

Temporal changes of depositional environment in southeastern Tarim Basin, western China, since 10 Ma

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East Asian Monsoon was considered to have been enhanced by the uplift of Himalaya-Tibet. Tarim Basin is lying to the north of the Kunlun Mountains, which were formed as the final stage of the uplift of Tibet and still continue to rise. The basin is largely covered by Taklimakan Desert, the world's second largest sand desert. It is suggested that Taklimakan Desert is one of the major sources of aeolian sediments in Chinese Loess Plateau which record the evolution and variability of East Asian Monsoon. Thus, knowledge on the timing and mode of emergence and evolution of Taklimakan Desert will provide useful information for understanding the relationship between mountain building and evolution of East Asian Monsoon as well as aridification in inland Asia.

We conducted field observation in order to complete detailed column and collected samples in strata since 10Ma at Taklimakan Desert last summer. The studied section is located at Yecheng in the southwestern margin of Tarim Basin. There are well-exposed outcrops of thick late Cenozoic deposits (Zheng et al., 2000). The sedimentological study indicates that this section represents deposition in a fluvial system, beginning as a meandering system, and ending as a proximal alluvial fan system. The deposits are intercalated with yellow siltstone beds, which are interpreted as aeolian deposits. (Zheng et al., 2003). The timing when eolian deposits appeared is important because it constrains the onset timing of the desert formation. This study examined grain size distribution, mineral composition, chemical composition and surface microtexture of grains in samples collected from the section in order to confirm that the yellow siltstone is of eolian origin and demonstrate the provenance change of the yellow siltstone which were controlled by climate change or tectonics.