

## Autoguiding Stark Labs

The 100 Best Astrophotography Targets  
Solid-State Imaging with Charge-Coupled Devices  
The Handbook of Astronomical Image Processing  
Scientific Charge-coupled Devices  
The Dobsonian Telescope  
Biographical Encyclopedia of Astronomers  
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Capturing the Cosmic Light - A Handbook of Astrophotography  
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New Light on Dark Stars

### The 100 Best Astrophotography Targets

This book covers the "why," "how," and "what" of astronomy under light-polluted skies. The prospective city-based observer is told why to observe from home (there are hundreds of spectacular objects to be seen from the average urban site), how to observe the city sky (telescopes, accessories, and modern techniques), and what to observe. About half of the book is devoted to describing "tours" of the sky, with physical and observational descriptions, at-the-eyepiece drawings, and photographs.

### Solid-State Imaging with Charge-Coupled Devices

The discovery of x-rays continues to have a profound and accelerating effect on the field of astronomy. It has opened the cosmos to exploration in ways previously unimaginable and fundamentally altered the methods for pursuing information about our solar system and beyond. Nobel Prize winner Riccardo Giacconi's highly personal account of the birth and evolution of x-ray astronomy reveals the science, people, and institutional settings behind this incalculably important and deeply influential discipline. Part history, part memoir, and part cutting-edge science, *Secrets of the Hoary Deep* is the tale of x-ray astronomy from its infancy through what can only be called its early adulthood. It also offers the companion story of how the tools, techniques, and practices designed to support and develop x-ray astronomy were transferred to optical, infrared, and radio astronomy, drastically altering the face of modern space exploration. Giacconi relates the basic techniques developed at American Science and Engineering and explains how, where, and by whom the science was advanced. From the first Earth-orbiting x-ray satellite, Uhuru, to the opening of the Space Telescope Science Institute and the lift-off of the Hubble Space Telescope to the construction of the Very Large Telescope, Giacconi recounts the ways in which the management methods and scientific

methodology behind successful astronomy projects came to set the standards of operations for all subsequent space- and Earth-based observatories. Along the way he spares no criticism and holds back no praise, detailing individual as well as institutional failures and successes, reflecting upon how far astronomy has come and how far it has yet to go. Crisp, informative, and prognostic, Giacconi's story will captivate, inspire, and, at times, possibly infuriate professional and amateur astronomers across the breadth of the field and at all stages of their personal and professional development.

## **The Handbook of Astronomical Image Processing**

The 110 star clusters, nebulae and galaxies of Messier's catalog are among the most popular of all the deep sky objects and are beautiful targets for amateur observers of all abilities. This stunning new atlas presents a complete and lively account of all of the Messier objects. Details for each object given include a thoroughly-researched history of its discovery, historical observations and anecdotes, the latest scientific data detailing its astrophysical findings, and clear observational descriptions from naked eye through to large telescopes. In addition, this atlas has some of the world's finest color astrophotos, inverted and labelled photos pointing to hidden details and neighboring objects, as well as historical sketches alongside new deep sky drawings. Quite simply, this is the most far-reaching and beautiful reference on the Messier objects there has ever been, and one that no observer should be without!

## **Scientific Charge-coupled Devices**

### **The Dobsonian Telescope**

"The book provides invaluable information to scientists, engineers, and product managers involved with imaging CCDs, as well as those who need a comprehensive introduction to the subject."--Page 4 de la couverture.

## **Biographical Encyclopedia of Astronomers**

Choosing and Using a Refracting Telescope has been written for the many amateur astronomers who already own, or are intending to purchase, a refracting telescope – perhaps to complement their existing arsenal of larger reflecting telescopes – or for the specialist who requires a particular refractor for serious astronomical applications or nature studies. Four hundred year ago, during the winter of 1609, a relatively unknown Italian scientist, Galileo Galilei designed a spyglass with two crude lenses and turned it skyward. Since then, refractors have retained their dominance over all types of reflector in studies of the Moon, planets and double stars because of the precision of their optics and lack of a central obstruction in the optical path, which causes diffraction effects in all commercially-made reflectors. Most mature amateur astronomers got started with a 60mm refractor, or something similar. Thirty years ago, there was little choice available to the hobbyist, but in the last decade long focus crown-flint achromats have moved aside for some exquisitely crafted apochromatic designs offered by leading

