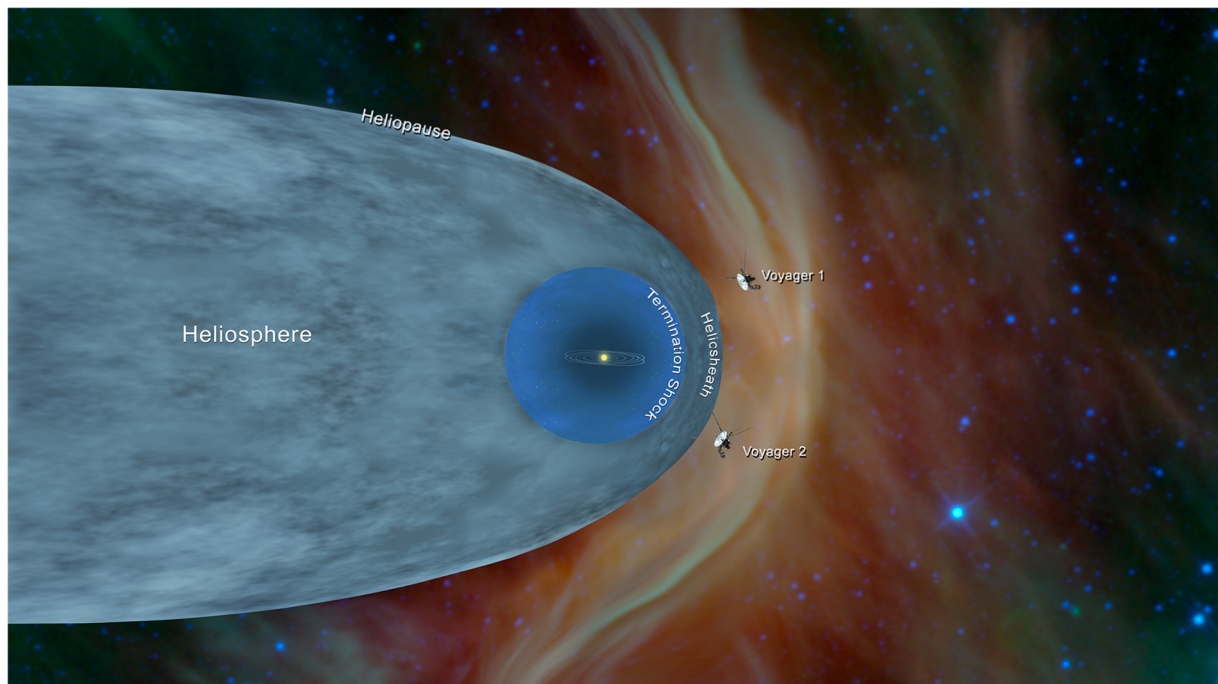


# Heliopause

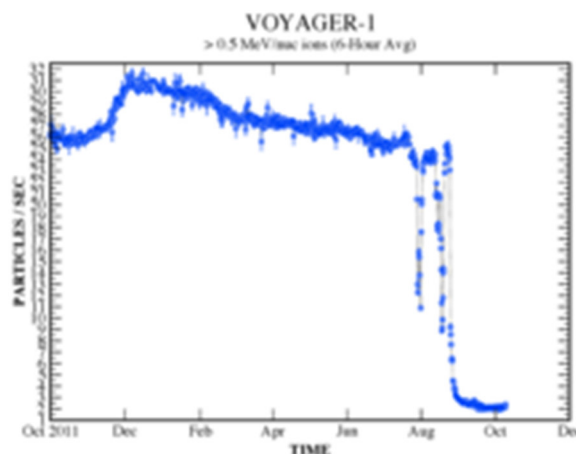


Picture: Diagram of the heliosphere as it travels through the interstellar medium:

Author: NASA/JPL-Caltech

<https://de.wikipedia.org/wiki/Heliosph%C3%A4re#/media/Datei:Ibexheliosphererevised.jpg>

The heliopause denotes the end of the heliosphere. Within the heliosphere, the solar wind dominates over the radiation of interstellar space. Between the edge shock wave and the heliopause lies the heliosheath, where the transition from solar-determined space to interstellar space is completed. Outwardly, the heliosheath is bounded by the heliopause. In the heliosheath a mixture of solar wind and interstellar gases takes place. The helio envelope is largely a kind of "foam" consisting of magnetic bubbles 1AE (about 150 million km) in size. Ionized particles of the solar wind are trapped in the bubbles. According to the first measurements, the helio envelope has a spherical shape.



Picture: Plot showing a dramatic decrease in the rate of solar wind particle detection by

Voyager 1.

Autor: NASA

[https://en.wikipedia.org/wiki/Solar\\_wind#/media/File:Solar\\_wind\\_at\\_Voyager\\_1.png](https://en.wikipedia.org/wiki/Solar_wind#/media/File:Solar_wind_at_Voyager_1.png)

The heliopause is the boundary for the influence exerted by the solar wind. Behind the heliopause the interstellar medium becomes more and more the main component of the activities. The solar wind mixes with the interstellar medium and is lost in it as an independent component. The distance of the heliopause from the Sun is estimated to be about 120 AU (18 billion km) based on the measurements of the Voyager probes. However, the heliopause has also no fixed distance limit, but this shifts according to the solar activities or the size of the interplanetary medium in certain limits. In the heliopause the magnetic lines of the heliosphere are connected with those of the interstellar space. In addition, a magnetic barrier is formed which protects the solar system from the very energetic cosmic rays, similar to the Van Allen belt which protects the Earth from the solar wind.

However, the heliopause is not an absolute boundary of the solar system. Recent observations have shown that outside the heliopause there are other objects orbiting the Sun, e.g. Sedna - a dwarf planet candidate. The gravitational influence of the Sun extends far beyond the heliopause and is limited only by the gravitational forces of other stars. The gravitational force extends at least 1 light year into the cosmos (more than 10 trillion km).

**Link:** <https://de.wikipedia.org/wiki/Heliosph%C3%A4re>

**Link:** <https://de.wikipedia.org/wiki/Van-Allen-G%C3%BCrtel>