



The Gold Standard

The journal of The Gold Standard Institute

The purpose of The Gold Standard Institute is to promote an unadulterated Gold Standard.

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Editorial

In the December 2013 issue of The Gold Standard, Dr. Anton Wallner, a Senior Fellow in the Department of Nuclear Physics at The Australian National University in Canberra kindly wrote a piece for us on [the process involved in the formation of gold](#). In this month's issue, Wallace Thornhill presents another view based on an [alternative theory of cosmology](#). I found it fascinating and hope that you enjoy it as much as I did.

The Brexit victory is now history. The price of currencies fell heavily as the safety of Gold's stable value was suddenly in huge demand. With few exceptions, the big financial players in London misread the mood outside the capital and failed to plan for the result. Likewise the Brussels' Eurocrats, who flew into headless chicken mode.

The leaders of both the UK's major parties campaigned strongly for Remain, yet the people voted Leave. As a reader observed: 'far right' 'anti-immigration' – how about 'ordinary people who are fed up with politicians'? That is the real story of Brexit. Not only were they fed up with unelected, unknown and unrecognizable EU bureaucrats inflicting an alien way of life on the UK, they were fed up with their own elected, known and recognizable politicians treating their views with contempt.

The media exacerbated the problem by not only failing to represent their views, but by misrepresenting them. The silent majority made the most of their one chance to express their feelings.

"The alienation of the people charged with documenting the national mood from the people who actually define it is one of the ruptures that has led to this moment." John Harris – The Guardian

As an observation from afar, a significant moment during the campaign was a widely published photograph of Bob Geldof showing two fingers to Brexit supporters. That alone could have swung enough voters to secure the Brexit win. Working people are not keen on being insulted by rich fops.

What has happened in the UK, and what is in progress in the US, are incipient signs that people have reached boiling point with those whose sole aim in life is to tell other people how to live theirs – elected or not.

Included in this month's issue, is a report on Brexit by our man on the spot, [Jack Barton](#), who predicted a win for Brexit and flew into London for the announcement.

Who can foretell with accuracy where the ripple out effects of Brexit will land? I am reminded of the 80s musical drivel – 'Don't Worry, Be Happy'. It became the philosophy of 21st century EU apparatchiks.

Something with a little more substance is needed now.

Philip Barton

President, Gold Standard Institute

[Times of Gold](#)

News

[Youtube](#): Professor Keynes – UK freed from the “Gold cage” – historic footage

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[Huffington Post](#): An article from someone with a good understanding of Gold – a rare gem.

[Guardian](#): UK – deep sea Gold rush

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[Materials Today](#): Gold nanocluster reveals secret side

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[321gold](#): Burning Down the House

Gold Has No Value

Some people object to the gold standard because gold has no intrinsic value. An example of a person expressing this notion is Richard Cook in *We Hold These Truths: The Hope of Monetary Reform* (Aurora, Colorado: Tendrill Press, 2008-2009), pages 55-56. (Cook is a promoter of the social credits monetary theory and believes that money should have no value in-and-of itself. Yet he opposes gold even though he claims that it has no value in-and-of itself.)

The extent that gold has no intrinsic value is the extent that food, water, shelter, and clothing have no intrinsic value. Valuation is mostly subjective. A person who is full from just eating a large meal places little value on another meal, even a gourmet meal, for several hours. A person who has not eaten for several days places a great deal of value on even a mediocre meal.

However, when a person uses gold as money, each additional unit of gold that he possesses decreases the value of gold as money at an almost unnoticeable rate. On the other hand, when a person needs a gold crown on a tooth, he values that gold as a crown more than he values it as money. Once the tooth is crowned, his valuation of gold for a crown rapidly approaches zero until he needs another tooth crowned.

If intrinsic value means that gold has no absolute value in-and-of itself, independent of human thought, then neither gold nor anything else has such value. When people say that gold has intrinsic value, they usually mean that it has value in-and-of itself because of its uses. Gold has value because of its use in jewelry, electronics, medicine, and religion. That is, it has value in its monetary use because it has value in its nonmonetary use. When people began using gold as money (medium of exchange, store of value, etc.), its monetary use added to its intrinsic value.

