

GUIDE TO THE HANDLING ROCKS

This is a brief guide with some additional information about the meteorites and associated rocks for handling and investigation in the loan boxes. Please note that the images may vary from your own samples depending on the box that you have.

LARGE CAMPO DE CIELO IRON METEORITE

This is part of a group of iron meteorites that have been found about 1000 km Northwest of Buenos Aires in Argentina. Records exist as far back as 1576 for this meteorite, when one of the governors of a province in Argentina sent his men on a search for a huge mass of iron. The natives had been using this iron for their weapons, and claimed that it had fallen from the sky, which is where the name comes from (translated from "Field of Heaven").



UDEI STATION IRON METEORITE

This is an iron meteorite with silicate inclusions (crystals found inside the meteorite). These are the darker, rougher sections that you can see. It was witnessed falling to the Earth in 1927. This meteorite has been sliced open to allow you to see the inclusions inside.



MOLDAVITE IMPACTITE

This is a type of glass that is believed to have been formed 14.7 million years ago during the impact of a large meteorite in what is now Germany. When the meteorite hit, some of the energy of the impact caused the ground to melt into glass, and liquid glass droplets were thrown up into the atmosphere. These cooled as they fell to Earth, resulting in the objects we see today.



LIBYAN GLASS IMPACTITE

Also known as Libyan desert glass, this material is found in the Eastern Sahara Desert. It can be found embedded in the bedrock, and is thought to have been created when a very large meteorite underwent an airburst explosion (where the meteorite blows itself up in the atmosphere before hitting the Earth) that had enough energy to melt and fuse the surface desert sand into glass.



SAHARA CHONDRITE METEORITE

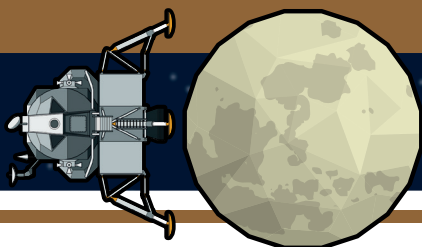
This meteorite was discovered in the Sahara desert and is part of a huge strewn field (the area over which fragments of a larger meteorite have fallen). On the samples in the loan boxes you can see evidence of a fusion crust, and in some, where the surface is chipped, you can make out some of the small chondrules within. It is weakly magnetic and may show a few rust spots on the outside, indicating the iron content within.



TEKTITE IMPACTITE

Originally thought to be a new class of meteorite, tektites are actually material that has been melted when a meteorite impacts the ground. This material was ejected upon impact, and cooled as it fell back to Earth, often resulting in a droplet shape. They typically show bubbles of gas trapped within and have a surface that is similar in appearance to a fusion crust.





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ANORTHOSITE

Anorthosite is an intrusive igneous rock composed mainly of silicates called feldspar. The Earth rock included is an analogue for the anorthosite that has been discovered on the Moon. Differences in the amount of volatile materials in Earth anorthosite and Moon anorthosite allow us to differentiate which is which. You will see that it is similar to the anorthosite that is contained within the Apollo Lunar Disks.



BASALT

Basalt is an extrusive igneous rock formed by the rapid cooling of lava. This Earth rock has been included because it is an analogue for the basalt that has been discovered on the Moon. That the Moon is mainly made of anorthosite and basalt suggests that not only was it once volcanic (the Moon's Mares, or 'seas' contain fewer craters since they were filled with volcanic lava), but also that the Moon was originally part of our planet.



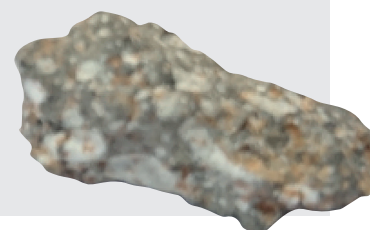
CUT AND POLISHED SAHARA

This meteorite is the same as the Sahara chondrite whole stone, except it has been cut open and polished to expose the chondrules inside and to allow you to more accurately see the fusion crust.



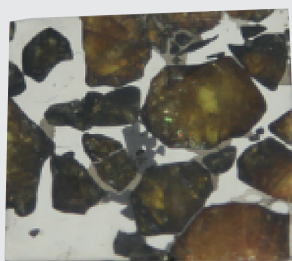
LUNAR METEORITE (MEMBRANE BOX)

This is a piece of Moon rock that was ejected from the surface after a huge impact. It is classed as a melt breccia. It is formed from the fragments of Lunar rocks that have been shocked and broken up during an impact. You can see the similarities between this and the breccia in the Apollo Lunar Disk. You can still see the orange soil from the desert clinging its surface.



IMILAC PALLASITE (MEMBRANE BOX)

This stony-iron meteorite was found in the Atacama Desert of Northern Chile in 1822. You can clearly see the beautiful green-yellow olivine (magnesium iron silicate) crystals encase within the iron. These are extremely sought after for the purposes of jewellery making.



SHERGOTTITE MARTIAN METEORITE (MEMBRANE BOX)

This small section of a Martian meteorite would have been part of a larger section, ejected from the surface of Mars following a huge impact. They are an igneous rock, suggesting that Mars was once geologically active.



ETCHED IRON METEORITE SLICE (MEMBRANE BOX)

This is a small section of an iron meteorite that has been etched with nitric acid to allow the Widmanstätten patterns to show up (showing the crystal structure of the iron). The larger the crystals, the slower the iron meteorite cooled.



CARBONACEOUS CHONDRITE SLICE (MEMBRANE BOX)

This is a cut and polished section of a carbonaceous chondrite. This is one of the oldest, and most primitive of all meteorites. You can clearly see the well-defined, colourful chondrules in these samples.

