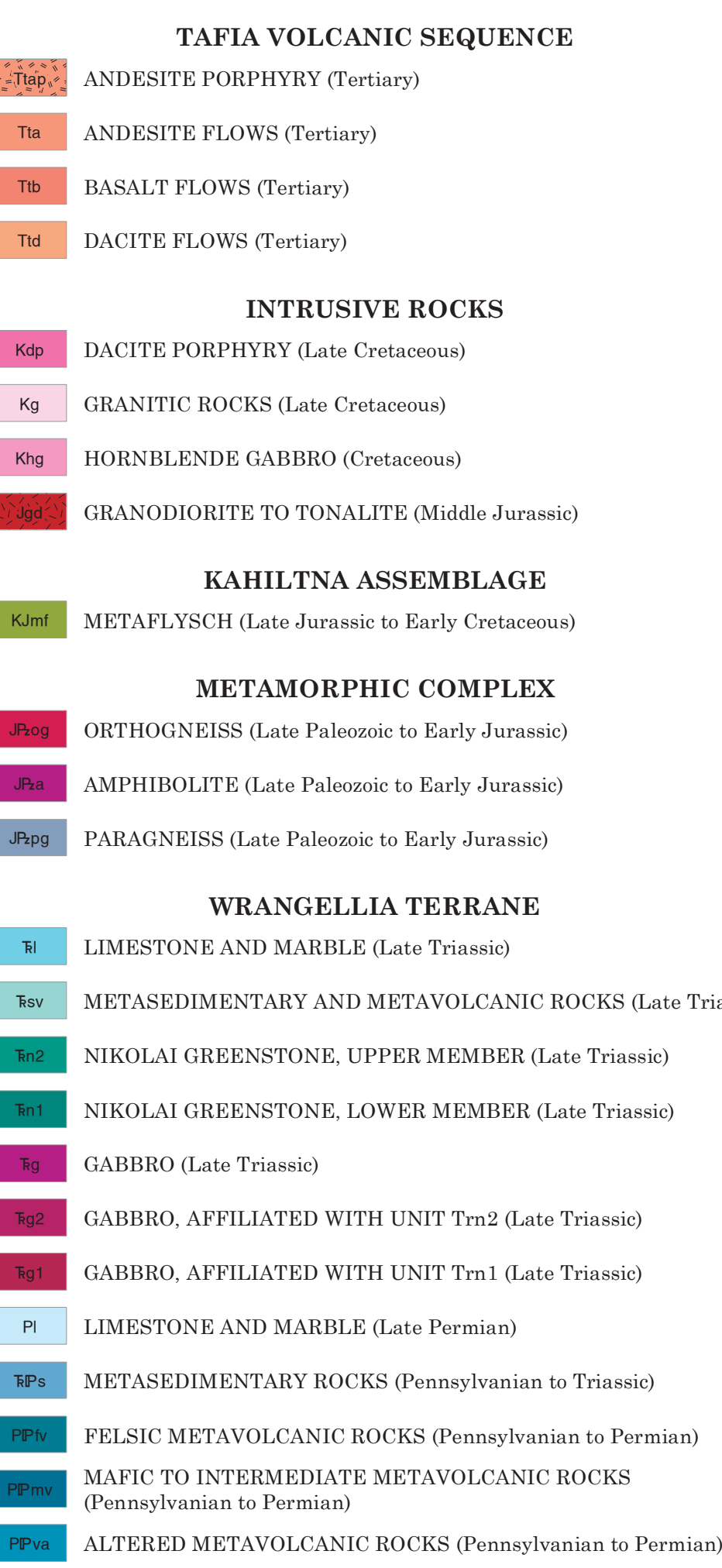


DESCRIPTION OF GEOLOGIC MAP UNITS

- ALLUVIAL DEPOSITS**
- Qa UNDIFFERENTIATED FLOODPLAIN ALLUVIUM
  - Qal ACTIVE FLOODPLAIN ALLUVIUM
  - Qal ALLUVIAL-FAN DEPOSITS
  - Qal INACTIVE FLOODPLAIN ALLUVIUM
- COLLUVIAL DEPOSITS**
- Qc UNDIFFERENTIATED COLLUVIUM
  - Qcl MIXED COLLUVIUM AND ALLUVIUM
  - Qcl DEBRIS-FLOW DEPOSITS
  - Qcg ROCK GLACIER DEPOSITS
  - Qcl TALUS
- GLACIAL DEPOSITS**
- Qg1 ICE STAGNATION TILL OF LATEST WISCONSINAN AGE (11,000 TO 9,000 Y.B.P.)
  - Qg2 TILL AND ASSOCIATED MORAINAL DEPOSITS OF LATEST WISCONSINAN AGE (11,000 TO 9,000 Y.B.P.)
  - Qg2 DRIFT OF LATE WISCONSINAN AGE, UNDIFFERENTIATED (25,000 TO 11,000 Y.B.P.)
  - Qg1 ICE STAGNATION TILL OF EARLY WISCONSINAN AGE (75,000 TO 40,000 Y.B.P.)
  - Qg1 DRIFT OF EARLY WISCONSINAN AGE (75,000 TO 40,000 Y.B.P.)
- GLACIOFLUVIAL DEPOSITS**
- Qgf OUTWASH OF LATEST WISCONSINAN AGE
  - Qgf OUTWASH OF LATE WISCONSINAN AGE, UNDIFFERENTIATED
- GLACIOLACUSTRINE DEPOSITS**
- Qld LAKE DELTA DEPOSITS
  - Qli LACUSTRINE DEPOSITS
- PALUDAL DEPOSITS**
- Qp SWAMP DEPOSITS
- REMUS VOLCANIC SEQUENCE**
- Rhyolite Porphyry (Tertiary)
  - Upper Rhyolite (Tertiary)
  - Interlayered Unit (Tertiary)
  - Intermediate Volcaniclastic Rocks (Tertiary)
  - Lower Rhyolite (Tertiary)
- SLOT LAKE VOLCANIC SEQUENCE**
- Dacite Porphyry (Tertiary)
  - Andesite Flows (Tertiary)
  - Dacite (Tertiary)
  - Rhyolite (Tertiary)
  - Basalt Flows (Tertiary)
- DEADMAN VOLCANIC SEQUENCE**
- Basalt (Tertiary)
- TAFIA VOLCANIC SEQUENCE**
- Andesite Porphyry (Tertiary)
  - Andesite Flows (Tertiary)
  - Basalt Flows (Tertiary)
  - Dacite Flows (Tertiary)
- INTRUSIVE ROCKS**
- Kdp Dacite Porphyry (Late Cretaceous)
  - Kg Granitic Rocks (Late Cretaceous)
  - Khp Hornblende Gabbro (Cretaceous)
  - Kt Grandiorite to Tonalite (Middle Jurassic)
- KAHILTNA ASSEMBLAGE**
- Kalm Metapelite (Late Jurassic to Early Cretaceous)
- METAMORPHIC COMPLEX**
- Orthogneiss (Late Paleozoic to Early Jurassic)
  - Amphibolite (Late Paleozoic to Early Jurassic)
  - Paragneiss (Late Paleozoic to Early Jurassic)
- WRANGELLIA TERRANE**
- Li Limestone and Marble (Late Triassic)
  - Nv Metasedimentary and Metavolcanic Rocks (Late Triassic)
  - Nk Nikolai Greenstone, Upper Member (Late Triassic)
  - Nl Nikolai Greenstone, Lower Member (Late Triassic)
  - Gb Gabbro (Late Triassic)
  - Gaf Gabbro, Affiliated with Unit Tm2 (Late Triassic)
  - Gaf Gabbro, Affiliated with Unit Tm1 (Late Triassic)
  - Pi Limestone and Marble (Late Permian)
  - Sp Metasedimentary Rocks (Pennsylvanian to Triassic)
  - Fv Felsic Metavolcanic Rocks (Pennsylvanian to Permian)
  - Mf Mafic to Intermediate Metavolcanic Rocks (Pennsylvanian to Permian)
  - Ar Altered Metavolcanic Rocks (Pennsylvanian to Permian)



