The Dark Matter Dine & Dash

Shopping around for answers; Dark Matter Scatter part 2

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ABSTRACT

Model failures are known to all, and the "crisis in Cosmology" continues to deepen. While some are embracing the plasma-electromagnetic (PEM) model and trying to hybridize the Standard Model further with incompatible elements, others make a mad dash to shop around for tools from other systems, or from pseudoscientific ideas, in order to give the semblance of scientific progress. But the dash to create a hybrid chimera of science, ignoring all mathematical and philosophical incompatibilities, can be erased with a shift into the Plasma-Electromagnetic Cosmologies, as has been discussed in previous parts. In describing the "scatter" of ideas, the chronology and *current* of thought remains the most pertinent discussion. In this paper, an examination of the latest failures in Accretion, Dark Matter (DM), and classical Black Holes reveals the continuing efforts of the mainstream/Big Bang school to hide the failures of gravitational-based models while simultaneously adapting PEM models, claiming they accepted them all along.

Keywords: *Axion - Neutrino - Neutron Stars - Magnetic Current - Dark Matter - Black Holes*

Updates on Dark Universe Search

In the last few weeks since the release of the "Dark Matter Scatter," several new papers have come out that lay it out very clear that the mainstream Standard Model (SM) is desperate for solutions, and short on options:

Big Bang itself is undergoing a nip n' tuck revisioning, whereby electricity is there… but gravity is sort of hiding the truth (folded, as it were), and it is perplexing cosmologists. ESA put out this article describing the conundrum,

> *"Investigating the history of our cosmos with a large sample of distant 'active' galaxies observed by ESA's XMM-Newton, a team of astronomers found there might be more to the early expansion of the Universe than predicted by the standard model of cosmology…*
>
> *A new study, led by Guido Risaliti of Università di Firenze, Italy, and Elisabeta Lusso of Durham University, UK, points to another type of cosmic tracer – quasars – that would fill part of the gap between these observations, measuring the expansion of the Universe up to 12 billion years ago.*
>
> *Quasars are the cores of galaxies where an active supermassive black hole is pulling in matter from its surroundings at very intense rates, shining brightly across the electromagnetic spectrum. As material falls onto the black hole, it forms a swirling disc that radiates in visible and ultraviolet light; this light, in turn, heats up nearby electrons, generating X-rays…*
>
> *"When we combine the quasar sample, which spans almost 12 billion years of cosmic history, with the more local sample of type-Ia supernovas, covering only the past eight billion years or so, we find similar results in the overlapping epochs," says Elisabeta.*
>
> *"However, in the earlier phases that we can only probe with quasars,* ***we find a discrepancy between the observed evolution of the Universe and what we would predict based on the standard cosmological model.****"*
>
> *"Looking into this previously poorly explored period of cosmic history with the help of quasars, the astronomers have revealed a possible tension in the standard model of cosmology, which might require the addition of extra parameters to reconcile the data with theory.*
>
> *"One of the possible solutions would be to invoke an evolving dark energy, with a density that increases as time goes by," says Guido.*
>
> *Incidentally, this particular model would also alleviate another tension that has kept cosmologists busy lately, concerning the Hubble constant – the current rate of cosmic expansion. This discrepancy was found between estimates of the Hubble constant in the local Universe, based on supernova data – and, independently, on galaxy clusters – and those based on Planck's observations of the cosmic microwave background in the early Universe."*[1] *(emphasis added)*

The author's response to this hand-waving is quick, and concise:

1. There will always be more to the story. The fact that they have stated this shows how bad the hubris is in BBC/SM
2. Once again gravity is converted magically into reality. Black Holes are nebulae sized electric generators, of course they are releasing EMF in all spectrums.
3. This discrepancy is what is being glossed over. The Tension being spoken of is the "uh oh" moment that is quietly being swept under the rug.[2]

[1] http://www.esa.int/Our_Activities/Space_Science/Active_galaxies_point_to_new_physics_of_cosmic_expansion
[2] https://arxiv.org/pdf/1901.05289.pdf

4. Read “evolving dark energy” as “fudge factor” and understand that energy is work * time. It is literally what is exchanged by forces. It cannot evolve because it is not a biological organism.

Dear Reader, if the author were to come to you and assert that there were nargles in your car engine, and that’s why it makes noise, this would not square with what you know, or what a car mechanic would say. Now if the author insisted that the solution was to purchase were-bunnies to eat the nargles and place them in the engine compartment to resolve the “tension” between his theory and the mechanics, would you pay for it?

Why not? Because already B. Pandey has gone shopping for a solution, and with not too much difficulty found the ancient solution to the Dark Energy conundrum - the Void,

> *“ABSTRACT We propose an alternative physical mechanism to explain the observed accelerated expansion of the Universe based on the configuration entropy of the cosmic web and its evolution. We show that the sheets, filaments and clusters in the cosmic web act as sinks whereas the voids act as the sources of information. The* ***differential entropy of the cosmic velocity field increases with time and also acts as a source of entropy****. The growth of non-linear structures and the emergence of the cosmic web may lead to a situation where the overall dissipation rate of information at the sinks are about to dominate the generation rate of information from the sources. Consequently, the Universe either requires a dispersal of the overdense non-linear structures or an accelerated expansion of the underdense voids to prevent a violation of the second law of thermodynamics. The dispersal of the sheets, filaments and clusters are not a viable option due to the attractive nature of gravity but the repulsive and outward peculiar gravitational acceleration at the voids makes it easier to stretch them at an accelerated rate.* ***We argue that this accelerated expansion of the voids inside the cosmic web may mimic the behaviour of dark energy****.”*[3] *(emphasis added)*

The author doesn’t condone the ignoring of electrical mechanisms in plasma, especially the known convergences of plasma into filaments, sheets, and webs. But this sort of shopping around is condonable because it has a basis in something: previously discussed mechanisms empirically observed for thousands of years, and observation of the nonlinear dynamics of spatial network systems. This is how the Universe actually works. In the previous article, the author used the word “fall” like it was an accident. Somehow falling (ie, violating thermodynamics by performing work on itself in space), would convert a ridiculous amount of potential energy - with no description of its own source - into kinetic energy, which caused thermal radiation (of EMF waves). This is pure nonsense magic. Nothing is “falling,” it is being guided by a filamentary force field or fields if one wishes to divide into the 5 aspects[4] of the single Dao of things.[5]

As for the concept in bold, this mirrors in almost exact meaning and conceptualization the author’s own “Cosmic Rearrangement Hypothesis,” introduced in a previous part[6]. As of the assertions made thereafter he may or may not agree, depending on how things turn out for Intrinsic Redshift (see Table 2) and the known distance failures of Doppler Redshift. But the final argument certainly jives with the assertions of Daoists, Brahmins, etc… who witnessed events that convinced them of the power of the Void (Shunyata/ Wuji), and of the existence of primordial chaotic “waters” (Hundun) which formed a soup of **visible** material… most reflected by the Baryonic hot grains in modern astrophysics.[7]

In the Dark Matter discussion,the COSINE-100 Collaboration has released their wimpy results in the search for WIMPs using sodium iodide detectors,

> *“We observe no excess of signal-like events above the expected background in the first 59.5*

[3] https://arxiv.org/pdf/1901.08475.pdf
[4] The “five phases of Force” we may term it.
[5] Gravity, Magnetism, Di-Electricity, Electroweak, and Strong
[6] [12] & [13]
[7] [8]

days of data from COSINE-100. Assuming the so-called standard dark-matter halo model, this result rules out spin-independent WIMP–nucleon interactions as the cause of the annual modulation observed by the DAMA collaboration 20,21,22,23. The exclusion limit on the WIMP–sodium interaction cross-section is 1.14 × 10−40 cm2 for 10-GeV c−2 WIMPs at a 90% confidence level. The COSINE-100 experiment will continue to collect data for two more years, enabling a model-independent test of the annual modulation observed by the DAMA collaboration."[8]

The author's response is that they can search for two or two hundred more years, and they aren't going to find WIMPs, because they do not exist - and he has a 99.9% confidence level of that.

That isn't to say the experiment isn't worthwhile. If one shows up to a deserted island there might be pirate treasure or there might not. But when you'd dug up the entire island, there will certainly be some type of use for the island. Is it worth the expense of resources? Depends on what natural treasures are dug up. After all, you might look for Spanish gold and find Mayan mica. It was valuable to someone, and so will these results be. But although the author applauds the elimination of false hypotheses, he does not condone creating weird hypotheses to acquire grants to simply knock down. This is the behavior of creating straw men, and is a logical fallacy.

Now is it fair to describe the situation thusly? The author thinks so, as daily (it seems) new places are being discovered which do not even need dark matter.[9] [10] Is that to be interpreted - as it has been despite the logical fallacy that it represents - as proof of DM existence? If again the island found has no Spanish gold is that proof one exists with the booty desired? Of course, not. But if one has evidence, such as a treasure map or a story of where a ship went down, etc… then it becomes slightly more reasonable. The story surrounding DM is as flimsy as the search for El Dorado. But while El Dorado has cost a few lives and fortunes, the search for DM has cost billions which could have been directly spent on the PEMC search and to further our understanding of a known and viable material. This material (plasma) is known to create crystalline, ultracold, ultrahot phases[11] as well as exist in four modes: darkened, glow, arc, and super-high-energy (Birkeland Current)[12]. Wouldn't it be better to simply try to understand Plasma-electromagnetism at all scales from quark to quasar? Of course, that would require being logical and frugal, and treating science as a method and not a free-for-all shopping spree.

It would require stellar cosmologists to stop inventing ways to use the wrong words[13] to describe important PEM motion[14], behavior (see Figure 1), forces, etc… and to even re-adopt classical, proven definitions for work, energy, power, etc… from geniuses such as Tesla, Steinmetz, and Heaviside[15]. It would require, in short: expertise in plasma-electromagnetic cosmology, and not in fantasy. But we have 40 years of fantasy scientists and scientologists doing mathemagics and guesswork, and they will not be stopping because of a pesky "can't find it" issue. Instead they will, as predicted[16], be making up new pseudo scientific words[17] and browsing - buffet style - for any haphazard conglomeration to post. In the very new future they will invent new WIMP-like devices, dozens of them, and state that all of them must be tested, and any number of them (or none!) will be found. In an age where geology and meteorology[18] [19] are turning more and more to electricity

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[8] https://www.nature.com/articles/s41586-018-0739-1#change-history
[9] https://arxiv.org/pdf/1901.05973.pdf
[10] https://arxiv.org/pdf/1901.04638.pdf
[11] [11]
[12] [4]
[13] Such as "jets" https://www.nature.com/articles/d41586-019-00043-x
[14] https://arxiv.org/pdf/1901.02747.pdf
[15] "A Common Language for Electrical Engineering: Lone Pine Writings, Volume 1," E. Dollard, 2015
[16] [8]
[17] [12]
[18] https://www.sciencedirect.com/science/article/pii/S1364682618304541
[19] https://www.newscientist.com/article/dn13669-shooting-clouds-with-lasers-triggers-electrical-discharge/

(and magnetism[20]), and black holes even are being turned electric (see below), how can astrophysical cosmogony do anything else?

