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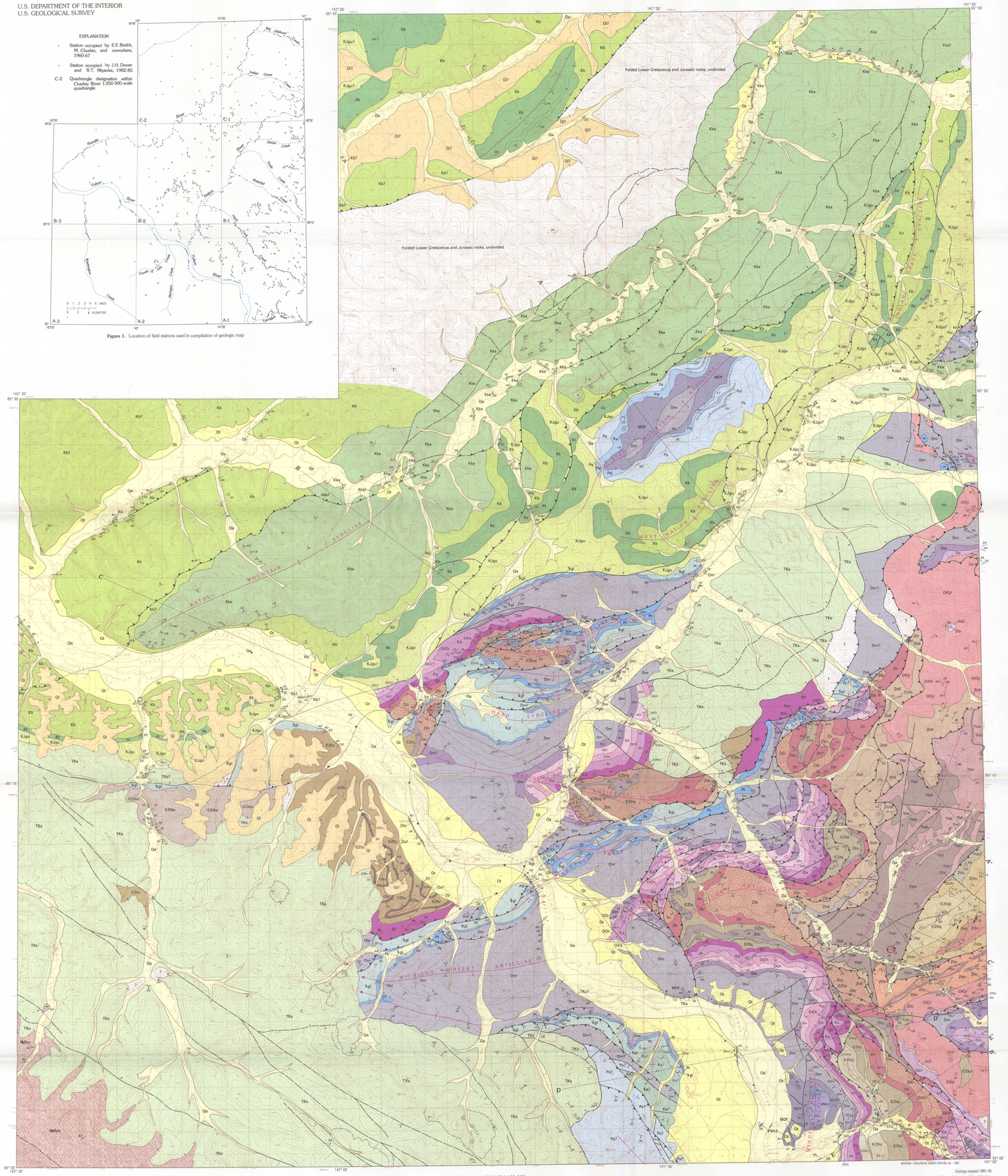
MISCELLANEOUS INVESTIGATIONS SERIES
MAP I-1942 (SHEET 1 OF 2)
Explanatory pamphlet accompanies map

Figure 1. Location of field stations used in compilation of geologic map



Base from U.S. Geological Survey 1:63,360
Charley River A-1,2,3; B-1,2,3; C-1,2
Universal Transverse Mercator

APPROXIMATE MEAN DECLINATION, 1992

SCALE 1:100 000
KILOMETERS
MILES
FEET
CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

