

## ***Sr isotope initial ratios from the Mount Taylor volcanic field. New Mexico***

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## SR ISOTOPE INITIAL RATIOS FROM THE MOUNT TAYLOR VOLCANIC FIELD, NEW MEXICO

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We report initial Sr isotope ratios for nine samples ranging from alkali basalts to trachytes from the Mount Taylor volcanic field, New Mexico.

All  $^{87}\text{Sr}/^{86}\text{Sr}$  data have been normalized to  $^{86}\text{Sr}/^{88}\text{Sr} = 0.1194$ ; total SrO was determined by atomic absorption spectrophotometry.

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### DISCUSSION

Primary volcanic landforms are still preserved in the northern part of the Mount Taylor volcanic field (Mesa Chivato). These include over 100 volcanic vents consisting of basaltic and hawaiitic cinder cones, maars, pit craters and mugearite, benmorite and trachyte flow domes. Volcanism occurred in three separate stages that were identified during mapping of two 7.5-minute quadrangles (Crumpler, 1977). The first stage, the Tapia stage, comprises a complete alkali basalt through trachyte suite similar in major elements and mineralogy to the oceanic (Hawaiian) sodic alkalic suite. The Cebolleta stage followed the Tapia stage and is approximately equivalent in age to the andesitic activity of the Mount Taylor composite volcano which has been dated at 2.6 m.y. (Bassett and others, 1963). The Cebolleta stage and the subsequent Alejandro stage both erupted alkali basalts and hawaiites.

### SAMPLE DESCRIPTIONS

#### Tapia Stage

1. UNM-LC-134  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7051 (whole rock)  
Basanite ( $107^{\circ}18'30''\text{W}$ ,  $35^{\circ}24'10''\text{N}$ ; McKinley Co., NM). 900 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
2. UNM-LC-75-1  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7142 (whole rock)  
Mugearite ( $107^{\circ}23'40''\text{W}$ ,  $35^{\circ}25'10''\text{N}$ ; McKinley Co., NM). 1700 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
3. UNM-LC-D-11  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7047 (whole rock)  
Benmorite ( $107^{\circ}22'36''\text{W}$ ,  $35^{\circ}29'30''\text{N}$ ; McKinley Co., NM). 1300 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.

4. UNM-LC-FLJ-101  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7047 (whole rock)  
Trachyte ( $107^{\circ}18'24''\text{W}$ ,  $35^{\circ}25'40''\text{N}$ ; McKinley Co., NM). 800 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
  5. UNM-LC-66-1  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7049 (whole rock)  
Trachyte ( $107^{\circ}21'32''\text{W}$ ,  $35^{\circ}26'30''\text{N}$ ; McKinley Co., NM). 500 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
  6. UNM-LC-107-1  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7039 (whole rock)  
Trachyte ( $107^{\circ}19'40''\text{W}$ ,  $35^{\circ}27'52''\text{N}$ ; McKinley Co., NM). 100 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
- Cebolleta Stage
7. UNM-LC-B23B  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7053 (whole rock)  
Alkali basalt ( $107^{\circ}18'20''\text{W}$ ,  $35^{\circ}26'30''\text{N}$ ; McKinley Co., NM). 900 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
  8. UNM-LC-41a-1  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7061 (whole rock)  
Hawaiite ( $107^{\circ}22'00''\text{W}$ ,  $35^{\circ}26'00''\text{N}$ ; McKinley Co., NM). 1000 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.
- Alejandro Stage
9. UNM-LC-78-1  $^{87}\text{Sr}/^{86}\text{Sr}$  initial ratio:  
0.7056 (whole rock)  
Alkali basalt ( $107^{\circ}24'25''\text{W}$ ,  $35^{\circ}25'10''\text{N}$ ; McKinley Co., NM). 800 ppm SrO. Collected by: L. S. Crumpler; data from: UNM Geochronology Laboratory.

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