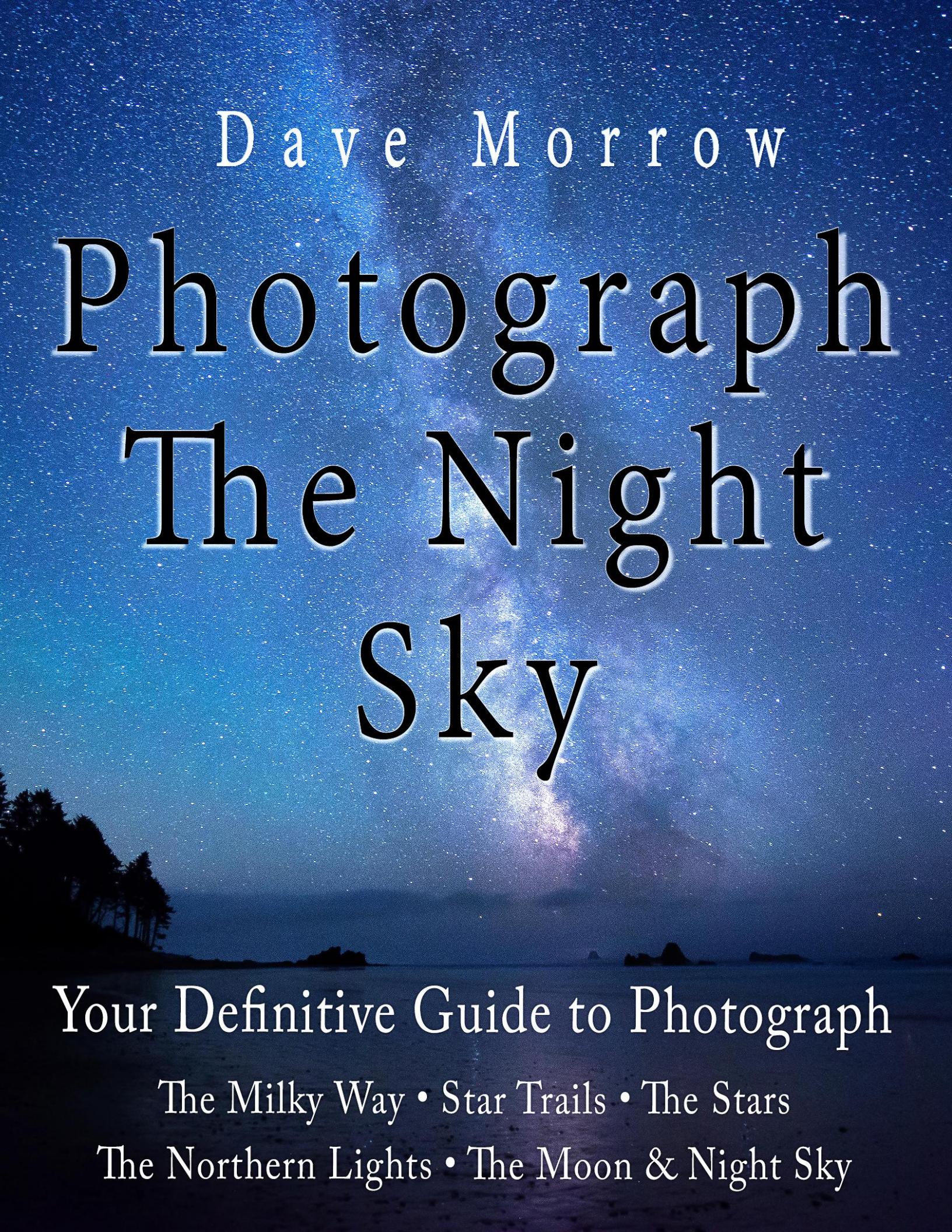


D a v e M o r r o w

Photograph The Night Sky



Your Definitive Guide to Photograph

The Milky Way • Star Trails • The Stars
The Northern Lights • The Moon & Night Sky

Table of Contents

Foreword	2
Introduction	9
Scouting & Planning	11
Applications, Websites, and Computer Programs	11
Scouting for Night Photography.....	16
Step 1: Online Research.....	16
Step 2: Fine Tuning Your Search	19
Step 3: Scouting on Location	20
Dave's Favorite Scouting Tools.....	21
In Depth Planning & Logistics	22
Cold Weather Considerations	22
Finding Dark Skies – Avoiding Light Pollution	23
Finding Clear Skies	26
Celestial Dynamics	30
Locating the Milky Way & Other Celestial Bodies	35
Meteor Showers	39
Video Tutorial – Scouting & Planning for Star and Landscape Photography	39
Scouting Your Lens at Night.....	40
Focusing Tips for Photographers with Live View Camera Functionality	41
Methods for Focusing at Night.....	42