commercial manufacturers. There has been a huge increase in the popularity of these telescopes in the last few years, led by a significant increase in the number of companies (particularly, William Optics, Orion USA, StellarVue, SkyWatcher and AstroTech) who are now heavily marketing refractors in the amateur astronomical magazines. In *Choosing and Using a Refracting Telescope*, well-known observer and astronomy writer Neil English celebrates the remarkable history and evolution of the refracting telescope and looks in detail at the instruments, their development and their use. A major feature of this book is the way it compares not only different classes of refractor, but also telescopes of each class that are sold by various commercial manufacturers. The author is perhaps uniquely placed to do this, having used and tested literally hundreds of different refracting telescopes over three decades. Because it includes many diverse subjects such as imaging with consumer-level digital cameras, imaging with webcams, and imaging with astronomical CCD cameras – that are not covered together in equal depth in any other single volume – *Choosing and Using a Refracting Telescope* could become the ‘refractor bible’ for amateur astronomers at all levels, especially those who are interested in imaging astronomical objects of every class.

## **Scientific Astrophotography**

### **Imaging the Southern Sky**

The creation of the European Southern Observatory (ESO) in 1962 was the culmination of the dream of leading astronomers from five European countries. Over the years, as more member states joined, ESO constructed the La Silla and Paranal observatories, as well as the Atacama Large Millimeter/submillimeter Array (ALMA) together with partners. ESO is now starting to build the world's biggest eye on the sky, the European Extremely Large Telescope. At the dawn of 2012, its 50th anniversary year, ESO is ready to enter a new era. One that not even its founding members could have anticipated in their boldest dreams. Constantly at the technological forefront, ESO is ready to tackle new and as yet unimaginable territories of high-precision technology and scientific discovery. Produced especially for ESO's 50th anniversary, this sumptuously illustrated book takes the reader behind the scenes of the most productive ground-based observatory in the world. It contains the best 300 of ESO's images, hand-picked from a large collection of more than 100 000 images. "Beautifully produced, *Europe to the Stars* tells the story of how dreams of giant telescopes became a reality and covers many of the exciting discoveries made at La Silla and Paranal." —BBC Sky at Night, 1 February 2013 "Leave the book on your coffee table, certainly, but read it first and come back to it regularly. It's an intelligent, inspiring celebration of a great European scientific adventure." —Astronomy Now, 1 March 2013

### **Small Astronomical Observatories**

The *Encyclopedia of Twentieth-Century Photography* explores the vast international scope of twentieth-century photography and explains that history with a wide-ranging, interdisciplinary manner. This unique approach covers the aesthetic history of photography as an evolving art and documentary form, while

also recognizing it as a developing technology and cultural force. This Encyclopedia presents the important developments, movements, photographers, photographic institutions, and theoretical aspects of the field along with information about equipment, techniques, and practical applications of photography. To bring this history alive for the reader, the set is illustrated in black and white throughout, and each volume contains a color plate section. A useful glossary of terms is also included.

### **Amazing Light**

The Biographical Encyclopedia of Astronomers is a unique and valuable resource for historians and astronomers alike. The two volumes include approximately 1550 biographical sketches on astronomers from antiquity to modern times. It is the collective work of about 400 authors edited by an editorial board of 9 historians and astronomers, and provides additional details on the nature of an entry and some summary statistics on the content of entries. This new reference provides biographical information on astronomers and cosmologists by utilizing contemporary historical scholarship. Individual entries vary from 100 to 1500 words, including the likes of the superluminaries such as Newton and Einstein, as well as lesser-known astronomers like Galileo's acolyte, Mario Guiducci. A comprehensive contributor index helps researchers to identify the authors of important scientific topics and treatises.

### **Discover the Stars**

This book provides a thorough introduction to and exploration of deep sky astrophotography for the digital photographer. With over 280 images, graphs, and tables, this introductory book uses a progressive and practical style to teach readers how to image the night sky using existing, affordable equipment. The book opens with a brief astronomy primer, followed by chapters that build progressively to explain the challenges, offer solutions, and provide invaluable information on equipment choice through image capture, calibration, and processing in affordable software. The book's focus ranges from how to image sweeping vistas and star trails using only a camera body, lens and tripod, to more advanced methods suitable for imaging galaxies, clusters, nebulae, and stars. Other features of the book include: Real-world assignments showing how and when to use certain tools and how to overcome challenges and setbacks Practical construction projects Evaluations of the most recent developments in affordable hardware and software Exploration on how sensor performance and light pollution relate to image quality and exposure planning Ground-breaking practical chapters on lucky imaging and choosing and using the latest CMOS cameras Written in an accessible, easy to follow format, this comprehensive guide equips readers with all the necessary skills to progress from photographer to astrophotographer.

