

A/AC.105/C.1/2006/CRP.21
1 March 2006

Original: English and Russian

COMMITTEE ON THE PEACEFUL USES OF
OUTER SPACE

Scientific and Technical Subcommittee

Forty-third session

Vienna, 20 February-3 March 2006

Agenda item 13

International Heliophysical Year 2007

**Report on planning activities for the
International Heliophysical Year 2007***

I. Introduction

In paragraph 10 (b) of its resolution 60/99, the General Assembly endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that the Scientific and Technical Subcommittee, at its forty-third session, consider the item on International Heliophysical Year 2007 in accordance with the workplan adopted by the Subcommittee at its forty-second session (A/AC.105/848, annex I, para. 22).

According to that workplan, the Subcommittee, at its forty-third session, would consider, among other things, planning activities by interested Member States and scientific organizations.

The present document contains reports received on this matter by the Office for Outer Space Affairs. These reports are also available on the website of the Office at <http://www.unoosa.org/oosa/nactact/ihy/index.html>.

* This document has not been officially edited

II. Reports on planning activities for the International Heliophysical Year 2007

Belarus

[Original text: Russian]

The following steps are taken at the National Academy of Sciences of Belarus in view of the International Heliophysical Year:

- (a) planning of research projects on processes of interaction between light and matter, solar energy conversion and storage through artificial supra-molecular ensembles and nanometric structures, and light energy absorption processes and transport to reaction sites and electric charge separation, i.e. conversion of light energy into electrical energy;
- (b) development of fine-film solar cells based on Cu(In,Ga)Se₂ compositions on flexible substrates; and
- (c) development of equipment converting light energy over different spectrum ranges in order to improve the use of solar energy and to increase solar cell efficiency.

Finland

[Original text: English]

1. The activities for the International Heliophysical Year 2007 (IHY) and the International Polar Year 2007-2008 (IPY) in Finland are linked and they are planned together.
2. The coordinator for IHY is Professor Jarmo Torsti from the University of Turku (jarmo.torsti@utu.fi). Thus far the ongoing activities relate to Finland's Energetic and Relativistic Nuclei and Electron experiment onboard the Solar and Heliospheric Observatory (http://www.srl.utu.fi/index_english.html). Prof. Torsti has informed the University of Helsinki, the Finnish Meteorological Institute and the University of Oulu about IHY.
3. Kirsti Kauristie from the Finnish Meteorological Institute is involved in the international Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR) project, for which an application for official IPY status has been filed (collaboration with the United Kingdom of Great Britain and Northern Ireland, contact person Professor Richard Harrison, Rutherford Appleton Laboratory).
4. Finnish IPY activities will promote the focus areas of the Finnish Arctic research strategy and the Northern Dimension policy and activities related to that.
5. Fields of know-how in the Finnish polar research and Finnish Arctic research strategy focus areas are: (a) space research; (b) global change; (c) natural resources and land use; (d) research in the fields of society, economy and health; (e) Arctic technology
6. The framework for Finnish IPY activities is as follows: (a) National Arctic / Northern research programme; (b) expedition to Svalbard Kinnvika; (c) development of the circum-arctic research stations networking; (d) Finnish participation in the international research projects/ consortiums; (e) outreach of scientific research and education on Arctic and Northern regions; and (f) possibilities and opportunities offered by IPY to Finnish business life.

7. There are many equally important partners in Finland: universities, research institutes and enterprises.

8. National coordination and communication points are situated in two Finnish Northern and Arctic research institutes: Thule Institute (University of Oulu) and Arctic Centre (University of Lapland, www.ipy-finland.fi).

Hungary

[Original text: English]

1. Tihany Observatory of Eötvös Loránd Geophysical Institute (ELGI), Earth Physics Department, wants to study the dynamics of the plasmasphere through national and international cooperation. ELGI would like to create a Hungarian website on the topic of Sun-Earth relations. This is an example of an ELGI activity on general education.

2. The Geodetic and Geophysical Research Institute of the Hungarian Academy of Sciences is organizing a conference in September 2007, entitled: “Earth Electromagnetism: Geophysical Symposium on the occasion of the fifty-year anniversary of the Nagycenk Observatory”.

3. The Heliophysical Observatory of Konkoly Observatory of the Hungarian Academy of Sciences plans the following:

- (a) Debrecen Photoheliographic Data programme (production and evaluation of sunspot database);
- (b) production of sunspot (database by using observations from the Michelson Doppler Imager of the Solar and Heliospheric Observatory);
- (c) H-alpha observations (solar flares);
- (d) Study of geo-effective solar plasma events;
- (e) North-South asymmetries in the Sun and interplanetary space; and
- (f) Sunspot group evolution and penetration of the magnetic field into the solar corona.

