**Astronomy Assessment and TPS Questions:**

**Observing Retrograde Motion**

1. Which of the following astronomers first proposed the heliocentric model of the solar system?
   1. Isaac Newton
   2. Claudius Ptolemy
   3. Tycho Brahe
   4. Nicholas Copernicus
2. A model for which the stars, planets, and other objects orbit the stationary Earth is called a(n) \_\_\_\_\_ model.
   1. geocentric
   2. heliocentric
   3. epicycle
   4. retrograde
3. The best explanation for the retrograde motion of planets in the heliocentric model is that
   1. the planets sometimes change their direction of travel.
   2. planets closer to the Sun move faster and overtake those farther from the Sun.
   3. the planets move on smaller circles called epicycles while they orbit the Sun.
   4. planets farther from the Sun move faster and overtake those closer to the Sun.
   5. none of the above
4. A planet is moving with retrograde motion. Over the course of several weeks, how will the planet appear to move relative to the background stars?
5. east to west
6. west to east
7. It will not move at all, as planets do not move with respect to the stars.
8. It will move randomly, as planets move differently than the stars.
9. Which of Galileo’s discoveries provided the greatest evidence that the Sun must be at the center of the solar system?
   1. that Mars moves with retrograde motion
   2. that Jupiter has several moons orbiting it
   3. that Venus goes through phases
   4. that the Sun rotates on its axis
   5. that Saturn has rings

*Use the graph provided below, on which an imaginary planet’s motion has been plotted over several months, to answer the next two questions.*



Path of the imaginary planet

## March 31st

## April 12th

## April 5th

## March 1st

## March 21st

## April 22nd

## May 15th

1. On which date, if any, would the planet appear to rise in the west?
   1. March 1st
   2. March 31st
   3. April 5th
   4. April 12th
   5. Never
2. For how many days would this planet have appeared to move with retrograde motion?
   1. 10 days
   2. 12 days
   3. 15 days
   4. 17 days
   5. 32 days
3. A planet moving in retrograde motion will, over the course of one night,
   1. rise in the east and set in the west.
   2. rise in the west and set in the east.
   3. not move at all, as planets do not move with the stars.
   4. move randomly, as planets move differently than the stars.