

approach is to study the pattern of the paleo-longitudinal profiles of selected streams throughout the study region. The inferred paleostream profiles will be compared with the modern incised rivers to examine the history of stream incision. If uplift has occurred in the dome, the strath surfaces will show faster incision rates at the head of the river, so the paleo-longitudinal profiles will converge downstream. After establishing if the dome rocks are uplifting (or if the basin is subsiding), we can interpret the rates of rock uplift and determine if the rates have varied over time. Preliminary results indicate that the paleo-long profiles converge downstream, supporting the rock uplift hypothesis.

The second approach is to determine the age of the exposed straths, to help confirm our correlation of the strath fragments in Approach 1, and to determine any variability in the rates of incision between periods of strath abandonment. Cosmogenic  $^{10}\text{Be}$  and  $^{36}\text{Cl}$  exposure dating of the strath surfaces (bedrock samples were collected in three valleys) will be used to determine the age of strath abandonment. Given the age of river abandonment, and paleo-stream and modern river elevation, we can approximate stream incision rate.

The temporal variability of incision rate will help test the hypothesis that the uplift is related to a mantle avalanche (rates will be initially rapid in that case). Thus, the analysis, will contribute to our understanding of intra-continental plate dynamics.

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### Bedrock incision and relief generation of the western Hangay Dome, Mongolia

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The origin of relief of the Hangay Mountains in west-central Mongolia is problematic because they are situated far from any plate boundary or major active tectonic structure. Straths, former stream bottoms preserved as bedrock terraces, are useful indicators of rock uplift or foreland basin subsidence. By correlating and dating straths of differing heights preserved along valleys in the western Hangay Dome, it is possible to relate them to the tectonic or isostatic processes that contribute to the relief.

Two approaches are being undertaken. The first