



CORRELATION OF MAP UNITS

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

Qn	} Quaternary and Tertiary
QTV	
Tmp	} Tertiary
TKp	
TKp	} Tertiary or Cretaceous
TKp	
KJup	} Lower Cretaceous
KJd	
JNt	} Upper Triassic
JNv	
Mp	} Middle and Upper Paleocene
Mp	
Pz	} Paleozoic or Older
Pz	

DESCRIPTION OF MAP UNITS

Qn	UNCONSOLIDATED DEPOSITS, UNDIVIDED (Quaternary)
QTV	VOLCANIC ROCKS (Quaternary and Tertiary)
Tmp	UNDIVIDED MIOCENE PLUTONIC ROCKS
TKp	UNDIVIDED EOCENE PLUTONIC ROCKS
TKp	UNDIVIDED TERTIARY OR CRETACEOUS PLUTONIC ROCKS
KJup	GRAVINA ISLAND FORMATION AND UNNAMED CORRELATIVE ROCKS (Lower Cretaceous or Upper Jurassic)
KJd	Ultramafic and other plutonic rocks
KJd	Metasedimentary rocks
KJd	Metavolcanic rocks
JNt	TEXAS CREEK GRANODIORITE (Jurassic or Triassic)
JNv	METAMORPHIC VOLCANIC AND SEDIMENTARY ROCKS (Jurassic or Triassic)
Mp	METAMORPHIC SEDIMENTARY AND VOLCANIC ROCKS (Upper Triassic)
Mp	PARAGNEISS AND AMPHIBOLITE (Mesozoic or Paleozoic)
Pz	METAMORPHIC ROCKS, UNDIVIDED (Mesozoic or Paleozoic)
Pz	METAMORPHIC SEDIMENTARY AND MINOR VOLCANIC ROCKS (Middle and upper Paleozoic)
Pz	FELSIC METAVOLCANIC ROCKS (Paleozoic or older)
Pz	PLUTONIC ROCKS, CHIEFLY TRONDHJEMITE (Sturlian or older)
Pz	METAMORPHIC SEDIMENTARY AND VOLCANIC ROCKS (Sturlian 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 imagery was analyzed for linear features and for lineaments, circular and arcuate features, and quadrangle-wide fracture patterns that might be related to known mineral occurrences (Elliott and others, 1978) or to areas of mineral resource potential (Berg and others, 1978). 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 (1978) and Albert and Steele (1978a, b).

References cited

Albert, N. R. D., 1978, Interpretation of Earth Resources Technology Satellite imagery of the Nabesna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-563, 2 sheets, scale 1:250,000.

Albert, N. R. D., and Steele, W. C., 1978b, Interpretation of Landsat imagery of the McArthur quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-573, 3 sheets, scale 1:250,000.

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Berg, H. C., Elliott, R. L., and Koch, R. D., 1978a, Map and tables describing areas of mineral resource potential, Ketchikan and Prince Rupert quadrangles, Alaska: U.S. Geological Survey Open-File report 78-73K, scale 1:250,000, 1 sheet and accompanying pamphlet, 47 p.

Berg, H. C., Elliott, R. L., Smith, J. D., and Koch, R. D., 1978b, Geologic map of the Ketchikan and Prince Rupert quadrangles, Alaska: U.S. Geological Survey Open-File report 78-73K, scale 1:250,000.

Elliott, R. L., Berg, H. C., and Koch, R. D., 1979, Map and table describing metaliferous and selected nonmetaliferous deposits, Ketchikan and Prince Rupert quadrangles, Alaska: U.S. Geological Survey Open-File report 78-73B, scale 1:250,000.