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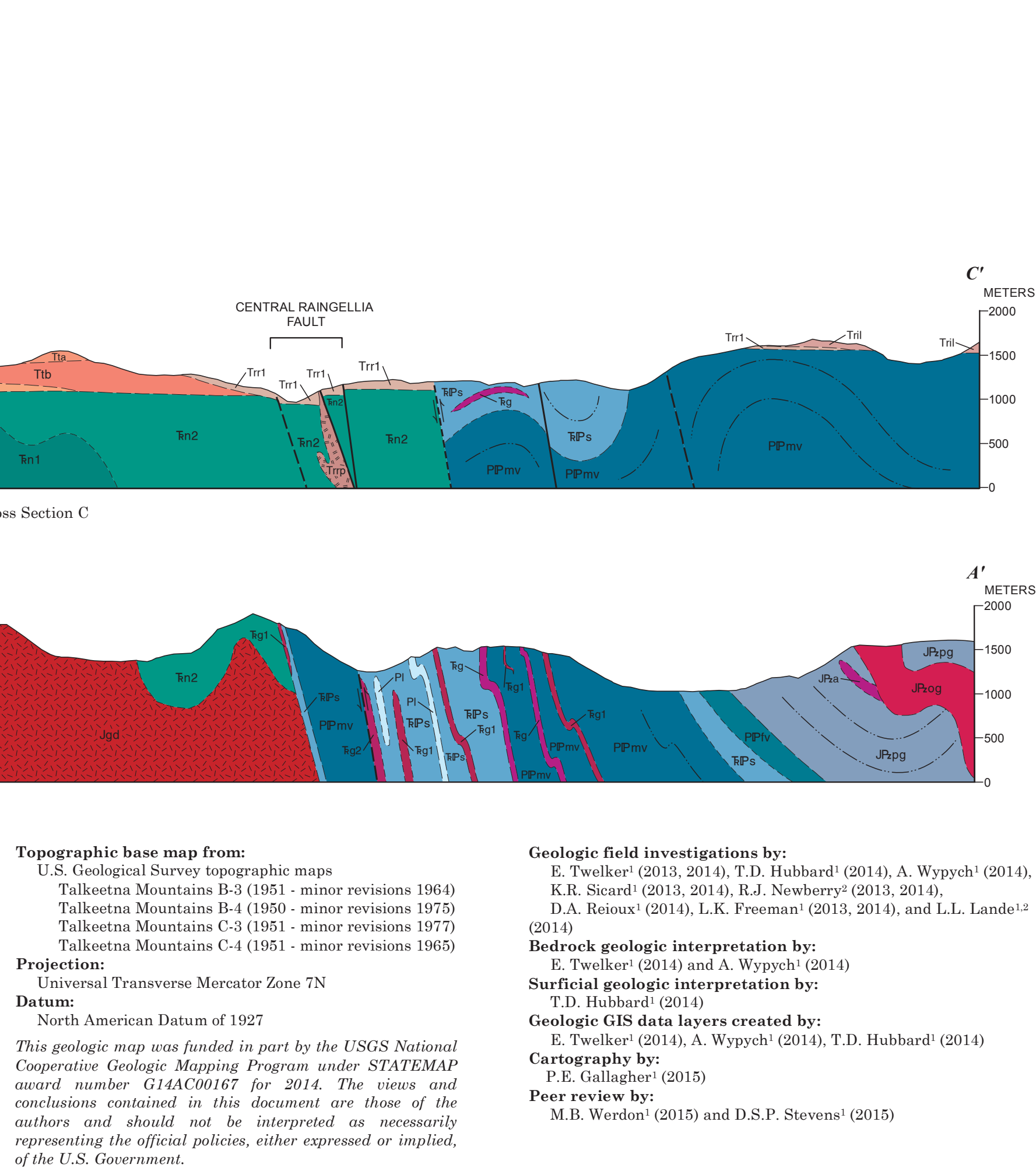
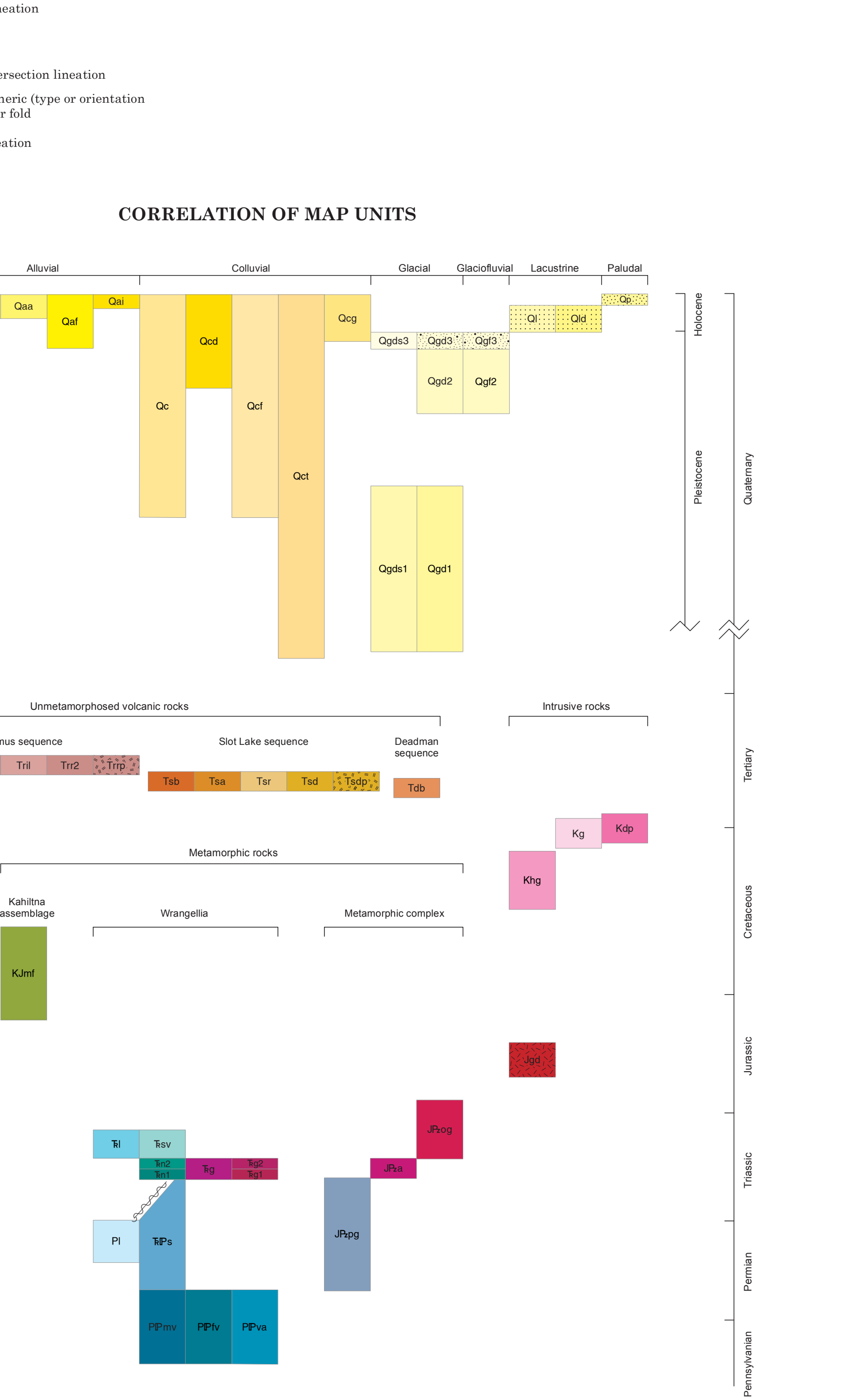
