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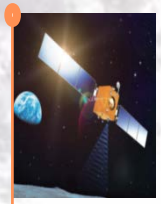
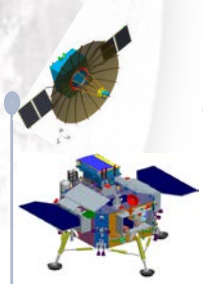
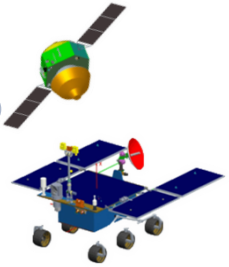


Chang'E-1
2007.10

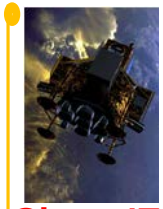
Chang'E-3
2013.12



Chang'E-4
2018

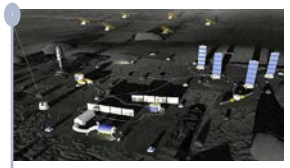


HX-1
2020



Chang'E-P1
2023

Chang'E-P2
2026

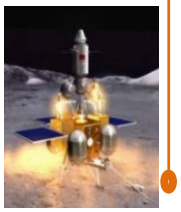


ILRS
2030

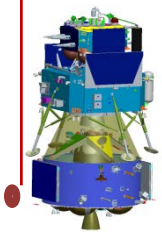
Chang'E-2
2010.10

T1 Reentry
test 2014.10

Chang'E-5
2019



Chang'E-6
2020



Asteroid
Mission
2024

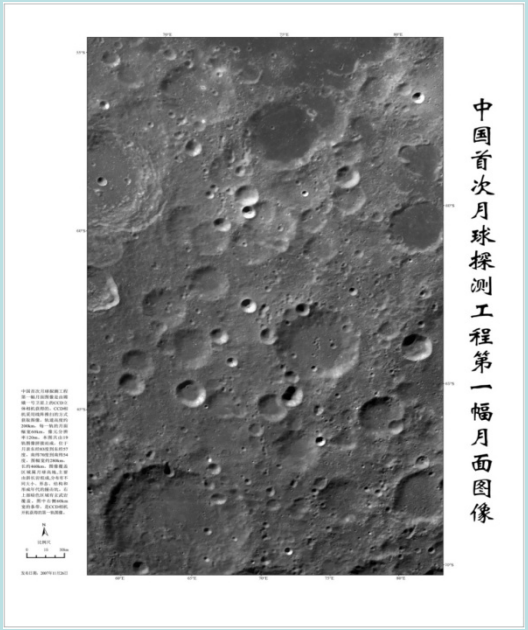
HX-2
2028

Jupiter Mission
2030

# Deep Space Exploration Roadmap

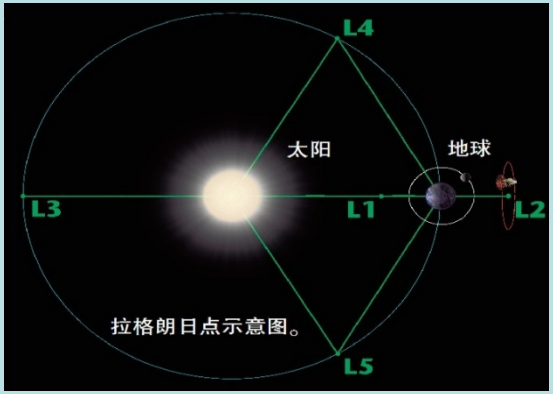
## Chang'E-1

- Launched in Oct., 2007;
- Carried out lunar global survey through remote sensing. Obtained lunar global image and elevation map with 120m in resolution. Mapping the abundance and distribution of various chemical elements .