### **Alas, Babylon**

The Astrophotography Manual is for those photographers who aspire to move beyond using standard SLR cameras and editing software, and who are ready to create beautiful images of nebulae, galaxies, clusters, and the solar system.

Beginning with a brief astronomy primer, this book takes readers through the full astrophotography process, from choosing and using equipment through image capture, calibration, and processing. This combination of technical background information and the hands-on approach brings the science down to earth with a practical method to plan for success. Features include: Over 400 images, graphs, and tables to illustrate these concepts A wide range of hardware to be used, including smartphones, tablets, and the latest mount technologies How to utilize a variety of leading software such as Maxim DL, Nebulosity, Sequence Generator Pro, Photoshop, and PixInsight Case studies showing how and when to use certain tools and overcoming technical challenges How sensor performance and light pollution relate to image quality and exposure planning

### **Lecture Notes and Essays in Astrophysics**

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.

### **Next Time You See the Moon**

PixInsight has taken the astro-imaging world by storm. As the first comprehensive postprocessing platform to be created by astro-imagers for astro-imagers, it has for many replaced other generic graphics editors as the software of choice. PixInsight has been embraced by professionals such as the James Webb (and Hubble) Space Telescope's science imager Joseph DePasquale and Calar Alto's Vicent Peris, as well as thousands of amateurs around the world. While PixInsight is extremely powerful, very little has been printed on the subject. The first edition of this book broke that mold, offering a comprehensive look into the software's capabilities. This second edition expands on the several new processes added to the PixInsight platform since that time, detailing and demonstrating each one with a now-expanded workflow. Addressing topics such as PhotometricColorCalibration, Large-Scale Pixel Rejection, LocalNormalization and a host of other functions, this text remains the authoritative guide to PixInsight.

## **Capturing the Universe**

### **Europe to the Stars**

Arditti's approachable work covers all the details of design, siting and construction – once a basic type has been decided upon. It is written in a way that is equally applicable to the USA and UK (where there are slightly different building regulations) and deals with matters that are basic to building and commissioning any amateur observatory. Uniquely, David Arditti also considers the aesthetics of amateur observatories – fitting them in with family and neighbors, and maybe disguising them as more common garden buildings if necessary. Every amateur astronomer who wants a purpose-built observatory (and let's face it, which one of them doesn't?) will find this book invaluable.

### **Laboratory Astrophysics**

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.

### **International Aerospace Abstracts**

This book focuses on the most recent, relevant, comprehensive and significant aspects in the well-established multidisciplinary field Laboratory Astrophysics. It focuses on astrophysical environments, which include asteroids, comets, the interstellar medium, and circumstellar and circumplanetary regions. Its scope lies between physics and chemistry, since it explores physical properties of the gas, ice, and dust present in those systems, as well as chemical reactions occurring in the gas phase, the bare dust surface, or in the ice bulk and its surface. Each chapter provides the necessary mathematical background to understand the subject, followed by a case study of the corresponding system. The book provides adequate material to help interpret the observations, or the computer models of astrophysical environments. It introduces and describes the use of spectroscopic tools for laboratory astrophysics. This book is mainly addressed to PhD graduates working in this field or observers and modelers searching for information on ice and dust processes.

## **Setting-Up a Small Observatory: From Concept to Construction**

In *The Art of Astrophotography*, astronomer and *Astronomy Now* columnist Ian Morison provides the essential foundations of how to produce beautiful astronomical images. Every type of astroimaging is covered, from images of the Moon and planets, to the constellations, star clusters and nebulae within our Milky Way Galaxy and the faint light of distant galaxies. He achieves this through a series of worked examples and short project walk-throughs, detailing the equipment needed - starting with just a DSLR (digital single lens reflex) camera and tripod, and increasing in complexity as the book progresses - followed by the way to best capture the images and then how, step by step, these may be processed and enhanced to provide results that can rival those seen in astronomical magazines and books. Whether you are just getting into astrophotography or are already deeply involved, Morison's advice will help you capture and create enticing astronomical images.

