



Leaping Forward Period (1995 to Present): Moving into Digital Mapping and Digital Cartography Era

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During the Ninth Five-Year Plan period, the Ministry of Geology and Mineral Resources deployed a pilot project for the construction of space database of 1:20 million. Since 2000, China Geological Survey has developed computer mapping systems in combination with regional geological survey. From 1999 to 2006, the China Geological Survey (CGS) completed a number of 1:250000 Regional geological maps using 3S technology in the area of 152,000 km² in Qinghai-Tibet Plateau and its adjacent areas, in accordance with the unified mapping technical standards. This is an epoch-making project, marking the full completion of the medium-scale regional geological survey of China's land. What Lu Xun has said, "There is no home-made precise geological map in its territory and its city of a non-civilized country" has been fully realized.

Computer-aided mapping not only changes the traditional geological mapping method, speeds up the mapping speed, reduces the labor intensity, and improves the quality of information transmission function and loading function of geological mapping, but also gives geologists sufficient time for comprehensive analysis and thinking and improves the understanding of regional geological development and tectonic evolution. With the continuous development and improvement of computer mapping and 3S technology, China has possessed a large number of precise geological maps and databases, such as geological, mineral, hydrological, environmental, geophysical, and geochemical exploration maps and databases of different scales, nationwide and regional. China's geological mapping has entered into the

new era of information, electronic, networked, and large numbers.

In July 1999, the China Geological Survey chose the Meishan section distribution area of Changxing, Zhejiang, as one of the first series of new national mapping projects. The projects have had an impact on the basic geological mapping of stratotypic sections and are significant at home and abroad. The Meishan Township sheet is the first candidate section of the international Changxing Stage standard section and the International Permian-Triassic Boundary Stratotype Section. That is, it is a support map of the global stratotype section and point (GSSP; commonly read as "Golden Spike") and is characterized by high-resolution, high-precision stratigraphic units (e.g., fossil zone, isochronous event stratum, high-frequency cycle stratum, boundary stratum) and integrated stratigraphy (Fig. 5.1).

This map comprehensively analyzes the special geological and geomorphological features of the Qinghai-Tibet Plateau unit in the context of the global tectonic pattern. In addition, it highlights recent achievements and insights of geological surveys and other scientific research. It also showcases outstanding achievements in regional geological surveys of and geological research in this area. As such, the map represents a new level of expertise achieved by Chinese geologists. Additionally, it represents the best map for international geologists seeking a comprehensive, objective, and detailed understanding of the general geological picture of the Qinghai-Tibet Plateau as well as the composition, structure, and evolution of each orogenic belt (Fig. 5.2).

This map was designated a pilot digital geological map for western China by the China Geological Survey (October 2001). This pilot project at a scale of 1:250,000 established and improved the current technical requirements for digital mapping using an entire sheet at the same scale. In addition, it provided information and a foundation for teaching digital geologic mapping, the development of software and hardware for a computer-assisted field mapping system and international exchange (Fig. 5.3).

