Name(s):	_____	_____

	_____	_____

Date:	_____	Course/Section:	_____

Grade:	_____

Properties of Asteroids

Objectives:

The goal of this lab is for students to find and identify asteroids using observations of the ecliptic and learn about some of the properties of asteroids.

Checklist:

☐ **Complete the pre-lab quiz with your team (if required).**
☐ **Compile a list of resources you expect to use in the lab.**
☐ **Work with your team to complete the lab exercises and activities.**
☐ **Record your results and mark which resources you used.**
☐ **Share and discuss your results with the rest of the class.**
☐ **Determine if your team's answers are reasonable.**
☐ **Submit an observation request for next week (if required).**

Resources:

Pre-Lab Quiz

Record your group's answers to each question, along with your reasoning. These concepts will be relevant later in this lab exercise.

1.
2.
3.
4.

Part 1: Detecting Asteroids

1. What is the optimal arrangement of Earth, Sun and asteroid that gives the maximum likelihood of detecting an asteroid from Earth? Explain in terms of your experiment with the flashlight and aluminum foil.

2. Determine the R.A. and Dec. coordinates with the highest chance of finding an asteroid, assuming you were to observe using the Rigel telescope at midnight tonight. Explain your reasoning.

Part 2: Identifying Asteroids

1. Record which asteroids you were able find in your images in the table below. Include the distance if available.

Catalog Name	Apparent Magnitude (V)	Distance

2. Record the data for any asteroids you found in your images *after* identifying them using the Minor Planet Checker. Compare these with the ones your team found using only the images. Why were these more difficult to find?

Catalog Name	Apparent Magnitude (V)	Distance

Part 3: Measuring Asteroid Rotation

1. Estimate the asteroid's rotation period from the lightcurve. Estimate the uncertainty in your measurement.

2. Do some research and find the currently accepted value for the asteroid's rotation period. Does it agree with your estimate, within your uncertainty?

3. Determine the period of the asteroid by performing a curve fit to the data using Logger Pro. Does the period found in this way agree better with the accepted value? Why or why not?