Distribution of K, Rb, Sr, Ba, and Rb-Sr Isotopic Relationships in Apollo-12 Samples.

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The abundances of K, Rb, Sr, and Ba in nine samples composed of five rocks and two fine materials have been measured by mass spectrometric techniques. The rock samples are characterized by low Rb (0.67-1.27 ppm) relative to Sr (86.4-146 ppm). In this context, they resemble Type II rocks from Apollo-11. Isotopic composition of Sr in the total rock samples does not show enough spread to be useful in calculating ages. Rb-Sr isotopic data on density fractions from three rocks will be presented.

The fine materials 12033, 12070 have higher concentrations of these elements, in marked contrast to all the rocks studied. Further, 12033 fines are enriched in these elements relative to 12070. It is certain that both fine materials contain a component not represented in the rocks sampled, and this component is variable from sample to sample of the lunar fines, indicating the complex provenance, and mixing history for the lunar soils.