ANALYSIS OF LUNAR GEOLOGY FROM APOLLO PHOTOGRAPHY,
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High resolution metric and panoramic photographs taken by
the Apollo SIM Bay camera system provide an excellent oppor-
tunity for detailed interpretation of lunar surface features.
Near-terminator photography from the area east of Lebronne
illustrates the morphology of landforms related to volcanism and
tectonism in the maria. Mare ridges apparently form by several
processes including faulting, flexuring, volcanism, and probably
plutonism. In most instances, several processes appear to con-
tribute to the formation of individual ridges. Some mare ridges
change in character along their length as several processes of
formation exert varying influence from one part to another.
Evidence of faulting along the mare ridges is conspicuous. Much
of the volcanism in the maria apparently has taken place in the
form of fissure eruptions along fractures beneath mare ridges.
Late volcanism has obscured much of the evidence of earlier
faulting on some ridge segments.

Close spatial relationships between sinuous rilles and mare
ridges imply close genetic relationships. Herigonius and Jansen
Rilles appear to have formed as lava tubes with vents along mare
ridges. Supporting evidence of volcanic activity in the form of
volcanic subsidence craters and possible volcanic cones appears
to be present near the Herigonius Rille. The collapse of lunar
lava tube roofs and the conspicuous absence of fine surface
detail on lunar volcanic features can be ascribed to the intense
post-mare impact flux documented by other investigators.

King Crater, on the lunar farside, is particularly well
illustrated on Apollo 16 photography. The distribution of its
ejecta blanket, in which several facies can be recognized, can
easily be observed in the surrounding terra. Aspects of the
surface morphology are revealed in detail. Volcanism to the
northwest of King Crater appears to have taken place along frac-
tures on and adjacent to the rim. Surface features visible on
the flows indicate that flow was to the north and east, and
caused the filling of a small lava pool.
ANALYSIS OF LUNAR GEOLOGY

Young, R.A. et al.

In the highlands adjacent to the eastern maria, there are extensive areas composed of hilly or hummocky terrain which commonly exhibits subdued cratering or appears to be only slightly cratered. Its pattern of distribution and superposition relationships indicate that much of it is relatively old. Apollo photography indicates that this terrain has had a complex origin beginning with initial deposition as part of the ejecta blankets around the large impact basins. Intermittent motion on sub-blanket faults has formed elongate depressions which vary from nearly linear to arcuate to slightly sinuous. Continued lunar tectonism and impact events have resulted in seismic shaking which appears to have caused gravitational motion along fractures formed both in the ejecta blankets at the time of deposition and as a result of motion along sub-blanket faults. This has caused the apparent widespread gravity faulting, slumping, and other forms of mass movement which have resulted in the development of surfaces composed primarily of low rounded hills and complexes of small valleys. In many instances fault produced lineaments can be traced over large distances only with difficulty, and many faults which extend from the surrounding maria into the highlands appear to end abruptly due primarily to the complex structural history of the terrain.