STCE Newsletter

13 May 2013 - 19 May 2013

Published by the STCE - this issue : 24 May 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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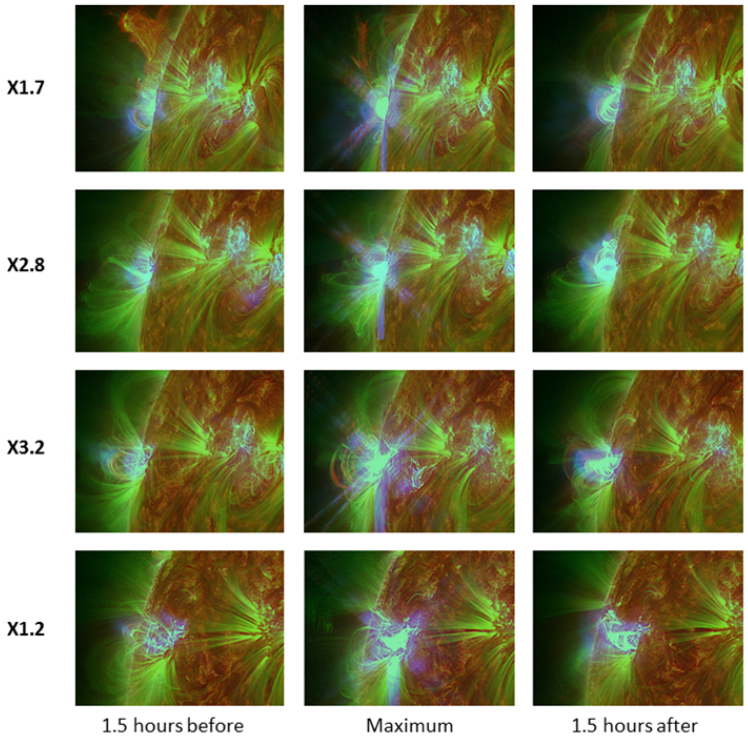
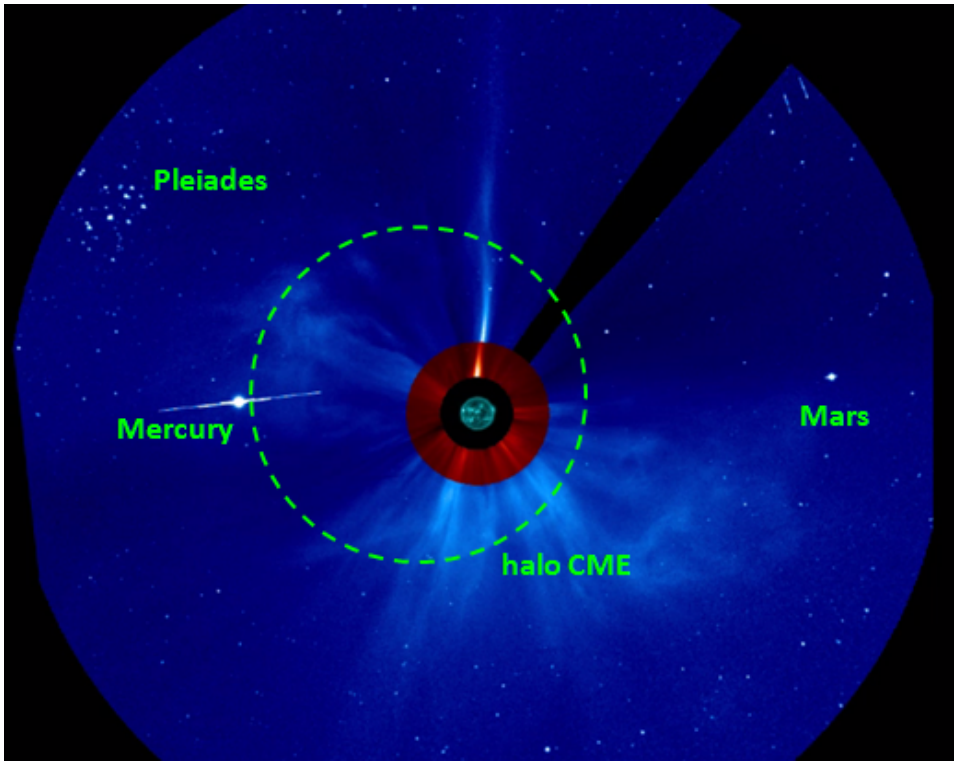
1. The Sun has a blast... or four! (13 May 2013 - 19 May 2013)

