Names: _____   Per: _____

Find That Planet!

An exploration of using star charts to map the heavens and plot the motion of the planets

Part 1

1. Visit http://cse.ssl.berkeley.edu/segwayed/lessons/findplanets/Find-hmpg2.html to read about the celestial coordinates astronomers use to location objects in space.

2. Visit https://in-the-sky.org/skymap2.php to view the star chart for the sky above you right now (or anywhere/anywhen in the world)! Animate the map to watch how our view of stars changes as the sky wheels overhead.

3. Visit https://ssd.jpl.nasa.gov/horizons.cgi to generate the ephemeris (data table giving the calculated celestial coordinates) for planets or other celestial bodies.

Part 2

1. Use the ephemeris generator to find, plot, and label 4 different planets/bodies on the star chart on the back of this worksheet. Plot 10 data points per planet/body.

2. Draw arrows connecting your 10 data points from beginning to end.

3. Write the start and end dates at the beginning and end of each orbital chunk.

Pro Tips

1. Not all of the planets will be visible in the portion of sky depicted on the provided star chart. Adjust the start and end times until you find a stretch of the orbit that will be visible on the star chart.

2. The faster a body orbits, the less time you'll want to wait before checking its new position, whereas for slower orbiting bodies, you'll need to wait longer before you see a noticeable change in its position. Below are suggested step sizes:

    i.   Orbiting Satellites (e.g. ISS or Hubble): every 5 minutes for 50 minutes

    ii. The Moon: everyday for 10 days

    iii. Inner Planet (Mercury, Venus, Mars): every 6 days for 60 days

    iv. Outer Planet (Jupiter, Saturn, Uranus, Neptune): every 30 days for 300 days