



Icy worlds of the solar system

by Pat Dasch (ed.)

Cambridge University Press, 2004.
Pp xii + 351. ISBN 0-521-64048-2
(hbk), £30.00.

Icy Worlds of the Solar System is an excellent little book. It is a collection of purpose-written, illustrated essays by leading planetary scientists that have been brought together by writer and editor Pat Dasch, a former Chief Executive of the US National Space Society. This is an effective combination since the book has real authority yet shows many signs of the careful editing needed to make such a work easily accessible to the public audience at which it is aimed.

The coverage is remarkably wide. Robert Bindschadler gets things off to a fine start with a comprehensive survey of the history and significance of ice on Earth. This dense but clear article explains everything from the parabolic profile of terrestrial glaciers to the role of polar ice as a repository of meteorites. It provides a good background for the plethora of mainly extraterrestrial topics that follow. The current evidence for ice in craters on the Moon and Mercury is discussed by Bryan Butler, along with the future space missions designed to finally settle the issue. The frozen landscape of Mars and the icy moons of the outer Solar System are covered by Michael Mellon and Paul Schenk respectively.

The similarity of Triton and Pluto is emphasised by John Stansberry, who goes on to describe the growing families of trans-Neptunian and Kuiper belt objects. This generally outward directed survey is rounded off by Dale Cruikshank with a dis-

cussion of the ancient ice that can be expected to be found in comets, and the role of comets in clarifying the origin and evolutionary history of the Solar System. In addition to all this, there is one other essay that enriches the mix; a study of how the Earth got its atmosphere. This is well up to the standard of the other articles but, despite the important role of icy planetesimals in the story, it seems rather out of place in this particular collection.

Although I very much enjoyed this book, I do have three criticisms. First, I was very disappointed that the publishers had chosen to present the illustrations in black and white. I suspect this may have been a late decision since, in what is generally a carefully edited work, there are still some references (e.g. in the figure caption on page 29) to the colour which is so sadly lacking. Anyone familiar with modern planetary images will recognise many of those included in this book and will appreciate what the reader is missing. My second and third criticisms also relate to absences. Despite careful writing and editing, I think the book would have benefited from a glossary, and it's also a shame that the editor chose not to include an article on the basic physics and chemistry of ice, possibly as an appendix. Still, apart from the lack of colour, these are minor complaints about a book that will richly reward readers for the time they devote to it.

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