the situation in space of *the planes* in which they revolve; and the number of years required to complete their revolutions. Among them occurs every variety of form (*always elliptic*), from the nearly circular one of the planetary, to the long ellipsis of the cometary orbits; every variety of oblique presentation, from a plane passing nearly or quite edgeways through the eye of the spectator to one nearly perpendicular to the visual line; and every length of period, from thirty years up to many centuries. The only element about which in the great majority of cases we are left in complete uncertainty, is the actual *size* of the orbit, which cannot become known till the distance of the star is ascertained. For our present purpose then we must confine our attention to those of which at present the distance *is* known. The two just spoken of present a striking contrast. The revolution of the two stars of α Centauri is performed in about seventy-eight years. Their orbit is a very elongated ellipse, decidedly cometary in its character; and its presentation to our sight so nearly edgeways, that the two stars at present almost occult or cover one another; though when at their greatest distance from each other, they would appear, if viewed perpendicularly, nearly thirty seconds apart. The other requires about 514 years for a complete revolution. Its orbit is nearly circular, and its presentation to our view nearly perpendicular: so that we see the distance between the two stars unforeshortened; and so seen it measures almost exactly sixteen seconds, or a little less than the average apparent diameter of the globe of Saturn. Now we have