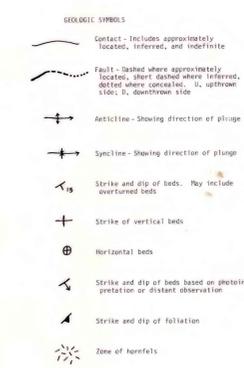
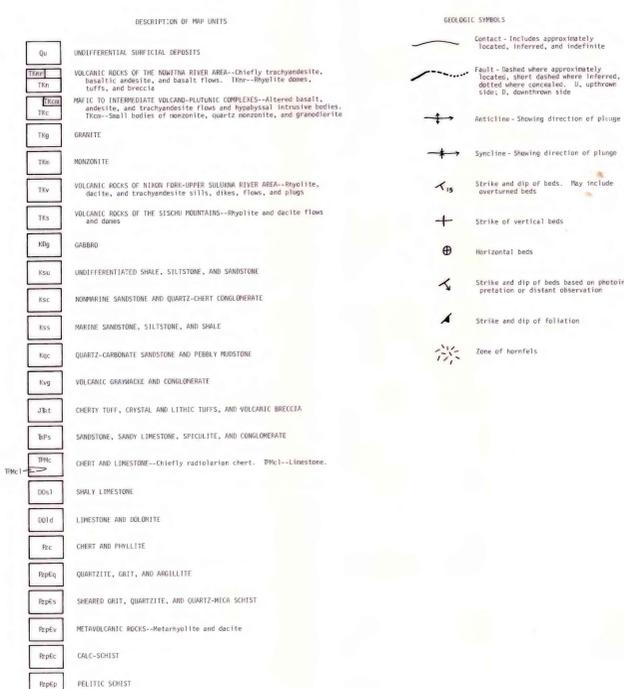
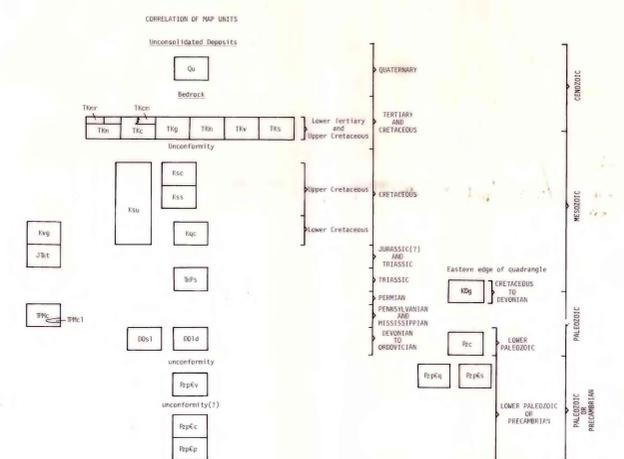
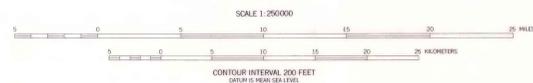


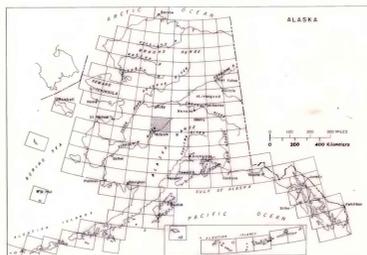
BASE FROM U.S. GEOLOGICAL SURVEY, 1953, 1959

Generalized geology after Patton, W.W., Jr., Moll, E.J.,
Dutro, J.T., Jr., Silberman, M.L., and Chapman, R.M., 1980



EXPLANATION OF IMAGERY INTERPRETATION

Lineament



LINEAMENT MAP

DISCUSSION

These maps are part of a folio of maps on the Medfra quadrangle. Landsat images of the quadrangle were analyzed for lineaments and circular and arcuate features as a possible aid in the mineral resource assessment of the area. This study is a modified version of one detailed interpretative investigation conducted in other areas in Alaska (Albert, 1975; Albert and Steele, 1976a, b; Albert and others, 1976; Steele and Albert, 1978). The report is divided into the methodology involved is similar to that used by Albert (1976). Details concerning the different types of imagery used are given in "Table of Imagery Used in Analyses." Although many lineaments and circular and arcuate features were observed from the imagery, no marked spatial relation between these features and known mineral deposits (Steele and others, 1980) is apparent. However, numerous lineaments and circular and arcuate features observed from the imagery do show good spatial correlation with known geologic features (Patton and others, 1980). For example, feature 1 (lineament map, sheet 1) correlates well with a segment of the trace of the Nixon Fork fault in the central part of the quadrangle, and features 2-5 (lineament map, sheet 1) correspond to segments of lesser(?) unnamed fault traces exposed elsewhere within the central and northeast parts of the quadrangle. Features 6-10, 12-16, and 18-24 (circular and arcuate features map, sheet 2) show good spatial correlation with areas underlain by prominent exposures of intrusive (volcanic or plutonic) rocks and (or) hornfels throughout the quadrangle; features 7, 11, and 17 (circular and arcuate features map, sheet 2) mark localities characterized by locally prominent fold structures (synclines) in the western half of the quadrangle.