## **Space Telescopes and Instrumentation 2016**

### **The Universe Today Ultimate Guide to Viewing The Cosmos**

This Festschrift is a collection of essays contributed by students, colleagues, and admirers to honor an eminent scholar on a special anniversary: Charles Hard Townes on the occasion of his 80th birthday, July 28, 1995. In 1964, Townes shared the Nobel Prize in physics with Alexander Mikhailovich Prokhorov and Nikolai Gennadyevich Basov "for fundamental work in the field of quantum electronics, which has led to the construction of oscillators and amplifiers based on the maser-laser principle." His contributions have covered a much wider area, however. His fruitful interests spanning several decades have included many scientific subjects, including, microwave spectroscopy and astrophysics (other articles in this volume will expand further on this point). He has also contributed to public service, having served as the chairman of the Science and Technology Advisory Committee for NASA's Apollo program, and as a member and vice chairman of the President's Science Advisory Committee. As the enormous breadth of contributions from his students shows, he has educated scholars who are now in a wide range of fields. The contributions from his many admirers, among whom are nine fellow Nobel laureates, attest to his impact on many disciplines ranging from electrical engineering to medicine. His influence extends even to theology, as is indicated by one essay. The broadly international character of this Festschrift reflects his deep belief in the international, universal nature of science.

### **The Amateur Astronomer**

The classic apocalyptic novel that stunned the world.

### **Build Your Own Telescope**

### **The Astrophotography Manual**

A guide to constellations, stars, and other celestial objects reveals the mythology surrounding the star groups and the star movement through the sky

### **Lessons from the Masters**

In *Small Astronomical Observatories*, Patrick Moore has collected descriptions of amateur and small professional observatories currently in use in Europe and America, showing how many astronomers have built their own observatory, often with effective and sometimes extraordinary improvisations to reduce the cost. There is a photograph of each, along with details of its construction and a foreword written by Patrick Moore. In addition to providing a fascinating study for its own sake, *Small Astronomical Observatories* offers a unique fund of ideas and practical details for anyone who wants to build an amateur or small professional observatory.

### **Encyclopedia of Twentieth-Century Photography, 3-Volume Set**

*Computers and Astronomy* Perhaps every generation of astronomers believes that their telescopes are the best that have ever been. They are surely all correct! The great leap of our time is that computer-designed and machined parts have led to more accurately made components that give the astronomer ever better views. The manual skills of the craftsman mirror grinder have been transformed into the new-age skills of the programmer and the machine maker. (The new products did not end the work of craftsman telescope makers, though. Many highly skilled amateur/professional opticians continued to produce good-quality mirrors that are still seen today. ) Amateur-priced telescopes are now capable of highly accurate tracking and computer control that were once only the province of professionals. This has greatly increased the possibilities of serious astronomy projects for which tailor-made software has been developed. Add a CCD camera to these improved telescopes (see Chap. 3), and you bring a whole new dimension to your astronomy (see Fig. 1. 1). *Look Before You Leap!* But first, a word of caution. Unless you are already familiar with astronomy and basic telescopes, it is not wise to start spending large amounts of money on a well-featured telescope. Such an instrument might otherwise be subsequently abandoned due to a perceived overcomplexity coupled with a waning interest.

### **Capturing the Cosmic Light - A Handbook of Astrophotography**

*Scientific Astrophotography* is intended for those amateur astronomers who are looking for new challenges, once they have mastered visual observing and the basic imaging of various astronomical objects. It will also be a useful reference for scientifically inclined observers who want to learn the fundamentals of astrophotography with a firm emphasis on the discipline of scientific imaging. This book is not about making beautiful astronomical images; it is about recording astronomical images that are scientifically rigorous and from which accurate data can be extracted. This book is unique in that it gives readers the skills necessary for obtaining excellent images for scientific purposes in a concise and procedurally oriented manner. This not only gets the reader used to a disciplined approach to imaging to maximize quality, but also to maximize the success (and minimize the

frustration!) inherent in the pursuit of astrophotography. The knowledge and skills imparted to the reader of this handbook also provide an excellent basis for “beautiful picture” astrophotography! There is a wealth of information in this book – a distillation of ideas and data presented by a diverse set of sources and based on the most recent techniques, equipment, and data available to the amateur astronomer. There are also numerous practical exercises. Scientific Astrophotography is perfect for any amateur astronomer who wants to go beyond just astrophotography and actually contribute to the science of astronomy.

