How does a Telescope Work?

A telescope makes faraway objects look closer and lets you see them better. This text explains how a telescope works.

Optical telescopes

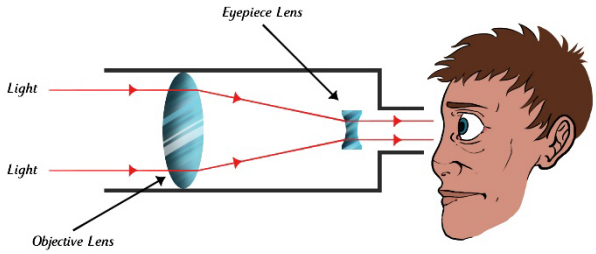
Optical telescopes see visible light from space. Small ones allow anyone to see the night sky and they can be bought quite cheaply. There are very large optical telescopes positioned around the world. These are used by professional astronomers.

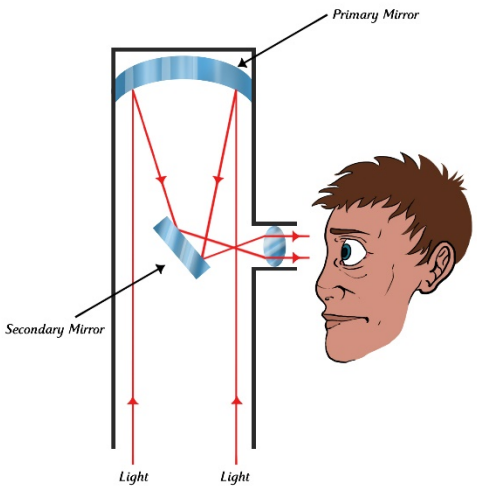
Different types

There are two main types of optical telescope. The refractor telescope uses a glass lens, and the reflection telescope uses mirrors.

The refractor telescope

A refractor telescope collects light through a special lens called an objective lens. When you look at a faraway object, like a star, the objective lens collects the light from that object. Next, the light travels along the telescope and through an eyepiece. Finally, the eyepiece acts like a magnifying glass, making the object look bigger.





The reflection telescope

A reflection telescope collects light through a mirror called a primary mirror. Again, the light travels through the telescope to the eyepiece. Finally, the eyepiece acts to make the object look bigger.

Bigger images

The smaller the objective lens or the primary mirror, the less light it can collect. This means that you see a smaller and less detailed image. The bigger the objective lens or the primary mirror, the more light it can collect. This means that you see a larger and more detailed image.

Did you know?

The Hubble Space Telescope is one of the most famous telescopes in the world. It was sent into space in 1990 and orbits the Earth at a speed of 5 miles per second. Every 97 minutes, Hubble completes a spin around the Earth, taking pictures of planets, stars and galaxies as it goes.

Text Marking

1. Underline the technical words in blue.
2. Draw a green line around the sub-headings.
3. Draw a red line around the labelled diagram of a refractor telescope.
4. Draw a purple line around the labelled diagram of a reflection telescope.
5. Draw a pink line around the opening statement.
6. Underline the adverbials of time in yellow.

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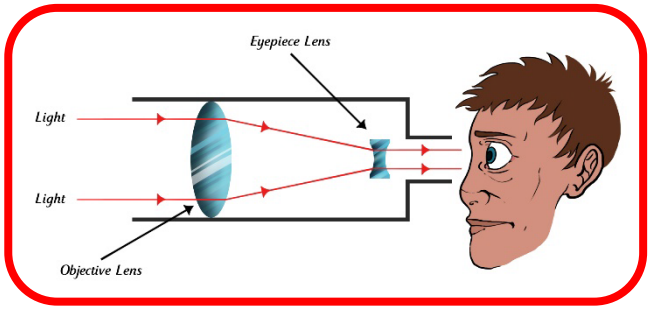

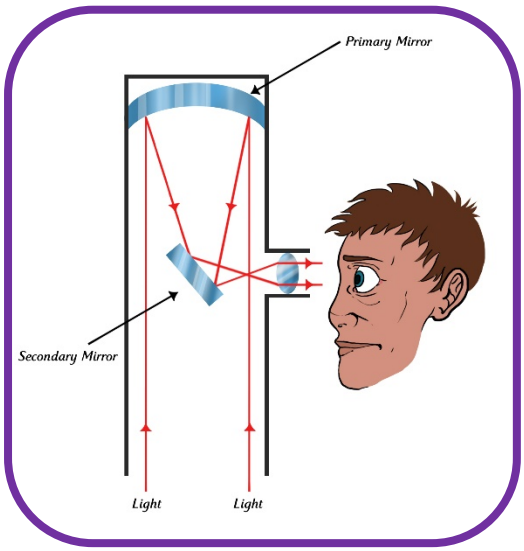

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