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Committee on the Peaceful Uses of Outer Space

Activities of Member States for young people

Note by the Secretariat*

Addendum

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* The present document contains replies received from Member States between 25 November 2000 and 5 February 2001.

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I. Introduction

1. In the report of its forty-third session,[1] the Committee on the Peaceful Uses of Outer Space took note of the agreement of the Working Group of the Whole of the Scientific and Technical Subcommittee that Member States and their relevant national institutions should be invited to report to the Subcommittee on the activities that they had carried out for young people (A/AC.105/736, annex II, para. 16).

2. The information submitted by Member States as at 24 November 2000 is contained in the note by the Secretariat of 4 December 2000 (A/AC.105/755). The present addendum contains information submitted by Member States between 25 November 2000 and 5 February 2001.

II. Replies received from Member States

Austria

With regard to Austria's support for the promotion of the participation of youth in space activities, the Federal Ministry for Foreign Affairs refers to the United Nations/Austria/European Space Agency Symposium on Enhancing the Participation of Youth in Space Activities, held in Graz, Austria, from 11 to 14 September 2000, and to the report on the event (A/AC.105/743).

Pakistan

A. Organization of outreach activities for young people and for the general public

1. A Pakistani youth was selected by the national space agency, the Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), to participate in the Space Generation Forum of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) and made an effective representation at the Forum by putting forward creative ideas and recommendations that were adopted by the Forum. The young Pakistani student was elected as regional advisor for the Middle East region and in that capacity has been actively involved in responsibilities such as (a) the Association for Development of Aerospace Medicine; (b) a disaster management case study for Mozambique; (c) participation in three teleconferences among the youth of the world held between August 1999 and July 2000; (d) acting as communication officer to the Space Youth Advisory Council for the month of May 2000. He also presented a preview of what is expected to happen in space science and technology in the near future on the occasion of the tenth anniversary of the launching of Pakistan's first experimental satellite, BADR-1, during an open house organized by SUPARCO to raise public awareness of national activities in the development of space technology and its applications.

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[1] *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 20* (A/55/20).

2. Pakistan remains committed to the goals outlined in the Vienna Declaration[2] on the United Nations efforts to enhance the quality of lives through sharing the benefits of space science and technology. To further the decision of the General Assembly in 1999 to celebrate World Space Week from 4 to 10 October each year, SUPARCO celebrated the week in 2000 with a view to enhancing public awareness about national and international space science and technology activities contributing to national socio-economic development and organized seminars at the national level on the theme "Space as visioned in the twenty-first century", during which developments in space science and technology during the twentieth century were also highlighted. The presentations included: (a) "Satellite remote sensing and geographic information system (GIS) applications in the new millennium"; (b) "Atmospheric pollution: an imminent threat in the years to come"; (c) "Linking the world through space"; (d) "Information technology: a new tool for advancement in the twenty-first century"; (e) "Preparing the young generation to be torch bearers in the field of space science in the third millennium"; and (f) "Youth vision of space technology in the twenty-first century". Exhibitions were also arranged around the theme of the seminars, which also included a retrospective look at developments in space science and technology.

B. Distance education

3. The development and maintenance of a good and sophisticated educational institution as well as a qualified teaching cadre is difficult and very costly. However, transmission of training and educational material and conversation with instructors via satellite telecommunication has removed all difficulties relating to inaccessibility of remote and isolated communities, long delays in dispatching and receiving materials and the costs involved. SUPARCO has been contributing actively to the development as well as the implementation of training modules for distance education. In that regard, SUPARCO has developed a Store-and-Forward Communication Experiment (SAFE) for exchange of messages and information between any two remote locations. The module was flown on board SUPARCO's first experimental satellite, BADR-1, launched in July 1990. Small ground terminals were also developed for tracking the satellite and transmitting messages. To demonstrate and to develop awareness among teachers and students in educational institutions, several open houses, seminars and workshops were organized on the usefulness of the system, especially for distance messaging and education. SUPARCO is also extending cooperation to higher educational institutions by arranging specialized courses on satellite-based telecommunications and related applications on a regular basis. These training courses are conducted at Karachi and Lahore Universities. In addition, SUPARCO has established an Aerospace Institute in Islamabad for regular training and education of scientists and engineers in the fields of space science and space technology, including telecommunications, information technology and their applications.

