

The Cosmic Landscape String Theory And The Illusion Of Intelligent Design

WHEN SOMEBODY SHOULD GO TO THE BOOK STORES, SEARCH OPENING BY SHOP, SHELF BY SHELF, IT IS IN REALITY PROBLEMATIC. THIS IS WHY WE ALLOW THE EBOOK COMPILATIONS IN THIS WEBSITE. IT WILL UNCONDITIONALLY EASE YOU TO LOOK GUIDE **THE COSMIC LANDSCAPE STRING THEORY AND THE ILLUSION OF INTELLIGENT DESIGN** AS YOU SUCH AS.

BY SEARCHING THE TITLE, PUBLISHER, OR AUTHORS OF GUIDE YOU IN FACT WANT, YOU CAN DISCOVER THEM RAPIDLY. IN THE HOUSE, WORKPLACE, OR PERHAPS IN YOUR METHOD CAN BE ALL BEST AREA WITHIN NET CONNECTIONS. IF YOU INTEND TO DOWNLOAD AND INSTALL THE **THE COSMIC LANDSCAPE STRING THEORY AND THE ILLUSION OF INTELLIGENT DESIGN**, IT IS ENORMOUSLY SIMPLE THEN, BEFORE CURRENTLY WE EXTEND THE JOIN TO BUY AND CREATE BARGAINS TO DOWNLOAD AND INSTALL **THE COSMIC LANDSCAPE STRING THEORY AND THE ILLUSION OF INTELLIGENT DESIGN** SUITABLY SIMPLE!

SUPERSYMMETRY AND STRING THEORY - MICHAEL DINE 2007-01-04

THE PAST DECADE HAS WITNESSED DRAMATIC DEVELOPMENTS IN THE FIELD OF THEORETICAL PHYSICS. THIS BOOK IS A COMPREHENSIVE INTRODUCTION TO THESE RECENT DEVELOPMENTS. IT CONTAINS A REVIEW OF THE STANDARD MODEL, COVERING NON-PERTURBATIVE TOPICS, AND A DISCUSSION OF GRAND UNIFIED THEORIES AND MAGNETIC MONOPOLES. IT INTRODUCES THE BASICS OF SUPERSYMMETRY AND ITS PHENOMENOLOGY, AND INCLUDES DYNAMICS, DYNAMICAL SUPERSYMMETRY BREAKING, AND ELECTRIC-MAGNETIC DUALITY. THE BOOK THEN COVERS GENERAL RELATIVITY AND THE BIG BANG THEORY, AND THE BASIC ISSUES IN INFLATIONARY COSMOLOGIES BEFORE DISCUSSING THE SPECTRA OF KNOWN STRING THEORIES AND THE FEATURES OF THEIR INTERACTIONS. THE BOOK ALSO INCLUDES BRIEF INTRODUCTIONS TO TECHNICOLOR, LARGE EXTRA DIMENSIONS, AND THE RANDALL-SUNDRUM THEORY OF WARPED SPACES. THIS WILL BE OF GREAT INTEREST TO GRADUATES AND RESEARCHERS IN THE FIELDS OF PARTICLE THEORY, STRING THEORY, ASTROPHYSICS AND COSMOLOGY. THE BOOK CONTAINS SEVERAL PROBLEMS, AND PASSWORD PROTECTED SOLUTIONS WILL BE AVAILABLE TO LECTURERS AT WWW.CAMBRIDGE.ORG/9780521858410.

INFLATION AND QUANTUM COSMOLOGY - A. D. LINDE 1990

INFLATION AND QUANTUM COSMOLOGY ...

BEFORE THE BIG BANG - LAURA MERSINI-HOUGHTON 2022-07-19

"A RIVETING TOUR OF THE COSMOS FROM ONE OF THE BRIGHTEST MINDS IN ASTROPHYSICS."
—THE WASHINGTON POST A REVOLUTIONARY NEW ACCOUNT OF OUR UNIVERSE'S CREATION—AND A BREATHTAKING EXPLORATION OF THE LANDSCAPE FROM WHICH WE SPRANG—FROM ONE OF THE WORLD'S MOST CELEBRATED COSMOLOGISTS WHAT CAME BEFORE THE BIG BANG, AND WHAT EXISTS OUTSIDE OF THE UNIVERSE IT CREATED? UNTIL RECENTLY, SCIENTISTS COULD ONLY GUESS AT WHAT LAY PAST THE EDGE OF SPACE-TIME.

HOWEVER, AS PIONEERING THEORETICAL PHYSICIST LAURA MERSINI-HOUGHTON EXPLAINS, NEW SCIENTIFIC TOOLS ARE NOW GIVING US THE ABILITY TO PEER BEYOND THE LIMITS OF OUR UNIVERSE AND TO TEST OUR THEORIES ABOUT WHAT IS THERE. AND WHAT WE ARE FINDING IS UPENDING EVERYTHING WE THOUGHT WE KNEW ABOUT THE COSMOS AND OUR PLACE IN IT. MERSINI-HOUGHTON IS NO STRANGER TO BOUNDARIES—OR TO PUSHING THROUGH THEM. AS A CHILD GROWING UP IN COMMUNIST ALBANIA, SHE DISCOVERED A UNIVERSE BEYOND HER WALLED-OFF WORLD THROUGH THE STUDY OF MATH AND SCIENCE, AND THROUGH MUSIC. AS A FEMALE COSMOLOGIST IN A MALE-DOMINATED FIELD, SHE TRANSCENDED THE LIMITS THAT SOCIETY AND HER PROFESSION TRIED TO PLACE ON HER. AND AS A TRAILBLAZING RESEARCHER, SHE HELPED TO REVOLUTIONIZE THE STUDY OF OUR UNIVERSE BY REVEALING THAT, FAR FROM LIVING IN A COSMIC ALBANIA, WITH A WORLD THAT ENDS AT ITS BORDERS, WE ARE PART OF A LARGER FAMILY OF UNIVERSES—A MULTIVERSE—THAT HOLDS WONDERS WE ARE ONLY BEGINNING TO UNLOCK. MERSINI-HOUGHTON'S GROUNDBREAKING RESEARCH SUGGESTS THAT WE SIT IN A QUANTUM LANDSCAPE WHOSE PEAKS AND VALLEYS HIDE A MULTITUDE OF OTHER UNIVERSES, AND EVEN HOLD THE SECRET TO THE ORIGINS OF EXISTENCE ITSELF. RECENT EVIDENCE HAS REVEALED THE SIGNATURES OF SUCH SIBLING UNIVERSES IN OUR OWN NIGHT SKY, CONFIRMING MERSINI-HOUGHTON'S THEORETICAL WORK AND OFFERING HUMBLING EVIDENCE THAT OUR UNIVERSE IS JUST ONE MEMBER OF AN UNENDING COSMIC FAMILY. THE INCREDIBLE SCIENTIFIC SAGA OF ONE WOMAN'S MIND-EXPANDING JOURNEY THROUGH THE MULTIVERSE, *BEFORE THE BIG BANG* WILL RESHAPE OUR UNDERSTANDING OF HUMANITY'S PLACE IN THE UNFATHOMABLE VASTNESS OF THE COSMOS.

THE SHAPE OF INNER SPACE - SHING-TUNG YAU 2010-09-07

STRING THEORY SAYS WE LIVE IN A TEN-DIMENSIONAL UNIVERSE, BUT THAT ONLY FOUR ARE ACCESSIBLE TO OUR EVERYDAY SENSES. ACCORDING TO THEORISTS, THE MISSING SIX ARE

CURLED UP IN BIZARRE STRUCTURES KNOWN AS CALABI-YAU MANIFOLDS. IN THE SHAPE OF INNER SPACE, SHING-TUNG YAU, THE MAN WHO MATHEMATICALLY PROVED THAT THESE MANIFOLDS EXIST, ARGUES THAT NOT ONLY IS GEOMETRY FUNDAMENTAL TO STRING THEORY, IT IS ALSO FUNDAMENTAL TO THE VERY NATURE OF OUR UNIVERSE. TIME AND AGAIN, WHERE YAU HAS GONE, PHYSICS HAS FOLLOWED. NOW FOR THE FIRST TIME, READERS WILL FOLLOW YAU'S PENETRATING THINKING ON WHERE WE'VE BEEN, AND WHERE MATHEMATICS WILL TAKE US NEXT. A FASCINATING EXPLORATION OF A WORLD WE ARE ONLY JUST BEGINNING TO GRASP, THE SHAPE OF INNER SPACE WILL CHANGE THE WAY WE CONSIDER THE UNIVERSE ON BOTH ITS GRANDEST AND SMALLEST SCALES.

