Frederick William Herschell



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(1738-1822)

The most important work in the field of observational astronomy belongs to Herschell. Herschell's sister Carolin and son John are also astronomers. Herschell prepared his lenses with his sister and made very powerful telescopes. He found that there was a ratio between the diameter of the telescope and the distance of the star. Accordingly, the telescope lens has an accurate ratio between the diameter R and the distance L of the star. For example, let us observe star A with a telescope with a diameter of 40 inches, and star B with another telescope with a diameter of 10 inches. If two stars have the same brightness, star A is 4 times farther away than star B.

Herschell is a scientist who has made some very important discoveries in astronomy. His most important work is on galaxies. Aristotelian cosmology assumed that planets and fixed stars were embedded in intertwined crystal spheres. This view, which had been valid until the sixteenth century, had ceased to be valid as a result of some observations made by Tycho Brahe. After that, the question was raised about how fixed stars were scattered throughout the universe. For the first time in the history of Astronomy, Herschell started research in the region of fixed stars, and by scanning the sky with a telescope, he revealed the view that fixed stars in the universe form islets, galaxies, not random ones. Herschell also studied the movement of these celestial Islands and determined that the solar system was moving towards the constellation of Hercules.

Herschell's main significance comes from his discovery of the first new member of the solar system. In 1781, Herschell calculated a moving celestial body in the ark of the comet to be the sixth member of the solar system, and this planet was named Uranus. In 1787, two moons of this new member were discovered by Herschell.

An important work by Herschell is also on double stars. Newton's law is now universal, thanks to Herschell, who found that some stars are double stars as a result of his observations. Because until now, Newton's law of attraction was only valid in the solar system. But the pair of stars also revolved around each other with the law of attraction. So Newton's law of attraction was universal, in other words, valid throughout the universe.

Herschell, who also observed the planets Mars and Saturn, found the orbital inclination of Mars and said that this planet was similar to Earth. Herschell, who also studied the entanglement period of the planet Saturn's ring, discovered Mimas, the moon of this planet.

In his observations of stars, Herschell determined that some stars vary in brightness and tried to give periods of these changes by determining that this phenomenon is proportional to magnitude. Today, these stars are called ” variable stars". Herschell, who has also studied the brightness variations of stars, has classified stars according to their brightness degrees.

Herschell's other work is on sunspots. Studying sunspots, Herschell found that these spots change every 11 years, affecting Earth's climates. In 1774, Alexandra Wilson had worked on sunspots, suggesting that these spots were funnel-like dark structures. Herschell, however, does not accept this view. According to him, the protosphere lies above the core of The Sun. The spots are the torn parts of this protosphere. The core appears from this torn part and we perceive it as a stain.