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Dominant factors having adverse effects on Bermuda Triangle region

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Abstract

The objective of this paper is to study, analyze, and explain most salient and dominant factors having adverse effects in the region called Bermuda triangular. World maps and US Board of Geographic Names do not identify its existence, which caused disappear a lot number of aero-planes and ships. The published literature during last eighty-five years provides information about disappeared aero-planes and ships as well as various reasons for the abnormal behavior in the region. Most important discussed reasons are the impact of solar energy, hot and cold water flowing in the Atlantic Ocean, strong electromagnetic fields solenoids, effects of spirals, effects of magnetic particles, hurricanes, strong winds, presence of jelly-like plasma and dilemma regarding geographical and other North-South poles in this region. There are strong believes about presence of spiritual forces and their adverse actions on every passing aircraft and ship through this region. Apart from other scientific reasons, this paper focuses on analysis of plasma created by oscillation of electrons. Electromagnetic field of the solenoid is discussed. The supernatural phenomenon like the moving light in the region and existence of methane similar to Mars, though argued and observed but not used as strong evidence of abnormal behavior in region of Bermuda Triangle. The paper analyzes unknown mysteries, rules out parapsychological, Skepticism, Paranormal, and other nonscientific reasons. The massive crater under Bermuda Triangle adversely affects weather. We analyze abnormal behavior due to effects of two Van Allen Belts. Other effective reasons such as, solar radiation, global heat waves, powerful hurricanes, winds, volcanoes, and fast-spinning tornadoes cause severe damage. According to observations by Hubble Telescope, malfunctioning, existence, emission, and attacks of very high intensity and energy particles emitting in the form of large groups, flocks, heavy clouds, and swarms confirm that Van Allen Belts exert most impact to cause anomalies.

Keywords: Bermuda Triangle; Plasma; Electromagnetic Field; Solenoid; Van Allen Belts; Heat Waves.

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1. Introduction

The Bermuda triangle is known to be dangerous for more than 85 years causing loss to aero-planes and ships passing through the region locate in the Atlantic Ocean. It is close to North America, there are many small islands such as called Bermuda. These islands are arranged in triangle shapes as shown in Figure 1. A large shipping zone in America, Europe, Caribbean Islands and air route for private and commercial aircraft travelling for South America, Florida and Caribbean. Before its scientific explanations, it is important to know something about oceans. Oceans on the earth have changed seven states, since the beginning of the earth. Now all oceans are in their seventh state that is triangular. (Monkhouse, 1970) showed that it means that like all other oceans Atlantic Ocean is also in a triangular.

Secondly, Michael and Richard (2007) stated that 47% of the solar energy coming to earth is utilized in heating the earth (continents and oceans) and the blowing of winds, therefore, continents and oceans are continuously interchanging their positions on the earth slightly, due to which blowing of wind is directly affected on earth. Halls (1983) stated that Bermuda triangles' influence in the air reaches. up to the height of 2.5 thousand feet and covers the area of 1 km radius. It has very strong attractive forces; if anything comes within this area or passed by it, it gets lost. It is well known that about 150 airplanes and thousands of people are lost there, mysteriously. Notable incidents are described in a study by Halls (1983).

In the literature about abnormal effects of Bermuda triangle, it has been mentioned due to reasons such as strong Winds, plasma (jelly-like substance), spiral, electromagnetic field, solenoid, field lines, hot & cold-water streamers flowing parallel in this region, North & South pole disparity, quicksand, spirits and Luminous effects. Figure 2 shows storms in Bermuda Triangle region. The effects are well known and observed in the height of the field, which is 2.5 thousand feet.

Sometimes, Bermuda Triangle is missing from the maps of the world. There are reports of unexplained events in the area date back to the mid-nineteenth century. The term "Bermuda Triangle" was used in 1964, in a pulp magazine article that first appeared in print, stated that has destroyed hundreds of ships and planes without a trace. There is no truth in any supernatural concepts, which blames the incidents not on technology, but on mythical and other non-existent believes about the continent and

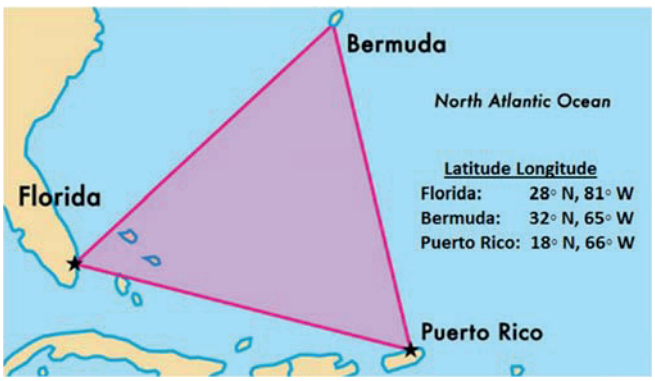

Figure 1. Location and co-ordinates of Bermuda Triangle [Source: distanesto.com]

Figure 2. Storms in Bermuda Triangle (Quasar, 2005)

Bermuda Triangle of Atlantis. No proof exists or captured about regularly moving and in an action of any UFO.

