



MAP SHOWING POTASSIUM-ARGON AGES FROM THE GOODNEWS QUADRANGLE, ALASKA  
by  
Frederic H. Wilson and James G. Smith

Presented here are 14 K/Ar ages on biotites and amphiboles from 10 plutons in the Goodnews quadrangle, Alaska. These samples were collected during the 1973-1975 field seasons by J. M. Hoare, W. L. Conrad and F. H. Wilson.

Potassium was determined by flame photometry using lithium metaborate fusion. Potassium analysis was by J. H. Christie, Marcelyn Cramer, L. B. Schlocker and J. H. Tillman. Argon extraction and measurement was accomplished with the standard techniques of isotope dilution mass spectrometry as described by Dalrymple and Lanphere (1969). Argon extractions and measurements were done by the authors. The plus or minus value assigned to each age (Table 1) is an estimate of the standard deviation of analytical precision using the method of Cox and Dalrymple (1967), together with an estimate of uncertainty based on evaluation of the variations in the concentration of the <sup>39</sup>Ar tracer and the potassium measurements.

Sample and analytical data are listed in Table 1 and sample locations are plotted on the map. Outlines of plutons are from Hoare and Conrad (1961) and the field notes of J. M. Hoare and W. L. Conrad. The intention of this report is to present the K/Ar data. It is recommended that J. M. Hoare and W. L. Conrad, who are currently preparing a series of MF maps for the Alaskan Mineral Resources Assessment Program, be consulted concerning interpretation and use of this data.

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#### References

- Cox, Allan and Dalrymple, G. B., 1967, Statistical analysis of geomagnetic reversal data and the precision of potassium-argon dating: Jour. Geophys. Research, v. 72, no. 10, P. 2603-2604.
- Dalrymple, G. B. and Lanphere, M. A., 1969, Potassium-argon dating: San Francisco, W. H. Freeman and Co., 258p.
- Hoare, J. M. and Conrad, W. L., 1961, Geologic map of the Goodnews quadrangle, Alaska: U. S. Geol. Survey Misc. Geologic Invest. Map 1-339, 1:250,000.

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U. S. COAST AND GEODETIC SURVEY  
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CONTROL BY USC&GS  
HYDROGRAPHY COMPILED FROM USC&GS CHART 9103  
TOPOGRAPHY COMPILED FROM ORIGINAL SURVEYS OF THE  
GEOLOGICAL SURVEY AND USC&GS 1898-1951, SUPPLEMENTED  
BY STEREOPHOTOGRAMMETRIC (PHOTOALTIMETER) COMPILED,  
1943-1945  
UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 4  
1927 NORTH AMERICAN DATUM

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1976

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

GOODNEWS, ALASKA  
1991