

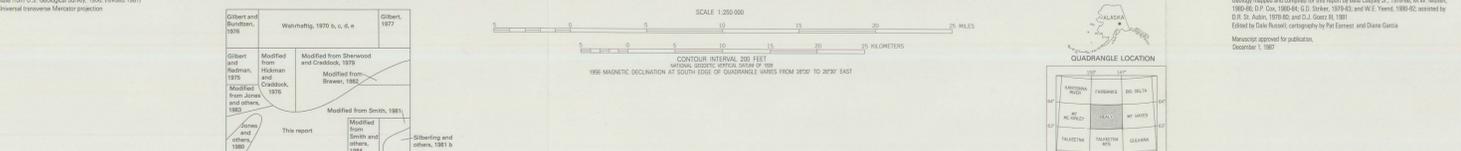
- ### LIST OF MAP UNITS
- (See accompanying pamphlet for Description of Map Units)
- #### ALL AREAS OF HEALY QUADRANGLE
- ##### SEDIMENTARY AND VOLCANIC ROCKS
- Os Surficial deposits (Quaternary)
  - Thd Hornblende dacite (Pliocene)
  - Th Nenana Gravel (Pliocene and Miocene)
  - Tb Coal-bearing rocks (Miocene to Eocene)
  - Ts Sedimentary rocks (Miocene? to Paleocene?)
  - Tvv Volcanic rocks (Oligocene to Paleocene)
  - Tvm Volcanic flows, pyroclastic rocks, and subordinate mafic subvolcanic intrusive rocks
  - Tvf Mafic subvolcanic intrusive rocks
  - Tvt Felsic subvolcanic intrusive rocks
  - Thv Fluvial and subordinate volcanic rocks (Eocene?)
  - Tp Cantwell Formation (Paleocene)
  - Tv Volcanic rocks subunit
  - Tca Sedimentary rocks subunit
- ##### PLUTONIC ROCKS
- Trp Granitic rocks (Oligocene to Paleocene)
  - Tppp Granitic and volcanic rocks, undivided (Oligocene to Paleocene)
  - Tpgr Granitic and hypabyssal intrusive rocks (Paleocene? and Late Cretaceous)
- #### TALKEETNA MOUNTAINS QUADRANGLE (PART)
- ##### SEDIMENTARY AND VOLCANIC ROCKS
- Tsuv Volcanic and sedimentary rocks of Talkeetna superterrane (Triassic and Paleozoic)—Appears only in cross sections
- ##### PLUTONIC ROCKS
- Tpva Volcanic and sedimentary rocks of Talkeetna superterrane (Triassic and Paleozoic)—Appears only in cross sections

- #### NORTHERN, EASTERN, AND SOUTH-CENTRAL AREAS OF HEALY QUADRANGLE
- ##### SEDIMENTARY AND VOLCANIC ROCKS
- Rocks north of Hines Creek fault
- Kvb Basaltic subvolcanic rocks (Late Cretaceous)
  - MDC Totolanika Schist (Early Mississippian to Middle Devonian)
  - Dmf Felsic metavolcanic rocks (Late Devonian)
  - Dms Metabasalt and subordinate metasedimentary rocks (Late Devonian)
  - Dmv Metasedimentary rocks (Late Devonian)
  - PK Keeyuk Peak Formation (early Paleozoic)
  - PpCp Public and quartzite schist sequence (early Paleozoic and Precambrian?)
- Rocks south of Hines Creek fault
- Tca Calcareous sedimentary rocks (Late Triassic; middle? Norian to late Karmanian)
  - Dv Yentek sequence (Late Devonian)
- ##### PLUTONIC ROCKS
- Kva Andesitic subvolcanic rocks (Late Cretaceous)
  - KJF Flysch sequence (Early Cretaceous and Late Jurassic)
  - KJm Overthrust flyschlike rocks
  - KJg Conglomerate, sandstone, siltstone, shale, and volcanic rocks (Early Cretaceous and Late Jurassic)

- #### SOUTHWESTERN AND WEST-CENTRAL AREAS OF HEALY QUADRANGLE
- ##### SEDIMENTARY AND VOLCANIC ROCKS
- Olin Creek area (Chulitna district)
- Tca Argillite, chert, sandstone, and limestone (Early Cretaceous and Late Jurassic)
  - Jrvs Red and brown sedimentary rocks and basalt (Early Jurassic and Late Triassic)
  - Trp Red beds (Late Triassic)
  - Tdv Volcanogenic and sedimentary rocks (Early Triassic to Late Devonian)
  - Dvb Serpentine, basalt, chert, and gabbro (Late Devonian)
- Flysch and associated rocks
- KJF Flysch sequence (Late Cretaceous to Late Jurassic)
  - JKJ Flysch sequence (Late Cretaceous to Late Jurassic)
  - JKp Crystal tuff, argillite, chert, graywacke, and limestone (Late Jurassic to Late Triassic?)

