

# Far, far away

This apparatus, held in London's Science Museum, has some significant purpose — or curiosity value — in the history of physics. Can you guess what it is?

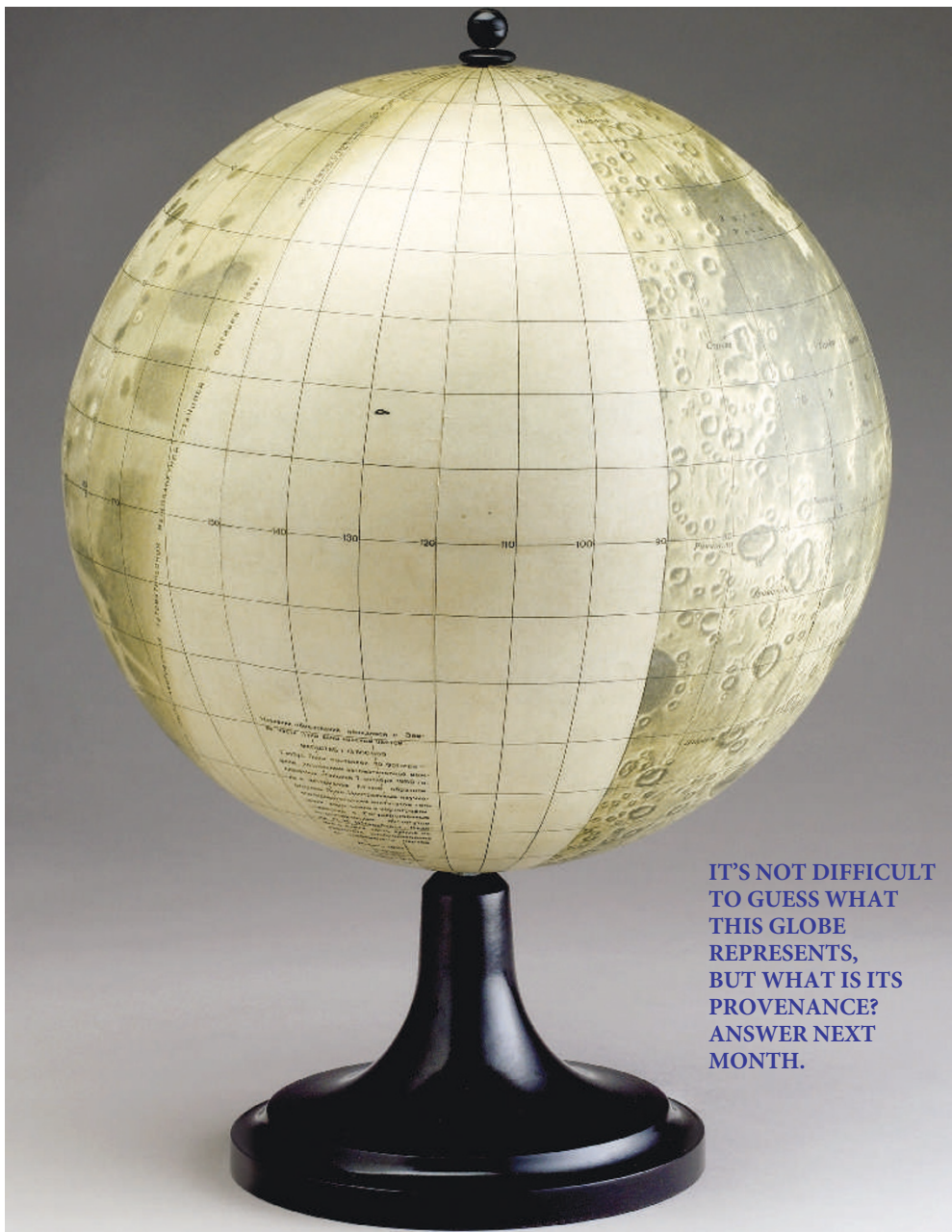


**Last month:**  
Faraday's lodestone and coil

Michael Faraday's discoveries paved the way for a world powered by electricity. In 1831, he found that he could create a spark across the two ends of the coil if he moved the lodestone, a natural magnet, in its vicinity. The lodestone (top) has a Russian inscription and is dated 1777. It was lent to Faraday by a fellow physicist and chemist, John Frederick Daniell, who had just taken up the post of professor of chemistry at the newly formed King's College, London. Its inscription claims that it weighed the equivalent of 7 kg and could lift 19 kg. Measurements of its magnetism made in 1982 gave results of 21 electromagnetic units (0.021 A m<sup>2</sup>) — a remarkably high value. This might explain why Faraday used this lodestone in preference to the artificial steel magnets that were then widely available.

Faraday touched the ends of the iron core of the coil on the poles of the lodestone and found that he could make a spark jump across the ends of the wire if they were brought sufficiently close together. There was a similar effect when he removed the lodestone. Faraday recorded in his diary that he was probably the first to have used a magnet to produce a spark.

These experiments, and similar ones carried out in the same year, enabled Faraday to generalize the conditions



IT'S NOT DIFFICULT TO GUESS WHAT THIS GLOBE REPRESENTS, BUT WHAT IS ITS PROVENANCE? ANSWER NEXT MONTH.

for obtaining an induced current, and to construct the prototype electric generator. There followed a period of experimental designs for the production of electricity until the dynamo, designed by Werner Siemens in 1866,

became the basis for large-scale electricity production.

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