

Quaestio: _____

Nunc Agenda: Analyze the map of the solar system on the board and try to correctly identify each celestial body.

A = _____ B = _____ C = _____ D = _____

E = _____ F = _____ G = _____ H = _____

THE GEOCENTRIC MODEL

- _____ philosophers like _____ and _____ believed that _____ was center of universe
- This model is called the _____ Model of the Universe
- The _____ supported the Geocentric Model based on passages from the _____, insisting that EVERYTHING revolved around the _____, which did not move.

THE HELIOCENTRIC MODEL

- 1514- Polish Astronomer Nicolaus _____ realized that the way _____ appeared to move in the sky did not make _____ with the geocentric model
- He proposed the _____ model, with the _____ at the center, to explain why the planets appeared to move as they did, and found that the mathematical calculations worked!
- Copernicus was not the first to propose the sun-centered theory:
 - _____ - _____ Astronomer Aristarchus suggested the Sun was unmoving at the center of the universe
 - _____ - _____ Astronomer Aryabhata theorized that Earth spins on its axis
 - _____ - _____ Astronomer Al-Balkhi wrote that the planets move in orbits around the sun
- Danish Astronomer Tycho _____ recorded _____ of the movements of heavenly bodies, and after his death, German astronomer Johannes _____ used Brahe's data to _____ the orbits of planets revolving around the sun. Still, many were not convinced by the evidence...

GALILEO'S DISCOVERY

- Until Italian Astronomer _____ Galilei used a _____ (new Dutch invention for sighting enemy ships) to observe four _____ in orbit around _____, which disproved the geocentric belief that everything in the heavens orbited the Earth.
- Galileo promoted the _____ Model, which the Church considered _____ (contradicting Church teaching), and claimed that the verses in the Bible that say the Earth cannot move had been _____, which violated the Council of _____ (only Church can interpret). The Roman _____ banned books by Galileo and put him on trial.

TRIAL OF GALILEO

Directions: Read the primary and secondary sources about Galileo and answer the questions that follow.

On this April 12, 1633, chief inquisitor of the **Roman Inquisition**, appointed by Pope Urban VIII, begins the inquisition of physicist and astronomer **Galileo Galilei**. Galileo was ordered to turn himself in to the Holy Office to begin trial for holding the belief that the Earth revolves around the Sun, which was deemed **heretical** by the Catholic Church. Standard practice demanded that the accused be imprisoned and secluded during the trial.

This was the second time that Galileo was in the hot seat for refusing to accept the Church teaching that the Earth was the immovable center of the universe: In 1616, he had been forbidden from holding or defending his beliefs. In the 1633 interrogation, Galileo denied that he "held" belief in the view of Copernicus and only continued to write about the issue and evidence as a means of "discussion" rather than belief. The Church had decided the idea that the Sun moved around the Earth was an absolute fact of scripture that could not be disputed, despite the fact that scientists had known **for centuries** that the Earth was not the center of the universe.

This time, Galileo's technical argument didn't win the day. On June 22, 1633, the Church handed down the following order: "We pronounce, judge, and declare, that you, the said Galileo... have rendered yourself vehemently suspected by this Holy Office of heresy, that is, of having believed and held the doctrine (which is false and contrary to the Holy and Divine Scriptures) that the sun is the center of the world, and that it does not move from east to west, and that the earth does move, and is not the center of the world."

Along with the order came the following penalty: "We order that by a public edict the book of Dialogues of Galileo Galilei be **prohibited**, and We condemn you to the prison of this Holy Office during Our will and pleasure; and as a salutary penance [to be forgiven of this sin] We enjoin on you that for the space of three years you shall recite once a week the Seven Penitential Psalms."

Galileo agreed not to teach the heresy anymore and spent the rest of his life under house arrest. It took more than 300 years for the Church to admit that Galileo was right and to clear his name of **heresy**.

Source: "Galileo is Convicted of Heresy," History.com



1. Why was the Church so angry over Galileo teaching that the sun was the center of the solar system?
2. What was the decision of the Roman Inquisition at Galileo's trial, and what happened to him after?
3. Why do you think Galileo agreed not to never again teach this "heresy" if he knew it was true?