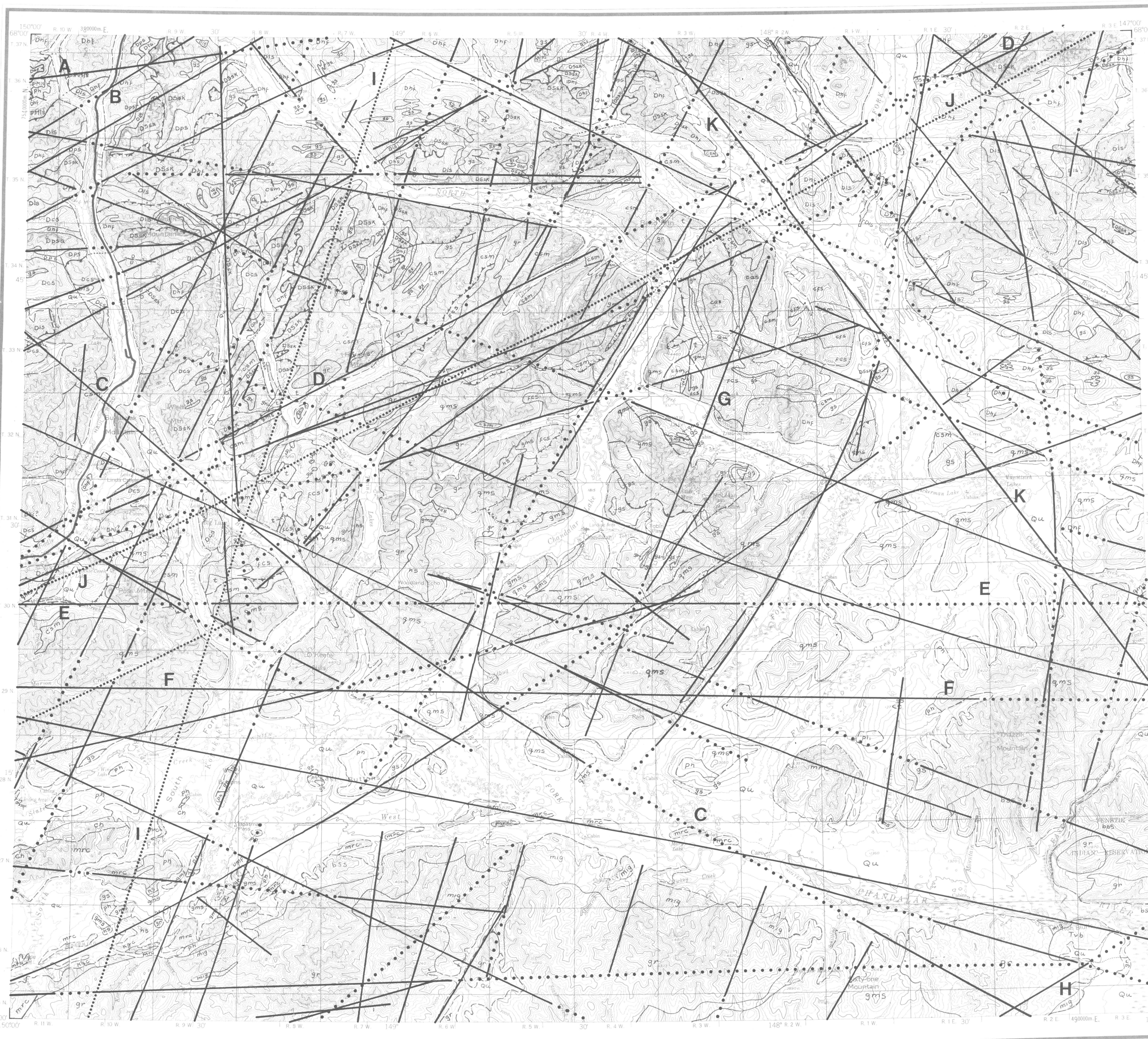
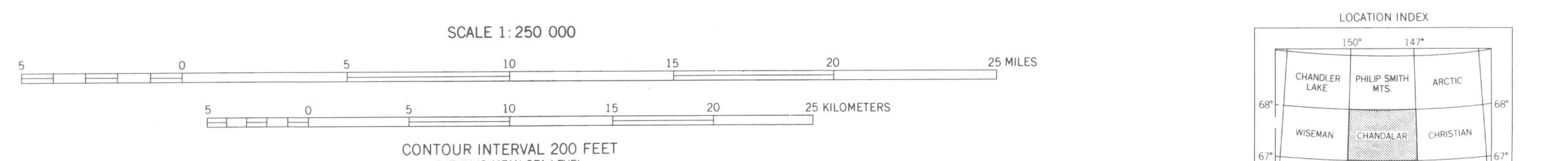


Please return to
MINERALS LIBRARY
A.D.G.C.S.



