

## **Genesis of the BIF-hosted high-grade ores in the North China Craton**

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Iron ore deposits formed through upgrading of Precambrian banded iron formations (BIFs) are the primary sources of iron in the world. Most of them are high-grade hematite deposits, while high-grade magnetite ores are less common. In the North China Craton where Neoproterozoic–Paleoproterozoic BIFs are abundant, economic high-grade hematite ores are scarce, but high-grade magnetite ores are widely developed. Recent dating results indicate that the high-grade magnetite mineralization of the Gongchangling formed at 1.86 Ga, significantly later than ~2.55 Ga BIF deposition. The BIF-hosted high-grade magnetite mineralization shares genetic similarities with high-grade hematite mineralization but records higher ore-forming temperatures than the latter, likely reflecting a greater depth of the magnetite mineralization. The dating results of the Yuanjiacun reveal that high-grade hematite mineralization formed at 1.41 Ga and 1.34 Ga, obviously later than Paleoproterozoic BIF deposition. The high-grade hematite ores are considered to have resulted from ingress of hypogene hydrothermal fluid, similar to high-grade hematite mineralization worldwide. However, most of the high-grade ores in the North China Craton were removed by extensive erosion during later regional uplift events.