

regions are seen and more impact craters are obvious in this image. The mare regions are younger formations formed by the flooding of lava that buried many ancient impact craters. You will consider the formation and composition of the Moon in Chapter 2, and the historical impact record of the Moon in Chapter 4.

1.1.4 Mars

Continuing our tour outwards from the Sun, we next encounter Mars (Figure 1.11). It is not hard to understand why it is often referred to as ‘the red planet’ (although in fact, most people would probably describe it as orange). Mars can often be seen with the naked eye as a ‘star’ that has a very obvious orange hue to it. Figure 1.11 shows some striking features. The image shows a huge canyon system (called *Valles Marineris*), which represents a fracture in the planet’s surface that extends about 4000 km across the planet. This canyon dwarfs the Earth’s Grand Canyon, having regions that are 11 km deep and 200 km wide. Also very obvious are the dark, circular features near the left-hand side of the image. These are enormous, old volcanoes. The largest volcano on Mars, *Olympus Mons* (not shown in Figure 1.11), which is also the largest volcano in the Solar System, is 24 km high and has a volume a hundred times greater than Mauna Loa in Hawaii – the largest equivalent feature on Earth.

Figure 1.11 The planet Mars (radius 3390 km). This is a composite image produced from images obtained by the Viking Orbiter spacecraft. (US Geological Survey)

