INTERNATIONAL ASTRONOMICAL UNION

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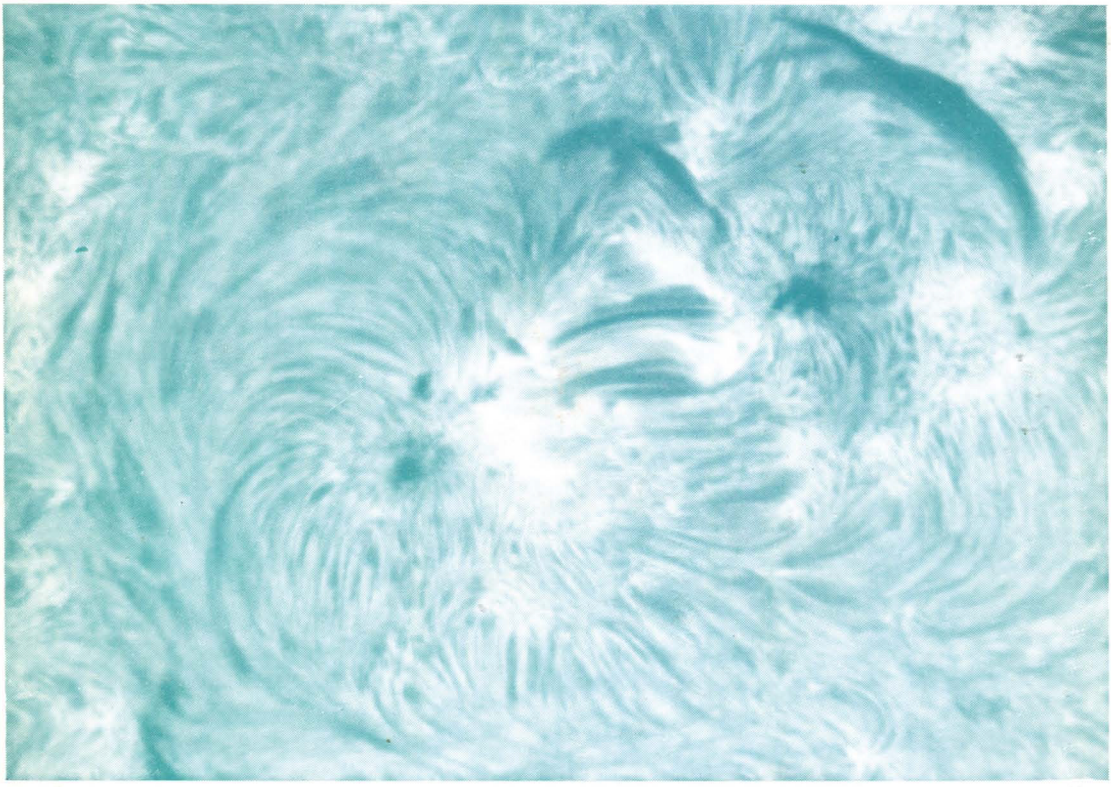
CHROMOSPHERIC FINE STRUCTURE

Edited by R. GRANT ATHAY



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Chromospheres undoubtedly exist in the majority of stars; and by implication, chromospheric fine structure exists in the majority of stars as well. Only in the case of the Sun, however, can we hope to isolate and identify the true nature of the fluid motions giving rise to spectral line broadening and to the transport and dissipation of mechanical energy. No student of stellar atmospheres and convective layers can afford to be ignorant of or disinterested in the nature of solar fine structure.

The devotion of an I.A.U. symposium entirely to the topic of chromospheric fine structure at a time when models of the spherically symmetric chromosphere are still evolving constitutes a valid recognition of the growing feeling among solar astronomers that the chromosphere cannot be understood independently of its discrete structural features. Network structure, which seemingly borders the photospheric supergranule cells, persists intact throughout the chromosphere and most of the chromosphere-corona transition region. The network is the locus of the bright coarse mottles, and the spicule bushes and is the terminus for one end of the quiet chromospheric fibrils as well. Additionally, it is the locus of most of the magnetic flux of the quiet chromosphere. It is not surprising, therefore, that current studies of the chromosphere tend to center around efforts to better describe the network phenomena and to ascertain the physical properties of the network features. Clearly, the supergranule cells and associated network structures constitute a fundamental and singularly important feature of solar structure in the boundary layers. By implication, these same phenomena are equally fundamental to the structure and nature of the sub-photospheric convection zone.

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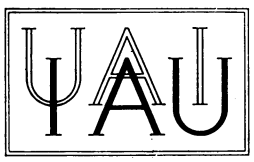

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