DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN FILE REPORT
78 - 73 K

Folio of the Ketchikan and Prince Rupert Quadrangles, Alaska

SHEET 2 OF 2

STEELE AND ALBERT--INTERPRETATION OF LANDSAT IMAGERY

EXPLANATION OF IMAGERY INTERPRETATION

- Features identified on Landsat imagery that coincide mainly with faults, contacts, and lithologic trends identified during geologic mapping (Berg and others, 1978b).
- Features identified on Landsat imagery that parallel or closely approximate the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b).
- Features identified on Landsat imagery that coincide mainly with faults, contacts, and lithologic trends identified during geologic mapping and parallel or closely approximate the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b).
- Features identified on Landsat imagery that are approximately perpendicular to the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b).
- Features identified on Landsat imagery that coincide with trends or deflections of aeromagnetic contours (U.S. Geological Survey, 1977) or interpreted aeromagnetic features (Griscom, 1978).
- Features identified on Landsat imagery which 1) coincide with faults, contacts, and lithologic trends identified during geologic mapping or parallel or closely approximate the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b) and 2) coincide with trends or deflections of aeromagnetic contours (U.S. Geological Survey, 1977) or interpreted aeromagnetic features (Griscom, 1978).
- Features identified on Landsat imagery which 1) are approximately perpendicular to strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b) and 2) coincide with trends or deflections of aeromagnetic contours (U.S. Geological Survey, 1977) or interpreted aeromagnetic features (Griscom, 1978).
- Features identified on Landsat imagery that coincide with rock geochemical anomalies (Koch and Elliott, 1978a, b).
- Features identified on Landsat imagery coincident with known mineral occurrences (Elliott and others, 1978).
- Features identified on Landsat imagery 1) that coincide mainly with faults, contacts, and lithologic trends identified during geologic mapping or parallel or closely approximate the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b), and 2) coincide with known mineral occurrences (Elliott and others, 1978) or with rock geochemical anomalies (Koch and Elliott, 1978a, b).
- Features identified on Landsat imagery 1) coincident with known mineral occurrences (Elliott and others, 1978) or with rock geochemical anomalies (Koch and Elliott, 1978a, b) and 2) that are approximately perpendicular to the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b).
- Features identified on Landsat imagery coincident 1) with known mineral occurrences (Elliott and others, 1978) or with rock geochemical anomalies (Koch and Elliott, 1978a, b) and 2) with trends or deflections of aeromagnetic contours (U.S. Geological Survey, 1977) or interpreted aeromagnetic features (Griscom, 1978).
- Features identified on Landsat imagery 1) that coincide mainly with faults, contacts, and lithologic trends identified during geologic mapping or are approximately parallel or perpendicular to the strike of foliation or schistosity (H. C. Berg and R. L. Elliott, unpubl. data, 1975-1977; Berg and others, 1978b), 2) coincident with known mineral occurrences (Elliott and others, 1978) or with rock geochemical anomalies (Koch and Elliott, 1978a, b), and 3) which coincide with trends or deflections of aeromagnetic contours (U.S. Geological Survey, 1977) or interpreted aeromagnetic features (Griscom, 1978).
- . . . . . Features detected on Landsat imagery herein interpreted as extensions of above features.

Table 1.--*Landsat imagery used in analyses of the Ketchikan and Prince Rupert quadrangles.*

[Computer compatible tapes were processed by Pat S. Chavez, Jr., Teresa E. Grow, and Lynda Sowers, U.S. Geological Survey, Flagstaff, Ariz. Imagery is available from EROS Data Center, Sioux Falls, South Dakota 57198 (specify Public Affairs Office (PAO) number when ordering). For description of these types of enhancement, see Albert and Steele (1976a, b). Example of imagery is shown in figure 1.]

