IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Interactive Presentations - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (IP)

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TECHNICAL IMPROVEMENT OF LAUNCH VEHICLE CONTROL SYSTEM FOR CHANG'E 4 MISSION

Abstract

Technical Improvement of Launch Vehicle Control System for Chang'e 4 Mission In 2018 China's launch vehicles completed 37 launches, of which Chang'e IV was the most interesting one. This launch is the 95th launch of the LM-3A series launch vehicle, the 13th launch in 2018, and the 5th mission of the lunar exploration project. This is not an ordinary launch of LM-3A series. The launch vehicle control system has made many special improvements to carry out this launch mission. 1. Chang'e-4 has very high requirement for the accuracy of Earth-Moon transfer orbit. Optimization of inertial products and algorithms improves the design accuracy of Chang'e-4 detector. 2. Chang'e 4 detector has two launch windows every day. The control system meets the requirement of timely launch through orbit design and product reliability improvement. 3. In order to meet the multi launch window requirements of Chang'e 4 mission within two days, the control system carried out the test of "24 hours delay after low temperature filling", which could delay the launch for 24 hours. 4. System designers controlled product selection, strengthennd risk analysis and designed preplans for Chang'e 4. 5. Considering the characteristics of Chang'e 4 mission, the product and system were specially tested. The successful implementation of these measures ensures the successful launch and accurate orbit entry of Chang'e 4 mission.