

New Tanzania mine uncovers source of exceptional rubies

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During the BaselWorld show in April, the SSEF Swiss Gemmological Institute received a number of rubies that showed some new features. The new kind of rubies of high transparency that were presented by several dealers all had a rather saturated red and showed no indications of heating. An absolutely striking stone of 10.5 carats was submitted to the SSEF laboratory for a gemstone report with origin indication. Two weeks later, during SSEF off-premise testing in Bangkok we saw more of this beautiful ruby material, including two more stones over 10 carats in weight. Furthermore, we also saw some rough pieces of deep blue and purple color from the same locality in Tanzania.

Microscopic features

The internal features of the new material includes specifically bent fibers, identified as hollow channels with a polycrystalline

filling of probably secondary minerals. Straight lines are also often present, representing twin lamellae intersections. Naturally, healed fissures are charged with negative crystals containing a polyphase solid filling consisting of white and often black grains. Blue color zones, often occurring as thin stripes or in growth sectors, are another characteristic feature. Typical mineral inclusions for rubies from other Tanzanian deposits, such as zircon as single inclusions or clusters, have so far not been seen.

When the chemical composition was tested with ED-XRF, Cr and Fe were found as main traces, while there was little Ga and Ti and V under the detection limit of the method.

Rough material:

Werner Spaltenstein, a rough gemstone buyer in East Africa, provided a number of rough crystals and fragments that strongly resembled Mong Hsu ruby some months earlier. The origin was indicated as Winza, from the Morogoro area of central Tanzania.



Unheated rubies weighing from 2.2 to 3.6 carats, from the new source at Winza, Tanzania. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute.



An excellent ruby of 10.75 carats originating from the new source at Winza, Tanzania. The stone has no fissures and shows no indications of heating. Characteristic inclusions consist of fine bent fibers. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute.



Ruby from Winza, Tanzania. Characteristic inclusions consist of fine bent fibers with a polycrystalline filling of probably secondary minerals. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute.



Ruby from Winza, Tanzania, with a healing fissure charged with multiphase inclusions. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute.

faces are however different, and twin lines are common. With magnification, one can discover on the triangular faces traces of surfacing twin lamellae, visible as sets of parallel fine lines. The cut gems we have seen so far from this deposit suggest that there is a potential for high-grade rubies that do not require treatment. But, as in all deposits, the lower qualities will surely be subjected to heat treatment, to remove the blue spots and to lessen the conspicuousness of the fractures.

Heat treatment experiments to remove the blue color zones in the Winza ruby were not successful, as reported from people from Chantaburi. When the characteristics of the faceted stones were compared to those of the rough, a good coincidence of features was observed. It was therefore possible to attach the origin tag "Winza Tanzanian ruby" on the new cut material.

The crystals and fragments expose different crystal habits and faces. The most surprising is an octahedron like variation of the rhombohedral shape. Many of the ruby crystals strikingly resemble spinel octahedra. The angles between the ruby



Ruby from Winza, Tanzania, with characteristic blue color zoning as thin parallel stripes. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute.

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Ruby crystals of rhombohedral to prismatic habit from Winza, in the Morogoro area of central Tanzania. The stones may contain blue patches that are confined to crystallographically controlled areas. The largest stone is 25 mm across and weighs 88 carats. Photo © H.A. Hänni, SSEF.