FASTER THAN LIGHT – Transcending Light Speed to Explore the Stars

Always listen to the experts. They will tell you what can't be done and why. Then just do it. Albert Einstein

The late Dr. Robert Carroll worked with AESOP Institute for 12 years prior to his death. Carroll was a dissident physicist whose lifelong disagreement with relativity theory was dedicated to practical interstellar exploration. He concluded his presentation at the San Francisco AAAS meeting on non-relativistic physics by writing on the whiteboard: "The maximum speed of a spacecraft is 20,000,000 C." Twenty million times the speed of light!

Dr. Millennium Twain, an aerospace scientist who has long admired Carroll's work, was in the audience. We recently reconnected. Twain is updating and revising a book he wrote three decades ago titled: "The Undiscovered (Superluminal) Physics".

Carroll's analysis required development of an antimatter drive that emits Pions (Pi Mesons).

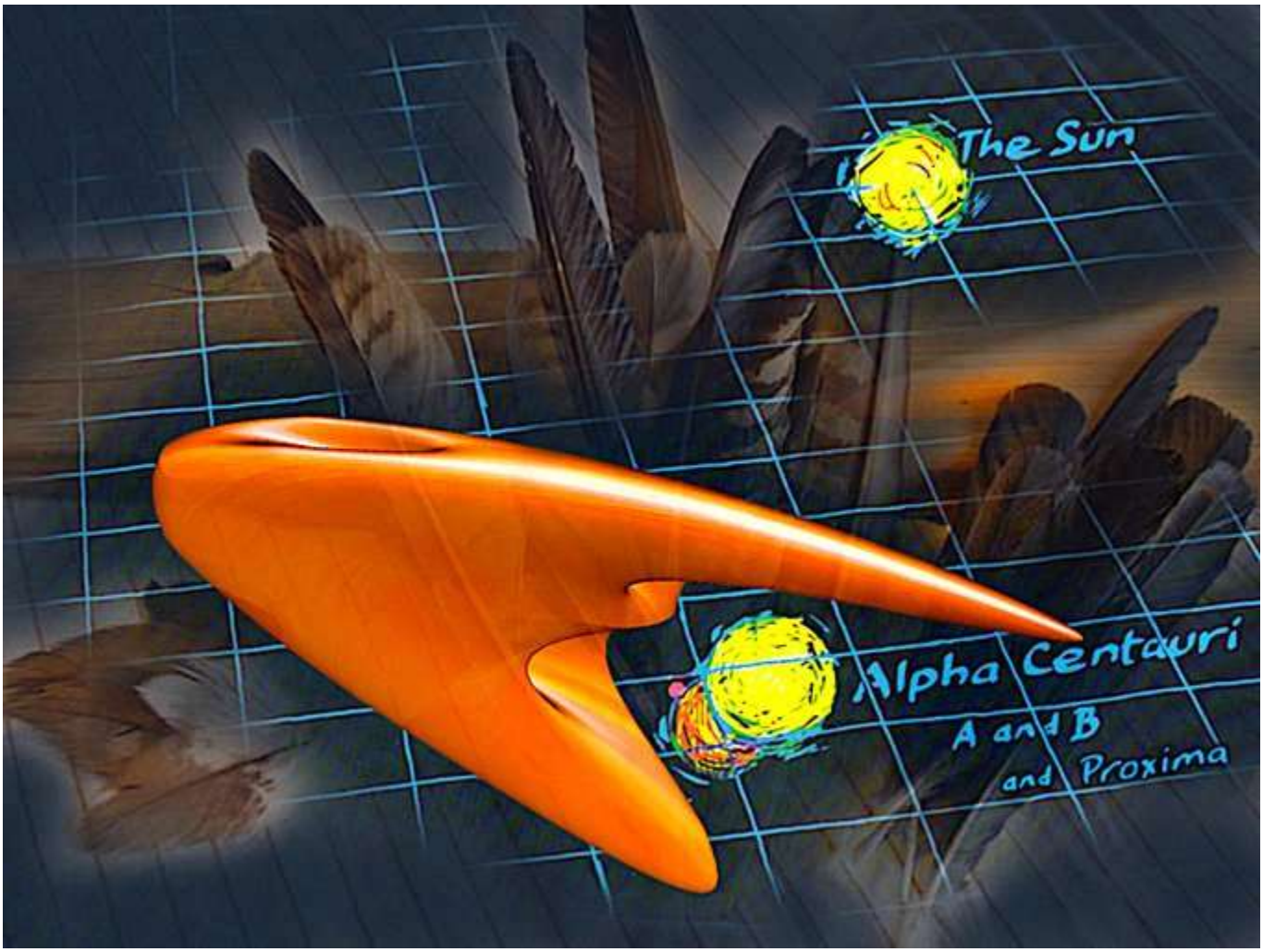
Leif Holmlid and Sindre Ziner-Gunderson have invented an antimatter interstellar space drive that emits Kaon, Pions and Muons - at speeds they state will be very close to that of light. The project grows out of Holmlid's laser induced fusion reactor for power generation. Prototypes are now the subject of research at universities in Sweden, Norway and Iceland. Holmlid states One Megawatt fusion reactors will be on the market in 24 months. This will be the first fusion reactor in production. He predicts a spacecraft will be equipped with their proposed drive within a decade.

