

flow with record highs along its axis and more than twice the world mean along its coasts. This may restrict the hydrocarbon potential to gas.

With all these exciting developments Coleman's book on the geology of the Red Sea is most timely. Although it is a slim volume (152 pages of text plus a very useful 21 pages of references), it contains a wealth of information ranging from geomorphology, stratigraphy, volcanic and sedimentary history, structure, and geophysics to plate tectonics and economic aspects. The subject treated in the most detail is the volcanic history, reflecting the author's interests. This chapter is a personal account of Coleman's experiences in the Red Sea. He repeatedly raises the vexing problem of the amount of oceanic crust. Unlike the Gulf of Aden, the Red Sea has huge thicknesses of evaporites, and it has been extraordinarily difficult to answer the question of what lies beneath them. After following the U.S. Geological Survey line postulating shore-to-shore oceanic crust at least in the southern Red Sea, Coleman in his epilogue says: "I now believe that the crust under the thick evaporite section consists of extended Precambrian crust invaded by tholeiitic intrusives." Like the biblical parting of the Red Sea, it remains a mystery.

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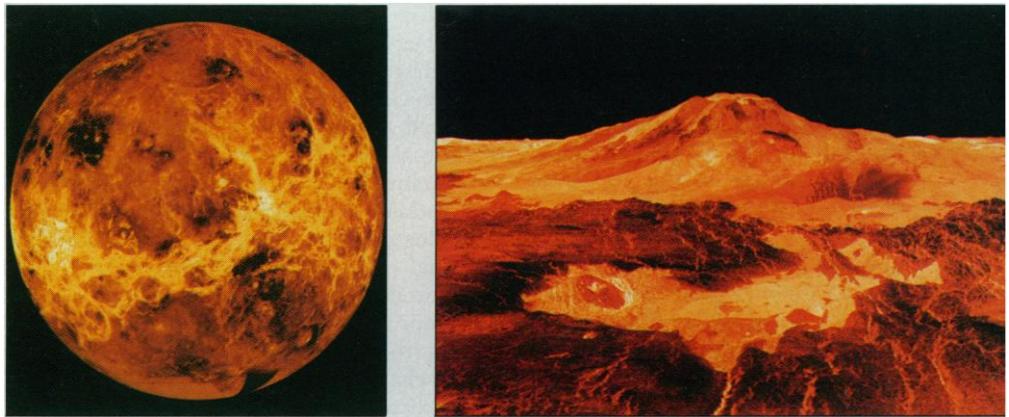


The Veiled Planet

Venus. The Geological Story. PETER CATTERMOLLE. UCL Press, London, and Johns Hopkins University Press, Baltimore, MD, 1994. vi, 250 pp., illus., + plates. £25 or \$49.95.

The recent success of the Magellan mission to Venus has resulted not only in a significant increase in the amount of available data on this planet but now in mountains of new research papers. With *Venus: The Geological Story* Peter Cattermole attempts to summarize the current state of our knowledge of the surface and interior of Venus. The book captures the essence of a dynamic planet that fascinates specialists and non-specialists alike owing to its unique spectrum of volcanic and tectonic features and its fantastic geological activity to within at least the last several hundred million years.

The time is indeed ripe for a book on the geology of Venus, and Cattermole has, to use the words of Nathan Bedford Forrest, gotten there "first with the most men." However, the forced march of a quick



Left, the western hemisphere of Venus; centered on the area known as Beta Regio. Magellan MRPS 42303. *Right*, a perspective view of Maat Mons, a 5-kilometer-high volcano with a summit caldera complex. "This view, looking south, shows radar-bright volcanic flows extending northwards and embaying ejecta from a 23 km diameter impact crater." Magellan image P-40175. [From *Venus*]

writing (many of the references are to material published in October 1992 and the preface is dated March 1993) has resulted in an uneven product. The author remarks that the book represents his attempt "to abstract, from a wealth of data, the bare bones of the geology of Venus, almost as it is being written." Indeed, he may not have had time to construct any real synthesis. In 1992, 48 original research papers reporting on Magellan observations were published in two weighty issues of the *Journal of Geophysical Research*. Cattermole's detailed summaries of many of these papers form the bulk of the book. Unfortunately, an absence of continuity between these essays has left the material in a state of disorganization. For example, the most detailed discussion of highland formation occurs in the context of an analysis of one paper about one highland. The organizational problems are especially evident in the presentation of related material, either illustrations or text, from different research papers with no critical analysis of the distinctions between them. In general, the material is not well integrated, with pre-Magellan research not placed in its appropriate post-Magellan context.

The book gives a balanced overview of impact cratering, surficial processes, volcanism, and tectonism. The material on tectonism is distributed throughout three separate, nonadjacent chapters. Terminology is sometimes confusing: For example, Magellan established that Venus has no globally interconnected tectonic network, which is a signature of plate tectonics. Cattermole recognizes this absence of a network, yet repeatedly refers to Venus's tectonic patterns as "global-scale." The description of the planet's physiography is excessive; much of the information could be obtained simply by looking at a map. In addition, the text reveals some significant misconceptions concerning gravity, isostasy, and heat loss and

contains an above-average number of misquotations and minor errors. This is definitely a book to read with pencil in hand.

Despite these flaws, *Venus: The Geological Story* will meet the needs of the non-specialist seeking a single-volume introduction to the subject. Containing good geological background material and up to date through 1992, it fills the gap between the research journals and more popular, coffee-table books. As in any active scientific field, in Venusian geology it is difficult to pick a stopping point and say, "This is it." This book provides a convenient first stop. It is unfortunate that more recent findings such as the implications of Magellan's gravity data for the interior structure of the planet did not make it into the book. With NASA's apparent early cancellation of Venus-specific data analysis programs, such work may slow, and it is unclear when, in Cattermole's words, "a more complete picture of Venusian geology will . . . emerge."

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Language and Interaction

The Transition from Infancy to Language. Acquiring the Power of Expression. LOIS BLOOM. Cambridge University Press, New York, 1993. xiv, 350 pp., illus. \$44.95 or £35.

Regardless of their theoretical persuasions, researchers in language acquisition today recognize (at least in passing) that both nature and nurture are necessary to the child's achievement of language. Most, however, continue to construe those terms in traditional ways that perpetuate an "ei-