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**Committee on the Peaceful
Uses of Outer Space
Sixty-fifth session
Vienna, 1–10 June 2022**

Draft report

Addendum

Chapter II

Recommendations and decisions

B. Report of the Scientific and Technical Subcommittee on its fifty-ninth session

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its fifty-ninth session ([A/AC.105/1258](#)), which contained the results of its deliberations on the items considered by the Subcommittee in accordance with General Assembly resolution [76/76](#).
2. The Committee expressed its appreciation to Juan Francisco Facetti (Paraguay) for his able leadership as Chair during the fifty-ninth session of the Subcommittee.
3. The representatives of Australia, Austria, Brazil, Canada, Chile, China, Finland, Germany, Indonesia, Iran (Islamic Republic of), Italy, Japan, the Russian Federation, South Africa, Switzerland, the United Kingdom, the United States and Venezuela (Bolivarian Republic of) made statements under the item. The representative of Morocco made a statement on behalf of the Group of 77 and China. The observer for IAU also made a statement. During the general exchange of views, statements relating to the item were also made by other member States.
4. The Committee heard the following presentations:
 - (a) “HERA mission: three-dimensional vision processing and visualization methods to analyse the DART impact on Dimorphos”, by the representative of Austria;
 - (b) “Real-time Earth observation for responsive disaster management”, by the representatives of Austria;
 - (c) “LEO megaconstellations are deeply changing space activities of the world”, by the representative of China;
 - (d) “The impact of the Double Asteroid Redirection Test”, by the representative of the United States.



1. United Nations Programme on Space Applications**(a) Activities of the United Nations Programme on Space Applications**

5. The Committee took note of the discussion of the Subcommittee under the item on the activities of the United Nations Programme on Space Applications, as reflected in the report of the Subcommittee (A/AC.105/1258, paras. 54–74).

6. The Committee noted that the priority areas of the Programme were environmental monitoring, natural resource management, satellite communications, disaster risk reduction, the use of global navigation satellite systems (GNSS), the Basic Space Science Initiative, climate change, the Basic Space Technology Initiative, the Human Space Technology Initiative, and biodiversity and ecosystems.

7. The Committee took note of the activities of the Programme carried out in 2021 and planned for 2022, as presented in the report of the Subcommittee (A/AC.105/1258, paras. 59–69).

8. The Committee expressed its appreciation to the Office for Outer Space Affairs for the manner in which the activities of the Programme had been implemented, in particular, in 2021, with the limited funds available. The Committee also expressed its appreciation to the Governments and intergovernmental and non-governmental organizations that had sponsored the activities. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2022.

9. The Committee expressed its concern that the financial resources available to the United Nations Programme on Space Applications remained limited and emphasized that it was important that the Office was equipped with the necessary resources, including sufficient funding, to assist a greater number of countries in having access to the benefits of space science and technology and its applications in line with the spirit of the Outer Space Treaty as well as the “Space2030” Agenda.

10. The Committee noted that CubeSats developed by teams from Kenya, Guatemala and Mauritius, winners in the first, second and third rounds, respectively, had been deployed from the International Space Station through the United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station Japanese Experiment Module, known as “KiboCUBE”. Teams from Indonesia, the Republic of Moldova and the Central American Integration System (SICA), winners in the third, fourth and fifth rounds, respectively, were currently developing their CubeSats under the programme. The Committee further noted that the KiboCUBE programme had become an essential tool for capacity-building in space science and technology and that, in that regard, the Office for Outer Space Affairs and the Japan Aerospace Exploration Agency (JAXA) had announced the extension of the KiboCUBE programme until the end of December 2024 and had added a new educational opportunity called “KiboCUBE Academy”.

11. The Committee noted that the United Nations Programme on Space Applications continued to implement the Access to Space for All initiative, which was focused on developing the capacity of Member States to access the benefits of space and which offered to its partners research opportunities to develop the technologies needed to send hardware into space, access to unique ground and orbital facilities for experiments in microgravity and access to space data and training on their use, including the use of astronomical data, placing those countries in the international space arena and enabling in-depth capacity-building in space science and technology.

12. The Committee requested the Office for Outer Space Affairs to continue to work with the Scientific and Technical Subcommittee on defining the priorities of the Programme.

