

Japan Item 10– “Near-Earth Objects”

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Chair, Distinguished Delegates,

Japan recognizes the importance of the exploration of asteroids. Even though the probability of a Near-Earth Object (NEO) collision with the Earth is low, it is important to understand the fundamental characteristics of NEOs by observing and exploring them to avoid such a collision.

The Asteroid Explorer Hayabusa2 collected surface and underground samples from the C-type asteroid Ryugu and brought them back to Earth in 2020. Through the initial analysis of samples, the existence of water and organic matter including many amino acids was reported. Samples were also distributed to various research institutes around the world, and further scientific results are expected. Currently, Hayabusa2 spacecraft is on the way to explore two more asteroids to contribute to the planetary defense. In 2026, the spacecraft will conduct a flyby observation of Asteroid 2001 CC21. In 2031, the spacecraft will arrive at a small and fast rotating asteroid known as 1998 KY26. for its observation.

Chair,

Itokawa and Ryugu, the target asteroids of Hayabusa and Hayabusa2, are objects that travel near the Earth. Detailed data on these NEOs is valuable to investigate ways and means to avoid a NEO collision with Earth. In the realm of NEO observation, JAXA has and operates Bisei Spaceguard Center, an optical telescope facility, that tracks the asteroids that approach the earth, nonfunctional satellites and rockets, and orbital debris. Also, JAXA has developed an image analysis method to find fast-moving celestial bodies. This image analysis method has enabled JAXA to detect fast-moving celestial bodies moving towards Earth by using as small as 20cm-telescopes located at a remote observation site at the Siding Spring observatory in Australia. This image analysis method is also being applied to “Tomo-e Gozen,” which is an

optical wide-field video observations system composed of a mosaic CMOS camera on the 1.05 m Kiso Schmidt telescope developed by the University of Tokyo.

Another contribution to address the risks of NEOs is the Hera mission led by the European Space Agency (ESA), in which JAXA participates by providing a thermal imager and scientific expertise. This is a planetary defense mission investigating near-Earth binary asteroids called “Didymos” and “Dimorphos” to demonstrate planetary defense technology.

JAXA has been a member of the Space Mission Planning Advisory Group (SMPAG) since it was established in 2014 and became a member of the International Asteroid Warning Network (IAWN) in 2023. Japan would like to continue contributing to their activities with its observation facilities.

Chair,

Japan will continue to conduct research missions to deepen its understanding of the basic features of NEOs to better assess the probability of a NEO collision with Earth. To conclude this statement, I would like to reiterate the importance of international cooperation on NEOs and Japan’s commitment to continue contributing to this critical issue.

Thank you for your attention.