



## Arizona Rocks 1

Text and photos by Ray Grant

One of the most common rocks found in Arizona is basalt. It is a fine-grained (aphanitic) dark gray to black rock made up of two major minerals, pyroxene and plagioclase and contains minor amounts of the mineral olivine. The crystals of the minerals are usually too small to be seen.

Between 20 and 25 percent of the state is covered with basalt. There are basalts from the southeast corner to the northern part of the state with the largest concentrations along the Mogollon Rim and in the White Mountains and San Francisco Peaks. In the Phoenix area, basalt is found in the North Mountain Preserve, Moon Hill, and north of there.

These basalt volcanic eruptions in Arizona occurred between 15 million years ago and the present. The most recent eruption of basalt in Arizona was at Sunset Crater a little less than 1000 years ago, and this means that there is a good chance of future volcanic activity in Arizona.

The world's ocean floors are all made of basalt making it the most common rock on the earth's surface, but most of it is under water. The basalt magma that forms the ocean floor comes from partial melting of the mantle and the basalt in Arizona comes from the same source.

The magma that basalt crystallizes from is relatively fluid and therefore the volcanic eruptions associated with basalt are not very violent, similar to what we see in Hawaii today. Many of the volcanic features, lava tubes, pahoehoe and aa flows, fissure eruptions, cinders, and bombs, around Sunset Crater are exactly like those you find in Hawaii.

