

THE SCIENTIFIC REVOLUTION

Catholic Church

- Believed the Heavens were spiritual
- Believed the Earth was the center of the Universe (Deductive Reasoning)
- God was in a specific place in the Heavens
- Based many of their scientific views on the ideas of Aristotle (He believed the Earth was surrounded by Crystal Spheres)

Ptolemy

- Put forth the Geocentric or "Earth Centered" idea of the Universe
- The movements of Ptolemy universe was very complex
- This was the accepted notion of the universe for hundreds of years

Copernicus

- Wrote "On the Revolutions of the Heavenly Spheres" in 1543
- First person to put forth the Heliocentric (Sun Centered) universe
- Earth turns on its axis and around the sun
- Moon revolved around the earth

Church Initial Reaction to Copernicus

- Nobody thought that he "really" believed that the sun was the center of the universe!
- Some of his findings will actually help to fix the calendar
- Not a real threat to Aristotle's ideas

Galileo

- First to use the telescope
- Mountains on the moon, sunspots, 4 Jupiter moons
- He wrote the "Starry Messenger" 1610
- Church ordered Galileo to abandon the Copernican idea

Brahe

- First to discover Comets moving in "through" Aristotle's Crystal Spheres

Kepler

- Orbits are not circular, but elliptical (egg shaped)
- Sun toward the end of orbits instead of the center

Descartes

- "Discourse on Method" 1637
- First principle "I think therefore I am" Second principle: Mind and Matter are completely separate
- Father of modern Rationalism: System of thought is based on the belief that reason is the chief source of knowledge

Newton

- Wrote the "Principia"
- Developed the Universal Law of Gravitation
- Every object in the universe is attracted to every other object by a force called gravity

Francis Bacon

- Scientific Method: Systematic procedure for collecting and analyzing evidence.
- Inductive Reasoning: systematic observations and carefully organized experiments to test hypotheses.
- Human power could conquer nature in action