

Section 02. Geotechnical Systems Stability

Nadia Altanets
D.S. Malashkevych, research supervisor
I.I. Zyenok, language adviser
National Mining University, Dnipropetrovsk

The Theory of the origin of water on the planet

Most of our planet – up to 79% – is water. Moreover, even if you go deeper into the crust, then in the cracks and pores you can also find water. All minerals and living organisms existed on the Earth have water in their composition. This is exactly what makes the Earth as a planet different from every other planets of the Solar System.

It is a quite natural that many scientists are concerned with the origin of water on the planet, some of the most popular ones are described in this paper.

Geologists assumed that immediately after the formation of the planet, it became extremely dry and hot. Theoretically, about 3.8 billion years ago millions of asteroids and comets, which were rich in water, massively attacked the Earth, this is an explanation of why the oceans appeared after the formation of the planet.

American, Japanese and Canadian scientists consider the asteroids that bombarding the Earth large in size and had huge reserves of water in the vapor state, ice or liquid.

Otherwise, some specialists from Japan put forward a new theory of the origin of water on the Earth. They believe that water, appeared on our planet is not connected with the universe. Specialists suggest that at the initial stage of formation in the structure of the earth there were entire hydrogen layers that reacted chemically with the oxygen present in the earth mantle. As a result of this interaction, water appeared on the planet in a huge quantities.

Some researchers show how vital sample return missions to asteroids and comets really are, as they allow us to study the chemistry of these bodies and determine how and when they formed.

Nevertheless, of the different theories and assumptions exist the question of the origin of water on the Earth is still open for additional research. Due to the need of chemical properties of water in different ancient chemicals and their change against the time scale.

In the conclusion, I would like to share the results research published in well-known journal “Science” by Dr. Hallis, who also points out the role of studying the chemistry of the space bodies in order to determining the way and time their formation.

References:

<http://www.iflscience.com/physics/origin-earths-water-discovered-0/>