A Big Earth Data Platform for Three Poles

**Xinjiang Central Asia mineral resources distribution and potential evaluation (January 2018-december 2021)**

1、Description

1) Data content: this database includes spatial scope: ① Qinghai Tibet Plateau and Xinjiang in China; ② Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan); ③ West Asia (Pakistan, Afghanistan, Iran); ④ Southeast Asia (Thailand, Vietnam, Laos, Myanmar, Cambodia). The data content mainly includes: ① 1:5 million geological data set (geological body and structure); ② 1:1 million geological and mineral data sets of various countries (geological body, structure and mineral resources); ② Metal mineral data sets (deposits, occurrences, mineralized spots); ③ Xinjiang Central Asia metallogenic geological background data set (rock formation assemblage, tectonic zoning, metallogenic zone, prospective area, target area and minerals); Main maps include: Pan third pole geological and mineral map (1:5 million), geological and mineral map of four Central Asian countries (1:1.5 million), geological and mineral map of Pakistan (1:1 million), geological and mineral map of Afghanistan (1:1 million), geological and mineral map of Iran (1:1 million), geological and mineral map of Xinjiang Central Asia corridor in China (1:2.5 million), metallogenic law map of Xinjiang Central Asia corridor in China (1:2.5 million) Geological and mineral map of Qinghai Tibet Plateau in China (1:1.5 million). The spatial database adopts ArcGIS platform, which can provide basic data support for regional metallogenic law research, resource potential evaluation, strategic prospect area delineation and various thematic maps. The database format is file database (. GDB), and drawings include engineering files (MXD) and grid diagrams (jpg). Various common graphics formats (PDF, TIF, EPS, etc.) can also be generated as required. The pan third pole region (1:5 million) adopts Lambert Conformal cone projection, with the central longitude of 84 degrees east longitude and double latitudes of 20 degrees and 55 degrees respectively. The geological and mineral data of China's Xinjiang Central Asia corridor belt adopts Lambert isometric conic projection. The central longitude is 75 degrees east longitude and the double latitudes are 30 degrees and 50 degrees respectively. The 1:1 million geological and mineral data of major countries in central and West Asia adopt Lambert isometric conic projection, and the central longitude and double latitude are determined according to the location of each country.
2) Data source and processing method; The basic geological data are mainly from the geological map of Asia (2015) (1:5 million), the tectonic metallogenic map and geological map of Central Eurasia (2008) (1:2.5 million), and the geological map of geological survey departments of various countries in the region (1:1 million); ② The main sources of mineral data include the results of the national mineral resource potential evaluation project (2012), the Central Asian mineral database and thematic map of the natural history museum in London, UK (2014), the Afghanistan data set of the U.S. Geological Survey (2008), relevant data of geological survey departments of various countries in the region, and papers on minerals in the region. In addition, in order to meet the modification and improvement of various data, a large number of remote sensing data are used, including image data such as ETM +, oli, aster and worldview, as well as 90m, 30m and 12.5mdem data. 3) Data quality description; In order to meet the needs of the study of metallogenic law in Pan third pole region and the preparation of geological and mineral map and metallogenic prediction map, the data spatial accuracy, logical consistency and data integrity are edited, processed and supplemented. Specifically, it includes: ① vectorization. A lot of vectorization work has been carried out based on the above data to supplement the missing areas of digital data (Iran and Pakistan). At the same time, various surface elements and line elements are combined and divided according to the degree of data update. The vectorization work is completed according to the requirements of relevant specifications and scale accuracy in China; ② Topology processing to eliminate topology errors such as overlapping surfaces and empty areas; ③ Improve the element attribute structure and supplement the element attribute content, focus on the preparation objectives of regional metallogenic law research, geological and mineral map and metallogenic prediction map, establish the corresponding data model according to China's relevant specifications and combined with specific data and data content, improve the attribute structure of geological body, structure and mineral elements, and complete the filling in of corresponding attributes; ④ Based on the above data processing contents, combined with the pan third pole research results and the latest understanding, the relevant geological contents in the area have been further modified and improved.
4) Data application achievements and prospects: the pan third pole geological and mineral database mainly serves the pan third pole region, important metallogenic belts and national and regional metallogenic law research, and the preparation of geological and mineral map and metallogenic prediction map. The scale is 1:5 million (Pan third pole region), 1:2.5 million (Xinjiang Central Asia corridor belt in China), and 1:1 million (important metallogenic belts and countries in central and Western Asia).

2、Keywords

Theme：Cr,Fe,Rocks/Minerals,Gold,Mn,mineral distribution,Cu
Discipline：Solid earth
Places：West Asia, Xinjiang China, Southeast Asia, Central Asia, Tibetan Plateau
Time：2018-2021

3、Data details

1.Scale：5000000

2.Projection：

3.Filesize：370.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：36.126 | - |
| west：6.46 | - | east：6.5 |
| - | south：60.102 | - |

5、Time frame:None--None

6、Reference method

References to data:

LIU Yan. Xinjiang Central Asia mineral resources distribution and potential evaluation (January 2018-december 2021). A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2720082021

References to articles:

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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