## Chang'E-2

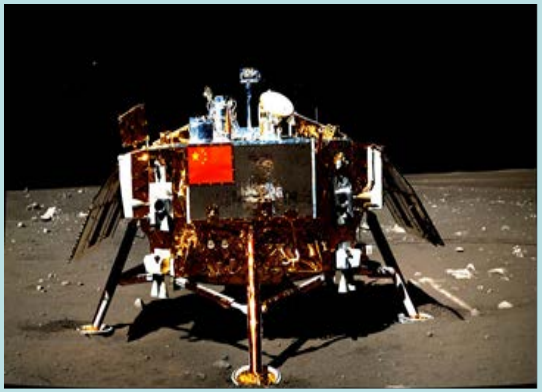
- Launched in Oct., 2010;
- Explored Sun-earth L2;
- December 13th, 2012, flyby Asteroid 4179 Toutatis.

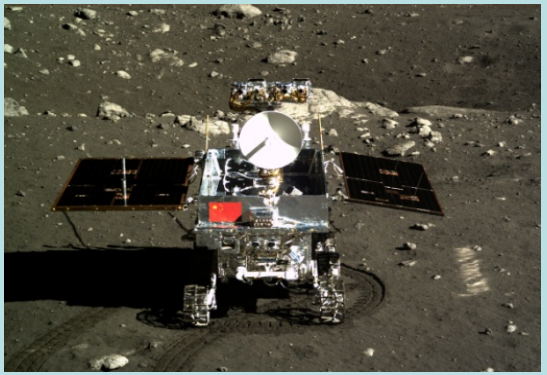




## Chang'E-3

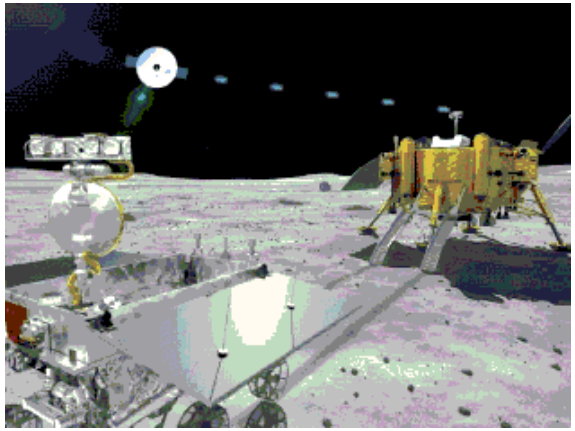
- Launched on Dec. 2nd, 2013;
- On Dec. 14th, 2013, S/C successfully soft landed in designated area of Sinus Iridium.

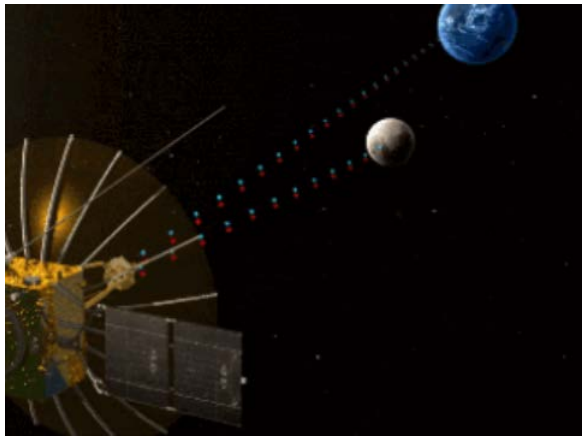




## Chang'E-4 Mission

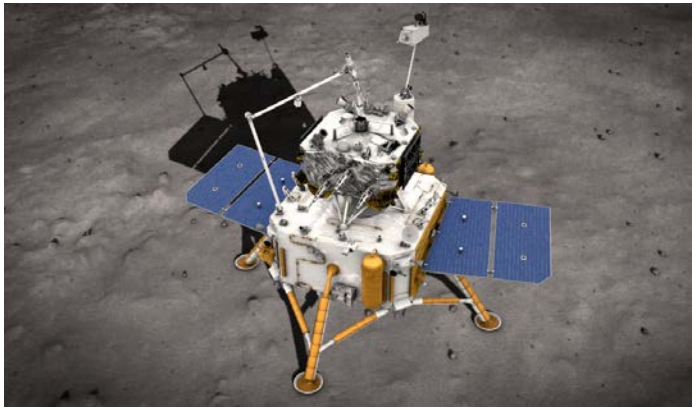
- Land at Aitken basin of moon farside by human S/C for the first time. Communicate relay at Earth-moon L2 point.
- Conduct low frequency radio observation, shallow structure investigation.
- At flight model development phase. Relay satellite Launched in May, 2018.