https://www.nasw.org/article/nucleon-annihilation-may-have-rockets-reaching-warp-speed-decade

Should Carroll's dissent from relativity physics prove correct, spacecraft powered by Holmlid's invention, or a future drive developed by Twain, could pass by and photograph Goldilocks planets orbiting stars nearest to earth long before the time required by Special Relativity. They would reach the stars in trips taking days, weeks or months, rather than several years.

Carroll's analysis suggests spacecraft powered by such reactors would travel many multiples of the speed of light. Imagine the implications. Pictures and data regarding Goldilocks planets could prove or disprove Carroll's hypothesis when compared with observations from the Hubble - and in the future also the Webb - Telescopes.

For an introduction to Dr. Carroll's work, look under MORE on the aesopinstitute.org website.



The spacecraft shown above is an early 200 passenger design by Millennium Twain

Twain's rewrite and update of the book he wrote about 30 years ago titled: "The Undiscovered (Superluminal) Physics" includes references to inspiration provided by Robert Carroll's small book "Arcturus by Dawn" - as well as Carroll's other books and papers providing more substantial material.

Arcturus by Dawn is available on this website. It is intended to be readily understood by those of us who cannot follow the mathematics of his much larger, earlier, volumes – beginning with publication of: "The Eternity Equation". MG

Ultra Dense Fusion, A Physics/Energy Magnum Opus

Russ George January 19, 2017

A paper by Holmlid is a magnificent magnum opus on ultra dense fusion

In the works - metals filled with hydrogen and deuterium are teased with a green laser

The result is incredible energy release by a form of nuclear fusion never, well almost never, before described.

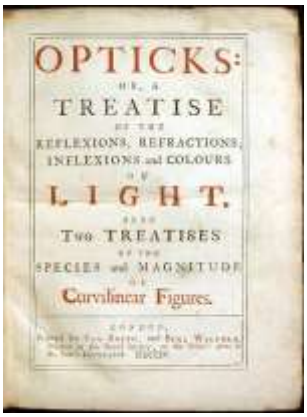
What can one say, this 41 page paper is simply magnificent, "Mesons from Laser-Induced Processes in Ultra Dense Hydrogen H(0)" – Leif Holmlid – Published: January 12, in PLOS ONE. It seems a very unusual form of ultra dense fusion is in hand in an incredibly simple to reproduce form with all the precision particle physics anyone might ever demand to substantiate it. Best of all is that the ultra-dense deuterium that my good friend Martin reported on all those so many years ago in 1989 is now confirmed as being the magic.

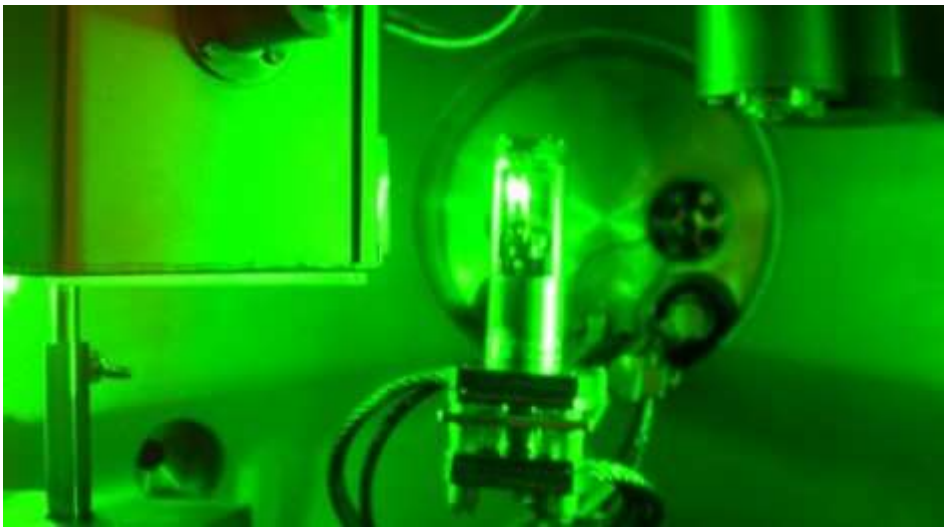
The profound observations reported on in this paper are the match for any of the great papers of the age of modern 'experimental' physics and that age goes back for some considerable span of time. In my view this paper is the match for many including the work that began the modern scientific revolution, *On the Revolutions of the Heavenly Spheres* by renaissance astronomer Nicolaus Copernicus, first printed in 1543. What followed is a list of note including the reports on their experiments by Van de Waals, Röntgen, Thompson and more. Later theoretical upstarts like Einstein would join the list though his works were purely 'gedanken' in character not anchored by his own experiments.

