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Comet Worlds in Collision Shadows of Forgotten Ancestors COMETS! Cosmos: Possible Worlds The Night of the Comet Contact The Varieties of Scientific Experience Asimov's Guide to Halley's Comet Catching Stardust Pale Blue Dot Incoming Asteroid! Near-Earth Objects Impact! Murmurs of Earth Carl Sagan's Universe Beyond Earth Earth in Human Hands Carl Sagan and Immanuel Velikovsky Felix the Comet The Comet Box Dragons of Eden Isaac Asimov's Guide to Earth and Space Omega - The Last days of the World Carl Sagan David Levy's Guide to Observing and Discovering Comets The Hunt for Vulcan Organic Matter and the Moon The Cold and the Dark From Eternity to Here Carl Sagan UFO's--a Scientific Debate The Whole Shebang Astronomy Saves the World Cosmic Horizons The Effort Comets Cosmos Comet Madness Soviet Life

Carl Sagan Jan 26 2021 A penetrating, mesmerizing biography of a scientific icon, now in paperback "Absolutely fascinating . . . Davidson has done a remarkable job."-Sir Arthur C. Clarke "Engaging . . . accessible, carefully documented . . . sophisticated."-Dr. David Hollinger for The New York Times Book Review "Entertaining . . . Davidson treats [the] nuances of Sagan's complex life with understanding and sympathy."-The Christian Science Monitor "Excellent . . . Davidson acts as a keen critic to Sagan's works and their vast uncertainties."-Scientific American "A fascinating book about an extraordinary man."-Johnny Carson "Davidson, an award-winning science writer, has written an absorbing portrait of this Pied Piper of planetary science. Davidson thoroughly explores Sagan's science, wrestles with his politics, and plumbs his personal passions with a telling instinct for the revealing underside of a life lived so publicly."-Los Angeles Times Carl Sagan was one of the most celebrated scientists of this century-the handsome and alluring visionary who inspired a generation to look to the heavens and beyond. His life was both an intellectual feast and an emotional rollercoaster. Based on interviews with Sagan's family and friends, including his widow, Ann Druyan; his first wife, acclaimed scientist Lynn Margulis; and his three sons, as well as exclusive access to many personal papers, this highly acclaimed life story offers remarkable insight into one of the most influential, provocative, and beloved figures of our time-a complex, contradictory prophet of the Space Age.

Beyond Earth Oct 03 2021 From a leading planetary scientist and an award-winning science writer, a propulsive account of the developments and initiatives that have transformed the dream of space colonization into something that may well be achievable. We are at the cusp of a golden age in space science, as increasingly more entrepreneurs-Elon Musk, Richard Branson, Jeff Bezos-are seduced by the commercial potential of human access to space. But Beyond Earth does not offer another wide-eyed technology fantasy: instead, it is grounded not only in the human capacity for invention and the appeal of adventure but also in the bureaucratic, political, and scientific realities that present obstacles to space travel-realities that have hampered NASA's efforts ever since the Challenger disaster. In Beyond Earth, Charles Wohlforth and Amanda R.Hendrix offer groundbreaking research and argue persuasively that not Mars, but Titan-a moon of Saturn with a nitrogen atmosphere, a weather cycle, and an inexhaustible supply of cheap energy, where we will even be able to fly like birds in the minimal gravitational field-offers the most realistic and thrilling prospect of life without support from Earth. (With 8 pages of color illustrations)

Comets Jan 14 2020 Radiating fire and ice, comets as a phenomenon seem part science, part myth. Two thousand years ago when a comet shot across the night sky, it convinced the Romans that Julius Caesar was a god. In 1066, Halley's Comet was

interpreted as a foreshadowing of the death of Harold the Second in the Battle of Hastings. Even today the arrival of a comet often feels auspicious, confirming our hopes, fears, and sense of wonder in the universe. In *Comets*, P. Andrew Karam takes the reader on a far-ranging exploration of these most beautiful and dramatic objects in the skies, revealing how comets and humanity have been interwoven throughout history. He delves into the science of comets and how it has changed over time; the way comets have been depicted in art, religion, literature, and popular culture; and how comets have appeared in the heavens through the centuries. Comprehensive in scope and beautifully illustrated throughout, the book will appeal not only to the budding astronomer, but to anyone with an appreciation for these compelling and remarkable celestial bodies.