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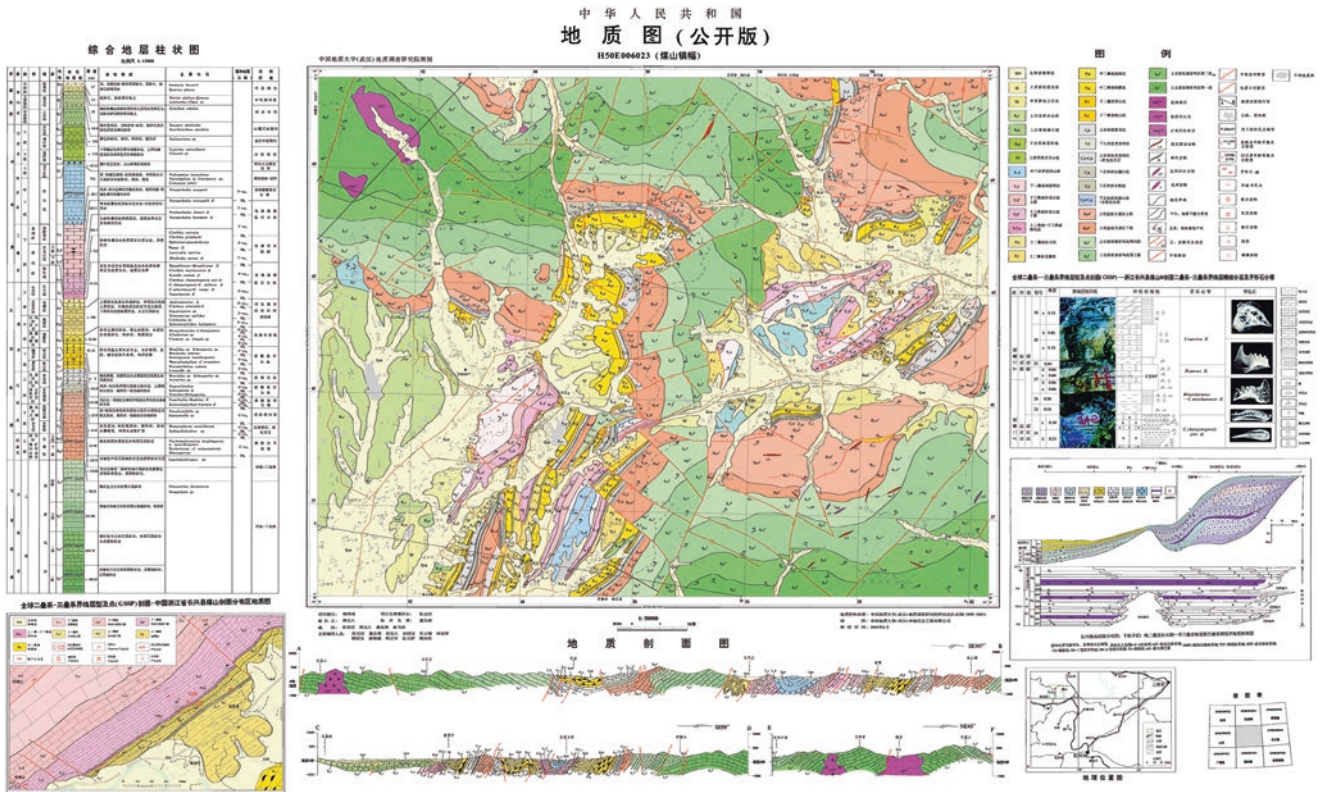


Fig. 5.1 Geological map of the People’s Republic of China (H50E006023 Meishan Township sheet) [1]

This map is the first to fully describe the Asian continent and adjacent waters. In addition, it is the first Asian geological map with a spatial database, thus representing a significant advance toward the digitalization of Asian geol-

ogy. It is also the latest, most comprehensive international geological map of Asia and has been recognized as a masterpiece and a milestone in the history of Asian geoscience research (Fig. 5.14).

