

# **Relativistic Chiral Inversion of Non-Zero Nuclear Magnetic Moments During Centrifugal Industrial Fermentative Processes**

**Reginald B. Little  
Stillman College  
Dept of Natural Science  
Tuscaloosa, Alabama 35401**

## **Abstract**

Fermentative productions of amino acids are thought to retain homochirality. This work proposes rotational motions for accelerations by centrifugations during fermentative processes enrich heavier, stable isotopes of differing nuclear magnetic moments (NMMs) with consequent altered chirality and magnitude of rotating polarized light for altering chemical, physical and biological phenomena. The author discovered gravity seeding homochirality. Thereby in this work, the author determined that altered gravity can change magnitude and direction of chirality. In this work, the changes in isotopes alter gravitational effects on metabolism in hosts eating fermentative produced amino acids. Cancer was determined from eating heavy isotopes from fermentative processes and cancer cells were reasoned in this work to be more affected as earth's gravitational field is reduce by travel away from earth's surface. Similarly accelerated motional and gravitational effects on isotopes in planetary atmospheres of Earth, Saturn, Jupiter and Uranus by  $^{14}\text{N}$ ,  $^{15}\text{N}$ ,  $^1\text{H}$ ,  $^3\text{He}$ ,  $^{13}\text{C}$  and  $^{17}\text{O}$  was reasoned in this work to cause lightning. Such solvent of positive NMMs were reasoned to accumulate and exchange charges in clouds and solute negative NMMs were reasoned to alter charge for streamers to induce lightning strikes. Lack of sufficient  $^{13}\text{C}$  and  $^{17}\text{O}$  in the  $\text{CO}_2$  of Venus' atmosphere is explained in this work to mediate lack of charge accumulation and discharge for lack of lightning on Venus. The lower temperature (-214 °C) and raining  $\text{N}_2$  (boiling temperature of -210 °C) in Neptune was reasoned in this work to strips  $^{15}\text{N}$  from the atmosphere of Neptune for explaining its lack of lightning in spite of its similar atmospheric composition but warmer (-193 °C) as Uranus. Such internal charging of Neptunian's atmosphere by the inability to discharge lightning by the author's theory is a basis for stronger gravitomagnetic coupling of Neptune to the magnetic field of the Sun. The author thereby explains the disappearance and appearance cycle of Neptune's clouds by gravitomagnetic coupling of charged clouds of Neptune to 11-year magnetic pole reversal of the Sun!

## **Introduction**

### **General Method of Amino Acid Productions**

The isolations of amino acids from plants and animals involve isolation from natural plant, animal and human sources, chemical formations and fermentative productions from microbes. The isolations from humans, animals and plants are more expensive on industrial scales. The productions by isolations from organic sources as humans, plants, and animals better preserve the isotopic distributions of  $^2\text{D}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ ,  $^{25}\text{Mg}$  and  $^{33}\text{S}$  and other isotopes of trace minerals as well organic sources preserve the intrinsic homochirality of biomolecules in living organisms. But the chemical syntheses on industrial scales more often lead to formations of racemic (50%-50%) mixtures of the 2 isomers (D and L enantiomers) of these biomolecules. The microbial fermentative processes are thought to preserve the homochirality during industrial productions. In this work, the author proposes some processes during these industrial productions can alter chirality of biomolecules in novel ways.

## Isomers and Chirality and Different Properties

These stereoisomers of D and L types (for dextrorotatory and levorotatory by their differing clockwise and counterclockwise rotations of polarized light) manifest different properties in chiral environments. The biomolecules in living matter on earth manifest L isomers of proteins and carbohydrates and D isomers of nucleic acids (DNA and RNA). For instance, the D isomers of proteins, amino acids, carbohydrates and other biomolecules in some cases may manifest different biological activities relative to the natural L isomers for therapeutic effects in some cases but toxic and ill effects in other cases [1]. The L isomers of nucleotides likewise may manifest therapeutic effects or ill effects. For instance, some evidence points to D isomers of amino acids and proteins and L isomers of nucleotides for causing cancer [2]. Thereby in this work the author introduces centrifugations in fermentative processes that alter chirality of some amino acids and other biomolecules and causes mutations in genes of the microbes during centrifugation. The eating of such alter chiral amino acids and biomolecules from such processes can cause illness in humans and animals due to the change in chirality by the centrifugations of the microbes producing the amino acids.