The Hunt for Vulcan Nov 23 2020 The captivating, all-but-forgotten story of Isaac Newton, Albert Einstein, and the search for a planet that never existed For more than fifty years, the world's top scientists searched for the "missing" planet Vulcan, whose existence was mandated by Isaac Newton's theories of gravity. Countless hours were spent on the hunt for the elusive orb, and some of the era's most skilled astronomers even claimed to have found it. There was just one problem: It was never there. In *The Hunt for Vulcan*, Thomas Levenson follows the visionary scientists who inhabit the story of the phantom planet, starting with Isaac Newton, who in 1687 provided an explanation for all matter in motion throughout the universe, leading to Urbain-Jean-Joseph Le Verrier, who almost two centuries later built on Newton's theories and discovered Neptune, becoming the most famous scientist in the world. Le Verrier attempted to surpass that triumph by predicting the existence of yet another planet in our solar system, Vulcan. It took Albert Einstein to discern that the mystery of the missing planet was a problem not of measurements or math but of Newton's theory of gravity itself. Einstein's general theory of relativity proved that Vulcan did not and could not exist, and that the search for it had merely been a quirk of operating under the wrong set of assumptions about the universe. Levenson tells the previously untold tale of how the "discovery" of Vulcan in the nineteenth century set the stage for Einstein's monumental breakthrough, the greatest individual intellectual achievement of the twentieth century. A dramatic human story of an epic quest, *The Hunt for Vulcan* offers insight into how science really advances (as opposed to the way we're taught about it in school) and how the best work of the greatest scientists reveals an artist's sensibility. Opening a new window onto our world, Levenson illuminates some of our most iconic ideas as he recounts one of the strangest episodes in the history of science. Praise for *The Hunt for Vulcan* "Delightful . . . a charming tale about an all-but-forgotten episode in science history."—*The Wall Street Journal* "Engaging . . . At heart, this is a story about how science advances, one insight at a time. But the immediacy, almost romance, of Levenson's writing makes it almost novelistic."—*The Washington Post* "A well-structured, fast-paced example of exemplary science writing."—*Kirkus Reviews* (starred review)

Carl Sagan's Universe Nov 04 2021 Papers presented at a symposium held in October, 1994, at Cornell University in honor of Carl Sagan's sixtieth birthday.

Isaac Asimov's Guide to Earth and Space Mar 28 2021 A thrilling nonfiction tour of the cosmos that brings the universe down to Earth, from one of the all-time masters of science fiction. No one makes sense out of science like Isaac Asimov. Are you puzzled by pulsars? Baffled by black holes? Bewildered by the big bang? If so, here are succinct, crystal-clear answers to more than one hundred of the most significant questions about the essential nature of the universe—questions that have fired the imagination since the beginning of history. Over the course of this fantastic voyage, the origins, the discoveries, and the stunning achievements of astronomy will unfold before your eyes. You will experience close encounters with giant planets, exploding stars, distant galaxies, and more. For anyone who has ever asked the ultimate questions, who has ever looked up at the sky and asked What in

heaven is going on?, Isaac Asimov's unique vision, skill, and authority will bring the big picture into focus. "A fine introduction to modern astronomical theory."—Library Journal

The Effort Feb 13 2020 For readers of *Station Eleven* and *Good Morning, Midnight* comes an electric, heart-pounding novel of love and sacrifice that follows people around the world as they unite to prevent a global catastrophe. When dark comet UD3 was spotted near Jupiter's orbit, its existence was largely ignored. But to individuals who knew better -- scientists like Benjamin Schwartz, manager of NASA's Center for Near-Earth Object Studies -- the threat this eight-kilometer comet posed to the survival of the human race was unthinkable. The 150-million-year reign of the dinosaurs ended when an asteroid impact generated more than a billiontimes the energy of an atomic bomb. What would happen to Earth's seven billion inhabitants if a similar event were allowed to occur? Ben and his indomitable girlfriend Amy Kowalski fly to South America to assemble an international counteraction team, whose notable recruits include Love Mwangi, a UN interpreter and nomad scholar, and Zhen Liu, an extraordinary engineer from China's national space agency. At the same time, on board a polar icebreaker life continues under the looming shadow of comet UD3. Jack Campbell, a photographer for National Geographic, works to capture the beauty of the Arctic before it is gone forever. Gustavo Wayãpi, a Nobel Laureate poet from Brazil, struggles to accept the recent murder of his beloved twin brother. And Maya Gutiérrez, an impassioned marine biologist is -- quite unexpectedly -- falling in love for the first time. Together, these men and women must fight to survive in an unknown future with no rules and nothing to be taken for granted. They have two choices: neutralize the greatest threat the world has ever seen (preferably before mass hysteria hits or world leaders declare World War III) or come to terms with the annihilation of humanity itself. Their mission is codenamed *The Effort*.

