

Astrophysics For People In Hurry By Neil Degrasse Tyson Ebook

“Splendidly satisfying reading, designed for a nonspecialist audience.”—Kirkus Reviews, starred review Evalyn Gates, a talented astrophysicist, transports readers to the edge of contemporary science to explore the revolutionary tool—“Einstein’s telescope”—that is unlocking the secrets of the Universe. Einstein’s telescope, or gravitational lensing, is so-called for the way gravity causes space to distort and allow massive objects to act like “lenses,” amplifying and distorting the images of objects behind them. By allowing for the detection of mass where no light is found, scientists can map out the distribution of dark matter and come a step closer to teasing out the effects of dark energy on the Universe—which may forever upend long-held notions about where the Universe came from and where it is going.

“I was taught from the start not to be silent.” For years, renowned activist and scholar Ilana Hammerman has given the world remarkable translations of Kafka. With *A Small Door Set in Concrete*, she turns to the actual surreal existence that is life in the West Bank after decades of occupation. After losing her husband and her sister, Hammerman set out to travel to the end of the world. She began her trip with the hope that it would reveal the right path to take in life. But she soon realized that finding answers was less important than experiencing the freedom to move from place to place without restriction. Hammerman returned to the West Bank with a renewed joie de vivre and a resolution: she would become a regular visitor to the men, women, and children who were on the other side of the wall, unable to move or act freely. She would listen to their dreams and fight to bring some justice into their lives. *A Small Door Set in Concrete* is a moving picture of lives filled with destruction and frustration but also infusions of joy. Whether joining Palestinian laborers lining up behind checkpoints hours before the crack of dawn in the hope of crossing into Israel for a day’s work, accompanying a family to military court for their loved one’s hearing, or smuggling Palestinian children across borders for a day at the beach, Hammerman fearlessly ventures into territories where few Israelis dare set foot and challenges her readers not to avert their eyes in the face of injustice. Hammerman neither preaches nor politicks. Instead, she engages in a much more personal, everyday kind of activism. Hammerman is adept at revealing the absurdities of a land where people are stripped of their humanity. And she is equally skilled at illuminating the humanity of those caught in this political web. To those who have become simply statistics or targets to those in Israel and around the world, she gives names, faces, dreams, desires. This is not a book that allows us to sit passively. It is a slap in the face, a necessary splash of cold water that will reawaken the humanity inside all of us.

“Who can ask for better cosmic tour guides to the universe than Drs. Tyson and Goldsmith?” —Michio Kaku, author of *Hyperspace* and *Parallel Worlds* Our true origins are not just human, or even terrestrial, but in fact cosmic. Drawing on recent scientific breakthroughs and the current cross-pollination among geology, biology, astrophysics, and cosmology, *Origins* explains the soul-stirring leaps in our understanding of the cosmos. From the first image of a galaxy birth to Spirit Rover’s exploration of Mars, to the discovery of water on one of Jupiter’s moons, coauthors Neil deGrasse Tyson and Donald Goldsmith conduct a galvanizing tour of the cosmos with clarity and exuberance.

This illustrated companion to the popular podcast and National Geographic Channel show is an eye-opening journey for anyone curious about our universe, space, astronomy and the complexities of the cosmos. For decades, beloved astrophysicist Neil deGrasse Tyson has interpreted science with a combination of brainpower and charm that resonates with fans everywhere. This pioneering, provocative book brings together the best of *StarTalk*, his beloved podcast and television show devoted to solving the most confounding mysteries of Earth, space, and what it means to be human. Filled with brilliant sidebars, vivid photography, and unforgettable quotes from Tyson and his brilliant cohort of science and entertainment luminaries, *StarTalk* will help answer all of your most pressing questions about our world—from how the brain works to the physics of comic book superheroes. Fun, smart, and laugh-out-loud funny, this book is the perfect guide to everything you ever wanted to know about the universe—and beyond.

Describes the American rowing team’s triumphant and unlikely win during the 1936 Olympics.

In this primer for the information age, von Baeyer presents a clear description of what information is; how concepts of its measurement, meaning, and transmission evolved; and what its ever-expanding presence portends for the future.

