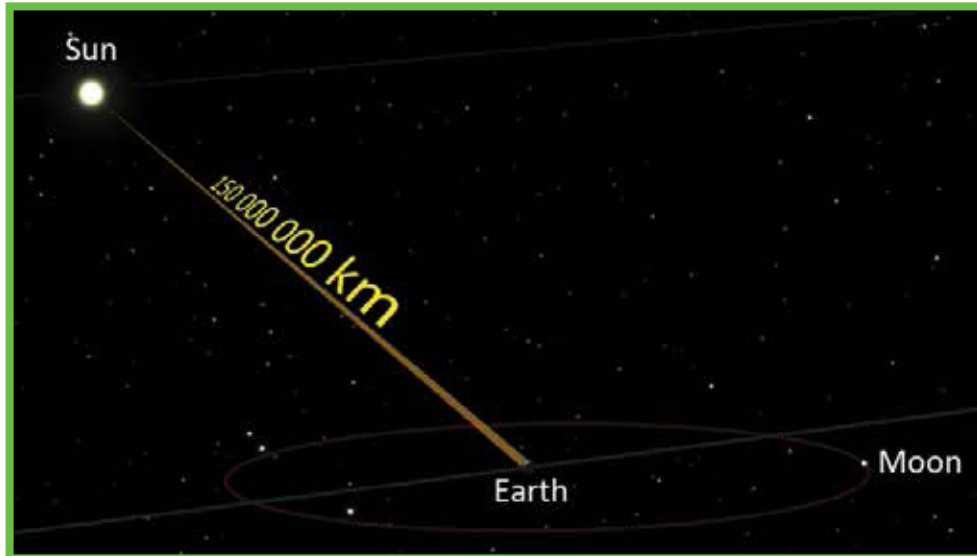


Light Speed

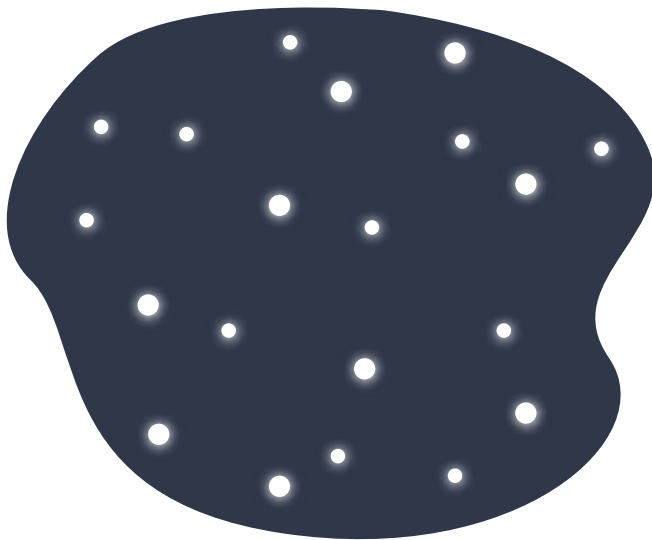
There is almost nothing in our universe that can travel faster than the speed of light!



The distance light has to travel from the Sun to Earth

Light speed is the speed at which light travels through a vacuum. Light travels at 186,000 miles per second through the space vacuum! When we see stars, we are seeing the light that has traveled many miles through the space vacuum to Earth.

The lights we call “stars” are actually light beams that are hundreds to millions of years old. Even our closest star, the Sun, is about 93 million miles away from Earth. It takes light from the Sun, traveling at 186,000 miles a second, a little over eight minutes to make it to Earth. That means that all the light we see from the Sun is eight minutes old!



Imagine if the Sun was suddenly destroyed. It would take roughly eight minutes before the Sun’s light would no longer be visible on Earth.

Light Speed Math

A light year is a common unit of measurement in astronomy. It is how far light can travel over a year. Using what you know about the speed of light per second, find the measurement of a light year.

Now, using your knowledge of the speed of light per second, calculate the distances between each item in the diagram.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$



Note: This diagram shows rough estimates.

Fun Fact: Did you know that light from the closest star besides the Sun takes 4.3 years to reach Earth?