

The Solar System (p. 690 – 694)

I. Ideas About The Solar System

1. In an Earth-Centered Model (geocentric), what is at the center of the universe?

Earth is at the center of the revolving planets and stars

2. How did Ptolemy's differ from earlier Greek models? (Not in the book.)

Ptolemy thought the planets moved on little circles that moved on bigger circles (accepted for 1,500 years)

3. A description of the solar system in which all the planets revolve around the Sun is called the :

Sun-Centered Model (heliocentric)

4. Who were two people that helped contribute to the Sun-Centered Model?

1. Nicholas Copernicus - Sun centered theory
2. Galileo Galilei (Venus + Mars)

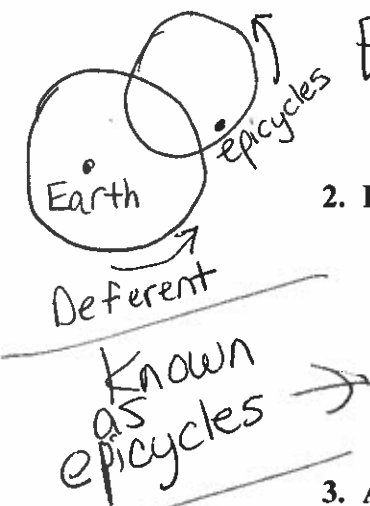
5. Copernicus believed that the Moon revolved around the Earth and that the Earth and other planets revolved around the Sun.

6. What were two observations that Galileo made through his telescope that supported the Sun-Centered Model? (One answer not in the book.)

- 1) Discovered that Venus goes through phases similar to the moon.
- 2) He saw four "moons" revolving around Jupiter

7. Define the term solar system.

Solar System - system of "nine" planets, including Earth, and other objects revolving around the Sun.



8. What percentage of the solar system does the Sun compose?

99.86 %

9. What force is responsible for holding all solar system objects together?

Gravity

II. How The Solar System Formed

1. Complete the flowchart showing the sequences of solar system development.

4.6 Billion years ago the solar system was a cloud of gas, ice, & dust.

The cloud fragments Contracted into a large, tightly packed, spinning disk.


Nuclear fusion reactions begin, and the Sun was born.

The rest of the material in the disk cools, and Clumped into scattered solids.

Clumps collided and became the "nine" planets.

III. Motions Of The Planets

1. Define the term ellipse.

 $e = 0.999$ (close to a straight line)

Ellipse - An oval shape which may be elongated or nearly circular

2. Planets closer to the Sun travel faster than planets farther from the Sun.

Circle One : True False

3. Match the astronomer with the correct accomplishment. (Not all answers in the book.)

- 1. D - Nicolas Copernicus (1473 - 1543) A. Observed planet positions for 20 yrs; supernova in 1572
- 2. A - Tyco Brahe (1546 - 1601) B. Used telescope to support Sun-Centered Model
- 3. B - Galileo Galilei (1564 - 1642) C. Discovered orbits of planets are ellipses
- 4. C - Johannes Kepler (1571 - 1630) D. Developed Sun-Centered model of the solar system

$e=0$
(perfect circle)

Assumed circular paths →
Lost part of →

Did not invent telescope
Condemned by Roman Catholic Church

Assistant to Tyco Brahe

House Arros