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**Mesozoic-Cenozoic exhumation history of the Qimen Tagh Range, northeastern margins of the Tibetan Plateau: evidence from apatite fission track analysis**

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**Abstract:** The Tibetan Plateau (TP) is the highest plateau in the world. It is composed of a series of E-W stretched blocks/terrane originating from the Gondwana super-continent. As such, the TP has become one of the world's critical foci of Cenozoic geological studies. The Paleozoic and Mesozoic tectonic histories of the Proto-Tibetan region played an important role in the Cenozoic evolution of the TP. Understanding the pre-Cenozoic building of the Qimen Tagh Range located along the northeastern margins of the TP will help to constrain the development of the northern boundaries of the Proto-Tibetan region. Here, we present apatite fission track data for six granite samples along two vertical transects in the North Qimen Tagh Range. These thermochronometric data indicate that the North Qimen Tagh Range experienced a four-stage cooling history, *i.e.*, during the periods ~262-240 Ma, ~165-160 Ma, 105-80 Ma and ~14/10-0 Ma. They reveal that the initial uplift of the northern margins of the TP (*i.e.*, the Qimen Tagh and East Kunlun mountain ranges) during the Late Permian-Middle Triassic separated the paleo-Qaidam Basin from the

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