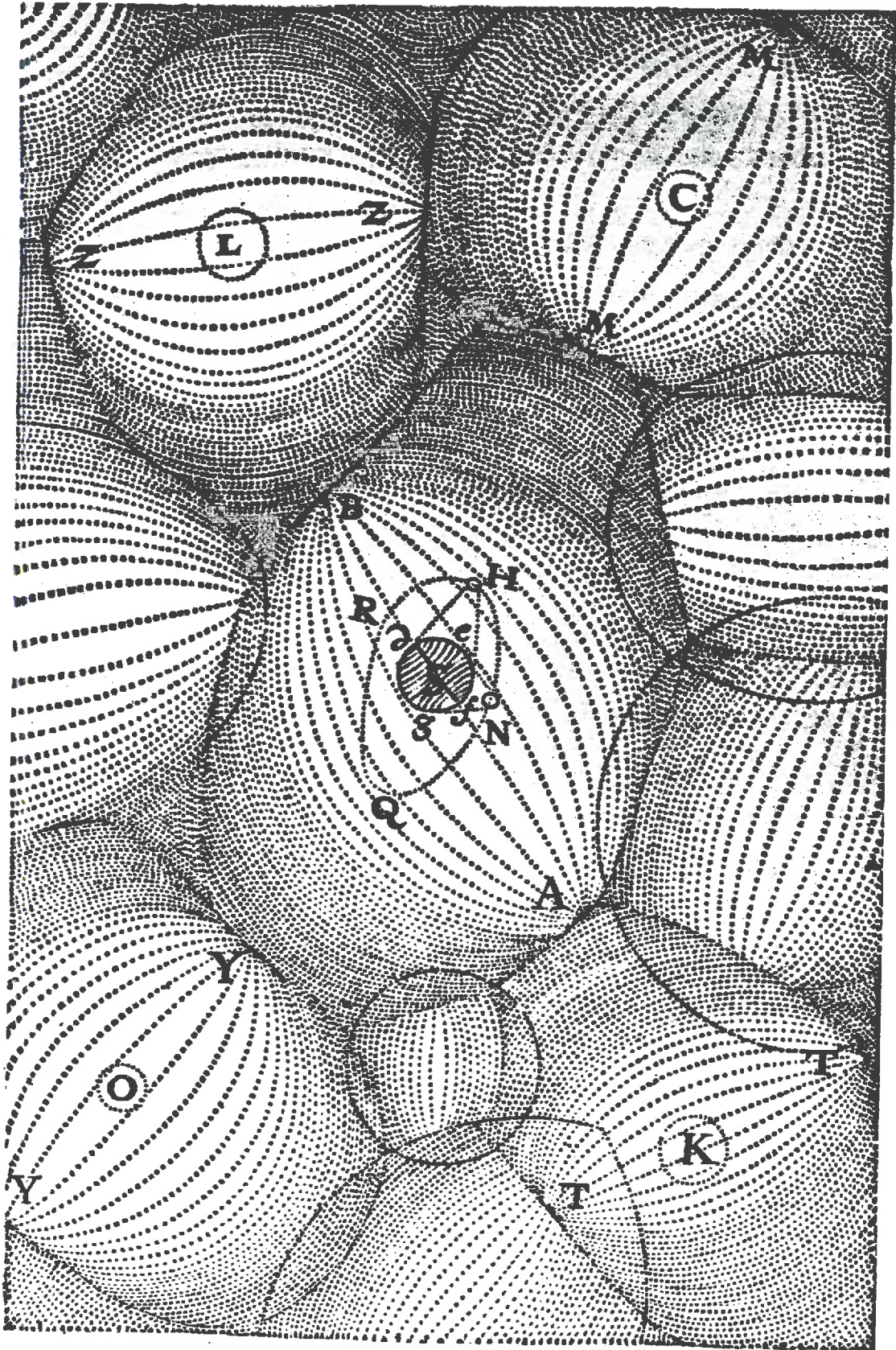
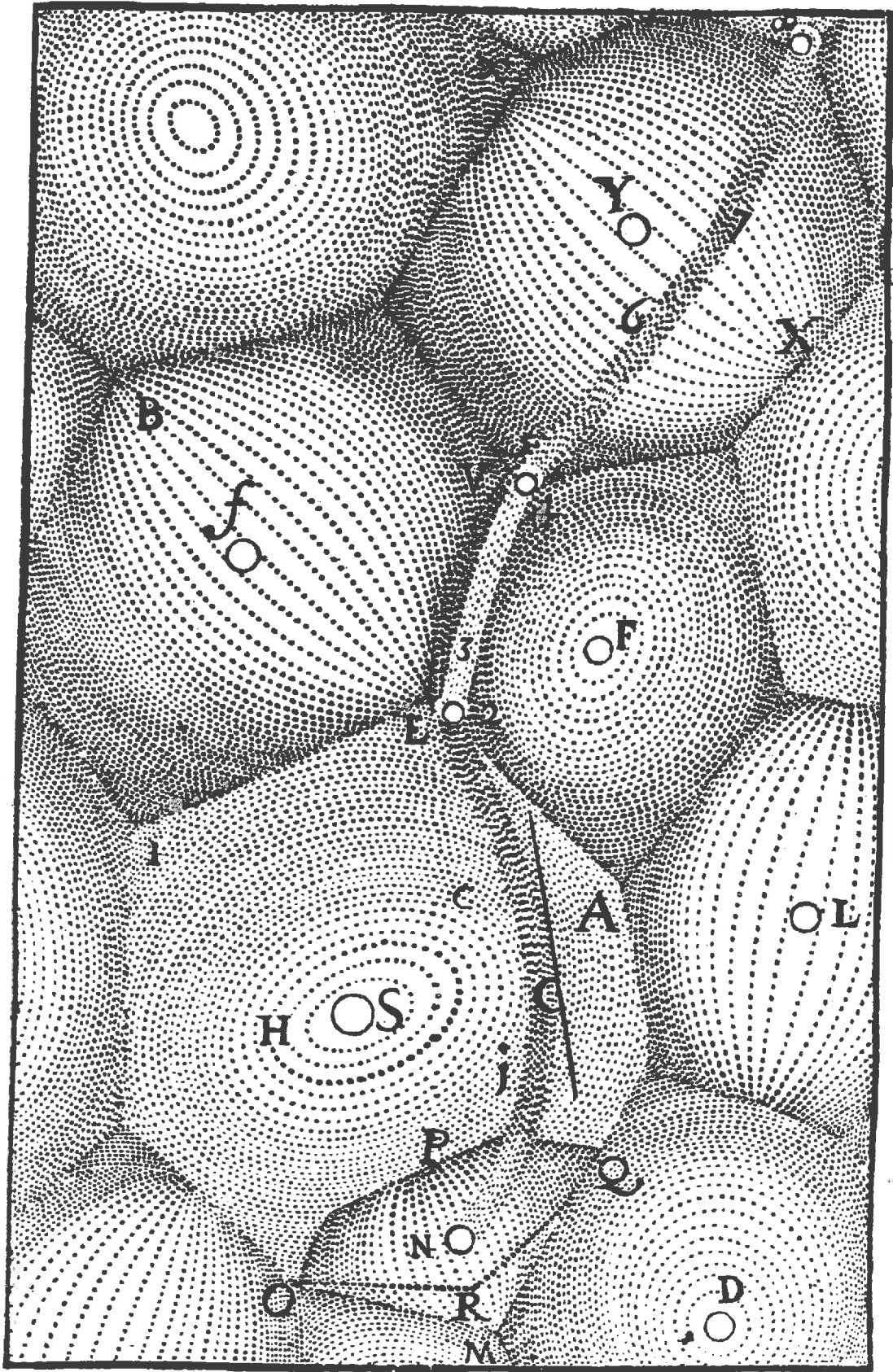