BASE FROM U.S. GEOLOGICAL SURVEY, 1957



EXPLANATION OF IMAGERY INTERPRETATION

- R LINEAMENT, DOTTED WHERE UNCERTAIN
- L LETTERED FEATURES ARE DESCRIBED IN TABLE
- D LINEAMENT, DERIVED FROM LATHRAM AND RAYNOLDS (1977). LETTERED FEATURES ARE DESCRIBED IN TABLE

EXPLANATION

GEOLOGY GENERALIZED AND REVISED FROM BROGG AND RYSETER, 1978 AND CHIPP, 1970

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS

Quaternary (Q)

Subsiding

METAMORPHIC, INTRUSIVE, AND VOLCANIC ROCKS

Tertiary (T)

Palaeozoic and older (P)

UNCONFORMITY

Unconformity (U)

DESCRIPTION OF MAP UNITS

This map is generalized from Brogg and Ryseter (1978) and Chipp (1970) maps and is a modification of their maps. The map is based on the 1:50,000-scale map of the Chandalar quadrangle, Alaska, by Brogg and Ryseter (1978) for the area shown in the map. It was revised to show the results of the study.

TECTONIC SYMBOLS

Mapped fault (MF)

Mapped thrust fault (MTF)

Well-defined conjunctural fault extension (WDF)

Moderately defined conjunctural fault extension (MDF)

Poorly defined conjunctural fault extension (PDF)

DISCUSSION

The fundamental types of imagery used for this study of the Chandalar quadrangle, Alaska, are Landsat satellite imagery and computer-processed Landsat imagery. Landsat satellite imagery was obtained from computer-compatible tapes (CCTs) of the Landsat satellite imagery by the U.S. Geological Survey. Computer-processed Landsat imagery was obtained from the Landsat satellite imagery by the U.S. Geological Survey. Computer-processed Landsat imagery was obtained from the Landsat satellite imagery by the U.S. Geological Survey. Computer-processed Landsat imagery was obtained from the Landsat satellite imagery by the U.S. Geological Survey.

LINEAMENTS AND STRUCTURAL TRENDS

The lineaments and structural trends identified in this study are primarily derived from Landsat imagery. They are defined as linear features that are visible in the imagery and that are interpreted as geological structures. The lineaments and structural trends identified in this study are primarily derived from Landsat imagery. They are defined as linear features that are visible in the imagery and that are interpreted as geological structures. The lineaments and structural trends identified in this study are primarily derived from Landsat imagery. They are defined as linear features that are visible in the imagery and that are interpreted as geological structures.

TABLE 1.—Landsat imagery used in study.

Imagery type	Date and color	Scale	Projection	Public Affairs Office No.	Transparency scale	Print scale
U.S.A. Alaska mosaic	Black and white	Not applicable	Albers' equal-area	Not applicable	Not applicable	1:1,000,000
Computer-enhanced imagery						
False-color with linear stretch - east	Blue, Green, Red	2500-29625	8-19-75	Orthographic E-478-5337	1:3,000,000	1:300,000
False-color with linear stretch - west	Blue, Green, Red	1722-20015	8-3-74	Orthographic E-478-6437	1:3,000,000	1:300,000
False-color with linear stretch - west	Blue, Green, Red	2208-29625	8-19-75	Orthographic E-478-5337	1:3,000,000	1:300,000
False-color with linear stretch - west	Blue, Green, Red	1722-20015	8-3-74	Orthographic E-478-6437	1:3,000,000	1:300,000
Structural natural color - east	Blue, Green, Red	2208-29625	8-19-75	Orthographic E-478-5337	1:3,000,000	1:300,000
Structural natural color - west	Blue, Green, Red	1722-20015	8-3-74	Orthographic E-478-6437	1:3,000,000	1:300,000
Vertical first derivative - east	Black and white	2208-29625	8-19-75	Orthographic E-478-5338	1:3,000,000	1:300,000
Vertical first derivative - west	Black and white	1722-20015	8-3-74	Orthographic E-478-6438	1:3,000,000	1:300,000
Horizontal first derivative - east	Black and white	2208-29625	8-19-75	Orthographic E-478-5339	1:3,000,000	1:300,000
Horizontal first derivative - west	Black and white	1722-20015	8-3-74	Orthographic E-478-6439	1:3,000,000	1:300,000
Diagonal first derivative - east	Black and white	2208-29625	8-19-75	Orthographic E-478-5340	1:3,000,000	1:300,000
Diagonal first derivative - west	Black and white	1722-20015	8-3-74	Orthographic E-478-6440	1:3,000,000	1:300,000