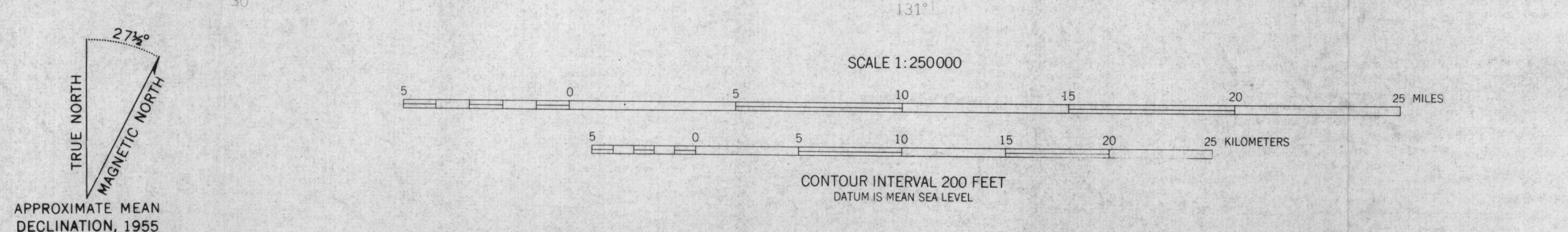
Grisson, Andrew, 1978, Aerial photograph interpretation map of the Ketchikan, Prince Rupert, and northeastern Craig quadrangles, Alaska: U.S. Geological Survey Open-File report 78-73A, scale 1:250,000.

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 78-166, 37 pp.

1978b, Analyses of rock samples from the Ketchikan quadrangle, southeastern Alaska: U.S. Geological Survey Open-File report 78-165A, 142 pp.

U.S. Geological Survey, 1977, Aerial photograph map of the Ketchikan, Prince Rupert, and northeastern Craig quadrangles, Alaska: U.S. Geological Survey Open-File report 77-359, scale 1:250,000.

Base from USGS 1:250,000 topo series: KETCHIKAN, 1955; PRINCE RUPERT, 1959. ALASKA-CANADA.



Geology by H. Berg, R. Carten, J. Childs, A. Clark, W. Condon, M. Diggle, 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.

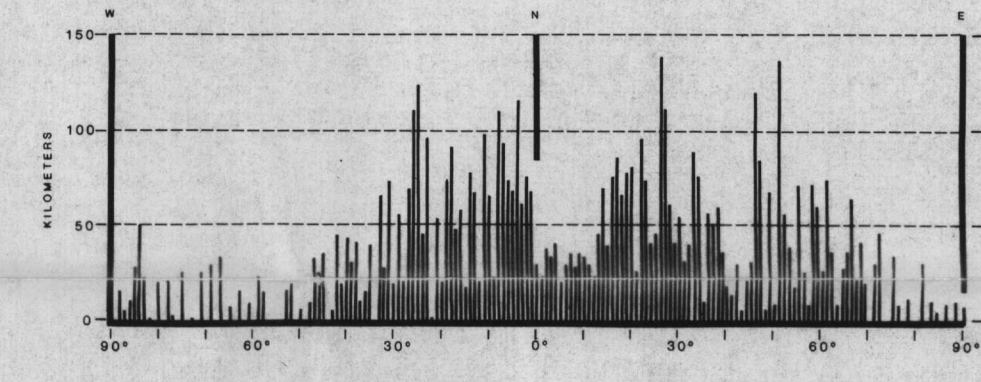


Figure 3.--Histogram of trends and cumulative lengths of lineaments observed on Landsat imagery of the Ketchikan and Prince Rupert quadrangles.

