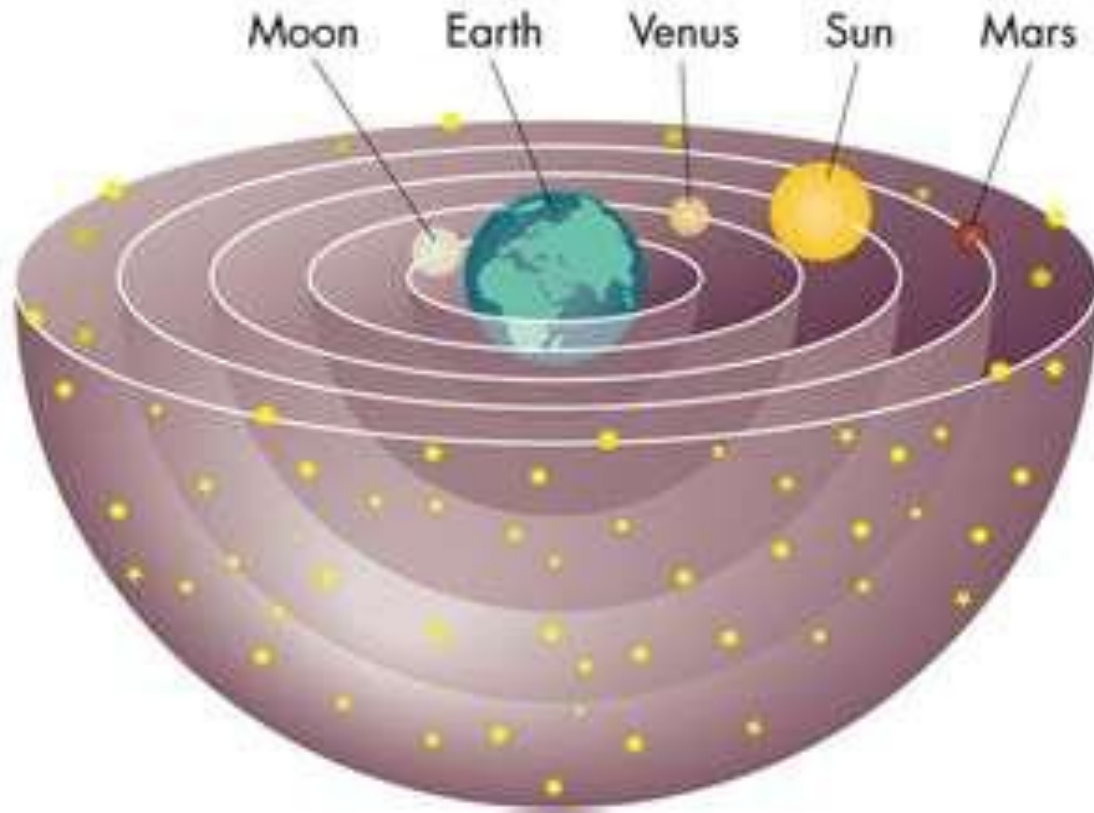


Ch. 6.1 Scientific Revolution

I. The Roots of Modern Science

A. Medieval View

1. The earth was an immovable object at the center of the universe
2. Moon, sun, & stars were thought to move around the earth



A. Medieval View

3. **Geocentric Theory**- the earth centered view of the universe-idea by Aristotle
4. Christianity taught that God deliberately placed earth at the center of the universe



