bits might have had any eccentricity.* In that of Mercury, where it is much the greatest, it is only one-fifth. How came it to pass that the orbits were not more elongated? A little more or a little less velocity in their original motions would have made them so. They might have had any inclination to the ecliptic from *no* degrees to 90 degrees. Mercury, which again deviates most widely, is inclined $7\frac{3}{4}$ degrees, Venus $3\frac{3}{4}$, Saturn $2\frac{3}{4}$, Jupiter $1\frac{1}{2}$, Mars 2. How came it that their motions are thus contained within such a narrow strip of the sky? One, or any number of them, might have moved from east to west: none of them does so. And these circumstances, which appear to be, each in particular, requisite for the stability of the system and the smallness of its disturbances, are all found in combination. Does not this imply both clear purpose and profound skill?

It is difficult to convey an adequate notion of the extreme complexity of the task thus executed. A number of bodies, all attracting each other, are to be projected in such a manner that their revolutions shall be permanent and stable, their mutual perturbations always small. If we return to the basin with its rolling balls, by which we before represented the solar system, we must complicate with new conditions the trial of skill which we supposed. The problem must now be to project at once seven such balls, all connected by strings which influence their movements, so that each may hit its respective mark. And we must further suppose, that the marks are to be hit after many thousand revolutions of the balls. No one will imagine that this could be done by accident.

In fact it is allowed by all those who have considered this subject, that such a coincidence of the ex-

* The *eccentricity* of a planet's orbit is measured by taking the proportion of the *difference* of the greatest and least distances from the sun, to the *sum* of the same distances. Mercury's greatest and least distances are as two and three; his eccentricity, therefore, is one-fifth.