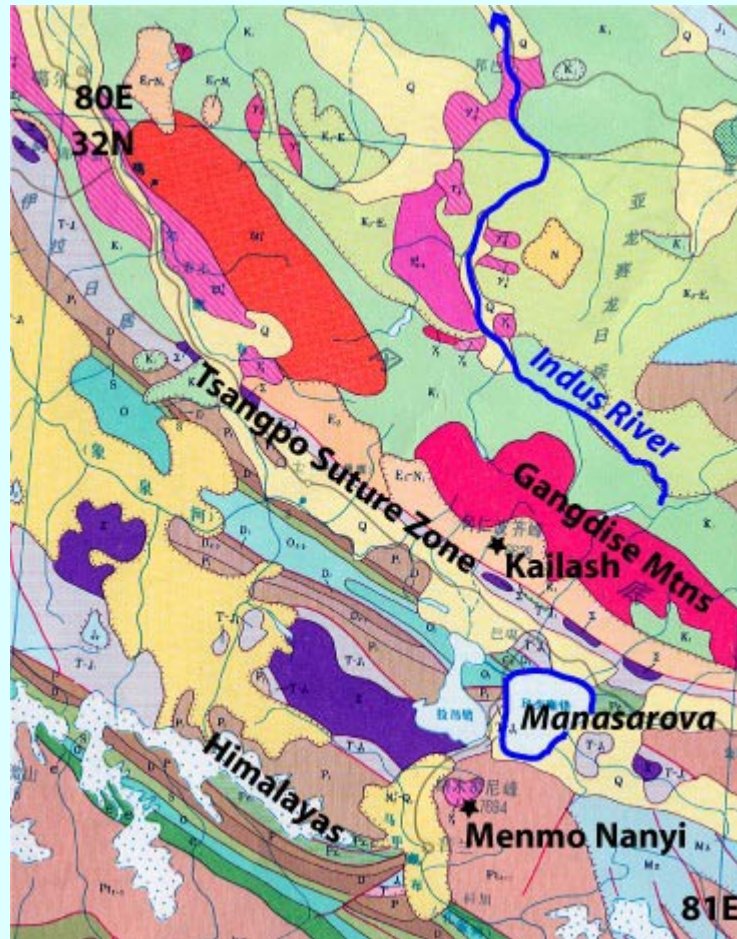


## Geology and Geography of the Mt. Kailash area and Indus River headwaters in southwestern Tibet



Geologic Map of the Mt. Kailash area and Indus River headwaters in southwestern Tibet Headwaters Area  
Map produced by the Chinese Ministry of Geology and Mineral Resources  
Original scale 1:1,500,000

Mt. Kailash and the headwaters of the Indus River are located in the Gangdise Mountains north of the Tsangpo Suture. The Tsangpo Suture is a thrust fault representing the Eocene boundary of the Indian and Asian plates, with subsequent right lateral strike-slip displacement. The high average elevation of this area (about 17,000 feet) is typical of the western Tibetan Plateau and results from the ongoing penetration of India into Asia.

The Mt. Kailash and Indus headwaters area is characterized by extensively faulted and metamorphosed late Cretaceous to mid Cenozoic metasedimentary rocks which have been intruded by Cenozoic granitic rocks. Faults are generally oriented NW-SE. With the exception of the Xiangquan basin which contains late Cenozoic sediments, Paleozoic and Mesozoic rocks generally occur south of the Tsangpo Suture in NW-SE elongated fault bounded blocks. Paleozoic rocks represent offshore marine limestones deposited before subduction of the Tethys oceanic crust. Mesozoic sediments were deposited on the southern margin of the Asia block during subduction of the Tethys oceanic crust and prior to the collision between the Indian and Asian continents. North of the Tsangpo Suture, a large sheet of Late Cretaceous to mid Cenozoic clastic sediments unconformably overlies these rocks. These sediments were derived from the volcanic highlands during the early stages of collision. Cenozoic granitic rocks probably represent the low melting temperature fraction of subducted oceanic basalt and Indian

continental crustal rocks.



Looking south over Eocene-Neogene metaconglomerates on the south side of Mount Kailash. Mt. Menmo Nanyi (7694 m, 25,236') is in the Himalayas, and the Indus Suture Zone is in the valley.

Photo by Travis Winn



Mt. Kailash appears to be a metasedimentary roof pendent supported by massive granite.

Photo by Travis Winn





A small glacier feeding lakes bounded by moraines on the north side of Mt. Kailash is a remnant of the great ice sheets that covered northern Asia and Tibet during the Quaternary. The last ice sheet began retreating about 10,000 years ago. Photo by Travis Winn



A herd of kiang (wild asses) cross Quaternary sand dunes which cover late Eocene volcanics interbedded with Cretaceous to Eocene sediments in the Indus River headwaters. The river valley is filled with glacial gravels and as a result has a constant gradient of about 16 feet per mile (3 m/km). Photo by Travis Winn