IN ORDER BY COUNTRY

Ethiopia	**Opal - Fire**	**Much of this opal is produced from a single area of stratified volcanic rocks. The main vein is an opalized rhyolitic ignimbrite up to one meter thick that overlies a base of clay. The opal likely formed as silica-bearing waters accumulated on top of the impermeable clay. Silica gel precipitated in the pore spaces of the ignimbrite and was later transformed into opal. The seam outcrops along steep valley walls, where short horizontal tunnels are excavated to mine the opal.**	**red, orange**	**1,2**
Madagascar	**Amethyst chevron**	**Chevron, with its agatized banding, is found anywhere crystals of amethyst are found. Amethyst owes its color to high energy radiation, e.g. gamma rays from radioactive sources and the presence of iron built into its crystal lattice. The name refers to its alleged ability to protect its owner from the negative effects of alcohol consumption, namely "methy", the Greek expression for being drunk, and "a-methy-stos" would translate to "one that does not get drunk"[1]. This association probably came up because of the color of red wine is sometimes similar to that of amethyst.**	**purple**	**all,6**
Madagascar	**Calcite - cave**	**The name calcite comes from the Greek word 'chalix', which means lime. An abundant material found throughout the world, calcite can manifest in almost every color imaginable, and is the primary mineral component found in cave formations. Stalactites and stalagmites, cave veils, and cave pearls are all formed primarily of calcite.**	**white**	**all**
Madagascar	**Celestite**	**Celestite is composed of strontium sulphate. Celestine occurs as crystals, and also in compact massive and fibrous forms. It is mostly found in sedimentary rocks, often associated with the minerals gypsum, anhydrite, and halite. The mineral is found worldwide, usually in small quantities.**	**blue**	**5**
Madagascar	**Crystal Quartz**	**Large sized clear single crystals from 4 oz to 4.5 pounds began being used in the 40's for making oscillator plates for radio frequency control. That emphasized the imporatnce of this mineral. 50% of the crystal must be free of defect to be used in this way, as an amplifier. Usable quartz occurs in well-formed crystals, lining vugs in the veins of milky quartz in Madagascar.**	**clear**	**all**
Madagascar	**Jasper Polychrome**	**Polychrome jasper is a type of opaque, multi-colored chalcedony which develops in massive formations. It is believed to be one of the rarest jaspers in the world.**	**many**	**1**

IN ORDER BY COUNTRY

Madagascar	**Labradorite**	**Labradorite is a variety of Feldspar, originally named after being discovered in Labrador, Newfoundland (Canada) .The several areas of Madagascar where Labradorite is mined provide perhaps the largest concentration of this gem mineral found on the planet.**	**many**	**5 to 8**
Madagascar	**Lepidolite**	**Lepidolite is a lilac-gray or rose-colored member of the mica group of minerals. It is one of the major sources of the rare alkali metals rubidium and caesium.**	**lilac**	**4,5,6**
Madagascar	**Rose Quartz - Star**	**Known for its rose red hue, the color is usually considered as due to trace amounts of titanium, iron, or manganese, in the massive material. Rose quartz is a pink variety of quartz that occurs in large translucent masses. It is never transparent, and it does not form crystal faces or crystals. It is not a cryptocrystalline variety, however, as it is made up of many intergrown crystal subindividuals. shows asterism when illuminated by a point-like light source: light reflections appear as a six-rayed star. It can best be observed in a polished ball, and is invisible under diffuse light. Star rose quartz is only found at a few locations, the one in the image is from pegmatites in the Vorondolo Mountains, south-east of Antsirabé in Madagascar. The star is caused by light reflected from needle-like inclusions of the aforementioned mineral that is also the colorizing agent. These needles grew oriented along three axes that intersect at an angle of 60°. The star's position depends both on the location of the light source and the position of the observer and is different from the surface reflection because refraction acts on the light rays that enter and leave the sphere. Because of that the left and right eye see the star at different positions and the brain concludes from this stereo image that it must hover above the rose quartz ball - looking at it for some time can make you feel dizzy as something is apparently "wrong".**	**pink**	**4, 7**
Madagascar	**Tourmaline - black, Schorl**	**Usually as elongated prismatic crystals that are heavily striated. Also as short, stubby, prismatic crystals. Many Schorl crystals have a rounded, triangular cross-section, and a flattened pyramidal termination. Seldom in tabular crystals. Aggregates include columnar, radiating, stalactitic, dense groups of acicular needles, and compact masses. Crystals may be curved or warped, and in some cases may have their growth interrupted by host rock with the same crystal appearing in two parts of a matrix. Crystal size can range from very small to excessively large crystals several feet in length.**	**black w/ blue, yellow, purple**	**1**

