



## **The timing of Late Pleistocene glaciation at Mount Wilhelm, Papua New Guinea**

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The highlands of New Guinea were the most extensively glaciated area in the Asian tropical region during the Late Pleistocene. Evidence for glaciation is widespread on most of the mountain peaks above ~3500 m. Glacial landforms include both valley and ice cap forms, but the timing of glaciation remains constrained to only a few local areas. This paper focuses on Mount Wilhelm, which is situated in the central southern region of Papua New Guinea at 5.78°S and is the highest peak (4510 m a.s.l.) We focus on a south easterly valley (Pindaunde Valley) emanating from the peak, where large moraines indicate the maximum ice extent of a valley glacier ~5 km long. Within this extensive moraine complex, recessional moraines document the retreat of the glacier towards the summit region. In order to determine the timing of deglaciation, we collected samples for surface exposure dating using <sup>36</sup>Cl and <sup>10</sup>Be from diorite boulders positioned on moraine crests. The ages indicate that maximum ice extent was attained during the last glacial maximum (LGM) and that ice remained near its maximum extent until after 15 ka but persisted at higher elevations almost until the Holocene. These results are similar to those described from Mt Giluwe to the northwest of Mount Wilhelm, where an ice cap reached its maximum extent at the LGM and remained there for around 3-4,000 years. This indicates that full glacial conditions were only brief in this region of the tropics.