

A Guide To Astrophotography With Digital Slr Cameras

The touchstone for contemporary stargazers. This classic, groundbreaking guide has been the go-to field guide for both beginning and experienced amateur astronomers for nearly 30 years. The fourth edition brings Terence Dickinson and Alan Dyer's invaluable manual completely up-to-date. Setting a new standard for astronomy guides, it will serve as the touchstone for the next generation of stargazers as well as longtime devotees. Technology and astronomical understanding are evolving at a breathtaking clip, and to reflect the latest information about observing techniques and equipment, this massively revised and expanded edition has been completely rebuilt (an additional 48 pages brings the page count to 416). Illustrated throughout with all-new photographs and star charts, this edition boasts a refreshed design and features five brand-new chapters, including three essential essays on binocular, telescope and Moon tours by renowned astronomy writer Ken Hewitt-White. With new content on naked-eye sky sights, LED lighting technology, WiFi-enabled telescopes and the latest advances in binoculars, telescopes and other astronomical gear, the fourth edition of The Backyard Astronomer's Guide is sure to become an indispensable reference for all levels of stargazers. New techniques for observing the Sun, the Moon and solar and lunar eclipses are an especially timely addition, given the upcoming solar eclipses in 2023 and 2024. Rounding out these impressive offerings are new sections on dark sky reserves, astro-tourism, modern astrophotography and cellphone astrophotography, making this book an enduring must-have guide for anyone looking to improve his or her astronomical viewing experience. The Backyard Astronomer's Guide also features a foreword by Dr. Sara Seager, a Canadian-American astrophysicist and planetary scientist at the Massachusetts Institute of Technology and an internationally recognized expert in the search for exoplanets.

This is an introductory guide to the night sky, from the Royal Observatory Greenwich. Offering complete advice from the ground up, Stargazing is the perfect manual for beginners to astronomy, introducing the world of telescopes, planets, stars, dark skies and celestial maps. Discover how to tackle light pollution, how to stargaze with just your eyes, and what equipment is best for beginners. This book explains the best ways to plan your stargazing experience and the keys things to look out for on specific dates throughout the year. With seasonal star charts, constellation charts and facts about our Solar System, Stargazing is packed full of useful information and guidance for both the Northern and Southern Hemispheres. Bridging the gap between human curiosity and the need for scientific expertise, Stargazing allows a complete novice to understand our place in the cosmos and enjoy the beautiful and extraordinary wonders of the night sky.

At first glance, the challenge of astrophotography may appear daunting. But not only are spectacular results possible, they are easy to learn with the step-by-step instructions provided in this handy resource, which shows amateurs how to produce images to rival a professional observatory.

Featuring new chapters on astro-software and CCD-imaging techniques, a book for amateur astronomers covers astrophotography, telescope construction, planetary observing, comet hunting, variable star recording, and nova discovery, and features both novice and advanced techniques. UP.

Understanding, Planning, Creating, and Processing Nightscape Images

Night Scenes

The Practical Astronomer

Photography: Night Sky

Budget Astrophotography

The Guide to Amateur Astronomy

How to Capture the Cosmos with Any Camera

There are many books covering different facets of astrophotography, but few of them contain all the necessary steps for beginners in one accessible place. Astrophotography is Easy! fills that void, serving as a guide to anybody interested in the subject but starting totally from scratch. Assuming no prior experience, the author runs through the basics for how to take astrophotos using just a camera—including cell phones and tablets—as well as a telescope and more sophisticated equipment. The book includes proven techniques, checklists, safety guidelines, troubleshooting tips, and more. Each chapter builds upon the last, allowing readers to master basic techniques before moving on to more challenging material. Also included is a comprehensive list of additional books and resources on a variety of topics so readers can continue expanding their skills. Astrophotography Is Easy! doesn't simply teach you the basic skills for becoming an astrophotographer: it provides you with the foundations you will need for a lifelong pursuit.

