COSMOLOGICAL VIEWS BEFORE COPERNICUS

Babylonian image of the structure of the universe

All great civilizations observed the sky and religious beliefs constituted an inherent part of such observations. The Babylonians imagined that the Earth was situated in the centre of the universe, stood still and had a convex shape. Inside it there was a palace of the dead and an underground ocean. The sky was above the Earth and the Sun was moving on it during the day, and the Moon and stars at night. The Sun would enter the palace of the dead through the western gate to spend the night there, and leave the palace in the morning through the eastern gate.

Ancient Greeks developed numerous theories regarding the Earth. Some imagined it as a great round plate floating on the ocean. The heavenly vault with the stars, planets, the Sun and the Moon was believed to revolve around it to pass through the underground ocean every day. Others believed that the Universe consisted of many worlds that are similar to the Earth, and the new worlds replaced the old ones that had died.

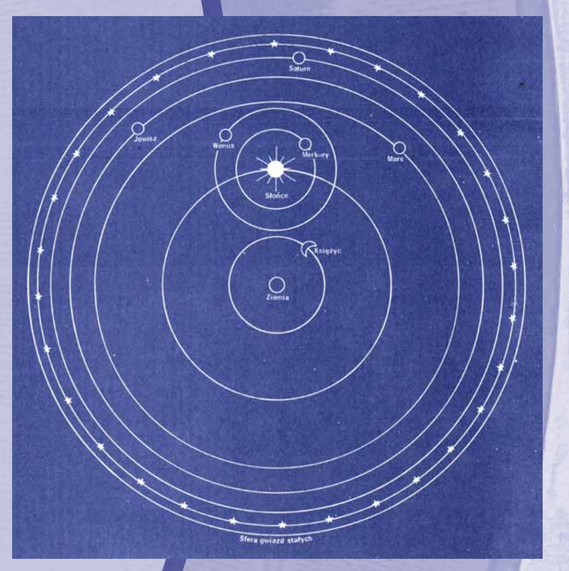
The first ones to believe that the Earth was round and constituted the centre of the universe were the Pythagoreans. Seven spheres with planets, the Sun and the Moon attached to their surfaces revolved around the universe. One of the Pythagoreans removed the Earth from the centre of the Universe and replaced it with fire. According to this model, the Earth revolved around it with the hypothetical Antichthon, and further the spheres of the Moon, the Sun, planets and stars.

According to Plato, the universe with the Earth suspended in its centre was created by God to reflect the needs and wishes of mankind. The Earth was round, as it is the most perfect shape.

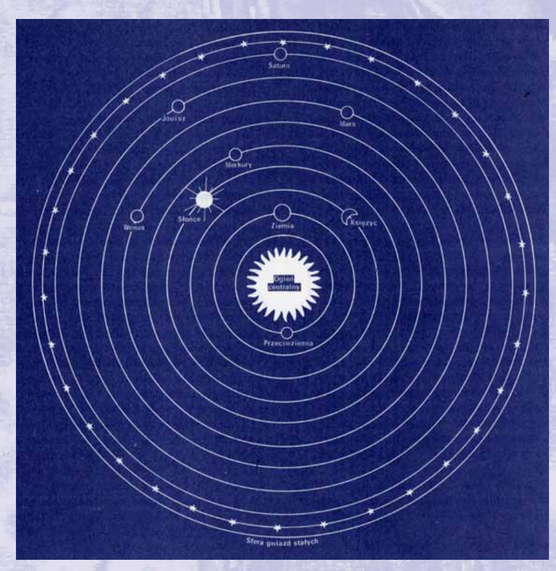
Aristotle believed the Earth was a sphere that, as the heaviest of all planets, stood still in the middle of the universe. Water, as a lighter element, would float on its surface to form oceans and rivers. The Earth was surrounded by air, the lightest of all elements. Celestial bodies – the Moon, the Sun, Venus, Mercury, Mars, Jupiter, Saturn and other fixed stars – were of pure crystal and revolved around the Earth in a set order. The structure contained fire as well.

The main promoter of geocentrism was Ptolemy. This theory reflected religious beliefs that the Sun, the Moon and other celestial bodies were created by God to illuminate the Earth and determine time.

