



# Contents

**Part I   Binoculars**

<b>1   Why Binoculars?</b>	<b>3</b>
Portability.....	4
Ease of Setup.....	4
The Binocular Advantage .....	5
The 5-mm Exit Pupil.....	6
Small Focal Ratio and Aberrations .....	7
Conclusion .....	8
Bibliography .....	8
 <b>2   Binocular Optics and Mechanics</b>	 <b>9</b>
Objective Lens Assemblies .....	11
Eyepieces .....	11
Prisms.....	12
Coatings .....	24
Aberrations.....	29
Aperture Stops and Vignetting.....	35
Focusing Mechanisms.....	36
Center Focus (Porro Prism) .....	36
Center Focus (Roof Prism) .....	36
Independent Focus .....	36
Collimation .....	37
Bibliography .....	40

<b>3</b>	<b>Choosing Binoculars .....</b>	<b>43</b>
	Deciding What You Need .....	43
	Binocular Specifications .....	44
	What Size? .....	46
	Field of View .....	48
	Eye Relief.....	50
	Handheld Binoculars.....	53
	Mounted Binoculars.....	55
	Budget Versus Quality.....	57
	Binoviewers .....	58
	Zoom Binoculars.....	61
	Bibliography .....	61
<b>4</b>	<b>Evaluating Binoculars .....</b>	<b>63</b>
	Preliminary Tests .....	64
	Field Tests .....	73
	Additional Tests for Used Binoculars.....	76
<b>5</b>	<b>Care and Maintenance of Binoculars.....</b>	<b>77</b>
	Rain Guards .....	78
	Storage .....	78
	Desiccants .....	79
	Grit .....	80
	Cleaning .....	80
	Dismantling Binoculars .....	82
	Right Eyepiece Diopter Adjustment .....	89
	The Solution.....	89
	Collimation .....	91
	Bibliography .....	94
<b>6</b>	<b>Holding and Mounting Binoculars .....</b>	<b>95</b>
	Hand-Holding .....	95
	“Informal” Supports.....	99
	Mounting Brackets.....	100
	Monopods .....	103
	Neckpod .....	104
	Bodge-o-pod .....	106
	Photo Tripods.....	107
	Fork Mounts.....	109
	Mirror Mounts.....	110
	Parallelogram Mounts.....	111
	Observing Chairs .....	113
	Summary .....	116
	Bibliography .....	117

<b>7</b>	<b>Binocular Telescopes</b> .....	119
	Binocular Telescopes .....	119
<b>8</b>	<b>Observing Accessories</b> .....	129
	Finders.....	129
	Filters .....	132
	Dew Prevention and Removal .....	133
	Compass.....	135
	Charts and Charting Software.....	135
	Torches (Flashlights) .....	137
	Storage and Transport Container .....	138
	Software Sources .....	139
<b>9</b>	<b>Observing Techniques</b> .....	141
	Personal Comfort .....	141
	Observing Sites .....	143
	Observing Techniques .....	144

## Part II Deep Sky Objects for Binoculars

<b>10</b>	<b>Overview</b> .....	149
	The Object Catalogues.....	150
	Summary Charts.....	151
	North Polar Region .....	152
	North RA 22 h 30 m to 01 h 30 m .....	153
	South RA 22 h 30 m to 01 h 30 m .....	154
	North RA 01 h 30 m to 04 h 30 m .....	155
	South RA 01 h 30 m to 04 h 30 m .....	156
	North RA 04 h 30 m to 07 h 30 m .....	157
	South RA 04 h 30 m to 07 h 30 m .....	158
	North RA 07 h 30 m to 10 h 30 m .....	159
	South RA 07 h 30 m to 10 h 30 m .....	160
	North RA 10 h 30 m to 13 h 30 m .....	161
	South RA 10 h 30 m to 13 h 30 m .....	162
	North RA 13 h 30 m to 16 h 30 m .....	163
	South RA 13 h 30 m to 16 h 30 m .....	164
	North RA 16 h 30 m to 19 h 30 m .....	165
	South RA 16 h 30 m to 19 h 30 m .....	166
	North RA 19 h 30 m to 22 h 30 m .....	167
	South RA 19 h 30 m to 22 h 30 m .....	168
	South Polar Region .....	169
	Objects by Type (Listed in Order of Right Ascension) .....	169
	Asterisms.....	169
	Dark Nebulae .....	170
	Emission Nebulae .....	170

