smooth plains, as discussed below. Thus the regional slope data suggest that the circular coronae revealed in local, high-resolution images have an obvious topographic expression, a global distribution, and an association with global scale linear trends.

Topographic fabric. Although variations in the distribution of regional slope features on Venus are not as dramatic as on earth, there are, nonetheless, broad, distinct variations in the concentration of the 0.1°–0.2° features within the Venus plains: Several zones of considerable extent, characterized by relatively low abundances of nonzero slope features are evident in Plate 1, bottom. These zones typically occur as narrow belts of topographically smooth terrain, as depicted schematically in Figure 2*c*, and are often bounded by distinct linear slope features. These smooth belts are sometimes flanked by other more rugged belts containing a relatively high abundance of 0.1°–0.2° features. The boundaries of these belts are locally difficult to trace; small-scale irregularities in width and variations in orientation are apparent. Nevertheless, these linear regional slope trends can be traced for thousands of kilometers with no significant offset. The northeast trending smooth belt south of Aphrodite Terra between Artemis Chasma and Beta Regio extends over 20,000 km. This zone, which parallels the axis of central Aphrodite Terra [*Ehmann and Head*, 1982], is interrupted only in the vicinity of Atla Regio by a northwest trending belt of 0.1°–0.4° slope values which extends southeastward from Atla through Themis Regio [*Schaber*, 1982]. The truncation of this smooth belt with the western margin of Beta Regio is sharp and linear and appears to connect with a distinct linear regional slope boundary extending southward to about −60° latitude, and slightly east of Lise Meitner (−56°; 321°).

A northeast oriented belt of smooth terrain occurs just north of the highlands of eastern Aphrodite between Asteria Regio and Thetis Regio and is interrupted by the northern extension of the aforementioned Atla-Themis trend. This belt intersects the highlands of Aphrodite at Thetis Regio (Figure 2*a*) in central Aphrodite. There is a distinct alignment of the mountain ranges within Aphrodite at this point, and the trend of the mountains, as well as the orientation of Diana Chasma, parallel the trend of the smooth belt. Distinct inflections in the margins of central Aphrodite also occur at the zone of intersection. To the south of Aphrodite the belt of smooth terrain continues southwestward as a narrow zone defined by northeast trending 0.1°–0.2° slope features. South of Ovda Regio in western Aphrodite, this northeast trending belt intersects another linear belt of smooth terrain trending northwest. From a point just south of Artemis Chasma the flanks of this smooth belt can be traced by aligned northwest trending slope features to north of Rhea Mons in Beta Regio, a distance of approximately 25,000 km. This feature follows the general trend of Aino and Guinevere Planitia and is also distinctly recognizable within the upland rolling plains which divide these two broad troughs. Numerous other trends aligned with these belts of smooth terrain are evident throughout the plains provinces of Venus thus producing a subtle but globally pervasive rectilinear topographic fabric distinctly unlike the more complex mosaic of plate-related features observed on earth. The great-circle-like patterns of the Venus fabric appear sinusoidal in Plate 1, bottom, and Figure 2*c* due to the map projection.

Highland Interiors

Unlike the interiors of earth's continents, the Venus highlands do not contain appreciable smooth, flat regions, and the topography within the highlands is distinctly steeper and more rugged than that characteristic of the lowlands and upland rolling plains. The interiors of western Aphrodite Terra and Beta Regio are areas of 0.1°–0.3° regional slope, most similar in regional slope characteristics to the Rocky Mountains in the western United States or slow-spreading ocean ridges such as the Mid-Atlantic Ridge. Central Aphrodite Terra (e.g., Thetis Regio) contains zones of anomalously steep topography (as great as 0.7°) which trend northeast and generally define the intersection of Aphrodite with the boundaries of the northeast trending smooth belt discussed in the previous section. Maximum regional slope values associated with this region are similar to those of some Recent mountain belts on earth.

The steepest slopes found within the Venus highlands are associated with the unique mountain systems that encircle Lakshmi Planum in western Ishtar Terra. Maxwell, Akna, and Freyja montes have regional slope values ranging typically between 0.6° and 2.0°; the western flank of Maxwell Montes contains slopes as great as 2.4°. The regional slope and elevation characteristics of these mountain ranges are similar to major compressional features on earth (active continental margins and zones of continental convergence). Surfaces within Lakshmi Planum range in slope generally between 0.1° and 0.2° and have a distinct southward regional tilt.

The interior of eastern Ishtar Terra (east of Maxwell Montes) contains neither the systematic arrangement of mountain belts nor the distinct plains regions characteristic of the western Ishtar. Instead, regional slopes are highly variable across short distances and range in magnitude from 0.1° to 0.8°. In terms of regional slope and elevation characteristics this region is similar to Ovda and Thetis regiones in Aphrodite Terra. High-resolution radar images [*Barsukov et al.*, 1986] reveal that eastern Ishtar is dominated by "parquet" terrain [*Basilevsky et al.*, 1986] consisting primarily of intersecting sets of linear ridges and grooves. *Basilevsky et al.* [1986] cite similarities to conjugate fault systems, local offsets across linear features, and associated extensional features as evidence for shear deformation throughout this region.

Chasmata. Major chasmata, or steep-walled, linear, or arcuate valleys such as Artemis, Diana, Dali, and Devana (Figure 2*a*) appear to be similar in regional slope expression (0.1°–0.4°), although those occurring within the highland regions (e.g., Dali and Diana) are not readily distinguished from the relatively steep and variable slopes characteristic of the highland interiors. Typically, chasmata display moderate regional slopes comparable to those of the East African Rift on earth (Figure 1), thus supporting the interpretation of the Venus chasmata as rift valleys [*Masursky et al.*, 1980; *Kaula and Phillips*, 1981; *McGill et al.*, 1981; *Schaber*, 1982; *Campbell et al.*, 1984].

Highland Margins

The major highland regions on Venus are bounded by zones of relatively steep slope, although magnitudes are, in general, significantly less than those associated with terrestrial continental margins. The margin slopes of Aphrodite Terra range in magnitude from about 0.1° to approximately 0.5° and are largest and most continuous on the north and south flanks of western Aphrodite. The steepest slopes in central Aphrodite occur along the axis of this narrow highlands regions and appear to be associated with the extensive system of chasmata found in this region [*Schaber*, 1982]. Beta Regio is bounded by slopes of 0.1°–0.4° which are most distinctly expressed on