13. The Committee noted with satisfaction that the United Nations Programme on Space Applications had continued to emphasize, promote and foster cooperation with Member States at the regional and global levels to support the regional centres for space science and technology education, affiliated to the United Nations.

14. The Committee noted that the Office for Outer Space Affairs continued to closely collaborate with the regional centres for space science and technology education, affiliated to the United Nations, namely the African Regional Centre for Space Science and Technology Education – in English Language, the African Regional Centre for Space Science and Technology – in French Language; the Centre for Space Science and Technology Education in Asia and the Pacific, the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, the Regional Centre for Space Science and Technology Education for Western Asia and the Regional Centre for Space Science and Technology Education in Asia and the Pacific (China). In that connection, the Committee noted with appreciation that the host countries of the regional centres for space science and technology education, affiliated to the United Nations, were providing significant financial and in-kind support to the centres.

(b) International Satellite System for Search and Rescue

15. The Committee noted with satisfaction that the International Satellite System for Search and Rescue (COSPAS-SARSAT), which provided worldwide coverage of emergency beacons, carried on vessels and aircraft and by individual users around the world, currently had 43 member States and 2 participating organizations. The Committee also noted that in 2021 the programme had helped to rescue 330 people from potentially life-threatening situations throughout the United States and its surrounding waters, and since 1982, the start of the programme, COSPAS-SARSAT had supported more than 48,000 rescues worldwide, including more than 9,700 in the United States and its surrounding waters.

2. Space technology for sustainable socioeconomic development

16. The Committee took note of the discussion of the Subcommittee under the item on space technology for sustainable socioeconomic development, as reflected in the report of the Subcommittee (A/AC.105/1258, paras. 79–88).

17. The Committee endorsed the decisions and recommendations of the Subcommittee on the item (A/AC.105/1258, para. 88).

18. The Committee took note of the report of the Working Group of the Whole of the Scientific and Technical Subcommittee, reconvened under the chairmanship of Prakash Chauhan (India) as Chair (A/AC.105/1258, annex I).

19. Some delegations expressed the view that space science and technology and their applications were essential to effectively addressing current and future challenges to social and economic development and sustainability, such as natural disasters, food security, climate change and natural resource security, and noted that space activities were crucial to realizing the Sustainable Development Goals and the “Space2030” Agenda, in particular as part of efforts to support sustainable economic growth, improve the quality of life and manage the global environment. The delegations expressing that view were also of the view that it was important to ensure that the Office was equipped with the necessary resources, including sufficient funding, to assist a greater number of countries in gaining access to the benefits of space science and technology and their applications.

3. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth’s environment

20. The Committee took note of the discussion of the Subcommittee under the item on matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth’s environment, as reflected in the report of the Subcommittee (A/AC.105/1258, paras. 89–98).

21. The Committee noted that international and regional initiatives of States used remote sensing data to support sustainable socioeconomic development, in particular for the benefit of developing countries.

22. In the course of the discussions, delegations were informed of the critical role that remote sensing played in well-informed decision-making and of cooperation programmes at the national and international levels that utilized space-derived data and applications. Examples included services for territorial mapping and border security, land-use planning, management of natural and mineral resources, forestry, the identification and recording of property rights, tools for mapping vegetation, crops and soil and watershed and hydrologic features to support precision agriculture and rural planning, the identification of arable land, irrigation and groundwater detection, meteorology and weather forecasting and early warning of severe storms, disaster management and emergency response, climate change and environmental protection, oceanographic temperature and sea level monitoring, monitoring air quality for aerosols and pollutants, including the monitoring of essential climate variables to contribute to international studies, promoting sustainable development, ecosystems management, glacier and snowfall mapping and studies, crop and soil monitoring for irrigation and groundwater detection, space weather monitoring and early warning systems to protect critical infrastructure and animal movement monitoring.

23. The Committee noted that important initiatives such as the Group on Earth Observations and CEOS played an important role in promoting and facilitating the sharing of remote sensing data, and, in this regard, welcomed the continued commitment of many Member States in that area.

4. Space debris

24. The Committee took note of the discussion of the Subcommittee under the item on space debris, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 99–123).

25. The Committee noted with satisfaction that 2022 marked the fifteenth anniversary of the endorsement by the General Assembly, in its resolution [62/217](#), of the Space Debris Mitigation Guidelines of the Committee, and urged those countries that had not yet done so to consider implementing the Guidelines on a voluntary basis.

