BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Center for Space Physics

2020—2021 SPACE PHYSICS SEMINAR SERIES

Using SHIELD to study our heliospheric shield

The heliosphere is created through the interaction between the solar wind and interstellar medium, and acts as a bubble which shields the solar system from galactic cosmic rays. Traditionally thought to have a comet-like shape with a long tail extending for thousands of AU, recent studies have suggested the heliosphere may have a short tail with a "croissant-like" shape. SHIELD is a NASA Drive Science Center which focuses on understanding the shape of the heliosphere and the physical processes within through a combination of observational and modeling expertise. One notable project within SHIELD involves investigating how different heliospheric shapes manifest in energetic neutral atom (ENA) maps. ENA observations with increasing energies have the ability to probe deeper into the heliotail. The Interstellar Boundary Explorer (IBEX) and the Ion and Neutral Camera (INCA) onboard Cassini have provided a great deal of ENA imaging of the heliosphere that vary with both time (2003-present) and energy (0.1-55 keV), while the Interstellar Mapping and Acceleration Probe (IMAP) will probe up to much higher energies (~300 keV) in the future. By modeling ENA maps from different heliospheric shapes, we are able to investigate how ENA observations can be used to reveal the shape of the heliosphere.

Thursday, November 19th

4:00-5:00 p.m.

See website for Zoom information

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