

Introductory Guide to the Electric Universe

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We consider major precepts of today's Standard Model of the Universe, comparing them to the precepts of the alternative "Electric Universe" Model. Written from a non-professional vantage point, this paper highlights aspects of the electric model that can be readily comprehended by the lay reader. It is no longer reasonable to treat the vacuum of space as either "empty" or electrically neutral. Evidence at every scale of observation indicates that electric currents flow across interstellar and intergalactic space to produce elaborate structure and powerful electromagnetic events. The possibility that even stars are powered by electric currents can no longer be ignored.

1. Introduction

This is "A Tale of Two Models" and one non-professional's discovery of the differences between them, the learning experiences gone through and the resulting adoption of a new direction dedicated to providing the same opportunity for enlightenment to others. This account comes with the necessary inclusion of a personal slant. This is not only a description of the uncovering of scientific detail new to the author; it is also an account of profound personal learning, realization and a swift change in personal direction.

In the public arena, it is commonplace to hear mention of aspects of the current gravity-based Standard Model (SM). The SM has become deep-seated as a notion within the public psyche and is typically considered "intellectually comfortable" and therefore acceptable. Questions from the public at large are not expected to arise to challenge the detail of what the SM says. One exception to this is where individuals and certain special interest groups have their own developed opinions on the matters involved.

A study of theory detail and the steady emergence of bafflement and basic questions around the SM focused the attention of this non-professional and brought dissatisfaction with what had become clear. A chance discovery of the Electric Universe (EU) model together with its premise that Electricity exists in space brought an abrupt pause to consider the new issues in play. Initial comparison of the two models highlighted immediate questions, some of which were very profound. A measure of emotional discomfort regarding the potential implications if aspects of the EU model were true then manifested. The challenge moved swiftly to how to make good and proper sense of the issues. This paper describes thoughts that led to questions, further study, conclusions, profound realizations and a determination to engage further in the debate. In addition, this paper highlights the importance of providing opportunities for scientific enlightenment to interested non-professionals and their groups.

2. Immediate Questions and Thoughts

With basic principles from both models in mind, initial studies highlighted both separate and associated areas in which either new fundamental knowledge had to be developed or pre-

viously accepted theory stood out as requiring reconsideration. The areas immediately identified were:

1. *What is Plasma? How could it exist in space? Why was it being described as the fundamental form of all matter that exists everywhere? What was the influence over Plasma that the electromagnetic (EM) force apparently has?* A background in electrical, electronic and radio engineering rapidly brought the realization that what was being claimed regarding Plasma by the EU model was plausible and likely acceptable.
2. *Why had the roles of Plasma and the EM force in space seemingly not played much part in the formulation of the current SM. It seemed strange that aspects so apparently significant had not had more mention or even had not been taken into account in certain areas. How could this be the case, and might the whole proposal around Plasma and Electricity in space be completely wrong? The non-inclusion was a major puzzle that would remain, but the idea of Plasma and Electricity in space appeared to be sound.*
3. *What then was the relationship between the EM and gravity forces and why, apparently, was this staggeringly in favour of EM? To establish the correct context in which to assess the detail of this, the challenge became that of learning more about atomic structure and the forces involved at that level. This, considered intuitively along with real life experience, brought clarity to the comparison between gravity and the EM force, and so made sense of the larger picture. EM was understood as an extremely powerful and highly scalable force.*
4. *The EM force appeared easily capable of manipulating Plasma structures in space. Some of these appeared interestingly similar in form to results obtained through experiment in laboratories here on Earth. Long and well-defined filaments of Plasma would entwine in pairs; the spiral form of galaxies could also be re-created. This and other learning brought further realization that something very significant was afoot. It also underlined the relevance of the statement "profound coincidences should never be ignored".*
5. *The substantial issue of the apparent misapplication of redshift, as it had been applied to the calculation of Galactic and Stellar distances, was provided currency through apparently credible and sound supporting evidence. Additional work to better understand the EM spectrum was required. Other possible implications also arose, some of which were beyond astro-science detail and*

very much in the public arena; things such as what the Big Bang implied. The scientific and social implications were huge.

