Kepler Exoplanet Transit Hunt Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A transit is when a planet crosses in front of a star from our point of view. When a planet crosses in front of its star or transits, it blocks some of the light coming from the star. If a telescope is taking a series of images of the star it may catch the star when a planet is transiting. If an astronomer measures the light from the star in all the images, that decrease in light can be detected.

This simulation will give you a chance to detect a transit before we do it with our own images. Select **four** stars to investigate. Keep a record of your investigation below. When you have to record the blink, just do your best. The site takes response time into account. When you view your exoplanet, it is portrayed based on its size, its star’s temp, its distance from its star and its own temp. (FYI – telescopes don’t really record blinks; they record light counts; the blink is a simulation of a drop in light measurement) http://amazing-space.stsci.edu/resources/explorations/light/

Star #1

Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #2

Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #3

Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #4

Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Do you see any pattern among the types of stars you investigated and the exoplanets you found? Explain.

Kepler Exoplanet Transit Hunt

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Star #1 Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_ Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_

Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #2 Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

% Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_ Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_

Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #3 Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 % Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_ Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_

Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Star #4 Spectral type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Star’s Temp (K) \_\_\_\_\_\_\_\_\_ Star’s Mass (in Sun Radii) \_\_\_\_\_\_\_\_\_\_\_

Exoplanet Orbital Period (in Earth Days) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

% Brightness Drop \_\_\_\_\_\_\_\_\_\_\_\_\_ Distance (in AU) \_\_\_\_\_\_\_\_\_\_\_\_

Planet in Habitable Zone: Yes No Star’s Temp \_\_\_\_\_\_\_\_\_\_\_

Exoplanet Radius (in Earth Radii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does this exoplanet compare to Earth?

Do you see any pattern among the types of stars you investigated and the exoplanets you found? Explain.