

“Strange Particles”: Plasmoids and the Need for Paradigm Change in Physics

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I received the email reproduced below, and I thought it might be a good set of propositions to write about because the ideas therein are common among cold fusion researchers. Some researchers hold that the “strange traces” of the Russians are caused by monopoles, especially what is called the Lochak monopole that is a theorized kind of “leptonic monopole.” Many in the cold fusion field, especially older researchers, say that there is no need for any kind of paradigm shift. They say that their own quantum mechanics (QM) theories are correct or that they don’t see a need for a drastic revision of QM. They say the anomalies of cold fusion can be explained by QM one day. To me, this is nonsense. Their attempts haven’t worked for 30 years, and they keep ignoring all the anomalies of plasmoid phenomena.

Here is the email message I received:

It is well known that we study the world around us, based on some basic theoretical constructs, which are a generalization of well-established experimental facts.

Such basic models are, in particular, electrodynamics and quantum mechanics, the validity of which is confirmed by the coincidence of the results of calculations with the results of experiments. Of course, these theories are valid at certain scales (at not very small distances, at moderate energy, etc.).

The problem of the structure of the atom belongs to the field where the laws of electrodynamics and quantum mechanics work very reliably. In my opinion, all the effects that are observed in these systems should be in good agreement with these theories.

Of course, sometimes at the scale of atoms and nuclei such phenomena are recorded that, at first glance, it is difficult to explain with the help of “standard” models of atomic and nuclear physics. Such processes include, in particular, the LENR phenomena. The actual question is: is it necessary to rebuild the entire theoretical basis for each such phenomenon (or process)?

If you take this position, then a natural question arises—how to be with the billions of facts and results that are already perfectly consistent with the existing theoretical model?

Based on this concept, I believe that at the moment there are no reasons to abandon the existing “quasiplanetary” model of the atom and proton-neutron model of nuclei, interpreted on the basis of quantum mechanics. It adequately describes all the properties of atoms and nuclei.

On the other hand, I confirm the authors’ right to their model (in particular, to the model of some plasmoids). But in this case they must show that this model leads to the same well-established results (in particular, to the spectrum of electromagnetic transitions, to the selection rules, etc.).

The same applies to the LENR phenomenon.

I believe that the concept is erroneous when for each manifestation of LENR (in crystals, gases, liquids, electrical discharges, biological systems, for light and heavy nuclei, etc., including the prohibition of the synthesis of radioactive daughter isotopes and the suppression of gamma radiation during LENR) built its own separate model. In my opinion (and I confirm this on the basis of my calculations), these processes are described by a single mechanism, which ideally agrees well with quantum mechanics.

This is in very good agreement with the principles of the “Okama razor”—do not create entities (*i.e.* models) up needed!

Regarding incomprehensible tracks and holes, which are sometimes observed in experiments, they must first of all be carefully examined (to make sure they are reliable!) and only then build a model. A typical example is, in my opinion, our old experiments in the Proton 21 laboratory, where we first carefully studied all the parameters and then created a possible process model that does not contradict quantum mechanics and electrodynamics—the model of a magnetic monopole...

The topic of experimental plasmoids was developed first by Winston Bostick in the U.S. and then by Ken Shoulders. It seems to me that the person who sent this email hasn’t studied the literature on plasmoids by Bostick, Shoulders and others. The person never mentioned them. It is critical that people are well-read in existing plasmoid scientific literature before critiquing groundbreaking paradigms.

There are those say that Russian researchers were and are still simply producing plasmoids of the kind long studied by Shoulders and other Americans, and they saw no reason to believe these are a strange type of monopole that needed a whole new theory on special leptonic monopoles developed for their discovery. Ken Shoulders explains this in a 2007 paper.¹

Yet there are still people insisting that these are monopoles, but they don’t seem to acknowledge the prior work on plasmoids at all. So for this long going difference of

opinion now two decades long, I'm writing this. Readers are encouraged to think through this issue, read my writings and Shoulders' writings and Thomas Kuhn's *The Structure of Scientific Revolutions*.