THE LIFE OF THE COSMOS - LEE SMOLIN 1999-03-04

LEE SMOLIN OFFERS A NEW THEORY OF THE UNIVERSE THAT IS AT ONCE ELEGANT, COMPREHENSIVE, AND RADICALLY DIFFERENT FROM ANYTHING PROPOSED BEFORE. SMOLIN POSITS THAT A PROCESS OF SELF ORGANIZATION LIKE THAT OF BIOLOGICAL EVOLUTION SHAPES THE UNIVERSE, AS IT DEVELOPS AND EVENTUALLY REPRODUCES THROUGH BLACK HOLES, EACH OF WHICH MAY RESULT IN A NEW BIG BANG AND A NEW UNIVERSE. NATURAL SELECTION MAY GUIDE THE APPEARANCE OF THE LAWS OF PHYSICS, FAVORING THOSE UNIVERSES WHICH BEST REPRODUCE. THE RESULT WOULD BE A COSMOLOGY ACCORDING TO WHICH LIFE IS A NATURAL CONSEQUENCE OF THE FUNDAMENTAL PRINCIPLES ON WHICH THE UNIVERSE HAS BEEN BUILT, AND A SCIENCE THAT WOULD GIVE US A PICTURE OF THE UNIVERSE IN WHICH, AS THE AUTHOR WRITES, "THE OCCURRENCE OF NOVELTY, INDEED THE PERPETUAL BIRTH OF NOVELTY, CAN BE UNDERSTOOD." SMOLIN IS ONE OF THE LEADING COSMOLOGISTS AT WORK TODAY, AND HE WRITES WITH AN EXPERTISE AND FORCE OF ARGUMENT THAT WILL COMMAND ATTENTION THROUGHOUT THE WORLD OF PHYSICS. BUT IT IS THE HUMANITY AND SHARP CLARITY OF HIS PROSE THAT OFFERS ACCESS FOR THE LAYPERSON TO THE MIND BENDING SPACE AT THE FOREFRONT OF TODAY'S PHYSICS.

NOT EVEN WRONG - PETER WOIT 2007-03-09

WHEN DOES PHYSICS DEPART THE REALM OF TESTABLE HYPOTHESIS AND COME TO RESEMBLE THEOLOGY? PETER WOIT ARGUES THAT STRING THEORY ISN'T JUST GOING IN THE WRONG DIRECTION, IT'S NOT EVEN SCIENCE. NOT EVEN WRONG SHOWS THAT WHAT MANY PHYSICISTS CALL SUPERSTRING "THEORY" IS NOT A THEORY AT ALL. IT MAKES NO PREDICTIONS, NOT EVEN WRONG ONES, AND THIS VERY LACK OF FALSIFIABILITY IS WHAT HAS ALLOWED THE SUBJECT TO SURVIVE AND FLOURISH. PETER WOIT EXPLAINS WHY THE MATHEMATICAL CONDITIONS FOR PROGRESS IN PHYSICS ARE ENTIRELY ABSENT FROM SUPERSTRING THEORY TODAY, OFFERING THE OTHER SIDE OF THE STORY.

FASHION, FAITH, AND FANTASY IN THE NEW PHYSICS OF THE UNIVERSE - ROGER PENROSE 2016-09-13

ONE OF THE WORLD'S LEADING PHYSICISTS QUESTIONS SOME OF THE MOST FASHIONABLE IDEAS IN PHYSICS TODAY, INCLUDING STRING THEORY. WHAT CAN FASHIONABLE IDEAS, BLIND FAITH, OR PURE FANTASY POSSIBLY HAVE TO DO WITH THE SCIENTIFIC QUEST TO UNDERSTAND THE UNIVERSE? SURELY, THEORETICAL PHYSICISTS ARE IMMUNE TO MERE

TRENDS, DOGMATIC BELIEFS, OR FLIGHTS OF FANCY? IN FACT, ACCLAIMED PHYSICIST AND BESTSELLING AUTHOR ROGER PENROSE ARGUES THAT RESEARCHERS WORKING AT THE EXTREME FRONTIERS OF PHYSICS ARE JUST AS SUSCEPTIBLE TO THESE FORCES AS ANYONE ELSE. IN THIS PROVOCATIVE BOOK, HE ARGUES THAT FASHION, FAITH, AND FANTASY, WHILE SOMETIMES PRODUCTIVE AND EVEN ESSENTIAL IN PHYSICS, MAY BE LEADING TODAY'S RESEARCHERS ASTRAY IN THREE OF THE FIELD'S MOST IMPORTANT AREAS—STRING THEORY, QUANTUM MECHANICS, AND COSMOLOGY. ARGUING THAT STRING THEORY HAS VEERED AWAY FROM PHYSICAL REALITY BY POSITING SIX EXTRA HIDDEN DIMENSIONS, PENROSE CAUTIONS THAT THE FASHIONABLE NATURE OF A THEORY CAN CLOUD OUR JUDGMENT OF ITS PLAUSIBILITY. IN THE CASE OF QUANTUM MECHANICS, ITS STUNNING SUCCESS IN EXPLAINING THE ATOMIC UNIVERSE HAS LED TO AN UNCRITICAL FAITH THAT IT MUST ALSO APPLY TO REASONABLY MASSIVE OBJECTS, AND PENROSE RESPONDS BY SUGGESTING POSSIBLE CHANGES IN QUANTUM THEORY. TURNING TO COSMOLOGY, HE ARGUES THAT MOST OF THE CURRENT FANTASTICAL IDEAS ABOUT THE ORIGINS OF THE UNIVERSE CANNOT BE TRUE, BUT THAT AN EVEN WILDER REALITY MAY LIE BEHIND THEM. FINALLY, PENROSE DESCRIBES HOW FASHION, FAITH, AND FANTASY HAVE IRONICALLY ALSO SHAPED HIS OWN WORK, FROM TWISTOR THEORY, A POSSIBLE ALTERNATIVE TO STRING THEORY THAT IS BEGINNING TO ACQUIRE A FASHIONABLE STATUS, TO "CONFORMAL CYCLIC COSMOLOGY," AN IDEA SO FANTASTIC THAT IT COULD BE CALLED "CONFORMAL CRAZY COSMOLOGY." THE RESULT IS AN IMPORTANT CRITIQUE OF SOME OF THE MOST SIGNIFICANT DEVELOPMENTS IN PHYSICS TODAY FROM ONE OF ITS MOST EMINENT FIGURES.

INTELLIGENT DESIGN - WILLIAM A. DEMBSKI 2002-07-12

IN THIS BOOK WILLIAM A. DEMBSKI BRILLIANTLY ARGUES THAT INTELLIGENT DESIGN PROVIDES A CRUCIAL LINK BETWEEN SCIENCE AND THEOLOGY. THIS IS A PIVOTAL WORK FROM A THINKER WHOM PHILLIP JOHNSON CALLS "ONE OF THE MOST IMPORTANT OF THE 'DESIGN' THEORISTS." UNIVERSE OR MULTIVERSE? - BERNARD CARR 2007-06-21

PHYSICISTS ARGUE FROM DIFFERENT PERSPECTIVES FOR AND AGAINST THE IDEA OF THE EXISTENCE OF MULTIPLE UNIVERSES.