Galaxies.....	170
Globular Clusters .....	171
Multiple Stars.....	172
Open Clusters.....	173
Planetary Nebulae .....	175
Reflection Nebulae.....	175
Supernova Remnants .....	175
Nearby Star .....	175
Variable Stars.....	175
Objects by Binocular Aperture (Listed in Order of Right Ascension) .....	176
Objects by Constellation .....	181
Andromeda.....	181
Aquarius.....	181
Aquila.....	181
Ara.....	182
Aries .....	182
Auriga .....	182
Boötes .....	182
Camelopardalis .....	182
Cancer .....	182
Canis Major.....	183
Carina.....	183
Cassiopeia .....	183
Centaurus .....	183
Cepheus.....	184
Cetus .....	184
Coma .....	184
Corona Australis .....	184
Corvus .....	184
Crux.....	185
Canes Venatici .....	185
Cygnus .....	185
Delphinus .....	185
Dorado.....	185
Draco.....	186
Eridanus .....	186
Gemini.....	186
Hercules .....	186
Hydra.....	186
Lacerta.....	186
Leo .....	186
Lepus.....	187
Monoceros.....	187
Norma .....	187
Ophiuchus .....	187

Orion .....	188
Pavo.....	188
Pegasus.....	188
Perseus .....	188
Pictor .....	188
Puppis.....	189
Sagitta .....	189
Sagittarius .....	189
Scorpius.....	189
Sculptor .....	190
Scutum .....	190
Serpens.....	190
Sextans .....	190
Taurus .....	190
Telescopium.....	191
Triangulum.....	191
Triangulum Australis .....	191
Tucana.....	191
Ursa Major .....	191
Ursa Minor .....	191
Vela.....	192
Virgo .....	192
Vulpecula .....	192
Bibliography .....	192
<b>11 December Solstice to March Equinox (RA 04:00 h to 10:00 h) .....</b>	<b>193</b>
Perseus: Emission Nebula: NGC 1499	
(the <i>California Nebula</i> ) (70 mm).....	194
Perseus: Open Cluster: NGC 1528 (70 mm).....	195
Eridanus: Planetary Nebula: NGC 1535 (100 mm) .....	196
Taurus: Open Cluster: Melotte 25 (C41, the <i>Hyades</i> ) (50 mm) .....	197
Taurus: Open Cluster: NGC1647 (70 mm).....	198
Taurus: Open Cluster: NGC 1746 (70 mm).....	199
Taurus: Supernova Remnant: M1 (NGC 1952, the Crab Nebula) (100 mm) .....	200
Lepus: Variable Star: R Leporis ( <i>Hind's Crimson Star</i> ) (70 mm).....	201
Lepus: Double Star: $\gamma$ Leporis (50 mm).....	202
Auriga: Asterism: The <i>Leaping Minnow</i> (50 mm) .....	203
Auriga: Three Open Clusters: M36 (NGC 1960), M37 (NGC 2099), and M38 (NGC 1912) (70 mm) .....	204
Dorado: Galaxy and Emission Nebula: <i>Large Magellanic Cloud</i> and NGC 2070 (C103, <i>Tarantula Nebula</i> , <i>Loop Nebula</i> , 30 Doradus) (100 mm).....	205
Pictor: Double Star: $\theta$ Pictoris (100 mm) .....	206
Orion: Open Cluster: Collinder 65 (50 mm).....	207