青藏高原及邻区地质图

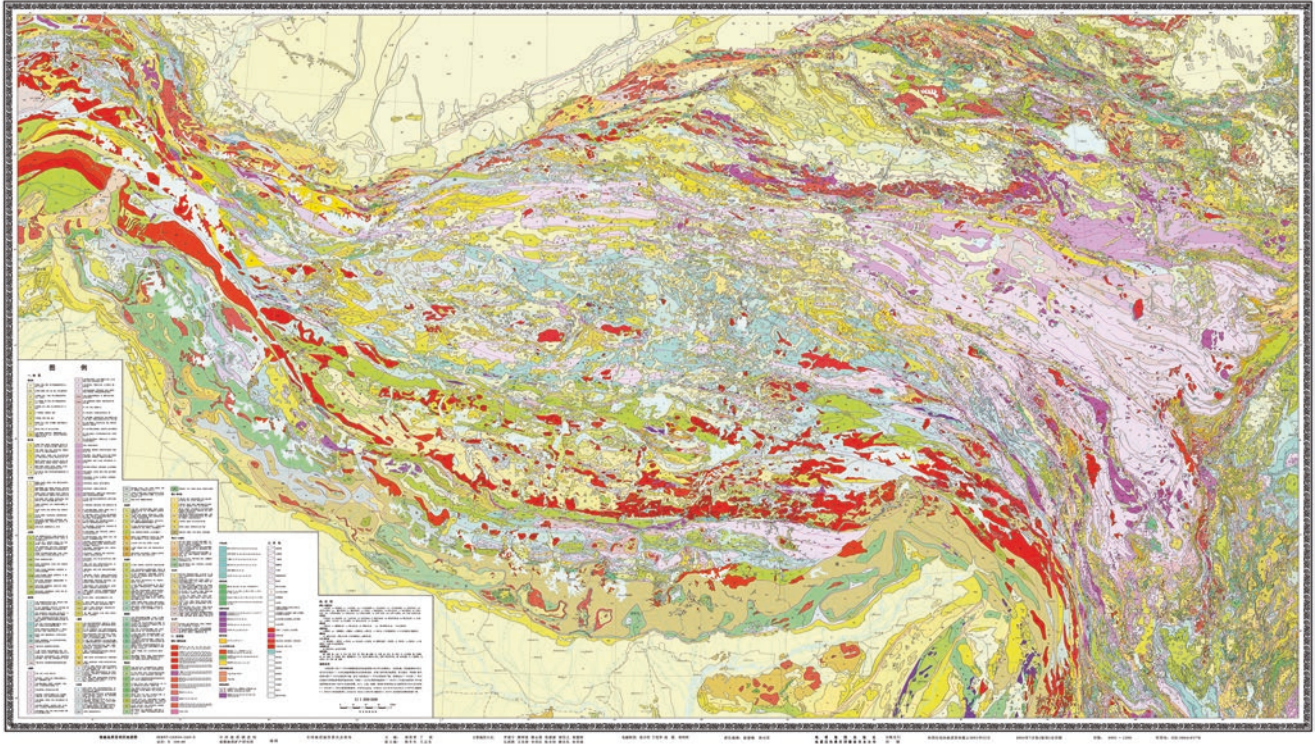


Fig. 5.2 Geological map of the Qinghai-Tibet Plateau and adjacent areas (1:1,500,000) [2]

中华人民共和国
地质图(公开版)

中国地质大学(武汉)地质研究所编
J48C004001 (民和回族土族自治县幅)

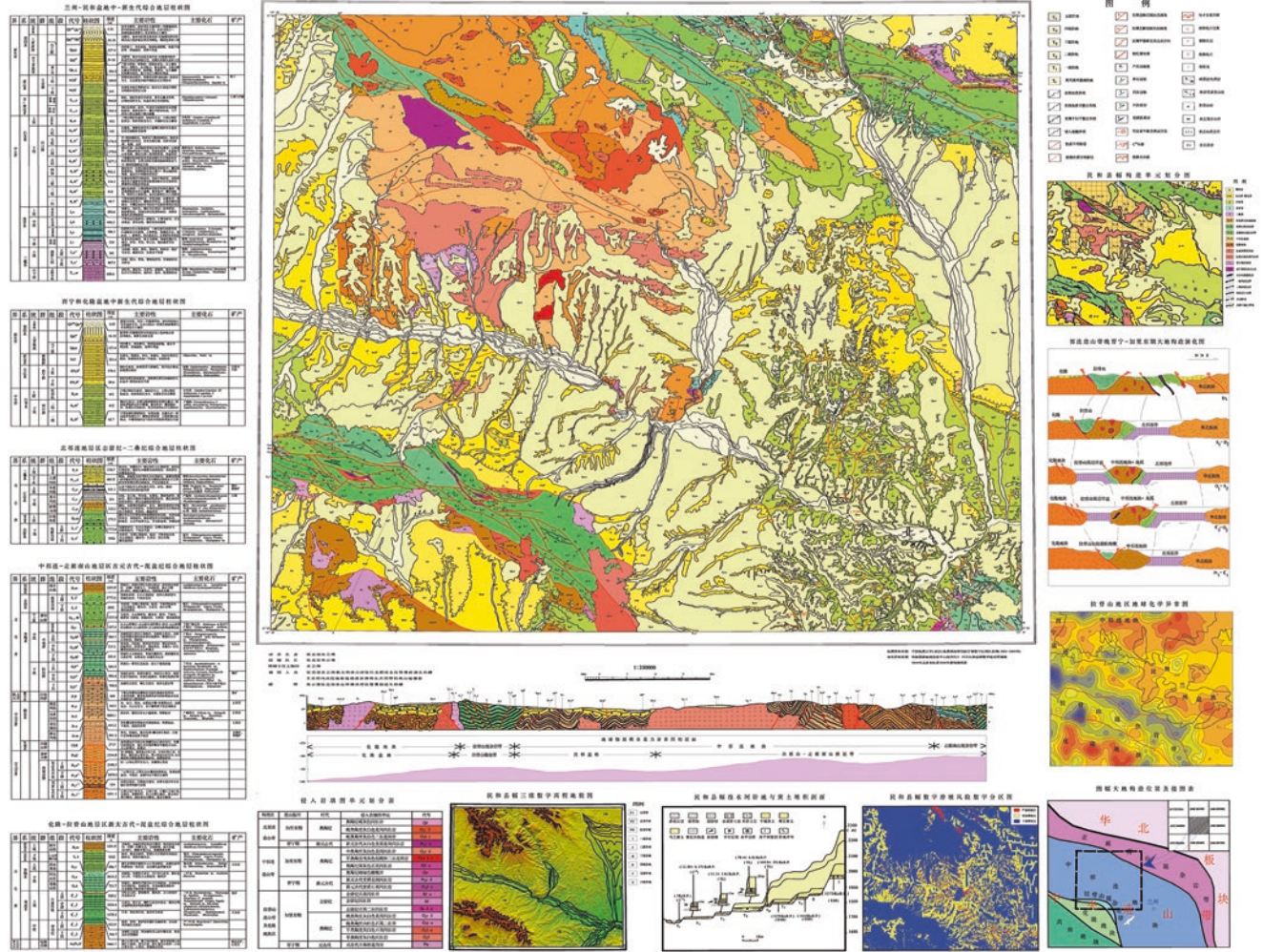


Fig. 5.3 Geological map of the People's Republic of China (J48C004001 Minhe Hui-Tu Autonomous County sheet) [3]

