

DOWNLOAD LESSONS FROM THE MASTERS CURRENT CONCEPTS IN ASTRONOMICAL IMAGE PROCESSING THE PATRICK MOORE PRACTICAL ASTRONOMY SERIES FREE

Lessons from the Masters

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.

Astrophotography is Easy!

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.

Budget Astrophotography

Here are clear explanations of how to make superb astronomical deep-sky images using only a DSLR or webcam and an astronomical telescope – no expensive dedicated CCD cameras needed! The book is written for amateur astronomers interested in budget astrophotography – the deep sky, not just the Moon and planets – and for those who want to improve their imaging skills using DSLR and webcams. It is even possible to use existing (non-specialist astronomical) equipment for scientific applications such as high resolution planetary and lunar photography, astrometry, photometry, and spectroscopy. The introduction of the CCD

revolutionized astrophotography. The availability of this technology to the amateur astronomy community has allowed advanced science and imaging techniques to become available to almost anyone willing to take the time to learn a few, simple techniques. Specialized cooled-chip CCD imagers are capable of superb results in the right hands – but they are all very expensive. If budget is important, the reader is advised on using a standard camera instead. Jensen provides techniques useful in acquiring beautiful high-quality images and high level scientific data in one accessible and easy-to-read book. It introduces techniques that will allow the reader to use more economical DSLR cameras – that are of course also used for day-to-day photography – to produce images and data of high quality, without a large cash investment.

The Amateur Astronomer's Guide to the Deep-Sky Catalogs

Every amateur astronomer has at least heard of the many different catalogs of deep-sky objects; the most well known are the Messier, the Caldwell, the Herschel, and the NGC. All of these catalogs are, in general, readily available, but very few amateur observers are in a position to choose the best catalog for their particular deep-sky observing program, know how to use the catalog, or even realize just how many there are out there! The Amateur Astronomer's Guide to the Deep-sky Catalogs is a single compilation of the historical and modern astronomical deep-sky catalogs. It discusses their origins, compares what's in them, explains how to interpret the data they contain, and even outlines how readers can create suitable 'custom' catalogs for their own use. The last section provides a set of three deep-sky catalogs created by the author, for observers of different levels of experience, from newcomer to expert.

Choosing and Using a Dobsonian Telescope

In the 1960's, American amateur astronomer, John Dobson, designed a revolutionary kind of astronomical telescope featuring a lightweight large-aperture reflecting system on a simple mounting, using the then-revolutionary material called teflon. The design combines simplicity and portability with large-aperture prowess. Thirty years later Dobsonians remain supreme for visually observing faint deep-sky objects and are one of the best-selling large telescopes in the USA and Europe. This popularity is reflected in the recent increase of companies now heavily marketing Dobsonians, in particular, Meade (the "Lightbridge" range), Orion USA (XT Intelliscope series), and Skywatcher (Skyliner and Flextube models). This book is the ultimate guide to buying and using commercial Dobsonians, both 'Econo' and 'Primo' models, with in-depth accounts for the various models (plus accessories) on the market and descriptions of the many innovations that amateurs have made to optimize their telescopes' performance.

A Practical Guide to Lightcurve Photometry and Analysis

Tools for amateur astronomers who wish to go beyond CCD imaging and step into 'serious' science. The text offers techniques for gathering, analyzing, and publishing data, and describes joint projects in which amateurs and students can take part. Readers learn to recognize and avoid common errors in gathering photometry data, with detailed examples for analysis. Includes reviews of available software, with screen shots and useful tips.

Choosing and Using a Refracting Telescope

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.

