A Big Earth Data Platform for Three Poles

**Paleomagnetic and paleoclimate data sets from huatugou section, Qaidam Basin, China**

1、Description

1) Data content:
The paleomagnetic data can establish the paleomagnetic time frame of huatougou section, and the grain size, magnetic indexes and geochemical indexes can restore the climate change in geological history.
2) Data sources and processing methods
Data sources are experimental data.
Paleomagnetic data: 2x2x2 cm cylindrical samples were drilled with a small gasoline drill and measured in a magnetic shielding chamber with a cryogenic superconducting magnetometer.
Magnetic data: The samples collected in the field were ground into fine particles in a 2x2x2 non-magnetic plastic box with a mortar, and tested with a Kapobridge magnetometer, pulse magnetometer and rotary magnetometer.
Grain size data: Analysis of decomposed samples using a Malvern Mastersizer 2000 particle size analyzer. Prior to analysis, organic matter was removed with hot hydrogen peroxide and then carbonate was removed with hydrochloric acid in accordance with standard Procedures of Lanzhou University.
Geochemical data: Take a small amount of samples to be pounded with agate mortar and ground into powder, and then sieve with a 200-mesh sieve to ensure that the samples meet test standards. After all the samples were ground and sifted, the samples were placed lightly in the groove of the slide and scraped to be flush with the surrounding slide. A PANalytical X 'Pert Pro MPD Polycrystal X-ray diffractometer was used as the test instrument.
3) Data quality
Sample collection and experimental processing were carried out in accordance with strict standards, and the data obtained were of reliable quality.
4) Data application achievements and prospects
Two SCI papers were published using these data, one of which was Ni.

2、Keywords

Theme：Geochemical,magnetic properties,Grain size,Paleomagnetic,Paleoclimate Reconstruction
Discipline：Palaeoenvironment
Places：Qaidam Basin
Time：Pliocene

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：0.1MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.0 | - |
| west：91.0 | - | east：92.0 |
| - | south：38.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

NIE Junsheng. Paleomagnetic and paleoclimate data sets from huatugou section, Qaidam Basin, China. A Big Earth Data Platform for Three Poles, doi:10.1029/2019GL0846482022

References to articles:

Luo, Z., Su, Q. D., Wang, Z., Heermance, R. V., Garzione, C., & Li, M., et al. (2018). Orbital forcing of Plio‐Pleistocene climate variation in a Qaidam Basin lake based on paleomagnetic and evaporite mineralogic analysis. Palaeogeography, Palaeoclimatology, Palaeoecology, 510,
31–39. https://doi.org/10.1016/j.palaeo.2017.09.022

Su, Q., Nie, J., Meng, Q., Heermance, R., Gong, L., & Luo, Z., et al. (2019). Central Asian drying at 3.3 Ma linked to tropical forcing? Geophysical Research Letters, 46 https://doi.org/10.1029/2019GL084648

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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