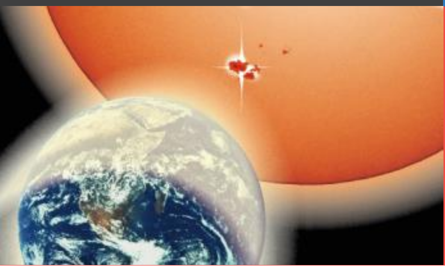
Variability of the Sun and Its Terrestrial Impact (VarSITI)
SEE / ISEST-Minimax24 / SPeCIMEN / ROSMIC
http://www.varsiti.org/

Vol. 1, April 2014



VarSITI Newsletter

Inside this issue

Article 1:

Introducing VarSITI

Variability of the Sun and Its Terrestrial Impact

Katya Georgieva

Kazuo Shiokawa

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The previous solar minimum in 2008-2009 as well as the current solar maximum of sunspot cycle 24 have been very unusual. Both these recent periods had much lower activities compared with the previous two solar cycles 22 and 23. The solar-terrestrial physics community is now observing these very low solar activity levels, and examining the consequence on and around Earth. These conditions are unprecedented in the era of modern scientific measurements. Current solar dynamo theories are unable to predict the long-term solar activity variations we are now seeing. It is not clear whether the last deep solar minimum and the current low solar maximum may signal the end of the recent period of relatively high solar activity, and what long-term solar activity variations we can expect in the future. Our present understanding of how the Sun influences geospace has been based on instrumental, observations taken during only the recent period of possibly unusually high solar

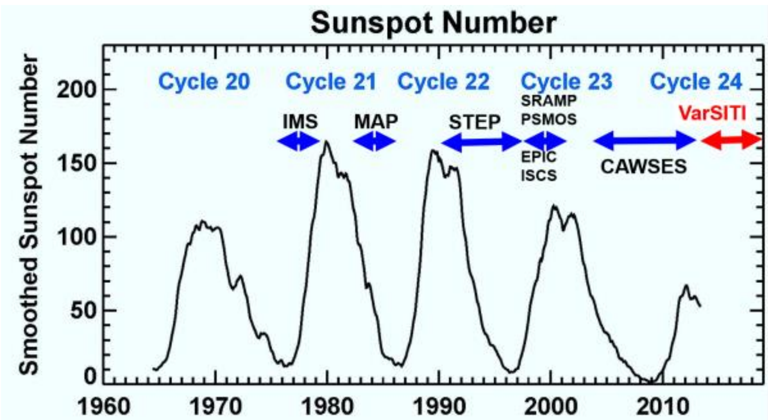

Figure 1. Variation of sunspot numbers and overlapping SCOSTEP programs. VarSITI is now being carried out during the lowest solar activity level period of the modern scientific age.

activity in the second half of the 20th century. It is uncertain how our well our understanding will hold during periods of more moderate to low solar activity which may be "the new normal" in the near future. Furthermore, it is still more unclear how all this may affect global climate change.

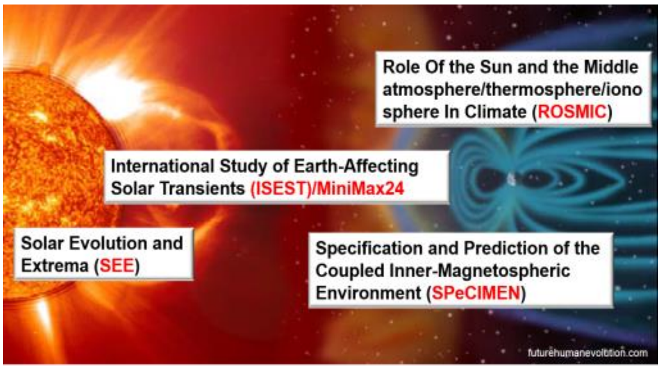

Figure 2. Four Projects of VarSITI to cover the variability of the Sun, its terrestrial impact and span the interlinked system (Credit: futurehumanevolution.com and NASA).

The new SCOSTEP program "Variability of the Sun and Its Terrestrial Impact (VarSITI)" (2014-2018) will focus on this current period of low solar activity and its consequences on Earth. The program will span various times scales from the order of thousands of years to milliseconds, and for various connected locations ranging from the solar interior to the Earth's atmosphere. In order to elucidate various Sun-Earth connections, we encourage communication between solar scientists (solar interior, Sun, and the heliosphere) and geospace scientists (magnetosphere, ionosphere, and atmosphere). Campaign observations and data analysis are being selected for specific times intervals to focus collaboration between relevant satellite and ground-based missions as well as modeling efforts. Four scientific projects will be carried out in VarSITI. These are: (1) Solar Evolution and Extrema (SEE), (2) International Study of Earth-Affecting Solar Transients (ISEST/Minimax24), (3) Specification and Prediction of the Coupled Inner-Magnetospheric Environment (SPeCIMEN), and (4) Role Of the Sun and the Middle atmosphere/thermosphere/ionosphere In Climate (ROSMIC).

Article 2:

Project SEE

Solar Evolution and Extrema

P. C. Martens[1], D. Nandi[2], and V. N. Obridko[3]

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[3]IZMIRAN, Moscow, Russian Federation



Petrus C. Martens Dibyendu Nandi Vladimir N.Obridko

Science Questions:

1) Are we at the verge of a new grand minimum? If not, what is the expectation for cycle 25?

2) Does our current best understanding of the evolution of solar irradiance and mass loss resolve the "Faint Young Sun" problem? What are the alternative solutions?

3) For the next few decades, what can we expect in terms of extreme flares and storms, and also absence of activity? Another Carrington event? What is the largest solar eruption/flare possible? What is the expectation for periods with absence of activity?

Goals and Objectives:

1) Reproduce magnetic activity as observed in the Sunspot record, including grand minima and extended minima in dynamo simulations,

2) Amalgamate the best current models and observations for solar spectral and wind output over the Earth's history,

3) Determine the size and expected frequency of extreme solar events; flares and CME's.