The Astrophotography Manual

The *Astrophotography Manual*, Second Edition is for photographers ready to move beyond standard SLR cameras and editing software to create beautiful images of nebulae, galaxies, clusters, and the stars. Beginning with a brief astronomy primer, this book takes readers through the full astrophotography process, from choosing and using equipment to image capture, calibration, and processing. This combination of technical background and hands-on approach brings the science down to earth, with practical methods to ensure success. This second edition now includes: Over 170 pages of new content within 22 new chapters, with 600 full-color illustrations. Covers a wide range of hardware, including mobile devices, remote control and new technologies. Further insights into leading software, including automation, Sequence Generator Pro and PixInsight Ground-breaking practical chapters on hardware and software as well as alternative astrophotography pursuits

Inside PixInsight

In this book, Warren Keller reveals the secrets of astro-image processing software PixInsight in a practical and easy to follow manner, allowing the reader to produce stunning astrophotographs from even mediocre data. As the first comprehensive post-processing platform to be created by astro-imagers for astro-imagers, it has for many, replaced the generic graphics editors as the software of choice. With clear instructions from Keller, astrophotographers can get the most from its tools to create amazing images. Capable of complex post-processing routines, PixInsight is also an advanced pre-processing software, through which astrophotographers calibrate and stack their exposures into completed master files. Although it is extremely powerful, PixInsight has been inadequately documented in print--until now. With screenshots to help illustrate the process, it is a vital guide.

Open Skies

This open access book on the history of the National Radio Astronomy Observatory covers the scientific discoveries and technical innovations of late 20th century radio astronomy with particular attention to the people and institutions involved. The authors have made extensive use of the NRAO Archives, which contain an unparalleled collection of documents pertaining to the history of radio astronomy, including the institutional records of NRAO as well as the personal papers of many of the pioneers of U.S. radio astronomy. Technical details and extensive citations to original sources are given in notes for the more technical readers, but are not required for an understanding of the body of the book. This book is intended for an audience ranging from interested lay readers to professional researchers studying the scientific, technical, political, and cultural development of a new science, and how it changed the course of 20th century

astronomy.

So You Want a Meade LX Telescope!

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.

A Buyer's and User's Guide to Astronomical Telescopes and Binoculars

Amateur astronomers of all skill levels are always contemplating their next telescope, and this book points the way to the most suitable instruments. Similarly, those who are buying their first telescopes – and these days not necessarily a low-cost one – will be able to compare and contrast different types and manufacturers. This exciting and revised new guide provides an extensive overview of binoculars and telescopes. It includes detailed up-to-date information on sources, selection and use of virtually every major type, brand, and model on today's market, a truly invaluable treasure-trove of information and helpful advice for all amateur astronomers. Originally written in 2006, much of the first edition is inevitably now out of date, as equipment advances and manufacturers come and go. This second edition not only updates all the existing sections of "A Buyer's and User's Guide to Astronomical Telescopes and Binoculars" but adds two new ones: Astro-imaging and Professional-Amateur collaboration. Thanks to the rapid and amazing developments that have been made in digital cameras – not those specialist cool-chip astronomical cameras, not even DSLRs, but regular general-purpose vacation cameras – it is easily possible to image all sorts of astronomical objects and fields. Technical developments, including the Internet, have also made it possible for amateur astronomers to make a real contribution to science by working with professionals. Selecting the right device for a variety of purposes can be an overwhelming task in a market crowded with observing options, but this comprehensive guide clarifies the process. Anyone planning to purchase binoculars or telescopes for astronomy – whether as a first instrument or as an upgrade to the next level – will find this book a treasure-trove of information and advice. It also supplies the reader with many useful hints and tips on using astronomical telescopes or binoculars to get the best possible results from your purchase.

Practical Astronomy

This practical manual provides essential material for the extensive world-wide community of non-professional astronomers. Every page of the book is alive with the infectious enthusiasm of the author whose expertise, knowledge and teaching experience provides easy access to the fascination and enjoyment of sky-watching. - Provides essential material for the extensive world-wide community of non-professional astronomers - The author's enthusiasm is reflected in every page, and his expertise, knowledge and teaching experience provides easy access to the fascination and enjoyment of sky-watching - Includes chapters on the celestial sphere, the sun and sundials, star positions, star maps, planispheres and nomograms, and light and basic optics