Today's photographic equipment allows amateurs to take pictures of the stars that far surpass images taken just a few decades ago by even the largest observatories-and this book will teach you how. Author and world-renowned astrophotographer Thierry Legault teaches the art and techniques of astrophotography: from simple camera-on-tripod night-scene imaging of constellations, star trails, eclipses, artificial satellites, and polar auroras to more intensive astrophotography using specialized equipment for lunar, planetary, solar, and deep-sky imaging. Legault shares advice on equipment and guides you through techniques to capture and process your images to achieve spectacular results. Astrophotography provides the most thorough treatment of the topic available. This large-format, richly illustrated book is intended for all sky enthusiasts-newcomers and veterans alike. Learn how to: Select the most useful equipment: cameras, adapters, filters, focal reducers/extenders, field correctors, and guide telescopes Set up your camera (digital, video, or CCD) and your lens or telescope for optimal results Plan your observing sessions Mount the camera on your telescope and focus it for razor-sharp images Polar-align your equatorial mount and improve tracking for pin-point star images Make celestial time-lapse videos Calculate the shooting parameters: focal length and ratio, field of view, exposure time, etc.

Combine multiples exposures to reveal faint galaxies, nebulae details, elusive planetary structures, and tiny lunar craters Adjust contrast, brightness, light curves, and colors Postprocess your images to fix defects such as vignetting, dust shadows, hot pixels, uneven background, and noise Identify problems with your images and improve your results

No longer are heavy, sturdy, expensive mounts and tripods required to photograph deep space. With today's advances in technology, all that is required is an entry-DSLR and an entry level GoTo telescope. Here is all of the information needed to start photographing the night sky without buying expensive tracking mounts. By using multiple short exposures and combining them with mostly 'freeware' computer programs, the effect of image rotation can be minimized to a point where it is undetectable in normal astrophotography, even for a deep-sky object such as a galaxy or nebula. All the processes, techniques, and equipment needed to use inexpensive, lightweight altazimuth and equatorial mounts and very short exposures photography to image deep space objects are explained, step-by-step, in full detail, supported by clear, easy to understand graphics and photographs. Currently available lightweight mounts and tripods are identified and examined from an economic versus capability perspective to help users determine what camera, telescope, and mount is the best fit for them. A similar analysis is presented for entry-level telescopes and mounts sold as bundled packages by the telescope manufacturers. This book lifts the veil of mystery from the creation of deep space photographs and makes astrophotography affordable and accessible to most amateur astronomers.

Any amateur astronomer who is interested in astrophotography, particularly if just getting started, needs to know what objects are best for imaging in each month of the year. These are not necessarily the same objects that are the most spectacular or intriguing visually. The camera reveals different things and has different requirements. What objects in the sky tonight are large enough, bright enough, and high enough to be photographed? This book reveals, for each month of the year, the choicest celestial treasures within the reach of a commercial CCD camera. Helpful hints and advice on framing, exposures, and filters are included. Each deep sky object is explained in beautiful detail, so that observers will gain a richer understanding of these astronomical objects. This is not a book that dwells on the technology of CCD, Webcam, wet, or other types of astrophotography. Neither is it a book about in-depth computer processing of the images (although this topic is included). Detailed discussions of these topics can be found in other publications. This book focuses on what northern latitude objects to image at any given time of the year to get the most spectacular results.

Star-Gazing.co.uk Astrophotography Guide

Getting Started

Exposure Guide for Astrophotography

National Geographic Backyard Guide to the Night Sky, 2nd Edition

Everything You Need to Know to Become an Amateur Astronomer

The essential guide to photographing the night sky by TV's favourite astronomer

A Guide to Astronomy in the National Parks

First published in 1999, this is an expanded and updated edition of the best-selling, standard handbook on astrophotography for amateurs.

A complete, self-contained guide to choosing and using CCD cameras - for amateur astonomers and enthusiasts.

From the author of Getting Started: Long Exposure Astrophotography and the Messier Astrophotography Reference comes a book showing you how to produce wonderful astrophotos without the astronomical costs nozmally associated with the hobby. From a DSLR, to a point and shoot, and even using your phone, you can capture beautiful images of the sun, moon, clusters, galaxies and nebulae without breaking the bank. A complete image processing walkthrough is included using only freely downloadable software.Discussed inside are telescopes, adapters, do-it-yourself projects, software and processing techniques to help you photograph the skies without spending a fortune.Already have a telescope or other equipment? No problem, it will help you make the most of what you already have as well as show you what you can buy or make yourself to improve your images.

