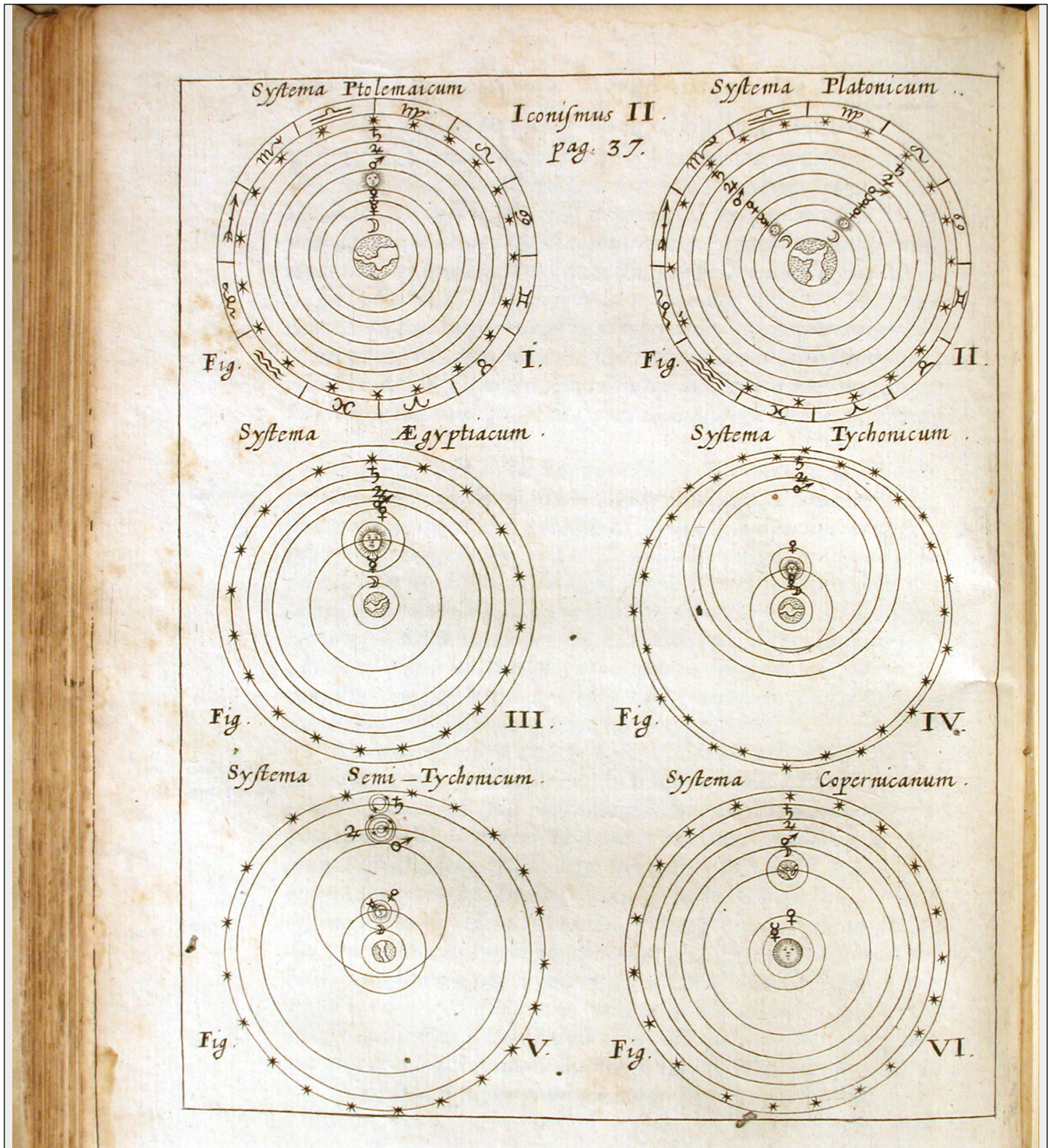


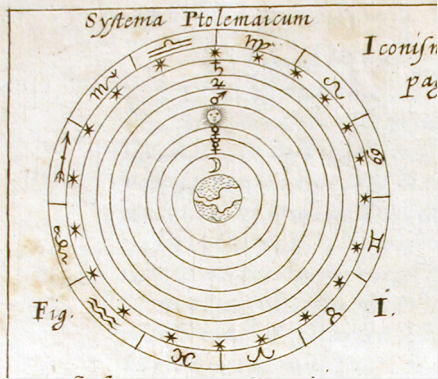
# Six Cosmological Systems Phases of Venus

Learning Leaflet: Starting Points  
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Athanasius Kircher, *Iter exstaticum* (Würzburg, 1660; "Ecstatic Journey through the Heavens")

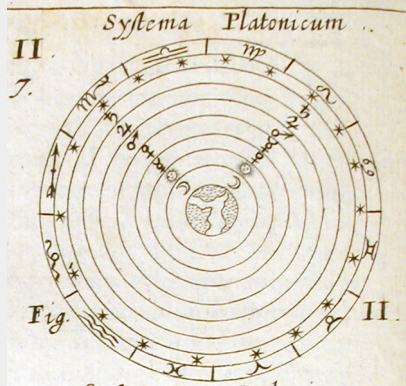
Which of the six world systems are compatible with Galileo's discovery of the phases of Venus?



