Scientists Approve Terms for Largest, Smallest Measurements

科学家批准了最大、最小测量值的术语

An international group of scientists has expanded the metric terms used to express the largest and smallest measurements.

一个国际科学家小组扩展了用于表示最大和最小测量值的公制术语。

The changes were decided at a recent meeting of the 27th General Conference on Weights and Measures, which took place near Paris, France. The group sets international standards for scientific measurements.

这些变化是在最近的一次会议上决定的第 27 届度量衡大会在法国巴黎附近召开。该小组制定了科学测量的国际标准。

The new terms are known as prefixes. A prefix is a word, letter or number placed before a base word to change its meaning.

新术语称为前缀。前缀是放置在基本单词之前以改变其含义的单词、字母或数字。

Examples of existing prefixes used in the metric system are kilo- and milli-. When these prefixes are added to the metric unit meter, they become kilometer and millimeter.

公制系统中使用的现有前缀示例有千和毫。当这些前缀加到公制单位米上时，它们就变成了公里和毫米。

This method of combining terms makes it easier to express size and distances. For example, saying "kilometer" is easier than having to say 1,000 meters. And using "millimeter" is much easier than having to say "one thousandth of a meter."

这种组合术语的方法更容易表达大小和距离。例如，说“公里”比说 1,000 米更容易。使用“毫米”比说“千分之一米”要容易得多。

The worldwide standard for the metric system is known as the International System of Units. Changes to this standard are decided by scientists and government representatives from around the world.

公制的全球标准被称为国际单位制。对该标准的更改由来自世界各地的科学家和政府代表决定。

Britain's National Physical Laboratory, which led the push for new prefixes, confirmed the new changes were approved in a resolution at the meeting.

领导推动新前缀的英国国家物理实验室证实，新的更改已在会议的一项决议中获得批准。

It marked the first time in more than 30 years that new terms have been added to the International System of Units. Representatives attending the meeting said the need for new prefixes had grown because of scientific advances and huge increases in digital data storage.

它标志着 30 多年来首次将新术语添加到国际单位制中。与会代表表示，由于科学进步和数字数据存储量的巨大增长，对新前缀的需求不断增长。

The new prefixes were created to express "the biggest and smallest levels ever measured," said Richard Brown. He is head of Metrology at the National Physical Laboratory.

创建新前缀是为了表示“有史以来测量到的最大和最小水平”，他说理查德·布朗。他是国家物理实验室的计量学负责人。

The new terms for the largest units are ronna and quetta. And the new expressions for the smallest are ronto and quecto.

最大单位的新术语是 ronna 和 quetta。最小的新表达式是 ronto 和 quecto。

Ronna is represented by a one, followed by 27 zeros, while quetta has 30 zeros. For measuring extremely small things, ronto has 27 zeros after the decimal point, while quecto would have 30 zeros.

Ronna 由一个 1 后跟 27 个零表示，而 quetta 有 30 个零。为了测量极小的东西，ronto 在小数点后有 27 个零，而 quecto 有 30 个零。

Brown told The Associated Press the new prefixes will make it easier for scientists to describe things they already known about. He said the Earth weighs about six ronnagrams. The weight of Jupiter, on the other hand, can be expressed as two quettagrams.

布朗告诉美联社，新的前缀将使科学家更容易描述他们已知的事物。他说地球重约 6 ronnagrams。另一方面，木星的重量可以用两个 quettagram 来表示。

The mass of an electron can be described as one rontogram. And, scientists can now say that a single byte of data on a smartphone increases the phone's mass by one quectogram.

一个电子的质量可以用一个 rontogram 来表示。而且，科学家们现在可以说，智能手机上的单个字节数据会使手机的质量增加一个 quectogram。

Brown said "the diameter of the entire observable universe is just one ronnameter."

布朗说：“整个可观测宇宙的直径只有一个 ronnameter。”

He added that the new names were not chosen without careful thought. The first letter of the new prefixes had to be one that had not been used in other prefixes and units.

他补充说，新名称的选择并不是经过深思熟虑的。新前缀的第一个字母必须是其他前缀和单元中没有使用过的。

"There were only the letters ‘r' and ‘q' that weren't already taken," Brown said. "Following that, there's a precedent that they sound similar to Greek letters and that big number prefixes end with an ‘a' and smaller numbers with an ‘o.'"

“只有字母‘r’和‘q’还没有被拿走，”布朗说。 “在此之后，有一个先例，它们听起来类似于希腊字母，大数字前缀以‘a’结尾，较小的数字以‘o’结尾。”

Brown noted that it was "high time" for the terms to be added. "(We) need new words as things expand," Brown said. "In just a few decades, the world has become a very different place."

布朗指出，现在是添加条款的“最佳时机”。 “随着事情的发展，（我们）需要新词，”布朗说。 “在短短几十年里，世界已经变得非常不同了。”