Orion: Nebulosity and Clusters: M42 (NGC 1976), M43 (NGC 1982), NGC 1973, 1975, 1977, and 1980 (50 mm) .....	208
Orion: Open Cluster: Cr 70 (50 mm).....	210
Orion: Multiple Star: $\sigma$ Orionis (50 mm) .....	211
Orion: Nebula: NGC 2024 ( <i>the Flame Nebula, the Burning Bush, the Ghost of Alnitak</i> ) (70 mm) .....	212
Orion: Emission Nebula: M78 (NGC 2068) (70 mm) .....	213
Gemini: Open Cluster: M35 (NGC 2168) (50 mm).....	214
Monoceros: Open Cluster: NGC 2239 (NGC 2244, C50) (70 mm) .....	215
Monoceros: Open Cluster: NGC 2264 ( <i>the Christmas Tree Cluster</i> ) (70 mm).....	216
Monoceros: Open Cluster: M50 (NGC 2323) (50 mm).....	217
Monoceros: Open Cluster: NGC 2353 (100 mm).....	218
Canis Major: Open Cluster: M41 (NGC 2287) (50 mm).....	219
Canis Major: Open Cluster: NGC 2362 (C64) (100 mm).....	220
Puppis: Open Clusters: M46 (NGC 2437) and M47 (NGC 2422) (50 mm).....	221
Camelopardalis: Galaxy: NGC 2403 (C7) (100 mm).....	222
Carina: Open Cluster: NGC 2516 (C96) (100 mm).....	223
Vela: Open Cluster: NGC 2547 (100 mm) .....	224
Puppis: Open Cluster: NGC 2539 (100 mm).....	225
Puppis: Open Cluster: M93 (NGC 2447) (70 mm).....	226
Puppis: Open Cluster: NGC 2451 (50 mm).....	227
Puppis: Open Cluster: NGC 2477 (C71) (70 mm).....	228
Puppis: Open Cluster: NGC 2546 (100 mm).....	229
Hydra: Open Cluster: M48 (NGC 2548) (70 mm).....	230
Vela: Open Cluster: IC 2391 (C85, <i>the Omicron Velorum Cluster</i> ) (50 mm).....	231
Cancer: Open Cluster: M44 (NGC 2632, <i>Praesepe, the Beehive Cluster</i> ) (50 mm).....	232
Cancer: Open Cluster: M67 (NGC 2682) (70 mm) .....	233
Sextans: Double Star: 9 Sextantis (100 mm) .....	234
Ursa Major: Galaxy Pair: M81 (NGC 3031) and M82 (NGC 3034) (100 mm).....	235
<b>12 March Equinox to June Solstice (RA 10:00 h to 16:00 h) .....</b>	<b>237</b>
Carina: Open Cluster: NGC 3114 (50 mm) .....	238
Sextans: Galaxy: NGC 3115 (C53, <i>the Spindle Galaxy</i> ) (100 mm) .....	239
Hydra: Planetary Nebula: NGC 3242 (C59, <i>the Ghost of Jupiter</i> ) (100mm) .....	240
Carina: Open Cluster: IC 2602 (C102, <i>the <math>\theta</math> Carinae Cluster, the Southern Pleiades</i> ) (50 mm) .....	241
Carina: Emission Nebula: NGC 3372 (C92, <i><math>\eta</math> Carinae Nebula</i> ) (50 mm).....	242

Leo: Galaxy Trio: M95 (NGC 3351), M96 (NGC 3368), and M105 (NGC 3379) (100 mm).....	243
Leo: Galaxy: NGC 3521 (100 mm) .....	244
Leo: Galaxy: NGC 3607 (100 mm) .....	245
Leo: Galaxy Trio: M65 (NGC 3623), M66 (NGC 3627) and NGC 3628 (100 mm) .....	246
Ursa Major: Planetary Nebula: M97 (NGC 3587, the <i>Owl Nebula</i> ) (100 mm).....	247
Ursa Major: Asterism: M40 (100 mm) .....	248
Corvus: Planetary Nebula: NGC 4361 (100 mm).....	249
Centaurus: Open Cluster: NGC 3766 (C97, the <i>Pearl Cluster</i> ) (100 mm).....	250
Centaurus: Open Cluster and Supernova Remnant: IC 2944 (C100, the <i>Running Chicken</i> , the $\lambda$ Centauri Nebula) (100 mm) .....	251
Canes Venatici: Galaxy: M106 (NGC 4258) (100 mm).....	252
Canes Venatici: Galaxy Pair: NGC 4631 (C32, the <i>Whale Galaxy</i> ) and NGC 4656 (100 mm) .....	253
Canes Venatici: Carbon Star: Y CVn ( <i>La Superba</i> ) (50 mm) .....	254
Canes Venatici: Galaxy: M94 (NGC 4736) (70 mm).....	255
Canes Venatici: Galaxy: M63 (NGC 5055, the <i>Sunflower Galaxy</i> ) (70 mm).....	256
Canes Venatici: Galaxy: M51 (NGC 5194, the <i>Whirlpool Galaxy</i> ) (100 mm).....	257
Canes Venatici: Globular Cluster: M3 (NGC 5272) (70 mm).....	258
Coma Berenices: Open Cluster: Melotte 111 (50 mm) .....	259
Coma Berenices: Galaxy: NGC 4559 (C36) (100 mm).....	260
Coma Berenices: Galaxy: NGC 4565 (C38, <i>Berenice's Hair Clip</i> , the <i>Needle Galaxy</i> ) (100 mm).....	261
Coma Berenices: Galaxy: M64 (NGC 4826, the <i>Black Eye Galaxy</i> ) (70 mm).....	262
Coma Berenices: Globular Cluster: M53 (NGC 5024) (100 mm).....	263
Musca: Globular Cluster: NGC 4372 (C108) (100 mm) .....	264
Musca: Globular Cluster: NGC 4833 (C105) (100 mm) .....	265
Crux: Open Cluster: NGC 4755 (C94, the <i>Jewel Box</i> ) (50 mm) .....	266
Virgo: Galaxy Chain: NGC 4374 (M84), 4406 (M86), 4438, 4473, 4477, and 4459 ( <i>Markarian's Chain</i> ) (100 mm) .....	267
Virgo: Galaxy: M49 (NGC 4472) (70 mm).....	268
Virgo: Galaxy Group: M87 (NGC 4486) and Friends (70 mm).....	269
Virgo: Galaxy Pair: M59 (NGC 4621) and M60 (NGC 4649) (70 mm).....	270
Virgo: Galaxy: M104 (NGC 4594, the <i>Sombrero Galaxy</i> ) (100 mm) .....	271
Hydra: M68 (NGC 4590) (100 mm).....	272
Hydra: Galaxy: M83 (NGC 5263) (100 mm) .....	273
Centaurus: Galaxy: NGC 5128 (C77, <i>Centaurus A</i> ) (100 mm).....	274
Centaurus: Globular Cluster: NGC 5139 (C80, Omega Centauri) (50 mm).....	275