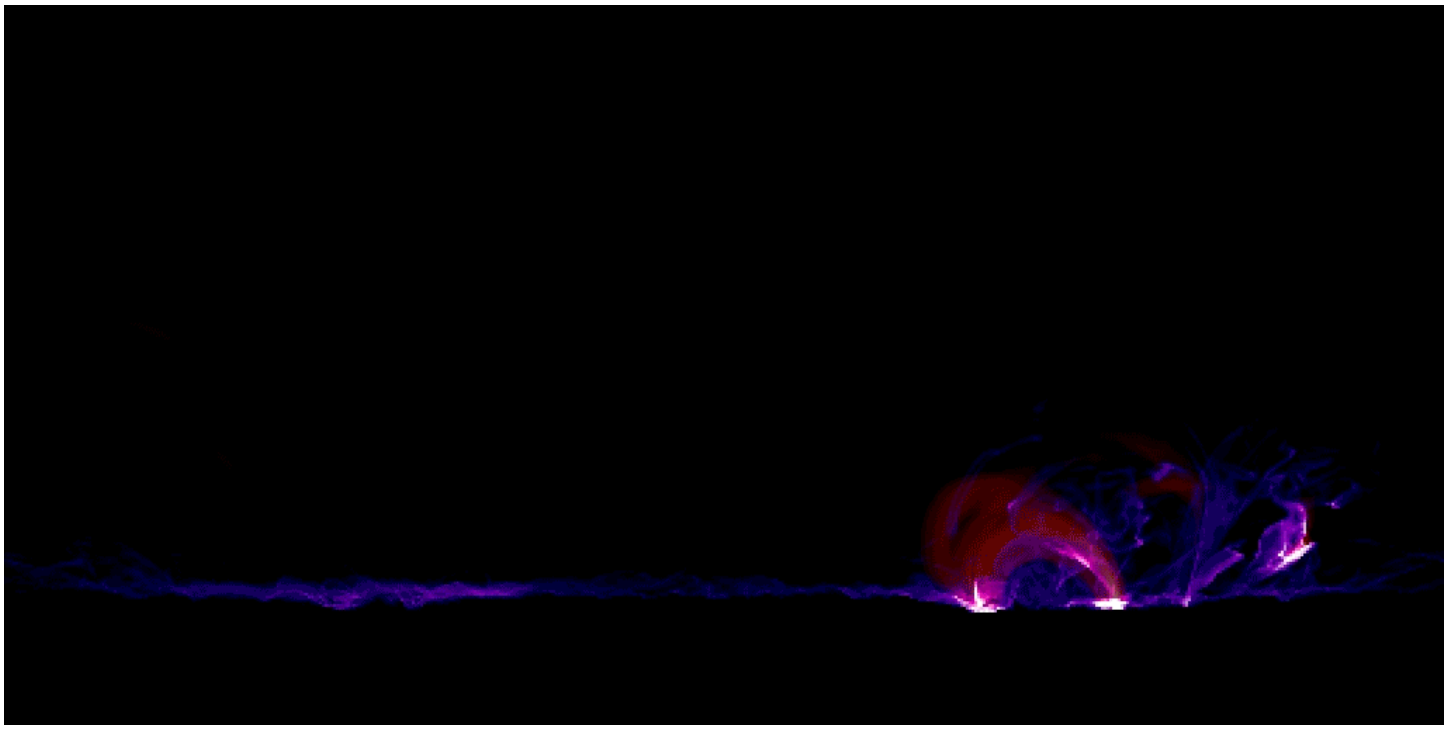

Figure 1: Complete Solar Flare Eruption, with acceleration/deceleration along electromagnetic field gradients[21]

If anyone is keeping count, yes Dark Matter is still missing.[22]

Two papers recently released, one from SENSEI and a more intriguing one from X. Hernandez detail continuing observational and logical problems for DM:

> *"ABSTRACT We present new direct-detection constraints on eV-to-GeV dark matter interacting with electrons using a prototype detector of the Sub-Electron-Noise Skipper-CCD Experimental Instrument. The results are based on data taken in the MINOS cavern at the Fermi National Accelerator Laboratory. We focus on data obtained with two distinct readout strategies. For the first strategy, we read out the Skipper-CCD continuously, accumulating an exposure of 0.177 gram-days. While* ***we observe no events containing three or more electrons****, we find a large one- and two-electron background event rate, which we attribute to spurious events induced by the amplifier in the Skipper-CCD readout stage. For the second strategy, we take five sets of data in which we switch off all amplifiers while exposing the Skipper-CCD for 120k seconds, and then read out the data through the best prototype amplifier. ...* ***We again observe no events containing three or more electrons****, for an exposure of 0.069 gram-days. We use these data to derive world-leading constraints on dark matter-electron scattering for masses between 500 keV to 5 MeV, and on* ***dark-photon dark matter*** *being absorbed by electrons for a range of masses below 12.4 eV."*[23] *(emphasis added)*

[20] https://arxiv.org/pdf/1901.04720.pdf
[21] https://news.ucar.edu/132648/emergence-eruption Image: Courtesy Mark Cheung, Lockheed Martin, and Matthias Rempel, NCAR
[22] https://arxiv.org/pdf/1901.03711.pdf
[23] https://arxiv.org/pdf/1901.10478.pdf

"ABSTRACT Within the dark matter paradigm, explaining observed orbital dynamics at galactic level through the inclusion of a dominant dark halo, implies also the necessary appearance of dynamical friction effects. Satellite galaxies, globular clusters and even stars orbiting within these galactic halos, will perturb the equilibrium orbits of dark matter particles encountered, to produce a resulting trailing wake of slightly enhanced dark matter density associated with any perturber in the halo. The principal effect of this gravitational interaction between an orbiting body and the dark matter particles composing it, is the appearance of a frictional drag force slowly removing energy and angular momentum from the perturber. Whilst this effect might be relevant to help bring about the actual merger of the components of interacting forming galaxies, at smaller stellar scales, it becomes negligible. However, the trailing wake will still be present. In this letter I show that the corresponding dark matter wake associated to the Sun, will constitute a small but resonant perturbation on solar system dynamics which can be ruled out, as current laser and radio ranging measurements are now over an order of magnitude more precise than the amplitude of the orbital perturbations which said wake implies. The ***absence of any such detection implies the nonexistence of the dynamical friction trailing wake on the sun, which in turn strongly disfavours dark matter as an explanation for the observed gravitational anomalies at galactic scales****."*[24] *(emphasis added)*

The author's responses are as follows:

1. Adding more and more constraints is generally a good process, but adding 100 constraints, or 1,000 will not matter if your basis is searching for pseudoscientific "dark photons." World-leading, or not.
2. Hernandez does an excellent job here of describing in one paragraph the logic which should persist in the search for DM Haloes. Start with what you know, and can observe, and scale up from there. Astrophysics has taken entirely too much out on the plate at the buffet, and cannot even begin to swallow the scale of the problem. In the first place it's a proposed substance, in the second now they are proposing how to measure the friction with plasma and ordinary matter, and it's all completely speculative.

In response to this speculation, a previously cited author, W. Giordano has this to say,

"I firmly believe that when the volume of the universe is recomputed to reflect 2 pi^2 r^3 instead of (4/3)(pi r^3), the so called dark matter will prove to be a miscalculation of visible matter by the density difference factor coupled with unilluminated gas and dust[25]*… everyone is using the volume for a 3D ball for the universe. But, if it is a 4-ball the volume of the 3D outer volume is 4.71 times larger. [There was a report a few years ago that the UV light being received from the cosmos was off by a factor of 400%*[26]*.]"*[27]

That may be speculation, but it is based on something observed, and is a plausible response to that observation![28] Hernandez elaborates,

"[the list of failures] illustrates the increasing amount and variety of work going into developing ideas alternative to the dark matter paradigm. This has been partly in response to the various problems which have arisen with the standard picture in terms of details (e.g. Famaey & McGaugh 2012), but mostly, due to the continual and complete lack of a direct detection or an independent confirmation of the existence of dark matter, beyond gravitational anomalies in the low acceleration regime. Recently

[24] https://arxiv.org/pdf/1901.10605.pdf
[25] https://arxiv.org/pdf/1404.2933.pdf
[26] https://www.cnet.com/news/universes-missing-photons-baffle-scientists/
[27] Emails dated 1/25/19 and 1/29/19
[28] https://www.academia.edu/27815784/On_the_Geometry_of_Our_Universe_Rev._Aug._15_2016_

*we have seen all direct detection experiments **return only null results** (e.g. Yang 2016), as sensitivity limits previously deemed important have been reached and surpassed… The current dark matter paradigm is a framework where the driving causal entity is something which no one has ever seen a single particle of."*[29] *(clarification added)*

That pretty much sums the issue up.

Black Holes Die and Get a Face-lift

To start with, the reader must understand something: black holes as they were originally defined **do not exist** except in science-fiction[30]. They have not proven General Relativity, because GR specifies and hypothesizes them to be a Singularity with a Schwarzschild radius of **0**. This means, a non-physical radius. These black holes are defined as being infinitely dense specs (with a dark event horizon surrounding them) where the gravity is so strong that light enters and cannot escape. Hawking Radiation notwithstanding (hand-waving), not a single one of these proposed monsters has ever been directly observed, and **all** observations of them have turned out to be otherwise: they belch gas, plasma, magnetism, electrons, X-rays, gravity waves, and everything but the kitchen sink.[31] To complete the lie they release CGI images which alter the data or fabricate it, in order to support the science fiction, while actual radioscope images never show black hole centers.[32] See Figures 2-4:

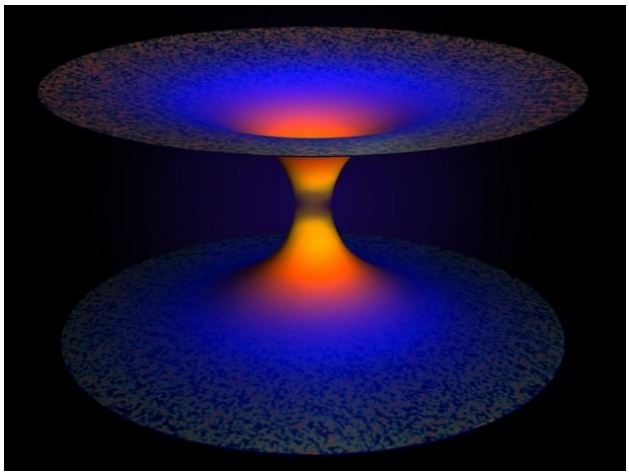

Figure 2 - Artist rendition of supposed black holes; Corichi/Ruiz

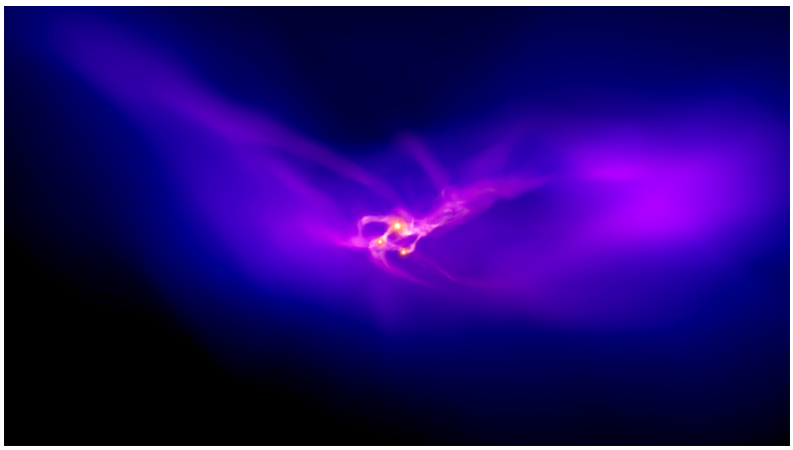

Figure 3 - *"This image shows the inner 30 light-years of a dark matter halo in a cluster of young galaxies. The rotating gaseous disk breaks apart into three clumps that collapse under their own gravity to form supermassive stars. Credits: John Wise, Georgia Institute of Technology"*[33]

Please note the filamentary structures, and the lack of mention of underlying baryonic structure.

