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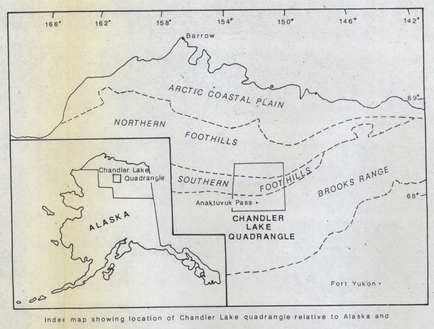
U.S. Geological Survey

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

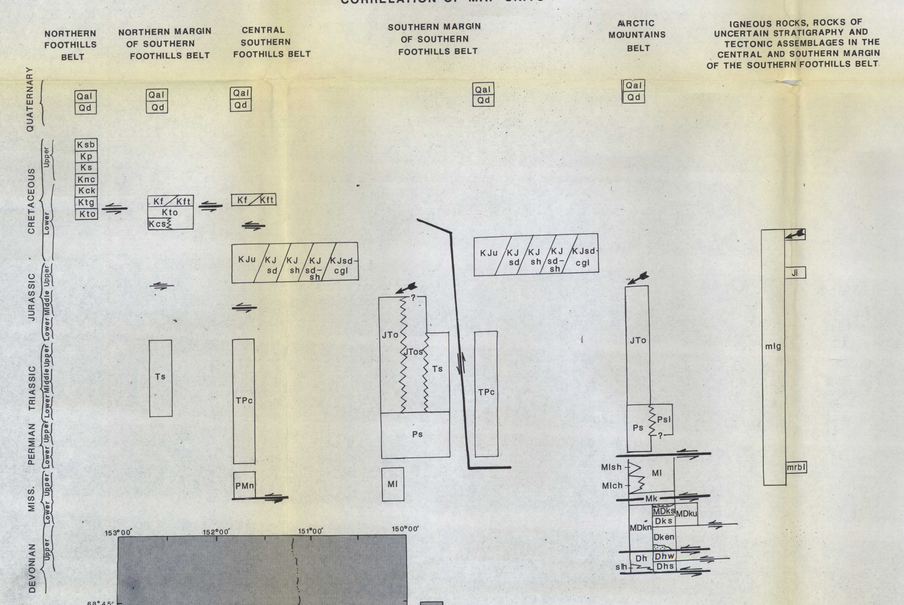
OPEN-FILE REPORT 88-42
SHEET 1 OF 2

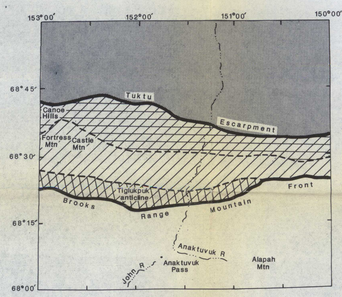
## LOCATION MAP




Index map showing location of Chandler Lake quadrangle relative to Alaska and physiography of northern Alaska (modified from Wahrhaftig, 1965)

## CORRELATION OF MAP UNITS




INDEX MAP FOR CORRELATION OF MAP UNITS

Correlation of map units shows time-stratigraphic correlation of 5 discrete and areally restricted rock assemblages. The assemblages occur in east-west trending belts that correspond to 3 regional physiographic belts, Northern Foothills, Southern Foothills, and Arctic Mountains Belts of Wahrhaftig (1965) (see Location Map); single assemblages underlie the Northern Foothills and Arctic Mountains Belts and 3 assemblages underlie the Southern Foothills Belt.

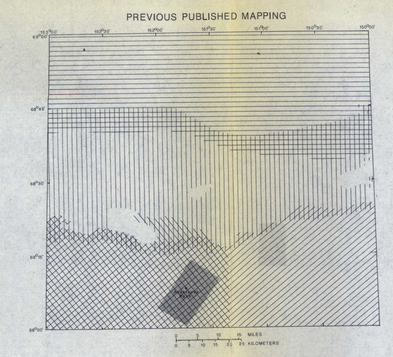
Although structural relations between assemblages are not well exposed, the correlation diagram shows observable and reasonably inferrable structural relations, facies transitions, and litho-stratigraphic sequences. The diagram shows location of décollements and overthrust relations. Extensive décollements correspond to the more bold shear symbols whereas smaller symbols correspond to less extensive décollements.

