K-Ar dates from volcanic and plutonic rocks of the northern Wassuk Range, Central Western Nevada

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SHORT NOTES

K-AR DATES FROM VOLCANIC AND PLUTONIC ROCKS OF THE NORTHERN WASSUK RANGE, CENTRAL WESTERN NEVADA

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The four age dates reported here were performed by Geochron Laboratories during the early part of 1971 for the Nevada Bureau of Mines and Geology; the analytical methods used were reported in Isochron/West, No. 1 (January 1971), p. 9. The constants used in the age calculations are: $\lambda_e = 0.585 \times 10^{-10}$/yr., $\lambda_\beta = 4.72 \times 10^{-10}$/yr.; $K^{40}/K_{total} = 1.22 \times 10^{-4}$ gm/gm. All samples were collected by the author as part of a continuing program of studies in the Wassuk Range.

The four dates listed below are the first reported from the northern Wassuk Range. The two volcanic rock samples are taken from an extensive sequence of welded ash-flows generally believed to be equivalent in age to the Hartford Hill Rhyolite (Moore, 1969, p. 10). Both tuff samples yielded Oligocene ages, however, and would appear on the basis of this preliminary data to be substantially older than the Hartford Hill Rhyolite (22-23 m.y. reported by Bonham and Papke, 1969, p. 25). Two plutonic rocks were dated: a Late Jurassic quartz diorite to granodiorite porphyry intrusive into a major east-west structural belt which truncates the oldest metamorphic and intrusive basement rocks, and a large Late Cretaceous quartz monzonite stock which, on the basis of field relationships is the youngest major intrusive phase in the Wassuk Range.

1. G-B1945/NBM-AD45 K-Ar (biotite) 25.2±1.0 m.y.

Augite rhyodacite vitrophyre. Welded crystal tuff (38°59′26″N, 118°53′54″W; NE/4 Sec. 13, T13N, R27E; 1½ mi SW of White Mountain; Mineral Co., NV) from a basal horizon of strongly welded black vitrophyre agglomerate that disconformably overlies a thick section of quartz latitic tuff (see sample no. 2 below). Sample represents the oldest part of the rhyodacite ash-flow tuff section. Analytical data: K = 7.187%; $\overset{*}{A}r^{40}$ = 0.0130 ppm; $\overset{*}{A}r^{40}/\Sigma Ar^{40}$ = 44.7%.

2. G-B1788/NBM-AD43 K-Ar (biotite) 28.5±1.1 m.y.

Hornblende quartz latite. Welded crystal tuff (38°58′30″N, 118°56′20″W; SW/4 Sec. 23, T13N, R27E; near old site of Mountain View, Mountain View Mining District; Mineral Co., NV) from the middle member of a thick section of quartz latite welded ash-flow tuffs. Crystal-rich, moderately welded, crystallized tuff. Analytical data: K = 7.072%; $\overset{*}{A}r^{40}$ = 0.0145 ppm; $\overset{*}{A}r^{40}/\Sigma Ar^{40}$ = 42.7%.

3. G-B1928/NBM-AD46 K-Ar (biotite) 80.0±3.0 m.y.

Sodic quartz monzonite. Medium-grained biotite leuco quartz monzonite (38°55′32″N, 118°51′08″W; SE/4 Sec. 4, T12N, R28E; 3 mi SW of Schurz; Mineral Co., NV). Part of the youngest stock that makes up much of the core of the Wassuk Range. Analytical data: K = 6.470%; $\overset{*}{A}r^{40}$ = 0.0378 ppm; $\overset{*}{A}r^{40}/\Sigma Ar^{40}$ = 68.0%.

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4. G-A1787/NBM-AD42 K-Ar (hornblende) 143±8 m.y.

Hornblende quartz diorite porphyry (38°58′56″N, 118°57′24″W; NW/4 Sec. 22, T13N, R27E; 1 mi W of the old site of Mountain View, Mountain View Mining District; Mineral Co., NV). Part of an areally restricted suite of hypabyssal intrusive rocks of intermediate to basic composition. Suggests a minimum age for an east-west structural zone prominent in the northern Wassuk Range (Bingler, 1971). Analytical data: K = 0.740%; $\overset{*}{A}r^{40}$ = 0.00784 ppm; $\overset{*}{A}r^{40}/\Sigma Ar^{40}$ = 51.4%.

REFERENCES

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