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Committee on the Peaceful

Uses of Outer Space

Scientific and Technical Subcommittee

Forty-third session

Vienna, 20 February-3 March 2006

Draft report

Addendum

VIII. Near-Earth objects

1. In accordance with General Assembly resolution 60/99, the Scientific and Technical Subcommittee considered agenda item 11, "Near-Earth objects", under the three-year workplan amended at its forty-second session (A/AC.105/848, annex II). Pursuant to the workplan, in 2005, international organizations, regional bodies and others active in the field of near-Earth object research were invited to report on their activities.

2. The Subcommittee had before it a note by the Secretariat (A/AC.105/863) containing information on research in the field of near-Earth objects carried out by Germany, Italy and Norway. The Subcommittee had also before it a conference room paper (A/AC.105/C.1/2006/CRP.5) containing information on research in the field of near-Earth objects carried out by the Russian Federation and the United Kingdom.

3. The representatives of Italy, the United Kingdom and the United States made statements on the item. The observer for the Association of Space Explorers (ASE) also made a statement on the item.

4. The Subcommittee heard the following scientific and technical presentations on the item:

(a) "Near-Earth object research activities in the Republic of Korea: 2005 progress report", by the representative of the Republic of Korea;

(b) "Near-Earth object-related activities in the United Kingdom", by the representative of the United Kingdom;



(c) “Near-Earth object deflection: an international challenge”, by the observer for the Association of Space Explorers (ASE);

(d) “The need for an international near-Earth object committee”, by the observer for the International Space University.

5. The Subcommittee recalled that near-Earth objects were asteroids and comets with orbits that could cross the orbit of the planet Earth.

6. The Subcommittee noted that the interest to asteroids was largely due to their scientific value as remnant debris from the inner solar system formation process, the possibility of their collision with the Earth and its devastating consequences, and the availability of various resources on them.

7. The Subcommittee noted that early detection and precision tracking were the most effective tools for the management of threats posed by near-Earth objects. The Subcommittee also noted that a number of teams searching near-Earth objects and investigating them were active in various countries.

8. The Subcommittee noted that a number of institutions were investigating possibilities for the mitigation of threats posed by near-Earth objects. The Subcommittee also noted that any measures to mitigate such threats would require coordinated international efforts.

9. The Subcommittee noted that some member States had implemented or were planning to implement fly-by and exploration missions to near-Earth objects. The Subcommittee also noted past and upcoming international missions to near-Earth objects.

10. The Subcommittee commended the United States for the significant progress achieved in reaching its target of detecting 90 per cent of all the near-Earth objects larger than one kilometre in diameter. The Subcommittee noted that the United States had discovered 816 near-Earth objects of that size. The Subcommittee also noted with appreciation that the United States was investigating systems to detect and track objects greater than 140 metres in diameter.

11. The Subcommittee agreed that efforts to detect and track near-Earth objects should be continued and expanded at the national and international levels.

X. International Heliophysical Year, 2007

12. In accordance with General Assembly resolution 60/99, the Scientific and Technical Subcommittee considered agenda item 13, “International Heliophysical Year 2007”, under the three-year workplan adopted at its forty-second session (A/AC.105/848, annex I).

13. The representatives of China, France, Indonesia, Nigeria and the United States made statements on the item.

14. The Subcommittee heard the following scientific and technical presentations on the item:

(a) “CORONAS-F mission: results of the Sun and solar-terrestrial investigations”, by the representative of the Russian Federation;

(b) “Russian Federation satellite experiments for solar-terrestrial physics”, by the representative of the Russian Federation;

(c) “Preparations for the International Heliophysical Year 2007”, by the representative of the United States, on behalf of the secretariat of the International Heliophysical Year.

15. The Subcommittee had before it a conference room paper containing reports of Member States on their activities being planned for the International Heliophysical Year (A/AC.105/C.1/2006/CRP.21).

16. The Subcommittee noted with satisfaction that the Office for Outer Space Affairs, in cooperation with the secretariat of the International Heliophysical Year, had published a booklet entitled *Putting the “I” in the IHY*, which contained an overview of the worldwide preparations for the Year.

17. The Subcommittee noted that the International Heliophysical Year was an international programme for scientific collaboration to understand the external drivers of planetary environments and was of great interest to Member States. The preparations for the Year would involve the deployment of new instrumentation, particularly in developing countries, would include new observations from the ground and in space and would have an educational component.

18. The Subcommittee noted that, building on the results of the International Geophysical Year, observed in 1957, the International Heliophysical Year would expand the study of universal processes in the solar system affecting the interplanetary and terrestrial environments. The study of energetic events in the solar system would pave the way for safe human space travel to the Moon and planets and would serve to inspire the next generation of space physicists.

19. The Subcommittee noted that the specific objectives of the International Heliophysical Year were:

(a) To provide benchmark measurements of the response of the magnetosphere, the ionosphere, the lower atmosphere and Earth’s surface to identify global processes and drivers that affected the terrestrial environment and climate;

(b) To further the global study of the Sun-heliosphere system outwards to the heliopause, in order to understand the external and historical drivers of geophysical change;

(c) To foster international scientific cooperation in the study of current and future heliophysical phenomena;

(d) To communicate the unique scientific results of the Year to interested members of the scientific community and to the general public.

20. The Subcommittee noted with satisfaction that the United Nations Basic Space Science Initiative, in cooperation with the secretariat of the International Heliophysical Year, was supporting the deployment around the world, in particular in developing countries, of arrays of small instruments such as magnetometers, radio antennas, Global Positioning System (GPS) receivers and all-sky cameras, to provide global measurements of heliospheric phenomena.

21. The Subcommittee noted the programmes and studies being conducted within the framework of the International Heliophysical Year, including: the reactivation of

geomagnetic and equatorial electrojet research in Nigeria; the establishment of an integrated, operational, ground-based and large-scale monitoring system in China; the planning of activities in Indonesia aimed at improving and developing predictions of the effects of solar activities and space weather on satellite anomalies, geomagnetism, climate variability and the ionosphere and telecommunication; and the development in France of several microsatellites such as Picard, to provide information on the diameter of the Sun and its possible variations; Taranis, to study the coupling of the atmosphere, the ionosphere and the magnetosphere through recently discovered phenomena of electrical discharge; and LYOT/SMESE, to study high-energy solar phenomena.

22. The Subcommittee also noted that the first European General Assembly of the International Heliophysical Year was held in Paris in January 2006.

23. The Subcommittee further noted that a regional workshop on African participation in the International Heliophysical Year and the International Polar Year would be held in Cape Town, South Africa, in June 2006, and that an international seminar on the International Heliophysical Year in Asia and the Pacific would be coordinated and hosted by China in October 2006.

XII. Draft provisional agenda for the forty-fourth session of the Scientific and Technical Subcommittee

24. In accordance with General Assembly resolution 60/99, the Scientific and Technical Subcommittee considered proposals for a draft provisional agenda for its forty-fourth session to be submitted to the Committee on the Peaceful Uses of Outer Space. Pursuant to paragraph 13 of that resolution, the Subcommittee requested the Working Group of the Whole, established at its [...] meeting, on [...] February, to consider the draft provisional agenda for the forty-fourth session of the Subcommittee.

25. At its [...] meeting, on [...] March, the Subcommittee endorsed the recommendations of the Working Group of the Whole concerning the draft provisional agenda for the forty-fourth session of the Subcommittee, as contained in the report of the Working Group of the Whole (see annex [...] to the present report).

26. The Subcommittee noted that the Secretariat had scheduled the forty-third session of the Subcommittee to be held from 12 to 23 February 2007.