**New Evidence Found of Ancient Rivers on Mars**

**新证据证明火星曾有过古河流**

Scientists say they have found the most detailed evidence yet of long-flowing, ancient rivers on Mars.

科学家称，他们发现了最为详细的证据证明火星上曾存在过古老的长河。

The discovery supports existing evidence that Mars – which today is dry and cold – was once a water-rich planet. The researchers say their findings suggest rivers may have flowed on the surface of Mars for hundreds of thousands of years.

这一发现恰好与现有的证据相呼应——虽然如今火星干燥而寒冷，但它曾经是一个水域丰盛的行星。研究人员说，他们的发现表明在火星表面曾有河流流淌过数十万年。

The evidence came from new satellite pictures of the Martian surface. These images were captured by a camera on NASA’s Mars Reconnaissance Orbiter. The camera is able to take detailed pictures of the surface while orbiting the planet from about 400 kilometers away.

这些证据来自卫星新拍摄的火星地表图。这些图像是由美国宇航局（NASA）火星侦察轨道器上的相机捕获的。该摄像机能够在400公里外绕火星轨道而行的情况下，拍摄出火星地表的细节图。

A team of scientists studied the images, which showed a rocky area within the planet’s Hellas Impact Crater. An impact crater is formed when a space object crashes into a planet or moon. The Hellas Impact Crater, in the southern Martian hemisphere, is one of the largest formations of its kind in the solar system.

一个科学家小组研究了这些图像，图像中可以看到火星上海勒斯陨石坑内的一个岩石区。当宇宙中有物体撞向一个行星或月球时就会形成陨石坑。位于火星南半球的海勒斯陨石坑，是太阳系中最大的陨石坑之一。

The team was led by Francesco Salese, a geologist at Utrecht University in the Netherlands. The research results were recently published in a study in Nature Communications.

该科研小组由荷兰乌得勒支大学的地质学家弗朗西斯科·萨尔斯领导。该研究结果最近发表于《自然通讯》。

Salese said the scientists studied sedimentary rocks from a 200 meter high rocky cliff. Sedimentary rocks form when sediment, transported by water or wind, settles and forms solid rock.

萨尔斯表示，科学家研究了采自200米高的岩石峭壁上的沉积岩。水或风输送的沉积物沉降并形成的固体岩石就是沉积岩。

“These are sedimentary rocks, 3.7 billion years old, and were formed by rivers that were likely active for over 100,000 years of Martian history,” Salese said in a statement.

萨尔斯在一份声明中说：“这些是沉积岩，有37亿年的历史，是由可能在火星历史上活跃了超过10万年的河流形成的。”

“OK, it is not like reading a newspaper, but the extremely high resolution imagery allowed us to ‘read’ the rocks as if you are standing very close to the cliff,” he added.

他补充道：“虽然这并不像阅读报纸那样，但是超高分辨率的图像使我们能够像在非常近距离地观察悬崖一样来'审视'这些岩石。”

Salese said even without the ability to examine the cliff area up-close on Mars, the pictures show strong similarities to sedimentary rocks found on Earth.

萨尔斯说，即使没有能力近距离在火星上去检验悬崖区域，这些照片也显示出它与地球上发现的沉积岩非常相似。

The researchers created three-dimensional, or 3D, images of the area to get a more detailed understanding of it. The pictures suggested that some ancient Martian rivers were several meters deep.

研究人员创建了该区域的三维或3D图像，以便更好地了解它。这些图片表明火星上一些古老的河流深达几米。

William McMahon is another geologist who was part of the investigation team. He said sedimentary rocks have long been studied on Earth to learn what conditions were like on our planet millions, or even billions of years ago.

威廉·麦克马洪是调查小组的另一位地质学家。他说，人类对地球上的沉积岩进行了长期研究，以了解数百万甚至数十亿年前地球上的状况。

“Now we have the technology to extend this methodology to another terrestrial planet, Mars, which hosts an ancient sedimentary rock record which extends even further back in time than our own,” McMahon said in a statement.

麦克马洪在一份声明中说：“现在，我们的技术能够使我们将这种方法扩展到另一个类地行星——火星。而火星上发现了更为古老的沉积岩石，其历史可以追溯到比地球更久远的时间。”

Another leader of the team was Joel Davis, a researcher with Britain’s Natural History Museum. He said scientists had never before been able to examine such a rock formation with such great detail.

该小组的另一位领导人是英国自然历史博物馆的研究员乔尔·戴维斯。他说，科学家们此前从未能如此详细地研究这种岩层。

Davis said the discovery is “one more piece of the puzzle in the search for ancient life on Mars.” He added that it also provides new evidence of how much water existed on Mars in ancient times.

戴维斯说，这一发现是“在火星上寻找远古生命的另一谜题。”他补充说，它也为证明古代火星上有过多少水提供了新证据。

“The rivers that formed these rocks weren't just a one-off event - they were probably active for tens to hundreds of thousands of years,” Davis said.

戴维斯说：“形成这些岩石的河流不仅仅是一次性事件，它们可能活跃了数万至数十万年。”

Salese added that the findings show Mars had an environment able to support large, flowing rivers for extended periods of time.

萨尔斯补充道，研究结果表明火星的环境能够长时间支撑大型流动的河流。

“This kind of evidence, of a long-lived watery landscape, is crucial in our search for ancient life on the planet,” Salese said.

萨尔斯说：“这种证明火星曾长久存在过水域的证据对于我们寻找火星上的古老生命至关重要。”

I’m Bryan Lynn.

布莱恩·林恩报道。

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