## MAP SYMBOLS

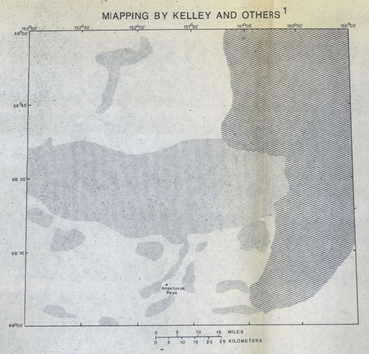
- measured strike and dip
- estimated strike and dip
- estimated orientation of strike and dip
- horizontal beds
- vertical beds, measured
- vertical beds, estimated
- anticline, arrow shows direction of plunge, dashed where removed by erosion, dotted where concealed.
- strongly asymmetrical anticline, double arrow identifies steeper dipping limb
- syncline, arrow shows direction of plunge, dotted where concealed
- strongly asymmetrical syncline, double arrow identifies steeper dipping limb
- overturned anticline
- overturned syncline
- thrust fault, teeth on upper plate, dotted where concealed, dashed where approximately located, querried existence uncertain
- fault, nature uncertain, dotted where concealed
- shear zone
- depositional contact, dashed where approximate, dotted where concealed
- drill hole
- well drilled for oil or gas, abandoned

## SOURCES OF MAPPING

PREVIOUS PUBLISHED MAPPING



MIAPPING BY KELLEY AND OTHERS[1]



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- Brosgé, W.P., Reiser, H.N., Dutro, J.T., Jr., and Nilsen, T.H., 1979, Geologic map of Devonian rocks in parts of the Chandler Lake and Killik River quadrangles, Alaska: U.S. Geological Survey Open-File Report 79-1224, scale 1:2,000,000 1 sheet.
- Brosgé, W.P., Reiser, H.N., Patton, W.W., Jr., and Mangus, M.D., 1960, Geologic map of the Killik-Anaktuvuk River region, Brooks Range, Alaska: U.S. Geological Survey Open-File Report 60-21, scale 1:96,000, 2 sheets.
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- Porter, S.C., 1966, Stratigraphy and deformation of Paleozoic section at Anaktuvuk Pass, central Brooks Range, Alaska: American Association of Petroleum Geologists Bulletin, v. 50, no. 5, p. 952-980.

[1] J.S. Kelley, A.K. Armstrong, J.R. Bergquist, W.H. Nelson, C.G. Mull, D.M. Peterson, 1982; J.S. Kelley, W.P. Brosgé, D. Bohn, W.H. Nelson, 1983; J.S. Kelley, M.W. Reynolds, J.T. Dutro, Jr., W.H. Nelson, B. Caeijtey, Jr., D. Bohn, 1984; J.S. Kelley, G.D. Stricker, S.W. Nelson, W.H. Nelson, B. Caeijtey, Jr., D. Bohn, 1985; J.S. Kelley, S.M. Karl, D. Bohn, G.A. Lanceater, 1986.

- Geology mapped on color infrared aerial photographs at 1:60,000, transferred to topographic base maps at 1:63,360 with a Kern PG-2 stereo plotting instrument, and abstracted and transferred to this base map.
- Geology mapped on black and white aerial photographs at 120,000 and transferred by inspection to this base map.
- Geology observed at scattered field stations, short foot traverses, and helicopter observations.
- Geology interpolated from published sources, aerial photographs, geology in areas more thoroughly investigated, and scattered helicopter observations.

Base from U.S. Geological Survey
Chandler Lake 1:250,000 quadrangle,
1956 with limited revisions, 1983

1959 MAGNETIC DECLINATION AT SOUTH EDGE OF SHEET
RANGES FROM 27° TO 29°30' EAST

SCALE 1:125 000

200 foot contour interval

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

# WEST HALF
# PRELIMINARY GEOLOGIC MAP OF THE CHANDLER LAKE QUADRANGLE, ALASKA

BY J.S. KELLEY 1988

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