4. SUPARCO has also developed an improved version of the SAFE module to be flown on board its second BADR satellite, scheduled to be launched in the first

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[2] *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999* (United Nations publication, Sales No. E.00.I.3), chap. I, resolution 1.

quarter of 2001. Small ground terminals are also being developed for participation of the national scientific community and educational institutions in the experiment.

Republic of Korea

1. In the Republic of Korea, Young Astronauts Korea (YAK) has organized various space programmes for young people since it was founded in 1989 in the spirit of achieving peace for humankind through space. The membership of YAK is composed mostly of teenage boys and girls in the Republic of Korea. Through the above-mentioned programme, it has played a pivotal role in providing youth with a vast dream and vision for a future in the coming space age and information society.

2. A variety of major programmes related to space activities for young people have been organized and are described below.

A. Lecture meeting and commemorative event on space science

3. A lecture meeting and a commemorative event on space science for youth were held in 1995 and 1996, respectively. A Japanese astronaut, Mr. Mukai, and Mr. Dihara from the National Aeronautics and Space Administration (NASA) of the United States of America had a chance to talk about the process of spaceflight and on exploration of Mars, respectively. In addition, videotapes of Mars exploration by Pathfinder were distributed to young people. This enabled them to develop an interest in space.

B. Space Science Camp

4. The Space Science Camp took place during the summer vacation in 2000, with 16,000 young people and leaders attending, exposing them to themes related to scientific exploration and natural phenomena. The Camp is scheduled to be held in the same period next year.

C. Event to launch an artificial rocket

5. Young people made a variety of artificial, self-designed rockets and had a chance to launch them at a launch event held in May 2000. This acts as a catalyst for them to become space scientists in the future.

D. Science Festival for Young People

6. The Science Festival for Young People was opened on the occasion of the Youth Day in April. Through the event, young people selected a topic of interest to them in the field of science, and studied it through experiments.

E. Comet Gala

7. For the celebration of Science Day in May, a Comet Gala was held to provide youth with an opportunity to observe stars and comets in urban areas. They discussed the eternal challenge of space and the will of humanity to meet that challenge.

F. Publication of a science textbook

8. A science textbook on the manufacture of spacecraft models was published and distributed for youth. It assisted them in forming a deep interest in the universe.

United States of America

1. Over the last year, the United States Government has continued its extensive involvement with activities for young people to further their awareness and understanding of space, science, engineering, mathematics, technology and other subjects critical to the scientific and technological advancement and vitality of the nation. The following examples highlight the types of activity that United States agencies carried out for young people over the past year and will continue to conduct in the year ahead.

2. Since its creation, the National Aeronautics and Space Administration (NASA), like many United States government agencies, has made a substantial commitment to the education of young people at all levels. However, its mission is unique in that it gives teachers and students an opportunity to participate and a visible, tangible example of using science and technology to achieve national goals. Whether it is exploring the surface of Mars through a robot named Sojourner on the Internet, witnessing the building of the most complex laboratory in space, the International Space Station, or providing ground truth data on rainfall and climatic conditions to researchers studying the Earth, students and their teachers become involved in the NASA mission, transferring their theoretical knowledge of mathematics, science, technology and geography into its real life applications and integration to provide answers to questions.

3. The NASA education programme reaches out to the elementary, secondary and post-secondary communities in all 50 states, the District of Columbia and Puerto Rico, and also targets populations who are traditionally underserved in science, mathematics, technology and engineering. Its contribution to education and to activities for young people is based on the agency’s inspiring mission, specialized workforce, close working relationship with the research and development community and unique world-class facilities.

