Quartz pods: an exploration guide to iron oxide-copper-gold mineralization?

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Mineralised stockworks in quartz pods

Fig 15. *Dense network of magnetite-pyrite-chalcopyrite veinlets in a quartz pod. This particular outcrop has at least 150 m in diameter, and contains significant copper mineralization. Gold might also be present in economic concentrations. Scale marks every mm.*

Fig 16. *Portion of a chalcopyrite-pyrite rich, magnetite-filled stockwork in a quartz pod. Note some of the vugs. Scale has marks every 2 mm.*

Fig 17. *Surface expression of bornite-chalcopyrite-magnetite enriched stockwork hosted by a quartz pod. Note abundance of secondary copper sulfides (black) and carbonates (green-blue) that coexist with magnetite. Scale marks every mm.*

Fig 18. *Slab of a copper sulfide-rich, magnetite stockwork hosted in a quartz pod. The field of view is 15 cm. Note copper carbonates after bornite and chalcopyrite. Brown-red stains are hematite, after pyrite mineralization in the veinlets. These features are common in portions of some quartz pods, and may extend for several dozens of square meters in outcrops.*

Hydrothermal breccias in quartz pods

Fig 19. *Monomict, explosive hydrothermal breccia from the Tevrede rich Cu+Au IOCG project, northwestern Kamanjab Batholith, Namibia. Fragments are rounded to sub-angular. Quartz pods are both host rocks and single clast component for this breccia. Quartz pods behave in a brittle way and produce very important brecciation around IOCG systems. Scale with marks every 2 mm.*

Fig 20. *Hydrothermal angular clast breccia cemented by magnetite that is hosted in a quartz pod. Clasts are made of quartz fragments. This same feature was observed at larger scales.*

Braided and subparallel veinlet systems in quartz pods

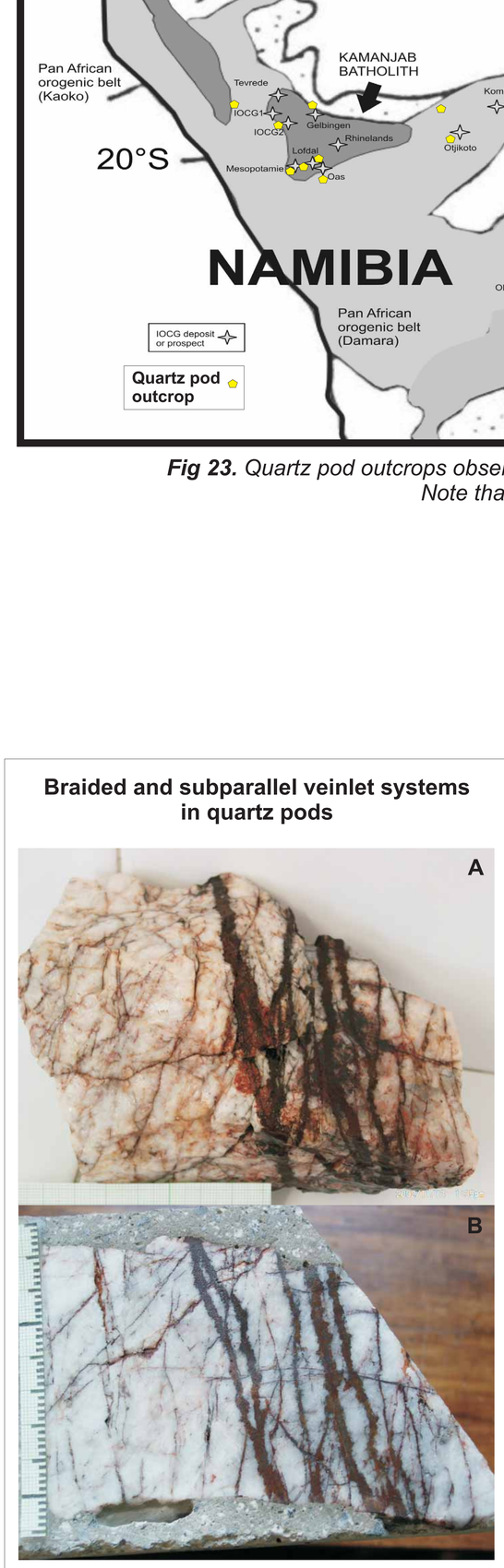

Fig 21. *Braided veins with hematite and oxidized sulfides that are hosted in a quartz pod. The sample was very fragile and was set in concrete for slabbing. Notice several generations of fractures that intersect each other. If mineralized with gold, such a sample could carry multigrams per ton. Outcrop surface above, slabbed surface below. Collected at the Oas farm, Khorixas inlier, Namibia. Both scales in mm.*