STRING THEORY AND THE SCIENTIFIC METHOD - RICHARD DAWID 2013-05-02

STRING THEORY HAS PLAYED A HIGHLY INFLUENTIAL ROLE IN THEORETICAL PHYSICS FOR NEARLY THREE DECADES AND HAS SUBSTANTIALLY ALTERED OUR VIEW OF THE ELEMENTARY BUILDING PRINCIPLES OF THE UNIVERSE. HOWEVER, THE THEORY REMAINS EMPIRICALLY UNCONFIRMED, AND IS EXPECTED TO REMAIN SO FOR THE FORESEEABLE FUTURE. SO WHY DO STRING THEORISTS HAVE SUCH A STRONG BELIEF IN THEIR THEORY? THIS BOOK EXPLORES THIS QUESTION, OFFERING A NOVEL INSIGHT INTO THE NATURE OF THEORY ASSESSMENT ITSELF. DAWID APPROACHES THE TOPIC FROM A UNIQUE POSITION, HAVING EXTENSIVE EXPERIENCE IN BOTH PHILOSOPHY AND HIGH-ENERGY PHYSICS. HE ARGUES THAT STRING THEORY IS JUST THE MOST CONSPICUOUS EXAMPLE OF A NUMBER OF THEORIES IN HIGH-ENERGY PHYSICS WHERE NON-EMPIRICAL THEORY ASSESSMENT HAS AN IMPORTANT PART TO PLAY. AIMED AT PHYSICISTS AND PHILOSOPHERS OF SCIENCE, THE BOOK DOES NOT USE

MATHEMATICAL FORMALISM AND EXPLAINS MOST TECHNICAL TERMS.

THE THEORETICAL MINIMUM - LEONARD SUSSKIND 2014-04-22

A MASTER TEACHER PRESENTS THE ULTIMATE INTRODUCTION TO CLASSICAL MECHANICS FOR PEOPLE WHO ARE SERIOUS ABOUT LEARNING PHYSICS "BEAUTIFULLY CLEAR EXPLANATIONS OF FAMOUSLY 'DIFFICULT' THINGS," -- WALL STREET JOURNAL IF YOU EVER REGRETTED NOT TAKING PHYSICS IN COLLEGE -- OR SIMPLY WANT TO KNOW HOW TO THINK LIKE A PHYSICIST -- THIS IS THE BOOK FOR YOU. IN THIS BESTSELLING INTRODUCTION TO CLASSICAL MECHANICS, PHYSICIST LEONARD SUSSKIND AND HACKER-SCIENTIST GEORGE HRABOVSKY OFFER A FIRST COURSE IN PHYSICS AND ASSOCIATED MATH FOR THE ARDENT AMATEUR. CHALLENGING, LUCID, AND CONCISE, THE THEORETICAL MINIMUM PROVIDES A TOOL KIT FOR AMATEUR SCIENTISTS TO LEARN PHYSICS AT THEIR OWN PACE.

THE COSMIC LANDSCAPE - LEONARD SUSSKIND 2008-12-14

IN HIS FIRST BOOK EVER, THE FATHER OF STRING THEORY REINVENTS THE WORLD'S CONCEPT OF THE KNOWN UNIVERSE AND MAN'S UNIQUE PLACE WITHIN IT. LINE DRAWINGS.

BANKRUPTING PHYSICS - ALEXANDER UNZICKER 2013-07-30

AN AWARD-WINNING SCIENTIST ARGUES THAT THEORETICAL PHYSICS HAS BECOME TOO ABSTRACT AND CALLS FOR SCIENCE TO RETURN TO THE EXPERIMENTAL METHOD THE RECENTLY CELEBRATED DISCOVERY OF THE HIGGS BOSON HAS CAPTIVATED THE PUBLIC'S IMAGINATION WITH THE PROMISE THAT IT CAN EXPLAIN THE ORIGINS OF EVERYTHING IN THE UNIVERSE. IT'S NO WONDER THAT THE MEDIA REFERS TO IT GRANDLY AS THE "GOD PARTICLE." YET BEHIND CLOSED DOORS, PHYSICISTS ARE ADMITTING THAT THERE IS MUCH MORE TO THIS STORY, AND EVEN YEARS OF GUNNING THE LARGE HADRON COLLIDER AND HERCULEAN NUMBER CRUNCHING MAY STILL NOT LEAD TO A DEEP UNDERSTANDING OF THE LAWS OF NATURE. IN THIS FASCINATING AND EYE-OPENING ACCOUNT, THEORETICAL PHYSICIST ALEXANDER UNZICKER AND SCIENCE WRITER SHEILLA JONES OFFER A POLEMIC. THEY QUESTION WHETHER THE LARGE-SCALE, MULTINATIONAL ENTERPRISES ACTUALLY LEAD US TO THE PROMISED LAND OF UNDERSTANDING THE UNIVERSE. THE TWO SCIENTISTS TAKE US ON A TOUR OF CONTEMPORARY PHYSICS AND SHOW HOW A SERIES OF HIGHLY PUBLICIZED THEORIES MET A DEAD END. UNZICKER AND JONES SYSTEMATICALLY UNPACK THE RECENT HOT THEORIES SUCH AS "PARALLEL UNIVERSES," "STRING THEORY," AND "INFLATIONARY COSMOLOGY," AND PROVIDE AN ACCESSIBLE EXPLANATION OF EACH. THE AUHORS ARGUE THAT PHYSICS HAS ABANDONED ITS EVIDENCE-BASED ROOTS AND SHIFTED TO UNTESTABLE MATHEMATICAL THEORIES, AND THEY ISSUE A CLARION CALL FOR THE SCIENCE TO RETURN TO ITS EXPERIMENTAL FOUNDATION.

THE GOD EQUATION - MICHIO KAKU 2021-04-06

#1 NEW YORK TIMES BESTSELLER • THE EPIC STORY OF THE GREATEST QUEST IN ALL OF SCIENCE—THE HOLY GRAIL OF PHYSICS THAT WOULD EXPLAIN THE CREATION OF THE UNIVERSE—FROM RENOWNED THEORETICAL PHYSICIST AND AUTHOR OF *THE FUTURE OF THE MIND* AND *THE FUTURE OF HUMANITY*. WHEN NEWTON DISCOVERED THE LAW OF GRAVITY, HE UNIFIED THE RULES GOVERNING THE HEAVENS AND THE EARTH. SINCE THEN, PHYSICISTS

HAVE BEEN PLACING NEW FORCES INTO EVER-GRANDER THEORIES. BUT PERHAPS THE ULTIMATE CHALLENGE IS ACHIEVING A MONUMENTAL SYNTHESIS OF THE TWO REMAINING THEORIES—RELATIVITY AND THE QUANTUM THEORY. THIS WOULD BE THE CROWNING ACHIEVEMENT OF SCIENCE, A PROFOUND MERGING OF ALL THE FORCES OF NATURE INTO ONE BEAUTIFUL, MAGNIFICENT EQUATION TO UNLOCK THE DEEPEST MYSTERIES IN SCIENCE: WHAT HAPPENED BEFORE THE BIG BANG? WHAT LIES ON THE OTHER SIDE OF A BLACK HOLE? ARE THERE OTHER UNIVERSES AND DIMENSIONS? IS TIME TRAVEL POSSIBLE? WHY ARE WE HERE? KAKU ALSO EXPLAINS THE INTENSE CONTROVERSY SWIRLING AROUND THIS THEORY, WITH NOBEL LAUREATES TAKING OPPOSITE SIDES ON THIS VITAL QUESTION. IT IS A CAPTIVATING, GRIPPING STORY; WHAT'S AT STAKE IS NOTHING LESS THAN OUR CONCEPTION OF THE UNIVERSE. WRITTEN WITH KAKU'S TRADEMARK ENTHUSIASM AND CLARITY, THIS EPIC AND ENGAGING JOURNEY IS THE STORY OF THE GOD EQUATION.