TABLE 2.—Regionally important lineaments observed in the Chandalar quadrangle.

Lineament*	Approximate trend and length (km)	Correlation with geology	Correlation with geomorphic data	Correlation with structural data	Correlation with aeromagnetic data
A	N. 80° E. 680	Corresponds to parts of a fault contact in a basement block... (text continues)	Agreeable with geomorphic data...	Agreeable with structural data...	None observed.
B	N. 60° E. 1,100	Corresponds to part of a fault contact in a basement block... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
C	N. 50° W. 3,000	Corresponds to a post-tectonic trending fault in a basement block... (text continues)	Agreeable with geomorphic data...	Agreeable with structural data...	None observed.
D	N. 60° E. 1,100	Terminates several north-trending faults in a basement block... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
E	East 770	Corresponds to a north-trending fault in a basement block... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
F	East 770	Corresponds to a north-trending fault in a basement block... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
G	N. 20° E. 80	None observed.	None observed.	None observed.	None observed.
H	N. 50° E. 1,000	Corresponds to a basement fault of major importance in the Chandalar quadrangle... (text continues)	Agreeable with geomorphic data...	Agreeable with structural data...	None observed.
I	N. 20° E. 1,100	Defines westward extent of lower Palaeozoic basement in the Chandalar quadrangle... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
J	N. 60° E. 770	Corresponds to parts of a fault in a basement block... (text continues)	Partially agreeable with geomorphic data...	Partially agreeable with structural data...	None observed.
K	N. 30° W. 1,200	Corresponds to a basement boundary in the Chandalar quadrangle... (text continues)	Agreeable with geomorphic data...	Agreeable with structural data...	None observed.

Figure 1.—Map showing the coverage of Landsat scenes used in this study. Dotted line indicates boundary between computer-mosaiced scenes.

