East African Rift valley

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East African Rift System

- East African Rift System, also called Afro-Arabian Rift Valley, one of the most extensive rifts on Earth’s surface, extending from Jordan in southwestern Asia southward through eastern Africa to Mozambique.
- The system is some 4,000 miles (6,400 km) long and averages 30–40 miles (48–64 km) wide.
- The point where these three plates meet in the Afar region of Ethiopia forms what is called a triple-junction.
- However, all the rifting in East Africa is not confined to the Horn of Africa; there is a lot of rifting activity further south as well, extending into Kenya and Tanzania and the Great Lakes region of Africa.
- The system consists of two branches.

The Eastern Rift Valley (often called the Great Rift Valley, or Rift Valley)

- Extends along the entire length of the system. In the north the rift is occupied by the Jordan River, the Dead Sea, and the Gulf of Aqaba.
- It continues southward along the Red Sea and into the Ethiopian Danakil Plain to Lakes Rudolf (Turkana), Naivasha, and Magadi in Kenya.
- The rift is less obvious through Tanzania, because the eastern rim is much eroded, but it continues southward through the Shire River valley and Mozambique Plain to the coast of the Indian Ocean near Beira, Mozambique.

The Western Rift Valley

- Extends northward from the northern end of Lake Nyasa (Lake Malawi) in a great arc that includes Lakes Rukwa, Tanganyika, Kivu, Edward, and Albert.
- Most of the lakes in the rift system are deep and fjordlike, some with their floors well below sea level.

Why African continent splitting ?

- **Conventional current in the Asthenosphere:** Continental rifting requires the existence of extensional forces great enough to break the lithosphere. The East African Rift is described as an active type of rift, in which the source of these stresses lies in the circulation of the underlying mantle.
- **Plate Tectonics:** The Earth's lithosphere (formed by the crust and the upper part of the mantle) is broken up into a number of tectonic plates. These plates are not static, but move relative to each other at varying speeds, "gliding" over a viscous asthenosphere.
- **Tri-junction:** In East Africa, a series of rifts are bound together starting from the Afar region. This rift is faulting at a mean rate of 2-2.5cm/year.
- **Faulting and Rift Valley:** When the lithosphere is subject to a horizontal extensional force it will stretch, becoming thinner. Eventually, it will rupture, leading to the formation of a rift valley.This process is accompanied by surface manifestations along the rift valley in the form of volcanism and seismic activity. Rifts are the initial stage of a continental break-up and, if successful, can lead to the formation of a new ocean basin.