

# GEMS That Define History and Culture



Throughout history, certain diamonds and colored gems have captivated collectors, historians, and the public with their beauty, rarity, and the stories they carry. The Gemological Institute of America (GIA) has had the privilege of examining many of these extraordinary gems, from legendary diamonds like the Hope Diamond and the Dresden Green to unique objects like the Antique Mughal Spectacles.

Each gem tells a story that blends natural science, human craftsmanship, and cultural significance. Some stones become famous through royal ownership, auction records, or mysterious histories, while others are celebrated for their technical perfection and rarity. In an era when consumers seek jewelry that feels personal, timeless, and meaningful, these gems remain a source of inspiration, fascination, and style.



Photo: Smithsonian Institution

## The Hope Diamond

**Origin:** India's Golconda District, 17th century; now housed at the Smithsonian National Museum of Natural History.

**What Makes It Extraordinary:** 45.52 ct, cushion brilliant cut, Fancy Deep grayish blue, VS1 clarity, good polish, fair to good symmetry.

**Why It's Famous:** Perhaps the most renowned colored diamond in the world, the Hope Diamond's recorded weight and documented history underscore its legendary status. Purchased by French gem merchant Jean-Baptiste Tavernier in India in 1666, the stone was later sold to King Louis XIV of France, who had it cut and polished into the famed "French Blue." Stolen during the French Revolution, it resurfaced in early 19th-century England and passed through several notable owners before being donated by the famous diamantaire Harry Winston to the Smithsonian Institution in 1958. From films to fashion, the Hope Diamond continues to symbolize mystery, rarity, and the enduring allure of natural diamonds.

**Science Made Simple:** Its rare blue color comes from tiny amounts of boron in the crystal's structure. Evidence discovered by GIA scientists suggests that boron in diamonds originated in the ancient oceanic floor and was transported by complex geological processes to depths of 410 miles or more, where blue diamonds like the Hope formed. Another notable feature of this diamond is that it exhibits red phosphorescence – or afterglow – after being exposed to ultraviolet light.

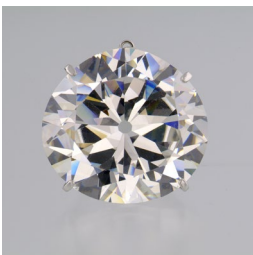


Photo: C. D. Mengason

## Idol's Eye

**Origin:** India's Golconda District, 17th century.

**What Makes It Extraordinary:** Weighs 70.21 ct, Light blue color, VVS1 clarity, modified triangle, showcasing exceptional size and clarity.

**Why It's Famous:** Shrouded in myth and legend, the Idol's Eye has been associated with tall tales, including being confused with the Nassak Diamond, though this has been disproven. It was first documented in a Christie's London auction lot in July 1865. Historic Indian diamonds, like the Idol's Eye, have inspired jewelry designers, collectors, and museum exhibitors worldwide.

**Science Made Simple:** Its near-flawless clarity and even blue color reflect remarkably uniform crystal growth, giving the stone both brilliance and durability.



Photo: Jian Xin (Jae) Liao/GIA

## Winston Red Diamond

**Origin:** Possibly from Brazil or Venezuela, but geographic origin and date of discovery are unknown.

**What Makes It Extraordinary:** 2.33 ct, Fancy red, old mine brilliant cut, I2 clarity. One of the largest pure red diamonds in the world and the only Fancy red diamond on public display.

**Why It's Famous:** Traced back to 1938 when sold by Cartier to the Maharaja of Nawanagar; later owned by Ronald Winston and gifted to the Smithsonian National Museum of Natural History in 2023. Celebrated for its rarity, vibrant red color, and storied royal and collector provenance. Featured in a permanent museum exhibit alongside the Hope Diamond; inspired jewelry design and was worn as a pinky ring by Brooke Shields as part of the "American Collection," linking it to Hollywood glamour and pop culture.

**Science Made Simple:** Its hue is the result of the subtle balance between the absorption of light by crystal distortions caused by plastic deformation and specific nitrogen defects (N3, H3, H4), creating the pure red color. Extremely rare, Fancy red diamonds make up only ~0.04% of all Fancy-color diamonds submitted to GIA.



Photo: Jian Xin (Jae) Liao

## Antique Mughal Spectacles with Gemstone Lenses

**Origin:** Crafted in the mid-17th century India during the height of the Mughal Empire, each set of lenses was likely cut from the same large diamond and emerald rough, respectively. Frames were later updated in the late 19th century.