MORROW—GEOLOGICAL SURVEY, RESTON, VA—1992

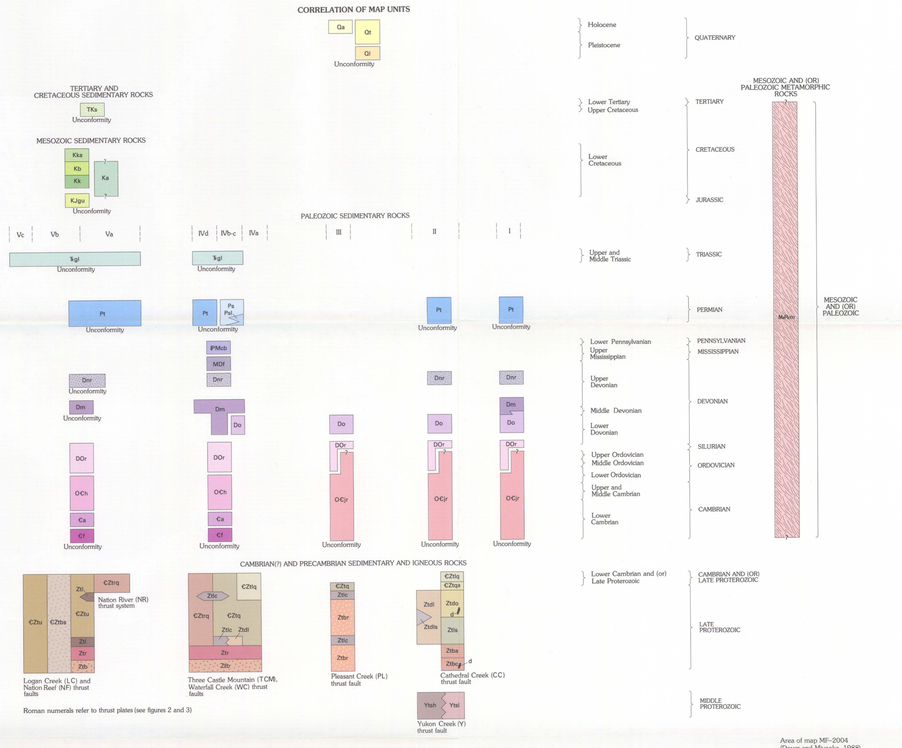
Geology mapped 1982–85

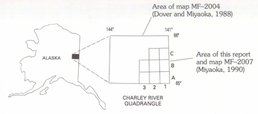
Manuscript approved for publication August 13, 1987

GEOLOGIC MAP AND FOLD- AND THRUST-BELT INTERPRETATION OF THE SOUTHEASTERN PART OF THE CHARLEY RIVER QUADRANGLE, EAST-CENTRAL ALASKA

By
James H. Dover
1992

CORRELATION OF MAP UNITS





LOCATION MAP AND INDEX TO 1:63,360 QUADRANGLES

LIST OF MAP UNITS

(See pamphlet for complete description of map units)

QUATERNARY SURFICIAL DEPOSITS

- Qa — **Alluvium (Holocene)**
- Qt — **Terrace deposits (Holocene and Pleistocene)**
- Ql — **Loess(?) (Pleistocene)**

TERTIARY AND CRETACEOUS SEDIMENTARY ROCKS

- TKs — **Sandstone, conglomerate, and mudstone (lower Tertiary and Upper Cretaceous)**

MESOZOIC SEDIMENTARY ROCKS

Kandik Group (Lower Cretaceous)

- Kka — **Kathul Graywacke (Lower Cretaceous)**
- Kb — **Biederman Argillite (Lower Cretaceous)**
- Kk — **Keenan Quartzite (Lower Cretaceous)**
- Ka — **Argillite (Lower Cretaceous)**

Glenn Shale (Lower Cretaceous to Middle Triassic)

- KJgu — **Upper part (Lower Cretaceous and Jurassic)**
- Ꞓgl — **Lower part (Upper and Middle Triassic)**

MESOZOIC AND (OR) PALEOZOIC METAMORPHIC ROCKS

- MePzm — **Metamorphic rocks, undivided (Mesozoic and (or) Paleozoic)**

PALEOZOIC SEDIMENTARY ROCKS

- Pt — **Tahkandit Limestone (Permian)**
- Ps — **Step Conglomerate (Permian)**
- Psl — **Limestone (Permian)**
- IPMcb — **Calico Bluff Formation (Lower Pennsylvanian and Upper Mississippian)**
- MDf — **Ford Lake Shale (Upper Mississippian to Upper Devonian)**
- Dnr — **Nation River Formation (Upper Devonian)**
- Dm — **McCann Hill Chert (Upper to Lower Devonian)**
- Do — **Ogilvie Formation of Clough (1980) (Middle and Lower Devonian)**
- DOr — **Road River Formation (Lower Devonian to Lower Ordovician)**
- O-Cjr — **Jones Ridge Limestone (Upper or Middle Ordovician to Lower Cambrian)**
- O-Ch — **Hillard Limestone (Lower Ordovician to Lower Cambrian)**
- Ca — **Adams Argillite (Lower Cambrian)**
- Cf — **Funnel Creek Limestone (Lower Cambrian)**

