

# BREAKING THROUGH EDITORIAL



## Satellites, Spinning Disks, and Textbooks —

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In this issue we offer our readers an assortment of articles on various topics. Starting with our first article, Dr. Ruyong Wang challenges the relativistic physicists to an experimental show-down. In [1] he states: “. . . please don’t try to make the light-speed constancy un-definable. If you care to define that the speed of light is the same for any moving observer, we will design a GPS experiment to show it is not the truth. *Give us a clear definition, and we will disprove it.*” This dilemma illustrates one of the most serious problems with special relativity theory (SRT). It also helps to explain why the theory has not yet been rejected as fashionable nonsense—it is protected from refutation by way of its own circular logic.

SRT *assumes* that the speed of light is constant by way of the second postulate, and then modifies the measurement of length and time, based on the velocity of the observer. This ensures that the desired assumption of constant light-speed (second postulate) is achieved. But this makes it quite difficult to get agreement on exactly how to go about disproving SRT, because of its inadvertent immunization against refutation. Hence, it fails on logical as well as experimental grounds.

Despite the difficulties, Dr. Wang has achieved the noble task of invalidating SRT. He uses the GPS constellation to show that the Sagnac effect applies not only to rotating systems, but *also to systems in linear translation!* This invalidates the second postulate and shows that the speed of light is constant with respect to a non-rotating Earth-centered inertial (ECI) frame of reference (in the vicinity of the Earth). To be sure, this is a controversial topic; we offer a reprint of an important paper by Ruyong Wang and Ron Hatch. These men are *true* experts when it comes to the GPS constellation. We can only hope that the mainstream will stop sticking their collective heads in the sand and acknowledge the experimental implications.

In this issue we also have an experimental paper by Jorge Guala-Valverde *et al.* on another source of controversy and fascination, the Faraday unipolar generator. The unipolar generator consists of a magnet and a metal disk, with the disk completing an electrical circuit along a radial path from its center to its edge. Rotate the metal disk with respect to the closing wire circuit and *viola!*—a DC voltage is generated by Faraday’s Law ( $\nabla \times E = -dB/dt$ ).

What makes Faraday’s Law so interesting is that it is utter-

ly vital to our modern way of life and, yet, it does *not* describe the actual physics of how a voltage is induced in a circuit. This is another one of those awkward situations within modern physics that is conveniently ignored. We can illustrate the point with an admittedly outlandish thought experiment. Suppose we obtain a homeland security contract to construct an electric fence around the continental U.S., that is, we stretch a single conductor, suspended on insulators, all the way around the border. We connect the ends together to make a continuous loop of wire. Next, we insert a voltmeter in series with the loop somewhere, anywhere, along the perimeter—say at the mouth of the Mississippi. Next, we cause a time-varying magnetic field to pass *through* the loop. In particular, we constrain the magnetic flux so that it passes through the loop and into the ground entirely within the borders of an interior region of the country, suppose within the confines of the state of Iowa. The magnetic field passes into the ground, through a portion of the earth’s interior, and back out again well outside of the continental U.S. (Recall that the magnetic flux lines must close on themselves per  $\nabla \cdot B = 0$ .) So, we pass the magnetic field *through* the plane of the wire loop. It is nearly a thousand miles between the closest location of the magnetic flux and the voltmeter. Does the voltmeter indicate a voltage?

Before we answer this question, note that there is *no* magnetic flux in contact with the wire loop itself. It is literally hundreds of miles from the flux to the nearest point on the border. There is no magnetic flux in contact with *any* of the electrons in the wire. Nevertheless the voltmeter does indeed register a voltage, exactly as predicted by Faraday’s Law. The magnetic flux need only pass through the *plane* of the wire loop—it does not need to come in contact with the wire to generate a voltage.

But we hardly need to resort to a thought experiment to illustrate this conundrum; we can inspect the common everyday transformer. Look out a window or around the office and you are likely to spot one. A properly designed transformer works most efficiently when the magnetic flux created by the primary winding is completely constrained to its magnetic core. Stray flux (leakage flux) at the location of the secondary winding is undesirable. Designers may even add a Faraday shield between the primary and secondary windings to block the *electric* flux from reaching the second-

If you care to define that the speed of light is the same for any moving observer, we will design a GPS experiment to show it is not the truth. Give us a clear definition, and we will disprove it. —Dr. Ruyong Wang

ary. This is the ideal case where *no* fields reach the secondary winding. It is optimum from an engineering design standpoint, but if you ask how power is actually transferred from one winding to another, you get a blank stare and a shoulder shrug. The Poynting vector of field theory is not capable of explaining how a simple transformer works.

