



The Martian climate revisited: atmosphere and environment of a desert planet

by Peter L. Read & Stephen R. Lewis

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Assessment of the voluminous data returned from numerous spacecraft that have visited the Red Planet since the 1960s makes it possible to construct climatic models to try to predict the distribution of dust and volatiles over the planet as a function both of location and time. In the Department of Physics at Oxford University, Prof Read and Dr Lewis have developed such a climatic model to simulate the real planet, and an important aspect of this book is a detailed description of how that model can succeed in modelling such phenomena as great dust storms. In the latter connection, it was good to see some reference in the text to the use of BAA data. The treatment is necessarily mathematical in describing the modelling techniques used, but it manages to be highly readable at the same time.

In this monograph – of greatest interest to specialists in atmospheric dynamics – the authors discuss in depth the background

details of the atmosphere and near-surface environment of Mars. The effects of topography upon dust storm initiation and atmospheric circulation are discussed, though the physics of the planet's interior are naturally not covered. There is a very good discussion of the role of water in shaping the ancient landscapes, and long-term changes in the martian climate also receive attention. The book concludes with a very balanced discussion of how and to what extent Mars might in the future be colonised and/or terraformed, and for what reasons.

The book is beautifully printed and bound, with a set of excellent colour plates that focus largely upon climatic modelling, and it is also extensively illustrated throughout the text. Although its fairly high price will make it less interesting to individuals to buy on a personal basis, it is recommended without hesitation to professionals in the field, and for purchase by University libraries.

Richard McKim

The present Director of the BAA Mars Section, Dr Richard McKim has carried out original research in the field of martian dust storms since 1980.

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