Asimov's Guide to Halley's Comet Jun 11 2022

Comet Feb 19 2023 What are these graceful visitors to our skies? We now know that they bring both life and death and teach us about our origins. *Comet* begins with a breathtaking journey through space astride a comet. Pulitzer Prize-winning astronomer Carl Sagan, author of *Cosmos* and *Contact*, and writer Ann Druyan explore the origin, nature, and future of comets, and the exotic myths and portents attached to them. The authors show how comets have spurred some of the great discoveries in the history of science and raise intriguing questions about these brilliant visitors from the interstellar dark. Were the fates of the dinosaurs and the origins of humans tied to the wanderings of a comet? Are comets the building blocks from which worlds are formed? Lavishly illustrated with photographs and specially commissioned full-color paintings, *Comet* is an enthralling adventure, indispensable for anyone who has ever gazed up at the heavens and wondered why. Praise for *Comet* "Simply the best." —The Times of London "Fascinating, evocative, inspiring." —The Washington Post "Comet humanizes science. A beautiful, interesting book." —United Press International "Masterful . . . science, poetry, and imagination." —The Atlanta Journal & Constitution

Earth in Human Hands Sep 02 2021 NASA Astrobiologist and renowned scientist Dr. David Grinspoon brings readers an optimistic message about humanity's future in the face of climate change. For the first time in Earth's history, our planet is experiencing a confluence of rapidly accelerating changes prompted by one species: humans. Climate change is only the most visible of the modifications we've made--up until this point, inadvertently--to the planet. And our current behavior threatens not only our own future but that of countless other creatures. By comparing Earth's story to those of other planets, astrobiologist David Grinspoon shows what a strange and novel development it is for a species to evolve to build machines, and ultimately, global societies with world-shaping influence. Without minimizing the challenges of the next century, Grinspoon suggests that our present moment is not

only one of peril, but also great potential, especially when viewed from a 10,000-year perspective. Our species has surmounted the threat of extinction before, thanks to our innate ingenuity and ability to adapt, and there's every reason to believe we can do so again. Our challenge now is to awaken to our role as a force of planetary change, and to grow into this task. We must become graceful planetary engineers, conscious shapers of our environment and caretakers of Earth's biosphere. This is a perspective that begs us to ask not just what future do we want to avoid, but what do we seek to build? What kind of world do we want? Are humans the worst thing or the best thing to ever happen to our planet? Today we stand at a pivotal juncture, and the answer will depend on the choices we make.

The Whole Shebang May 18 2020 Summarizes what science has learned about the universe as of the end of the twentieth century, and offers predictions about what may emerge in the near future.

Soviet Life Oct 11 2019

Cosmos Dec 13 2019 RETURNING TO TELEVISION AS AN ALL-NEW MINISERIES ON FOX Cosmos is one of the bestselling science books of all time. In clear-eyed prose, Sagan reveals a jewel-like blue world inhabited by a life form that is just beginning to discover its own identity and to venture into the vast ocean of space. Cosmos retraces the fourteen billion years of cosmic evolution that have transformed matter into consciousness, exploring such topics as the origin of life, the human brain, Egyptian hieroglyphics, spacecraft missions, the death of the Sun, the evolution of galaxies, and the forces and individuals who helped to shape modern science. Praise for Cosmos "Magnificent . . . With a lyrical literary style, and a range that touches almost all aspects of human knowledge, Cosmos often seems too good to be true."—The Plain Dealer "Sagan is an astronomer with one eye on the stars, another on history, and a third—his mind's—on the human condition."—Newsday "Brilliant in its scope and provocative in its suggestions . . . shimmers with a sense of wonder."—The Miami Herald "Sagan dazzles the mind with the miracle of our survival, framed by the stately galaxies of space."—Cosmopolitan "Enticing . . . iridescent . . . imaginatively illustrated."—The New York Times Book Review NOTE: This edition does not include images.

The Night of the Comet Sep 14 2022 NAMED ONE OF THE BEST BOOKS OF THE YEAR BY KIRKUS REVIEWS From the acclaimed author of Letter to My Daughter comes an engrossing coming-of-age tale that deftly conveys the hopes and heartaches of adolescence and the unfulfilled dreams that divide a family, played out against the backdrop of a small southern town in 1973. For his fourteenth birthday, Alan Broussard, Jr., receives a telescope from his father, a science teacher at the local high school who's eagerly awaiting what he promises will be the astronomical event of the century: the coming of Comet Kohoutek. For Alan Broussard, Sr.—frustrated in his job, remote from his family—the comet is a connection to his past and a bridge to his son, with whom he's eager to share his love for the stars. But the only heavenly body Junior has any interest in is his captivating new neighbor and classmate, Gabriella Martello, whose bedroom sits within eyeshot of his telescope's lens. Meanwhile, his mother, Lydia, sees the comet—and her husband's obsession with it—as one more thing that keeps her from the bigger, brighter life she once imagined for herself far from the swampy environs of Terrebonne, Louisiana. With Kohoutek drawing ever closer, the family begins to crumble under the weight of expectations, until a startling turn of events will leave both father and son much less certain about the laws that govern their universe. Illuminating and unforgettable, *The Night of the Comet* is a novel about the perils of growing up, the longing for connection, and the idea that love and redemption can be found among the stars. Praise for *The Night of the Comet* "A quiet, occasionally bittersweet novel about the differences between desire and disappointment, expectations and reality."—Booklist "Coming-of-age novels examine youthful revelations about the world—filled with cynicism and wonder and rearranged

