Lighting the moon's dark side

嫦娥四号开启首次探索月球背面之旅

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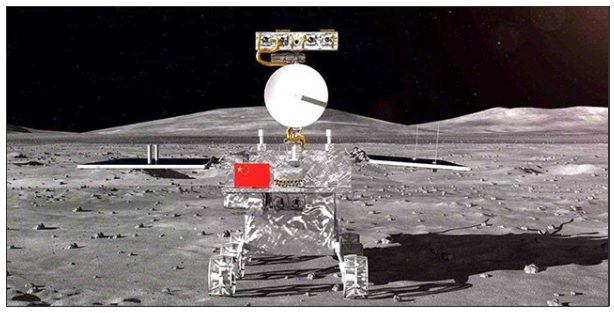
导读：嫦娥四号登月探测器已经上路，这将是全世界首次对月球背面进行着陆探测和巡视探测。一直以来，月球都以"正面"示人，那么月球背面，到底会有什么秘密呢?



China launched the Chang'e-4 lunar probe to explore the far side of the moon on Dec 8. Xinhua

As our closest neighbor in space, the moon has been the subject of popular myths, songs and poems since ancient times. And it has no less fascinated scientists.
n. 神话(n.诗，韵文(仍然，依旧，还是;
作为我们在宇宙中的近邻，月亮自古以来便在神话、歌曲和诗歌中广为流传。而它也深深地吸引着科学家们。

But even after centuries of research many questions remain to be answered about Earth's only satellite.
但在人类进行了数世纪的探索之后，地球的这颗唯一卫星依然有许多未解之谜。

Perhaps the Chang'e-4 lunar probe will be able to reveal more of its secrets. On Dec 8, the probe lifted off from Xichang Satellite Launch Center in Sichuan province. It is the first probe to the far side of moon.
或许嫦娥四号月球探测器能够揭开更多的谜团。12月8日，该探测器在四川西昌卫星发射中心发射升空，首次开启对月球背面的探索之旅。

The Earth's gravity slows the moon's rotation, matching it to the speed of its orbit. Thus, the far side of the moon is always dark and has never been seen.
n. 轨道
地球引力减缓了月球的自转速度，使其与公转速度一致。因此，月球背面常年昏暗，无法直接观测。

It's this sense of the unknown that makes the far side of the moon such an interesting place for scientific and space exploration. Long exposed to solar winds, the far side may have the special soil and minerals in its upper mantle.
n. 矿物
这种未知感令月球背面在科研和太空探索中颇受关注。常年暴露在太阳风之下的月球背面，或许其上地幔中会有特殊的土壤和矿物质。

For this reason, Chang'e-4 will study the effect of solar winds on the lunar surface and any minerals found beneath the spacecraft. Chang'e-4 is also carrying flower seeds and potato and silkworm eggs to see whether life is possible on the moon. If it is, then the moon will become a more likely destination for space travel in the future.
出于这个原因，嫦娥四号将研究太阳风对月球表面的影响，以及在航天器下所发现的任何矿物质。嫦娥四号上也载有花籽、土豆和蚕卵，以观察生命是否有可能在月球上生存。如果答案是肯定的，那么月球将更有可能成为未来太空旅行的目的地。

However, due to communication problems, exploration of the dark side will not be easy.
然而，由于通讯问题，探索月球昏暗的背面并非易事。

As the far side is blocked off from us, radio noise coming off Earth is also blocked. This is why China launched the relay satellite Queqiao in May – so that communication between Earth and the probe could go ahead.
由于月球背面背对着我们，来自地球的无线电噪声也因此被屏蔽。这便是中国于今年5月发射中继卫星鹊桥号的原因 —— 如此一来，地球与探测器之间的通讯能够继续进行下去。

Power supply will also be a challenge to the mission.
电源供应也是该任务的一大挑战。

Chang'e-4 gets energy from the sun through its solar panels. However, a lunar day has the length of 28 Earth days. This means that the probe will need to orbit the moon for over 20 days to be in a position to be able to land in moon daylight and so use its solar panels.
n. 轨道
嫦娥四号通过太阳能板获得太阳能。但月球上的1天相当于地球上28天。这意味着，探测器需要绕月球飞行20多天，才能找到一个合适的位置在月球白天登陆，从而能够使用太阳能板。

According to Xinhua, if everything goes well, the satellite will land on the far side on Jan 2.
据新华社报道，如果一切进展顺利，该人造卫星将在1月2日登陆月球背面。

The New York Times described the journey as "groundbreaking", and wrote that it will "give clues to the history and development of the moon".
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《纽约时报》称这一旅程"具有开拓性意义"，认为这将会"为月球的历史与发展提供线索"。线索(clue的名词复数);

(Translator & Editor: Wang Xingwei AND Luo Sitian)
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辞海拾贝

Myths	神话	**Probe**	探测器
Rotation	旋转	**Orbit**	轨道
Mantle	地幔	**Silkworm**	蚕
Launched	发射	**Relay satellite**	中继卫星

Solar panels 太阳能板