

# **OUR UNIVERSE VIA DREXLER DARK MATTER**

**Drexler Dark Matter Created  
and Explains Dark Energy,  
Top-Down Cosmology, Inflation,  
Accelerating Cosmos, Stars,  
Galaxies, Cosmic Web**

**JEROME DREXLER**



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Top-Down Cosmology, Inflation, Accelerating Cosmos, Stars,  
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*This book is dedicated to Sylvia, my wife, best friend,  
and lifelong partner and to my father, Max Drexler,  
who taught me about the cosmology of  
Nicolaus Copernicus and the wonders of astronomy.*

*“Scientific advancement is not evolutionary,  
but rather is a series of peaceful interludes punctuated  
by intellectually violent revolutions.”*

*~Thomas S. Kuhn ~*

*“Leave the beaten track occasionally and dive into the woods.  
Every time you do so you will find something you have never seen  
before. Follow it up, explore all around it, and before you know  
it, you will have something to think about to occupy your mind.  
All really big discoveries are the result of thought.”*

*~ Alexander Graham Bell ~*

*“We are to admit no more causes of natural things than such  
are both true and sufficient to explain their appearances.”*

*~ Issac Newton’s version of Occam’s razor ~*

*“Make everything as simple as possible, but not simpler.”*

*~ Albert Einstein ~*

*“It is dangerous to be right in matters on which  
the established authorities are wrong.”*

*~ Voltaire ~*



## FORWARD

Mainstream cosmology is in a crisis.

These three paragraphs, which were part of the introduction to the Paris symposium, “Invisible Universe — Toward a New Cosmological Paradigm”, June 29 - July 10, 2009, explain it:

“Cosmology has arrived at a crossroads. According to the best data available, from large ground-based telescopes and space observatories, almost 95 percent of the universe irretrievably escapes observational detection.”

“This missing part of the cosmos is constituted for 25 percent by a mysterious form of dark matter and 70 percent, by a dark energy whose nature is even more exotic and unknown! But what are exactly these new physical entities?”

“In an attempt to answer this complex and profound question, more than 400 experts will gather in Paris to evaluate the situation, and draw future perspectives. The basic principles of physics appear sometimes to be put into question. Modern cosmology is perhaps at the beginnings of a major renewal, similar to those once made by Galileo and Einstein.”

Drexler’s Cosmology offers a solution.

Amazon.com Book Reviews for his 2008 Book:

*Discovering Postmodern Cosmology*

“This third book in a series by Drexler shows how his thesis, that dark matter is composed of charged ultra high energy relativistic protons, is capable of solving up to 25 previously unresolved mysteries of the Cosmos. Older cold dark matter concepts, now generally discredited, relied on too few

observations and have required additional hypotheses to account for each new experimental finding. In significant contrast: each new data set gathered subsequent to Drexler's first publication of his thesis has appeared to reinforce his concepts without the need for adaptation. Most recently the publication by astronomers at the University of Chicago titled "Reopening the window on charged dark matter" which occurred 6 months after Drexler's third book first became available, lends considerable additional support to the thesis that dark matter is composed of charged particles. While this book is sure to prove controversial amongst conservative astrophysicists, I would encourage the reader to keep an open mind. Remember there was a time when conventional wisdom had it that the sun revolved around a flat earth!"

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"Discovering challenges to conventional wisdom is always interesting and especially so when the challenge is as compelling and well-reasoned as in this book. Jerome Drexler presents a plausible theory as to the composition of the dark matter that represents a high percentage of the mass of the universe but whose makeup mystifies cosmologists. Drexler posits that this dark matter consists of relativistic protons, which he believes are capable of forming galaxies, dark matter, the cosmic web, and newborn stars. Throughout the book, he repeatedly demonstrates how conventional cosmology is frequently at odds with actual astronomical observations and even with the laws of physics. Drexler's Postmodern Cosmology model presents a coherent theory that solves a number of cosmological "mysteries", including the nature of the Big Bang."

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"A must read for anyone interested in straightforward, logical solutions to some of cosmology's most significant unsolved

problems. This book highlights all of Drexler's work to date, particularly his relativistic-baryon dark matter hypothesis; it also establishes his primacy on the concept of a Relativistic Big Bang that satisfies the second law of thermodynamics. It is now incumbent on the scientific community to accept the plausibility of Drexler's theories, and to find additional supporting observational evidence (e.g., the UV signatures of Lyman-alpha blobs), or to refute them based on such evidence."

