



The Shuttle Radar Topography Mission (SRTM), flown on the Space Shuttle Endeavor in February 2000, measured the elevation of nearly all the Earth's land areas between latitudes 60° N and 56° S. For many regions, these SRTM data represent the most detailed and accurate information about the shape of the Earth's surface, or "topography." This type of data is essential for many regional-scale applications in geology, water resources management, urban and regional planning, ecology, glaciology, forest and rangeland management, and other fields.

The SRTM image shown at upper left is a three-dimensional perspective view of the Crater Highlands, located along the East African Rift in Tanzania. The highest point in this area is the 3648-meter peak of Mount Loolmalasin, shown in white near the center of the image. Beyond Mount Loolmalasin is the circular caldera known as Ngorongoro Crater, with Lake Makat situated in its center. The eastern end of Lake Eyasi is in the background. Other peaks, including Kitumbeine (center left), Gelai (right) and Longido (lower left) appear in the foreground. This image covers an area of approximately 48 km by 230 km.

The East African Rift is a zone where the African and Somali crustal plates are splitting apart. Volcanoes are often located along these types of spreading zones, where the thinning of the Earth's crust allows magma to rise toward the surface. Calderas such as Ngorongoro can result from large volcanic explosions, or from the collapse of the surface above a subterranean magma chamber.

The Crater Highlands and the adjacent Serengeti Plain are home to some of the largest and most spectacular populations of East African wildlife. The Ngorongoro Conservation Area provides habitat for the critically endangered black rhinoceros, as well as the hippopotamus, wildebeest, zebra, and the highest density of mammalian predators in Africa, including large numbers of lions.

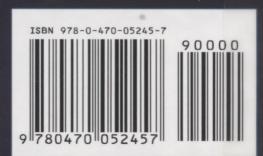
The SRTM radar antennas are illustrated at upper right in an artist's rendition. Radar signals are transmitted by the main antenna, located inside the Shuttle's payload bay. The returning radar signals—reflected from the Earth's surface—are received by both the main antenna and by a secondary "outboard" antenna, located at the end of a 60-meter-long mast extending from the payload bay. By analyzing the slight differences in the phase of the signals received by these two antennas, it is possible to precisely measure the shape of the Earth's surface, using the techniques of radar interferometry.

Image credits: NASA/JPL and Robert Crippen (upper left); NASA Public Affairs Office (upper right).



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