

[Geologic map generalized from Berg and others (1978)]

Qu			} QUATERNARY
QTV			
Tmp	} Miocene		} QUATERNARY AND TERTIARY
Tep			
TKp	} Eocene		} TERTIARY
KJup			} TERTIARY OR CRETACEOUS
KUs KJv	} Lower Cretaceous or Upper Jurassic		
Jht Jhs			} JURASSIC OR TRIASSIC
Trv			
	} Upper Triassic		} TRIASSIC
MzPzp MzPzu			
Pzs		} Middle and Upper Paleocene	} PALEOZOIC OR OLDER
Pzv			
Pzp		} Silurian or Older	}
Pzsv			

#### DESCRIPTION OF MAP UNITS

Qu	UNCONSOLIDATED DEPOSITS, UNDIVIDED (Quaternary)
QTV	VOLCANIC ROCKS (Quaternary and Tertiary)
Tmp	UNDIVIDED MIOCENE PLUTONIC ROCKS
Tep	UNDIVIDED EOCENE PLUTONIC ROCKS
Tkp	UNDIVIDED TERTIARY OR CRETACEOUS PLUTONIC ROCKS
	GRAVINA ISLAND FORMATION AND UNNAMED CORRELATIVE ROCKS (Lower Cretaceous or Upper Jurassic)
Kulp	Ultramafic and other plutonic rocks
Kjs	Metasedimentary rocks
Klv	Metavolcanic rocks
JTrL	TEXAS CREEK GRANDIORITE (Jurassic or Triassic)
JTrvs	METAMORPHOSED VOLCANIC AND SEDIMENTARY ROCKS (Jurassic or Triassic)
Trsv	METAMORPHOSED SEDIMENTARY AND VOLCANIC ROCKS (Upper Triassic)
MPp	PARAGNEISS AND AMPHIBOLITE (Mesozoic or Paleozoic)
MPsu	METAMORPHIC ROCKS, UNDIVIDED (Mesozoic or Paleozoic)
Pzs	METAMORPHOSED SEDIMENTARY AND MINOR VOLCANIC ROCKS (Middle and upper Paleozoic)
Pzv	FELSIC METAVOLCANIC ROCKS (Paleozoic or older)
Psv	PLUTONIC ROCKS, CHIEFLY TRONDHJEMITE (Silurian or older)
PSv	METAMORPHOSED SEDIMENTARY AND VOLCANIC ROCKS (Silurian or older)


## SYMBOLS

\_\_\_\_\_ ..... Contact. Approximately located; dotted where concealed

\_\_\_\_\_ - - - - - High-angle fault. Dashed where inferred; dotted where concealed

▲▲▲▲▲ Thrust fault. Dashed where concealed, inferred, or assumed  
Sawtooth on upper plate

### EXPLANATION OF IMAGERY INTERPRETATION



WELL-DEFINED LINEAMENT.  
CIRCULAR OR ARCUATE FEATURE.

MODERATELY DEFINED LINEAMENT.  
CIRCULAR OR ARCUATE FEATURE.

POORLY DEFINED LINEAMENT.  
CIRCULAR OR ARCUATE FEATURE.

IRON-OXIDE COLORED AREAS

## Discussion

To aid in the mineral resource assessment of the Ketchikan and Prince Rupert quadrangles, Landsat images were analyzed for color anomalies, and for lineaments, circular and arcuate features, and quadrangle-wide fracture patterns that might be related to known mineral occurrences (Elliott and others, 1975) or to areas of mineral resource potential (Serg and others, 1976c). Details concerning the different types of imagery used are given in table 1 and image coverage is shown on figure 2. The methodology and limitations of this type of study are discussed in Albert (1975) and Albert and Steele (1976a, b).

### References cited

- Albert, N. R. D., 1979, Interpretation of Earth Resources Technology Satellite images of the Nabesna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-6542, 2 sheets, scale 1:250,000.
- Albert, N. R. D., and Steele, W. C., 1984a, Interpretation of Landsat imagery of the McCarthy quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-7736, 3 sheets, scale 1:250,000.
- \_\_\_\_\_, 1979a, Interpretation of Landsat imagery of the Tanacross quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-7676, 3 sheets, scale 1:250,000. Supersedes Open-file report 78-850.
- Berg, H. C., Elliott, R. L., and Koch, R. D., 1978a, Map and tables describing areas of mineral resource potential in the Prince Rupert quadrangle, Alaska: U.S. Geological Survey Open-file report 78-739, scale 1:250,000, 1 sheet and accompanying pamphlet, 47 pp.
- Berg, H. C., Elliott, R. L., Smith, G. J., and Koch, R. D., 1978b, Geological map of the Ketchikan and Prince Rupert quadrangles, Alaska: U.S. Geological Survey Open-file report 78-734, scale 1:250,000.
- Elliott, R. L., Berg, H. C., and Karl, Susan, 1978, Map and table describing mineraliferous and selected nonmetallic deposits, Ketchikan and Prince Rupert quadrangles, Alaska: U.S. Geological Survey Open-file report 78-735, scale 1:250,000, 1 sheet.
- Griscom, Andrew, 1978, Aeromagnetic interpretation map of the Ketchikan, Prince Rupert, and northeastern Craig quadrangles, Alaska: U.S. Geological Survey Open-file report 78-731, scale 1:250,000.
- Koch, R. D., and Elliott, R. L., 1978a, Analyses of rock and stream-sediment samples from the Prince Rupert quadrangle, southeastern Alaska: U.S. Geological Survey Open-file report 78-1568, 99 pp.
- \_\_\_\_\_, 1978b, Analyses of rock samples from the Ketchikan quadrangle, southeastern Alaska: U.S. Geological Survey Open-file report 78-1564.
- U.S. Geological Survey, 1977, Aeromagnetic map of the Ketchikan, Prince Rupert, and northeastern Craig quadrangles, Alaska: U.S. Geological Survey Open-file report 77-339, scale 1:250,000.