Unlike US federal reserve notes, gold has an intrinsic value not affected by law. The reason that federal reserve notes have value is that the dollar used to be a definite weight of gold and that the federal reserve notes were once redeemable in gold on demand. Likewise, other fiat paper currencies have value because they were once convertible in gold or are descendants of currencies that were. Once paper money, including its electronic equivalent, ceases being redeemable in gold, its value, i.e., purchasing power, begins declining. Legal tender laws slow the decline fiat paper money to their nonmonetary intrinsic value of crude toilet paper and Btu content. Furthermore, electronic money has no intrinsic value.

As a medium of exchange, money is whatever a willing buyer and a willing seller agree on to make the exchange. However, unless the government forces them to, no sane person is going to trade a useful product for a worthless piece of paper or an electric blip. That paper or its electronic equivalent can only have value if it is or once was related to something that had value in-and-of itself. If money has no value in-and-of itself or is not descended from money that did, how does one know the value of the money? Legal tender laws are often needed to force people to accept irredeemable paper money for payment. Otherwise, it would quickly reach its intrinsic value of its nonmonetary use.

A corollary notion is that gold is totally useless unless goods and services are available for sale (Cook, p. 56). No, it is not. To the contrary, it is highly useful even if not used as money. Its nonmonetary uses are what gave it value that enabled it to be used for money. Today, gold is not used as a medium of exchange, yet it is highly valuable.

A pre-1933 US gold dollar has the purchasing power of about 65 US-federal reserve-note dollars in June 2016. Thus, a gold dollar has much more value, intrinsic or otherwise, than the federal-reserve-note dollar.

If one believes that gold has no value whereas electronic blips, which is the predominant form of money today, do, he should go to some poverty-stricken country like Haiti and find out which one really has value. He will have no problem spending his gold coin. He will have difficulty finding anyone willing to sell him something for his electronic blip. (We are assuming that the government does not prohibit exchanging goods and services for gold.)

Furthermore, if gold has no value, why do governments expend many more resources guarding their hoards of gold than they expend guarding any vault filled with paper currency? If gold has no value, why do people expend their time and resources looking for, mining, and refining gold?

Thomas Allen

<http://tcallenco.blogspot.com.au/>

Brexit

As loveless as a marriage may be it's no easy thing to walk out the door into a cold and sometimes lonely new world after forty-three years of trying to make it work.

Britain and the E.U. fought incessantly and spent a lot of time cold shouldering each other in different rooms, but the sex was still occasionally good and all that financial interdependence would, after all, be a glue too hard to dissolve.

That was the theory, and why Britain's decision to opt single sent a shock wave across the world.

When Brexit became reality even UKIP's Nigel Farage seemed perplexed. Only Vladimir Putin broke into a genuine smile.

Like the Roman emperor Marcus Aurelius, who valiantly defended the empire he knew to be deeply corrupt and doomed, European Council President Donald Tusk should receive some credit for boldly trying to wrench the institutional focus away from political integration, back towards the devolution of power and cutting red tape.

The rot that grew for decades become too rancid to tolerate under the previous Commission and Council presidencies of Jose Manuel Barroso and Herman Van Rompuy had proved too much to bear for the many Brits, which probably would have been the case even if the 'leave' campaign had not unnecessarily fabricated many of the facts for their argument.

But was the Brexit really sparked by the meddling of Eurocrats? The morning after the vote there was shock and confusion in London.

Soon after the results were out, one of the most popular Google searches in Britain was 'what is the E.U.?' At the same time the voices of people outside London finally burst onto the airwaves and it turned out their anger was aimed as much, if not more, at London than Brussels.

Separated from the hype leading up to the vote the motives that drove the referendum became more apparent.

