BOOK REVIEW

Th. Henning (ed.): *Astromineralogy: Lecture Notes in Physics*, vol. 609, Edited by ISBN: Springer, New York, 2003, Hardback 291 pages, ISBN: 3-540-44323-1, Price: 66.95 Euro, 62$.

This book describes a new research discipline within the field of cosmic dust, namely Astromineralogy. Astromineralogy has emerged in recent years from synergies between new high-resolution satellite observations of interstellar and circumstellar environments, comets, laboratory studies of cosmic dust analogues and the analysis of extraterrestrial materials such as meteorites and interplanetary dust particles (IDPs).

The eight chapters review the state of the art in each of the respective research areas. First, a historical review of dust mineralogy precedes a chapter discussing theoretical calculations of dust growth and processing in stellar outflows. The following two chapters discuss the mineralogy of interstellar and circumstellar dust as revealed by the Infrared Space Observatory and the mineralogy of cometary dust in relation to its interstellar origin. A chapter on *in situ* studies of solid particles in our own solar system discusses new findings and the corresponding dust detection systems on-board space missions. Two chapters investigate the pre-solar heritage of IDPs and meteorites, which is made possible by using new sensitive experimental techniques, including nano-SIMS and isotopic analysis. The final chapter describes progress in laboratory studies of cosmic dust analogues and their role in identifying the physical and chemical processes of cosmic dust formation.

Astromineralogy has emerged as a new research discipline in the last decade mainly because new infrared satellite data have been available. Furthermore, innovative new techniques enabling the successful study of tiny quantities of extraterrestrial material have provided important new knowledge. The book provides a comprehensive overview about the formation of 'astrominerals' in stellar outflows, their distribution and evolution in interstellar and circumstellar environments, their characterization in comets, meteorites and IDPs, and supporting laboratory studies of dust analogues. The new findings discussed in 280 pages indicate that Astromineralogy provides a tool to establish a link between the original interstellar cloud and solar system material and therefore provides important constraints for the history of our solar system.

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