6. *Plasma, neutral matter, powerful electric space currents and EM forces, when taken together with Time, seemed to be the major ingredients able to account for Galaxy, Star, Planet, Moon and Comet formation and behavior.* Could combinations of these ingredients go further to provide a picture on an even grander Universal scale? A sense of continuity based on common sense and logical explanations began to emerge and lay a path for further revelations.
7. *The result of Electric Current flow within filaments and areas of Plasma and the resulting behavior of the Magnetic Fields produced, seemed to provide a route to explain the natural rotation of bodies in space, at all scales.* Could this thorn in the side of gravity-centric astro-science possibly be explained through such proven theory as that which describes the interaction of pairs of Plasma filaments and the operation of a simple Homopolar Motor?
8. *The mysterious Neutron Stars, Pulsars, Magnetars and Black Holes seemed also to have alternative explanations, again with links to basic and proven electric theory.* Powerful interaction between differentially charged areas of Plasma and in filaments within these areas on galactic and stellar scales appeared to form the basis for answers. Account would have to be taken of the existence of the ‘Double Layer’ barriers created between these areas, together with the likelihood of Z-Pinch events occurring in filaments that result in catastrophic electric breakdown events. This made further clear sense because electrical engineers, and of course Plasma scientists as well, would relate to this. Through these further realizations, the Universe was becoming much less complicated and the now-questionable validity of the mathematical models for these “objects” became obvious.
9. *Electricity existing in space had become real. Therefore, based on the ubiquity of Plasma, the possibility for powerful “lightning” also existing in space was real. This brought cause to reconsider how craters and surface scarring on Planets and Moons might occur.* Could an answer be supplied through considering the potential for close interaction between massive electrically charged bodies such as Planets and Moons? When bodies such as these would move within the conductive Plasma medium of space under the playful influence of the powerful EM force, it appeared there might be a case. It seemed plausible that this could be an explanation for most types of surface “blemish” we observe on these types of bodies.
10. *If the effect of gravity is so weak and appropriate only to consider accurately between two bodies in motion, how then is Planet and Moon orbital stability being achieved between all the bodies in our Solar System?* All electrical, magnetic and EM-driven systems desire to achieve force stability. Could this line of thinking based on proven fact contain an answer?
11. *Fascinating possibilities came to mind that seemingly linked the powerful action of interplanetary Plasma discharges to the apparent catastrophic events originating from the heavens that were recorded by ancient civilizations. The overall EU model now appeared to not only be about today’s astro-science but also about humankind’s having experienced catastrophic events in ancient times as well.* Could

it be that there is more to Petroglyphs and the many other records left to us by ancient civilizations? Why would the people who created these records take the time and trouble to do it had they only felt a need to express imagination? Having nothing other than a limited view of their world, what was their intent? Could they possibly have been recording in the only way they knew how, actual events they had experienced? The jigsaw picture that is the true but illusive human story seemed to have an important new piece provided.

3. The Position within Astro-Science Today

Before considering these things further, certain positions within the current astro-science discipline needed a better understanding. It became apparent that, in addition to the well-known commitment given to gravity as the dominant force in our Universe, there also existed fundamental opposition to the idea of recognizing the important roles of Plasma and the power of the EM force in today’s version of how our Universe works. The main points arising from the position adopted by astro-science, appeared to be ...

