

## Meteorites: Flux with Time and Impact Effects

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# Meteorites: Flux with Time and Impact Effects

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## Preface

Research on the twin themes of this Special Publication is proceeding at a great pace and, though this volume contains much new and interesting material, no doubt much of it will be upstaged by further discoveries and sophisticated scientific research in the next few years. For instance, only part of the Nullarbor Plain has been systematically searched for meteorites; the yield to date is already about 250 separate meteorites (excluding pairings) as compared with about 20 when I was active in Perth and had to rely on finds by rabbit trappers and the searches of W. H. Cleverly. There must also be many further finds to be made in Antarctica and the Sahara. The immense Chicxulub impact structure at the K–T boundary has at present only been investigated in a preliminary fashion and new finds such as the Morokweng Structure in the Kalahari Desert and the Gliksen structure in Australia (named after my former research student to whom Gene Shoemaker also allocated the name of an asteroid) have only recently been recognized. The only reason for wanting to live to a great age is to experience the excitement of the new discoveries in meteoritics and planetology that will surely emerge in the next decades, and change our concepts.

I am particularly pleased that reviews by palaeontologists have been included in this volume. The problem of mass extinctions can have no simple answer and workers in both the meteoritic field and palaeontology must read and consider deeply each other's output and not form two adversary camps. Despite the evidence of a major impact at the K–T boundary, there is overwhelming evidence to suggest many contributory factors, both of extraterrestrial and terrestrial origin, cause mass extinctions and the oversimplified 'media' image of all manner of life forms 'frying in an immense impact produced holocaust' is impossible to accept on the available evidence. The truth must be more complicated. There are strong and real conflicts in the evidence and only exhaustive further studies will take us further towards a real understanding of mass extinction in the geological record.

There has been much discussion lately about the definition of a geologist and the boundaries of geology as a science. Some favour narrow definitions and some wide definitions embracing planetary science. Geologists are specialist planetologists, by definition primarily concerned with one single planet in the solar system, the one on which they live. However, the science of geology gives them unique insights into the surface development and internal workings of planetary bodies so they must also be involved, albeit alongside scientists of other disciplines, in the study of extraterrestrial bodies and processes, including meteoritics. Meteoritics and study of, say, the Moon, also provide a feedback, giving them insight into the history and workings of their own planet, particularly in its very early, obscured development. So this rather unusual topic, relating to astronomy, planetology and meteoritics, is an entirely proper addition to the growing list of Geological Society Special Publications. It is also a model in interdisciplinarity, bringing together as it does geoscientists and astronomers.

**Acknowledgements.** Late in 1995, I was asked to act as convenor of a Fermor Lecture Meeting in 1997 on a meteorite-related topic. Although I spent a decade in the 1960s supervising and cataloguing the collections of the Western Australian Museum, encouraging new finds there, studying the Wolfe Creek crater and preparing three books on meteorites and possible impact



structures, I was obliged in the 1970s to move on to other geological preoccupations because of the need to secure an adequate salary after I left the University in Perth. So, though I had maintained my interest in meteoritics and planetology, it was necessary to enrol as co-convenors active workers in the field of meteoritics, and I sought out Dr Hutchison and Dr Grady at the Natural History Museum who proposed the theme of 'Flux with Time and Impact Effects'. We completed the team by inviting Dr Rothery of the Open University, a geologist with strong planetological interests. These, my co-convenors, have put in an immense amount of hard work both organizing the Fermor Meeting, and preparing this volume for the publishers. Because of the fact that they were equipped with the logistic base necessary, very much of the load in connection with this publication has fallen on Dr Hutchison and Dr Grady, while I myself have carried out a coordinating role including a final coordinating editor's review of the articles, something very necessary in the case of all such special publications, in order to eradicate inconsistencies, missing or incorrect references, etc. My gratitude to my three co-editors is immense and it has been a pleasure working with them. I must also thank the referees who are listed below.

**Joe McCall**  
**December 1997**

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