

Table of Contents

Introduction	1
Section 1: Understanding	3
Problems and solutions	5
Field rotation	6
Light pollution.....	12
Push-to/Go-to/Manual.....	15
Tracking mounts	17
Seeing conditions	18
Imaging methods.....	21
Direct	22
Prime focus.....	25
Afocal.....	27
Eyepiece projection	28
Cameras	30
DSLRs	31
MLCs	35
Bridge cameras	36
Point & Shoot cameras.....	37
Phone/Tablet cameras	39
Film cameras.....	40
Video cameras	41
Telescopes	43
Refractors	44
Newtonians.....	46
Dobsonians	48
Schmidt-Cassegrain & Maksutov Cassegrain.....	50

Focusing	52
Bahtinov mask.....	53
Hartmann mask.....	55
Software aided focusing.....	57
Focusing with camera lenses	59
Mounts	62
Tripods and tables.....	63
Altitude Azimuth	66
Equatorial.....	68
Barn door trackers	70
Navigating the night sky.....	73
Celestial coordinate system	74
Section 2: Doing.....	77
Finding targets.....	79
Stellarium	80
C2A	85
Tablet software	97
Capturing images	103
Camera settings	104
Exposure settings	105
ISO, dynamic range, bit depth and signal to noise ratio	107
Lights/Darks/Flats/Bias	110
Raw versus JPG.....	112
Methods of firing the shutter	113
Video capturing.....	117
Processing images	123
Stacking.....	124

Conversion.....	131
Image editing software.....	133
Layers.....	134
Stretching	137
Simple selections as masks.....	147
Noise reduction	152
High dynamic range images.....	154
Video processing	158
Section 3: Building	167
Do-It-Yourself Projects.....	169
Modifications.....	170
Dovetail extension to balance a scope.....	171
Balancing a Dobsonian	3
Improve focus capabilities.....	175
Stabilizing your mount.....	179
Modifying a webcam for astrophotography	186
Dark adapting your laptop screen	207
Creations.....	212
Building a Flat light box	213
Simple barn door tracker.....	226
Illuminated collimation cap	3
Glass solar filter for camera lenses.....	240
Making your own dew heaters.....	243
36Ah field power pack.....	249
The Denver chair	259
Cheap and easy solar/dew hutch	271
Targets to start with	275

Where to get more information	291
Glossary	295
Index	311