The New Amateur Astronomer

Amateur astronomy has changed beyond recognition in less than two decades. The reason is, of course, technology. Affordable high-quality telescopes, computer-controlled 'go to' mountings, autoguiders, CCD cameras, video, and (as always) computers and the Internet, are just a few of the advances that have revolutionized astronomy for the twenty-first century. Martin Mobberley first looks at the basics before going into an in-depth study of what's available commercially. He then moves on to the revolutionary possibilities that are open to amateurs, from imaging, through spectroscopy and photometry, to patrolling for near-earth objects - the search for comets and asteroids that may come close to, or even hit, the earth. The New Amateur Astronomer is a road map of the new astronomy, equally suitable for newcomers who want an introduction, or old hands who need to keep abreast of innovations. From the reviews: "This is one of several dozen books in Patrick Moore's "Practical Astronomy" series. Amid this large family, Mobberley finds his niche: the beginning high-tech amateur. The book's first half discusses equipment: computer-driven telescopes, CCD cameras, imaging processing software, etc. This market is changing every bit as rapidly as the computer world, so these details will be current for only a year or two. The rest of the book offers an overview of scientific projects that serious amateurs are carrying out these days. Throughout, basic formulas and technical terms are provided as needed, without formal derivations. An appendix with useful references and Web sites is also included. Readers will need more than this book if they are considering a plunge into high-tech amateur astronomy, but it certainly will whet their appetites. Mobberley's most valuable advice will save the book's owner many times its cover price: buy a quality telescope from a reputable dealer and install it in a simple shelter so it can be used with as little set-up time as possible. A poor purchase choice and the hassle of setting up are why most fancy telescopes gather dust in their owners' dens. Summing Up: Highly recommended. General readers; lower- and upper-division undergraduates." (T. D. Oswalt, CHOICE, March 2005)

Choosing and Using Astronomical Filters

As a casual read through any of the major amateur astronomical magazines will demonstrate, there are filters available for all aspects of optical astronomy. This book provides a ready resource on the use of the following filters, among others, for observational astronomy or for imaging: Light pollution filters Planetary filters Solar filters Neutral density filters for Moon observation Deep-sky filters, for such objects as galaxies, nebulae and more Deep-sky objects can be imaged in much greater detail than was possible many years ago. Amateur astronomers can take photographs that rival those of professional observatories! The ability to do this has been brought about by the revolution in CCD cameras and improved filters. The book pinpoints which astronomical objects are best observed with which filters. Post-processing (using Photoshop) is also discussed, since it is helpful in further improving filtered astro images. The last part of the book is an observational guide to 100 deep sky objects that benefit from the use of filters – all personally observed by the author – with notes on the filters used (or potentially of use) in their observation and imaging. There are also notes on their celestial coordinates, magnitudes and other pertinent information.

Machine Learning Techniques for Space Weather

Machine Learning Techniques for Space Weather provides a thorough and accessible presentation of machine learning techniques that can be employed by space weather professionals. Additionally, it presents an overview of real-world applications in space science to the machine learning community, offering a bridge between the fields. As this volume demonstrates, real advances in space weather can be gained using nontraditional approaches that take into account nonlinear and complex dynamics, including information theory, nonlinear auto-regression models, neural networks and clustering algorithms. Offering practical techniques for translating the huge amount of information hidden in data into useful knowledge that allows for better prediction, this book is a unique and important resource for space physicists, space weather professionals and computer scientists in related fields. - Collects many representative non-traditional approaches to space weather into a single volume - Covers, in an accessible way, the mathematical background that is not often explained in detail for space scientists - Includes free software in the form of

simple MATLAB® scripts that allow for replication of results in the book, also familiarizing readers with algorithms

Classic Telescopes

Classic telescopes are of interest to amateur astronomers for a variety of reasons. There are the dedicated collectors, but there are also many amateurs who love the nostalgia they inspire. These telescopes “feel” different from any contemporary telescope and perhaps have a unique ability to reconnect the owner to a bygone age of craftsmanship. This book takes a look at traditional telescopes built by the great instrument makers of the 18th and 19th centuries, particularly the dynastic telescope makers, including Dollond, Alvan Clark, Thomas Cooke & Sons, and Carl Zeiss. Also included are lesser luminaries such as John Brashear, John Calver, William Wray, Henry Fitz, and William Henry Mogy. 'Classic Telescopes' covers the key features of the telescopes designed by these manufacturers, and shows how a heady combination of market trends, instrument condition, and pedigree will dictate their prices at auction. 'Classic Telescopes' also shows the reader how to find real bargains! Interviews with top classic telescope collectors (and users) provide the best tips of prospecting for a genuine acquisition.