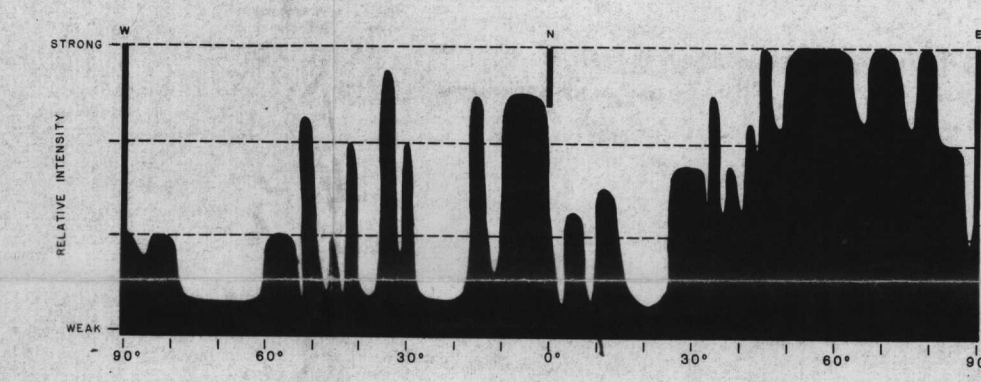
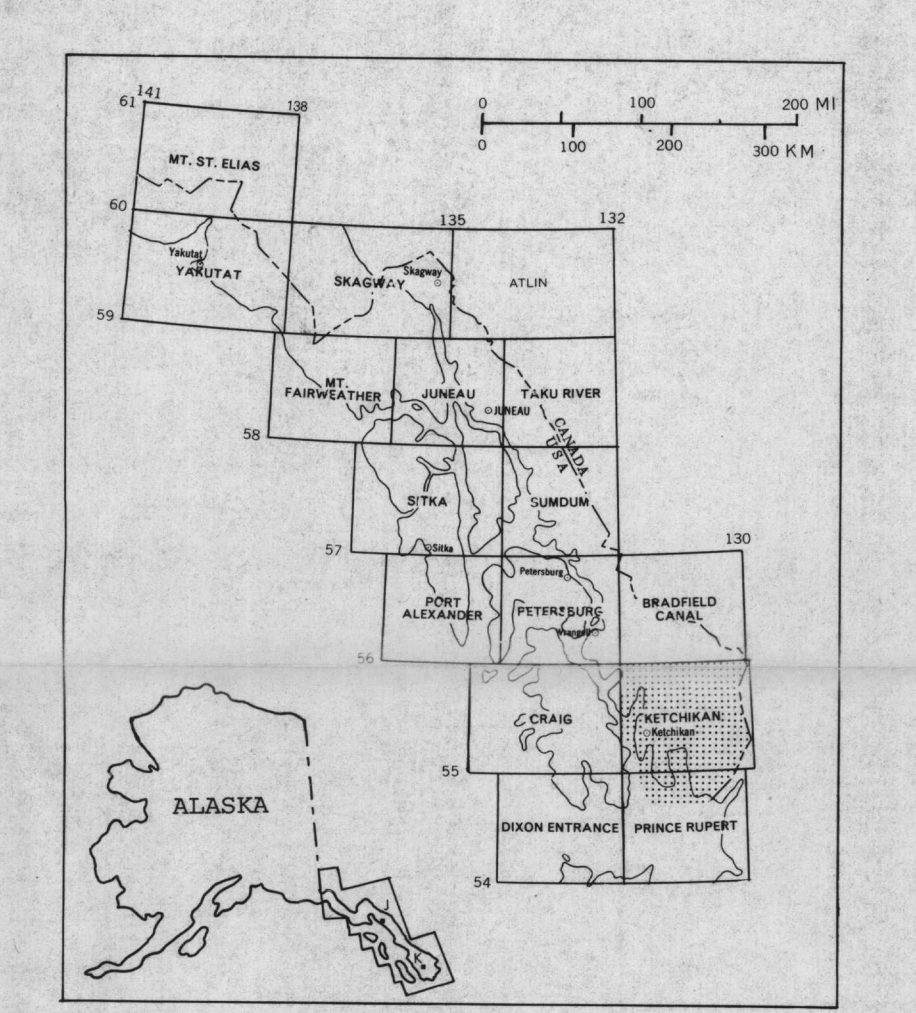


Figure 4.--Histogram of trends and relative intensities of lineaments less than 10 km long as determined by use of a diffraction grating on Landsat imagery of the Ketchikan and Prince Rupert quadrangles. Relative intensities are subjective.



MAP SHOWING INTERPRETATION OF LANDSAT IMAGERY OF THE KETCHIKAN AND PRINCE RUPERT QUADRANGLES, ALASKA

BY
WM. CLINTON STEELE AND NAIRN R. D. ALBERT
1978