

The Scientific Revolution

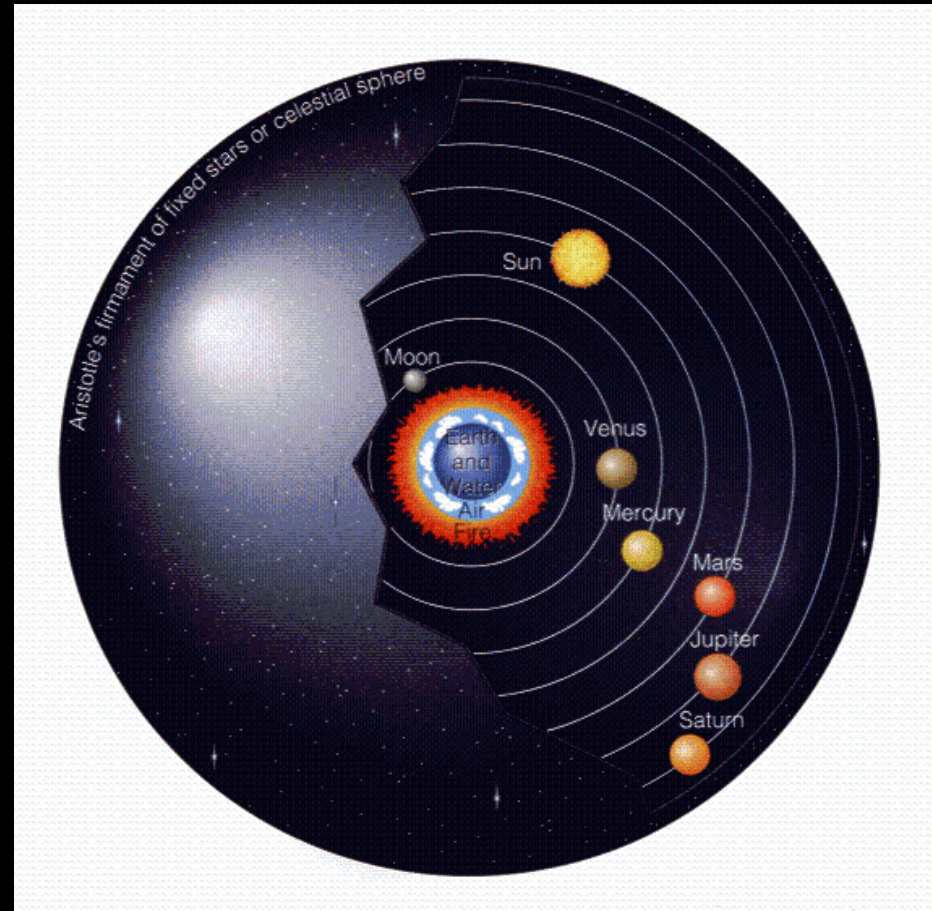


The Scientific Revolution:

- **Emphasis on reasoned observation, logic, and systematic measurement.
- Formulation of the Scientific Method-experiments
- Expanded **SCIENTIFIC KNOWLEDGE**
- This idea went **against with Catholic Church**-you were just supposed to accept and not question

The First Big Challenge: The Heliocentric Theory

- The accepted model of the solar system had been put forward by an ancient astronomer named Ptolemy (TOL-uh-mee), who placed the **earth in the center of the universe.**



**Nicolaus Copernicus—Developed the Heliocentric Theory

- Nicolaus Copernicus (1473-1543) argued that the **earth was a planet that revolved around the sun.** Copernicus's model for the solar system is called the **heliocentric** (hee-lee-oh-SEN-trik) system.





- ** Johannes Kepler discovered that the planets travel in stretched-out circles called ellipses.

