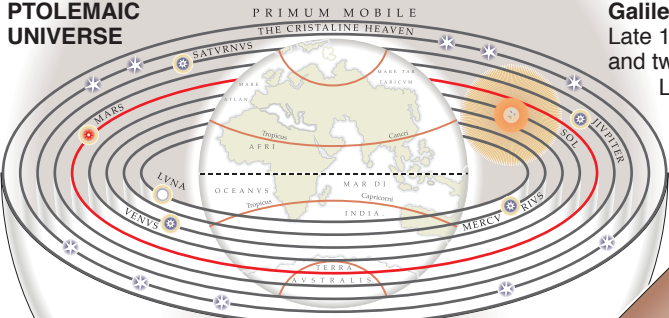


Glimpse of space that led to modern astronomy

Galileo made his first telescope, capable of magnifying objects three times, in mid-1609. This was quickly followed by a nine-power, then a 20-power instrument which enabled him to look at the moon, discover the four satellites of Jupiter, observe a supernova, and discover sunspots. His discoveries – which proved that the Earth and other planets revolve around the Sun – rocked the Catholic Church

PTOLEMAIC UNIVERSE



Ancient Greek astronomer Ptolemy (90-168AD) argues that **Earth** is at centre of universe with **Moon, Sun** and **planets** moving around it within concentric spheres

Beyond planets are **fixed stars** and finally **Sphere of Prime Mover (God)**.

Ptolemy's work is based on Aristotle's idea of ordered universe divided into corruptible earthly region and immutable, perfect heavenly region

Galileo's 20X telescope

Late 1609, wood, leather and two glass lenses.

Length: 927mm

Objective lens:
Plano-convex, convex side faces outward.

Diameter: 37mm

Aperture: 15mm

Focal length: 980mm

Construction: Strips of wood joined with animal glue

Main tube has separate sections at either end for objective and eyepiece

Adjustable ocular tube for focusing

Eyepiece: Original lens lost in eighteenth century. Likely to have been plano-concave with focal length of about 50mm

Lens replaced in 19th century with biconcave eyepiece with diameter of 22mm

Magnification: **20**. Field of view: About **15 minutes of arc** – only 25% of full moon could be seen

Sources: Museo di Storia della Scienza, Jim and Rhoda Morris

COPERNICAN SYSTEM
Galileo's findings confirm Nicholas Copernicus's theory that Earth revolves around Sun

Vatican condemns theory as heresy, and in 1633 hauls Galileo before Inquisition

In 1992, Pope John Paul II vindicates Galileo and in 2000 formally apologises for astronomer's treatment

Jupiter

Saturn

Uranus

Neptune

Dwarf planets