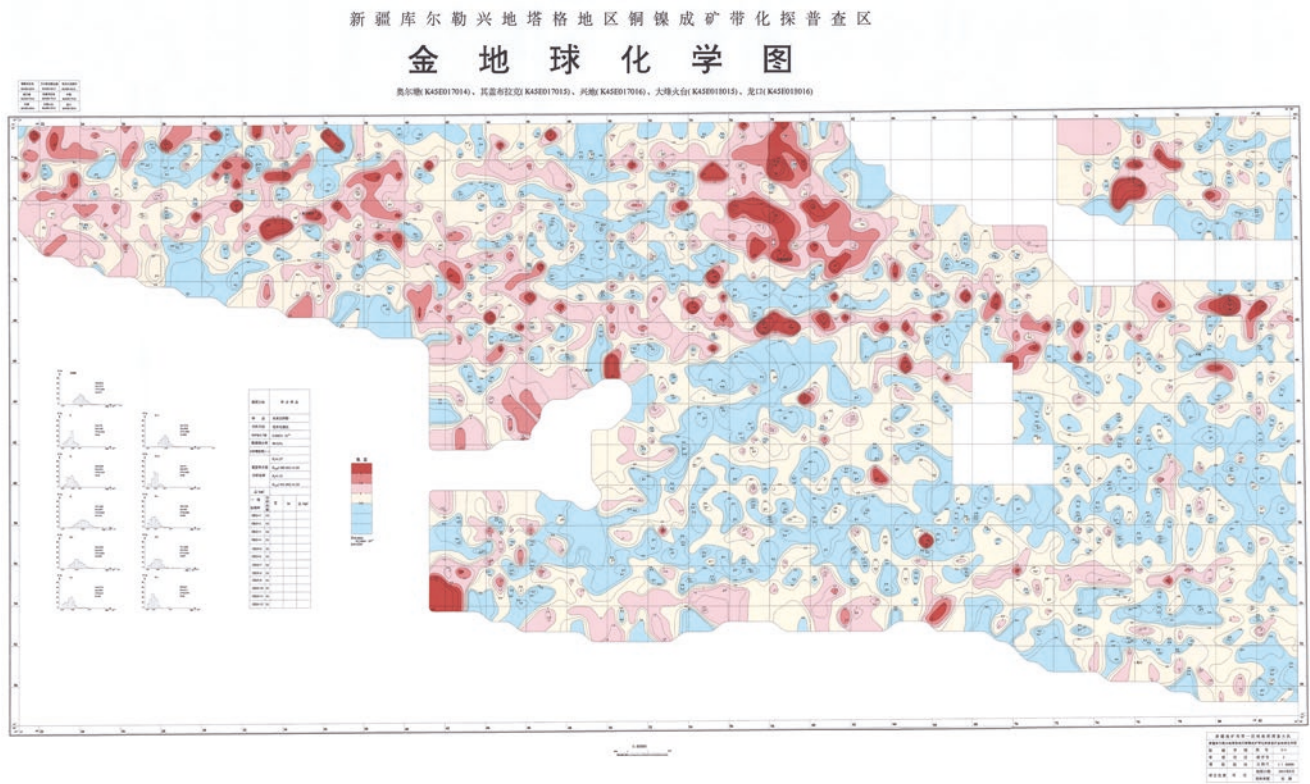


Fig. 5.4 Geochemical map of gold deposits in the general chemical prospecting area of the copper-nickel metallogenic belt in Taha and Korla, Xinjiang [4]

