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Series of China's metallogenic geological setting maps

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China, located at the conjunction of three major tectonic domains, i.e., ancient Asia, Tethys and Marginal-Pacific, has suffered from a more than 4,000 Ma of geological evolution history, resulting into extremely complex mineralization and geological setting. As such, China is facing an increasing geological ore-finding difficulty day by day. Accordingly, Development and Research Center, CGS organized more than 40 units/organizations across China to perform a geological setting research, in detail investigate metallogenic geological features and acquire mineralization information. After eight years of hard work, three series of metallogenic geological setting maps were completed.

Series I includes division primitive data maps and formation structural maps of a 1:250,000 scale international sheet. This series of maps are basic maps of compiling geological structural special base maps and geotectonic maps for predicated work areas [1]. The formation structural map decomposes the "Formation" present in original geological maps into different sedimentary, volcanic, intrusive and metamorphic rock formations, and comprehensively reflects various formations and structural configurations in the major sheet, so as to providethe spatial location and evolution features of rock formations and regional tectonic belts for mineral prediction.

Series II includes geological structural specific base maps of prediction work areas. This series of maps are the basis and work base maps of metallogenic regularity research and mineral prediction, which principally reflect the metallogenic geological process features of specific mineral prediction types and highlight mineralization-related rock formations and structures [1]. This series of maps are divided into tectonic lithofacies paleogeographic map, sedimentary formation structural map, topography and Quaternary geological map, volcanic lithology–lithofacies structural map, intrusive magma structural map, metamorphic formation structural map and formation structural map.

Series III is China's geotectonic map series. This series of maps are synthetic maps providing macroscopic tectonic setting for regional metallogenic regularity summary and mineral prediction and reflecting regional geotectonic environment and its evolution regularity. Through 1:2,500,000 scale series of maps, we re-defined the continental tectonic framework of China, first proposed a new framework of the

continent of China, comprising 6 orogenic systems, 3 continental blocks, 5 jointing belts and eastern continental margin arc-basin system[2], and proposed new understandings of key geological issues. Through compiling these 1:10,000,000 scale series of 10 tectonic epochs maps, we proposed that the metallogenic geological setting of the continent of China experienced pre-Nanhua, Nanhua–middle Triassic and late Triassic–Quaternary stages of evolution.

References

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