## Gravity and Homochirality

The author [3-5] recently proposed that gravity may have been a source for seeding homochirality in life on earth for life possesses of L isomers of amino acids, proteins and carbohydrates and D isomers of nucleotides and DNA and RNA. The author proposed gravity's ability to seed such homochirality on basis of his application reasoning superluminous changes in general relativistic theory for determining that matter being space and space being matter for space to undergo relativistic alterations of quantum particles by fractional, irrational, superluminous, reversible, fissing and fusing of quanta particles for forming surrounding fields and space time (thermal space in rarefaction of matter). Vice versa the author gave theory of space time (thermal space) undergoing hidden integer, rational, reversible fusing to quanta (for spatial temporal in denseness).

By such fractional, luminous, reversible fissing and fusing of quanta and integer, rational reversible fusing of space and fractional, irrational fissing of quantum explain the quantum fluctuations and entanglement by the author's theory [4]. Such fractional, reversible fusing of space and fractional, irrational fissing of quanta also explain electromagnetic waves and their quantum nature. Furthermore, the author's theory give basis for understanding transportations, transformations, transmutations, and thermodynamics of quanta by undergoing intermediates by quantum fluctuations by fractional, reversible fissing to space for motions, chemical reactions, nuclear reactions and energetics! Such operation predict, discover and account for alter chirality. The author notes the superluminous irrationality of gravity and thermal space for coupling to rational, luminous quanta particles like electrons, quarks, nucleons and nuclei to induce fractional, reversible fissing and fusing of the quanta and the integer, reversible fusing of the thermal space to gravity and gravity to L continua, strong and nuclear fields. By such RBL notes gravity and altered gravity can couple to NMMs and alter chirality.

## Hypothesis

### Changing Gravity and Changing Acceleration Changes Chirality

The hypothesis in this paper is given here. On the basis of the author's theory biomolecules during the industrial productions by microbial fermentative processes may undergo some change in chiral change due to altered gravity. Just as the gravity seeded the chirality of the biomolecules during the formation and evolution of life on earth, the author proposes in this work that changing the gravity on organisms and their biomolecules can cause change in chirality of the biomolecules for causing various effects of space travel. The author's theory notes the thermal space and gravity space interact with quanta to frustrate the integer quanta to induce fractional fissing of the quanta for inducing and

activating transport, transformations, transmutations and thermodynamics of the quanta. Vice versa, quanta can alter surrounding space time for production of gravity and thermal spaces in hidden ways and momentarily QFs, electric fields, magnetic fields and mechanical fields. Thereby by the author's theory, the altered gravity on the quanta of a system alters the frustrations of the quanta and fractional fission and fusion of the quanta to alter the transport, transformations, transmutations and thermodynamics of the quanta of such systems for among many things altering the chiralities in the systems.

Thereby biomolecules in changing gravity can change the motion, chemistry, nuclear reactions and energetics of such biomolecules. The changing chemistry may include altered stereochemistry in the changing gravity by the hypothesis here in this article. Furthermore, the author notes the presence of quanta having nonzero nuclear magnetic moments (NMMs) heighten these effects and induce such effects under milder less energetic conditions. On such basis, the author noted astronauts in space away from earth fit this model as their transported to outer space changes the gravity on such them and the recycling of their waste of urine (enriched with  $^{15}\text{N}$ ) for water and  $\text{CO}_2$  (enriched with  $^{13}\text{C}$  and  $^{17}\text{O}$ ) conversion to sugars provide diet enriched in  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  under severely altered gravity for altering the motions in their bodies [3-5]. Such change in motion and gravity on the body of the astronauts changes their biochemical reactions in their bodies and possibly induce nuclear reactions in their bodies under cosmic ray interactions. On such basis, the author has given prior consideration and explanations in his original theory of space travel why causing diseases.

