

Beyond the Solar System



Picture (Map of the Milky Way Galaxy with the constellations that cross the galactic plane in each direction and the known prominent components annotated including main arms, spurs, bar, nucleus/bulge, notable nebulae and globular clusters.):

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https://en.wikipedia.org/wiki/Milky_Way#/media/File:Milky_way_map.png

With this last info board on the way through the solar system, however, you have not yet reached the end of our solar system. The gravitational force of the suns still reaches some more light years into the universe. Since the gravitational force can only be measured directly on the spot and mankind has not yet sent a probe to the edge of our solar system, the exact boundaries of our solar system are still in the dark. The extent of our solar system also depends very much on our neighbouring stars. How big are these, how far are these from the sun? There are points where the gravitational forces of our suns and their neighbouring stars balance each other out. This boundary line of our solar system will not have a spherical shape, but will enclose a spherical space that is very irregular in shape.

However, we can still recommend two distant targets in our solar system that are still clearly influenced by the gravitational force of the suns:

- The dwarf planet candidate Sedna is the most distant object from the sun in the solar system according to current knowledge: The original of the stela for the dwarf planet candidate Sedna is located about 70 km from this point. It is located in our Polish partner community Słońsk (German Sonnenburg). Słońsk belongs to the Powiat Sulęciński (Zielenziger Kreis) in the Polish voivodeship Lubus. It is a village belonging to the rural commune of the same name (until 1947 it was a town). Słońsk is the seat of the rural commune administration.

- The hypothetical Oort cloud is a collection of comets and other smaller objects. The original stela is located about 10,000 km away from this site in Colombia. It is installed at the German school in Medellin/District of Itagüí (<https://www.dsmedellin.edu.co/de>). One copy each of the original is located directly at our solar model and on the school grounds of the Albert-Schweitzer-Gymnasium in Eisenhüttenstadt <https://www.asg-ehst.de/>. The integration of Oort's cloud as well as the installation of a Spanish internet access to our planetary path was done as a joint project of both schools and AstroWis e.V.

However, you can also travel beyond the solar system in your mind. In the near future, a journey to this region remains a vision. However, we can observe the light of the distant stars every night. Here are some indications for more distant destinations, whose distances are converted in planetary scale:

- Our nearest neighbouring star, Proxima Centauri, is according to our scale about 40,000 km (circumference of the Earth) away (in reality about 4.3 light years).
- Centre of the galaxy: about 250 million km (distance Sun-Mars) away (in reality about 25,000 light years).
- The Large and Small Magellanic Clouds are small galaxies orbiting our Milky Way and, according to our scale, are about 1.5 billion and 1.9 billion km (roughly Sun-Saturn distance) away (in reality, about 160,000 and 200,000 light-years, respectively).
- The next big galaxy, the Andromeda nebula, is according to our scale about 25 billion km (five times distance Sun - Neptune) away (in reality about 2.5 million light years).
- Even with these objects, we are still over 10,000 times away from the "end" of the world as we know it.

However, our solar system has already been visited by objects moving through our galaxy and having a short rendezvous in our solar system. Two objects of this kind could be detected so far:

- Oumuamua, formerly named C/2017 U1 and A/2017 U1.
- Comet 2I/Borisov

The asteroid (514107) Ka'epaoka'awela could be a former interstellar object captured by the solar system.

Link: https://en.wikipedia.org/wiki/Interstellar_object