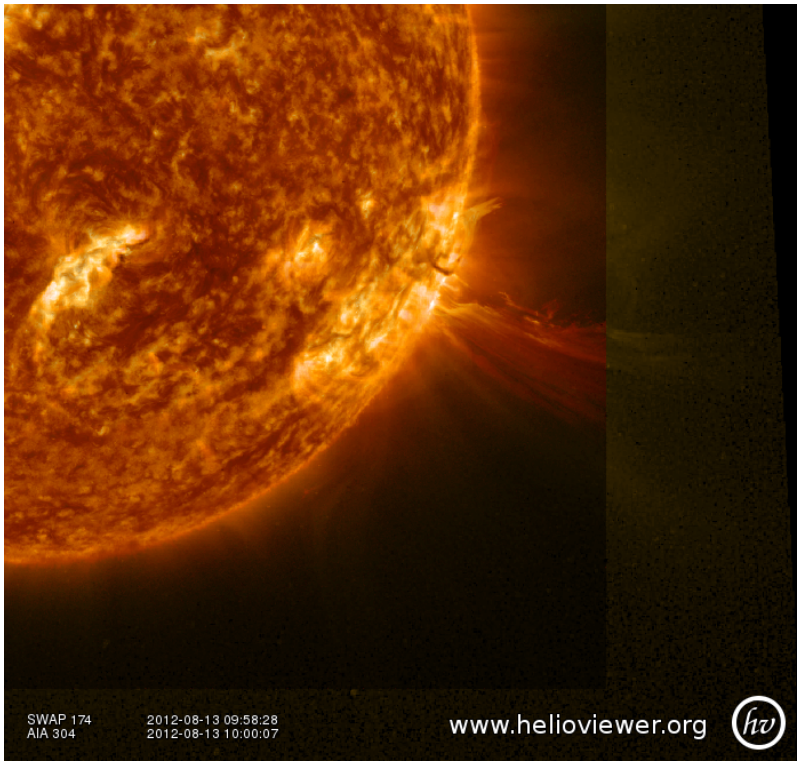
Solar Activity
Early this week, the Sun's activity level was *Low*, until AR 11548 was closing in from behind the east limb. *Moderate* activity was generated by this AR with several M flares on Friday and Saturday (see table above). On Sunday, when the AR had rounded the limb, the activity went back to *Low*.

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.

Most of the M flares were occurring behind the east limb on Friday and Saturday and so there was only limited viewing available.

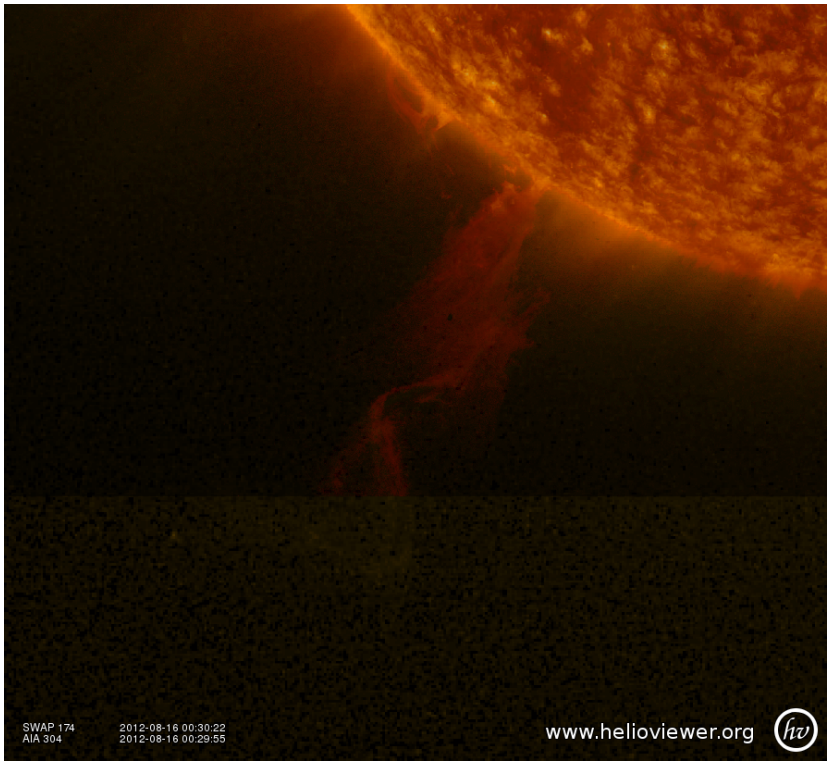
However, another couple of interesting phenomena occurred on Monday 13th as well as around midnight on the 15th and 16th.

