

Solar Extreme Events: Fundamental Science and Applied Aspects
(SEE-2005)

International Symposium
Nor Amberd, Armenia
26-30 September 2005

Second Circular

Date and Location

26-30 September 2005 (arrive by September 25)

Nor Amberd International Conference Centre of Alikhanyan Physics Institute, Byurakan, Aragatzotn District, Armenia

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Sponsoring Organizations

International Science & Technology Center (ISTC)

Committee on Space Research (COSPAR)

Alikhanyan Physics Institute

National Foundation of Science and Advanced Technologies (NFSAT)

WEB-limited Company

Support Committee for Armenia's Cosmic Ray Division (SCACRD)

Deadlines

- Pre-registration and Request for Financial Assistance: July 15, 2005 (*new*)
- Abstracts: July 15, 2005 (*new*)
- Registration: August 30, 2005

General Information about the Conference Site

Armenia is located in the southern Caucasus. It is a beautiful country with a history and culture that dates back to ancient times and has evolved to match modern achievements in the arts, sciences, and business. Numerous monuments and masterpieces from the Ancient era and Middle Ages can be found mixed with the modern throughout the country and near the conference site.

Yerevan, the capital of Armenia, is one of the oldest cities in the world. The earliest recorded settlement there dates back to 782 BC. Museums, Opera house, Symphony hall, movie theaters, beautiful architecture, numerous festivals make it a pleasant place for the visitor

Biblical Mt. Ararat in all its splendor has an everlasting presence from any vantage point in Yerevan and vicinity. The 4090 meter high Mt. Aragats is the tallest mountain in Armenia. It reaches for the sky to the north-west of Yerevan.

The high altitude plateau of Mt. Aragats and also its lower slopes have become the site of several scientific research centers since the 1940-ies. One of these centers is the Cosmic Ray Division of the Alikhanyan Physics Institute, with research centers at two locations - Aragats at 3200 m, and Nor Amberd at 2000 m above sea level. The Nor Amberd International Conference Centre is in a lovely spot, just below the tree line.

The end of September is the best season in Armenia with the average air temperature of 20C in Yerevan and 15C at Nor Ambert.

Scientific Rationale

Investigation of the Solar Extreme Events (SEE) is important for several reasons:

- It provides us with unique information about violent processes in the solar corona, including the mechanisms of particle acceleration and Coronal Mass Ejection (CME);
- The study of the propagation of huge amounts of solar plasma in the interplanetary space can shed light on the interactions with the Interplanetary Magnetic Field (IMF) and ambient population of the Galactic Cosmic Rays (GCR);
- Interplanetary shocks and CMEs, along with solar particle and electromagnetic emissions trigger various dynamic processes in the Earth's magnetosphere, causing global geo-effective effects, including e.g. geomagnetic storms, heating of the upper atmosphere, changing of the electrodynamic properties of the ionosphere, and creation of the geomagnetically induced surface currents. All these constitute conditions of Space Weather (SW), changing dramatically with SEE development.
- Space Weather can influence the performance and reliability of space-borne and ground-based technology systems and can endanger human health and life. It is of major importance to establish accurate methods for monitoring and forecasting the strength of SW disturbances and to identify the mechanisms of the various SW effects.

The solar extreme events of October-November, 2003, known as the Halloween events have provided us with rich information to study and better understand space weather. The Moscow symposium SEE-2004 (Moscow, July 2004) focused on comprehensive discussions of solar/heliospheric and magnetospheric aspects of these events. The data obtained onboard numerous satellites and from ground-based observatories were presented, discussed and interpreted both from experimental and theoretical points of view. The COSPAR congress (Paris, July, 2004) and the European Cosmic Ray Symposium (Florence, September, 2004) also demonstrated a large interest and the continuing activity of the community to understand in detail the 2003 Halloween events. New attempts to develop analysis techniques to incorporate data from space-born and surface instruments open new perspectives in the understanding and forecasting of the consequences of SEEs.

In 2004 several extreme events from the end of July to mid November provided us with new examples of the severe Geospace Storms and Forbush decreases. Analysis of these events is under way and will provide extremely interesting basis for the understanding of SEE's and their effects.

The Aim of SEE-05 is Twofold:

- 1) Provide a wide forum for discussion of recent Solar Extreme Events and their impact on technological systems and human environment, and

2) Discuss directions for future research, and to promote co-operation between groups with different research interests from different countries.

