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ROBOTIC LUNAR EXPLORATION BASED ON ASSEMBLY TECHNOLOGY ON LUNAR SURFACE

Abstract

A robotic lunar exploration based on assembly technology on lunar surface was mentioned in this paper. The main idea was that took the robots and the equipment to the rendezvous on the lunar surface with three rockets, assembled the detection and security system on the lunar surface, and achieved the goals of low-cost lunar exploration. In the first launch, solar generators are taken to the rendezvous on the lunar surface and used to generate electricity, in order to make sure the robots and the equipment could access to energy when they arrived there later. In the second launch, the robots were taken on the lunar surface. These robots connect those solar generators into power plant, maintain the solar generators and make their rounds to survey resources. When their power is low, these robots come back to the power plant for charging. As a result, these robots can work on the lunar surface for a long time. In the third launch, auxiliary equipment such as experiment cabin are taken to the rendezvous on the lunar surface. With the help of robots, auxiliary equipment are assembled together and powered by power plant. So that more complex exploration activities such as in-situ resource utilization can be carried out. After analysis demonstrated and simulation, the robotic lunar exploration based on assembly technology on lunar surface could construct low-cost permanent lunar base and provide infrastructure for the international lunar exploration activities.