1. *The traditional stance that the force of gravity and its effects are central in importance to the theories that constitute the SM. [1]* The long-considered issue of what gravity actually is, together with the on-going conjecture around its association with the other forces, has never inspired confidence that the best path is being followed to consider these issues. Gravity has to be reckoned with in the challenge to assess the merits of the EU model. The EU model, however, is off to a good start through the fact that the EM force is recognized as being 10^{39} times more powerful than gravity.
2. *A fundamental objection to the claim by EU and Plasma Cosmology proponents that charge separation can exist within Plasma in space. [2]* The argument here being that any areas of Plasma influenced through whatever means to take on their own charge levels would rapidly equalize their overall charge through the recombination of electrons and positive ions. This would result in electrically neutral matter, which then would be influenced only by gravity. This appears to be the argument for rejecting electric current flow in space. If electric currents did not exist, then their associated magnetic fields could not exist either; hence, astro-science’s further reliance on the next point...
3. *A fundamental claim that the Plasma which can exist in space is capable of maintaining steady magnetic fields in the form of monopoles; these in turn having the capability to connect and disconnect powerfully between each other. [3]* For this to be possible Plasma would need to be a superconductor; it is not. It is, however, an excellent conductor that has a natural but low resistance to current flow. Nevertheless, superconducting Plasma has been hailed as the basis to explain how static magnetic fields can exist in space, together with their so-far-unexplained ability to break and re-connect. Furthermore, these powerful actions are claimed to serve as sources of much of the powerful EM radiation we detect here on Earth from deep space. It is a fundamental fact from basic electrical engineering that magnetic fields cannot be “broken” neither can they “re-connect”. Magnetic “lines” of force do not exist as lines; they are solely

a graphic convenience; a magnetic field should be considered as a continuum.

Furthermore, the tendency towards gravity-centric thinking had apparently produced additional points that seemed worthy of further consideration; points which again have casually been passed on as fact to the public. Standing out most within these "facts" seemed to be the following ...

1. ... that matter accretion is the only process to explain Galaxies, Stars, Planets and Moons.
2. ... that where powerful sources of radiation are found it is highly likely that either a Black Hole or another form of monstrous gravitational effect has formed or that some other 'mysterious' event is taking place.
3. ... that gravitationally induced collapse of matter can produce Stars made of matter that currently accepted theory says cannot exist.
4. ... that the kinetic interaction of neutral matter alone in space has the ability to produce EM radiation at X-Ray and Gamma Ray wavelengths.
5. ... that manifestations of magnetic forces can drastically influence the temperature profile of the Sun's gravity-centric Nuclear Model and that that model is correct.
6. ... that craters on Planets, Moons, Comets and Asteroids have largely been formed through the gravitational attraction and subsequent impact of solid projectiles.
7. ... that gouges and other missing-matter surface features on Planets and Moons have been brought about either by gravitationally induced tidal forces, natural tectonic movement, volcanic forces, or by the erosive action of flowing liquids.
8. ... that Comets are cold dirty snowball remnants of the Solar System's gravitationally managed birth.
9. ... that the central position of gravity's role is acceptable enough to continue to legitimize the "suggestion" that the age of our Universe is 13.7 billion years.
10. ... that time and gravity alone are the only requirements to account for the sculpting of our Universe and its contents and that it has an age to which a figure can be put in the first place.

Questions had been raised that seemed to contradict or devalue these assertions and there seemed also to have existed longstanding and substantial arguments against them. What then was there, from within the EU model that might provide better explanations? What could be taken from EU theory fundamentals that would more convincingly stand as common sense and logical arguments against these assertions and perhaps even as complete replacements for them?

Further to these issues, there exist other conundrums such as Black Holes, Dark Matter, Dark Energy and Inflation. The EU model has nothing direct to say on these points because it does not play with conjecture in the way apparently practiced within the gravity model. The EU model also has nothing direct to say about the Big Bang, time, relativity or possible multi-universes; it addresses its consideration of the physics of the Universe through science we have reason to be sure of.

4. What the Electric Universe has to Say

In the clearly more precise terms of what the EU model *does* have to say, the aspects of theory and observation that are currently interpreted as being problematic and mysterious by astro-scientists, have plausible explanations grounded in common sense and logic. In addition, there exist significant databases of proven results from decades of previous research and experimentation in Electrical and Plasma laboratories that support the theories put forward by the EU model. Here are some major summary aspects of EU model theory to consider ...

