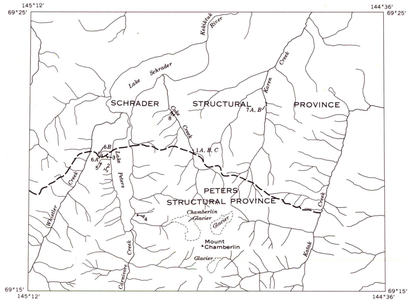
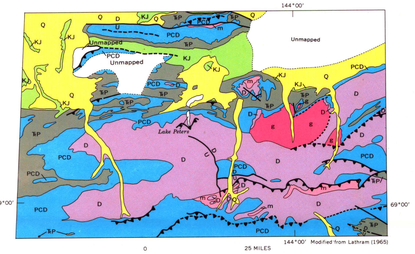


A. LOCATION OF MEASURED STRATIGRAPHIC SECTIONS AND STRUCTURAL PROVINCES



B. GENERALIZED GEOLOGIC MAP OF PART OF NORTHEASTERN BROOKS RANGE

EXPLANATION

SEDIMENTARY AND METAMORPHIC ROCKS

Q — Quaternary
- Alluvium and glacial deposits

KJ — Cretaceous and Jurassic
Includes Ipnek Formation and Kingak Shale

TRP — Triassic and Permian
Includes Shublik and Sadlerochit Formations

PCD — Permian, Carboniferous, and Devonian
Includes Lisburne Group, Kayak(?) Shale, Kekiktuk Conglomerate, and Kanayut Conglomerate

