



Paleoglaciation of Shaluli Shan, Southeastern Tibetan Plateau

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Geomorphological mapping, ^{10}Be and ^{26}Al exposure dating and glacial modeling are used to reconstruct the glacial history of the Shaluli Shan, southeastern Tibetan Plateau, and to understand the evolution of the glacial landscape. The mapping results indicate past extensive alpine glaciation in high mountain areas and ice caps on low relief plateaus such as the Haizishan Plateau. Using ^{10}Be exposure ages from glacial boulders, we identify glacial deposits from the Late Glacial, with minimum ages at 13.0 ± 1.2 ka – 17.1 ± 1.6 ka, global Last Glacial Maximum (gLGM) at 21.6 ± 2.0 ka, and pre-gLGM with minimum ages at 102.3 ± 10.0 – 183.6 ± 17.0 ka. The glacial chronology of Shaluli Shan appears more consistent with Northern Hemisphere paleo-ice sheet variations than with glacial chronologies from other areas of the Tibetan Plateau. The Haizishan Plateau experienced multiple ice cap glaciations, and ^{10}Be and ^{26}Al exposure ages from bedrock, boulder and saprolite profile samples show limited glacial erosion on some parts of the plateau surface and more than 2 meters of bedrock erosion in other areas. This juxtaposition of high erosion and relict topography suggests that the paleo Haizishan ice cap had a complex basal thermal regime. A numerical glacier model (PISM) is now being used to investigate the thermal regime of the paleo ice cap and patterns of erosion potential. This work provides new insights into the paleo-climatic setting and glacial landscape evolution of the southeast Tibetan Plateau.