CAMBRIAN(?) AND PRECAMBRIAN SEDIMENTARY AND IGNEOUS ROCKS

Tindir Group (Lower Cambrian? to Middle Proterozoic)
Upper part

- CZtu — **Upper part, undivided (Lower Cambrian? and Late Proterozoic)**
- CZtq — **Quartzite (Lower Cambrian? and Late Proterozoic)**
- CZtlq — **Limestone and quartzite (Lower Cambrian? and Late Proterozoic)**
- CZtqs — **Quartzite and argillite (Lower Cambrian? and Late Proterozoic)**
- CZtrq — **Red beds and quartzite (Lower Cambrian? and Late Proterozoic)**
- CZtbs — **Basalt and sedimentary rocks of Washington Creek (Lower Cambrian? and Late Proterozoic)**
- Zrd — **Dolomite and limestone (Late Proterozoic)**
- Zrds — **Shale**
- Zr — **Laminated limestone (Late Proterozoic)**
- Zlc — **Limestone and conglomeratic rocks (Late Proterozoic)**
- Zrdo, d — **Dolomite (Late Proterozoic) –Dike, d**
- Zrls — **Limestone (Late Proterozoic)**
- Zbr — **Basalt and red beds, undivided (Late Proterozoic)**
- Zrr — **Red beds**
- Zb — **Basalt**
- Zbs — **Basalt and argillite (Late Proterozoic)**
- Zbs, d — **Basalt and clastic rocks (Late Proterozoic) –Dike, d**

Lower part

- Ytsh — **Shale and diamictite (Middle Proterozoic)**
- Ytsl — **Stromatolitic limestone (Middle Proterozoic)**

Contact—Approximately located; queried where uncertain

Bedding trace or marker bed

High-angle fault (including listric normal fault)—Dashed where approximately located; dotted where concealed; queried where uncertain. Bar and ball on downthrown side. Arrows on cross sections show relative movement

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

Landslide—Hachures point into slide mass

Strike and dip of beds—Bar and ball point toward stratigraphic top as determined from sedimentary structures

- 40 — **Inclined**
- **Horizontal**
- **Vertical**
- **Overturned**
- 125 — **Determined from aerial photographs or estimated from a distance**

Strike and dip of axial plane cleavage

- 65 — **Inclined**
- **Vertical**

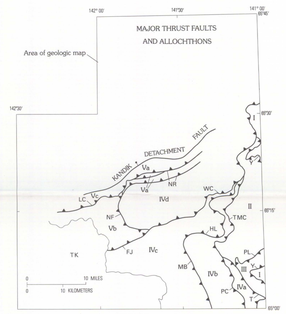
Strike and dip of inclined metamorphic foliation

- 50 — **Major fold axis**—Shows direction of plunge, where known; dotted where concealed

- **Anticline**
- **Overturned anticline**
- **Syncline**
- **Overturned syncline**

Minor fold axis—Shows direction of plunge where known

- **Anticline**
- **Syncline**
- **Overturned**
- **Crenulations or group of minor folds**



EXPLANATION

- Contact
- Fault—Ball and bar on downthrown side
- Thrust fault— Sawteeth on upper plate. Named thrusts:

LC	Logan Creek	MB	Montauk Bluff
NF	Nation Reef	PC	Pass Creek
NR	Nation River	T	Tatonduk
FJ	Fourth of July Creek	TCM	Three Castle Mountain
WC	Waterfall Creek	PL	Pleasant Creek
HL	Hardluck Creek	Y	Yukon

I – Vc Thrust Plates

TK Unconformable lower Tertiary to Upper Cretaceous rocks

Figure 3. Major thrust faults and thrust plates in the southeastern part of the Charley River quadrangle, east-central Alaska. See figure 2 and correlation of map units.

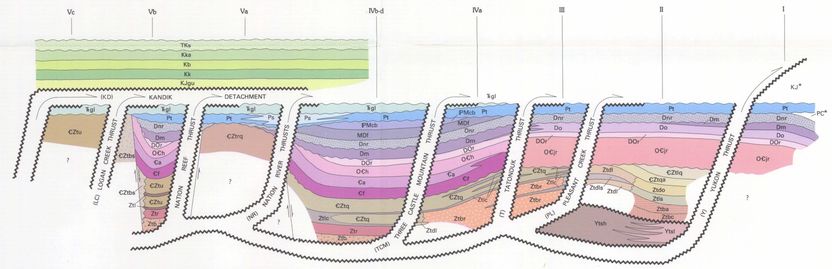


Figure 2. Schematic reconstruction of pre-Jurassic stratigraphic relations in the southeastern part of the Charley River quadrangle interpreted from restored thrust plates (Roman numerals; see fig. 3 and correlation of map units). Suspected unconformity between Jurassic and Triassic rocks restored to horizontal. Asterisk (*) indicates units present in adjacent Ogilvie River quadrangle (Norris, 1982), but not present in Charley River quadrangle. See list of map units and symbols above.

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