

Lunar Exploration (3)  
Lunar Mission updates (1A)

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POSITION DETERMINATION OF CHANGE'3 LANDER BASED ON OCEL PROJECT

**Abstract**

The successful soft landing of China Chang'E-3 on lunar surface stands for the phase II of CLEP (China Lunar Exploration Program) project finishing perfectly. Chang'E-3 lander is equipped with X-band DOR transponder which could be deemed as a radiometric beacon. It's another radio transmitter on lunar surface since Apollo era, so a new window for an era of lunar surface observations from Earth is opened. Since July 2014, OCEL (Observing Chang'E-3 Lander with VLBI) project has been conducting jointly by IVS (International VLBI Service of Geodesy and Astrometry) and BACC (Beijing Aerospace Control Center), a global IVS RD network augmented with two China Deep Space Stations was configured for OCEL. Until end of 2016, totally 12 observation sessions have been conducted, eight of them are 24-hour sessions. High accuracy of determination of the lander is the first step of scientific analysis, in this paper, we analyze the determination results of the lander in OCEL, error analysis and future OCEL observation are also discussed.