

Century to Mary Kathleen – 500 degrees of separation

Geoff Derrick, Presenter: Thursday 28 September, 2023

Synopsis

In a geological career spanning over 50 years, there is always a chance of intersecting with rocks which rise in stature above the top 20 metres of a barren laterite profile. Two such locations have been selected by Geoff from a broad world canvas – the Century Zn project and the Mary Kathleen uranium deposit, both in the Mt Isa Inlier but as different as chalk and cheese in their nature and origins. Century appears to be a syndiagenetic replacement orebody in which mineralising fluids have percolated along black shale strata, to be mediated by hydrocarbon present in the shale basin. The result is an orebody of laminated appearance which some may view as seafloor exhalation, but which is most likely a product of diagenetic replacement at depth. Mary Kathleen by contrast is a skarn orebody that is granite-related and reached metamorphic temperatures of about 600°C based on minerals such as vesuvianite and wollastonite in carbonate rocks. It is also blessed with often overlooked pre-skarn metamorphic and metasomatic events, and which collectively define a complex geological history extending from 1740 to about 1500Ma.

There are no equations or phase diagrams or mineral equilibrium diagrams in this presentation. It is quite simply a celebration of world class geology revealed by the rocks themselves – outcrops that have been assembled for your enjoyment and wonderment – from simple to complex, but when unravelled, inspirational enough to say – “because of these rocks, I am glad that I became a geologist”.