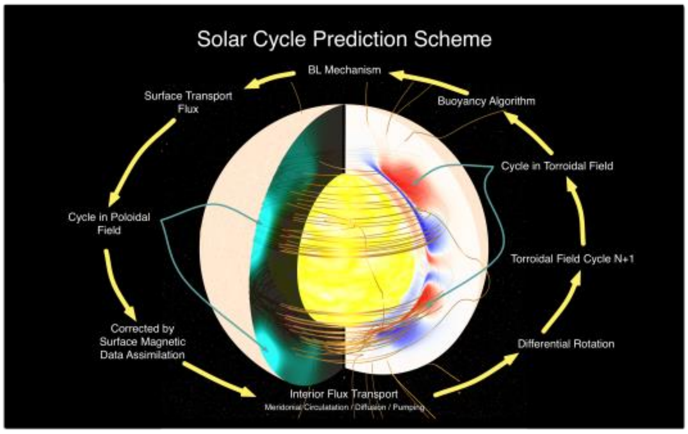

Figure 1. A possible scheme to predict the solar cycle variation.

Figure 2. The early evolution of the Earth's surface and atmospheres (clockwise). The first picture shows the impact of a very heavy object on the proto-Earth, creating the Earth Moon system, with the Moon formed from the debris that went into orbit around the Earth and later coalesced. After the impact there was a prolonged period of a hellish bombardment of meteors, asteroids, and comets, creating a very inhospitable environment (second image). As the bombardment finally subsided, the impact pocketed surface of the Earth calmed down and looked a lot like the current Moon (third figure). Volcanic activity driven by the hot inner core of the Earth released gases and water above the surface creating an atmosphere and oceans. Around that time life began. However, according to the Faint Young Sun Paradox the weaker Sun would leave the Earth's surface so cold that the oceans immediately froze creating "Snowball Earth" (fourth figure). Biological and geological evidence on the other hand indicates the Earth was warmer than it is now in that period.

Anticipated Outcomes:

1) Dynamo Models for the near future, including a prediction for
cycle 25, or for an upcoming grand minimum,
2) A timeline of solar activity spectral radiation, wind, CME's -from the Earth's formation up to the present,

3) A frequency distribution and near term likelihood prediction of extreme events.

Article 3:

Project ISEST/MiniMax24

International Study of Earth-affecting Solar Transients

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Jie Zhang

Manuela Temmer

Nat Gopalswamy

Background

Our Sun is an active star. Flares and coronal mass ejections (CMEs) are the most violent phenomena of solar activity. CMEs in the interplanetary medium (ICMEs) are the main source of geomagnetic storms when heading towards Earth. CMEs drive shocks that accelerate particles to very high energies, producing harmful radiation in space. Flares on the solar disk generate strong electromagnetic radiation that may severly change the environmental conditions in near-Earth space. The effects of these transients on humans span a range of sectors from satellite operations, radio communications, enhanced radiation risks for aircraft crew and passengers, to outages in electric power networks on the ground.

The aim of ISEST is to understand the origin, propagation and evolution of these solar transients through the space between the Sun and the Earth, and develop the prediction capability for space weather.

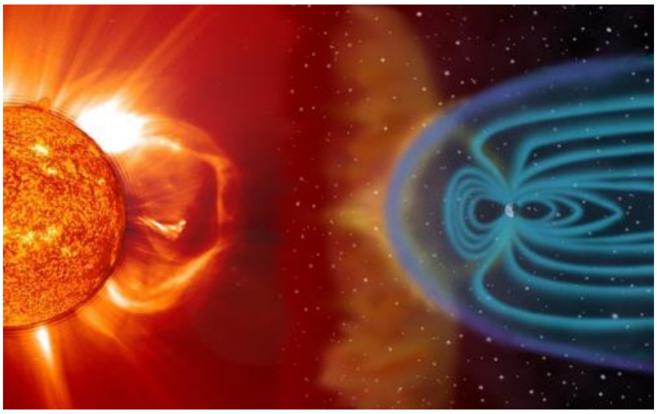

Figure 1. Schematic of the Sun-Earth connection (Credit: NASA).

Particular emphasis will be placed on the weak solar activity prevailing in Solar Cycle 24 (MiniMax24).

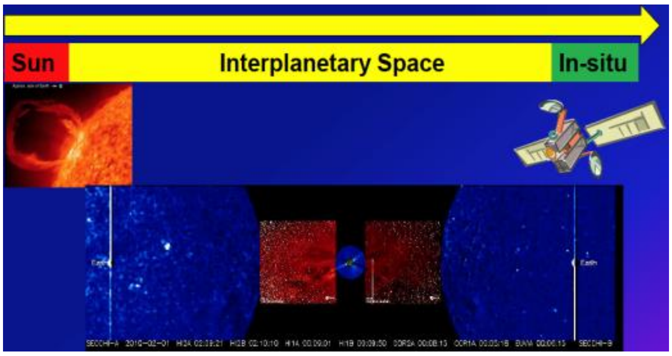

Figure2. The observations from the Sun to Earth: solar activity, evolution of the transients in the interplanetary space and effects on Earth's space environment (Credit: Jie Zhang).

Research

The research of ISEST/MiniMax24 is enabled by continuous observations of the Sun and the heliosphere from an array of space and ground-based instruments, global numerical simulations of the system and theoretical analysis as well. The ISEST/MiniMax24 project has organized the following five working groups (WGs) to address the relevant scientific questions.

Working Group 1 (Data):

The goal of WG1 is to identify all Earth-affecting ICMEs during the STEREO era (2007– to – date) and their solar sources. WG1 will identify and characterize other Earth-affecting transients, including solar flares, SEPs and CIRs.

Working Group 2 (Theory):

WG2 aims to understand the structure and evolution of CMEs as well as the origin of CMEs and their magnetic rope structure.

