PLATE 1 Geologist-astronaut Harrison Schmitt doing fieldwork during Apollo 17. (Courtesy NASA.)

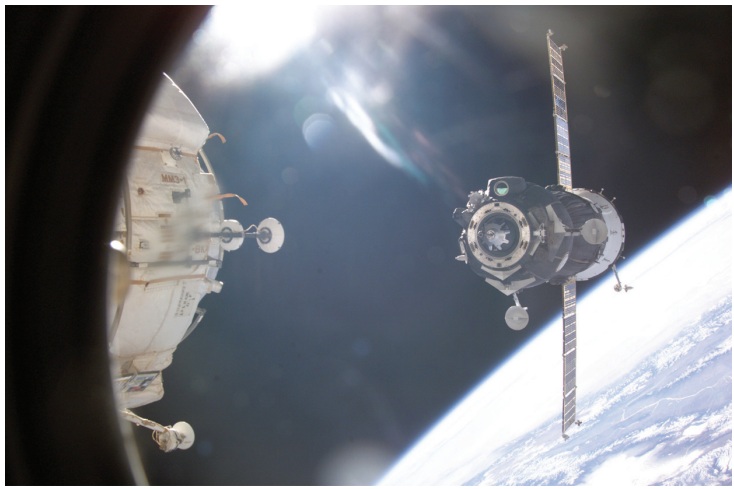

PLATE 2 An astronaut-bearing Soyuz capsule prepares to dock at the International Space Station. (Courtesy ESA.)

PLATE 3 Water, light and life. (Photo V. Rouse-Delimol.)

PLATE 4 Comet Hale-Bopp and a meteorite trail. The Earth is bombarded by cosmic material on a constant basis. (Photo James W. Young – Resident astronomer JPL/NASA/Table Mountain – used with permission.)

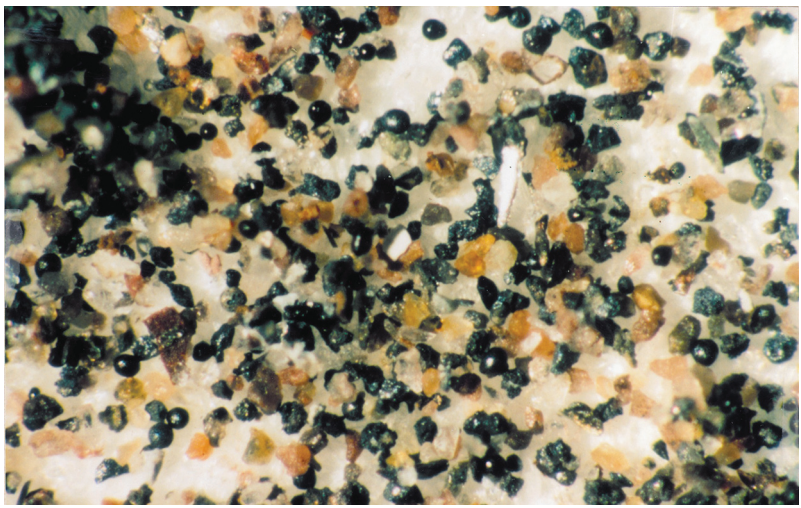

PLATE 5 Unmelted micro-meteorites (black grains) from old Arctic blue ice. (Courtesy ESA.)