Before Religion

Examining a wide array of ancient writings, Brent Nongbri dispels the commonly held idea that there is such a thing as ancient religion. Nongbri shows how misleading it is to speak as though religion was a concept native to pre-modern cultures.

Complexity

“If you liked Chaos, you’ll love Complexity. Waldrop creates the most exciting intellectual adventure story of the year” (The Washington Post). In a rarified world of scientific research, a revolution has been brewing. Its activists are not anarchists, but rather Nobel Laureates in physics and economics and pony-tailed graduates, mathematicians, and computer scientists from all over the world. They have formed an iconoclastic think-tank and their radical idea is to create a new science: complexity. They want to know how a primordial soup of simple molecules managed to turn itself into the first living cell—and what the origin of life some four billion years ago can tell us about the process of technological innovation today. This book is their story—the story of how they have tried to forge what they like to call the science of the twenty-first century. “Lucidly shows physicists, biologists, computer scientists and economists swapping metaphors and reveling in the sense that epochal discoveries are just around the corner . . . [Waldrop] has a special talent for relaying the exhilaration of moments of intellectual insight.” —The New York Times Book Review “Where I enjoyed the book was when it dove into the actual question of complexity, talking about complex systems in economics, biology, genetics, computer modeling, and so on. Snippets of rare beauty here and there almost took your breath away.” —Medium “[Waldrop] provides a good grounding of what may indeed be the first flowering of a new science.” —Publishers Weekly

The Deep-sky Imaging Primer

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.

Searching the Heavens and the Earth

Jesuits established a large number of astronomical, geophysical and meteorological observatories during the 17th and 18th centuries and again during the 19th and 20th centuries throughout the world. The history of these observatories has never been published in a complete form. Many early European astronomical observatories were established in Jesuit colleges. During the 17th and 18th centuries Jesuits were the first western scientists to enter into contact with China and India. It was through them that western astronomy was first introduced in these countries. They made early astronomical observations in India and China and they directed for 150 years the Imperial Observatory of Beijing. In the 19th and 20th centuries a new set of observatories were established. Besides astronomy these now included meteorology and geophysics. Jesuits established some of the earliest observatories in Africa, South America and the Far East. Jesuit observatories constitute an often forgotten chapter of the history of these sciences.

The Time Is Now

TEAM-UP, the National Task Force to Elevate African American representation in Undergraduate Physics & Astronomy was chartered and funded by the American Institute of Physics (AIP) Board of Directors to examine the reasons for the persistent under-representation of African Americans in physics and astronomy in the US as measured by bachelor's degrees in these fields. This book is their detailed report which include recommendations.

Frontiers in Massive Data Analysis

Data mining of massive data sets is transforming the way we think about crisis response, marketing, entertainment, cybersecurity and national intelligence. Collections of documents, images, videos, and networks are being thought of not merely as bit strings to be stored, indexed, and retrieved, but as potential sources of discovery and knowledge, requiring sophisticated analysis techniques that go far beyond classical indexing and keyword counting, aiming to find relational and semantic interpretations of the phenomena underlying the data. *Frontiers in Massive Data Analysis* examines the frontier of analyzing massive amounts of data, whether in a static database or streaming through a system. Data at that scale-terabytes and petabytes-is increasingly common in science (e.g., particle physics, remote sensing, genomics), Internet commerce, business analytics, national security, communications, and elsewhere. The tools that work to infer knowledge from data at smaller scales do not necessarily work, or work well, at such massive scale. New tools, skills, and approaches are necessary, and this report identifies many of them, plus promising research directions to explore. *Frontiers in Massive Data Analysis* discusses pitfalls in trying to infer knowledge from massive data, and it characterizes seven major classes of computation that are common in the analysis of massive data. Overall, this report illustrates the cross-disciplinary knowledge-from computer science, statistics, machine learning, and application disciplines-that must be brought to bear to make useful inferences from massive data.

