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GEMSTONE PHENOMENA

Phenomena is described by unusual visual effects shown by some gemstones. Some examples that have phenomena are: star sapphire, moonstone, and opal.

The type of phenomenal effects seen in gemstones fall under one of the three types: mirror image of light from inclusions, selective absorption of light, and intrusion of light.

Chatoyancy

What is chatoyancy? It is caused in gemstones by reflected light that is in a line that looks like the contracted pupil of a cat's eye. What causes this is the large number of tiny, parallel needle-like inclusions and usually included fibrous crystals. Some examples of gemstones: chrysoberyl, quartz, and beryl.

Asterism

The word comes from the Greek word "aster" which means *star*. Stars are usually four, six, and sometimes twelve rayed. Asterism are caused by reflection of light from tiny, oriented needle-like crystals. The stone is cut in a cabochon (it is domed and not faceted) and light is reflected and seen as bright intersecting lines. The tiny needle-like inclusions that are crucial to fine stars and are called *silk*.

The silk is oriented in three directions and intersecting at 60 degrees, through reflection, they produce three chatoyant bands at right angles to the inclusions and forming a six-rayed star. An example is a cat's eye chrysoberyl.

Aventurescence

The name is applied to a show of bright sparkly reflections. This is caused by light gleaming off very small platelets that are in the gemstone. Light reflected off of hematite specs in sunstone and aventurescence quartz off of inclusions of fuchsite. An example is aventurine.

Change of color

The basic cause of the color of gemstones is the selective absorption. It has been known that some infrequent gemstones are sensitive to very minor differences between incandescent and day light. What this will result in a difference in the color of the gemstone, depending on the type of light the gemstone was revealed to. The most common gem of this sort is alexandrite. For example: alexandrite sends out green and red wavelengths while it will attract other wavelengths. This will result in the gemstone looking greenish in daylight and reddish in incandescent light.



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Play of color

What is play of color? It is a multi-patchwork of colors found in opals. Red flashes are the most sought-after, followed by green and then blue. How this works is by spheres of non arrangement silica and the empty space between them. The obstruction and diffraction of light as it passes through the stone that produces the variety of colors.

Labradorescence

Labradorescence is found in labradorite which is a dreary gray stone. If it is polished, large areas of vibrant colors often will be seen that can change slowly as the gemstone is moved. What causes this is by the obstruction of light from very thin parallel planes that will pass through the gemstone.

Iridescence

This is a display of rainbow colors formed by light interference from very narrow fissures that will encapsulate lean films of air or a liquid. You can find this phenomenon in a gemstone that has a crack that has begun to develop and the best way to describe what it looks like is like oil on water.

Adularescence

This effect is found in moonstone because it gives off a blue to white sheen in particular directions. The stone is usually cut in a cabochon shape which can make the stone look like a floating, billowy, bluish white light. It is seen as the stone is turned and is usually caused by mostly diffused reflections of light.