



Discovery of the Late Jurassic-Early Cretaceous Aeolian Deposits in Qaidam Basin, Northern Tibet Plateau

Junjie Hu and Yinsheng Ma

Institute of Geomechanics, Chinese Academy of Geological Sciences, Energy Geology Laboratory, Beijing, China
(howimet@foxmail.com)

China's complete late Mesozoic continental sedimentary records are advantaged condition for related land-based climatic history research. Qaidam Basin located at the northern margin of Tibetan Plateau, its late Mesozoic strata provides important information about palaeoenvironment change. Several significant geologic events such as the collision of Bangong-Nujiang Suture and the interior aridification appearance at NW China are likely recorded in the succession, which makes it an ideal window of palaeoclimate investigation.

Through the recent study, the Late Jurassic-Early Cretaceous eolian deposits have been discovered from the overlying strata of Hongshuigou Formation in Wanggaxiu area, Qaidam Basin. The typical eolian evidences can be identified in both rock micro-structure and depositional features: the strata mainly consist of brown medium pure sandstone with well sorting-good round quartz. Obvious eolian grain surface textures such as dish-shaped impact crater, crescent-shaped impact scars can be observed through SEM. Well-developed thick, large scale and high dip tabular cross-bedding characterized by eolian dune foresets. The syndimentary deformation structures are common in eolian strata, such as drag folds and overturned folds. According to lithology and sedimentary structure characteristics, 4 subfacies were recognized in the Wanggaxiu eolian deposits. The dune subfacies was characterized by large-scale cross bedding. Waddy , inter dunes and desert lake were feat ure as aqueous deposit. The discovery of Wanggaxiu eolian strata has enriched sedimentary types in the Mesozoic Qaidam Basin. and is of certain significances for the study of regional sequncces, Late Mesozoic paleoclimatic and paleogeographic evolution of the northwest China.