中华人民共和国
数字旅游资源分布图

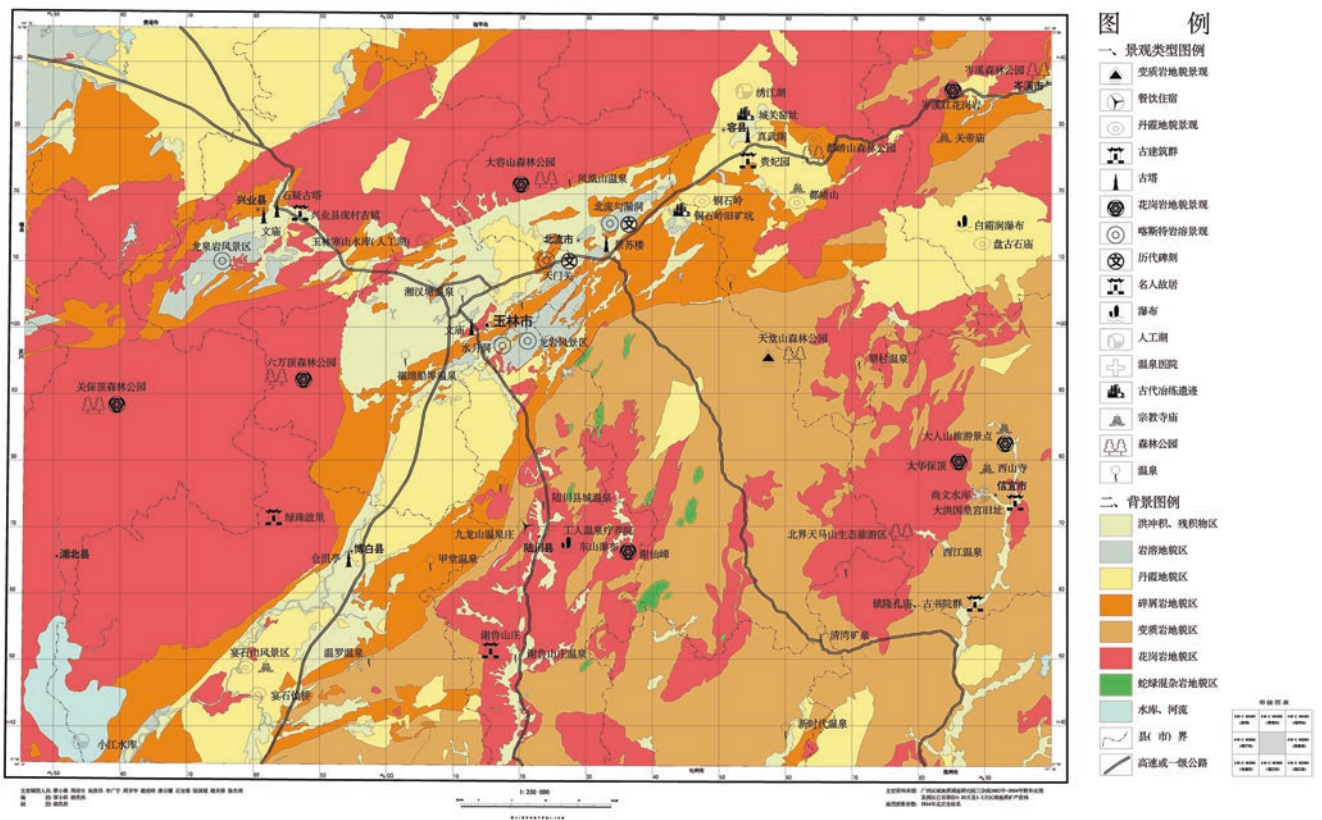


Fig. 5.7 Digital tourism resources distribution map of the People’s Republic of China (Yulin City sheet) [7]

