

Agenda Item 9: Space weather

Republic of Korea

UN COPUOS Scientific and Technical Subcommittee,

Sixty-first Session February 1, 2024

Thank you, Madam. Chair,

Space weather encompasses the fluctuations in the space environment between the Sun and Earth, impacting the electromagnetic conditions of our planet. In 2024, we are on the cusp of experiencing maximum solar activity. As such, space weather constitutes a global challenge necessitating coordinated preparedness efforts. It is imperative that we forge robust global partnerships through COPUOS to collectively address this challenge.

The Republic of Korea recognizes space weather as a significant natural hazard, posing economic and societal risks to key infrastructures and technologies, including aviation operations, communications, and satellite security.

For instance, Korean air carriers frequently opt for a detour known as the Kamchatka air route, which lies at a lower latitude than the preferred Polar route. This deviation is employed to mitigate the risks associated with space radiation during space weather events. Over the past year, we have witnessed more than 50 instances of such detours, incurring additional costs and flight time for airlines. This underscores the fact that

space weather events and their ramifications are becoming increasingly common.

To mitigate these space weather risks, we unveiled the third iteration of our "National Space Weather Strategy and Action Plan" in March of the previous year. Recognizing the necessity of international collaboration in addressing this complex global issue, Korea is exploring task forces to enhance interactions and advance operational space weather services.

In this vein, the Korean Space Weather Center has initiated new research programs focused on tailored services, including the prediction of Electron/Proton/Neutral density for satellite users and Coronal Mass Ejection (CME) Propagation, as well as tracing farside sunspot. Additionally, we are planning to exchange ionosonde and geomagnetic equipment at the Jeju site and establish new facilities across the Korean Peninsula.

Furthermore, we are planning to support upcoming solar wind satellite missions such as NOAA SWFO-L1 and NASA IMAP, both scheduled for launch in 2025. To support global satellite mission, the Korean Space Weather Center will erect a 13-meter diameter antenna in Jeju Island with a secured line of sight. This expansion will bolster our observational capabilities for monitoring space weather events.

Madam. Chair,

The Republic of Korea would like to continue to work collaboratively on space weather with international partners. As part of those efforts, we're distributing easy tool to get information of many aspects of the Sun, Automatic Solar Synoptic Analyzer (ASSA). Furthermore, The Republic of Korea has maintained ISES webpage for last decade to exchange key information of space weather.

In February 2013, space weather was officially included in our national risk profiles, and we have established a governmental structure and emergency plan. The Ministry of Science and ICT (MSIT) has outlined the risk management procedures and actions for space weather, delineating the roles and responsibilities of relevant ministries and institutions. In line with this plan, MSIT issued an official "concern" level national warning for space weather risk in 2023, with all ministries in our nation following the predefined procedures.

We anticipate that these measures will contribute to enhancing our resilience against space weather and strengthening our capabilities as we approach Solar Cycle 25.

Madam. Chair, distinguished delegates,

The republic of Korea will host the assembly of the International Space Environment Service (ISES) in conjunction with the 45th COSPAR event in Busan. Additionally, there are scheduled sessions on "international cooperation" within the COSPAR Panel on Space Weather. Furthermore,

the Republic of Korea aspires to host the 2026 International Space Weather Initiative (ISWI) to support “Space 2030 Initiative” of UNOOSA.

The ongoing programs will enable us to safeguard national assets against space weather threats and to contribute to the global monitoring of space weather and the promotion of Peaceful Uses of Outer Space.

We are looking forward to working with international partners to enhance space weather capability and minimize the impact of space weather phenomenon.

Thank you for your kind attention, Madam. Chair.

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