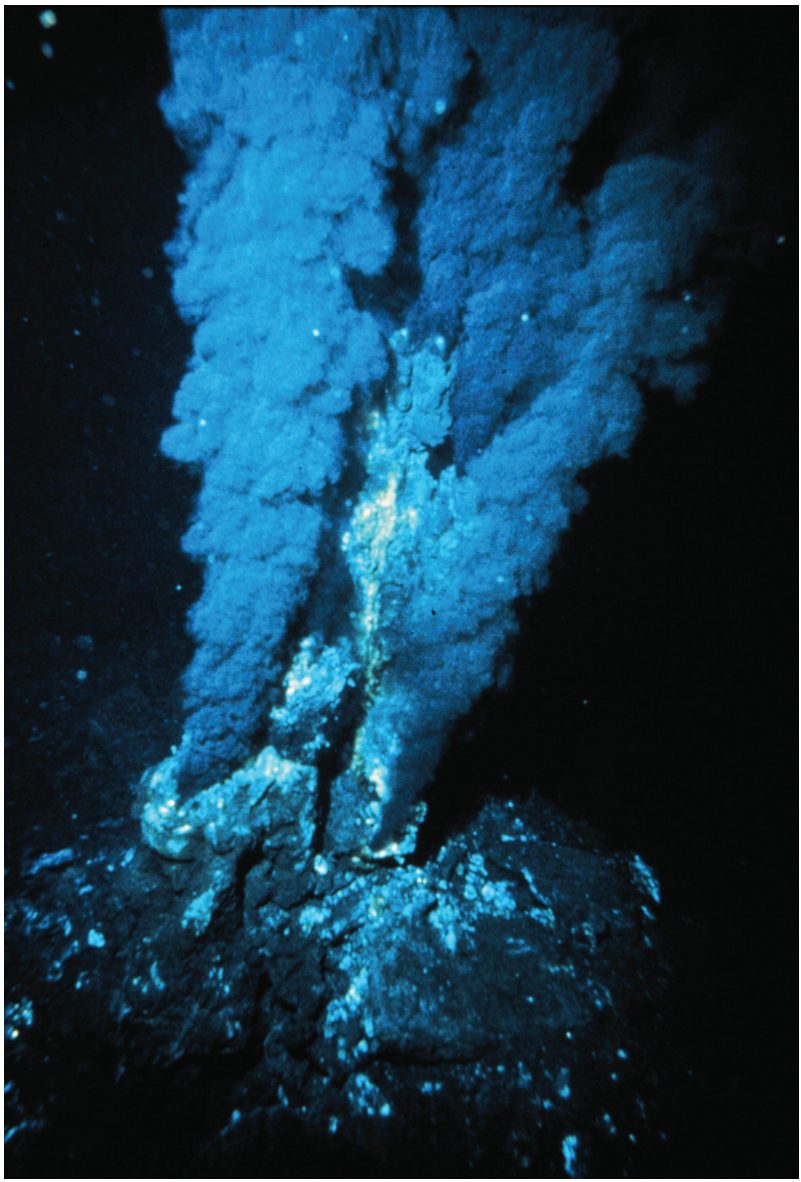

PLATE 6 A hydrothermal vent and black smoker. (Courtesy NOAA.)

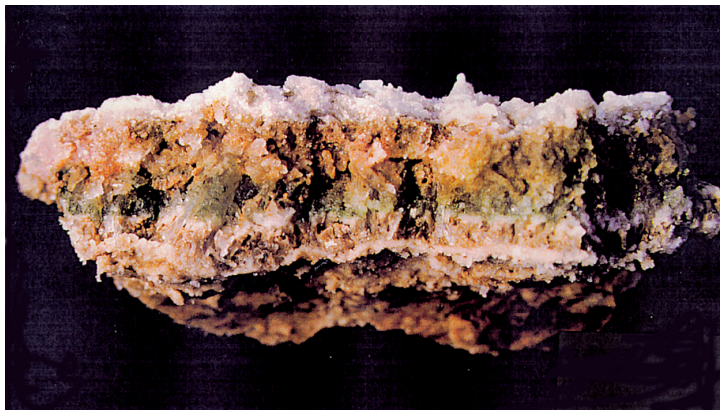

PLATE 7 Evaporite with horizontal bands of endoevaporitic microbial communities (From ESA SP-1231).

PLATE 8 Typical microbialite (or 'stromatolite') from the Precambrian Transvaal Dolomite about 2.3 billon years old. The bun-shaped and partially interfering layers represent consecutive growth stages of the primary microbial community. (From ESA SP-1231.)

