

Lunar Exploration (2)
Lunar Exploration (1) (1)

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MANNED LUNAR SURFACE MISSION OPTIONS ANALYSIS

Abstract

This paper focuses on two options of a manned lunar surface mission: one considers using Lunar Orbital Platform – Gateway (LOP-G) as an intermediate route point and the other doesn't. Space transportation system required to perform manned lunar missions includes the following: - Crew transportation vehicle (CTV); - Upper stage for CTV (US CTV); - Interorbital tug for CTV (IOT CTV); - Lunar descent ascent vehicle (crewed lunar lander) (LDAV); - Upper stage for LDAV (US LDAV); - Interorbital tug for LDAV (IOT LDAV). For the space transportation system elements transfer from the Earth to the Low Earth Orbit the super-heavy class launch vehicle (SHC LV) is used. Selection rationale for preferable option of lunar surface mission is provided based on the information presented in this paper.