

CHEMICAL COMPOSITION OF SOME APOLLO 12

LUNAR ROCKS AND SOILS

by

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ABSTRACT

Abundances of major constituents ( $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{FeO}$ ,  $\text{CaO}$ ,  $\text{MgO}$ ,  $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ,  $\text{H}_2\text{O}^+$ ,  $\text{TiO}_2$ ,  $\text{P}_2\text{O}_5$ , and  $\text{Cr}_2\text{O}_3$ ) and 18 minor elements (Ba, Be, Co, Cu, Ga, La, Li, Mn, Nb, Ni, Rb, Sc, Sr, V, Y, Yb, Zn, and Zr) are reported for 4 gabbro, 4 basalt and 4 soil samples collected during the Apollo 12 Mission in the Ocean of Storms. These lunar soils also showed a high reducing capacity similar to that determined for the Apollo 11 lunar materials. Compared to the Apollo 11 samples, the Apollo 12 materials exhibit a much lower  $\text{TiO}_2$  content ( $< 3.50\%$ ). Interpretations and speculations regarding the elemental abundances are also presented.