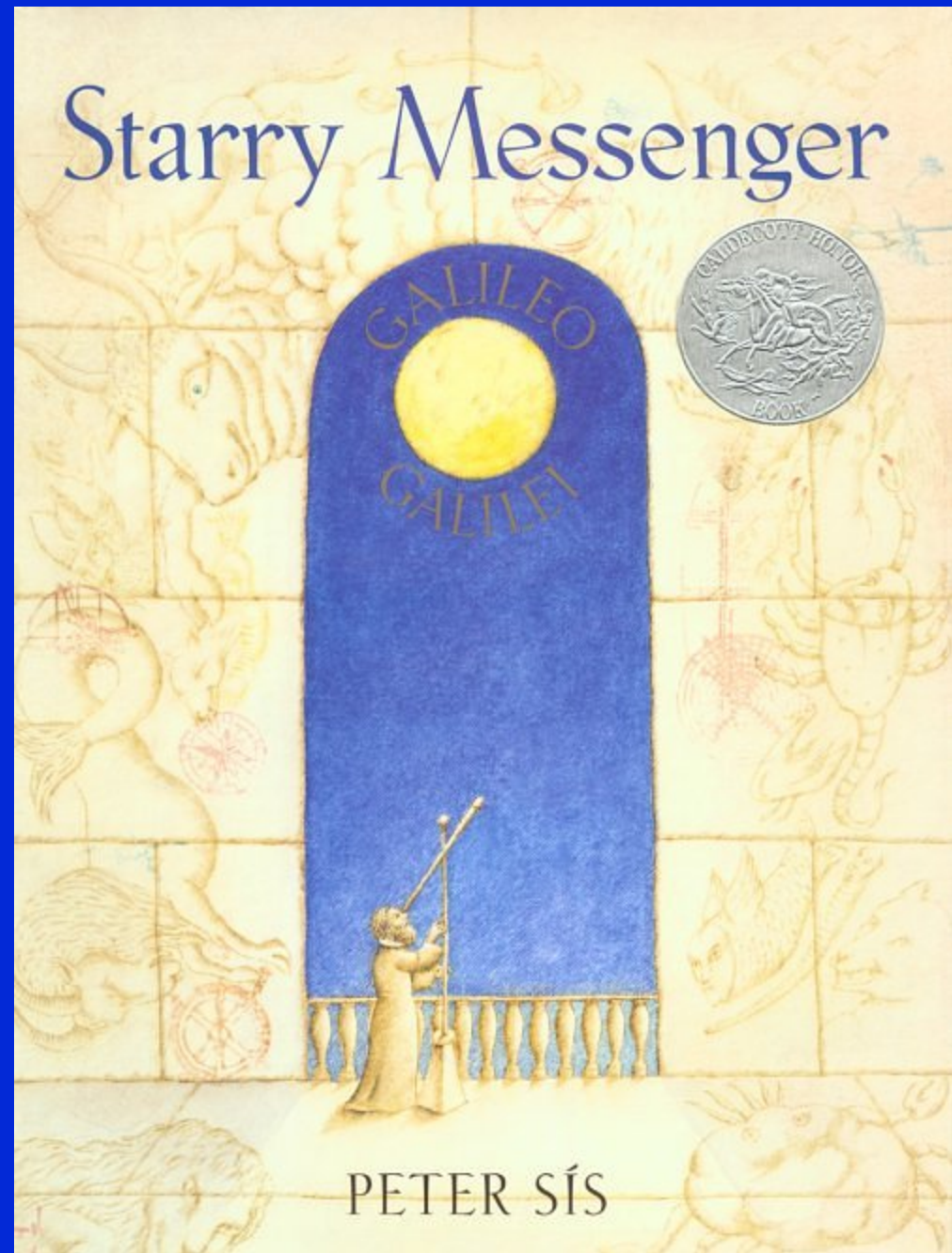
****Using a telescope that he made himself, the Italian astronomer Galileo Galilei (1564-1642) showed that the sun was not a perfect form, as Aristotle had written.**