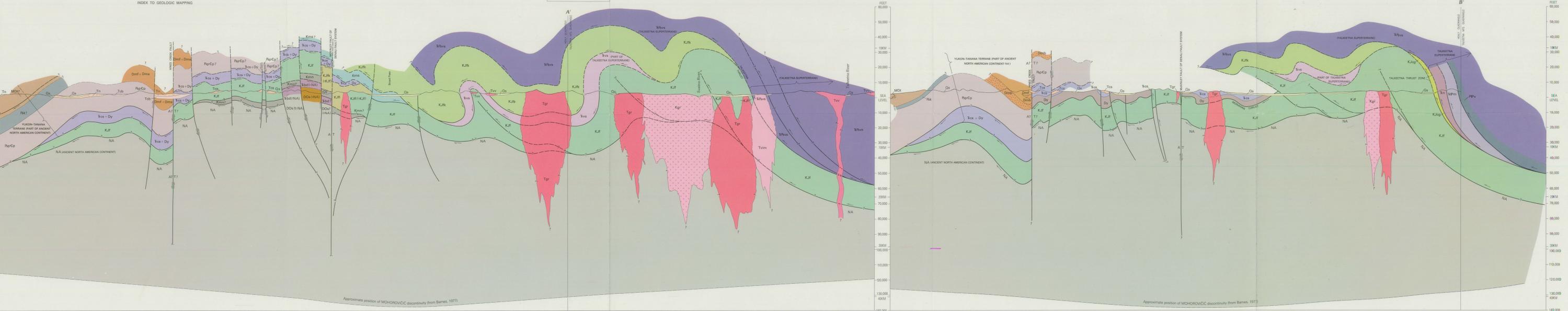
- ### EXPLANATION
- (Altitude symbols may be combined on map)
- Contact—Approximately located; dashed where inferred; dotted where concealed. Small arrow indicates dip direction of overturned fault. Southwest on upper plate.
  - Thrust fault—Approximately located; dashed where inferred; dotted where concealed. U, upthrown side; D, downthrown side. Arrows indicate relative horizontal movement.
  - High-angle reverse fault—Approximately located; dashed where inferred; dotted where concealed. Southwest indicate upthrown side.
  - Fault—Approximately located; dashed where inferred; dotted where concealed. U, upthrown side; D, downthrown side. Arrows indicate relative horizontal movement.
  - Postulated position of fault prior to intrusion of granitic and subvolcanic rocks—Shown within large spaces only.
  - Anticline—Showing direction of plunge.
  - Overturned anticline—Showing direction of plunge and dip of limbs.
  - Syncline—Showing direction of plunge; dashed where inferred.
  - Overturned syncline—Showing dip of limbs; dashed where inferred.
  - Location of sample dated by potassium-argon method—Showing map number and calculated mineral age (Ma). Analytical data listed by map number in table 1 in accompanying pamphlet. Bl, biotite; Hb, hornblende; An, amphibole; Ms, muscovite; Ss, sanidine; Pl, plagioclase; W, whole rock.
  - Strike and dip of beds: Inclined, Vertical, Approximate inclined, estimated from distant observations, Overturned, Approximate overturned, estimated from distant observations.
  - Strike and dip of slaty or axial plane cleavage: Inclined, Vertical.
  - Strike and dip of metamorphic foliation, primary igneous foliation, and (or) shear planes: Inclined, Vertical.
  - Bearing and plunge of lineation: Inclined, Vertical.
  - Strike and dip of joints: Inclined, Vertical.

- ### EXPLANATORY NOTE
- To better understand the role of the Talkeetna superterrane in the tectonic evolution of the Healy Quadrangle, we extended the cross sections into the northern part of the Talkeetna Mountains quadrangle. Several inferred faults are shown on the cross sections but where no field evidence could be found, we did not show them on the geologic map.
- In the cross sections, we have projected many of the structural features and rock units above the surface for considerable distances in order to show schematically our interpretation of the tectonics resulting from the Cretaceous accretionary orogeny. No attempt was made to take into account the possible effects of pre-Cretaceous erosion on these structures, nor were the late tectonic and (or) post-tectonic plating and volcanic rocks projected above the surface.
- Where units Tca and Dy are differentiated in the cross sections, shown Tca=Dy, only the color of Tca is shown.



### INDEX TO GEOLOGIC MAPPING

Author	Year	Modified by	Year
Gilbert and Sisson	1978	Modified from Sisson and Gilbert	1978
Wahrhaftig	1970, et. al.	Modified from Sisson and Wahrhaftig	1978
Gilbert and Sisson	1978	Modified from Sisson and Wahrhaftig	1978
Wahrhaftig	1970, et. al.	Modified from Sisson and Wahrhaftig	1978
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Gilbert and Sisson	1978	Modified from Sisson and Wahrhaftig	1978
Wahrhaftig	1970, et. al.	Modified from Sisson and Wahrhaftig	1978



## GEOLOGY AND GEOCHRONOLOGY OF THE HEALY QUADRANGLE, SOUTH-CENTRAL ALASKA

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