### **PASCAL explore**

Perhaps the most common question that a child asks when he or she sees the night sky from a dark site for the first time is: 'How many stars are there?' This happens to be a question which has exercised the intellectual skills of many astronomers over the course of most of the last century, including, for the last two decades, one of the authors of this text. Until recently, the most accurate answer was 'We are not certain, but there is a good chance that almost all of them are M dwarfs.' Within the last three years, results from new sky-surveys - particularly the first deep surveys at near infrared wavelengths - have provided a breakthrough in this subject, solidifying our census of the lowest-mass stars and identifying large numbers of the hitherto almost mythical substellar-mass brown dwarfs. These extremely low-luminosity objects are the central subjects of this book, and the subtitle should be interpreted accordingly. The expression 'low-mass stars' carries a wide range of meanings in the astronomical literature, but is most frequently taken to refer to objects with masses comparable with that of the Sun - F and G dwarfs, and their red giant descendants. While this definition is eminently reasonable for the average extragalactic astronomer, our discussion centres on M dwarfs, with masses of no more than 60% that of the Sun, and extends to 'failed stars' - objects with insufficient mass to ignite central hydrogen fusion.

### **Secrets of the Hoary Deep**

This fascinating book will stay with children every time they gaze up at the night sky. Through vivid pictures and engaging explanations, children will learn about many of the Moon's mysteries: what makes it look like a silvery crescent one time and a chalk-white ball a few nights later, why it sometimes appears in the daytime, where it gets its light, and how scientists can predict its shape on your birthday a thousand years from now. Next Time You See the Moon is an ideal way to explain the science behind the shape of the Moon and bring about an evening outing no child—or grown-up—will soon forget. Awaken a sense of wonder in a child with the Next Time You See series from NSTA Kids. The books will inspire elementary-age children to experience the enchantment of everyday phenomena such as sunsets, seashells, fireflies, pill bugs, and more. Free supplementary activities are available on the NSTA website. Especially designed to be experienced with an adult—be it a parent, teacher, or friend—Next Time You See books serve as a reminder that you don't have to look far to find something remarkable in nature.

### **Star Ware**

## **Choosing and Using a Refracting Telescope**

This book is not about imaging from the southern hemisphere, but rather about imaging those areas of the sky that lie south of the celestial equator. Many of the astronomical objects presented are also accessible to northern hemisphere imagers, including those in both the USA and Europe. Imaging the Southern Sky discusses over 150 of the best southern objects to image, including nebulae, galaxies, and planetaries, each one accompanied by a spectacular color image. This book also includes sections on both image capturing and processing techniques and so makes an ideal all-in-one introduction. Furthermore, because it contains an in-depth study of how to capture all the objects, many of which are rarely imaged by amateurs and professionals alike, it is also extremely useful for the more advanced imager.

## **Astrophotography on the Go**

There are currently thousands of amateur astronomers around the world engaged in astrophotography at a sophisticated level. Their ranks far outnumber professional astronomers doing the same and their contributions both technically and artistically are the dominant drivers of progress in the field today. This book is a unique collaboration of individuals world-renowned in their particular area and covers in detail each of the major sub-disciplines of astrophotography. This approach offers the reader the greatest opportunity to learn the most current information and the latest techniques directly from the foremost innovators in the field today. "Lessons from the Masters" includes a brilliant body of recognized leaders in astronomical imaging, assembled by Robert Gendler, who delivers the most current, sophisticated and useful information on digital enhancement techniques in astrophotography available today. Each chapter focuses on a particular technique, but the book as a whole covers all types of astronomical image processing, including processing of events such as eclipses, using DSLRs, and deep-sky, planetary, widefield, and high resolution astronomical image processing. Recognized contributors include deep-sky experts such as Jay GaBany, Tony Hallas, and Ken Crawford, high-resolution planetary expert Damian Peach, and the founder of TWAN (The World at Night) Babak A. Tafreshi. A large number of illustrations (150, 75 in color) present the challenges and accomplishments involved in the processing of astronomical images by enthusiasts.

