

Canadian Statement
Agenda Item 12 – Near-Earth Objects
Statement delivered by: Jordan Miller, CSA

Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
Fifty-seventh Session, Vienna, February 3-14, 2020

Madame Chair,

Canada values the ongoing research performed by scientists in Canada and around the world to better understand and characterize the population of Near-Earth Objects or NEOs. Canadian researchers at the University of New Brunswick’s Planetary and Space Science Centre host the Earth Impact Database, which has catalogued 190 confirmed asteroid impact crater sites on our planet, including 31 in Canada. Canada continues to support the work of the International Asteroid Warning Network (IAWN) and the Space Mission Planning Advisory Group (SMPAG), established by the United Nations Scientific & Technical Committee in 2013.

Madame Chair, distinguished delegates,

Canada’s space telescope, NEOSat, was launched in 2013. Orbiting in a sun-synchronous low-Earth orbit at an altitude of 780km, NEOSat has a joint mission to detect and track Near-Earth Objects and monitor resident space objects, such as satellites and debris, in high and medium Earth orbit. NEOSat’s position on-orbit and large baffle enables it to image objects closer to the Sun than ground-based telescopes without concerns for the day/night cycle or weather. In the past year, it has increased its observations of Near-Earth Objects, including asteroids and comets, and performed asteroid survey imaging as close as 13 degrees from the Sun.

NEOSat participated in a number of interesting observation campaigns in 2019, including follow-up on newly discovered comets at low solar elongation, follow-up on the first discovered near-Earth asteroid whose orbit is entirely within Venus’s orbit, and daily observations of the second-ever interstellar object to visit our solar system, the interstellar comet 2I/Borisov. NEOSat imagery is published on the Government of Canada’s Open Data portal as well as the Canadian Astronomy Data Centre, managed by Canada’s National Research Council. In addition, measurements from these and other observation campaigns have been published by the International Astronomical Union and the Minor Planet Center for the benefit of the international community.

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In 2019, CSA launched a new Guest Observer program for NEOSSat, providing opportunities for Canadian astronomers and international collaborators to propose new observation campaigns for NEOSSat. The inaugural cycle selected eight proposals, enabling advanced space-based study of asteroids, comets as well as exoplanet transits and other variable star phenomenon. Canadian scientists look forward to building partnerships with scientists and researchers around the world to enhance NEOSSat’s scientific and operational contributions to both communities.

Madame Chair, distinguished delegates,

There is much to learn about Near-Earth Objects by observing them from ground-based and space-based telescopes and studying Earth impact craters. However, to get a complete picture, a closer look at asteroids in space is necessary. Canada is proud to be a partner in NASA’s OSIRIS-REx mission, the first spacecraft to visit an asteroid for the purposes of sample return. Launched in 2016, OSIRIS-REx successfully reached the near-Earth asteroid Bennu in August 2018 and the Canadian-built OSIRIS-REx Laser Altimeter (OLA) is now playing a critical role in the reconnaissance phase of the mission. In April 2019, the first 3D lidar map of Bennu was published based on OLA measurements.

Using this information, mission scientists first down-selected to four sites by August 2019, and then in December, announced the selection of the site known as Nightingale as the best location for the spacecraft’s descent and sample retrieval. The sample-return capsule will then be sent back to Earth with a planned return in 2023. Canada is thrilled by the success of the OSIRIS-REx mission so far, and proud of the critical role that Canadian science and technology plays within it. We wish this community continued success in 2020 and beyond, as each milestone brings us closer to humanity’s first ever successful asteroid sample return mission.

Thank you for your attention.