Working Group 3 (Simulation):

WG3 will provide a global context for CME events investigated by WG1. WG3 will use existing 3D MHD models inlcuding ENLIL, COIN-TVD, H3DMHD and SWMF.

Working Group 4 (Campaign):

WG4 is dedicated to campaign events. The participants will integrate theory, simulations and observations in order to understand the chain of cause-effect activities from the Sun to Earth for a small number of carefully selected events.

Working Group 5 (Bs-challenge):

The presence of southward magnetic fields, Bs, in ICMEs and CIRs is the most important factor in producing geomagnetic storms. WG5 aims to predict the intensity and the duration of the Bs in ICMEs upon arriving at Earth.

MiniMax24:

MiniMax24 coordinates international observations and conducts long-term campaigns providing daily updates on solar and geospace events through a network of international participants.

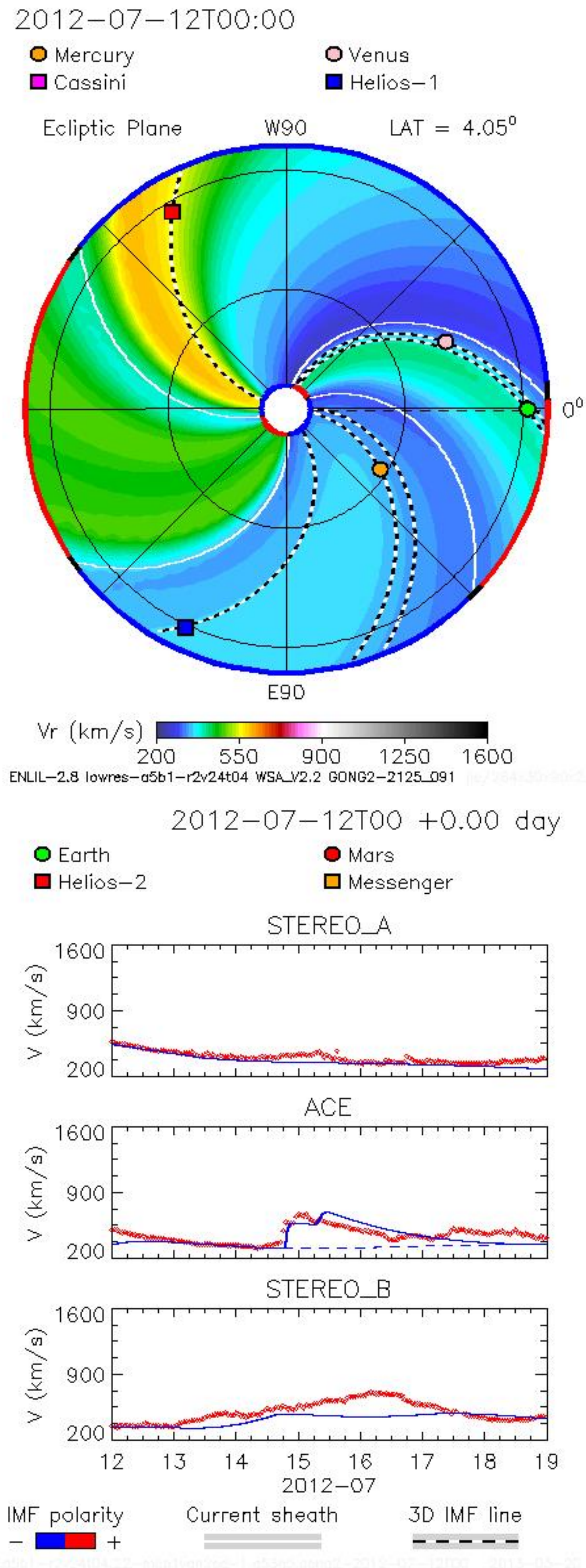

Figure 3. Example of an ENLIL model run and results (Credit: Dusan Odstrcil).

Anticipated Outcome

The ISEST project will create a comprehensive database of Earth-affecting solar transients contributed by both observers and modelers. The effort will improve the understanding of the origin, propagation and Earth impact of solar transient events. It will significantly improve the space weather prediction.

Article 4:

Project SPeCIMEN

Specification and Prediction of the Coupled Inner-Magnetospheric Environment

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Jacob Bortnik

Craig J. Rodger

The Earth's inner magnetosphere is an exceedingly complex, coupled system that is driven by fluctuations in the solar wind, ultimately reflecting conditions in the Sun's corona. This inner magnetospheric environment is host to a variety of particle species (including electrons and heavy ions) that cover a broad range of energies from sub-eV to tens of MeV, and plasma waves that cover essentially the entire frequency spectrum. Incoming energy from the solar wind is processed through the system and results in a variety of effects such as the energisation of electrons and protons to MeV energies (i.e., the formation of the radiation belts), and the precipitation of particles into the dense upper atmosphere resulting in bright auroral displays, modifications to the distribution of ionospheric conductivities, and a slew of chemical reactions that propagate through the Earth's atmosphere and may couple to surface climate. These effects also act as feedback processes to inner magnetospheric dynamics, throttling rates of reconnection or convection, modifying the pattern of the global electric field and hence wave excitation (which, in turn, affect the higher energy particles), and loading or unloading the system's mass dynamics via substorms, flows, and related effects.

The inner magnetospheric system is not only the key link between the Sun/solar-wind input and atmospheric output, but also acts as the environment within which the vast majority of all Earth-orbiting spacecraft (i.e., commercial, scientific, or military) are immersed, and this environment is known to degrade or destroy such spacecraft through a variety of mechanisms.