Stars Above, Earth Below uses photographs and sky charts to form a connection between what is seen on the ground and in the sky, and looks at the deeper scientific meaning behind these sights. Nordgren describes other objects in the Solar System with features similar to those on Earth and links the geological features seen in the national parks to the very latest NASA spacecraft discoveries on other planets and their moons. Additionally, historical context is discussed to show why we humans (who have lived in and around our national parts for tens of thousands of years) have always been astronomers. The first book to make direct connections between astronomy and the landscapes, processes and cultures one experiences in the US National Parks Each chapter ties a specific astronomical phenomenon to a particular National Park or type of park and concludes with a “See for yourself” section that shows you how to see the planets, stars, nebulae, moons, etc. that are described within that chapter A personal guide showing the reader the astronomical phenomena that you can see for yourself when visiting the U.S. National Parks

Shoot the Moon

Stars Above, Earth Below

Guide to Simple Astrophotography

Peterson First Guide to Astronomy

A Guide to Capturing the Cosmos

A Field Guide for Shooting after Dark

A Complete Guide to the Best Astrophotography Targets of the Year

Have fun exploring the stars with close-up views of space objects right from your own backyard! Take the mystery and struggle out of discovering new worlds. With hands-on tips, tricks, and instructions, this book allows you to unleash the full power of your small telescope and view amazing space objects right from your own backyard, including:
• Saturn’s Rings
• Jupiter’s Moons
• Apollo 11’s Landing Site
• Orion Nebula
• Andromeda Galaxy
• Polaris Double Star
• Pegasus Globular Cluster
• and much, much more!
“An observation guide, mentor, and historical tour all in one.” —Space.com

In the last few years, digital SLR cameras have taken the astrophotography world by storm. It is now easier to photograph the stars than ever before! They are compact and portable, flexible to adapt with different lenses and for telescope use, and above all DSLR cameras are easy and enjoyable to use. In this concise guide, experienced astrophotography expert Michael Covington outlines the simple, enduring basics that will enable you to get started, and help you get the most from your equipment. He covers a wide selection of equipment, simple and advanced projects, technical considerations and image processing techniques. Unlike other astrophotography books, this one focuses specifically on DSLR cameras, not astronomical CCDs, non-DSLR digital cameras, or film. This guide is ideal for astrophotographers who wish to develop their skills using DSLR cameras and as a friendly introduction to amateur astronomers or photographers curious about photographing the night sky.

Philip's Astrophotography With Mark Thompson is an essential guide for anyone wishing to photograph or image the stars and planets, written by TV's favourite astronomer. For many people, looking at the sky is not enough and they would love to try and capture what they can see. Until a few years ago, capturing astronomical images was fraught with many challenges, but with the development of digital cameras replacing film, things have become much easier and great astronomical images are now within the reach of even the most novice stargazer. Mark Thompson has spent many years capturing the beauty of the night sky, first with film and now with the digital camera, and has discovered and overcome many of the pitfalls. This book takes the reader on a journey through the world of capturing astronomical images from using the humble mobile phone to specialist cameras, brought to life with Mark's personal experiences and many of his own astronomical images.

"Unless otherwise noted, Scripture quotations are from the New King James Version of the Bible."--T.p. verso.

Basics for Beginners

See It with a Small Telescope

Digital Astrophotography

The Universe Today Ultimate Guide to Viewing The Cosmos

Using Short Exposures with Light Mounts

A Guide to Spectacular Viewing

A basic field guide for beginning observers of the night sky, introducing information on the locations, names, and characteristics of stars, constellations, and other bodies in outer space.

Dedicated to modern lunar imaging, this is an in-depth and illustrated guide to capturing impressive images of our nearest neighbour.