The causes of adverse behavior of Bermuda triangle in Atlantic Ocean is explained in this article, there is an Electromagnetic field (Long ranged) is naturally forming in the Air (converted to plasma due to high temperature). In oscillations electrons are light particles so move with higher speed as compared to heavy charges. Its south pole is at the top, which is attracted by north of the Earth. Everything passed by it is lost in the muddy base formed by strong field lines. It is a big problem for America & Europe because they have to adopt a long track through Ocean, extremely hot and cold water is a reason. About all mysterious stories vanish in the presence of this literature. The research work is continuing to resolve and find out the hidden mysteries of this region. The borders of the Bermuda Triangle are uncertain. The estimate of entire area is about 500,000 to 1,510,000 square miles. It is agreed upon that the shape of the area is a triangular shape, while

Table 1. Aero Planes Disappeared in Bermuda Triangle

Year	Aero planes -Casualties
1945	12
1945	14
1945	13
1947	2
1948	72
1949	20
1956	10
1965	2
2005	3
2007	4
2019	7

Table 2. Ships Disappeared in Bermuda Triangle

Year	Aero planes -Casualties
1800	90
1814	140
1824	31
1918	306
1941	58
1941	61
1963	39
2015	2
2015	33

the reports of mysterious activities are usual features. Table 1 and 2 show some incidents happened to the airplanes and ships over the years in the area.

The important point regarding the planet's surface is north and magnetic north coincides, and magnetic declination on a compass isn't necessary to compensate. Hurricanes and tropical storms frequently strike the Bermuda Triangle. In this area, there are sudden changes occurring in weather, where flows ocean in the Bermuda Triangle. The Bermuda Triangle contains the Atlantic Ocean's deepest point Milwaukee Depth. A depth achieved by the Puerto Rico Trench. Airspace above Bermuda Triangle is also not safe. Carroll Taylor vanished. No explanation exists or given and no debris were identified, as in the Cyclops incident. Charles (1974) found that the deserted region is due to several reported disappearances. Mostaghimi and Boulos (1989) explained that a constructive debate has been posed about uniform electrical conductivity conductors surrounded by numerous solenoids and existence of strong electromagnetic fields.

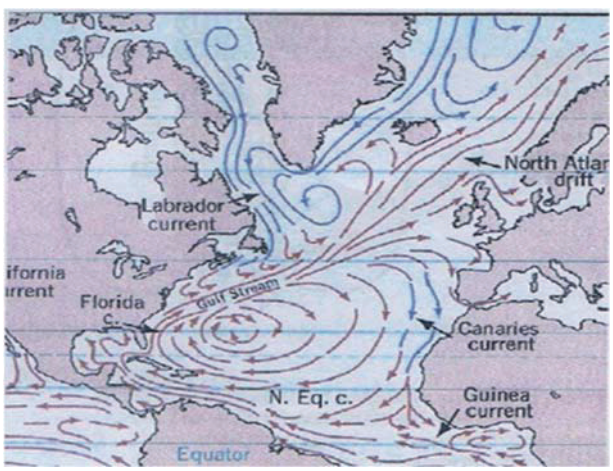

Figure 3. Surface drifts, hot and cold currents in ocean. [Source: U.S Navy Oceanographic office]

2. Material and methods

2.1. Arguments based on Scientific Reasons

Before going deep down in to the reasoning, it is observable that the Atlantic Ocean is surrounded by three continents (America, Africa, and Europe) that is why it is in triangular shape. In this ocean two waters (hot & cold) are moving side by side and are not mixing with each other. There is invisible wall between the two, as explained on "ocean currents" in (Strahlar, 2002) and shown in Figure 3, based on 30 years of data collected by the U.S Navy Oceanographic Office. The high temperature produces plasma (ions and electrons) that moves up in spiral form causing solenoid in air. When an airplane flies over the hot water, the experience is, it gets completely hot, and when it flies over the cold water, it gets utterly cold.

The existence of two hot and cold-water streams discussed in (Halls, 1983), (Quran, 55:19-20), (Mörner, 2018) and (Quran, 45:5). In Holy Quran; it is quoted: "He has let free the two seas meeting together. Between them is a Barrier which they do not transgress". Strahlar (2002) explained that due to the presence of invisible wall two streams of water are moving without mixing air. However, the air above the cool water is thick and seeks to fill the empty space created by the hot water above the hot water becomes light in weight and moves up.

This process continues and the air moves up in a spiral shape. During this intense spiral flow, there are charged particles within it. As the flow of charges is current, it means that the current is flowing in spiral form. Mörner (2018) described a "powerful downdraft of magnetic field lines" have been identified which seriously cause damage to the ships in the stream such as in case of sinking of famous Baltimore in 1986. "It was noted that the wind suddenly shifted and increased velocity from 20 mph to 90 mph. A national Hurricane Center Satellite Specialist, James Lushine, stated that during very unstable weather conditions, the downburst of cold air aloft can hit the surface like a bomb, exploding outward like a giant squall line of wind and water". The assertions discussed in (Mörner, 2018), supports the above-mentioned phenomena.

However, since the world is not fully spherical, the magnetic field is weaker above the South Atlantic. The Earth's magnetic dipole field is about 500 kilometers away from its core (300 miles). This is a known fact that the cosmic rays and charged particles are close to the Earth's atmosphere where, the dip exists, creating less shielding from interplanetary space. The unusual about the core-mantle boundary may be affecting the global magnetic field.

