

Our Planet

Interaction of Solar System with the Heliosphere

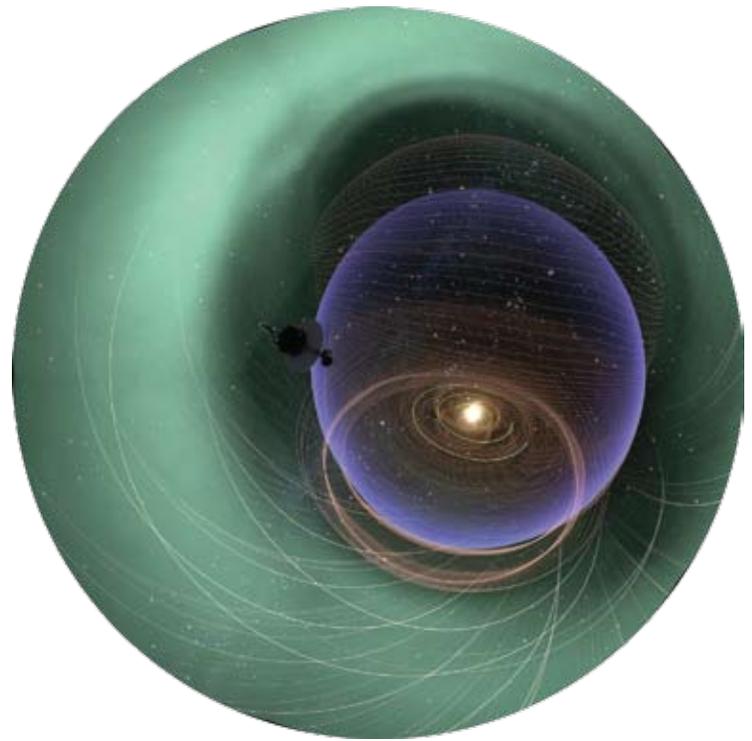
NASA's twin Voyager spacecraft were launched in 1977 to explore the outer planets of the solar system. Thirty years later, Voyager is still producing amazing new discoveries about the universe.

Recent findings have shown that solar winds carve a giant "bubble" around the interstellar medium called the heliosphere. The spacecraft are now past the solar wind termination shock and are exploring the heliosheath—the outer region of the heliosphere. The heliosheath, where the solar wind flows at subsonic speed, is an unexplored region. Voyager's observations show that the heliosphere is asymmetric, most probably due to the influence of the interstellar magnetic field.

Using data gathered on supercomputers at the Jet Propulsion Laboratory, investigators have animated the interaction of the solar system with the heliosphere.

This animation shows the heliosphere in its trajectory in the interstellar medium, and confirms that it is being distorted by the interstellar magnetic field:

<http://www.nas.nasa.gov/SC09/videos/heliosphere.mov>



This image shows Voyager 2 at the edge of the solar system. Voyager 2 is seen beyond the termination shock (purple) almost reaching the heliopause (green), the theoretical boundary between the heliosphere and the interstellar medium. The magnetic field lines that drape around the heliosphere are seen in yellow. Voyager 2 looks back at the Sun and the planets inside the termination shock as it leaves our solar system. (Merav Opher, George Mason University; Darren DeZeeuw, Tamas Gombosi, The University of Michigan; American Museum of Natural History).