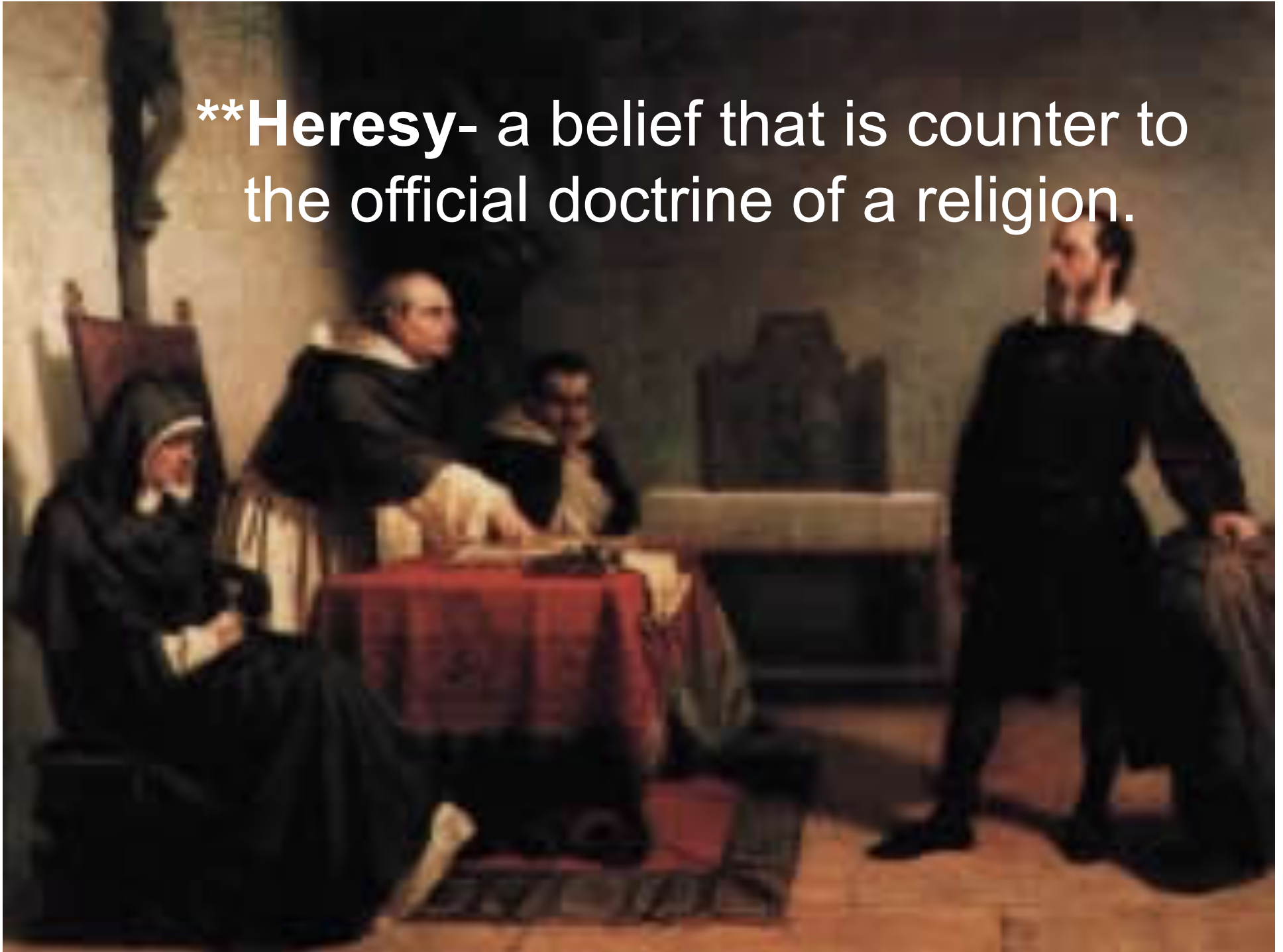


****He used telescope to support Copernicus's theory that the earth was a planet orbiting the sun.