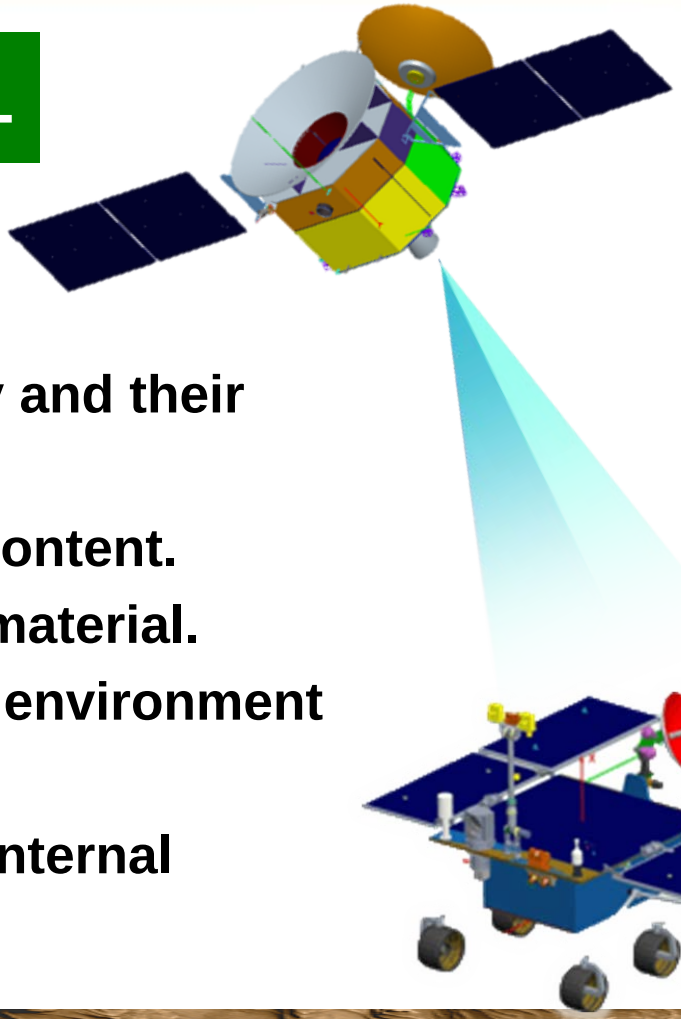
## Chang'E-5 Mission

- Autonomous lunar sampling and return to the Earth.
- Launched by Long March 5 rocket at Wenchang Satellite Launch Center in 2019.
- Study topography and geological structure, mineral composition, regolith thickness and structure.



