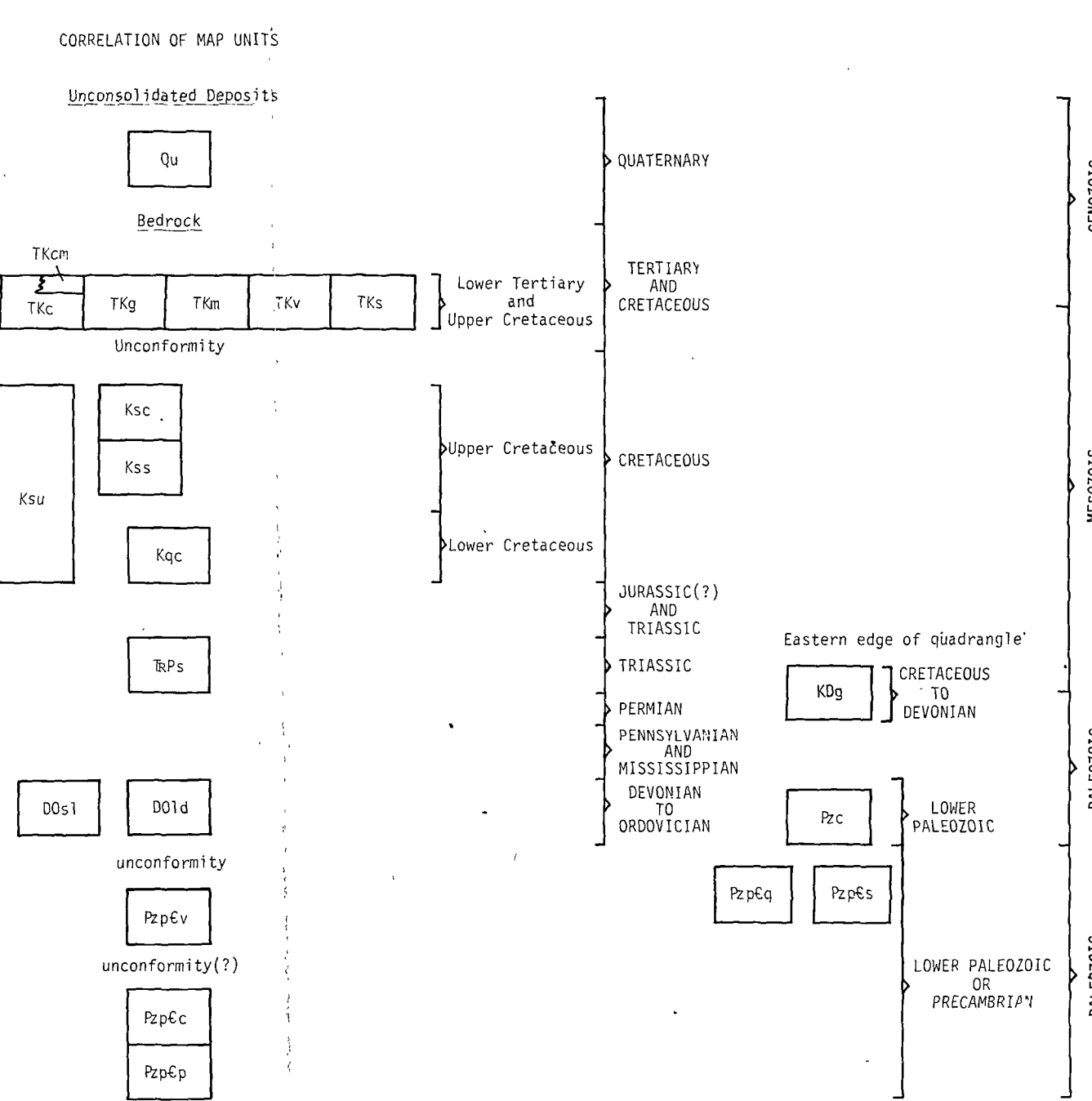


Explanation for Generalized Geologic Map



- DESCRIPTION OF MAP UNITS
- Qu UNDIFFERENTIATED SURFICIAL DEPOSITS
  - Tkx VOLCANIC ROCKS OF THE NORTHERN BEVER AREA—Chiefly trachyandesite, basaltic andesite, and basalt flows. Tephra-Rhyolite domes, dikes, and breccias
  - Tkx VOLCANIC ROCKS OF THE NORTH-FORK-SULUKNA RIVER AREA—Rhyolite, dacite, and trachyandesite sills, flows, and dikes
  - Tkx VOLCANIC ROCKS OF THE SIOUX MOUNTAINS—Rhyolite and dacite flows and dikes
  - Tkx GABBRO
  - Ksu UNDIFFERENTIATED SHALE, SILTSTONE, AND SANDSTONE
  - Ksu HOMOPLASTIC SANDSTONE AND QUARTZ-CHERT CONGLOMERATE
  - Ksu MARINE SANDSTONE, SILTSTONE, AND SHALE
  - Ksu QUARTZ-CARBONATE SANDSTONE AND FELSIC MUDSTONE
  - Ksu VOLCANIC SANDSTONE AND CONGLOMERATE
  - Jkt CHERY TUFF, CRYSTAL AND LITHIC TUFFS, AND VOLCANIC BRECCIA