Imagery type	Bands and colors used	Scene ID number	Date	Projection	Public Affairs Office (PAO) number	Transparency scale	Print scale
U.S.D.A. Alaska mosaic	7 Black and white	Not applicable		Alber's equal area	Not applicable	Not applicable	1:1,000,000
Computer-enhanced imagery							
False-color with linear stretch - east	4 Blue 5 Green 7 Red	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-681-64CT	1:1,605,000	1:250,000
False-color with linear stretch - west	4 Blue 5 Green 7 Red	1772-19165	9-3-74	Orthographic	E-684-52CT	1:1,590,000	1:250,000
False-color with sinusoidal stretch - east	4 Blue 6 Red 7 Green	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-682-64CT	1:1,605,000	1:250,000
False-color with sinusoidal stretch - west	4 Blue 6 Red 7 Green	1772-19165	9-3-74	Orthographic	E-685-52CT	1:1,590,000	1:250,000
Simulated natural color - east	Synthetic blue 4 Green 5 Red	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-683-64CT	1:1,605,000	1:250,000
Simulated natural color - west	Synthetic blue 4 Green 5 Red	1772-19165	9-3-74	Orthographic	E-686-52CT	1:1,590,000	1:250,000
Vertical first derivative - east	6 Black and white	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-336-64BN	1:1,605,000	1:250,000
Vertical first derivative - west	6 Black and white	1772-19165	9-3-74	Orthographic	E-339-52BN	1:1,590,000	1:250,000
Horizontal first derivative - east	6 Black and white	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-337-64BN	1:1,605,000	1:250,000
Horizontal first derivative - west	6 Black and white	1772-19165	9-3-74	Orthographic	E-340-52BN	1:1,590,000	1:250,000
Diagonal first derivative - east	6 Black and white	1770-19053 1770-19055	9-1-74 9-1-74	Orthographic	E-338-64BN	1:1,605,000	1:250,000
Diagonal first derivative - west	6 Black and white	1772-19165	9-3-74	Orthographic	E-341-52BN	1:1,590,000	1:250,000

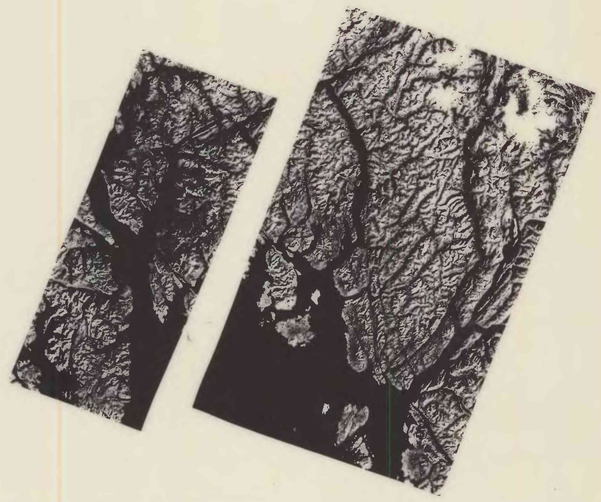

Figure 1.--Example of Landsat imagery used in analyses of the Ketchikan and Prince Rupert quadrangles. Band 7.

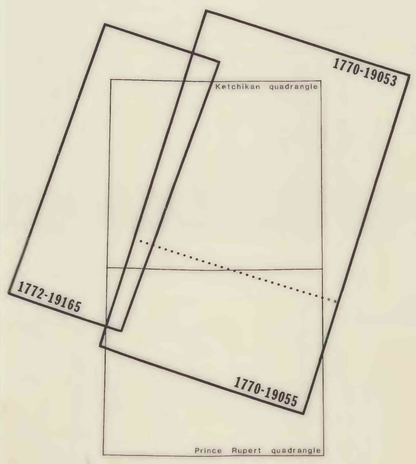

Figure 2.--Map showing location of Landsat imagery used in the analyses of the Ketchikan and Prince Rupert quadrangles. Dotted lines indicate mosaicked image boundaries.

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

SCALE 1:250000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

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

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

BY

WM. CLINTON STEELE AND NAIRN R. D. ALBERT

1978