**What Makes It Extraordinary:** Two pairs of spectacles feature transparent, pear-shaped lenses made from diamond and emerald. The emerald lenses display classic Colombian three-phase inclusions, offering insight into their geographic origin. Both pairs demonstrate extraordinary precision and technical mastery for their era.

**Why They're Famous:** These spectacles are rare historical artifacts that combine the worlds of luxury gemstones, scientific observation, and Mughal artistry. The lenses, cut from single large stones, reveal both the wealth of their patrons and the skill of the artisans who created them. Beyond their historical significance, these spectacles inspire fascination with gemstone innovation, bridging science, fashion, and art.

**Science Made Simple:** Advanced spectroscopy and microscopic analysis confirm the diamond lenses' matching natural growth structures and stress patterns, while the emerald lenses' inclusions reveal their Colombian origin. Both sets demonstrate how nature and human craftsmanship intersect to create functional yet astonishingly beautiful objects.

## The Dresden Green



Photo: Shane McClure/GIA.  
Courtesy of Grünes Gewölbe,  
Staatliche Kunstsammlungen  
Dresden

**Origin:** Housed in the Green Vaults of Dresden, Germany; Possibly mined in Brazil or India, but the origin is unknown, natural green coloration confirmed.

**What Makes It Extraordinary:** Weighing approximately 41 carats, the Dresden Green is a modified pear-shaped brilliant cut and a type IIa diamond, the rarest and purest form of diamond known. Its natural green color is medium in tone with slightly grayish saturation.

**Why They're Famous:** The Dresden Green is the largest known green diamond of natural origin and has been documented since the 18th century. Its rich history and association with European royalty have made it a symbol of rarity, prestige, and the pinnacle of gemological intrigue. Beyond its historical and scientific significance, the Dresden Green has inspired fascination in art, jewelry design, and collectors, serving as a standard for the allure of colored diamonds in both museums and media worldwide.

**Science Made Simple:** The diamond owes its color to vacancies, missing atoms in its crystal that were dislodged by irradiation. Examination by GIA scientists, combined with its long history, confirmed that its rare green hue is natural. Analysis of this diamond has helped experts develop criteria to distinguish natural green diamonds from those that have been artificially irradiated. The wonder of the Dresden Green is further highlighted by its high chemical purity.



Photo: Chip Clark, Smithsonian Institution

## The Portuguese Diamond

**Origin:** Premier Mine, Kimberley, South Africa, 1910 (despite its misleading name).

**What Makes It Extraordinary:** 127.01 ct, M color, VS1 clarity, Asscher cut, Very Strong blue fluorescence, one of the largest faceted diamonds in the world. Originally recut from nearly 150 carats.

**Why It's Famous:** Once owned by Peggy Hopkins Joyce, then Harry Winston, and now part of the Smithsonian National Gem Collection. Its journey through iconic collectors and exhibitions, including Winston's "Court of Jewels," made it a cultural and historical treasure. The diamond's story intersects with Hollywood glamour, high society, and museum exhibitions, symbolizing both wealth and rarity. Its distinctive Asscher cut has inspired high jewelry designs and remains a reference for collectors seeking historically significant stones.

**Science Made Simple:** This diamond's allure is enhanced by its very strong blue fluorescence, whereby it glows when exposed to ultraviolet light. The intensity of the fluorescence is sufficient that it can be noted even in daylight conditions, which includes an ultraviolet component, and may help counterbalance the slight yellow color of the diamond. The Portuguese Diamond displays a milky bluish haze, attributed to fluorescence light scattering from minute structural defects.



Photo: Courtesy of Mouawad

## Taylor-Burton Diamond

**Origin:** Premier Mine, South Africa, 1966.

**What Makes It Extraordinary:** 69.42 ct, pear-shaped, E-F color, Internally Flawless; one of the largest gem-quality diamonds discovered in the 1960s.

**Why It's Famous:** The diamond became world-famous when Richard Burton purchased it for Elizabeth Taylor. Originally worn in a ring, it was later re-set into a Cartier necklace and appeared at Hollywood events, including the 1970 Academy Awards. After their divorce, Taylor sold the piece and donated part of the proceeds to help fund a hospital in Botswana, adding philanthropy to its legacy. The diamond is a symbol of Hollywood glamour, a world-famous romance, and the enduring appeal of diamonds.

