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The Heliosphere: What Has Been Learned and What Is Ahead

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Abstract content

The presence of a heliosphere surrounding the Sun was suggested by L. Davis fifty years ago, when there was limited knowledge of interplanetary and interstellar conditions. That suggestion was soon followed by Parker's prediction of a supersonic solar wind that was observed by Mariner 2, initiating a systematic exploration of the heliosphere that now extends to high solar latitudes and to distances of >100 AU from the Sun. The complex interaction of the heliosphere with the surrounding interstellar medium is modeled with increasing fidelity as diverse observations reveal the three dimensional properties of the heliosphere that are important to the solar modulation on galactic cosmic rays and the acceleration and propagation of anomalous cosmic rays. Our understanding of the heliosphere will further evolve in the next several years as the International Boundary Explorer (IBEX) begins remotely mapping the sources of neutral atoms in the outer heliosphere and the two Voyager spacecraft continue their journeys to interstellar space.

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Summary

Reference

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