The 100 Best Astrophotography TargetsA Monthly Guide for CCD Imaging with Amateur TelescopesSpringer

Describes telescopes, binoculars, the solar system and the stars, with charts of the major constellations, a guide to equipping a home observatory, and a series of projects for effective observation and recording

The Essential Guide to Photographing the Night Sky

Visual Astronomy in the Suburbs

A Visual Guide

A Practical Guide to CCD Astronomy

The Backyard Astronomer's Guide

A Stargazing Program for Beginners

A Complete Guide to Lunar Imaging

Discover 60 Deep Sky Objects that will considerably improve your Imaging and Processing skills!Whether you are a beginner, intermediate, or advanced astrophotographer, this detailed book of the best deep sky objects will serve as a personal guide for years to come!Discover which star clusters, nebulae, and galaxies are the easiest and most impressive to photograph for each season. Learn how to find each object in the night sky, and read our recommendations on imaging them in a quick and comprehensive way. Each target listed in this guide contains our advice on imaging, photos of expected results, and a useful information table. We've also included a few cool facts about each target, a map to find it in the night sky, and more!

The only practical guide to observing truly spectacular astronomical objects from less than perfect locations. The only book to deal in depth with the application of image intensifiers to real-time astronomy. Gives advice on viewing objects, and on making realistic images by drawing or video. Includes extensive catalogs of spectacular objects that can be seen from suburban sites in both hemispheres.

For anyone who's ever looked at the night sky and wanted to know more about the galaxy around them, The Practical Astronomer offers a comprehensive guide to discovering and understanding the mysteries of the solar system and beyond. Illustrated with specially commissioned photography and artwork, and using clear, easy-to-follow text, The Practical Astronomer takes you on a step-by-step journey from the basics of what can be seen with the naked eye from your own backyard, to how you can view more distant objects such as the planets of the solar system, and even galaxies far, far away. The book opens with an explanation of the fundamentals of astronomy, detailing when, where, and how to look at the night sky. It goes on to cover the necessary equipment and clothing that the amateur astronomer needs, reviewing optical equipment such as binoculars and telescopes, how they work and how to use them. A special section focuses on photography and covers the "how-to-s" of capturing beautiful images of what you see. The Practical Astronomer aims to foster an awareness and understanding of what you're looking at-be it a planet, star, or asteroid. Different sections are devoted to looking at how the night sky changes, whether that's because it's viewed from a different place in the world or at a different time of year. Star charts and detailed maps of the night sky are included to aid budding astronomers in their quest to know more about this fascinating subject.

THE ULTIMATE GUIDE TO MASTER ASTROPHOTOGRAPHY.The Ultimate Guide to Master Astrophotography is the ultimate manual for anyone looking to create spectacular landscape astrophotography images. By explaining the science of landscape astrophotography in clear and straightforward language, it provides insights into phenomena such as the appearance or absence of the Milky Way, the moon, and constellations. This unique approach, which combines the underlying scientific principles of astronomy with those of photography, will help deepen your understanding and give you the tools you need to fulfill your artistic vision.

The Beginner's Guide to Astronomy

Digital SLR Astrophotography

Astronomy

Beginners Guide to Astronomy

An Owner's Manual for the Night Sky

Stargazing

Sky Gazing

This accessible yet comprehensive illustrated handbook covers every aspect of astronomy, featuring the latest discoveries and the most recently available images of the planets and solar system. Includes a definitive month-by-month guide to the night sky, with star charts for the northern and southern hemispheres, profiles of all 88 constellations, and more.

Explore the star-studded cosmos with this fully updated, user-friendly skywatcher's guide, filled with charts, graphics, photographs, and expert tips for viewing -- and understanding -- the wonders of space. Stargazing's too much fun to leave to astronomers. In these inviting pages, "Night Sky Guy" Andrew Fazekas takes an expert but easygoing approach that will delight would-be astronomers of all levels. Essential information, organized logically, brings the solar system, stars, and planets to life in your own backyard. Start with the easiest constellations and then "star-hop" across the night sky to find others nearby. Learn about the dark side of the moon, how to pick Mars out of a planetary lineup, and which kinds of stars twinkle in your favorite constellations. Hands-on tips and techniques for observing with the naked eye, binoculars, or a telescope help make the most out of sightings and astronomical phenomena such as eclipses and meteor showers. Photographs and graphics present key facts in an easy-to-understand format, explaining heavenly phenomena such as black holes, solar flares, and supernovas. Revised to make skywatching even easier for the whole family, this indispensable guide shines light on the night sky--truly one of the greatest shows on Earth!

