OSU Department of Astronomy
Meteorite Samples

Pallasite

93.4 gram slice from the pallasite portion of the same Semichan meteorite our iron slice is from. A pallasite is a type of stony-iron meteorite that has large crystals of olivine embedded in an iron-nickel matrix. There are two ideas for the origin of pallasites: they are the result of impact mixing of core and mantle material, or they are from the core-mantle boundary of shattered differentiated asteroids.

Contrary to popular misconception, pallasites do not originate from the asteroid 2 Pallas, but instead are named for German naturalist Peter Pallas (1741-1811) who identified the first specimens.

Carbonaceous Chondrite

33.2 gram slice of type 3 carbonaceous chondrite meteor Northwest Africa 6619 found in the Sahara in 2011. It is a CV3 meteorite, meaning it is a carbonaceous chondrite with a roughly solar Mg/Si ratio and oxygen isotope ratios smaller than the terrestrial value, distinguished 45% of its volume filled with large (mm-scale) chondrules (spherical mineral grains formed from molten droplets before accretion onto their parent body). Chondrites are among the oldest solid materials in the solar system.
Sample Descriptions

**Canyon Diablo Iron**

17.6 kilogram iron meteorite from Canyon Diablo, Arizona. This is a fragment of the meteor that created the famous “Meteor Crater” in northern Arizona about 50,000 years ago. This meteorite was purchased by Arne Slettebak, first chair of the OSU Astronomy Department, and for whom our planetarium on campus is named.

**Iron Meteorite**

136.8 gram slice of a portion of the Seymchan pallasite meteorite found in the Magadan district of Russia in June 1967. This is from an olivine-free portion of the meteorite, and shows a beautiful Widmanstätten pattern, long crystals of nickel-iron that indicate its extraterrestrial origin. The Seymchan meteor is also known for its high iridium content.