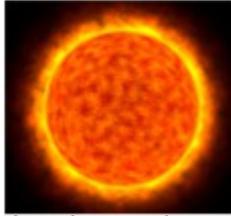


Station #2: The Sun



Introduction:

During the ancient Greek times it was believed that the Earth was stationary and that the Sun orbited around the Earth. Throughout history scientists began to develop models that accounted for observations of the stars and planets which all contributed to today's current belief of the Sun centered model of the solar system.

- As a group read pages 577 to 580 out loud while taking turns.
- Complete the following questions as a group, by answering each in full sentences.
- Remember only one good copy needs to be passed in.

Investigation Question: How did we come to understanding the “motion” of the sun?

1. Explain what the main difference was between the geocentric and heliocentric models of the solar system?
2. What were the three laws of planetary motion that Kepler developed using Brahe's discoveries? Explain each.
3. What is the average speed the Earth revolves around the sun?
4. Explain what Newton believed kept the planets orbiting the sun, and briefly explain how it worked.

Introduction Continued...

Thousands of years ago, people told time by looking at the sky. You may not think about it, but you probably do this as well. For example, you know a day has passed when the Sun rises, it grows light outside, and then the Sun sets again.

- Open the Lunar Phase Simulation found on the computer at <http://astro.unl.edu/naap/lps/animations/lps.swf>.
- Begin by putting the animation rate (found at the bottom left side of the screen) in the middle and by clicking on “show time tickmarks” found in the diagram options box (middle-bottom part of the screen).
- Complete the following questions by viewing the animation and writing your answers in full sentences.

Investigation Question: What causes the Sun to appear to move in a path across the sky?

5. Observe the simulation by clicking “start animation” and observe what is happening to Earth and you (person) standing on the Earth. Describe what astronomical event causes day and night?
6. Observe the Horizon diagram (found in the bottom right side of the screen) and watch the apparent motion of the Sun across the sky. Notice the directional values given (north, south, east and west). By looking at this you can conclude that the Sun “rises” in the _____ and “sets” in the _____.
7. Explain why we know that the sun does not actually rise or set in Earth's sky and explain what actually causes the apparent motion of the Sun across the sky.