An older generation witness to Britain's economic decline, in terms of real jobs and wages, were keener to go than the young who saw opportunities abroad or in services. As the financial gateway to Europe, London was keener to stay than the countryside where factories had long been shuttered and the few businesses remaining continue to close. The wealthy and educated in good jobs leaned towards the status quo, the poorer less qualified looked to the exit door in vain as an alternative to the dole queue.

It was an indication that the referendum had also been about something interconnected yet different: the level of simmering discontent across Britain, and much of the world in which the wealth gap has not been so wide since the start of the industrial revolution.

The vote reflected the anger in the so-called developed world that manufacturing has largely fled to parts of the globe where wages are cheapest, resulting in soaring youth unemployment and an older generation clinging to their jobs knowing their pension might vanish with the next popping debt bubble. Unconsciously it also reflected anger in the so-called developing world where economies are hobbled by dictatorial regimes when they attempt to transition beyond a low wage economy that services the west.

It is not an anger that will disappear any time soon.

In the short term the E.U. may benefit politically from a Brexit. Nervous Spanish voters surprised many pundits by sidelining the E.U. sceptic Podemos party in an election that fell on the skirt-tail of the U.K. referendum.

In time though the existing fault line across Europe will likely be widened further by Britain's departure. The union is unlikely to disappear altogether but within a decade many analysts I met while living in Brussels, and who once thought the bloc would continue to grow, now say it could shrink back to its original six members, or perhaps five without Italy, where the sovereign bond and the word 'bank' were born.

If the bloc scraps the Euro it might even do better than that, given the degree to which the single currency, without any common budget, exacerbates the differences between disparate economies. This in turn has a very real economic impact on the majority of people within the union, particularly for countries like Greece, which is caught in an endless downward cycle of servicing the interest re-payments on loans mostly originating at the I.M.F. and in Germany.

Britain's decision has already started to reverberate within the U.K., which will be less united if Scotland leaves, as well as across the E.U. and beyond. It has sent a message around the world that the status quo is unacceptable.

The discontent is still largely inarticulate and the solution evasive to many who cast their protest vote, but one country has taken the first step, with the people telling their overriding and complacent partner 'anything is better than this. I'll take the risk'.

While it would be nice to think that the U.K.'s actions will prompt a much stronger debate among those with the most to lose the reality of course is that rarely happens. Complacency and a sense of entitlement are hard rocks to budge.

The majority of people in Britain have shown they at least have the courage and determination to try.

The Cockney cabbie who drove me to the Paris train after the results told me most people knew the referendum was about more than the incompetence of Brussels.

“Quantitative easing means a lot of debt, but if you don’t make anything it also means no jobs,” he said, adding that his vote was just to ensure that when it comes to people who have the most to lose or have already lost it all “they still got a bit of skin in the game”.

Jack Barton

Casino World

In my last article ‘Costs of Compliance’, I wrote about the Mengerian concept of ‘Marginalism’ particularly as it applies to the Marginal Productivity of Labor. Specifically, how this margin is defined; as the line between profit and loss as far as labor productivity vs costs is concerned. I also mentioned that a similar concept will hold for the marginal productivity of capital, that is the profitability or lack of it in regards to investments in productive capital.

Now in a world of honest money, the situation is simple. Savings are equivalent to hoarding; stuffing Gold and Silver coins and bars into the mattress, to hold for a rainy day... and to enjoy the natural appreciation, the natural increase of purchasing power of money as the world economy improves, and the cost of producing most goods slowly and inexorable declines.

Investing in an honest world is also simple; investment implies the purchase of Gold bonds; bonds that produce return in the form of Gold, bonds that mature into Gold... and bonds that are protected from loss or gain of market value through the benefit of sinking funds designed to do just that. Investment in bonds in such a scenario implies absolute security and steady income for widows and orphans; return of principle at full value plus increase in purchasing power, coupled with modest but dependable returns.

Speculation is also a part of the honest money world; this simple fact is stuffed down the memory hole, and speculation is equated with gambling, but this is not so; speculation is not gambling. In an honest money economy, speculation has positive and important roles. Speculators buy shares of companies; yes, buying stocks is speculative; after all, how does the share buyer know that the company will prosper, produce income (dividends) and in fact survive?

