The Shanxi Province of north China has been the location of large, devastating earthquakes in the past, making it an ideal location for the study of the timing of intracontinental earthquakes. This study focuses on part of the North Wutaishan Fault at the northeastern end of the Shanxi Province. Three trenches were excavated across the fault in order to determine earthquake timing, magnitude and frequency which helps in the assessment of earthquake hazard for the area. The trenches revealed a large amount of erosion and deposition has occurred in the recent past eliminating evidence of recent earthquake events. An estimate for the rate of extension of the basin was determined by measuring the displacement, along the fault, of an ancient soil from its original position as well as measuring the vertical offset of two preserved river terrace surfaces that had been cut by the fault. Our measurements agree with Global Positioning System (GPS) measurements of extension across the Shanxi Province and are similar to those measured for a longer time scale suggesting that the basin has been expanding at a consistent rate for at least the past 2.6 million years. These findings help with our understanding of tectonics within the continent, away from plate boundaries such as the Himalayas in Southwestern China.