The Development of A Double Hemispherical Probe for The Advancement of Space Plasma Measurements

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**Target**: space and planetary plasma.

**Science**:  
- To improve the understanding of space plasma in harsh environments, including low-density plasmas, high surface-emission environments, and dust-rich as well as oxygen-rich plasmas.

**Objectives**:  
- To greatly enhance the capability and accuracy of the characterization of space plasmas by developing a novel Double Hemispherical Probe (DHP).  
- To develop new coating materials for mitigating the probe surface oxidation problem.

**CoIs**: Hsiang-Wen Hsu, Mihály Horányi/University of Colorado-Boulder.

**Key Milestones**:  
- Year 1: Start with TRL 2-3; validate new probe coating material (ongoing); fabricate the prototype DHP; case I lab test.  
- Year 2: Lab test for cases II, III and IV; meet TRL 4.  
- Year 3: vibration, thermal and DHMR tests for the coated DHP; plasma tests with the coated DHP; meet TRL 5 in the end of the year.

** планетарные инструментные концепции для развития солнечной системы операций (PICASSO)**