

ON THE ANOMALOUS EXPLOSION OF ORE-FORMING PROCESSES AND SUPER ACCUMULATION OF METALS IN LARGE IRON DEPOSITS

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Anomalous explosion of ore-forming processes and its intensity is a key genesis of large iron deposits. A new attempt is put forward to assess the intensity of anomalous explosion through studies of ore-forming geochronology, ore-forming thermal events and relationship between the relative abundance of ore reserves (RAOR) and the forming time interval (FTI) of deposits. Super accumulation of metals in a large iron deposit should be regarded as a result of gravitational tide resonance, which means an anomalous events to superimpose on the normal state of ore-forming processes stimulating a plenty of metals supply. Based on the fact that the ore deposits can be served as a criterion for geological thermal events, an excess oxygen event of oxyatmversion related to Banded Iron Formation in Archean-Proterozoic has been proposed. Oxyatmversion is an important engine to cause the anomalous explosion and stimulate the super accumulation of metals in Banded Iron Formation. From the relationship of RAOR with FTI of Banded Iron Formation, the RAOR of Hamersley (RAOR=100%; FTI=2600~2450 Ma), Krivoy Rog (RAOR=79%; FTI=2550~2200), Quadrilatero Fe deposit (RAOR=60%;FTI=2500-2200), Labrador (RAOR=56%; FTI=2500 ~2350),and Superior Lake (RAOR=44%; FTI=2500 ~2450) are greater than 44%, while their FTI were only 50-350 Ma. However, the RAOR of Zimbabwe (RAOR=17%; FTI=3600~1750) and South Africa (RAOR=18%; FTI=3050~1800) are only 17%-18%, while their FTI were long up to 1850Ma. Obviously, the super accumulation of metals in former 5 large iron deposits developed in relative short time by ore-forming anomalous explosion, especially more intensive in Hamersly and Krivoy Rog. Certainly, the strong oxyatmversion also happened in this period (2500-1900Ma) which is common recognized by geologists.