

## RAINBOW GARNET: ALL COLORS ON BLACK...

**G**arnet group minerals are never short of marvels. There are more than twenty-four related species of garnets, ten of which are also known as gemstones. Structurally similar, gem garnets differ from one another by interchanging chemical compositions through solid solutions. This complicated and fascinating group of minerals are fairly common. So much so, that some of them have been used as an abrasive for millennia. Large, transparent and colorful ones, such as almandine, pyrope and spessartine have also been fashioned as beads and cabochons probably as long. The more species from modern sources were discovered, the more available garnets became almost in every color and level of transparency, therefore an increasingly popular gemstone. While many people were fascinated by the high dispersion and vivid green of demantoid garnet, its black counterpart melanite has been overlooked. Melanite is known to be used in jewelry due to its high luster, yet not even mentioned. However, a new discovery has excited collectors about melanite as it displayed a phenomenon known as iridescence. They were first reported from Nevada, USA in the 1940s. Later, other findings emerged from Sonora, Mexico in 1970s and New Mexico, USA and Nara, Japan later in 2000s.

Interestingly, the samples from Mexico and Japan may display differences for the observant collector. The Japanese rainbow garnet has distinct dark greenish body color and the interference is caused by thin film interference. The lamellar structure of this material may also cause cat's eye effect in even rarer cases.

Phenomenal garnets are rare. The most common ones are cat's eye and star garnets which are dark



*Rainbow garnet, 6.12ct from Mexico.  
Courtesy of Pala International. Photo by Mia Dixon.*

brownish red and not generally transparent. The chatoyancy and asterism in these examples are caused by rutile needles in pyrope-almandine species. Found in much smaller amounts, color-change garnets are seldom large and exciting collectables for the connoisseur. Rainbow garnets are an unusual edition to phenomenal garnets. This particular opaque, brown-black variety has iridescence caused by interference colors of growth layers and considered to be the rarest of all. It truly is a collector's gem due to its rarity and structure. It's almost opaque body color doesn't leave much room for cutting; also polishing might damage the delicate iridescence effect. Most samples are left as found or fashioned as cabochons. The sizes are rarely over 3 ct, majority of the crystals are under one carat. Due to its rarity and collectable character, these gems will only be sold via specialized dealers and priced individually.

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