Chapter 3 Section 1 Name _____
Observing the Solar System
p.72-75 and Video Clips from class on Mr. Mascio's web page

EARTH AT THE CENTER
constellations position

When the ancient Greeks watched _____ move across the sky from night to night and year to year, they noticed that they stayed in the same _____ relative to one another.

Greek Observations

Celestial Earth geocentric planets

As they watched these constellations, they noticed points of light wander through these constellations. They called these _____.

Most Greeks thought the Earth was inside a rotating dome called the Celestial Sphere. It placed Earth at the center of the Solar System. This is called the _____ model of the solar system. Remember "Geo" is the Greek word for _____. _____ refers to something that is positioned in outer space.

Ptolemy's Model- video clip from teacher web

1,500 circles geocentric incorrect super sonic speeds

Ptolemy further developed the _____ model. In Ptolemy's model the planets move on small _____ that move on bigger circles. Although it explained the motions pretty well, his geocentric model was _____. We know that Earth is not in the center. We are referring to the planets moving on circles upon larger circles at

_____. Ptolemy's version of the geocentric model lasts for _____ years.

Influence of Religion- Video

Center Church Kings and Queens

Ptolemy's model supported the _____. The Church was often the most powerful entity. It often told _____ what to do. Since God made the Earth, it must be at the _____ of the Solar System. Also, everything must revolve around the Earth. Finally, the sky was unchanging. Meaning it had a regular predictable cycle of movements.

SUN AT THE CENTER

heliocentric model

Another model started to make its presence. It placed the sun at the center. This was known as the _____. It was not accepted widely though.

Revolution • a dramatic and wide-reaching change in the way something works or is organized or in people's ideas about it:

The Copernican Revolution

sun-centered 1,500

In 1543 Nicolas Copernicus improved upon the early heliocentric, _____ model. He began to speak and write openly despite the risk to himself. People do not change their minds easily after _____ years. The church called for more evidence of course. Galileo was there to provided it.

Galileo – - video clip from teacher web
A. moons revolving around it
B. it can only have phases if it goes around the sun

Remember the church stated that everything revolves around the Earth.

Galileo found several pieces of evidence to dispute this. He observed:

1. Jupiter has four

   _____

2. Venus goes through phases like the moon

   _____

   _____

   _____

Tycho Brahe's Observations

change comet twenty

Tycho and his assistances observed the positions of the planets without telescopes for _____ years. Tycho realized that the sky does _____. He observed a _____ .

Kepler's Calculations

ellipse

Johannes Kepler was Tycho's assistant mathematician. While calculating the orbit of Mars. He learned that it was an _____. He learned that all planets had elliptical orbits not round orbits.