Issac Newton's Magnum Opus describing his experimental work redefined the world of optics when published in 1704.

The true test of a great scientific work is whether it produces practical useful technology. In this Holmlid's experiments go the distance to explain the phenomenon described in 1989 by Fleischmann & Pons which was all about producing ultra-dense hydrogen in metals with the observation of spectacular energy release, ultra

dense fusion. The ‘spin masters’ of time re-worded Fleischmann’s descriptions of what was going on and dubbed that work ‘cold fusion’, a moniker that has become for a brand of bad science. Holmlid’s stunning experiments have shown that the works were prescient, powerful, and profound and anything but ‘cold.’



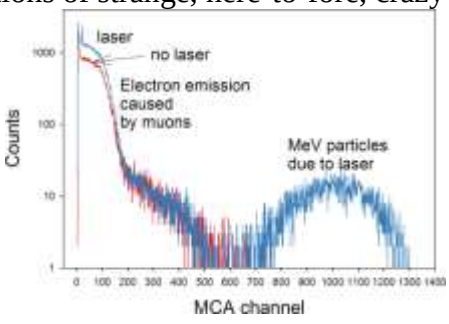


Data Speak To Me

Prof. Leif Holmlid

Like a few others working on experiments with hydrogen loaded metals, aka ultra-dense states of hydrogen, Holmlid added a simple dimension of teasing the UDH (ultra dense hydrogen) with a green laser, something many have tried. What Holmlid did that is of such extraordinary substance is that he wrapped his experiment with the most sophisticated observational instruments imaginable. He is a true perfectionist scientist and his results offer proof of his experimentalist skills. He sought the data that would speak for itself and he gathered it.

What Holmlid’s data speaks of is that in the complex environment that is solid state matter filled with ultra dense hydrogen the complexity of the atom ecology therein defies being dumbed down into a singular form. There is an entire zoo of behavior taking place and most assuredly the one behavior that is NOT taking place is simply ordinary fusion. Most striking of all are the observations of strange, here-to-fore, crazy mischugenon particles, that are almost like nothing we’ve seen before.



Holmlid's emission data proves nuclear processes result when a very weak green laser illuminates a metal filled with ultra dense hydrogen.

Holmlid's body of work going back a decade is amongst the most advanced in the field of the atom ecology of ultra dense hydrogen and the unusual fusion that is so characteristic of that field. HIs work points to obvious directions to stimulate the reactivity and promise. His observations also clearly show that the field of fusion is not at all a data point but is in fact a very complex continuum that merges 'cold and hot' fusion into an apparent fusion ecosystem. In the middle of it all is ultra dense fusion, aka solid state fusion.

As is becoming clearly apparent of the meticulous character of Prof. Holmlid he has explored the two common forms of hydrogen, light and heavy (deuterium). In reward for this choice he has observed that while both forms of hydrogen participate in these new fusion pathways only deuterium yields net energy gains.

He states, ***"MeV particles are ejected by laser-induced processes in both D(0) and p(0). Also, normal D+D fusion processes giving 4He and 3He ions were shown to be initiated by a relatively weak pulsed laser [using deuterium fuel]. Laser-induced nuclear fusion in D(0) gives heat above break-even, as reported in Ref. [15]."***

To summarize it is safe to say that in both cases, light and heavy hydrogen, mesons/muons are produced in abundance. But with deuterium there is also classical D+D fusion where helium is formed in addition to the mesons, and this provides the excess heat. This is NOT the case with protons. The expected 24 MeV gamma of classic D+D → 4He is NOT present.