[29] Ibid. p. 1
[30] https://news.psu.edu/story/552527/2018/12/20/research/beyond-black-hole-singularity
[31] https://www.unige.ch/communication/communiques/en/2019/le-chaos-ordonne-des-trous-noirs/
[32] [13] & [16]
[33] https://www.nasa.gov/feature/goddard/2019/birth-of-massive-black-holes-in-the-early-universe-revealed

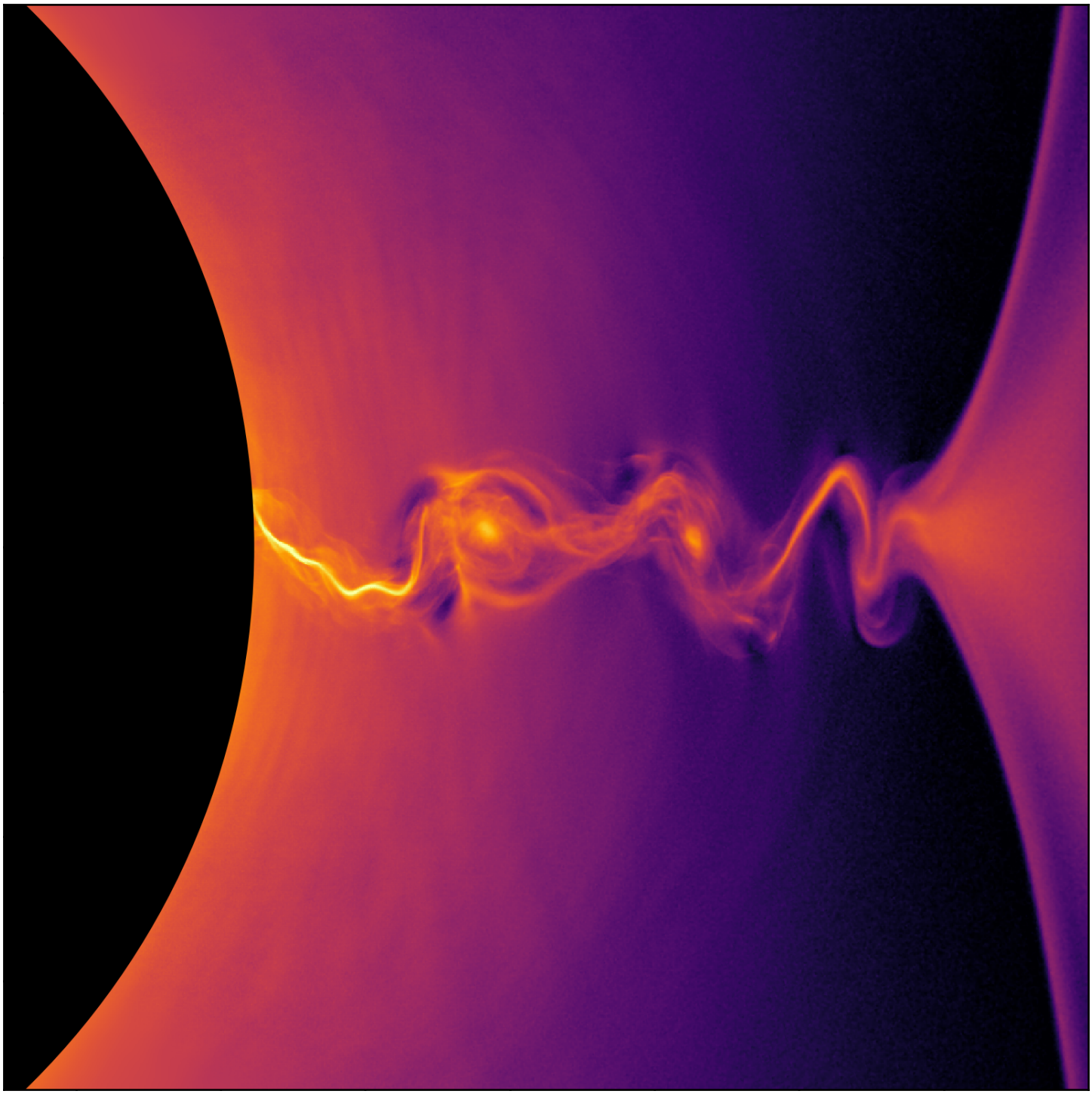

Figure 4 - This visualization of a general-relativistic collisionless plasma simulation shows the density of positrons near the event horizon of a rotating black hole. Plasma instabilities produce island-like structures in the region of intense electric current. (Credit: Kyle Parfrey et al./Berkeley Lab)[34]

Beautiful stuff. The only problem is that black holes are incompatible with WIMPs[35] (and DM in general) and besides: **measurements between X-rays and gravity waves (if they are GW), don't agree**.[36]

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[34] https://newscenter.lbl.gov/2019/01/24/how-to-escape-a-black-hole-simulations-provide-new-clues-to-whats-driving-powerful-plasma-jets

[35] https://arxiv.org/pdf/1901.08528.pdf

[36] https://arxiv.org/pdf/1901.03345.pdf

The author doesn't have a problem with the possibility, as discussed above and in previous parts, that there are large, super-dense, super energetic pinches which drive massive amounts of matter, electromagnetic waves, charges, and "flux ropes" (Birkeland Currents) out into space. This would certainly facilitate the powering of stars, filaments, expansions and contractions (Marklund convection[37]), flares, repeating novas, pulsars, quasars, AGN, magnitars, etc… The system would require the Void/CRH mechanism discussed above, or a mysteriously infinite aether in a hyperdimensional space oozing into the visible space via some quantum foam or strings, etc… and the author favors the former as it has built in yin-yang recycling entropy and does not violate thermodynamics as the latter might. But at least there is something to power it. Gravitational collapse, whilst being both impossible and nonsensical, violates all of the 5 laws of thermodynamics.[38]

The figure in (4) being partially edited to *make a black hole* notwithstanding, the article itself reads straight out of PEMC, but a bit *mutated,*

> *"Parfrey said he realized that more complex simulations to better describe the jets would require a combination of expertise in plasma physics and the general theory of relativity…*
>
> *Performed at a supercomputing center at NASA Ames Research Center in Mountain View, California, the simulations incorporate new numerical techniques that provide the first model of a collisionless plasma – in which collisions between charged particles do not play a major role – in the presence of a strong gravitational field associated with a black hole.*
>
> *The simulations naturally produce effects known as the Blandford-Znajek mechanism[39], which describes the twisting magnetic fields that form jets, and a separate Penrose process that describes what happens when negative-energy particles are gulped down by the black hole.[40]*
>
> *The Penrose process, "even though it doesn't necessarily contribute that much to extracting the black hole's rotation energy," Parfrey said, "is* ***possibly directly linked to the electric currents that twist the jets' magnetic fields****."[41]*
>
> *The team intends to better model the process by which* ***electron-positron pairs[42] are created in the jets*** *in order to study the jets' plasma distribution and their emission of radiation more realistically for comparison to observations. They also plan to broaden the scope of the simulations to include the flow of infalling matter around the black hole's event horizon, known as its accretion flow."*

In other words: Birkeland Currents, Marklund Convection, and finding the origins of neutrons as pairs. As for accretion, we shall deal with updates on it next. Suffice it to say, this is not passive gravitational accretion, but an active, forceful process they are describing of the stellar and gravitational discs, and it is a major challenge for the SM/BB cosmology to find the energy-mass justification for its formation without an electromagnetic process. Hence the need for the combination of plasma and gravitation by marrying GR with relativistic plasma (measured). But this is a marriage which was said was not needed. For decades GR has been deemed complete, whole, and perfect. But if it is perfect, then why marry it to plasma? Because in the end plasma results can be seen in light bulbs held in hand (see Figure 5), while GR can only be force-fit

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[37] Marklund, Göran (February 1979). "Plasma convection in force-free magnetic fields as a mechanism for chemical separation in cosmical plasma". *Nature*. **277** (5695): 370–371.
[38] [6] & see: Dr. Robitaille's channel, SkyScholar, as well as [126].
[39] https://en.wikipedia.org/wiki/Blandford%E2%80%93Znajek_process ; may precede MC but was limited in scope of application. MC describes many scales of plasmoid accumulation which could lead to planets, stars, quasars, pulsars, etc...
[40] https://arxiv.org/abs/0804.1912
[41] http://adsabs.harvard.edu/abs/1977MNRAS.179..433B
[42] [16] & [18]

through mathematical interpretation[43] and data massaging. E. Dowdye has dealt with this latter issue on his website[44] and in three presentations.[45] [46] [47]

It must by remember that whatsoever the success of the SM, the fact remains that it is at a confusing and problematic crossroads.[48]

> *"Particle physics is at a crossroads. The standard model (SM) explains a wide range of phenomena spanning interactions over many orders of magnitude, yet no demonstrated explanation exists for a variety of fundamental questions. Most recently, the discovery of the Higgs boson [1], [2], [3], [4], [5], [6], [7], [8], [9] at the ATLAS [10] and CMS [11] detectors has addressed the mechanism of electroweak symmetry breaking, but there is no explanation for why the scale of its mass is so much different from naive quantum-mechanical expectations (the "hierarchy problem") [12], [13], [14], [15], [16], [17], [18], [19], [20]. Dark matter(DM) remains an enigma, despite extensive astronomical confirmation of its existence [21], [22], [23]. Neutrino masses are observed to be nonzero [24], [25], [26], [27], and elements of the Pontecorvo–Maki–Nakagawa–Sakata matrix[49] [28], [29] have been measured, but these masses are not easily accounted for in the SM [30]. Unification of the strong and electroweak forces is expected, but not yet observed nor understood [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44]; such models often predict the existence of yet-to-be-observed leptoquarks (LQs) or proton decay [45]. Furthermore, there are unexpected observations that are not explained in the SM, such as the baryon asymmetry [46], anomalies in the decays of bottom-quark hadrons [47], a discrepancy in the anomalous magnetic moment of the muon (g-2) [48], and the strong CP problem [49], [50], [51]. Even further, there are open questions about long-standing observations, such as whether or not there is an extended Higgs sector [52], why there are multiple generations of fermions with a large mass hierarchy [32], [53], [54], [55], and why no magnetic monopoles are observed to exist [56]. For these reasons, the SM is considered to be an effective field theory, and that physics beyond the SM (BSM) should exist."*[50]

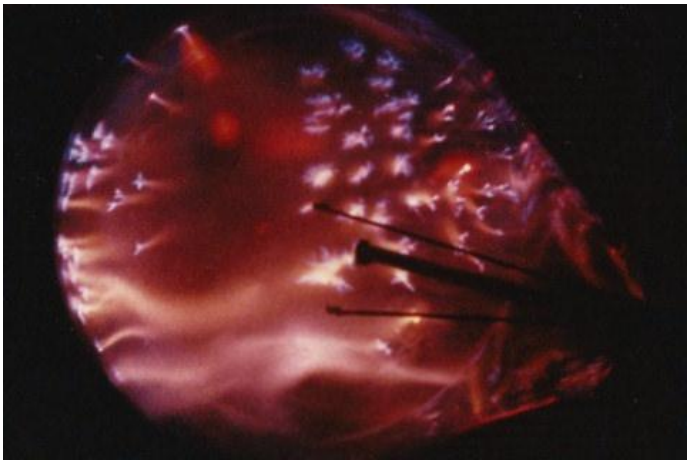

Figure 5 - Plasmoids forming in mysterious Vacuum Tube; credit: E. Dollard

A more concise summary that agrees with the author could not be better written or found! The Physics beyond the SM is the Cosmic Rearrangement Hypothesis as well as Thornhill-Scottian Birkeland Current webs.

[43] http://vixra.org/pdf/1409.0072v9.pdf
[44] A condensed analysis of his websites exists in [6], or visit: https://einsteinwrong.com/site/dr-edward-dowdye/
[45] https://youtu.be/6kJ8gTdOsek
[46] https://youtu.be/CnvOybT2WwU
[47] https://youtu.be/B_jxkOl4k8c
[48] https://www.sciencedirect.com/science/article/pii/S2405428318300121
[49] https://en.wikipedia.org/wiki/Pontecorvo%E2%80%93Maki%E2%80%93Nakagawa%E2%80%93Sakata_matrix
[50] https://doi.org/10.1016/j.revip.2018.100027

Accretion Continues to Dissolve

Accretion Model (AM) has two main issues facing it: (1) electro-cometology[51] and (2) large scale current sheets.

Regarding the second issue, Comerón et al[52] have this to say,

> *"ABSTRACT Thick discs are nearly ubiquitous components of the discs of present-day galaxies. It has been proposed that a fraction of their stars has been accreted. Here, we aim to find whether accretion of satellites is the main thick disc formation mechanism. To do so, we observed a sample of eight nearby edge-on galaxies with the MUSE integral field unit at the VLT. Six of the galaxies have a distinct thick disc. We derived thick disc velocities and velocity dispersions for the galaxies in our sample. We devise a formalism to estimate the fractions of retrograde material in the thick discs by using kinematical maps and thin/thick dis decompositions. None of the galaxies in our sample shows strong evidence for retrograde material at large distances from the centre. Including those found in the literature, there are seventeen thick discs with studied kinematics, with only one showing unambiguous signatures of retrograde material. Literature numerical studies of dynamical friction allow us to estimate that at the current cosmic time about one in six mergers for which the stars of the accreted galaxy ended in a thick disc were retrograde. This is in tension with the observed fraction of 1/17 of galaxies with a partly retrograde thick disc.* ***We conclude that satellite accretion is not favoured by observations to be the main thick disk formation mechanism****." (emphasis added)*

> "*We note that the reported properties of thick discs depend on how thick discs are defined. Indeed, in the Galaxy the thick disc is defined by selecting individual stars based on their kinematics and/or composition"*[53]

It seems to the author that the area of formation is central to cosmology, and so in this way the AM hypothesis is likely to be the most vicious and taciturn area of cosmological upheaval. One would not think so, however the model is both extremely straightforward and "well understood" (by the public) and visible, as well as inextricably tied to gravitation. To challenge accretion is to challenge Einstein and Newton in the minds of the faithful. But, Nature brooks no challenges: she simply barrels through the opposition; go ask SUSY if mother nature slowed down even as she crushed the LHC team at Cern!

