CHONDRULES

Chondrules are sub-millimetre spherical metal-sulphide-silicate objects which formed from the solar protoplanetary disk material, and as such provide an important record of the chronology and conditions of the solar system in pre-planetary times. Chondrules are a major constituent of chondritic meteorites; however, despite being recognised for over 200 years their origins remain enigmatic. This comprehensive review describes state-of-the-art research into chondrules, bringing together leading cosmochemists and astrophysicists to review the properties of chondrules and their possible formation mechanisms based on careful observations of their chemistry, mineralogy, petrology and isotopic composition, as well as laboratory experiments and theoretical modelling. Current and upcoming space missions returning material from chondritic asteroids and cometary bodies have invigorated research in this field, leading to new models and observations, and providing new insight into the conditions and timescales of the solar protoplanetary disk. Presenting the most recent advances, this book is an invaluable reference for researchers and graduate students interested in meteorites, asteroids, planetary accretion and solar system dynamics.

SARA S. RUSSELL is Head of Planetary Materials at the Natural History Museum in London, England, and a visiting professor at the Open University. She is a fellow of the Meteoritical Society and has been honoured with the eponymous asteroid 5497 Sararussell. She has been awarded the Antarctica Service Medal of the United States of America and the Bigsby Medal of the Geological Society. Her research interests include the formation of the solar system and the evolution of the Moon.

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