Thus, speculation provides funds needed for capital investment, a crucial component of economic development. Furthermore, speculation is essential to the viability of commodities markets; commodities such as grains and fuel are traded on these markets... which are in effect a regulated, well defined method of forward sales. For example, a grain farmer wishes to sell his crop for a reasonable price, well before the crop actually matures.

This relieves the farmer of the risk of a price drop due to bumper crops or lesser demand... by giving up the opportunity to make excess profits due to price increases that poor crops or unexpectedly high demand would produce. On the flip side, the grain mill operator also would like to buy grains at a known price, avoiding the risk of soaring prices while giving up potential gains due to prices dropping.

In other words, the producer and the buyer both wish to avoid risk. Commodity markets allow for this in a systematic manner. However, these markets cannot thrive without liquidity, that is plenty of money... and supplying

liquidity is another role of the speculator; the speculator takes on the risk avoided by producers and consumers, in return for the opportunity to profit from price swings. Not only does this speculative buying/selling allow the producer and consumer to meet, but it tends to reduce wild destructive price swings; speculative buying when prices tank supports the farmer and speculative selling when prices soar supports the buyer.

Finally, we have an activity called gambling; a form of 'entertainment'... and while gambling seems to provide titillation for the gambler, and serves to enrich the casino or 'game house', gambling does not in any way contribute to economic development. Human nature seems to get a kick out of gambling... but there is no place for gambling in a proper economic system, no important role like for investment, and for appropriate speculation.

Indeed, New Austrian Economists consider speculation to be bets placed against natural phenomena like poor weather that effect crop yields and gambling to be bets placed against man created risk. Weather is not controlled by any casino; but in today's Fiat world, speculation has degenerated into gambling; interest rates and Forex, the biggest futures markets of all, are vehicles for gambling on casino created risk. Humans (casino owners) set Forex and interest rates, not nature.

This is how low we have sunk; whereas bonds used to be considered safe, secure sources of income for widows and orphans, today the bond market is the biggest casino of all. Zirp and Nirp policies ensure that there is no income available for bond holders, for savers; gamblers, falsely called speculators, however, are well served by rising or falling interest rates. Bond prices rise and fall in inverse proportion to interest rates.

Mainstream Austrian economists, if I may call them mainstream, do not recognize this fact; they are still stuck with the words of Mises, written many decades ago, before the importance of 'speculation' in interest rate and Forex futures was recognized.

So, how does all this tie to the marginal productivity of capital? In the days of honest money, the answer was clear; bonds produced steady, secure income... and only gains higher than the prevailing rate of interest would encourage speculation, the purchase of equities. For example, if the long term interest rate is 5%, consider the choices facing someone with funds to invest.

If a business venture promises a 10% net return, this is a powerful inducement; buy the business (shares) and double your investment income. Likely the increased income is worth the increased risk. On the other hand, if interest rates are 7.5%, and the equity can produce 10%, the difference may not be worth the extra risk; fewer speculators will show up. And at the limit, if the business gains 7.5%, no one would take the risk; much easier and safer to buy the 7.5% bond, and simply clip coupons.

Thus interest rates are limited by equities; if interest rates rise, there will be more buying of bonds and selling of equities; this pushes up bond prices, which is the same as pushing down interest rates... and pushes down equity prices, which is the same as increasing dividend yields. On the other hand, if interest rates are too low, hoarding takes over; no one will buy or hold bonds for a pittance... but will choose to hold their Gold money out of the markets. A scarcity of money due to hoarding leads directly to higher interest rates; those who need capital must pay the price requested by the holders of Gold.

Now this natural feedback mechanism falls apart under Fiat; the interest rates floor is no longer set by holders of Gold coin, but by banksters; so rates continue to fall... rates approach zero, debtors (like the G'man) benefit, savers are robbed, speculators (gamblers, mostly the banksters themselves) make a killing, and the economy tanks due to the impoverishment of the saver (middle) class.