1. The EU model maintains that charge separation in space Plasma is possible and real. It follows that electric currents in space are real and that the magnetic fields these inherently generate are real.
 - a. Probes sent into Space have confirmed the existence of charge-separated Plasma. It goes beyond doubt that electric currents exist in Space. [4]
 - b. A magnetic field is a field of force produced by moving electric charges (an electric current). Magnetic fields therefore also exist in Space. [5]
 - c. 1932 Nobel Prize winner in Chemistry Irving Langmuir's discovery in the 1920s of "Langmuir Sheaths" (Double Sheaths or Double Layers) showed how charged objects separate themselves when surrounded by charged Plasma. [6]
2. There appears to exist an untold number of cosmic grids (networks) of filamentary Plasma in the form of Birkeland currents that supply electric power to everything in the Universe. Galaxies can now be seen strung like fairy lights along these filaments, as can stars within our Milky Way Galaxy.
 - a. Plasma organizes itself as entwined filamentary pairs known as Birkeland currents. Both Hannes Alfvén 1970 Nobel Prize winner in Magnetohydrodynamics, and Kristian Birkeland nominated for the Nobel Prize, contributed to the detailed understanding of Birkeland currents and to their operation. [7]
 - b. Plasma effects can be scaled "The hallmark of Plasma phenomena is their scalability over an enormous range, from microscopic to galactic." Wallace Thornhill 2009 [8]
 - c. Intra-galactic scale filamentary structures have been confirmed by NASA's PLANCK mission imagery [9a] and through the study of super clusters [9b]
3. The process of Galaxy and Star birth can be considered to involve extreme levels of current density arising at locations along the entwined structure of Birkeland currents. These areas then initiate Z-pinch events.
 - a. When EM forces act to misalign the path of electrons as they accelerate within a magnetic field, a torque results that brings about the natural entwining of the Birkeland currents. [10]
 - b. The current density along the length of Birkeland current structures will vary due to extraneous effects. This produces great torque and highly concentrated areas of plasma at which Z-pinch events will tend to occur. [11]

- c. Due to the great physical reach of the concentration of EM forces involved, Z-pinch events are able to bring vast amounts of Plasma and neutral matter together to create a spinning central plasmoid body. [12]
4. Multiple Star systems are common. They appear to arise where Stars must reduce, to some degree, the electrical current density “stress” they experience entering through their surface area. An internal charge imbalance is produced that results in the separation of amounts of Star material that is then ejected into Space.
 - a. From Donald E Scott’s book, **The Electric Sky** “*Internal electrostatic forces prevent stars from collapsing gravitationally and occasionally cause them to ‘give birth’ by electrical fissioning to form companion stars and gas giant planets. Sudden brightening or a nova outburst marks such an event. That elucidates why stars commonly have partners and why most of the giant planets so far detected closely orbit their parent star. “The cause of stellar fissioning may also be external. We have said a star is a ball of plasma. As such, the ions and electrons in it have (random) thermal velocities. If incoming electric current density increases so that the drift velocity of those particles exceeds the value of the thermal velocity, this produces a double layer (DL). The DL may move down into the plasma (into the star). At this position the DL can act much like a membrane that divides a biological cell. If the current density increases to too high a value, the DL may explode, splitting the star into two or more parts.”* [13]
 - b. From Wal Thornhill’s web article “The True State of the Universe”: “*Double star systems are common amongst mature stars. Multiple star systems were thought to be due to capture, long after the stars were formed. So it was a surprise when young stars were found to have companions. But this finding is not a surprise if all stars are born in a cosmic electric discharge. The simplest way for a star to reduce electrical stress as it grows is to increase its effective surface area by electrically fissioning. The result is a companion star or a gas giant. It explains why gas giants are found in tight orbits about nearby stars. It helps explain the large number of brown dwarf stars being discovered.*” [14]