**

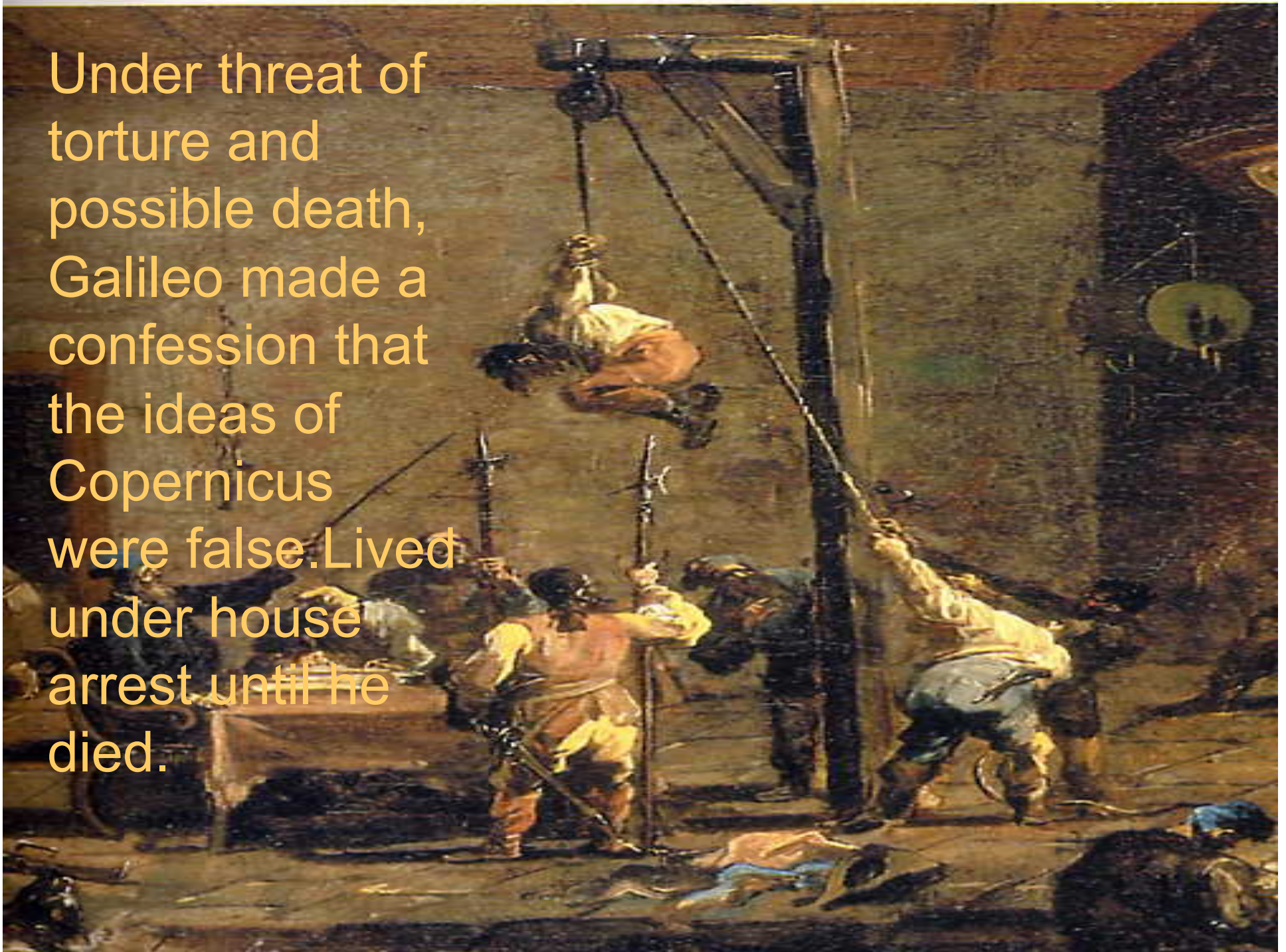
******He wrote his findings in a book called *Starry Messenger*. He was accused of heresy by the Catholic Church and went on trial.