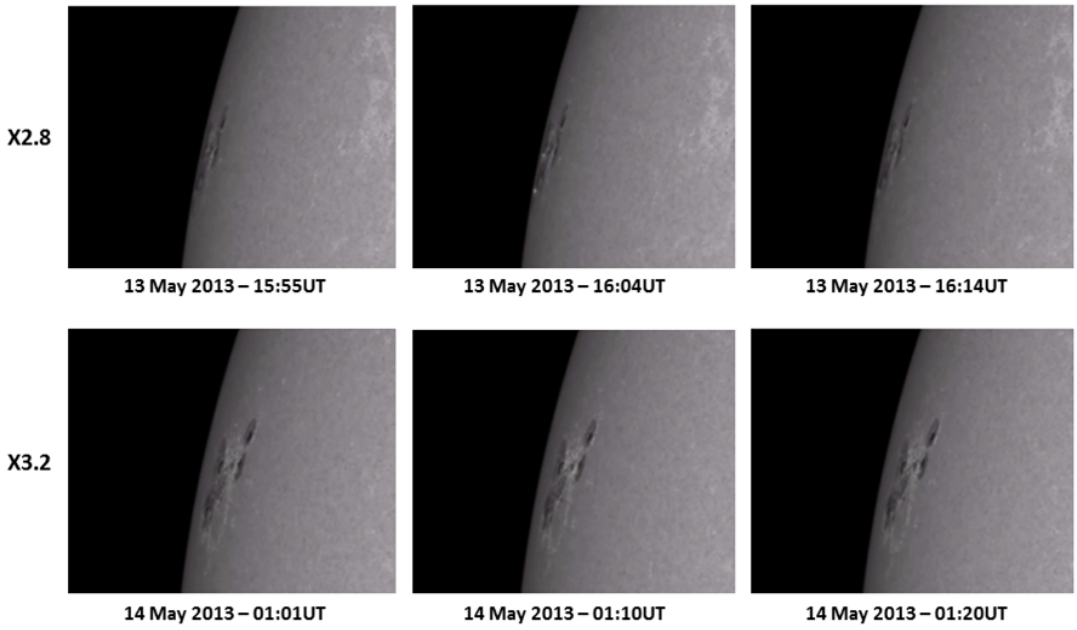
Early last week, the Sun produced 4 X-class solar flares in rapid succession. They all originated from NOAA 1748, a magnetically complex region located near the east solar limb. In summary, there was an X1.7 flare on 13 May peaking at 02:17UT, an X2.8 the same day at 16:05UT, an X3.2 early on 14 May at 01:11UT, and the final X1.2 on 15 May at 01:48UT. The SDO images underneath show for each flare the outlook of the region 1.5 hours before the maximum, the maximum itself, and 1.5 hours after the x-ray peak (resp. left, middle and right frame).
The eruptions were extensively covered in a special STCE news item at http://www.stce.be/news/195/welcome.html Related movies can be found at http://www.youtube.com/watch?v=plByWC40xsU and http://www.youtube.com/watch?v=bbyduDLyPdk



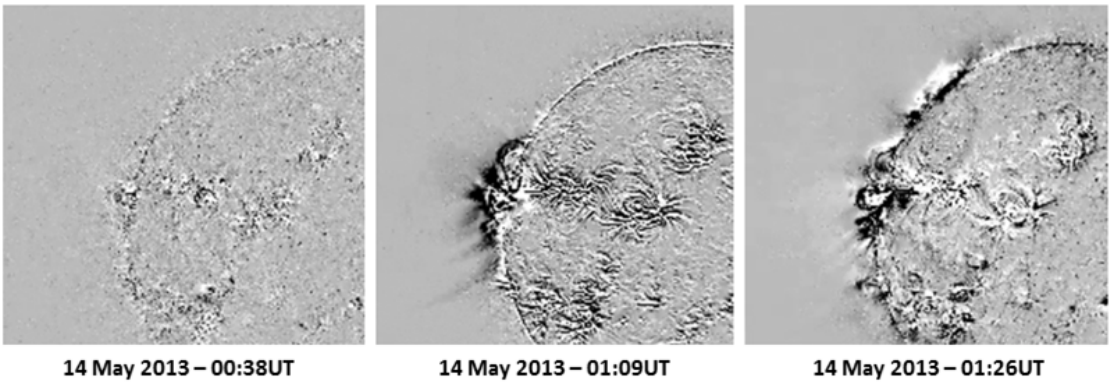
All eruptions were accompanied by coronal mass ejections (CMEs), which were quite fast (1000-1600 km/s). However, only for the CME associated with the last X-class flare, NOAA 1748 had already rotated far enough onto the solar disk to get this halo CME also to be geo-effective. Eventually, the particle cloud delivered a glancing blow to the Earth early on 18 May, causing a minor geomagnetic storm. The CME can be seen in this annotated combo image from SOHO and SDO.



