

CONTENTS

<i>Preface</i>	<i>page</i> vii
<i>Bibliography</i>	x
CHAPTER I	
THE PRINCIPLES OF GEOMETRICAL OPTICS FOR ORDINARY MEDIA	
1. The nature of geometrical optics	1
2. Fermat's principle: laws of reflection and refraction	2
3. Normal and skew congruences: theorem of Malus	8
4. The construction of Huyghens	12
CHAPTER II	
THE CHARACTERISTIC FUNCTIONS FOR INSTRUMENTS FORMED OF ORDINARY MEDIA	
5. The characteristic function V	17
6. The characteristic function W	24
7. The characteristic function T	29
8. The T -function for reflection or refraction at a sphere or a paraboloid of revolution	36
CHAPTER III	
THIN BUNDLES OF RAYS	
9. Foci and focal lines	40
10. Aberration at a focal line	50
11. Principal foci: aberration at a principal focus	52
CHAPTER IV	
THE INSTRUMENT OF REVOLUTION	
12. Approximate form of T for any reflecting or refracting surface of revolution	57
13. General form of T : method of calculation up to the fourth order	61
14. First order theory: object and image points: cardinal points	68

CONTENTS

15. Spherical aberration, astigmatism, coma, curvature of the image, distortion	<i>page</i> 76
16. The sine condition of Abbe	87
17. Calculation of T for a thin system	89
18. Aberrations of a thin lens	95
19. Chromatic aberrations	96

CHAPTER V

HETEROGENEOUS ISOTROPIC MEDIA

20. Fermat's principle	99
21. The characteristic function V	106
22. The construction of Huyghens	107