

he found a kingdom. Astronomy has also its corresponding counterpart. Sir Wm. Herschel, while attempting to measure the distances of double stars, discovered their orbital motions. Astronomers, as we know, were before Bradley's time puzzled at certain irregularities in the apparent motions of fixed stars in a most unaccountable way; they refused to appear where stars of regular habits ought to have appeared. While sailing on the Thames he observed the shifting of a vane on the mast as the boat altered its course, and having been assured that the motion of the vane meant that the boat and not the wind had altered its direction he realized that the position taken by the vane was determined by the motion of the boat and the direction of the wind. From that slight incident he transferred the explanation to the sky, and proved that the apparent shift in the position of a star was referred to a combination of the orbital movement of the earth and the velocity of light, and thus another of Nature's secrets was dragged from her unwillingly and the theory of the aberration of light—a corner stone in the edifice of Astronomical Science was established. When that curious law called Bode's law showed an extraordinary relation of the distances of the planets from the sun, the sequence of which was broken by a blank between Mars and Jupiter, Astronomers sought in vain to discover the missing member of the solar family, the lost sheep of the planetary fold, but had given it up and the perfection of Bode's law was unsatisfied. But Piazzi, when laboriously charting the stars in 1801, accidentally discovered the first minor planet—and Ceres took her place on the star maps as the first of the great family of asteroids which had, with such successful modesty, for untold centuries eluded the observation of their big sister the earth. But the most wonderful example of great discoveries from some accidental complication of circumstances is the well-known story of Newton's discovery of the theory of gravitation when he was driven by a prevailing epidemic to visit the country, and then and there some kindly gust of sportive wind loosened an apple from a tree which fell at the feet of the great philosopher, and awakened in his mind the question, why is this piece of matter here? And why did it fall? So also was it in 1882 when a brilliant comet appeared in the southern heavens at the Cape Observatory so brilliant that it was seen in full sunlight even near the sun's edge.