Holmlid's D+D fusion reactions proceed with two steps and only give an energy up to 3.0 MeV in the first reaction step, and up to 14.7 MeV in the second step of the reactions. This is the process apparently that avoids the 24 MeV gamma. Thus, nuclear processes take place with deuterium which are indeed a new version of fusion — with a new kind of unexpected multi-particle branching where gammas do not occur.

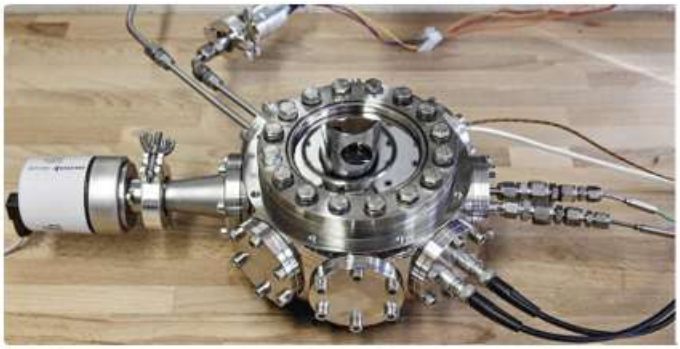
About that new multi-particle evidence what is apparent is that mesons come first after the laser pulse. But since mesons have incredibly short lifetimes what happens next is vital. The mesons very quickly transform into muons. In the presence of an enormous flux of muons catalyzed fusion which has been known for 75 years is entirely likely. It would be nigh unto impossible to avoid fusion when muons and deuterons are both present. But the new physics doesn't simply stop there an additional miracle appears in that the suppression of energetic gamma radiation is also a characteristic of this particular atom ecology.

For the history books

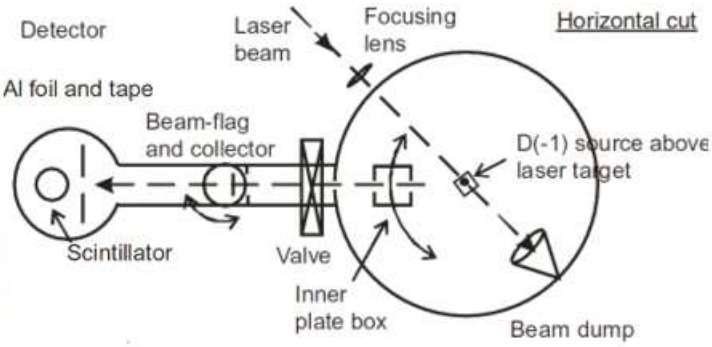
One of the side-shows for the history books that this stunning new work provides is that it re-defines as fools and naer-do-wells a host of ruthless critics of 'cold fusion', aka 'ultra dense fusion', over the years including the most prestigious of so called scientific societies and journals. You all know who you are (those still alive), perhaps there is time to recant your ruthless tirades and ridicule and in confessing your utter lack of humility and your treacherous criticism find absolution. At the top of the list is of course lies the Journal

Nature which it is now proven does not hold up to its name. As Max Planck once said, ***"science progresses one funeral at a time"***, bemoaning the fact that fools spreading fake news are nothing new.

Holmlid's Magnum Opus is available for free online at PLOS ONE via this link http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0169895



Holmlid Reactor



Schematic

Future interstellar rockets may use laser-induced annihilation reactions for relativistic drive

Leif Holmlid & Sindre Zeiner-Gundersen 2020

Publication

Acta Astronautica, 175, 32-6

Abstract

Interstellar probes and future interstellar travel will require relativistic rockets. The problem is that such a rocket drive requires that the rocket exhaust velocity from the fuel also is relativistic, since otherwise the rocket thrust is much too small: the total mass of the fuel will be so large that relativistic speeds cannot be reached in a reasonable time and the total mass of the rocket will be extremely large. Until now, no technology was known that would be able to give rocket exhaust at relativistic speed and a high enough momentum for relativistic travel. Here, a useful method for relativistic interstellar propulsion is described for the first time. This method gives exhaust at relativistic speeds and is a factor of at least one hundred better than normal fusion due to its increased energy output from the annihilation-like meson formation processes. It uses ordinary hydrogen as fuel so a return travel is possible after refuelling almost anywhere in space. The central nuclear processes have been studied in around 20 publications, which is considered to be sufficient evidence for the general properties. The nuclear processes give relativistic particles (kaons, pions and muons) by laser-induced annihilation-like processes in ultra-dense hydrogen H(0). The kinetic energy of the mesons is 1300 times larger than the energy of the laser pulse. This method is superior to the laser-sail method by several orders of magnitude and is suitable for large space- ships.