4. Several programmes carried out for young people involve multiple United States government agencies and some extend internationally. One example is the Global Learning and Observations to Benefit the Environment (GLOBE) programme, which consists of a worldwide network of primary and secondary school students who work under the guidance of GLOBE-trained teachers to make environmental observations at or near their schools, report their data to a GLOBE student data archive, receive and use global images created from the data they and other students have collected and study environmental topics in their classrooms. GLOBE environmental measurements relate to the following study areas: atmosphere; hydrology; land cover/biology; and soils. The data acquired by students are used worldwide by environmental scientists in their research to improve understanding of the global environment.

5. Within the United States, GLOBE is managed by an inter-agency team that includes NASA, the National Oceanic and Atmospheric Administration, the

National Science Foundation, the Environmental Protection Agency and the Departments of Education and State. Another successful programme is the Mars Millennium Project, an official White House Millennium Council Youth Initiative, which challenges students across the United States to design a community yet to be imagined—for the planet Mars. Young people imagine and then design a liveable community for 100 earthlings on the planet Mars in the year 2030. This programme touches upon a large number of subjects and can be tailored for students and teachers at the kindergarten to high school levels.

6. Today, much of NASA's outreach to young people is occurring over the Internet. For example, on 5 October 2000, during World Space Week, female NASA scientists, engineers and technicians were the focus of Internet chats and Webcasts. NASA Webcasts, such as the one on 5 October, enable students to watch live video, listen to audio and interact in real time with experts participating in NASA programmes. The Webcasts also offer tours of NASA space centre locations typically not open to the public, with insights from the people who work there. Each Webcast is designed to engage classrooms in science and mathematics and provides lesson plans and curricula developed by NASA. Those activities, including "Under construction—the International Space Station", originate from the Kennedy Space Center.

7. In addition to Internet-based programmes, NASA carries out many other kinds of programmes in an effort to reach out to young people. One example is an on-going programme called "A day with NASA Goddard Space Flight Center", in which NASA engineers and scientists visit schools to make presentations to students about NASA programmes. NASA trains teachers to conduct pre-visit activities and during the presentations students are actively engaged in such subjects as living and working in space (Grades K-1); Earth science (Grades 2-4); exploring the universe (Grades 4-6); and exploring the solar system (Grades 4-6). The content of the programme is customized according to the school and NASA planning. The goals and objectives are to promote the learning of mathematics and science at the national, state and local levels from kindergarten to the eighth grade.

8. The Great Moonbuggy Race, held each April, illustrates another approach taken by NASA to reach out to young people. This annual event gives undergraduate and high school students from around the nation an opportunity to apply engineering skills and to develop team spirit in an activity that will enhance awareness about human exploration and development of space. The event tests the creativity, talents, ingenuity, endurance and resourcefulness of participants, while fostering spirit among team members and competitiveness during the race. Moonbuggies are built from the students' own design recreating the lunar experience of the Apollo astronauts and looking ahead to further human exploration of the solar system. Prizes are awarded for originality of design and quickest traversal of the lunar course. The NASA Marshall Space Flight Center and the United States Space and Rocket Center host this unique and inspiring competition.

9. For more information about NASA activities for young people and its many educational activities, please see the agency's Web pages devoted to the topic, beginning at http://education.nasa.gov. The reader may also wish to visit http://spacelink.nasa.gov for additional information about NASA education programmes and to download materials for teachers and students.

10. Several private organizations and foundations within the United States also sponsor activities for young people and educators to inspire enthusiasm for and foster greater learning about space exploration, science and technology. One example is the Space Foundation, which provides quality space education programmes to educators nationwide. The Foundation has trained more than 12,000 teachers since 1986 through Space Discovery graduate courses, their Teaching with Space programme and national conferences. For more information on Space Foundation programmes, readers may visit their Internet Web page at http://www.spacefoundation.org.