Ursa Major: Galaxy: M101 (NGC 5457) (100 mm).....	276
Draco: Galaxy: NGC 5866 (100 mm).....	277
Draco: Galaxy: NGC 5907 (the <i>Splinter Galaxy</i> ) (100 mm).....	278
Boötes: Variable Star: RV Boötis (100 mm).....	279
Boötes: Multiple Stars: $\delta$ Boötis and 50 Boötis (100 mm).....	280
Serpens: Globular Cluster: M5 (NGC 5904) (70 mm).....	281
<b>13 June Solstice to September Equinox (RA 16:00 h to 22:00 h) .....</b>	<b>283</b>
Triangulum Australe: Open Cluster: NGC 2065 (100 mm) .....	284
Norma: Open Cluster: NGC 6067 (100 mm).....	285
Scorpius: Globular Clusters: M4 (NGC 6121)	
and NGC 6144 (70 mm) .....	286
Scorpius: Open Cluster: NGC 6231 (C76) (50 mm) .....	287
Scorpius: Open Cluster: NGC 6322 (100 mm).....	288
Scorpius: Open Cluster: M6 (NGC 6405, the <i>Butterfly</i>	
<i>Cluster</i> ) (50 mm) .....	289
Scorpius: Open Cluster: M7 (NGC 6475, <i>Ptolemy's</i>	
<i>Cluster</i> ) (50 mm).....	290
Ophiuchus: Triple Star: $\rho$ Ophiuchi (100 mm).....	291
Ophiuchus: M12 (NGC 6218) (70 mm).....	292
Ophiuchus: M10 (NGC 6254) (70 mm).....	293
Ophiuchus: M62 (NGC 6266) (100 mm).....	294
Ophiuchus: M19 (NGC 6273) (70 mm).....	295
Ophiuchus: M14 (NGC 6402) (70 mm).....	296
Ophiuchus: Open Cluster: IC 4665 ( <i>the Summer Beehive</i> )	
(70 mm).....	297
Ophiuchus: Star: <i>Barnard's Star</i> (70 mm).....	298
Ophiuchus: Open Cluster: Melotte 186 (50 mm) .....	299
Ophiuchus: Planetary Nebula: NGC 6572 (100 mm).....	300
Ophiuchus: Open Cluster: NGC 6633 (100 mm) .....	301
Hercules: Globular Cluster: M13 (NGC 6205) (50 mm).....	302
Hercules: Globular Cluster: M92 (NGC 6341) (100 mm).....	303
Ara: Globular Cluster: NGC 6397 (C86) (100 mm).....	304
Corona Australis: Globular Clusters: NGC 6541 (C78)	
and NGC 6496 (100 mm) .....	305
Sagittarius: Open Cluster: M23 (NGC 6494) (70 mm) .....	306
Sagittarius: Emission Nebula: M20 (NGC 6514,	
the <i>Trifid Nebula</i> ) (100 mm) .....	307
Sagittarius: Open Cluster and Nebulosity: NGC 6530 and M8	
(NGC 6523, the <i>Lagoon Nebula</i> ) (50 mm).....	308
Sagittarius: Star Cloud: M24 (50 mm).....	309
Sagittarius: Open Cluster: M18 (NGC 6613) (100 mm) .....	310
Sagittarius: Emission Nebula: M17 (NGC 6618, the Omega	
Nebula or Swan Nebula) (100 mm).....	311



