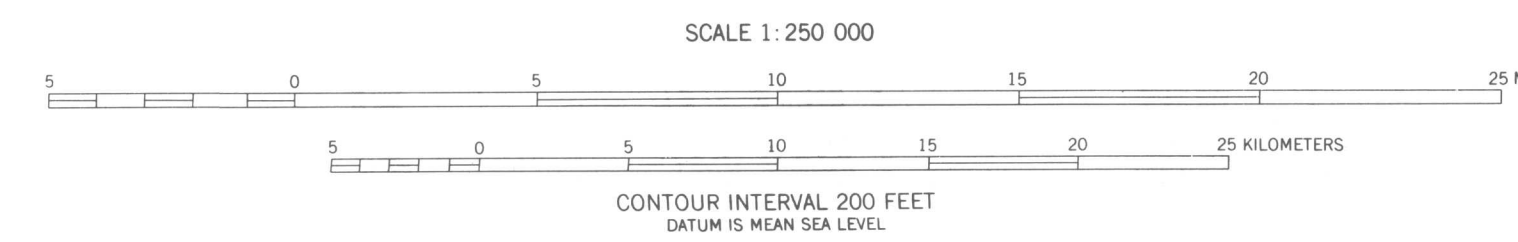


BASE FROM U.S. GEOLOGICAL SURVEY, 1957

EXPLANATION OF IMAGERY INTERPRETATION

- 2 CIRCULAR OR ARCUATE FEATURE. DOTTED WHERE UNCERTAIN. NUMBERED FEATURES ARE DESCRIBED IN TABLE
- ▲ IRON-OXIDE COLORED AREAS



MAP SHOWING INTERPRETATION OF LANDSAT IMAGERY OF THE CHANDALAR QUADRANGLE, ALASKA

BY  
NAIRN R. D. ALBERT, JAMES R. LE COMPTE, AND WM. CLINTON STEELE  
1978

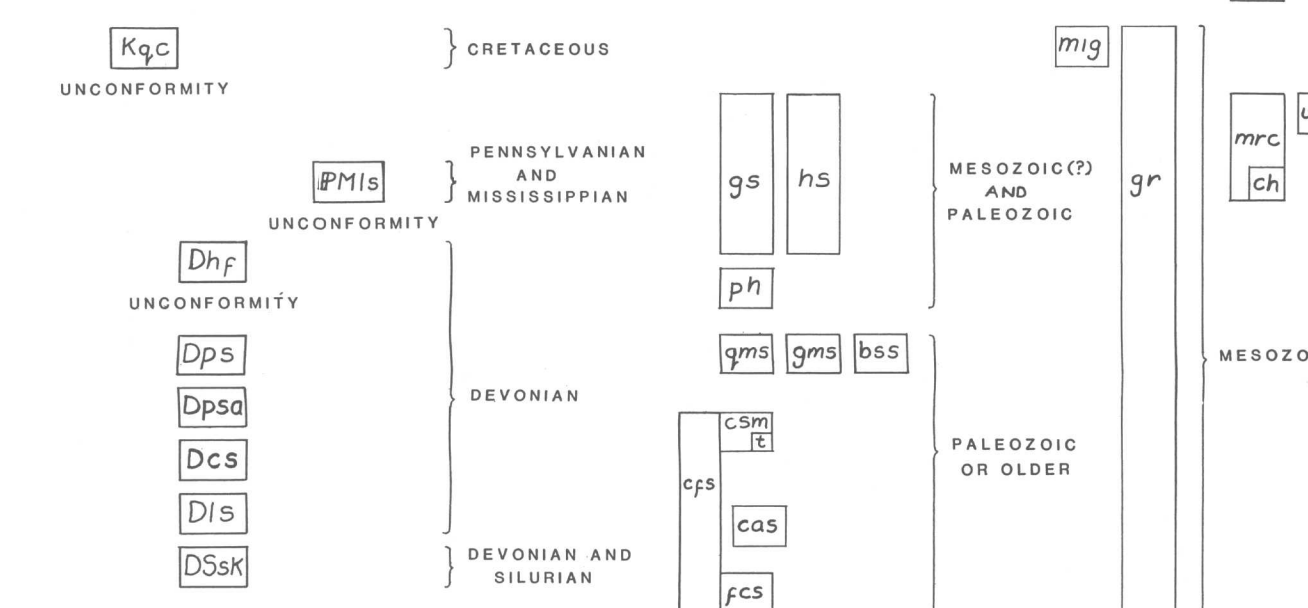
EXPLANATION  
GEOLOGY GENERALIZED AND REVISED FROM BROUSSÉ AND REISER, 1964, AND CHIPP, 1970

