

## Years

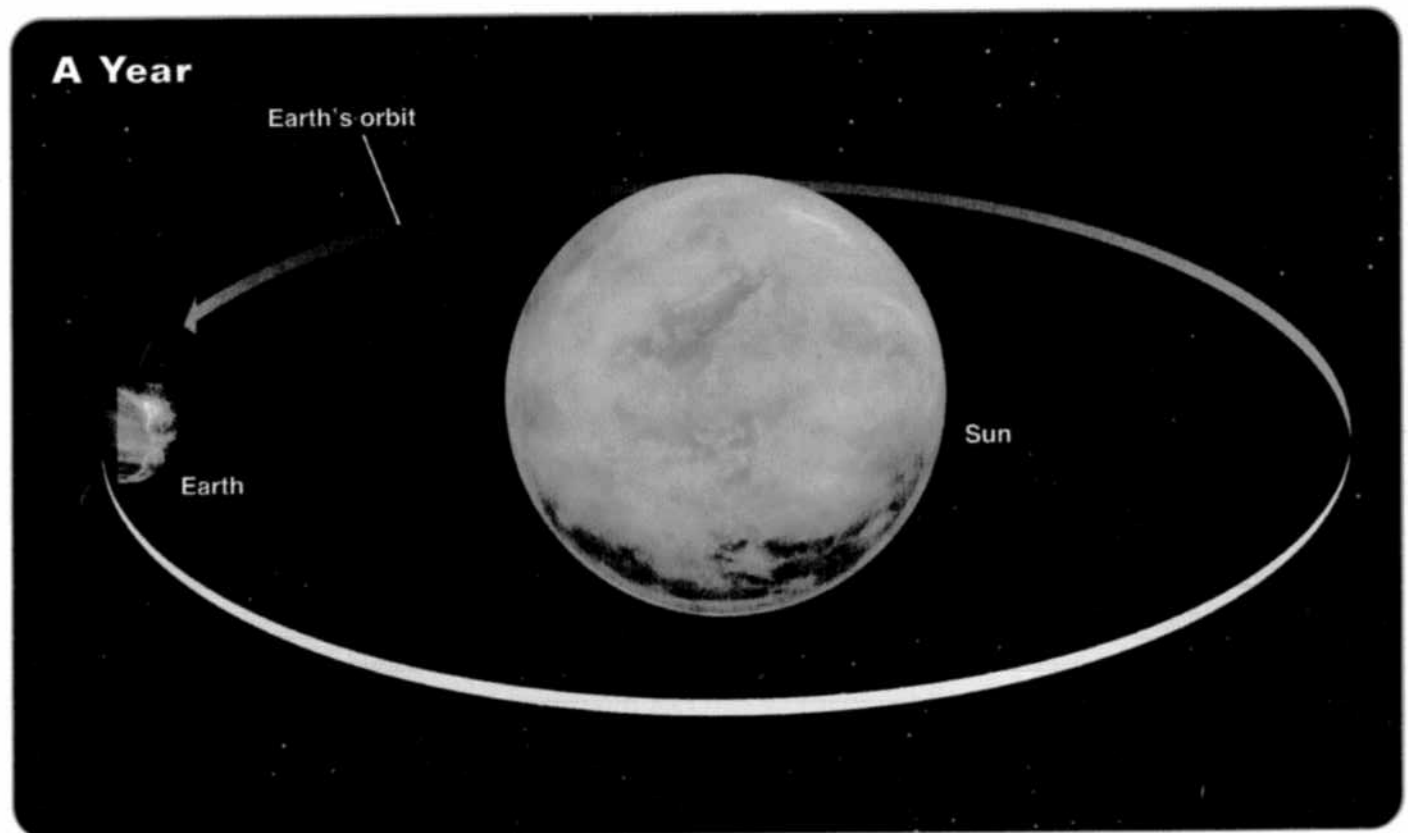
As Earth rotates on its axis, it also travels in its orbit around the Sun (Figure 12). The movement of a satellite in its orbit is called **revolution**. A **year** is the amount of time it takes a planet to revolve once around the Sun. Earth's year is 365.25 days. Mercury, the planet closest to the Sun, has a much shorter year, lasting only 88 Earth days. By contrast, Pluto's year is equal to about 248 Earth years.

For thousands of years, people have observed the Sun, stars, and other objects in the sky to help keep track of events that occur each year. Egyptian farmers from about 3000 B.C.E. could accurately predict the annual flooding of the Nile River by observing the star Sirius. Sirius appeared in the morning sky every year shortly before the flooding began. The farmers watched Sirius and waited until the flooding was over before planting their crops. Ancient Chinese astronomers from about 1300 B.C.E. also made detailed observations of the night sky. From

their observations, the astronomers accurately calculated the number of days in a year.

Our modern calendar has 12 months with a total of 365 days. But since Earth actually takes 365.25 days to orbit the Sun, every four years the calendar is a whole day ahead compared with Earth in its orbit. To solve this problem, every four years we add an extra day, February 29, to our calendar. The years that have 366 days are called leap years.

Earth's orbit around the Sun is not a perfect circle. Instead it is slightly elongated, like an oval. This shape is called an **ellipse**. Because of this slightly elliptical orbit, Earth is not always the same distance from the Sun. The closest Earth gets to the Sun during a revolution is 147 million kilometers (about 91 million miles). This usually occurs early in January. The farthest Earth gets from the Sun is 152 million kilometers (about 94 million miles). This usually occurs early in July.



▲ **Figure 12** A year is the time it takes Earth to make one complete revolution around the Sun.