a shorter oval, or an exact circle. But if we suppose the result left to chance, the chances are infinitely against the last mentioned case. There is but one circle; there are an infinite number of ovals. Any original impulse would give some oval, but only one particular impulse, determinate in velocity and direction, will give a circle. If we suppose the planet to be originally *projected*, it must be projected perpendicularly to its distance from the sun, and with a certain precise velocity, in order that the motion may be circular.

In the basin to which we have compared the solar system, the adjustment requisite to produce circular motion would require us to project our pellet so that after running half round the surface it should touch a point exactly at an equal distance from the centre, on the other side, passing neither too high nor too low. And the pellet, it may be observed, should be in size only one ten thousandth part of the distance from the centre, to make the dimensions correspond with the cast of the earth's orbit. If the mark were set up and hit, we should hardly attribute the result to chance.

The earth's orbit, however, is not exactly a circle. The mark is not precisely a single point, but is a space of the breadth of one thirtieth of the distance from the centre. Still this is much too near an agreement with the circle to be considered as the work of chance. The chances were great against the ball passing so nearly at the same distance, for there were twenty-nine equal spaces through which it might have gone, between the mark and the centre, and an indefinite number outside the mark.

But it is not the earth's orbit alone which is nearly a circle: the rest of the planets also approach very nearly to that form: Venus more nearly still than the earth: Jupiter, Saturn, and Uranus have a difference of about one tenth, between their greatest and least distances from the sun: Mars has his extreme distances in the proportion of five to six nearly; and