“A compelling appeal, at just the right time, for continuing to look up.”—Air & Space America’s space program is at a turning point. After decades of global primacy, NASA has ended the space-shuttle program, cutting off its access to space. No astronauts will be launched in an American craft, from American soil, until the 2020s, and NASA may soon find itself eclipsed by other countries’ space programs. With his signature wit and thought-provoking insights, Neil deGrasse Tyson—one of our foremost thinkers on all things space—illuminates the past, present, and future of space exploration and brilliantly reminds us why NASA matters now as much as ever. As Tyson reveals, exploring the space frontier can profoundly enrich many aspects of our daily lives, from education systems and the economy to national security and morale. For America to maintain its status as a global leader and a technological innovator, he explains, we must regain our enthusiasm and curiosity about what lies beyond our world. Provocative, humorous, and wonderfully readable, *Space Chronicles* represents the best of Tyson’s recent commentary, including a must-read prologue on NASA and partisan politics. Reflecting on topics that range from scientific literacy to space-travel missteps, Tyson gives us an urgent, clear-eyed, and ultimately inspiring vision for the future.

“Explanations about the extraordinary physics that invisibly guides our daily lives”--

Bringing demonstrations of the principles of nature into the living room, Tyson writes in a lucid, easygoing style that finally makes scientific literacy possible for enthusiasts and those with math and science phobias alike.

Since the dawn of humankind, people have looked upward to the heavens and tried to understand them. This encyclopedia takes you on an expedition through time and space to discover our place in the universe. We invite you to take a journey through the wonders of the universe. Explore the cosmos, from planets to black holes, the Big Bang, and everything in-between! Get ready to discover the story of the universe one page at a time! This educational book for young adults will launch you on a wild trip through the cosmos and the incredible discoveries throughout history. Filled to the brim with beautifully illustrated flowcharts, graphics, and jargon-free language, *The Astronomy Book* breaks down hard-to-grasp concepts to guide you in understanding almost 100 big astronomical ideas. Big Ideas How do we measure the universe? Where is the event horizon? What is dark matter? Now you can find out all the answers to these questions and so much more in this inquisitive book about our universe! Using incredibly clever visual learning devices like step-by-step diagrams, you’ll learn more about captivating topics from the Copernican Revolution. Dive into the mind-boggling theories of recent science in a user-friendly format that makes the information easy to follow. Explore the biographies, theories, and discoveries of key astronomers through the ages such as Ptolemy, Galileo, Newton, Hubble, and Hawking. To infinity and beyond! Journey through space and time with us: - From Myth to Science 600 BCE - 1550 CE - The Telescope Revolution 1550 - 1750 - Uranus to Neptune 1750 - 1850 - The Rise of Astrophysics 1850 - 1915 - Atom, Stars, And Galaxies 1915 - 1950 - New Windows on The Universe 1950 - 1917 - The Triumph of Technology 1975 - Present The Series Simply Explained With over 7 million copies sold worldwide to date, *The Astronomy Book* is part of the award-winning Big Ideas Simply Explained series from DK Books. It uses innovative graphics along with engaging writing to make complex subjects easier to understand. Shortlisted: A Young Adult Library Services Association Outstanding Books for the College Bound and Lifelong Learners list selection A Mom’s Choice Awards® Honoring Excellence Gold Seal of Approval for Young Adult Books A Parents’

Choice Gold Award winner

Sheds new light on discoveries that have revolutionized the field of cosmology and transformed understanding of the universe, offering an explanation of the multiverse M-theory and its implications in terms of the fate of our own universe.

A pocket-style edition based on the New York Times bestseller *A Brief Welcome to the Universe* offers a breathtaking tour of the cosmos, from planets, stars, and galaxies to black holes and time loops. Bestselling authors and acclaimed astrophysicists Neil deGrasse Tyson, Michael A. Strauss, and J. Richard Gott take readers on an unforgettable journey of exploration to reveal how our universe actually works. Propelling you from our home solar system to the outermost frontiers of space, this book builds your cosmic insight and perspective through a marvelously entertaining narrative. How do stars live and die? What are the prospects of intelligent life elsewhere in the universe? How did the universe begin? Why is it expanding and accelerating? Is our universe alone or part of an infinite multiverse? Exploring these and many other questions, this pocket-friendly book is your passport into the wonders of our evolving cosmos.

Prepare to learn everything we still don't know about our strange and mysterious universe. Humanity's understanding of the physical world is full of gaps. Not tiny little gaps you can safely ignore —there are huge yawning voids in our basic notions of how the world works. PHD Comics creator Jorge Cham and particle physicist Daniel Whiteson have teamed up to explore everything we don't know about the universe: the enormous holes in our knowledge of the cosmos. Armed with their popular infographics, cartoons, and unusually entertaining and lucid explanations of science, they give us the best answers currently available for a lot of questions that are still perplexing scientists, including: * Why does the universe have a speed limit? * Why aren't we all made of antimatter? * What (or who) is attacking Earth with tiny, superfast particles? * What is dark matter, and why does it keep ignoring us? It turns out the universe is full of weird things that don't make any sense. But Cham and Whiteson make a compelling case that the questions we can't answer are as interesting as the ones we can. This fully illustrated introduction to the biggest mysteries in physics also helpfully demystifies many complicated things we do know about, from quarks and neutrinos to gravitational waves and exploding black holes. With equal doses of humor and delight, Cham and Whiteson invite us to see the universe as a possibly boundless expanse of uncharted territory that's still ours to explore.

