

governed by that principle. The comet of 1680, which approached the sun to within one sixth of its diameter, enabled him to test the truth of his conjecture ; and he proved that it moved in an elliptical orbit of so great eccentricity that it could not be distinguished from a parabola, having the sun as one of its foci ; and that, as in the case of the planets, the areas described about the sun were proportional to the times ; a law discovered by the illustrious Kepler. From this calculation it became evident that the comets were governed by the same laws as the planetary bodies, and that the orbits of the former differed from those of the latter in the great elongation of their elliptical paths.

Halley applied the principle discovered by Newton, and by calculating the elements of the comet which appeared in 1682, from its perihelion passage, identified it as the comet that appeared in 1531 and 1607, and predicted that it would again appear in the year 1759. After this, Clairaut, a French astronomer, computed the influence that would be exerted upon it by the planets, and calculated that if it retained its period it would be delayed about 618 days, and that it would pass the perihelion about the middle of April, 1759 ; but it made its perihelion passage on the 12th of March, a time sufficiently near to prove the accuracy of the principle. This comet, called after the celebrated astronomer Halley, who first calculated its elements, will be visible in the year 1835, and its return to its perihelion has been calculated by Lubbock, Damoiseau, and Pontecoulant. Lubbock supposes that it will be there on the thirteenth of October ; Damoiseau, on the fourth of November ; and Pontecoulant makes its time to be on the seventh of that month. Its first recorded appearance was in 1305, and from this time it has been decreasing in brilliancy and in the length of its tail, which, however, was 30° in 1682, and consequently may be expected to present a very splendid appearance when it next becomes visible, as it approaches comparatively near to the earth.

The nature of comets, and the purposes they serve in the system to which they belong, are almost entirely unknown. No probable explanation has yet been given of the character of that train of luminous matter frequently appended to them, and very inappropriately termed the tail, since it frequently precedes the body itself. The tail is sometimes of very considerable length. Aristotle states that the tail of the comet