ORGANIC GEOCHEMISTRY UNIT

SCHOOL OF CHEMISTRY

UNIVERSITY OF BRISTOL.

AUTHORS

G. Eglinton*, P.I. Abell, P. Cadogan, J.R. Maxwell, C.T. Pillinger.

TITLE:

Survey of Lunar Carbon Compounds

ABSTRACT.

Indigeneous gases and chemical reaction products released by acid dissolution of lunar samples have been examined by gas chromatography, mass spectrometry and combined gas chromatography-mass spectrometry. Methane, ethane, ethylene, acetylene, carbon monoxide and carbon dioxide are among the species identified and quantified. Hydrocarbons have been resolved into indigeneous species and chemical reaction products by the use of deuterium-labelled reagents. The samples examined included size-differentiated fines, non-magnetic particles, interior fragments of igneous rock chips, and fines from different locations and core samples from varying depths. The contributions made to lunar carbon by primordial carbon compounds, the solar wind and meteorite impacts have been estimated. The analyses constitute a preliminary carbon-orientated field survey of the Apollo 12 site.

* Principal Investigator.