A Big Earth Data Platform for Three Poles

**Zircon (U-Th) / He age data of Cretaceous denudation cooling events in the Qiangtang block**

1、Description

The samples are well qiangke-1, well qiangdi-17 and well qiangzi-16. The analysis and testing work was completed in the laboratory of AR, u-th-he geochronology, Institute of Geology and Geophysics, Chinese Academy of Sciences. See Wu Lin et al. (2016) for testing methods. The results are as follows: the zircon (U-Th) / He ages of 9 samples from three boreholes in the Qiangtang block in the Qinghai Tibet Plateau, except that the thermal history information of two samples from Eocene has not been reset, the rest of the samples are concentrated in Cretaceous, and the age values change little with elevation, indicating the existence of Cretaceous denudation cooling. Well qd-17 in the west of the Qiangtang block recorded denudation cooling in the early Cretaceous (about 127-114 MA), and well qz-16 in the East recorded denudation cooling in the late Cretaceous (about 92-64 MA). The denudation and cooling of the Cretaceous resulted in the statistics of regional low temperature thermochronology and the response of tectonic sedimentary events. The low-temperature thermochronological data of the Qiangtang block, Lhasa block and Himalayan block show that the Cretaceous early Eocene low-temperature thermochronological ages are widely distributed in the Northern Lhasa block and Qiangtang block (within the plateau), while the late Miocene low-temperature thermochronological ages are widely distributed in the southern Lhasa block to Himalayan block (southern margin of the plateau), This age distribution pattern suggests that the interior and southern margin of the plateau experienced different erosion cooling histories. Referring to the rapid denudation cooling process in the southern margin of the plateau since late Miocene, it is speculated that there was a Cretaceous rapid denudation cooling event in the interior of the plateau. Early Cretaceous depositional discontinuities and unconformities occurred widely in the Northern Lhasa block, Qiangtang block and its northern area, which also indicated rapid denudation during Cretaceous. Combined with the analysis of regional tectonic evolution, the Cretaceous denudation cooling may be the result of the collision between the Lhasa block and Qiangtang block after the closure of the Bangong Lake Nujiang ocean in Early Cretaceous, which indicates that there may have been obvious shortening, thickening deformation and corresponding denudation cooling in the crust of the plateau before the Cenozoic India Eurasia collision.

2、Keywords

Theme：collision event,Tectonics,plate tectonics  
Discipline：Solid earth  
Places：Qiangtang Basin  
Time：Cretaceous

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.5MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：35.0 | - |
| west：79.0 | - | east：93.0 |
| - | south：26.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

zheng Bo. Zircon (U-Th) / He age data of Cretaceous denudation cooling events in the Qiangtang block. A Big Earth Data Platform for Three Poles, doi:10.11888/Geo.tpdc.2714692021

References to articles:

郑波, 陈文彬, 王增振, 冯丽霞, 张艳雄, 万友利, 吴林. (2020). 羌塘地块白垩纪剥蚀—冷却事件. 地质论评, 66(05), 1143-1154.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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