For example, Shoulders' 2007 article "EVOs and the 'Strange' Particles of L.I. Urutskoev"¹ explains that Urutskoev and the many others (Russian and French mainly) who started research in this area following up on Urutskoev's research are simply finding "EVOs." EVO ("exotic vacuum object") was a name Shoulders coined to replace the original acronym "EV." EV originally meant electrical vortex, but since he found no evidence of a vortex, Shoulders stopped believing in that concept. Then, he started saying that the name meant "*electrum validum*." Later, in the 1990s or 2000s, he started calling them EVOs. However, I myself don't think of these as being some sort of objects of an energetic vacuum or an aether, as some theorists describe them. There may be such an "exotic vacuum," but I never think of ball lightning-like phenomena in this way. I don't think that Shoulders was ever firmly convinced about the existence of such an energetic vacuum, although he worked with people who did, such as Jack Sarfatti. Shoulders seemed to think the exotic vacuum idea was plausible. I might not understand his appreciation of the idea accurately though.

I myself conceptualize microplasmoids and anomalous ball lightning as simply something like clumped electricity. I don't believe in a nuclear model of atoms, but I think of atoms as perhaps structured much like ball lightning even though when atoms are in a dormant state, their behavior is much different than when they are in the black, white or grey plasmoid states. Most atoms on this planet are in the normal dormant liquid, gas, solid or plasma states, and as far as is evident on the surface of this planet, only a small percentage of material is in a plasmoid state. However, I'm speculating that plasmoid state atoms are common deep below the surface. However, atoms or molecules can convert to a plasmoid state, and when they move, they can also carry along atoms or molecules in a normal state in certain circumstances.

I think of microplasmoids and anomalous ball lightning as being in a state of matter that was previously unidentified until I independently understood the existence of micro ball lightning, their causal role in transmutation, and atoms as ball lightning-like microplasmoids in 1992. When I told the micro ball lightning idea to Takaaki Matsumoto in 1992, he accept-

ed the idea quickly. He told me that before I wrote him, he never heard of ball lightning. But he soon became one of the world's experts on the subject. In early 1992, I also wrote Shoulders about how the micro ball lightning/microplasmoids he studied for more than ten years caused the massive amount of atomic transmutation (reported by Matsumoto and other researchers in 1992 and before) and caused Matsumoto's plasmod markings too. Then he started studying their role in transmutation. Based on his reports, I don't see that he studied or realized the causal connection of microplasmoids to atomic transmutation phenomena of the kind discovered by Matsumoto before I told him.

EV and EVO were purposefully non-meaningful names Shoulders chose because he said he wanted some sort of names devoid of meaning for the phenomena. He knew that in Bostick's plasmoids there are smaller objects he called EVOs and other names over the years. I call these smaller objects simply plasmoids or active plasmoids. Or I call them ball lightning-like plasmoids or sometimes simply micro ball lightning.

Scientific Revolutions (Paradigm Shifts) Happen About Every 80 Years

In the history of science as taught by historians such as Thomas Kuhn in *The Structure of Scientific Revolutions*, it is shown that periodically (it works out to 80 years on average), various scientific fields have scientific revolutions. The development of science is not "incremental," as Kuhn called it, but revolutionary. Periodically, there are revolutionary changes in physics where one "paradigm" is replaced by another.

This happened with QM/relativity theory replacing the experimentally contradicted hypotheses of classical field theory starting around the year 1905. Before that, classical field theory replaced the fluid paradigm in the early to middle 1800s. These theory replacements happened approximately every 80 years all the way back to when Copernicus first formulated his theory in the year 1506.

The person who sent me the email wrote: "[I]s it necessary to rebuild the entire theoretical basis for each such phenomenon (or process)? If you take this position, then a natural question arises—how to be with the billions of facts and results that are already perfectly consistent with the existing theoretical model? Based on this concept, I believe that at the moment there are no reasons to abandon the existing 'quasi-planetary' model of the atom and proton-neutron model of nuclei, interpreted on the basis of quantum mechanics. It adequately describes all the properties of atoms and nuclei."

My response was: I agree that QM can explain thousands and maybe millions of observed effects. Thousands of people have labored for decades to make this so. But it doesn't mean that there is no need now for a change of paradigm. As Kuhn described in his book, repeatedly, one of the main arguments against a new paradigm is that people say: "The old reliable theory works well for the myriad of observed effects and has been proven so accurately predictive for decades..."

The simple answer of someone proposing a new paradigm model is something like this: "The old theory can't resolve all the important anomalies that have more recently been discovered such as..." Then they make a list of what they think are the big anomalies.