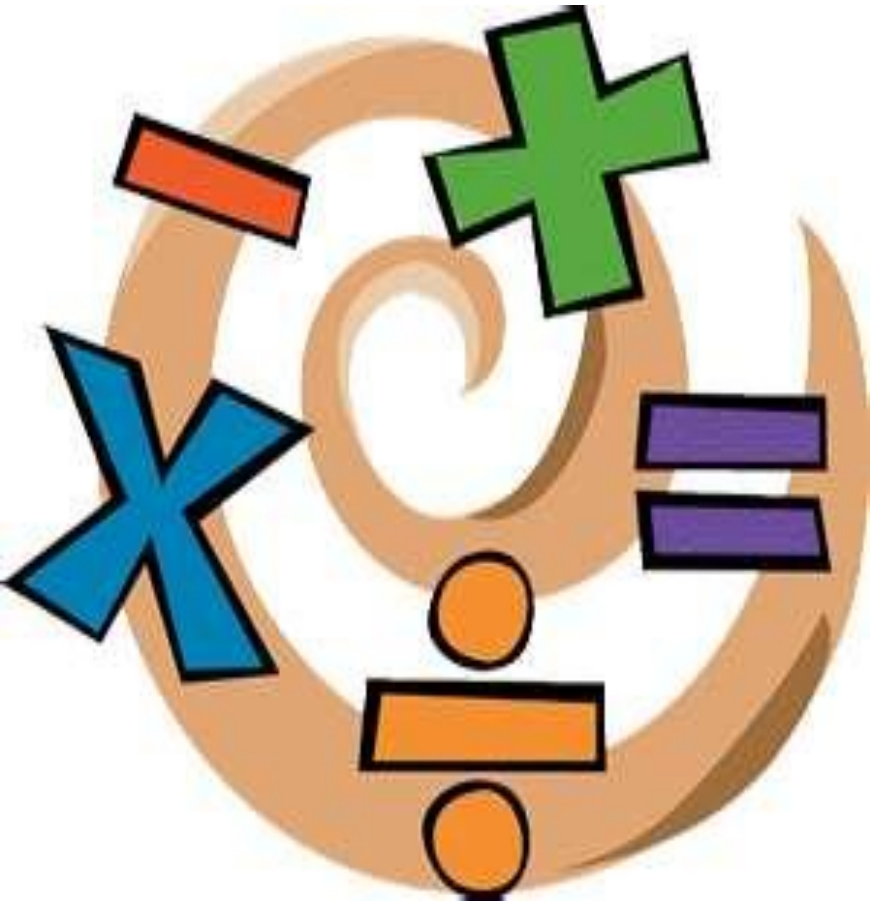
B. A New Way of Thinking

1. **Scientific Revolution**- Created by scholars to replace old assumptions w/ new theories
1. A new way of thinking about the natural world



B. A New Way of Thinking

3. Europeans traveling to other parts of the world helped ideas to advance
4. Astronomy and mathematics added to the advancement of new ideas



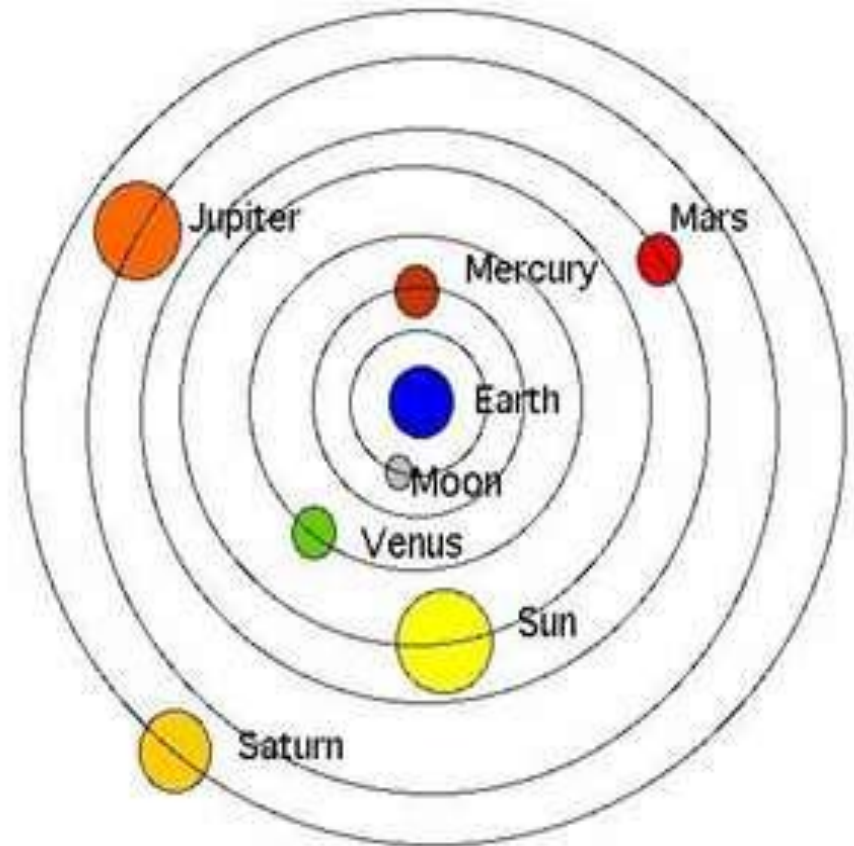
II. A Revolutionary Model of the Universe