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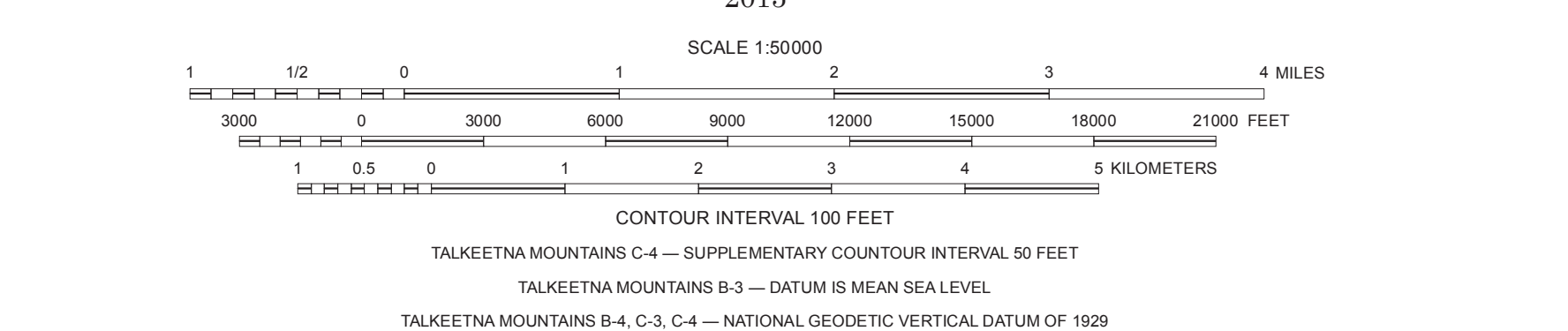
EXPLANATION OF MAP SYMBOLS