So what is Nature suggesting about accretion. As Dr. Robitaille and Wal Thornhill et al… have predicted: it's a total fantasy. Even *if* satellites could and would accrete along the stellar plane, or Saturn's plane (which is only recently now understood precisely enough to debunk accretion ideas[54]), none of the tilts are working in a cohesion to produce the type of single-parent family that is suggested by solar system cosmogenists. Rather, in research into planet 9[55] and the trans-Neptunian families[56], it's been found instead that **several** solar orbital planes exist, and in their own families, suggesting separate originations[57]. As

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[51] https://arxiv.org/pdf/1901.07854.pdf
[52] https://arxiv.org/pdf/1901.10294.pdf
[53] Ibid. p. 2
[54] https://www.jpl.nasa.gov/news/news.php?feature=7251
[55] https://www.cam.ac.uk/research/news/mystery-orbits-in-outermost-reaches-of-solar-system-not-caused-by-planet-nine-say-researchers
[56] https://arxiv.org/pdf/1809.02571.pdf
[57] https://arxiv.org/pdf/1805.05355.pdf

discussed previously, even Jupiter's moons suggest non accretion methods, as you have a pro-grade group, a retro-grade group, and a single moon in that last group going pro-grade![58]

Nature also has suggested that space is filled with large electrical current sheets[59], of various thicknesses. Could these mysterious objects[60] be driving disc formation? They are certainly involved at solar[61] and "micro-scales".[62] They have also been implicated at interstellar medium scales.[63]

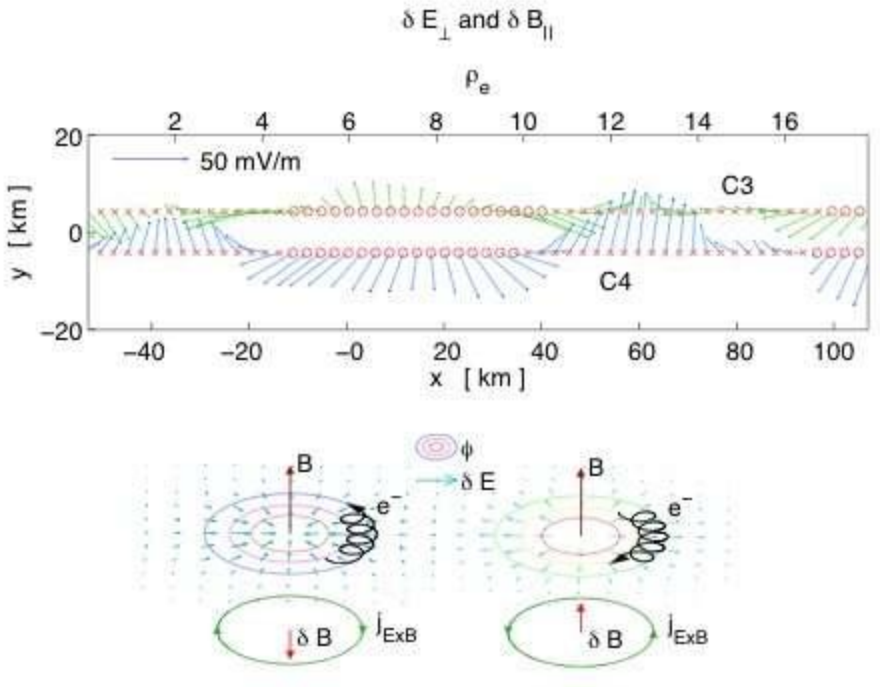

Figure 6 - *"The electric field forms vortices propagating past two of the Cluster spacecraft. Since the electrons have much lower mass than the ions and can easily be moved around by the electric field, the electrons create a magnetic field, as shown in the bottom panel. (Fig. from Norgren et al., PRL, 2012)"*[64]

In the presence of these large structures, is accretion via gravity necessary or tenable? Something tells the author that the SM will *make it so*, and marry things that may not necessarily even need each other, just to avoid admitting they didn't consider electricity important enough, early enough, or listen to Hannes Alfvén.

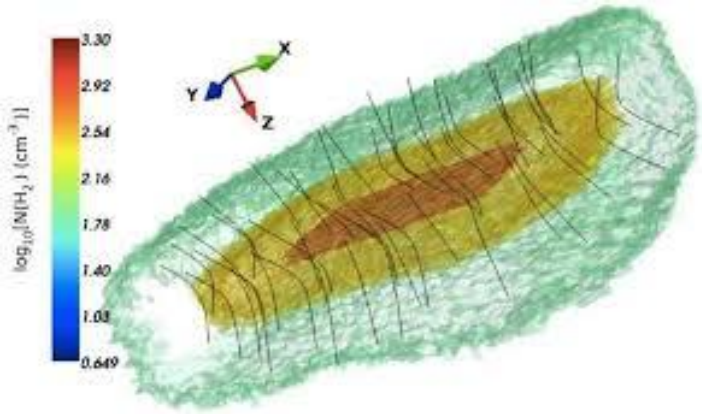

Figure 7 - Musca Sheet; *"Computer simulation of the Musca cloud, performed at the Metropolis HPC Facility of the Crete Center for Quantum Complexity and Nanotechnology (CCQCN) of the University of Crete. The colour scale denotes density of the gas in the cloud. Black lines threading the cloud almost at right angles to its plane are the magnetic field lines."*[65]

[58] https://arxiv.org/pdf/1809.00700.pdf
[59] https://phys.org/news/2012-08-thin-current-sheets-space-action.html
[60] https://arxiv.org/pdf/1811.08563.pdf
[61] http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?1988ApJ...326..418S&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf
[62] https://arxiv.org/pdf/1711.11284.pdf
[63] http://iopscience.iop.org/article/10.1086/303824/pdf
[64] Ibid.
[65] https://www.physics.uoc.gr/en/565958200

Table 1 :: Proper Physics Chronology[66]

Electricity	Ben Franklin	1751
Gaussian Theory	Carl Gauss	1813
Electromagnetism Unification	Michael Faraday	1831
Doppler Redshift	Hippolyte Fizeau	1848
Maxwell's Equations	James Maxwell	1861-62
Quantized Hypothesis	Ludwig Boltzmann	1877
Photoelectric effect	Heinrich Hertz	1887
Electron Theory	JJ Thomson	1897
Quantum Theory	Max Planck	1900
Relativity theory	Henri Poincare	1900-1904
Mass-energy relation	Henri Poincare	1900
Gravity Waves	Henri Poincare	1905
Special Relativity	Albert Einstein	1905
Photoelectric Effect Explained	Albert Einstein	1905
Birkeland Currents	Kristian Birkeland	1908
Atomic Theory Proved	Ernest Rutherford	1911
Particle-Wave Theory of Atoms and Particles	Niels Bohr	1913
General Relativity	Albert Einstein	1915
Proton discovered	Ernest Rutherford	1919
Quantum Radiation Interaction	Paul Dirac	1920
Quantum Mechanics Codified	Born, Heisenberg, Pauli	1924
Bose-Einstein Condensate	Bose, Einstein	1924
Plasma Cosmology	Irving Langmuir	1927
Big Bang Cosmology	Georges Lemaitre	1927
Missing Matter	Edward Zwicky	1933
Magnetohydrodynamics	Hannes Alfven	1940
QEM/QED	Bethe to Feynman	1947-1960
Electroweak Theory	JC Ward	1959
Quarks	M Gell-Mann & G Zweig	1964
Black Hole Theory	John Wheeler	1967
Dark Matter	Rubin & Ford	1970
Electric Star Theory	Ralph Juergens[67]	1972
QCD	Gross, Wilczek, & Politzer	1973
Axions	Peicci & Quinn	1977
SUSY	Werner Nahm	1978
WIMPs	unclear[68]	1980
MOND	Mordehai Milgrom	1982
String Theory	Green & Schwarz	1984
Dark Energy	Friedman[69] or Sivaram[70]	1924 or 1986
M Theory	Edward Witten	1995
Intrinsic Redshift	Halton Arp[71]	1998

[66] Tables 1 and 2 reproduced from [11]; all references in [18] included, as this paper is a follow-up.
[67] https://www.velikovsky.info/Ralph_Juergens
[68] https://www.scientificamerican.com/article/dark-matter-exotic-possibilities/
[69] http://home.fnal.gov/~skent/early.html
[70] https://arxiv.org/ftp/arxiv/papers/0809/0809.3364.pdf
[71] https://www.haltonarp.com/articles/intrinsic_redshifts_in_quasars_and_galaxies.pdf

MACHOs	unclear	2002?[72] [73]

Table 2 :: Falsifications

Cosmic Background Radiation	2007[74] & 2019[75]
LCDM	2010[76], 2014[77]
SUSY	2012[78] - 2017[79]
CDM	2012[80], 2015[81], 2016[82] - 2018[83] [84] [85] [86]
WIMPs & MACHOs	2017[87]
Galaxy Rotation and DM	2017[88] [89]
Standard Redshift	2017[90] [91] [92]
MOND	2018[93] [94] [95]
Galaxy Rotation and MOND	2018[96]
Higgs-boson as non-standard Quark	2018[97]
Dark Energy	2018[98]
LDM	2018[99] [100]
Classical Black Holes	2018[101]
Accretion Model	2019[102]

[72] http://www.astro.caltech.edu/~george/ay20/eaa-wimps-machos.pdf
[73] https://theconversation.com/from-machos-to-wimps-meet-the-top-five-candidates-for-dark-matter-51516
[74] http://rnas.asj-oa.am/2542/1/73.pdf
[75] https://www.youtube.com/watch?v=p8lKQMEYYLw
[76] https://arxiv.org/abs/1011.0004
[77] https://astro.uni-bonn.de/~pavel/kroupa_SciLogs.html
[78] http://backreaction.blogspot.com/2016/08/the-lhc-nightmare-scenario-has-come-true.html
[79] https://www.space.com/39001-dark-matter-doesnt-exist-study-suggests.html
[80] https://arxiv.org/abs/1204.2546
[81] http://adsabs.harvard.edu/cgi-bin/bib_query?arXiv:1406.4860
[82] http://adsabs.harvard.edu/abs/2016arXiv161003854K
[83] https://arxiv.org/pdf/1808.09823.pdf
[84] https://academic.oup.com/mnras/article/476/3/3124/4875952
[85] https://arxiv.org/pdf/1807.07113.pdf
[86] https://arxiv.org/pdf/1805.04817.pdf
[87] https://phys.org/news/2017-12-machos-dead-wimps-no-showsay-simps.html
[88] https://arxiv.org/pdf/1805.10706.pdf
[89] https://arxiv.org/pdf/1811.08843.pdf
[90] https://arxiv.org/pdf/1805.03298.pdf
[91] https://arxiv.org/abs/1807.09409
[92] https://arxiv.org/pdf/1804.03888.pdf
[93] https://www.physicsforums.com/threads/falsifications-and-constraints-due-to-gw-measurements.929254/
[94] https://arxiv.org/pdf/1804.04167.pdf
[95] https://arxiv.org/ftp/arxiv/papers/1809/1809.09019.pdf
[96] https://arxiv.org/pdf/1801.09304.pdf
[97] https://www.nature.com/articles/d41586-018-06130-9
[98] https://arxiv.org/pdf/1810.05027.pdf
[99] https://arxiv.org/pdf/1810.10543.pdf
[100] Several, see previous papers to the series
[101] Ibid.
[102] Ibid.

