

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.

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