

# Caroline Herschel

Name:

## The First Lady of Astronomy

Date:

Caroline Lucretia Herschel was noted for her accomplishments in astronomy and mathematics. She was the first woman to discover a comet, the first woman officially recognised in a scientific position, and the first woman to receive honorary membership into Britain's Royal Society. Caroline Herschel made a significant contribution to the field of astronomy. She never received formal mathematical training, which highlights her determination in a time when women were not recognised for academic achievement.

Caroline Herschel was born in Hanover in Germany on March 16th 1750. Her father, Isaac Herschel, was a talented musician and encouraged his children to study Music, Mathematics and French. However, she received little encouragement from her mother who believed an education was useless for a girl. She wanted Caroline to look after the family home. Her parents thought that she would never marry as she had been scarred at the age of three by smallpox and her growth was permanently stunted by typhus when she was ten. They thought she would live a life of domestic duties. Caroline, never-the-less managed to keep up with some basic studies while carrying out her domestic chores.

When Caroline was 22, her brother William invited her to live in his home in Bath, England as his housekeeper. William was teaching music but he also had a keen interest in astronomy. He encouraged his sister to be independent, so Caroline had voice lessons and was soon performing in concerts.

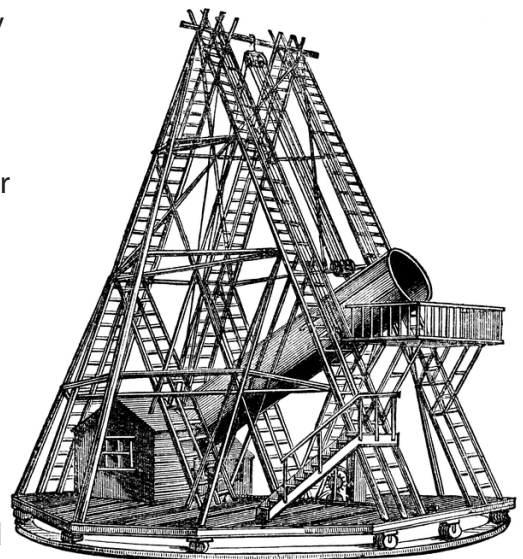
William and Caroline often discussed astronomy. Eventually her interest grew in that area, and she gave up a promising career as a singer to concentrate on astronomy. Her brother soon found her efficient, meticulous talents essential to his work. She assisted him by his recording his observations in astronomical catalogues. She even helped him with the grinding and polishing of lenses for the telescopes that he built. Eventually, she studied astronomical theory and began her own research.

In 1781, William (with Caroline's help) discovered the planet Uranus. This discovery led to his appointment to the position of court astronomer and he was knighted. Caroline Herschel was appointed his assistant and given an annual salary of 50 pounds. She was the first female in England to be honoured with a government position.

In early 1783, after searching the night skies using a small Newtonian reflector, Caroline discovered the Andromeda and Cetus nebulae. By the end of the year, she had discovered 14 additional nebulae. On the 1st of August, 1786 she became the first woman to discover a comet and discovered another seven comets during the next ten years.

When William died in 1822, Caroline returned home to Germany and continued her astronomical work. She was awarded a gold medal by the Royal Astronomical Society in 1828 and was made an honorary member of the Royal Society ten years later. She was also awarded medals by the Irish Academy of Science and the Prussian Academy of Science. She spent the final years of her life organising and cataloguing the work of William's son, Sir John Herschel, who carried on his father's work. Caroline Herschel died on January 9th 1848, at the age of 97, leaving an amazing legacy to the science of astronomy.

Caroline Herschel never married. Unlike many women in her situation she was not limited to a life of domestic service. She had a strong determination to learn more about the world and she proved that women could achieve great things. That is why she is known as the First Lady of Astronomy. Overcoming barriers built up since early childhood, Caroline Herschel proved herself to be an independent and accomplished scientist and an inspiration to people around the world. A crater on the moon was named after her to honour her dedication to astronomy.



40 foot Telescope, built by Herschel, 1787

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Choose the correct answers:

1) When was Caroline Herschel born?

- 1750
- 1781
- 1783

2) Who encouraged her to obtain an education?

- her mother
- her father and brother
- her sister

3) Why did Caroline go to England when she was 22?

- to study astronomy
- to help her brother catalogue stars
- to be her brother's housekeeper

4) How did William encourage his sister to become independent?

- He gave her a job as a housekeeper
- He gave her music lessons
- Both of the above

5) Which word in the text tells us Caroline was a careful and precise worker?

- promising
- meticulous
- honoured

6) How many nebulae did Caroline discover in 1783?

- 12
- 14
- 16

7) Caroline Herschel was the first person to discover a comet. True or false?

- true
- false

8) How many comets did Caroline Herschel discover?

- 7
- 8
- 9

Investigate and write the answers:

1) Name three tasks Caroline Herschel performed to assist her brother's astronomical work.

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2) What do you think cataloguing involves?

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3) Caroline Herschel was given a government appointment in 1781. Why was this unusual at the time?

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4) Write definitions of the following terms: nebula, comet.

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5) How were Caroline Herschel's achievements acknowledged during her lifetime?

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