Conclusion

The continual search for the Dark Universe is taking a predictably droll turn wherein the surety of finding said matter (predicted with *apriori* knowledge) demands replacements. The replacements are manifold and yet not connected via anything real, except the electrical connections documented or found in these collaborative experiments. On occasion new discoveries are made which support the plasma model, but otherwise, all of the proposed DU hypotheses constrain out, and are replaced with electrical hypotheses, or pseudoscientific unicorns. Meanwhile Black Holes and Accretion continue to simplify nicely into current-based models.

References

1. "Extended Plasma-electromagnetic Cosmology," Sf. R. Careaga, 2018 http://www.academia.edu/36753648/Extended-Plasma-Electromagnetic_Cosmology_EPEMC
2. "On the Origins of Religions," Sf. R. Careaga, 2018 http://www.academia.edu/36753645/On_the_Origins_of_Religions
3. "Unboxing Atlantis," Sf. R. Careaga, 2018 http://www.academia.edu/36753644/Unboxing_Atlantis_A_top-down_review_of_what_we_know_and_dont_know_about_the_Atlantean_through_Megalithic_Period_continents_and_cities_36_000_-2_000_YBP
4. "Our Plasma-Electromagnetic Sky," Sf. R. Careaga, 2018 http://www.academia.edu/36753643/Our_Plasma-Electromagnetic_Sky_Application_of_Hollow-Expanding-Growing-Electromagnetic_Earth_Hypothesis_with_particular_respect_to_the_Earths_Atmosphere_starting_from_the_Lithosphere_and_ascending_Altitude
5. "Investments in Ragnarok," Sf. R. Careaga, 2018 http://www.academia.edu/36753646/Investments_in_Ragnarok_Comparisons_and_Conclusions_from_the_study_of_Media_Business_and_Government_investments_in_End_of_the_World_myth_story_and_preparation
6. "Magnetic Universe Theory," Sf. R. Careaga, 2018 https://www.academia.edu/37439506/Magnetic_Universe_Theory_A_Top-Down_Review_of_Phases_of_Magnetic_Theory_Development_with_accompanying_historiography_and_comparison_with_Unified_Aether_Field_Theories_including_EPEMC
7. "Ferris Wheels and the Dionysian Irony," Sf. R. Careaga, 2018 http://www.academia.edu/37403915/Ferris_Wheels_and_the_Dionysian_Irony_The_subconscious_drive_of_thrill_abandonment_of_caution_and_the_motifs_of_Amusement_Park_rides
8. "The Predictable Rise of 'Charged' Dark Matter," Sf. R. Careaga, 2018 https://www.researchgate.net/publication/328175179_The_Predictable_Rise_of_Charged_Dark_Matter_How_Covert_MatterHot_Grains-Plasma_in_Dark_Mode-is_pushing_the_failures_of_CDM_and_MOND_into_the_Plasma-Electromagnetic_Cosmological_Paradigm
9. "Clinical Electric Field Measurements," Sf. R. Careaga, 2018 https://www.researchgate.net/publication/328697566_Clinical_Electric_Field_Measurements_In_situ_pre_and_post_treatment_measurement_data_with_weather_and_space-weather_lunar_and_solar_data_with_self-reported_pain_and_significance_scales_in_three_phases
10. "Chinese Natural Philosophy (Physics) in EPEMC," Sf. R. Careaga, 2018, http://www.academia.edu/37784032/Chinese_Natural_Philosophy_Physics_in_EPEMC
11. "Bose-Einstein Condensate Cosmology vs PEMC," Sf. R. Careaga, 2018 https://www.researchgate.net/publication/329427472_Bose-Einstein_Condensate_Cosmology_vs_PEMC_Cold_plasma_Discussing_the_problem_of_replacing_all_forms_of_Dark_Matter_with_an_interstellar_medium_BEC_vs_PEMUAF
12. "Pseudoscience Cannot be Dark Matter," Sf. R. Careaga, 2018, https://www.researchgate.net/publication/329629284_Pseudoscience_Cannot_Be_Dark_Matter_A_Short_Concise_Rebuttal_to_Negative_Mass_Dark_Photons_and_the_General_Bunkish_Trend_Physics_in_Crisis_Must_be_Guided_to_Safe_Shores

13. “Acoustic Shockwave Cosmology and EPEMC,” Sf. R. Careaga, 2018, https://www.academia.edu/38017260/Acoustic_Shockwave_Cosmology_Big_Bang_and_PEMC_The_belief_in_emergent_matter_versus_material_rearrangement
14. “Plasma Petroglyphs (Plasmaglyphs), Earthworks, and the Megafauna Extinction,” Sf. R. Careaga, 2018, https://www.academia.edu/37490311/Plasma_Petroglyphs_Plasmaglyphs_Earthworks_and_the_Megafauna_Extinction
15. “Charge Distribution Networks as Meridians,” Sf. R. Careaga, 2019, https://www.researchgate.net/publication/330117614_Charge_Distribution_Networks_CDN_as_Meridians_Utilizing_conductivity_as_replacement_'structure'_for_meridians_comparison_with_neural_muscular_and_fascial_models
16. “Dark Matter Scatter,” Sf. R. Careaga, 2019, https://www.academia.edu/38105102/The_Dark_Matter_Scatter_How_the_Dark_Universe_Community_is_fraying_and_in_which_directions_as_a_response_to_the_DM_crisis_How_PEMC_re-unifies_the_camps
17. “Ten Reasons to Consider Switching to EPEMC,” Sf. R. Careaga, 2018, https://www.academia.edu/37569958/EPEMC_tm_Benefits_Ten_Reasons_to_Consider_Switching_to_Extended_Plasma-electromagnetic_Cosmology
18. “Neutrinos, Neutron Stars, and Axions,” Sf. R. Careaga, 2019 http://www.academia.edu/38152014/Neutrinos_Neutron_Stars_and_Axions.pdf
19. “Bose-Einstein condensate,” Wiki, https://en.wikipedia.org/wiki/Bose%E2%80%93Einstein_condensate
20. “Bose-Einstein condensate in cosmology,” S. Das and R. K. Bhaduri, 2018, https://arxiv.org/pdf/1808.10505.pdf
21. “The Temperatures of Outer Space Around the Earth,” A. Libal, 2018, https://sciencing.com/temperatures-outer-space-around-earth-20254.html
22. “The Matter- Antimatter asymmetry Problem,”https://home.cern/science/physics/matter-antimatter-asymmetry-problem
23. “Did Gravity Save the Universe from 'God Particle' Higgs Boson?”, C. Q. Choi, 2015, https://www.space.com/28181-gravity-higgs-boson-universe-destruction.html
24. “Higgs Boson,” Wiki, https://en.wikipedia.org/wiki/Higgs_boson
25. “States of Matter: Bose-Einstein Condensate,” J. Emspak, 2018, https://www.livescience.com/54667-bose-einstein-condensate.html
26. “Plasma classification (types of plasma)”, https://www.plasma-universe.com/Plasma_classification_(types_of_plasma)
27. “Ultracold neutral plasmas,” T.C. Killian et al., 2007, https://www.sciencedirect.com/science/article/abs/pii/S0370157307001937?via%3Dihub
28. “Trend: Ultracold Neutral Plasmas,” S.L. Rolston, 2008, https://physics.aps.org/articles/v1/2
29. “Charged Planckian Interacting Dark Matter.” M. Garnya, A. Palessandrob et al...2018, https://arxiv.org/pdf/1810.01428.pdf
30. “Nano dust in space and astrophysics,” I. Mann et al…, 2018, https://arxiv.org/pdf/1810.12502.pdf
31. “Measuring the local matter density using Gaia DR2,” A. Widmark, 2018, https://arxiv.org/pdf/1811.07911.pdf
32. “Discovery of a primordial water reservoir in the envelope of HH 211,” O. Dionators, 2018, https://arxiv.org/pdf/1811.08799.pdf
33. “Half the universe’s missing matter has just been finally found,” New Scientist, L. Crane, 2017, https://www.newscientist.com/article/2149742-half-the-universes-missing-matter-has-just-been-finally-found/
34. “Discovery of massive warm-hot circumgalactic medium around NGC 3221,” S Das et al…, 2018 https://arxiv.org/pdf/1810.12454.pdf
35. “Universe has 2 trillion galaxies, astronomers say,” The Guardian, 2016, https://www.theguardian.com/science/2016/oct/13/hubble-telescope-universe-galaxies-astronomy
36. “Y-Type Stars,” Smithsonian Astrophysical Observatory, 2017, https://www.cfa.harvard.edu/news/su201725
37. “Wasp-104B is darker than Charcoal,” T. Mocnik, C. Hellier, and J. Southworth, 2018, https://arxiv.org/pdf/1804.05334.pdf
38. “Origins of Hot Jupiters,” R. Dawson & J. A. Johnson, 2018, https://arxiv.org/abs/1801.06117
39. “Ralph Juergens,” The Velikovsky Encyclopedia, https://www.velikovsky.info/Ralph_Juergens
40. “The Early History of Dark Energy,” http://home.fnal.gov/~skent/early.html
41. “ A Brief History of Dark Energy,” C Sivaram, https://arxiv.org/ftp/arxiv/papers/0809/0809.3364.pdf

42. “Intrinsic Redshifts in Quasars and Galaxies,” H. Arp et al...https://www.haltonarp.com/articles/intrinsic_redshifts_in_quasars_and_galaxies.pdf
43. “WIMPs and MACHOs, Copyright © Nature Publishing Group 2002, K. Griest, http://www.astro.caltech.edu/~george/ay20/eaa-wimps-machos.pdf
44. “Cold Dark Matter and Experimental Searches for WIMPs,” https://www.astro.umd.edu/~ssm/darkmatter/WIMPexperiments.html
45. “Measured Parameters of Large Antenna of ROT-54/2.6 Tell about Absence of Big Bang,” P. Herouni, 2007, http://rnas.asj-oa.am/2542/1/73.pdf & http://jae.ece.ntua.gr/archive/archive_index.html
46. “From MACHOs to WIMPs: meet the top five candidates for ‘dark matter’,” The Conversation.com, 2015, https://theconversation.com/from-machos-to-wimps-meet-the-top-five-candidates-for-dark-matter-51516
47. S. Hossenfelder, The LHC “nightmare scenario” has come true,” 2016, Available at http://backreaction.blogspot.com/2016/08/the-lhc-nightmare-scenario-has-come-true.html
48. **“**Does Dark Matter Exist? Bold New Study Offers Alternative Model,” Tereza Pultarova, 2017, https://www.space.com/39001-dark-matter-doesnt-exist-study-suggests.html
49. “The dark matter crisis: falsification of the current standard model of cosmology,” P. Kroupa, 2012, https://arxiv.org/abs/1204.2546
50. “Galaxies as simple dynamical systems: observational data disfavor dark matter and stochastic star formation,” Canadian Journal of Physics, vol. 93, P. Kroupa, 2015, http://adsabs.harvard.edu/cgi-bin/bib_query?arXiv:1406.4860
51. “The observed spatial distribution of matter on scales ranging from 100kpc to 1Gpc is inconsistent with the standard dark-matter-based cosmological models, P. Kroupa, 2016, http://adsabs.harvard.edu/abs/2016arXiv161003854K
52. “Problems with The Dark Matter and Dark Energy: Hypothesis and alternative Ideas,” M. L.. Corredoira, 2018, https://arxiv.org/pdf/1808.09823.pdf
53. “Probing dark matter with star clusters: a dark matter core in the ultra-faint dwarf Eridanus II,” Oxford Academic, F. Contenta et al., 2018, https://academic.oup.com/mnras/article/476/3/3124/4875952
54. “Search for annual and diurnal rate modulations in the LUX experiment , D.S. Akerib et al…., 2018, https://arxiv.org/pdf/1807.07113.pdf
55. “Reply to the claim by van Dokkum et al. for a galaxy not containing dark matter .R.Scarpa et al…, 2018, https://arxiv.org/pdf/1805.04817.pdf
56. “Simultaneous Falsification of LCDM and Quintessence with Massive, Distant Clusters,” M.J. Mortonson, 2010, https://arxiv.org/abs/1011.0004
57. “Pavel Kroupa: The Dark Matter Crisis,” P. Kroupa, 2018, https://astro.uni-bonn.de/~pavel/kroupa_SciLogs.html
58. “MACHOs are dead. WIMPs are a no-show. Say hello to SIMPs: New candidate for dark matter,” Phys.org., R. Sanders, 2017, https://phys.org/news/2017-12-machos-dead-wimps-no-showsay-simps.html
59. “Boran et al.,2017 “Falsifications and Constraints due to GW measurements,” Available at https://www.physicsforums.com/threads/falsifications-and-constraints-due-to-gw-measurements.929254/
60. “MOND and the dynamics of NGC-1052-DF2,” B. Famaey et al.., 2018, https://arxiv.org/pdf/1804.04167.pdf
61. “No evidence for modifications of gravity From galaxy Motions on cosmological scales,” J.He et al., https://arxiv.org/ftp/arxiv/papers/1809/1809.09019.pdf
62. “Investigating Dark Matter and MOND Models with Galactic Rotation Curve Data,” M. T. Frandsen and J. Petersen, 2018, https://arxiv.org/pdf/1805.10706.pdf
63. “The distribution of dark matter in galaxies,” P Salucci, https://arxiv.org/pdf/1811.08843.pdf
64. “On the Gaia DR2 distances for Galactic Luminous Blue Variables,” N. Smith et al., 2018, https://arxiv.org/pdf/1805.03298.pdf
65. “Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole,” R. Abuter et al., 2018, https://arxiv.org/abs/1807.09409
66. “EDGES result versus CMB and low-redshift constraints on ionization histories,” S. Witte et al., 2018, https://arxiv.org/pdf/1804.03888.pdf
67. “Spiral Galaxy Rotation Curves Without Dark Matter or MOND – Two Conjectures,” T. Biswas, 2018, https://arxiv.org/pdf/1801.09304.pdf
68. “LHC physicists finally uncover Higgs ‘bottom’ decay,” Nature International Journal of Science, D. Castelvecchi, 2018, https://www.nature.com/articles/d41586-018-06130-9
69. “Cherenkov radiation from the quantum vacuum,” Macleod et al…, 2018 https://arxiv.org/pdf/1810.05027.pdf

