

# Computer-Based Systems for Geological Field Data

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geophysical problems.

Chapter 12 on Mars, Venus and The Planets Beyond, I found particularly good because they set in context our early stages of learning about the terrestrial planets. The last chapter on What Does it All Mean, attempts to set in context the view of planets and their evolution. The material is highly speculative and while any investigator would have emphasized his favourite points the chapter is quite well done.

There is no doubt that this is an important reference work about the newest frontier in earth science. I plan to adopt it as a source of reference material for my own introductory course on the moon and planets.

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This publication is an outcome of a meeting held at UNESCO headquarters in Paris November 5-9, 1973. The meeting was sponsored by COGEO DATA, International Union of Geological Sciences, in collaboration with the Division of Earth and Environmental Sciences, UNESCO and the Canadian Centre for Geoscience Data. It provides the reader a condensed description of the most important presentations, made at the meeting, concerning the computer applications in various domains of the earth sciences. Although many of these computerized systems have been the object of publication and presentation elsewhere, it is for the second time that they are grouped in this paper for easy access by earth scientists already engaged or interested in the use of computers. The earlier attempt was the publication of section 16 report of the 24th International Geological Congress, Montreal 1972.

The paper is divided into two parts. The first part deals with Geological Field Data Systems. A common point with all Field Data Systems has been the design and use of an input document to record geological data in the field, thus replacing the traditional field notebook. It is now an established fact, at least for big exploration projects, that well-designed input documents have proved to be time saving on the outcrop and have improved the quality of data collected. In Canada the pioneering work in the Field Data Systems was initiated by the Coast Mountains Project of the Geological Survey of Canada, the Project Pioneer of the Manitoba Geological Survey and the Grenville Project of the Quebec Department of Natural Resources. Subsequently similar systems have

been developed by the geological surveys in Sweden, Finland, Denmark, Federal Republic of Germany and other provincial surveys and universities in Canada. This paper describes the techniques used in some of these systems. The final objective of all these systems is to generate maps displaying geological information, after various analyses of the field data, with the help of computer driven plotters.

The second part of the paper deals with Generalized Geological Data Management Systems developed by different institutions in France, Canada, Netherlands, U.S.A. and Czechoslovakia. These systems have a much wider scope as compared to Field Data Systems, as they possess interactive systems which treat geochemical data, mineral deposits data, petrological-petrographical data, structural data, cartographic data, environmental, social and economic data in various combinations.

All the articles in this paper are quite brief and well illustrated and represent the work of excellent editing. For persons who are interested in more detailed accounts of the existing computer-based systems in geological sciences, the bibliographic references given with each article should prove to be quite useful.

MS received September 25, 1975.