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A SPACE DYNAMICS NAVIGATION ROUTES (SDNR) FOR ROBOTIC SOLAR SYSTEM EXPLORATION

Abstract

At present, space exploration is conducted by robotic platforms as a means to study the universe and to prepare conditions for future missions and human settlements on the Moon, Mars, and beyond. However, these missions are accompanied by disadvantages related to the years of preparation, launch, and reach of scientific targets. In that sense, a novel approach is proposed that utilizes the same principle of maritime navigation routes but establishes planets' orbits as fixed reference or chokepoints for space routes. This approach, designated as Space Dynamics Navigation Routes (SDNR), will facilitate permanent robotics exploration missions of the solar system on an entirely new scale and complexity. Two platforms are under consideration: "Curiara," a space transporter designed to carry all robotic platforms along the SDNR, and "Cerbatana," which provides "Curiara" spaceships with assistance in accelerating or decelerating. The SDNR is a component of the Venezuelan Program for Robotic Space Exploration proposal.