Monday 13/08



For a movie of the Monday 13 expulsion, see http://proba2.oma.be/swap/data/mpg/movies/campaign_movies/2012_08_13_08_32_31_2012_08_13_11_31_55_SWAP_174__AIA_304-hq.mp4. The movie was generated with HelioViewer, using (colored) SWAP and AIA 304 images.

Wed/Thu 15-16/08

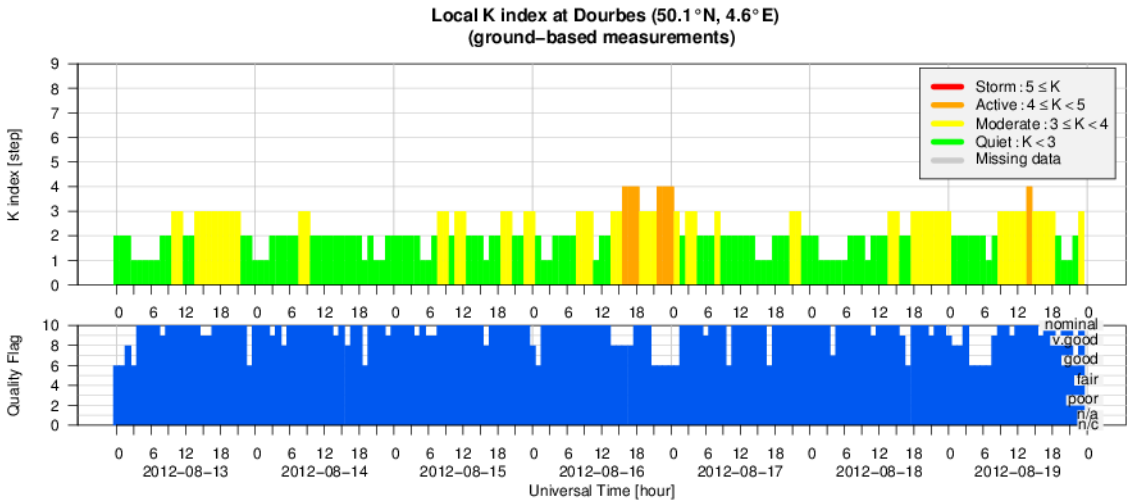


The movie can be found at http://proba2.oma.be/swap/data/mpg/movies/campaign_movies/2012_08_15_22_30_31_2012_08_16_01_29_55_SWAP_174__AIA_304-hq.mp4. It was generated with HelioViewer, using (colored) SWAP and AIA 304 images.

5. Review of geomagnetic activity (13 Aug 2012 - 19 Aug 2012)

Geomagnetic activity was very low during the week. Unsettled to active conditions (K=3 to 4) were observed locally in Dourbes on August 19 when the Earth entered a fast solar wind stream linked to a coronal hole. A shock signature was observed by ACE on that day around 08:00 UT.

6. Geomagnetic Observations at Dourbes (13 Aug 2012 - 19 Aug 2012)



7. New documents in the European Space Weather Portal Repository

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

In-flight evolution of EIT

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=223

Degradation of the PREMOS instrument onboard PICARD

Workshop On-orbit degradation of solar and space weather Instruments - Lessons learned
http://www.spaceweather.eu/en/repository/show?id=224

Degradation of LYRA on PROBA2 after two years in orbit

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=225

The calibration of SOHO CDS

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=226

Long-Term Stability of the Photometric Calibration of the STEREO HI-1 Heliospheric Imagers

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=227

Introduction to the Extreme Ultraviolet Imager (EUI) telescopes onboard Solar Orbiter

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=228

Measured degradation in solar EUV spectrometers SOHO-CELIAS-SEM and SDO-EVE

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=229

Ageing of the PICARD payload thermal control Impact on SODISM measurements

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=230

DIARAD/VIRGO ageing correction on SOHO

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=231

Introduction to the space radiation environment and the EPT instrument

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=232

Cleanliness and Calibration Stability of UV instruments

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=233

SWAP at 2.5 years: a performance analysis

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=234

ESIO : an introduction

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=235

SOLSPEC measurement of the solar absolute spectral irradiance from 165 to 2900 nm onboard the ISS

