



Announcement of Opportunities for Scientific Payloads onboard Chang'E-6 Mission

China National Space Administration

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Lunar and deep space exploration is of great significance for exploring the mystery of space and expanding human living space. China Lunar Exploration Program (CLEP) has achieved lunar orbiting and landing, and is implementing sampling return mission, and planning for follow-up exploration activities.

Chang'E-4 mission has been a great success while successfully carrying a suite of international payloads. CNSA plans to utilize Chang'E-6 mission, a lunar sample return mission, to explore more modes and projects of international cooperation aiming at improving technology, sharing achievements, win-win cooperation, thus creating a platform for space exploration and contributing wisdom to scientific exploration.

1. MISSION OVERVIEW

The main task of Chang'E-6 mission is to realize automatic sample return.

Chang'E-6 probe consists of four modules: orbiter, return capsule, lander and ascender. The orbiter will travel through the Earth-to-Moon transfer, moon orbiting, and Moon-to-Earth transfer. The lander and the ascender will descend from the lunar orbit to the lunar surface to collect samples.

The ascender will carry the collected samples from the lunar surface to the lunar orbit and transfer them to the return capsule. The return capsule is responsible for bringing the collected lunar samples back to the Earth with the orbiter.

2. COOPERATION OPPORTUNITIES

Both the orbiter and the lander provide onboard opportunities. The payloads either work independently or require support from the orbiter/lander. The preliminary constraints on the onboard payloads are as follows:

2.1 Design Constraints on Payloads onboard Orbiter

- Total mass: ≤ 10 kg
- Total power consumption: ≤ 50 W
- Optional accommodation envelope (mm, one of the following):
400×350×300, 280×260×160, 150×300×300
- Temperature range: -100°C to + 80°C
- Flight Orbit:
 - Earth-Moon Transfer Orbit: 200 km (perigee) × 380000 km (apogee), with an inclination of about 45° and a flight for about 5 earth days.
 - Lunar circular orbit: 200 km with inclination of 45°, and flight duration in lunar orbit is about 4 Earth days.

➤ Moon-Earth transfer orbit: 60 km (perigee) × 380000 km (apogee) with 45° inclination. Flight for approximately 5 Earth days.

2.2 Design Constraints for Payloads onboard the Lander

- Total mass: ≤ 10 kg
- Total power consumption: ≤ 30 W
- Optional accommodation envelope (mm, one of the following):
200 × 300 × 150, 150 × 250 × 100, 200 × 250 × 150
- Temperature range: -100°C to +120°C
- Orbit: 15 km (perilune) × 100 km (apolune) of the lunar orbit before descent.
- Working mode: working on the lander or on the lunar surface.

3. DEADLINES

The deadline for proposals is August 31, 2019. Please briefly introduce payloads and identify the contact point in the proposal.

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