

## **Agenda Item 11: Near-Earth Objects**

### **Republic of Korea**

#### **UN COPUOS Scientific and Technical Subcommittee, Sixtieth Session February 14, 2023**

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Thank you, Mr. Chair.

Member States, including Korea, have been engaging in global efforts to monitor and physically characterize potentially hazardous near-Earth objects. Such efforts have undergone significant progress and expansion recently through the work of the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG).

As of February 2023, the total number of known near-Earth objects came to 31,200. Most of these objects are detected in the Northern Hemisphere as we do not have any dedicated facilities larger than 1 meter in the aperture for scientific studies of near-Earth objects in the Southern Hemisphere.

In this vein, Korea built its own ground-based network of telescopes in the Southern Hemisphere: the Korea Microlensing Telescope Network (KMTNet). Based on round-the-clock surveys utilizing the KMTNet, we investigate the orbits and rotation periods of asteroids as well as the spin states, 3-D shapes and approximate surface mineralogy of their fractions. We expect that it provides a practical solution for the IAWN by filling in the gaps in global coverage with the coordinated use of telescopes, especially in the Southern Hemisphere.

Korea has been participating in the IAWN since 2014. Last

November, scientists of the Korea Astronomy Space Science Institute participated in the IAWN observing campaign for near-Earth asteroid 2005 LW3. Its fast sky motion during the encounter enabled the assessment of the accuracy of the observation times.

KMTNet telescopes also contributed to the Double Asteroid Redirection Test (DART) of the National Aeronautics and Space Administration (NASA). Our telescope successfully captured the plume immediately after impact and detected a significant orbital period change in the binary system. We congratulate NASA's success in the DART mission and appreciate the efforts of scientists and engineers.

We are also participating in the SMPAG meetings to contribute to the United Nations' efforts to reduce the impact risks posed by near-Earth objects. Last year, we contributed to the design study of the rendezvous mission to Apophis in 2022, which gained much support from the world science community.

The Republic of Korea is willing to continuously conduct scientific investigations of hazardous asteroids, the possible consequences of their impact, and mitigation measures. We will continue working with the Member States to share our experiences.

Thank you.

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