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS

[Qu] QUATERNARY

FOSSILIFEROUS, PARTLY METAMORPHOSED SEDIMENTARY ROCKS



DESCRIPTION OF MAP UNITS

This map is generalized from Broussé and Reiser (1964). Many of these map units are combinations of units shown separately on the older map. The Devonian and Devonian(?) age that was assigned to the metamorphic rocks by Broussé and Reiser (1964) is hereby revised to early Paleozoic or older.

SURFICIAL DEPOSITS

[Qu] Unconsolidated sedimentary deposits (Quaternary)

FOSSILIFEROUS PARTLY METAMORPHOSED SEDIMENTARY ROCKS

- [Kgc] Quartz pebble conglomerate (Cretaceous)
- [Pmls] Liaburne Group (Pennsylvanian and Mississippian) and Kayak Shale (Mississippian)—Limestone, dolomite, shale and conglomerate
- [Dhf] Hunt Fork Shale (Upper Devonian)—slate and phyllite
- [Dps] Purple and green slate and phyllite (Devonian)
- [Dpsa] Purple and green andesitic volcanic sheared conglomerate (Devonian)
- [Dca] Chloritic siltstone and grit (Devonian)—schistose; in part graywacke
- [Dis] Limestone and siltstone (Upper Devonian)—schistose; includes some green slate locally
- [Dsk] Shalit Limestone (Upper and Middle Devonian, Upper Silurian)—Limestone, dolomite, and marble

METAMORPHIC, INTRUSIVE AND VOLCANIC ROCKS

- [Tvb] Vesicular olivine basalt flows (Tertiary)
- [mig] Magnetite-intercalated mica schist and granite; granite with mafic inclusions
- [gr] Granitic rocks—K/Ar dates of biotite are 101 m.y. and 125 m.y. (Broussé and Reiser, 1964); of hornblende, 416 m.y. (De L. Silberman and D. L. Turner, written comm., 1977)
- [mfc] Mafic rocks and chert—Pillow basalt, andesite, minor chert; dioritic diabase and gabbro. Chert (?) differentiated where abundant
- [umf] Ultramafic rocks
- [gd] Greenstone and greenschist—Includes pillowed flows in Hunt Fork Shale (Dhf) in northeast part of the quadrangle
- [hs] Hornblende schist—Mostly hornfels facies
- [ph] Phyllite and schistose wacke
- [qms] Quartz muscovite schist
- [gms] Garnet mica schist—Mostly hornfels facies
- [bss] Biotite staurolite schist—Hornfels facies
- [csm] Calcareous schist, marble and talcite (?) locally
- [cfs] Undifferentiated calcareous schist (csm) and feldspathic chloritic schist (cfs)
- [fcs] Feldspathic chloritic schist—Includes meta-dioritic sills and pyritic quartzite
- [cas] Chloritized amphibole schist—Local remnant glaucophane

GEOLOGIC SYMBOLS

- CONTACT—Dashed where approximate; dotted where concealed
- NORMAL FAULT—Dashed where inferred, quartered where doubtful; dotted where concealed; U, upthrown side; D, downthrown side
- THRUST FAULT—Quartered where doubtful; dotted where concealed. Sawtooth on upper plate

THIS MAP IS ONE OF A SERIES.  
ALL BEARING THE NUMBER MF-878  
BACKGROUND INFORMATION RELATING TO  
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TABLE 3.—Significant circular and arcuate features observed in the Chandalar quadrangle.  
[Superscript numbers designate references at end of table.]

