

Probe will bring back moon rocks and soil

Chang'e 5, China's newest lunar probe, will bring 2 kilograms of lunar soil and rock samples back to Earth before the end of 2017, the project's chief said Thursday.

"The monthlong Chang'e 5 mission will be the most sophisticated lunar expedition China has ever made," Hu Hao, director of the national Lunar Exploration Center, told China Daily. "It will face a lot of challenges such as the great number of demanding maneuvers and the complicated condition of its landing site."

The center is under the State Administration of Science, Technology and Industry for National Defense.

Hu said that Chang'e 5 will be launched atop a Long March 5 heavy-lift carrier rocket at the Wenchang Space Launch Center in Hainan province.

The 8.2-metric ton probe has four components, an orbiter, lander, ascender and re-entry module. After the probe reaches lunar orbit, the components will separate into two parts, with the orbiter and re-entry module remaining in the orbit while the lander and ascender descend toward the moon's surface, Hu said.

The lander and ascender will make a soft landing – using small rockets to slow descent – and get to work of such tasks as using a drill to collect underground rocks and a mechanical arm to gather lunar soil.

After two days, the ascender's rocket will elevate it to lunar orbit to dock with the re-entry module. It will transfer lunar samples to the module, which will carry them to Earth. The samples are to be distributed to scientists around the country for research.

If the mission is successful, the third phase of China's lunar exploration program will be finished ahead of schedule, Hu said, also a deputy to the 12th National People's Congress. The third phase is to be concluded before 2020, according to earlier plans.

China's most recent lunar mission took place in December 2013 when the Chang'e 3 probe carried the nation's first lunar rover, Yutu or Jade Rabbit, to the moon. The mission marked the mankind's first soft-landing on the moon in nearly four decades.

Chang'e 3's success marked the completion of the second phase of China's lunar exploration program. It followed the successful Chang'e 1 mission in 2007 and Chang'e 2 in 2010.

Designers and engineers are now carrying out tests on Chang'e 5 and work is proceeding well, Hu said.

The Chang'e 5 mission will pave the way for the nation's future manned expedition to the moon, Hu said.

Ye Peijian, one of China's leading space scientists, told Xinhua News Agency on Wednesday that the fourth phase of the country's lunar exploration program will unfold in 2018 as the Chang'e 4 probe will be launched to carry out the world's first soft-landing on the far side of the moon. He added that China also plans to explore the two lunar poles in the near future.