26. The Committee also noted with satisfaction that many States and international intergovernmental organizations were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines and the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee ([A/74/20](#), annex II) and that a number of States had harmonized their national space debris mitigation standards with those guidelines.

27. In addition, the Committee noted that some States were using the Space Debris Mitigation Guidelines of the Committee and/or the Space Debris Mitigation Guidelines of the Inter-Agency Space Debris Coordination Committee (IADC), ISO standard 24113:2011 (Space systems: space debris mitigation requirements) and ITU recommendation ITU-R S.1003 (Environmental protection of the geostationary-satellite orbit) as reference points in their regulatory frameworks for national space activities. The Committee also noted that some States were cooperating under the space surveillance and tracking support framework funded by the European Union and in the space safety programme of ESA.

28. The Committee also noted that an increasing number of States were adopting concrete measures to mitigate space debris, including the improvement of the design of launch vehicles and spacecraft, the de-orbiting of satellites, passivation, life extension, end-of-life operations and the development of specific software and models for space debris mitigation.

29. The Committee further noted that IADC, whose initial work had served as the basis for the Space Debris Mitigation Guidelines of the Committee, had updated its own Space Debris Mitigation Guidelines in 2022.

30. The Committee took note with concern of the issue of space debris and the challenges that the proliferation of space debris posed to the future exploration and use of outer space.

31. The Committee agreed that Member States and international organizations having permanent observer status with the Committee should continue to be invited to provide reports on research on space debris, the safety of space objects with nuclear power sources on board, problems relating to the collision of such space objects with space debris and the ways in which debris mitigation guidelines were being implemented.

32. Some delegations expressed the view that the issue of space debris should be addressed in a manner that would not jeopardize the development of the space capabilities of developing countries.

33. Some delegations expressed the view that it was important that new space actors were not burdened as a result of the historical activities of established space actors.

34. Some delegations expressed the view that addressing the challenges posed by the placement of megaconstellations in low Earth orbit, including those related to the sustainable use of orbit and frequencies, should be made a priority in the work of the Committee.

35. Some delegations expressed the view that advanced spacefaring countries and other actors, especially those deploying megaconstellations, to pay due regard to the application of the relevant voluntary measures such as the Space Debris Mitigation Guidelines and the Guidelines for the Long-term Sustainability of Outer Space Activities and underscored the importance of strengthening the capacity of developing countries for the voluntary implementation of those measures.

36. Some delegations expressed the view that, since orbital debris was the consequence of the past and ongoing operations of major spacefaring nations, those nations should accept the primary responsibility both for alleviating the situation and for assisting the developing and emerging spacefaring nations technically and financially in meeting space debris mitigation guidelines.

37. The view was expressed that in discussing debris mitigation as well as space traffic management, it was necessary to promote transparency and confidence-building measures in space activities to avoid miscalculations and misunderstandings.

5. Space-system-based disaster management support

38. The Committee took note of the discussion of the Subcommittee under the item on space-system-based disaster management support, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 124–136).

39. The Committee noted the importance of space-based information for disaster management and emergency response, utilizing remote sensing data and Earth observation satellites for developing multi-hazard early warning systems and disaster impact analysis for all types of natural disasters, including for monitoring the coronavirus disease (COVID-19) pandemic.

40. The Committee welcomed the activities organized by the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), which supported the development of capacity to use all types of space-based information in support of the full disaster management cycle. In that regard, the Committee took note of the UN-SPIDER activities and capacity-strengthening efforts, including the generation of tailored space-based information for countries in need in 2021 (see [A/AC.105/1250](#)), which were carried out with the continued support of its network of partners, as well as the benefits of the UN-SPIDER knowledge portal (www.un-spider.org), a web-based platform for information, communication and process support that fostered the exchange of information, the sharing of experiences, capacity-building and technical advisory support and services.

41. Some delegations expressed the view that in order to strengthen disaster preparedness and emergency response at the national level, the Office for Outer Space Affairs should increase the capacity-building activities of UN-SPIDER by offering

more technical advisory missions and training programmes, in particular to developing countries.