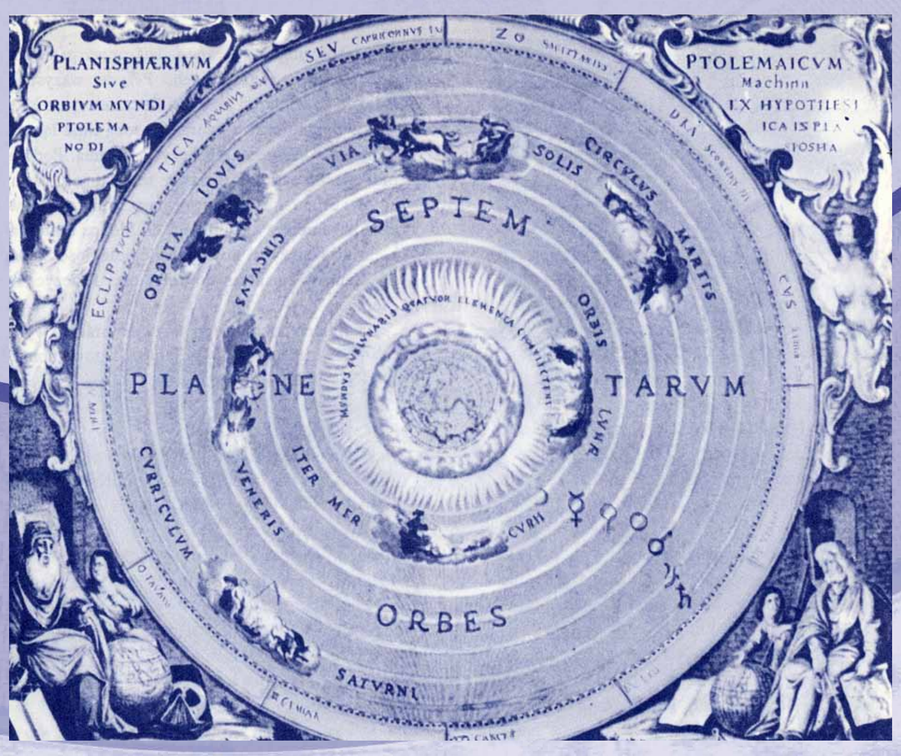
Primitive representation of a flat Earth floating on the sea



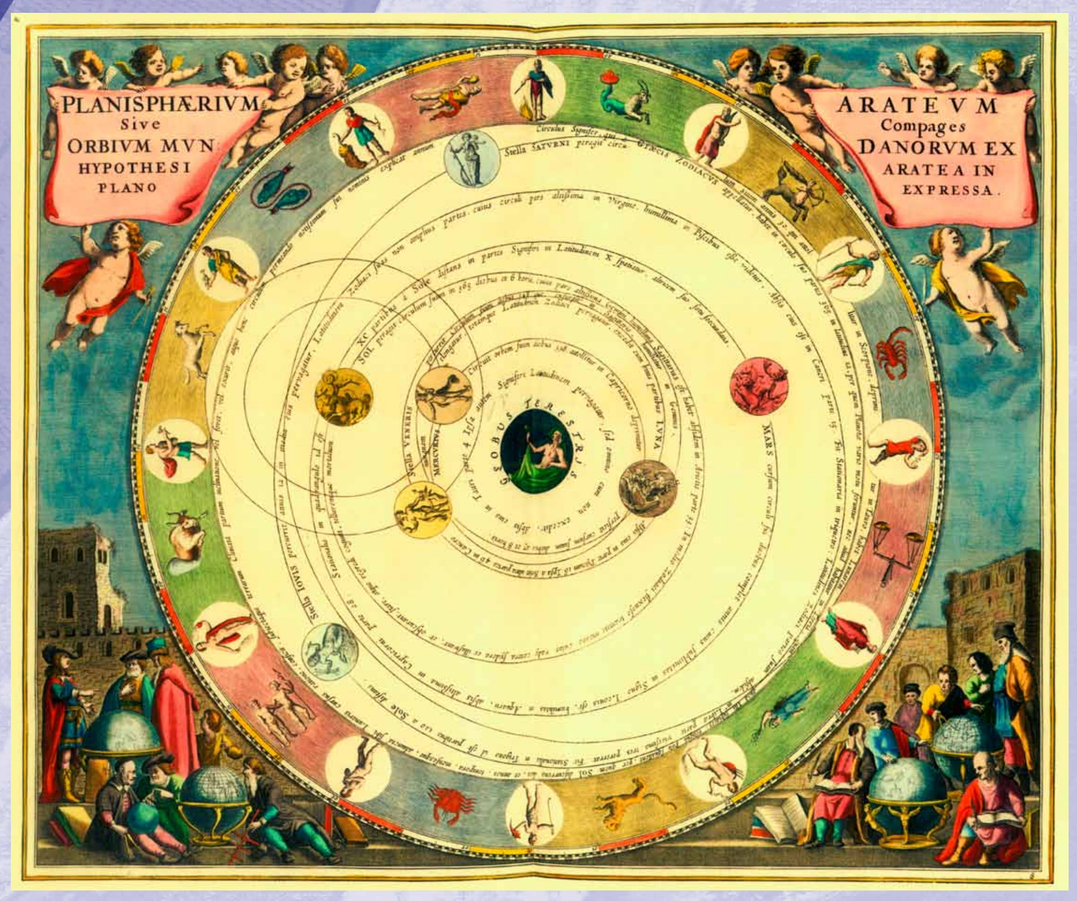
The world according to Philolaus



The world acoording to Heraclides Ponticus



Ptolemy's geocentric universe, according to a drawing from the 17th century



The world according to Heraclides Ponticus. Andreas Cellarius, *Harmonia Macrocosmica Sev Atlas Universalis Et Novus: Totius Universi Creati Cosmographiam Generalem, Et Novam Exhibens*, Amsterdam, 1661