

Chapter 24 Studying the Sun

Section 24.2 Tools for Studying Space

(pages 678–683)

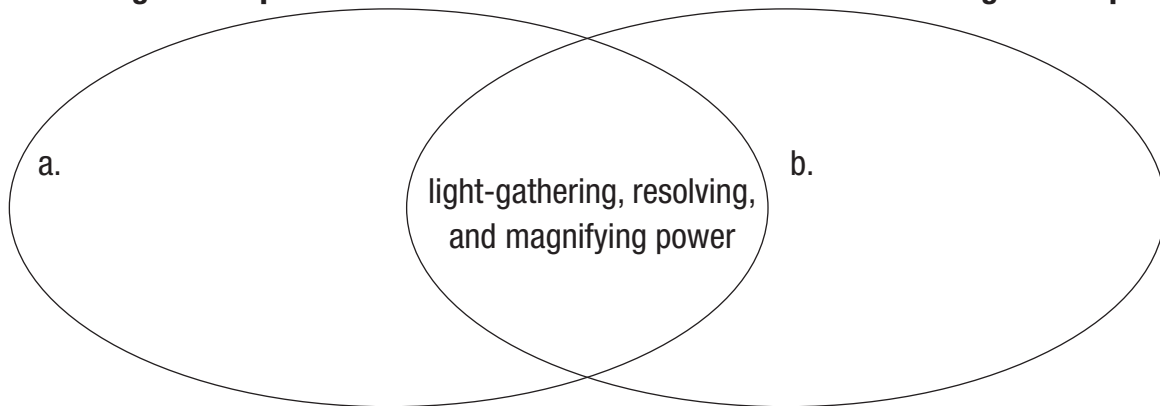
This section describes refracting, reflecting, radio, and space telescopes and how they work.

Reading Strategy (page 678)

Comparing and Contrasting As you read, complete the Venn diagram below to show the differences between refracting and reflecting telescopes. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

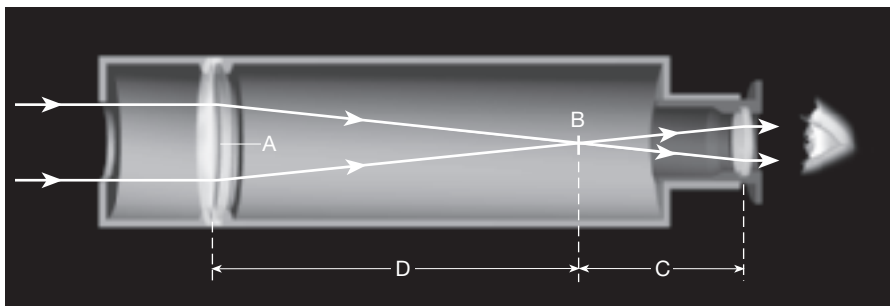
Refracting Telescopes

Reflecting Telescopes



Refracting Telescopes (pages 678–679)

1. Is the following sentence true or false? The objective lens of a refracting telescope produces an image by bending light from a distant object so that the light converges at the focus. _____
2. Select the appropriate letter in the figure that identifies each of the following features.
 - _____ objective lens
 - _____ focus
 - _____ focal length of the eyepiece



3. Refracting telescopes got their name because they refract, or _____, light.

Chapter 24 Studying the Sun

4. Is the following sentence true or false? Astronomers usually study an object by looking directly through a telescope. _____
5. Is the following sentence true or false? Refracting telescopes suffer from an optical defect called chromatic aberration. _____

Reflecting Telescopes (page 680)

6. Use the terms below to fill in the blank. The main difference between a reflecting telescope and a refracting telescope is that a reflecting telescope uses a(n) _____ to focus the incoming light.

mirror	antenna	lens
--------	---------	------

7. Is the following sentence true or false? Most large optical telescopes are reflectors. _____
8. Three properties of optical telescopes that aid astronomers in their work are light-gathering power, resolving power, and _____.

Detecting Invisible Radiation (pages 681–682)

9. Circle the letter of the type of invisible radiation from space that can be detected from Earth’s surface.
 - a. gamma rays
 - b. X-rays
 - c. radio waves
10. Is the following sentence true or false? A radio telescope works in a similar way to a radio antenna. _____
11. Is the following statement true or false? The surfaces of radio telescopes need to be as smooth as a mirror. _____

Space Telescopes (pages 682–683)

12. Space telescopes produce clearer images than telescopes on Earth because space telescopes are above the _____, which distorts images made by most Earth telescopes.
13. Circle the letter of the first space telescope.
 - a. Hubble Space Telescope
 - b. Chandra X-ray Observatory
 - c. Compton Gamma-Ray Observatory