2.2. Analysis of Plasma Clouds

At the high temperature, the fourth state of matter is produced called plasma this is a mixture of partially or fully ionized gas. The effect of Jelly-like matter yellow in color always exists, called plasma, which causes oscillation of electrons as well as ions and the neutrons. Plasma is also used to define the electronic forces. Francis (2016) indicated that in oscillations electrons are light particles so move with a higher speed as compared to heavy charges so the Lamoure radius (rL) of electrons is smaller as compared to heavy charges.

$$r_L = \frac{v_\perp}{\omega_c} = \frac{Perpendicualr\ velocity}{Frequency\ of\ Oscillations}$$

Magnetic field force produced will be Lorentz force:

$$F = q\,v \times B$$

Plasmas can act like a collection of particles or like fluids at times. Plasma behaves in a different way, due to electric and magnetic fields. Electrons and ions make up plasma. Plasma density is naturally insufficient when compared to water density, but at extremely high temperatures, plasma density is extremely effective.

It is supposed that electric field E=0 and B= magnetic field.

So that E and B are uniform. The cyclotron gyration of a charged particle is simple. The motion equation is:

$$m\,\frac{dv}{dt} = qv \times B$$

Selecting B in the direction of z,

$$B = B\,\hat{z}$$

$$m\frac{d}{dt}vx = qBvy,$$

$$m\frac{d}{dt}vy = -qBvx\,,$$

$$m\frac{d}{dt}vz = 0$$

$$\ddot{x} = qB\,\frac{d}{mdt}vy = -(\frac{qB}{m})2\,vx$$

$$\ddot{y} = qB\,\frac{d}{mdt}vx = -(\frac{qB}{m})2\,vy$$

This describes SHM at cyclotron frequency

$$\omega = qB/m$$

$$Vx = V\perp\, eiwt = \dot{x}$$

$$Vy = \pm i\,V\perp\, eiwt = \dot{y}$$

Where the speed in the plane perpendicular to B is V:

Integrate again:

$$x - xo = -i\frac{V\perp}{\omega}\,eiwt$$

$$y - yo = \pm\,\frac{V\perp}{\omega}\,eiwt$$

$$The\ Larmor\ radius = rL = \frac{V\perp}{\omega} = \frac{mV\perp}{qB}$$

Then, taking real part:

$$x - xo = rL\sin\omega t$$

$$-yo = rL\cos\omega t$$

where, the point (xo, yo) is the center of orbit, which circular in shape.

The direction of the magnetic field produced by charged particles is opposite to imposed field because of the gyration direction. The particles of the Plasma have a propensity to decrease the magnetic field, and plasmas themselves are diamagnetic. A helix is a path of charged magnetic particles. The collection of these charged particles formulates a region or zone called the Van Allen Radiation belt, around the planet by its magnetic field, the majority of which is created from the solar wind. There are two such belts on Earth, and others may be created at any time. In 2012, NASA had launched a probe to assess the effects of Allen radiations, which operated several years to understand the belts, as shown in Figure. 4.

2.3. Plasma Density

The existing matter in the universe contains 99% plasma, which is in the form of gas atoms, such as Sun contains above 90 % matter in the form of Hydrogen and helium. The atoms sometimes are disassociated from their constituent

Figure 4. Van Allen Probes for earth's radiation belts [Source: NASA and (Kirby et al, 2015)]

particles and exist in the form of electrons (negatively charged), protons (positively charged) and formulate an electric field. The ionized form of the particles is responsible for this action. Therefore, the formation of the plasma in the context of the Bermuda Triangle is also formed in this manner. We only come into contact with plasma on a few occasions in our daily lives. The warmer glare of the aurora borealis indicates the higher flash of lightning. Now, argue as under considering following parameters:

$Ni/\ Nn\ =\ 2.4\ x\ 1021\ T2/3\ /\ Ni\ e^{-U\ i/KT}$

$N\ n\ =number\ per\ M3\ neutral\ atoms.$

$Ni\ =number\ per\ M3\ of\ ionized\ atoms$

$Ui\ =ionized\ energy\ of\ the\ gas$

$T\ =\ temperature\ per\ degree\ Kelvin$

$K\ =\ Boltzmann's\ constant$

$K\ =\ 1.38\ j/K$

The degree of ionization remains low as the temperature increases, until Ui is just a few times KT. If the gas reaches a plasma state, the ratio Ni/No suddenly grows. If the temperature increases, N0 sinks below Ni, and the plasma becomes completely ionized. "An atom is a quasi-neutral gas made up of charged and neutral particles that behave collectively. In plasma, which comprises charged ions, the condition is entirely different. As these charges travel about, they may create concentrated positive and negative charge distributions, resulting in an electric field (Hutchinson, 2001). The density n is created by the motion of charges, which produces current and hence magnetic fields (number of particles per m^3 is N in 3D). Following is a simple relation:

$$f(u,v,w) = \text{A3}.exp\left[-\frac{\frac{1}{2}m(u^2+v^2+w^2)}{KT}\right]$$

$$E_{av} = \frac{\iiint_{-\infty}^{\infty} A_{32}^{1} m(u^2+v^2+w^2) exp\left[-\frac{\frac{1}{2}m(u^2+v^2+w^2)}{KT}\right] dudv\ dw}{\iiint_{-\infty}^{\infty} A_3\ exp\left[-\frac{\frac{1}{2}m(u^2+v^2+w^2)}{KT}\right] dudv\ dw}$$

$$E_{av}\ =\ 3/2\ KT$$

The Ions are formed in the air above the Atlantic Ocean due to high temperature, which is plasma. As shown in Figure 4, positive ions and negative electrons gyrate in reverse directions but always in a direction perpendicular to that of Earth's magnetic field. The gyration radius

