
IMMEDIATE RELEASE

Astroscale's ADRAS-J Completes Successful Rendezvous and Initiates Proximity Approach

ADRAS-J's Visual Camera Detects Rocket Upper Stage and Achieves Angles-Only Navigation at Several Hundred Kilometers: A Landmark Event for Rendezvous and Proximity Approach (RPO).

Tokyo, Japan, Apr. 11, 2024 – Astroscale Japan Inc. (“Astroscale Japan”), a subsidiary of Astroscale Holdings Inc. (“Astroscale”), the market leader in satellite servicing and long-term orbital sustainability across all orbits, announced that its commercial debris inspection demonstration satellite, Active Debris Removal by Astroscale-Japan (ADRAS-J), has achieved a major technical milestone: completion of the rendezvous phase of its mission and the beginning of proximity approach. This success is underscored by starting Angles-Only Navigation, a navigation method to estimate relative position and velocity through the servicer’s on-board cameras.

During the rendezvous phase, ADRAS-J initiated its approach through several orbit raising maneuvers at a distance of thousands of kilometers from the client rocket upper stage. The upper stage, which was launched in 2009, is an unprepared object that does not provide any GPS data on its own, meaning the precise location needed for an RPO mission is not available. Based on limited information available from ground-based observations, the Astroscale operations teams in Japan and the United Kingdom successfully maneuvered the ADRAS-J servicer within several hundred kilometers of the rocket upper stage. ADRAS-J's visual camera then successfully detected the client, and its images were processed using Astroscale-developed Angles-Only Navigation algorithms.

“Starting Angles Only Navigation is a huge milestone for the ADRAS-J mission, highlighting the expertise and teamwork among Astroscale teams in Japan, the UK, and the US,” said Eijiro Atarashi, ADRAS-J Project Manager at Astroscale Japan. “This brings us one step closer to further advancing our RPO capabilities and our understanding of space debris, reinforcing our commitment to the sustainable development of space.”

As the mission progresses into the proximity approach phase, ADRAS-J will continue to demonstrate industry-leading RPO technologies. Equipped with a suite of various on-board

rendezvous payload sensors, ADRAS-J will conduct a safe approach to the client, capturing crucial relative navigation information, such as distance and attitude. The seamless coordination and switching between these sensors are paramount to the mission's success, akin to transitioning from a telescope to binoculars to a magnifying glass while in a fast-moving vehicle — a testament to the complexity and precision required for this type of mission.

The ADRAS-J spacecraft was selected by the Japan Aerospace Exploration Agency for Phase I of its [Commercial Removal of Debris Demonstration](#) program. Astroscale Japan is responsible for the design, manufacture, test, launch and operations of ADRAS-J.

ADRAS-J is a groundbreaking mission as the world's first attempt to safely approach, characterize and survey the state of an existing piece of large debris through RPO. Following the proximity approach phase, ADRAS-J will attempt to execute a fly-around, capturing crucial images and data to assess the rocket body's movement and condition of the structure. The mission heralds a new era in RPO missions, paving the way for future on-orbit services while laying the foundation of a sustainable space environment. The mission is slated for completion by the end of May 2024.

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