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Summary Article: **Bradley, James**

From *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

English astronomer. In 1728 he discovered the aberration of starlight. From the amount of aberration in star positions, he was able to calculate the speed of light. In 1748 he announced the discovery of nutation (variation in the Earth's axial tilt).

Bradley was born in Sherborne, Dorset, and studied theology at Oxford. His keen interest in astronomy caused him to resign a clerical post in 1721 to become professor of astronomy at Oxford. He became the third Astronomer Royal 1742, and remained at Greenwich until his death. He sought to modernize the observatory and methods at Greenwich, and embarked on an extensive and precise programme of stellar observation.

The determination of stellar parallax was the goal of many astronomers of Bradley's day because it would confirm Copernicus' hypothesis that the Earth moved around the Sun. When Bradley did find a displacement, it was not only too large, but was in an unexpected direction. Eventually Bradley realized that the displacement was simply a consequence of observing a stationary object from a moving one, namely the Earth. Bradley called this effect the 'aberration of light'.

This discovery allowed Bradley to produce more accurate tables of stellar positions, but he found that his observations on the distances of stars were still variable. He studied the distribution of these variations and deduced that they were caused by the oscillation of the Earth's axis, which in turn was caused by the gravitational interaction between the Moon and the Earth's equatorial bulge, so that the orbit of the Moon was sometimes above the ecliptic and sometimes below it. Bradley named this 'nutation'.

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