After completing the final version of his general theory of relativity in November 1915, Albert Einstein wrote a book about relativity for a popular audience. His intention was 'to give an exact insight into the theory of relativity to those readers who, from a general scientific and philosophical point of view, are interested in the theory, but who are not conversant with the mathematical apparatus of theoretical physics.' The book remains one of the most lucid explanations of the special and general theories ever written. In the early 1920s alone, it was translated into ten languages, and fifteen editions in the original German appeared over the course of Einstein's lifetime. The theory of relativity enriched physics and astronomy during the 20th century.

?Astrophysics for People in a Hurry by Neil deGrasse Tyson - Book Summary - Readtrepreneur (Disclaimer: This is NOT the original book, but an unofficial summary.) Haven't you always wanted to understand the universe? Then *Astrophysics for People in a Hurry* is the right book for you. *Astrophysics for People in a Hurry* will help you educate yourself on one of the most mysterious topics of modern-day science. With this book, you will get acquainted with the main ideas and discoveries which are at the foundation of everything we know about the universe today. (Note: This summary is wholly written and published by readtrepreneur.com It is not affiliated with the original author in any way) "The universe is under no obligation to make sense to you." - Neil deGrasse Tyson Author Neil deGrasse Tyson, considered to be the most well known astrophysicist of his time, will help you understand the laws that govern the universe and receive the answers to questions people have been asking themselves since the beginning of time. What is the nature of space and time? How do we fit within the universe? How does the universe fit within us? No one can guide you through these questions better than Neil deGrasse Tyson. P.S. Since most people do not have the time to contemplate the existence of the universe, *Astrophysics for People in a Hurry* is written in a way that allows people to read through the clear and concise paragraphs during their lunch breaks or while waiting in line. The Time for Thinking is Over! Time for Action! Scroll Up Now and Click on the "Buy now with 1-Click" Button to Download your Copy Right Away! Why Choose Us, Readtrepreneur? ? Highest Quality Summaries ? Delivers Amazing Knowledge ? Awesome Refresher ? Clear And Concise Disclaimer Once Again: This book is meant for a great companionship of the original book or to simply get the gist of the original book.

New York Times Bestseller A luminous companion to the phenomenal bestseller *Astrophysics for People in a Hurry*. Astrophysicist Neil deGrasse Tyson has attracted one of the world's largest online followings with his fascinating, widely accessible insights into science and our universe. Now, Tyson invites us to go behind the scenes of his public fame by revealing his correspondence with people across the globe who have sought him out in search of answers. In this hand-picked collection of 101 letters, Tyson draws upon cosmic perspectives to address a vast array of questions about science, faith, philosophy, life, and of course, Pluto. His succinct, opinionated, passionate, and often funny responses reflect his popularity and standing as a leading educator. Tyson's 2017 bestseller *Astrophysics for People in a Hurry* offered more than one million readers an insightful and accessible understanding of the universe. Tyson's most candid and heartfelt writing yet, *Letters from an Astrophysicist* introduces us to a newly personal dimension of Tyson's quest to explore our place in the cosmos.

From the author of *How Emotions Are Made*, a myth-busting primer on the brain in the tradition of *Seven Brief Lessons on Physics* and *Astrophysics for People in a Hurry*. Have you ever wondered why you have a brain? Let renowned neuroscientist Lisa Feldman Barrett demystify that big gray blob between your ears. In seven short essays (plus a bite-sized story about how brains evolved), this slim, entertaining, and accessible collection reveals mind-expanding lessons from the front lines of neuroscience research. You'll learn where brains came from, how they're structured (and why it matters), and how yours works in tandem with other brains to create everything you experience. Along the way, you'll also learn to dismiss popular myths such as the idea of a "lizard brain" and the alleged battle between thoughts and emotions, or even between nature and nurture, to determine your behavior. Sure to intrigue casual readers and scientific veterans alike, *Seven and a Half Lessons About the Brain* is full of surprises, humor, and important implications for human nature—a gift of a book that you will want to savor again and again.

