

Giuseppe Piazzi

**Director of the
Palermo Observatory
and**

**Discoverer of the first minor planet, Ceres
in 1801**

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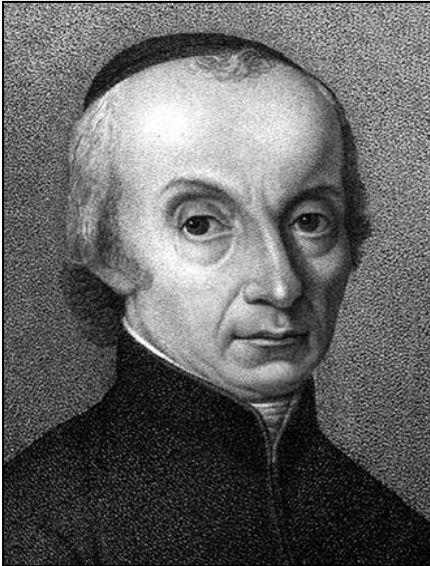
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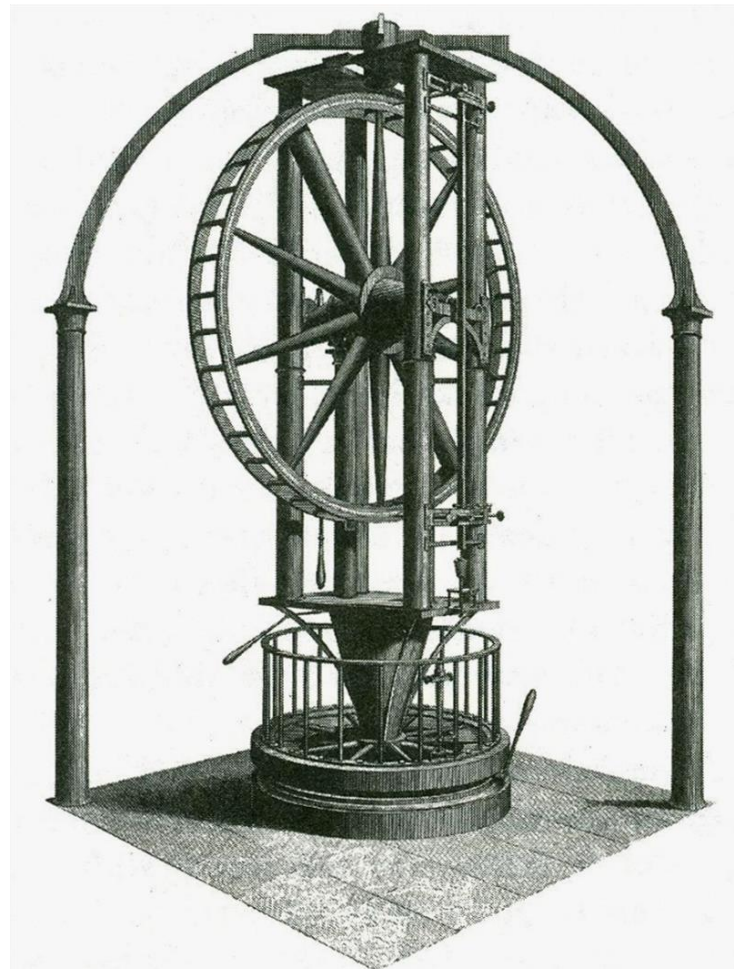
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Progress in astronomy towards the end of the 1700s was not restricted to Britain, France and Germany. In Italy, a new observatory was being built at the University of Palermo, Sicily. It was to be under the directorship of **Father Giuseppe Piazzi** (1746-1826). Piazzi had lectured in mathematics there since 1781, and was appointed Professor of Astronomy from the start of 1787.

Though well qualified academically, he knew that he had little observational experience with telescopes. He asked for and was granted a sabbatical of three years to spend in Paris and London, in order to undergo training in practical astronomy, and also to have instrumentation specially made for the Observatory then under construction.

In the period spent abroad, from 13 March 1787 until the end of 1789, Piazzi made the acquaintance of the major French and English astronomers of his time. In London he was able to have a telescope on an alt-azimuthal circle made by Jesse Ramsden, one of the most skilled instrument-makers in the world. This 'Palermo Circle' became famous, and was the most important instrument of the Palermo Observatory.



