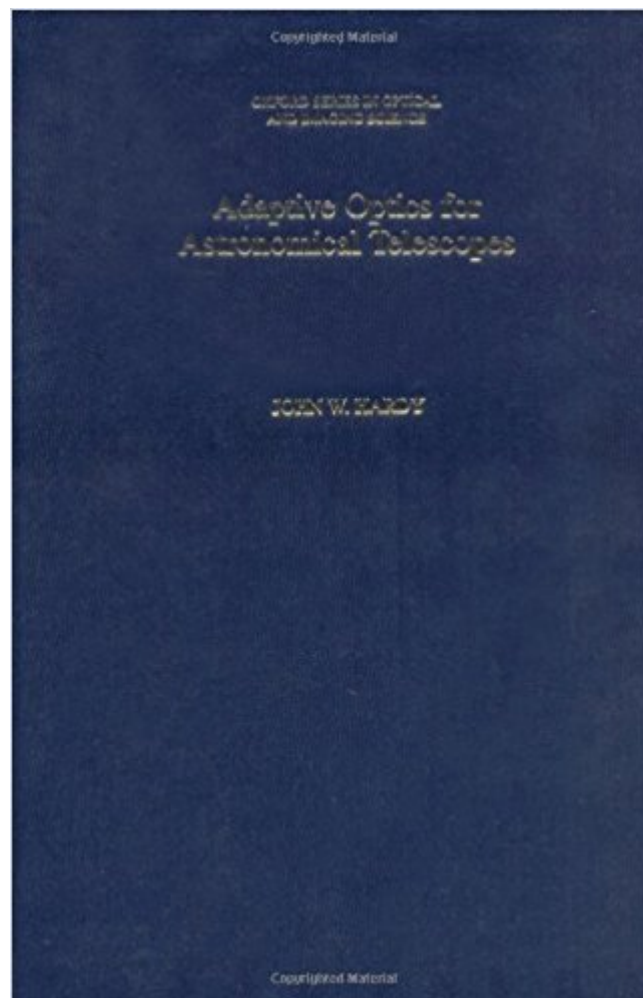


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Adaptive Optics For Astronomical Telescopes (Oxford Series In Optical And Imaging Sciences)



Synopsis

This book by one of the leaders in adaptive optics covers the fundamental theory and then describes in detail how this technology can be applied to large ground-based telescopes to compensate for the effects of atmospheric turbulence. It includes information on basic adaptive optics components and technology, and has chapters devoted to atmospheric turbulence, optical image structure, laser beacons, and overall system design. The chapter on system design is particularly detailed and includes performance estimation and optimization. Combining a clear discussion of physical principles with numerous real-world examples, this book will be a valuable resource for all graduate students and researchers in astronomy and optics.

Book Information

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Customer Reviews

"While any of the four [monographs available in the field of adaptive optics] is suitable for use in a graduate class in observational astronomy, by far the best of them is Adaptive Optics for Astronomical Telescopes, by John Hardy, a pioneer in adaptive optics who, as adaptive-optics project leader at ITEK Corp, led the research and technology effort that culminated in the first operational military adaptive optics system in 1981. Hardy's book . . . would be an outstanding choice for a graduate class, because each topic is explained completely from basic principles to the ultimate level of complexity. . . . Once one is immersed in the rhythm of the presentation, the book is a pleasure to read. The strengths of Hardy's work include his knowledge of the US military literature

in this field and his even-handed presentation of the many competing technologies that contribute to an adaptive-optics system."--Physics Today

Very dense, very good coverage. If you have any interest in the history or major concepts in this field, this is a very good book.

When I asked an astronomer what book he recommended for adaptive optics he disappeared into the control room and returned with 'Hardy'. If you are a technical person---read this book first. Than Roddier...

The book does an excellent job of describing the basic principles and the practice of adaptive optics for astronomical applications. The author was a pioneer in adaptive optics and in the 1970s he built the first system capable of compensating a large astronomical telescope at visible wavelengths. The book gives a good history of adaptive optics including an excellent bibliography. Wavefront sensors, correctors, laser beacons, and wavefront reconstruction and control systems are described. Current adaptive optics programs are described and future prospects are discussed. I had the good fortune of working with the author at the time the first adaptive optics system was built and the author conveys in this book the excitement we felt about adaptive optics at that time. While the book is very specialized and technical, and the number of readers who will enjoy the book is limited, if you are interested in adaptive optics the reading of this book is a must.

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