**Science Made Simple:** Its flawless clarity and near-colorless grading reflect extraordinary natural crystal growth. The pear shape with brilliant cut facets was carefully designed to maximize sparkle and showcase the diamond's vibrant light performance.



Photo: Shane F. McClure

## The Moussaieff Red

**Origin:** Brazil, discovered by a farmer in the 1990s.

**What Makes It Extraordinary:** 5.11 ct, Fancy Intense red, modified triangular brilliant cut, the largest confirmed unmodified Fancy red diamond.

**Why It's Famous:** Recognized as the largest unmodified red diamond, in 2003 it was part of the temporary "The Splendor of Diamonds" exhibit at the Smithsonian National Museum of Natural History. Unmodified red diamonds are extraordinarily rare, with less than 0.04% of Fancy-color diamonds graded by GIA attaining this coveted color grade. The Moussaieff Red continues to be a benchmark for red diamonds and a symbol of fascination for anyone captivated by the allure of colored gems.

**Science Made Simple:** Although the detailed crystal structure associated with the red color remains a mystery, it is associated with significant plastic deformation and the creation of certain nitrogen-related impurities. Exposure to such extreme forces typically lead to sample breakage, and it is a miracle for a red diamond of such a size to survive its geological history.



Photo: Wuyi Wang

## Motswedi Diamond

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**Origin:** Karowe Mine, Botswana, recovered August 2024.

**What Makes It Extraordinary:** 2,488.32 ct rough diamond, a type Ila gem with no detectable nitrogen by infrared absorption, demonstrating its chemical purity. Largest known single crystal diamond in existence. GIA examination revealed that this extraordinary diamond is divided into several large gem-quality blocks with minimal inclusions. Nearly 1.10 pounds of rare brilliance!

**Why It's Famous:** Second only to the Cullinan in size, the Motswedi has captured global attention for its sheer scale and quality. Named through a public competition in Botswana, "Motswedi" means water spring or source, reflecting both its origin and significance. This giant rough diamond has dominated headlines worldwide and inspired jewelry enthusiasts, collectors, and gemologists alike. Its story celebrates Botswana's role in producing world-class diamonds and adds to the mystique surrounding legendary stones like the Cullinan.

**Science Made Simple:** Large, high purity type Ila diamonds such as the Motswedi Diamond and Cullinan Diamond are thought to originate from significantly deeper within the Earth compared to most diamonds. These rare "superdeep" diamonds formed at depths between 360 and 750 km, in contrast to most diamonds, which form at depths of 150 – 200 km. Studying such superdeep specimens provide scientists a unique window into the deep Earth.



Photo: Courtesy of Christie's

## Mellon Blue

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**Origin:** Geographic origin and date of discovery unknown

**What Makes It Extraordinary:** 9.51 ct, Fancy Vivid blue, Internally Flawless, set as a ring. Color intensity and clarity make it one of the most exceptional blue diamonds in existence.

**Why It's Famous:** Once owned by American philanthropist Bunny Mellon and sold at Christie's Geneva in 2025 for approximately \$26.6 million. Celebrated for its historic provenance, rarity, and record-breaking per-carat value which inspires high jewelry design and collector fascination worldwide.

**Science Made Simple:** Like the Hope Diamond, the Mellon Blue's vivid hue is caused by trace amounts of boron within its crystal structure. Research by GIA scientists suggests that the boron in diamonds originated in the ancient oceanic floor and was carried deep into the Earth through complex geological processes, reaching depths of 410 miles or more, where extraordinary blue diamonds such as the Mellon Blue and the Hope Diamond formed.



Photo: Courtesy of Christie's

## Marie-Thérèse Pink

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**Origin:** Likely India, mid-1700s.

**What Makes It Extraordinary:** 10.38 ct, Fancy purple-pink, modified kite brilliant cut, SI1 clarity.

**Why It's Famous:** Passed down from Queen Marie-Antoinette to her daughter, Duchess Marie-Thérèse of Angoulême, and later to Duchess Marie-Thérèse of Chambord. Auctioned in 2025 for \$13.98 million, celebrated for its royal provenance, rarity, and historical significance. Iconic in historical and high jewelry collections, inspiring designers and collectors who value both color and royal legacy.

**Science Made Simple:** Vibrant purple-pink color comes from a combination of nitrogen-related impurities and unidentified structures produced by natural deformation deep within the Earth.