expectations—and the quality hinges on the honesty of the voice, the truth of the observations, the handling of innocence lost; Bishop succeeds on all these fronts.”—Kirkus Reviews “Resonant . . . explores the complexities of a father-son relationship through science, astronomy, and the growing pains of adolescence. . . . Bishop’s characterizations of young Alan’s mother, father, and sister Megan are endearing and their relentless coddling of their maturing son is wincingly accurate.”—Publishers Weekly “Hilarious and heart-wrenching, ethereal and earthy, *The Night of the Comet* points us to the fragile universe of dreams and disappointments, joy and tragedy, saying here it is, all of it: feast your eyes on the magic. It’s a heavenly book. Nobody writes about the gravitational pull of parent-child relationships—all that we yearn for and all that we can’t have—like George Bishop.”—Minrose Gwin, author of *The Queen of Palmyra* “Equally sweet and sad, this is a fine novel of love and forgiveness.”—Stewart O’Nan, author of *Snow Angels* “Bishop’s one of our best, and this book’s a quiet marvel.”—Josh Russell, author of *Yellow Jack* “A deft, clear-eyed, and sensitive examination of the mysterious bonds of family, the allure of the unattainable, and love and desire—and their consequences—in all their many forms.”—Ellen Baker, author of *I Gave My Heart to Know This*

COMETS! Nov 16 2022 Join David J. Eicher in this fast-paced and entertaining journey through the history, present, and future of these important yet mysterious cosmic bodies. From ancient times, humans have been fascinated by 'broom stars' and 'blazing scimitars' lighting up the sky and moving against the fixed background of stars. The Great Comets of our time still receive in-depth attention - ISON, Hale-Bopp, Hyakutake, West, and others - while recent spacecraft encounters offer amazing insight into the earliest days of the solar system. In this guide you will discover the cutting-edge science of what comets are, how they behave, where they reside, how groups of comets are related, and much more. The author carefully explores the ideas relating comets and life on Earth - and the danger posed by impacts. He finishes with practical, how-to techniques, tips, and tricks on how to successfully observe comets and even to capture your own images of them.

From Eternity to Here Aug 21 2020 Twenty years after Stephen Hawking's 9-million-copy selling *A Brief History of Time*, pioneering theoretical physicist Sean Carroll takes our investigation into the nature of time to the next level. You can't unscramble an egg and you can't remember the future. But what if time doesn't (or didn't!) always go in the same direction? Carroll's paradigm-shifting research suggests that other universes experience time running in the opposite direction to our own. Exploring subjects from entropy and quantum mechanics to time travel and the meaning of life, Carroll presents a dazzling new view of how we came to exist.

Dragons of Eden Apr 28 2021 “A history of the human brain from the big bang, fifteen billion years ago, to the day before yesterday . . . It’s a delight.”—The New York Times Dr. Carl Sagan takes us on a great reading adventure, offering his vivid and startling insight into the brain of man and beast, the origin of human intelligence, the function of our most haunting legends—and their amazing links to recent discoveries. “How can I persuade every intelligent person to read this important and elegant book? . . . He talks about all kinds of things: the why of the pain of human childbirth . . . the reason for sleeping and dreaming . . . chimpanzees taught to communicate in deaf and dumb language . . . the definition of death . . . cloning . . . computers . . . intelligent life on other planets. . . . Fascinating . . . delightful.”—The Boston Globe “In some lost Eden where dragons ruled, the foundations of our intelligence were laid. . . . Carl Sagan takes us on a guided tour of that lost land. . . . Fascinating . . . entertaining . . . masterful.”—St. Louis Post-Dispatch