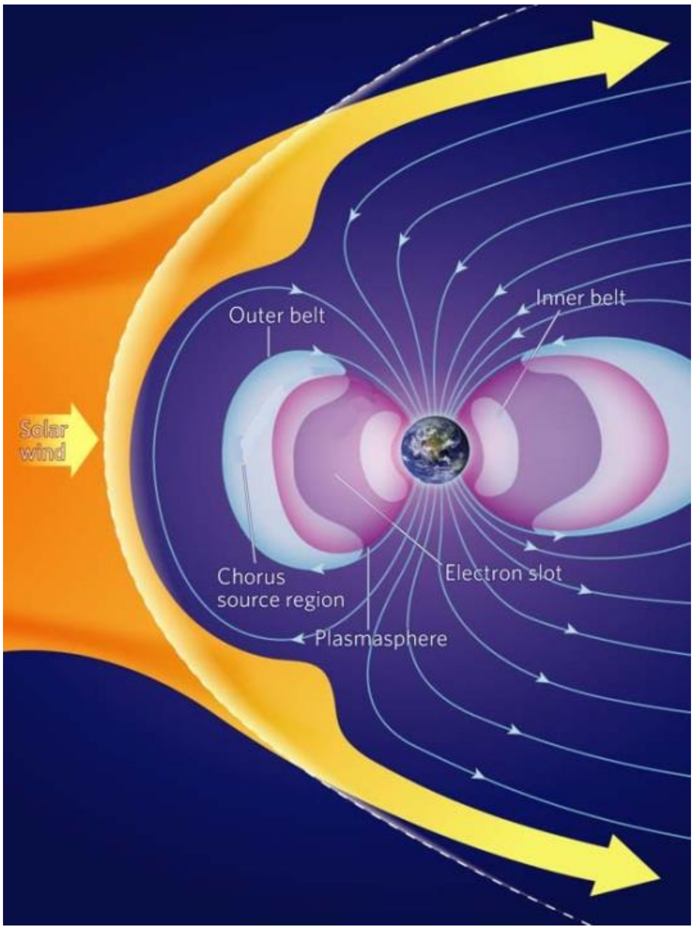

Figure 1. A schematic of the inner magnetosphere, showing the high velocity solar wind impinging upon the Earth's magnetic field (yellow, left), compressing it, and flowing around the boundary forming the magnetopause. Closer to the Earth are pictured regions high energy electrons in two distinct zones of radiation (inner belt, outer belt, and slot region separating them), the cool, high-density plasma region known as the plasmasphere, and a region dominated by an electromagnetic wave known as chorus. The formation of the radiation belts is an active area of research which is intimately coupled with the dynamics of the solar wind, plasmasphere, and chorus region (Adapted from Rodger and Clilverd, Nature, vol. 452, 2008).

SCIENTIFIC QUESTION:

Can the state of the Earth's inner magnetosphere be specified and predicted to high accuracy, based on inputs from the sun and solar wind?

DATASETS AND APPROACH:

We currently enjoy an unprecedented quantity of data that describes the inner magnetosphere, solar wind, Sun's surface, and ionosphere. A recent example is the twin Van Allen Probes mission (formerly known as Radiation Belt Storm Probes) which has been launched in August