Celestial Sleuth

For a general audience interested in solving mysteries in art, history, and literature using the methods of science, 'forensic astronomy' is a thrilling new field of exploration. Astronomical calculations are the basis of the studies, which have the advantage of bringing to readers both evocative images and a better understanding of the skies. Weather facts, volcano studies, topography, tides, historical letters and diaries, famous paintings, military records, and the friendly assistance of experts in related fields add variety, depth, and interest to the work. The chosen topics are selected for their wide public recognition and intrigue, involving artists such as Vincent van Gogh, Claude Monet, Edvard Munch, and Ansel Adams; historical events such as the Battle of Marathon, the death of Julius Caesar, the American Revolution, and World War II; and literary authors such as Chaucer, Shakespeare, Joyce, and Mary Shelley. This book sets out to answer these mysteries indicated with the means and expertise of astronomy, opening the door to a richer experience

of human culture and its relationship with nature. Each subject is carefully analyzed. As an example using the study of sky paintings by Vincent van Gogh, the analytical method would include: - computer calculations of historical skies above France in the 19th century - finding and quoting the clues found in translations of original letters by Van Gogh - making site visits to France to determine the precise locations when Van Gogh set up his easel and what celestial objects are depicted. For each historical event influenced by astronomy, there would be a different kind of mystery to be solved. As an example: - How can the phase of the Moon and time of moonrise help to explain a turning point of the American Civil War - the fatal wounding of Stonewall Jackson at Chancellorsville in 1863? For each literary reference to astronomy, it was determined which celestial objects were being described and making an argument that the author is describing an actual event. For example, what was the date of the moonlit scene when Mary Shelley first had the idea for her novel "Frankenstein?" These and more fun riddles will enchant and delight the fan of art and astronomy.

Archaeology, Anthropology, and Interstellar Communication

Addressing a field that has been dominated by astronomers, physicists, engineers, and computer scientists, the contributors to this collection raise questions that may have been overlooked by physical scientists about the ease of establishing meaningful communication with an extraterrestrial intelligence. These scholars are grappling with some of the enormous challenges that will face humanity if an information-rich signal emanating from another world is detected. By drawing on issues at the core of contemporary archaeology and anthropology, we can be much better prepared for contact with an extraterrestrial civilization, should that day ever come.

Cataclysmic Cosmic Events and How to Observe Them

In the Victorian era – or for non-British readers, the mid-to-late nineteenth century – amateur astronomy tended to center on Solar System objects. The Moon and planets, as well as bright comets, were the key objects of interest. The brighter variable stars were monitored, but photography was in its infancy and digital imaging lay a century in the future. Today, at the start of the twenty-first century, amateurs are better equipped than any professionals of the mid-twentieth century, let alone the nineteenth. An amateur equipped with a 30-cm telescope and a CCD camera can easily image objects below magnitude 20 and, from very dark sites, 22 or 23. Such limits would have been within the realm of the 100- and 200-inch reflectors on Mount Wilson and Mount Palomar in the 1950s, but no other observatories. However, even those telescopes took hours to reach such limits, and then the photographic plates had to be developed, fixed, and examined by eye. In the modern era digital images can be obtained in minutes and analyzed 'on the fly' while more images are being downloaded. Developments can be e-mailed to other interested amateurs in real time, during an observing session, so that when a cataclysmic event takes place amateurs worldwide know about it. As recently as the 1980s, even professional astronomers could only dream of such instantaneous communication and processing ability.

