

Agenda Item 8 – United States “Space Weather”

February 6, 2025

Thank you, Chair and distinguished delegates. The United States remains committed to advancing our space weather observation and prediction capabilities, and we look forward to enhancing international cooperation as countries around the globe continue to expand their related interests and capabilities. Addressing space weather as a global concern requires coordinated efforts to predict and manage severe events and their impact on Earth. Activity on the Sun has reached its solar maximum period for Solar Cycle 25. In addition to more sunspots on the Sun, energetic events like solar flares and coronal mass ejections have become more frequent in the past year. Ongoing measurements and focused research efforts are improving modeling and forecasting capabilities and collaboration with our international partners has helped us leverage our collective investment to predict and mitigate severe space weather events effectively.

The United States leads and participates in numerous initiatives to improve space weather observations and services to advance the scientific understanding of the space environment and provide warning of critical space weather events.

We continue to implement the U.S. 2019 National Space Weather Strategy and Action Plan, which highlight the importance of UNCOPUOS and serve as a roadmap for coordinated interagency and international efforts.

The United States makes its space weather data and forecasts available on a full and open basis, and we continue our research efforts to advance our space weather models and to work with our international partners around the world to strengthen our operational space weather forecasts. The United States strives to improve its space weather observing infrastructure and to maintain long-term continuity of essential observations.

This past June, NOAA launched the Geostationary Operational Environmental Satellites (GOES) 19 satellite, which carries a Compact Coronagraph (CCOR-1), a powerful solar telescope. The CCOR is the world’s first operational, space-based coronagraph and began observing the sun’s corona, which is used to observe a Coronal Mass Ejection’s size, mass, speed, and direction, warning forecasters of

impending geomagnetic events. Later this fall, NOAA will launch the Space Weather Follow On (SWFO-L1) mission at Lagrange Point 1, which will orbit the Sun to collect data and measurements and will use a suite of instruments to make real time measurements of the solar wind, thermal plasma, and the magnetic field. The United States appreciates the support of our international partners, especially Korea and Japan, who have agreed to contribute to the operational space-based space weather observations to support this mission and future space weather missions with NOAA's Space Weather Next program.

NASA continues its commitment to advancing the scientific understanding of space weather through improved measurement and analysis techniques, and transitioning space weather research into operations and applications for improved nowcasting and forecasting. In 2024, NASA's Centers of Excellence began their first full year of activities to address grand challenges in space weather and transition those outcomes to operational space weather users. Four scientific instruments comprising the HERMES science payload were successfully completed and put into storage awaiting launch of the first Gateway segments to the Moon as part of the Artemis Program. NASA selected the Joint Extreme ultraviolet light coronal Diagnostic Investigation (JEDI) science instrument to be hosted on the European Space Agency Vigil space weather mission that will monitor and study the Sun from the Sun-Earth Lagrange Point 5. Both HERMES and JEDI will fill measurement and location gaps identified by the NASA Space Weather Gap Analysis. In addition, four Space Weather CubeSats passed their Critical Design Reviews in 2024. The Moon to Mars Space Weather Analysis Office (M2M) provided real-time space environment analysis this past May to NASA missions during the largest solar storm ever measured at Mars. Also in May 2024, the U.S. hosted a Space Weather Tabletop Exercise, a simulated space weather event to identify response plans and communication processes. In September 2024, a comprehensive survey of the needs of users of space weather products and data in the U.S. was released and will inform future applied research and applications activities supported by NASA.

In closing, Chair, the United States congratulates the Expert Group on Space Weather on its recommendations to help ensure all Members are making progress toward implementation of the LTS Guidelines for Space Weather. Thank you, Chair.