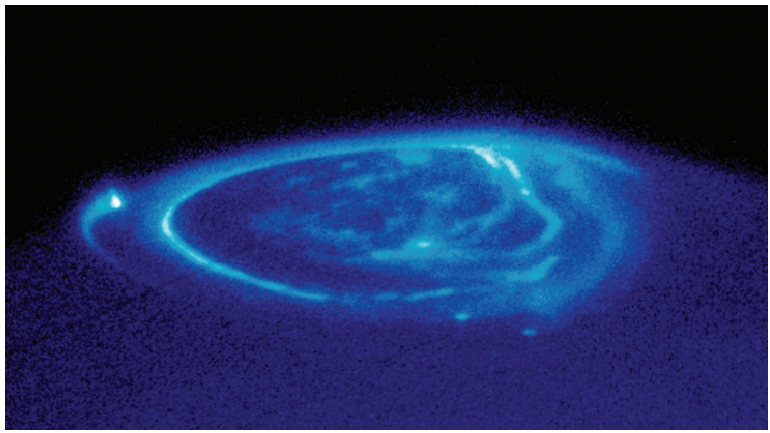

PLATE 9 Evidence for the pervasiveness of intense radiation in interplanetary space can be seen in spectacular auroras. These are created in the upper atmosphere by the interaction of the solar wind and the intense magnetic field of a planet. Here the Galileo mission captures Jupiter's aurora (above) and the Hubble Space Telescope shows auroras in Saturn's northern and southern hemispheres (below). (Courtesy NASA/ESA.)

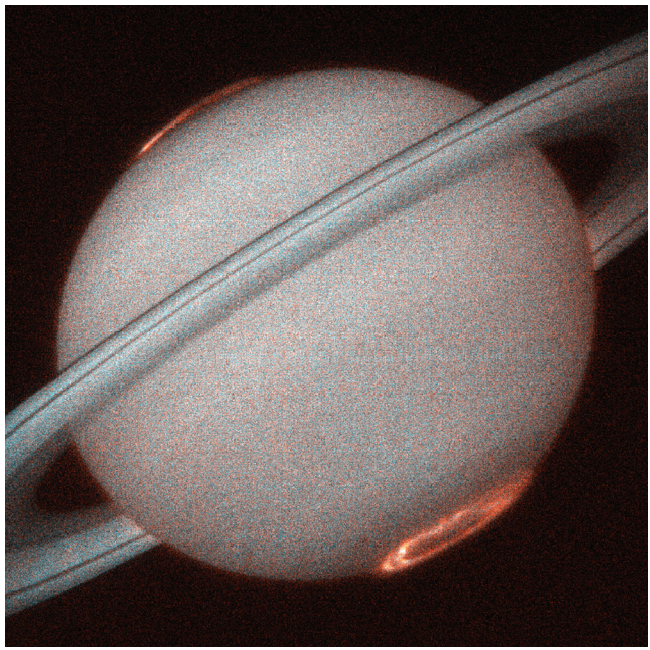

PLATE 10

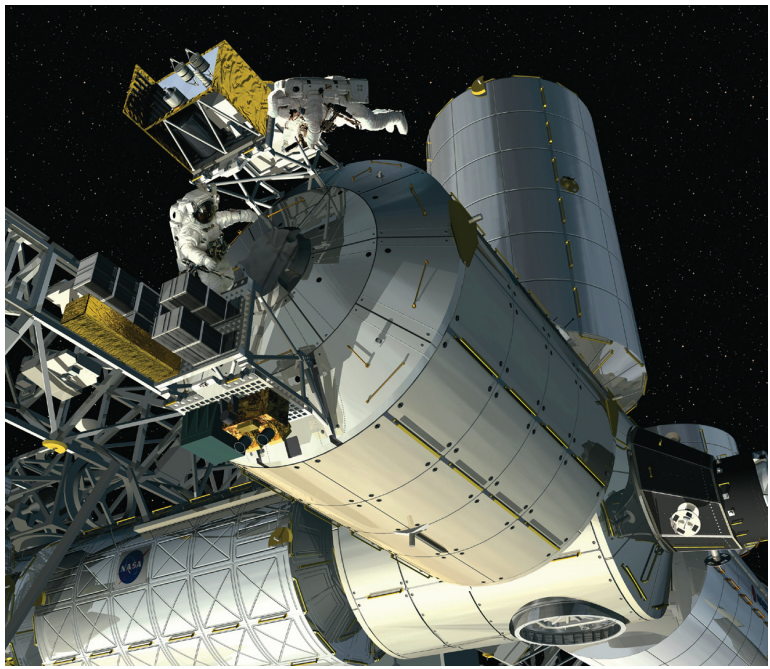

PLATE 11 Artist's impression of how astronauts will work on the platform where ESA's EXPOSE facility for the exposure of biological materials to the space environment will be located. (Courtesy ESA/Deuros.)