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"Drexler presents a conceptually coherent and logically appealing model for the mechanics underlying the large scale structure of the universe. As his theory departs dramatically from the current Standard Cosmological Model, it will certainly attract vociferous criticism. Yet ongoing reports of newly observed and measured astronomical phenomena seem to be, more often than not, congruent with Drexler's Halo theory for dark matter and dark energy. Until his hypotheses are definitively falsified, the fact that some of the phenomena required by Drexler's theory have not yet been observed is no more troubling than the current non-observation of WIMPs, neutralinos, or MACHOs. Altogether, this book presents an intriguing rationalization for the many mysteries currently unexplained by the Standard Cosmological Model."





## **PREFACE**

Physicists say that no one understands the nature of dark matter; even though it was discovered 75 years ago and represents about 23% of the mass of the universe.

Physicists say that no one understands the nature of dark energy or what causes the accelerating expansion of the universe; even though they were discovered 11 years ago and dark energy represents about 70% of the mass-energy of the universe.

Physicists say that no one knows where ultra-high-energy cosmic-ray protons, that bombard Earth's atmosphere every day, derive their very high energies; even though they were discovered over 90 years ago.

Physicists say that no one understands the nature of the post-big-bang inflationary epoch phenomenon of very rapid expansion of the universe, commonly called Cosmic Inflation; even though it was discovered 28 years ago.

I am pleased to report that through seven years of intensive cosmology research and good fortune, I have been able to discover a unified theory of astrophysical cosmology that plausibly solves these four long-unsolved mysteries, as well as more than a dozen other cosmic mysteries.

This book describes this unified astrophysical cosmology theory and how it is utilized to solve these four famous mysteries as well as a number of others, in thirty-one chapters. This new cosmology paradigm also can provide insights into and solutions to newly discovered cosmic mysteries within days or weeks following the publication of the related scientific papers.

Most of the excitement and success during the past 50 years in the field of astrophysical cosmology has stemmed from the discovery of *new astronomical mysteries* rather than from solving then existing mysteries. There does not seem to be enough properly trained cosmologists and astrophysicists to slow the rising tide of unsolved cosmic mysteries, enigmas, anomalies, discrepancies, and conundrums.

Meanwhile, astronomers are building more and more advanced telescopic systems by utilizing space platforms, employing adaptive optics, and by combining images derived from photons of different wavelengths. With more and more cosmic mysteries being discovered and the slow progress in solving them, cosmologists and astrophysicists must re-train themselves to understand and also to utilize the postmodern unified astrophysical cosmology model and to maximize the knowledge derived from the astronomical data. These are the three principal objectives of this book.

I previously documented six years of my dark matter/dark energy research, its timeline, its interaction with mainstream cosmology, and the overwhelming evidence that relativistic-proton dark matter represents the principal constituent of the dark matter of the universe in the six publications listed here:

- (1) Scientific Web site dated Dec. 8, 2008, entitled, “Discovering Dark Matter Cosmology” at: <http://www.jeromedrexler.org/>.
- (2) Paperback book, March 1, 2008, *Discovering Postmodern Cosmology: Discoveries in Dark Matter, Cosmic Web, Big Bang, Inflation, Cosmic Rays, Dark Energy, Accelerating Cosmos*.
- (3) Scientific paper, physics/0702132, Feb. 15 2007, “A Relativistic-Proton Dark Matter Would Be Evidence the Big Bang Probably Satisfied the Second Law of Thermodynamics”.
- (4) Paperback book, May 22, 2006, *Comprehending and Decoding the Cosmos: Discovering Solutions to Over a Dozen Cosmic Mysteries by Utilizing Dark Matter Relationism, Cosmology, and Astrophysics*.
- (5) Scientific paper, astro-ph/0504512, April 22, 2005, “Identifying Dark Matter through the Constraints Imposed by Fourteen Astronomically Based ‘Cosmic Constituents’”.
- (6) Paperback book, Dec. 15, 2003, *How Dark Matter Created Dark Energy and the Sun: An Astrophysics Detective Story*.

This book is different from all other modern cosmology books in several ways. It introduces a cosmologic universe, which is orderly, logical, and systematic. It teaches and explains by illustrating how a variety of cosmic mysteries have been solved. It raises the status of dark matter in the universe by illuminating its roles as the principal source of energy, the principal source of matter in the form of hydrogen and helium, and the principal source of cosmic relationships with the principal cosmic phenomena and cosmic constituents of the universe. This book simplifies the universe as the book of Nicolaus Copernicus simplified the solar system in 1543.

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# **Our Universe via Drexler Dark Matter**

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Top-Down Cosmology, Inflation, Accelerating Cosmos,  
Stars, Galaxies, Cosmic Web***

## **INTRODUCTION**

This book, *Our Universe via Drexler Dark Matter* was so named because by using the Drexler relativistic-proton dark matter model, along with the laws of physics, and known astronomical data, at least 18 cosmic constituents or cosmic phenomena of the universe were determined and can be explained plausibly.