IN ORDER BY COUNTRY

Morocco	**Azurite-Malachite**	**Azurite is an an intense deep blue color that often occurs with Malachite, Chrysocolla or Turquoise in areas with copper deposits.**	**blue**	**5**
Morocco	**Crystal Geodes**	**Geodes are geological rock formations which occur in sedimentary and certain volcanic rocks. They are rock cavities or vugs with internal Crystal formations or concentric banding. The exterior is generally Limestone while the interior contains Quartz Crystals and/or Chalcedony deposits.**	**clear**	**1, all**
Morocco	**Fossils - Ammonites**	**The name "Ammonite" originates from the Greek horned ram called Ammon. Ammonites are perhaps the most widely known fossils, bearing a typically banded spiral formation shell. These squid-like creatures lived in the sea between 65-415 million years ago. Morocco has vast deposits of Devonian Limestone which date back three hundred fifty million years. Ammonites found today in Morocco once flourished in a warm shallow sea which covered what is now the Sahara Desert. As the shells of the creatures accumulated on the sea floor, they were buried by sediments and, over the ages, transformed into stone by physical and chemical processes.**	**earth**	**1,2,6**
Morocco	**Fossils - An overview**	**“We did not evolve from a single ‘cradle of mankind’ somewhere in East Africa,” said Philipp Gunz, a paleoanthropologist at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, and a co-author of two new studies on the fossils, published in the journal Nature. “We evolved on the African continent.” Until now, the oldest known fossils of our species dated back just 195,000 years. The Moroccan fossils, by contrast, are roughly 300,000 years old. Remarkably, they indicate that early Homo sapiens had faces much like our own, although their brains differed in fundamental ways. A portion of the Sahara Desert, which was once an ocean, is located within Morocco and holds many remains of creatures that once inhabited the earth.**	**earth**	**1,2**
Morocco	**Fossils - Orthoceras**	**Orthoceras are dated to the lower Ordovician to Triassic ages (500 to 190 million years ago).**	**earth**	**1,2**
Morocco	**Fossils - Shark Tooth**	**The most ancient types of sharks date back to 450 million years ago, during the Late Ordovician period, and they are mostly known from their fossilised teeth. The most commonly found fossil shark's teeth are, however, from the Cenozoic (the last 66 million years).**	**earth**	**1,3**

IN ORDER BY COUNTRY

Morocco	**Fossils - Trilobite**	**The name, trilobite, comes from the three distinct portions of their segmented body. The hard exoskeleton allowed good preservation as a fossil and served as defensive armor, but had to be shed periodically as the animal grew. These many legged arthropods roamed the sandy bottoms of the seas and coral reefs in search of food. The trilobite is the earliest animal known to possess vision. The remarkable construction and preservation of trilobite eyes enable scientists to study the development of a sensory organ which is only rarely preserved in other organisms. As a group, trilobites survived for more than three hundred million years, from the Cambrian to the Permian period.**	**earth**	**1,2**
Morocco	**Selenite**	**Selenite is a crystallized form of gypsum. The name Selenite comes from the Greek word for moon and means "moon glow," and these Selenite pieces glow with a shimmery, pearl-like luster. They form as 'wands' or can be created into spheres.**	**white**	**7**
South Africa	**Amethyst cactus quartz**	**Spirit Quartz is an unusual member of the Quartz family - a community within a stone, and first appearing in 2001, during the International Peace Conference held in South Africa.**	**purple**	**6**
South Africa	**Rhodonite**	**Rhodonite is a manganese inosilicate, (Mn, Fe, Mg, Ca)SiO3 and member of the pyroxenoid group of minerals, crystallizing in the triclinic system. It commonly occurs as cleavable to compact masses with a rose-red color (the name comes from the Greek ῥόδος rhodos, rosy), often tending to brown because of surface oxidation.**	**pink**	**4**
Zaire	**Malachite**	**Polished, banded Malachite has been carved into ornaments and worn as jewelry for thousands of years, and in some ancient civilizations it was thought to be a protection from evil when worn as jewelry.**	**green**	**4**
Zambia	**Citrine**	**Natural-color citrine is less common than other quartz varieties such as amethyst and smoky quartz and are uncommon worldwide.**	**yellow**	**3**

IN ORDER BY COUNTRY

Zimbabwe	**Serpentine**	**The majority of stones used in Zimbabwean sculpture are locally sourced and belong to the geological family of Serpentine. They are sedimentary, having originally been laid down on a sandy sea floor and metamorphic, since subsequent exposure to intense heat and pressure over hundreds of millions of years has transformed them into hard stone. Serpentines are rich in iron, so when the stone weathers it turns a rust colour. Zimbabwe houses The Great Dyke -a 2.5 billion year old horse-shoe ridge of 500km stretching through the North and East round to the centre of the country and is rich in minerals of every description. Different areas of The Dyke produce a different variety of stone. Over 200 colours of stone have been geologically catalogued, ranging in Mohs scale of mineral hardness from 1-5.5 on the scale of hard stones, with Granite being 6.**	**green**	**all**
Zimbabwe	**Smoky Citrine**	**The color of smoky quartz is produced when natural radiation, emitted from the surrounding rock, activates color centers around aluminum impurities within the crystalline quartz. Natural citrine is uncommon.**	**gray, yellow**	**1**