

# Heliosphere

The [solar wind](#) streams off of the [Sun](#) at a speed of several hundred km/s, creating a magnetized bubble of hot [plasma](#) around the Sun. This bubble is called the heliosphere, and it is separated from the interstellar gas (local interstellar medium, LISM) by a heliopause. Inside the heliopause a termination [shock](#) is created to make the solar wind subsonic; the region between the shock and the heliopause is called the helio-sheath. Helio-sheath is deformed because of the ambient flow of the interstellar gas, forming a comet-like tail behind the Sun (see also [magnetosphere](#)).

The heliopause is believed to be at least 120 AU away from the Sun, i.e., all the planets are located within it (Earth and Pluto are 1 and 40 AU away, respectively). The Voyager and Pioneer spacecraft will reach it in the early 2000's.

The interstellar medium surrounding us currently is of low density, and contains mainly neutral hydrogen. It has been estimated that as our Sun rotates around the galactic centre (T=200 million years) it will also hit regions with higher density and more molecular hydrogen. This could lead to modifications to the heliospheric structure, and changes in the [cosmic ray fluxes](#) (see [space climate](#)).