

Award

2008 Leonard Medal for Edward R. D. Scott

Ed Scott's meteorite research is marked by its breadth. His contributions range from core formation and evolution to chondrule formation to impact processing. He has a great facility for identifying important problems in meteoritics. He gathers the important experimental data by mineralogical and petrological approaches as well as neutron activation and interprets these data in terms of detailed models. From these data and models, he has developed a very good understanding of the physical processes occurring in the solar nebula and in asteroidal parent bodies. In the view of his many colleagues, Ed is one of the leading researchers in meteoritics and cosmochemistry.

Dr. Scott received his Ph.D. in 1972 from the Department of Earth Sciences at the University of Cambridge. He did postdoctoral research with Dr. John T. Wasson of UCLA and with Dr. Stuart O. Agrell of the University of Cambridge, and was a Senior Fellow at the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Dr. Scott was a Senior Research Scientist at the Institute of Meteoritics, University of New Mexico, for the period of 1980 to 1990. Dr. Scott has been a planetary scientist, equivalent to a full professor, in the Hawaii Institute of Geophysics and Planetology at the University of Hawaii since 1990.

During the early years (1970s) of Dr. Scott's research career, he made remarkable discoveries, developing an understanding of the chemical variations within groups of iron meteorites and the significance of fractional crystallization, as well as the geochemical relationships between pallasites and iron meteorites. In addition, he was the first person to do transmission electron microscopy on iron meteorites, which led to the identification of the cloudy zone in taenite, to the identification of clear taenite as ordered FeNi, and to the development of an explanation for the phase transformations which controlled the formation of these microstructures. Dr. Scott's work in the area of iron meteorites and pallasites is so important that it continues to be cited some 30 years later.

Since his first decade of research, Dr. Scott has written significant research papers on ordinary chondrites, chondrules and other components of chondrites, nebular and asteroidal features of a variety of carbonaceous chondrites, ureilites and planetary accretion, and the formation of mesosiderites. More recently, he has worked on the formation of magnetite in Martian meteorites and the thermal processing of silicate dust in the solar nebula. He has helped elucidate



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the nebular origins of primitive components in chondritic meteorites, the nature of solar nebular processes and the accretion of nebular dust into asteroids and planetesimals, and the origin and evolution of the solar nebula, asteroids, and the solar system.

One of Dr. Scott's major contributions to his scientific discipline is his ability to synthesize various research papers, including his own, in a given area of meteoritics developing valuable insight into what we understand and what issues remain to be investigated. His review article with Dr. A. N. Krot in 2003, for example, gave the first detailed geochemical review of components in primitive chondrites and their origins.

In addition to over 130 reviewed research publications, Dr. Scott has served his profession and the Meteoritical Society as councilor and secretary with distinction. He was a member of the organizing committee for several technical workshops as well as the 37th, 40th, and 47th annual meetings of the Meteoritical Society, and has served as an associate editor of the *Journal of Geophysical Research*, Proceedings of the Lunar and Planetary Science Conference, and *Meteoritics & Planetary Science*.

One of Dr. Scott's most important contributions continues to be his insight into the sophisticated problems associated with understanding the origin of meteorites, asteroids, and the solar system. His wide understanding of the

field of meteoritics has had a profound effect on many of his associates. Dr. Scott is a first-class scientist who has contributed in fundamental ways to his field, a person who has contributed in many ways to his profession, and perhaps more importantly a very unassuming person who contributes his time and insights freely to his colleagues.

It is for these contributions that the Meteoritical Society awards Edward R. D. Scott the 2008 Leonard Medal.

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