  - Sps SANDSTONE, SANDY LIMESTONE, SPICULITE, AND CONGLOMERATE
  - Jkt CHERY AND LIMESTONE—Chiefly radiolarian chert. Phcl—Limestone
  - D001 SLATE LIMESTONE
  - D001 LIMESTONE AND DOLOMITE
  - Rch CHERY AND PALETTE
  - Rpk QUARTZITE, GILT, AND ARSILLITE
  - Rpk SHEARED GILT, QUARTZITE, AND QUARTZ-NECA SCHIST
  - Rpk METAVOLCANIC ROCKS—Metapelite and dacite
  - Rpk CALC-SCHIST
  - Rpk FELTIC SCHIST

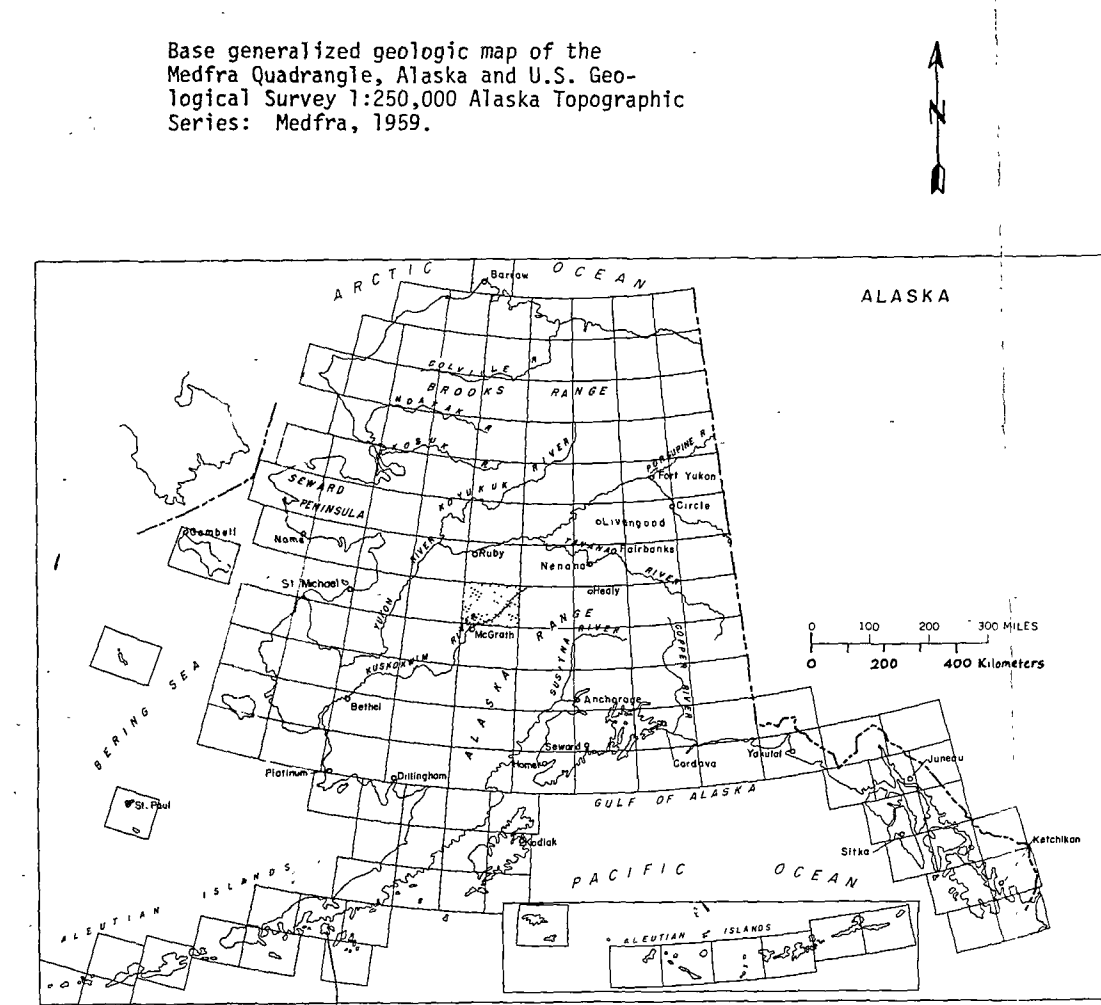
- KEY TO PLUTON LOCALITIES
- A Cripple Creek Mountains
  - B West Fork
  - C Sunshine Mountains
  - D Meadow Creek
  - E Nixon Fork
  - F Whirlwind Ridge
  - G Von Frank Mountain
  - H Shepherd Creek
  - I Upper Sulukna River
  - J Stone Mountain
  - K Teilda Mountains
  - L Appel Mountain
  - M Cloudy Mountain
  - N Alone benchmark
  - O Page Mountain