How I Became a Quant

Praise for How I Became a Quant "Led by two top-notch quants, Richard R. Lindsey and Barry Schachter, How I Became a Quant details the quirky world of quantitative analysis through stories told by some of today's most successful quants. For anyone who might have thought otherwise, there are engaging personalities behind all that number crunching!" --Ira Kawaller, Kawaller & Co. and the Kawaller Fund "A fun and fascinating read. This book tells the story of how academics, physicists, mathematicians, and other scientists became professional investors managing billions." --David A. Krell, President and CEO, International Securities Exchange "How I Became a Quant should be must reading for all students with a quantitative aptitude. It provides fascinating examples of the dynamic career opportunities potentially open to anyone with the skills and passion for quantitative analysis." --Roy D. Henriksson, Chief Investment Officer, Advanced Portfolio Management "Quants"--those who design and implement mathematical models for the pricing of derivatives, assessment of risk, or prediction of market movements--are the backbone of today's

investment industry. As the greater volatility of current financial markets has driven investors to seek shelter from increasing uncertainty, the quant revolution has given people the opportunity to avoid unwanted financial risk by literally trading it away, or more specifically, paying someone else to take on the unwanted risk. *How I Became a Quant* reveals the faces behind the quant revolution, offering you the chance to learn firsthand what it's like to be a quant today. In this fascinating collection of Wall Street war stories, more than two dozen quants detail their roots, roles, and contributions, explaining what they do and how they do it, as well as outlining the sometimes unexpected paths they have followed from the halls of academia to the front lines of an investment revolution.

But it was Fun

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 nebulas, 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

The Astrophotography Manual

Fiftieth anniversary reissue of the founding media studies book that helped establish media art as a cultural category. First published in 1970, Gene Youngblood's influential *Expanded Cinema* was the first serious treatment of video, computers, and holography as cinematic technologies. Long considered the bible for media artists, Youngblood's insider account of 1960s counterculture and the birth of cybernetics remains a mainstay reference in today's hypermediated digital world. This fiftieth anniversary edition includes a new Introduction by the author that offers conceptual tools for understanding the sociocultural and sociopolitical realities of our present world. A unique eyewitness account of burgeoning experimental film and the birth of video art in the late 1960s, this far-ranging study traces the evolution of cinematic language to the end of fiction, drama, and realism. Vast in scope, its prescient formulations include "the paleocybernetic age," "intermedia," the "artist as design scientist," the "artist as ecologist," "synaesthetics and kinesthetics," and "the technosphere: man/machine symbiosis." Outstanding works are analyzed in detail. Methods of production are meticulously described, including interviews with artists and technologists of the period, such as Nam June Paik, Jordan Belson, Andy Warhol, Stan Brakhage, Carolee Schneemann, Stan VanDerBeek, Les Levine, and Frank Gillette. An inspiring Introduction by the celebrated polymath and designer R. Buckminster Fuller—a perfectly cut gem of countercultural thinking in itself—places Youngblood's radical observations in comprehensive perspective. Providing an unparalleled historical documentation, *Expanded Cinema* clarifies a chapter of countercultural history that is still not fully represented in the arthistorical record half a century later. The book will also inspire the current generation of artists working in ever-newer expansions of the cinematic environment and will prove invaluable to all who are concerned with the technologies that are reshaping the nature of human communication.

Expanded Cinema

This open access book explores commentaries on an influential text of pre-Copernican astronomy in Europe. It features essays that take a close look at key intellectuals and how they engaged with the main ideas of this qualitative introduction to geocentric cosmology. Johannes de Sacrobosco compiled his *Tractatus de sphaera* during the thirteenth century in the frame of his teaching activities at the then recently founded University of

Paris. It soon became a mandatory text all over Europe. As a result, a tradition of commentaries to the text was soon established and flourished until the second half of the 17th century. Here, readers will find an informative overview of these commentaries complete with a rich context. The essays explore the educational and social backgrounds of the writers. They also detail how their careers developed after the publication of their commentaries, the institutions and patrons they were affiliated with, what their agenda was, and whether and how they actually accomplished it. The editor of this collection considers these scientific commentaries as genuine scientific works. The contributors investigate them here not only in reference to the work on which it comments but also, and especially, as independent scientific contributions that are socially, institutionally, and intellectually contextualized around their authors.

