**八年级（下）英语第3周第4课时**

**Module 3 Revision学程拓展**

**一、请同学们阅读文章，进一步了解嫦娥五号探测器。**

**Lunar triumph**

A sophisticated (复杂的) and challenging space adventure－the Chang’e-5 robotic lunar mission－has achieved success.

On Dec 17, the Chang’e-5 lunar probe (探测器), with its load of rocks and dust from the moon, landed in the Inner Mongolia autonomous region, China Daily reported. The successful landing marked the completion of the historic 23-day expedition (航行,探险).

The probe brought back an incredible 1,713 grams of samples from the moon. They are the first lunar samples in over 40 years since the former Soviet Union’s Luna 24 probe in 1976. China is the third country in the world to successfully retrieve (取回) lunar samples after the United States and the former Soviet Union.

Next, scientists will conduct various analyses, tests and experiments to determine the composition (成分), structure and physical (物理的，物质的) characteristics (特点) of the lunar samples. This information will help to deepen our knowledge about the history of the moon, as well as our solar system as a whole.

The return of Chang’e-5 was the last step in China’s three-step lunar exploration program. Beginning in 2014, the program included orbiting (绕……轨道而行), landing and bringing back lunar samples. The achievement marks a major step forward in the country’s space industry.

**二、请同学们听音频，阅读文章，获取不同国家太空取样的信息。**

**Lunar samples land**

****We now are in a “golden age” of space-sample retrieval (取回) and exploration. Space agencies around the world are busy collecting, or planning to collect, samples from celestial bodies (天体) like asteroids (小行星), moons and planets.

China’s Chang’e-5 mission is the most recent sample-return mission that has been successfully completed. On Dec 17, the Chang’e-5 lunar probe (探测器) returned home and landed in the Inner Mongolia autonomous region after weeks of space travel, China Daily reported. This was the world’s first lunar sample-return mission since 1976. The mission retrieved an incredible 1,713 grams of samples of rocks and dust with the help of a drill (钻孔机) and a mechanical (机械的) arm.

Another space sample-return mission was completed on Dec 6. Japan’s Hayabusa-2 probe returned a capsule to Earth containing valuable samples from the asteroid Ryugu. This was the second time asteroid samples have ever been collected and brought back to Earth. The first asteroid samples were collected by the original Hayabusa spacecraft back in 2010.

There will be more such missions in the near future. NASA’s OSIRIS-REx spacecraft, which collected samples from the asteroid Bennu in October, is expected to return to Earth in 2023. Russia’s Lunar-25 mission is scheduled to launch to the moon in 2021 to collect lunar samples.

Collecting these samples from different celestial bodies is important because they can help to answer questions that have puzzled scientists for years, such as how life first came about or how water appeared on our planet.

“I cannot emphasize enough how valuable return samples are for increasing our understanding of the origin and evolution of our solar system and our place in the universe, and how we came to be,” said Ann Nguyen, a NASA planetary scientist.

Once the space samples are delivered to Earth, they are then analyzed with high-powered tools. These tools can help to reveal more detailed information than just photos or robotic rovers (探测车) alone.

As for the Chang’e-5 lunar samples, scientists will conduct various analyses, tests and experiments to determine the composition (构成), structure and physical characteristics of the samples. This information will help to deepen our knowledge about the history of the moon, as well as our solar system as a whole.

We have only just begun to scratch (抓) the surface of such celestial bodies, both literally and figuratively (象征性地). However, we have already learned so much and have a lot left to discover.