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SPACE EXPLORATION SYMPOSIUM (A3)
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TECHNOLOGY OF INDUSTRIAL DEVELOPMENT OF THE MOON

Abstract

At present, the energy crisis is one of the global challenges for humanity. In view of this the proposals for mining operations at the Moon and asteroids becomes more and more actual. The officials of the leading states have repeatedly declared their intension of the Moon development, as a strategic objective. Recently, the research in this direction has been initiated in Yuzhnoye SDO, which is the leading enterprise in Ukrainian aerospace industry. The following tasks have been considered: equipment transportation to the Moon; experimental and industrial mining at the Moon with rovers and delivering of their production to the Earth; rovers positioning and control on the Moon surface. To accomplish these tasks space system for industrial development of the Moon is proposed. The system includes: booster and landing unit to deliver cargo to the Moon built on the base of "block E", developed in the framework of the Soviet lunar program; rovers and equipment for mining at the Moon, production of various substances (helium 3 and others), and their delivery to the Earth; system for lunar surface monitoring, rovers and equipment positioning and control, including near-moon orbital module, and lunar surface and the Earth control station. To date, the concept of technology of industrial development of the Moon allowing the extraction of minerals in large areas of the lunar surface, including its opposite side is developed.