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# Ice Worlds of the Solar System

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Michael Carroll

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Their Tortured Landscapes and Biological  
Potential

 Springer

Michael Carroll  
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## A Note About This Book

The natural satellites of the Solar System have become individual worlds to us, far more than star-like objects attending their important planetary overseers. But to understand the pattern and overall design of their natures, we have organized them (primarily) by how active they are. After visiting the largest asteroid—the dwarf planet Ceres—we will dive into the details of worlds beyond, beginning with the ones that are the most geologically tame. From them, we'll progress to the most complex planets and moons, the ones with ice crusts covering oceans. This progression from geologic simplicity to complexity will help the reader to understand the ice worlds as an interrelated family within the Solar System's clan of asteroids, comets, icy and rocky moons, terrestrial planets, and gas and ice giants. It's a strange and beautiful realm filled with worlds of frost and fire.

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## About the Author

**Michael Carroll** received the AAS Division for Planetary Sciences' Jonathan Eberhart Award for the best planetary science feature article of 2012, an article based on his Springer book *Drifting on Alien Winds*. He lectures extensively in concert with his various books and has done invited talks at science museums, aerospace facilities, and NASA centers. His two decades as a science journalist have left him well-connected in the planetary science community. He is a Fellow of the International Association for the Astronomical Arts and has written articles and books on topics ranging from space to archaeology. His articles have appeared in *Popular Science*, *Astronomy*, *Sky & Telescope*, *Astronomy Now* (UK), and a host of children's magazines. His twenty-some titles also include *Alien Volcanoes* (Johns Hopkins University Press), *Space Art* (Watson-Guptill), *The Seventh Landing* (Springer 2009), and *Drifting on Alien Winds* (Springer 2011). His latest book—his eighth from Springer—is in Springer's Science and Fiction series, a novel called *Lords of the Ice Moons* (2019).

Carroll has done commissioned artwork for NASA, the Jet Propulsion Laboratory, and several hundred magazines throughout the world, including *National Geographic*, *Time*, *Smithsonian*, *Astronomy*, and others. One of his paintings is on the surface of Mars—in digital form—aboard the Phoenix lander. Carroll is the 2006 recipient of the Lucien Rudaux Award for lifetime achievement in the Astronomical Arts.