

# Earth

In our [solar system](#), planet Earth is the third in distance from the [Sun](#) and the fifth largest in diameter. The mean distance of the Earth from the Sun is 149,503,000 km, and radius varies from 6378 km in the equator to 6356 km in polar direction. It is the only planet known to support (intelligent) life, although some of the other planets or their moons have [atmospheres](#) and contain water.

For the space physicist, the most important aspect of the Earth is that it behaves as an enormous magnet. The English physician and natural philosopher William Gilbert was the first to demonstrate this similarity in about 1600, although the effects of terrestrial magnetism had been utilized much earlier in primitive compasses. In first order the [magnetic field](#) created by this magnet is that of a dipole whose axis is tilted with respect to the spin axis by about 11 degrees. The north magnetic pole is presently located off the western coast of Bathurst Island, in the Canadian Northwest Territories, almost 1290 km northwest of Hudson Bay. The south magnetic pole is presently situated at the edge of the Antarctic continent in Adélie Land about 1930 km northeast of Little America. The magnetic field points (at the moment) down towards the surface of the Earth in the northern hemisphere, and away from it in the southern hemisphere. The difference between the dipole axis and geographic axis is one of the reasons why there are so many different [coordinate systems](#) needed to describe locations in space around the Earth.

The area around the Earth governed by its magnetic field is called the [magnetosphere](#). The properties of the magnetosphere are strongly affected by the [solar wind](#). The interaction ([coupling](#)) between the solar wind and the magnetosphere is important in space physics.

See also [Wikipedia on Earth](#).