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5.7 The Eikonal Equation. The Complete Integral5.8 The Eikonal Equation. The General Solution; 5.9 The Eikonal Equation. Proof of the Pudding; Part II The k-function; 6 The Geometry of Wave Fronts; 6.1 Preliminary Calculations; 6.2 The Caustic Surface; 6.3 Special Surfaces I: Plane and Spherical Wavefronts; 6.4 Parameter Transformations; 6.5 Asymptotic Curves and Isotropic Directions; 7 Ray Tracing: Generalized and Otherwise; 7.1 The Transfer Equations; 7.2 The Ancillary Quantities; 7.3 The Refraction Equations; 7.4 Rotational Symmetry; 7.5 The Paraxial Approximation

7.6 Generalized Ray Tracing - Transfer7.7 Generalized Ray Tracing - Preliminary Calculations; 7.8 Generalized Ray Tracing - Refraction; 7.9 The Caustic; 7.10 The Prolate Spheroid; 7.11 Rays in the Spheroid; 8 Aberrations in Finite Terms; 8.1 Herzberger's Diapoints; 8.2 Herzberger's Fundamental Optical Invariant; 8.3 The Lens Equation; 8.4 Aberrations in Finite Terms; 8.5 Half-Symmetric, Symmetric and Sharp Images; 9 Refracting the k-Function; 9.1 Refraction; 9.2 The Refracting Surface; 9.3 The Partial Derivatives; 9.4 The Finite Object Point; 9.5 The Quest for C; 9.6 Developing the Solution

9.7 Conclusions

Sommario/riassunto	In this sequel to his book, ""The Optics of Rays, Wavefronts, and Caustics,"" Stavroudis not only covers his own research results, but also includes more recent developments. The book is divided into three parts, starting with basic mathematical concepts that are further applied in the book. Surface geometry is treated with classical mathematics, while the second part covers the k-function, discussing and solving the eikonal equation as well as Maxwell equations in this context. A final part on applications consists of conclusions drawn or developed in the first two parts of the book, discussi