 - c. The well known star V838 Monocerotis is recognised as being a partner in a binary pair. [15]
5. An obvious visual feature of the “Novae” and “Supernovae” we observe is that they are often seen to have identifiable symmetric forms. These ordered structures, along with their less ordered siblings, can be considered through EU theory as arising out of violent electrical overload events involving Stars and even Galaxies that find themselves under great electrical stress. The visual appearance of the resulting phenomena is resolved through the high-energy radiation they emit.
 - a. The EM force shapes symmetrically the plasma in the vicinity and accelerates charged particles in a spiral around the axes of the Birkeland currents that supply the nova event. These particles reach relativistic speeds and produce a great abundance of high-energy synchrotron radiation. An hourglass shape similar to that observed being produced by novae and which is reproducible in the plasma laboratory, gives us reason to view this analysis as highly plausible – at all scales. [16]
 - b. From Dave Talbott and Wal Thornhill’s book **The Electric Universe**: “High-energy plasma discharges always produce synchrotron radiation.” [17]
 - c. Aspects of the celestial formations we refer to as “Nebulae” can be considered in the same vein. [18]
6. The variety of Star types we are informed of also have plausible explanations from within EU theory. These so-described “separate phenomena” can also be seen without the traditional label of age, as sharing theory that explains their size, temperature, brightness, color, radiation emissions, pulsing behavior and more. The behavior of a mix of ingredients in various amounts of energy and Plasma, forced to operate in either one of its dark, glow or arc modes, is at the heart of this.
 - a. The falling short of the traditional explanation for Pulsars has led to the requirement for a different type of star, the Neutron Star. Both these “objects” have an explanation to consider from within basic electrical theory – the Relaxation Oscillator. [19a] [19b]
 - b. Large, small, bright, dull and the full range of colors of Stars all have plausible explanations through application of the same fundamental ingredients but to different degrees for each Star type. [20a] [20b] [20c]
 - c. While enormous time and resource has been poured into the effort to understand Stars based on an apparent outdated idea, those familiar with plasma discharge phenomena have been paying close attention to the observed phenomena on the Sun and finding simple electrical explanations. [21]
7. The Sun’s observed operation can be better explained through EU theory. Here is the proposition that the Stars we observe have solid and relatively cool interiors surrounded by a ball of Plasma operating in either glow or arc mode, depending on the density of electric current impinging on their “surface” Photosphere or outer Chromosphere. The Sun does not generate heat and light through an independent ability to control an on-going nuclear explosion; its “surface” converts to heat, light and other radiation, the electric power flowing onto it from surrounding space. This model makes irrelevant the temperature profile problem, and it provides plausible reasoning for sunspots, the sunspot cycle and many other observed phenomena and behaviors of the Sun. [22]
 - a. The differential Photosphere rotation speeds observed between Poles and Equator and the Sun’s mid latitude regions. Birkeland current density is greatest and has its greatest torque effect at the Sun’s Poles and its Equator. [23]
 - b. The detection of heavy elements present in the Sun’s “atmosphere”. This is where the Sun’s limited amount of nuclear fusion apparently takes place, and not at its core as it is imagined to be. [24]
 - c. The long-present Neutrino deficiency problem can be considered in light of the proposition that any nuclear fusion