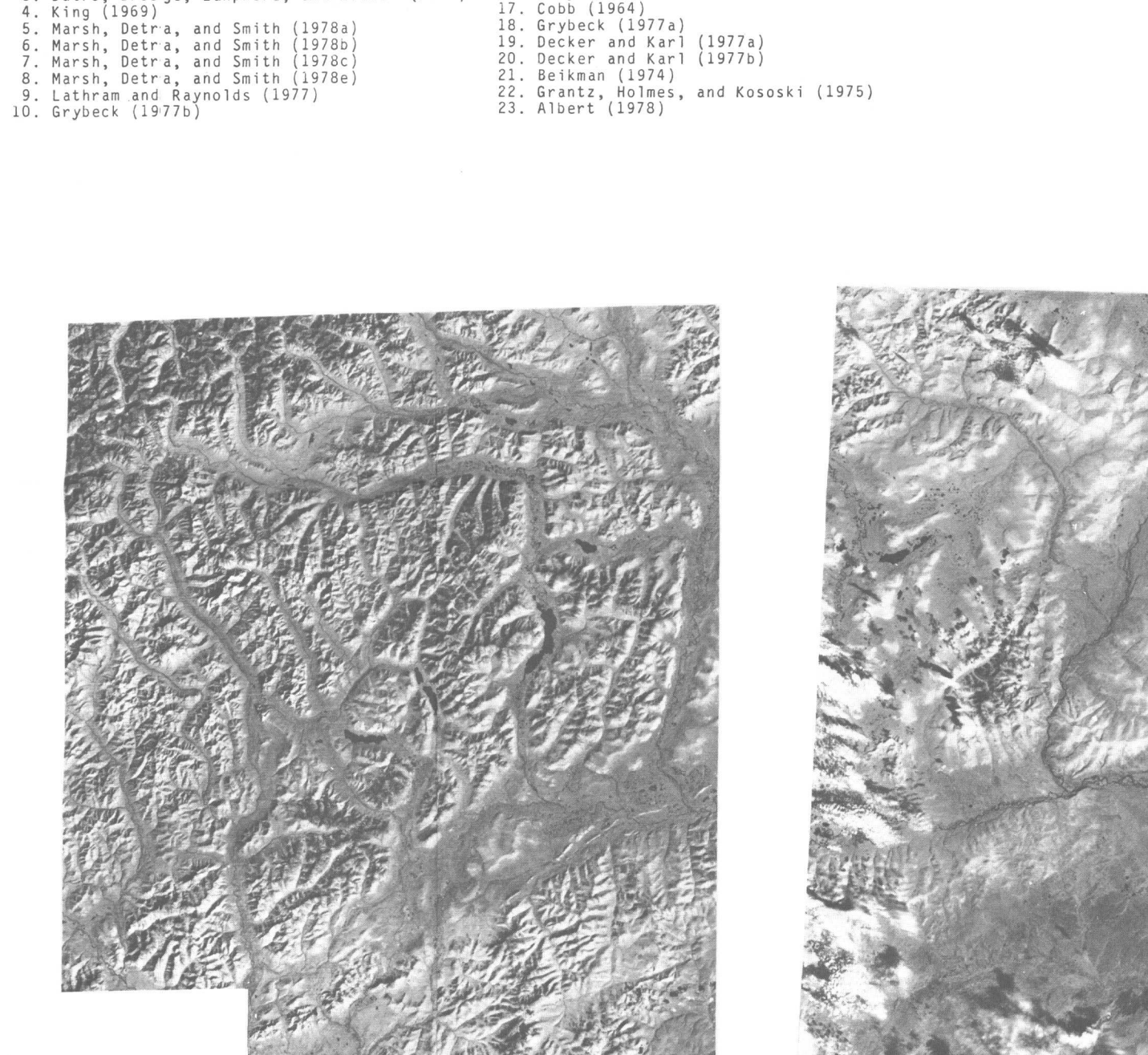


Figure 2.—Example of Landsat imagery used in this study. Band C.