Gets beginners off to a great start! Introduces the hobby of astronomy with observation and photographic tips. Identifies the best sky objects to observe using the naked eye, binoculars, and backyard telescopes. By David J. Eicher, managing editor of Astronomy magazine. 7 3/8 x 9 5/8; 166 pgs.; 80 b&w and 80 color photos; softcover.

Photography: Night Sky will give you the tips and techniques you need to take stunning photographs in the dark. You'll learn how to overcome the unique issues that confront nighttime photographers and capture images of which you'll be proud. Co-author Jennifer Wu, an elite Canon "Explorer of Light" professional photographer, has become renowned for her ability to capture nighttime phenomena, from quarter-phase moon rises to shooting stars to the ephemeral Milky Way. this new guide reveals her methods and concentrates on photographing four principal subjects: stars as points of light, star trails, the moon, and twilight. these subjects share common photo techniques and considerations, but each also requires a distinct approach. Once captured, your digital images must be finished on the computer; coauthor and author of the bestselling Photography: Outdoors, James Martin, delves into the settings and procedures that elevate an image from mundane to striking. This clear and practical guide will help photographers of all levels portray the stunning spectacle of the night sky, preserving those special memories and moments from a life outdoors.

The Ultimate Guide To Master Astrophotography

Astrophotography on the Go

The Astrophotographer's Guidebook

The Photographer's Guide to Astrophotography

Astrophotography for the Amateur

A Guide to the Moon, Sun, Planets, Stars, Eclipses, and Constellations

Philip's Astrophotography With Mark Thompson

"Detailing the photographic equipment and astronomical instruments needed to capture celestial images, this guide shows how astrophotography can be accessible to all photographers. Included is a detailed introduction to basic astronomy with information on mapping the sky, locating celestial bodies, and planning an expedition to photograph astronomical phenomena. Photographers learn how to determine the color sensitivity of various films and achieve the best possible exposure, how to ensure a captivating composition, and how commercially processed prints can support their artistic vision. Whether photographers wish to capture deep sky or solar system subjects, the dual focus on photography and astronomy and the helpful sidebars and charts will ensure great images, enhanced creativity, and a greater appreciation of the night sky."

Provides novice to accomplished amateur astronomers with a firm grounding in the basics and successful use of digital astrophotography. Provides examples of the best images, and gives readers hints and tips about how to get the best out of this extraordinary technology. Experts in CCD astronomy from North America and Europe have contributed to this book, illustrating their help and advice with many beautiful colour images - the book is in full color throughout. Techniques range from using simple webcams to highly technical aspects such as supernovae patrolling. Computer processing, stacking and image-enhancement are detailed, along with many hints and tips from the experts.

The Definitive Resource for Viewing the Night Sky David Dickinson, Earth science teacher and backyard astronomer, and Fraser Cain, publisher of Universe Today, have teamed up to provide expert guidance on observing the night sky. The Universe Today Ultimate Guide to Viewing the Cosmos features the best tips and tricks for viewing our solar system and deep sky objects, as well as detailed charts, graphs and tables to find must-see events for years to come. This comprehensive guide is complete with stunning and exclusive photography from top night sky photographers, as well as advice on how to take your own incredible photos. Take your recreational viewing to the next level with activities like: Finding comets and asteroids Tracking variable stars Monitoring meteor showers Following solar activity Tracking satellites Timing lunar and asteroid occultations With star charts, practical background information, technological resources and telescope and astrophotography guides, this is the ultimate resource for any backyard space enthusiast.

This rich visual guide takes readers aged 9-14 on a journey through the Earth's solar system, around the galaxy, and into deep space to learn about the moon, sun, planets, stars, and constellations.