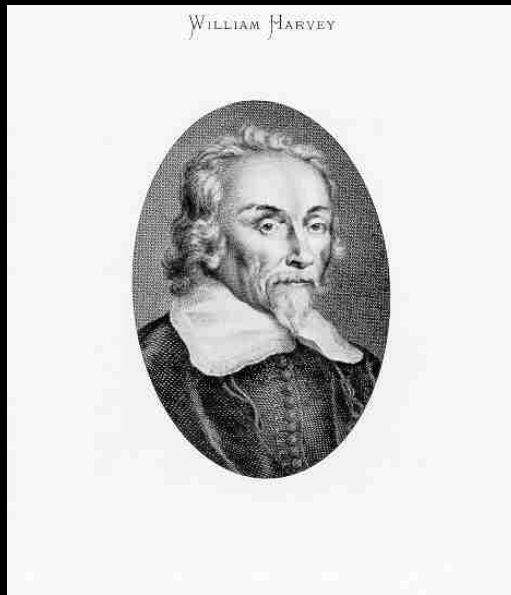


****Heresy-** a belief that is counter to the official doctrine of a religion.

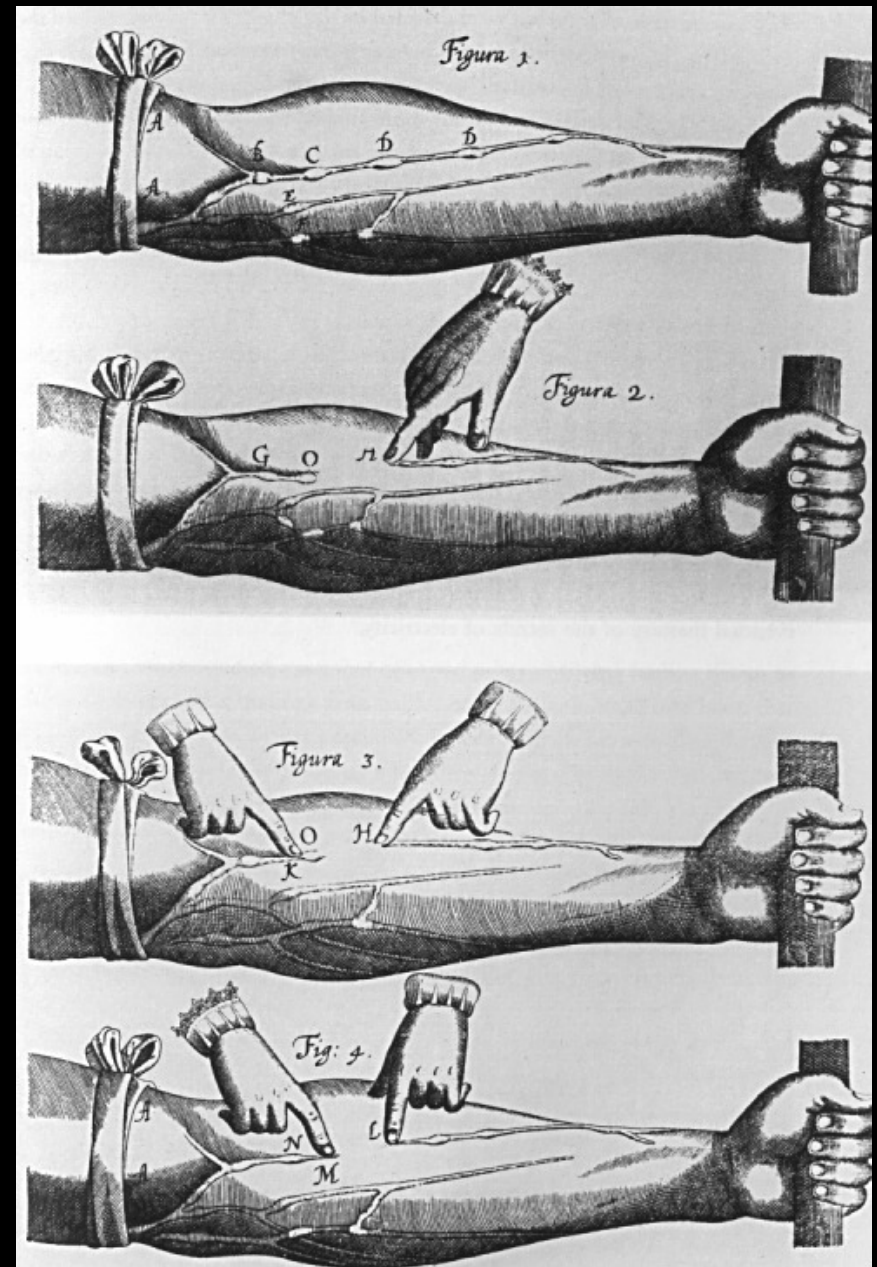


Under threat of torture and possible death, Galileo made a confession that the ideas of Copernicus