

Cretaceous–Paleogene lithostratigraphic and tectonostratigraphic frameworks in southern Tibet: implication to the timing of the India-Asia collision

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Lithostratigraphic redefinition is a fundamental and important work, and reflects present knowledge to understanding the strata in a given region. This paper presents detailed description and critical review of 34 lithostratigraphic units in southern Tibet, including 14 lithostratigraphic units of southern Tethyan Himalaya, which are Gucuocun, Dongshan, Chaqiela, Lengqingre, Bolinxiala, Gambacunkou, Jiubao, Zhepure Shanpo and Zongshan formations of the Cretaceous; Jidula, Zongpu, Enba and Zhaguo formations of the Paleogene; 9 lithostratigraphic units of northern Tethyan Himalaya which are Weimei, Rilang, Jiabula and Chuangde formations of the Cretaceous, Zongzhuo, Jiachala, Denggang, Sangdanlin and Zheya formations of the Paleogene; 9 lithostratigraphic units of Xigaze forearc basin, which include Sangzugang, Ngamring, Padana and Qubeiya formations of the Cretaceous, Quxia, Jialazi, Dajin, Qiuwu and Dazhuka formations of the Paleogene; and two from the Indus-Yarlung suture zone, which are Cretaceous Chongdui Formation and Oligocene-Miocene Liuqu group. Based on obtained stratigraphic, sedimentological, provenance and basin evolution data, this paper divides 7 tectonostratigraphic units in southern Tibet including two Cenozoic tectonostratigraphic units (TS1, TS2) after India-Asia initial collision, 5 Cretaceous tectonostratigraphic units prior to the India-Asia collision including the TSI3, TSI4, TSI5 units belong to the northern margin of India and the TSL3, TSL4 units belong to southern margin of Asia.