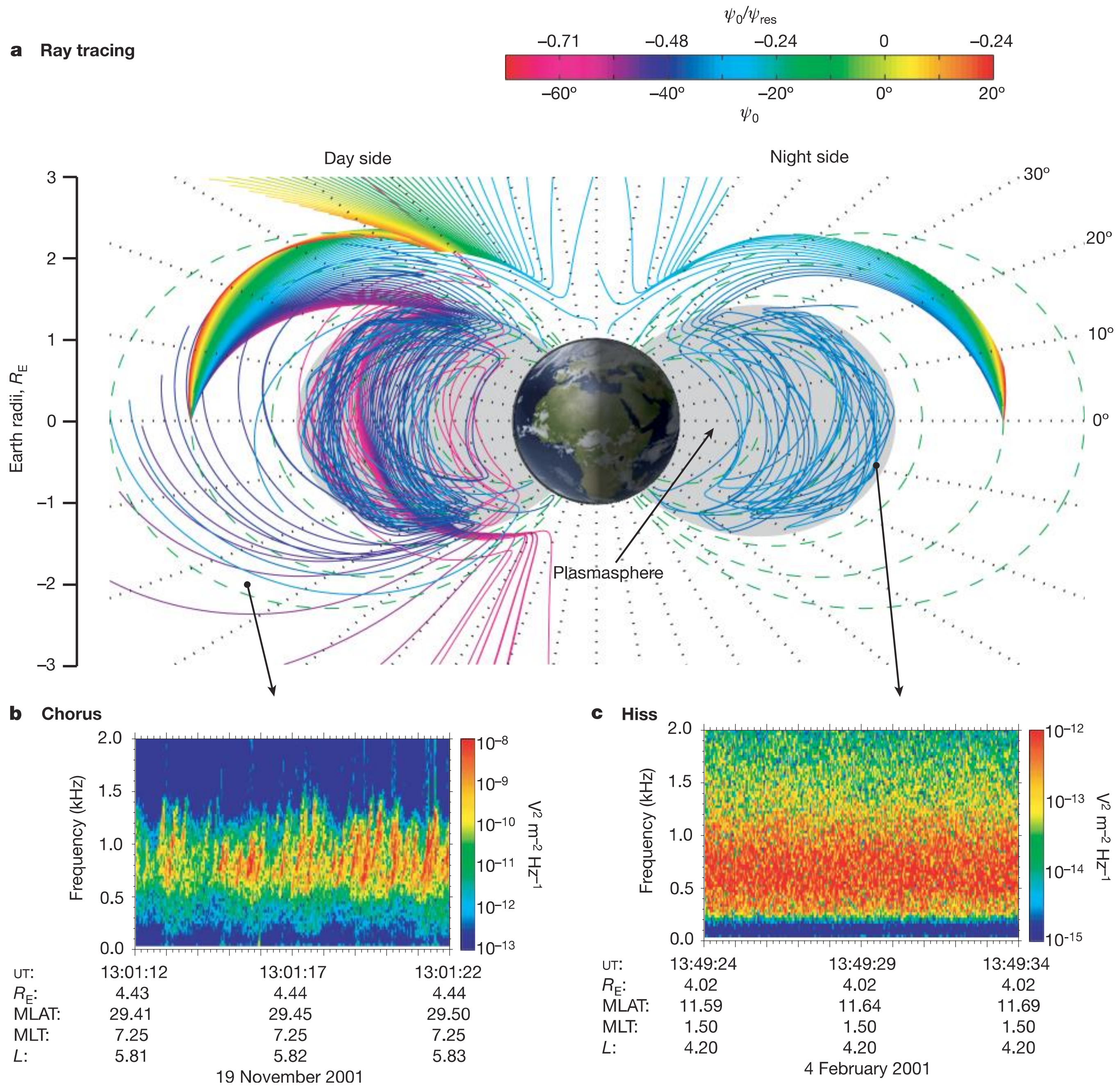

Figure 2. A figure taken from a recent paper illustrating the coupled nature of two different wave phenomena, namely whistler-mode chorus waves (panel b) and plasmaspheric hiss (panel c). The latter (hiss) is shown to be a consequence of the propagation of chorus waves into the plasmasphere. Since both waves affect the radiation belts in different ways, the coupling of these two waves has profound implications on the dynamics and net outcome of the radiation belt formation, once chorus waves are excited following geomagnetic activity (From Figure 1 of Bortnik et al. [Nature, 2008]).

2012 and will operate for 2-4 years, collecting data on the particle and wave environment in the critical solar max and declining phase period beyond 2012. This dataset has spurred great interest in inner magnetospheric physics, and forms a complement to existing missions such as THEMIS, CLUSTER, Double Star, and context for upcoming missions such as MMS, DSX, BARREL, RESONANCE, ERG and others.

This is also an area where ground-based observatories can make significant contributions and enhance the understanding gained from the space-based missions. This provides opportunities for a wide range of international partners, and is thus not restricted to researchers from the primary space-faring countries. Indeed, some of the experimental techniques, such as observations of high-latitude VLF waves or mid- and high-latitude narrowband or riometer observations are comparatively cheap. As an example of strong scientific value from ground-based arrays, consider the THEMIS all-sky imager network which is able to do real-time imaging of the whistler-mode chorus wave field in space, through its signature pulsating auroral precipitation.

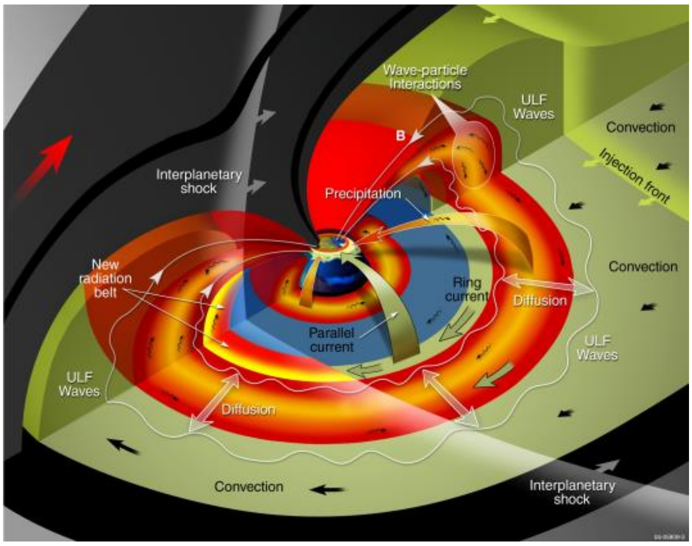

Figure 3. A similar figure showing a perspective cut-away of the Earth's inner magnetosphere. Here the various regions are indicated, such as the various current systems that shape and deform the Earth's dipolar magnetic field, regions of wave activity, and plasma convection. The near -Earth space environment is seen as a highly dynamic, highly coupled region of space (Credit: http://vanallenprobes.jhuapl.edu/gallery/artRender/hr/artRender_06_hr.jpg).

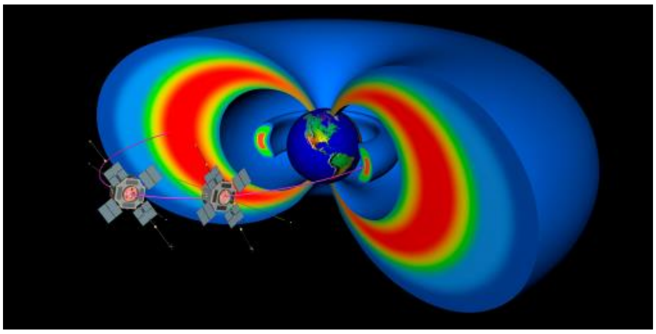

Figure 4. An illustration of the Van Allen Probes, NASA's most recent mission to investigate the physical processes that control the dynamical behaviour of the Earth's radiation belts, eponymously named after its discovered, Prof. James Van Allen. The mission is comprised of two identical spacecraft flying in similar orbits, outfitted with a suite of instruments that measure the radio wave environment all the way from Ultra Low Frequencies up to several hundred kHz, and the plasma populations from a few eV up to ultra relativistic energies in the range of several MeV (Credit: http://vanallenprobes.jhuapl.edu/gallery/artRender/hr/artRender_01_hr.jpg).

Anticipated Outcome:

A series of coupled, related models that quantitatively predict the dynamical evolution of the inner magnetospheric state (radiation belts, ring current, cold plasma distribution, plasmasheet, convection electric field, and so on).