Pale Blue Dot Apr 09 2022 “Fascinating . . . memorable . . . revealing . . . perhaps the best of Carl Sagan’s books.”—The Washington Post Book World (front page review) In *Cosmos*, the late astronomer Carl Sagan cast his gaze over the

magnificent mystery of the Universe and made it accessible to millions of people around the world. Now in this stunning sequel, Carl Sagan completes his revolutionary journey through space and time. Future generations will look back on our epoch as the time when the human race finally broke into a radically new frontier-space. In *Pale Blue Dot*, Sagan traces the spellbinding history of our launch into the cosmos and assesses the future that looms before us as we move out into our own solar system and on to distant galaxies beyond. The exploration and eventual settlement of other worlds is neither a fantasy nor luxury, insists Sagan, but rather a necessary condition for the survival of the human race. "Takes readers far beyond *Cosmos* . . . Sagan sees humanity's future in the stars."—Chicago Tribune

Contact Aug 13 2022 Pulitzer Prize-winning author and astronomer Carl Sagan imagines the greatest adventure of all—the discovery of an advanced civilization in the depths of space. In December of 1999, a multinational team journeys out to the stars, to the most awesome encounter in human history. Who—or what—is out there? In *Cosmos*, Carl Sagan explained the universe. In *Contact*, he predicts its future—and our own.

Astronomy Saves the World Apr 16 2020

Organic Matter and the Moon Oct 23 2020

The Cold and the Dark Sep 21 2020

UFO's--a Scientific Debate Jun 18 2020

Impact! Jan 06 2022 Most scientists now agree that some sixty-five million years ago, an immense comet slammed into the Yucatan, detonating a blast twenty million times more powerful than the largest hydrogen bomb, punching a hole ten miles deep in the earth. Trillions of tons of rock were vaporized and launched into the atmosphere. For a thousand miles in all directions, vegetation burst into flames. There were tremendous blast waves, searing winds, showers of molten matter from the sky, earthquakes, and a terrible darkness that cut out sunlight for a year, enveloping the planet in freezing cold. Thousands of species of plants and animals were obliterated, including the dinosaurs, some of which may have become extinct in a matter of hours. In *Impact*, Gerrit L. Verschuur offers an eye-opening look at such catastrophic collisions with our planet. Perhaps more important, he paints an unsettling portrait of the possibility of new collisions with earth, exploring potential threats to our planet and describing what scientists are doing right now to prepare for this awful possibility. Every day something from space hits our planet, Verschuur reveals. In fact, about 10,000 tons of space debris fall to earth every year, mostly in meteoric form. The author recounts spectacular recent sightings, such as over Allende, Mexico, in 1969, when a fireball showered the region with four tons of fragments, and the twenty-six pound meteor that went through the trunk of a red Chevy Malibu in Peekskill, New York, in 1992 (the meteor was subsequently sold for \$69,000 and the car itself fetched \$10,000). But meteors are not the greatest threat to life on earth, the author points out. The major threats are asteroids and comets. The reader discovers that astronomers have located some 350 NEAs ("Near Earth Asteroids"), objects whose orbits cross the orbit of the earth, the largest of which are 1627 Ivar (6 kilometers wide) and 1580 Betula (8 kilometers). Indeed, we learn that in 1989, a bus-sized asteroid called Asclepius missed our planet by 650,000 kilometers (a mere six hours), and that in 1994 a sixty-foot object passed within 180,000 kilometers, half the distance to the moon. Comets, of course, are even more deadly. Verschuur provides a gripping description of the small comet that exploded in the atmosphere above the Tunguska River valley in Siberia, in 1908, in a blinding flash visible for several thousand miles (every tree within sixty miles of ground zero was flattened). He discusses Comet Swift-Tuttle—"the most dangerous object in the solar system"—a comet far larger than the one that killed off the dinosaurs, due to pass through earth's orbit in the year 2126. And he recounts the collision of Comet Shoemaker-Levy 9 with Jupiter in 1994, as some twenty cometary fragments struck the giant planet

over the course of several days, casting titanic plumes out into space (when Fragment G hit, it outshone the planet on the infrared band, and left a dark area at the impact site larger than the Great Red Spot). In addition, the author describes the efforts of Spacewatch and other groups to locate NEAs, and evaluates the idea that comet and asteroid impacts have been an underrated factor in the evolution of life on earth. Astronomer Herbert Howe observed in 1897: "While there are not definite data to reason from, it is believed that an encounter with the nucleus of one of the largest comets is not to be desired." As Verschuur shows in *Impact*, we now have substantial data with which to support Howe's tongue-in-cheek remark. Whether discussing monumental tsunamis or the innumerable comets in the Solar System, this book will enthrall anyone curious about outer space, remarkable natural phenomenon, or the future of the planet earth.