- Map units are identified by the symbols described below. Those symbols, shown in parentheses, such as (Qg1), indicate combined map units consisting of bedrock overlain by this or discontinuous deposits of the map unit. Map units with a question mark such as Qg1?, indicate an uncertain identification.
- BEDDING**
- Inclined bedding
  - Vertical bedding
  - Inclined bedding, where top direction of beds is known from local features
  - Approximate orientation of inclined bedding
- FOLIATION**
- Inclined flow banding, lamination, layering, or foliation in igneous rock
  - Vertical flow banding, lamination, layering, or foliation in igneous rock
  - Inclined metamorphic or tectonic foliation
  - Vertical metamorphic or tectonic foliation
  - Inclined metamorphic or tectonic foliation parallel to bedding
  - Inclined gneissic layering
  - Inclined mylonitic foliation
- CLEAVAGE**
- Inclined cleavage
  - Vertical cleavage
  - Small, minor inclined joint
  - Small, minor vertical or near-vertical joint
  - Slickenside surface
- DIKES**
- Inclined dike
  - Vertical dike
  - Dike — Intermediate (Tertiary)
  - Dike — Mafic (Tertiary)
- VEINS**
- Small, minor inclined vein, veinlet, or mineralized stringer
  - Small, minor vertical or near-vertical vein, veinlet, or mineralized stringer
- LINATION**
- Inclined slickenside, groove, or striation on fault surface
  - Inclined aligned-mineral lamination
  - Inclined aligned deformed-mineral lamination
  - Inclined aligned clast lamination
  - Inclined boudins
  - Inclined lamination at intersection lamination
  - Inclined fold hinge of generic type or orientation unspecified small, minor fold
  - Inclined crenulation lamination
- CONTACTS**
- CONTACT — Identity and existence certain, location accurate
  - CONTACT — Identity and existence certain, location approximate
  - CONTACT — Identity and existence certain, location inferred
  - INTERNAL CONTACT — Form lines to bedding in cross sections
  - CONTACT — Identity and existence certain, location concealed
- FAULTS**
- FAULT — Identity and existence certain, location accurate
  - FAULT — Identity and existence certain, location approximate
  - FAULT — Identity and existence questionable, location approximate
  - FAULT — Identity and existence certain, location inferred
  - FAULT — Identity and existence questionable, location inferred
  - FAULT — Identity and existence certain, location concealed
  - FAULT — Identity and existence questionable, location concealed
  - THURST FAULT — Identity and existence questionable, location approximate
  - THURST FAULT — Identity and existence questionable, location inferred
  - THURST FAULT — Identity and existence questionable, location concealed
- FOLDS**
- ANTICLINE — Identity and existence certain, location approximate
  - SYNCLINE — Identity and existence certain, location approximate
- SURFICIAL FEATURES**
- MORaine — Crest line of moraine, sense of symmetry unspecified
  - ESKER — Esker or ice-marginal channel deposit, transport direction unknown
- MISCELLANEOUS MAP ELEMENTS**
- Ac/Ar LOCALITIES — Numbers refer to Table 2 of the Explanation of Map Units
  - U-Pb LOCALITIES — Numbers refer to Table 3 of the Explanation of Map Units
  - FOSSIL LOCALITIES — Numbers refer to Table 4 of the Explanation of Map Units
  - CROSS SECTION LINE AND LABEL



