

Scapolite from Tanzania with Magnetite Inclusions

During the February 2016 Tucson gem shows, gem dealer Dudley Blauwet bought a 48.06 g scapolite crystal that contained numerous black inclusions. It appeared light yellow when viewed down the c-axis and greyish tan down the a- and b-axes. His East African supplier indicated that the stone came from an unspecified deposit in Tanzania, but not from the previously known scapolite mines in the Dodoma area. The crystal was faceted into two stones (weighing a total of ~87 carats), rather than one, to avoid a fracture in the centre and also to show the best colour by cutting the table perpendicular to the c-axis.

Blauwet loaned one of the stones, a 31.44 ct light brown cushion cut (Figure 28), to American Gemological Laboratories for examination. Standard gemmological testing was consistent with scapolite, and the RIs of 1.542–1.560 (birefringence 0.018) indicated an intermediate composition between the Na-rich end-member marialite and the Ca-rich end-member meionite, though somewhat closer to marialite (cf. Deer et al., 1963). The hydrostatic SG was 2.66. The stone fluoresced moderate purplish pink to long-wave UV radiation and moderate orangey red to short-wave UV. The black platelet inclusions were con-

spicuous to the unaided eye. Microscopic examination showed the platelets were both discoid and irregular in shape (Figure 29), and were randomly oriented throughout the stone. The inclusions were identified as magnetite with Raman spectroscopy using a 514 nm laser.

Magnetite inclusions have been documented previously in brown cat's-eye meionite from the Dodoma area (Mayerson et al., 2003). However, their distribution and appearance—oriented fine needles, elongated platelets and flat dendrites—were much different than the magnetite inclusions in the present sample.

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References

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- Mayerson W.M., Elen S. and Owens P., 2003. Gem News International: Cat's-eye scapolite from Tanzania. *Gems & Gemology*, **39**(2), 158–159.

Figure 28: This 31.44 ct scapolite from Tanzania contains many black inclusions that are visible to the unaided eye. Photo by Alex Mercado and Kelly Kramer.



Figure 29: The inclusions in the scapolite consist of discoid and irregular-shaped black platelets that were identified as magnetite. Photomicrograph by Christopher P. Smith; magnified 32×.