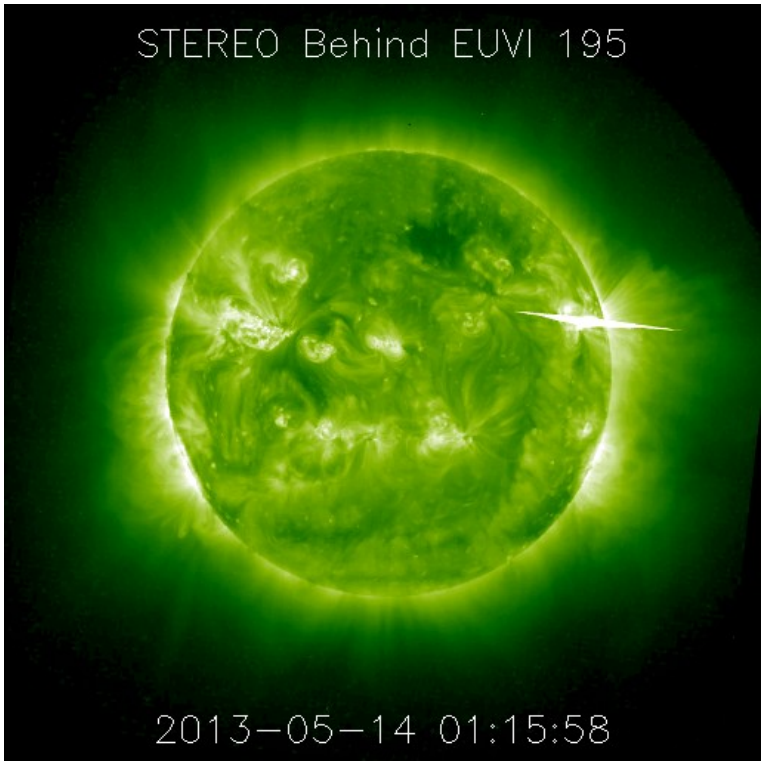
The X2.8 and X3.2 flares were actually white light flares (WLFs), as seen by SDO/HMI instrument. The Helioseismic and Magnetic Imager (http://hmi.stanford.edu/) observes the Sun at 617.3nm, which is in the orange part of the visual spectrum. HMI-imagery shows some brightening in both flares for a few minutes around maximum x-ray flux. For the X2.8 flare, it consists of 2 bright points in the trailing portion of the NOAA 1748. For the X3.2 flare, some diffuse patches can be seen near the leading sunspots. WLFs are very rare events, only associated to very energetic flares. Satellites such as SDO have a better view than ground-based observatories and have increased the number of WLFs and even extended to less energetic events over the last decade.



The first three X-class events were also associated with EIT-waves. These are shock waves, emanating from the blast site, and traveling through the corona with speeds of a few hundred km/s. In particular the second and third eruption showed obvious EIT-waves, and the disturbances could clearly be seen racing over the east solar limb, as pictured in the difference-images underneath made by the PROBA2/ SWAP instrument.



As seen from Earth, NOAA 1748 was rounding the east solar limb and getting better into view for ground- and space-based solar observatories. For STEREO-B, it was the other way around: it had the best views on the first X-class flares, with the last occurring just near the west solar limb. It thus provided a great view on e.g. the first X-class flare and its effects on its surroundings. Image underneath shows the X3.2 flare as seen by STEREO-B.



With its 4 X-flares, NOAA 1748 single-handedly increased the number of X-class flares so far in the current solar cycle (SC) with more than 25%! It also put 2 of these in the current SC24 Top 5 of strongest events. Some details on the eruptions and their geomagnetic influence can be found in table underneath. It is noteworthy that only 4 events resulted from the southern solar hemisphere.