GEOLOGIC MAP OF THE TALKEETNA MOUNTAINS C-4 QUADRANGLE AND ADJOINING AREAS, CENTRAL ALASKA

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This publication is PRELIMINARY in nature and is meant to allow rapid release of field observations or initial interpretations of geology or analytical data. It has not undergone formal peer review. Interpretations or conclusions contained in this publication are subject to change.

**Topographic base map from:**

U.S. Geological Survey topographic maps  
Talkeetna Mountains B-3 (1951 - minor revisions 1964)  
Talkeetna Mountains B-4 (1950 - minor revisions 1975)  
Talkeetna Mountains C-3 (1951 - minor revisions 1975)  
Talkeetna Mountains C-4 (1951 - minor revisions 1965)

**Projection:**

Universal Transverse Mercator Zone 7N

**Datum:**

North American Datum of 1927

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**Geologic field investigations by:**

E. Twelker<sup>1</sup> (2013, 2014), T.D. Hubbard<sup>1</sup> (2014), A. Wypych<sup>1</sup> (2014), K.R. Sicard<sup>1</sup> (2013, 2014), R.J. Newberry<sup>2</sup> (2013, 2014), D.A. Reoux<sup>1</sup> (2014), L.K. Freeman<sup>1</sup> (2013, 2014), and L.L. Lande<sup>1,2</sup> (2014)

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