

## Contents

<i>List of Illustrations</i>	viii
<i>Preface</i>	xiii
<i>Acknowledgements</i>	xvii
<b>1 Optics</b>	1
Rock, clay and ceramic mirrors	1
Plastic optics	3
Metal and composite material mirrors	3
Glass/metal mirrors	6
Flexible mirrors	10
Liquid mirrors	10
Membrane mirrors	15
Flexible glass mirrors	16
Gaseous mirrors	19
Planets, stars and galaxies used as optical elements	19
Classification by number of optical elements	21
Single-mirror systems	21
The schiefspiegler	34
Three-mirror systems	37
Wide field optics	44
Miscellaneous optics	52
Moving the optics around	57
Convertible telescopes	58
Pinholes and optics that don't look like optics	60
Double field telescopes	61
Lens/mirror combinations	65
Eliminating diffraction spikes	69
<b>2 Telescope mounts</b>	71
Zero-axis telescopes	71
One-axis telescopes	74

## CONTENTS

<b>Two-axis telescopes</b>	79
Altitude-azimuth (alt-az) mounts	79
Equatorial mounts	82
Elevation-elevation (el-el) mounts	84
<b>Three-axis telescopes</b>	86
<b>Four-axis telescopes</b>	89
<b>Infinite-axis telescopes</b>	91
<b>Floating telescopes</b>	93
<b>3 Telescope and mount materials</b>	95
Tube materials	97
Wood	98
Mount materials	100
Poncet mounts and other equatorial platforms	101
Axle materials and bearings	103
Mount vibrations	105
<b>4 Strange drivers</b>	110
Tangent-arm drives	115
Manual drives	119
Motive power	122
Miscellaneous drives	125
<b>5 Moving the whole telescope</b>	129
Moving the telescope short distances	129
Trailer-mounted telescopes	130
Truck-mounted and vehicle-mounted telescopes	138
<b>6 The moving eyepiece</b>	141
Riding the telescope	144
<b>7 The stationary eyepiece</b>	147
Putting the observer in the center	147
Turret telescopes	149
Springfield mounts	155
Coudé mounts	161
Siderostats, heliostats, coelostats and uranostats	164
Telescopes built into houses	173
<b>8 Limits</b>	180
Large aperture refractors	180
Long focal length refractors	182
Large telescope platforms	184
Multiple mirrors and lenses	185
Multiple optical systems on a single mount	186

## CONTENTS

Noncoherent multiple mirror light-buckets	187
True multiple mirror telescopes	195
Arrays of telescopes on separate mounts	200
Small telescopes	204
<b>9 Whimsy</b>	208
<i>Index</i>	215