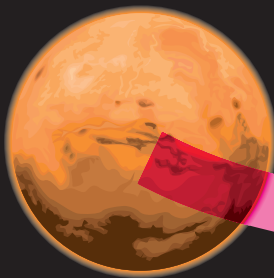


Relic from the Red Planet

A 4.5 billion-year-old rock, found in Antarctica in 1984, offers strong evidence that microbe life once existed on Mars. The potato-sized meteorite – known as ALH84001 – is one of more than 17,000 recovered from the continent's ancient ice fields over the last 28 years



Mars, 4.5 billion years ago: ALH84001 is crystallised from molten rock as planet forms

1.8 to 3.6 billion years ago: Water seeps into fractures in rock, leaving deposits of carbonate minerals

16 million years ago:

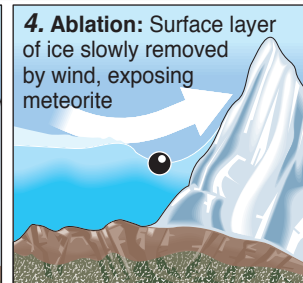
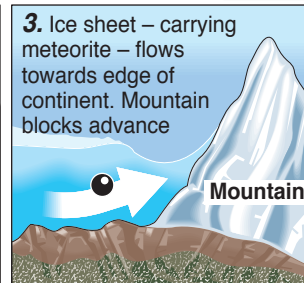
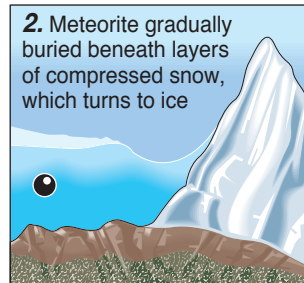
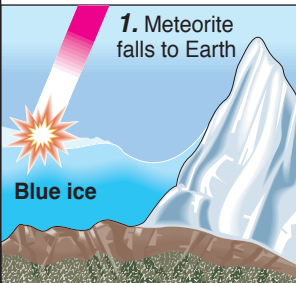
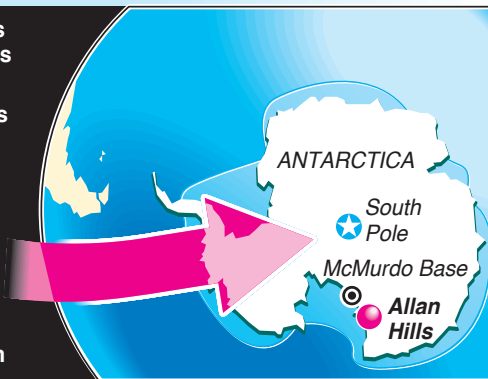
ALH84001 is ejected into space by impact of comet

13,000 years ago:

ALH84001 lands in Antarctica

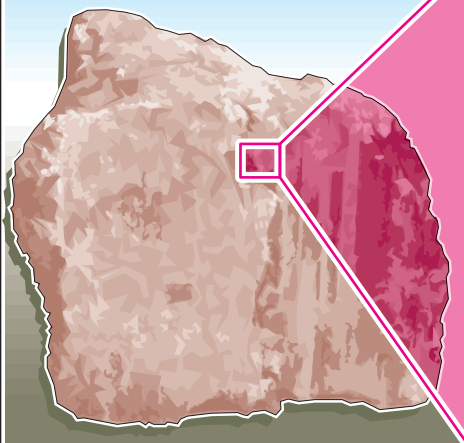
Dec 1984: ALH84001 discovered at Allan Hills by U.S. expedition

Oct 1993: Identified as a Martian rock from its chemical composition



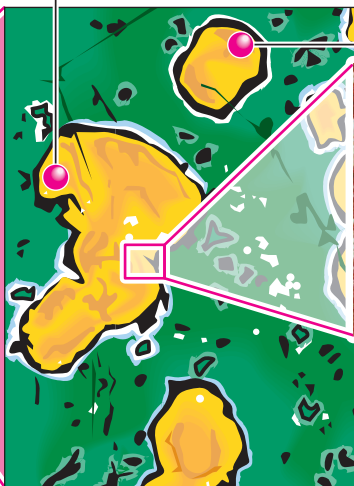
Three clues to possible life:

The rock is cut open revealing an area rich in globules of carbonate minerals. A 2mm-long chip taken from inside the meteorite – where terrestrial contamination is very unlikely to have occurred – presents evidence which may be indicative of life



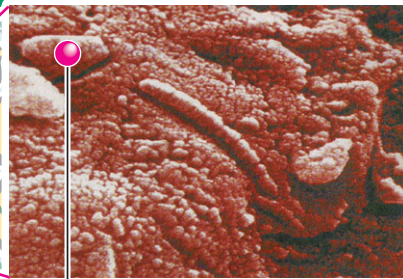
Carbonate globules:

Globules contain tiny mineral grains – *magnetites* – which resemble those formed by bacteria on Earth



Organic molecules:

PAHs – *polycyclic aromatic hydrocarbons* – found in carbonate-rich areas of rock, including the globules. PAHs are created on Earth when organisms die and decay



'Fossil' structures:

Globules contain ovoid and tube-shaped bodies which bear a striking resemblance to bacteria fossils found on Earth