The Comet Box May 30 2021 It's 1986 and Halley's Comet is hurtling towards Earth. Everyone is talking about what the comet will bring - wishes could be granted, people might go mad, great disasters could happen... When Andrew is asked to write down his greatest wish for the Comet Box, he can think of only one thing - that his runaway sister Amelia will finally come home. As the comet draws nearer he begins to learn the reasons why she left in the first place and the more he learns, the more he wants to forget. When Amelia is captured and brought home she reveals a shocking secret that makes Andrew's once safe world begin to unravel. As the comet arrives, Andrew must choose whether to be blind to the mistakes of the people around him or to side with his sister as she tears his family apart.

David Levy's Guide to Observing and Discovering Comets Dec 25 2020 David Levy has held a lifelong passion for comets, and is one of the most successful comet discoverers in history. In this book he describes the observing techniques that have been developed over the years--from visual observations and searching, to photography, through to electronic charge-coupled devices (CCDs). He combines the history of comet hunting with the latest techniques, showing how our understanding of comets has evolved over time. This practical handbook is suitable for amateur astronomers, from those who are casually interested in comets and how to observe them, to those who want to begin and expand an observing program of their own. Drawing widely from his own extensive experience, Levy describes how enthusiastic amateurs can observe comets and try to make new discoveries themselves. David H. Levy is one of the world's foremost amateur astronomers. He has discovered seventeen comets, seven using a telescope in his own backyard, and had a minor planet, Asteroid 3673 Levy named in his honor. He is best known as the co-discoverer of the famous 1994 Shoemaker-Levy 9 comet. Levy is frequently interviewed in the media and succeeded Carl Sagan as science columnist for *Parade* magazine. He has written and contributed to a number of books, most recently *David Levy's Guide to the Night Sky* (Cambridge, 2001).

The Varieties of Scientific Experience Jul 12 2022 "Ann Druyan has unearthed a treasure. It is a treasure of reason, compassion, and scientific awe. It should be the next book you read." -Sam Harris, author of *The End of Faith* "A stunningly valuable legacy left to all of us by a great human being. I miss him so." -Kurt Vonnegut Carl Sagan's prophetic vision of the tragic resurgence of fundamentalism and the hope-filled potential of the next great development in human spirituality The late great astronomer and astrophysicist describes his personal search to understand the nature of the sacred in the vastness of the cosmos. Exhibiting a breadth of intellect nothing short of astounding, Sagan presents his views on a wide range of topics, including the likelihood of intelligent life on other planets, creationism and so-called intelligent design, and a new concept of science as "informed worship." Originally presented at the centennial celebration of the famous Gifford Lectures in Scotland in 1985 but never published, this book offers a unique encounter with one of the most remarkable minds of the twentieth century.

Shadows of Forgotten Ancestors Dec 17 2022 NATIONAL BESTSELLER • "Exciting and

provocative . . . A tour de force of a book that begs to be seen as well as to be read.”—The Washington Post Book World World renowned scientist Carl Sagan and acclaimed author Ann Druyan have written a Roots for the human species, a lucid and riveting account of how humans got to be the way we are. Shadows of Forgotten Ancestors is a thrilling saga that starts with the origin of the Earth. It shows with humor and drama that many of our key traits—self-awareness, technology, family ties, submission to authority, hatred for those a little different from ourselves, reason, and ethics—are rooted in the deep past, and illuminated by our kinship with other animals. Sagan and Druyan conduct a breathtaking journey through space and time, zeroing in on critical turning points in evolutionary history, and tracing the origins of sex, altruism, violence, rape, and dominance. Their book culminates in a stunningly original examination of the connection between primate and human traits. Astonishing in its scope, brilliant in its insights, and an absolutely compelling read, Shadows of Forgotten Ancestors is a triumph of popular science.

Worlds in Collision Jan 18 2023

Incoming Asteroid! Mar 08 2022 ‘Incoming Asteroid!’ is based on a project within ASTRA (the Association in Scotland to Research into Astronautics) to provide scientific answers to the question – what would we do if we knew there was going to be an asteroid impact in ten years’ time or less? Clearly there are many things humanity can do nothing about, for example an unseen object traveling towards us so fast that we have no time to prepare, or an object so large it may be unstoppable. A realistic hazard model was decided upon, and the scenario developed from that: an incoming object about 1 kilometer in diameter, in an orbit ranging from the outer rim of the Asteroid Belt to within that of Earth’s. Three basic possibilities are considered in this book. The first is the deflection of the asteroid, using remote probes along with a number of possible technologies to change the asteroid’s course. Second is the attempt of a manned mission, in order to plant a propulsion system on the asteroid to push it into a different orbit. Third is the nuclear option, a last-ditch attempt to break up and then disperse the asteroid using nuclear weapons. (A rather impractical combination of these second and third options were used as the plot of the popular 1998 Bruce Willis feature film, Armageddon.) Although the cost of developing the technology needed to protect the Earth would be substantial, there would certainly be spin-off benefits. These could eventually result in practical small-scale atomic energy sources, new propulsion systems that could make extraterrestrial mining within the solar system a possibility, and other as-yet unforeseen benefits. And finally, Incoming Asteroid! considers the political implications - how governments across the world should best react to the threat with a view to minimizing loss of life, and in the weeks running up to the possible impact, preventing panic in the population.

