A precursory glance at the high-resolution images (2-5 m/pixel) returned from the Mars Global Surveyor satellite currently orbiting Mars indicate an abundance of aeolian transverse ridges. These ridges are located in all geological terrains. This paper is concerned with ridges that have accumulated within linear troughs and valleys. These ridges appear to parallel the valley orientation and often occupy the entire trough floor. We have collected data on their width, length and spacing as well as observing local trough floor morphology, absolute depth and width. Attributes of these ridges may inform us on aspects of the wind and sediment regimes within valleys. We present a preliminary four-fold classification based on planform variability: Simple, Sinuous (in phase and out of phase), Forked and Feathered.

We find that ridge attributes vary along and between troughs. In particular, their form, width and spacing. One example is the tendency for sinuous ridges to become forked close to the trough wall. This may reflect a change in slope, a coarser grain texture or the influence of higher wind frictional resistance at the trough boundary. Down valley variability in ridge form appears to be influenced by trough width (and depth) and by floor morphology. Where valleys widen (either symmetrically or asymmetrically) ridge form becomes increasingly complex. A similar adjustment in form is noted at valley junctions.