A Big Earth Data Platform for Three Poles

**The Pre-Cambrian to Cambrian lithostratigraphic columns of the sections in Northern Pakistan**

1、Description

The Ediacaran to early Cambrian representing the transition of Cryptozoic to Phanerozoic is one of the most important transitional periods in the earth system evolution and a hot period for the study of the origin and evolution of metazoan. Focusing on this scientific question, massive interdisciplinary studies including palaeontology, stratigraphy, geochemistry, geophysics etc. have been taken in many regions which significantly improve our understandings of this period. In the Himalaya zone, the correlative strata only have been reported and studies in a few regions in the Sub Indian Continent. The North Pakistan locating the western Himalaya is one of the adjoining areas of Tibet Plateau. For the lack of basic stratigraphic and palaeontological studies, it’s hard to confirm the exact age of the Pre-Cambrian to Cambrian strata assigned by the previous studies. Thus, for the establishment of the chronological framework in western Himalaya, it’s necessary to do more detailed investigations and sample collections to sort out the sedimentary sequence, biostratigraphy and chemostratigraphy of this interval in North Pakistan. During the expeditions in the Hazara Basin divided into eastern (Abbottabad block) and western (Tanawal Block) segments across Panjal-Khairabad Thrust (PKT or MCT), we detailedly observed the lithostratigraphy and systematically collected samples for petrological, palaeontological and geochemical studies at the sections in both eastern (Sikhar Mountain, Tarnawai Village, Tanakki, Abbottabad Height and Sobangali sections) and western (Neelor Village and Pindkhan Khel sections) Hazara Basin. Basing on the lab analysis, we have detailed correlated and sorted the lithostratigraphic sequences of each section, and completed a correlative lithostratigraphic columns of the sections. In general, the lithology of these sections in eastern and western Hazara Basin are comparable and consist of the Hazara Formation (Eastern Harara Basin) and Tanawa Formation (Western Harara Basin), Ediacaran Tanakki Diamictite, Cap-Carbonate, Kakul Formation (siliciclastics) and Abbottabad Formation (dolostone)、Cambrian Hazira Formation (phosphorite, dolostone and siliciclastics ) and Jurassic Samana Suk (bioclastic limestone) in ascending order. The Tanakki Diamictite disconformably overlies the underlying Hazara Formation (Eastern Harara Basin) and Tanawa Formation (Western Harara Basin); the Abbottabad Formation both disconformably contacts with the under Kakul Formation and upper Hazira Formation; the Jurassic Samana Suk directly unconformably overlies the Cambrian Hazira Formation. For now, the Ediacaran Cap-carbonate has only been observed at the Pindkhand Khel section in the western Hazara Basin which is reported in the Lesser Himalaya for the first time. Thus, it is possible to induce the underlying Tanakki Diamictite is belong to Ediacaran in age. However, the exact Cambrian Hazira Formation bearing abundant small shelly fossils has only been confirmed at Tarnawai Village and Tanakki sections in eastern Harara Basin.

2、Keywords

Theme：Paleontology,Strata  
Discipline：Solid earth  
Places：Northern Pakistan, Hazara Basin  
Time：Cambrian, Precambrian

3、Data details

1.Scale：None

2.Projection：

3.Filesize：9.48MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：34.28 | - |
| west：73.31 | - | east：72.93 |
| - | south：33.93 | - |

5、Time frame:None--None

6、Reference method

References to data:

PAN Bing. The Pre-Cambrian to Cambrian lithostratigraphic columns of the sections in Northern Pakistan. A Big Earth Data Platform for Three Poles, doi:10.11888/Geo.tpdc.2717322021

References to articles:

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

name: PAN Bing  
unit:   
email: bpan@nigpas.ac.cn