A FIRST COURSE IN STRING THEORY - BARTON ZWIEBACH 2009-01-22

STRING THEORY MADE UNDERSTANDABLE. BARTON ZWIEBACH IS ONCE AGAIN FAITHFUL TO HIS GOAL OF MAKING STRING THEORY ACCESSIBLE TO UNDERGRADUATES. HE PRESENTS THE MAIN CONCEPTS OF STRING THEORY IN A CONCRETE AND PHYSICAL WAY TO DEVELOP INTUITION BEFORE FORMALISM, OFTEN THROUGH SIMPLIFIED AND ILLUSTRATIVE EXAMPLES. COMPLETE AND THOROUGH IN ITS COVERAGE, THIS NEW EDITION NOW INCLUDES ADS/CFT CORRESPONDENCE AND INTRODUCES SUPERSTRINGS. IT IS PERFECTLY SUITED TO INTRODUCTORY COURSES IN STRING THEORY FOR STUDENTS WITH A BACKGROUND IN MATHEMATICS AND PHYSICS. NEW SECTIONS COVER STRINGS ON ORBIFOLDS, COSMIC STRINGS, MODULI STABILIZATION, AND THE STRING THEORY LANDSCAPE. NOW WITH ALMOST 300 PROBLEMS AND EXERCISES, WITH PASSWORD-PROTECTED SOLUTIONS FOR INSTRUCTORS AT WWW.CAMBRIDGE.ORG/ZWIEBACH.

THIS WAY TO THE UNIVERSE - MICHAEL DINE 2022-02-08

FOR READERS OF SEAN CARROLL, BRIAN GREENE, KATIE MACK, AND ANYONE WHO WANTS TO KNOW WHAT THEORETICAL PHYSICISTS ACTUALLY DO. THIS WAY TO THE UNIVERSE IS A CELEBRATION OF THE ASTOUNDING, ONGOING SCIENTIFIC INVESTIGATIONS THAT HAVE REVEALED THE NATURE OF REALITY AT ITS SMALLEST, AT ITS LARGEST, AND AT THE SCALE OF OUR DAILY LIVES. THE ENIGMAS THAT PROFESSOR MICHAEL DINE DISCUSSES ARE LIKE LANDMARKS ON A FANTASTIC JOURNEY TO THE EDGE OF THE UNIVERSE. ASKED WHERE TO FIND OUT ABOUT THE BIG BANG, DARK MATTER, THE HIGGS BOSON PARTICLE—THE LONG CUTTING EDGE OF PHYSICS RIGHT NOW—DINE HAD NO SINGLE BOOK HE COULD RECOMMEND. THIS IS HIS ACCESSIBLE, AUTHORITATIVE, AND UP-TO-DATE ANSWER. COMPREHENSIBLE TO ANYONE WITH A HIGH-SCHOOL LEVEL EDUCATION, WITH ALMOST NO EQUATIONS, THERE IS NO BETTER AUTHOR TO TAKE YOU ON THIS AMAZING ODYSSEY. DINE IS WIDELY RECOGNIZED AS HAVING MADE PROFOUND CONTRIBUTIONS TO OUR UNDERSTANDING OF MATTER, TIME, THE BIG BANG, AND EVEN WHAT MIGHT HAVE COME BEFORE IT. THIS WAY TO THE UNIVERSE TOUCHES ON MANY EMOTIONAL, CRITICAL POINTS IN HIS EXTRAORDINARY CAREER WHILE PRESENTING MIND-BENDING PHYSICS LIKE HIS ANSWER TO THE DARK MATTER AND DARK ENERGY

MYSTERIES AS WELL AS THE IDEAS THAT EXPLAIN WHY OUR UNIVERSE CONSISTS OF SOMETHING RATHER THAN NOTHING. PEOPLE ASSUME STRING THEORY CAN NEVER BE TESTED, BUT DINE INTREPIDLY EXPLORES EXACTLY HOW THE THEORY MIGHT BE TESTED EXPERIMENTALLY, AS WELL AS THE PITFALLS OF FALLING IN LOVE WITH MATH. THIS BOOK REFLECTS A LIFETIME PURSUING THE DEEPEST MYSTERIES OF REALITY, BY ONE OF THE MOST HUMBLE AND WARMLY ENGAGING VOICES YOU WILL EVER READ.

FAREWELL TO REALITY - JIM BAGGOTT 2013-08-06

FROM ACCLAIMED SCIENCE AUTHOR JIM BAGGOTT, A LIVELY, PROVOCATIVE, AND "INTELLECTUALLY GRATIFYING" CRITIQUE OF MODERN THEORETICAL PHYSICS (THE ECONOMIST). WHERE DOES ONE DRAW THE LINE BETWEEN SOLID SCIENCE AND FAIRY-TALE PHYSICS? JIM BAGGOTT ARGUES THAT THERE IS NO OBSERVATIONAL OR EXPERIMENTAL EVIDENCE FOR MANY OF THE IDEAS OF MODERN THEORETICAL PHYSICS: SUPER-SYMMETRIC PARTICLES, SUPER STRINGS, THE MULTIVERSE, THE HOLOGRAPHIC PRINCIPLE, OR THE ANTHROPIC COSMOLOGICAL PRINCIPLE. UNAFRAID TO CHALLENGE PROMINENT THEORISTS, BAGGOTT OFFERS ENGAGING PORTRAITS OF MANY CENTRAL FIGURES OF MODERN PHYSICS, INCLUDING STEPHEN HAWKING, PAUL DAVIES, JOHN D. BARROW, BRIAN GREENE, AND LEONARD SUSSKIND. INFORMED, COMPREHENSIVE, AND BALANCED, FAREWELL TO REALITY DISCUSSES THE LATEST IDEAS ABOUT THE NATURE OF PHYSICAL REALITY WHILE CLEARLY DISTINGUISHING BETWEEN FACT AND FANTASY, PROVIDING ESSENTIAL AND ENTERTAINING READING FOR EVERYONE INTERESTED IN WHAT WE KNOW AND DON'T KNOW ABOUT THE NATURE OF THE UNIVERSE AND REALITY ITSELF.

OUR COSMIC HABITAT - MARTIN REES 2017-11-21

OUR UNIVERSE SEEMS STRANGELY "BIOPHILIC," OR HOSPITABLE TO LIFE. IS THIS HAPPENSTANCE, PROVIDENCE, OR COINCIDENCE? ACCORDING TO COSMOLOGIST MARTIN REES, THE ANSWER DEPENDS ON THE ANSWER TO ANOTHER QUESTION, THE ONE POSED BY EINSTEIN'S FAMOUS REMARK: "WHAT INTERESTS ME MOST IS WHETHER GOD COULD HAVE MADE THE WORLD DIFFERENTLY." THIS HIGHLY ENGAGING BOOK EXPLORES THE FASCINATING CONSEQUENCES OF THE ANSWER BEING "YES." REES EXPLORES THE NOTION THAT OUR UNIVERSE IS JUST A PART OF A VAST "MULTIVERSE," OR ENSEMBLE OF UNIVERSES, IN WHICH MOST OF THE OTHER UNIVERSES ARE LIFELESS. WHAT WE CALL THE LAWS OF NATURE WOULD THEN BE NO MORE THAN LOCAL BYLAWS, IMPOSED IN THE AFTERMATH OF OUR OWN BIG BANG. IN THIS SCENARIO, OUR COSMIC HABITAT WOULD BE A SPECIAL, POSSIBLY UNIQUE UNIVERSE WHERE THE PREVAILING LAWS OF PHYSICS ALLOWED LIFE TO EMERGE. REES BEGINS BY EXPLORING THE NATURE OF OUR SOLAR SYSTEM AND EXAMINING A RANGE OF RELATED ISSUES SUCH AS WHETHER OUR UNIVERSE IS OR ISN'T INFINITE. HE ASKS, FOR EXAMPLE: HOW LIKELY IS LIFE? HOW CREDIBLE IS THE BIG BANG THEORY? REES THEN PEERS INTO THE LONG-RANGE COSMIC FUTURE BEFORE TRACING THE CAUSAL CHAIN BACKWARD TO THE BEGINNING. HE CONCLUDES BY TRYING TO UNTANGLE THE PARADOXICAL NOTION THAT OUR ENTIRE UNIVERSE, STRETCHING 10 BILLION LIGHT-YEARS IN ALL DIRECTIONS, EMERGED FROM AN INFINITESIMAL SPECK. AS REES ARGUES, WE MAY ALREADY HAVE INTIMATIONS OF OTHER

UNIVERSES. BUT THE FATE OF THE MULTIVERSE CONCEPT DEPENDS ON THE STILL-UNKNOWN BEDROCK NATURE OF SPACE AND TIME ON SCALES A TRILLION TRILLION TIMES SMALLER THAN ATOMS, IN THE REALM GOVERNED BY THE QUANTUM PHYSICS OF GRAVITY. EXPANDING OUR COMPREHENSION OF THE COSMOS, OUR COSMIC HABITAT WILL BE READ AND ENJOYED BY ALL THOSE--SCIENTISTS AND NONSCIENTISTS ALIKE--WHO ARE AS FASCINATED BY THE UNIVERSE WE INHABIT AS IS THE AUTHOR HIMSELF.

