CHEMICAL COMPOSITION OF APOLLO - 12 LUNAR SAMPLES 12004, 12033, 12051, 12052 and 12065

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ABSTRACT (tentative)

Major, minor and trace element determinations are reported for lunar rocks 12004, 12051, 12052 and 12065, and for the < mm fraction of some unconsolidated surficial material (12033), with a brief account of the analytical procedures used. Resemblance to the Apollo 11 samples previously analyzed is seen in the almost complete absence of volatile constituents, the low alkalies, lack of any measurable Fe (III), the high chromium content and, except for 12004, approximately similar concentrations of Ca, Mg and total Fe; the higher Si and markedly lower Ti contents of the Apollo 12 samples are thus striking features of these rocks. There are also important individual differences between the Apollo 11 and 12 samples, and between the Apollo 12 samples themselves, in the concentrations of such constituents as phosporus, potassium, vanadium, zirconium and barium; the total S content of these Apollo 12 samples is about one-half that found for the Apollo 11 material. The samples again show only a superficial compositional resemblance to any known terrestrial and meteoritic material.