70. “Novel direct detection constraints on light dark matter,” T. Bringmann & M. Pospelov, 2018 https://arxiv.org/pdf/1810.10543.pdf
71. C. Harlos & T. Edgell, “We looked at 1,154 climate science results and found no evidence of ‘publication bias,” 2017, Available at https://theconversation.com/we-looked-at-1-154-climate-science-results-and-found-no-evidence-of-publication-bias-84500
72. “Climate Change Research Grants.” US EPA, https://www.epa.gov/research-grants/climate-change-research-grants
73. “Publication bias in climate-change science,” Lund University, https://www.biology.lu.se/research/research-groups/aquatic-ecology/research-projects/publication-bias-in-climate-change-science
74. H. Ludwig, “Your Tax Dollars Fund the ‘Global Warming’ Narrative,” 2017, Available at https://capitalresearch.org/article/your-tax-dollars-fund-the-global-warming-narrative/
75. “Why Exploring Space And Investing In Research Is Non-Negotiable,” Forbes, E. Siegel, 2017, https://www.forbes.com/sites/startswithabang/2017/10/26/even-while-the-world-suffers-investing-in-science-is-non-negotiable/#1800d3dc1647
76. “How much money is spent on space exploration? (Intermediate),” K. Masters, 2015, http://curious.astro.cornell.edu/about-us/150-people-in-astronomy/space-exploration-and-astronauts/general-questions/921-how-much-money-is-spent-on-space-exploration-intermediate
77. “The jets of AGN as giant coaxial cables,’ D. C.Gabuzda, 2017, https://arxiv.org/pdf/1712.08414.pdf
78. “Origin of Enigmatic Galactic-center Filaments Revealed,” Y.-Zadeh, et al. 2004, https://public.nrao.edu/news/origin-of-enigmatic-galactic-center-filaments-revealed/#PRimageSelected
79. “ The Io Dynamo,” NASA, https://www-spof.gsfc.nasa.gov/Education/wio.html
80. “Magnetic Portals Connect Earth to the Sun,” NASA, 2008, https://science.nasa.gov/science-news/science-at-nasa/2008/30oct_ftes
81. “Thin current sheets in space: where the action is,” Swedish Institute of Space Physics, 2012, https://phys.org/news/2012-08-thin-current-sheets-space-action.html
82. “ Current Sheets in the Solar Corona,” The Astrophysical Journal, H. R. Strauss and N. F. Otani, © 1988, http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?1988ApJ...326..418S&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf
83. “Collapse of neutral current sheet and reconnection at micro-scales,” I. F..Shaikhislamov, https://arxiv.org/ftp/arxiv/papers/1711/1711.11284.pdf
84. “Current Sheet Formation in the Interstellar Medium,” E. G Zweibel & A. Brandenburg, The Astrophysical Journal, 1997, http://iopscience.iop.org/article/10.1086/303824/pdf
85. “Freezing-in condition for a magnetic field and current sheets in plasma,” Astrophysics and Space Science, vol. 56, 1978, S. I. Syrovatskii, http://adsabs.harvard.edu/full/1978Ap%26SS..56....3S
86. “Giant galaxy-packed filament revealed,” McGill University, 2012, https://www.sciencedaily.com/releases/2012/05/120517143639.htm
87. “Cosmic filament probes our galaxy's giant black hole,” Harvard-Smithsonian Center for Astrophysics, 2017, https://phys.org/news/2017-12-cosmic-filament-probes-galaxy-giant.html
88. “Giant Dark Matter Bridge Between Galaxy Clusters Discovered,” Space.com C. Moskowitz, 2012, https://www.space.com/16412-dark-matter-filament-galaxy-clusters.html
89. “Solar-radiation burst hit Earth in record time,” K. Young, New Scientist, 2005, https://www.newscientist.com/article/dn7427-solar-radiation-burst-hit-earth-in-record-time/
90. N. Mortillaro, CBC News, 2017 “7 Earth-sized planets found orbiting star 39 light-years away,” Available at https://www.cbc.ca/news/technology/7-earth-like-planets-discovered-1.3992156
91. “How Cold Is a Y Dwarf Star? Even You Are Warmer,” C. Q. Choi, 2011, https://www.space.com/12714-coldest-failed-stars-brown-dwarfs-wise.html
92. “Star smaller than Jupiter discovered,” Space, 2017, http://www.eniscuola.net/en/2017/07/18/star-smaller-jupiter-discovered/
93. “Fast-spinning neutron star smashes speed limit,” New Scientist, M. McKee, 2006, https://www.newscientist.com/article/dn8576-fast-spinning-neutron-star-smashes-speed-limit/
94. “Observations challenge cosmological theories,” University/Bonn, 2018, https://www.uni-bonn.de/news/272-2018
95. “Red face Shift,” Everything Electric, 2015, http://www.everythingselectric.com/red-face-shift/

96. “First observation of gravitational waves,” Wiki, https://en.wikipedia.org/wiki/First_observation_of_gravitational_waves
97. “Gravitational Waves Detected from Neutron-Star Crashes: The Discovery Explained,” C.Q. Choi, 2017, https://www.space.com/38471-gravitational-waves-neutron-star-crashes-discovery-explained.html
98. “Gravitational waves from a binary black hole merger observed by LIGO and Virgo,” LIGO, 2017, https://www.ligo.caltech.edu/news/ligo20170927
99. “Virgo Joins LIGO in Detection of Gravitational Waves,”APS Physics, D. Voss, 2017, https://www.aps.org/publications/apsnews/updates/ligo-virgo.cfm
100. “Stability of disks in quasilinear MOND,” I. Banik et al., 2018, https://arxiv.org/pdf/1808.10545.pdf
101. “Henri Poincaré, Wiki, https://en.wikipedia.org/wiki/Henri_Poincar%C3%A9#Three-body_problem
102. “Hubble data indicate universe growing faster than expected,” Astronomy Now, W. Harwood, 2018, https://astronomynow.com/2018/02/23/hubble-data-indicate-universe-growing-faster-than-expected/
103. “We may have Overestimated the Expansion rate of the Universe,” Science, J. Walker, 2015, http://www.digitaljournal.com/science/the-expansion-of-the-universe-may-be-much-slower-than-we-thought/article/430558
104. “Faster Than Light? Neutron-Star Merger Shot Out a Jet with Seemingly Impossible Speed,” Space, M. Wall, 2018, https://www.space.com/41724-neutron-star-merger-superfast-jet.html
105. “The Painlevé-Gullstrand ‘Extension’ - A Black Hole Fallacy,” American Journal of Modern Physics, S. J. Crothers, 2016, http://vixra.org/pdf/1512.0089v1.pdf
106. “Thousands of Black Holes May Lurk at the Galaxy's Center,” Nat Geo, S. Gibbens, 2018, https://news.nationalgeographic.com/2018/04/black-hole-stellar-binary-stars-milky-way-galaxy/
107. “Gravitational Waves Could Collide Sucking Earth Into a Black Hole,” Newsweek, K. Gander, 2018, https://www.newsweek.com/gravitational-waves-could-collide-sucking-earth-black-hole-1097203
108. “ Does Dark Matter Ever Die?” PBS/KET, K. Becker, 2018, http://www.pbs.org/wgbh/nova/next/physics/dynamical-dark-matter/
109. “The frustrating and fascinating world of dark matter research,” ScienceNordic, N. G. Nielsen, 2018, https://phys.org/news/2018-03-frustrating-fascinating-world-dark.html
110. K. Haynes, “What is Dark Matter..., Even the Best Theories are Crumbling,” 2018, Available on http://blogs.discovermagazine.com/crux/2018/09/21/the-dark-matter-crisis/#.W7u0CGhKjct
111. “Yes, The Multiverse Is Real, But It Won’t Fix Physics,” E. Siegel, 2018, https://medium.com/starts-with-a-bang/yes-the-multiverse-is-real-but-it-wont-fix-physics-82beaed322b
112. “Variations Between Dust and Gas In The Diffuse Interstellar Medium 3. Changes In Dust Properties,” W. T. Reach et al., 2018, https://arxiv.org/pdf/1808.03316.pdf
113. “Hall effect-driven formation of gravitationally unstable discs in magnetized molecular cloud cores,” J. Wurster et al., 2018, https://arxiv.org/pdf/1808.04376.pdf
114. “21-cm Fluctuations from Charged Dark Matter,” J. B. Muñoz, 2018, https://arxiv.org/abs/1804.01092
115. “Does Some Dark Matter Carry an Electric Charge?” Harvard Smithsonian CFA, 2018, https://www.cfa.harvard.edu/news/2018-08
116. “On the loadstone and magnetic bodies and on the great magnet the earth. A new physiology, demonstrated with many arguments and experiments,” W. Gilbert, 1893, https://archive.org/details/williamgilbertof00gilb/page/n5
117. “Birkeland current,” Wiki, https://www.plasma-universe.com/Birkeland_current
118. “Perspectives on Plasma,” http://www.plasmas.org/fusion-icf.htm
119. “How to Register a Trademark for a Company Name,” WSJ, http://guides.wsj.com/small-business/starting-a-business/how-to-trademark-a-company-name/
120. Radboud University, Astrophysics, “New theory explains missing Dark energy and Dark matter in our Universe.” J.S. Farnes, 2018, https://www.ru.nl/astrophysics/news-agenda/news/news-ru/new-theory-explains-missing-dark-energy-dark/
121. “On the Gaia DR2 distances for Galactic Luminous Blue Variables ,” N. Smith et al., 2018, https://arxiv.org/pdf/1805.03298.pdf
122. “Intrinsic Redshifts in Quasars and Galaxies.” H.Arp et al., https://www.haltonarp.com/articles/intrinsic_redshifts_in_quasars_and_galaxies.pdf
123. Astronomy and Astrophysics, “Disk stars in the Milky Way detected beyond 25 kpc from its center,” M.L. Corredoira et al., 2018, https://www.aanda.org/articles/aa/abs/2018/04/aa32880-18/aa32880-18.html