Fig 22. *Slab with series of closely-packed, subparallel sheeted veinlets filled by magnetite and sulfides hosted in a quartz pod. Oxidation of the sulfides produced goethite coloration in parts of the sample. Comes from part of an IOCG mineralised system. Again, quartz pods are hosting mineralisation. Each black or white mark in scale is 1 mm.*

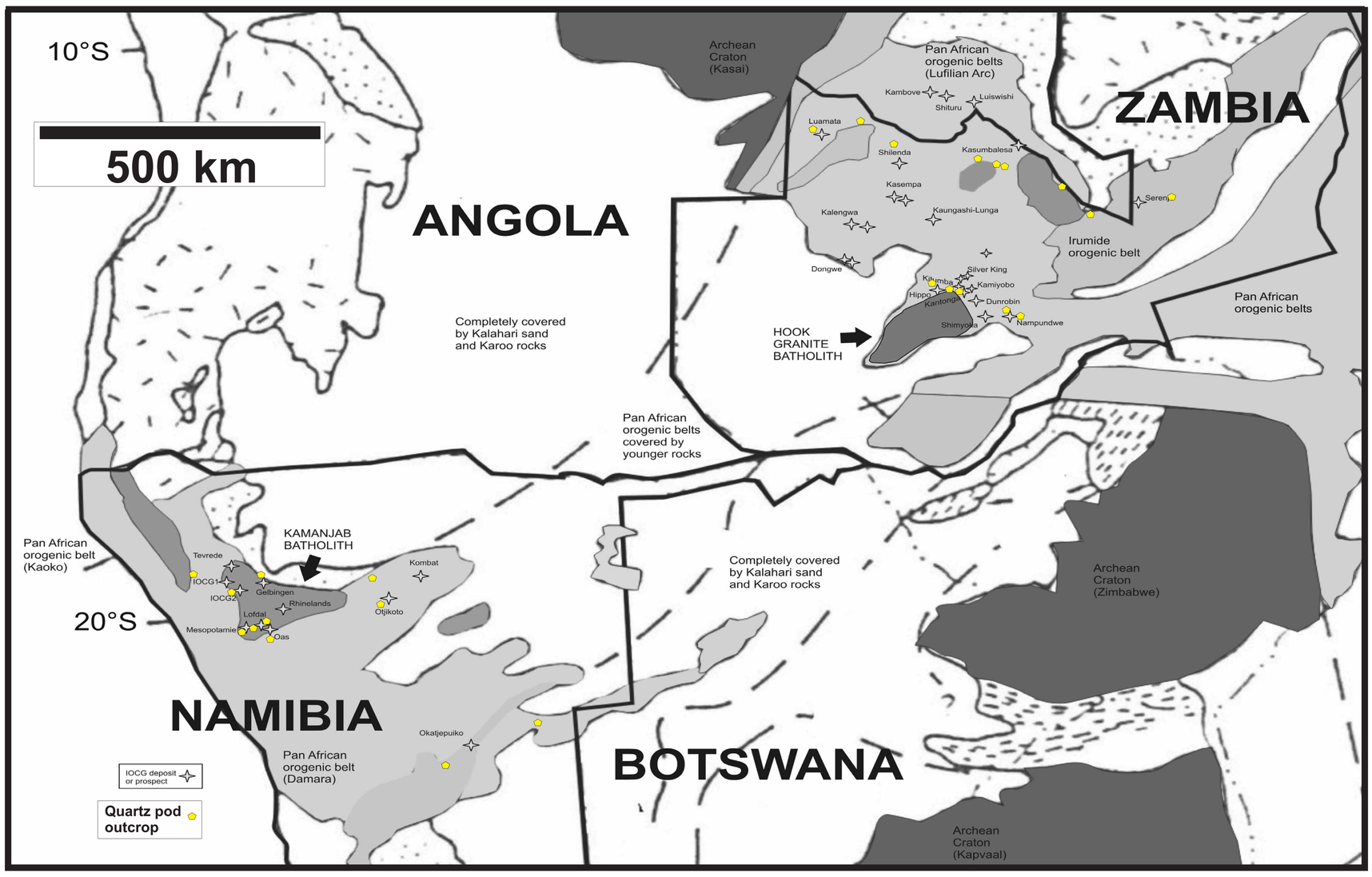

Fig 23. *Quartz pod outcrops observed in the Greater Lufilian Arc, Zambia and Namibia. Yellow pentagons represent quartz pods. Note that many quartz pods occur near iron oxide-copper-gold mineralisation.*