D — Devonian or older
Neruokpuk Formation undifferentiated

IGNEOUS ROCKS

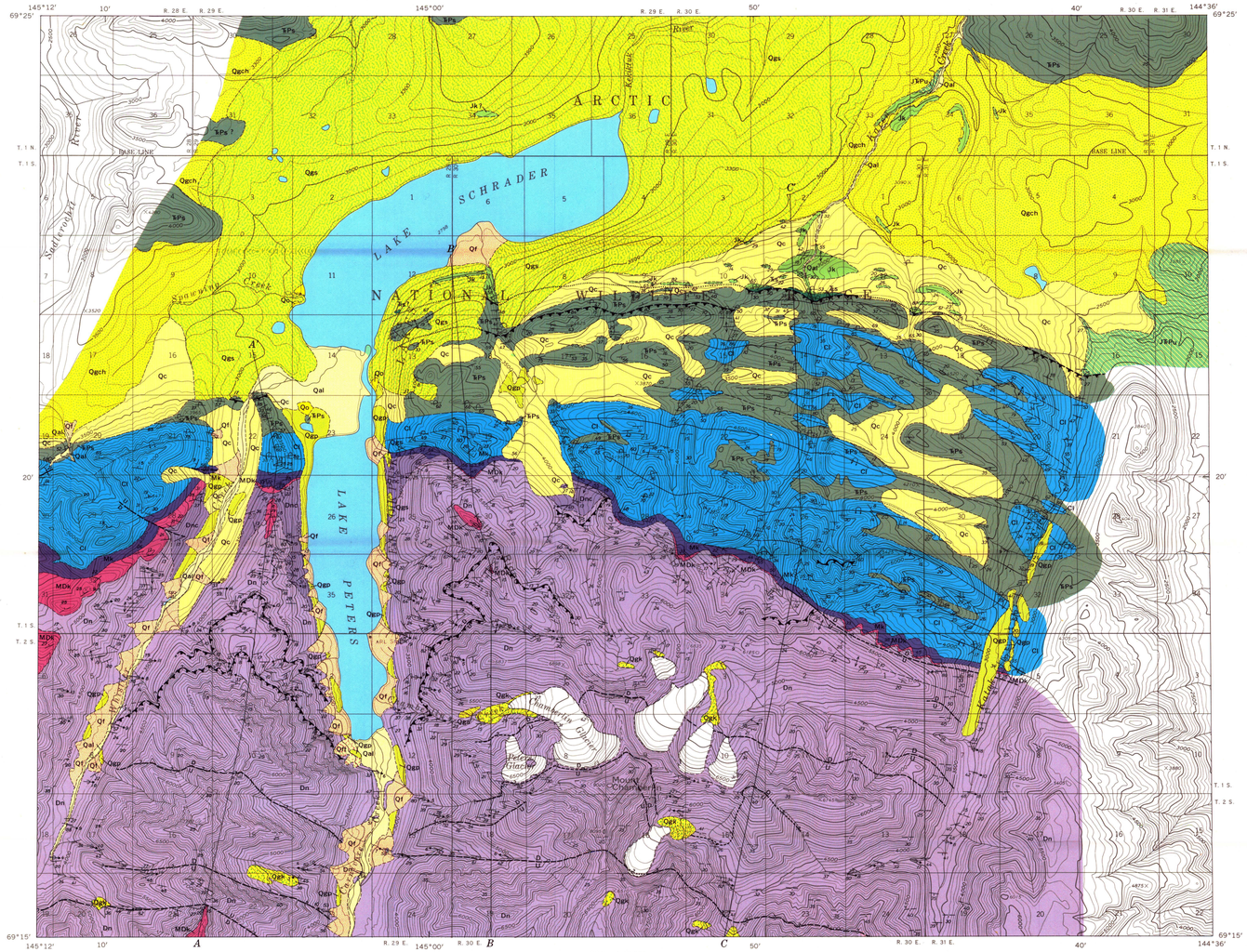
E — Devonian(?)
Mount Michelson pluton

m — Devonian(?)
Mafic volcanic(?) rocks

Contact

Fault showing relative movement
Dashed where inferred; U, upthrown side; D, downthrown side

Thrust fault
Sawteeth on upper plate; dashed where inferred



Base from U.S. Geological Survey
Mt. Michelson B-2, 1956

SCALE 1:48,000

1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 KILOMETERS

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

Geology by Bruce L. Reed, assisted by Peter Workum, 1960, and Robert Fisher 1961

EXPLANATION

QUATERNARY

Qal, Qf, Qfl — Surficial deposits

Qal, *flood-plain alluvium, poorly-sorted to well-sorted silt, sand, pebbles, cobbles, and boulders; restricted to narrow flood plains and low terraces of streams, but includes outwash from Whistler Creek between Lake Peters and Lake Schrader*

Qf, *alluvial fans and cones, fine to coarse, poorly sorted, poorly stratified gravel; locally includes glacial outwash. Commonly frozen at shallow depths. Local frost features. Includes talus cones (Qfl) at south end of Lake Peters*

Qc — Colluvium undivided
Chiefly debris from gravity and frost processes; from sheet erosion by surface runoff or slope wash. Locally includes modified material from Peters, Schrader, and Chamberlin Glaciations

Qo — Outwash deposits
Generally well-sorted silt, sand, and gravel in terraces and outwash fans

Pleistocene

Glaciation	Symbol
Katak Glaciation	Qgk
Alapah Mountain Glaciation	Qga
Peters Glaciation	Qgp
Schrader Glaciation	Qgs
Chamberlin Glaciation	Qgch

Glacial deposits

Qgk, *small, fresh, barren moraines restricted to the fronts of glaciers and recently evacuated cirques; as much as one-half mile in front of present glaciers*

Qga, *fresh, lichen covered moraine. Mapped only along Chamberlin Creek*

Qgp, *bouldery and somewhat hummocky moraine, breached by tributaries and encroached by alluvial fans. Lateral moraines well developed 160-210 feet above the surface of Lake Peters. Confined to larger valleys*

Qgs, *partly dissected relatively fresh moraine that extends as much as 8 miles north of mountain front. Frost features and active earth flows common; silt and peat locally present. Well-developed lobate moraine around and north of Lake Schrader*

Qgch, *widespread, smooth appearing drift well modified by stream erosion and mass wasting. Extends 11-12 miles north of mountain front*

Recent

JURASSIC

REGIONAL UNCONFORMITY

Jk — Kingak Shale
Shale, slaty shale, siltstone, sandstone; basal quartzitic siltstone containing phosphatic nodules

TRIASSIC

DISCONFORMITY

TRs — Shublik Formation
Dark-gray phosphatic limestone and calcareous shale

DISCONFORMITY(?)

