Mercury and Venus by circles of 4½ and 9 inches respectively—that of the moon above the earth by one 15th of an inch, and the globe of the earth itself by a dot barely the thousandth part of an inch in size.

(11.) Strictly speaking, the orbits are not circles—they are slightly oval, or, as it is called, elliptic in form, and the sun does not occupy their common centre, but what is called the *focus* of each; that is to say, one of the two pins round which an ellipse may be described by carrying a pencil round them confined by a looped string encircling them both. The planetary orbits, moreover, all lie nearly in one plane, or very slightly inclined to that in which the earth performs its annual revolution, which is called the plane of the ecliptic—the angle at which the plane of each orbit meets and cuts this, being called its *inclination* to the ecliptic. They all circulate the same way round the sun, and the farther they are from the sun the slower they move—so that while the earth goes round it in 365 days, Mercury occupies only 88 in its revolution, while Neptune requires no less than 168 *years* to complete one of his circuits.

(12.) When we come to the comets, however, we find a very different state of things. A comet, it is true, moves round the sun as his centre of motion : not, however, in a circle, or any approach to a circle, but (with a very few, and those highly remarkable exceptions) in an immensely elongated, or, as it is termed, a very eccentric ellipse. In consequence, the nearest distances to which they approach the sun bear almost universally an exceedingly small proportion to those they attain when most