124. Astronomy and Astrophysics, ”Measuring the local matter density using Gaia DR2,” A. Widmark, 2018, https://arxiv.org/pdf/1811.07911.pdf
125. Department of Astrophysics, University of Vienna, “Discovery of a primordial water reservoir in the envelope of HH 211,” O. Dionatos, 2018, https://arxiv.org/pdf/1811.08799.pdf
126. Edge.org., “Crisis at the Foundation of Physics,” S. Giddings, https://www.edge.org/response-detail/23857
127. Nature, How the belief in beauty has triggered a crisis in physics,” A. Ananthaswamy, 2018, https://www.nature.com/articles/d41586-018-05374-9
128. Pierre-Marie Robitaille, Articles/Abstracts List, http://vixra.org/author/pierre-marie_robitaille
129. Science & Invention (August 1929) / Psychic Observer 37, "How I Control Gravitation" T.T. Brown, http://blog.lege.net/content/Gravitator_1926.pdf
130. Biefeld-Brown Effect, Wiki, https://en.wikipedia.org/wiki/Biefeld%E2%80%93Brown_effect
131. ScienceDirect, Physics Letter B Volume 787, “Search for dark matter in the form of hidden photons and axion-like particles in the XMASS detector,” 2018, https://www.sciencedirect.com/science/article/pii/S0370269318308219?via%3Dihub#fn0030
132. “What is the Mass of a Photon, M. Austern, http://math.ucr.edu/home/baez/physics/ParticleAndNuclear/photon_mass.html
133. “Does Light Have Mass?” P. Gibbs, 1997, http://www.desy.de/user/projects/Physics/Relativity/SR/light_mass.html
134. Darkstar Publications, “Uncovering the missing Secrets of Magnetism,” K.L. Wheeler, 2014, https://archive.org/details/magnetism1small/page/n13
135. Quora, “What is Precisely the Speed of Light in Fiber Optics?” https://www.quora.com/What-is-precisely-the-speed-of-light-in-fiber-optics
136. “Intrinsic and extrinsic properties,” Wiki, https://en.wikipedia.org/wiki/Intrinsic_and_extrinsic_properties
137. ResearchGate, “Is LIGO guilty of Scientific Fraud? O. E. Rossler, 2015, https://www.researchgate.net/post/Is_LIGO_guilty_of_Scientific_Fraud
138. “The 2017 Nobel Prize for physics was awarded to a FRAUD,” D. Chakalov, 2017. http://vixra.org/pdf/1712.0017v1.pdf
139. “Matter Emerges - A Group Project Proposal,” W. R. Giordano, 2018, https://www.academia.edu/37980100/Matter_Emerges_-_A_Group_Project_Proposal
140. “Tired Light,” Wiki, https://en.wikipedia.org/wiki/Tired_light
141. “Can "tired light theory" explain the observed redshifts of galaxies? (Intermediate) K. Masters, 2015, http://curious.astro.cornell.edu/about-us/110-the-universe/cosmology-and-the-big-bang/alternate-theories/670-can-tired-light-theory-explain-the-observed-redshifts-of-galaxies-intermediate
142. “Errors in Tired Light Cosmology,” E.L. Wright, 2008, http://www.astro.ucla.edu/~wright/tiredlit.htm
143. “Tired Light and Type Ia Supernovae Observations,” H. Holushko, http://bourabai.kz/articles/snt.pdf
144. “Time Dilation in Type Ia Supernova Spectra at High Redshift,” S. Blondin et al., 2008, https://arxiv.org/pdf/0804.3595.pdf
145. “Spiral Galaxy Rotation Curves Without Dark Matter or MOND – Two Conjectures,” T. Biswas, 2018, https://arxiv.org/pdf/1801.09304.pdf
146. “The Expanding Universe and Hubble’s Law,” https://www.physicsoftheuniverse.com/topics_bigbang_expanding.html
147. “Relativistic Jets in Active Galactic Nuclei,” R. Blandford , D. Meier , and A. Readhead, https://arxiv.org/pdf/1812.06025.pdf
148. “Michelson–Morley experiment,” Wiki, https://simple.wikipedia.org/wiki/Michelson%E2%80%93Morley_experiment
149. “Galactic - Scale Electric Fields Could Solve Dark Matter Mystery” 2014, https://medium.com/the-physics-arxiv-blog/galactic-scale-electric-fields-could-solve-the-dark-matter-mystery-says-physicist-117a6488ba0e
150. “A galaxy lacking dark matter,” P.V. Dokkum et al., 2018, https://www.nature.com/articles/nature25767
151. “All disk galaxies rotate once every billion years,” J. Parks, 2018, http://www.astronomy.com/news/2018/03/all-galaxies-rotate-once-every-billion-years
152. “Birkeland Currents,” 2015, http://www.everythingselectric.com/birkeland-currents/
153. “Constraining the charge of the Galactic centre black hole, M.I Zajaˇcek1 et al., 2018, https://arxiv.org/pdf/1812.03574.pdf
154. “Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole,” GRAVITY collaboration, 2018, https://arxiv.org/abs/1807.09409

155. “New Simulation Sheds Light on Spiraling Supermassive Black Holes,” J. Kazmierczak, 2018, https://www.nasa.gov/feature/goddard/2018/new-simulation-sheds-light-on-spiraling-supermassive-black-holes
156. “Cloudlets Swarm Around our Local Supermassive Black Hole,” 2018, https://www.almaobservatory.org/en/audiences/cloudlets-swarm-around-our-local-supermassive-black-hole/
157. “Black Hole 'Donuts' are Actually 'Fountains,” 2018, https://alma-telescope.jp/en/news/press/agn-201811
158. “Cosmic Fountain Powered by Giant Black Hole,” 2018, http://www.chandra.harvard.edu/photo/2018/a2597/
159. “Measurement of the Electric Current in a kpc Scale Jet,” P. P. Kronberg et al., 2011, http://iopscience.iop.org/article/10.1088/2041-8205/741/1/L15/pdf
160. “The jets of AGN as giant coaxial cables,” D. C. Gabuzda, M. Nagle and N. Roche, 2017, https://arxiv.org/pdf/1712.08414.pdf
161. “Birkeland Currents: A Force-Free Field-Aligned Model,” D.E. Scott, 2015, http://www.ptep-online.com/2015/PP-41-13.PDF
162. “Electric Universe: has there ever been a scientific research program?” http://www.internationalskeptics.com/forums/showthread.php?s=a6a26562dfa9ead7772d677dbad6a74d&t=302933&page=3&styleid=50
163. “Accelerating expansion of the universe,” Wiki, https://en.wikipedia.org/wiki/Accelerating_expansion_of_the_universe
164. “Spin Physics,” Wiki, https://en.wikipedia.org/wiki/Spin_(physics)
165. “Quantum gas goes below absolute zero, Ultracold atoms pave way for negative-Kelvin materials.” Z. Merali, 2013, https://www.nature.com/news/quantum-gas-goes-below-absolute-zero-1.12146
166. Physics Stack Exchange, “What are the calculations for Vacuum Energy?” 2012, https://physics.stackexchange.com/questions/22468/what-are-the-calculations-for-vacuum-energy
167. The Guardian, “Universe recreated in massive computer simulation,” I. Sample, 2014, https://www.theguardian.com/science/2014/may/07/universe-recreated-computer-simulation-model-big-bang
168. Science Alert, “Astrophysicists Have Built The Most Detailed Simulation of The Universe Ever Created” M. Mcrae, 2018, https://www.sciencealert.com/most-advanced-illustris-next-generation-computer-model-universe-simulations
169. CERN, (Science), “ Dark Matter,” https://home.cern/science/physics/dark-matter
170. CERN, (Science), “ “The Brout-Englert-Higgs Mechanism,” https://home.cern/science/physics/higgs-boson
171. The Guardian News Blog, “Higgs boson announcement: Cern scientists discover subatomic particle,” 2012, https://www.theguardian.com/science/blog/2012/jul/04/higgs-boson-discovered-live-coverage-cern
172. NewScientist, “ Galaxies in filaments spaced like pearls on a necklace,” L. Kruesi, 2014, https://www.newscientist.com/article/dn26598-galaxies-in-filaments-spaced-like-pearls-on-a-necklace/
173. “Galaxies,” Prof S. Phillipps, 2009, http://www.star.bris.ac.uk/sxp/galaxiesnotes_short.pdf
174. Nature, “A Vast Thin Plane of Co-rotating Dwarf Galaxies Orbiting the Andromeda Galaxy,” R.A. Ibata et al., 2013, https://arxiv.org/abs/1301.0446
175. Ask an Astronomer, “Are the planes of solar systems aligned with the plane of the Galaxy? (Intermediate), C. Springob, 2015, http://curious.astro.cornell.edu/about-us/159-our-solar-system/the-sun/the-solar-system/236-are-the-planes-of-solar-systems-aligned-with-the-plane-of-the-galaxy-intermediate
176. Astronomy, “All disk galaxies rotate once every billion years” J. Parks, 2018, http://www.astronomy.com/news/2018/03/all-galaxies-rotate-once-every-billion-years
177. National Geographic, “This Galaxy Has Almost No Dark Matter—and Scientists Are Baffled,” N. Drake, 2018, https://news.nationalgeographic.com/2018/03/dark-matter-galaxy-gravity-dragonfly-physics-space-science/
178. “On the absence of dark matter in dwarf galaxies surrounding the Milky Way,” F. Hammer et al., 2018, https://arxiv.org/pdf/1812.10714.pdf
179. New Scientist, “Half the Universe’s Missing Matter has Just Been Found,” L. Crane, 2017, https://www.newscientist.com/article/2149742-half-the-universes-missing-matter-has-just-been-finally-found/
180. NASA, “Faint Glow Within Galaxy Clusters Illuminates Dark Matter,” L.Ramsay and R. Villard, 2018, https://www.nasa.gov/image-feature/goddard/2018/faint-glow-within-galaxy-clusters-illuminates-dark-matter
181. Penn State, “Beyond the Black Hole Singularity,” S. Sholtis, 2018, https://news.psu.edu/story/552527/2018/12/20/research/beyond-black-hole-singularity
182. UC Berkeley, “Black holes ruled out as universe’s missing dark matter,” R. Sanders, 2018, https://news.berkeley.edu/2018/10/02/black-holes-ruled-out-as-universes-missing-dark-matter/