Circular or arcuate feature	Approximate diameter (mi and axial trend)	Correlation with geology	Correlation with gravimetric data	Correlation with aeromagnetic data	Correlation with mineralization	Correlation with geochemical data	Postulated cause
1	15 N. trend	None observed.	None observed.	Associated with inferred buried granitic body.	None observed.	None observed.	Buried granitic rocks.
2	45 No trend	Encloses all Cretaceous conglomerate, Paleozoic or older hornblende hornfels and greenstone schist. Mississippian to Jurassic chert and siliceous argillite, nearly all Paleozoic wacke, and much of Paleozoic phyllite and slate and Mississippian to Jurassic mafic volcanics, intrusives, and ultramafic rocks in Chandalar quadrangle.	Centered on high anomaly.	Associated with significant low anomaly and with several smaller high anomalies related to mafic volcanic and ultramafic rocks in Chandalar quadrangle.	Associated with two Au placer sites and several Cu occurrences.	Associated with significant Ni, V, and La anomalies; and several Bi, Cd, Cu, Hg, and Zn anomalies.	Possible gneiss with associated intrusive and extrusive rocks.
3	15 N. 80° E.	Corresponds to synform. Centered on swarm of dioritic sills and andesitic flows. <sup>1</sup>	None observed.	None observed.	None observed.	Associated with several Cu anomalies.	Synform with associated intrusive and extrusive rocks.
4	25 N. 30° E.	Encloses all albite-chlorite-muscovite schist. <sup>2</sup> Corresponds to synform. <sup>3</sup>	Corresponds to divergent contours related to high anomaly.	None observed.	Outline corresponds to seven Au placer sites.	None observed.	Synform.
5	20 N. 45° E.	Corresponds to synform. <sup>3</sup> Mainly encloses quartz-mica schist. <sup>3</sup>	Corresponds to convergent contours related to low anomaly.	Centered on anomaly associated with quartz-muscovite schist.	None observed.	None observed.	Synform.
6	8 No trend	Mainly encloses Mesozoic-Paleozoic granitic rocks. <sup>3</sup>	Centered on low anomaly.	Associated with high anomaly related to granitic rocks.	Outline passes through porphyry Cu deposit and may also be associated with Zn and Au occurrences. <sup>3</sup>	Associated with major Cu and Mo anomalies. <sup>3</sup>	Granitic rocks.
7	10 N. 35° E.	Mainly encloses quartz-mica schist. <sup>3</sup>	None observed.	Centered on several small high and low anomalies related to quartz-muscovite schist.	Associated with two Au occurrences. <sup>3</sup>	None observed.	Probable antiform.
8	17 N. 50° E.	Centered on thrust section of quartz-mica schist. <sup>3</sup>	None observed.	Centered on strong high anomaly related to quartz-muscovite schist.	Associated with a number of Au mines, prospects, and occurrences in Little Soap Peak gold district. <sup>3</sup>	Associated with numerous Bi and Ag anomalies. <sup>3</sup>	Possible antiform somewhat obscured by overthrust plate?
9	10 N. 80° E.	Encloses only quartz-mica schist. <sup>3</sup>	Associated with high anomaly.	Centered on axis of low anomaly.	None observed.	None observed.	Antiform.
10	180 N. 75° W.	Outline corresponds to fault marking northern boundary of Doonack structural high. <sup>3,11</sup>	Centered on major low anomaly in southeastern Brooks Range.	None observed.	Corresponds closely to Au prospect. Encloses nearly all mineral deposits in Chandalar and Williams quadrangles. <sup>11</sup>	Encloses all Ag anomalies in Williams quadrangle. <sup>11</sup>	Possibly related to intrusive rocks?
11	300 N. 75° W.	Outline corresponds to two major thrust faults, marking boundary between Tertiary and Foran rocks and Pennsylvanian and Mississippian rocks in Arctic quadrangle, and following structural grain in Arctic and Table Mountains quadrangles. <sup>10</sup>	Seems to correspond to major low anomaly in northeastern Brooks Range (data sparse).	Outline passes through major east-trending group of high and low anomalies in Christian and Colleen quadrangles. <sup>10</sup>	Outline passes nearly Co-In prospect. <sup>10</sup>	None observed.	Unknown
12	180 East	Outline corresponds to two major thrust faults, marking boundary between Tertiary and Foran rocks and Pennsylvanian and Mississippian rocks in Arctic quadrangle, and following structural grain in Arctic and Table Mountains quadrangles. <sup>10</sup>	May be associated with weak high to northeast Brooks Range (data sparse).	Outline passes through part of major east-trending group of high and low anomalies in Christian quadrangle. <sup>11</sup>	Outline passes nearly Co-In prospect. <sup>10</sup>	None observed.	Unknown

\*See map (sheet 2) for locations (see Figure 8).