From the author of *Astrophysics for People in a Hurry* and the host of *Cosmos: A Spacetime Odyssey*, a memoir about growing up and a young man's budding scientific curiosity. This is the absorbing story of Neil deGrasse Tyson's lifelong fascination with the night sky, a restless wonder that began some thirty years ago on the roof of his Bronx apartment building and eventually led him to become the director of the Hayden Planetarium. A unique chronicle of a young man who at one time was both nerd and jock, Tyson's memoir could well inspire other similarly curious youngsters to pursue their dreams. Like many athletic kids he played baseball, won medals in track and swimming, and was captain of his high school wrestling team. But at the same time he was setting up a telescope on winter nights, taking an advanced

astronomy course at the Hayden Planetarium, and spending a summer vacation at an astronomy camp in the Mojave Desert. Eventually, his scientific curiosity prevailed, and he went on to graduate in physics from Harvard and to earn a Ph.D. in astrophysics from Columbia. There followed postdoctoral research at Princeton. In 1996, he became the director of the Hayden Planetarium, where some twenty-five years earlier he had been awed by the spectacular vista in the sky theater. Tyson pays tribute to the key teachers and mentors who recognized his precocious interests and abilities, and helped him succeed. He intersperses personal reminiscences with thoughts on scientific literacy, careful science vs. media hype, the possibility that a meteor could someday hit the Earth, dealing with society's racial stereotypes, what science can and cannot say about the existence of God, and many other interesting insights about science, society, and the nature of the universe. Now available in paperback with a new preface and other additions, this engaging memoir will enlighten and inspire an appreciation of astronomy and the wonders of our universe.

This book summary and analysis is created for individuals who want to extract the essential contents and are too busy to go through the full version. This book is not intended to replace the original book. Instead, we highly encourage you to buy the full version. What is the true nature of the fabrics of spacetime? Where does humankind belong in the grand scheme of the universe? How exactly is the universe alive within us? Let renowned astrophysicist and acclaimed author Neil deGrasse Tyson guide you through these baffling mysteries of the cosmos. In the modern day, so few people spend their time to contemplate the secrets of the universe. Tyson offers us a closer look at the heavens, with brevity and wit, in twelve comprehensible chapters you can read anytime, anywhere. As you brew your morning coffee or as you wait for your bus ride to work, this book provides just more than enough for you to be fluent in the complex subject of the cosmos. From the Big Bang to supermassive black holes, from general relativity to quantum theory, and from the quest for exoplanets to the quest for extraterrestrial life—Astrophysics for People in a Hurry guarantees to fill you in and bring you up to date. Wait no more, take action and get this book now! Combining the latest scientific advances with storytelling skills unmatched in the cosmos, an award-winning astrophysicist and popular writer leads us on a tour of some of the greatest mysteries of our universe. In the constellation of Eridanus there lurks a cosmic mystery: It's as if something has taken a huge bite out of the universe. But what is the culprit? The hole in the universe is just one of many puzzles keeping cosmologists busy. Supermassive black holes, bubbles of nothingness gobbling up space, monster universes swallowing others—these and many other bizarre ideas are being pursued by scientists. Due to breathtaking progress in astronomy, the history of our universe is now better understood than the history of our own planet. But these advances have uncovered some startling riddles. In this electrifying new book, renowned cosmologist and author Paul Davies lucidly explains what we know about the cosmos and its enigmas, exploring the tantalizing—and sometimes terrifying—possibilities that lie before us. As Davies guides us through the audacious research offering mind-bending solutions to these and other mysteries, he leads us up to the greatest outstanding conundrum of all: Why does the universe even exist in the first place? And how did a system of mindless, purposeless particles manage to bring forth conscious, thinking beings? Filled with wit and wonder, *What's Eating the Universe?* is a dazzling tour of cosmic questions, sure to entertain, enchant, and inspire us all.

--Let's get this story moving. Alongside the people most important to him, a boy goes out to meet the same sunrise once more. Strengthening his resolve, Subaru returns to his first day in the mansion. Repeating his loop in the Roswaal household armed with his memories, Subaru attempts to only make the optimal decisions to avoid another tragedy, but his fear and obsession with evading death and failure are slowly warping him. While Subaru slowly falls apart trying to save everyone...who will save Subaru...?

