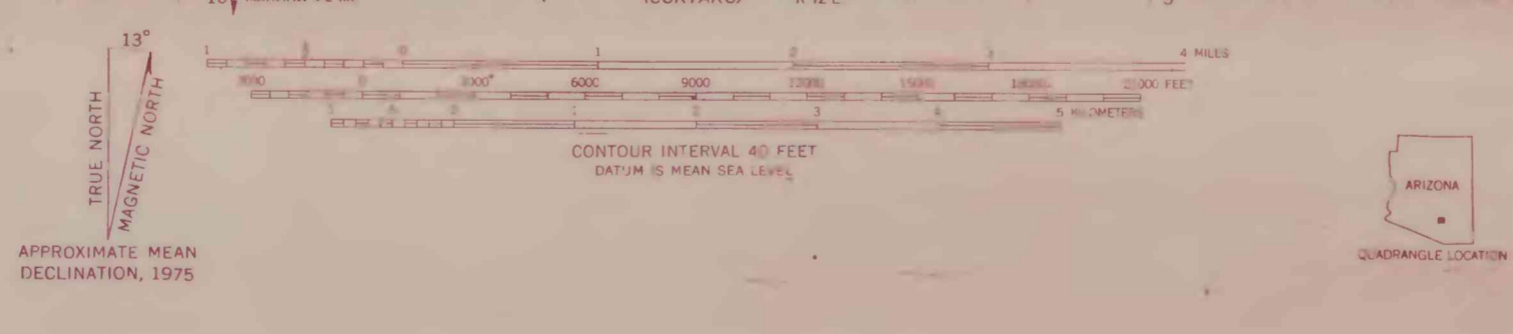




BASE BY U.S. GEOLOGICAL SURVEY, 1959



This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey standards and nomenclature.

TORTOLITA MTS., ARIZ.
N3230-W11100/15
1959

MAP SHOWING PHOTO LINEAMENTS IN THE TORTOLITA MOUNTAINS QUADRANGLE, ARIZONA
by
Roger D. Dockter and Norman G. Banks
1976

EXPLANATION

- Solid lines indicate photo lineaments in areas of exposed bedrock
- - - Dashed lines indicate vegetation alignments in alluvial areas

A high percentage of the photo lineaments compiled while preparing a photo geologic map of the Tortolita Mountains quadrangle were found to be directly or spatially related to geologic features mapped subsequently (Banks and others, 1977). The majority of the photo lineaments fall into two groups trending N. 25°-35° W. and N. 20°-40° E. Photo lineaments in bedrock areas fall directly upon, align with, or parallel mapped joints, faults, and dikes cutting Tertiary rocks (Banks and others, 1977). Photo lineaments (vegetation alignments) in alluvial areas trend parallel to and often extend from faults, joints, and dikes in exposed bedrock areas. Washes cutting alluvial deposits commonly change course where intersected by a vegetation alignment; however, faulting of the gravels on the wash banks was not observed. Therefore, none of the alluvial lineaments were observed to be earth fractures like those described by Leonard (1929) in the adjoining Red Rock quadrangle, but they do compare to descriptions by Sherman and Hathaway (1964) of photo linears in the Tucson basin, south of the Tortolita Mountains quadrangle. Vegetation alignments are most dense in a 6-km-wide, north-trending strip west of Owl Head Buttes. The preferential growth of vegetation probably reflects a better access to moisture supplied to the Quaternary deposits along the underlying pre-Quaternary bedrock geologic features such as faults, joints, or dikes. The occurrence of a few isolated exposures of Tertiary volcanic rocks within this band suggests the presence of a bedrock high with bedrock

lows on each side of the 6-km-wide strip. Barter (1962) came to a similar conclusion based on a gravity profile across this same 6-km-wide strip along Red Rock Road (now Golf Links Drive).

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