

## 9.10: Meteorites

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Meteorites are representatives of the early solar system. There are three types of meteorites. **Stones or Stony meteorites.** These are composed of silicates and other materials. Most stony meteorites contain metal in the form of iron and nickel. And stone meteorites are by far the most common type; some 94% of recovered meteorites are stony. Stone meteorites also include very rare types of meteorites, including lunar, Martian, and possibly even comets.

**Iron meteorites, or Irons.** These are composed of iron (Fe) and nickel (Ni), with some cobalt (Co) and other trace elements and minerals. Iron is the predominant metal, and the type of Iron meteorite depends on the ratio of iron to nickel. No Earth rock has iron and nickel in combination. Thus a 'rock' recovered with iron and nickel together is a meteorite. Irons are very dense meteorites, in comparison to stony meteorites.

**Stony Irons.** As the name indicates, they are a combination of iron and stony meteorite properties and the rarest type or class of meteorite. The **Pallasites**, a class within the Stony Irons, are simply spectacular. When sliced and polished, you can see a metal matrix of iron-nickel that surrounds crystals of olivine – peridot in gem terms.

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