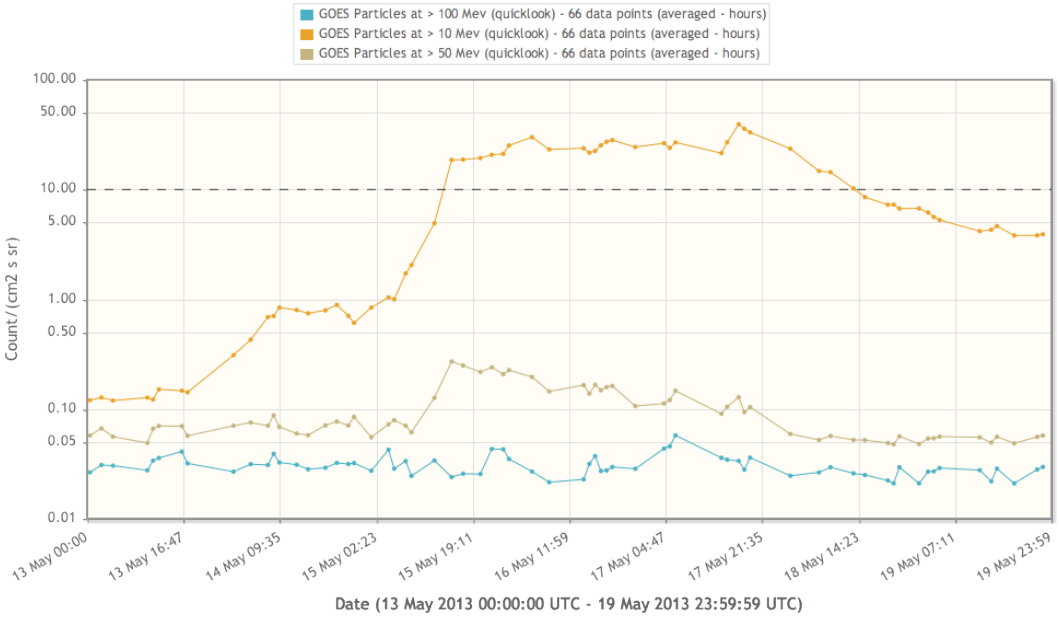
Number	Year	Month	Day	NOAA	Hem	Class	Proton	Kp
1	2011	8	9	11263	N	X 6.9	26	No
2	2012	3	7	11429	N	X 5.4	6530	7
3	*2013*	*5*	*14*	*11748*	*N*	*X3.2*	*41*	*No*
4	*2013*	*5*	*13*	*11748*	*N*	*X2.8*	*Enhanced*	*No*
5	2011	2	15	11158	S	X 2.2	Enhanced	5
6	2011	9	6	11283	N	X 2.1	Enhanced	7
7	2011	9	24	11302	N	X 1.9	In progress	8*
8	2011	11	3	11339	N	X 1.9	Enhanced	No
9	2011	9	7	11283	N	X 1.8	No	7
10	2012	10	23	11598	S	X 1.8	No	No
11	2012	1	27	11402	N	X 1.7	796	3
12	*2013*	*5*	*13*	*11748*	*N*	*X1.7*	*No*	*No*
13	2011	3	9	11166	N	X 1.5	In progress	No
14	2012	7	12	11520	S	X 1.4	96	7
15	2011	9	22	11302	N	X 1.4	35	No
16	2012	3	7	11430	N	X 1.3	In progress	7*
17	*2013*	*5*	*15*	*11748*	*N*	*X1.2*	*In progress*	*5*
18	2012	7	6	11515	S	X 1.1	25	5*
19	2012	3	5	11429	N	X 1.1	Enhanced	6

A view on the CMEs, the WLFs, the EIT waves, as well as imagery by STEREO-B can be found in this movie at http://www.youtube.com/watch?v=ZFl5s57mGu4

Credits - Imagery for these movies was taken from SOHO (http://sohowww.nascom.nasa.gov/), SDO (http://sdo.gsfc.nasa.gov/data/), PROBA2 (http://proba2.oma.be/ssa) and STEREO-B (http://stereo.gsfc.nasa.gov/).