But wait; if interest rates are so low, should not equities soar? Should not entrepreneurs gleefully invest... after all, with 0% interest, even an enterprise that produces only 2-1/2% net return seems lucrative, no? Furthermore,

unnaturally low interest rates reduce the cost of capital; it is possible to borrow at near zero rates, and invest in business that would normally be marginal, or even sub-marginal; unprofitable.

Indeed, this is one of the tenets of Austrian economics; malinvestment. That is, investment in business ventures only viable under artificially low interest rates, ventures that will collapse when rates return to the norm.

But what if interest rates never rise, are not allowed to return to the norm? What if rates keep going down, asymptotically approaching zero... in fact, and incredibly, even going under zero? Should not there be a mad scramble for ever more 'malinvestment'? For ever more enterprises... leading to more and more employment, more and more economic growth? With negative rates, an enterprise that simply breaks even sounds so good!

Why is this not happening? Why instead of a boom is there severe structural unemployment, debt explosion, looming economic collapse? Is it possible that the theories under which the CB's control interest rates are wrong? Is it possible that artificially lowering interest rates is destructive to the economy?

No kidding.

Thus we come to the crunch; even though the marginal productivity of capital has been forced down by 'policy', there is no improvement to the economy, only destruction. The reason should be obvious; newly minted 'money' has not flown into productive enterprise, but into speculation (gambling). Why should anyone invest in a business that is marginal, that is risky, and that produces meager returns... when there are enormous profits to be made in gambling?

Especially risk free gambling; the big banks not only gamble in interest rates futures, to the tune of a quadrillion dollars' worth of interest rate and forex derivatives, but the big banks also set the rates! If this is not a giant casino, then I don't know what is. This is like arsonists running the fire insurance business.

Not only is wealth being burned in this gambling frenzy, not only is wealth being transferred from savers and producers to gamblers and gangsters, but endless human talent is tragically wasted in working to devise ever more effective means of profiting from gambling... instead of turning to solving all the problems that plague our world; war, hunger, poverty, pollution, the ongoing destruction of civilization.

William Jennings Bryan, American presidential hopeful, advocate of honest money, battling against the demonetization of Silver, famously said *"You shall not crucify mankind upon a cross of gold"*. Unfortunately, while he was right in his battle for Silver money, he was wrong about the 'Cross of Gold'. Mankind is being crucified on a cross of paper.

Rudy J. Fritsch

The Origin of Gold on Earth

Wikipedia presents the following story of the origin of gold: *"Gold's atomic number of 79 makes it one of the higher atomic number elements that occur naturally in the universe. It is thought to have been produced in supernova nucleosynthesis and from the collision of neutron stars and to have been present in the dust from which the Solar System formed. Because the Earth was molten when it was just formed, almost all of the gold present in the early Earth probably sank into the planetary core. Therefore, most of the gold that is present today in the Earth's crust and mantle is thought to have been delivered to Earth later, by asteroid impacts during the Late Heavy Bombardment, about 4 billion years ago."*

This is merely a cover story to hide our total ignorance about the nature of stars, their formation and that of their planets. I can state this with great confidence since both stars and exoplanets are being found by the score that shouldn't exist according to current theories. Also, the nucleosynthesis of heavy elements in rare supernova

explosions is the most unlikely scenario imaginable given that those elements are blasted into deep space where the weak force of gravity is unlikely to ever recover them. In fact, it has not yet been shown theoretically how planets can form gravitationally from a ring of dust and gas encircling a star. Collisions tend to fragment rather than coalesce orbiting objects. The history of the solar system and the Earth is a centuries-old fiction. We now have more than 3500 exoplanetary systems for comparison and they show our solar system to be an odd one. As for neutron stars, they are a mathematical figment based upon a lighthouse model of a super-collapsed object rotating faster than a dentist's drill. Mathematics is not physics! Neutrons are only observed outside atomic nuclei where they decay in a few minutes. There is no evidence whatsoever that a stable body can be composed entirely of neutrons.

