
# Tectonic evolution and dynamics of the Tibetan Plateau

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Editorial

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## 1. Introduction

The Tibetan Plateau, bordered by the Tarim, North China, South China and Indian Cratons in central Asia, was built upon a tectonic collage that was created by sequential accretion, from north to south, of several microcontinents, accretionary belts, and island arcs onto the southern margin of Eurasia since the early Paleozoic. The Tibetan Plateau consists of six major terranes, namely, from north to south, the Kunlun, Songpan–Ganze, Northern Qiangtang, Southern Qiangtang, Lhasa and Himalaya terranes (Fig. 1). These terranes are separated by the Kunlun suture, Jinsha suture, Longmu Co–Shuanghu suture, Bangong–Nujiang suture, and Indus–Tsangpo suture zones, representing Paleo-Asian, Paleo-, Meso-, and Neo-Tethyan oceanic relicts, respectively (e.g., Yin and Harrison, 2000 and references therein). Gehrels et al. (2011) proposed that the fragments south of the Jinsa suture zone evolved along the northern margin of India as part of a circum-Gondwana convergent margin system, whereas the terranes north of the Jinsa suture zone formed along the southern margin of the Tarim–North China Craton, and that northern terranes and Gondwana-margin assemblages may have been juxtaposed during mid-Paleozoic time, followed by rifting that formed the Paleo-Tethys and Meso-Tethys ocean basins. Pan et al. (2012) proposed that the Tibetan Plateau includes three major orogenic systems, namely, from northeast to southwest, the Early Paleozoic Qinling–Qilianshan–Kunlunshan–Altyn (Qin–Qi–Kun–A), the Late Paleozoic–Triassic Qiangtang–Sanjiang, and the Late Paleozoic to Cenozoic Gangdese–Himalaya orogenic systems (Fig. 1). It is noted that all the tectonic units of the Tibetan Plateau have been strongly deformed and displaced by numerous Cenozoic fault systems including the Altyn Tagh, Karakax, and Karaforum systems to the west, and Kunlun, Red River, and Longmenshan fault systems to the east.

Studies of the formation and evolution of the Tibetan Plateau have been