

23 What was Copernicus's big idea?

- Copernicus did not agree with the geocentric model.
- Galileo used a telescope to prove Copernicus's model was a good one.

Nicolas Copernicus lived in the Russian province of Poland from 1473 to 1543. He set out his **heliocentric** view of the Universe, which put the **Sun** at its centre rather than the Earth. His ideas caused great controversy. They clashed with views that had been held for centuries and with the views of the Catholic Church.

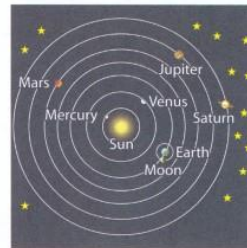


What was Copernicus's model of planets and stars?

Copernicus based his heliocentric model on his observation of the movements of the Earth, Moon and other planets. He found if he put the Sun at the centre of the solar system he could explain their movements much better than Ptolemy had.

His main ideas were that:

- The Earth is one of seven planets circling a stationary Sun.
- The Earth moves in three ways: it rotates every day, moves around the Sun once a year, and tilts on its axis.
- The apparent movements of the Sun, stars and other planets can be explained by the movements of the Earth.



How did Galileo improve the model?

Galileo was one of the first people to use a telescope. This let him observe the skies in more detail and he became a champion of the heliocentric model.



Heliocentric

Having the Sun as a centre of the universe. 'Helio' means sun.

Proof

Evidence that is good enough to say an idea is true.

**On track**

- 1 Mr Hills gave his class some statements about what scientists now think our solar system looks like. He asked them to compare these with the ideas of Copernicus.

What scientists now know	Was Copernicus correct?
A The Sun is at the centre of our solar system	
B The Earth orbits the Sun	
C The Moon orbits the Earth	
D The Sun, Earth and Moon spin on their axis	
E The planets have elliptical orbits	
F Our solar system contains eight planets	
G The solar system is not at the centre of the Universe	
H The solar system also contains meteors, asteroids and comets	

- (a) Copy out the table. Complete the second column by writing 'He was right', 'He was wrong' or 'He didn't mention it' to show if Copernicus agreed or disagreed with the views of modern scientists.
- (b) Explain in your own words what the main difference was between Copernicus's idea and the modern one.

**Aiming higher**

- 2 Leopard class researched some more early scientists.

Scientist	Date	Country	Big idea
Galileo	1632	Italian	Published evidence to support Copernicus
Najm al-Dīn al-Qazwīnī al-Kātibī	1277 AD	Arabic	Suggested heliocentric model, but changed his mind later on.
Nilakantha Somayaji	1500 AD	Indian	Planets orbit the Sun; Sun orbits the Earth.
Tycho Brahe	1587 AD	Danish	Planets orbit the Sun; Sun and Moon orbits the Earth.

- (a) How did each scientist agree or disagree with what we know now?
- (b) How do you think scientists get their ideas about the solar system and the universe?

**How well am I doing?****On track**

I can describe the heliocentric model of the Universe.

Aiming higher

I can name some famous scientists who developed this model.