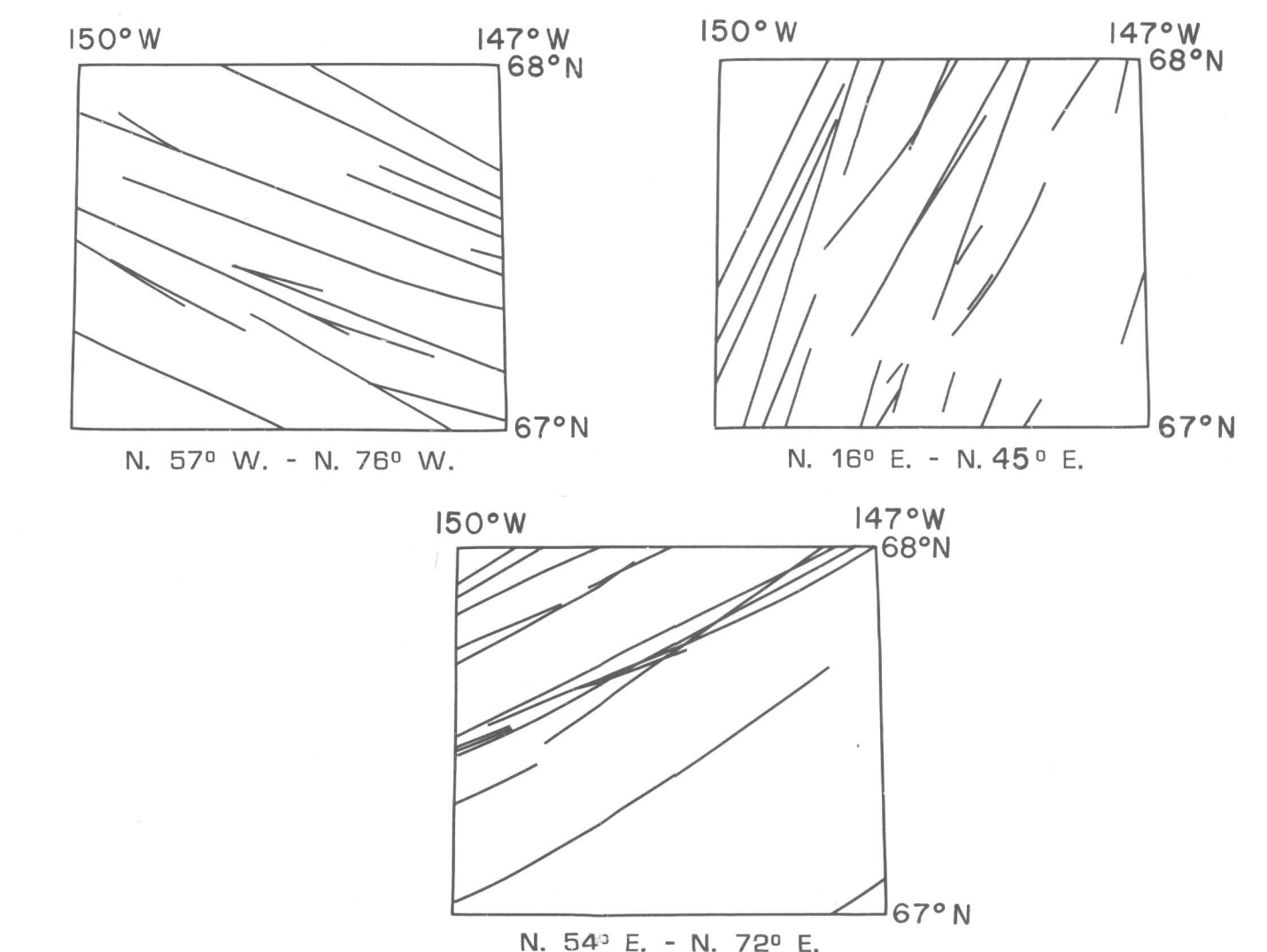


Figure 3.—Maps of the Chandalar quadrangle showing the distribution of the three most prominent sets of lineament trends observed on Landsat imagery.