- activity that is going on is being limited only to taking place within the Sun's "atmosphere" and does not originate from its interior. [25]
8. The birth of Planets and Moons of different size, mass and type can be considered as being a similar process to that where Stars divest excess electric charge to produce multiple Star systems. In an extension to the proposal that Stars have smaller solid cores, they may also "shed" some of their electric charge through the process of ejecting fragments of their core material off into space. The production of these fragments, together with their cooling and sorting into stable orbits by the EM force, may be the model responsible for how we see the Planets and Moons in our Solar System today.
 - a. It is interesting that the rotation axis angle of inclination of certain Planets to the plane of their orbits around the Sun seems to be associated. The example here is Saturn, Earth and Mars where the close average in the angle of "tilt" between the three is 26°. In contrast with this, the angle of inclination for Mercury is very close to 0°, for Jupiter it is near 3° and for Venus we have around 177°. [26]
 - b. The fact that Planets and Moons have a natural rotation is considered in the same light as the rotation of Stars and Galaxies. It may be that there is no coincidence between the rotating property of incoming Birkeland currents to Stars that maintains a torque to service their natural spin and the possibility that less major intra-Solar-System Birkeland currents will provide a similar service to the Planets and their Moons. [27]
 - c. The distribution of planetary types can be considered through the process of "body capture". This can be thought of as taking place between star systems in past times as they would possibly meet and integrate to varying degrees. [28]
 9. The apparent stability of Planet orbits within the Solar System can be addressed. The charge gradient of the Heliosphere seems to provide for Planet orbit locations in which they and their Moons have found a degree of electrical and therefore physical stabilization.
 - a. The Sun appears to be a component within two electrical circuits those of the interstellar and local systems. The interstellar circuit is the main power supply to the Sun and the local circuit maintains the Solar System through the Ecliptic and returning to the Sun via the Heliopause. [29]
 - b. The Heliosphere is a gradient of charge that extends between the positive anode of the Sun and the negative cathode of the Heliopause. (See Fig.1.)
 - c. The Planets and their Moons are situated along the Ecliptic within what appears to be a relatively stable charge concentration. Further, this plane of Planet orbits appears to operate through the homopolar motor action of this Ecliptic "disc". [30]
 10. The appearance and behavior of Comets that was unanticipated by NASA can be addressed. In addition to evidence from close-up observation that shows Comets do not have the appearance of temperature-sculpted lumps of dirty ice, there is now available substantial evidence that supports the contrary explanation that they are rocky bodies with a high electric charge. [31] [32] [33]
 - a. The Comas of Comets can glow to fantastic distances from their negative nuclei as they enter the central region of the Solar System. This is due to electrostatic action as they travel through the significant gradient of positive charge around the Sun.
 - b. The Tails of Comets extend over fantastic distances, far greater than can be explained through considering ejected gasses and sublimating ice. The reason for this appears to be that comet tails are ionized particles kept together in filamentary form by their own magnetic fields. This is the same natural action as that displayed by Birkeland currents.
 - c. The great distances from the Sun at which flaring of Comets has been observed is contrary to the notion that they are solid bodies reacting to heat from the Sun. The passage of Comets through regions of the Heliosphere that have various levels of charge, even out to the distance of Saturn, can account for this flaring behavior. As a further outcome of electric stress that can explain the occasional break-up of Comet nuclei, we can consider the case of Comet Shoemaker-Levy Nine as it passed Jupiter.
 11. Craters on the surfaces of Planets, Moons, Asteroids and Comets have plausible electrical discharge explanations for their existence. Plasma behavior can be vastly scaled up and so the human experience of lightning strokes as plasma discharges is brought to mind. It becomes possible then to consider super-discharges taking place between large differentially charged bodies as they come close to one another with the medium of Plasma between them. If then consideration is given to the close physical interaction between Planets, Moons, Asteroids and Comets that arguably would have occurred in times past, and perhaps not so long ago, then opportunities for powerful inter-body discharge events become clear. It is fundamental to the EU model that these type of discharge events actually have occurred in distant and recent history. Some of these are apparently recent enough to have