Article 5:

Project ROSMIC

Role Of the Sun and the Middle atmosphere/thermosphere/ionosphere In Climate

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[2]Finnish Meteorological Institute, Helsinki, Finland

[3]University of New Brunswick, Fredericton, Canada

Franz-Josef Lübken

Annika Seppälä

William E. Ward

We are now at a point where an investigation of Earth-Sun interactions can start to be undertaken from a systems perspective. Work over the past couple of decades has sufficiently advanced our understanding of the physics of various regions of this system on their own (Sun, magnetosphere, ionosphere, thermosphere, mesosphere, stratosphere, and troposphere) that further advances require the connections between these regions to be addressed. Satellite and ground based observations challenge current modeling efforts and point to the need for coupling information across the boundaries of these regions. The recent extended solar minimum has revealed the extent to which the dynamics of the lower atmosphere penetrates and influences the ionosphere and upper atmosphere and possibly also the magnetosphere.

For obvious reasons, the terrestrial atmosphere/ionosphere is the most extensively and intensively observed and analysed physical system in the natural world. It is a complex non-linear system which responds non-locally to external forcing (Solar variability, cosmic ray variations and space weather) and changes in its internal characteristics (such as anthropogenic changes to the constituent distributions, atmospheric waves, volcanic eruptions or large meteor collisions). Its structure can be viewed as a

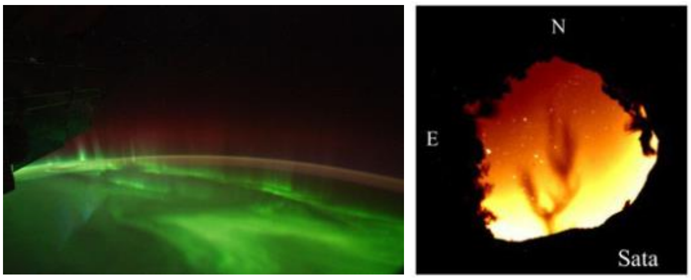

Figure 1. (Left) Aurora and airglow observed from the space station: iss029e007502 NASA, (right) Thermospheric Plasma Bubbles (Otsuka et al. [GRL, 2002]) imaged in red line airglow near the equator.

self-organizing response primarily to radiative input from the Sun (see schematics of the Mechanisms of Solar Influence and the Ionsosphere/Thermosphere system below.

Since total solar irradiance variations over time scales of a solar cycle are of the order of 0.07% the basic structure of the atmosphere has remained very stable. To a large extent atmospheric variability below 100 km is internally generated and waves provide the main coupling mechanism between various layers. A body of theory on the subject of wave/mean flow interactions has been developed over the past thirty years and has been used to successfully explain a quasi-periodic two year vacillation (termed the quasi-biennial oscillation) observed in equatorial winds and a global pole to pole circulation observed during solstices (termed the Brewer-Dobson or residual circulation). This theory is now being applied to explain aspects of the solar interior magnetic field).

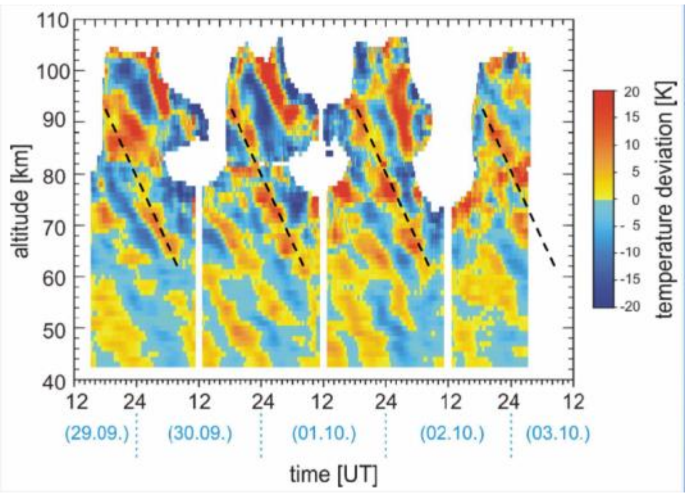

Figure 2. Gravity waves observed in temperature in the midlatitudes showing the increase of amplitude with height. These waves penetrate into the ionosphere and thermosphere. Courtesy of IAP Kühlungsborn.

Although the basic structure of the neutral atmosphere appears very stable there are two questions of particular interest. Although energetically modest, there is significant variability in the solar spectrum at wavelengths shorter than the near ultra-violet. In addition particle precipitation and magnetic field variations associated with the solar wind result in significant short term changes in the ionosphere and upper and middle atmosphere. It is clear that the observed variability at these heights is a combination of upward propagating disturbances from lower in the atmosphere and variability associated with the downward effects of short term solar influences (both radiative, particle and magnetic field related). What the relative roles of these various influences and their interactions are is one important question to examine.

Another important question is "How stable is the structure of the lower/middle atmosphere?" Changes to the composition of the atmosphere such as those currently taking place through anthropogenic activity may induce changes to its structure as could significant changes in the state of the Sun. The pathways whereby solar effects may influence the lower atmosphere are still poorly known. By the same token, the mechanisms through which the atmosphere/geospace environment accommodates and dampens the effects of solar variability are not well understood. Investigations of both aspects of this problem are essential for identifying risks to human life and our tacit assumptions about the environment we live in.

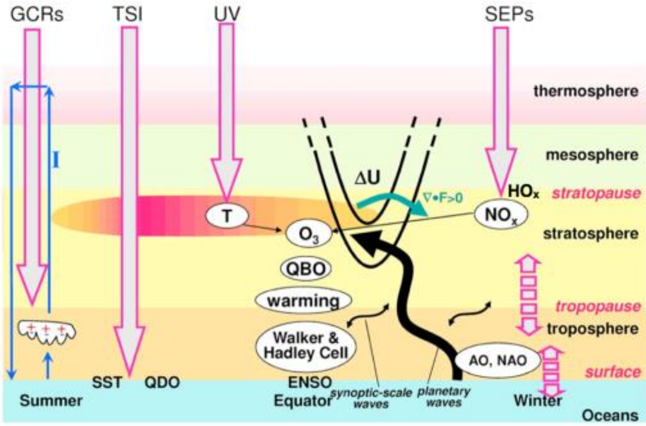

Figure 3. Mechanisms of Solar Influence (after Gray et al, 2010).