中华人民共和国
数字植被及农作物分布图

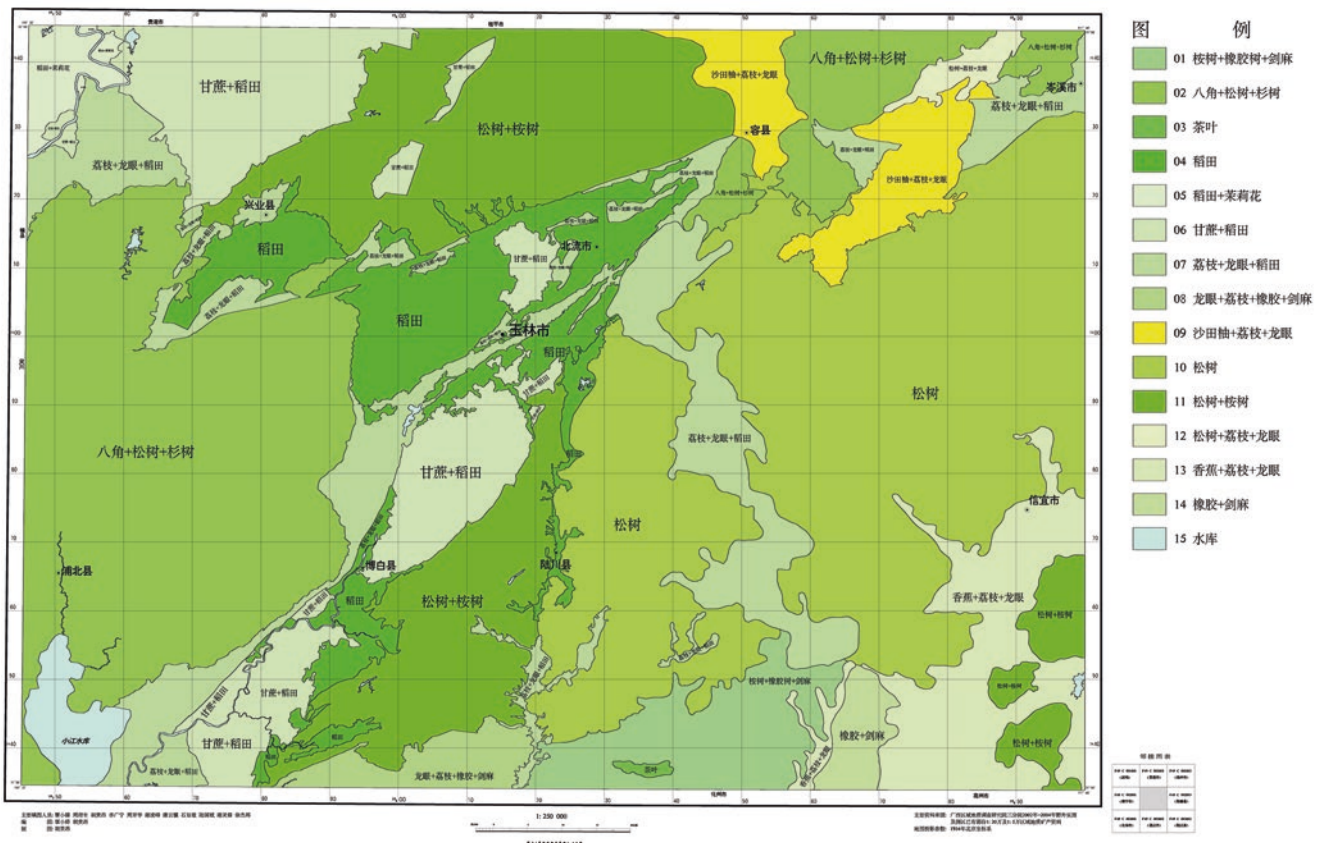
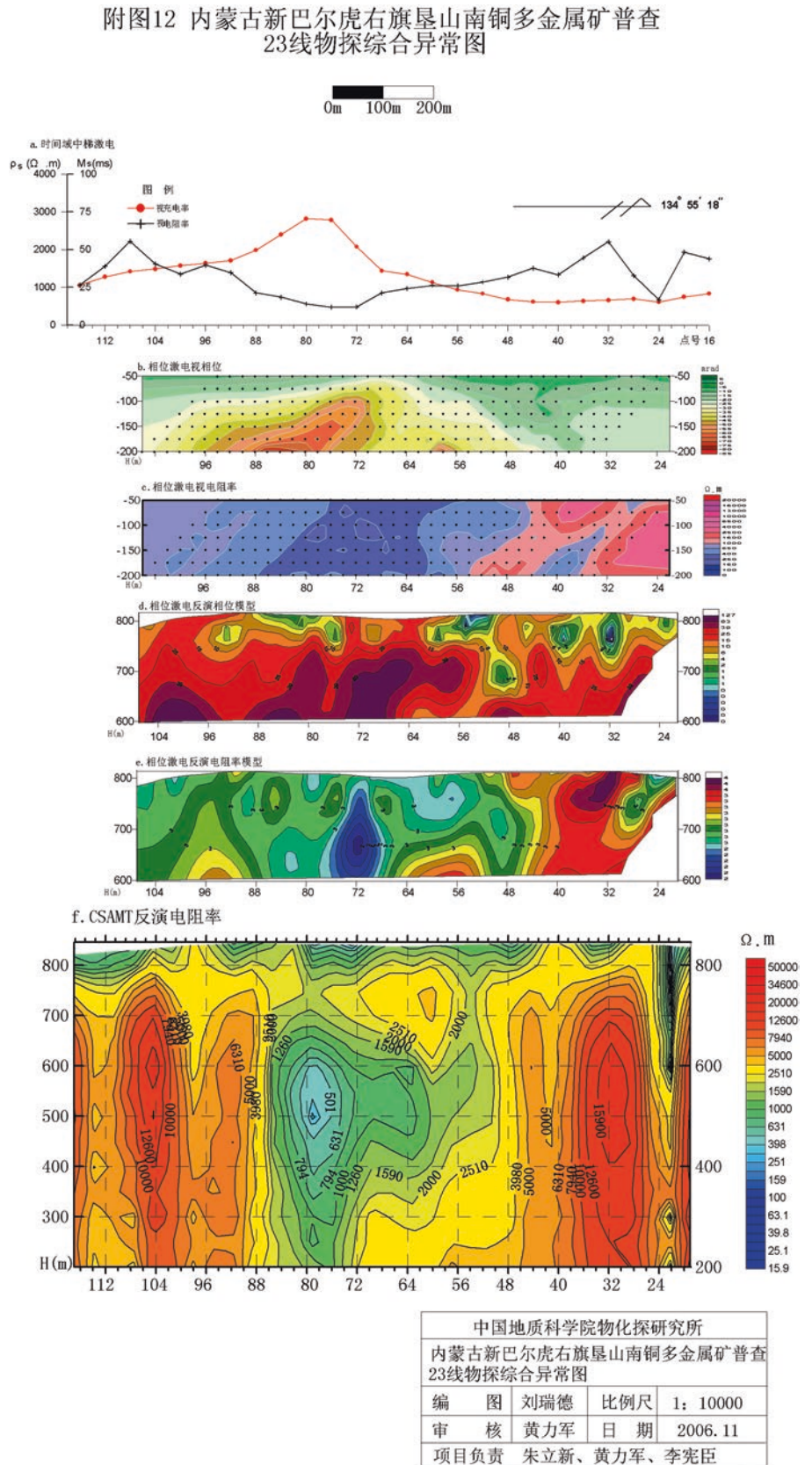