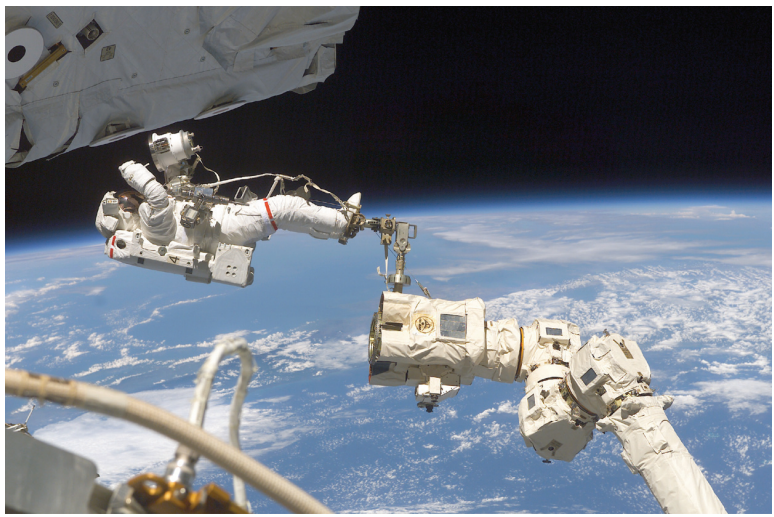

PLATE 12 An astronaut in EVA mode works outside the ISS. (Courtesy ESA.)

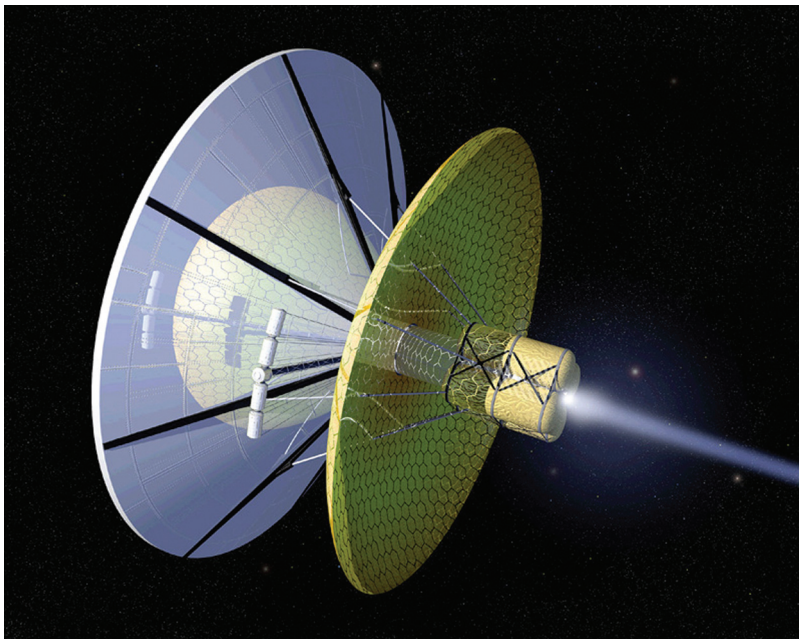

PLATE 13 A futuristic view of a Ramjet Fusion Propulsion system. Da full-scale exploration of the Solar System will require the development of advanced propulsion systems. (Courtesy NASA.)

PLATE 14 Astronaut Gene Cernan rides the 'Lunar Buggy' in search of geologically interesting sites during the Apollo 17 mission. Mobility is a key issue in any exploration scenario. (Courtesy NASA.)

PLATE 15 A Mars exploration scenario with a Mars astronaut/explorer scaling a martian cliff in the search for interesting exobiological sites. (Courtesy NASA.)

PLATE 16 The Mars Labs from the ESA Aurora study. (Courtesy ESA.)

