



The Observation and Analysis of Stellar Photospheres

By David Frank Gray

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The starlight we see comes from the outer layers of a star, from the region known as the photosphere. Most of what we know about stars is learned by studying the light from the photosphere. This book describes the equipment, observational techniques and analysis used in the investigation of stellar photospheres. The opening chapters describe the basic tools, such as spectrographs and light detectors, as well as the physics of radiative transfer and the construction of models. Next the author introduces the measurement and modelling of the continuum spectrum. This is followed by the study of spectral line radiation. The final chapters explain how these techniques enable astronomers to deduce valuable information on basic properties of stars. For example, temperature, radius, surface gravity, chemical composition, rotation rate, and velocity fields can be derived from stellar spectroscopy. This textbook is written clearly and at a level suitable for advanced undergraduates, graduate students and researchers working on the properties of stars. The book is filled with real examples of stellar observations and analysis. There is valuable data and calibrations that are useful in real research, as well as extensive references to the primary literature.

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'Every observer of stellar atmospheres should have this volume.' Observatory

About the Author

David F. Gray is Director of the Elginfield Observatory and Professor of Astronomy at the University of Western Ontario, London, Canada.

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