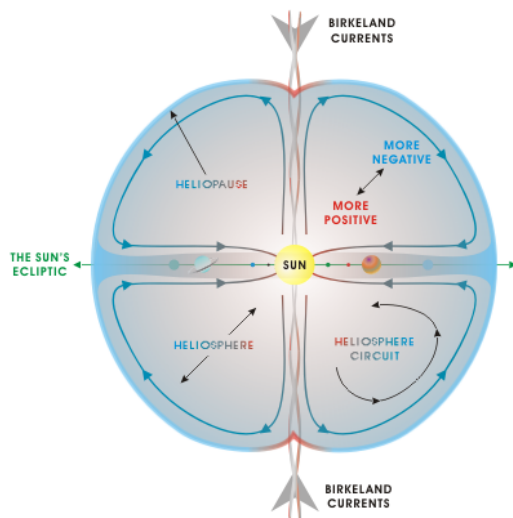


Fig. 1. Electric Sun Model - Credit: T.Findlay 2011

been recorded by ancient observers who had little understanding of what they were seeing. [34] [35] [36]

- a. Craters appear round and on many occasions can be seen to have stepped internal walls with no apparent ejected debris lying around. Impact theory struggles to explain this morphology. However, a powerfully twisting Plasma discharge event acting along the vertical axis possibly can. Round craters and evidence of rotating forces fit naturally with Birkeland current behavior.
 - b. Discharge events to solid surfaces always seek the highest points with which to make contact. This stands as a plausible explanation of why small craters are very often found perched on the raised rims of larger craters. After an initial discharge stroke in the lab, a secondary stroke may occur in the same vicinity. This second stroke often makes contact with the raised rim produced by the first.
 - c. Some craters on Moons and Asteroids are disproportionate in size to the dimensions of their host's body. The question arises, how can relatively small Moons and Asteroids survive intact when apparently struck so fiercely? Taking into account the kinetics in play, the apparent form of the craters and the likely composition of the bodies involved, it seems logical to assume that the struck body should have ended up in many pieces. Theory from the EU model can explain this when discharge events are considered. Discharge events would remove debris into space. They would not deposit anything other than charged particles. This suggestion accounts for the stark lack of debris within and around crater fields and within craters themselves.
12. As with the theories that address the production of Craters, we can consider some of the other physical features found on Planet, Moon, Asteroid and Comet surfaces. Here in particular we have Rilles, the sinuous channels that ostensibly look like riverbeds. Additionally, it is important to note there are further types of surface features that may have a similar cause. [37] [38] [39]
- a. Material removal as opposed to any form of surface material collapse or erosion is likely to be the explanation for the debris-free areas seen within and around Rilles and related surface features.
 - b. On a number of large bodies where Rilles are to be found, such as on Mars, certain Moons, Asteroids and Comets, there is little to no chance of there ever having been any form of internally influenced surface movement that might explain their creation through geologic means.
 - c. The flow of water or other form of liquid is often presented as a basis on which explanations can be given for Rilles – even for bodies on which it seems no form of liquid could ever have existed. There is an abundance of evidence to show that water is highly unlikely to have been involved in most cases. There is often no evidence of where a liquid has been absorbed by the surface material. We see Rilles on bodies that have no atmospheres so there could be no evaporation. No tell-tale tributaries, flow planes or deltas can be identified to suggest water being involved. There are cases where, if water were involved,

it would have needed to flow up-hill. The type of erosion seen with rock formations and loose surface material is not of the type we expect to see created by water. Again, the clean removal of debris via Plasma discharge events between bodies is available to consider as the likely cause for Rilles.

13. Evidence from known History and the Ancient Record appears to provide significant support for aspects of the EU model and the relevance of considering its theories. This is most particularly the case where the morphology of Plasma discharge events is considered alongside the physical evidence we find in the ancient anthropological, geological, archeological and archaeoastronomy databases left for us by our ancestors and by distant geologic events. This evidence is further complimented by what we now observe in great detail on the surfaces of other Planets and Moons. [40]
 - a. Mythological stories, petroglyphs and other evidences appear to be highly relevant to the greater story that arises from the EU model.
 - b. Intriguing implications are available to consider when we inspect similarities between messages left to us by ancient cultures from across the world. These are cultures that never could have been in contact with each other.
 - c. The scars, variations in areas of terrain and many of the geological formations we see on Planets and Moons are to be viewed under this new and brighter EU light. The stories from ancient history that tell of Gods, their battles in the heavens and of mysterious Comets and Suns, provide clues that may lead to the unveiling of what has until now for many been a deeply rooted suspicion that the human race has gone through terrible things in the past.

5. Conclusion

The details touched on here are very real and very important. However, a question arises: even if true, what relevance does this debate have? Science belongs to all of us for it is involved in the lives of everyone, today and tomorrow. It is not only relevant to the scientist; it is relevant to those outside science as well and even more so today when we think of our expanding technological society. It is true that within the public arena interest in science varies greatly. However, for the many who are interested and capable, it is ultimately important they be provided with well-qualified information, for even they can trust too easily the professional image. Respect for science would grow, as would the view of science for bringing along the collective opinion of the knowledgeable non-professional. Science that goes too far alone finds itself with few friends out on a limb. We have a case of this today with gravity-centric astro-science. Where practicable, the involvement of interested non-professional groups, a notion that is complimentary to the tenets of interdisciplinary studies, would broaden the view of everyone and boulders on the path ahead would be identified more easily. Whether seen or not, a paradigm touching everyone's lives is involved and there can be nothing more important to get right. Astro-science must expand its focus from the troubled and tired gravity model to embrace the common sense logic of the electric model. Those of

the interested and capable public, who wish to be involved with changing this paradigm, deserve to have their voices heard too.

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