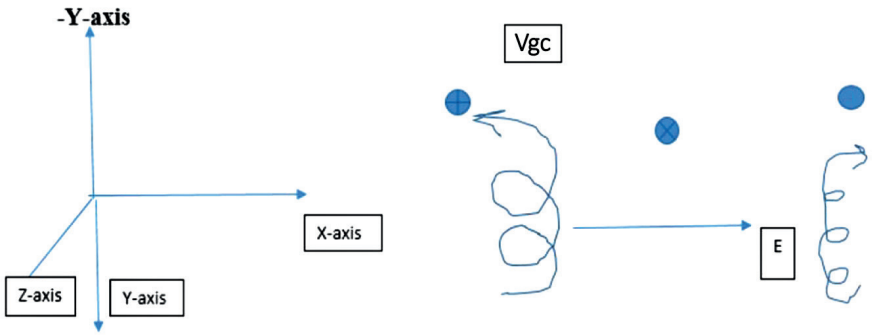

Figure 5. Drift of particles in crossed electrical and magnetic field

of +ve ions is greater, gaining more energy, while the gyration radius of –ve electrons is smaller, gaining less energy. In 3D air, a slanted helix is formed due to this difference in energy and gyration radius (Hutchinson, 2001).

Figure 5 shows the drift of the particles lies in the crossed electric and magnetic fields. Here, an electric field is formed between +ve and –ve charges that is directed parallel to the water surface, while the magnetic lines of r^{th} magnetic field" are perpendicular to water surface.

The magnetic field of Earth B runs perpendicular to these field lines. In a gravitational field, gyrating waves drift perpendicular to E and B. The electrons gyrate in the same direction as ions, but the force acting on them is the same. The magnitude of Vg is generally small, although there is gravitational force because of the "centrifugal force" when the "lines of force" are bent as shown in Figure 6. This centrifugal force is basis of gravitational uncertainty, which is a form of plasma instability.

These particles move in inhomogeneous different fields E and B in terms of space and time. This is highly complicated. But based on the orbit theory, just one inhomogeneity will exist at a given length of inhomogeneity.

2.4. Magnetic Mirror and Analysis of Magnetic Field

The concept of a magnetic mirror is simple as shown in Figure 7, and deals with trapping light, which is not in the form of photons. Actually, using this concept, the configuration of electromagnets enables to produce an area with an enormous density of magnetic field to reverse the direction in the confinement

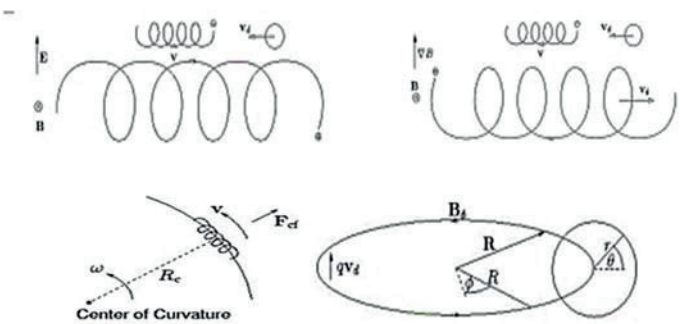

Figure 6. Center of curvature and Centrifugal force

area. Ioffe (1965) presented that the trapped light can also be saved and reversed made the beam 500,000 times stronger than that of the original one. This emission may be in the form of photons. The mirror trapping works for a restricted range of velocities and angles. This strong drift can push bodies far away in space, when ΔB‖B then magnetic mirrors are produced; since magnetic field lines differ in the Z direction (along the water's surface), they can converge and diverge axis-symmetrically. A portion of B must generate a force capable of catching and trapping a particle in the magnetic field. The gyrating particle's mag moment would compensate for the force Fz:

$$Fz = -\mu \frac{\partial B}{\partial Z}$$

As the particle moves in the strong or weak field but μ remains invariant. This invariance of μ causes plasma confinement: magnetic mirror. If B is high then the particle is reflected back to a weaker field, as the particle moves from weak field to strong-field region to compensate for thermal motion. Concentrated Magnetic field of spiral, effect due to the hot water and cold water flow can be seen in Figure 8. The Radiofrequency inducts plasma's electromagnetic fields discussed in Hopwood et al. (1993) but when then Grad B drifts are produced, where:

$$V\nabla B = 1/q \; and$$

$$F\ X\ B\ /B2 \; is \; grad - B \; drift$$

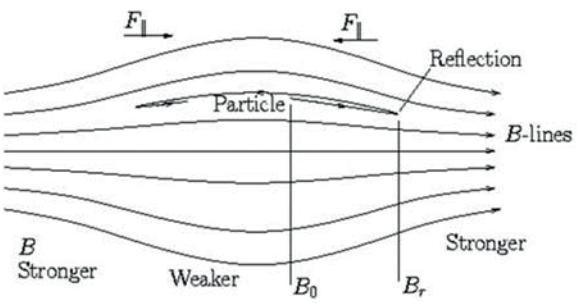

Figure 7. Magnetic Mirror (Hutchinson, 2001)

