

**RESEARCH NOTE****● Life on Mars?**

In late 1996 the headlines read, "Evidence of Life on Mars." What kind of life? Aliens similar to those that we see in sci-fi movies? Some creature completely unlike any we've seen before? Not quite, but the story behind the headlines is no less fascinating!

**An Unusual Spaceship**

In 1996, a group of researchers led by NASA scientists studied a 3.8-billion-year-old meteorite named ALH84001. These scientists agree that the potato-sized ALH84001 is a piece of the planet Mars. They also agree that it fell to Earth about 13,000 years ago. It was discovered in Antarctica in 1984. And according to the NASA team, ALH84001 brought with it evidence that life once existed on Mars.

**Life-Form Leftovers**

On the surface of ALH84001, scientists found certain kinds of *organic molecules* (molecules containing carbon). These molecules are similar to those left behind when living things break down substances for food. And when these scientists examined the interior of the meteorite, they found the same organic molecules throughout. Because these molecules were spread throughout the meteorite, scientists concluded the molecules were not contamination from Earth. The NASA team believes these organic leftovers are strong evidence that tiny organisms similar to bacteria lived, ate, and died on Mars millions of years ago.

**Dirty Water or Star Dust**

Many scientists disagree that ALH84001 contains evidence of Martian life. Some of them argue that the organic compounds are contaminants from Antarctic meltwater that seeped into the meteorite.

Others argue that the molecules were created by processes involving very high temperatures. These scientists think the compounds were formed during star formation and ended up on Mars when it became a planet. Other supporters of this theory believe that the compounds were created during the formation of rocks on Mars. In either case, they argue that no life-forms could exist at such high temperatures and that these compounds could not be the result of living things.

## RESEARCH NOTE

### ● Life on Mars? *continued*

#### The Debate Continues

Scientists continue to debate the evidence of ALH84001. They are looking for evidence specific to biological life, such as proteins, nucleic acids, and cellular walls. Other scientists are looking to Mars itself for more evidence. Some hope to find underground water that might have supported life. Others hope to gather soil and rock samples that might hold evidence that Mars was once a living planet. Until scientists have more evidence, the debate will continue.

#### Think About It

If you went to Mars, what kinds of evidence would you look for to prove that life once existed there? How could the discovery of nucleic or amino acids prove life existed on Mars?