# Deep Space Exploration Roadmap

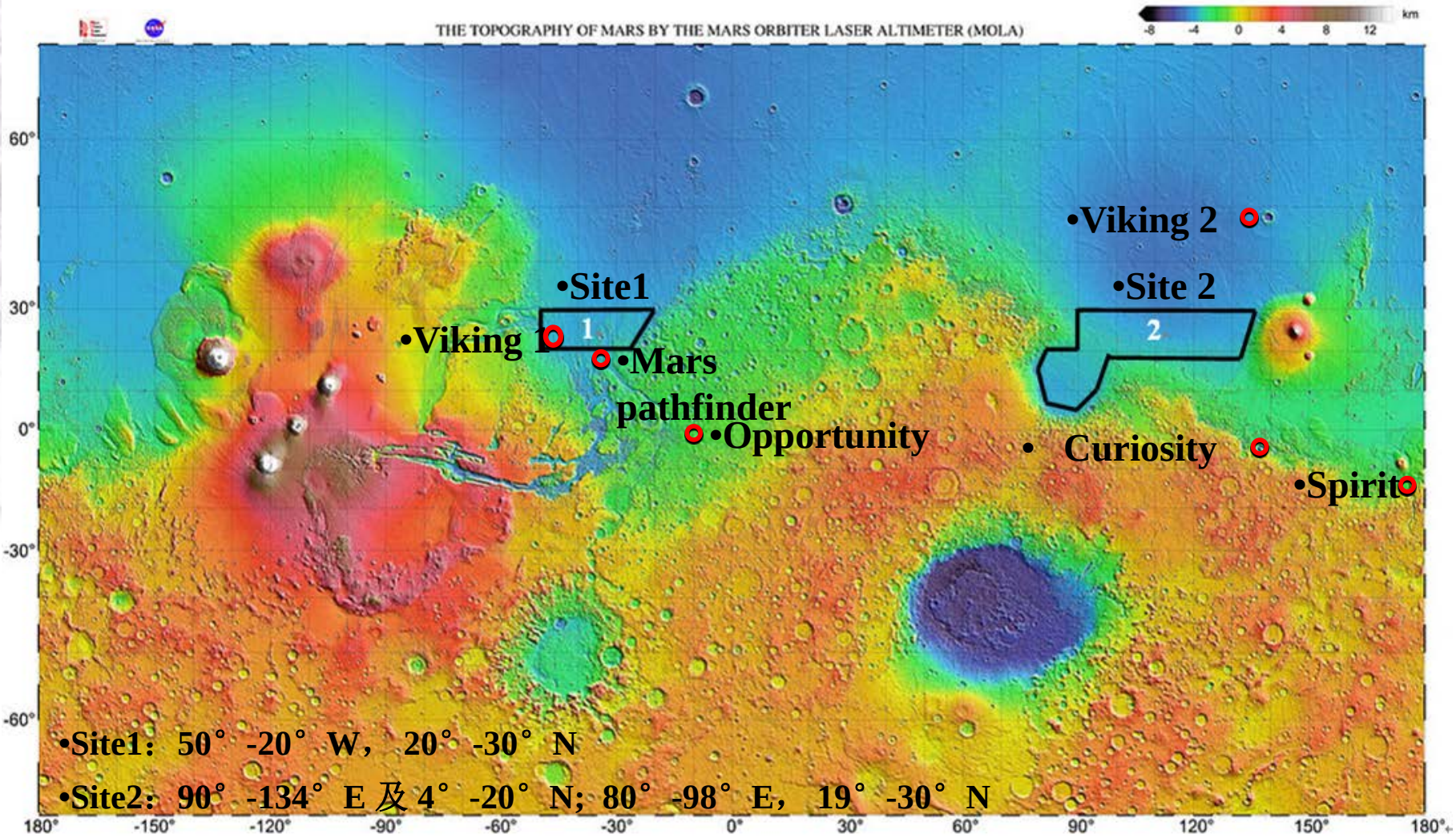
## First Mars Mission HX-1



- To be launched in 2020.
- Scientific Objective

- Feature topography and geology and their variations；
- Characterize soil and water-ice content.
- The composition of the surface material.
- Martian ionosphere, climate and environment feature.
- The Martian physical fields and internal structure.