REFERENCES CITED

Albert, R.R.D., 1975, Interpretation of Earth Resources Technology Satellite imagery of the Nabesna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-8591, 2 sheets, scale 1:250,000.
Albert, R.R.D., Le Conte, J.R., and Steele, W.C., 1976, Map showing interpretation of Landsat imagery of the Chandler quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-8761, 2 sheets, scale 1:250,000.
Albert, R.R.D., and Steele, W.C., 1976a, Interpretation of Landsat imagery of the McCarthy quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-8726, 3 sheets, scale 1:250,000.
—, 1976b, Interpretation of Landsat imagery of the Tanacross quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-8676, 3 sheets, scale 1:250,000. Supersedes Open-File Report 76-850.
Comit, C.D., and Chavez, P.S., Jr., 1979, Basic concepts of computerized digital image processing for geologists: U.S. Geological Survey Bulletin 1462.
Patton, W.W., Jr., Moll, E.J., Dutro, J.T., Jr., Silberman, M.L., and Chapman, R.M., 1980, Preliminary geologic map of the Medfra quadrangle, Alaska: U.S. Geological Survey Open-File Report 80-811A, scale 1:250,000.
Schwab, C.E., Moll, E.J., and Patton, W.W., Jr., 1981, Mineral occurrence map of the Medfra quadrangle, Alaska: U.S. Geological Survey Open-File Report 80-811B, 2 sheets, scale 1:250,000.
Steele, W.C., and Albert, R.R.D., 1978, Interpretation of Landsat imagery of the Talkeetna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-8702, 2 sheets, scale 1:250,000.

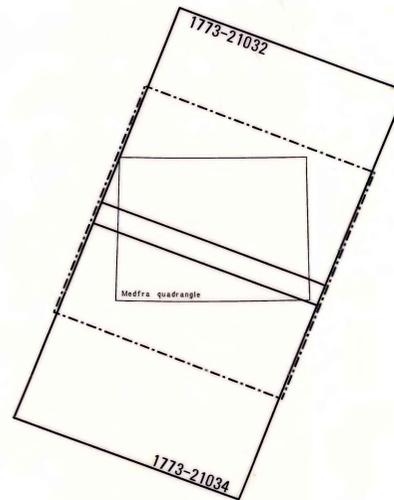


Figure 1. Map showing location of Landsat imagery used in analyses of the Medfra quadrangle. Dashed line indicates boundaries of mosaic (simulated natural color) image.

TABLE OF IMAGERY USED IN ANALYSES

Scenes used for computer enhancement are 1773-21032 and 1773-21034, both taken September 4, 1974. Computer compatible tapes were processed by J.L. Chavez, Jr. and Ellen Sanchez, U.S. Geological Survey, Flagstaff, Arizona. For a description of this type of enhancement, see Albert and Steele (1976a, b) and Condit and Chavez (1979). All imagery listed below is available from EROS Data Center, Sioux Falls, South Dakota 57198 (specify PMS number when ordering).

IMAGE TYPE	COMPUTER-ENHANCED	BANDS AND COLORS USED	PROJECTION	IMAGE NUMBER	SCENE ID NUMBER	TRANSPARENCY SCALE	PRINT SCALE
R.G.H. Rayfield Alaska mosaic	No	7 BW	Albers' Equal-area		This item not available from EROS Data Center	1:1,000,000	
False-color (POE) - south	No	4 Blue 5 Green 7 Red	Space Cylindrical	E-1200-99CT 1773-21034	1:1,007,500	1:250,000	
False-color (POE) - north	No	4 Blue 5 Green 7 Red	Space Cylindrical	E-1201-99CT 1773-21032	1:1,009,000	1:250,000	
Simulated natural color	Yes	4 Green 5 Red Syn Blue	Orthographic	E-1202-99CT Composite (1773-21032, 1773-21034)	1:1,075,000	1:250,000	

POE = photo-optically enhanced

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature

MAPS SHOWING INTERPRETATION OF LANDSAT IMAGERY OF THE MEDFRA QUADRANGLE, ALASKA

by

James R. Le Compte

1981