The Asteroid Redirect Mission (ARM)

The National Aeronautics and Space Administration (NASA) is developing a robotic mission to visit a large near-Earth asteroid (NEA), collect a multi-ton boulder from its surface, and redirect it into a stable orbit around the Moon. Once returned to cislunar space in the mid-2020s, astronauts will explore the boulder and return to Earth with samples. This Asteroid Redirect Mission (ARM) is part of NASA's plan to advance the technologies, capabilities, and spaceflight experience needed for a human mission to the Martian system in the 2030s. Subsequent human and robotic missions to the asteroidal material would also be facilitated by its return to cislunar space. Although ARM is primarily a capability demonstration mission (i.e., technologies and associated operations), there exist significant opportunities to advance our knowledge of small bodies in the synergistic areas of science, planetary defense, asteroidal resources and in-situ resource utilization (ISRU), and capability and technology demonstrations. In order to maximize the knowledge return from the mission, NASA is organizing an ARM Investigation Team, which is being preceded by the Formulation Assessment and Support Team. These teams will be comprised of scientists, technologists, and other qualified and interested individuals to help plan the implementation and execution of ARM. An overview of robotic and crewed segments of ARM, including the mission requirements, NEA targets, and mission operations, will be provided along with a discussion of the potential opportunities associated with the mission.