THE TROUBLE WITH PHYSICS - LEE SMOLIN 2006

SAMPLE TEXT

THE BLACK HOLE WAR - LEONARD SUSSKIND 2008-07-07

WHAT HAPPENS WHEN SOMETHING IS SUCKED INTO A BLACK HOLE? DOES IT DISAPPEAR? THREE DECADES AGO, A YOUNG PHYSICIST NAMED STEPHEN HAWKING CLAIMED IT DID--AND IN DOING SO PUT AT RISK EVERYTHING WE KNOW ABOUT PHYSICS AND THE FUNDAMENTAL LAWS OF THE UNIVERSE. MOST SCIENTISTS DIDN'T RECOGNIZE THE IMPORT OF HAWKING'S CLAIMS, BUT LEONARD SUSSKIND AND GERARD T'HOOFT REALIZED THE THREAT, AND RESPONDED WITH A COUNTERATTACK THAT CHANGED THE COURSE OF PHYSICS. THE BLACK HOLE WAR IS THE THRILLING STORY OF THEIR UNITED EFFORT TO RECONCILE HAWKING'S REVOLUTIONARY THEORIES OF BLACK HOLES WITH THEIR OWN SENSE OF REALITY--EFFORT THAT WOULD EVENTUALLY RESULT IN HAWKING ADMITTING HE WAS WRONG, PAYING UP, AND SUSSKIND AND T'HOOFT REALIZING THAT OUR WORLD IS A HOLOGRAM PROJECTED FROM THE OUTER BOUNDARIES OF SPACE. A BRILLIANT BOOK ABOUT MODERN PHYSICS, QUANTUM MECHANICS, THE FATE OF STARS AND THE DEEP MYSTERIES OF BLACK HOLES, LEONARD SUSSKIND'S ACCOUNT OF THE BLACK HOLE WAR IS MIND-BENDING AND EXHILARATING READING.

STRING THEORY COMPACTIFICATIONS - MARIANA GRAJESCU 2017-03-21

THE LECTURES IN THIS BOOK PROVIDE GRADUATE STUDENTS AND NON-SPECIALIST RESEARCHERS WITH A CONCISE INTRODUCTION TO THE CONCEPTS AND FORMALISM REQUIRED TO REDUCE THE TEN-DIMENSIONAL STRING THEORIES TO THE OBSERVABLE FOUR-DIMENSIONAL SPACE-TIME - A PROCEDURE CALLED STRING COMPACTIFICATION. THE TEXT STARTS WITH A VERY BRIEF INTRODUCTION TO STRING THEORY, FIRST WORKING OUT ITS MASSLESS SPECTRUM AND SHOWING HOW THE CONDITION ON THE NUMBER OF DIMENSIONS ARISES. IT THEN DWELLS ON THE DIFFERENT POSSIBLE INTERNAL MANIFOLDS, FROM THE SIMPLEST TO THE MOST RELEVANT PHENOMENOLOGICALLY, THEREBY SHOWING THAT THE MOST ELEGANT DESCRIPTION IS THROUGH AN EXTENSION OF ORDINARY RIEMANNIAN GEOMETRY TERMED GENERALIZED GEOMETRY, WHICH WAS FIRST INTRODUCED BY HITCHIN. LAST BUT NOT LEAST, THE AUTHORS REVIEW OPEN PROBLEMS IN STRING PHENOMENOLOGY, SUCH AS THE EMBEDDING OF THE STANDARD MODEL AND OBTAINING DE SITTER SOLUTIONS.

BEYOND EINSTEIN - MICHIO KAKU 1987

BEYOND EINSTEIN TAKES READERS ON AN EXCITING EXCURSION INTO THE DISCOVERIES THAT HAVE LED SCIENTISTS TO THE BRIGHTEST NEW PROSPECT IN THEORETICAL PHYSICS TODAY -- SUPERSTRING THEORY. WHAT IS SUPERSTRING THEORY AND WHY IS IT IMPORTANT? THIS REVOLUTIONARY BREAKTHROUGH MAY WELL BE THE FULFILLMENT OF ALBERT EINSTEIN'S

LIFELONG DREAM OF A THEORY OF EVERYTHING, UNITING THE LAWS OF PHYSICS INTO A SINGLE DESCRIPTION EXPLAINING ALL THE KNOWN FORCES IN THE UNIVERSE. CO-AUTHORED BY ONE OF THE LEADING PIONEERS IN SUPERSTRINGS, MICHIO KAKU, AND COMPLETELY REVISED AND UPDATED WITH THE NEWEST GROUNDBREAKING RESEARCH, THE BOOK APPROACHES SCIENTIFIC QUESTIONS WITH THE EXCITEMENT OF A DETECTIVE STORY, OFFERING A FASCINATING LOOK AT THE NEW SCIENCE THAT MAY MAKE THE IMPOSSIBLE POSSIBLE.

SPECIAL RELATIVITY AND CLASSICAL FIELD THEORY - LEONARD SUSSKIND 2017-09-26

THE THIRD VOLUME IN THE BESTSELLING PHYSICS SERIES CRACKS OPEN EINSTEIN'S SPECIAL RELATIVITY AND FIELD THEORY PHYSICIST LEONARD SUSSKIND AND DATA ENGINEER ART FRIEDMAN ARE BACK. THIS TIME, THEY INTRODUCE READERS TO EINSTEIN'S SPECIAL RELATIVITY AND MAXWELL'S CLASSICAL FIELD THEORY. USING THEIR TYPICAL BRAND OF REAL MATH, ENLIGHTENING DRAWINGS, AND HUMOR, SUSSKIND AND FRIEDMAN WALK US THROUGH THE COMPLEXITIES OF WAVES, FORCES, AND PARTICLES BY EXPLORING SPECIAL RELATIVITY AND ELECTROMAGNETISM. IT'S A MUST-READ FOR BOTH DEVOTEES OF THE SERIES AND ANY ARMCHAIR PHYSICIST WHO WANTS TO IMPROVE THEIR KNOWLEDGE OF PHYSICS' DEEPEST TRUTHS.

SPECIAL RELATIVITY AND CLASSICAL FIELD THEORY - LEONARD. FRIEDMAN SUSSKIND (ART.) 2017-09-26

THE THIRD VOLUME IN LEONARD SUSSKIND'S ONE-OF-A-KIND PHYSICS SERIES CRACKS OPEN EINSTEIN'S SPECIAL RELATIVITY AND FIELD THEORY IN THE FIRST TWO BOOKS IN HIS WILDLY POPULAR THE THEORETICAL MINIMUM SERIES, WORLD-CLASS PHYSICIST LEONARD SUSSKIND PROVIDED A BRILLIANT FIRST COURSE IN CLASSICAL AND QUANTUM MECHANICS, OFFERING READERS NOT AN OVERSIMPLIFIED INTRODUCTION, BUT THE REAL THING - EVERYTHING YOU NEED TO START DOING PHYSICS, AND NOTHING MORE. NOW, THANKFULLY, SUSSKIND AND HIS FORMER STUDENT ART FRIEDMAN ARE BACK, THIS TIME TO INTRODUCE READERS TO SPECIAL RELATIVITY AND CLASSICAL FIELD THEORY. AT LAST, WAVES, FORCES AND PARTICLES WILL BE DEMYSTIFIED. USING THEIR TYPICAL BRAND OF RELATIVELY SIMPLE MATHS, ENLIGHTENING SKETCHES AND THE SAME FICTIONAL COUNTERPARTS, ART AND LENNY, SPECIAL RELATIVITY AND CLASSICAL FIELD THEORY TAKES US ON AN ENLIGHTENING JOURNEY THROUGH A WORLD NOW GOVERNED BY THE LAWS OF SPECIAL RELATIVITY. STARTING IN THEIR NEW WATERING HOLE, HERMANN'S HIDEAWAY, WITH A LESSON ON RELATIVITY, ART AND LENNY WALK US THROUGH THE COMPLEXITIES OF EINSTEIN'S FAMOUS THEORY. COMBINING RIGOR WITH HUMOUR, SUSSKIND AND FRIEDMAN GUARANTEE THAT SPECIAL RELATIVITY AND CLASSICAL FIELD THEORY WILL BECOME PART OF THE READER'S PHYSICS TOOLBOX.

