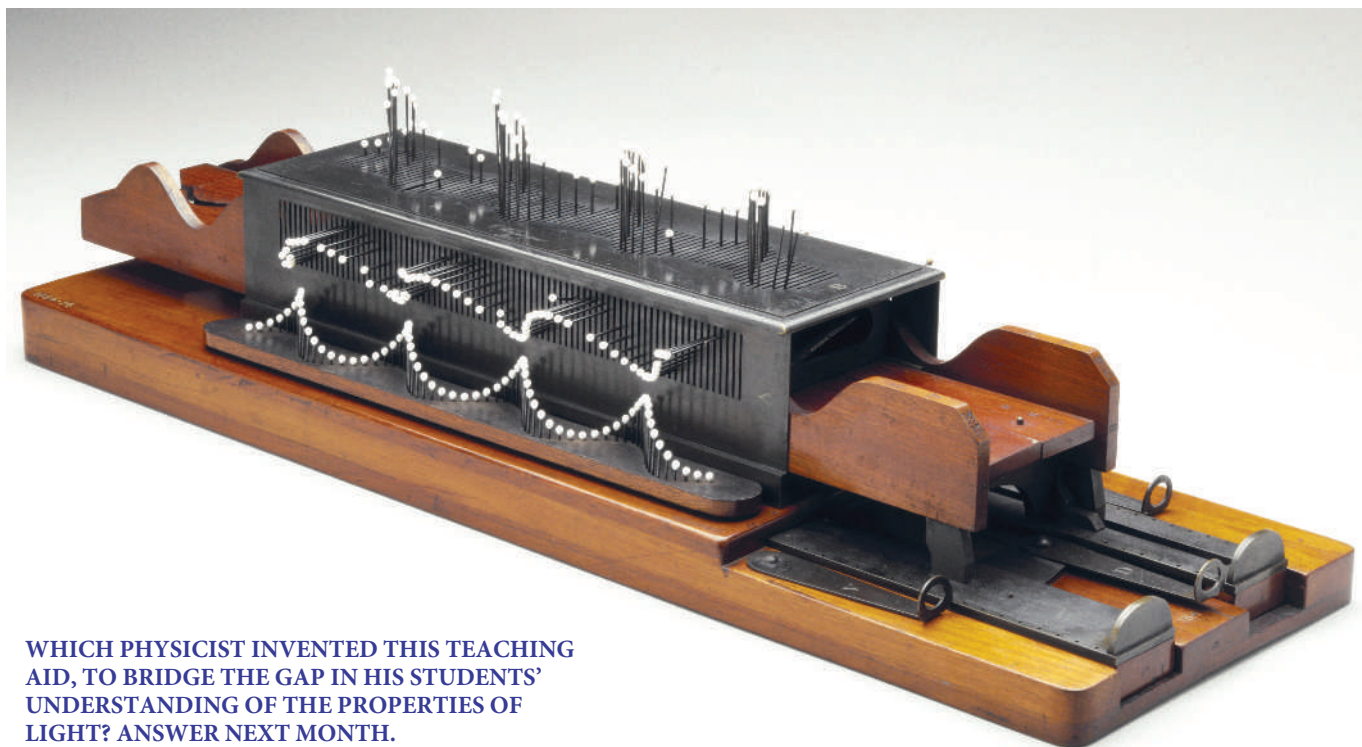


New wave

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?



WHICH PHYSICIST INVENTED THIS TEACHING AID, TO BRIDGE THE GAP IN HIS STUDENTS' UNDERSTANDING OF THE PROPERTIES OF LIGHT? ANSWER NEXT MONTH.

This reflecting telescope was built in about 1795 by Sir William Herschel, who gave it to his sister Caroline. A dedicated assistant to her brother, Caroline was a celebrated astronomer in her own right, discovering eight comets and three nebulae. She described vividly the experience of astronomical observing on “starlit nights on a grass-plot covered with dew or hoar frost, without a human being near enough to be within call”.

The Herschels left their native city of Hanover, Germany, for Bath in England, where William made his living as a musician. However his passion was astronomy and in 1773, dissatisfied with the quality of equipment available, he began making his own telescopes. He perfected the art of mirror polishing and his superior

instruments enabled him to make detailed surveys of the night sky. In 1781, he observed a fuzzy object, which he at first assumed might be a comet. Further observation revealed it to be a planet — the first new one to be spotted since prehistoric times. Herschel named it *Georgium sidus* (the Georgian star) after King George III, but this name proved unpopular with astronomers and we know it today as Uranus.

Caroline Herschel described the telescope pictured here as looking exactly like the one used by her brother in the discovery of Uranus. It has a 7-foot octagonal wooden tube and is operated using pulley ropes and gears. The 6-1/8-inch mirror is made of speculum metal, an alloy of copper and tin.

In 1782, William Herschel was awarded a pension in recognition



Last month: Caroline Herschel's telescope

of his achievements, enabling him to give up work as a musician and, at 42, become the world's first professional astronomer. His son John continued the family tradition, charting the Southern skies from Cape Town, South Africa. The Herschel name still features prominently in astronomy today: in 2007, the European Space Agency will launch the Herschel Space Observatory, to study the skies at far-infrared and sub-millimetre wavelengths. It will have the largest mirror ever deployed in space — a fitting tribute to William and Caroline.

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www.sciencemuseum.org.uk

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