I suggest that people who want to understand these top-

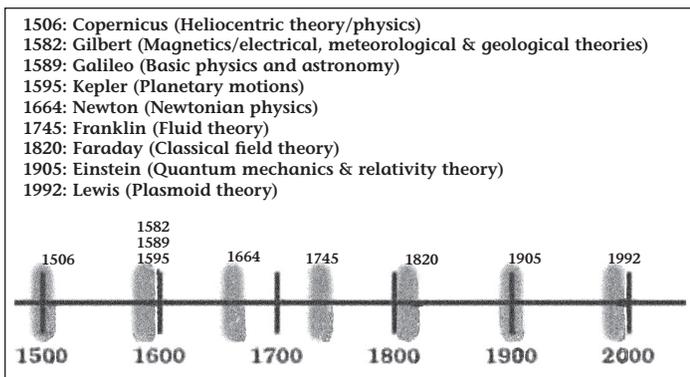


Figure 1. Timeline of the history of science showing the dates of first formulation of theory of these scientists and general names for the paradigms. The second paradigm was formulated by Galileo, Kepler and Gilbert, and their theories were similar. The grey vertical lines show the eras of the crisis periods.

ics—scientific revolutions and when and how they happen, and plasmoids—read Kuhn’s book, Shoulders’ writings and my book *The Periodic Production of Rationalized Phenomena and the Past Periodic Depressions*.

Figure 1 is a chart of the paradigm shifts in physics since Copernicus. This timeline was drawn by me about the year 2000. The chart shows how the major paradigm shifts in physics, if plotted on a timeline, do show a clear 80-year periodic pattern.

Plasmoid Markings (Traces) from the Past and from Space

Figure 2 shows a ring plasmoid skimming and hopping on Takaaki Matsumoto’s nuclear emulsion (film used to get traces of particles). At ICCF5 in 1995, Matsumoto distributed the booklet “Artificial Ball Lightning: Photographs of Cold Fusion.”

Figure 3 was taken by me around October 1996 on a lexan plastic casing of Ni/plastic Run #8² from George Miley’s lab of an electrolysis cell that had evidenced much atomic elemental transmutation that Miley subsequently wrote papers about. Later, when Ken Shoulders visited the lab, I showed him these casings and casing pieces I had sectioned and studied, and he said he saw many plasmoid markings on them also.

Often, we see that a chain of plasmoids form a circle as in Figure 3. Shoulders called these formations “necklaces.” For more information about the experiment and this picture, see my 1997 article about it on my site.²

In Figure 4, we see a typical plasmoid ring necklace mark Shoulders showed people from his 1980s experimental lab research.³

In Figures 5 and 6, there are plasmoid marks by Savvatimova in the early to middle of the decade of the 2000s.⁴ We see two types of typical patterns. In Figure 5, these are what I call trenches. A moving active micro plasmoid (white state or maybe grey state) dug the trenches. Trying to determine where the material goes and how the

material along the sides of the trench (you can see some uplifted material we call “sloshing” along the rims) are transmuted, transformed, moved, etc. when it was in an active atomic plasmoid state is part of the fun.

The material doesn’t always all revert back to a normal dormant atomic state quickly. There might still be active patches in that sample if the sample still exists.

Figure 6 shows typical tracks. Sort of like trenches or bead chain markings. It is these kinds of markings that the Russians started calling “caterpillar track” markings. The different kinds of patterns that have been discovered to date around the world are astounding and mirrored in astrophysical phenomena and terrestrial phenomena.

Figure 7 shows a ball lightning/lightning-caused rille or trench dug by such a thing in the ground. The picture was taken in the 1940s. All lightning bolts have leading ball lightnings that go ahead of them and somehow set their channels. This was a discovery of Ken Shoulders back in the 1980s, and he described this effect in his earliest patents of around the year 1990. What we see as electrical discharge strokes (whether microscopic, common types such as static electricity discharges, or atmospheric or celestial discharges) are led by a plasmoid object that sets the trail up.

You can see in Figures 5-7 two common types of linear plasmoid tracks: clear trenches, grooves or ditches as in Figures 5 and 7 and the pits in a line or row as the right one in Figure 6. Figures 5 and 7 clearly show the marks of moving individual objects or a chain of plasmoids in a chain that dug the trenches.