It's a demon-eat-demon world for Nick Gautier. Just when he thinks he's finally gotten a handle on how not to take over the world and destroy it, Death returns with an all-star cast that is determined to end the Malachai reign and lineage forever. Worse? Death and War have found the one, true enemy Nick can't find, and even if he did, it's one he could never bring himself to banish or kill. Now framed for murders he hasn't committed, and surrounded by new friends who might be turncoats, Nick is learning fast how his father went down in flames. The heat in New Orleans is rising fast, and Nick's threat level has gone into a whole new level of intensity. He's learning fast that when War and Death decide to battle, they don't take prisoners. They don't negotiate. And they're both immune to his biting sarcasm and Cajun charm. To win this, he will have to embrace a new set of powers, but one wrong step and he will belong to the side of Darkness, forever. Praise for *Chronicles of Nick*: "Illusion [is] another great story. The humour [is] spot on... great balance between action and storytelling." – Total Book Geek on *Illusion* "[Chock] full of action, suspense, emotion, Nick's perfectly timed humour and sarcasm, friends coming together to help one another, danger and peril at every turn, and of course Kenyon's brilliant world-building, character creations, and imagination that make you forget you are reading a work of fiction." –The Reading Café on *Instinct* "Nick never ceases to amaze me. ...My words don't do him justice. You won't understand until you read the book. So read the book, please? You won't regret it."?My Not So Salient Life on *Instinct* "The perfect amount of action, snark and intriguing character development."?Teen Library on *Instinct*

We're told that if we care about our health—or our planet—eliminating red meat from our diets is crucial. That beef is bad for us and cattle farming is horrible for the environment. But science says otherwise. Beef is framed as the most environmentally destructive and least healthy of meats. We're often told that the only solution is to reduce or quit red meat entirely. But despite what anti-meat groups, vegan celebrities, and some health experts say, plant-based agriculture is far from a perfect solution. In *Sacred Cow*, registered dietitian Diana Rodgers and former research biochemist and New York Times bestselling author Robb Wolf explore the quandaries we face in raising and eating animals—focusing on the largest (and most maligned) of farmed animals, the cow. Taking a critical look at the assumptions and misinformation about meat, *Sacred Cow* points out the flaws in our current food system and in the proposed "solutions." Inside, Rodgers and Wolf reveal contrarian but science-based findings, such as: • Meat and animal fat are essential for our bodies. • A sustainable food system cannot exist without animals. • A vegan diet may destroy more life than sustainable cattle farming. • Regenerative cattle ranching is one of our best tools at mitigating climate change. You'll also find practical guidance on how to support sustainable farms and a 30-day challenge to help you transition to a healthful and conscientious diet. With scientific rigor, deep compassion, and wit, Rodgers and Wolf argue unequivocally that meat (done right) should have a place on the table. It's not the cow, it's the how!

Twelve eye-opening, mind-expanding, funny and provocative essays on the implications of artificial intelligence for the way we live and the way we love from New York Times bestselling author Jeanette Winterson "Talky, smart, anarchic and quite sexy," said Dwight Garner in the New York Times about Jeanette Winterson's latest novel, *Frankissstein*, which perfectly describes too this new collection of essays on the same subject of AI. In *12 Bytes*, the New York Times bestselling author of *Why Be Happy When You Can Be Normal?* Jeanette Winterson, draws on her years of thinking and reading about artificial intelligence in all its bewildering manifestations. In her brilliant, laser focused, uniquely pointed and witty style of story-telling, Winterson looks to history, religion, myth, literature, the politics of race and gender, and computer science, to help us understand the radical changes to the way we live and love that are happening now. When we create non-biological life-forms, will we do so in our image? Or will we accept the once-in-a-species opportunity to remake ourselves in their image? What do love, caring, sex, and attachment look like when humans form connections with non-human helpers, teachers, sex-workers, and companions? And what will happen to our deep-rooted assumptions about gender? Will the physical body that is our home soon be enhanced by biological and neural implants, keeping us fitter, younger, and connected? Is it time to join Elon Musk and leave Planet Earth? With wit, compassion and curiosity, Winterson tackles AI's most fascinating talking points, from the algorithms that data-dossier your whole life to the weirdness of backing up your brain.

Over a year on the New York Times bestseller list and more than a million copies sold. The essential universe, from our most celebrated and beloved astrophysicist. What is the nature of space and time? How do we fit within the universe?

How does the universe fit within us? There's no better guide through these mind-expanding questions than acclaimed astrophysicist and best-selling author Neil deGrasse Tyson. But today, few of us have time to contemplate the cosmos. So Tyson brings the universe down to Earth succinctly and clearly, with sparkling wit, in tasty chapters consumable anytime and anywhere in your busy day. While you wait for your morning coffee to brew, for the bus, the train, or a plane to arrive, *Astrophysics for People in a Hurry* will reveal just what you need to be fluent and ready for the next cosmic headlines: from the Big Bang to black holes, from quarks to quantum mechanics, and from the search for planets to the search for life in the universe.