#### Simulated Gravity by Accelerating and Changing Accelerating Alters Chirality by NMMs

The author further hypothesize that simulated altered gravity during the centrifugations in biophysical technologies employing centrifugations of bacterial and fungal cultures having ingredients of sugar and urine of known high  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  enrichments leads to altered stereochemistry and inversions about chiral centers of amino acids and sugars and nucleic acids. Sugar and urine used in many industrial fermentative processes are known to be enriched in  $^{13}\text{C}$ ,  $^{15}\text{N}$ , and  $^{17}\text{O}$  as these come from C4 plants [6] and from human and animal wastes. The accelerations by the centrifugations are hypothesized here to cause altered gravity to simulate either stronger gravity on a different planet, say Jupiter or Saturn and/or to simulate reduction in gravity as displacing the organisms from surface of earth to satellite orbiting earth in free fall for such altered gravity to alter chirality and alter metabolisms. The NMMs and nuclei are sensitive to change in acceleration and such change in gravity. The author hypothesizes here in this work that such rapid rotations to separate the bacteria, fungi and algae from the products produced in industrial fermentative processes are typically vigorous and involving many g (s) and can manifest simulated gravitational changes for changing chiralities and changing isotopic enrichments. Thereby the induced gravity in the mixture having chiral centers, unreacted nucleophiles of nonzero NMMs, and leaving groups of nonzero NMMs and solvent water enriched with  $^{17}\text{O}$  can due to the centrifugations induce chemical attacks by the nucleophiles on the chiral centers of amino acids, sugars, fats, and nucleotides formed by the process to alter the chirality.

It could be that prior to this work of the author the small scale lab preparations by the biophysical and enzymatic processes involved simple separations. But industrial scale and human applications may involve stronger motions and certainly more massive tanks and contents to separate the microbes for sanitation purposes. The more rapid centrifugal motions of more massive samples cause greater mechanical pressures on the organic molecules above the aqueous phase for stronger simulated gravity + mechanical pressures to more strongly alter the nucleophilic attacks to change chirality. The electromagnetic fields of motors for such stirring also can augment mechanical and simulated gravity forces for altering nucleophilicity and stereochemistry of the product molecules in

larger scale heavier centrifugal industrial processes. The altered chirality of some of the product molecules like aspartic acid and phenylalanine in forming aspartame may explain ill health effects of aspartame. As these biomolecules are often in fermentative processes produced in nonchiral environments and involve  $S_N1$  reactions racemizations and inversions occur by the theory here. In living organisms such reactions may occur enzymatically in the chiral environments of the biomolecules and the author has noted steric effects of proteins and nucleic acids and complex carbohydrates steer the stereochemistry and prevent inversions even for  $S_N1$  reactions. But in industrial processes (where single amino acids, nucleotides, lipids and/or simple sugars are produced or involved), the steric blocking in living cells is missing (and the chiral environment in living cells is also missing) as the peptides and dipeptides like aspartic acid and phenylalanine have more space about them for nucleophilic attacks from both sides for more possible inversion of chirality. So the inversions and racemizations can occur more readily for peptides, dipeptides, nucleotides and oligonucleotides produce industrially relative to macromolecular chiral environments inside living cells.

## Procedure

RBL theory is applied to aspartame production and to thunder cloud for explaining isotopic enrichment of aspartame and  $^{15}\text{N}$  and  $^{14}\text{N}$  generating lightning.

## Results

### Details of Aspartame Production

Prior science has missed these effects as given by the author on enzymatic productions of amino acid and lightning production by  $^{14}\text{N}$  and  $^{15}\text{N}$  and other positive and negative NMMs in Jupiter, Saturn, and Uranus. Prior science has considered nuclei immutable under these conditions. Prior science has considered the nuclei only emitting positive electric charges and possible magnetic fields from nuclear spin magnetic moments. But RBL's theory introduces the fractional fission and fusion of nuclei for nuclei releasing various electric, magnetic, gravitational and quantum fields for novel dynamics.