A. Heliocentric Theory

1. Nicolaus Copernicus developed the concept that the earth, stars, & planets revolve around the sun
2. Published this a year before he died; **On the Revolutions of Heavenly Bodies**

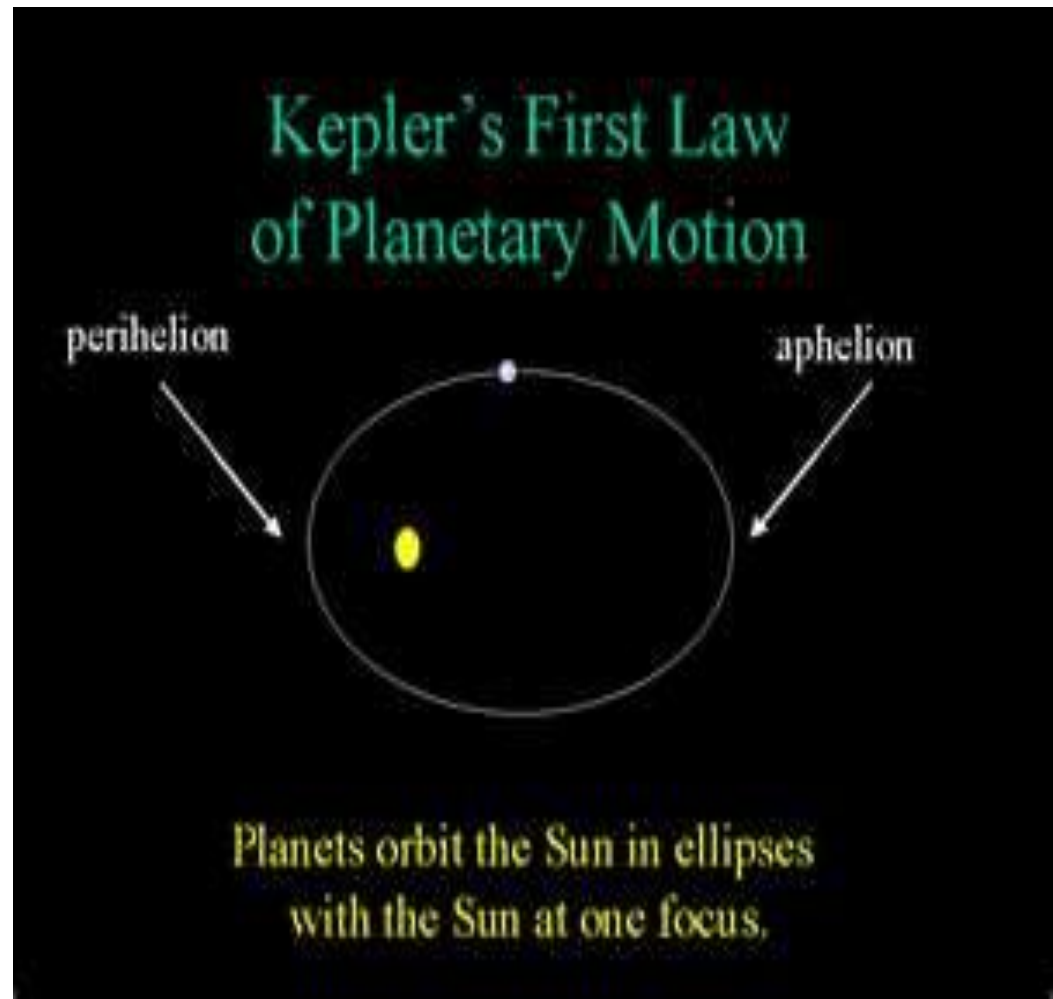


VS



A. Heliocentric Theory

3. Johannes Kepler discovered that planets revolve around the sun in elliptical orbits instead of circles. All done with math