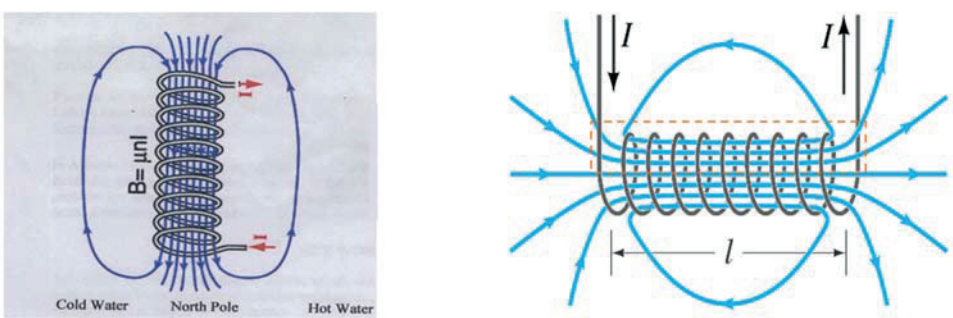

Figure 8. Concentrated Magnetic field of spiral, effect of the hot water and cold water flow in Bermuda Triangle Region (Jiles, 2015)

2.5. Analysis of Electromagnetic field of solenoid and formation of spiral

The flow of current through a wire makes an electromagnet. If the current is flowing through a wire in the spiral form a solenoid is formed. This movement of current in spiral form is making a "solenoid type electromagnet" in the air (plasma), of about the height of 2.5 thousand feet and the area of 2 miles' diameter. The attractive forces are in its center; North Pole is formed at the surface of the ocean. This huge electromagnetic field of solenoid is stronger and the South Pole forming at the top of this spiral, which is attracted by the South of the Earth. Due to these strong field lines, the body is broken into pieces and pushed towards the ocean. It can also happen that the body can move in a circular form along field lines for some time and come out of the vicinity of this field but unfortunately, the body is pushed deep down in the ocean.

There are many different stories alike about Bermuda Triangle, such as:

- Special types of luminous thin gasses are seen there
- Space ships are seen there.
- Watch needles stop moving there
- About 150 people claim that they were mysteriously taken by angles for a short time when they were dead and have come back of life. The answer to all is that when light rays of high energy & short-wavelength of different frequencies superpose each other.
- Constructive interference produced and luminous effects can be seen. Due to the effects of magnetic field lines needle of the watch remains as it is, because during one half-circle needle is moving clockwise during the other half-circle needle is moving anticlockwise, its net effect is zero.
- America launched a Research Center in the ocean there. But no useful research results have come up so far.

If people go within such a spiral motion, obviously, they would feel and see mysterious things and its psychological effects are of wide range too due to the uniform field in the center of a long solenoid. The field outside is upward weak and divergent and inside is strong and convergent downward (2.5 thousand feet high and 2 miles' radius). There is strong evidence discussed in (Rosenberg, 1974) and (Francis, 2016), we infer that infrequent local magnetic anomalies exist in the Bermuda triangle. The batteries of a Douglas DC-3 aircraft were inspected and established to have a low charge. Because of the North-South poles' orientation, a serious problem is known as the "compass issue" exists. Bhattacharya (2018) showed that the DC-3 dropped into the Bermuda Triangle. This could be due to the peculiar local magnetic disturbances in the area as shown in Figures 9 and 10.

Jeffrey et al. (2020) explained that the earth's magnetic field, using ground-based observatories, is monitored regularly and information provided to various concerned agencies. The records pertain to magnetic field variations.

Mahesh (1996) stated that the plasma has been generated and processed with specially designed apparatus using a high vacuum container. The Plasma processing apparatus with an electric field that rotates. A plasma process apparatus consists of a high-vacuum container in which a semiconductor wafer is placed horizontally on a susceptor and through which a process gas, such as an etching gas, supplied. A susceptor

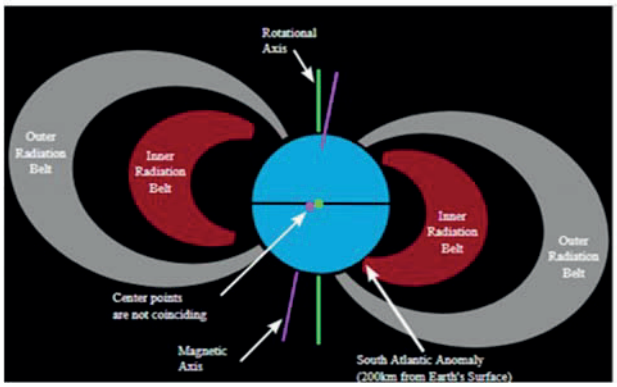

Figure 9. Magnetic Axis and the Radiation Belts (Christine, 2019)

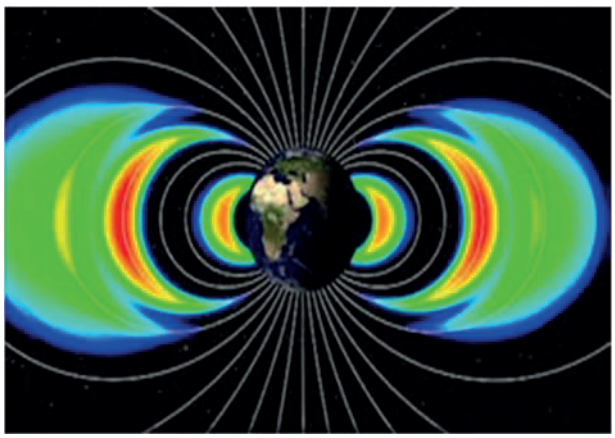

Figure 10. Magnetic Field Compilation (Karen, 2014)

is a material used for its ability to absorb electromagnetic energy and converts it to heat. A high-frequency voltage is applied between the suscepter and the jar. Four high-frequency coils are arranged at given intervals in a circumferential direction along the outer perimeter of the jar. The coils apply the high-frequency energy into the container with a phase difference of $\pi/2$ between the neighboring coils, so that a high-frequency spinning electromagnetic field is generated in a horizontal plane. The work presented in Mahesh (1996) is US patented. The magnetic field model led to observe changes, due to this phenomenon; which has been discussed in depth in Finlay *et al.* (2020) particularly with reference to geomagnetic field anomalies in the Atlantic.

