

**Rate and structural style of basement-involved faulting and folding,
southern Issyk-Kul basin, Tien Shan Mountains of the Kyrgyz Republic,
central Asia.**

By

Reed Burgett

University of Oregon, Department of Geological Sciences, Eugene, OR, U.S.A.

rburgett@darkwing.uoregon.edu

The Issyk-Kul basin is the largest of the intermontane basins within the Tien Shan Mountains. The range front of the Terskey Range, which borders the Issyk-Kul basin to the south, is expressed at its west and east ends by well-defined thrust faults that place basement rock over Cenozoic basin sediments. In the central area of the southern Issyk-Kul basin, however, active faults show an opposite vergence, with Issyk-Kul basin sediments and underlying basement being transported south toward the higher Terskey Range. Preliminary geomorphic observations suggest that the north-dipping reverse faults in this area become younger and more active to the north. Many of these faults appear to be high angle and bring crystalline basement rock to the surface. Elsewhere in the Tien Shan, the most active faults are low angle and localized in the Tertiary basin sediments to the foreland of the main range-bounding faults. These highest slip rate faults appear to be splays off the crustal-scale ramps that underlie the ranges and young in the direction of vergence. Detailed mapping will allow comparison of the anomalous structural style of the southern Issyk-Kul area to previously studied areas to the west.

River and lake terraces are preserved across active south-vergent structures in the area. Surveying and analysis of progressively deformed geomorphic surfaces of different ages, combined with bedrock structural data, will allow tests of different models of fault-related fold growth. Carbon-14 dating terrace sediments will constrain slip rates on faults and the late Quaternary geomorphic evolution of the basin margin.