

SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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RUSSIAN UNMANNED SPACECRAFT FOR FUNDAMENTAL SPACE RESEARCHES. THE PAST
AND THE FUTURE (FOR 75TH ANNIVERSARY OF LAVOCHKIN ASSOCIATION)

Abstract

Last year we celebrated the 50th Anniversary of flight of the First Cosmonaut, Yuriy Alekseevich Gagarin. But there are also other anniversaries. All manned flights to the Earth orbit, Moon, Mars and other celestial bodies were preceded and will be preceded by unmanned spacecraft flights. This year we will celebrate the 55th Anniversary of launch of the First Artificial Satellite. In December 2010 there was the 40th Anniversary of the first Lunokhod, the first Moon soil delivery, the first Venus landing. At that time Georgy Nikolaevich Babakin was the Chief Designer of Lavochkin Association. In 1961, 50 years ago, the first spacecraft was launched to Venus. In March 2011 there was the 25th Anniversary of successful implementation of “Vega-1, 2” missions, when soft landing on Venus surface was performed, two-day drift of balloon probes in Venus atmosphere and Halley comet rendezvous. All the above was achieved for the first time in the world. This tendency characterizes the space activities of Federal Enterprise “Lavochkin Association”, which is celebrating its 75th Anniversary this year. Since 1977 till 1995 the Chief Designer, then the General Designer of Lavochkin Association, was Vyacheslav Mikhailovich Kovtunenkov, who could have celebrated 90th Anniversary last year. Under his leadership the fundamental space researches were successfully being developed: planetary studies, astrophysical research, and near-Earth explorations. Currently Lavochkin Association team develops the next-generation unmanned spacecraft. New unified platforms “Navigator”, “Flagman”, “Karat” have been built. New line of activities aimed at small spacecraft creation is currently under development. “Fregat” upper stage has acquired good reputation being used for launch of both domestic and foreign spacecraft from both Russian cosmodromes and Kourou launch site. Last year Lavochkin Association activities were concentrated on development and launch of spacecraft for all the above mentioned research areas. “Electro-L” SC has been successfully launched and is currently being operated in the Earth orbit. Another mission “Spektr-R” was a success, intended for astrophysical radio range research. Unfortunately the launch of “Phobos-Grunt” SC was a failure, but there is a decision to continue these activities. At the same time the activities under other projects, such as “MKA-FKI”, “Luna-Resource”, “Luna-Glob”, “Mars-NET”, “Venera-D”, “Spektr-RG”, “Spektr-UF”, “Sokol-Laplace”, “Apophis”, etc. are being carried out.