42. The Committee noted the holding of several international conferences recently related to disaster management, such as the Third Multi-Hazard Early Warning Conference, which was held in Bali, Indonesia, on 23 and 24 May, and the ESA Living Planet Symposium, held in Bonn, Germany, from 23 to 27 May, highlighting the use of space technologies in disaster management.

43. The Committee also noted the support that States had been providing to the Working Group on Disasters of CEOS and the international COSPAS-SARSAT programme.

44. The Committee noted with appreciation the financial and staff resource contributions made by China, France and Germany to UN-SPIDER and the in-kind contributions, including the provision of experts, made by some States members of the Committee and by the regional support offices in 2021 in support of the activities conducted by the Office for Outer Space Affairs through UN-SPIDER, as well as their efforts to share experience with other interested countries. In that regard, the Committee encouraged other member States and permanent observers to provide to the activities and programmes of the Office, including UN-SPIDER, all necessary support on a voluntary basis, including increased financial support, to enable it to better respond to Member States' requests for assistance and to fully carry out its workplan in the coming years.

6. Recent developments in global navigation satellite systems

45. The Committee took note of the discussion of the Subcommittee under the item on recent developments in global navigation satellite systems, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 137–157).

46. The Committee noted that the International Committee on Global Navigation Satellite Systems (ICG), as an optimal cooperation mechanism, offered the benefit of providing a flexible forum in which GNSS providers and users discussed all matters regarding the use of multiple GNSS signals.

47. The Committee noted the work of ICG aimed at creating an interoperable, multi-GNSS space service volume, which would enable improved navigation for space operations beyond geostationary Earth orbit and that GNSS services were expected to be employed in cislunar space.

48. The Committee noted the efforts by the Office for Outer Space Affairs in promoting the use of GNSS through its capacity-building and information dissemination initiatives, in particular in developing countries, as well as the role of the Office as the executive secretariat of ICG in coordinating the annual meetings of ICG and its Providers' Forum.

49. The Committee noted that the fifteenth meeting of ICG and the twenty-fourth meeting of the Providers' Forum, organized by the Office for Outer Space Affairs, had been held in Vienna from 27 September to 1 October 2021 and that the sixteenth meeting of ICG would be hosted by the United Arab Emirates and be held in Abu Dhabi, from 9 to 14 October 2022.

7. Space weather

50. The Committee took note of the discussion of the Subcommittee under the item on space weather, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 158–172).

51. The Committee noted that space weather, which was caused by solar variability, was an international concern owing to the potential threat it posed to space systems, human space flight and ground- and space-based infrastructures upon which society was increasingly dependent. As such, it needed to be addressed in a global manner, through international cooperation and coordination, in order to be able to predict

potentially severe space weather events and mitigate their impact so that the long-term sustainability of outer space activities was ensured.

52. The Committee noted a number of national and international activities undertaken in the fields of research, training and education to improve the scientific and technical understanding of the adverse effects of space weather and thus strengthen global resilience to its threat, with the goal of facilitating the implementation of the space weather-related guidelines B.6 and B.7 of the Guidelines for the Long-term Sustainability of Outer Space Activities.

53. The Committee noted with appreciation that the Expert Group on Space Weather of the Scientific and Technical Subcommittee had held meetings on the margins of the fifty-ninth session of the Subcommittee, in 2022, as well as in the intersessional period. The Committee also noted the document submitted to the Subcommittee entitled “Draft final report of the Expert Group on Space Weather: towards improved international coordination for space weather services” (A/AC.105/C.1/L.401), which contained six high-level recommendations, and expressed its appreciation to the Rapporteur of the Expert Group, Ian Mann, for his dedicated work.

54. The Committee endorsed the decision that was agreed by the Subcommittee to consider the report (A/AC.105/C.1/L.401) as a final report of the Expert Group and to issue the report under the symbol A/AC.105/C.1/122, as reflected in the report of the Subcommittee (A/AC.105/1258, para. 172).

55. Some delegations expressed the view that it was important for the international space weather community to find a mechanism to coordinate and continue its work.

8. Near-Earth objects

56. The Committee took note of the discussion of the Subcommittee under the item on near-Earth objects, as reflected in the report of the Subcommittee (A/AC.105/1258, paras. 173–190).

57. The Committee noted with appreciation the work done by the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG) to ensure that all nations, in particular developing countries with limited capacity to predict and mitigate the impact of a near-Earth object, were aware of potential threats.