Figure 6 shows the fairly common mark pattern of pits set in a line. Such pits in lines like that are caused by two different plasmoid behaviors when a plasmoid impinges on a surface: one is called the “plasmoid chain effect.” That is, connected plasmoids in a line similar to a chain of beads lands on a surface and each leaves an impression or residue of a pit or perhaps a pit with a hump. The other manner that plasmoids

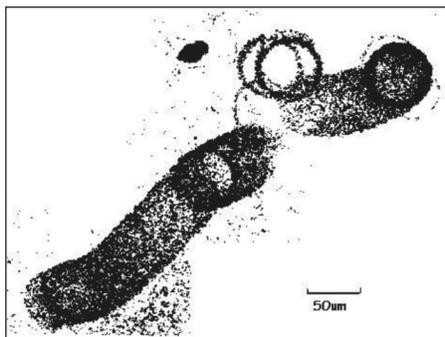


Figure 2. Ring plasmoid skimming and hopping on Matsumoto’s nuclear emulsion.

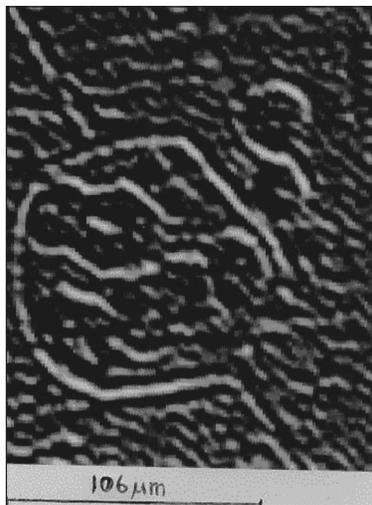


Figure 3. Several plasmoid ring marks (not very clear in this small picture) arranged in an interesting round cluster. Another ring is on the top right of it. It is about 106 micrometers wide. It was photographed by me on the lexan casing of Ni/plastic Run #8 that evidenced much elemental transmutation.

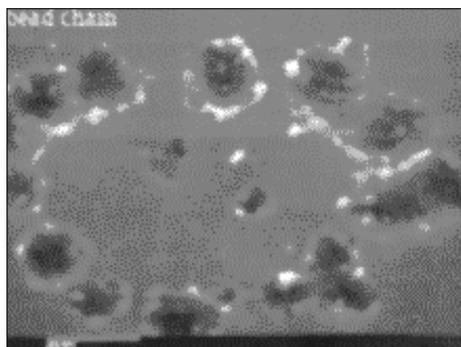


Figure 4. Plasmoid ring “necklace.” Scale is 25 micrometers.

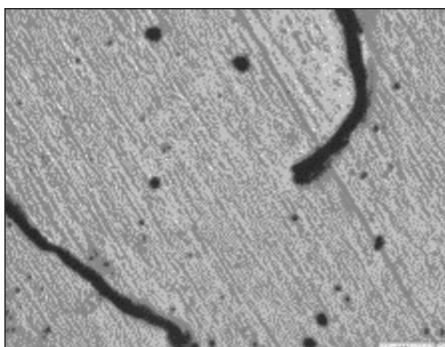


Figure 5. Plasmoid trench marks.

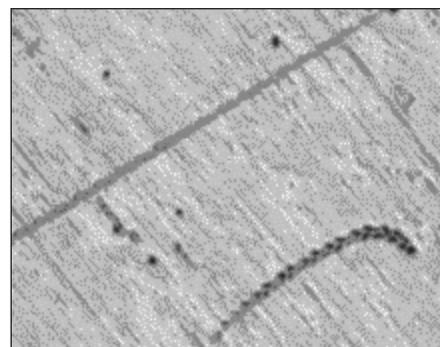


Figure 6. Plasmoid chain or “caterpillar” markings.

leave pits in lines is the plasmoid hopping effect. That is, one singular plasmoid can skip along on a surface and leave a series of pits in its wake. This is quite a common behavior that Ken Shoulder's wrote extensively about. Matsumoto's picture in Figure 2 shows a hopping effect reminiscent of a tornado track.

However, I want to point out that not all plasmoid pit chains that are observable on the surface of an object or a body are due to chains landing on a surface or individual plasmoids leaving behind hopping marks. A third way (there may be others also) that a plasmoid may leave a chain mark is by boring a tunnel below the surface, but it bores close enough to the surface that periodic gaps are made on the surface as it bores. Daviau *et al.* in 2013⁵ published an amazing, quite detailed picture, shown in Figure 8, of such a tunnel in a sample with what looks like a "caterpillar" type track it made on the surface.