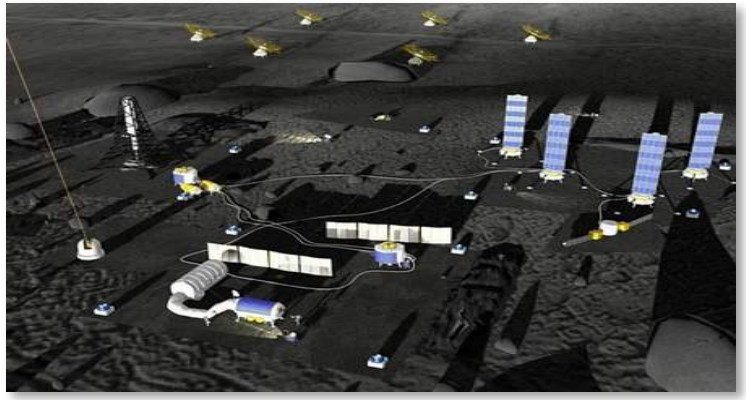
# Deep Space Exploration Roadmap




Candidate Landing Sites

# Deep Space Exploration Roadmap

## Future Lunar Exploration



**Unmanned Lunar Research Station**

After 2030

**Unmanned Lunar Research Station Prototype**

Before 2030

**CLEP 3 Phases**

Before 2020

Long term research, Large scale utilization

In support of human space missions

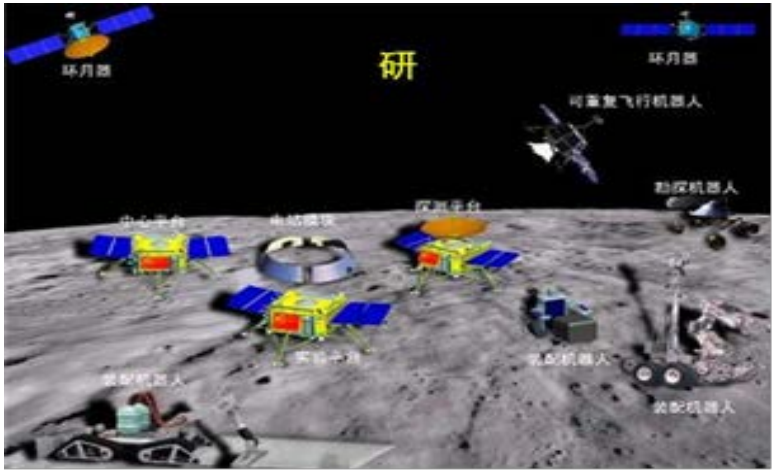
Prospecting, Scientific Research, Application

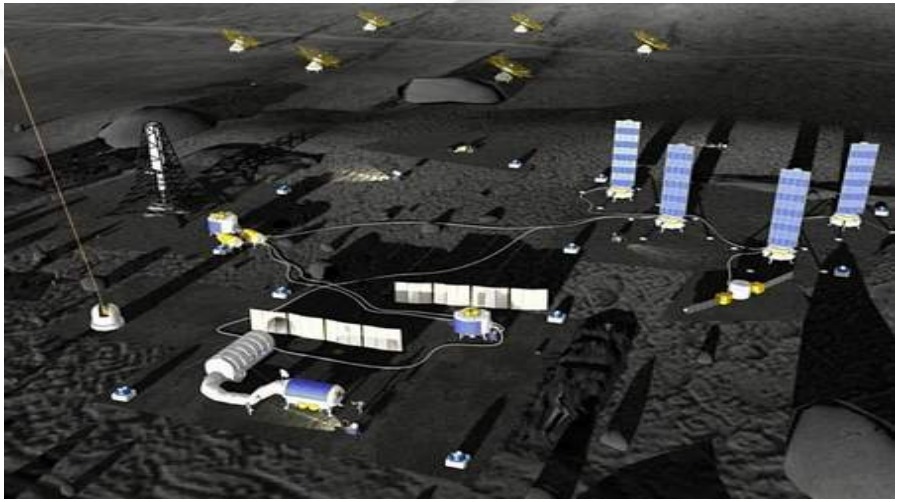
Orbiting Landing Return

# Deep Space Exploration Roadmap

## International Space Research Station

- Planning time: after 2030.
- Long-term energy supply, autonomous infrastructures.
- Conduct robotic scientific research and technology tests.





- Lunar environment and resource prospecting.
- Lunar-based observation.
- In-situ resource utilization.

# Deep Space Exploration Roadmap

## Asteroid Mission

- Around 2024.
- Complete flyby, landing, sample return of a near-Earth asteroid and main belt comet flying around.

## Martian Sample Return

- Around 2028.
- Explore topography, composition.
- Obtain environment data.
- Investigate soil and mineral rocks structure, physical property, composition.
- Deepen the understanding of the formation and evolution of Mars.

## Jupiter Mission

- Around 2030.
- Through one mission to achieve flying around Jupiter, Europa and interstellar exploration.