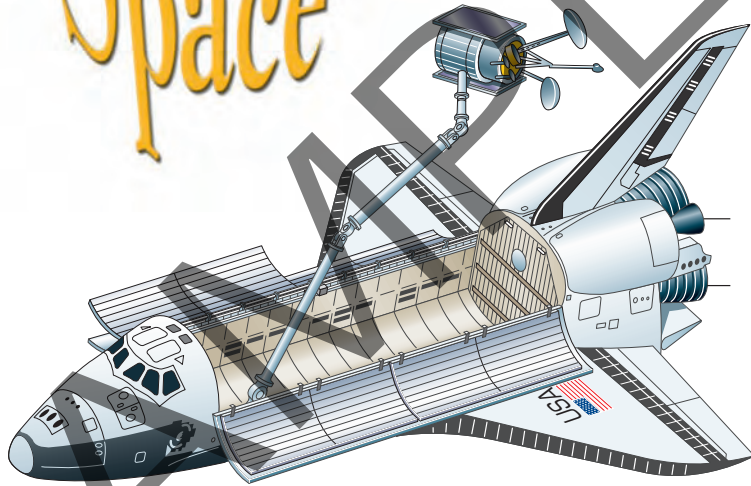


Exploring Space



Elizabeth Miles

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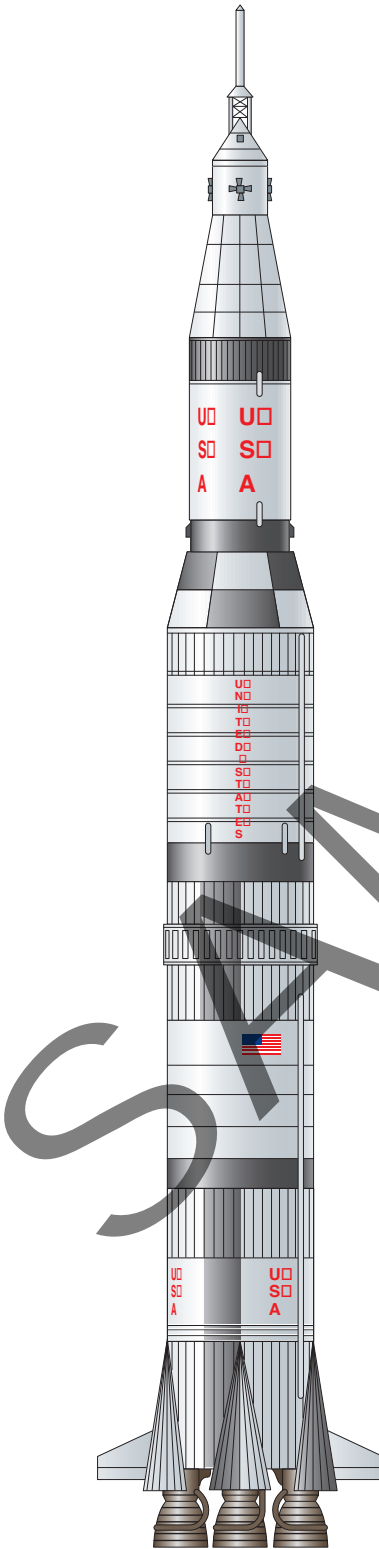
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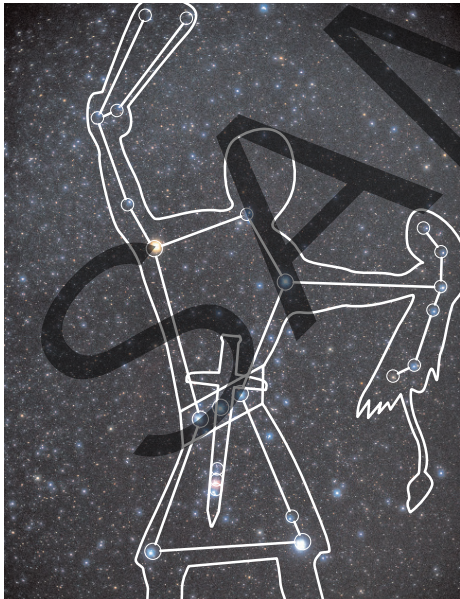
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Looking into Space

The shining **stars** and **planets** in the night sky, and the Sun and **Moon**, have fascinated the human race for thousands of years. Ancient civilizations believed that the Sun and Moon were gods. The ancient Greeks believed that stars formed pictures of mythical gods, heroes, and animals.

It took many centuries for astronomers to discover the truth about our solar system, to learn that the Earth was round and not flat, and to figure out the position of the Earth in relation to its neighboring planets. Later, with the invention of the telescope, astronomers were able to uncover even more.



▲ In the night sky of the Northern Hemisphere, you can see the star formations that the ancient Greeks used to imagine were pictures in the sky. For example, three stars make up a belt worn by Orion, the hunter.

The First Astronomers

Ptolemy (AD 100–170)

The Egyptian astronomer, Claudius Ptolemy, came up with a theory that the Earth was at the center of the universe, with the Sun, Moon, and stars revolving around it.

