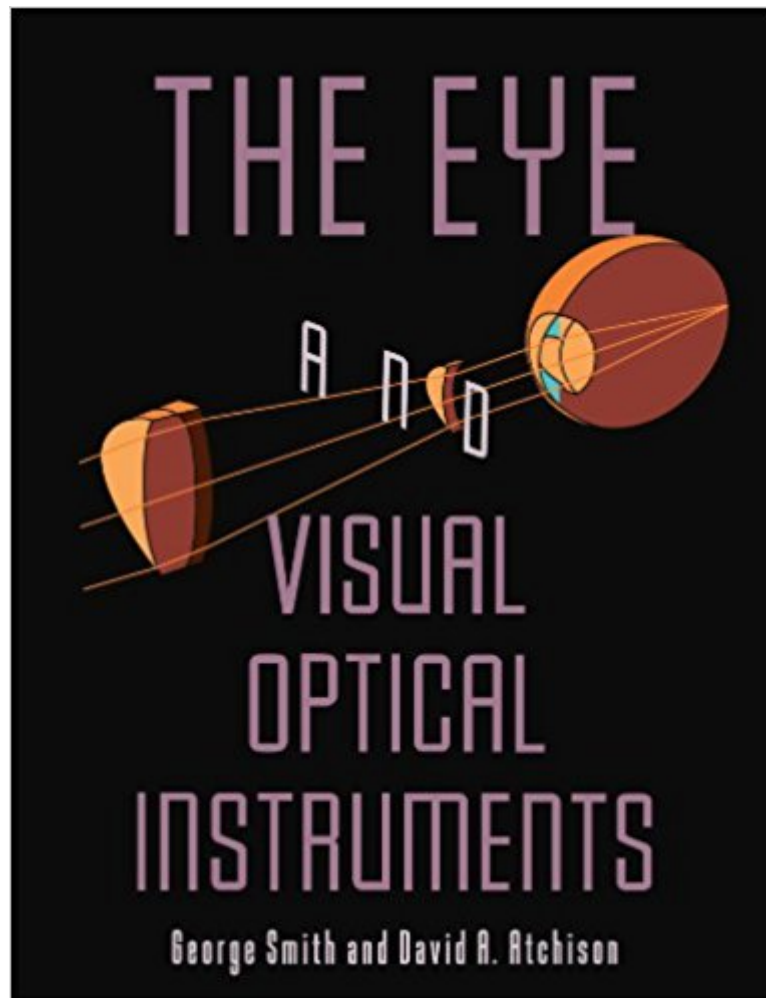




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# The Eye And Visual Optical Instruments



## Synopsis

A wide variety of optical instruments exists in which the human eye forms an integral part of the system. This book provides a detailed description of the visual ergonomics of such instruments. The book begins with a section on image formation and basic optical components. The authors then discuss various optical instruments that can be adequately described using geometrical optics, and follow this with a section on diffraction and interference, and the instruments based on these effects. There are separate sections devoted to ophthalmic instruments and aberration theory, with a final section covering visual ergonomics in depth. Containing many problems and solutions, this book will be of great use to undergraduate and graduate students of optometry, optical design, optical engineering, and visual science, and to professionals working in these and related fields.

## Book Information

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## Customer Reviews

A wide variety of optical instruments exists in which the human eye forms an integral part of the system. This book provides a detailed description of the visual ergonomics of such instruments. There are separate sections devoted to ophthalmic instruments and aberration theory.

I am a researcher in the field of visual optics. I first obtained a copy of this book nearly 5 years ago, when I was a lecturer at the University of Auckland. I thought the book was excellent then and the subsequent passage of time has reinforced my view. I refer to my copy constantly. When I am dealing with a new and complicated topic as part of my work my first instinct is to check if Smith and

Atchison have anything to say on the topic, and I'm usually rewarded. They nearly always provide good introductory material and analytical tools. The book contains very basic level material which is suitable for undergraduates in the area of clinical optics and develops these concepts to postgrad and research levels. The section on aberrations is extremely useful, although it does not use the Zernike polynomials that have become popular in the last few years, it has still allowed me to do useful analysis of my data. I have also found the sections on optical quality calculations extremely useful, and the appendices on schematic eyes are the most complete I've come across in the literature. I look forward to many subsequent editions of this text. An excellent book for researchers and students.

This book has good content, particularly for ophthalmic optics. The description of optical aberrations is useful. However, the treatment of paraxial optics is confusing. The authors should avoid the use of symbols that are not writeable (e.g. Cyrillic), and obscure Greek letters. All in all, a useful book.

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