PROTECTION OF THE NEAR-EARTH SPACE AS AN UNDERVISED PROBLEM OF THE PRESENT

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This paper addresses the problems of near-Earth space as a new potential threat to the planet.

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Any human activity brings both benefit and harm to the planet. Since the beginning of space exploration by man, a new ecological threat has hung over the planet: pollution and destruction of the planet at a different, previously unused level of its organization. Near-Earth space (NES), the outer gas envelope of the earth, plays a special role in the most complex solar-terrestrial interconnections that determine the conditions of life on Earth, as well as the magnetosphere, which protects the earth from the solar wind.

NES has become a favorable space for the orbits of a large number of spacecraft. Thus, according to the popular science journal «Popular Mechanics», there are currently 1,071 working satellites in near-Earth space. Satellites are necessary in our life: they help us get to a previously unknown place, predict the weather and disastrous natural phenomena, thereby preventing the death of many people, and also help in studying the planet. Their main advantage is static with respect to the Earth. This property gives us stability, continuity of broadcasts and the implementation of meteorological observations. However, already now because of a sufficiently large amount of space debris: accelerators, inactive satellites and even parts of ships and costumes - the international space station is forced to move in space so as not to receive damage.

Regarding the topic of the Earth's magnetosphere, it should be clarified that the destruction and its change are little studied and, for the most part, depend on the change in the core of our planet. Considering the NES at a distance of 100 km and more, it should be noted that the air here consists mainly of ions and electrons, which contributes to the reflection of short and medium radio waves. And when the solar wind deviates from the geomagnetic field, accumulation takes place in the so-called radiation belts of the Earth. These belts adversely affect both the operation of spacecraft and the biosphere of the earth, in particular, the central nervous system (central nervous system) of man. An example of inaccurate instrument operation is the WISE telescope. So in the South Atlantic radiation field with a large number of particles, the telescope observes many artifacts (traces of charged particles), which often attracted the attention of participants in a volunteer project to search for a hypothetical ninth planet. Thus, the study of the NES in the form of the magnetosphere and its protection are important because of the strong impact on the work of electronics and on the Earth's biosphere.

The detrimental effect on the NES will be made before the benefit is brought. There are several types of destructive effects. The first is associated with the removal of spacecraft into Earth orbit. Here there is a release of chemicals due to the operation of rocket engines. The second is associated with the unlimited use of NES. Space debris pollution should also be important for humanity, as well as pollution of world waters with toxins, since small objects that cannot be traced, or the problem of old unused satellites, without the possibility of removing them from the orbit of the Earth, pose a real threat to the development of science and further space exploration.

The environmental protection of the planet at all levels of its organization is necessary in order to avoid deterioration in the quality of life of all life on the planet and the planet itself. After all, if the problem is far from us, it does not mean at all that it does not exist. Mastering new horizons brings not only the joy of discovery, but also new dangers. New challenges for ecology are emerging, and this means that we need to be ready for this.