Method 1: Preset Your Focus Point During the Day.....	42
Method 2: Live View Focusing at Night	44
Method 3: Focusing at Night with Artificial Light.....	45
Method 4: High Contrast Focusing.....	46
Method 5: Trial and Error.....	47
Finding Composition.....	48
Transitions	49
Color Transitions.....	50
Light Transitions	51
Time Transitions.....	52
Contrast Transitions.....	54
Detail Transitions	56
The Human Element.....	57
Tips & Tricks for Great Composition	59
The Golden Ratio.....	59
Video Tutorial – Cropping with the Golden Ratio.....	61
Reflections	61
Left to Right Eye Movement	61
Look Up.....	64
Artistic Flow – The Formula for Creating Beautiful Images.....	65
Arrive Early	66
Review Your Compositions	67
Artistic Flow.....	68

The Shoot.....	68
Final Words of Advice.....	69
Milky Way Photography.....	70
Gear & Equipment.....	71
Minimum Gear Requirements	71
Camera Settings	73
Selecting Exposure Time for Milky Way Photography.....	75
The 500 Rule Equation.....	75
Example Photos & Discussion – The 500 Rule	77
The 500 Rule Chart.....	81
Fine Tuning Exposure Time.....	83
Final Adjustments – Aperture & ISO	85
Aperture Selection.....	85
ISO Selection	85
Example Photos & Discussion – RAW Picture Data.....	87
Video Tutorial – Double Processing in Lightroom & Photoshop	91
Test Your Camera Settings & Compare the Images	91
Post Processing / Editing for Milky Way Photography	98
Final Words of Advice for Milky Way Photography.....	99
Star Trail Photography	100
Gear & Equipment	101
Minimum Gear Requirements	101
Camera Settings.....	102

Selecting Exposure Time for Star Trail Photography	106
Method 1 (Preferred): Multiple Exposures	106
Method 2 (Second Best Option): Single Exposure.....	107
Selecting Number of Exposures	108
Methods for Calculating Elapsed Shooting Time / Number of Exposures.....	109
Camera Timer Settings	109
Editing / Post Processing for Star Trail Photography.....	111
Video Tutorial – Post Processing Your Star Trail Photos	112
Final Words of Advice for Star Trail Photography	113
Northern Lights Photography.....	114
Planning.....	115
Step 1: Find Dark Skies	115
Step 2: Find Clear Skies	115
Step 3: Check the Aurora Activity Level	115
Gear & Equipment	117
Minimum Gear Requirements	117
Recommended Gear	117
Camera Settings.....	118
Example 1: Overexposed Image.....	122
Example 2: Well Exposed Image	123
Example 3: Optimally Exposed Image.....	124
Action Required – Test Your Camera Setup	126
Final Words of Advice for Photographing the Northern Lights.....	128

How to Edit / Post Process Your Northern Lights Photos	129
Moon Photography.....	130
Gear & Equipment	131
Minimum Gear Requirements	131
Camera Settings.....	132
Selecting ISO & Exposure Time.....	134
Selecting Exposure Time.....	135
Selecting ISO.....	136
Final Words of Advice for Moon Photography	137
Twilight Photography.....	139
Astronomical Twilight	139
Nautical Twilight	141
Civil Twilight.....	142
Advanced Night Photography Skills Sets	145
Focus Stacking.....	145
Video Tutorial – Focus Stacking for Landscape Photography.....	146
Exposure Blending	146
Light Painting	148
Tips & Tricks for Light Painting	148
Panoramic Images.....	150
Shooting / In the Field	150
Video Tutorial – Create Panoramic Images in Lightroom & Photosthop.....	151

Example Photos, Camera Settings & Discussion.....	152
Not of this World – Crater Lake, OR.....	152
Shoot Me to the Stars – Mount Rainier, WA.....	154
The Last Drop – Palouse Falls, WA	156
The Photographer's Apprentice – Mount Rainier, WA	158
Become Your Dreams – Olympic National Park, WA	159
In Closing... As the Sun Rises.....	161
Photography Tutorials, Workshops & Useful Links	162
Star Photography Tutorials & Workshops	162
Dave's Favorite Video Tutorials	163
Reviews / Equipment.....	164
Night Photography Camera & Lens Suggetions	165
Dave's Camera Equipment.....	168
Star Photography Resources & Tools.....	169
Share / Upload Your Star Photography Photos.....	169
About the Author	170

All rights reserved. This book, and all of the photographs and written text contained therein, are the intellectual property of the author and are protected by U.S. and international copyright laws. No part of this book may be reproduced or transmitted in any form without the prior written permission of the author. Copyright © 2015 [Dave Morrow / Dave Morrow Photography](#)