Samples 45 and 46 collected at localities in the Mount McKinley quadrangle. See latitude and longitude, Tables 1 and 2 for sample locations.

Explanation for K-Ar Map

- ◆ K-Ar age determination
- Chemical analysis

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



CHEMISTRY, MINERALOGY, AND K-AR AGES OF IGNEOUS AND METAMORPHIC ROCKS OF THE MEDFRA QUADRANGLE, ALASKA

by  
E. J. Moll, M. L. Silberman, and W. W. Patton, Jr.

1981

Table 2.—Radiometric age determinations

[<sup>40</sup>K decay constants:  $\lambda_1 = 5.04 \times 10^{-11} \text{ year}^{-1}$ ;  $\lambda_2 = 4.96 \times 10^{-11} \text{ year}^{-1}$ . Branching ratio:  $0.1167 \pm 0.0011$ . Potassium analysis by E. Moll, P. Kloos, B. Lee, and M. Taylor; argon analysis and age calculations by M. L. Silberman, C. L. Connor, L. B. Gray, Kruger Enterprises, Inc. (Geochron Labs), and Telechem isotopes (Georgine Valchovska).]

Map No.	Field No.	Latitude and Longitude	Mineral	Rock type	K <sub>2</sub> O wt percent	Age (Ma)	±1σ (Ma)	±2σ (Ma)	Calculated age (millions of years)
Tcu	1	779277 155°21' W. 63°22' N.	Whole rock	High-K andesite	2.642 2.552 2.373	0.43	.10	.10	63.8 ± 2.7
	2	779280 155°14' W. 63°21' N.	Whole rock	High-K andesite	2.010 1.947 1.832	0.34	.04	.04	64.2 ± 2.4
Tcu	4	779288 155°10' W. 63°21' N.	Blotite <sub>2</sub>	high-K andesite	0.88 0.89 0.792	0.49	.04	.04	69.8 ± 2.4
	5	779282 155°29' W. 63°21' N.	Whole rock	Altered high-K andesite	4.48 4.28 4.09	0.91	.04	.04	59.5 ± 1.4
Tcu	6	779289 155°19' W. 63°21' N.	Blotite <sub>2</sub>	high-K andesite	1.36 1.35 1.35	0.70	.04	.04	64.4 ± 2.0
	7	779291 155°19' W. 63°21' N.	Blotite <sub>2</sub>	high-K andesite	0.84 0.84 0.84	0.61	.04	.04	65.2 ± 2.0
Tcu	8	779294 155°23' W. 63°21' N.	Blotite <sub>2</sub>	Gabbro	0.89 0.89 0.78	0.76	.04	.04	70.5 ± 2.4
	9	779292 155°18' W. 63°21' N.	G-feldspar	Monzonite	0.17 0.17 0.17	0.55	.04	.04	69.3 ± 2.6
Tcu	10	779293 155°04' W. 63°21' N.	Blotite <sub>2</sub>	Granite (A-type)	0.93 0.93 0.93	0.69	.04	.04	69.2 ± 2.4
	12	779292 155°08' W. 63°21' N.	Blotite <sub>2</sub>	Granite (A-type)	0.84 0.84 0.84	0.71	.04	.04	70.5 ± 2.8
Tcu	14	779297 155°11' W. 63°21' N.	Blotite <sub>2</sub>	Granite (A-type)	7.85 7.85 7.25	0.37	.04	.04	64.4 ± 2.5
	15	779293 155°23' W. 63°21' N.	Blotite <sub>2</sub>	Gabbro	0.96 0.96 0.96	0.79	.04	.04	66.2 ± 3.3
Tcu	19	779295 155°16' W. 63°21' N.	Blotite <sub>2</sub>	Quartz monzonite	0.90 0.89 0.89	0.73	.04	.04	69.9 ± 2.1
	18	779293 155°22' W. 63°21' N.	Blotite <sub>2</sub>	Quartz monzonite	0.79 0.79 0.79	0.59	.04	.04	65.8 ± 2.0
Tcu	21	779292 155°16' W. 63°21' N.	Blotite <sub>2</sub>	Quartz monzonite	0.97 0.97 0.97	0.84	.04	.04	70.4 ± 2.1