Last Things is the true and intensely personal story of how one woman coped with the devastating effects of a catastrophic illness in her family. Using her trademark mix of words and pictures to sharp effect, Marissa Moss presents the story of how she, her husband, and her three young sons struggled to maintain their sense of selves and wholeness as a family and how they continued on with everyday life when the earth shifted beneath their feet. After returning home from a year abroad, Marissa's husband, Harvey, was diagnosed with ALS. The disease progressed quickly, and Marissa was soon consumed with caring for Harvey while trying to keep life as normal as possible for her young children. ALS stole the man who was her husband, the father of her children, and her best friend in less than 7 months. This is not a story about the redemptive power of a terminal illness. It is a story of resilience - of how a family managed to survive a terrible loss and grow in spite of it. Although it's a sad story, it's powerfully told and ultimately uplifting as a guide to strength and perseverance, to staying connected to those who matter most in the midst of a bleak upheaval. If you've ever wondered how you would cope with a dire diagnosis, this book can provide a powerful example of what it feels like and how to come through the darkness into the light. *Last Things* is one of the most amazingly poignant and honest memoirs - graphic or otherwise -- I've ever encountered. This book - which I read in one insatiable sitting -- tore my heart in two. Moss handles the material with such a delicate sensibility, both with her drawings and her text, I couldn't help but let her carry me along on her journey of love and loss. ---Katie Hafner, contributing writer to *The New York Times* and author of *Mother, Daughter, Me: A Memoir*

Neil deGrasse Tyson's #1 *New York Times* best-selling guide to the cosmos, adapted for young readers. From the basics of physics to big questions about the nature of space and time, celebrated astrophysicist and science communicator Neil deGrasse Tyson breaks down the mysteries of the cosmos into bite-sized pieces. *Astrophysics for Young People in a Hurry* describes the fundamental rules and unknowns of our universe clearly—and with Tyson's characteristic wit, there's a lot of fun thrown in, too. This adaptation by Gregory Mone includes full-color photos, infographics, and extra explanations to make even the trickiest concepts accessible. Building on the wonder inspired by outer space, *Astrophysics for Young People in a Hurry* introduces an exciting field and the principles of scientific inquiry to young readers.

From two of the world's great physicists—Stephen Hawking and Nobel laureate Roger Penrose—a lively debate about the nature of space and time Einstein said that the most incomprehensible thing about the universe is that it is comprehensible. But was he right? Can the quantum theory of fields and Einstein's general theory of relativity, the two most accurate and successful theories in all of physics, be united into a single quantum theory of gravity? Can quantum and cosmos ever be combined? In *The Nature of Space and Time*, two of the world's most famous physicists—Stephen Hawking (*A Brief History of Time*) and Roger Penrose (*The Road to Reality*)—debate these questions. The authors outline how their positions have further diverged on a number of key issues, including the spatial geometry of the universe, inflationary versus cyclic theories of the cosmos, and the black-hole information-loss paradox. Though much progress has been made, Hawking and Penrose stress that physicists still have further to go in their quest for a quantum theory of gravity.

The *New York Times* bestseller: "You gotta read this. It is the most exciting book about Pluto you will ever read in your life." —Jon Stewart When the Rose Center for Earth and Space at the American Museum of Natural History reclassified Pluto as an icy comet, the *New York Times* proclaimed on page one, "Pluto Not a Planet? Only in New York." Immediately, the public, professionals, and press were choosing sides over Pluto's planethood. Pluto is entrenched in our cultural and emotional view of the cosmos, and Neil deGrasse Tyson, award-winning author and director of the Rose Center, is on a quest to discover why. He stood at the heart of the controversy over Pluto's demotion, and consequently Plutophiles have freely shared their opinions with him, including endless hate mail from third-graders. With his inimitable wit, Tyson delivers a minihistory of planets, describes the oversized characters of the people who study them, and recounts how America's favorite planet was ousted from the cosmic hub.

In this thought-provoking follow-up to his acclaimed *StarTalk* book, uber astrophysicist Neil deGrasse Tyson tackles the world's most important philosophical questions about the universe with wit, wisdom, and cutting-edge science. For science geeks, space and physics nerds, and all who want to understand their place in the universe, this enlightening new book from Neil deGrasse Tyson offers a unique take on the mysteries and curiosities of the cosmos, building on rich material from his beloved *StarTalk* podcast. In these illuminating pages, illustrated with dazzling photos and revealing graphics, Tyson and co-author James Trefil, a renowned physicist and science popularizer, take on the big questions that humanity has been posing for millennia--How did life begin? What is our place in the universe? Are we alone?--and provide answers based on the most current data, observations, and theories. Populated with paradigm-shifting discoveries that help explain the building blocks of astrophysics, this relatable and entertaining book will engage and inspire readers of all ages, bring sophisticated concepts within reach, and offer a window into the complexities of the cosmos.