So what exactly *does* cause a voltage to be induced in the wire, given that there is no magnetic (or electric) field in contact with the wire? One line of thinking claims that the vector magnetic potential,  $A$  (which is not zero at the position of the wire), must be responsible. This explanation is backed by the many experiments spawned from the Aharonov-Bohm effect.<sup>2</sup> But we are also told that the vector magnetic potential is merely a fictitious term used to simplify the mathematics; and so, the topic remains controversial. Guala-Valverde continues this debate as to the true description of the physics behind the source of the emf. Readers will find some very nice illustrations and photography of his experimental setup.

Our next article dates back to the early 1960s, and as any student of history knows, this decade was the pinnacle of the Cold War. During this time, the U.S. military was racing



El Campo, Texas MIT radar facility.

against the Soviets to gather vital data about ionospheric propagation in a nuclear environment, as well as other classified subjects related to communications. Information was also needed by NASA to support the Space Race in their quest to beat the Soviets to the Moon. This is where Dr. J.C. James entered the scene. As Director of the El Campo MIT Radar facility, he designed and managed the installation located in South Texas. It was a beautiful piece of engineering, employing a custom-built 500 kilowatt VHF transmitter and a nine-acre antenna array. After military sponsorship of the site was transferred to MIT in the mid-1960s, it was used to study Mars, Venus, and the sun's corona. Researchers bounced radar signals off of these distant objects in our solar system. According to Dr. James' analysis of the radar data, there is evidence for liquid underground water on Mars. His analysis has been aided and supported by recent supplemental information in the form of detailed mappings of the surface of Mars.

### “Dissident” Technical Book List

I would like to share with you a list of some of the technical books that I have come across over the last several years. These are well-researched books that expose problems, errors, and inconsistencies associated with some of the cherished theories of the mainstream. This list is by no means exhaustive and regular readers of *IE* will recognize many of the titles.

We begin with books that challenge mainstream ideas

within the astronomical community:

■ *Dark Matter, Missing Planets & New Comets: Paradoxes Resolved, Origins Illuminated* (Dr. Tom Van Flandern, ISBN: 1-55643-155-4, North Atlantic Books, 1993)

This book on astronomy and gravitation is utterly fascinating. (I think it is best read by starting with Chapter 6, and then returning to the earlier chapters later.) Van Flandern describes a little known aspect of gravity, called the sphere of influence. Even though Newton's Laws predicts it precisely, this effect was not realized until the first manned space flights. Van Flandern also develops an outstanding and original explanation for the origin of comets in our solar system, effectively debunking the “Oort cloud” model cherished by mainstream cosmologists. In this book, he develops the Exploding Planet Hypothesis (EPH) to account for the asteroid belt. This is supported by all of the known experimental evidence to date, including the recent 2005 results of the comet impact probe.

■ *The Big Bang Never Happened* (Eric J. Lerner, ISBN: 0-679-74049-X, Vintage Books, 1991)

This book describes the pet theories of modern cosmology, primarily the Big Bang theory. Lerner shows that the Big Bang does not fit the experimental evidence. He also brings the work of Nobel laureate Hannes Alfvén to the forefront in plasma cosmology. Plasma cosmology is a dominant force in the formation of solar systems and galaxies. There are enough charged particles in outer space (plasma) to allow current flow over vast distances. Faraday's Law allows energy to be transferred by this mechanism. This allows the angular momentum of swirling matter to be dissipated so that it can collapse and form planets. *Huge* electrical generators exist at the scale of solar systems and perhaps even galaxies. A fascinating book.

■ *Seeing Red: Redshifts, Cosmology and Academic Science* (Dr. Halton Arp, ISBN: 0-9683689-0-5, Apeiron, 1998)

This book gives astronomical photographic evidence that totally refutes the Big Bang theory of an expanding universe. In total opposition to mainstream theory, Arp offers startling evidence that high-redshift quasars emerge from the nuclei of energetic galaxies. The political wars inside the astronomical community are also exposed in great detail.

■ *Origin of Inertia* (Prof. Amitabha Ghosh, ISBN: 0-9683689-3-X, Apeiron, 2000)

Based on the astronomical evidence, this book reformulates Newton's Laws to account for deviations from inverse-square law behavior at cosmological distances. The author explains gravitational redshifts by adding a cosmic (velocity) drag term as well as an inertial induction term (similar to that of Faraday induction for electromagnetics) as possible modifications to Newton's Law. The book is rich in equations, including a detailed and straightforward analysis of their meaning. Prof. Ghosh has done a superb job in gener-

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alizing Newton's inverse-square law.

The following books challenge the environmental pop-culture. We will have more to say on this topic in the next issue of *IE*.

■ *The Skeptical Environmentalist: Measuring the Real State of the World* (Dr. Bjorn Lomborg, ISBN: 0-521-01068-3, Cambridge Univ. Press, 2001)

Probably the most important book ever to be written on the environment, this is a *tour de force*, a brilliant work, and a masterpiece of careful analysis. The author is a former member of Greenpeace who originally intended to prove that the environment was getting worse over time. Much to his surprise, and somewhat reluctantly at first, he discovered just the opposite. Lomborg exposes and criticizes the ways in which many environmental organizations make biased and misleading use of the scientific evidence to suit their own political agendas. He sets the record straight by tracking down and exposing the fabricated claims made by often-quoted environmental groups. He also backs his own conclusions with solid scientific evidence, including extensive references.

■ *Hard Green: Saving the Environment from the Environmentalists* (Peter Huber, ISBN: 0-465-03112-9, Basic Books, 1999)

This book makes the point that modern environmentalism does not conserve the environment—it actually hastens its destruction. Huber shows that there is no inherent scarcity of fuel, metals, or minerals. He makes the point that recycling programs promote a false sense of environmental progress. Contrary to conventional wisdom, it is the rich industrialized countries, not the poor ones, which protect the environment and conserve the wilderness.

■ *Eco-Scam* (Ronald Bailey, ISBN: 0-312-08698-9, St. Martin's Press, 1993)

This book exposes the flaws and failures of Malthusian ideology. It also exposes the false teachings of ecological doom. Bailey proves that there is no population explosion, no ecology crisis, no global warming, no mineral shortage, and *no* energy shortage.

These titles challenge the conventional wisdom regarding oil and energy supplies:

■ *The Deep Hot Biosphere* (Dr. Thomas Gold, ISBN: 0-387-98546-8, Copernicus Books, 1999)

This book gives convincing evidence that oil, gas, and coal are not “fossil fuels” at all. Microbes merely use them as a source of fuel leaving behind their characteristic signatures, and hence, the “fossil” misnomer. They are primordial hydrocarbons—fundamental hydrocarbon building blocks from the Earth's original formation. This also means that the supply of oil is very probably inexhaustible. There is good reason for optimism. Many oil wells around the world are continually refilling themselves. Oil is far, far more abundant than presently estimated, with the largest reserves in

our own Gulf of Mexico. A fascinating book!

■ *The Bottomless Well: The Twilight of Fuel, the Virtue of Waste, and Why We Will Never Run Out of Energy* (Peter W. Huber and Mark P. Mills, ISBN: 0-465-03116-1, Basic Books, 2005)

This book is pure dynamite! Although the title says it all, a detailed review will appear in the *next* issue of *IE*.

These books challenge some of the cherished dogma of modern physics:

■ *Einstein Plus Two* (Dr. Petr Beckmann, ISBN: 0-911762-39-6, Golem Press, 1987)

This book uses Maxwell's Equations and classical mechanics to derive Planck's Constant and the Schrödinger Equation. Beckmann does an excellent job of debunking Einstein's relativity theories by showing their conceptual flaws in logic. Beckmann's central theory is that the speed of light is constant with respect to the source of the dominant gravitational field, *not* the observer. This view is supported by all known experimental evidence, *e.g.*, the earth-centered inertial (ECI) reference frame and GPS. Later critique has discovered a flaw in the second half of this text regarding Beckmann's definition for aberration. Nevertheless, Beckmann's writing style is very witty and entertaining.

■ *Heretical Verities: Mathematical Themes in Physical Description* (Dr. Thomas E. Phipps, Jr., ISBN: 0-9606540-0-7, Classic Non-Fiction Library, 1986)

This book modifies the Maxwell equations by going the route first proposed by Hertz. These “neo-Hertzian” equations correct the Maxwell equations so that they are invariant to first order. Hence there is no need for the Lorentz transformation nor Einstein's relativity, which only provides covariance rather than invariance. Phipps disproves the *ad-hoc* Thomas Precession by experiment. He also delves into Cauchy's discrete infinite processes, Shannon's axioms on entropy, and quantum electrodynamics. Phipps' writing style is absolutely superb. You might mistake him for an English professor rather than the brilliant physicist that he is. Phipps thoroughly debunks Einstein's relativity theories with sharp wit, biting satire, and commentary. He also explains some of the peculiar history behind the development of modern science in the twentieth century.

■ *Newtonian Electrodynamics* (Dr. Peter Graneau and Dr. Neal Graneau, ISBN: 981-02-2284-X, World Scientific Publishing, 1996)

This book discusses longitudinal Ampère forces, originally proposed by Ampère himself, based on his experiments in the early nineteenth century. Later, Maxwell adopted a different formulation in his equations, and longitudinal Ampère forces were all but forgotten. The Lorentz force equation of modern physics has become dominant, although it does not predict longitudinal Ampère forces. This book describes the experiments that have been performed to prove their existence. This force is thought to be the true cause for thunder from lightning and the source of the mysterious “sprites” and “jets” seen in the upper atmos-

phere. Naturally, this force has been overlooked and is denied by the physics establishment.

■ *Newton versus Einstein* (Dr. Peter Graneau and Dr. Neal Graneau, ISBN: 0-8062-4514-X, Carlton Press, 1993)

This book also discusses longitudinal Ampère forces, including a brief description of the experiments involved. It focuses mainly on the scientific history behind the decisions made in the latter part of the nineteenth century where force laws were concerned.

■ *Escape from Einstein* (Ronald R. Hatch, ISBN: 0-9632113-0-7, Kneat Kompany, 1992)

This book discusses GPS satellite data that contradicts Einstein's relativity theories. Hatch also proposes his own "ether-gauge" theory as a replacement.

■ *Causality, Electromagnetic Induction and Gravitation* (Dr. Oleg D. Jefimenko, ISBN: 0-917406-23-0, Electret Scientific Co., 1992)

This book redefines electromagnetic induction with rigorous attention to the vector mathematics of Maxwell's equations. Jefimenko also redefines Newton's gravitational law to satisfy conservation of momentum. This results in striking similarities between the two sets of equations. Jefimenko's ability to manipulate and reformulate vector calculus is simply awesome.

■ *Electromagnetic Retardation and Theory of Relativity* (Dr. Oleg D. Jefimenko, ISBN: 0-917406-21-4, Electret Scientific Co., 1997)

This book develops the Maxwell equations using retarded vector potentials. Jefimenko goes on to show that Einstein's idea of time dilation (the Lorentz transformation) is incorrect. Jefimenko provides several simple electrodynamic examples where moving charges are used as simple clocks. They do not always obey the  $(1 - v^2/c^2)^{-1/2}$  time dilation rule. For example, many obey a  $(1 - v^2/c^2)^{-3/4}$  rule, while others obey a  $(1 - v^2/c^2)^{-5/4}$  rule, which by the way, has nothing to do with *time* itself, but rather, how fundamental electric charges interact due to the retarded field potentials.

■ *Gravitational Force of the Sun* (Dr. Pari Spolter, ISBN: 0-9638107-5-8, Orb Publishing, 1993)

This book challenges Newton's classical law of universal gravitation, and Einstein's general relativity theory. It has a very comprehensive listing of hard to find reference material.

■ *The Farce of Physics* (Bryan G. Wallace, 1993, available free online: [http://surf.de.uu.net/bookland/sci/farce/farce\\_toc.html](http://surf.de.uu.net/bookland/sci/farce/farce_toc.html))

This 49,000 word treatise is the story of Wallace's iconoclastic attempts to convince the physics establishment to look at his work showing that the speed of light is  $(v + c)$  in the Galilean sense in our solar system. This data stands in direct contradiction to Einstein's second postulate. Wallace's analysis is based on the Venus Radar ranging studies conducted by MIT Lincoln Lab. He goes into great detail concerning the political and peer pressures that lurk within modern science.

■ *The Structure of Scientific Revolutions* (Dr. Thomas S. Kuhn, ISBN: 0-226-45804-0, Univ. of Chicago Press, 1962, 1970)

This is the book that coined the term "paradigm." It describes the nature of scientific progress in general, a path that is not smooth, but one with false turns and dead ends. Occasionally a new theory comes along that will get science back on the right track, but never without political wars, personality clashes, and crises. Kuhn's writing style is very clinical and academic.

■ *The Relativity Question* (Dr. Ian McCausland, Univ. of Toronto Press, 1988)

This essay describes the academic struggles of Professor Herbert Dingle, author of the book *Science at the Crossroads*. Dingle was a noted authority on Einstein's relativity and a promoter of the theory, but he turned against it late in life due to its logical flaws and internal inconsistencies.

■ *From Galileo to Lorentz. . . and Beyond* (Joseph Lévy, ISBN: 0-9732911-1-7, Apeiron, 2003)

This little book tackles special relativity theory by challenging the *first* postulate, that of the *principle* of relativity. Lévy makes a coherent, well-developed argument for his theory using a mathematically rigorous analysis. He explains that there really is a single privileged aether frame of reference, but that systematic errors committed in the measurement process lead to the erroneous conclusion that light-speed is constant with respect to the observer.

■ *A Promenade Along Electrodynamics* (Junichiro Fukai, ISBN: 0-9714845-1-1, Vales Lake Publishing, 2003)

This delightful little book offers an alternative to the field theory of Maxwell's equations. It provides an introduction to Weber's Electrodynamics and truly "relative" force laws.

■ *Relational Mechanics* (Dr. Andre K.T. Assis, ISBN: 0-9683689-2-1, Apeiron, 1999)

This book offers a thorough treatment of Newton's Laws and the gravitational paradox. It also discusses Ernst Mach's formulation of mechanics. The author goes on to develop a true relational mechanics.

■ *Weber's Electrodynamics* (Dr. Andre K.T. Assis, ISBN: 0-7923-3137-0, Kluwer Academic Publ., 1994)

This book provides an alternate formulation of electrodynamics by presenting a thorough treatment of Weber's Electrodynamics. It also discusses the forces of Ampère and Grassmann between current elements.

■ *How the Laser Happened* (Charles H. Townes, ISBN: 0-19-512268-2, Oxford Univ. Press, 1999)

This book describes the history of the laser and how it was invented (and how it was almost *not* invented). The author was ridiculed by the scientific authorities of the day for daring to suggest that such a device was possible, and for wasting time on its development.

Books that challenge some of the conventional wisdom regarding war, human behavior, and historical cycles:



■ *On Thermonuclear War* (Herman Kahn, Princeton Univ. Press, 1960)

This is the man (and his book) who was the genesis for Stanley Kubrick's masterpiece, "Dr. Strangelove." The book gives the reader a chilling look at strategies in which to wage *and win* a nuclear war. It is definitely an iconoclastic work for the factual and dispassionate manner in which mass casualties and future birth defects are discussed and *quantified*—with graphical information plotted logarithmically by order of magnitude. In retrospect the work is quite outdated, but the discussions of nuclear-powered aircraft and available mine-shaft space are amusing. Nevertheless, it is a captivating look at civilian and military planning to survive and rebound from the unthinkable.

■ *The Fourth Turning: An American Prophecy* (William Strauss and Neil Howe, ISBN: 0-553-06682-X, Broadway Books, 1997)

My short description hardly begins to do it justice, but Strauss and Howe have authored an absolutely *brilliant* book that will change the way in which we view history and our place in it. If we look back in time, we see that a great depression, followed by a major war, has occurred roughly every 80 years for the last several hundred years. We know that the history of human progress is not chaotic—it has order. We are taught that history advances along a linear timeline, but intuitively, we know this is not quite right. The authors make the case that modern history moves in ever advancing but repetitive *cycles*, each one lasting about 80 years, the length of a long human life. Each cycle is composed of four different generations. Taking the most recent cycle as an example, it begins with the G.I. generation (heroes), followed by the silent generation (conformists), followed by

the baby boomers (self-indulgent and rebellious), and followed by Generation X (neglected but pragmatic). In their youth, these four generations propel us through the four stages of a cycle, the survival of a great crisis, followed by confident expansion of the new order, followed by rebellion against the established order, followed by total individualism and a crumbling of order. Society gradually unravels until the next great crisis is thrust upon it, which begins the cycle anew. A debate continues amongst historians as to whether historical cycles do indeed occur. This book makes an overwhelming case for them, using fascinating and captivating arguments right out of the history books.


### A Farewell Message. . .

It has been more than a year since I was asked to serve as a technical editor for *IE Magazine*. During this time, it has been my honor and pleasure to serve the readership. Unfortunately, during the past year the demands on my time have escalated substantially, as have my teaching and lecture responsibilities. I can no longer devote the time required of an editor, so the next issue of this magazine will be my last. Rest assured, *Infinite Energy* will continue forward in our quest to bring new scientific ideas to the forefront, as intended by its founder, Dr. Gene Mallove.

### References

1. Wang, R. 2005. "First-Order Fiber-Interferometric Experiments for Crucial Test of Light-Speed Constancy," *Galilean Electrodynamics*, 16, 2, 23-30.
2. Aharonov, Y. and Bohm, D. 1959. "Significance of Electromagnetic Potentials in Quantum Theory," *Phys. Rev.*, 115, 485-491.

Read the Pulitzer-nominated cold fusion book by Dr. Eugene Mallove:



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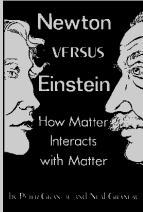
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