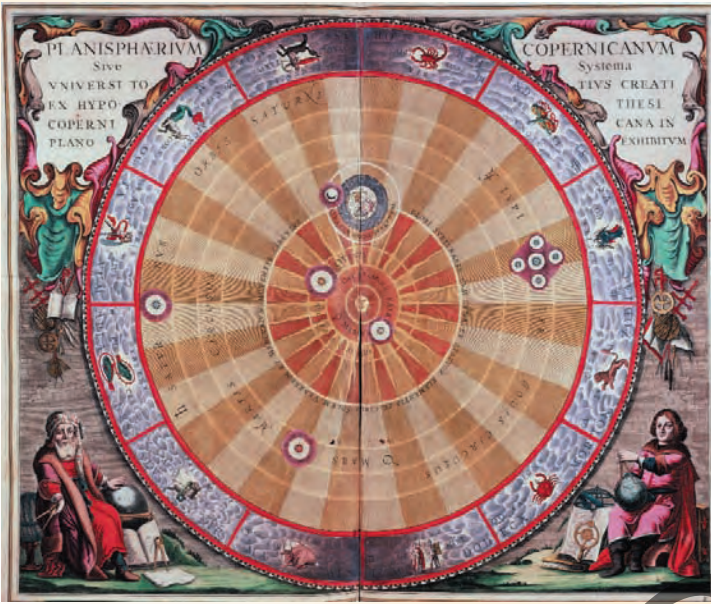
Copernicus (1473–1543)

The Polish priest and astronomer, Nicolaus Copernicus, claimed that the Earth, along with other planets, moved around the Sun.

Amazing Discoveries

Before the seventeenth century, all observations of outer space had been made with just the naked eye. Then, in 1609, the Italian scientist Galileo Galilei (1564–1642) became the first person to use a telescope to study the sky. He saw craters on the Moon, rings around Saturn, and discovered four moons **orbiting** Jupiter!

Galileo used a **refractor** telescope, but in 1668, English scientist Isaac Newton made a more powerful kind of telescope, called a **reflector** telescope. In 1781, astronomers William and Catherine Herschel were the first to find a new planet through a telescope – it was Uranus, the seventh planet from the Sun in our solar system.



Brahe (1546–1601)

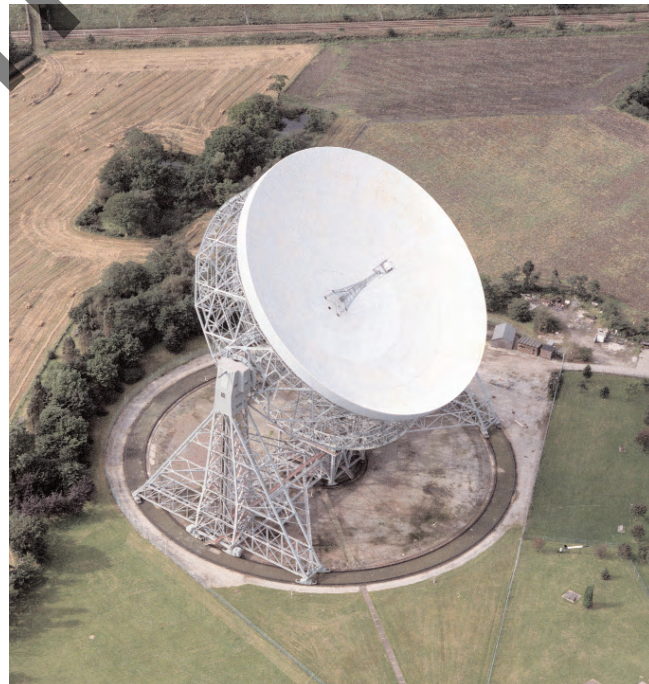
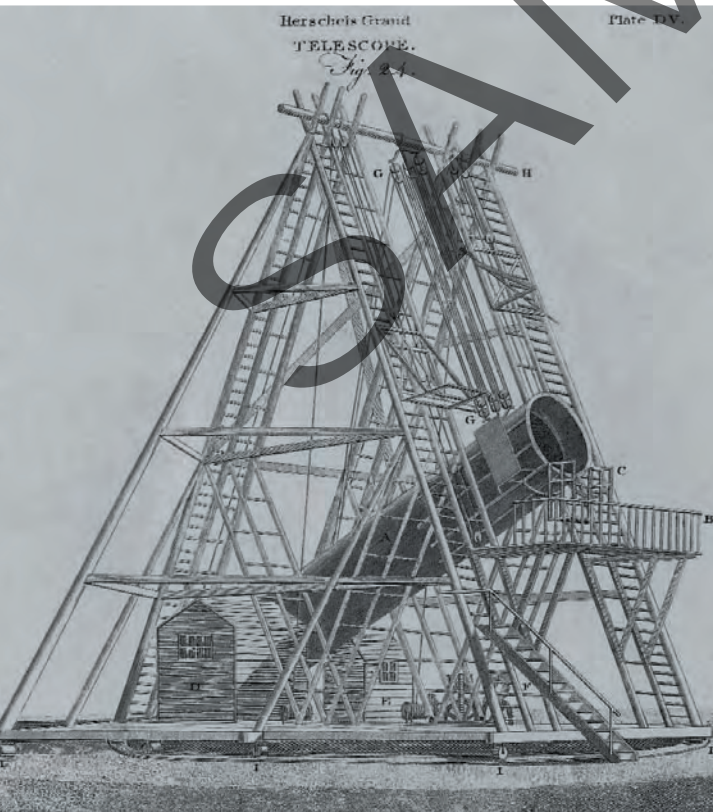
Tycho Brahe, a Danish astronomer, took many accurate measurements of how the planets change position. These observations led to a completely different view of the solar system.

Kepler (1571–1630)

After Brahe's death, his assistant, a German astronomer named Johannes Kepler, looked at Brahe's measurements and used them to prove that each planet orbits the Sun, following an oval path called an ellipse.

▲ Copernicus's view of the solar system. Only six planets appear in it because at the time no one knew that Uranus, Neptune, or Pluto existed.

▼ William Herschel was a German musician who became a telescope maker. He completed this telescope in 1789.



▲ Many telescopes today are radio telescopes. They pick up radio waves from space. The Lovell telescope, built in 1957 with a 250-foot (76-m) dish, was the first giant radio telescope.