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中生代天山地区隆升历史的裂变径迹证据 [点此下载全文](#)

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摘要:

本文对天山及其两侧盆地的8条典型地质剖面进行了大量的磷灰石裂变径迹测试,重点分析了天山地区不同区域的抬升历史的差异。结果表明天山主要经历4次构造抬升过程,每次抬升的范围并不相同,且存在东西差异:①早白垩世抬升,在天山南北两侧都有发生,且南边抬升早,北边抬升晚。本次抬升导致早中侏罗世天山地区准平原化状态开始解体,盆山分异开始出现;②晚白垩世抬升,从约96Ma开始,天山南侧为盆山同升的区域性隆升,天山北侧的抬升主要发生在东部地区;③古近纪抬升,从约46Ma开始,主要发生在中天山和南天山,造成天山两侧盆地物源区的重大变化,本次抬升为印度-亚洲碰撞在天山地区产生的最早的远程效应;④中新世以来的抬升,从约25Ma开始,主要发生在库车盆地北缘和北天山—准噶尔南缘。从抬升剥蚀量来看,从东向西逐渐变大。

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Mesozoic and Cenozoic Uplifting History of the Tianshan Region: Insight from Apatite Fission Track [Download Fulltext](#)

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Abstract:

According to the apatite fission track analysis of the samples from different parts of Tianshan and its' two piedmont basins, the major uplifts happened in Tianshan can be recovered. Tianshan underwent four uplifting events during the Mesozoic and Cenozoic, each of which covered a different area, namely, 1) the early Cretaceous uplift began at ~140Ma and took place in the south, central and north parts of Tianshan, leading to the destruction of the Jurassic peneplanation in Tianshan area; 2) the late Cretaceous uplift began at ~96Ma, took place in both Tianshan and its piedmont basins. The uplift height of the area near the Bogda Range in the east is larger than the west; and 3) the Paleogene uplift began at about 46 Ma, happening mainly in the central Tianshan and south Tianshan. It's probably the earliest distant effect of the India-Asia collision. 4) The Miocene uplift began at about 25 Ma, limited to the northern margin of the Kuqa basin and the southern margin of North Tianshan-Sjungggar. The erosive volume by lifting was increasing gradually from east to west.

Keywords: [apatite](#) [fission track](#) [Mesozoic and Cenozoic](#) [Tianshan](#) [uplift](#)

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