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JAPAN'S PUBLIC INTEREST IN SUSTAINABILITY ON EARTH AND IN SPACE

Abstract

Space debris made its mainstream debut in the 2013 Hollywood film, Gravity, highlighting the dangers of orbital debris to the general public for the first time. However, rewind 14 years, Planetes, a manga series which follows the crew of a space debris collection spacecraft in the year 2075, was first published in Japan and the nation's interest in the issue has only intensified.

While pop culture makes predictions about the future all the time, Japan is taking important steps to make debris collection a reality through its leadership on this global issue. Japan's first attempt to demonstrate debris removal technology was in 2017 with Kounotori Integrated Tether Experiments (KITE) which used an electrodynamic tether to the H-II Transfer Vehicle KOUNOTORI6 (HTV6) cargo spacecraft. While the experiment did not completely succeed, Japan has continued to cement its leadership on orbital debris mitigation and removal.

In February, Japan and the United Nations (UN) signed a joint statement to cooperate in disseminating information on the latest research on reducing space debris and to raise global awareness of space debris mitigation – the first country to ink such a statement. The signing was recognized by the UN Office for Outer Space Affairs (UNOOSA) as an"importance piece of the puzzle" and Japan has continued to demonstrate its commitment with the Tokyo Metropolitan Government awarding commercial debris removal company, Astroscale, a grant of up to US $4.5 million to commercialize debris removal services.

Most recently, JAXA announced its first debris removal project and its selection of Astroscale as commercial partner for Phase I. Japan is also establishing a national operational framework for Space Situational Awareness (SSA) and will cooperate with the United States military to share real-time information on active spacecraft and debris.

From manga to missions, why has space debris been on the minds of the Japanese government and its people for all these years? This paper will explore three key aspects which have contributed to Japan's leadership on the issue: Japan's pacifist constitution and use of outer space for 'peaceful purposes', environmentalism and sustainability forming a significant cornerstone of Japan's global image, and Japan's reliance on its prowess in robotics to emerge as a key space-faring nation. This paper will also explore various outreach activities from Japan, including conferences such as the 2019 G20 Osaka Summit, Japanese corporations recognizing debris removal initiatives through awards, and Astroscale's public outreach activities over the past seven years.