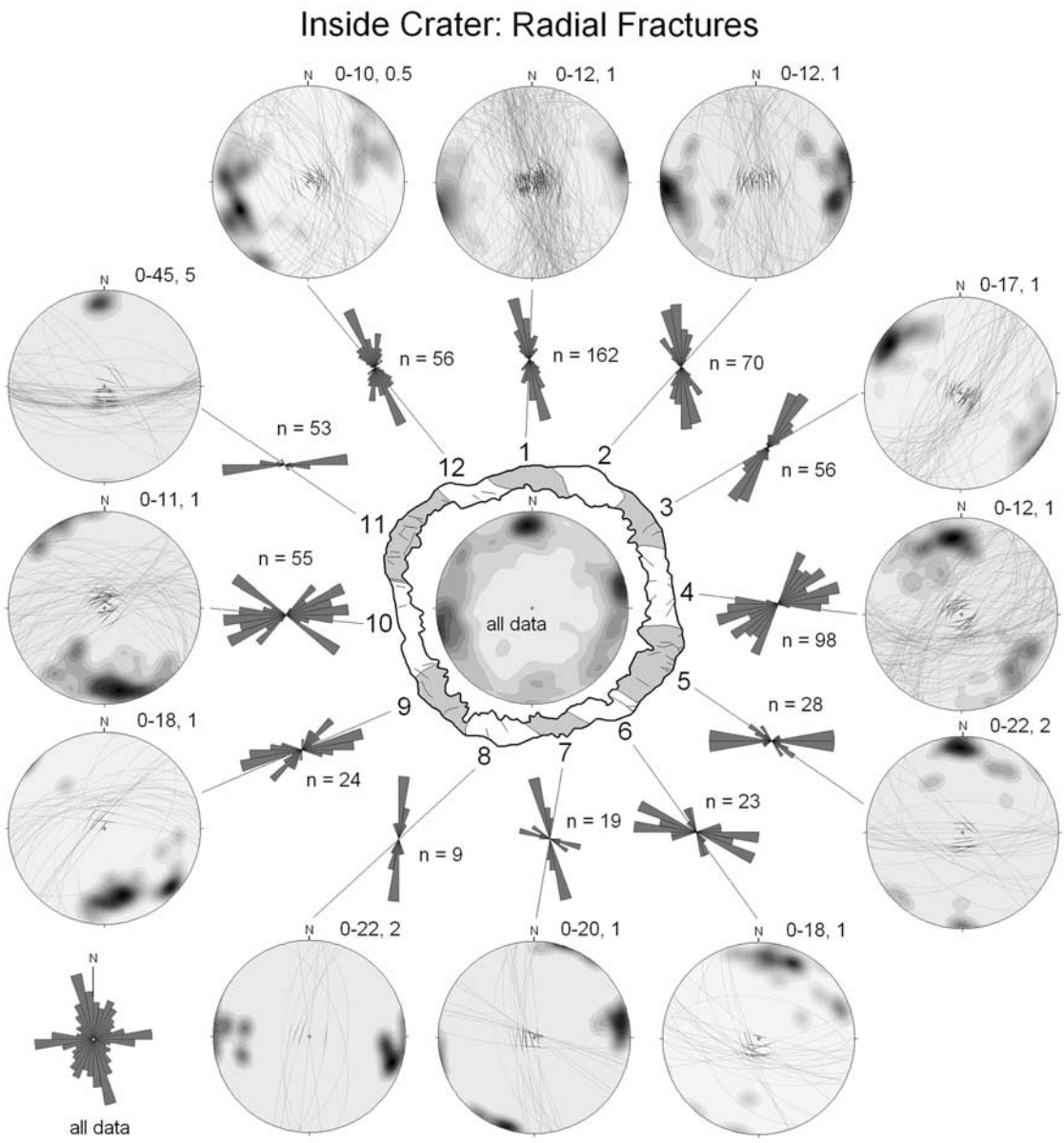

Figure 6. Impact structures (radial fractures): great circles, pole density contours, and bidirectional rose diagrams representing the geometry of radial fractures in the Moenkopi (Moqui and Wupatki members) and Kaibab formations (Alpha and Beta members) exposed on the 12 crater wall tectonic blocks. The pole density range (in percent) and contour interval (in percent) are shown near the equal-area plots; n represents a number of strike/dip measurements. A bidirectional rose diagram representing all measurements indicates preferential orientations of the radial fractures.

planes, although some of them are oriented obliquely. In general, the radial fractures have preferred orientations, in the directions of NNW-SSE and ENE-WSW, approximately parallel to the crater long walls (Figure 6). The radial fractures occur as single, conjugate pairs, and branching types. Most of them are straight to curvilinear on map view. The concentric fractures strike more or less parallel to the bedding planes and dip away from the dip directions of the bedding planes (Figure 7). That is, the concentric fractures dip toward the center of the crater except where affected by lateral tilting (e.g., drag folding near a tear fault). The amount of dip of these fractures is also highly variable. The concentric fractures also have preferred orientation in the direction of the dominant preimpact fractures, i.e., ENW-ESE, while the other sets are less dominant. The conical fractures are similar to the concentric fractures in their strikes, but have highly variable dips that are roughly in the direction of the bedding planes (Figure 8). Interestingly, the conical fractures have a preferred orientation with a NW-SE bearing and a less dominant NE-SW bearing.