Geophysical Research Abstracts
Vol. 16, EGU2014-6696, 2014
EGU General Assembly 2014

"Luna-Glob" and "Luna-Resurs": science goals, payload and status

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Vicinity of the South pole of the Moon is thought to be the most interesting region for future investigations. The first reason is associated with the studies of composition and content of volatiles in the lunar polar regolith: neutron mapping with high spatial resolution by LRO has shown that there are more local spots with strong signatures of water at south pole in comparison with the north one. Secondly, the center of Galaxy is not visible from the north pole, therefore southern location is more preferable for perspectives of future lunar exploration.

The current Russian space program contains successive missions to study physical environment at the vicinity of the lunar south pole. The first one is the "Luna-Glob" mission, which spacecraft is named Luna-25 (next after the last Soviet lander Luna-24 of 1976). This project has to test the upgraded landing technology, to study the samples of lunar regoluth from the upper most layer of the subsurface and to measure the content of dust, neutrals and plasma during the cycle of the lunar local time. This mission is planned for launch in 2016 by Soyuz.

The next lander is Luna-27 of the mission "Luna-Resurs" scheduled for launch in 2019 by Soyuz also. It will use the experience of the previous one to perform the comprehensive studies of the lunar polar environment. The landing site of this mission will be selected taking into account the perspective of further usage for future exploration. The lander will study in situ samples of regolith from the depth down to 2 meters. The mission "Luna-Resurs" will also include the lunar polar orbiter Luna-26 (launch in 2018 by Soyuz).

These missions will be implemented with contributions of international partners. In particular, the cooperation with ESA is now under discussion for contribution of scientific instruments, high precision landing technology, drilling element, etc.