Veberod Bulletin

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Space Rocks

Meteorites make jewelry that is out of this world!

Long before recorded history, a huge rock intersected earth's orbit aimed at what are now the central plains of North America. As it entered earth's atmosphere air friction began to heat it, leaving a glowing trail behind as it fell. Streaking through the sky, the meteoroid quickly exploded, breaking into hundreds of fragments, some weighing over one thousand pounds. The fragments slammed into the ground over a large elliptical area in what is now Kansas. What made this particular fall of meteorites unusual were not their size, but the fact that they contained thousands of large yellowish-green olivine crystals within the melted and recrystallized nickel-iron matrix. When scientists began classifying meteorites, this stony-iron type became known as pallasites.

There are three main types of meteorite: stone, iron and stony-iron. Stone meteorites are similar to rocks on earth. Iron meteorites are composed mostly of iron and nickel, and stony-iron are a mix. Iron and stony-iron meteorites both products of melting. When iron meteorites cool, the iron and nickel form into two different metals, known as kamacite and taenite, with differing nickel content. These two metals crystallize in a characteristic manner known as the Widmanstatten pattern, which can be revealed on a polished surface by etching with a mix of nitric acid and alcohol.

There are two recognized types of stony-iron meteorites. The first, mesosiderites, is a mix of igneous rock and iron resulting in a meteorite that appears similar to earth rocks. The second type is the one we are interested in - pallasites. No one knows for sure how pallasites are formed. The prevailing theory is that they come from the boundary of an asteroid's molten core and it's mantle. However they are formed, the mix of metal and translucent yellowish-green crystals creates a beautiful stained glass effect when sliced and polished!

In addition to meteorites, there are specimens of natural glass known as tektites, which are believed to be the result of meteorites striking the earth. The most beautiful of these are the dark green moldavites from the Czech Republic and the creamy colored Libyan Desert glass.

Moldavites were first became known to scientists in 1786 and the term tektite was first used around 1900, but it wasn't until around 1960 and the advent of space probes that much progress was made in the scientific study of them. While we still don't know for sure how tektites are formed, the prevailing scientific theory is that when a large meteorite strikes earth the incredible heat melts part of the impact area and the impact scatters the resulting molten glass. Libyan Desert glass is even more of a mystery. It is similar to other tektites, but there are some differences. While other tektites exhibit distinctive forms such as dumbbells, rods and teardrops, Libyan Desert glass tens to be irregular or tabular. Libyan Desert glass also has higher silica content. Analyzing elements in the glass indicate that it is made from the Nubian sandstone where it is found. Scientists just aren't sure what cataclysmic event momentarily melted the surface rock to create the glass.

Seymchan Pallasite, Diamond and Demantoid Garnet in 18KT Green Gold (inset detail shows pendant lit from behind) $2800

Pictured top to bottom:

Gibeon Meteorite and Ruby in 18KT $1875

Semychan Pallasite and Red Diamond with 22KT Accents $1990

Libyan Desert Glass. Peridot and Chrysoberyl with Sterling Silver $1575

Gibeon Meteorite in 14KT Yellow Gold $1190