How and Why to Make a User-Friendly Sidewalk Telescope

By the middle of the nineteenth century, the most common method of photography was the daguerreotype—Louis Jacques Mandé Daguerre’s miraculous invention that captured in a camera visual images on a highly polished silver surface through exposure to light. In this book are presented nearly eighty masterpieces—many never previously published—from the J. Paul Getty Museum’s extensive daguerreotype collection.

De Sphaera of Johannes de Sacrobosco in the Early Modern Period

This joint venture between ICOMOS, the advisory body to UNESCO on cultural sites, and the International Astronomical Union is the second volume in an ongoing exploration of themes and issues relating to astronomical heritage in particular and to science and technology heritage in general. It examines a number of key questions relating to astronomical heritage sites and their potential recognition as World Heritage, attempting to identify what might constitute "outstanding universal value" in relation to astronomy. "Heritage Sites of Astronomy and Archaeoastronomy--Volume 2" represents the culmination of several years' work to address some of the most challenging issues raised in the first ICOMOS-IAU Thematic Study, published in 2010. These include the recognition and preservation of the value of dark skies at both cultural and natural sites and landscapes; balancing archaeoastronomical considerations in the context of broader archaeological and cultural values; the potential for serial nominations; and management issues such as preserving the integrity of astronomical sightlines through the landscape. Its case studies are developed in greater depth than those in volume 1, and generally structured as segments of draft nomination dossiers. They include seven-stone antas (prehistoric dolmens) in Portugal and Spain, the thirteen towers of Chankillo in Peru, the astronomical timing of irrigation in Oman, Pic du Midi de Bigorre Observatory in France, Baikonur Cosmodrome in Kazakhstan, and Aoraki-Mackenzie International Dark Sky Reserve in New Zealand. A case study on Stonehenge, already a World Heritage Site, focuses on preserving the integrity of the solstitial sightlines. As for the first ICOMOS-IAU Thematic Study, a international team of authors including historians, astronomers and heritage professionals is led by Professor Clive Ruggles for the IAU and Professor Michel Cotte for ICOMOS.

The Silver Canvas

A concise introduction to the basics of open access, describing what it is (and isn't) and showing that it is easy, fast, inexpensive, legal, and beneficial. The Internet lets us share perfect copies of our work with a worldwide audience at virtually no cost. We take advantage of this revolutionary opportunity when we make our work "open access": digital, online, free of charge, and free of most copyright and licensing restrictions. Open access is made possible by the Internet and copyright-holder consent, and many authors, musicians, filmmakers, and other creators who depend on royalties are understandably unwilling to give their consent. But for 350 years, scholars have written peer-reviewed journal articles for impact, not for money, and are free to consent to open access without losing revenue. In this concise introduction, Peter Suber tells us what open access is and isn't, how it benefits authors and readers of research, how we pay for it, how it avoids copyright problems, how it has moved from the periphery to the mainstream, and what its future may hold. Distilling a

decade of Suber's influential writing and thinking about open access, this is the indispensable book on the subject for researchers, librarians, administrators, funders, publishers, and policy makers.

Heritage Sites of Astronomy and Archaeoastronomy in the Context of the UNESCO World Heritage Convention

This new Encyclopedia of Coastal Science stands as the latest authoritative source in the field of coastal studies, making it the standard reference work for specialists and the interested lay person. Unique in its interdisciplinary approach. This Encyclopedia features contributions by 245 well-known international specialists in their respective fields and is abundantly illustrated with line-drawings and photographs. Not only does this volume offer an extensive number of entries, it also includes various appendices, an illustrated glossary of coastal morphology and extensive bibliographic listings.