Figure 3.--Histogram of trends and cumulative lengths of lineaments observed on Landsat imagery of the Ketchikan and Prince Rupert quadrangles.

Geology by H. Berg, R. Carten, J. Childs, A. Clark,  
W. Condon, M. Diggles, G. Dunne, R. Elliott,  
C. Holloway, J. Houghton, R. Koch, R. Miller,  
R. Rudser, J. Smith, B. Wiggins, 1966-1977

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.

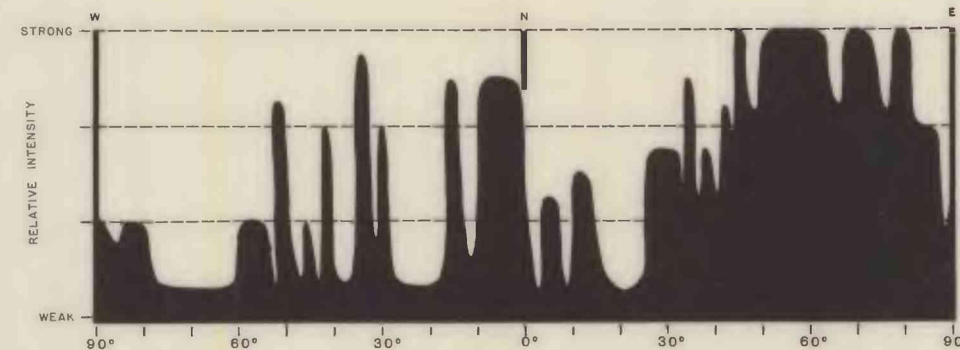
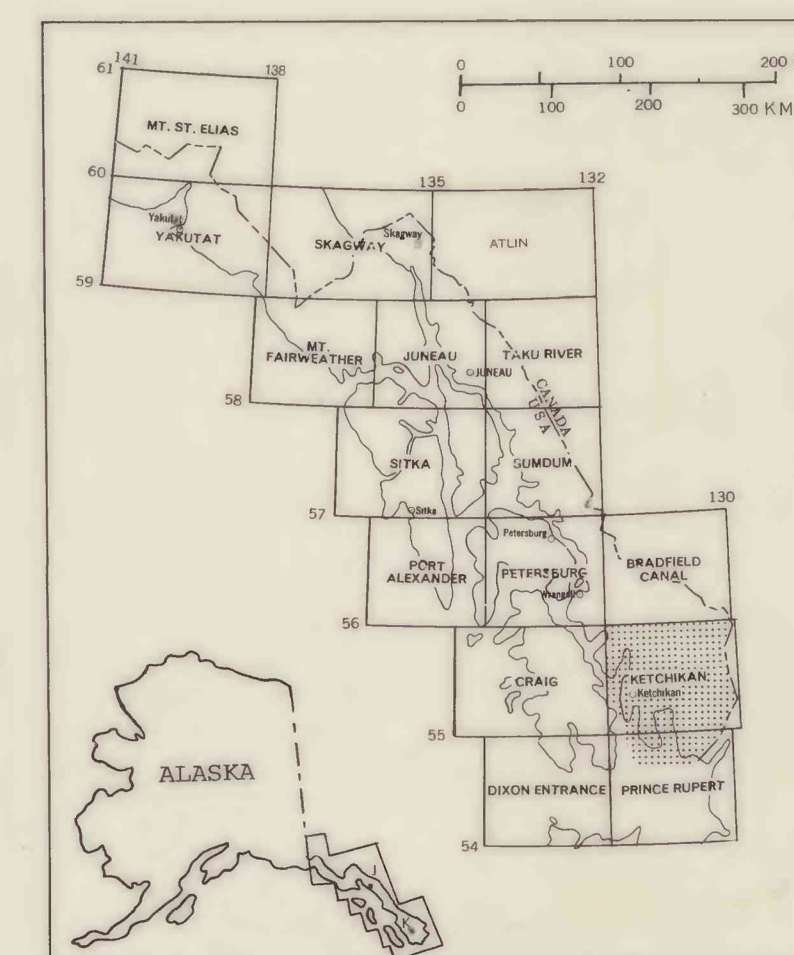


Figure 4.--Histogram of trends and relative intensities of lineaments less than 10 km long as determined by use of a diffraction grating on Landsat imagery of the Ketchikan and Prince Rupert quadrangles. Relative intensities are subjective.



BY  
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