58. The Committee noted that, should a credible threat of impact be identified by the worldwide network of astronomical observatories, the best information available on that threat would be provided by IAWN and disseminated to all Member States through the Office for Outer Space Affairs.

59. The Committee noted the importance of national efforts and activities aimed at developing capabilities in the discovery, observation, early warning and mitigation of potentially hazardous near-Earth objects that contributed to strengthening international collaboration and information-sharing, and in that regard highlighted the importance of contributing to the work of IAWN and SMPAG.

60. The Committee noted the launch of the first-ever planetary defence technology demonstration mission, the Double Asteroid Redirection Test (DART) of the National Aeronautics and Space Administration (NASA) of the United States, in November 2021, which would demonstrate the kinetic impact deflection technique. The Committee also noted that, as a follow-up, the Hera mission of ESA was planned to encounter the Didymos asteroid system in 2026 to provide a valuable assessment of the deflection technique test of the DART mission.

61. The Committee noted that further information on the meetings of IAWN and SMPAG, to which the Office for Outer Space Affairs served as the permanent secretariat, had been made available on their websites (<http://iawn.net> and <http://smpag.net>).

62. The Committee noted that the seventh International Academy of Astronautics Planetary Defense Conference had been held from 26 to 30 April 2021, hosted by the Office for Outer Space Affairs in cooperation with ESA, and that the eighth Planetary Defense Conference was to be held at the Vienna International Centre from 3 to 7 April 2023, hosted by the Office in cooperation with ESA and the host country, Austria.

9. Long-term sustainability of outer space activities

63. The Committee took note of the discussion by the Subcommittee under the item on the long-term sustainability of outer space activities, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 191–209).

64. The Committee had before it the following:

(a) Conference room paper by the Russian Federation entitled “Implementation of the LTSSA Guideline ‘A.1 Adopt, revise and amend, as necessary, national regulatory frameworks’” ([A/AC.105/2022/CRP.9](#));

(b) Conference room paper by the Russian Federation entitled “Contribution of the Centre for Space Science and Technology Education in the Eurasian Region to strengthening the capacity of COPUOS member States to implement the Guidelines for the Long-Term Sustainability of Outer Space Activities” ([A/AC.105/2022/CRP.10](#));

(c) Conference room paper by the Russian Federation entitled “Considerations on key unresolved tasks of ensuring safety of space operations in the context of the long-term sustainability of outer space activities” ([A/AC.105/2022/CRP.11](#)).

65. The Committee recalled with appreciation that, at the fifty-ninth session of the Subcommittee, the Working Group on the Long-term Sustainability of Outer Space Activities had agreed on and adopted its terms of reference, methods of work and workplan ([A/AC.105/1258](#), annex II, para. 7, and appendix).

66. The Committee also recalled that the Working Group would attach equal importance to each of the three elements of the guiding framework ([A/AC.105/1258](#), annex II, appendix, paras. 6 and 7).

67. The Committee further recalled that the Working Group had agreed to hold informal consultations, in a hybrid format, in November 2022 ([A/AC.105/1258](#), annex II, para. 9).

68. The Committee was informed that a number of States members had already either completed, or were currently completing, internal assessments of their implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space.

69. The Committee was also informed of a number of national, regional and international scientific, technical, legal and policy measures and initiatives that had been, or were currently being undertaken, to implement the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee.

70. The Committee was further informed about the continuation of the project of the Office for Outer Space Affairs entitled “Awareness-raising and capacity-building related to the implementation of the LTS Guidelines”, made possible through financial support provided by the United Kingdom, which had, in the second phase of the project, produced a stakeholder study report (see spacesustainability.unoosa.org).

71. Some delegations expressed the view that the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee constituted best practices for the safe and responsible use of outer space and were critical to maintaining outer space for future generations.

72. Some delegations expressed the view that it was important to share experiences and review best practices and lessons learned in the practical national implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee because it would enhance overall communication, international cooperation, awareness-raising and capacity-building.

73. Some delegations expressed the view that it would be useful for the Legal Subcommittee to carry out a review and assessment of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee.