The 100 Best Astrophotography Targets

The Complete Guide to Landscape Astrophotography

Beginner's Guide to Amateur Astronomy

Basic Astronomy and the Small Telescope

Digital Astrophotography: The State of the Art

Astrophotography

A Guide to Affordable Astronomy and Astrophotography

Sets out a simple month-by-month program to reveal all of the night sky's biggest and most beautiful secrets in just one year - and with only a few hours of stargazing each month By investing just an hour a week and \$50 in binoculars, it's possible to learn a few simple techniques and quickly gain a real insight into the night sky's ever-changing patterns - and what they tell us about Earth, the seasons and ourselves. Searching more for a learned appreciation of nature and our exact place within the cosmos than academic scientific knowledge, science and travel writer Jamie Carter takes the reader on a 12 month tour of the night sky's incredible annual rhythms that say so much about Earth. During the journey he learns about the celestial mechanics at work in the skies above that are - to the beginner - almost beyond belief. As well as the vital constellations and clusters, and the weird and wonderful nebulas, he searches out "dark sky destinations" across the globe that help increase knowledge and give a new perspective on familiar night sky sights. On the journey he witnesses a solar eclipse and grapples with star-charts, binoculars, smartphone apps, telescopes, spots satellites and attempts basic astro-photography. By year's end, the reader will be able to glance at the night sky from anywhere on the planet and tell what direction he or she is facing, what time it is, where all the planets are and even where the Galactic Center Point is. A concise guide for beginner and intermediate astrophotographers.

The Complete Guide to Landscape Astrophotography is the ultimate manual for anyone looking to create spectacular landscape astrophotography images. By explaining the science of landscape astrophotography in clear and straightforward language, it provides insights into phenomena such as the appearance or absence of the Milky Way, the moon, and constellations. This unique approach, which combines the underlying scientific principles of astronomy with those of photography, will help deepen your understanding and give you the tools you need to fulfil your artistic vision. Key features include: • Distinguished Guest Gallery of images from renowned nightscape photographers such as Babak Tafreshi, Bryan Peterson, Alan Dyer, Brenda Tharp, Royce Bair, Wally Pacholka, and David Kingham • The twenty-five best landscape astrophotography subjects and how to photograph them • Astronomy 101 - build your knowledge of night sky objects and their motion: the Milky Way, moon, Aurora Borealis/Australis, constellations, meteors and comets • Information on state-of-the-art planning software and apps designed to enable you to capture and enhance your landscape astrophotography • Field guide for creating a detailed plan for your night shoot • Description of the best moon phases for specific types of nightscape images, and the best months and times of night to see the Milky Way • How-to guide for creating stunning time-lapse videos of the night sky, including Holy Grail transitions from pre-sunset to complete darkness • Four detailed case studies on creating landscape astrophotography images of the Milky Way, full moon, star trails, and constellations

Learn how to find and photograph 50+ objects in the night sky using a small telescope and affordable equipment! Includes the moon, the planets, the sun, nebulae, galaxies, clusters, and multiple star systems! A small telescope is a powerful tool... if you know how to use one. This book walks the reader through the basics of astronomy (the sun, the Earth, the moon, the planets, Kepler's laws, and more), the basic concepts behind how telescopes work (resolution, magnification, parts & accessories, limitations, and more), and how to observe various astronomical targets through a small telescope (the moon, planets, stars, clusters, galaxies, and nebulae). A brief introduction to smartphone and budget-friendly DSLR astrophotography is also included. This book will show the reader affordable ways to pursue astronomy and astrophotography. For example, the book discusses "purchasing used equipment," "what you really need to buy," "how to take astrophotographs without tracking," "how to build your own solar filter," "how to build a simple barn door mount," "how to simply build your own telescopes," and other similar topics. This book also contains a complete messier object table (object, type, season, magnitude, and size), several star/constellation maps, a few moon maps, and other similar tables and data. A great resource for any astronomer! This book is 280 pages long (6"x9") and includes author-generated images to keep the price of the book to a minimum.

The Beginner's Guide to Astrophotography

A Pocket Field Guide

101 Cosmic Wonders Including Planets, Moons, Comets, Galaxies, Nebulae, Star Clusters and More

Heavenly Bodies

Astrophotography is Easy!

The Stargazer's Guide to the Night Sky

A Monthly Guide for CCD Imaging with Amateur Telescopes