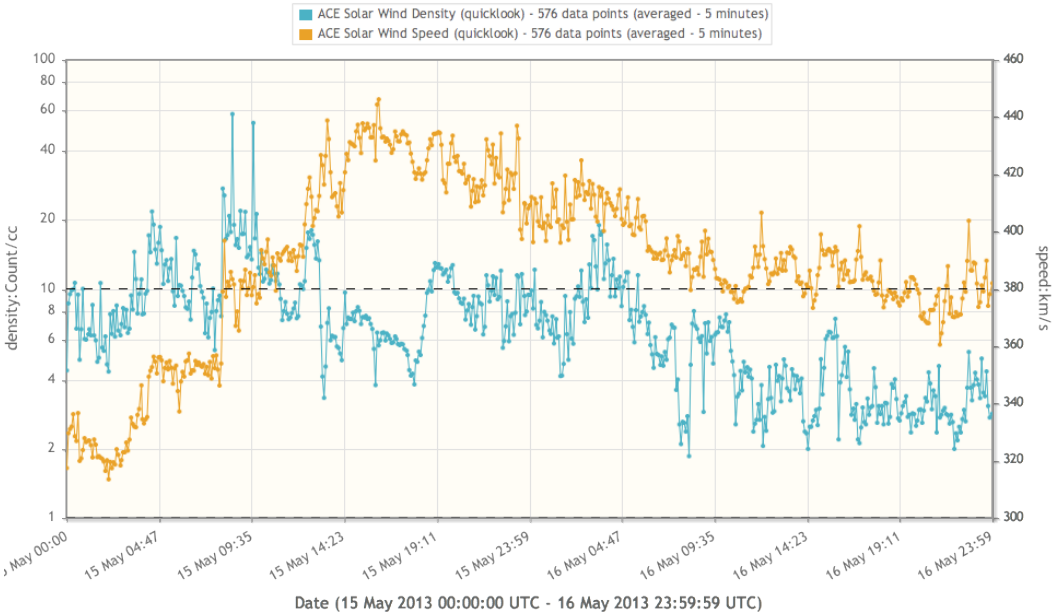
2. Review of solar activity (13 May 2013 - 19 May 2013)

Solar activity was dominated by NOAA AR 1748 (with beta-gamma-delta configuration most of the week), that produced several M-class flares and four X-class flares. The first one occurred while the AR was still behind the east limb on May 13 at 02:17 UT. The next one was an X2.8 with peak at 16:05 UT on May 13. The third one an X3.2 at 01:11 UT on May 14. Finally, the fourth X-class flare occurred on May 15, it was an X1.2 solar flare peaking at 01:48 UT. All four flares were associated with radio bursts and fast limb CMEs. The proton flux threshold of 10 protons/cm2-s-sr was crossed on May 15, and stayed slightly above it for 4 days. On May 17, a CME erupted in relation with an M3.2 flare from NOAA AR 1748, at 08:57 UT.