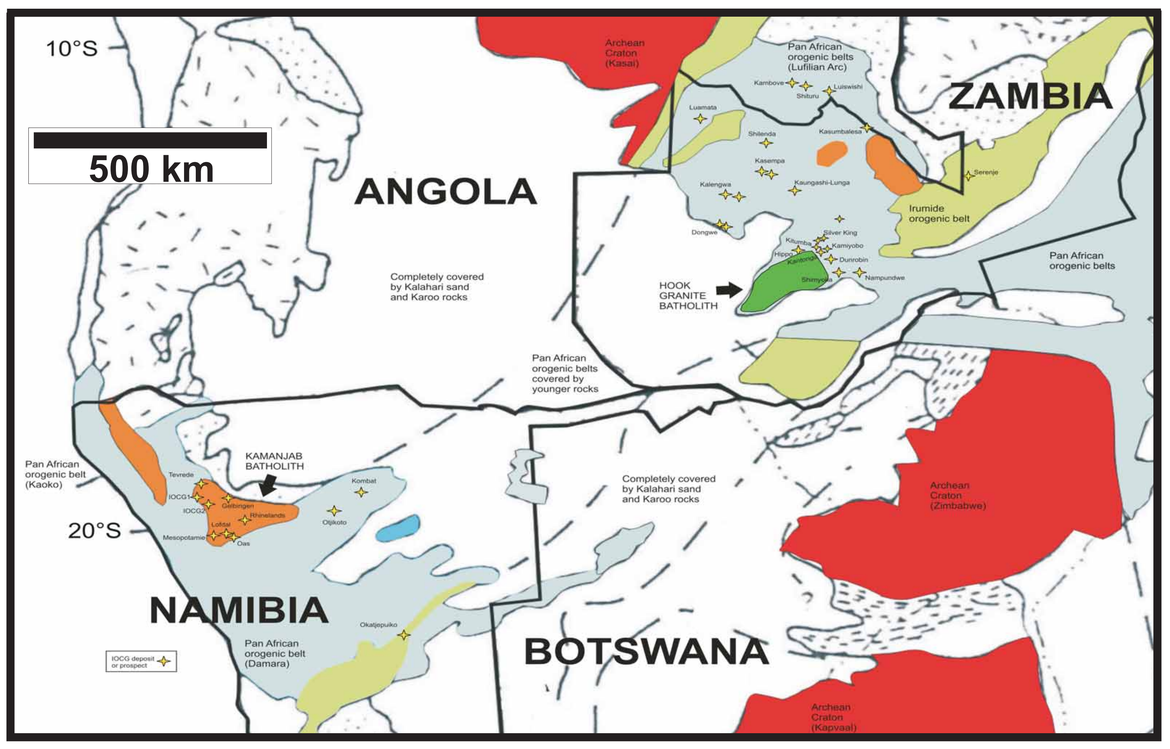

Fig 24. *Location of iron oxide-copper-gold prospects and deposits, Greater Lufilian Arc, Africa.*

Fig 25. *Location of Zambia and Namibia in the Southern African context. The area of maps in Figs 23 and 24 are indicated by the thin black rectangle.*

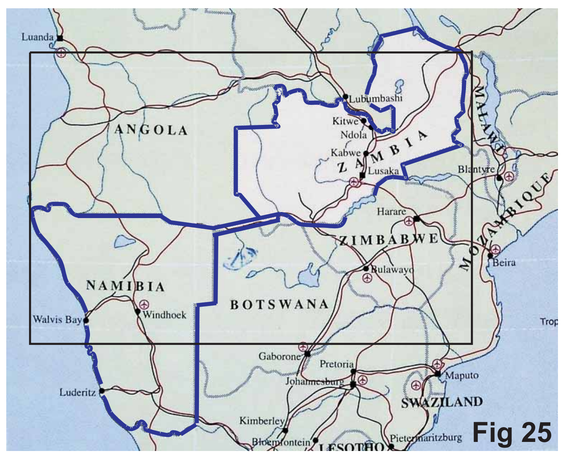

Fig 26. *Simplified geological map NE of Otjiwarongo, Namibia. Note location of IOCG deposits Otjikoto (Au) and Kombat (Cu-Pb). The large quartz pod of the Egue farm is marked by a yellow spot. Most of the mapped units are covered by calcrete; the entire area has very little outcrop. All of this region is thought to be underlain by the Otjiwarongo batholith. Map produced by the Anglo Vaal Namibian office and published by Wilton et al, 2002.*