Biographical Encyclopedia of Astronomers

Cassini, Jacques

Born Paris, France, 18 February 1677

Died Thury near Clermont, (Oise), France, 15 April 1756

Jacques Cassini, who was mainly an observationalist, was a fervent Cartesian who fought hard to reconcile the facts of observation with the theory of vortices. He was a lukewarm Copernican and never admitted Newtonian gravitation. His main areas of interest were the tides, the planets and their satellites, and the observation and theory of comets. His literary output was vast, but he is chiefly known for his Élémens d'Astronomie (Paris, 1740).

Cassini was the son of Giovanni Cassini and Geneviève de Laistre

After a period of study at home in the Paris Observatory, Jacques entered the Collège Mazarin. He soon turned to astronomy and was admitted as a student to the Académie royale des sciences (1694).

Cassini accompanied his father on a journey through Italy in 1695, making numerous scientific observations, taking part in geodetic work, and helping to restore the meridian of the Church of San Petronio in Bologna. He then journeyed to the Low Countries and England, taking various measurements of a geodetic and astronomical nature. In England, he made the acquaintance of John Flamsteed, Edmond Halley, and Isaac Newton, and was admitted to the Royal Society.

In 1706, Cassini was designated *maître ordinaire* of the chambre des comptes despite a modest legal background. He succeeded his father as supervisor of the Paris Observatory when the latter's health began to fail (before 1710).

In 1700/1701, Cassini took part in his father's expedition to extend the Paris meridian as far as the southern border of France. He criticized Willibrord Snel's 1617 measurements of the arc of the meridian and presented a new method of longitude determination based on occultations of stars and planets by the Moon.

In 1713, Cassini joined the controversy between the Cartesians and the Newtonians over the figure of the Earth by adopting the prolate spheroid hypothesis. Cassini based his view on previous measurements of arcs of the meridian, the results of which suggested the degrees of a terrestrial meridian lessen from the equator to the pole In 1718, he participated in measuring an arc of meridian from Dunkirk to the Pyrenees, and, relying on the results of this project, published *De la grandeur et de la figure de la terre* in 1722, in which he affirmed his support for the Cartesian view. Although Jean de Mairan sought to reconcile the apparent disagreement between theory and observation, the Newtonians sharply attacked Cassini's position and those of his supporters. In his defense, Cassini, backed by his sons and others of like mind, organized an operation in 1733/1734 to determine the perpendicular to the meridian of Paris, from Saint-Malo to Strasbourg. This seemed to bring a measure of satisfaction to the Cartesians and confirmed their belief about an egg-shaped Earth. The Newtonians disputed this conclusion and persuaded the Académie to mount expeditions to Peru (1735–1744) and Lapland (1736–1737) to measure arcs of latitude at more widely separated points on the globe. Following the return of the Lapland party with results that supported the Newtonian position, an unconvinced

Cassini abandoned the field to his son, César Cassini de Thury, bothering only to respond to an attack from Anders

Celsius in 1738. Two years later, perhaps realizing the futility of further opposition to Newtonianism, he gave up on serious scientific pursuits, and during his last few years, Cassini de Thury assisted in preparing the foundations for a new map of France.

Richard Baum

Alternate name

Cassini II

Selected Reference

Grant, Robert (1852). *History of Physical Astronomy, from the Earliest Ages to the Middle of the Nineteenth Century*. London: Henry G. Bohn. (Reprinted in 1966. New York: Johnson Reprint Corp.)