Jacob Albee Designs

Iron-Nickel Meteorite: A brief explanation and history

5% of the meteorites that have been found on Earth are iron-nickel meteorites, which contain an alloy of iron and nickel along with other trace minerals. The source of all of these meteorites (and most stony meteorites,) is the Asteroid Belt between Mars and Jupiter. This material never formed into a planet, and the pieces that were bumped out of the Asteroid Belt became meteorites, which date to 4.55 billion years old. The largest known iron-nickel meteorite is the Hoba Meteorite, found in northeast Namibia, weighing in around 60 tons. Namibia (in Great Namaqualand) was also the landing place for the Gibeon meteorite, which is recorded as the world's most abundant find of pieces of iron meteorites with an excellent iron/nickel pattern. This pattern, which is found consistently throughout iron-nickel meteorites but varies in look, is called the Widmanstatten structure, named for the Austrian naturalist and count Alois von Beckh Widmanstatten who is credited with discovering this fabulous natural design. This pattern is formed when the molten iron & nickel meteorite cools, separating into mineral crystals such as high-nickel taenite and low-nickel kamacite. A grid-like pattern of 2 minerals becomes visible in perfect alignment.

Many cultures used iron-nickel meteorite to make tools, long before humans created hard metals such as steel. The Northwest Greenland Inuits used meteoric iron from the Kap York nickel-iron meteorites, which landed in the Saviksoah Peninsulah in Greenland. They made knives and harpoons out of this celestial iron. Explorer Robert Peary was the first outsider to see these meteorites used by the Inuits, who gave the Inuit people a gun in exchange for information about where to find the meteorite. Within the following 3 years, Peary had the largest pieces of this meteorite shipped to the U.S., where they ended up in the American Museum of Natural History.

Norse legend speaks of Thor's hammer, named Mjollnir, which is said to have been forged from meteoric iron that descended from the sky.

The ancient Egyptian word for Iron was *biat*, or *bia n pet*, which translates to *ore of the heavens.* The oldest decorative and ceremonial artifacts found have the characteristics of iron-nickel meteorites.

We've found the use of Gibeon Meteorite to be ideal for incorporating with gold and gemstones in our jewelry. Jacob etches the piece after he does any forging, and before he sets any stones, to bring out the octahedral crystal pattern. In pieces such as rings, this pattern will slowly burnish away, showing far less of the pattern. In pieces that meet the world more gently (earrings, bracelets, pendants, cuff links) the pattern will remain visible.

Oxidation can occur on the surface of your meteorite jewelry, and can usually be rubbed off with your fingers. The best thing you can do to keep your meteorite in good shape is to wear it often. Our natural body oils maintain a good conditioning atmosphere. Do not sleep in your meteorite jewelry (unless it is a ring with a gold sleeve, which we've had no problems with due to the oily nature of our hands) and try to keep it out of salt water; if your piece gets salty, rinse it off with tap water, dry it well, and rub the surface on the oily palm of your hand.

Enjoy!

Sources:
Jewelry Artist. March 2009. *Iron Nickel Meteorite: Scrap from Space.* By Claus Hedegaard.

Wikipedia.org/wiki/Mjollnir

Mnsn.edu/emuseum/prehistory/Egypt/dailylife/mining.htm