Caroline Lucretia Herschel

Caroline Lucretia Herschel (March 16, 1750 – January 9, 1848) had to overcome many obstacles before she made major contributions to the study of comets. When she was ten, she contracted typhus. The disease stunted her growth; her height never exceeding four foot three inches. Herschel's father, an unschooled bandmaster with the Prussian Army, tried to give his four sons and two daughters an education. Her mother Anna disapproved of education, especially for females and opposed her daughter's learning anything other than household chores. Fortunately, her father secretly encouraged her to improve herself.

At twenty-two Herschel moved to England to keep house for her older brother William. To make ends meet the siblings performed musically. By the time she was twenty-seven years old she had become a popular vocalist. At the same time William had begun to make a name for himself in the field of Astronomy. He built better and better telescopes to see deeper and deeper into space. Astronomy ceased being only a hobby for William in 1781, when he achieved distinction by discovering a new planet, now named Uranus. King George III became William's patron, allowing him to become a full-time astronomer. William gave his sister a telescope with which she began to make her own observations, becoming her brother's apprentice. Her duties in assisting her brother included making tedious calculations necessary to reduce gathered data. To fulfill her duties, she studied geometry, collected formulas, learned to use logarithmic tables, and investigated the relationship of sidereal time to solar time.

On August 1, 1786, Herschel discovered her first comet, which brought her some fame and a salary from King George III for her assistance to her brother. In all she discovered eight comets between 1786 and 1797. In 1798, she submitted to the Royal Society an *Index to Flamsteed's Observations of the Fixed Stars*, a cross-reference and correction of the star catalogue produced by John Flamsteed, the first Astronomer Royal. The work contained a list of 560 stars that had been omitted from Flamsteed's work. For the next 25 years, Herschel took a special interest in the education of her nephew, John, William's son, who would also become a famous astronomer. After William's death in 1822, she returned to Hanover, where she produced a catalogue of 2500 nebulae (1828) to assist her nephew in his work. For her efforts, the Royal Astronomical

Society awarded her its gold medal. In 1835, she was elected to honorary membership in the Royal Society. On her ninety-sixth birthday, the King of Prussia awarded her a gold medal of science and in 1889, a minor planet *Lucretia* was named for her.

Quotation of the Day: The following is supposedly from a letter written by Herschel to her sister. In fact the passage is from the poem "Letter from Caroline Herschel (1750-1848)" written by Siv Cedering, found in *Songs from Unsung Worlds*, edited by Bonnie B. Gordon, Birkhäuser, Boston, 1985.

"I have discovered eight new comets and three nebulae never before seen by man… I … plan every night's observation schedule, … [William] says my intuition helps me turn the telescope to discover star cluster after star cluster. I have helped him polish the mirrors and lenses of our new telescope. It is the largest in existence. Can you imagine the thrill of turning it to some new corner of the heavens to see something never before seen from earth? … Sometimes when I am alone in the dark, and the universe reveals yet another secret, I say the names of my long lost sisters, forgotten in the books that record our science – Aganice of Thessaly, Hypatia, Hildegard, Catherine Hevelius, Maria Agnesi – as if the stars themselves could remember. … As for my name, it will also be forgotten, …. However long we live, life is short, so I work. And however important man becomes, he is nothing compared to the stars. There are secrets, dear sister, and it is for us to reveal them. Your name, like mine, is a song. Write soon, Caroline."