

Thunderstones and Shooting Stars: The Meaning of Meteorites by Robert T. Dodd. Harvard University Press, 1986. ISBN 0 674 89137 6 (hardback) £21.25. 196 pp.

This is a friendly, easy-going, but nevertheless highly systematic, amble through current meteorite studies and theories. Having just put the book down, one has the vision of a friendly, authoritative gentleman, ripe with childhood recollections and anecdotes, leading us patiently through the meteorite displays of a major museum, the enthusiasm of youth shining brightly in both eyes. The text is a delight, and the audience for which it is intended – informed laypeople and junior undergraduates – will find it anything but intimidating.

In this manner, the book describes the statistics of meteorite recovery, their prime properties (as perceived by the petrologist, the analytical chemist and the nuclear chemist), potential sources (planets, asteroids, comets), and the objects that were the source of the chondrites – the 'primitive' meteorites of essentially solar composition. There are three chapters concerning the rare igneous meteorites (e.g. iron meteorites, the Martian and lunar meteorites, and so on) and two final chapters relating meteorite data to the formation of the solar system and life on Earth, including biological extinctions.

Although it is clear from the text that major contributions have been made by chemists, physicists and astronomers, the book dwells in particular depth on petrology; and readers will acquire, probably without knowing it at the time, an introduction to petrology well beyond that normally associated with semi-popular books on the topic. Phase diagrams, fractional crystallization, partial melting and Bowen's reaction series are covered in great depth, for example. There are also many imaginative, but simple, diagrams. The emphasis on petrology is not without cost, and the sections on meteorite classification and the formation of the solar system suffer, in different ways, from an inadequate discussion of chemical principles.

As a semi-popular description of meteorites and the petrology involved in their study, Dodd's book is a masterpiece and will be a most welcome addition to the bookshelves of its intended readership.

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