A study of the occurrence of ionospheric scintillations at the VHF and L-band frequencies was carried out at two stations in East Africa, viz. University of Nairobi (Geog 1.3°S, 36.8°E; dip -22.9°) and Makerere University (Geog 0.3°N, 32.5°E; dip. -20.6°) during 2011 and 2012, respectively. Observations were made for the nighttime period (1800 to 0600 hrs LT). It was found that pre-sunset scintillations were more frequent from January to March, and after the March equinox, the onset times quickly shifted to pre-midnight and lasted up to pre-dawn hours. Pre-midnight and post-midnight scintillations have been associated with range-type spread-F and frequency-type spread-F, respectively; while pre-sunset scintillations have been linked to the E-region irregularities. The co-existence of both the VHF and L-band frequency scintillations was also observed, but the small scale irregularities responsible for the L-band scintillations could not exist beyond local midnight. Of particular interest to note were the VHF scintillation signatures at the onset, which were highly structured in short duration patches, but having longer duration with reduction in intensity as time progressed.