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- Key International and Political Developments**
- Advancements and Progress in NEO Discovery**
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JUVENTAS CUBESAT FOR THE HERA MISSION

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ABSTRACT

The Juventas CubeSat, will be delivered to the Didymos binary asteroid system by ESA's Hera mission within the context of the Asteroid Impact and Deflection Assessment (AIDA) international collaboration. AIDA is a technology demonstration of the kinetic impactor concept to deflect a small asteroid and to characterize its physical properties. Due to launch in 2024, Hera would travel to the binary asteroid system Didymos. It will explore the binary asteroid and the crater formed by the kinetic impact the NASA's Double Asteroid Redirection Test (DART). HERA will carry

two 6U CubeSats, one of which is the Juventas CubeSat developed by GomSpace Luxembourg with the Royal Observatory of Belgium as principal investigator. The spacecraft will attempt to characterize the internal structure of Didymos' secondary body, Dimorphos, over a period of roughly 2 months using a low-frequency radar, JuRa. During this period, Juventas will also perform radio science measurements using its Inter-Satellite-Link to characterize the mass and mass distribution of Dimorphos. Afterwards, Juventas will attempt to land on Dimorphos, during which the spacecraft is expected to perform several bounces. Once landed, Juventas will use its gravimeter GRASS to obtain measurements of the surface acceleration on Dimorphos for a nominal duration of two orbits. Through the monitoring of dynamics for landing and bouncing impacts as well as measurements from the GRASS gravimeter payload while on the surface, Juventas will determine surface mechanical properties and provide further information on subsurface structure and dynamical properties of Dimorphos.

The Juventas CubeSat for Hera will be discussed along with presentation of its scientific objectives and contribution to the Hera and AIDA science objectives.

Comments:

(Alternative session, Time slot, Oral or Poster, Etc...)