The largest tear in the Earth's crust for many decades was formed in a remote part of Ethiopia in September 2005. In just 2 weeks, more than 160 earthquakes of magnitude 3.9 to 5.6 pulled apart the entire 60 km length of the Dabbahu rift by up to 8 m. Dozens of newly-formed open fissures, rock falls and surface fault offsets of >2 m were triggered by the mid-crustal intrusion of most likely two dikes. This episode is still in process with more than a dozen injections of magma recorded to date. The volume of intruded and extruded rock (>3 cubic km) exceeds that of the 1975-1984 intrusion sequence at Krafla in Iceland, previously held to be the type example of this process. The Dabbahu rifting episode is the first recorded in the era of satellite geodesy and the best monitored the world has ever seen. It affords a unique opportunity to quantify the processes during a single rifting event. Such observations are vital for understanding the basic physics of plate tectonic processes, and to develop hazard assessment and mitigation programmes in magmatic rift elsewhere. This paper synthesizes on-going structural, seismic and spaced-based geodetic studies for the Dabbahu rifting episode with a particular focus on the relationship between dike intrusion and brittle strain.