74. The view was expressed that the Committee on the Peaceful Uses of Outer Space had become a principal forum for space sustainability discussions, setting itself apart from other forums by developing a “bottom-up” approach to addressing safe and sustainable practices with regard to the use of space.

75. The view was expressed that there were multiple parallel platforms considering the subject matter that had been under the purview of the Committee for years, that this included topics that were within the mandate of the Working Group on the Long-term Sustainability of Outer Space Activities, and that this constituted a direct duplication of functions. The delegation expressing that view was also of the view that international work undertaken in accordance with the inviolable principle of consensus was the only way to ensure the long-term sustainability of outer space activities in the interest of the world community as a whole.

76. The view was expressed that the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee were clear, practical and proven, meaning that both their implementation and efficacy had been demonstrated by States and international intergovernmental organizations, and that the Guidelines neither undermined existing legal obligations nor hampered the use of outer space, in particular its use by emerging space actors.

77. The view was expressed that, above all, the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee were a positive indication of efforts to alleviate environmental degradation as they contained recommendations that promoted more environmentally positive practices in the design and operation of space missions.

78. The view was expressed that the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee were the first complete body of rules governing contemporary space activities and that they must be kept up-to-date, or supplemented, in view of current and future challenges posed by the development of economic and scientific activity generated around space resources.

79. The view was expressed that Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee had led to improved domestic conversations on the implications of space sustainability for pursuing national space activities and for the development of stronger regulatory frameworks, along with coordinated national positions.

80. The view was expressed that developing countries should not be left behind or unfairly disadvantaged by space exploration efforts and that the only way to ensure the sustainability of outer space activities was to continue to deliver the benefits derived from those activities to humanity as a whole through enhanced cooperation and collaboration.

81. The view was expressed that, in order to achieve the main objectives of long-term sustainability of outer space activities, it was important for the Scientific and Technical Subcommittee to concentrate on areas such as building and promoting capacities, as well as the transfer of technology to developing countries, all within the framework of international cooperation, and for the full, effective and non-discriminatory operationalization of the Guidelines for the Long-term Sustainability of Outer Space Activities.

82. The view was expressed that understanding what was stopping countries from being able to implement the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee was critical to understanding the form of future capacity-building activities.

83. The view was expressed that plans of the Working Group on the Long-term Sustainability of Outer Space Activities to identify and study challenges and consider possible new guidelines were of relevance due, among other things, to the interest of States and commercial companies in projects for the active removal of space debris, as well as the development of plans and programmes for the exploration and use of the Moon. The delegation expressing that view recalled that further substantive inputs related to the Working Group could be found in conference room papers A/AC.105/2022/CRP.9, A/AC.105/2022/CRP.10 and A/AC.105/2022/CRP.11.

84. The view was expressed that the long-term sustainability of outer space activities should be retained as a regular item on the agenda of the Scientific and Technical Subcommittee to ensure that the discussion of the technical aspects on which progress had been made in the Working Group on the Long-term Sustainability of Outer Space Activities continued and received greater attention from all delegations.

10. Future role and method of work of the Committee

85. The Committee took note of the discussion of the Subcommittee under the item on the future role and method of work of the Committee, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 210–233).

86. The Committee recalled its decision, made at its sixty-second session, to introduce a regular item entitled “Future role and method of work of the Committee” on the agendas of both subcommittees to allow for discussion of cross-cutting issues ([A/74/20](#), para. 321 (h)).

11. Use of nuclear power sources in outer space

87. The Committee took note of the discussion of the Subcommittee under the item on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 224–237).

88. The Committee endorsed the recommendations of the Subcommittee and the Working Group on the Use of Nuclear Power Sources in Outer Space, reconvened under the chairmanship of Sam A. Harbison (United Kingdom), including the extension of the Working Group’s multi-year workplan by one year in order to finalize the report to the Subcommittee on the outcome of the multi-year workplan and explore options for gathering information about advances in knowledge, practices and plans for future space nuclear power source applications ([A/AC.105/1258](#), para. 237, and annex III).

89. The Committee noted that, in that connection, a series of intersessional meetings had been held by the Working Group, facilitated by the secretariat, and that the Working Group had held two informal meetings on the margins of the sixty-fifth session of the Committee, on 7 and 8 June 2022, to advance its work.

