

Telescopes - An Eye on the Universe - Answer Key

The first telescope, a refracting instrument, was made of a combination of two lenses. The objective lens bends parallel light rays and focuses them at a point called the focal point. Before the rays can spread out again, the eyepiece lens bends the rays and focuses them on the eye. Galileo was one of the first astronomers to use this type of telescope to study the moon.

Materials: two magnifying lenses

Step 1) Select a distant object to view (such as a tree or a building)

Step 2) Close one eye and hold the magnifying glass lens near your open eye.

Step 3) Look at the distant object through this lens. It may be blurry.

Step 4) Hold the second magnifying lens in front of the lens held near your eye. Slowly move the second lens away from the first one until the distant object is no longer blurry.

1) Which lens represented the objective lens and which one represented the eyepiece lens?

The lens near the eye is the eyepiece lens; the other is the objective lens.

2) What was unusual about the orientation of the object you viewed through the two lenses?

The object was upside down.

3) Why is the unusual orientation of far-away objects not so big a problem when viewing stars as it might be when viewing a tree?

A star's orientation is not important, since there is really no "up" or "down" in space.