THE HIDDEN REALITY - BRIAN GREENE 2011-01-25

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.

WHY STRING THEORY? - JOSEPH CONLON 2016-08-19

PHYSICS WORLD'S 'BOOK OF THE YEAR' FOR 2016 AN ENTERTAINING AND ENLIGHTENING GUIDE TO THE WHO, WHAT, AND WHY OF STRING THEORY, NOW ALSO AVAILABLE IN AN UPDATED REFLOWABLE ELECTRONIC FORMAT COMPATIBLE WITH MOBILE DEVICES AND E-READERS. DURING THE LAST 50 YEARS, NUMEROUS PHYSICISTS HAVE TRIED TO UNRAVEL THE SECRETS OF STRING THEORY. YET WHY DO THESE SCIENTISTS WORK ON A THEORY LACKING EXPERIMENTAL CONFIRMATION? WHY STRING THEORY? PROVIDES THE ANSWER, OFFERING A HIGHLY READABLE AND ACCESSIBLE PANORAMA OF THE WHO, WHAT, AND WHY OF THIS LARGE ASPECT OF MODERN THEORETICAL PHYSICS. THE AUTHOR, A THEORETICAL PHYSICS PROFESSOR AT THE UNIVERSITY OF OXFORD AND A LEADING STRING THEORIST, EXPLAINS WHAT STRING THEORY IS AND WHERE IT ORIGINATED. HE DESCRIBES HOW STRING THEORY FITS INTO PHYSICS AND WHY SO MANY PHYSICISTS AND MATHEMATICIANS FIND IT APPEALING WHEN WORKING ON TOPICS FROM M-THEORY TO MONSTERS AND FROM COSMOLOGY TO SUPERCONDUCTORS.

PROGRESS IN INFORMATION GEOMETRY - FRANK NIELSEN 2021-03-14

THIS BOOK FOCUSES ON INFORMATION-GEOMETRIC MANIFOLDS OF STRUCTURED DATA AND MODELS AND RELATED APPLIED MATHEMATICS. IT FEATURES NEW AND FRUITFUL INTERACTIONS BETWEEN SEVERAL BRANCHES OF SCIENCE: ADVANCED SIGNAL/IMAGE/VIDEO PROCESSING, COMPLEX DATA MODELING AND ANALYSIS, STATISTICS ON MANIFOLDS, TOPOLOGY/MACHINE/DEEP LEARNING AND ARTIFICIAL INTELLIGENCE. THE SELECTION OF APPLICATIONS MAKES THE BOOK A SUBSTANTIAL INFORMATION SOURCE, NOT ONLY FOR ACADEMIC SCIENTIST BUT IT IS ALSO HIGHLY RELEVANT FOR INDUSTRY. THE BOOK PROJECT WAS INITIATED FOLLOWING DISCUSSIONS AT THE INTERNATIONAL CONFERENCE GSI'2019 - GEOMETRIC SCIENCE OF INFORMATION THAT WAS HELD AT ENAC, TOULOUSE (FRANCE).

STRING THEORY FOR DUMMIES - ANDREW ZIMMERMAN JONES 2009-11-16

A CLEAR, PLAIN-ENGLISH GUIDE TO THIS COMPLEX SCIENTIFIC THEORY STRING THEORY IS THE HOTTEST TOPIC IN PHYSICS RIGHT NOW, WITH BOOKS ON THE SUBJECT (PRO AND CON) FLYING OUT OF THE STORES. STRING THEORY FOR DUMMIES OFFERS AN ACCESSIBLE INTRODUCTION TO THIS HIGHLY MATHEMATICAL "THEORY OF EVERYTHING," WHICH POSITS TEN OR MORE DIMENSIONS IN AN ATTEMPT TO EXPLAIN THE BASIC NATURE OF MATTER AND

ENERGY. WRITTEN FOR BOTH STUDENTS AND PEOPLE INTERESTED IN SCIENCE, THIS GUIDE EXPLAINS CONCEPTS, DISCUSSES THE STRING THEORY'S HYPOTHESES AND PREDICTIONS, AND PRESENTS THE MATH IN AN APPROACHABLE MANNER. IT FEATURES IN-DEPTH EXAMPLES AND AN EASY-TO-UNDERSTAND STYLE SO THAT READERS CAN UNDERSTAND THIS CONTROVERSIAL, CUTTING-EDGE THEORY.

AN INTRODUCTION TO BLACK HOLES, INFORMATION AND THE STRING THEORY REVOLUTION - LEONARD SUSSKIND 2005

- A UNIQUE EXPOSITION OF THE FOUNDATIONS OF THE QUANTUM THEORY OF BLACK HOLES INCLUDING THE IMPACT OF STRING THEORY, THE IDEA OF BLACK HOLE COMPLEMENTARITY AND THE HOLOGRAPHIC PRINCIPLE BULL; AIMS TO EDUCATE THE PHYSICIST OR STUDENT OF PHYSICS WHO IS NOT AN EXPERT ON STRING THEORY, ON THE REVOLUTION THAT HAS GROWN OUT OF BLACK HOLE PHYSICS AND STRING THEORY

MANY WORLDS IN ONE - ALEX VILENKIN 2007-07-10

A LEADING FIGURE IN THE DEVELOPMENT OF THE NEW COSMOLOGY EXPLAINS WHAT IT ALL MEANS AMONG HIS PEERS, ALEX VILENKIN IS REGARDED AS ONE OF THE MOST IMAGINATIVE AND CREATIVE COSMOLOGISTS OF OUR TIME. HIS CONTRIBUTIONS TO OUR CURRENT UNDERSTANDING OF THE UNIVERSE INCLUDE A NUMBER OF NOVEL IDEAS, TWO OF WHICH—ETERNAL COSMIC INFLATION AND THE QUANTUM CREATION OF THE UNIVERSE FROM NOTHING—HAVE PROVIDED A SCIENTIFIC FOUNDATION FOR THE POSSIBLE EXISTENCE OF MULTIPLE UNIVERSES. WITH THIS BOOK—HIS FIRST FOR THE GENERAL READER—VILENKIN JOINS ANOTHER SELECT GROUP: THE HANDFUL OF FIRST-RANK SCIENTISTS WHO ARE EQUALLY ADEPT AT EXPLAINING THEIR WORK TO NONSPECIALISTS. WITH ENGAGING, WELL-PACED STORYTELLING, A DROLL SENSE OF HUMOR, AND A GENEROUS SPRINKLING OF HELPFUL CARTOONS, HE CONJURES UP A BIZARRE AND FASCINATING NEW WORLDVIEW THAT—TO PARAPHRASE NIELS BOHR—JUST MIGHT BE CRAZY ENOUGH TO BE TRUE.

