

of their final rencontre, which took place in 1779, it is clear they could not have been far asunder in 1767, 3 years before it became visible ; and in fact, on executing the calculations necessary, it was clearly proved that before 1767 this unhappy comet had been revolving in a totally different orbit of much greater dimensions, and was actually siezed upon then and there by Jupiter, flung as it were inwards—and then after making two visits to the sun, again seized on, and thrown off into space, into an orbit of 20 years' period, where perhaps it may be quietly circulating to this day. Jupiter, in fact, is a regular stumbling-block in the way of comets.

(32.) This is a strange history—but it proved a very instructive one. The comet passed, as I have said, through the system of Jupiter's satellites. Now the motions of these bodies have been studied with a degree of care and precision quite remarkable by reason of their furnishing one of the means for ascertaining the longitudes of places. And if the comet had been a heavy massive body, its attraction must have produced some sensible disturbance in their motions. But no, not a trace of anything of the kind was detected. One and all of them pursued their courses with the very same precision and regularity as if nothing had happened. The conclusion is irresistible. *That* comet at least had no sensible weight or mass—it was a mere bunch of vapours.

(33.) Another very remarkable periodical comet is that of Encke, which makes its circuit about the sun in 1200 days, or about 3 years and 4 months, in the same