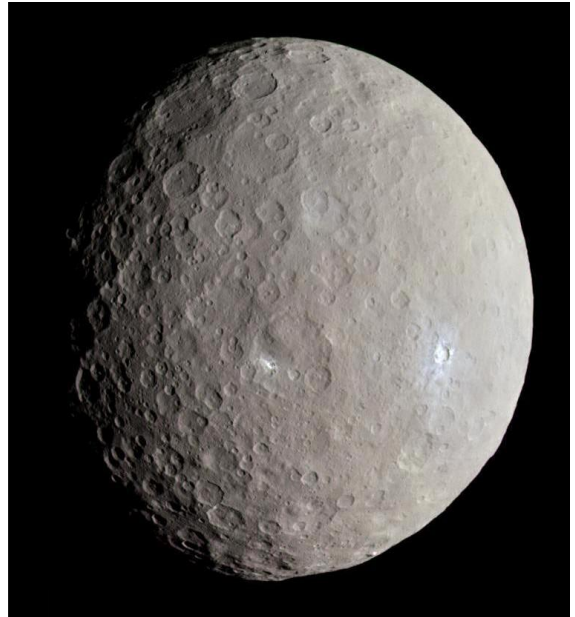
The discovery of Uranus in 1781 had made William Herschel a celebrity, overshadowing Astronomer Royal Nevil Maskelyne, so a visit to Herschel's observatory at Slough, outside London, was a top priority for Piazzi. Caroline Herschel's diary lists numerous accidents suffered by her brother and herself over the years, climbing up and around his huge telescopes, and bad luck attended Piazzi's visit too, for he stumbled over a protruding bar in the dark and broke his leg. Nevertheless, Piazzi returned to his university in Palermo fired with enthusiasm.

He set himself three goals – to make a new catalogue of stars with his new equipment, to discover another new planet like Herschel had done, and to detect the elusive stellar parallax. He began at once, supervising the methodical compilation of the Palermo Catalogue of stars, containing 7646 star entries with unprecedented precision, including a star named the ‘Garnet Star’ by Herschel. The first edition of the catalogue was published in 1803.

Twelve years after his visit to Herschel, Piazzi found his new planet, the dwarf planet **Ceres** moving against the starry background. It was discovered by Piazzi through good fortune on 1 January 1801 at the Palermo Observatory. He noticed an uncharted object in Taurus and followed its movement against the background stars for several nights. Its appearance was like a star of seventh magnitude, much fainter than any of the known planets, and too small to reveal itself as a disc as the other planets did.

Although he originally reported it as a comet, he was just being cautious, as its slow, uniform motion suggested to him that it was “better than a comet.”

Lost from sight for several months due to the proximity of the Sun, it was recovered later in the year by Baron von Zach and **Heinrich Wilhelm Olbers** after a preliminary orbit had been computed by their colleague, the prominent mathematician **Johann Carl Friedrich Gauss** (1777-1855). These calculations placed the object between the planets Mars and Jupiter, precisely where the Titius-Bode Law predicted it would be. Piazzi named the new planet **Ceres** (left), after the Roman goddess of agriculture. In 1811 Schröter estimated its diameter at 2613 km.



The Palermo Catalogue contained two invented star names: Rotanev and Sualocin. These names were attached to Alpha and Beta Delphini by one of the observers, **Niccolò Cacciatore** (*Nicholas Hunter* in English), when he was working on later editions of the Catalogue between 1807 and 1814. They sound exotic, but it was a practical joke – the star names are the Latinised versions of Cacciatore’s own names (*Nicolaus Venator*) spelled backwards. Piazzi did not notice the deception and they slipped through. Appearing in the catalogue, the hoax names gained the authority of the printed word, and soon became officially accepted, as they are today.

In comparing his catalogue with that of Flamsteed, Piazzi found that many of the stars had changed their positions slightly since Flamsteed’s time. This ‘proper motion’, unlike the regular movements caused by precession, was at random speeds and in random directions, and had first been reported by Halley in 1718. One star in particular, though, had moved quite a lot during the intervening 90 years – nine arcminutes or nearly a third of a lunar diameter. The star was **61 Cygni**, a fifth magnitude orange star, and Piazzi determined that it moved about 5.2 arcseconds per year. It became known as ‘**Piazzi’s Flying Star**’, and as of 2024 only six stars with faster proper motions have been found, all being fainter than sixth magnitude.

As 61 Cygni was located in the rich star fields of the northern Milky Way, over the years it had passed by many faint background stars, whose positions appeared to have changed only slightly, if at all. On hearing the news, astronomers felt that 61 Cygni must be a close neighbour, and could be the **star of choice** for finally finding parallax. This was a valid assumption, and we have now found only fifteen other star systems closer to the Sun, most of them being faint red or brown dwarfs, but also including the main sequence stars Alpha Centauri A and B, Sirius A and Procyon A. Though Piazzi did not find the elusive stellar parallax, his ‘Flying Star’ would provide Friedrich Bessel with the key to the solution.

End.