THE ELEGANT UNIVERSE - BRIAN GREENE 2000

INTRODUCES THE SUPERSTRING THEORY THAT ATTEMPTS TO UNITE GENERAL RELATIVITY AND QUANTUM MECHANICS

A FORTUNATE UNIVERSE - GERAINT F. LEWIS 2016-10-06

OVER THE LAST FORTY YEARS, SCIENTISTS HAVE UNCOVERED EVIDENCE THAT IF THE UNIVERSE HAD BEEN FORGED WITH EVEN SLIGHTLY DIFFERENT PROPERTIES, LIFE AS WE KNOW IT - AND LIFE AS WE CAN IMAGINE IT - WOULD BE IMPOSSIBLE. JOIN US ON A JOURNEY THROUGH HOW WE UNDERSTAND THE UNIVERSE, FROM ITS MOST BASIC PARTICLES AND FORCES, TO PLANETS, STARS AND GALAXIES, AND BACK THROUGH COSMIC HISTORY TO THE BIRTH OF THE COSMOS. CONFLICTING NOTIONS ABOUT OUR PLACE IN THE UNIVERSE ARE DEFINED, DEFENDED AND CRITIQUED FROM SCIENTIFIC, PHILOSOPHICAL AND RELIGIOUS VIEWPOINTS. THE AUTHORS' ENGAGING AND WITTY STYLE ADDRESSES WHAT FINE-TUNING MIGHT MEAN FOR THE FUTURE OF PHYSICS AND THE SEARCH FOR THE ULTIMATE LAWS OF NATURE. TACKLING DIFFICULT QUESTIONS AND PROVIDING THOUGHT-PROVOKING ANSWERS, THIS VOLUME CHALLENGES US TO CONSIDER OUR PLACE IN THE COSMOS, REGARDLESS OF OUR INITIAL

CONVICTIONS.

INFLATION AND STRING THEORY - DANIEL BAUMANN 2015-04-23

THE PAST TWO DECADES HAVE SEEN TRANSFORMATIVE ADVANCES IN COSMOLOGY AND STRING THEORY. OBSERVATIONS OF THE COSMIC MICROWAVE BACKGROUND HAVE REVEALED STRONG EVIDENCE FOR INFLATIONARY EXPANSION IN THE VERY EARLY UNIVERSE, WHILE NEW INSIGHTS ABOUT COMPACTIFICATIONS OF STRING THEORY HAVE LED TO A DEEPER UNDERSTANDING OF INFLATION IN A FRAMEWORK THAT UNIFIES QUANTUM MECHANICS AND GENERAL RELATIVITY. WRITTEN BY TWO OF THE LEADING RESEARCHERS IN THE FIELD, THIS COMPLETE AND ACCESSIBLE VOLUME PROVIDES A MODERN TREATMENT OF INFLATIONARY COSMOLOGY AND ITS CONNECTIONS TO STRING THEORY AND ELEMENTARY PARTICLE THEORY. AFTER AN UP-TO-DATE EXPERIMENTAL SUMMARY, THE AUTHORS PRESENT THE FOUNDATIONS OF EFFECTIVE FIELD THEORY, STRING THEORY, AND STRING COMPACTIFICATIONS, SETTING THE STAGE FOR A DETAILED EXAMINATION OF MODELS OF INFLATION IN STRING THEORY. THREE APPENDICES CONTAIN BACKGROUND MATERIAL IN GEOMETRY AND COSMOLOGICAL PERTURBATION THEORY, MAKING THIS A SELF-CONTAINED RESOURCE FOR GRADUATE STUDENTS AND RESEARCHERS IN STRING THEORY, COSMOLOGY, AND RELATED FIELDS.

STRING COSMOLOGY - JOHANNA ERDMENGER 2009-07-14

THIS RELATIVELY NEW FIELD APPLIES EQUATIONS FROM STRING THEORY TO SOLVE THE QUESTIONS OF EARLY COSMOLOGY, SINCE THE STANDARD PICTURE OF OUR UNIVERSE EMERGING FROM A 'BIG BANG' LEAVES MANY FUNDAMENTAL ISSUES UNANSWERED. STRING THEORY, ON THE OTHER HAND, POSTULATES THAT FUNDAMENTAL INGREDIENTS OF NATURE ARE NOT ZERO-DIMENSIONAL POINT PARTICLES BUT TINY ONE-DIMENSIONAL FILAMENTS. THIS THEORY HARMONIOUSLY UNITES QUANTUM MECHANICS AND GENERAL RELATIVITY -- THE PREVIOUSLY KNOWN LAWS OF THE SMALL AND THE LARGE -- WHICH ARE OTHERWISE INCOMPATIBLE. THE FIELD OF STRING COSMOLOGY HAS MATURED CONSIDERABLY OVER THE PAST FEW YEARS, ATTRACTING MANY NEW ADHERENTS. DUE TO THE MULTIDISCIPLINARY NATURE OF THE TOPIC, IT IS DIFFICULT FOR PRACTITIONERS TO BE CONVERSANT WITH ALL THE MANY DIFFERENT ASPECTS. THIS BOOK THUS FILLS A HUGE GAP BY BRINGING TOGETHER ALL THE DIFFERENT STRAINS OF RESEARCH INTO ONE SINGLE VOLUME. THE RESULTING COLLECTION OF SELECTED ARTICLES PRESENTS THE LATEST, ONGOING RESULTS FROM RENOWNED EXPERTS CURRENTLY WORKING IN THE FIELD. FROM THE CONTENTS: * INTRODUCTION TO COSMOLOGY AND STRING THEORY * STRING INFLATION: BRANE INFLATION AND INFLATION FROM MODULI * COSMIC SUPERSTRINGS * THE CMB AS A POSSIBLE PROBE OF STRING THEORY * STRING GAS COSMOLOGY * GAUGE-GRAVITY DUALITY AND STRING COSMOLOGY * HETEROTIC M-THEORY AND C A WELCOME ADDITION TO THE LITERATURE FOR GRADUATE STUDENTS, STUDENTS IN ASTRONOMY, ASTRONOMERS, MATHEMATICIANS AND THEORETICAL PHYSICISTS.

FLAT AND CURVED SPACE-TIMES - GEORGE FRANCIS RAYNER ELLIS 2000

THE PRESENT BOOK EXPLAINS SPECIAL RELATIVITY AND THE BASICS OF GENERAL RELATIVITY FROM A GEOMETRIC VIEWPOINT. SPACE-TIME GEOMETRY IS EMPHASIZED THROUGHOUT, AND

PROVIDES THE BASIS OF UNDERSTANDING OF THE SPECIAL RELATIVITY EFFECTS OF TIME DILATION, LENGTH CONTRACTION, AND THE RELATIVITY OF SIMULTANEITY. BONDÍ'S K-CALCULUS IS INTRODUCED AS A SIMPLE MEANS OF CALCULATING THE MAGNITUDES OF THESE EFFECTS, AND LEADS TO A DERIVATION OF THE LORENTZ TRANSFORMATION AS A WAY OF UNIFYING THESE RESULTS. THE INVARIANT INTERVAL OF FLAT SPACE-TIME IS GENERALISED TO THAT OF CURVED SPACE-TIMES, AND LEADS TO AN UNDERSTANDING OF THE BASIC PROPERTIES OF SIMPLE COSMOLOGICAL MODELS AND OF THE COLLAPSE OF A STAR TO FORM A BLACK HOLE. THE APPENDICES ENABLE THE ADVANCED STUDENT TO MASTER THE APPLICATION OF FOUR-TENSORS TO THE RELATIVISTIC STUDY OF ENERGY AND MOMENTUM, AND OF ELECTROMAGNETISM. IN ADDITION, THIS NEW EDITION CONTAINS UP-TO-DATE INFORMATION ON BLACK HOLES, GRAVITATIONAL COLLAPSE, AND COSMOLOGY.

