



16. Cometam infra sphaeram (18) Mercurij descendisse. Probatum a longitudine caudae. Item a quantitate lucis pro ratione distantiae caudae (19) a sole. Item a parallaxi motus annui terrae.

*Translation [Propositions on comets]*

1. Comets are higher than the moon.
  2. The matter of the heavens is fluid.
  3. The matter of the heavens revolves around the center of the cosmic system in the direction of the courses of the planets.
  4. According to the most ancient philosophy of Aristarchus of Samos, restored by Copernicus, the sun is the center of the cosmic system, and the earth is a planet.
  5. There is gravitation toward the centers of the sun and each of the planets, and that toward the center of the sun is far greater.
  6. That gravitation in things diminishes in duplicate ratio to the distance from the center of the sun or a planet as they recede from the surface of the sun or planet.
  7. The motion of a comet is accelerated until it is in perhelion and retarded afterwards.
  8. A comet does not travel in a straight line but in some curve the maximum curvature of which is at the minimum distance from the sun, the concave part faces the sun, and the plane passes through the sun, and the sun is in its near focus.
  9. The angular motion of a comet around the sun is very nearly reciprocal to the distance from the sun. Whence the motion would be uniform only if performed in a straight line.
- [X.] That curve is an oval if the comet returns in an orbit, if not [the curve] is nearly a hyperbola.
12. The tail of a comet is not produced by rays coming in curved lines to us from the head of a comet.
  13. [The tail is] produced by rays coming in straight lines to us from those places where the tail is seen.
  14. There is some matter different from the rest of the matter in the heavens, in those places where the tail is seen.
  15. That matter stretches far out into the regions more or less opposite to the sun. - - -  
----- certainly a straight line drawn from the sun to the end of the tail passes through the place the comet left behind two or three or perhaps more days before.
  16. The comet descended below the sphere of Mercury. This is proved from the longitude of the tail. The same [point is proved] from the quantity of light by reason of the distance of the tail from the sun. The same from the parallax of the earth's annual motion.

**Tell tale tails**

The topics are examined in reverse order to approximate the probable sequence of discovery or fomulation. Proposition 16 can refer only to the comet of 1680/1. The