

ARMENIAN PHYSICISTS AND COSMIC RAYS

Armenian physicists from the Cosmic Ray Division of the Yerevan Institute of Physics continue to score great successes in following and interpreting the current surge of high activity in the sun. The sun gets its energy from nuclear reactions proposed by Prof. Hans Bethe of Cornell University some sixty years ago. His pioneering work led to the awarding of the Nobel prize for his definition of the nuclear reactions that gave rise to this energy.

On approximately an eleven year cycle, a surge of activity greatly increases the radiation which is emitted by the sun. We are currently in the midst of an unusually active period. Under the leadership of Dr. Ashot Chilingarian, Armenian physicists from the Mount Aragats laboratory of the Cosmic Ray Division of the Yerevan Institute of Physics have been reporting unusual behavior which was presented at the COSPAR International convocation of cosmic ray specialists held in Warsaw and Lodz, Poland. Their work has won them an international reputation, and was achieved with minimum equipment with only two advantages –their location at a high attitude which reduced the interference of the atmosphere, and the expertise of the Armenian physicists developed over many years.

Six installations of the Cosmic Ray Division monitoring solar activities and various parameters of cosmic ray emissions registered unique results during the week of peak solar activity. All six installations registered decrease in Galactic Cosmic Ray intensity in the aftermath of solar eruptions. Galactic Cosmic Ray intensity is the flux of cosmic radiation that is usually at stable levels but decreases after solar events such as flares and Coronal Mass Ejections. Later on, it normally reverts to its stable level.

Raised activity in the sun began in the morning of July 13 and still continues. The giant flare on July 14 caused a solar radiation storm, the strongest since 1991. The event, alerted by NASA, was closely monitored by the six Armenian installations an unprecedented number of parameters was registered for a single ground station. A cloud of charged particles arrived on Thursday July 14, fifteen minutes after the visual eruption of the flare. Another cloud arrived on Saturday night, July 16 with a further decrease in Galactic Cosmic Ray intensity. This time, bursts on the sun were so close in time that the Galactic Cosmic Ray intensity did not recover to its normal steady state but continued to drop. Such a decrease may well be the first in the history of measured solar activity. Its registration in all six of the Armenian installations is a major success. Analysis of the data is in progress and will be presented at upcoming colloquiums and

international conferences in the United States, at Stanford University, Palo Alto, and San Diego, CA. Information of great interest to specialists in the fields is expected.

This work is expected to define “weather” conditions that will be encountered by satellites and other communications and space exploration equipment. Interesting results are expected, and the Armenian scientists’ work is highly pertinent.

Cosmic Ray Division installations are continuing to register interesting and potentially important events in the aftermath of the recent peak in solar activity. The data

are available at <http://crd1x5.yerphi.am/neutron>, at <http://crd1x5.yerphi.am/solar.htm> . The Cosmic Ray Division presentations at the COSPAR conference are also available on line: <http://crd1x5.yerphi.am/news/conferences/cospar.pdf>

Complete information on Cosmic Ray Division projects may be obtained from the home page, <http://crdlx.yerphi.am>

The Armenian National Sciences and Education Fund (ANSEF), has been organized to provide short as well as long term financial funding to scientists and scholars in Armenia and to support the Armenian National Academy of Sciences. A diligent effort is well under way by the ANSEF Committee to secure adequate funding to make the mission viable. Present emphasis is for providing short term funding for specific studies. Operating under aegis of the Fund for the Armenian Relief (FAR), control of the funds will remain in the U.S., and will be distributed under the surveillance of a Board of Directors in response to evaluated proposals from Armenia deemed worthy of support.

Tax-deductible contributions may be made to ANSEF/FAR, Attention Mr. George Kassis, 630 Second Avenue, New York, N.Y.10016. For additional information including how to make contributions in the form of stock certificates or other securities please call Mr. Kassis at (212) 686-0710. You can also visit www.ansef.org for latest news or its activities.