

## THE POSSIBILITIES OF MARS COLONIZATION

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Now as the purposes of colonization of Mars the following is called:

- Creation of constant base for scientific research of Mars and its satellites, in the long term — for studying of a belt of asteroids and distant planets of Solar System;
- Commercial production of valuable minerals;
- Solution of demographic problems of Earth;
- Main objective is creation of "Cradle of Humankind" on a case of a global cataclysm on Earth.

The major limiting factor is, first of all, extremely high cost of delivery of colonists and freights to Mars.

At the moment and the near future, apparently, only the first purpose is urgent. A number of enthusiasts of the idea of colonization of Mars considers that at larger tentative costs of the organization of colony in the long term, on condition of achievement of high degree of autonomy and the organization of production of a part of materials and necessities (first of all — oxygen, water, food) from local resources this path of conducting researches in general will be economically more effective, than sending the returned expeditions or creation of stations settlements for work as a shift method. Besides, in the long term Mars can become the convenient ground for carrying out the scale scientific and technical experiments dangerous to the terrestrial biosphere.

As for mining, on the one hand, Mars can be rather rich with mineral resources, and due to the lack of the free oxygen in the atmosphere existence on it rich fields of native elements is possible, with another — at the moment the cost of cargo delivery and the organization of production in a severe atmosphere is so big that no richness of fields will provide payback of production.

The solution of demographic problems will require, first, transfer from Earth of the population in the scales incomparable to opportunities of the modern technique (at least — millions of people), secondly — providing the complete autonomy of colony and a possibility of more or less comfortable life on the surface of the planet what will require creation on it the atmosphere, suitable for respiration, the hydrosphere, the biosphere and the solution of problems of protection against space radiation. Now all this can be considered only as prospect on the long-term future.