Near-Earth Objects Feb 07 2022 An insider's look at the science of near-Earth comets and asteroids Of all the natural disasters that could befall us, only an Earth impact by a large comet or asteroid has the potential to end civilization in a single blow. Yet these near-Earth objects also offer tantalizing clues to our solar system's origins, and someday could even serve as stepping-stones for space exploration. In this book, Donald Yeomans introduces readers to the science of near-Earth objects—its history, applications, and ongoing quest to find near-Earth objects before they find us. In its course around the sun, the Earth passes through a veritable shooting gallery of millions of nearby comets and asteroids. One such asteroid is thought to have plunged into our planet sixty-five million years ago, triggering a global catastrophe that killed off the dinosaurs. Yeomans provides an up-to-date and accessible guide for understanding the threats posed by near-Earth objects, and also explains how early collisions with them delivered the ingredients that made life on Earth possible. He shows how later impacts spurred evolution, allowing only the most adaptable species to thrive—in fact, we humans may owe our very existence to objects that struck our planet. Yeomans takes readers behind the

scenes of today's efforts to find, track, and study near-Earth objects. He shows how the same comets and asteroids most likely to collide with us could also be mined for precious natural resources like water and oxygen, and used as watering holes and fueling stations for expeditions to Mars and the outermost reaches of our solar system.

Cosmic Horizons Mar 16 2020 Leading scientists offer a collection of essays that furnish illuminating explanations of recent discoveries in modern astrophysics--from the Big Bang to black holes--the possibility of life on other worlds, and the emerging technologies that make such research possible, accompanied by incisive profiles of such key figures as Carl Sagan and Georges Lemaetre. Original.

Comet Madness Nov 11 2019 Halley's Comet visits the earth every seventy-five years. Since the dawn of civilization, humans had believed comets were evil portents. In 1705, Edmond Halley liberated humanity from these primordial superstitions (or so it was thought), proving that Newtonian mechanics rather than the will of the gods brought comets into our celestial neighborhood. Despite this scientific advance, when Halley's Comet returned in 1910 and astronomers announced that our planet would pass through its poisonous tail, newspapers gleefully provoked a global hysteria that unfolded with tragic consequences. In *Comet Madness*, author and historian Richard J. Goodrich examines the 1910 appearance of Halley's Comet and the ensuing frenzy sparked by media manipulation, bogus science, and outright deception. The result is a fascinating and illuminating narrative history that underscores how we behave in the face of potential calamity – then and now. As the comet neared Earth, scientists and journalists alike scrambled to get the story straight as citizens the world over panicked. Popular astronomer Camille Flammarion attempted to allay fears in a newspaper article, but the media ignored his true position that passage would be harmless; weather prophet Irl Hicks, publisher of an annual, pseudo-scientific almanac, announced that the comet would disrupt the world's weather; religious leaders thumbed the Bible's Book of Revelation and wondered if the comet presaged the apocalypse. Newspapers, confident that there was gold in these alternate theories, gave every crackpot a megaphone, increasing circulation and stoking international hysteria. As a result, workmen shelved their tools, farmers refused to plant crops they would never harvest, and formerly reliable people stopped paying their creditors. More opportunistic citizens opened "comet insurance" plans. Others suffered mental breakdowns, and some took their own lives. *Comet Madness* reveals how humans confront the unknown, how scientists learn about the world we inhabit, and how certain people—from outright hucksters to opportunistic journalists—harness fear to produce a profit.

Carl Sagan and Immanuel Velikovsky Aug 01 2021 About this book... Since the publication of *Worlds in Collision*, Dr. Immanuel Velikovsky's unconventional theories of the origin of the solar system have generated immense interest and bitter controversy. Chief among his critics has been the well-known astronomer, author and television personality, Dr. Carl Sagan, of Cornell University. While brilliantly defending Velikovsky's work, Carl Sagan and Immanuel Velikovsky mercilessly dissects Sagan, his blatantly snide, dishonest and unprofessional 'arguments,' and exposes the sordid and unscientific side of 'scientific' controversy.

Catching Stardust May 10 2022 'A promising debut.' *New Scientist* Icy, rocky, sometimes dusty, always mysterious – comets and asteroids are among the Solar System's very oldest inhabitants, formed within a swirling cloud of gas and dust in the area of space that eventually hosted the Sun and its planets. Locked within each of these extra-terrestrial objects is the 4.6-billion-year wisdom of Solar System events, and by studying them at close quarters using spacecraft we can coerce them into revealing their closely-guarded secrets. This offers us the chance to answer some fundamental questions about our planet and its inhabitants.