Link

https://doi.org/10.1016/j.actaastro.2020.05.034

Millennium Twain

SpacePlanes, SpaceShips, StarShips, Superluminal Physics

April 21, 2021

I have made some further strides in my refinements of my Quantum Superphysics and Astrophysics last October with the brief, but magic, expanded determination of the electromagnetic circuit parameters of the Superluminal Proton: tinyurl.com/TwainProtonPDF

And, the previous years electron parameters: tinyurl.com/TwainElectronPDF

As well as continuous work mapping the Velocity Field topology of our local Hyades Star Stream, and our greater Milky Way Galaxy Solar Neighborhood. Working closely with the ESA Gaia Satellite teams.

I have been taking a deep breath these last few months, while pondering what further refinements I might want or need to make to my superphysics and astrophysics.

So here is what I think stands before me:

1) Finish and tweak and retweak the spreadsheet I have put together from the above Proton SuperParameters PDF paper, until all the values converge into full agreement. Or, at least several agreements, with new insights and manifested topologies understood and placed in context.

2) Look at the interstellar and intergalactic medium, as to the Collision Cross Section for a Starship, and as a function of the Velocity (speed and direction) of the Medium, and of the Starship.

3) Explore and illustrate the implied structural designs for the Starships.

4) Look more fully at the greater Muon-Pion-Meson physics implied by my Proton SuperPhysics, in the context of what our contemporary corporate and dissident physicists observe and infer.

5) Carry out the most up-to-date exploration and illustration of the propulsion requirements & designs for Starships.

6) Gut and streamline, or recreate, the python open source Gaia Sky Galaxy Map https://twitter.com/GaiaSky_Dev for the Apple Macintosh so as to be ten times faster and less buggy, and a hundred times more user friendly for a global community (including me) of amateur as well as professional astronomers and astrophysics and would-be Galactic StarShip explorers.

I have a list of the needed tweaks needed to be able to focus on nearby Star Streams and Associations, beginning with the Hyades Cluster, to allow anyone to select which Stars, Clusters, Streams they want to focus on -- and to adjust the Electromagnetic Parameters between them.

At that point you just press 'go' in Gaia Sky, to go forward and backwards in time to show the CoRotation and CoPropagation topologies of the Stellar Associations over time. And, yes, of our Observers and StarShips going between them.

April 22, 2021

I haven't focused on Starship Propulsion requirements for a couple of decades, but I have focused very extensively on the electromagnetic plasma filament densities that we observe in nature. Viz. Electrons, Protons, Nuclei, Stars, Quasars, Galaxies and Galaxy Filaments.

My take, from two decades ago, on the best source/mechanism for Interstellar Propulsion seems to be the same as expressed at AESOP Institute: Proton Decay. And as I am the only physicist, to date, brave enough to show the detailed electromagnetic velocity field topology of the Proton, Neutron and all Nuclei -- I am today, perhaps the only one who can also look at Proton decay soberly and constructively.

My other take, on Interstellar Propulsion and Velocity achievement, from 2-3 decades ago, is that the Velocities a Starship can achieve, and the fastest routes we can take, will be dictated by the Velocities (direction and speeds) of the Medium we traverse. i.e., highest Velocities WITH the Plasma Wind, lowest Velocities AGAINST the Wind.

On the RANGE of potential Superluminal Velocities in the Cosmos. Over these last four decades where I have focused extensively on it, I have shown and proven that Vc (300,000 km/sec) is simply the median, average, velocity of electrons and the spectrum of electromagnetic waves within and between them. The Velocities within Protons however, and within observed Quasar SuperStars, appear to manifest as ElectroMagnetic Field topologies of 2-13 times Vc. Shortlived Velocities reaching tens or hundreds times Vc appear to be common as well, associated with SuperNovae and Starburst Galaxies.

Robert Carroll was very clearly correct, when he showed that accelerating a rock or spaceship does NOT increase its mass. It increases its momentum. It is a different story, different physics, when you accelerate an electron. The electron will shrink when accelerated, increase its internal velocity and frequency, reducing its wavelength, and thus increasing its mass. [This happens in a dense plasma filament, between protons and other nucleons, where the electron can evolve towards a Meson.]