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=236

Degradation of the Hinode EIS detectors after 5 years in orbit

Workshop On-orbit degradation of solar and space weather Instruments – Lesson learned
http://www.spaceweather.eu/en/repository/show?id=237

eHEROES - De Zon en het weer in de ruimte

A presentation given at the KULeuven (120 participants) and Kortrijk (80 participants) in the frame of the project Jr College. The presentation introduces the Sun and Space Weather.
http://www.spaceweather.eu/en/repository/show?id=238

eHEROES - PROBA2

A presentation given at the KULeuven (120 participants), Kortrijk (80 participants) in the frame of the project Jr College and Hoogstraten in the frame of PROBA@school. The presentation introduced the development, launch and exploitation of PROBA2 and PROBA2 as a satellite to monitor space weather.
http://www.spaceweather.eu/en/repository/show?id=239

eHEROES - Zonnewind: plasmawolken en coronale gaten

A workshop given in Hoogstraten, Belgium in the frame of the project PROBA2@school. Students of the last year of highschool were instructed to calculate the arrival time at Earth of the wind emanating from a coronal hole and the speed of a CME based on coronographic images of STEREO A and B.
http://www.spaceweather.eu/en/repository/show?id=240

eHEROES - De Zon en PROBA2

A presentation given for Urania, amateur astronomers (150 participants,Antwerpen) and for habitants of service flats (40 participants, Leuven), Belgium. The Sun as a dynamic star causing space weather was introduced. The facts of PROBA2 and its journey from launch to operations were presented.
http://www.spaceweather.eu/en/repository/show?id=241

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

8. Future Events

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

SOLSPANET-1: First Solar and Space Weather Network of Excellence summer school and workshop in Tbilisi (Georgia)

Start : 2012-08-27 - End : 2012-09-21
The Solar and Space Weather Network of excellence will hold its first Summer School and Workshop in Tbilisi Georgia. The meeting will focus on the first results achieved within the network and is also open to the wider international scientific community involved in solar and space weather modeling, monitoring and forecasting activities.
The Summer school will be open to all early-stage researchers from the SOLSPANET member groups as well as to other young scientists from institutes active in solar and space weather studies.
The week of September 17-21 will be dedicated to the International SOLSPANET-1 workshop. The workshop is also devoted to the memory of the great Georgian scientists, professors Rolan Kiladze and Avtandil Pataraya.
Scientific topics will include:
* Monitoring of precursors for solar flares and CMEs- solar weather
* MHD waves in non-equilibrium medium
* Numerical and observational studies of CMEs
* CME manifestation in the decametre wavelength band
* Impact of space weather on terrestrial life and technological systems
* Advanced computational tools and knowledge base for better solar and spaceweather forecasting
Website:
http://www.solspanet.eu/solspanet

International School of Space Science on "Astrophysical and Space Plasmas" in L'Aquila, Italy

Start : 2012-09-02 - End : 2012-09-08
The International School of Space Science of the Consorzio Interuniversitario per la Fisica Spaziale organizes a Course on "Astrophysical and Space Plasmas", to be held in L'Aquila, Italy, September 02-08, 2012, and directed by A. Ferrari, M. Tavani, B. Coppi and R. Rosner.
The aim of the Course is to present a comprehensive discussion of the plasma processes relevant to the astrophsyical context, from low energy phenomena in planetary systems to the very high energy objects recently discovered through X and gamma ray observatories.
Introductory lectures will be dedicated to an analysis of observations available from ground and space observatories enlightening the thermal and non-thermal plasma processes necessary for their interpretation. At the same time the theoretical tools, analytical and numerical, necessary for their interpretation will be presented from an institutional point of view. Finally current models of the astrophysical objects and phenomena will be discussed with particular attention to the critical points with the objective of selecting new research lines.
Website:
http://www.cifs-isss.org/

Heliophysics Integrated Observatory Coordinated Data Analysis Workshop in Dublin, Ireland

Start : 2012-09-04 - End : 2012-09-07
The Fourth HELIO Coordinated Data Analysis Workshop (CDAW) will be held during September 2012 in the School of Physics of Trinity College Dublin.
The purpose of this CDAW is to provide an opportunity for the heliophysics community to learn about the capabilities of HELIO and discover how they can be used to address science use cases. Feedback from the CDAWs also help us determine how the HELIO infrastructure should be extended.

The goal of the workshop is to exercise the HELIO infrastructure based on a selection of use cases and verify of the functionality of the services and their level of integration.
The general objective is to exercise the infrastructure by studying use cases that require observations made at multiple points in the Solar System, as e.g. propagation studies of CMEs and SEPs from their solar source toward 1 AU and beyond.
One specific objective is to examine how well the propagation tools that we are developing actually help determine the timing of the required remote sensing and in-situ observations. This will help us identify what improvements and developments are required for this capability.
Website:
http://helio-vo.eu/helio-cdaw/HELIO_CDAW-4.html

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/

Hybrid solar eclipse

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