Statement by IAWN Representative to STSC 55th session

Thank you, Madame Chair, for the opportunity to address the Subcommittee.

Distinguished delegates,

The International Asteroid Warning Network (IAWN) was established in 2013 as an international collaboration of astronomical organizations involved in detecting, tracking, and characterizing potentially hazardous near-Earth objects (NEOs). Since the inception of operations in 2014, the IAWN has seen continued growth in the worldwide capabilities and our Steering Committee has held a review meeting each year.

There are now thirteen (13) official signatories to the IAWN Statement of Intent, representing observatories and space institutions from Europe, Mexico, the Republic of Korea, Russia, Colombia, China, the United States, and even an amateur observer from the United Kingdom. These participants bring to bear a variety of ground and space-based assets to detect and observe NEOs; as well as abilities in orbit computation, potential impact prediction and modeling of potential impact effects. The signatories to the Statement of Intent recognize the importance of collaborative data analysis and being adequately prepared for communications with a variety of audiences about NEOs, their close approaches, and impact risks.

IAWN status was reported in detail in a technical presentation to the 55th Science Technology Subcommittee on 1 February 2018. That report included the following points:

- Nearly 22 million observations of asteroids and comets were collected in 2017, over 201,000 on NEOs alone, by the worldwide efforts of astronomical observatories in 47 countries;
- the number of known NEOs exceeded 17,500 as of 1 January, 2018, of which 2,056 were discovered in 2017, with 1,877 asteroids now catalogued whose orbits take them within 8 million kilometers of Earth's orbit;
- During 2017, an observing campaign to recover, track and characterize a small asteroid designated 2012 TC4 by IAWN elements before its predicted next very close approach to Earth was initiated as

a ‘test case’ to exercise the IAWN processes and interfaces on tracking of potentially hazardous asteroids. While the known orbit of this asteroid indicated that it would not hit Earth, the time and point of closest approach was not precisely known due to the short period it was observed in 2012. The European Southern Observatory’s 8.2-meter Very Large Telescope, in Chile, recovered the asteroid in late-July 2017. From that point, many other observations from around the world enabled the precise determination of 2012 TC4’s orbit. The asteroid passed within about 43,000 km (approximately 8 Earth radii) of the surface of the Earth on October 12, 2017. Furthermore, all the observations collected worldwide on 2012 TC4 have enabled precision orbital determination to rule out what was a possible impact with Earth in 2050.

- A discovery this last year of great interest was an asteroid-like body detected on October 19th by the Pan-STARRS survey team on Haleakalā, Maui, Hawai. It was found five days after passing about 15 million miles from Earth and determined to be on a trajectory that originated from outside our own solar system. First designated as 1I/2017 U1, it is now appropriately named 'Oumuamua (pronounced oh MOO-uh MOO-uh), which is Hawaiian for "a messenger from afar arriving first." This relatively small asteroid appears to be a highly elongated body whose surface has been reddened by many millennia of exposure to cosmic rays, and is now almost above the orbital path of Jupiter headed back out to interstellar space.

Distinguished delegates,

The IAWN brings together international experts across a variety of relevant disciplines for the detection, characterization and notification of the potential hazard to the Earth posed by asteroids and comets, and actions that could be taken to prevent or minimize the devastating effects of an asteroid impact.

The next IAWN Steering Committee meeting is tentatively slated for October of 2018 in conjunction with a SMPAG meeting to be either in Europe or the United States to review progress, current issues and future milestones.

Thank you for your kind attention.