Sagittarius: Globular Cluster: M28 (NGC 6626) (70 mm).....	312
Sagittarius: Open Cluster: M25 (IC 4725) (100 mm).....	313
Sagittarius: Globular Cluster: M22 (NGC 6656) (70 mm).....	314
Sagittarius: Globular Cluster: M54 (NGC 6715) (100 mm).....	315
Sagittarius: Globular Cluster: NGC 6723 (100 mm).....	316
Sagittarius: Globular Cluster: M55 (NGC 6809) (70 mm).....	317
Telescopium: Globular Cluster: NGC 6584 (100 mm).....	318
Serpens: Emission Nebula and Cluster: M16 (NGC 6611, the <i>Eagle Nebula</i> ) (100 mm).....	319
Serpens: Open Cluster: IC 4756 (50 mm).....	320
Serpens: Double Star: $\theta$ Serpentis (100 mm).....	321
Scutum: Open Cluster: M26 (NGC 6694) (70 mm).....	322
Scutum: Open Cluster: M11 (NGC 6705, <i>Wild Duck Cluster</i> ) (50 mm).....	323
Scutum: Globular Cluster: NGC 6712 (100 mm).....	324
Pavo: Globular Cluster: NGC 6752 (C 93) (100 mm).....	325
Aquila: Open Cluster: NGC6709 (100 mm).....	326
Aquila: Open Cluster: NGC 6738 (100 mm).....	327
Aquila: Planetary Nebula: NGC 6781 (100 mm).....	328
Aquila: Dark Nebulae: Barnard 142, 143 ( <i>Barnard's E</i> ) (70 mm).....	329
Vulpecula: Asterism: (Cr 399, <i>Brocchi's Cluster</i> , the <i>Coathanger</i> ) (50 mm).....	330
Vulpecula: Planetary Nebula: M27 (NGC 6853, the <i>Dumbbell Nebula</i> ) (50 mm).....	331
Sagitta: Double Star: $\epsilon$ Sagittae (100 mm).....	332
Sagitta: Cluster: M71 (NGC 6838) (100 mm).....	333
Cygnus: Double Star: $\beta$ Cyg ( <i>Albireo</i> ) (50 mm).....	334
Cygnus: Open Cluster: M29 (NGC 6913) (70 mm).....	335
Cygnus: Dark Nebula: LDN 906 (B 348, the <i>Northern Coalsack</i> ) (50 mm).....	336
Cygnus: Supernova Remnant: <i>Veil Nebula</i> NGC 6960 (C34), NGC 6992 (C33) and 6995 (100 mm).....	337
Cygnus: Emission Nebula: NGC 7000 (C20, the <i>North American Nebula</i> ) (50 mm).....	338
Cygnus: Double Star: 61 Cygni (70 mm).....	339
Cygnus: Open Cluster: M39 (NGC 7092) (70 mm).....	340
Delphinus: Globular Cluster: NGC 6934 (C47) (100 mm).....	341
Pegasus: Globular Cluster: M15 (NGC 7078) (50 mm).....	342
Aquarius: Globular Cluster: M2 (NGC 7089) (50 mm).....	343
Aquarius: Double Star: Struve 2809 (100 mm).....	344
Cepheus: Open Cluster: IC1396 (50 mm).....	345
Cepheus: Red Giant: $\mu$ Cep (the <i>Garnet Star</i> ) (50 mm).....	346

