

The distribution of Cenozoic conglomerates and its sedimentological constraint on the uplift of the South Tianshan, NW China

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The Cenozoic alluvial fan deposits in the Kuqa Depression of Tarim Basin, likely in response to a tectonic event, can provide critical evidence for constraining the timing of the South Tianshan uplift and reconstructing the paleotectonic evolution of the Central Asian Orogenic Belt. The sedimentological analysis shows that the conglomerates were deposited in alluvial fan environment. The initial uplift stage was started from the Jidike Formation at ~23Ma, resulting only small but angular gravels. Then the rapid uplift was since 15.97 Ma leading to the deposition of Kangcun conglomerate layers. And the next rapid and intensely uplift was started at ~4 Ma of the deposition of Kuqa Formation, according to ~2000m thick alluvial fan conglomerates. After a short quiescence, the most remarkable uplift of South Tianshan regenerated and caused the most extensive alluvial fan conglomerates of Xiyu Formation since 2.58 Ma and continuing to the present.

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