3. Results and Discussion

3.1. Rippling Channel is Dangerous

Cazeau and Scott (1979) showed that the Bermuda triangle has been causing harm for a long time, called a Ripping Channel by the writers. It was the last time she caught a glimpse of a man. Her bones have never been discovered. Without a question, the Bermuda triangle is undulating and swirling dangerously. We are aware of many unexplained disappearances of planes and ships in this area. The question of whether or not this area is genuinely dangerous is critical. Based on the Stewart (2011), the oceans on earth occupy 70% of the area and known depths of 3,700 meters on average 11,000

meters at their deepest stage. The estimated volume is 321 million cubic miles of water. In spite of this, the vessels and planes disappear, leaving no sign of their movement. However, the statistics indicate that it is dangerous. The risks travelling through this region are much higher than other places in the ocean.

3.2. Diffraction of Heat

Diffraction is the scattering of waves across barriers, according to definition the diffraction exists with vibration, electric radiation such as light, X-rays, and gamma rays and incredibly small moving particles with wavelike properties such as atoms, neutrons and electrons. There is another important issue, which in the opinion of scientists is causing abnormal behavior of the Bermuda Triangle, based on the studies conducted and reported regarding the theory of diffraction of heat in (Njau, 1994) using real meteorological data is the "diffraction of heat".

3.3. Effects of frequent Hurricanes and Volcanos

The number of disappearances that did arise in a region vulnerable to tropical cyclones was, for the most part, not excessive, unlikely, nor unexplained. Njau (1995) also showed very strong hurricanes and storms are customary in this part of the ocean, which could cause disappearances in the Bermuda Triangle over the years. Meso-meteorological storms, which are brief and intense thunderstorms that disrupt ship communications and whip up, massive waves, also play a pivotal role. The powerful hurricane (Black and Dickey, 2008) is sort of a strong storm accompanied by a fierce and violent wind. It is usual in the Caribbean and Atlantic Ocean. The other types of well-known tropical storms are typhoons, tornadoes, gals, cyclones, tempests, squalls, whirlwinds, twisters, and willy-willy. On the Beaufort scale, a wind of force (Francis, 2016) having sixty-four knots is known.

Mignot *et al*. (2011) stated that the Bermuda is a neighboring island of the Bermuda Triangle, as seen from the International Space Station, which is constructed on the ruins of an ancient volcano. While no two volcanoes are similar, they all shape in the same few forms. But, it seems, for the ancient volcano that forms the foundations of Bermuda's island. Bermuda's islands are situated 1,000 kilometers (600 miles) east of the Carolinas in the Sargasso Sea, a long-extinct volcanic seamount in the center of the Atlantic Ocean as shown in Figure 11.

Figure 11. (Left) Bermuda Triangle one of dangerous place in the world, (Right) Volcano Shape (Mindy Weisberger, 2016)

The researchers in oceanography have estimated that there exist many underwater volcanoes in the oceans. About one million submarine volcanoes are believed to exist (most are now extinct), with 75,000 rising more than one kilometer above the seabed. The volcanos and hydrothermal vents are commonly known as hotspots for biological activities. Climate instability and any subsequent changes in cyclones, hot storms, sub-tropical storms, and hurricanes exist in greater frequency. The debate study having been actively pursued, during years, especially (Landsea, 2007) at the International Workshop on Tropical Cyclones, 2006. Is it possible that the happening of cyclones has increased over time? Furthermore, (Black and Dickey, 2008) claims that the Bermuda Triangle, or Devil's Triangle, contains no inherently dangerous forces like ghostly or paranormal, besides hurricanes.

Swingedouw *et al.* (2015) stated that there are several well-known volcanoes of the Atlantic Ocean such as "Brava, Fogo, Santo Antao, Sao Nicolau, Sao Vicente". There are certain un-named also. The locations of a few un-named places are given below in Table 3:

3.4. Presence and effects of methane in Bermuda Triangle

This is well known that there exist huge reservoirs and emission of methane gas in the location of Bermuda Triangle, due to the large amount of oil and gas, beneath the area covering Bermuda Triangle. Gruy (1998) explained that it contains double amount of carbon as compared to all other constituents established, such as coal, oil, and synthetic natural gas (Methane) reserves combined. Gigantic bullets of gas-filled water with low density, which is enough to drift a ship and adequate localized atmospheric contaminants to obstruct "air-aspirated" engines of aero-plane; this has resulted from releases of (Methane) and gas because of sediment slides and other natural reasons and causes. In Bermuda Triangle, mysterious disappearances of ships and flights, as well as their crew and passengers, may be related to natural gas hydrate venting. These effects make the Bermuda Triangle one of dangerous place in the world, as shown in Figure 11.

Gruy (1998) discusses what gas hydrates are, how they shape and release them, and how they could be related to the unknown reasons of the Bermuda Triangle. A cluster of craters off the coast of Norway was found in the Barents Sea in March 2015. Along with the study's

Table 3. Coordinates where Ships Disappeared in Bermuda Triangle

0.72°S/20.53° W	3.5°S/24.5° W	32.958°S/5.22°W
39.95°N/25.83°W	38.75°N/38.08° W	4.20°N/21.45°W
49.00°N/34.5°W		7.00°N/21.83°W

writers, old methane blasts unconfined, more than 10 thousand years ago, may have caused the craters. Rising ocean temperatures induced pressure to increase, allowing methane to escape from gas hydrates, a thick ice-like crust formed as gases and frozen water combine.