Exploring comets and asteroids also allows us to shape the story of Earth's future, enabling us to protect our precious planet from the threat of a catastrophic impact from space, and maybe to even recover valuable raw materials from them. This cosmic bounty could be as useful in space as it is on Earth, providing the necessary fuel and supplies for humans as they voyage into deep space to explore more distant locations within the Solar System. *Catching Stardust* tells the story of these enigmatic celestial objects, revealing how scientists are using them to help understand a crucial time in our history – the birth of the Solar System, and everything contained within it.

Carl Sagan Jul 20 2020 In this compelling life of Carl Sagan, award-winning science writer William Poundstone details the transformation of a bookish young astronomer obsessed with life on other worlds into science's first authentic media superstar. The instantly recognizable Sagan, a fixture on television and a bestselling author, offered the layperson entry into the mysteries of the cosmos and of science in general. To much of the scientific community, however, he was a pariah, a brazen publicity seeker who cared more about his image and his fortune than the advancement of science. Poundstone reveals the seldom-discussed aspects of Sagan's life, the legitimate and important work of his early scientific career, the almost obsessive capacity to take on endless projects, and the multiple marriages and fractured personal life, in what *The New Yorker* called an "evenhanded guide" to a great man's career.

Murmurs of Earth Dec 05 2021 In 1977, two extraordinary spacecraft called Voyager were launched to the stars. Affixed to each Voyager craft was a gold-coated copped phonograph record as a message to possible extra-terrestrial civilizations that might encounter the spacecraft in some distant space and time. Each record contained 118 photographs of our planet; almost 90 minutes of the world's greatest music; an evolutionary audio essay on "The Sounds of Earth"; and greetings in almost sixty human languages (and one whale language). This book is an account, written by those chiefly responsible for the contents of the Voyager Record, of why they did it, how they selected the repertoire, and precisely what the record contains.

***Felix the Comet* Jun 30 2021** Felix is an enthusiastic kid who loves his dog Cosmo, school, and two best friends, until the November day Dave Spangler moves to town. Spangler gives him a horrible nickname, and Felix begins to doubt everything. On Thanksgiving night, he walks his dog, looks up in the sky, and notices something that takes the roller coaster ride of the week back up again. However, Spangler isn't through with him yet. Tai and Kelsey have his back, and so do a lot of others, even if he doesn't know it. He tries to handle everything by himself, especially being picked on, because being called a name really can't be that bad, can it? The last thing he wants to do is tattle.

Cosmos: Possible Worlds Oct 15 2022 This sequel to Carl Sagan's blockbuster continues the electrifying journey through space and time, connecting with worlds billions of miles away and envisioning a future of science tempered with wisdom. Based on National Geographic's internationally-renowned television series, this groundbreaking and visually stunning book explores how science and civilization grew up together. From the emergence of life at deep-sea vents to solar-powered starships sailing through the galaxy, from the Big Bang to the intricacies of intelligence in many life forms, acclaimed author Ann Druyan documents where humanity has been and where it is going, using her unique gift of bringing complex scientific concepts to life. With evocative photographs and vivid illustrations, she recounts momentous discoveries, from the Voyager missions in which she and her husband, Carl Sagan, participated to Cassini-Huygens's recent insights into Saturn's moons. This breathtaking sequel to Sagan's masterpiece explains how we humans can glean a new understanding of consciousness here on Earth and out in the cosmos--again reminding us that our planet is a pale blue dot in an immense

universe of possibility.

Omega - The Last days of the World Feb 24 2021 In the twenty-fifth century AD, a comet will collide with the earth and bring about the end of the world. Faced with this apocalyptic knowledge, humanity undergoes a multitude of social, physical and psychic changes that engender incredible alterations to both people and planet over many millennia. Beautifully illustrated, this novel is a fascinating vision of humanity millions of years in the future. Camille Flammarion's 1893 science fiction novel "Omega" marries reasonable scientific speculation and philosophy in this impressive exploration of things that may be to come. Nicolas Camille Flammarion FRAS (1842–1925) was a French author and astronomer. A prolific writer, he produced over fifty books including science fiction novels, works on astronomy, and works on physical research. Other titles by this author include: "The Plurality of Inhabited Worlds" (1862), "Real and Imaginary Worlds" (1865), and "God in Nature" (1866). Read & Co. Classics is proudly republishing this vintage science fiction novel now in a new edition complete with the introductory essay 'Distances of the Stars'.

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