## **The Deep-sky Imaging Primer**

This 2000 Edition of Sir Patrick Moore's classic book has been completely revised in the light of changes in technology. Not only do these changes include commercially available astronomical telescopes and software, but also what we know and understand about the universe. There are many new photographs and illustrations. Packs a great deal of valuable information into appendices which make up almost half the book. These are hugely comprehensive and provide hints and tips, as well as data (year 2000 onwards) for pretty well every aspect of amateur astronomy. This is probably the only book in which all this information is collected in one place.

## **Atlas of the Messier Objects**

### **So You Want a Meade LX Telescope!**

Solid-State Imaging with Charge-Coupled Devices covers the complete imaging chain: from the CCD's fundamentals to the applications. The book is divided into four main parts: the first deals with the basics of the charge-coupled devices in general. The second explains the imaging concepts in close relation to the classical television application. Part three goes into detail on new developments in the solid-state imaging world (light sensitivity, noise, device architectures), and part four rounds off the discussion with a variety of applications and the imager technology. The book is a reference work intended for all who deal with one or more aspects of solid-state imaging: the educational, scientific and industrial world. Graduates, undergraduates, engineers and technicians interested in the physics of solid-state imagers will find the answers to their imaging questions. Since each chapter concludes with a short section 'Worth Memorizing', reading this short summary allows readers to continue their reading without missing the main message from the previous section.

### **The Art of Astrophotography**

The book that taught thousands of people about astrophotography has been completely revised and updated in this second edition. It covers everything you need to know to capture stunning images of deep-sky objects with a DSLR or CCD camera: The fundamental concepts of imaging and their impact on the final image How to pick a telescope and camera How to get set up and take the images Where and when to find the best objects in the night sky How to process images using Adobe Photoshop(R) and PixInsight(R) Start-to-finish examples of image processing Full-color with over 300 illustrations.

### **Astronomy Now**

### **The Urban Astronomer's Guide**

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.

### **Inside PixInsight**

The Handbook of Astrophotography is the first book dedicated to Astronomical Imaging through modest equipment, and the first to be published in India. It is a chronicle of the techniques learnt and employed by the author and by no means are proprietary. It is assumed that the reader is equipped with the basic knowledge to use a digital camera. After showing the many methods to capture the Cosmos, the book shows how to process these images. It is designed to be a handbook and not a user manual. The author hopes that the reader will be confident in astronomical imaging and develop his/her own techniques after reading the book.

### **New Light on Dark Stars**

Description: This 24-photo calendar (a major and minor shot each month) features a wide range of objects and phenomena in the sky including stars, planets, and nebulae as well as historic lunar exploration photos. In addition to photos and commentary, the calendar provides monthly star charts to help observers note the night-sky changes throughout the year. Images are courtesy of Gemini Observatory, Chandra X-Ray Observatory, NASA/University of Massachusetts, D. Wang, NASA/NEAR (Near-Earth Asteroid Rendezvous mission), European Space Agency/Infrared Space Observatory Mission, CAM, ISOGAL Team, NASA/ESA, Cassini Mission, NASA, NASA/Space Telescope Science Institute, NASA/Malin Space Science Systems, and European Southern Observatory. Photos were also taken by the author and other talented stargazers. Notes: This calendar is created by Richard Berry, former editor-in-chief of Astronomy and Telescope Making magazines. Richard holds undergraduate and graduate degrees in astronomy, and now works full-time writing books about the stars. Pictured are: JAN Galaxy M74, Galactic Center in X-Rays FEB Apollo 9 Spacewalk, Asteroid Eros MAR Peering into the Pillars of Creation, Warm Dust in the Eagle Nebula APR Io over the Jovian Clouds, Jupiter Crescent with Io MAY Hubble over the Earth, Hubble Repairs JUN The Mice, The Tadpole JUL Apollo 16 at Descartes, Collecting Lunar Rock Samples AUG Starbirth in Sharpless 106, NGC 1999 SEP M63 Galaxy, Omega Nebula OCT Viking Lander 2, Mars in True Color NOV The Blue Cave, Nebula in Corona Australis DEC The Cone Nebula, Herbig-Haro Object #34

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