The reports of United States Geological Survey (USGS) in 1996 stated that there exist spread of methane gas off-shore and propose that gas hydrate-bearing sediments, which may be a potential cause for some of the disappearances in the region. According to the observations of the researchers in this regard, the unexpected and fierce methane blasts result in producing sinkholes or gas bubbles, which quickly inactivate and sink ships in Bermuda Triangle. Ruppel (2018) mentioned that explanation of a research geophysicist of USGS's Gas Hydrates Project is highly implausible and existence doubtful. "We do know that you see Methane coming from the seafloor now, and that's pretty widespread," she said. Although the existence of slow methane emission is typical in the context of an ocean, large-scale punctures, may have occurred as the last ice- age finished. This needs to be yet observed and recorded that many types of notable, strange, mysterious, unexplained incidents (Njau, 1995) occur in Bermuda Triangle such as plane's crash, sank of ship and existence of diamonds in that region, and not believed by other researches.

3.5. Experiments of International Space Station (ISS)

The ISS is performing extremely important and useful research projects and experiments jointly by NASA (National Aeronautics and Space Administration), CSA (Canadian Space Agency), JAXA (Japan Aerospace Exploration Agency), ESA (European Space Agency) and Roscommon. (Gibbs and Sachdev, 2002) reports on ISS, the station is orbiting around the earth with a speed of 17100 mph; completes 15.54 orbits in a day with an orbital inclination of 51.63°, for the last 22 years 03 months by10 March 2021. The astronauts have found the existence of harmful radiation affecting their electronic equipment and computers apart from the humans in Space.

Heirtzler (2002) showed the Bermuda Triangle of space, which ranges from Chile to Zimbabwe and is located above the South Atlantic. It is actually that location, where the inner Van Allen radiation belt passes. This point is indeed close to Earth's surface. In fact, our globe is affected by two Van Allen belts, having the shape of doughnut rings made up of charged particles fixed in place by the planet's magnetic field. The innermost layer is mainly made up of high-energy protons, while the outermost layer is mostly made up of electrons. Since the belts capture the electrons that are expelled from the sun's atmosphere, they shield the planet's surface (Aliza, 2014) from harmful radiation.

The Magnetic field of the earth is indeed weak in the site of Bermuda Triangle in Space, or "South Atlantic Phenomenon" SAA. This means that the solar cosmic ray ions aren't being left out elsewhere in the sky. Therefore, solar rays do pass as close as two hundred kilometers to the Earth's atmosphere. Increased flux of energetic particles in this region is due to increased solar radiation intensity. Due to this effect, satellites travelling through this area would be exposed to higher levels of radiation, possibly causing harm. Consider an electrical discharge, also known as an arc where, more electromagnetic waves flow.

The maps of Atlantic Ocean (South and North)

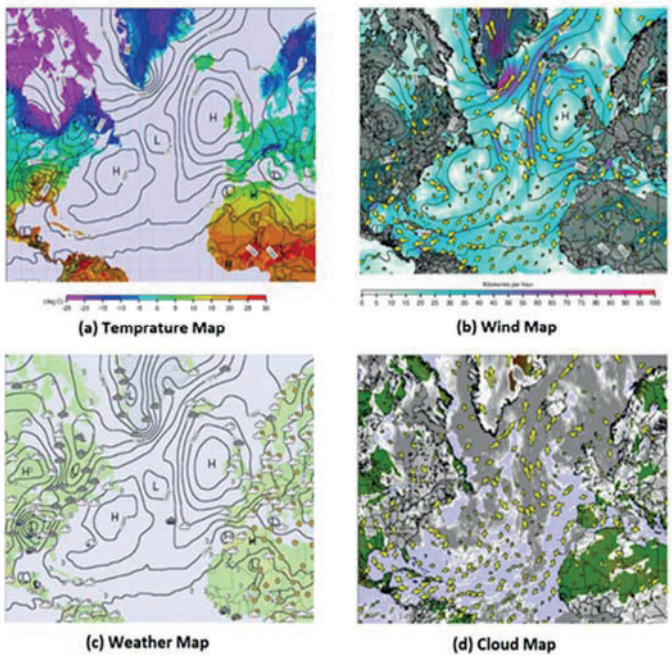

Figure 12. Atlantic Ocean Maps for a) Temperature Map; b) Wind Map; c) Weather Map; d) Cloud Map

regarding temperature, winds, whether and clouds are available online round the clock as shown in Figure 12 (a, b, c, d) for 18th March 2021. By moving the curser at any point, we may interactively find out regarding weather, temperature, or wind, at any geographical location, live.

Gruy (1998) explained due to the existence of heavy deposits of coal, methane, and carbon beneath the Bermuda triangle; the effect is causing hazards, atmospheric pollution and making the area very dangerous for flights and voyages. The emission chokes the aero-plane engines. The natural gas hydrates venting cause the disappearance of aircrafts and ships.

