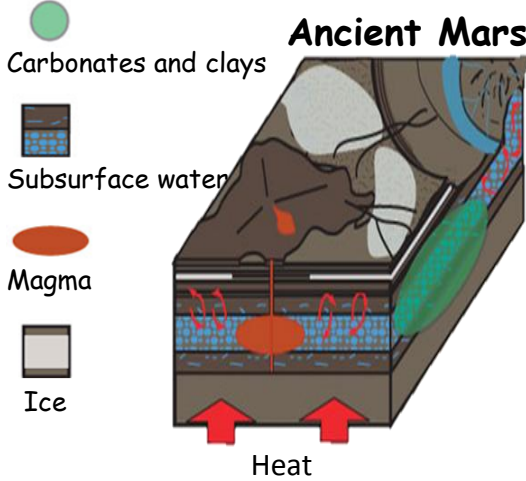


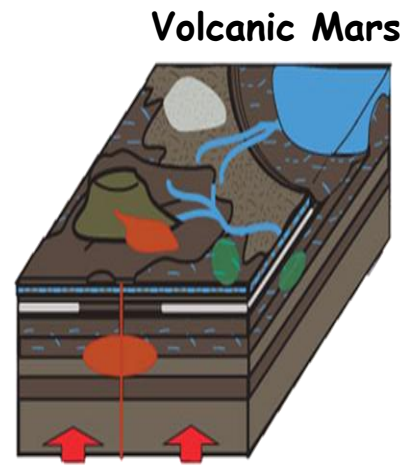
MINERALS ON MARS



Olivine has been found on Mars and in martian meteorites. It is one of Earth's most common minerals (by volume) and forms from a cooling magma (igneous rock).



Serpentine is a low-temperature metamorphic form of olivine. It has recently been observed on the martian surface by orbital instruments and is interesting as it typically requires water to form (metamorphic rock).



Calcite is a carbonate mineral. In 2009 it was detected on the surface of Mars by NASA's Phoenix Lander. Although this mineral can form inorganically, it can also form as an organic sedimentary rock (such as the Coquina limestone and chalk). The coquina limestone forms from the shells of dead marine organisms.



Gypsum is a sulphate mineral. It has been found on the surface of Mars and in martian meteorites. Gypsum forms in acidic conditions and is typically associated with volcanism, forming in hot springs from volcanic vapours. However, it can also form in the desert where water is evaporating (sedimentary rock).



Hematite is an iron oxide (similar to rust) and it occurs all over Mars. On Earth, this mineral can form both in, or without, water. It is typically associated with regions of volcanic activity. It is not known whether water was present during the formation of the *martian* hematite. However, what is known is that the fine grained hematite dust is what makes the planet appear red (sedimentary rock).