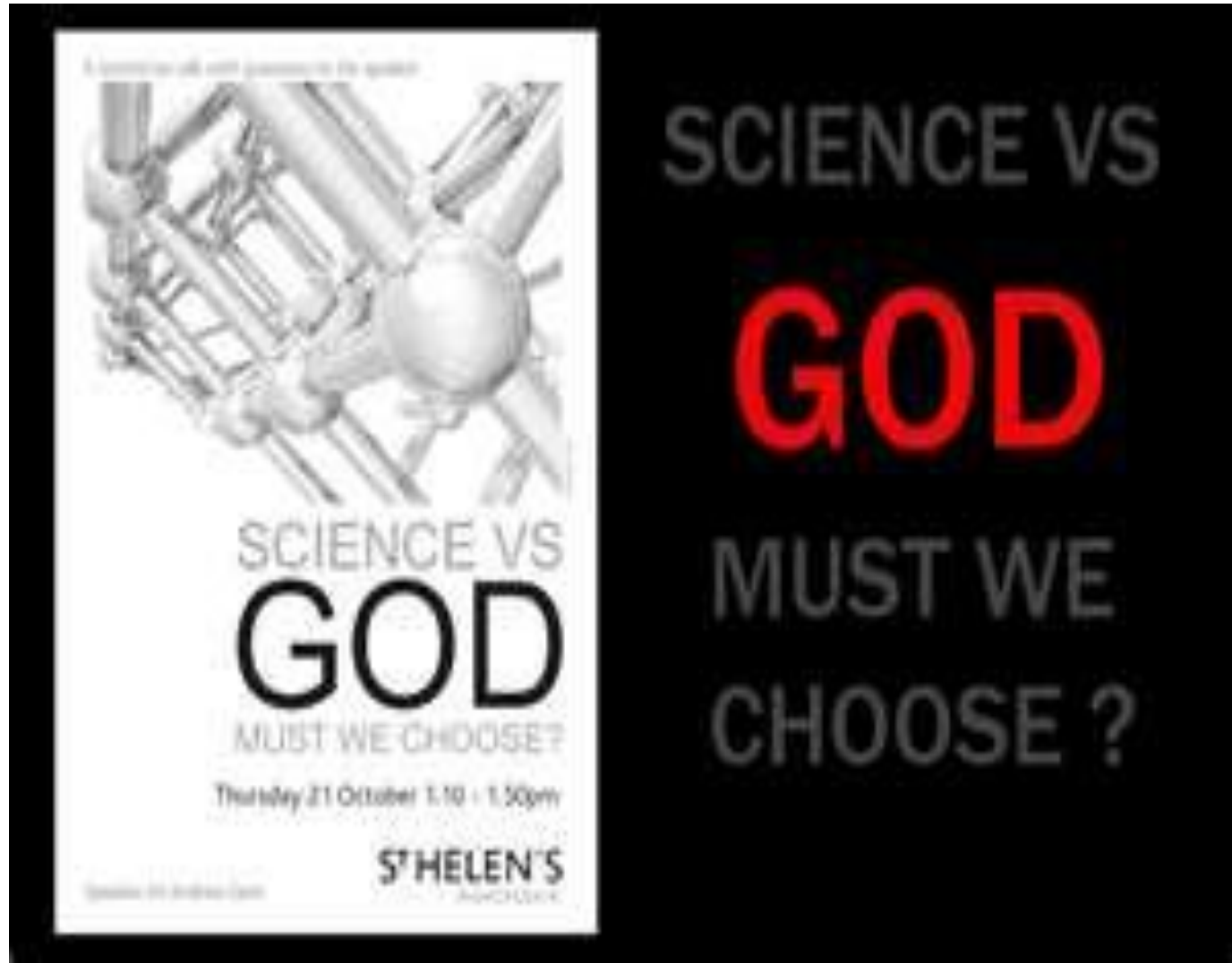
B. Galileo's Discoveries

1. Built his own telescope in 1607; more advanced than anyone else's at the time
2. Published **Dialogue Concerning the Two Chief World Systems** which supported Copernicus's theory of the sun
3. The Church arrested Galileo & forced him to recant his theories



