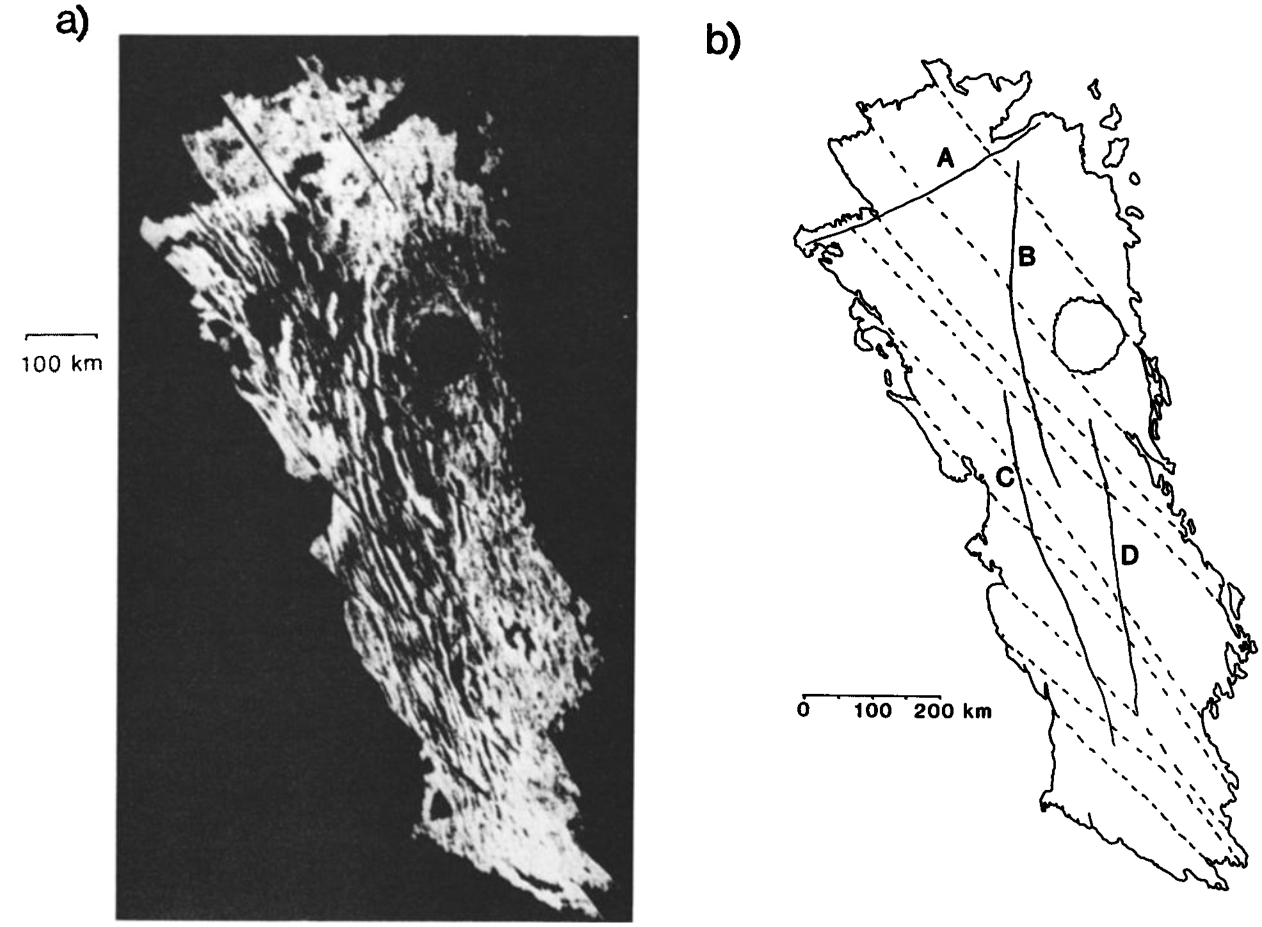

Fig. 11. Retrodeformation of Maxwell Montes: (*a*) Arecibo image reconstruction generated through technique shown in Figure 10. All succeeding reconstructions use offsets determined from this technique. (*b*) Sketch map of reconstructed Arecibo image, showing long, continuous, linear features. A, a 30 km-wide bright lineament continuous for over 200 km that crosses four CSDs. B, a 15 km-wide ridge continuous for over 400 km across four CSDs. C, two parallel ridges continuous for over 700 km across 5 CSDs. D, a 400 km-long linear boundary between the dissected terrain unit to the east and the banded units to the west. (*c*) Venera image reconstruction. (*d*) Topographic reconstruction. Contour interval is 1 km, with values relative to mean planetary radius of 6051.0. Note the linearity of the crest in this reconstruction relative to the hummocky nature in Figure 2*c*. (*e*) Reconstructed geological unit map. Note continuity of dissected terrain and bright terrain units.

accomodated. The first two models (Figures 13*a* and 13*b*) suggest that proto-Maxwell formed in its present location and then underwent strike-slip deformation either with or without large-scale rotation of the entire mountain belt. The third model (Figure 13*c*) suggests that the strike-slip faulting was related to large-scale east-west migration of the range within two converging shear zones, either with or without rotation.

In-place formation, without rotation. In the first model (Figure 13*a*), proto-Maxwell Montes has formed as an Akna Montes-like linear mountain belt striking north-northwest. This is then followed by a reorientation of the greatest compressional stress to N25°W in order to generate the observed orientation of CSDs and the offset along them. This model assumes that the orientation of the CSDs has remained fixed at N55°W during the strike-slip faulting. If Maxwell remained centered at 5°E/65°N with little or no large-scale rotation during offset (Figure 13*a*), then there should be evidence for N25°W directed compression to the north and south, perhaps in the form of folding or thrusting. As described above, the northern and southern slopes of Maxwell are characterized by the transitional units which are dominated by NNW trending ridges and valleys that often terminate against ridge-perpendicular troughs and by steep slopes associated with the shear zones. Although none of these features are strongly indicative of NNW-SSE compression, the steep scarps that extend west-southwest from northern and southern Maxwell are flanked by broad linear rises up to 100 km across on the edge of Lakshmi Planum (Figure 1). This combination of a broad topographic rise and an adjacent steep scarp is similar to that of Danu Montes along the southern flank of Lakshmi Planum which has previously been interpreted as the result of compressional deformation [*Pronin et al.*, 1986; *Head*, 1986]. Although the surface morphology of these rises does not include WSW oriented subparallel ridges and valleys as in Danu, these rises could be related to some NNW-SSE convergence. Several workers have recently discussed styles and orientations of crustal convergence around Ishtar Terra [*Head*, 1990; *Vorder Bruegge and Head*, 1989*a*; *Kozak and Schaber*, 1989]. *Head* [1990] describes the formation of Freyja Montes and the adjacent region, Itzpapalotl Tessera, as due to north-south convergence and underthrusting of the North Polar Plains beneath Ishtar Terra.