Open Access

This invaluable book, now in its second edition, covers a wide range of topics appropriate for both undergraduate and postgraduate courses in astrophysics. The book conveys a deep and coherent understanding of the stellar phenomena, and basic astrophysics of stars, galaxies, clusters of galaxies and other heavenly bodies of interest. Since the first appearance of the book in 1997, significant progress has been made in different branches of Astronomy and Astrophysics. The second edition takes into account the developments of the subject which have taken place in the last decade. It discusses the latest introduction of L and T dwarfs in the Hertzsprung-Russel diagram (or H-R diagram). Other developments discussed pertain to standard solar model, solar neutrino puzzle, cosmic microwave background radiation, Drake equation, dwarf galaxies, ultra compact dwarf galaxies, compact groups and cluster of galaxies. Problems at the end of each chapter motivate the students to go deeper into the topics. Suggested readings at the end of each chapter have been complemented.

Encyclopedia of Coastal Science

Casual stargazers are familiar with many classical figures and asterisms composed of bright stars (e.g., Orion and the Plough), but this book reveals not just the constellations of today but those of yesteryear. The history of the human identification of constellations among the stars is explored through the stories of some influential celestial cartographers whose works determined whether new inventions survived. The history of how the modern set of 88 constellations was defined by the professional astronomy community is recounted, explaining how the constellations described in the book became permanently "extinct." Dr. Barentine addresses why some figures were tried and discarded, and also directs observers to how those figures can still be picked out on a clear night if one knows where to look. These lost constellations are described in great detail using historical references, enabling observers to rediscover them on their own surveys of the sky. Treatment of the obsolete constellations as extant features of the night sky adds a new dimension to stargazing that merges history with the accessibility and immediacy of the night sky.

Letters and Social Aims

Making the Geologic Now announces shifts in cultural sensibilities and practices. It offers early sightings of an increasingly widespread turn toward the geologic as source of explanation, motivation, and inspiration for creative responses to conditions of the present moment. In the spirit of a broadside, this edited collection circulates images and short essays from over 40 artists, designers, architects, scholars, and journalists who are actively exploring and creatively responding to the geologic depth of "now." Contributors' ideas and works are drawn from architecture, design, contemporary philosophy and art. They are offered as test sites for what might become thinkable or possible if humans were to collectively take up the geologic as our instructive co-designer-as a partner in designing thoughts, objects, systems, and experiences. A new cultural

sensibility is emerging. As we struggle to understand and meet new material realities of earth and life on earth, it becomes increasingly obvious that the geologic is not just about rocks. We now cohabit with the geologic in unprecedented ways, in teeming assemblages of exchange and interaction among geologic materials and forces and the bio, cosmo, socio, political, legal, economic, strategic, and imaginary. As a reading and viewing experience, *Making the Geologic Now* is designed to move through culture, sounding an alert from the unfolding edge of the "geologic turn" that is now propagating through contemporary ideas and practices. Contributors include: Matt Baker, Jarrod Beck, Stephen Becker, Brooke Belisle, Jane Bennett, David Benque, Canary Project (Susannah Sayler, Edward Morris), Center for Land Use Interpretation, Brian Davis, Seth Denizen, Anthony Easton, Elizabeth Ellsworth, Valeria Federighi, William L. Fox, David Gersten, Bill Gilbert, Oliver Goodhall, John Gordon, Ilana Halperin, Lisa Hirmer, Rob Holmes, Katie Holten, Jane Hutton, Julia Kagan, Wade Kavanaugh, Oliver Kellhammer, Elizabeth Kolbert, Janike Kampevoll Larsen, Jamie Kruse, William Lamson, Tim Maly, Geoff Manaugh, Don McKay, Rachel McRae, Brett Milligan, Christian MilNeil, Laura Moriarity, Stephen Nguyen, Erika Osborne, Trevor Paglen, Anne Reeve, Chris Rose, Victoria Sambunaris, Paul Lloyd Sargent, Antonio Stoppani, Rachel Sussman, Shimpei Takeda, Chris Taylor, Ryan Thompson, Etienne Turpin, Nicola Twilley, Bryan M. Wilson.

AN INTRODUCTION TO ASTROPHYSICS, Second Edition

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