The author takes a step further with the subtitle and states that Drexler dark matter, with its protons, helium nuclei, and its enormous kinetic energy actually created dark energy, top-down cosmology, cosmic inflation, the accelerating cosmos, the stars, galaxies, and the Cosmic Web. Dark matter seems to be playing the role of stem cells in a developing human embryo that can transform themselves into all of the specialized embryonic tissues needed to create a fully functioning human body.

The Drexler dark matter model and its related dark energy model and related cosmic-ray proton model were announced on December 15, 2003 in the author's first book, "How Dark

Matter Created Dark Energy and the Sun. Six years and many astronomical observations later the three 2003 cosmologic models remain unchanged. Meanwhile Drexler has published two more books and two scientific papers that are fully compatible with the three 2003 models. Furthermore, the same three 2003 models are compatible with top-down cosmology, the Cosmic Web, cosmic inflation, star formation, galaxy formation and other cosmic constituents and cosmic phenomena.

The author believes that this book's 31 chapters provide the evidence necessary to support both the main title and subtitle. This also means that at least 18 cosmic constituents or cosmic phenomena have dark matter as a "common parent." This common-parent linkage implies that the Drexler dark matter cosmology model probably represents a unified astrophysical cosmology for our universe and makes our universe appear to be relatively orderly and logical.

In contrast, for the past 25 years mainstream physicists have believed that based upon astronomical observations and theory, the dark matter of the universe cannot be made of protons or neutrons or anything that was once made of protons or neutrons. According to them, calculations of particle synthesis during the big bang indicate that such proton and neutron based particles were simply too few in number to make up the estimated mass of dark matter in the universe.

Based upon these 1984 calculations <sup>[1]</sup>, scientists have searched for a dark matter that contains neither protons nor neutrons, called non-baryonic matter. They have not been successful. They even overlooked the relativistic-proton dark matter; the key solution to their “missing mass” problem, that Drexler discovered in early 2002 and announced in 2003.

Physicists still have not found any evidence of the putative non-baryonic Cold Dark Matter WIMPs (weakly interacting massive particles) for which they have been searching for 25 years. Moreover, the physicists’ WIMP-based cosmology has been unable to explain any of the following 18 cosmic constituents or cosmic phenomena known to exist in the universe, even though Drexler relativistic-proton dark matter provides plausible cosmologic explanations for each and every one of them.

A list follows of the 18 cosmic constituents or cosmic phenomena that are the focus of this book. The list includes the chapter numbers that are relevant to each subject.

1. The accelerating expansion of the universe (*see Chapters 9, 15, 19, 21, F*).
2. Dark Energy (*see Chapters 9, 15, 19, 21, F*).

3. A dark matter that can exist in the form of spheroidal halos around spiral disk galaxies and also in the form of long large slightly curved filaments that form the Cosmic Web (*see Chapters 1, 2, 3, 10, 15, 16, 17, 18, B, C, D, E, J*).
4. Source of ultra-high-energy cosmic-ray protons that bombard Earth's atmosphere (*see Chapters 10, 15, C, G, H*).
5. How Cosmic Inflation started then stopped during the big bang period (*see Chapters 21, H*).
6. Why most large galaxies formed without galaxy mergers (*see Chapters 6, 11, 14*).
7. The causes for the early rapid growth of massive galaxies (*see Chapters 6, 11, 14*).
8. The causes for the stunted mass growth of galaxy clusters (*see Chapters 9, 13, 22*).
9. How the first stars formed without availability of hydrogen molecules or dust (*see Chapter 20*).
10. The basis for the formation of the Lyman Alpha blobs (*see Chapter 12*).
11. The limitation of the diameter of galaxy superclusters to 430 million light years (*see Chapter 10*).
12. Top-Down theory of galaxy formation (*see Chapters 6, 11, 14, 17, D*).
13. Causes of ultraviolet (UV), EUV, or soft X-ray photon emission from dark matter (*see Chapters 8, 12, 13, 22, F*).
14. NASA discovers loud synchrotron-emission microwave noise (*see Chapters 5, 7*).
15. The nature of the Cosmic Web (*see Chapters 13, J*).

16. Roles of muons in cosmology (*see Chapter 12, 13, 20*).
17. New view of the nature of the big bang (*see Chapter C*).
18. Relativistic protons orbiting galaxies may be evading GZK cosmic-ray cutoff effect (*see Chapter G*).

