DID YOU FIND A METEORITE?

Ken Dewerson, Kelowna Metal Detectors.

There are basically 4 major types of meteorites, Iron Meteorites, Stoney Meteorites. Pallasites, and Tecktites.

Iron Meteorites are composed of nearly 100% metals, usually a Nickel Iron alloy, and are generally three times the weight of a similar size earth rock. These are the most common because they tend to survive the trip through our atmosphere, and once here are best able to survive the effect of weathering. These are also the easiest to recognize, and always have a crusty brown coating. As they plunge through the atmosphere the two elements tend to separate. If the Meteorite is sliced and etched they display a crystalline pattern called Widmanstatten patterns.

Stoney Meteorites are around 80% silicate minerals, and 10% Nickel Iron, and are just slightly heavier than earth rocks the same size. These are the hardest to recognize, they are non magnetic and at best have a slightly darkened exterior. These Meteorites often display flow line depressions and smooth pits also called thumbprints.

P**allasites** are a mixture of Stoney and Iron Meteorites and often have Olivine blobs inside. These are easy to recognize, but are the rarest of all the Meteorites.

Tecktites are glassy in appearance with 2 theories on their origin. One theory is that a meteorite striking the earth melted silica and sent it up into space where it fell back to earth. The second theory is that a meteorite stuck the moon and the glassy Tecktites fell to earth. The earth accumulates tons of space debris every day, chances are you have microscopic moon dust in your house gutter.

The American Meteorite Society advise that the best method to test for a meteorite is to grind off a corner. The Iron Meteorites will look like freshly cut iron, and a strong magnet will attract to it. Stoney meteorites usually show silvery flecks scattered in a stoney mass, and will be attracted by a strong magnet only slightly, if at all. There are many earth rocks that are magnetic and have the appearance of Meteorites. What you may have could be billions of years old, comes from outer space, and in the case of Tecktites are pieces of our nearest neighbour, the Moon.

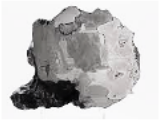
Some of our members have a Meteorite collection with all the types of Meteorites.

Below is a chart to give you an indication that you may have a Meteorite.

Start
Is it magnetic*?
Yes (#2) No (#4)

#2
Is it heavier than other rocks?
Yes (#3) No (#5)

#3
Sand a side. Is the inside shiny like steel?
Yes (#10) No (#11)



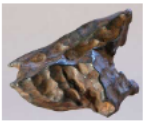
#4
Is it heavier than other rocks?
Yes (#11) No (#7)

#5
Does it have a dark, thin crust on the outside?
Yes (#6) No (#11)

#6
Does inside have particles with silver luster* or red spots?
Yes (#8) No (#11)

#7
Does it have a dark, thin crust on the outside?
Yes (#9) No (#11)

#8
Does it have Regmaglypts*?
Yes (#12) No (#11)



#9
Is the inside lighter coloured than the outside?
Yes (#12) No (#11)

#10
Does it have holes or bubbles inside?
Yes (#11) No (#8)

#11
Sorry, it is not a Meteorite

#12
Please send a photo of your rock to
earthmuseum@uwaterloo.ca