Fig. 5.9 Digital vegetation and crop distribution map of the People’s Republic of China (Yulin City sheet) [9]

Fig. 5.10 Geophysical integrated anomaly map of the No. 23 Line for general prospecting of the copper polymetallic deposit south of Kenshan, Xin Barag Right Banner, Inner Mongolia [10]



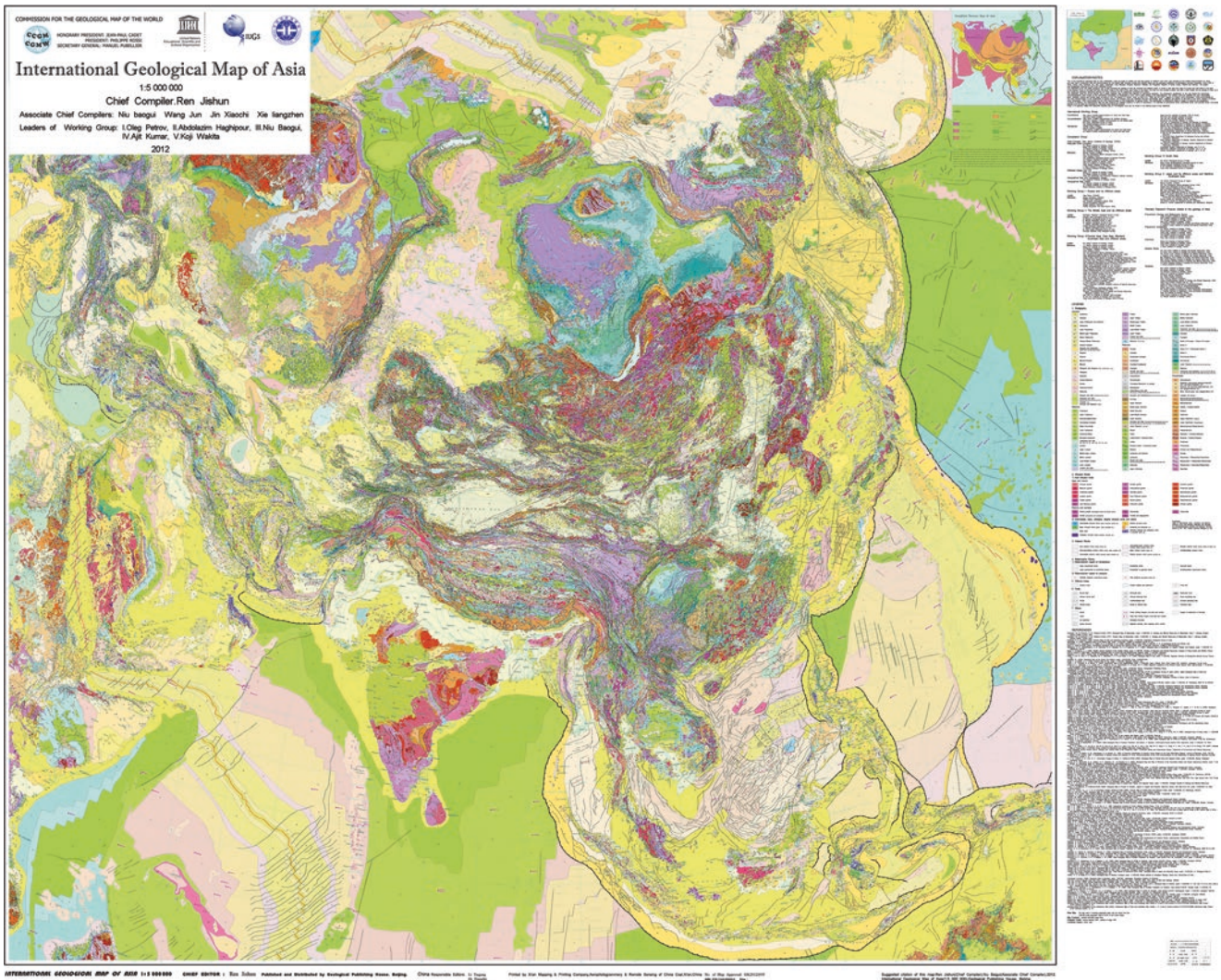


Fig. 5.14 International geological map of Asia (Scale: 1:5,000,000) [14]

