

aeolian processes, effects of wind erosion on impact craters, and consequences for understanding martian chronology are presented by Greeley and colleagues. They recommend that rates of erosion, burial and exhumation by aeolian processes be quantified for large landforms. The next chapter by Hartmann suggests that gullies observed on martian hillsides formed as a consequence of recent melting of permafrost ice by episodic, geothermal activity. The present status of the martian atmosphere and its history is then discussed by Encrenaz using ground and space based remote sensing data, and Viking *in situ* mass spectrometry measurements. Additionally, measurements of argon, krypton, xenon and other volatiles in martian meteorites indicate the composition of the martian atmosphere (Bogard and colleagues). The concluding chapter by Hartmann and colleagues presents an important summary of the current status of martian research and provides crucial research directions for the future.

In summary, this is a very useful and eminently readable book, which reflects the interdisciplinary nature of martian research. It also brings forth new knowledge since the last major Mars conference volume was published by Kieffer and colleagues in 1992. The book is an invaluable starting point and will serve as standard reference material for future Mars research work.

Debabrata Banerjee
Arkansas–Oklahoma Center for
Space and Planetary Science
Department of Physics
Oklahoma State University
Stillwater, Oklahoma 74078, USA



Higher than Everest: An Adventurer's Guide to the Solar System by Paul Hodge. Cambridge University Press, Cambridge, United Kingdom, 2001, 244 pp., \$28.00 hardcover (ISBN 0-521-65133-6).

Imagine for a moment what Sir Edmund Hillary and Tenzing Norgay must have experienced on May 29, 1953 as they climbed to the summit of Mt. Everest. The surrounding terrain was bleak, the temperature frigid, and the air thin. At 29 000 feet, Mt. Everest must have seemed somewhat alien to the two adventurers; Hillary and Norgay probably felt as if they were the first to reach a new world in addition to being the first humans to climb Earth's tallest mountain. But in the twenty-first century, all of the tallest peaks and "new" worlds on Earth have been or are being explored, and there are very few "firsts"

remaining. What is the intrepid adventurer of the future to do? Perhaps he/she should organize an expedition to the caldera of Olympus Mons or to the ice cliffs of Miranda. In *Higher than Everest*, Paul Hodge describes these and other potential first-time expeditions to the solar system's most fascinating locales, many of which, as the book's title implies, are higher than Mt. Everest.

Higher than Everest is organized into 20 chapters, each describing a particular adventure to a special feature on a planet or satellite. Most of the expeditions deal with climbing mountains, cliffs, or volcanoes, but a few explore other realms such as canyons, impact craters, and subsurface oceans. The first 11 chapters are devoted to exploring the special features of the inner solar system, such as the Cliffs of Discovery on Mercury, Olympus Mons on Mars, Mt. Tepev on Venus, and Copernicus crater on the Moon. The next eight chapters outline potential adventures to the outer solar system's most enigmatic features, such as Jupiter's upper atmosphere, the ice cliffs of Miranda, and the volcanoes of Io. The last chapter, "All Nine", represents a grand finale to this whirlwind tour of exotic places. Here Hodge lists the highest planetary features on all nine planets for those adventurers who want to "bag" the highest "peaks" in the solar system.

In addition to the "adventurer's guide," each chapter of Hodge's work also contains a brief description of the planetary body in question. He explains what is currently known about the object as well as some possible theories on how it may have formed. He often includes a historical perspective to help the reader place the planetary object and its special feature in the proper context, and depicts each expedition as fact-gathering as opposed to exploration solely for the sake of adventure. Hodge supports the text with diagrams and images, many of which are based on data from NASA spacecraft missions. He also uses comparative pictures of Earth features to explain some of the mechanisms believed to have led to the formation of similar landforms on the extraterrestrial bodies described.

Because it is written for a more general audience, serious scholars would probably not find *Higher than Everest* particularly useful. As a general text, this work is adequate. Its main strength is that it provides a unique, enjoyable approach for teaching planetary science in introductory courses or public forums. It is probably not detailed enough to be used as a textbook, but portions of it may be useful for supplementing lectures on specific features within our solar system.

Paul Abell
Department of Earth and Environmental Sciences
Rensselaer Polytechnic Institute
Troy, New York 12180, USA