90. The Committee acknowledged the fact that some States and an international intergovernmental organization were developing, or considering developing, legal and regulatory instruments on the safe use of nuclear power sources in outer space, taking into account the content and requirements of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space and of the Safety Framework for Nuclear Power Source Applications in Outer Space, which was developed jointly by the Subcommittee and the International Atomic Energy Agency.

91. The Committee in that regard also noted the importance of the work of the Working Group to allow for the continued sharing of information to promote further understanding and development of effective processes to ensure the safe use of

nuclear power in space, given the renewed interest in the use of nuclear power sources in outer space that had opened the solar system to exploration, making it possible to observe and understand dark, distant planetary bodies that would otherwise be unreachable, as well as the use of nuclear power sources for the in-space propulsion of spacecraft as a potential technology for crewed and cargo missions to Mars and scientific missions to the outer solar system, enabling faster and more robust human and robotic missions.

92. Some delegations expressed the view that there should be an ongoing mechanism for a structured exchange on the topic at the multilateral level, and that the Working Group on the Use of Nuclear Power Sources in Outer Space should recommend to the Subcommittee the new arrangements that would be needed to take forward the development of safety guidelines for potential future uses of nuclear power sources in outer space.

12. Space and global health

93. The Committee took note of the discussion of the Subcommittee under the item on space and global health, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 238–249).

94. The Committee endorsed the recommendations and decisions on the item made by the Subcommittee and its Working Group on Space and Global Health, convened under the chairmanship of Antoine Geissbühler (Switzerland), including the decisions regarding the establishment of the Space and Global Health Platform and the Space and Global Health Network ([A/AC.105/1258](#), para. 249, and annex IV, para. 7).

95. The Committee expressed appreciation to the delegation of Switzerland for facilitating informal consultations on the text of the draft resolution on space and global health, as contained in [A/AC.105/L.328](#), during the current session of the Committee.

96. The view was expressed that the text of the draft resolution could have been further enhanced through the acknowledgement of the importance of human medical research for improving understanding of ecology, psychology, ergonomics, genetics, physical education, nutrition and other sciences. The delegation expressing that view also stressed the non-discriminatory character of international cooperation in the domain of global health and emphasized that goals to develop and improve health-care systems should not be hindered by political motivations.

97. At its 790th meeting, on 3 June 2022, the Committee endorsed the draft resolution on space and global health, contained in annex I to the present report. The Committee noted that the draft resolution, as endorsed, would be submitted to the General Assembly at its seventy-seventh session, in 2022, for adoption by the Assembly under the agenda item entitled “International cooperation in the peaceful uses of outer space”.

98. The Committee noted the broad array of activities relevant to space and global health and acknowledged the contribution of space science, space technology and space applications to the prevention and control of diseases, the promotion of human health and welfare, the addressing of global health issues, the advancement of medical research, the advancement of health practices and the provision of health-care services to individuals and communities, including in rural areas with limited access to health care.

99. The Committee noted the vital role of space science, space technology and space applications in addressing the COVID-19 pandemic, and their critical role in support of contact tracing, the identification of affected areas, modelling the spread of the disease and monitoring its transmission, connectivity for remote working, telehealth and communication, as well as methods of coping with social isolation.

100. The Committee welcomed the report of the Working Group on Space and Global Health on the work conducted under its multi-year workplan ([A/AC.105/C.1/121](#)) and

expressed its gratitude to the Chair of the Working Group for his dedicated efforts and able leadership in guiding the work of the Working Group under its multi-year workplan.

101. The Committee agreed that the agenda item entitled “Space and global health” was to be made a regular item on the agenda of the Subcommittee from 2023 onwards.

13. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union

102. The Committee took note of the discussion of the Subcommittee under the item on the examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of ITU, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 250–261).

103. Some delegations expressed the view that the geostationary orbit was a limited natural resource that was at risk of becoming saturated, thereby threatening the sustainability of space activities in that environment, that its use should be rationalized, and that it should be made available to all States, under equitable conditions, irrespective of their current technical capabilities, taking into particular account the needs of developing countries and the geographical position of certain countries.

14. General exchange of views on dark and quiet skies for science and society

104. The Committee took note of the discussion of the Subcommittee under the item entitled “General exchange of views on dark and quiet skies for science and society”, as reflected in the report of the Subcommittee ([A/AC.105/1258](#), paras. 262–276).

