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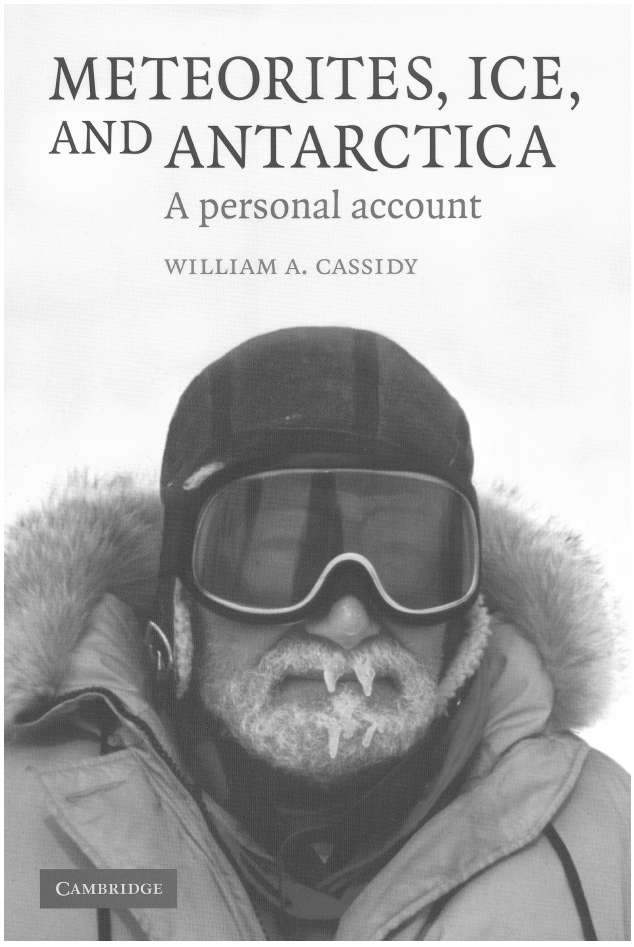
Book Review

Meteorites, ice, and Antarctica, by William A. Cassidy. Cambridge University Press, 2003, 349 pp., $30.00, hardcover, (ISBN 0-52125–872–3)



In the international meteorite community, the name Bill Cassidy is intimately connected to the ANSMET project (ANtarctic Search for METeorites), which, since 1976, has presented meteorite researchers around the globe with new and scientifically valuable material. In 1969, Japanese scientists discovered Antarctica to be a bonanza for meteorites. Up to now, it has produced more than 30,000 meteorite specimens from different locations of the Antarctic continent. These finds have had an immense impact on the progress of cosmochemistry and related fields during the last 30 years.

The great scientific success of the ANSMET program is, in my opinion, also based on two additional (and fortunate) points: 1) the meteorites, which are collected in a way that minimizes terrestrial contamination, are first documented, characterized, and handled by the best-qualified experts at the Johnson Space Center in Houston, Texas and the Smithsonian Institution in Washington D.C. These institutes also have a lot of experience with lunar rocks. From their experience with lunar rocks, logistics were in place to give interested scientists access to the meteorites samples with no (or almost no) bureaucratic efforts; 2) the ANSMET team always had members that were carrying out active research on meteorites. The unique Antarctic field experience raised their interest in these rocks and made them rather "popular" for scientific investigations.

Part I (about 100 pages) of Cassidy's book describes how this project began, the struggles with reviewers of the funding institution, the first experience with Japanese partners, and how finally, after 16 expeditions, the recovery of meteorites in Antarctica became nearly routine.

The second part (120 pages) of the book is a more general section on meteorites, especially those from the Moon and Mars, with emphasis to the influence of these Antarctic meteorites to current research topics. The final part (110 pages) discusses some properties of Antarctic meteorites in comparison to modern falls and discusses theories of concentration mechanisms.

This is not a textbook about Antarctic meteorites. The subtitle is "A personal account," which does not only refer to the first part but seems also to be the case for the more general parts of the book. However, it is not as "personal" as Guy Consolmagno's chapter "Wide wild whiteness" in his book *Brother Astronomer,* which describes very intimately the life within a group of meteorite hunters on the polar plateau (Consolmagno 2000). Cassidy always keeps his narrative some distance from his tent mates or party members. With his typical humor, he describes the struggles of the long path from an idea conceived in a meeting to its realization on the polar plateau. Part I contains many anecdotes and good stories, but—naturally—is a little short in Bill's own humorous experiences, as, for example, his remark after the 86/87 season on the success of a windmill generating power under Antarctic conditions: "I did not know how much energy is in one litre of fuel!"

The second part is written for the "intellectually curious general reader," who hopefully will also become a buyer of this book. It presents a very valuable summary on martian and lunar meteorites, written as a well-mixed conglomerate of scientific facts and nice stories. For physicists or chemists, the facts are maybe somewhat biased to the geological side of the

coin! This chapter does not only contain information for laymen, but meteorite "experts" may also learn new details, which are not generally known. This includes, for example, the history of the identification of the famous first lunar meteorite and the struggles of a fair distribution of its samples to interested scientific investigators.

The last part of the book contains a lot of statistics of Antarctic meteorites presented not only in tables but also in more than 20 similar-looking mass-frequency graphs (or better, bin number-frequency graphs. It is, at times, rather difficult to connect mass range and bin number). This section also addresses a number of problems under discussion, such as questions on possible different populations of Antarctic meteorites and "modern falls" or a changing flux of meteorites to Earth. In addition, this chapter also discusses models of Antarctic meteorite stranding surfaces and how meteorite investigations can help to learn about the Antarctic ice.

This book is a very valuable introduction to meteoritics for all persons generally interested in these rocks but does, naturally, focus on Antarctic meteorites. The book contains many interesting details and historically important facts and is, therefore, also recommended for the experts in this field.

It is a pity that the wonderful pictures in the text are only black and white and that only very few literature sources are given for further reading. However, these can be found in a recent summary on Antarctic meteorites given by R. Harvey, Bill Cassidy's successor as ANSMET leader (Harvey 2003).

REFERENCES

Consolmagno G. 2000. *Brother astronomer*. New York: McGraw-Hill. 229 p.

Harvey R. 2003. The origin and significance of Antarctic meteorites. *Chemie der Erde* 63:93–147.

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