So what is the real answer to the origin of gold on Earth? The notion of "*asteroid impacts during the Late Heavy Bombardment, about 4 billion years ago*" is ad hoc nonsense. We desperately need a new cosmology. This may seem too much to ask but there is a mature peer-reviewed cosmology based on sound electrical engineering principles and the work of several Nobel Prize winners, notably Hannes Alfvén. It is called plasma cosmology¹ and theoretical astrophysicists studiously avoid it because of their *firm belief* that "electricity does nothing in space." In a nutshell, spiral galaxies are formed and driven by vast cosmic electric current filaments, which are detectable by radio telescopes. Galactic rotation is governed by electromagnetic forces, not gravity, which is why spiral galaxies rotate rigidly like a simple Faraday motor. Electric current flows inward along the spiral arms and out along the spin axis. Where dust and gas is concentrated in molecular clouds the galactic current becomes more filamentary and can be seen glowing through the dust by infra-red space telescopes. We see stars and planets forming along the current filaments inside molecular clouds like shining beads on a necklace. These galactic lightning bolts scavenge dust and gas far more powerfully than gravity. And unlike gravity, electromagnetic forces sort the elements in the interstellar plasma according to their ionization potentials so that all stars and planets have a heavy element core and atmospheres of the lighter gases. The process is rapid and **cool** so there is little chance for heavy elements to migrate anywhere in smaller newborn planets, like the Earth. Heavy element cores means that stars are not the thermonuclear campfires in the sky we have been taught. That model is a hangover from the gaslight and horse and buggy era. However, plasma cosmologists have been unable or unwilling to challenge that particular belief.

This is where electric universe cosmology² picks up the story. When the cosmic lightning fades, the filamentary cosmic currents persist in plasma 'dark mode' and magnetically 'pinch,' forming an hourglass shape about the newborn stars and planets to provide a continuous diffuse source of electrical energy. Planetary systems are then formed by electrogravitic capture of nearby bodies, which explains the weird diversity seen in exoplanetary systems. So our solar system is a 'blended family' of exotic captured bodies. This is the only sensible explanation for the odd assortment of planets in the solar system. Each planet has its own story and former associations that may, in part, be judged by the gyroscopic tendency to maintain axial alignments. It seems on this basis that Saturn, Earth and Mars, for example, are related.³ So the Earth cannot be treated as a closed system for billions of years, which is the predilection of retro-calculating theorists.

So what is the origin of the heavy elements? The photosphere of the Sun, in all of its detailed features, is a low-pressure gas discharge phenomenon. Dr. Charles Bruce, who was a Fellow of the Royal Astronomical Society, the Institute of Physics and the Institute of Electrical Engineers, recognized this fact in the 1940s, "*It is not coincidence that the photosphere has the appearance, the temperature and spectrum of an electric arc; it has arc characteristics because it is an electric arc, or a large number of arcs in parallel. These arcs quickly result in the neutralization of the accumulated space charge in their neighbourhood and go out. They are not therefore stable discharges, but may rather be looked upon as transient sparks. Arcs thus continually appear and disappear. It is this coming and going which account for the observed granulation of the solar surface.*"⁴ The

¹ For a popular book on the subject see "The Big Bang Never Happened" by Eric Lerner.

² See <http://benthamopen.com/contents/pdf/TOAAJ/TOAAJ-4-191.pdf>.

³ See "Cassini's Homecoming," <http://www.holoscience.com/wp/cassinis-homecoming/>

⁴ C. E. R. Bruce, *A New Approach in Astrophysics and Cosmogony*, Unwin Brothers Ltd. (1944).

arcs, seen in profile in sunspot penumbrae, produce a ‘dense plasma focus’ effect, which is known experimentally as the most copious source of neutrons in the lab. And the presence of abundant neutrons allows neutron capture that is necessary for the generation of the heavy elements. The evidence is already in. Neutrinos signal that nuclear reactions are occurring *at* the Sun. However, they are modulated by sunspots, which is a surface effect. The neutrinos cannot be coming from the Sun’s core. All stars produce in plain view the heavy elements seen in their spectral lines. Nature doesn’t do anything the hard way.