ROSMIC is directed toward identifying the effects of external forcing on and predicting the effects of internal changes to the atmosphere/ionosphere. Its goals and objectives are to understand the impact of the Sun on the terrestrial middle atmosphere/ lower thermosphere/ ionosphere (MALTI) and Earth's climate and its importance relative to anthropogenic forcing over various time scales from minutes to centuries. The anticipated outcome of this work is the development of a better understanding of the impact of solar activity on the entire atmosphere, relative to anthropogenic forcing and natural long term variability. Science questions include:

1. What is impact of solar forcing of the entire atmosphere? What is the relative importance of solar irradiance versus energetic particles?

2. How is the solar signal transferred from the thermosphere to the troposphere?

3. How does coupling within the terrestrial atmosphere function (e.g. gravity waves and turbulence).

4. What is the impact of anthropogenic activities on the

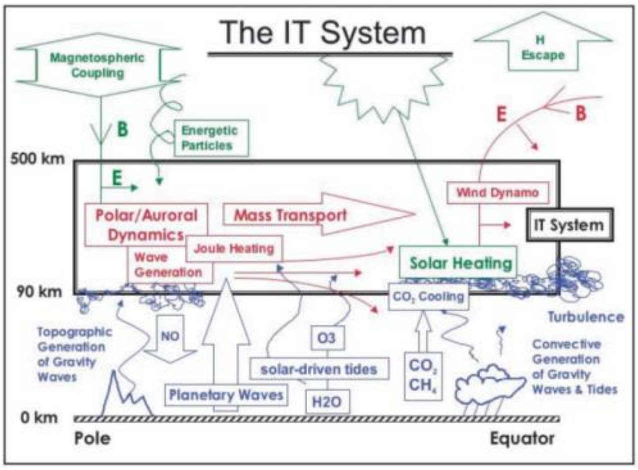

Figure 4. Schematic of the processes relevant to the Ionosphere-Thermosphere system showing the upward and downward coupling processes which influence this region of the atmosphere (after Forbes, JMSJ, 2007).

Middle Atmosphere, Lower Thermosphere, Ionosphere (MALTI)?

5. Why do parameters in the MALTI show varying forms of long term variations?

6. What are the characteristics of reconstructions and predictions of TSI and SSI?

7. What are the implications of trends in the ionosphere/thermosphere for technical systems such as satellites?

ROSMIC is organized into four working groups to address these questions. These groups and their leaders are:

- Solar Influence on Climate: Bernd Funke (Instituto de Astrofisica de Andalucia, Spain), Alexei Krivolutsky (Central Aero-logical Observatory, Russia), Tom Woods (LASP, University of Colorado, USA).
- Coupling by Dynamics: Takuji Nakamura (National Institute of Polar Research,Japan), Claudia Stolle (GFZ German Research Centre for Geosciences, Germany), Erdal Yigit (George Mason University, USA).
- Trends in the MLT: Jan Lastovicka (Institute of Atmospheric Physics, AS CR, Czech Republic), Dan Marsh (NCAR, USA)
- Trends and Solar Influence in the Thermosphere: Duggirala Pallamraju (Physical Research Laboratory, India), Stan Solomon (NCAR, USA)

The work of this project will take place through observing campaigns, model intercomparisons, analyses of data archives, and support of workshops and conference sessions on specific topics. While each working group will separately support activities pertinent to their topic and inter-group activities will be encouraged and supported to ensure that scientific linkages between these areas are explored and investigated.

Article 6:

From the SCOSTEP President

Nat Gopalswamy
NASA Goddard Space Flight Center, Greenbelt, MD, USA

Nat Gopalswamy

I am pleased to release the first issue of the VarSITI Newsletter. Variability of the Sun and Its terrestrial Impact (VarSITI) is the current scientific program of SCOSTEP launched just a couple of months ago. The VarSITI program will build upon the previous SCOSTEP programs including CAWSES –II. The complete definition of the VarSITI program took almost two years involving the global solar terrestrial physics community. After the announcement of opportunity and call for white papers, SCOSTEP received nine project proposals by the end of 2012. The white-paper authors, SCOSTEP Bureau, and selected solar terrestrial experts from the community at large met for a brain-storming session in May 2013 in Bern to synthesize and evolve a comprehensive science program that will run for about 5 years. The meeting was a Forum on SCOSTEP scientific program hosted by the International Space Science Institute (ISSI). SCOSTEP thanks all the participants of this Forum for their effort in defining the VarSITI program. SCOSTEP is also grateful to Professor Roger M. Bonnet for accepting our request and Professor Rudolf von Steiger for hosting the ISSI Forum. SCOSTEP also thanks Drs. Kazuo Shiokawa and Katya Georgieva for agreeing to lead the VarSITI Program as co-chairs.

The articles in this Newsletter provide all the details you need about VarSITI and how you can be involved in it. SCOSTEP is looking forward to many exciting results that will come out of the VarSITI program over the next five years.

Short News 1:

EGU Town Hall Meeting

Katya Georgieva
Space Research and Technologies Institute,
Bulgarian Academy of Sciences, Sofia, Bulgaria

The European Geosciences Union General Assembly 2014 will be held from 27 April to 02 May in Vienna, Austria (http://www.egu2014.eu/). More than 10,000 participants are expected from all over the world. During this Assembly, VarSITI is organizing a Town Hall meeting to present the program. After a brief introduction to the goals, history, and activities of SCOSTEP, an overall description of VarSITI will be made, followed by presentations of the four VarSITI projects.

