REMOTE SENSING, TREATISE OF PETROLEUM GEOLOGY REPRINT SERIES, NO. 19

Edited by **Edward Beaumont and Norman H. Foster**, ISBN: 0-89181-418-3; American Association of Petroleum Geologists, 1992; 670 p.

Review by **Christopher G. Kendall**

This book consists of a series of papers chosen to cover most of the aspects of remote sensing. This book is divided into four parts. The first section is concerned with general methods associated with remote sensing; the second with thermal infrared imagery; the third is on radar and the last portion of the book, which has the most papers, is focussed on case histories. The book has some 36 papers in it and deals with the development of this science from its inception to the present day. It emphasizes the application of remote sensing to petroleum exploration. The general methods section deals with how remote sensing is used for evaluating resources both from the point of view of petroleum and minerals, how images can be interpreted, how the LANDSAT observation satellite system works, how petroleum exploration can be tied into this, and how the techniques developed in photogeology can be related to the use of images acquired from outer space. The papers considered the use of structural analysis and recognition of different colors of soils and rocks.

The section on thermal infrared imagery consists of three papers, one on geological mapping using thermal images, another on thermal infrared imagery and its application to structural mapping in California and a final paper on the use of remote sensing in exploration.

The section on radar has a series of papers on Papua New Guinea, Irian Jaya in Indonesia, Gabon, the mapping of landforms of coastal regions, the use of imaging radar for oceanographic interpretation, its use in eastern Panama and lastly there is an explanation of how one can use radar imagery to identify hidden structures in the jungle.

The section on case histories considers examples from the Sirte basin of Libya; the Qaidam basin of China; in the Appalachians; the use of SEASAT in the North Sea, the Atlantic margin, and the Australian offshore; the overthrust area of Wyoming; use of multispectral analysis as a stratigraphic and structural tool in the Windriver and Bighorn basins of Wyoming; the Paradox basin; to the Powder River Basin of Wyoming and Montana; the Niaobra formation in Wyoming and the recognition of thrustfaults and its applications to exploration; use of spectral analysis to investigate Lisbon valley in Utah; the use of an integrated approach using a combination of field and remotely sensed data in the Southern Illinois basin; and finally a paper on a surface geochemical study of the Railroad valley, Nye county in Nevada.

This book is a useful compendium of papers that cover to present the state of the art of remote sensing. With time this book will become outdated but now it provides the reader with historical perspective of remote sensing and a good beginning to an understanding of this subject. The reproduction of the papers is by means of some photographic processes so that many of the papers appear in their original form. Some of the photographic images have suffered through this process but by and large the quality of the pictures is extremely good, including some colored photographs and colored maps and diagrams. Overall the editors have done a great job in bringing together some useful papers and this is going to be a useful book in the libraries of many companies and universities. It could also end up on the shelves of those who have an expertise or are in the need for skills in remote sensing. Once again the AAPG should be congratulated on coming up with a great book.