were false. Lived under house arrest until he died.





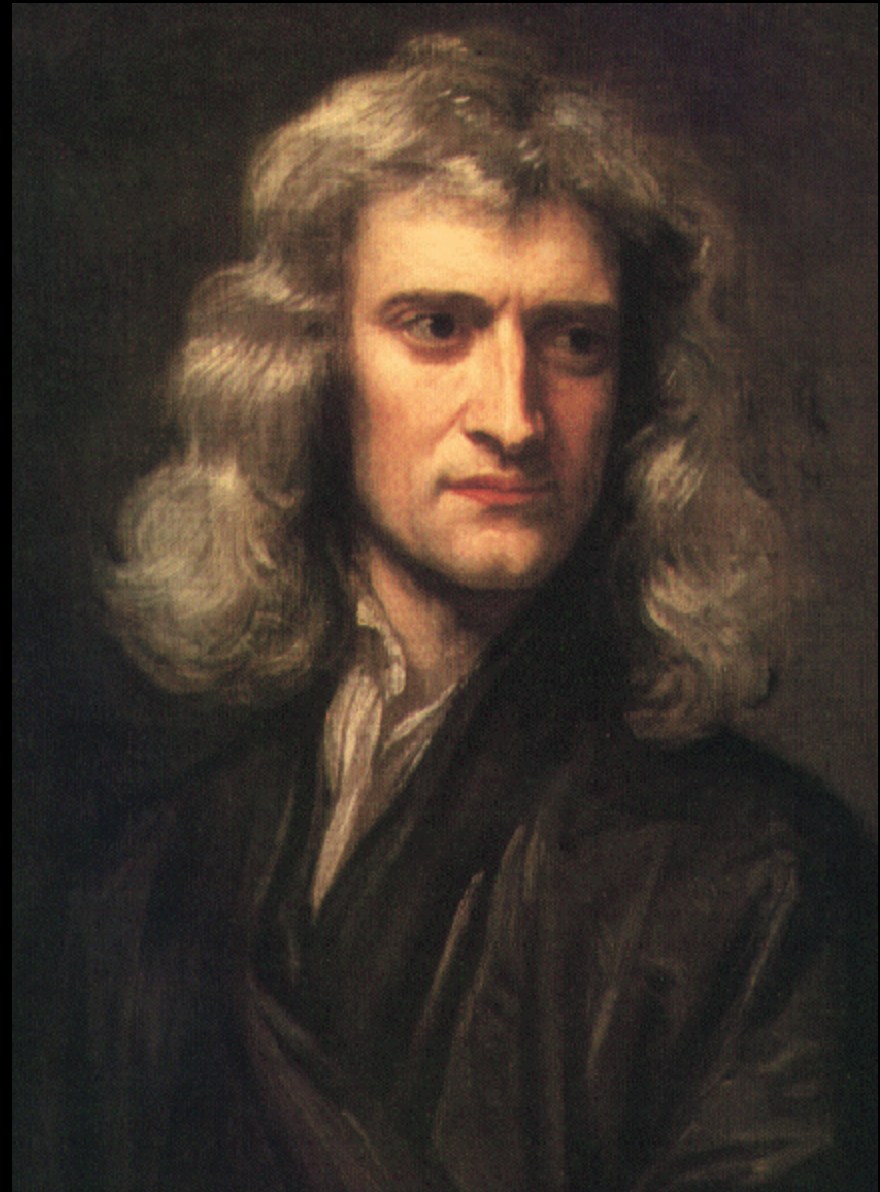
****English doctor William Harvey (1578-1657) published a study that showed how blood circulates through the body and explained how the valves of the heart function.**



