

Sr isotope initial ratios from the San Francisco volcanic field. Arizona

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SR ISOTOPE INITIAL RATIOS FROM THE SAN FRANCISCO
VOLCANIC FIELD, ARIZONA

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We report initial Sr isotope ratios for fifteen samples ranging from alkali olivine basalt through alkali-rich, high-alumina basalts and basaltic andesites to (rhyo-) dacites from the San Francisco, Arizona volcanic field. K-Ar dates (Damon and others, 1974) are available for some samples.

All $^{87}\text{Sr}/^{86}\text{Sr}$ data have been normalized to $^{86}\text{Sr}/^{88}\text{Sr} = 0.1194$; total Sr and Rb were determined by replicate x-ray fluorescence spectrography.

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SAMPLE DESCRIPTIONS

1. UNM-WM-41B $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7026 (whole rock)
Alkali olivine basalt ($111^{\circ}18'W$, $35^{\circ}21'30''N$; Coconino Co., AZ). 762 ppm Sr; less than 20 ppm Rb. K-Ar date: 0.84 ± 0.13 m.y. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
2. UNM-MM-242 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7028 (whole rock)
Alkali olivine basalt ($111^{\circ}14'W$, $35^{\circ}21'N$; Coconino Co., AZ). 709 ppm Sr; less than 20 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
3. UNM-MM-545 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7030 (whole rock)
Alkali olivine basalt ($111^{\circ}38'W$, $35^{\circ}12'N$; Coconino Co., AZ). 448 ppm Sr; less than 20 ppm Rb. K-Ar date: 5.80 ± 0.34 m.y. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
4. UNM-MM-529 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7031 (whole rock)
Basaltic andesite ($111^{\circ}26'W$, $35^{\circ}15'N$; Coconino Co., AZ). 511 ppm Sr; 7 ppm Rb. K-Ar date: $50,000 \pm 14,000$ yrs. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
5. UNM-SFO-12 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7031 (whole rock)
Andesite ($111^{\circ}40'30''W$, $35^{\circ}21'N$; Coconino Co., AZ). 690 ppm Sr; 24 ppm Rb. K-Ar date: $50,000 \pm 14,000$ yrs. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
6. UNM-MM-379 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7032 (whole rock)
Alkali olivine basalt ($111^{\circ}26'W$, $35^{\circ}13'N$; Coconino Co., AZ). 894 ppm Sr; less than 20 ppm Rb. K-Ar date: $50,000 \pm 14,000$ yrs. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
7. UNM-MM-1022 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7034 (whole rock)
Basaltic andesite ($111^{\circ}26'W$, $35^{\circ}15'N$; Coconino Co., AZ). 686 ppm Sr; less than 20 ppm Rb. K-Ar date: $50,000 \pm 14,000$ yrs. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
8. UNM-MM-213 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7035 (whole rock)
Alkali olivine basalt ($111^{\circ}12'30''W$, $35^{\circ}26'N$; Coconino Co., AZ). 795 ppm Sr; less than 20 ppm Rb.

Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.

9. UNM-MM-801C $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7035 (whole rock)
Alkali olivine basalt (111°31'W, 35°22'N; Coconino Co., AZ). Tree ring date: 1064 C. E. (Smiley, 1958). 842 ppm Sr; less than 20 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
10. UNM-MM-985A $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7036 (whole rock)
Basaltic andesite (111°26'W, 35°22'N; Coconino Co., AZ). 1241 ppm Sr; less than 20 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
11. UNM-MM-922 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7037 (whole rock)
Alkali-rich, high-alumina basalt (111°26'W, 35°29'N; Coconino Co., AZ). 821 ppm Sr; 0 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
12. UNM-MM-307 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7039 (whole rock)
Alkali-rich, high-alumina basalt (111°22'W, 35°15'30"N; Coconino Co., AZ). 937 ppm Sr; 0 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
13. UNM-SFO-15 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7039 (whole rock)
Dacite (111°40'30"N, 35°21'N; Coconino Co., AZ). 551 ppm Sr; 21 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
14. UNM-SFO-18C $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7042 (whole rock)
Basaltic andesite (111°40'30"W, 35°21'N; Coconino Co., AZ). 664 ppm Sr; less than 20 ppm Rb. Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.
15. UNM-MM-818 $^{87}\text{Sr}/^{86}\text{Sr}$ initial ratio: 0.7050 (whole rock)
Rhyodacite (111°32'W, 35°23'30"N; Coconino Co., AZ). 306 ppm Sr; 51 ppm Rb. K-Ar date: 233,000 ± 37,000 yrs. (Damon and others, 1974). Collected by: R. B. Moore, data from: UNM Geochronology Laboratory.

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Smiley, T. L. (1958) The geology and dating of Sunset Crater, Flagstaff, Arizona: New Mex. Geol. Soc. 9th Field Conf., Black Mesa basin, northeastern Arizona, p. 186-190.</p> |
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