For some reason, it made holes periodically on the surface as it bored below the surface. As you can see, Daviau *et al.* shows the picture of an accompanying line of pits to the right of the tunnel that looks like a mark of a plasmoid chain (see Figure 8). It could also be the mark left of a single "hopping" plasmoid. However, hopping plasmoids tend to leave more irregular looking tracks. Plasmoids in a chain tend to arrange themselves in a characteristic equidistant size to spacing arrangement. I want to point out that the tunnel seen in Figure 8 is a portion of a long two-part track. Figure 11 of their article⁵ (not reproduced herein) seems to show that the object changed state in flight since the tunnel stops and starts again. There is a gap of about 200 micrometers in between quite abruptly. I think it is evidence it changed to a black state as it moved along. You can see there is no evidence that the plasmoid rose up out of the material. It does seem like evidence of the state transition phenomena.

It would be great if more information can be had on the details of the photo shown in Figure 7, such as what was in the pit or if anyone ever did a chemical analysis of the parts of it. If you look very closely at the area on the bottom of this trench and sort of close to the bottom of the picture on the right side near the rim, you can see about nine knobs or



Figure 7. Rille or trench caused by ball lightning.

globules of matter arranged along the side in a chain. I think I can see others similar but smaller chains in this photo. This picture is very interesting, and I wish I could get even clearer images of it. The line of nine clumps don't look like a line of pits, but they look like the line of domes, globules or hills in Figure 12. There is the same characteristic spacing that many plasmoid chains exhibit. This too, the causing of residues, humps or balls of material perhaps arranged geometrically, are another common plasmoid behavior. Balls of material are often found wherever there are discharges. I would say, though an extensive study hasn't been done, that they usually exhibit transmutation.

In general, where there is an active white or grey state plasmoid interacting with any dormant atoms (I call atoms not in a plasmoid state dormant atoms), the atoms will change state, even momentarily, to different kinds of plasmoids and exhibit this spectrum of common behaviors depending on what state they change to and other criteria: transmutation of the residues and isotopic changes, extended active plasmoid life, resultant geometrical and "growing" or transforming or transmutating atomic patterns, radiation of various types, plasmoid emission, etc.

I am not sure whether this was reported to be a trench caused by ball lightning or lightning, but either way it doesn't matter since these are similar, as I described above. And, I am not sure what the observer(s) might have actually seen or simply have inferred. It would be great to have a more accurate eye-witness report about it.

Figure 9 is a similar looking large rille on the moon called Schroeter's Valley. The rille is 160 km long and up to 10 km wide. It is one of millions of various sizes and features. The picture was taken from a craft far above it. As per above, it is uncertain whether this is due to a singular ball lightning-like object or due to multiple ball lightning-like objects (such as a chain that landed in it; notice the line of many smaller pits as if they were in a chain at the bottom of the rille). There have been many ideas about its origins, but the standard idea is that the rille is due to lava flow. But the Thunderbolts Project explains how this explanation is not plausible.⁶

Figure 10 is another rille on the moon, called Rima

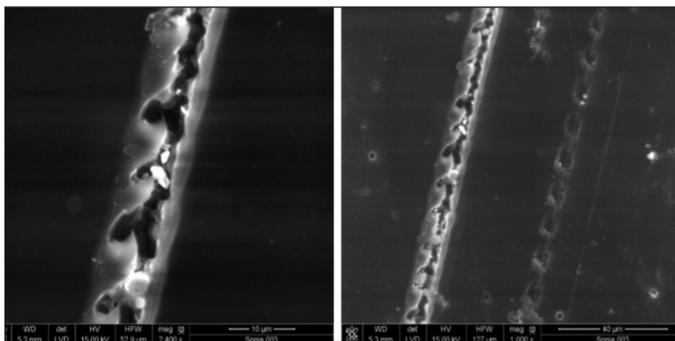


Figure 8. Detailed view of a long tunnel track that was divided into two segments. You can see the characteristic "caterpillar" track pattern on the surface and the tunnel. To the right, there is a chain or hopping track.

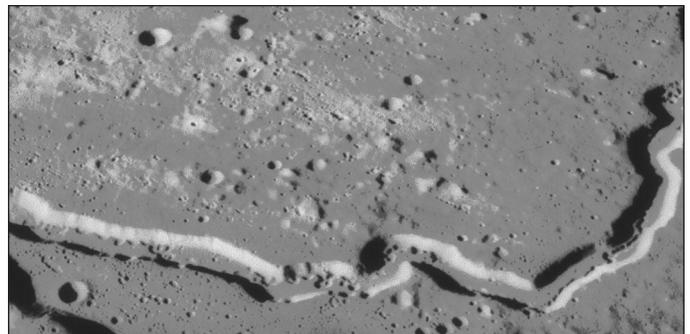


Figure 9. Schroeter's Valley is a big rille on the moon. The image shows only a portion of the extent of the whole rille.