	22	779295 155°18' W. 63°21' N.	Blotite <sub>2</sub>	Monzonite	0.84 0.84 0.84	0.71	.04	.04	67.3 ± 3.4
Tcu	25	779293 155°21' W. 63°21' N.	Blotite <sub>2</sub>	Gabbro	0.93 0.93 0.93	0.75	.04	.04	66.4 ± 2.5
	26	779293 155°21' W. 63°21' N.	Blotite <sub>2</sub>	Gabbro	0.82 0.82 0.82	0.40	.04	.04	68.9 ± 4.1
Tcu	27	779293 155°23' W. 63°21' N.	Blotite <sub>2</sub>	Dacite	2.40 2.39 2.39	0.43	.04	.04	62.6 ± 1.3
	28	779293 155°17' W. 63°21' N.	Blotite <sub>2</sub>	Dacite	0.71 0.71 0.71	0.76	.04	.04	62.2 ± 3.1
Tcu	31	779273 155°47' W. 63°13' N.	Whole rock	Altered high-K andesite	1.302 1.302 1.302	0.60	.04	.04	67.8 ± 2.0
	32	779273 155°46' W. 63°13' N.	Muscovite	Quartz schist	0.67 0.67 0.67	9.38	0.90	.90	69.1 ± 2.1
Tcu	33	779296 155°03' W. 63°21' N.	Sandstone	Rhyolite	7.65 7.65 7.65	0.82	.04	.04	66.3 ± 2.0
	34	779292 155°13' W. 63°21' N.	Whole rock	Felsite	0.34 0.34 0.34	0.32	.04	.04	69.9 ± 2.7
Tcu	35	779292 155°17' W. 63°21' N.	Whole rock	Felsite	0.44 0.44 0.44	0.25	.04	.04	71.0 ± 2.8
	36	779292 155°18' W. 63°21' N.	Whole rock	High-K andesite	0.40 0.40 0.40	0.29	.04	.04	64.9 ± 4.3
K0	37	779292 155°27' W. 63°21' N.	Amphibole	Gabbro	0.27 0.27 0.27	1.40	0.43	.43	267 ± 11
	38	779292 155°27' W. 63°21' N.	Whole rock	Gabbro	0.80 0.80 0.80	0.75	.04	.04	176 ± 9
K0	39	779293 155°22' W. 63°21' N.	Whole rock	Dibase	0.20 0.20 0.20	0.82	.04	.04	98 ± 10
	40	779292 155°20' W. 63°21' N.	Blotite <sub>2</sub>	actinolite gneiss	2.48 2.48 2.48	0.89	.04	.04	274 ± 14
K0	41	779297 155°18' W. 63°21' N.	Muscovite	Quartz-schist	4.21 4.21 4.21	0.82	.04	.04	411 ± 15
	42	779296 155°13' W. 63°21' N.	Muscovite	Quartz-schist	7.06 7.06 7.06	0.95	.04	.04	514 ± 18
K0	43	779296 155°14' W. 63°21' N.	Muscovite	Quartz-schist	0.78 0.78 0.78	0.90	.04	.04	296 ± 9
	44	779292 155°04' W. 63°21' N.	Muscovite	Metagabbro	10.34 10.34 10.34	0.87	.04	.04	108 ± 5
K0	45	779292 155°48' W. 63°00' N.	Muscovite	Metagabbro	0.37 0.37 0.37	41.28	0.95	.95	276 ± 8
	46	779292 155°48' W. 63°00' N.	Green amphibole	Metagabbro	0.161 0.161 0.161	1.16	0.64	.64	421 ± 23

Brief description of K-Ar and chemical analysis samples:

- 1. High-K andesite flow, Sunset benchmark
- 2. High-K andesite flow, Sunset benchmark
- 3. Altered high-K andesite flow, Sunset benchmark
- 4. High-K andesite flow, Sunset benchmark
- 5. High-K andesite flow, Sunset benchmark
- 6. High-K andesite flow, Sunset benchmark
- 7. High-K andesite flow, Sunset benchmark
- 8. High-K andesite flow, Sunset benchmark
- 9. High-K andesite flow, Sunset benchmark
- 10. High-K andesite flow, Sunset benchmark
- 11. High-K andesite flow, Sunset benchmark
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- 45. High-K andesite flow, Sunset benchmark
- 46. High-K andesite flow, Sunset benchmark