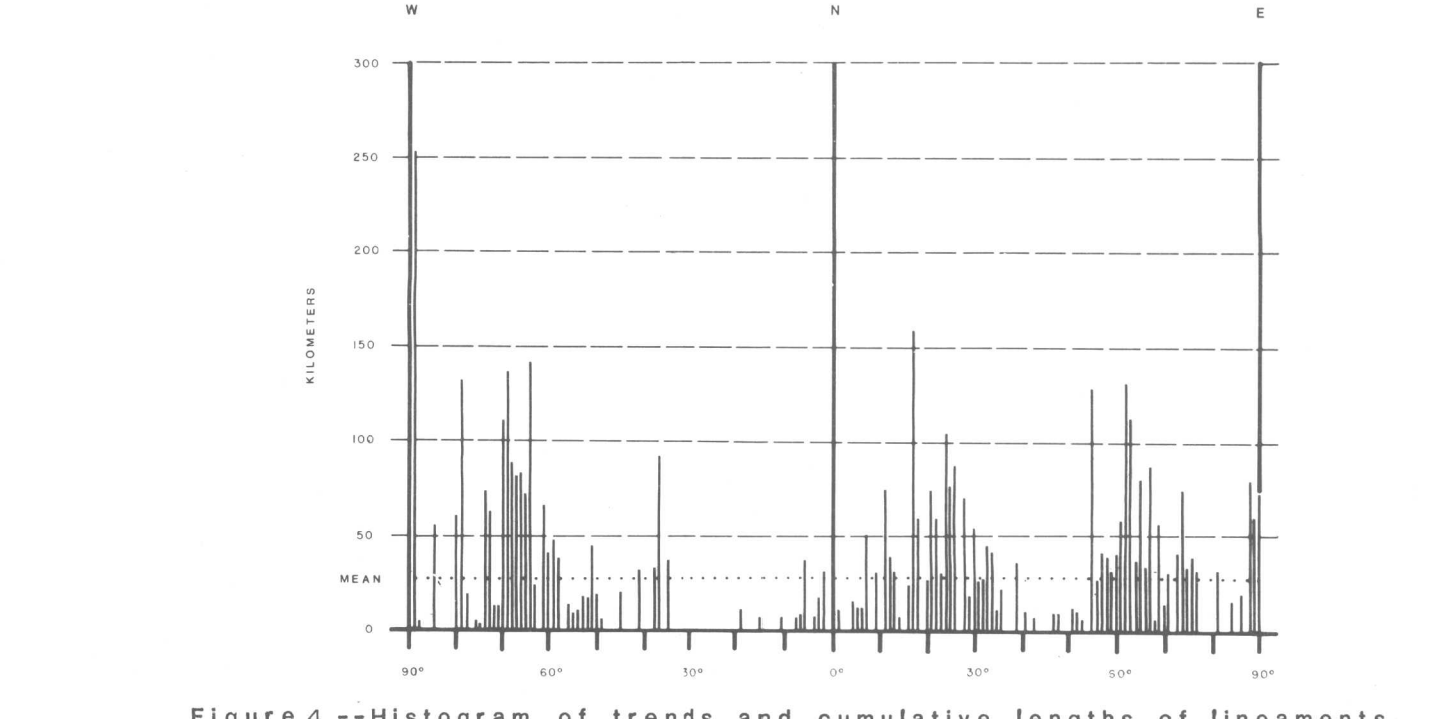


Figure 4.—Histogram of trends and cumulative lengths of lineaments observed on Landsat imagery of the Chandalar quadrangle.