The Following Topics will be Covered in SEE-05:

- Energetic processes on the Sun during the extreme events
- Propagation of the solar energetic particles and Interplanetary CMEs
- Magnetospheric response to the solar extreme events
- Methodologies of forecasting of Space Weather conditions
- Effects of Space Weather on technology infrastructure and human environment

List of Invited Speakers:

Energetic processes on the Sun during the extreme events

Allan Tylka*, Naval Research Laboratory, USA - “SEP particles: new data from WIND and ACE”

Igor Veselovsky, Moscow State University, Russia - “Energy and mass transports during extreme events on the Sun and in the heliosphere”

Vahe Petrossian, Stanford Univeristy, USA - “Particle Acceleration in Solar Flares”

John W. Bieber, Bartol Univeristy, USA - “Relativistic Solar Neutrons and Protons on 28 October 2003”

Yasushi Muraki, Kioto University, Japan - “High Energy Solar Neutrons and Protons detected in October 28, 2003”

Riho Nymmik, Moscow State University, Russia - “Long-term prediction of solar extreme events basing on the general regularities of energetic particle generation by the Sun”

Galina Bazilevskaya, Lebedev Physics Institute, Russia - “Energy spectrum of solar cosmic rays”

Magnetospheric response to the solar extreme events

Erwin Flueckiger, Physikalisches Institut, University of Bern, Switzerland - „Extreme Events and Super Storms”

Michail Panasyuk, Moscow State University, Russia - “The Radiation Storms in Near Cosmos”

Leonid Lazutin, Moscow State University, Russia - “On the storm-substorm relation problem”

Karel Kudela, Institute of Experimental Physics, Slovakia - “Low Energy Cosmic Rays and the Disturbed Magnetosphere”

Yuri Stozhkov, Lebedev Physics Institute, Russia - “Cosmic Rays and the Processes in the Atmosphere”

Yuri Yermolaev, Space Research Institute, Russian Academy of Science - “Geoeffectiveness of Solar and Interplanetary Events”

Effects of Space Weather and forecasting of Space Weather conditions

Anatoly Belov, Institute of Terrestrial Magnetism, Russian Academy of Science - “Cosmic Rays for Space Weather Tasks

Kazuoki.Munakata*, Shinshu University, Japan - “World Wide Network of Muon Telescopes”

Frank Jansen, University of Greifswald, Germany - “New European Space Weather Telescope - MuSTAnG.

Lev Dorman, Israel Cosmic Ray Center and Emilio Segre' Observatory - “Cosmic Ray On-Line Data Using for SEE Monitoring and Forecasting”

Ashot Chilingarian, Cosmic Ray Division of Alikhanian Physics Institute, Armenia - “Aragats Space Environmental Center (ASEC): Space Weather Observatory in Armenia” to be confirmed

Extracurricular Program

We will select from the following based on majority interest:

Armenian Capital -Yerevan and museums located there

Cathedral in Echmiadzin

The ancient fortress Amberd, the pagan temple of Garni and the cave monastery of Geghard

The church of Khor-Virap built over the pit where the founder of Christianity in Armenia was imprisoned by the king Dertates of Armenia.

Lake Sevan

September 29 - Conference dinner

September 30 - Trip to Aragats cosmic ray research station, 3200 m. above the sea level

Registration: Electronic registration on <http://crdlx5.yerphi.am>

- 250 Euro for International participants (except from Russia)
- 1000 roubles for participants from Russia
- 15,000 drams for participants from Armenia.

Fee to be paid at registration

Participation in the conference

Participation in the conference is by invitation. Invitations will be sent out after deliberations with the International Advisory Board of the conference, to be held following the pre-registration deadline.

Financial Support:

The Organizing Committee will be able to provide limited financial support in the form of

- (a) waiver of the registration fee, and / or
- (b) free accommodation in modestly furnished guest houses.

Financial support applicants will be notified before August 15, 2005 regarding the level of support possible for them. Preference will be given to students and postgraduate research assistants.

Abstract Submission

Electronic submission by emailing to the conference e-mail address, MS WORD, 1 page

Publication of Conference Proceedings

Detailed information will be provided in the 3rd circular.

Internet Access

Internet access will be provided at conference site.

Hotels & Accommodation

We recommend Olympia Hotel in Yerevan

67 Barbyus Str , Yerevan, Armenia

60-70 USD for single room, breakfast included;

Transportation to Conference Center will take 40 minutes and will be provided;

For those who like to stay in natural surroundings, the Conference Center hotel will be available for 30-40 USD with full pension.

Please, notify your preferences at registration. The conference secretariat will assist you in hotel booking.

Transportation from airport to hotels

Will be provided by organizers if notified in time, at least a week before arrival

Insurance and Liability

The Organizing Committee urges the conference participants to carry out sufficient travel insurance to ensure adequate coverage for the duration of the trip, including medical, liability, accident and other expenses during the flight and in Armenia. The organizing committee cannot accept any responsibility or liability for loss, accident or damage.

Flights to Yerevan, Armenia

There are direct flights to Yerevan from several cities in Europe such as Amsterdam, Munich, London, Moscow, Paris, Vienna, and others. For more information visit <http://www.armeniainfo.am/travel/?section=air&page=3&type=1>

For travel agencies which have experience in booking flights to Armenia visit

http://www.tacentral.com/agents.asp?story_no=2

Visas

Armenian tourist visas can be obtained from *Armenian embassies in respective countries*, and the internet site <http://www.armeniaforeignministry.am/eVisa/> .

Tourist visa for 21 day may also be obtainable at the Zvartnotz airport upon arrival. Cost is 30 USD.

Participants from the Russian Federation do not need entry visa.

Currency Exchange

The Armenian national currency is the Dram (AMD). Exchange offices are available all over Yerevan.