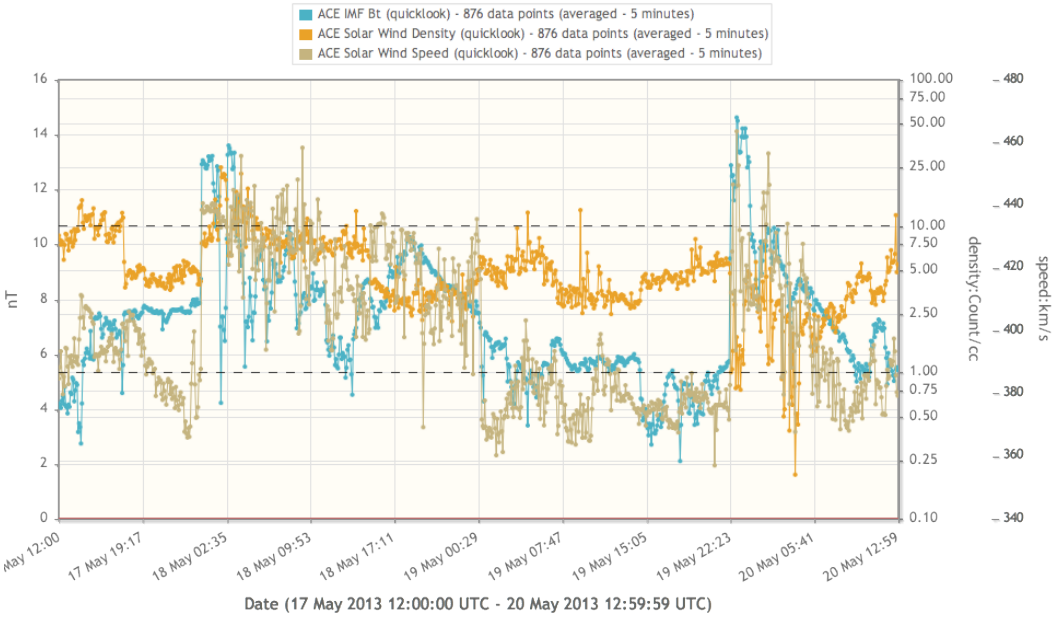


3. Review of geomagnetic activity (13 May 2013 - 19 May 2013)

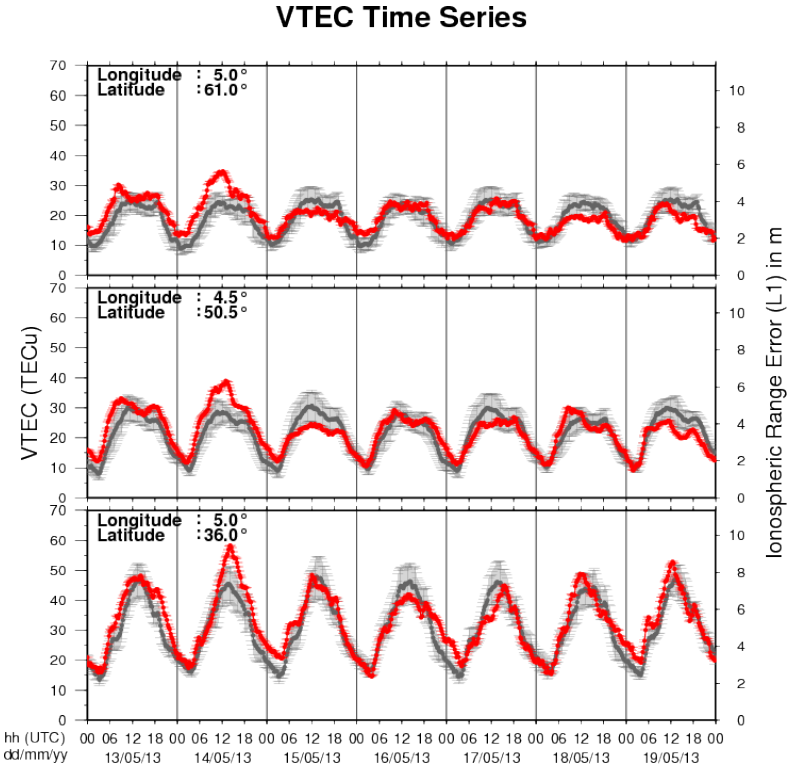
A CME from May 12 arrived to the Earth with weak signatures on May 15, producing active geomagnetic conditions (otherwise quiet to unsettled levels were seen in the beginning of the week).



A shock arrived to the Earth at 00:30 UT on May 18, it corresponded to the CME from May 15, it caused Kp = 5, between 00:00 UT and 06:00UT, while the local Dourbes K value went up to 4. The CME from May 17 arrived to the Earth on May 19 at 22:23 UT and produced active geomagnetic conditions.



4. Review of ionospheric activity (13 May 2013 - 19 May 2013)



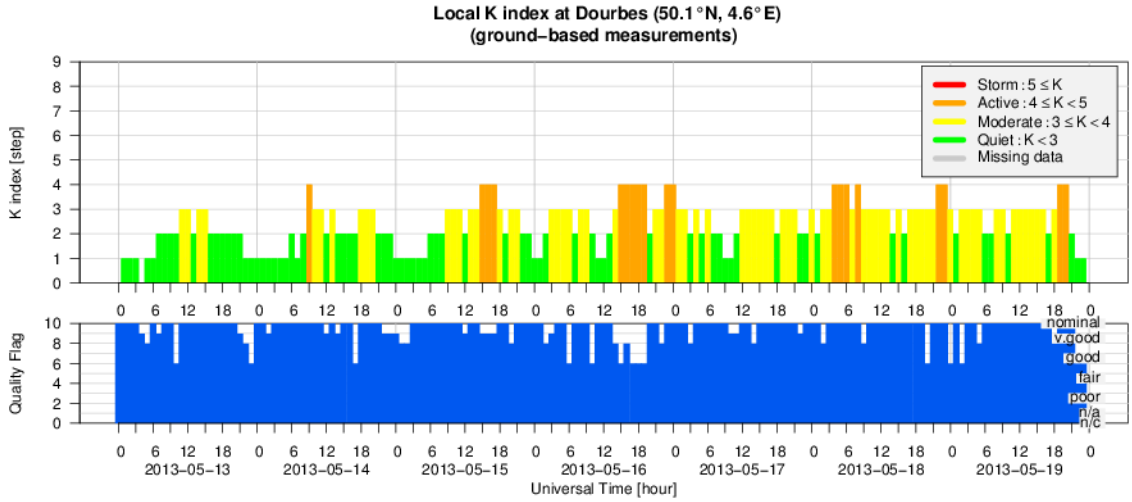
The figure shows the time evolution of the Vertical Total Electron Content (VTEC) (in red) during the last week at three locations:
a) in the northern part of Europe(N61°, 5°E)
b) above Brussels(N50.5°, 4.5°E)