This group of 18 sources of cosmologic evidence provides overwhelming support for the Drexler relativistic-proton dark matter. In contrast, mankind has waited 25 years for non-baryonic Cold Dark Matter WIMPs to prove that they exist and represent about 83% of the mass of the universe. They haven't done either. The 1984 non-baryonic WIMP theory<sup>[1]</sup> appears to have reached a cosmological dead end.

To demonstrate the validity and significance of his relativistic-proton dark matter model, Drexler used it to solve two dozen cosmic mysteries and published the results in *Comprehending and Decoding the Cosmos*, in May 2006 and *Discovering Postmodern Cosmology*, in March 2008.

Drexler, a Bell Labs-trained scientist/inventor, has completed seven years researching dark matter/dark energy cosmology and accumulating evidence supporting his unified astrophysical cosmology theory. This book is Drexler's capstone vehicle, along with his three earlier books and two scientific papers, to complete the launch of his unified astrophysical cosmology. Hopefully, the reader will feel that the book's cosmological evidence probably ensures that the Drexler dark matter cosmology paradigm will be adopted.

Some of the early history of dark matter research can be found in the first four pages of Chapter C. An 20-page glossary and 80 references are provided.

## **CHAPTER 1**

### **University of Chicago's CHAMPs Dark Matter Boosts Drexler's Dark Matter over WIMPs**

September 18, 2008 — On Sept. 2, 2008, the University of Chicago's Department of Astronomy and Astrophysics, published a scientific paper online entitled, "Reopening the Window On Charged Dark Matter"<sup>[2]</sup>.

The paper's dark matter, in the form of electrically charged massive particles (CHAMPs), boosts Bell Labs-trained scientist Jerome Drexler's five-year-old relativistic-proton dark matter model and undermines the 24-year-old putative Cold Dark Matter theory of uncharged weakly interacting massive particles (WIMPs), also known as neutralinos.

Drexler's dark matter theory launched Drexler's postmodern cosmology theory that simultaneously answers fundamental questions about dark matter, the big bang, cosmic inflation, the accelerating cosmos, ultra-high-energy cosmic rays, and the Cosmic Web.

The last sentence of the abstract of the University of Chicago paper (arXiv:0809.0436 v1) gives clues as to the paper's significance. It reads, "Further, we find that charged massive particles [CHAMPs] may simultaneously solve several

long-standing astrophysical problems, including the under abundance of dwarf galaxies, the shallow [mass] density profiles in the cores of the LSB [low surface brightness] galaxies, the absence of cooling flows in the cores of galaxy clusters, and several others.”

Solving long-standing astrophysical problems was also the goal of Drexler’s three books and two online scientific papers. He uses relativistic-proton dark matter that simultaneously solves over 15 astrophysical problems, mysteries, dilemmas, or conundrums. Note that Drexler’s dark matter particles are the only known real-world manifestation of CHAMPs. His three books were written as a trilogy with the first published December 2003, the second May 2006, and the third March 2008.

The University of Chicago paper makes a good prequel to Drexler’s trilogy since it provides a compelling introduction to the December 2003 book. For science enthusiasts, a *NewScientist.com* news article on Sept. 9 entitled, “Is dark matter a wimp or a champ?”<sup>[3]</sup> could function as a prequel to Drexler’s trilogy. (Note that a dark matter WIMP is a cold uncharged weakly interacting massive particle, a dark matter CHAMP is a charged massive particle and a relativistic dark matter particle is a proton or helium nucleus that becomes as massive as a CHAMP by moving at relativistic velocities.)



Drexler utilizes the evidence provided in his three books, his two scientific papers, and the University of Chicago paper to stake his claim to the discovery of the precise identity of the long-sought dark matter of the universe, which was first publicly disclosed in his December 15, 2003 book.

These five publications cover the precise nature of dark matter, the evidence supporting that conclusion, and the relationships that dark matter has with dark energy, the accelerating expansion of the universe, cosmic rays, the big bang, cosmic inflation, and the Cosmic Web. These cosmic relationships are keys to precisely identifying the dark matter of the cosmos. Since dark matter represents about 83 percent of the mass of the universe, any dark matter candidate that does not have relationships with most of these six cosmic phenomena should be treated with suspicion.

These five Drexler publications also disclose dark matter's surprising and significant roles and functions in creating the spiral galaxies, stars, starburst galaxies and ultra-high-energy cosmic rays.

- (1) Book, March 1, 2008, *Discovering Postmodern Cosmology: Discoveries in Dark Matter, Cosmic Web, Big Bang, Inflation, Cosmic Rays, Dark Energy, Accelerating Cosmos*.
- (2) Scientific paper, physics/0702132, Feb. 15, 2007, "A Relativistic-Proton Dark Matter Would Be Evidence the Big Bang Probably Satisfied the Second Law of Thermodynamics".