

The data processing and analysis of SELENE laser altimeter (LALT)

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Laser altimeter (LALT) is one of the scientific instruments onboard SELENE lunar orbiter and the three selenodetic missions of RISE group (Researches In Selenodesy) in National Astronomical Observatory of Japan. The manufacture of flight model of LALT (LALT-FM) was finished in March 2003. From Jul. 2006 to Jan. 2007 the final PFM integration test (PFT 2nd half) of the SELENE main orbiter including several environmental, electronic performance and thermal vacuum tests was carried out successfully. After the performance tests of the main orbiter system on Feb. 2007, SELENE will be transferred to the Tanegashima space center for the final launching operations in this summer. Range accuracy between SELENE orbiter and the lunar surface is formally +/-5m. The recent assessment of the ranging accuracy of LALT revealed that the true performance seems better from the data of the simulated ranging tests during PFT 2nd half electronic performance test of SELENE main orbiter. We are now preparing and evaluating data processing software for SELENE-LALT mission and developing algorithms for precise footprint positioning including a matching technique with DTM (digital terrain model) produce from SELENE-LISM (camera) group.

In this presentation we will show the detail of true performance of LALT and our data processing and analysis software.