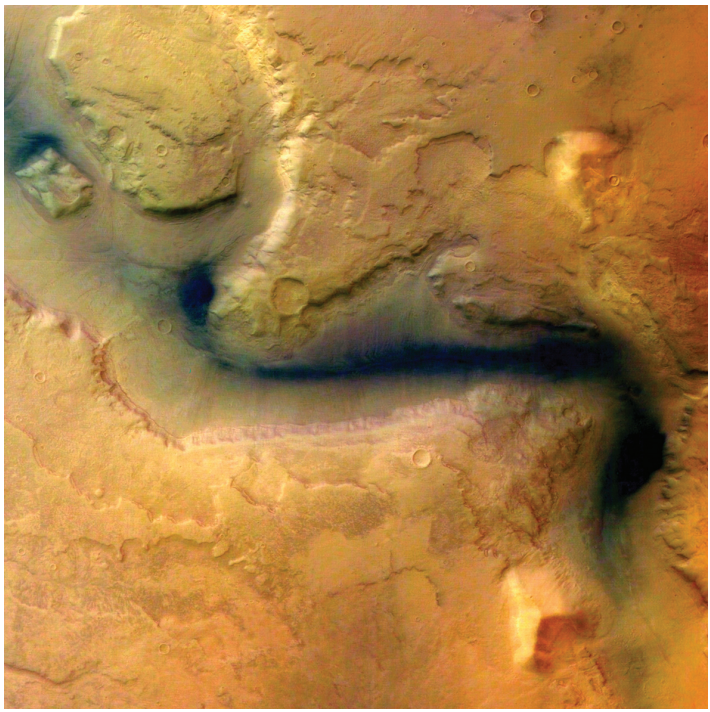

PLATE 17 Reuill Vallis imaged from ESA's Mars Express showing clear evidence of water-sculpted channels, gullies and canyons. (Courtesy ESA.)

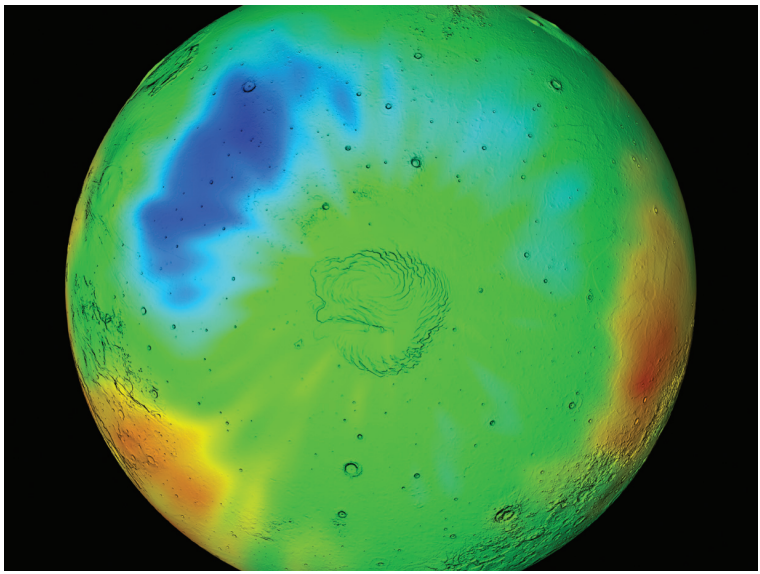

PLATE 18 The northern hemisphere of Mars in winter as viewed by the Odyssey spacecraft neutron detectors. The blue regions indicate water ice. In the summer the CO_2 ice melts to reveal the water ice beneath (see below, and also Figure 11.5). (Courtesy NASA.)