"Extraordinary.... A feast of history, an expert tour through thousands of years of war and conquest." —Jennifer Carson, *New York Times* Book Review In this far-reaching foray into the millennia-long relationship between science and military

power, acclaimed astrophysicist Neil deGrasse Tyson and co-author Avis Lang examine how the methods and tools of astrophysics have been enlisted in the service of war. Spanning early celestial navigation to satellite-enabled warfare, *Accessory to War* is a richly researched and provocative examination of the intersection of science, technology, industry, and power that will introduce Tyson's millions of fans to yet another dimension of how the universe has shaped our lives and our world.

"An introduction to unusual objects and phenomena in the universe. Includes diagrams, fun facts, glossary, resource list, and index"--Provided by publisher.

Although less well known outside the field than Edwin Hubble, Walter Baade was arguably the most influential observational astronomer of the twentieth century. Written by a fellow astronomer deeply familiar with Baade and his work, this is the first biography of this major figure in American astronomy. In it, Donald Osterbrock suggests that Baade's greatest contribution to astrophysics was not, as is often contended, his revision of Hubble's distance and age scales for the universe. Rather, it was his discovery of two distinct stellar populations: old and young stars. This discovery opened wide the previously marginal fields of stellar and galactic evolution--research areas that would be among the most fertile and exciting in all of astrophysics for decades to come. Baade was born, educated, and gained his early research experience in Germany. He came to the United States in 1931 as a staff member of Mount Wilson Observatory, which housed the world's largest telescope. There, he pioneered research on supernovae. With the 100-inch telescope, he studied globular clusters and the structure of the Milky Way, every step leading him closer to the population concept he discovered during the wartime years, when the skies of southern California were briefly darkened. Most Mount Wilson astronomers were working on weapons-development crash programs devoted to bringing Baade's native country to its knees, while he, formally an enemy alien in their midst, was confined to Los Angeles County but had almost unlimited use of the most powerful telescope in the world. After his great discovery, Baade continued his research with the new 200-inch telescope at Palomar. Always respected and well liked, he became even more famous among astronomers as they shifted their research to the fields he had opened. Publicity-shy and seemingly unconcerned with publication, however, Baade's celebrity remained largely within the field. This accomplished biography at last introduces Baade--and his important work--to a wider public, including the newest generation of skywatchers.

The bestselling author of *The Elegant Universe* and *The Fabric of the Cosmos* tackles perhaps the most mind-bending question in modern physics and cosmology: Is our universe the only universe? There was a time when "universe" meant all there is.

Everything. Yet, a number of theories are converging on the possibility that our universe may be but one among many parallel universes populating a vast multiverse. Here, Briane Greene, one of our foremost physicists and science writers, takes us on a breathtaking journey to a multiverse comprising an endless series of big bangs, a multiverse with duplicates of every one of us, a multiverse populated by vast sheets of spacetime, a multiverse in which all we consider real are holographic illusions, and even a multiverse made purely of math--and reveals the reality hidden within each. Using his trademark wit and precision, Greene presents a thrilling survey of cutting-edge physics and confronts the inevitable question: How can fundamental science progress if great swaths of reality lie beyond our reach? *The Hidden Reality* is a remarkable adventure through a world more vast and strange than anything we could have imagined.

The New York Times bestselling tour of the cosmos from three of today's leading astrophysicists *Welcome to the Universe* is a personal guided tour of the cosmos by three of today's leading astrophysicists. Inspired by the enormously popular introductory astronomy course that Neil deGrasse Tyson, Michael A. Strauss, and J. Richard Gott taught together at Princeton, this book covers it all—from planets, stars, and galaxies to black holes, wormholes, and time travel. Describing the latest discoveries in astrophysics, the informative and entertaining narrative propels you from our home solar system to the outermost frontiers of space. How do stars live and die? Why did Pluto lose its planetary status? What are the prospects of intelligent life elsewhere in the universe? How did the universe begin? Why is it expanding and why is its expansion accelerating? Is our universe alone or part of an infinite multiverse? Answering these and many other questions, the authors open your eyes to the wonders of the cosmos, sharing their knowledge of how the universe works. Breathtaking in scope and stunningly illustrated throughout, *Welcome to the Universe* is for those who hunger for insights into our evolving universe that only world-class astrophysicists can provide. A new window opens onto the cosmos... Almost every day we are challenged by new information from the outermost reaches of space. Using straightforward language, *One Universe* explores the physical principles that govern the workings of our own world so that we can appreciate how they operate in the cosmos around us. Bands of color in a sunlit crystal and the spectrum of starlight in giant telescopes, the arc of a hard-hit baseball and the orbit of the moon, traffic patterns on a freeway and the spiral arms in a galaxy full of stars--they're all tied together in grand and simple ways. We can understand the vast cosmos in which we live by exploring three basic concepts: motion, matter, and energy. With these as a starting point, *One Universe* shows how the physical principles that operate in our kitchens and backyards are actually down-to-Earth versions of cosmic processes. The book then takes us to the limits of our knowledge, asking the ultimate questions about the origins and existence of life as we know it and where the universe came from--and where it is going. Glorious photographs--many seen for the first time in these pages--and original illustrations expand and enrich our understanding. Evocative and clearly written, *One Universe* explains complex ideas in ways that every reader can grasp and enjoy. This book captures the grandeur of the heavens while making us feel at home in the cosmos. Above all, it helps us realize that galaxies, stars, planets, and we ourselves all belong to *One Universe*.