QUANTUM THEORY, GROUPS AND REPRESENTATIONS - PETER WOIT 2017-11-01

THIS TEXT SYSTEMATICALLY PRESENTS THE BASICS OF QUANTUM MECHANICS, EMPHASIZING THE ROLE OF LIE GROUPS, LIE ALGEBRAS, AND THEIR UNITARY REPRESENTATIONS. THE MATHEMATICAL STRUCTURE OF THE SUBJECT IS BROUGHT TO THE FORE, INTENTIONALLY AVOIDING SIGNIFICANT OVERLAP WITH MATERIAL FROM STANDARD PHYSICS COURSES IN QUANTUM MECHANICS AND QUANTUM FIELD THEORY. THE LEVEL OF PRESENTATION IS ATTRACTIVE TO MATHEMATICS STUDENTS LOOKING TO LEARN ABOUT BOTH QUANTUM MECHANICS AND REPRESENTATION THEORY, WHILE ALSO APPEALING TO PHYSICS STUDENTS WHO WOULD LIKE TO KNOW MORE ABOUT THE MATHEMATICS UNDERLYING THE SUBJECT. THIS TEXT SHOWCASES THE NUMEROUS DIFFERENCES BETWEEN TYPICAL MATHEMATICAL AND PHYSICAL TREATMENTS OF THE SUBJECT. THE LATTER PORTIONS OF THE BOOK FOCUS ON CENTRAL MATHEMATICAL OBJECTS THAT OCCUR IN THE STANDARD MODEL OF PARTICLE PHYSICS, UNDERLINING THE DEEP AND INTIMATE CONNECTIONS BETWEEN MATHEMATICS AND THE PHYSICAL WORLD. WHILE AN ELEMENTARY PHYSICS COURSE OF SOME KIND WOULD BE HELPFUL TO THE READER, NO SPECIFIC BACKGROUND IN PHYSICS IS ASSUMED, MAKING THIS BOOK ACCESSIBLE TO STUDENTS WITH A GROUNDING IN MULTIVARIABLE CALCULUS AND LINEAR ALGEBRA. MANY EXERCISES ARE PROVIDED TO DEVELOP THE READER'S UNDERSTANDING OF AND FACILITY IN QUANTUM-THEORETICAL CONCEPTS AND CALCULATIONS.

CALCULATING THE COSMOS - IAN STEWART 2016-10-25

A PRIZE-WINNING POPULAR SCIENCE WRITER USES MATHEMATICAL MODELING TO EXPLAIN THE COSMOS. IN *CALCULATING THE COSMOS*, IAN STEWART PRESENTS AN EXHILARATING GUIDE TO THE COSMOS, FROM OUR SOLAR SYSTEM TO THE ENTIRE UNIVERSE. HE DESCRIBES THE ARCHITECTURE OF SPACE AND TIME, DARK MATTER AND DARK ENERGY, HOW GALAXIES FORM, WHY STARS IMplode, HOW EVERYTHING BEGAN, AND HOW IT'S ALL GOING TO END. HE CONSIDERS PARALLEL UNIVERSES, THE FINE-TUNING OF THE COSMOS FOR LIFE, WHAT FORMS EXTRATERRESTRIAL LIFE MIGHT TAKE, AND THE LIKELIHOOD OF LIFE ON EARTH BEING SNUFFED OUT BY AN ASTEROID. BEGINNING WITH THE BABYLONIAN INTEGRATION OF MATHEMATICS INTO THE STUDY OF ASTRONOMY AND COSMOLOGY, STEWART TRACES THE EVOLUTION OF OUR UNDERSTANDING OF THE COSMOS: HOW KEPLER'S LAWS OF PLANETARY MOTION LED

NEWTON TO FORMULATE HIS THEORY OF GRAVITY. HOW, TWO CENTURIES LATER, TINY IRREGULARITIES IN THE MOTION OF MARS INSPIRED EINSTEIN TO DEVISE HIS GENERAL THEORY OF RELATIVITY. HOW, EIGHTY YEARS AGO, THE DISCOVERY THAT THE UNIVERSE IS EXPANDING LED TO THE DEVELOPMENT OF THE BIG BANG THEORY OF ITS ORIGINS. HOW SINGLE-POINT ORIGIN AND EXPANSION LED COSMOLOGISTS TO THEORIZE NEW COMPONENTS OF THE UNIVERSE, SUCH AS INFLATION, DARK MATTER, AND DARK ENERGY. BUT DOES INFLATION EXPLAIN THE STRUCTURE OF TODAY'S UNIVERSE? DOES DARK MATTER ACTUALLY EXIST? COULD A SCIENTIFIC REVOLUTION THAT WILL CHALLENGE THE LONG-HELD SCIENTIFIC ORTHODOXY AND ONCE AGAIN TRANSFORM OUR UNDERSTANDING OF THE UNIVERSE BE ON THE WAY? IN AN EXCITING AND ENGAGING STYLE, *CALCULATING THE COSMOS* IS A MATHEMATICAL QUEST THROUGH THE INTRICATE REALMS OF ASTRONOMY AND COSMOLOGY. *PHYSICAL FOUNDATIONS OF COSMOLOGY* - VIATCHESLAV MUKHANOV 2005-11-10
INFLATIONARY COSMOLOGY HAS BEEN DEVELOPED OVER THE LAST TWENTY YEARS TO REMEDY SERIOUS SHORTCOMINGS IN THE STANDARD HOT BIG BANG MODEL OF THE UNIVERSE. THIS TEXTBOOK, FIRST PUBLISHED IN 2005, EXPLAINS THE BASIS OF MODERN COSMOLOGY AND SHOWS WHERE THE THEORETICAL RESULTS COME FROM. THE BOOK IS DIVIDED INTO TWO PARTS; THE FIRST DEALS WITH THE HOMOGENEOUS AND ISOTROPIC MODEL OF THE UNIVERSE, THE SECOND PART DISCUSSES HOW INHOMOGENEITIES CAN EXPLAIN ITS STRUCTURE. ESTABLISHED MATERIAL SUCH AS THE INFLATION AND QUANTUM COSMOLOGICAL PERTURBATION ARE PRESENTED IN GREAT DETAIL, HOWEVER THE READER IS BROUGHT TO THE FRONTIERS OF CURRENT COSMOLOGICAL RESEARCH BY THE DISCUSSION OF MORE SPECULATIVE IDEAS. AN IDEAL TEXTBOOK FOR BOTH ADVANCED STUDENTS OF PHYSICS AND ASTROPHYSICS, ALL OF THE NECESSARY BACKGROUND MATERIAL IS INCLUDED IN EVERY CHAPTER AND NO PRIOR KNOWLEDGE OF GENERAL RELATIVITY AND QUANTUM FIELD THEORY IS ASSUMED.

A FIRST COURSE IN STRING THEORY - BARTON ZWIEBACH 2009-01-22

STRING THEORY MADE UNDERSTANDABLE. BARTON ZWIEBACH IS ONCE AGAIN FAITHFUL TO HIS GOAL OF MAKING STRING THEORY ACCESSIBLE TO UNDERGRADUATES. HE PRESENTS THE MAIN CONCEPTS OF STRING THEORY IN A CONCRETE AND PHYSICAL WAY TO DEVELOP INTUITION BEFORE FORMALISM, OFTEN THROUGH SIMPLIFIED AND ILLUSTRATIVE EXAMPLES. COMPLETE AND THOROUGH IN ITS COVERAGE, THIS NEW EDITION NOW INCLUDES AdS/CFT CORRESPONDENCE AND INTRODUCES SUPERSTRINGS. IT IS PERFECTLY SUITED TO INTRODUCTORY COURSES IN STRING THEORY FOR STUDENTS WITH A BACKGROUND IN MATHEMATICS AND PHYSICS. NEW SECTIONS COVER STRINGS ON ORBIFOLDS, COSMIC STRINGS, MODULI STABILIZATION, AND THE STRING THEORY LANDSCAPE. NOW WITH ALMOST 300 PROBLEMS AND EXERCISES, WITH PASSWORD-PROTECTED SOLUTIONS FOR INSTRUCTORS AT WWW.CAMBRIDGE.ORG/ZWIEBACH.

THE NUMBER OF THE HEAVENS - TOM SIEGFRIED 2019-09-17

ONE OF THE MOST CONTROVERSIAL, CUTTING-EDGE IDEAS IN COSMOLOGY—THE POSSIBILITY THAT THERE EXIST MULTIPLE PARALLEL UNIVERSES—IN FACT HAS A LONG HISTORY. TOM

SIEGFRIED REMINDS US THAT THE SIZE AND NUMBER OF THE HEAVENS HAVE BEEN CONTESTED

SINCE ANCIENT TIMES. HIS STORY OFFERS DEEP LESSONS ABOUT THE NATURE OF SCIENCE AND THE QUEST FOR UNDERSTANDING.