Norway

[Original text: English]

Recently, the Norwegian national IHY contact person was appointed to start preparing for future activities. The contact person is Professor Nikolai Østgaard at the Department of Physics and Technology, University of Bergen. He will participate in different IHY conferences next year and is also the co-organizer of a session at the European Geophysical Union conference in 2006.

Syrian Arab Republic

[Original text: English]

1. The Syrian Arab Republic has been involved in astronomy since 1997, when a French expert in space science visited the country and made a presentation on the Network of Oriental Robotic Telescopes (NORT, which was a selected project of the Sixth United Nations/European Space Agency Workshop on Basic Space Science (document A/AC.105/657 of 13 December 1996).

2. NORT aims to establish a robotic telescope network on high mountains peaks around the Tropic of Cancer, from Morocco in the west to the deserts of China in the east.

3. The aims of establishing this network are:

A. On the technical level:

- (a) Improving astronomical research in developing countries through participation in different studies and projects;
- (b) Achieving uniform scientific levels in space and astronomy;
- (c) Round-the-clock astronomic observations for the variable stars, through international cooperation with other telescopes of the Global Network of Astronomy Telescopes (GNAT);
- (d) Creating a database by using interferometry for the astronomical objects and variable stars; and
- (e) Providing an opportunity to develop new techniques in the Arab World.

B. On the educational level:

- (a) Preparing courses in astronomy and space science in the national universities, in addition to providing training courses on the national telescopes;
- (b) Offering training courses by Arab and foreign astronomers for students at the specialized summer schools;
- (c) Preparing basic courses on astronomical theory, technology of equipment and processing research data concerning variable stars;
- (d) Participating in summer schools and camps through the astronomical clubs; and
- (e) Encouraging inquisitiveness, imagination and participation in discovery works by students.

4. The General Organization of Remote Sensing (GORS) of the Syrian Arab Republic has carried out a pilot study using remote sensing techniques and has selected four sites in order to determine the best location for the astronomical observatory, within the NORT programme. That study was published in "Seminars of the United Nations Programme on Space Applications: Selected Papers from Activities held in 2000". This current stage requires vehicles equipped with a 16-inch telescope connected to a computer and a charge coupled device (CCD). This phase may last for two years.

5. Following this project, GORS decided to establish an office for astronomical studies. Its tasks are supervising, following up on GORS' efforts in the field of astronomy and the observations that it carries out, preparing an almanac, plans and periodical reports for the different astronomical phenomena, and exchanging astronomical data with local, Arab and foreign administrations and universities in order to: (a) promote astronomical education and space science; (b) support and improve the technology of astronomy and related sciences through an educational curriculum methodology directed at university and school students; (c) provide society with astronomical information i.e. connect the society to scientific bodies.

6. The astronomical studies office at GORS is divided into an observatory and planetarium department and a coordination and astronomical data exchange department.

7. One of the earliest works of GORS in astronomy was an initiative to establish a planetarium within the GORS campus, to accommodate approximately 120 observers. An architectural contest to choose the best planetarium design, for the Arab World, took place at GORS. The contest comprised 21 contestants from Egypt, Lebanon, Libyan Arab Jamahiriya, United Arab Emirates and the Syrian Arab Republic. The supervising committee members were specialists from Syrian and Lebanese universities, in addition to the aforementioned French expert in space science. The building of the planetarium commenced at the end of 2005 and is intended to continue until 2007.

8. The national Syrian committee for developing astronomy and space science was simultaneously formed from different interested bodies.

Additional astronomical activities in Syria

9. Summer astronomical camps take place annually in the Syrian Arab Republic and are organized by The Revolution Youth Union in cooperation with GORS, Syrian universities and the Syrian Cosmological Society.

10. Astronomers from Syria and Arab countries participate in these camps. During these camps, specialized lectures are presented during the day, and astronomical observations take place at night. In addition to these activities, simplified presentations are made to students from schools participating in the mobile planetarium.

11. For the purpose of transferring astronomical knowledge and technology, GORS takes part in all regional and international astronomical symposia. GORS also provides lectures on astronomy, according to academic terms.

12. The most important of these was the announcement of a partial solar eclipse that was observed in the Syrian Arab Republic on 3 October 2005 between 10:38 and 13:27, winter local time. This was by informing the mass media and asking the Ministry of Education to provide a special class on Sunday, 2 October to explain this phenomenon and the harm that would be caused to the eye by looking directly at the sun with the naked eye during the eclipse.

Tajikistan

[Original text: English]

The Astrophysics Institute of the Academy of Sciences of the Republic of Tajikistan conducts certain monitoring of circum-terrestrial space for scientific research purposes. Subject to the availability of modern charge coupled device technology, the Institute can participate in research of space debris and monitoring of near-Earth objects within the framework of the International Heliophysical Year.