****English physicist Sir Isaac Newton (1642-1727) proposed that there was a force, gravity that attracted all objects to one another.**

Laws of Motion

Laws of Mathematics-
calculus



PHILOSOPHIÆ

NATURALIS

PRINCIPIA

MATHEMATICA.

AUCTORE

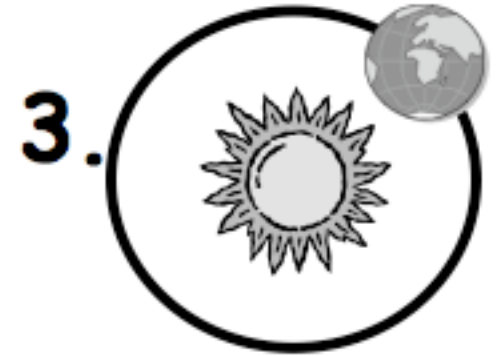
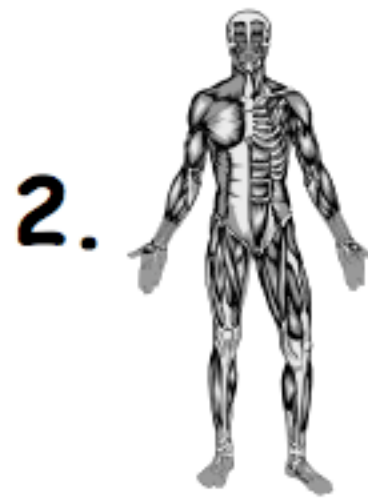
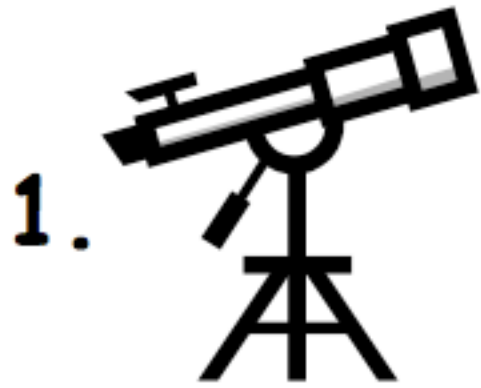
ISAACO NEWTONO, EQ. AUR.

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- Like gravitation, his laws of motion were universal. They were at work on earth and among the stars. The laws of motion solved a wide range of problems in science and engineering.



Each set of pictures represents a person of the Scientific Revolution. Write which person each set represents and tell why.



People of the Scientific Revolution

 Copernicus	Poland	<ul style="list-style-type: none">-reasoned the heliocentric theory - sun is center-kept ideas to himself b/c of Catholic Church (heresy)
 Bacon	England	<ul style="list-style-type: none">-scientific method - use reason & observation to prove things - not superstition-changed the way people thought
 Kepler	HRE	<ul style="list-style-type: none">-used reason & math to prove Copernicus right-used reason & math to discover laws of planetary motion
 Galileo	Italy	<ul style="list-style-type: none">-used reason & telescope to prove heliocentric theory-declared heretic - took back what he said
 Newton	England	<ul style="list-style-type: none">-used reason to discover Laws of Gravity, Laws of Motion, & calculus
 Harvey	England	<ul style="list-style-type: none">-used reason to discover circulation of blood-used reason to study the human body