Short News 2:

SCOSTEP's 13th Quadrennial Solar-Terrestrial Physics Symposium (STP13)

Kazuo Shiokawa
Solar-Terrestrial Environment Laboratory,
Nagoya University, Nagoya, Japan

The thirteenth Solar-Terrestrial Physics Symposium of the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) will be held in Xi'An, China during October 12-17, 2014. The Climate and Weather of the Sun-Earth System (CAWSES) program ended in 2013 and has now been followed by the Variability of the Sun and Its terrestrial Impact (VarSITI) program. This Symposium will highlight results obtained during CAWSES and VarSITI programs. A one-day workshop session (October 18) will be also held to analyze the data collected during the Mini-Max24 campaign. The symposium website is available at http://stp13.csp.escience.cn.

Upcoming meetings related to VarSITI

Conference	Date	Location	Contact Information
Japan Geoscience Union (JpGU)	Apr. 28-May 2, 2014	Yokohama, Japan	http://www.jpgu.org/meeting_e/
fifth international High Energy Particle Precipitation in the Atmosphere (HEPPA) workshop in conjunction with the SPARC-SOLARIS working group on solar variability	May 5-9, 2014	Baden-Baden near Karlsruhe, Germany	http://www.imk-asf.kit.edu/english/HEPPA_SOLARIS_2014.php
SEE kick-off meeting	May 26-30, 2014	Sozopol, Bulgaria	
Meeting of the Balkan, Black Sea, and Caspian Sea Regional Network for Space Weather Studies	May 26-30, 2014	Sozopol, Bulgaria	http://www.stil.bas.bg/IHY/
2014 African Geophysical Society (AGS)	Jun. 2-6, 2014	Abuja, Nigeria	http://afgps.org/
Geospace Environment Modeling (GEM) workshop	Jun.15-20, 2014	Portsmouth, VA, USA	http://www.cpe.vt.edu/gem/
Space Science and Applications School	Jun. 30 - Jul. 11, 2014	University of Rwanda, Rwanda	
Heliophysics Summer School, Comparative Heliophysics	Jul. 9-16, 2014	Boulder, CO, USA	http://www.vsp.ucar.edu/Heliophysics/science-over.shtml
8th IAGA/ICMA/SCOSTEP Workshop on Long-Term Changes and Trends in the Atmosphere	Jul. 28-31, 2014	Cambridge, UK	www.antarctica.ac.uk/trends2014
Asia Oceania Geosciences Society (AOGS) 11th Annual Meeting	Jul. 28-Aug. 1, 2014	Sapporo, Japan	http://www.asiaoceania.org/aogs2014/public.asp?page=home.htm
40th COSPAR Scientific Assembly	Aug. 2-10, 2014	Moscow, Russia	https://www.cospar-assembly.org/
5th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System	Aug. 11-15, 2014	Antalya, Turkey	http://5thiagaworkshop.akdeniz.edu.tr/en
12th Asia-Pacific Regional IAU Meeting (APRIM 2014)	Aug. 19-22, 2014	Daejeon, Korea	http://www.aprim2014.org/
14th European Solar Physics Meeting	Sep. 8-12, 2014	Trinity College, Dublin, Ireland	http://www.espm14.ie/
International Conference on "Geospace Revisited"	Sep. 15-20, 2014	Rhodes, Greece	http://geospacerev.space.noa.gr/index.php/
2nd ANGWIN Workshop	Sep. 22-24, 2014	Logan, UT, USA	
SCOSTEP's 13th Quadrennial Solar-Terrestrial Physics Symposium (STP 13)	Oct. 12 – 17, 2014	Xi'an, Shanxi, China	http://stp13.csp.escience.cn/dct/page/65560
New Challenges in the Study of the Impact of Solar Variability and on Climate	Oct. 13-17, 2014	Trieste, Italy	
12th International Conference on Substorms (ICS-12)	Nov. 10-14, 2014	Ise-Shima, Japan	http://www.stelab.nagoya-u.ac.jp/ICS-12/
International School on Space Weather, GNSS, GIS Internet and Data base	Nov. 10-21, 2014	University of Koudougou, Burkina Faso	

The purpose of the VarSITI newsletter is to promote communication among scientists related to the four VarSITI Projects (SEE, ISEST/MiniMax24, SPeCIMEN, and ROSMIC).

<u>The editors would like to ask you to submit the following articles to the VarSITI newsletter.</u>

Our newsletter has four categories of the articles:

1. Articles— Each article has a maximum of 500 words length and four figures/photos (at least two figures/photos). With the writer's approval, the small face photo will be also added.

   On campaign, ground observations, satellite observations, modeling, workshop/conference/symposium report, etc.

2. Highlights on young scientists— Each highlight has a maximum of 200 words length and two figures. With the writer's approval, the small face photo will be also added.

   On the young scientist's own work related to VarSITI

3. Short news— Each short news has a maximum of 100 words length with one photo and a caption.

   Announcements of campaign, workshop, etc.

4. Meeting schedule

Category 2 (Highlights on young scientists) helps both young scientists and VarSITI members to know each other. Please contact the editors if you know any recommended young scientists who are willing to write an article on this category.

TO SUBMIT AN ARTICLE

Articles/figures/photos can be emailed to the Newsletter Secretary, Ms. Mai Asakura (asakura_at_stelab.nagoya-u.ac.jp). If you have any questions or problem, please do not hesitate to ask us.

SUBSCRIPTION - VarSITI MAILING LIST

The PDF version of the VarSITI Newsletter is distributed through the VarSITI mailing list. The mailing list is created for each of the four Projects with an integrated list for all Projects. If you want to be included in the mailing list to receive future information of VarSITI, please send e-mail to "asakura_at_stelab.nagoya-u.ac.jp" (replace "_at_" by "@") with your full name, country, e-mail address to be included, and the name of the Project you are interested.

From the Editorial Board

Mai Asakura
VarSITI Newsletter Secretary
Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Japan

Welcome to the first issue of VarSITI Newsletter! The purpose of this newsletter is to provide rapid communication among VarSITI members and others. We hope you enjoyed reading this issue. As always, we would welcome your comments and feedback about any aspect of the newsletter. Thank you for all your support.

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