

THE MOON

A NEW APPRAISAL FROM SPACE MISSIONS AND LABORATORY ANALYSES

Knowledge of the Moon has been increased over the last decade in a remarkable way by space techniques. The photogeology of the Moon was greatly improved as a result of the early orbiting satellites and finally the sampling of the surface by the manned Apollo mission and the Luna unmanned missions has enabled the scientific disciplines of petrology, physics and chemistry to be applied to the study of the lunar strata. The great accumulation of new data from these space missions has now been reviewed and important conclusions concerning the evolution of the Moon have been drawn. The Royal Society discussion meeting on the Moon was held in June 1975 at an appropriate time to provide a well-considered review of the new data. Papers were given by all the European and Commonwealth laboratories which have worked on lunar rocks and a representative group of the large number of U.S. laboratories. As a result, the proceedings of this meeting represent the most complete survey of lunar science yet undertaken. Each of the 66 papers reviews the earlier work in the field and the relationship of the findings to three crucial questions concerning the Moon:

In what respects does the history of the evolution of the Moon contrast with that of the Earth?

What diagnostic evidence is there concerning the origin of the Moon?

How much of solar system history is recorded on the Moon?

The papers cover virtually every scientific discipline from mathematics to biology and are arranged in order of their relevance to the four great epochs of lunar history:

- (1) its initial accumulation
- (2) the filling of mare basins
- (3) the history of the subsequent bombardment of the Moon
- (4) present day processes.

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