C. Conflict with the Church

1. Fought scientific discoveries because they didn't want to admit they were wrong

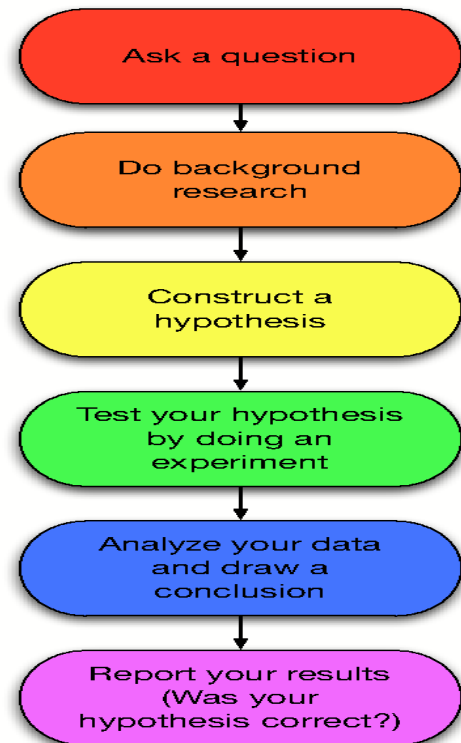


III. Scientific Method

A. Bacon and Descartes

1. Scientific Method- a logical procedure for gathering & testing ideas
2. Francis Bacon-Developed empiricism which urged scientists to experiment & draw conclusions
3. Rene Descartes-Developed analytical geometry which linked algebra & geometry

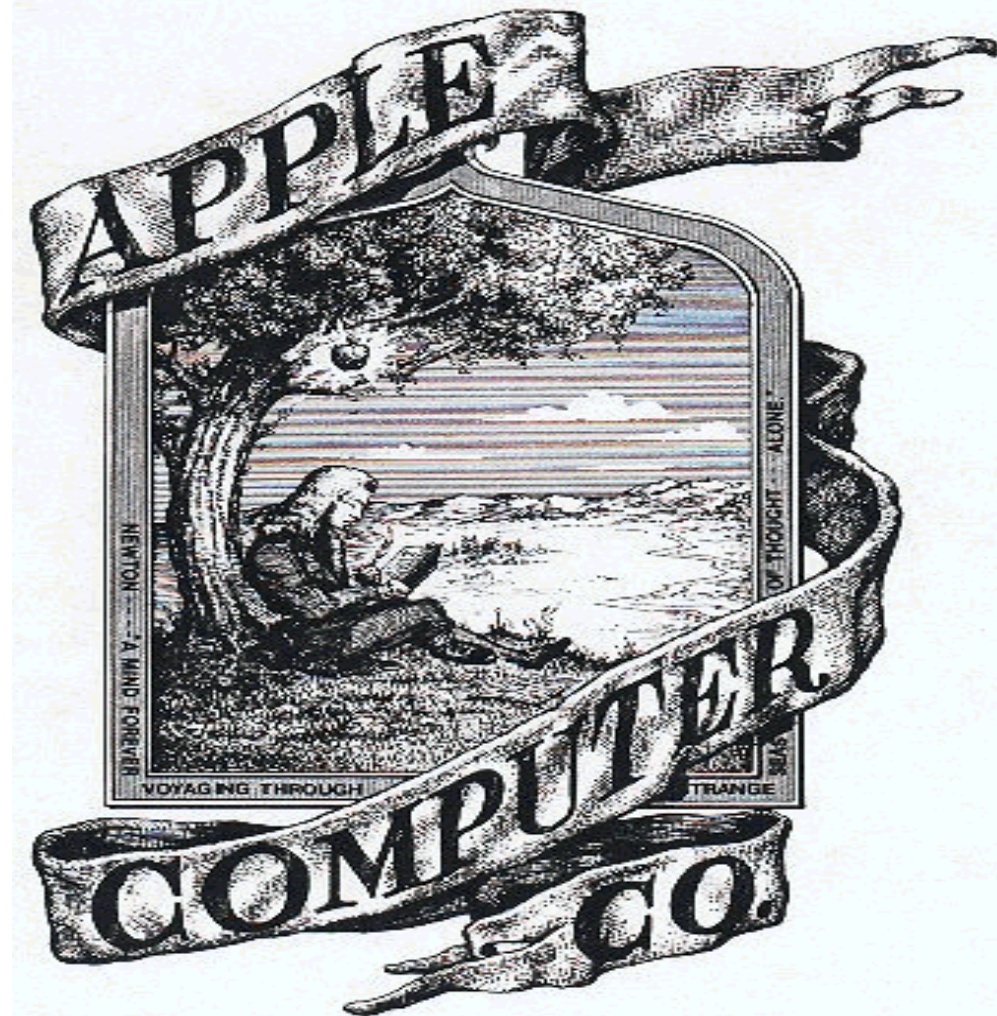
The Scientific Method



IV. Newton Explains the Law of Gravity

A. Isaac Newton

1. Studied math and physics at Cambridge University
2. According to his law every object in the universe attracts every other object



A. Isaac Newton

3. The degree of attraction depends on the mass of objects & distance between them
4. The Mathematical Principles of Natural Philosophy- Most important scientific book ever written