The results are the gravitational accelerations and changing accelerations of nuclei induce fractional fission and fusion of nuclei as during such dynamic the nuclei cannot completely recover. As in such motions and changing motions of nuclei, the matter is going to space and space is going to matter and the rapidity may not allow complete reversibility for released fields or released matter by RBL theory. The quanta cannot fully recover for transpositions, transformation and transmutations. Motions in motions in motions cannot recover quanta during dynamics so nuclear quanta seep. The seeps of nuclei are powerful on L Frame electrons. But after RBL proposed fractional reversible fission and fusion of nuclei in 2000-03, other scientists [7] realized nuclei like  $p^+$  are dynamical. Recently scientists determined protons undergoing dramatic changes even pulling in mass energy equivalent of a charm particle [7]. Neutrons are known to be dynamical as they spontaneously disintegrate to  $e^-$  and  $p^+$  outside nuclei by weak interactions. RBL propose that neutrons inside nuclei also fission and fuse to  $e^- + p^+$  and the surrounding  $p^+$  rapidly refuse the electron [3-5]. On the basis of such dynamics of  $p^+$  and  $n^0$ , RBL of fractional, reversible fission and fusion of nucleons and nuclei are valid. In this work it is stressed that the huge internal rotations inside quarks, nucleons and nuclei are very sensitive to tiny bulk rotations in C Frames by Little's Rules. Prior science has not realized nuclei are sensitive to induce internal changes by such tiny macro space motions as discovered in RBL theory.

Aspartame is made from two amino acids with forming methyl ester of one of the amino acids of the dipeptide. During the current industrial processes for synthesizing aspartame, aspartic acid and phenylalanine are produced by bacterial fermentative processes. Applying excess gravity and centrifugal

force is determined to alter the produced amino acids and resulting aspartame. Prior methods for forming these amino acids involved: 1) isolation from plant and/or animal sources or 2) chemical synthesis of the amino acids. The theory of RBL is applied as by the irrationality of gravity acting on quanta of aspartame process with alterations of chirality by excess gravity as introduced nonzero NMMs. Then by the RBL theory, the isotopic enriched molecules are placed in earth's gravity for different biochemistry to cancer then they are placed in lesser gravity by stopping the acceleration and rotations during centrifugations. The +/- NMMs are affected more than the zero gravity before centrifugation. There are 20 natural amino acids. Amino acids are composed of three groups: amino group, carboxyl group and side chain group. The 20 amino acids differ by having different side chains. Amino Acids composed proteins in biomolecules and different patterns of the amino acids for different patterns of the side chains manifest different molecular configurations (isomers). Isomers of peptides and proteins are chiral of two types designated L and D. The L isomers of aspartic acid and L isomer of phenylalanine when combined and the phenylalanine is modified to methyl ester the resulting modified dipeptide has sweet taste. The method of applying excess gravity and acceleration by the author is theory can change these isomers  $D \leftrightarrow L$  and/or  $L \leftrightarrow D$ . Aspartic acid has a polar side chain and phenylalanine has a nonpolar side chain.

The fermentative synthesis of aspartame involves forming phenylalanine in a bioreactor having *C. Glutamicum* and aspartic acid in a bioreactor having *B. Flavum*. (In such bio industrial fermentative processes, changes in quantum fields occur due to motional changes for changes in nuclear fields in motions and seeping of fields from nuclei by Little Rule. The seep induced dynamics and hidden activation states alter the biochemistry and chiralities.) The bacterial cultures in these reactors are established by growing the bacteria in nutrients for initial inoculation for multiplication of the bacterial population. The results here of applying the excessive gravity (G) and accelerations during centrifugations and/or decelerations on earth or taking such systems to outer space for even lesser gravity and effective decelerations alter the bacteria metabolisms to produce altered isomers of the  $L \leftrightarrow D$  and racemic mixtures. The recycles of bacteria in industrial processes over time and the mutations in bacteria induced by repeated centrifugations of genes from parent to off springs of microbes repeatedly used in such processes alter the products over time. The exposure of the microbes and biomolecules to centrifugations with repeated separation by centrifugations genetically alter the bacteria and fungi and other microbes with alteration of their DNA and RNA and proteins and amino acids and produced aspartame for disease. Upon sufficient population, the culture is added to a seed tank for providing an environment for growth of the bacteria. This growth environment includes warm water, carbohydrates (molasses, glucose, or sucrose), acetic acid, alcohols, ammonia and urea. Applying the procedure of RBL here results in greater sensitivity to centrifugations of bacteria as they are fed human and animal wastes (urine) with excess  $^{13}\text{C}$ ,  $^{15}\text{N}$ , and  $^{17}\text{O}$ . So the heavier isotopes cause greater sensitivity to centrifugations and altered chiralities. Also in these fermentative processes infections of the tanks by other organisms and foreign microbes lead to altered chiralities of products. Vitamins, amino acids and other nutrients are included in the seed tank. The seed tank is mixed and aerated by a pump.