Can we achieve Superluminal Velocities in large, one gravity acceleration, human crewed, starships? Against the friction, heating, and penetration of the Interstellar Wind (electrons and protons?) Pushing it away as in the envelope associated with a Supersonic Aircraft? Against dust, ice, rocks, comets, asteroids -- viz going through the Oort Sphere? Are there much greater Velocities possible, available in the much shorter term, for Robotic Starships, which can utilize tens or hundreds of times greater accelerations?

We can give numerical, quantitative, answers to all these questions, based on today's state-of-the-art Quantum Superphysics, and observational astrophysics. And we can propose mission tests for many of them. [All of which, and more, I assume have already been carried out by our proprietary Military Aerospace sector, which have a million times more brain-power, and a trillion times more computational and engineering resources than I. And nearly a century to explore and fine-tune it.]

Our dialog and collaborations will hopefully inspire our Aerospace Sector to take a ten-fold step forward in global transparency and collaboration, in 2021. Encouraged by us to set an example which will reduce our public sector ecocidal aerospace flight footprint, planetary extinction rate, by a factor of a thousand to ten thousand. Part of a global collaboration to restore our Biosphere, and Humanity's health and sanity. And allow the new global supereconomy to grow without (non-entropic) limits.

The short Essay that follows is by the late Ronald Bourgoin, once a student of Dr. Carroll.

Bourgoin, in spite of recent erroneous claims, invented the first room temperature superconductor. He was awarded US Patent 6,844,567 - A Process for Forming Ambient Temperature Superconducting Filaments in 1982.

Independently reproduced at the University of Alabama under an unpublicized Strategic Defense Initiative (Star Wars) contract, the filaments of Bismuth in epoxy proved inherently unstable. Years later, Linus Pauling revealed the superconductor was the polymer epoxy rather than, as Bourgoin believed, the Bismuth. Dr. Carroll immediately agreed. See ROOM TEMPERATURE SUPERCONDUCTORS on this website for additional details.

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The Evaporation of Common Sense

Abstract

Common sense left the human mind a hundred years ago. It was forced out by relativity theory. This wildly imaginative work of fiction displaced all the logic humankind had labored so long to establish. People loved it. They were set free of the constraints of disciplined thought. But today we have a problem: relativity and all it has sprouted has taken us down a blind alley.

Truth can be spoken in few words; lies require volumes.

This is not the typical paper criticizing Einstein. This is about the salesmen who surrounded him. H.A. Lorentz was the greatest of these. [1]

I'm not exactly sure what caused the sudden smackdown of common sense. Why were these imaginings of Einstein's accepted as ultimate truth? What was the catalyst that provided the transmutation to surrealism? Knowledge painstakingly acquired over five millennia briskly swept aside as if it never existed.

Is relativity physics' a version of existentialism? This philosophical movement was sweeping theology, literature, and art. It arose primarily from a general malaise over the fact that the moral, ethical, political, and legal standards of civilization were powerless in preventing destruction of life and property. Is it reasonable to expect that physics could not be affected by what was going on in its ambient intellectual environment? We have to project ourselves historically into the early twentieth century to see a world weary of absolutes. Absolutes had proven worthless.

Europe woke up one morning and found itself flattened to the ground. People needed another reality, and the patent clerk in Bern provided it. The salesmen Lorentz and Eddington went to work and delivered some of the best sales pitches of all time.

I remember as a boy the fever of relativity. It was even a topic of discussion among schoolyard thugs. And when Einstein died on April 18, 1955 [2], even they were sad.

But what did the thirty years that shook physics do? It created what reminds me of Arthur Rimbaud's "*Le Bateau Ivre"*. Rimbaud's boat has no compass heading and is at the mercy of the winds and the waves on the high seas. That's where physics is today.

We have found out the hard way that imagination cannot serve as the basis for science. There is a call today for a return to nineteenth-century physics - that we should start over. [3] Camelot in the sky has collapsed.

In a recent paper, physicists ask why students can no longer reason on the basis of common sense. [4] Whose fault is that? Have we not told our students that common sense has no power? Have we not told them that common sense is useless for the obtainment of understanding in modern physics? We have raised these youngsters on mathematics, not physics. They believe whatever the math tells them.

Some physicists have said our science is on an inevitable course to disaster. [5,6] But the history of our science instills confidence in me that physics will set itself aright. It will take a lot of work on the part of a lot of people, but it will be done. Our century of *congé* will be perceived in the future as evidence that physicists bleed. Of course we have a hundred years of physics literature that is worthless.

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4. Konovalov, V., "The End of Science", viXra:1005.0013.

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"No amount of experimentation can ever prove me right; a single experiment can prove me wrong." ***Albert Einstein***