Ore Deposits at the Permian Sedimentary Rock/Volcanic Rock Interface in Guizhou Province and Their Genesis

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In western Guizhou there are a large number of ore deposits, which are distributed at the Lower Permian sedimentary (Maokou limestone)/Upper Permian volcanic rock (Emeishan basalt) interface. These ore deposits are the Carling-type gold deposits, the laterite-type gold deposits, hydrothermal Sb deposits, volcano-sedimentary pyrite deposits and sedimentary Mn deposits.

The interface layer varies greatly in thickness and is complicated in petrological composition, which is a suite of rocks resultant from limestones, basaltic pyroclastic rocks and basaltic lavas formed in response to hydrothermal alteration, hydrolysis at the sea bottom, and mineralization with surface water involved. Underlying are mainly silicified limestones, in the transitional zone are silicified breccias and clay rocks; and overlying are mainly blastic basalts.

The authors considered that water/rock interactions at the stage of basalt eruption led to the release of Au, Cu, Sb, Fe, Mn, S, and F from basalts, and these elements were enriched to form ore deposits by way of adsorption, metasomatism or deposition.

Stable Isotope Results from the Permian/Triassic Boundary, South Africa, and Triassic/Jurassic Boundary, Western Canada: evidence against single strike impact as causes for these two mass extinctions

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There is now little doubt that the largest single cause of the Cretaceous /Tertiary (K/T) mass extinction was the impact of a large comet or asteroid in the Caribbean region, leaving he Chicxulub impact structure. With this mass extinction thus accounted for, increasing attention has been paid to the end-Permian and end -Triassic mass extinctions. In thelast two years separate groups of investigators have reported the presence of impact ejecta or geochemical anomalies at P/T and T/J boundary sections, indicating that both of these mass extinctions were likewise the result of large body impact with the Earth. In this talk we present new evidence arguing against these conclusions, and suggesting that neither the P/T nor T/J mass extinctions was either completely, or even largely the result of environmental effects of large body impact. New evidence from the Karoo of South Africa also indicates that the terrestrial portions of the P/T event may have predated the marine extinctions, (thus refuting hypotheses of a single contemporaneous cause, such as large body impact) while new data from T/J sections in Western Canada indicate that two pulses of extinction, one at the end Norian and one at the end Rhaetian Stages also argues against a single cause.