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RUSSIAN LUNAR EXPLORATION PROGRAM OPPORTUNITIES FOR INTERNATIONAL
COOPERATION

Abstract

According to the strategic documents on space activities of the Russian Federation, the main direction of manned missions after 2030 is the Moon, including the lunar base deployment. The Russian lunar exploration program includes four major phases that are based on a balance between manned and robotic missions. The first phase is preparative and is based mainly on the first robotic spacecraft that will investigate the most advantageous lunar landing sites and test a number of technologies. During this phase the Russian space transportation system for human and cargo delivery will be developed and critical technologies will be tested. In the second phase, the lunar communication and navigation systems will be deployed. The first Russian manned circumlunar mission will be launched. The technology of automatic lunar regolith return to Earth will be tested. The third phase is a human lunar base development in its' minimal configuration and infrastructure development for resources utilization, scientific and experimental complexes development, creation of basic conditions for continuous human stay at the lunar base. The fourth phase is a lunar base enlargement and closed-loop life-support system development that will operate using lunar resources; propellant components production and its' usage for the Russian space transportation system; oxygen, water, metals, constructional materials recovery from the lunar resources. This program is presenting a wide range of opportunities for lunar exploration by virtue of robotic and manned spacecraft combination. A joint development of robotic spacecraft payload can also ensure powerful capabilities for international cooperation as well. Projects of this very kind are already being implemented nowadays. An implementation of joint manned lunar missions and development of international lunar infrastructure are potentially prospective vectors of international cooperation.