2-D Active-source seismic reflection/refraction data is used to study the Kunlun strike-slip fault system in northeastern Tibet. Collision of the Asian and Indian plates 53-58 mya resulted in uplift and thickening of the Tibetan crust to approximately 80 kilometers. Strike-slip faults in the plateau, including the Kunlun strike-slip, accommodate east-west extension of the plateau’s boundaries. The INDEPTH IV dataset was collected as part of Project INDEPTH (International Deep Profiling of Tibet and the Himalaya), a multi-year international collaborative effort to study the crustal structure of the Tibetan Plateau and better understand its evolution. INDEPTH IV data was collected in the summer of 2007 over a 270 km transect that crossed the Kunlun Mountains and Qaidam Basin north of the range. I will utilize the INDEPTH IV data to examine the lateral extent of deformation associated with the Kunlun strike-slip, which I hypothesize should have lower seismic velocities than the surrounding rock, and display a higher degree of seismic anisotropy. Seismic anisotropy is the difference in seismic velocity with respect to azimuthal direction – or angle, and can be an important indicator of mineral grain alignment and stress fields associated with fault zones. Another goal of the project is to examine the dataset for evidence of the Lithosphere-Asthenosphere Boundary (LAB). The LAB is a region of the Earth – typically located at depths of 70-300 km, where relatively rigid crust and upper mantle gradually transitions to a more plastically flowing lower mantle. Previously, imaging of the LAB has been accomplished using receiver functions from earthquake data. Use of higher-resolution active-source reflection data would allow for higher-resolution imaging of the LAB underneath northern Tibet than traditional methods.