After sufficient population, the culture from the feed tank is added to a fermentation tank. The fermentative tank has similar environment as the seed tank for inducing further growth and multiplication of the bacteria. In the fermentative tank, the bacteria are induced to produce the amino acids with ammonia water used to control the pH. Upon sufficient amino acid production, the content of the fermentative tank is dumped into separation vessels for centrifugal separation. (The electric (E) and magnetic (B) fields involved in these processes act to induce nuclei for seeping Q fields from nuclei.) The centrifugal motions isolate the bacteria from the amino acids produced. Applying the procedure of RBL in this work leads to altered D and L isomers and isotopic compositions of amino acids and bacteria

by such centrifugations. The desired amino acids are then separated and purified in an ion exchange column. The amino acids are then crystallized in a crystallizing vessel.

The amino acids from the fermentative process are then used to synthesize aspartame. Methanol is combined with the phenylalanine to form the L-phenyl alanine methyl ester. During the process of forming the phenylalanine methyl ester, the aspartic acid part is protected by a substance that adds a benzyl ring to protect the aspartic acid sites. The benzyl ring induces more NMM effects. The greater NMM effects due to benzyl ring result as nucleotides have more NMM effects than amino acids. Nucleotides have more ring structures and greater NMM effects by the author's theory. The amino acids are then added to a reactor tank where they are heated to 65 °C and maintained for 24 hours. The reactor is cooled to room temperature and diluted with solvent and then cooled to -18 °C decreasing temperatures for crystallization of the dipeptide. This intermediate to aspartame is then added to a large tank where palladium catalysts and hydrogen are added to the aspartame intermediate to react it with acetic acid to form the aspartame from the intermediate by catalytic effects of the palladium. Filtration is used to remove the palladium after 12 hours. Palladium has negative NMMs. By the author's theory such negative NMMs of palladium isotopes alter NMM enrichments of aspartame produced. The filtrate is then distilled to remove the solvent to then crystallize the aspartame. Recently scientists demonstrate magnetic fields can cause chiral separation during such physical processes as chiral separation [8]. Weak magnetic fields in this process can cause changes in chiralities. The author notes the gravitational alterations and accelerations and changing accelerations cause stronger effects than the magnetic fields.

Applying RBL theory to this process leads to the centrifugations altering the chirality of some of the products. The use of urea further gives environment for altered chirality as the urea may come from animal and human sources and the N of such sources is known to be enriched with  $^{15}\text{N}$  relative to  $^{14}\text{N}$  [9]. The catalytic action of palladium and its negative NMMs may also contribute altered chirality of the some of the products. The crystallization is known to be affected by magnetic field so different magnetic noise can selectively crystallize on enantiomer. The result of applying RBL theory can result in the aspartame product have some D isomer rather than pure L isomer. The ingestion of the trace amount of D isomer impurity from the process may have ill effects on consumer over long time periods.

Such phenomena are related to the author previously noting in his book [4] that  $^{15}\text{N}$ ,  $^{13}\text{C}$  and  $^{17}\text{O}$  replacements in DNA and RNA alter the translation of proteins for altering patterns of amino acids in proteins [4]. Animal and human wastes are also known to enrich in  $^{13}\text{C}$  biomolecules [9]. The author notes that many bacteria, mold, fungi, protists [10,11] and alga readily enriching  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  and give  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  enriched biomolecules like amino acids that they produce to surrounding hosts even to mammals, plants and humans. