

# Ocean space exploration: key to our future?

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The naming of our planet is veiled in history. Earth is the only planet in our solar system, whose English name does not refer to a Greek or Roman god or goddess, as is the case with the other planets: Mercury, Venus, Mars, Jupiter, and Saturn. The name Earth is derived from the Old Saxon word 'ertha' or the Dutch word 'aerde'. It refers to the soil that we cultivate, of which and on which we live. Many other names, however, exist in other cultures and languages. Yet, the Earth-notion colours our perception; we traditionally have a land-oriented mind. Ocean space is alien to us.

But, the ocean matters. It is covering some seventy-two percent of the earth surface. It supplies half of its oxygen; every second breath one takes is 'ocean air'. It is a crucial part of the global water cycle, giving the water we drink. It provides food for more than 2,600 million people, and acts as a transport highway that effectively connects all parts of the globalized world. It hides the largest mountain range of the planet: the mid-ocean ridge, a 66,000 kilometres long chain of mountains at tectonic plate boundaries, where new material to the ocean crust is added. The ocean regulates the climate. As such it is our planet's life support system. But ocean space now is threatened by human activities.

The ocean isn't just water, isn't just a surface to cross. It is a crucial part of the Earth System. This view matured due to outer space exploration. It also led to the development of the environmental movement. 'Earth Rise' pictures in 1968 and a recent video clip, taken from lunar orbiters, dramatically changed our perspectives towards the planet we named Earth. Modern Earth System Science and Global Change research is leading to new ways and concepts to manage both the Earth and Ocean Space. The notions of the Anthropocene, the Planetary Boundaries as well as the Ocean Health Index are just examples of this. Moreover, innovative research aiming on sustainability is a fast developing field of thought.

In this presentation I will discuss these and many other initiatives, based upon my international career in ocean space sciences, both as a manager and a scientist. The lecture will be a 'walk in ocean space'. It will address the need for ocean going expeditions, technology development, and links with outer space exploration. It will address partnerships between government-science-industry, to develop new technology also leading to innovative monitoring from the comfort of an armchair in onshore ground stations; partnerships with developing countries to transfer knowledge and skills, partnerships with the media, schools and the public at large to create awareness and start the ocean literacy process in Europe. To sum up: it is all about understanding the role of the ocean in our, your live.