

Interstellar Mapping and Acceleration Probe

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Interstellar Mapping and Acceleration Probe Latest News

Recently, NASA launched the Interstellar Mapping and Acceleration Probe (IMAP) to show how solar particles are energised and shield us.

About Interstellar Mapping and Acceleration Probe

- Its goal is to **map the heliosphere's boundary**, trace energetic particles, and improve space weather forecasting.
- The heliosphere is a huge bubble created by **the Sun's wind** that encapsulates our entire solar system.
- IMAP will support **real-time observations of the solar wind** and energetic particles, which can produce hazardous conditions in the space environment near Earth.
- It is situated at the **first Earth-Sun Lagrange point (L1)**, at around one million miles from Earth toward the Sun.
- IMAP will also send data in near real-time to help scientists monitor space weather conditions.
- **Interstellar Mapping and Acceleration Probe** will

- Uncover fundamental physics at scales both tiny and immense.
- Improve **forecasting of solar wind disturbances** and particle radiation hazards from space.
- Draw a picture of our **nearby galactic neighborhood**.
- Help determine some of the basic cosmic building materials of the universe.
- Increase understanding of how the heliosphere shields life in the solar system from cosmic rays.

Components of Interstellar Mapping and Acceleration Probe

- IMAP is equipped with **10 scientific instruments**, each designed to detect different types of **particles or phenomena in space**.
- Some of them are **energetic neutral-atom detectors (IMAP-Lo, IMAP-Hi, IMAP-Ultra)**, which capture neutral atoms that were once charged ions but were changed by acquiring electrons.
- Other instruments detect charged **particles directly**, magnetic fields, interstellar dust, and solar-wind structures.

Source: **TH**

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