Agenda Item 8: Space Weather

Republic of Korea

UN COPUOS Scientific and Technical Subcommittee, Sixty-second Session February 3, 2025

Thank you, Chair.

The year 2024 marks the onset of the solar maximum, a period of heightened solar activity that is already impacting critical infrastructure and services, such as satellite operations, aviation, navigation, and communication systems. This underscores the urgent need for robust international cooperation, particularly through the Committee on the Peaceful Uses of Outer Space (COPUOS).

The Republic of Korea, manages solar activity as a natural disaster that may trigger national crises. Last year, we experienced significant space weather events, including the first G5 geomagnetic storm alert in 21 years. In response, we issued a "Caution" alert and activated coordinated measures across relevant ministries. These efforts included assessing potential impacts on aviation, power grids, and meteorological satellite operations, successfully mitigating the risks associated with the event.

Additionally, four G4-level geomagnetic storms were observed last year, prompting "Attention" alerts for space weather events. As we face the challenges of the solar maximum, these government-wide efforts will continue to play a critical role in minimizing risks and ensuring resilience. We are also planning to develop the next geostationary meteorological satellite, GK5, which is scheduled for launch in 2031. It will be equipped with space weather sensors, including electron and proton detectors, a

satellite charging monitor, and a magnetometer.

Recognizing the importance of addressing space weather challenges, the Republic of Korea has integrated the Korea Space Weather Center into the broader framework of Space Situational Awareness (SSA). This integration reflects the growing recognition of space weather, alongside space debris, as a key factor in ensuring safe and sustainable space activities. The center plays a vital role in monitoring and forecasting space weather events, as well as providing early warnings to mitigate their impacts. Through this unified approach, we aim to enhance our capacity to respond to space-related hazards and safeguard critical infrastructure.

The Republic of Korea also actively contributes to global efforts to address space weather challenges. Last July, we successfully hosted the 45th COSPAR Assembly in Busan, bringing together nations and researchers to collaborate on space weather and science. The event included the annual meeting of the International Space Environment Service (ISES), fostering knowledge exchange and innovation in space weather forecasting technologies.

In addition, the Republic of Korea will host the 2026 International Space Weather Initiative (ISWI) event, as announced during the ISWI closing ceremony in Neustrelitz, Germany, last June. This event will serve as a platform for technical cooperation, knowledge-sharing, and capacitybuilding between developed and developing countries. It will also provide opportunities for policymakers, researchers, and academics to engage in meaningful discussions on global space weather challenges.

These UN-led initiatives are essential for fostering international collaboration, ensuring the safe and sustainable use of outer space, and protecting vital infrastructure from space weather risks. The Republic of Korea remains fully committed to supporting the activities of COPUOS and advancing global cooperation in space weather.

Thank you.

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