This raises an issue at the other end of the cosmic scale, that of particle physics. The synthesis of the lighter elements from hydrogen through thermonuclear fusion assumes conventionally that the proton can be treated as a spherical positive charge, which requires enormous kinetic energy to overcome the electrical repulsion of another proton. Such energy is probably not to be found in the solar photosphere. However, experiments provide evidence of structure within the proton. The electric universe model of a proton has it composed of an orbiting system of smaller charged particles, the motion of which embodies the energy and mass of the proton. This simple repeated pattern of the atomic structure allows for resonant catalytic nuclear reactions in the presence of a heavy element. In other words, in a process similar to catalytic chemical reactions, so called ‘warm fusion’ is possible in the warm, dense plasma environment of stellar photospheres where the spectrum shows the presence of heavy atoms like iron.

Now to the origin of gold on Earth. Gold is principally found in hydrothermal quartz veins associated with granites and related rocks. Other gold deposits are associated with volcanic rocks, along with copper. These rocks erupt at the surface from depth, so that’s where the gold exists originally. It did not migrate to the core through a hypothetical early molten Earth. I mentioned earlier that planetary capture is an electrogravitic process in an electric universe. It requires for the first time in history a real understanding of gravity. At present we have only geometric mathematical descriptions of its effects, which fail beyond the boundary of our solar system. That boundary, or heliosphere, is the electrical plasma sheath protecting us from the galactic environment. Planets have similar electrical sheaths, misnamed magnetospheres because a planet’s magnetic field is trapped within it. Whenever two planetary plasma sheaths become enmeshed the electrical insulation breaks down and cataclysmic interplanetary thunderbolts may be unleashed. The massive charge exchange modifies the gravity of each body in such a way as to space their orbits apart to cause least interaction.⁵ That is the reason for the clockwork stability of the solar system. Conventional gravitational theory shows that a three-body system is unstable.

Interplanetary lightning bolts have the power to sculpt planetary surface features, forming grand canyons and mountains, while peppering a hemisphere with circular craters. The energy is more than sufficient to transmute elements and generate radioactivity. Jupiter’s moon, Io, looks like a pizza because the wandering electrical discharges on its surface combines the oxygen atoms from water ice to form sulphur. And like a welding arc, matter can be transferred through space from one body to the other. That is the origin of many near surface mineral deposits on Earth. Iron was deposited in large quantities from Mars. Martian meteorites are still landing on Earth today. Gold is to be found in veins within rock that has melted in massive telluric currents that form intrusive granite. Partial melting by cosmic thunderbolts will also cause boiling and generation of metal rich fluids that fill cracks and fractures at the surface.

A measure of a real cosmology is that it answers questions across many disciplines simply and without introducing assumptions that cannot be tested. The electric universe measures up. Big bang cosmology does not.

“Specialization has never been the hallmark of greatness. Our belief that it is has almost eliminated people with a broad, all-embracing, relevant education. I have no doubt that we should aim at ‘holism’ (a word coined back in 1926 by General Smuts),

⁵ [The Long Path to Understanding Gravity](#)

*where our sages for the future know about a host of facets of the world, and try constructively to understand the breadth of human endeavour.” — Brian J. Ford, *The Cult of the Expert*.*

Wallace William Thornhill

BSc (physics & electronics) Melbourne University, 1964



Before entering university Wal had been inspired by Immanuel Velikovsky's iconoclastic best-selling book, *Worlds in Collision*. It taught him to be sceptical of expert opinions. Wal worked at IBM Australia for 11 years, first as a scientific programmer, then a systems engineer specializing in operating systems and compilers. Moving to Canberra in 1967, he was IBM's systems engineer for the Research Schools at the Australian National University, which gave him excellent access to libraries and scientists there during the Apollo missions to the Moon. The early 1970's were spent in the prestigious IBM Systems Development Institute in Canberra, working on government projects, data communications and the application of the first computer graphics system in Australia for the Bureau of Meteorology. In 1975 Wal joined the Department of Foreign Affairs to develop secure diplomatic communications, message switching and office automation. Global travel established close contacts with scholars who were pushing the boundaries of knowledge. Wal is devoted to the continuing study of astronomy and physics and regularly attends colloquia at the Australian National University.