TRPs — Sadlerochit Formation
Lower siliceous sandstone-siliceous siltstone, minor chert unit; middle siltstone, shale, minor sandstone unit; upper interbedded siltstone-sandstone unit

JTRPu — Kingak Shale, Shublik Formation, and Sadlerochit Formation, undivided

PERMIAN AND TRIASSIC

DISCONFORMITY

MISSISSIPPIAN AND PENNSYLVANIAN(?)

Cl — Lisburne Group
Carbonate rocks; fine- to coarse-grained limestone, dolomitic limestone; dolomite; chert nodules and lenses common; lower part silty and shaly

Mk — Kayak(?) Shale
Argillite, siltstone, chert, quartzite. Chert and limestone in upper part

DEVONIAN OR MISSISSIPPIAN

MDk — Kekiktuk Conglomerate
Quartzite; pebble to cobble conglomerate; minor siltstone

ANGULAR UNCONFORMITY

DEVONIAN OR OLDER

Dn, Dnc — Neruokpuk Formation

Dn, *Neruokpuk Formation undivided; quartz wacke, quartz semischist, phyllite; minor metachert and quartzite; locally includes Dnc*

Dnc, *calcareous sandstone member; dolomitic and calcareous quartz wacke; lesser amounts of phyllite, metachert, and metaconglomerate*

Contact
Dashed where approximately located; short dashed where inferred; dotted where concealed

Fault
Dashed where approximately located; short dashed where inferred; queried where doubtful; dotted where concealed. U, upthrown side; D, downthrown side

Thrust fault
Dashed where approximately located; dotted where concealed. Sawteeth on upper plate

Anticline
Showing trace of axial plane; dashed where approximately located

Overturned anticline
Showing trace of axial plane; dashed where approximately located

Syncline

Plunge of minor anticlinal fold

Strike and dip of axial plane of minor anticlinal fold showing direction and plunge of fold axis

PLANAR AND LINEAR FEATURES

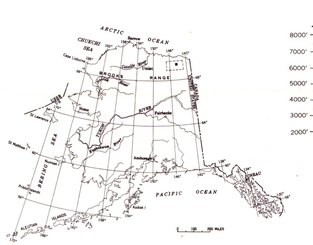
Symbols may be combined

Inclined — Overturned — Vertical — Crumpled, crenulated, or undulatory

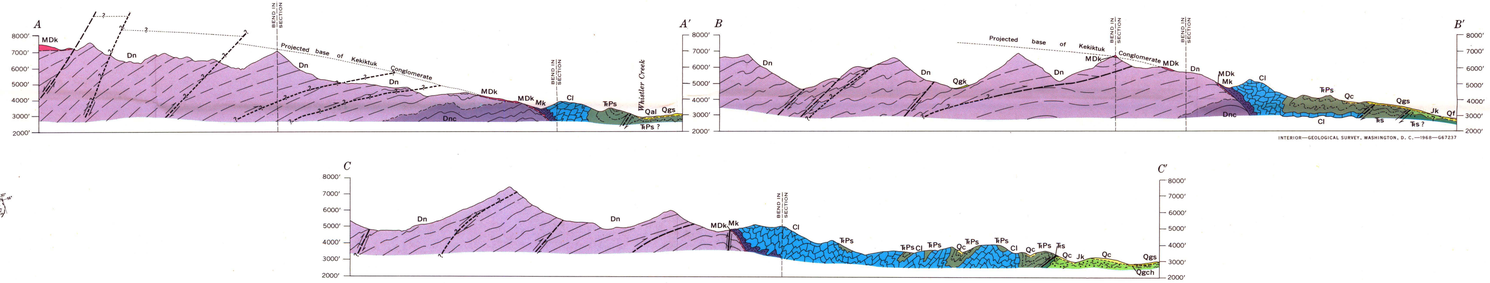
Strike and dip of beds
Dashed symbol indicates attitude estimated from distant field observations. 90 on vertical symbol is on up side

Strike and dip of cleavage

Plunge of lineation



INDEX MAP SHOWING LOCATION OF STUDY AREA
Dashed outline is area of generalized geologic map inset



GEOLOGIC MAP AND SECTIONS OF THE LAKE PETERS AREA NORTHEASTERN BROOKS RANGE, ALASKA