

Mineral Spotlight: Olivine

This week's Mineral of the Week may be simpler to find in or out of the earth, rather than on it! Olivine is a magnesium-iron silicate mineral. Because of its heavy metal content, it makes up much of the mantle (over half by volume, it is estimated). However, at the surface, olivine weathers fairly quickly.

Olivine crystals are also found in outer space – a type of meteorite known as a Pallasite is known for its large olivine crystals surrounded by a metallic iron matrix. We have an example of a Pallasite in the Museum, which hosts a few especially large olivine crystals. When light is shone through it, it almost looks like stained glass! Just like olivine dominates the mantle on earth and heavy metals like iron and nickel dominate the core, scientists think Pallasites represent the bits of mantle and core of planets or asteroids disrupted by planetary collision or massive meteor strikes long ago, ejecting material from deep within the body.

Here on earth's surface, though, olivine is most commonly found in mafic volcanic environments, like Hawaii. In fact, Hawaii is home to a rare green beach where the sand is made of weathered olivine from the surrounding geology.

This feature was posted on Dice Museum social media by Museum curator Jillian Herlinger on 7/19/2022.

