BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Center for Space Physics

2020—2021 SPACE PHYSICS SEMINAR SERIES

Interstellar Probe - Humanity's Exploration of Interstellar Space Begins

An Interstellar Probe is a mission concept to explore the boundaries of our vast magnetic bubble – The Heliosphere - formed as the Sun plows through the interstellar medium. The idea of an Interstellar Probe is nothing new and dates back to the 1960's, when also the ideas of a Solar Probe, and a Probe perpendicular to the ecliptic were formed. An international team of scientists and a team of engineers at the Johns Hopkins University Applied Physics Laboratory (APL) are now in its final year of a recent NASA-funded study to analyze pragmatic mission concepts that would make a launch in the 2030's a reality. The ground breaking science enabled by such a mission spans not only the discipline of Solar and Space Physics (aka Heliophysics), but also Planetary Sciences and Astrophysics. Detailed analyses of configurations using the upcoming SLS Block 2 and powerful upper stages demonstrate that asymptotic speeds in excess if 8 Astronomical Units per Year are already possible with conventional means and a Jupiter Gravity Assist. Here, we give an overview of the science discoveries that await along the journey, including the physics of the heliospheric boundary and interstellar medium, the potential for exploration of Kuiper Belt Objects, the circum-solar dust disk and the extra-galactic background light. We will discuss the details of the study, the example payloads, subsystems and mission architectures that would allow humanity to explore where no one has gone before.

Thursday, Februrary 4th

4:00-5:00 p.m.

See website for Zoom information

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