

History of Space Science to 1700s

Myths

At the beginning of mankind, early civilizations did not understand modern science. They created _____ to explain the universe.

Example I: Pangu Creates the World

1. From _____.
2. Pangu used his **hands and legs** to break the chaos.
3. His _____ eye became the Sun.
4. His _____ eye became the Moon.
5. His _____ became the soil.

Example II: The Turtle Island Myth

- From _____.
- The Earth was formed on the back of a giant _____ – “Turtle Island”.
- A woman gave birth to twins.
- The _____ Twin placed the Sun in the sky for _____.
- The _____ Twin placed the Moon in the sky for _____.
- Such myths explained the _____ before scientific astronomy.

Ancient Greek Astronomy

Eudoxus (390–337 BCE)

- Proposed the first geometric model of planetary motion.
- Used _____ concentric spheres with Earth at the center.
- First to use _____ and _____ to analyze the heavens (universe).

Aristotle (384–322 BCE)

- Expanded _____ using about _____ concentric spheres.
- Earth is a _____ and _____ at the universe's center.
- Everything travels in _____.
- The universe is _____ and finite.

Ptolemy (100–170 AD)

- Developed the _____ model.
- Introduced _____ to explain _____.

Heliocentric System

Copernicus

- Proposed the _____ universe.
- Planets arranged by _____.
- _____ explained by Earth's motion, no epicycles needed.

Tycho Brahe

- Built _____.
- Proposed a _____ model.

Johannes Kepler

- Showed planetary orbits are _____.
- Laws of Planetary Motion: _____.

Galileo Galilei

- First to use a _____ for astronomy.
- Discovered moons of _____.
- Opposed the _____ model.
- Condemned by the _____.

Practice Activity

1. Use the word bank to fill in the blank names in each sentence.
2. After filling in all names, arrange the scientists in **chronological order** on your own timeline.

Word Bank

Eudoxus, Aristotle, Ptolemy, Copernicus, Tycho Brahe, Kepler, Galileo Galilei

Sentences

1. _____ developed **concentric spheres** to explain planetary motion.
2. _____ used a **telescope** to observe moons of Jupiter, phases of Venus, and supported heliocentrism publicly.
3. _____ proposed a **Sun-centered (heliocentric) universe** with circular orbits, still keeping some small epicycles.
4. _____ wrote the **Almagest** and introduced **epicycles** to explain **retrograde motion**.
5. _____ formulated **Kepler's laws of planetary motion**: elliptical orbits, equal areas in equal times, period-distance law.
6. _____ built precise observatories and collected extremely accurate astronomical data.
7. _____ proposed a **geocentric model** with a **spherical Earth** and **perfect circular orbits**.

Optional

Draw a simple horizontal timeline and place each number in chronological order.

Please write your answer here:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____