Hyginus, which also features the pits in a row as well as a secondary small line above as well as double pit markings. Double pits marks are a characteristic and common plasmoid pit formation.

Figure 11 shows another chain of craters on the moon. This is a quite common planetary feature seen often on the planets and their moons. In a video presentation with Gary Hendershot and Moray King, I showed more pictures of such

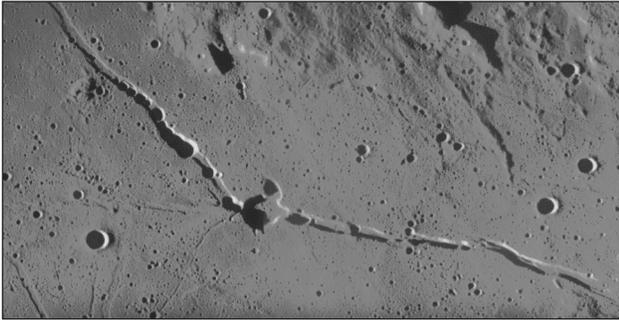


Figure 10. Rima Hyginus is another big rille. Again, only a portion of the total rille is shown. Notice the characteristic double plasmoid pits of the same size on the right side. That spacing to size is characteristic.



Figure 11. A chain of craters on the moon.



Figure 12. Boulders or mounds in a chain on Mars.



Figure 13. The chaining effect in space.

crater chains on other planets and their moons. The video is probably the best introduction to plasmoid theory available.⁷

Plasmoids don't always leave pits or craters. They make mounds or mountains as well. Figure 12 shows boulders or mounds on Mars. Other such formations have been found on Mars, including rings reminiscent of Stonehenge. Domes or boulders like these are very common on Mars.

Figures 13 and 14 show the chaining effect in space—reminiscent of bead lightning. In Figure 13, a plasmoid chain way out in space somewhere is shown. In Figure 14, about six plasmoids were in a chain next to the sun.

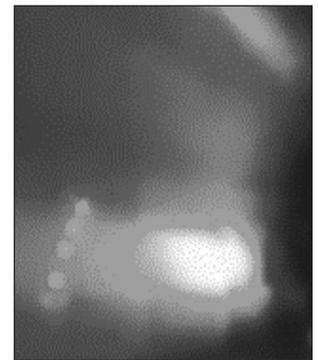


Figure 14. Plasmoid chaining effect of five or six plasmoids next to the sun. The sun is the dark area to the right of the big flare. The fact that the sun isn't as hot as its atmosphere is evidence of solar plasmoid phenomena. The sun and stars are plasmoids in the plasmoid paradigm way of thinking now.

Tornadoes

Figure 15 is faint. Objects such as this have been dubbed "solar tornadoes."

Tornadoes and ball lightning are actually the same thing basically because large ball lightning developed tornadoes and big whirlwinds and tornadoes had aspects much like that of ball lightning, such as being luminescent or having luminescent parts. If one kind of thing converts to another, then the two kinds of things must be versions of the same thing.

To learn more about this and the evidence for interconversion of these kinds of plasmoids, see an article I wrote in the mid-1990s called "Tornadoes and Ball Lightning."⁸

I suggested that a tornado exhibited a gravitational effect in this article. The man who was caught in a tornado saw fir trees being plucked up by it. When he was directly below the rim of a tornado, "he felt a kind of pressure from above; he noticed an unusual smell of ozone; then he felt himself raised up, and this not by the wind, for it was calm, but as though by some invisible force."



Figure 15. A solar tornado.



Figure 16. An anticyclonic tornado.



Figure 17. Hexagonal crater dug by electrical discharge in sand, by Jacob Gable.

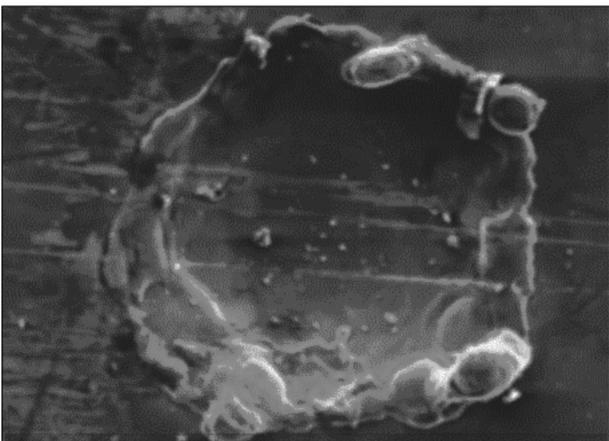


Figure 18. Geometrical crater produced by electrical discharge.