"This is science writing as wonder and as inspiration." —The Wall Street Journal *Wall Street Journal* From one of the most influential scientists of our time, a dazzling exploration of the hidden laws that govern the life cycle of everything from plants and animals to the cities we live in. Visionary physicist Geoffrey West is a pioneer in the field of complexity science, the science of emergent systems and networks. The term "complexity" can be misleading, however, because what makes West's discoveries so beautiful is that he has found an underlying simplicity that unites the seemingly complex and diverse phenomena of living systems, including our bodies, our cities and our businesses. Fascinated by aging and mortality, West applied the rigor of a physicist to the biological question of why we live as long as we do and no longer. The result was astonishing, and changed science: West found that despite the riotous diversity in mammals, they are all, to a large degree, scaled versions of each other. If you know the size of a mammal, you can use scaling laws to learn everything from how much food it eats per day, what its heart-rate is, how long it will take to mature, its lifespan, and so on. Furthermore, the efficiency of the mammal's circulatory systems scales up precisely based on weight: if you compare a mouse, a human and an elephant on a logarithmic graph, you find with every doubling of average

weight, a species gets 25% more efficient—and lives 25% longer. Fundamentally, he has proven, the issue has to do with the fractal geometry of the networks that supply energy and remove waste from the organism's body. West's work has been game-changing for biologists, but then he made the even bolder move of exploring his work's applicability. Cities, too, are constellations of networks and laws of scalability relate with eerie precision to them. Recently, West has applied his revolutionary work to the business world. This investigation has led to powerful insights into why some companies thrive while others fail. The implications of these discoveries are far-reaching, and are just beginning to be explored. Scale is a thrilling scientific adventure story about the elemental natural laws that bind us together in simple but profound ways. Through the brilliant mind of Geoffrey West, we can envision how cities, companies and biological life alike are dancing to the same simple, powerful tune.

Named a Best Book of 2020 by The Telegraph, The Times, and BBC History Magazine An illuminating guide to the scientific and technological achievements of the Middle Ages through the life of a crusading astronomer-monk. Soaring Gothic cathedrals, violent crusades, the Black Death: these are the dramatic forces that shaped the medieval era. But the so-called Dark Ages also gave us the first universities, eyeglasses, and mechanical clocks. As medieval thinkers sought to understand the world around them, from the passing of the seasons to the stars in the sky, they came to develop a vibrant scientific culture. In The Light Ages, Cambridge science historian Seb Falk takes us on a tour of medieval science through the eyes of one fourteenth-century monk, John of Westwyk. Born in a rural manor, educated in England's grandest monastery, and then exiled to a clifftop priory, Westwyk was an intrepid crusader, inventor, and astrologer. From multiplying Roman numerals to navigating by the stars, curing disease, and telling time with an ancient astrolabe, we learn emerging science alongside Westwyk and travel with him through the length and breadth of England and beyond its shores. On our way, we encounter a remarkable cast of characters: the clock-building English abbot with leprosy, the French craftsman-turned-spy, and the Persian polymath who founded the world's most advanced observatory. The Light Ages offers a gripping story of the struggles and successes of an ordinary man in a precarious world and conjures a vivid picture of medieval life as we have never seen it before. An enlightening history that argues that these times weren't so dark after all, The Light Ages shows how medieval ideas continue to color how we see the world today.

"[Tyson] tackles a great range of subjects...with great humor, humility, and—most important—humanity." —Entertainment Weekly Loyal readers of the monthly "Universe" essays in Natural History magazine have long recognized Neil deGrasse Tyson's talent for guiding them through the mysteries of the cosmos with clarity and enthusiasm. Bringing together more than forty of Tyson's favorite essays, Death by Black Hole explores a myriad of cosmic topics, from what it would be like to be inside a black hole to the movie industry's feeble efforts to get its night skies right. One of America's best-known astrophysicists, Tyson is a natural teacher who simplifies the complexities of astrophysics while sharing his infectious fascination for our universe.

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