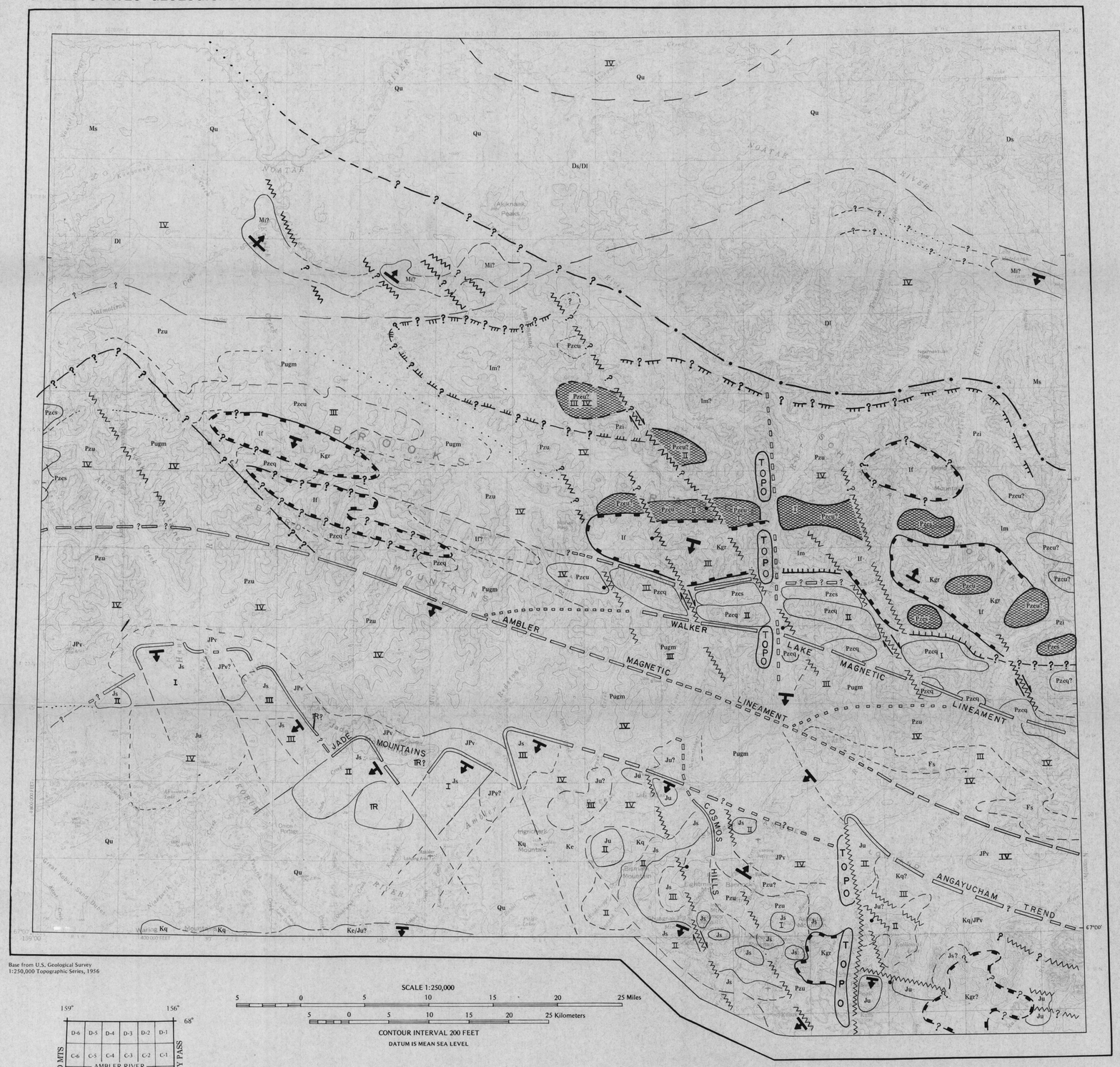
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY



Base from U.S. Geological Survey
1:250,000 Topographic Series, 1956

SCALE 1:250,000

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

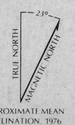
PROVISIONAL GEOLOGIC INTERPRETATION MAP

AEROMAGNETIC INTERPRETATION MAPS OF THE AMBLER RIVER QUADRANGLE, ALASKA

by Steve W. Hackett

State of Alaska, Department of Natural Resources
Division of Geological and Geophysical Surveys

1980



APPROXIMATE MEAN DECLINATION, 1976

U. S. GEOLOGICAL SURVEY
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Hackett- GEOLOGIC INTERPRETATION MAP

EXPLANATION FOR MAP SYMBOLS

MAGNETIC-LITHOLOGIC CONTACTS (Interpreted from aeromagnetic data)

- Principal boundary
- Subordinate boundary
- Subdued boundary
- Inferred boundary

Fault zone broken where approximate, queried where doubtful; arrows showing relative horizontal movement; bar and ball indicating downthrown side

Basement discontinuity (deep fault, or major angular unconformity or lithofacies change); broken where approximate, queried where doubtful.

MAGNETIC ZONATION AND RELIEF (Interpreted from aeromagnetic data)

Probable boundary of regional intrusive rocks.

Apparent strike and dip of magnetic unit.

Intrusive contacts - zones---
Felsic-intermediate phases
Intermediate-mafic phases

Contact-metamorphic zones---
(Probable hornfels facies or suspected rock alteration).

I >500γ Area of high magnetic relief, caused by surface or near-surface changes in bedrock composition.

II 500-200γ Area of moderately high magnetic relief, caused by local changes in bedrock composition.

III 200-50γ Area of moderate to weak magnetic relief, probably caused by suprabasement contrasts.

IV <50γ Area of subtle magnetic relief, probably caused by broad basement uplift but may be caused in part by intrabasement contrasts beneath thick sedimentary cover.

R Area of asymmetric magnetic low anomalies that are suspected to be caused in part by reversed remanent magnetism (NRM).

TOPO Area of magnetic anomaly in which components are probably caused in part by abrupt changes in topographic relief.

MAGNETIC-LITHOLOGIC UNITS (Interpreted from aeromagnetic and geologic data)

	RELATIVE MAGNETIZATION	IMPLIED LITHOLOGY*
Qu	Nil, very weak	Alluvial-glacial-eolian deposits
Kg or Kc	Weak to strong	Quartz conglomerates, magnetite-rich accessory minerals in some areas; Cretaceous.
Mi or Ms	Nil, weak	Massive carbonate, shale, and sedimentary rock units; Mississippian.
Ds or Dl	Nil	Sandstone, siltstones, and slates; minor limestones, schists and phyllites; Devonian and older.
Pzcq	Moderate to very high	Chloritic schists and quartzites, in places containing high percentages of magnetite.
Pzcu	Moderate	Undifferentiated chloritic quartzites and schists, including feldspathic orthogneiss with opaque minerals (magnetite?).
Pzcs	Nil, weak to moderate	Calc-schist and minor greenstones.
Pzu	Weak to moderate	Calc, quartz-mica schists
Pugm	Very weak	Quartz-mica schist, phyllite
Ju, Js	Very high	Ultramafic and serpentinite rocks, mixed with mafic volcanic rocks in Cosmos Hills and Angayucham Mts.
Mi, JPv	Moderate, high	Metamafic rocks, variable metamorphic grades; JPV units in and adjacent to Ambler lowlands with NRM/IM(?) suspected in Jade Mts.
Pzi	Nil, moderate	Metaigneous rocks, more mafic phases probably associated with metamorphosed hypabyssal and volcanic rocks.
Fs	Weak to moderate	Felsic schists, probably metamorphosed intermediate and rhyolite volcanics and related intrusive rocks.
Kgr or If, Im	Nil to weak	Granitic and undifferentiated igneous rocks (Cretaceous?); felsic to intermediate phases, intermediate to mafic phases.

*Lithologic information from detailed and generalized geologic maps (Pessel and Bronge, 1977; Mayfield and Tailleur, 1978) and Hackett, unpublished field observations and petrographic studies, 1975-1978.

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

Background information for this folio is published as U.S. Geological Survey Circular 793, available free of charge from the U.S. Geological Survey, Reston, VA 22092.