Work was done by Vonnegut and others on vortices produced by electrical discharge. Ken Shoulders said it was experimental work such as these that helped him focus to begin his experimental research on microplasmoids. For more accounts of unusual, electrical and luminescent tornadoes, see References 9-11.

Aaron Jayjack published¹² 4K footage of the Big Spring, Texas anticyclonic tornado that occurred on May 22, 2016. He wrote: "This anticyclonic tornado was extra rare in that it was not a satellite of a parent tornado, and was associated with a mesoanticyclone. This footage was taken about 8 miles SW of Big Spring, just off of I-20 interstate. I was looking south while taking the footage. You can clearly see a clear slot punch in from the south east and wrapping around to the north east. Unbelievable lightning strikes occur at around the 1:50 mark, including one bolt that starts behind the tornado, wraps around the front, and strikes behind the tornado—an amazing shot."

Anticyclonic tornadoes in the Northern Hemisphere are tornadoes that turn clockwise. They are rare. Figure 16 is evidence that the ball lightning that led the visible lightning bolt had to follow the track of space defined by the plasmoid. So the tornado, the material and the ball lightning turned in a clockwise direction. I think it is evidence of gravity.

Geometrical Patterns

Jacob Gable and others have shown that simple discharges in sand will produce cratering similar to the cratering and rilles we see on the planets, the moons of the planets and the asteroids. Usually, the craters are circular, and there are often paired craters, but Figure 17 is a picture from one of Jacob Gable's videos of a hexagonal crater being dug by discharge.¹³

Geometrically shaped craters are quite common on the planets and moons. Figure 18 shows a pentagonal or hexagonal crater produced by electrical discharge.

Takaaki Matsumoto also observed hexagonal plasmoid markings that were produced during this transmutation and ball lightning research about the years 1989 to 1997.¹⁴ He found hexagonal residues on his electrodes that he determined contained transmuted atoms, and if I remember correctly, he found hexagonal marks on his emulsions set outside of the cells too. The hexagonal marking in Figure 19 was not a crater.¹⁴ It was the residue of a ring plasmoid on an iron electrode that transformed to this hexagonal plate that probably had transmuted atoms. Matsumoto wrote¹⁴ that microplasmoids left through the water and glass of the cell and flew to the detection film and left ring markings 10 micrometers wide.

Figure 20 shows ring and partial ring marks from Daviau *et al.*,⁵ published in this decade. Matsumoto published very similar ring and half-ring markings in *Fusion Technology* in the 1990s.¹⁵

Microplasmoids themselves will often form geometrical patterns such as circles or rings and lines. Three might form a triangle, four might form a rhombus or quadrilateral arrangement, etc. An arrangement of six in a hexagon is common.

Figure 21 shows a hexagonal crater on the moon of some planet. The crater is huge and has an inner hill or mountain. The crater above it looks hexagonal as well. The commonality of geometrically shaped craters contradicts the idea that craters are caused by impact. There are also square craters.

Figure 22 shows two joined hexagonal craters on Mars. This suggests a two plasmoid chain. These both seem mainly smooth bottomed, but you can see small humps or mounds in the right one and a crater and other features that look like plasmoid fea-

tures in the one on the left.

I've written picture articles with pictures of plasmoid markings in space and in experiments starting in the mid-1990s. You can see some of them online.¹⁶

Summary and How to Get More Information

Plasmoids are the gist for a revolution in physics. Various anomalies in the universe and experimental effects such as superconductivity can be explained by them, but I believe QM can't be an adequate basis to explain their behavior, so new theory must be developed to understand them.

Little experimental research has been published in the last three decades since I first formulated my plasmoid theory and, as far as I know, plasmoid behavior and effects are not clearly determined. Their relationship to the novel gases, such as Brown's gas and Ohmasa gas, needs to be better understood too. But, it is difficult to publish. For example, the ICCF conference leaders have not permitted plasmoid researchers to present. If this field were to develop further, much better research should be published, and transmutation researchers should focus on understanding plasmoids. Matsumoto told me that the ICCF conference was "closed minded" back in the mid-1990s.

