

IAF SPACE EXPLORATION SYMPOSIUM (A3)

Late breaking abstracts (LBA)

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INTERSTELLAR PROBE: 15 YEARS TO THE INTERSTELLAR MEDIUM WITH AN ENHANCED
NASA SPACE LAUNCH SYSTEM**Abstract**

In addition to launching heavy payloads, the NASA Space Launch System (SLS) can also inject smaller spacecraft to extremely high velocities, allowing trip times to deep space destinations to be significantly shorter than those achieved by other launchers. One opportunity with great scientific interest involves the injection of a probe beyond the Solar system, into the interstellar medium, 200 AU distant. This Interstellar Probe (IP) mission will enable investigation of the outer reaches of our solar system, the interstellar medium's influence on the solar system, and characterization of interstellar gas, low-energy cosmic rays, dust and magnetic fields. Launch by an enhanced performance SLS at extremely high speed will provide for the collection of scientific data sooner, allowing for new discoveries to occur much earlier. In addition to the mission, this paper will describe a performance enhanced SLS capable of injecting a probe to the interstellar medium in 15 years.