a globally fragmented and mobile lithosphere on Venus

campus boundary inferred exemplar structure

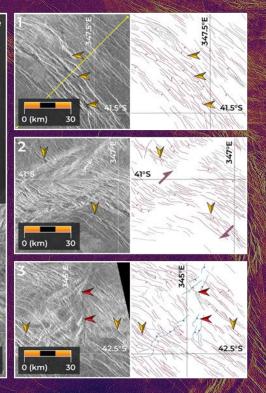
Byrne, P. K., Ghail, R. C., Şengör, A. M. C., James, P. B., Klimczak, C., and Solomon, S. C.

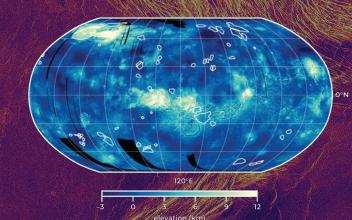
Proceedings of the National Academy of Sciences 118 (26) e2025919118

 at numerous sites across Venus, bands of tectonic structures delineate undeformed, low-lying areas

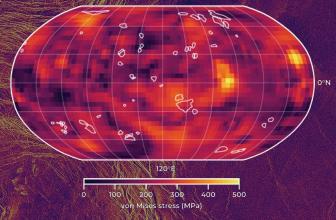
extensional structure
ball and bar on footwall
shortening structure
triangle on hanging wall
minor structure
type not specified
kinematic indicators
left-lateral motion
campus boundary
approximate
campus boundary

 many of these bands show evidence for lateral, as well as vertical, deformation





this pattern of deformation occurs across the planet, mainly in the lowlands



mantle convective stresses are enough to fragment and move the lithosphere

- much of Venus' lithosphere is broken into individual crustal blocks
- these blocks have jostled and moved like pack ice—in several places geologically recently
- this behavior arises from convection of the mantle, akin to how mantle motion drives plate tectonics on Earth