**14 September Equinox to December Solstice**

<b>(RA 22:00 h to 04:00 h)</b> .....	347
Lacerta: Open Cluster: NGC 7209 (70 mm).....	348
Lacerta: Open Cluster: NGC 7243 (70 mm).....	349
Cepheus: Open Cluster: NGC 7235 (70 mm).....	350
Cepheus: Open Cluster: NGC 7510 (70 mm).....	351
Aquarius: Planetary Nebula: NGC 7293 (C63, the <i>Helix Nebula</i> ) (100 mm).....	352
Sculptor: Galaxy: NGC 55 (C72) (100 mm).....	353
Sculptor: Galaxy and Globular Cluster : NGC 253 (C65) and NGC 288 (70 mm) .....	354
Sculptor: Galaxy: NGC 300 (C70) (100 mm).....	355
Vela: Open Cluster: NGC 3228 (100 mm) .....	356
Tucana: Globular Cluster: NGC 104 (C106, 47 Tucanae) (100 mm).....	357
Tucana: Galaxy: NGC 292 ( <i>Small Magellanic Cloud</i> ) (50 mm) .....	358
Andromeda: Galaxy: M31 (NGC 224, the <i>Great Andromeda</i> <i>Galaxy</i> ) (50 mm).....	359
Andromeda: Open Cluster and Double Star: NGC 752 (C28) and 56 And (70 mm).....	360
Cetus: Galaxy: NGC 247 (C62) (100 mm).....	361
Pisces: Double Star: $\psi^1$ Piscium (100 mm) .....	362
Pisces: Double Star: $\zeta$ Piscium (100 mm) .....	363
Andromeda: Open Cluster: NGC 7686 (70 mm).....	364
Cassiopeia: Open Cluster: Stock 12 (70 mm).....	365
Cassiopeia: Open Cluster: M52 (NGC 7654) (100 mm) .....	366
Cassiopeia: Open Cluster: NGC 7789 (70 mm) .....	367
Cassiopeia: Open Cluster: NGC 225 (70 mm) .....	368
Cassiopeia: Open Cluster: NGC 436 (100 mm) .....	369
Cassiopeia: Open Cluster: NGC 457 (C13) (the <i>ET Cluster</i> , the <i>Owl Cluster</i> ) (100 mm).....	370
Cassiopeia: Open Cluster: NGC 663 (C10) (50 mm) .....	371
Cassiopeia: Open Cluster: NGC 654 (70 mm) .....	372
Cassiopeia: Open Cluster: Cr 463 (70 mm).....	373
Cassiopeia: Open Clusters: Mel 15 and NGC 1027 (70 mm).....	374
Camelopardalis: Open Cluster: Stock 23 (70 mm).....	375
Andromeda: Open Cluster: NGC 956 (100 mm).....	376
Triangulum: Galaxy: M33 (NGC 598, the <i>Pinwheel</i> <i>Galaxy</i> ) (50 mm).....	377
Aries: Triple Star: 14 Arietis (50 mm).....	378
Eridanus: Galaxy: NGC 1232 (100 mm).....	379
Cetus: Variable Star: $\alpha$ Ceti ( <i>Mira</i> ) (50 mm).....	380
Cetus: Galaxy: M77 (NGC 1068) (100 mm) .....	381
Cassiopeia: Open Cluster: Stock 2 (the <i>Muscleman</i> <i>Cluster</i> ) (70 mm).....	382

Perseus: Open Clusters: NGC 884 and NGC 869 (C14, the <i>Double Cluster</i> ) (50 mm) .....	383
Perseus: Open Cluster: M34 (NGC 1039) (50 mm) .....	384
Perseus: Open Cluster: Melotte 20 (Cr 39, the <i>Alpha Persei</i> <i>Moving Cluster</i> ) (50 mm) .....	385
Perseus: Open Cluster: NGC 1342 (70 mm) .....	386
Ursa Minor: Asterism: The <i>Engagement Ring</i> (70 mm) .....	387
Taurus: Open Cluster: M45 (the <i>Pleiades</i> ) (50 mm) .....	388
Camelopardalis: Asterism: <i>Kemble's Cascade</i> (70 mm) .....	389
<b>Appendix 1</b> .....	391
<b>Appendix 2</b> .....	397
<b>Appendix 3</b> .....	403
<b>Appendix 4</b> .....	411
<b>Appendix 5</b> .....	417
<b>Appendix 6</b> .....	419
<b>Appendix 7</b> .....	421
<b>Index</b> .....	429

Binocular Astronomy

Tonkin, S.

2014, XXV, 435 p. 316 illus., 115 illus. in color.,

Softcover

ISBN: 978-1-4614-7466-1