A Big Earth Data Platform for Three Poles

**Major and trace elements, and zircon trace elements data sets of the Yunmengshan and Fangshan pluton in North China (2020)**

1、Description

The data of major and trace elements were analysed by ICP-MS at the State Key Laboratory of Isotope Geochemistry, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. Zircon U-Pb ages and trace elements were analysed by LA-ICP-MS at the Key Laboratory of Mineralogy and Metallogeny of CAS, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. The international standard samples and reference values measured in the same batch are consistent within the error range, with low blank in the whole process. The samples of YMS and FS batholiths range from diorite to granite (52‒75 wt. % SiO2), and both show the higher bulk rock Fe3+/ΣFe ratios (between 0.3 and 0.6). The Fe3+/ΣFe of low silica (SiO2<65 wt. %) samples of Dabie are consistent with YMS and FS, but the high SiO2 samples show the low ratios (between 0.1 and 0.3) . Compared with MORB, all the samples show the high ƒO2.Majority of zircons Ce4+/Ce3+ and Eu/Eu\* ratios are mostly in range of 100-1000, and consistent with ore-bearing porphyries in Chile and China (e.g., Dexing), indicating the high ƒO2. Conversely, the inherited zircon (~2.5 Ga) Ce4+/Ce3+ ratios of Liguo and FS plutons range from 10 to 200, similar to those of ore barren porphyries in Chile, i.e. low ƒO2 .That adakitic rocks with high oxygen fugacity are very widespread in the NCC. Those magmas were derived from partial melting of thickened lower continental crust with the mixing of mantle materials, and the high ƒO2 characteristic inherited from an oxidized mantle source that has been modified by fluids and/or melt derived from (Paleo)-Pacific plate.

2、Keywords

Theme：Oxygen fugacity,Decratonization,Geochemistry,Tectonics,Plate subduction  
Discipline：Solid earth  
Places：North China Craton  
Time：130Ma

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.06MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.45 | - |
| west：115.53 | - | east：116.5 |
| - | south：39.41 | - |

5、Time frame:None--None

6、Reference method

References to data:

ZHANG Zhekun. Major and trace elements, and zircon trace elements data sets of the Yunmengshan and Fangshan pluton in North China (2020). A Big Earth Data Platform for Three Poles, doi:10.1007/s11631-020-00394-72021

References to articles:

Zhang, Z., Ling, M., Zhang, L., Sun, S., & Sun, W. (2020). High oxygen fugacity magma: implication for the destruction of the North China Craton. Acta Geochimica, 39(2), 161-171.

7、Supporting project information

The deep process and resource effect of major geological events in Yanshan period

8、Data resource provider

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