### **III,30. That all the Planets are carried around the Sun by the heaven.**

Now that we have, by this reasoning, removed any possible doubt about the motion of the Earth, let us assume that the matter of the heaven, in which the planets are situated, unceasingly revolves, like a vortex having the Sun as its center, and that those of its parts which are close to the Sun move more quickly than those further away; and that all the Planets (among which we {shall from now on} include the Earth) always remain suspended among the same parts of this heavenly matter. For by that alone, and without any other devices, all their phenomena are very easily understood. Thus, if some straws {or other light bodies} are floating in the eddy of a river, where the water doubles back on itself and forms a vortex as it swirls; we can see that it carries them along and makes them move in circles with it. Further, we can often see that some of these straws rotate about their own centers, and that those which are closer to the center of the vortex which contains them complete their circle more rapidly than those which are further away from it. Finally, we see that, although these whirlpools always attempt a circular motion, they practically never describe perfect circles, but sometimes become too great in width or in length, {so that all parts of the circumference which they describe are not equidistant from the center.} Thus we can easily imagine that all the same things happen to the Planets; and this is all we need to explain [*explicantur*] all their remaining phenomena.



11.1. Descartes's conception of a typical region of the universe, as expounded in Part III of *Principia philosophiae* (1644). Several stars are portrayed, each surrounded by its own vortex.



11.2. Diagram to illustrate the path of a typical comet from one vortex to the next, from Part III of Descartes's *Principia philosophiae*.