

Canada
Agenda Item 9 – Near Earth Objects
Delivered by: Viqar Abbasi, Canadian Space Agency

Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
Sixty-second session, Vienna, February 3rd-14th, 2025

Chair, Distinguished Delegates,

On September 23, 2023, the international space community watched with pride as the sample retrieved on asteroid Bennu safely descended through Earth's atmosphere and landed in the Utah desert. While this was not the first time that asteroid fragments came to Earth, this special occasion was the first time Canada supported a mission where humanity piloted a spacecraft to an asteroid, collected its chosen sample, and brought it back in a controlled manner. The Canadian Space Agency (CSA) is proud to have partnered with NASA, Japan's Aerospace Exploration Agency (JAXA) and France's Centre National d'Études Spatiales (CNES) on this historic mission, OSIRIS-Rex. CSA is now constructing a new laboratory to receive its share of the asteroid sample fragments, allowing Canadian scientists to collaborate with international colleagues to study the samples and enrich our understanding of our solar system's origins.

Canada's OSIRIS-Rex Laser Altimeter (OLA) was instrumental in creating detailed 3D maps of asteroid Bennu's surface. These maps were crucial for selecting the optimal site for sample collection. Following the successful completion of its mission, the OSIRIS spacecraft has embarked on its next mission to study asteroid Apophis, which is expected to arrive shortly after the asteroid's close approach to Earth in 2029. The OLA instrument will once again play a key role by contributing to the production of detailed 3D maps when the newly branded OSIRIS-APEX reaches its destination. These 3D maps will provide

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unprecedented detail on the structure of these important celestial bodies and allow us to deepen humanity's knowledge of the Near-Earth Object (NEO) population.

The study of Near-Earth Objects is important to our collective understanding of the risks present in our solar system. We strongly support the NEO work of Canadian and international scientists, including collaboration through the UN-established International Asteroid Warning Network (IAWN). In 2024, Canada formally joined the UN-mandated Space Mission Planning Advisory Group (SMPAG), established in 2013 and which now comprises space agencies from 18 nations. Through SMPAG, Canada hopes to ensure that humanity is prepared in the event of a Near-Earth Objects impact threat. The importance of IAWN and SMPAG is highlighted by the recent discovery of asteroid 2024 YR4, which is being studied carefully right now as a potentially hazardous asteroid.

Chair,

Canada continues to operate its own space telescope in low-Earth orbit, the Near-Earth Object Surveillance Satellite, NEOSat, which is the first and only space telescope dedicated to detecting and tracking asteroids, comets, satellites and space debris. Through the CSA's NEOSat Guest Observer program for space astronomy, Canadian astronomers can participate in international observation campaigns led by the IAWN. ~~NEOSat also supports variable star photometry, including follow-up on exoplanet candidates from NASA's Kepler and Transiting Exoplanet Survey Satellite (TESS)~~

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~~missions, and other international initiatives.~~ In line with the Government of Canada's Directive on Open Government and commitments to Open Science principles, all NEOSSat's astronomy images are freely available to scientists and researchers worldwide.

NEOSSat's observation time is also dedicated to space situational awareness, collecting observations on the satellites and debris from Low-Earth-Orbit to geostationary and beyond, including cis-Lunar orbits. NEOSSat is Canada's eye in the sky, ready to pivot towards any important or emerging space phenomenon, such as witnessing the NASA DART spacecraft impact on asteroid Didymos. The NEOSSat team has recently started developing its Near-Earth Object Candidate Observation Planner (NEOCOP) to facilitate rapid response on NEO candidates and deliver data faster to the International Astronomical Union Minor Planet Center and the international community. This system parallels Canada's Conjunction Risk Assessment and Mitigation System (CRAMS) which optimizes the decision-making workflow for space debris conjunction events for satellites in Earth orbit.

Chair,

We wish to take the opportunity to commend Romania's leadership at COPUOS in 2024 in advancing the proposal for an International Year of Asteroid Awareness and Planetary Defence. We agree with the importance of raising awareness on planetary defence and that 2029 is a particularly compelling year. And were pleased to support

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during Fourth Committee deliberations in the fall. This is an opportunity to highlight the collaborative efforts being undertaken by the UN to mitigate the potential hazard posed by near-Earth objects.

In closing, increased data sharing from the large variety of sensors we collectively operate can yield great benefits for space sustainability, by improving our collective knowledge of the solar system, including risks to our planet in space and on-orbit. The last few years have seen great progress in these areas but there is still much to learn. Canada looks forward to building upon and expanding our capabilities and partnerships in these important areas. Thank you.