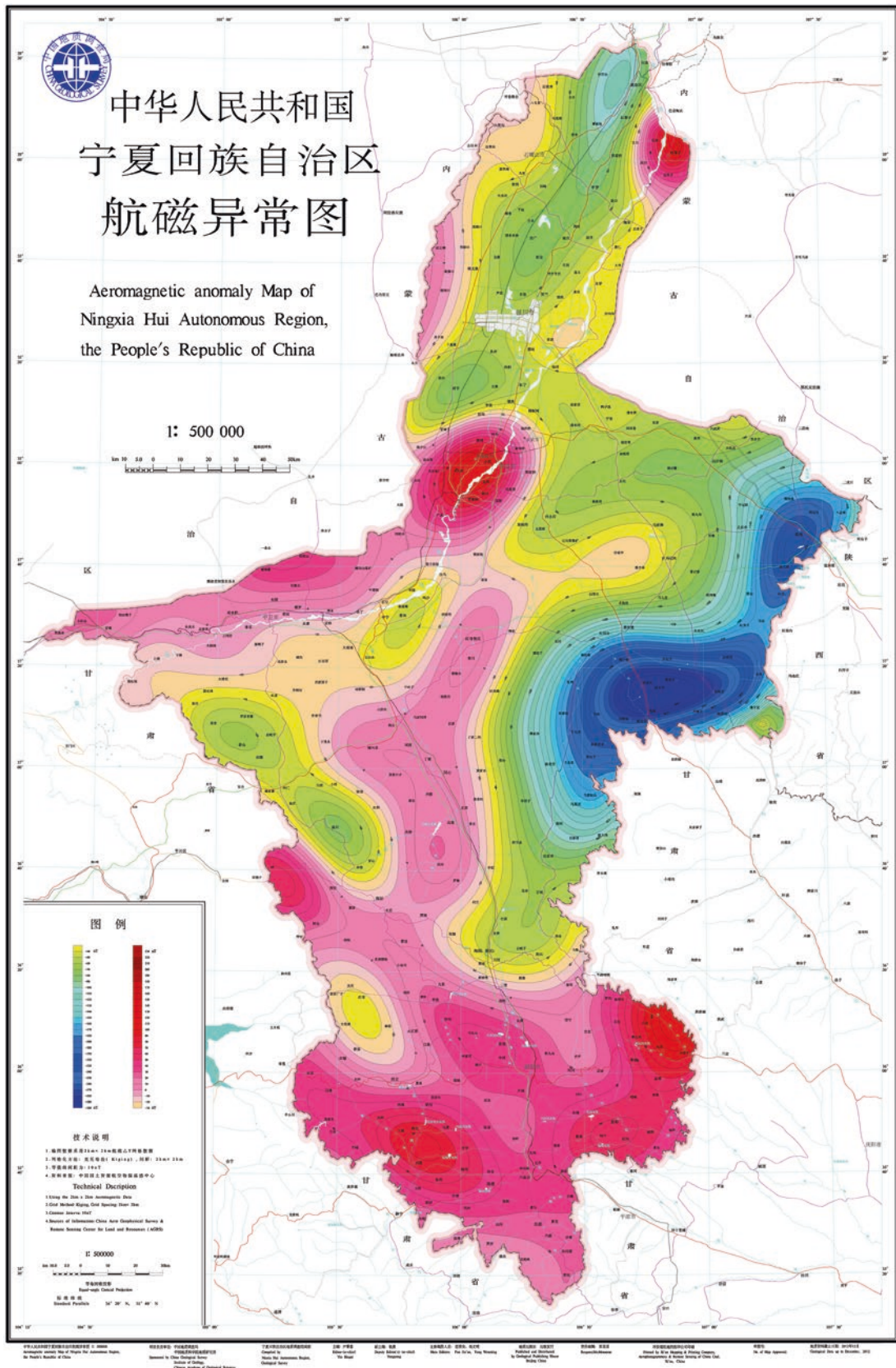


Fig. 5.15 Aeromagnetic anomaly map of Ningxia Hui Autonomous Region [15]

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