183. ESO, “Most Detailed Observations of Material Orbiting close to a Black Hole,” GRAVITY collaboration, https://www.eso.org/public/news/eso1835/
184. ALMA, “ Mystery of coronae around supermassive black holes deepens,” 2018, https://alma-telescope.jp/en/news/press/blackhole-201812
185. “On the charge of the Galactic centre black hole,” M. Zajaˇcek et al., 2018, https://arxiv.org/pdf/1808.07327.pdf
186. “Relativistic Jets in Active Galactic Nuclei,” R. Blandford , D. Meier , and A.Readhead 2018, https://arxiv.org/pdf/1812.06025.pdf
187. Oxford Academic, “ Dark matter heats up in dwarf galaxies,” J. I. Read, M. G.Walker and P. Steger, 2019, https://academic.oup.com/mnras/advance-article/doi/10.1093/mnras/sty3404/5265085
188. Progress in Physics, “Birkeland Currents and Dark Matter,” D.E. Scott, 2018, http://www.ptep-online.com/2018/PP-53-01.PDF
189. “Oscillation modes of ultralight BEC dark matter cores,” F. S. Guzman, 2019, https://arxiv.org/pdf/1812.11612.pdf
190. AGU100, “ Earthquake Lights: Mechanism of Electrical Coupling of Earth's Crust to the Lower Atmosphere,” J. Jansky and V. P. Pasko, 2018, https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2018JD028489
191. AGU100, “ Geomagnetically Induced Currents Caused by Interplanetary Shocks With Different Impact Angles and Speeds,” D. M. Oliveira, 2018, https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2018SW001880
192. Imperial College London, “Volcanoes fed by ‘mush’ reservoirs rather than molten magma chambers,” H. Dunning, 2018, https://www.imperial.ac.uk/news/189371/volcanoes-mush-reservoirs-rather-than-molten/
193. Science Daily, “ New imagery solves mystery of why Mount St. Helens is out of line with other volcanoes,” Oregon State University (source,) 2018, https://www.sciencedaily.com/releases/2018/09/180904093838.htm
194. “The Earth’s Ring Current: Causes Generation and Decay,” D. J. Williams, http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?1983SSRv...34..223W&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf
195. NASA, “NASA Research Reveals Saturn is Losing Its Rings at “Worst-Case-Scenario” Rate,” 2018, https://www.nasa.gov/press-release/goddard/2018/ring-rain
196. NASA, “Groundbreaking Science Emerges from Ultra-Close Orbits of Saturn,” 2018, https://www.jpl.nasa.gov/news/news.php?feature=7251
197. Phys.org., “The water in Saturn's rings and satellites is like that on Earth except for moon Phoebe, which is out of this world,” 2018, https://phys.org/news/2018-12-saturn-satellites-earth-moon-phoebe.html
198. “Inductance Modeling Using New Electromagnetism,” R.J. Distini, 2007, http://www.distinti.com/docs/neThesis.pdf
199. “New Constraints on Sterile Neutrino Dark Matter from NuSTAR M31 Observations,” K. C. Y. Ng et al., 2019, https://arxiv.org/pdf/1901.01262.pdf
200. “Atmospheric Structure and Radiation Pattern for Neutron-Star Polar Caps Heated By Magnetospheric Return Currents,” M.I Baubock, D.S Psaltis , and F. Özel, 2019, https://arxiv.org/pdf/1901.01274.pdf
201. “The Proton-Electron Atom,” E. Kaal, 2017, https://etherealmatters.org/sites/default/files/2018-02/Presentation%20SAM%202017.pdf
202. “Positron Emission,” Wiki, https://en.wikipedia.org/wiki/Positron_emission
203. The Astrophysical Journal Letters, “ Counter-Rotation in Relativistic Magnetohydrodynamic Jets,” V. Cayatte et al., 2014, http://iopscience.iop.org/article/10.1088/2041-8205/788/1/L19/pdf
204. British Antarctic Survey (BAS) “ A New way To Create Saturn’s Radiation Belts,” 2018, https://www.bas.ac.uk/media-post/a-new-way-to-create-saturns-radiation-belts/
205. Science Magazine, New Series Volume 238, “ The Jupiter-Io Connection: An Alfvén Engine in Space,” J.W. Belcher, 1987, https://www.jstor.org/stable/1700040?seq=1#page_scan_tab_contents
206. NewScientist, “Fast-spinning neutron star smashes speed limit,” M. McKee, 2006, https://www.newscientist.com/article/dn8576-fast-spinning-neutron-star-smashes-speed-limit/
207. ResearchGate, “Why don't fast spinning stars don't explode? T.D. Mees, https://www.researchgate.net/post/Why_dont_fast_spinning_stars_dont_explode
208. Sky News, “Zombie star' baffles scientists by surviving supernovae,” 2017, https://news.sky.com/story/zombie-star-baffles-scientists-by-surviving-supernovae-11119311
209. ExoPolitics.org., “ Impending Solar Flash Event Supported by Scientific Studies & Insider Testimony,” Dr. M. Salla, 2019, https://www.exopolitics.org/impending-solar-flash-event-supported-by-scientific-studies-insider-testimony/
210. Iflscience.com, “Dwarf Star Emits Solar Flare 10,000 times Stronger than anything seen from Our Sun,” https://www.iflscience.com/space/dwarf-star-emits-solar-flare-10000-times-stronger-anything-seen-our-sun/

211. “Piezoelectrically Tuned Multimode Cavity Search for Axion Dark Matter,” C. Boutan et al., 2019, https://arxiv.org/pdf/1901.00920.pdf
212. ESA/Space Science, “ Active Galaxies Point to new Physics of Cosmic Expansion,” 2019, http://www.esa.int/Our_Activities/Space_Science/Active_galaxies_point_to_new_physics_of_cosmic_expansion
213. POS, “On the tension between Large Scale Structures and Cosmic Microwave Background,” M. Douspis, L. Salvati and N. Aghanim, 2019, https://arxiv.org/pdf/1901.05289.pdf
214. Department of Physics, Visva-Bharati University, India, “Configuration entropy of the Cosmic Web: Can voids mimic the dark energy?” B. Pandey, 2019, https://arxiv.org/pdf/1901.08475.pdf
215. Nature International Journal, “An experiment to search for dark-matter interactions using sodium iodide detectors,” The COSINE-100 Collaboration, 2019, https://www.nature.com/articles/s41586-018-0739-1#change-history
216. Astrophysical Journal Letters, “A SECOND GALAXY MISSING DARK MATTER IN THE NGC 1052 GROUP,” P.V. Dokkum et al., 2019, https://arxiv.org/pdf/1901.05973.pdf
217. “Ruling out ~ 100 − 300 GeV thermal relic annihilating dark matter by radio observation of the Andromeda galaxy,” M. H. Chan et al., 2019, https://arxiv.org/pdf/1901.04638.pdf
218. Nature International Journal, “Heart of a stellar explosion revealed,” E. Nakar, 2019, https://www.nature.com/articles/d41586-019-00043-x
219. University of Cologne Institute of Geophysics and Meteorology, “Time-Variable Electromagnetic Star-Planet Interaction: THE Trappist-1 System As An Exemplary Case,” C. Fischer and J. Saur, 2019, https://arxiv.org/pdf/1901.02747.pdf
220. “A Common Language for Electrical Engineering: Lone Pine Writings, Volume 1,” E. Dollard, 2015
221. Journal of Atmospheric and Solar-Terrestrial Physics, “A global atmospheric electricity monitoring network for climate and geophysical research,” K.A. Nicoll et al., 2019, https://www.sciencedirect.com/science/article/pii/S1364682618304541
222. NewScientist, “Shooting clouds with lasers triggers electrical discharge,” F. Graham, 2008, https://www.newscientist.com/article/dn13669-shooting-clouds-with-lasers-triggers-electrical-discharge/
223. “Progress in the Global Modeling of the Galactic Magnetic Field,” M. Unger, and G. Farrar, https://arxiv.org/pdf/1901.04720.pdf
224. NCar and Ucar News, “ Solar Flares: From Emergence to Eruption,” L. Snider, 2019, https://news.ucar.edu/132648/emergence-eruption
225. “Still Missing Dark Matter: KCWI High-Resolution Stellar Kinematics of NGC1052-DF2,” S. Danieli et al., 2019, https://arxiv.org/pdf/1901.03711.pdf
226. “SENSEI: Direct-Detection Constraints on sub-GeV Dark Matter from a Shallow Underground Run Using a Prototype Skipper-CCD,” The SENSEI Collaboration, 2019, https://arxiv.org/pdf/1901.10478.pdf
227. “Detailed Solar System dynamics as a probe of the Dark Matter hypothesis,” X. Hernandez, 2019, https://arxiv.org/pdf/1901.10605.pdf
228. “The Photon Underproduction Crisis,” J.A. Kollmeier et al., 2014, https://arxiv.org/pdf/1404.2933.pdf
229. C/Net Science and Tech, “Universe's missing photon sources baffle scientists,” M. Franco, 2014, https://www.cnet.com/news/universes-missing-photons-baffle-scientists/
230. Academia, “ On the Geometry of Our Universe,” W.R. Giordano, 2016, https://www.academia.edu/27815784/On_the_Geometry_of_Our_Universe_Rev._Aug._15_2016_
231. Penn State News, “ Beyond The Black Hole Singularity,” S. Sholtis. 2018, https://news.psu.edu/story/552527/2018/12/20/research/beyond-black-hole-singularity’
232. Universite de Geneve, “Universe: the orderly chaos of black holes,” 2019, https://www.unige.ch/communication/communiques/en/2019/le-chaos-ordonne-des-trous-noirs/
233. NASA, “Birth of Massive Black Holes in the Early Universe Revealed,” 2019, https://www.nasa.gov/feature/goddard/2019/birth-of-massive-black-holes-in-the-early-universe-revealed
234. Berkeley Lab News, “How to Escape a Black Hole: Simulations Provide New Clues to What’s Driving Powerful Plasma Jets,” G. Roberts, Jr., 2019, https://newscenter.lbl.gov/2019/01/24/how-to-escape-a-black-hole-simulations-provide-new-clues-to-whats-driving-powerful-plasma-jets/
235. “WIMPs and stellar-mass primordial black holes are incompatible,” J. Adamek et al., 2019, https://arxiv.org/pdf/1901.08528.pdf

236. Astrophysics Journal, “ Constraining the BlackHole Initial Mass Function with Ligo/Virgo observations,” R. Perna et al., 2019, https://arxiv.org/pdf/1901.03345.pdf
237. “On The Apparent Dichotomy Between The Masses Of Black Holes Inferred Via X-Rays And Via Gravitational Waves,” R. Perna et al., 2019, https://arxiv.org/pdf/1901.03345.pdf
238. “Blandford–Znajek process, Wiki, https://en.wikipedia.org/wiki/Blandford%E2%80%93Znajek_process
239. Journal of the Korean Physical Society, “Blandford-Znajek mechanism versus Penrose process,” S. S. Komissarov, 2008, https://arxiv.org/abs/0804.1912
240. Plasma Resources.com, “General Relativity: In Acknowledgement Of Professor Gerardus ‘t Hooft, Nobel Laureate,” S.J. Crothers, 2014, http://vixra.org/pdf/1409.0072v9.pdf
241. Einstein Wrong, “Retired NASA Scientist,” E. Dowdye, https://einsteinwrong.com/site/dr-edward-dowdye/
242. Review in Physics, Volume 4, “The experimental status of direct searches for exotic physics beyond the standard model at the Large Hadron Collider,” S. Rappoccio, 2019, https://www.sciencedirect.com/science/article/pii/S2405428318300121
243. “Pontecorvo–Maki–Nakagawa–Sakata matrix,” Wiki, https://en.wikipedia.org/wiki/Pontecorvo%E2%80%93Maki%E2%80%93Nakagawa%E2%80%93Sakata_matrix
244. Astronomy & Astrophysics manuscript, “Solar wind charge exchange in cometary atmospheres II. Analytical model,” C.S. Wedlund et al., 2019, https://arxiv.org/pdf/1901.07854.pdf
245. Astronomy & Astrophysics manuscript, “The kinematics of local thick discs do not support an accretion origin,” S. Comerón et al., 2019, https://arxiv.org/pdf/1901.10294.pdf
246. NASA, Jet Propulsion Lab, “Groundbreaking Science Emerges from Ultra-Close Orbits of Saturn,” 2018, https://www.jpl.nasa.gov/news/news.php?feature=7251
247. University of Cambridge Research, “ Mystery orbits in outermost reaches of solar system not caused by Planet Nine, say researchers,” 2019, https://www.cam.ac.uk/research/news/mystery-orbits-in-outermost-reaches-of-solar-system-not-caused-by-planet-nine-say-researchers
248. “A Fruit of a Different Kind: 2015 BP519 as an Outlier among the Extreme Trans-Neptunian Objects,”C. de la Fuente Marcos and R. de la Fuente Marcos, 2018, https://arxiv.org/pdf/1809.02571.pdf
249. “Discovery and Dynamical Analysis of an Extreme Trans-Neptunian Object with a High Orbital Inclination,” J.C. Becker et al., 2018, https://arxiv.org/pdf/1805.05355.pdf
250. “New Jupiter Satellites and Moon-Moon Collisions,” S.S.Sheppard et al., 2018, https://arxiv.org/pdf/1809.00700.pdf
251. Phys.org., “Thin current sheets in space: where the action is,” 2012, https://phys.org/news/2012-08-thin-current-sheets-space-action.html
252. “Current sheets in the wake of an eruption of two crossing filaments,” J. Dai et al., 2018, https://arxiv.org/pdf/1811.08563.pdf
253. The Astrophysical Journal, “Current Sheets in the Solar Corona,” H. R. Strauss and N. F. Otani, 1988, http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?1988ApJ...326..418S&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf
254. Institute of Laser Physics, Novosibirsk, Russia “Collapse of neutral current sheet and reconnection at micro-scales,” I. F. Shaikhislamov, https://arxiv.org/ftp/arxiv/papers/1711/1711.11284.pdf
255. The Astrophysical Journal, “ Current Sheet Formation in the Interstellar Medium,” E.G. Zweibel and A. Brandenburg, 1997, https://iopscience.iop.org/article/10.1086/303824/pdf
256. University of Crete, Department of Physics, “ The Musca molecular cloud: An interstellar symphony,” 2018, https://www.physics.uoc.gr/en/565958200