Cartography Support for Luna-Glob – a Future Russian Mission to the Moon

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Introduction: The goal of this work is to provide cartographical support for characterization of potential landing sites of Russian space missions Luna Glob and Luna Resource. Here we present results of the analysis carried out for the sub-polar surface. It allows detect different hazards for the landing modules of spacecrafts.

Resources and products:

For mapping we used various DTMs and images with different resolutions. GLD-100 (Scholten et al., 2012) was used for characterization surface in global scale DTM; LOLA DEM (Neumann, 2010) was used for images orthorectification. We have rectificated a big count of the images automatically. After that it was used for digitizing craters and boulders on the potential landing sites areas. All craters were included in electronic catalogue that created as geodatabase and contains coordinates and other parameters of craters. Using data from this catalogue could be prepared map of spatial density of craters. Based on height values from LOLA DTM were created derivative products such as map of slopes and map of roughness (Karachevtseva et al., 2012).

All of data and mapping products are loaded in the GIS-project, which allows operatively get the spatial information about surface objects and characteristics for the whole sub-polar area, including the candidates landing sites on the various scales.