References for table 3

1. Barnes (1976)
2. Cady (1978)
3. DeYoung (1978)
4. Marsh, Dettra, and Smith (1978a)
5. Marsh, Dettra, and Smith (1978b)
6. Marsh, Dettra, and Smith (1978c)
7. Marsh, Dettra, and Smith (1978d)
8. Marsh, Dettra, and Smith (1978e)
9. Broussé and Reiser (1964)
10. Bekken and Lettrac (1976)
11. Dettra, Bragg, Leathers, and Reiser (1976)
12. Clark and others (1974)
13. Orzech (1972)
14. Decker and Karl (1977a)

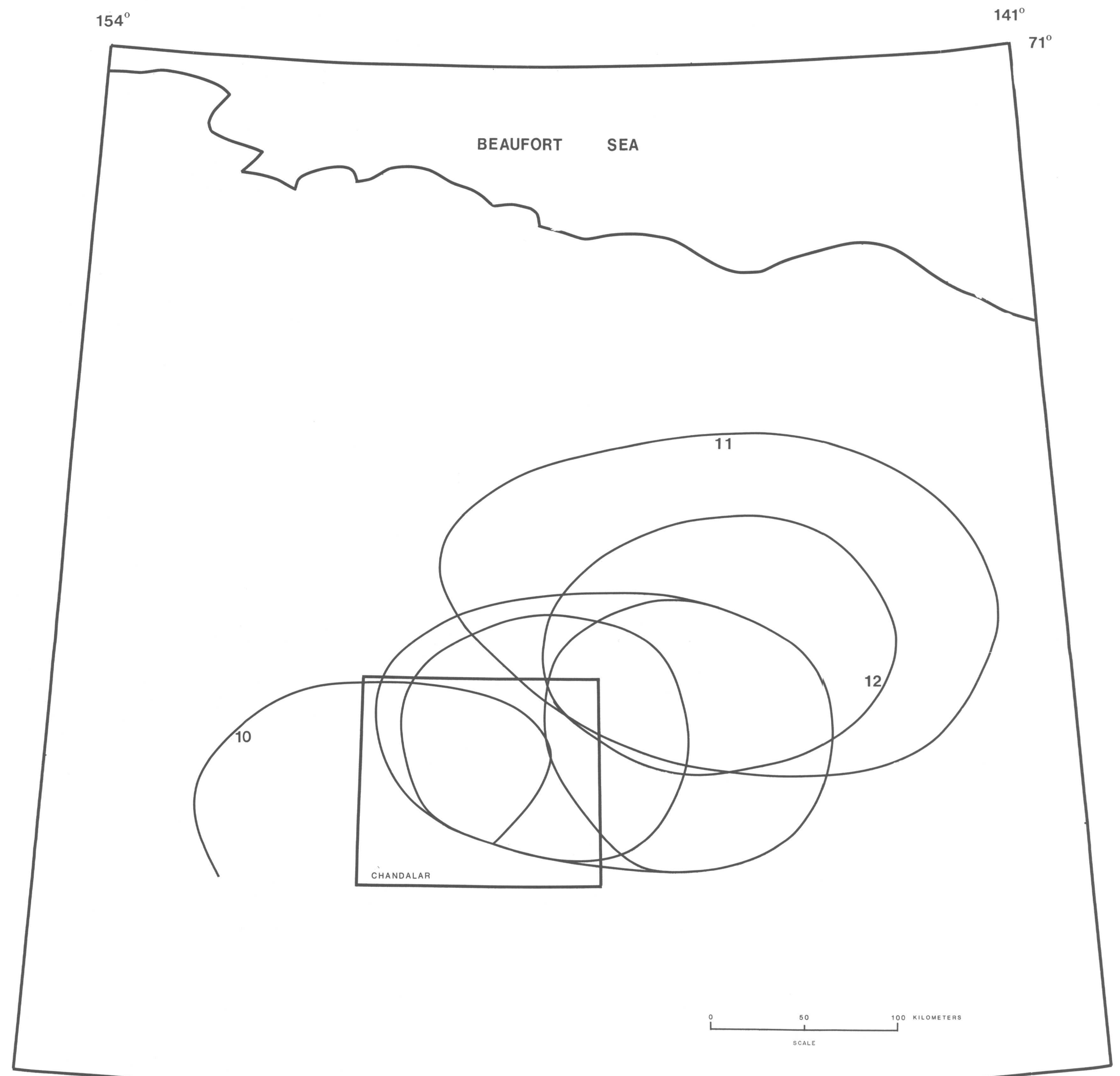


Figure 8.—Map of northeastern Alaska showing the location of the Chandalar quadrangle and the larger circular features observed on Landsat imagery.