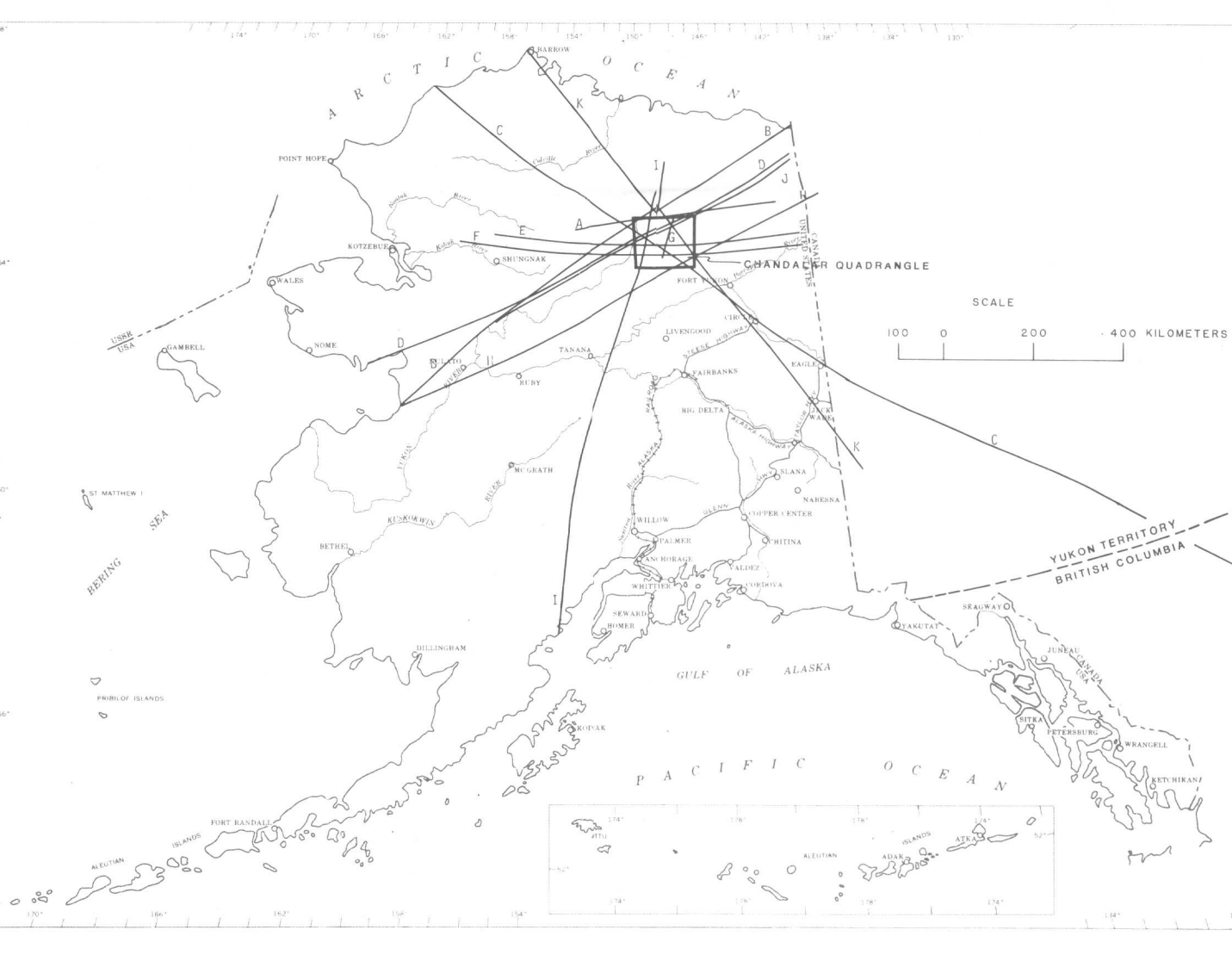


Figure 5.—Index map of Alaska showing the location of the Chandalar quadrangle and lineaments outside the quadrangle that are described in table 2.

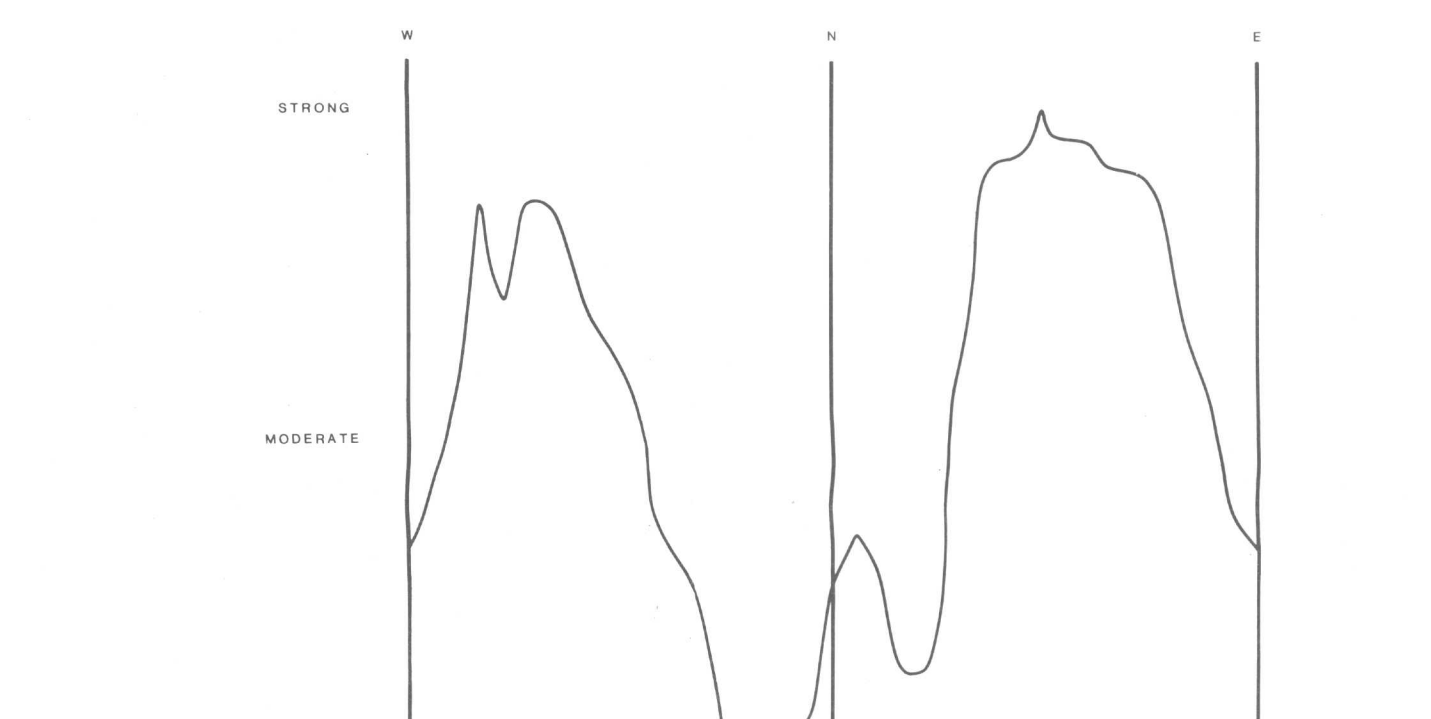


Figure 6.—Chart showing relative intensity and trends of lineaments less than 10 km long as determined by use of a diffraction grating on Landsat imagery of the Chandalar quadrangle. Relative intensities are subjective.

