

1651: Marking a Century of Breakthroughs

- 1. The full recognition that *apparent* celestial motions are consistent with incompatible alternatives about what is moving in orbit about what.**

Copernicus, Tycho, Kepler

- 2. The importance given to discrepancies in calculated versus observed (geocentric) longitudes and latitudes in astronomy.**

Tycho, Kepler, Horrocks

- 3. The shift from compounding curvilinear motions out of circular motions to compounding them out of rectilinear motions.**

Descartes, Galileo, Gassendi

- 4. The increased emphasis on designing and developing experiments that address comparatively specific questions.**

Mersenne, Galileo, Riccioli

- 5. A marked relaxation of the strictures of classical mathematics, opening the way to a wide range of new mathematical methods for solving problems**

Viète, Descartes, Fermat

- 6. The stress on “efficient causation” over its Aristotelian alternatives in answers to why- and how-questions about changes that occur in nature.**

Bacon, Mersenne, Descartes

Increasing respect for the idea that the empirical world ought, somehow or other, to be the ultimate arbiter of all questions about it.