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

5. Geomagnetic Observations at Dourbes (13 May 2013 - 19 May 2013)



6. New documents in the European Space Weather Portal Repository

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

CHARM annual meeting 2013 : Coronal Rain

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=450

CHARM annual meeting 2013 : Observations and Modelling of Magneto-acoustic Waves in Solar Sunspots

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=451

CHARM annual meeting 2013 : 3D simulations of the crab nebula

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=452

CHARM annual meeting 2013 : #3D Continuum Radiative Transfer Simulations of Galaxies

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=453

CHARM annual meeting 2013 : Cross-sectional and intensity variations for sausage modes

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=454

CHARM annual meeting 2013 : Quasi Periodic Pulsations in Solar Flares

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=455

CHARM annual meeting 2013 : Line-of-sight resolution effects on intensity perturbations by sausage modes

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven.
http://www.spaceweather.eu/en/repository/show?id=456

Evolution of CMEs in the inner heliosphere - observations versus models

http://www.spaceweather.eu/en/repository/show?id=457

CHARM annual meeting 2013 : The Solar Wind group at BIRA

Presentation given at the first annual meeting of CHARM, an Interuniversity Attraction Poles project lead by the KULeuven. The presentation introduces the solar wind group at BIRA-IASB and its link with CHARM.
http://www.spaceweather.eu/en/repository/show?id=433

eHEROES - Solar Cycle 24: Zonnecyclus op drift?

Presentation on the 24th solar cycle for members of the VVS-division ASH Polaris in Herentals in the framework of their monthly lecture series. Some basic knowledge was required. Topics included sunspots, solar dynamo, solar eruptions, space weather, predictions of SC24, evolution of SC24, expectations for the further evolution of SC24. 20 attendees.
http://www.spaceweather.eu/en/repository/show?id=429

eHEROES - De kunst van het zonnewaarnemen

This lecture was given during the Starparty weekend RACA (Rencontre Astronomique Centre Ardenne) in the Observatoire Centre Ardenne near Neufchateau. It discussed the basic know-how of solar observing, such as observing techniques, orientation of the solar image, seeing, determining the sunspot number, distinction between sunspot and pore, separating sunspot groups, monthly reports, k-factor,... (20 attendees).
http://www.spaceweather.eu/en/repository/show?id=458

7. Future Events

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

2013 UAHuntsville Space Weather Summer School in Huntsville, Alabama, USA

Start : 2013-05-29 - End : 2013-06-07
Website:
http://swssuah2013.pbworks.com/w/page/60509553/FrontPage

Meeting on Solar Wind Turbulence in Kennebunkport, Maine, USA

Start : 2013-06-04 - End : 2013-06-07
Our goal is somewhat different from more familiar conferences and is designed with the SHINE model in mind. We are inviting very few speakers who we are asking to give review and introductory talks for each topic we hope to discuss. Those invited review talks will be largely non-controversial and focus upon agreed-upon results. They are also likely to contain challenges for the participants to explain. Then, the bulk of the time is left unscheduled and we ask the participants to give short, focused talks that lead to discussion and debate on the fundamental aspects of the subject at hand.
We expect that everyone who attends will have ample opportunity to enter into the debate and we hope to stimulate a lively discussion of fundamental physics.
We hope you will join us. Bring multiple 5-minute talks that attempt to make specific points so you can enter into the debate clearly and propel the discussion forward. No one is expected to be given a large block of time to speak. The goal is meaningful and focused debate. Remember, you may not convince everyone, but there will be many participants who want to understand your point of view. Our goal is to debate and illuminate, providing inspiration to all.
Website:
http://www-ssg.sr.unh.edu/mag/Kennebunkport2013/Kennebunkport2013.html

