SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration - Part 1 (2A)

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INTRODUCTION TO THE SCIENTIFIC OBJECTIVES AND THE PAYLOADS OF CHANG'E-2 LUNAR SATELLITE

Abstract

China plans to implement its second lunar exploration before the end of 2011. Chang'E-2 is the forerunner of the Chinese second phase lunar exploration project, which will conduct the soft landing and in site probe. The main objectives of Chang'E-2 is to acquire the high resolution stereo image of the moon surface for the landing site investigations of next lunar mission, to analyze the content and the distribution of the useful elements, to explore the lunar soil thickness and estimate the resource of He-3, and to explore the space environment of the moon. The spacecraft is based on the standby platform of Chang'E-1; a few modifications will be conducted to satisfy the new requirements. The payload system consists of the high resolution stereo camera, which is the new designed instrument. The rest payloads such as laser altimeter, microwave radiometer, Gamma and X ray spectrometer, high energy ion detector, solar wind detector are almost the same with them onboard Chang'E-1, only a few adaptive modifications will be carried out. The orbit of the Chang'E-2 is designed in two models, 100km by 100km circular orbit for normal operation and 100km by 15km elliptical orbit for taking high resolution stereo image of the lunar surface, which is expected for soft landing site investigation. In this paper the goals of Chinese second lunar exploration and the payloads of the lunar satellite are described in detail.