

**EXPLANATION**  
GEOLOGY GENERALIZED FROM FOSTER (1970)

**CORRELATION OF MAP UNITS**

**UNCONSOLIDATED DEPOSITS**

**SEDIMENTARY ROCKS**

**IGNEOUS AND METAMORPHIC ROCKS**

**DESCRIPTION OF MAP UNITS**

**GEOLOGIC SYMBOLS**

**EXPLANATION OF IMAGERY INTERPRETATION**

**DISCUSSION**

In this study of Landsat imagery for the Tanacross quadrangle, Alaska, two fundamentally different types of maps were used: (1) a black and white Landsat mosaic, and (2) a color composite of Landsat imagery. The Landsat mosaic was constructed in 1973 by the U.S. Department of Agriculture Soil Conservation Service, using data generated without computer enhancement. Study of this mosaic was conducted at a scale of 1:250,000, and the results transcribed to a 1:250,000-scale version of the Landsat mosaic. The color composite was constructed from Landsat imagery of the Tanacross quadrangle and the surrounding area. The Landsat mosaic is not suitable for identifying linear features and circular features. The color composite is suitable for identifying linear features and circular features. The Landsat mosaic is not suitable for identifying linear features and circular features. The color composite is suitable for identifying linear features and circular features.

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Two types of lineaments were distinguished in the McGarty quadrangle, Alaska (Albert and Steele, 1976). One type is related to the major crustal faults and is generally oriented in a north-south direction. The other type is related to the minor crustal faults and is generally oriented in a northeast-southwest direction. The McGarty quadrangle is located in the Tanacross quadrangle, and the two types of lineaments are also present in the Tanacross quadrangle. The McGarty quadrangle is located in the Tanacross quadrangle, and the two types of lineaments are also present in the Tanacross quadrangle.

BASE FROM U. S. GEOLOGICAL SURVEY, 1:250,000, TANACROSS QUADRANGLE, 1964  
SCALE 1:250,000  
Computer processing of CCTV by Pat S. Chavez, Jr., Teresa E. Dow, and Lynn Swers, U.S. Geological Survey, Flagstaff, Arizona, 1976.

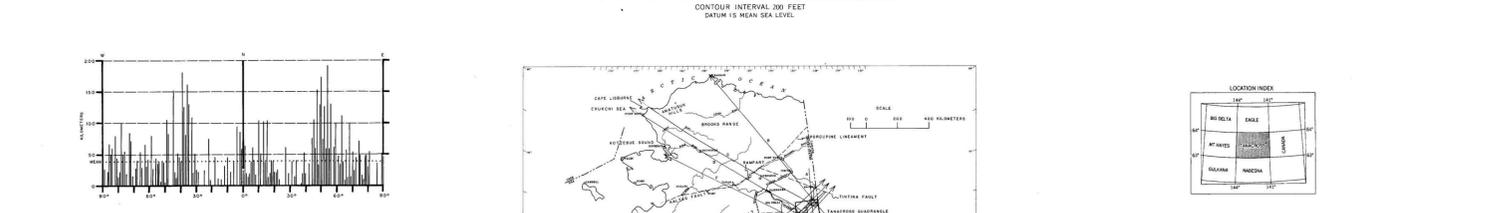


Figure 1.—Histograms of trends and cumulative lengths of lineaments observed on Landsat imagery of the Tanacross quadrangle.

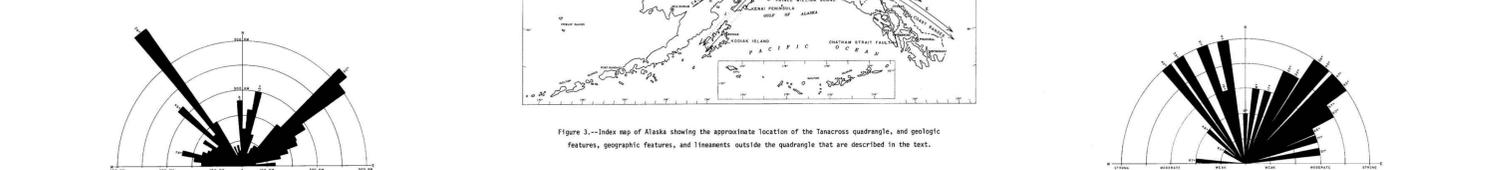


Figure 2.—Compass rose of trends and cumulative lengths of lineaments observed on Landsat imagery of the Tanacross quadrangle.



Figure 3.—Index map of Alaska showing the approximate location of the Tanacross quadrangle, and geologic features, geographic features, and lineaments outside the quadrangle that are described in the text.

Figure 4.—Compass rose of trends and cumulative lengths of lineaments less than 10 km long as determined by the use of a reflection grating on Landsat imagery of the Tanacross quadrangle. Lineaments and orientations are subjective.

**RESULTS**

**Lineaments**

The four types of computer-enhanced product used in this study is a black and white "horizontal first derivative" of bands 4 and 5, a color composite of bands 4, 5, and 7, a color composite of bands 4, 5, and 7, and a color composite of bands 4, 5, and 7. The four types of computer-enhanced product used in this study is a black and white "horizontal first derivative" of bands 4 and 5, a color composite of bands 4, 5, and 7, a color composite of bands 4, 5, and 7, and a color composite of bands 4, 5, and 7.

**INTERPRETATION OF LANDSAT IMAGERY OF THE TANACROSS QUADRANGLE, ALASKA**