Space Climate Symposium-5 in Oulu, Finland

Start : 2013-06-15 - End : 2013-06-19
Space Climate is an interdisciplinary science that deals with the long-term change in the Sun, and its effects in the heliosphere and in the near-Earth environment, including the atmosphere and climate. A special focus will be on studies of the causes, consequences and implications of the present, unusually low solar activity since solar cycle 23 that, most likely, indicates the imminent end of the Modern Grand Maximum of solar activity. Other topics include solar dynamo, solar irradiance variations, solar wind, geomagnetic field and activity, cosmic rays and cosmogenic isotopes, and solar effects on different layers of the atmosphere and on local and global climate, as well as possible solar effects on human health and on the development of human cultures.
Website:
http://www.spaceclimate.fi/

ISEST (International Study for Earth-Affecting Solar Transients) Workshop in Hvar, Croatia

Start : 2013-06-17 - End : 2013-06-20
The workshop is to improve the scientific understanding of the origin and propagation of solar transients, and develop the prediction capacity of these transients' arrival and potential impact on the Earth.
This workshop is the activity of the ISEST program in CAWSES-II / Task Group 3. The workshop engages coordinated international activities in observation, theory and modeling, and involves scientists in both developed and developing countries, and provides an online platform for educational opportunities for students.
Website:
http://spaceweather.gmu.edu/meetings/ISEST/Home.html

SWWT Plenary Meeting

Start : 2013-06-19 - End : 2013-06-19
The SWWT is a forum open to European experts in a variety of both scientific and application oriented fields relating to space weather. The SWWT plays an important role in advising ESA in space weather strategy and acts as a forum for discussion amongst the European space weather community. The SWWT is responsible for promoting coordinated European space weather activities at both national and industry levels. The SWWT seeks to identify and discuss potential collaborations and/or synergies with other structures or organisations such as the EC FP7 & COST programmes and others.
Each year they organise a Plenary Meeting.

Atomic physics, plasma spectroscopy, and space solar physics: Celebrating the achievements of Alan Gabrie at Orsay, France

Start : 2013-06-20 - End : 2013-06-20
This conference aims at presenting the status of atomic physics, plasma spectroscopy, and solar physics from space, put in the perspective of the achievements made with SOHO and the missions that followed. In addition, our friend and colleague Alan Gabriel will celebrate his 80th birthday. In anticipation of this, it will be an excellent opportunity to celebrate his many (and continuing) contributions to science in various fields. They range from atomic physics and plasma spectroscopy (theta-pinch machine) to solar and space physics - from Skylab, SMM (PI of XRP), Spacelab2, to SOHO (GOLF, CDS, EIT, SUMER) - as well as science management, including RAL (UK), IAS (France), ESA SSWG (and SSAC), NASA/ ESA Solar Orbiter/Sentinels.
Presentations addressing new results in atomic physics, plasma spectroscopy and solar physics are welcome, along with reminiscences related to Alan, which are warmly encouraged.
Website:
http://www.ias.u-psud.fr/AHG/

ILWS Science Workshop in Irkutsk, Russia

Start : 2013-06-23 - End : 2013-06-29
The 2013 ILWS Science Workshop will take place June 23-29, 2013 in Irkutsk, Russia and will be hosted by the Institute of Solar-Terrestrial Physics of the Russian Academy of Sciences
Website:
http://en.iszf.irk.ru/ILWS_2013

Asia Oceania Geosciences Society (AOGS) Annual Meeting in Brisbane (Australia)

Start : 2013-06-24 - End : 2013-06-28
Asia Oceania Geosciences Society (AOGS) was established in 2003 to promote geosciences and its application for the benefit of humanity, specifically in Asia and Oceania and with an overarching approach to global issues.
Asia- Oceania region is particularly vulnerable to natural hazards, accounting for almost 80% human lives lost globally. AOGS is deeply involved in addressing hazard related issues through improving our understanding of the genesis of hazards through scientific, social and technical approaches.
AOGS holds annual conventions providing a unique opportunity of exchanging scientific knowledge and discussion to address important geo-scientific issues among academia, research institution and public. Recognizing the need of global collaboration, AOGS has developed good co-operation with other international geo-science societies and unions such as the European Geosciences Union (EGU), American Geophysical Union (AGU), International Union of Geodesy and Geophysics (IUGG), Japan Geo-science Union (JpGU), and Science Council of Asia (SCA).
Website:
http://www.asiaoceania.org/aogs2013/public.asp?page=home.htm

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

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://stce.be/SpSTraining/

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/