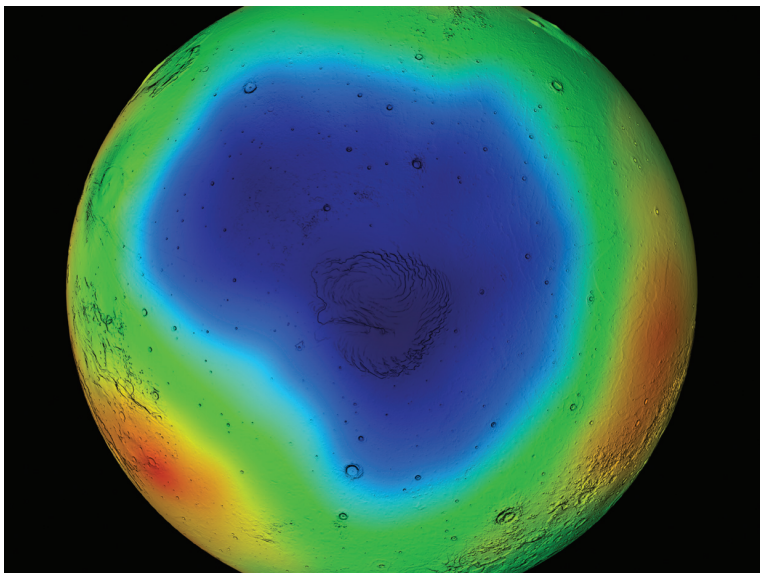

PLATE 19 The northern hemisphere of Mars in summer (also see above). (Courtesy NASA.)

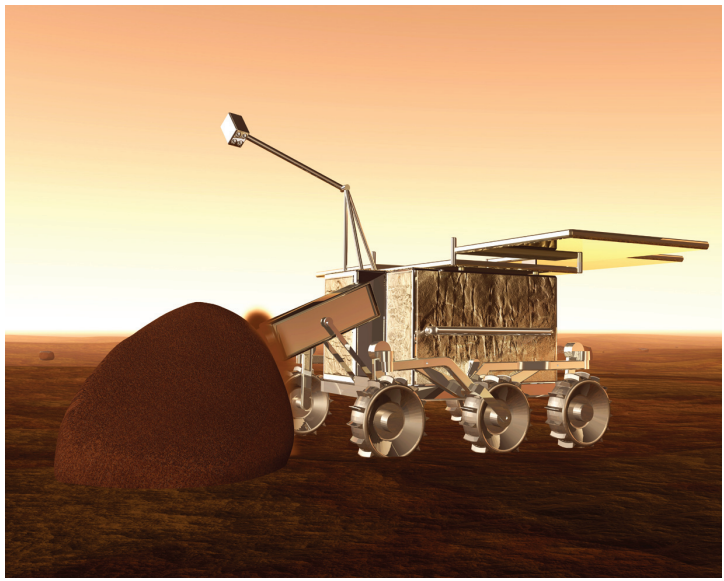

PLATE 20 Artist's impression of EXOMARS, an ESA misson in 2009/11 to search directly for the signatures of life below the Martian surface. (Courtesy ESA.)

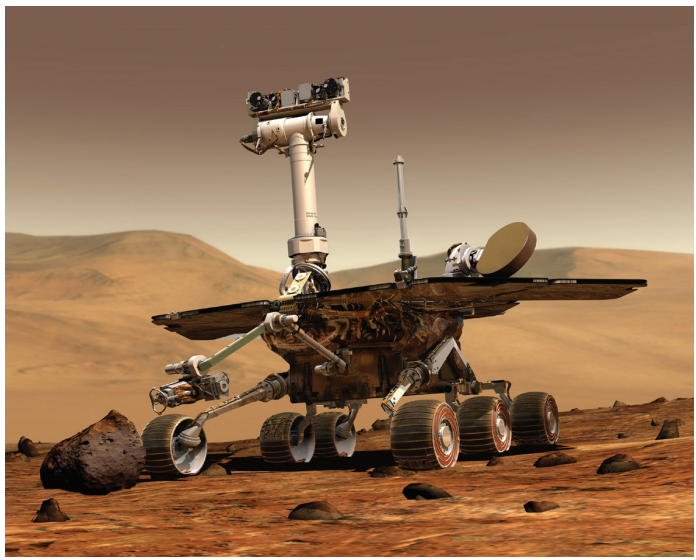

PLATE 21 The Spirit/Opportunity rovers. The large vertical mast carries stereoscopic cameras for panoramic imaging and navigation. The forward arm carries instruments for soil analysis such as alpha particle X-ray and Mössbauer spectroscopy and microscopic imaging, to determine the detailed composition of the Martian soil. (Courtesy NASA.)

PLATE 22 Humans and robots on the Martian surface in the search for life. (Courtesy NASA.)

PLATE 23 The Huygens probe, parachute deployed, descends to Titan's surface. (Courtesy ESA.)

PLATE 24 The Rosetta lander analysing the surface of the comet 67P/Churyumov-Gerasimenko in 2014. (Courtesy ESA.)

PLATE 25 Base on Callisto. (Courtesy NASA.)