Wal was invited to attend the 1974 international Velikovsky conference at McMaster University in Hamilton, Ontario, on the subject of 'The Recent History of the Solar System.' There he met Velikovsky and David Talbott, one of the conference organizers. Wal subsequently visited Velikovsky at his home in Princeton, NJ, on April 28, 1979. It was but a few months before Velikovsky's passing and the discussion turned on the key question raised by his theory of recent solar system chaos – the true nature of gravity and its role in cosmology. That led Wal to a re-examination of Einstein's legacy and the electrical nature of matter. Wal has written papers for the U.S. journal, *Aeon*, and the *Review of the Society for Interdisciplinary Studies (SIS)*, in England. He served as a council member of SIS for several years while working in London. He attended a postgraduate course in Astrophysics at the University of London and meetings of the Royal Astronomical Society and the British Astronomical Association.

Wal has achieved a broad synthesis of ideas he calls 'THE ELECTRIC UNIVERSE,' in collaboration with David Talbott. It was first presented at a world conference in Portland, Oregon, in January 1997. A booklet and CD with that title were produced. Workshops and conferences were subsequently held in Portland, Oregon, and Seattle, Washington. Wal became the main contributor to a free Internet newsletter 'THOTH,' and has been invited to speak several times a year in the US. He has presented at conferences in the USA, Australia, Europe and the Middle East. In 2000, Wal was one of the keynote speakers at a historic conference in Portland, OR along with the noted astronomer, Halton Arp, from the Max Planck Institute for Physics and Astrophysics in Germany, and the leading plasma cosmologist, Dr. Anthony Peratt, from the Los Alamos National Laboratories, author of 'Physics of the Plasma Universe.' Later that year Wal shared the lectern with Dr. Arp at University College, London [the late Dr. Arp was dubbed the modern Galileo for proving observationally that the universe is not expanding].

In 2001, Wal was a keynote speaker at the "Intersect 2001" conference in Laughlin, Nevada. The broad scope of the ELECTRIC UNIVERSE can be gauged by the connections established at that conference with the well-known Oxford biologist, Rupert Sheldrake, author of many books including *Seven Experiments That Could Change the World*; the cellular biologist, Bruce Lipton, and the psychologist, Garry Schwartz, of the University of Arizona. Anthony Peratt provided evidence at that meeting confirming that the powerful electric force is paramount in the universe.

Wal has published several books with David Talbott (author of *The Saturn Myth*)—the first titled 'Thunderbolts of the Gods' and the second, 'The Electric Universe,' on the combined subjects of the recent history of the solar system and the electrical nature of the universe. More volumes are planned. Also e-books are available online: 'The Big Bang?', 'The Electric Sun' and 'The Comet' being the first. The peer-reviewed paper 'The Z-Pinch Morphology of Supernova 1987A and Electric Stars' was published in the *IEEE Transactions on Plasma Science*, Vol 35 No. 4, Special Issue on Space & Cosmic Plasmas, August 2007. 'Toward a Real Cosmology in the 21st Century' was published in special issue #2 of the *Open Astronomy Journal* in 2011. Wal was awarded a gold medal in 2010 by the European Telesio-Galilei Academy of Science. He presented the Natural Philosophy Alliance John Chappell memorial lecture, 'Stars in an Electric Universe' in 2011 at U. Maryland and was awarded the NPA 2013 Sagnac Award for Lifetime Achievement.

Wal has a website, HOLOSCIENCE, at www.holoscience.com. It summarizes the Electric Universe Model and provides alternative views on scientific news. He is chief science advisor to the Thunderbolts Project [www.thunderbolts.info] and vice president of the non-profit U.S. TBolts Group Inc. Since 2012 there have been annual Electric Universe conferences and one Special Workshop in 2014.