



Table 5-10 Mars: atmospheric composition

component		percentage volume
carbon dioxide	CO ₂	about 96
nitrogen	N ₂	2.5
argon	Ar	1.5
oxygen	O ₂	0.1
krypton	Kr	trace
xenon	Xe	trace
helium (probable)	He	trace
neon (probable)	Ne	trace
water	H ₂ O	—

Chemical species probably formed within the atmosphere include: carbon monoxide (CO), atomic oxygen (O), atomic hydrogen (H), molecular hydrogen (H₂), the hydroxyl radical (OH), and hydrogen peroxide (H₂O₂).

The search for life

At one time there was fairly widespread belief in the existence of higher life forms on Mars, due to the supposition that the planet possessed an artificial canal system. However it is now known that these canals were an optical illusion, and the environment seems obviously unsuitable for any complex plant or animal species. One of the major tasks for the Viking Landers was to search for possible signs of life which might have formed in earlier times when the atmosphere was denser and warmer, and liquid water could have existed on the surface. Micro-organisms are known to survive in very harsh environments on Earth and also under simulated Martian conditions, so they could have persisted until the present time. Apart from the cameras which could obviously have

Above left: Layered terrain and etched terrain near the south pole of Mars. The laminations are probably caused by alternating layers of ice and dust deposits.

Top right: Photomosaic of Phobos, taken by Viking Orbiter 1 when about 300 km from the satellite. The striking linear grooves are about 500 m wide. The crater Stickney is indistinctly seen on the limb at top left.