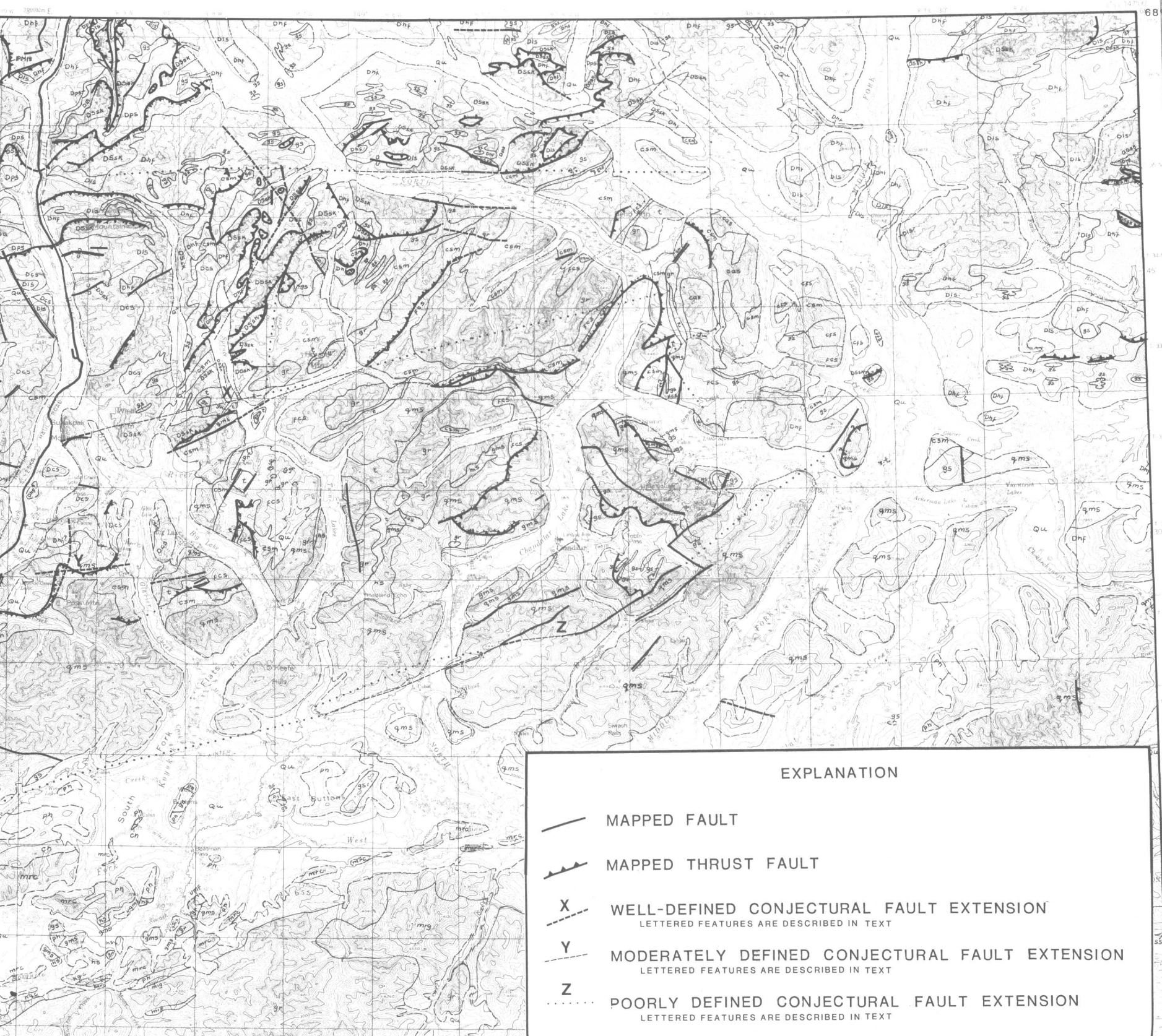


Figure 7.—Map of conjunctural fault extensions observed on imagery of the Chandalar quadrangle. Generalized geology modified from Brogg and Ryseter.