105. The Committee welcomed the inclusion of the general exchange of views on dark and quiet skies for science and society on the agenda of the Scientific and Technical Subcommittee as a single issue/item for discussion, as an important recognition of the fact that astronomical observations for both optical and radio astronomy were an essential aspect of space activities and should be protected from interference.

106. The Committee welcomed the contributions made to the discussion by the United Nations/Spain/IAU Conference on Dark and Quiet Skies for Science and Society (see [A/AC.105/1255](#) and [A/AC.105/1257](#)) and the industry symposium organized by the Office for Outer Space Affairs on the topic of dark and quiet skies on the margins of the fifty-ninth session of the Scientific and Technical Subcommittee ([A/AC.105/1258](#), paras. 43–48) and took note of the recommendations resulting from those events.

107. The Committee noted the initiative taken by IAU in inviting delegations to engage with its recently opened Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference, which began operation on 1 April 2022, aimed at coordinating collaborative multidisciplinary international efforts with institutions and individuals worldwide to help mitigate the negative impact of satellite constellations on ground-based optical and radio astronomy observations as well as on humanity’s enjoyment of the night sky.

108. The Committee noted the efforts to protect radio telescopes and radio quiet zones from satellite constellations carried out in some countries and the continuous engagement between the astronomical and satellite communities, as well as the importance of continued cooperation among all relevant actors, in particular the space

industry, satellite constellation operators and the astronomical community, to ensure the protection of the dark and quiet sky from satellite constellation interference.

109. Some delegations expressed the view that multi-stakeholder efforts to develop practical solutions to address the unintended impacts of satellite constellations on astronomy were needed.

110. The view was expressed that the adverse effects of satellite constellations on the visibility of the night skies for ground-based astronomy had not been adequately considered and that the matter, which fell within the mandate of the Committee, called for an internationally agreed regulation.

15. Draft provisional agenda for the sixtieth session of the Scientific and Technical Subcommittee

111. The Committee took note of the discussion of the Subcommittee under the item on the draft provisional agenda for its sixtieth session, as reflected in the report of the Subcommittee (A/AC.105/1258, paras. 277–281).

112. The Committee endorsed the recommendations and decisions on the item made by the Subcommittee (A/AC.105/1258, paras. 279–281).

113. On the basis of the deliberations of the Subcommittee at its fifty-ninth session, the Committee agreed that the following items should be considered by the Subcommittee at its sixtieth session:

1. Adoption of the agenda.
2. Statement by the Chair.
3. General exchange of views and introduction of reports submitted on national activities.
4. United Nations Programme on Space Applications.
5. Space technology for sustainable socioeconomic development.
6. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
7. Space debris.
8. Space-system-based disaster management support.
9. Recent developments in global navigation satellite systems.
10. Space weather.
11. Near-Earth objects.
12. Long-term sustainability of outer space activities.
(Work for 2023 as reflected in the multi-year workplan of the Working Group on the Long-term Sustainability of Outer Space Activities (A/AC.105/1258, para. 209 and para. 18 of the appendix to annex II))
13. Future role and method of work of the Committee.
14. Space and global health.
15. Use of nuclear power sources in outer space.
(Work for 2023 as reflected in the extended multi-year workplan of the Working Group on the Use of Nuclear Power Sources in Outer Space (A/AC.105/1258, para. 237 and annex III, para. 5))
16. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to

developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.

(Single issue/item for discussion)

17. General exchange of views on dark and quiet skies for science and society.

(Single issue/item for discussion)

18. Draft provisional agenda for the sixty-first session of the Scientific and Technical Subcommittee.

19. Report to the Committee on the Peaceful Uses of Outer Space.

114. The Committee agreed that the Working Group of the Whole, the Working Group on the Use of Nuclear Power Sources in Outer Space, and the Working Group on the Long-term Sustainability of Outer Space Activities should be reconvened at the sixtieth session of the Scientific and Technical Subcommittee.

115. The Committee agreed that, in accordance with the agreement reached at the forty-fourth session of the Scientific and Technical Subcommittee, held in 2007 ([A/AC.105/890](#), annex I, para. 24), the symposium to be organized by the Committee on Space Research at the sixtieth session of the Subcommittee should be on the topic of climate action and the contribution from space.