3.6. Observation of Anomaly by Hubble Telescope from Space

The Hubble telescope is powerful, launched by NASA in 1990 is still orbiting round, at an inclination of 28.50 and 540 Km above the earth, which passes over the Bermuda region 15 times a day. The telescope is designed to pick up a tiny spots of light from 7000 miles. Using Hubble Space Telescope data, Kornmesser (2014) analyzed the effects of an anomaly in that region; particularly about the malfunctioning, existence, emission, and attacks of very high intensity and energy particle emitting in the form of large groups, flocks, heavy clouds, and swarms. These particles cause malfunctioning, bugs, and problems in electronics devices of the space craft. The unsafe radiations also impact the telescope and space station. The information so collected from the Hubble telescope will be useful for future space missions.

The Figure 9 and 10 illustrate the magnetic field pattern observed. The existence of flickering light was observed, which is due to Van Allen Belts. Dalcanton (2009) stated that the emission of harmful detected particles is

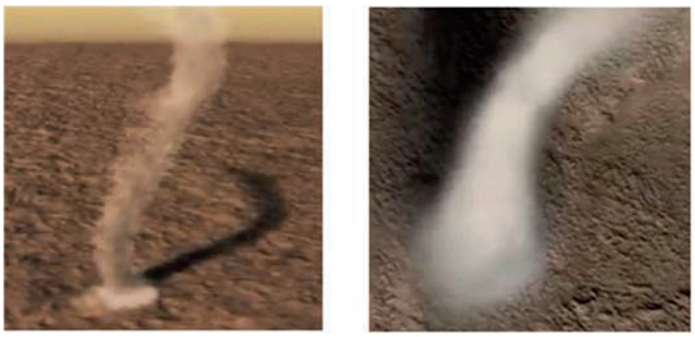

Figure 13. Dust Devil on Mars detected on 26 March 2021 by Perseverance Rover [Source: NASA]

composed of protons, electrons, atomic nuclear bits, and strike with a speed of 3000 hits per second.

The Dust Devil anomaly in space causes spin and then the rotating columns rise up due to cooler air, due to which strong pull could be induced. The NASA scientists have predicted similar Dust Devils may possibly be occurred on Earth. Figure 13 shows Dust Devil on Mars detected by Perseverance Rover.

Conclusions

a. There are still several superstitions prevail about the abnormal behaviors of the Bermuda triangle and missing aero-planes and ships. There is no truth in the paranormal and superstitions and supernatural reasoning, the reality must be treated as realty based on science and statistics. We strongly rule out Parapsychological, Skepticism, Paranormal and other nonscientific reasons prevailing in the literature.

b. There exist a massive, huge, giant, and colossal crater beneath the deep waters of Bermuda Triangle, which affects constantly the weather as well as cause the problem towards aircrafts and ships. Existence of heavy deposits of coal, methane, and carbon beneath the Bermuda triangle is one of major causes that effect hazards. The atmospheric pollution there is making the area very dangerous for flights and voyage. The emission chokes the aero-plane engines. The natural gas hydrates venting cause the disappearance of aircrafts and ships.

c. Another strong reason for abnormal behavior is due to the effects of two Van Allen Belts. The Hubble Telescope detected that the anomaly (Kornmesser, 2014), and malfunctioning in the region is due to the existence, emission and attacks of very high intensity and energy particle emitting in the form of large groups, flocks, heavy clouds and swarms. The existence of flickering light was also observed which is due to Van Allen Belts.

d. Another reason seems likely to be due to the existence of worldwide heat-waves travelling systematically eastwards through Earth's atmosphere, their crests and troughs cover the regional North-South axis. The wave has also affected and contributed to the Bermuda Triangle's odd behavior. The diffraction heat patterns trigger successive and following weather as well as the ocean patterns.

e. The researchers believe that this is the reason for the mysteries of the Bermuda Triangle. Powerful hurricanes, winds, volcanoes, and

fast-spinning tornadoes are a frequent and consistent aspect of the Bermuda triangle, causing severe damage. The tornadoes rotate fiercely, forcefully, intensely and very violently. They exist like a fast rotating cylindrical columns of air, sometimes have a vacuum inside and create disaster.

f. One of the reasons highlighted is the quickly spinning cyclone system categorized as a low-pressure center, and low-level air circulation bearing very strong spiral-shaped winds followed by thunderstorms.

g. On March 26, 2021, the NASA Perseverance Rover detected the first Dust Devil on Mars Figure 11, similar to that earth on earth. The heat causes spin and then the rotating columns rise up due to cooler air. The NASA scientists are worrying that such Dust Devils may possibly originate harm to the Rover. South Atlantic Anomaly (SAA) has increased beams flux of active particles in the area caused by the increased strength of solar radiation. Therefore, due to this effect, satellites travelling through this area would be exposed to higher levels of radiation, possibly causing harm; like an electrical discharge, also known as an arc where, more electromagnetic waves flow. The arguments based on diffraction of heat and radiations are more popular amongst researchers.

Recommendations

1. The pilots of aero-planes and captains of ships must avoid passing through this area by air and waters. Nowadays, it is being practiced in the neighborhood of the Bermuda Triangle and that of the triangle.
2. The live interactive maps as shown in Figure 12 must be adhered to and follow for safety during the flight over and voyage in the ocean.
3. The pilots of aero-planes and captains of ships and the general public must not be ignorant of the circumstances and understand a compass “changing” phenomenon over such a large area.
4. There is a serious need to avoid human error in the region using modern information technology techniques by aircrafts, yacht’s and ships related to expected storms, hurricanes, the giant squalls of the wind making very high level turbulences. The clouds with the strong wind of about 275 Km/h are termed “air bombs” in literature.

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