



## It Was a Dark and Starry Night



It was on a dark and starry night of New Year's Day, 1801, that **Giuseppe Piazzi**, an Italian monk, was at work in his observatory on the island of Sicily. As a member of the **Celestial Police** (see "In Search of..."), a group of astronomers looking for Kepler's missing planet between Jupiter and Mars (see "Between Jupiter and Mars..."), he was compiling an accurate catalog of known stars in the Taurus constellation. He was verifying some of his predecessors' work when he saw a tiny point of light close by. At first he thought it was just a dim star that had not been included on his chart, so he checked for it the next night, but *it had moved!* He continued to note its position changes on January 3 and 4. Clearly what he was observing was not a star! He wrote to a number of his colleagues, including **Johann Bode** (see "Patterns in the Sky"), who was then the Director of the Berlin Observatory, informing them of his findings.

Bode studied his star charts and was certain that Piazzi had found "the missing planet," even though no one besides Piazzi had seen the object.

### And the Plot Thickens...

Cloudy weather and Piazzi's illness prevented his regular observation of the skies on some January nights, but by January 24, it was evident that Piazzi understood what he had discovered. He wrote to his friend, Barnaba Oriani, Director of the Brera Observatory, "I have announced the star as a comet. But the fact that the star is not accompanied by any nebulosity [*clouds of dust and gas*] and that its movement is very slow and rather uniform has caused me many times to seriously consider that perhaps it might be something better than a comet. I would be very careful, however, about making this conjecture [*hypothesis*] public."

He wrote a similar letter to Bode the next day, but Bode did not receive it until March 20, because Napoleon's invasion of Italy disrupted communication routes. Bode studied his star maps and convinced Piazzi that he had found the "missing planet", whereupon Piazzi named the object Ceres. **Baron Francis Xaver von Zach** announced the discovery in his *Monthly Correspondence* in the summer of 1801.

Piazzi's six weeks of observations in January and February, however, did not provide enough information to calculate the object's orbit by any known methods. A reliable orbit was essential to establishing the authenticity of any newly sighted object, because knowing the orbit would enable astronomers to predict where they might find the object when they wished to investigate it more extensively. **William Herschel** and others searched unsuccessfully for the object and several astronomers attempted to work out Ceres' orbit from Piazzi's data, but each of them came up with different results. Ceres, appeared to be lost. It had passed into the evening's twilight before anyone else could substantiate or verify Piazzi's observations.

## Additional Resources

### Web Sites

<http://www.astropa.unipa.it/Asteroids2001/>

Presents a biography of Father Giuseppe Piazzi and historical information about the discovery of Ceres.

[http://www.astropa.unipa.it/versione\\_inglese/Hystory/BODE'S\\_LAW.htm](http://www.astropa.unipa.it/versione_inglese/Hystory/BODE'S_LAW.htm)

Informative text entitled "Bode's Law and the Discovery of Ceres" written by Michael Hoskin at *Churchill College*.

### Print Resources

Cousins, F.W. (1972). *The solar system*. New York, NY: Pica Press.

Grunn, B. (1991). *The timetable of history – A horizontal linkage of people and events*. Simon & Schuster, Inc.

McSween, H.Y. (1999). *Meteorites and their parent planets*. Cambridge; NY: Cambridge University Press.

Peebles, C. (2000). *Asteroids: A history*. Washington, DC: Smithsonian Institution Press.

Roth, G.D. (1962). *The system of minor planet*. Princeton, NJ: Company Inc.

Schorn, R.A. (1988). *Planetary astronomy*. College Station, TX: Texas A&M University Press.