political and scientific disputes of the professional societies of "ethnologicals" and "anthropologicals" divided by Darwinian issues. Less attention is paid to various styles of presenting and interpreting evidence of human diversity, the textual and documentary conventions that altered over the course of the period, and to many scholars and researchers difficult to nail with prevalent doctrinal pegs. In the case of John Crawfurd, for example, Stocking eventually acknowledges that this ethnological "polygenist," who argued a diversity of human races on linguistic grounds, was nevertheless a staunch opponent of slavery (p. 252).

Victorian Anthropology is not just a period history of anthropology but an anthropologically informed history of broader aspects of the Victorian period. Those "other Victorians" must be understood by way of their own understandings of others. This volume is a stately summing up, and it establishes a compelling new point of departure for the history of anthropology among the human sciences.

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Planetary Moons

Satellites. JOSEPH A. BURNS and MILDRED SHAPLEY MATTHEWS, Eds. University of Arizona Press, Tucson, 1986. xii, 1021 pp., illus. $55. Space Science Series. Based on a conference, Ithaca, NY, July 1983.

Our solar system contains only nine planets; indeed, some critics of little Pluto would have us reduce that number to eight. Unfortunately, theoretical models for the origin of the solar system tend to contain more than eight free parameters, and unique cosmogonic models cannot be crafted to account for the planets at hand. This situation has led to the common lament of planetary scientists that there are "too few planets." The situation is not readily remedied. The two most promising paths are to search for planets about nearby stars and to explore the larger satellites in our own planetary system. *Satellites* brings us nicely up-to-date on the latter effort.

Observations of the satellites of the Jovian planets by the Voyager 1 and 2 spacecraft (1979–1986), of the Martian moons Phobos and Deimos by Mariner 9 (1971) and the two Viking Orbiters (1976), and of Pluto and Charon by Earth-based observers (1980–1986) are distilled in this massive and fascinating book. An up-to-date review of thinking about Earth's moon is also included, showing that the cessation of American lunar spacecraft missions in 1972 and Soviet missions in 1976 has not fully prevented scientists from *thinking* about the subject.

Although small satellites and planetary rings undeniably have a certain charm and are attended by their own peculiar and interesting problems, the strongest incentive to most prospective readers of *Satellites* is the opportunity to learn more about the large, evolved, complex, planet-sized satellites (the moon; Jupiter's four Galilean satellites, Io, Europa, Ganymede, and Callisto; Saturn's largest moon, Titan; and Neptune's oddly situated Triton). The last five of these all contain substantial quantities of ices and hence can exhibit melting and volcanism even at temperatures far below 0°C. All of these satellites exhibit a clear trend toward higher contents of volatile materials at greater distances from the sun, as do the solid planets themselves.

To aficionados of satellites, however, the intermediate-sized bodies are a treasure trove of information on planetary evolution: bodies with radii less than about 100 km cannot melt and differentiate by density as a consequence of the decay of long-lived radioisotopes within them. Conversely, ice-rich bodies with radii larger than a few hundred kilometers cannot avoid at least partial differentiation and internal tectonic activity. Thus these mid-sized models (and the largest few dozen asteroids) provide valuable tests of our theories of planetary thermal evolution. Obviously, then, the smallest satellites should generally be very ancient, primitive, undifferentiated samples of the raw solid materials out of which the planets and larger satellites were formed. Thus planetologists are led naturally to the comparative study of planets with all the many varieties of satellites they possess.

The account of the satellites presented here is truly mind-stretching: lava flows of aqueous ammonia solution at −100°C; volcanic plumes of sulfur dioxide and sulfur vapor 250 km high; surfaces that seem to be collages of fragments from three or more radically different types of bodies; oceans of liquid nitrogen, methane, and ethane; a planet-sized body stained brown by organic polymers; holes "bitten" out of radiation belts by tiny satellites; donuts of hydrogen, sodium, and potassium circling planets near the orbits of large moons; extremely narrow, well-disciplined planetary rings "shepherded" by small nearby satellites; a planet-sized moon in a retrograde orbit about its primary body. Of necessity, research on these phenomena involves a host of scientists from widely diverse disciplines.

The organization and authorship of this book reflect that interdisciplinary character. The 45 authors are drawn from the ranks of astronomy, geology, chemistry, physics, aeronomy, geophysics, and geochemistry. The editors have, following the tradition of the series in which this volume appears, invited from two to five authors with very different disciplinary backgrounds to collaborate on each of the 18 chapters. These "arranged marriages" have for the most part parented chapters that can be read by scientifically literate nonspecialists. Planning this endeavor must have been challenging.

Satellites joins a distinguished family of over a dozen books in the Space Science Series of the University of Arizona, which boasts a 13-year history of excellence. This volume is not only technically meritorious and current, it is written (considering its very diverse authorship) in a surprisingly even and readable style. Planetary scientists are obliged to read it. Denizens of the more classical "parent disciplines" of the planetary sciences should find it a stimulating and accessible survey of one important aspect of the study of our solar system. And anyone who thinks that we can truly understand planet Earth without paying diligent attention to the study of other planetary bodies should find this book enlightening.

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Transmitters and Receptors

Excitatory Amino Acid Transmission. T. PHILIP HICKS, DAVID LODGE, and HUGH MCLENNAN, Eds. Liss, New York, 1987. xxvi, 426 pp., illus. $69.50. Neurology and Neurobiology, vol. 24. From a symposium, Banff, Alberta, July 1986.

The purpose of the meeting whose proceedings constitute this volume was to discuss the role of excitatory amino acids and their associated receptors in synaptic transmission within the vertebrate central nervous system. As one is reminded frequently throughout the book, there are at least three pharmacologically distinguishable postsynaptic receptors for excitatory amino acids—the *N*-methyl-D-aspartate (NMDA), kainate, and quisqualate receptors—with the possibility of additional receptor subclasses at presynaptic sites. Each of these receptors can be found throughout the central nervous system. Their distributions are heterogeneous and their physiological and behavioral effects variable.

More than 100 authors contributed 74 papers covering diverse facets of their re-