

In 1674 Hooke had put forward three hypotheses at the end of his An Attempt to Prove the Motion of the Earth:

- "That all celestial bodies whatsoever have an attraction or gravitating power towards their own centers, whereby they attract not only their own parts, and keep them from flying from them, as we observe the Earth to do, but that they do also attract all the other celestial bodies that are within the sphere of their activity; and consequently that not only the Sun and Moon have an influence upon the body and motion of the Earth, and the Earth upon them, but that Mercury, also Venus, Mars, Saturn, and Jupiter by their attractive powers, have a considerable influence upon its motion as in the same manner the corresponding attractive power of the Earth hath a considerable influence upon every one of their motions also."
  
- "That all bodies whatsoever that are put into a direct and simple motion, will so continue to move forward in a straight line, till they are by some other effectual powers deflected and bent into a motion, describing a circle, ellipse, or some other more compounded curved line."
  
- "That these attractive powers are so much the more powerful in operating, by how much the nearer the body wrought is to their own centers."

"Now what these several degrees are I have not yet experimentally verified; but it is a notion which, if fully prosecuted as it ought to be, will mightily assist the astronomer to reduce all the celestial motions to a certain rule, which I doubt will never be done true without it. He that understands the nature of the circular pendulum and circular motion, will easily understand the whole ground of this principle, and will know where to find direction in nature for the true stating thereof. This I only hint at at present to such as have ability and opportunity of prosecuting this inquiry, and are not wanting of industry for observing and calculating, wishing heartily such may be found, having myself many other things in hand which I would first complete and therefore cannot so well attend it. But this I durst promise the undertaker, that he will find all the great motions of the world to be influenced by this principle, and that the true understanding thereof will be the true perfection of astronomy." (Gunther, viii, pp.27-28)