

## **TECTONIC EVOLUTION OF THE EASTERN KUNLUN OROGEN IN WEST CHINA: CONSTRAINTS FROM $40\text{Ar}/39\text{Ar}$ DATA**

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A detailed survey of  $40\text{Ar}/39\text{Ar}$  dating was carried out on basement rocks of the Eastern Kunlun Mountains. The new ages constrain that the Kunlun basement essentially formed during Caledonian tectonic events. The basement was locally overprinted by Indosinian, Jurassic and Paleogene tectonothermal events. In detail, the results include (units are from N to S): (1) The Jinshuikou Group shows hornblende ages of ca. 390 Ma, muscovite at ca. 235 Ma, and biotite ages between 240 and 210 Ma. These are interpreted to result from amphibolite-grade Caledonian orogenic diastrophism and low-grade metamorphic Indosinian overprint. (2) The Xiao Miao Group is characterized by a  $40\text{Ar}/39\text{Ar}$  muscovite age of 420 Ma. (3) The Nachitai Group to the S of the Central Kunlun fault revealed muscovite ages of ca. 160 Ma, and biotite ages of ca. 110 Ma overprinted by a very-low-grade event at ca. 40 Ma. (4) The Kuhai basement to the S is again characterized by a Caledonian age with no detectable, latter overprint: Hornblende: ca. 400 Ma, muscovite 370 - 360 Ma, biotite: c. 370 Ma. These new ages argue for the presence of a major Jurassic tectonothermal event along Central Kunlun fault. We suggest, in accordance with a major subsidence phase in the Qaidam basin adjacent to the north, a Jurassic extensional event.