I wrote a book in the early 1990s on many of the topics described here. In the book, I present a theory for why scientific revolutions in the field of physics happen every 80 years or so and explain how the anomalies of the 1970s to 1990s crisis period enable the development of a new paradigm. You can find information about the book and purchase it online at: http://scientificrevolutions.com/?page_id=227

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About the Author

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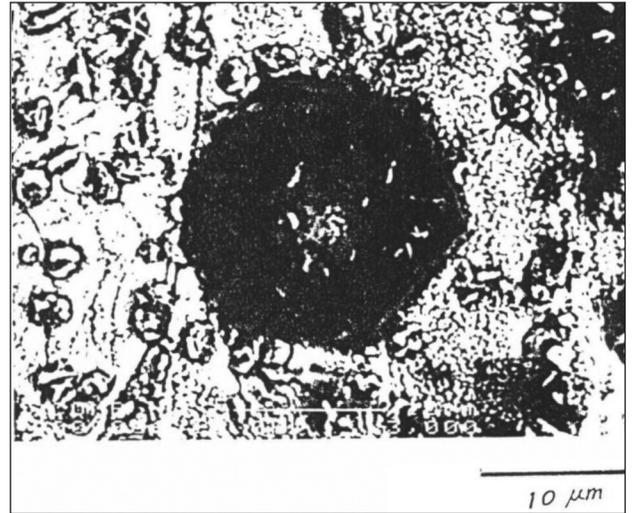


Figure 19. Hexagonal deposit with transmuted atoms left by a plasmoid on an electrode.

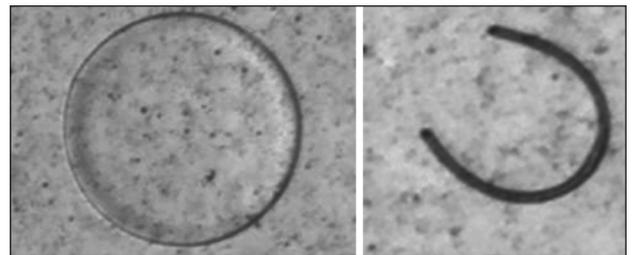


Figure 20. Daviau *et al.* ring and partial ring marks. Left: diameter 0.2 mm. Right: width 0.19 mm.

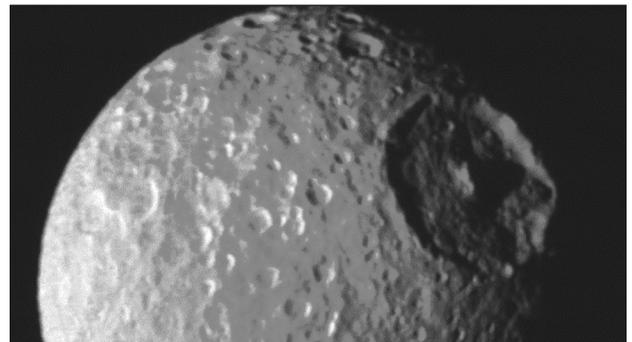


Figure 21. Hexagonal crater on a planetary moon.

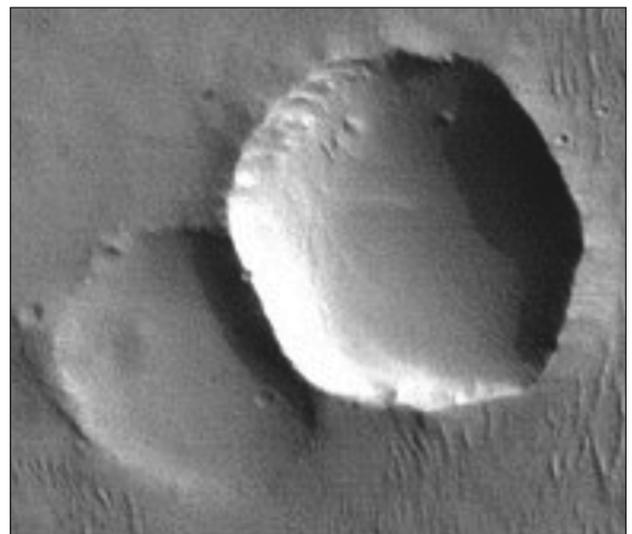


Figure 22. Joined hexagonal craters on Mars.