**1. Ptolemaic system**

All planets revolve around the central Earth.

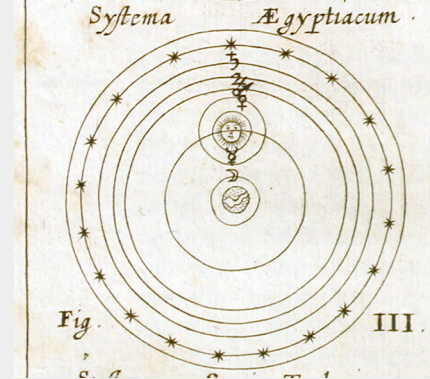
**Venus phases: Yes | No**



**2. Platonic system**

Like the Ptolemaic, except the positions of Venus and Mercury are switched.

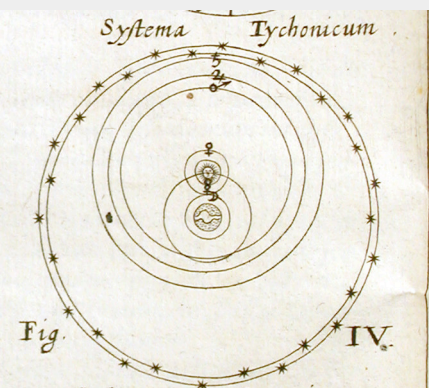
**Venus phases: Yes | No**



**3. Capellan or Egyptian system**

Venus and Mercury revolve around the Sun.

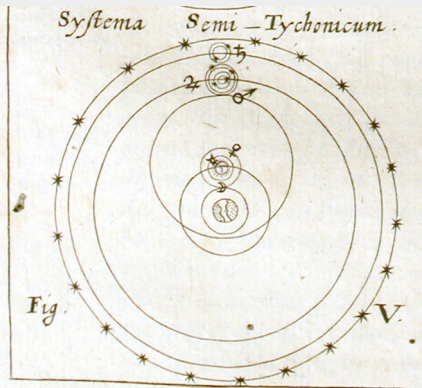
**Venus phases: Yes | No**



**4. Tychonic system**

Planets revolve around the Sun. The Sun in turn revolves around the Earth.

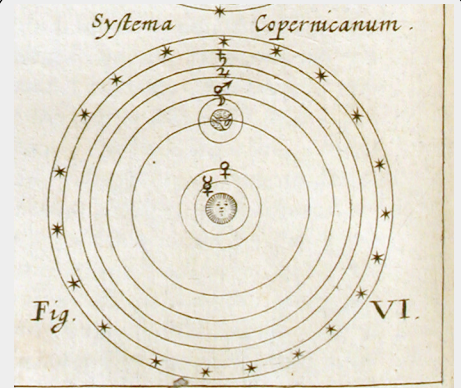
**Venus phases: Yes | No**



**5. Semi-Tychonic system**

Like the Tychonic, except Jupiter and Saturn revolve around the Earth.

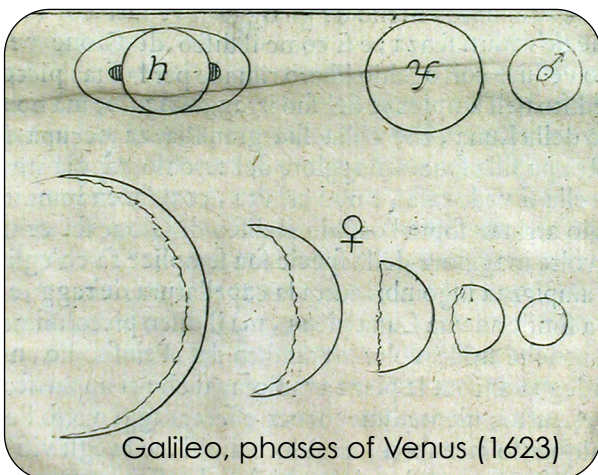
**Venus phases: Yes | No**



**6. Copernican system**

All planets revolve around the Sun. The Moon is a satellite and not a planet.

**Venus phases: Yes | No**



Galileo, phases of Venus (1623)

Six chief world systems were debated in Galileo's world, some geocentric and some heliocentric. Galileo's *Il Saggiatore* (1623) contains Galileo's earliest published illustration of the phases of Venus (left) which he had discovered through his telescope. When Galileo looked at Venus through the telescope, he saw a full set of phases. The phases prove that Venus revolves around the Sun.

**Circle "Yes" or "No" if Venus would show phases.**

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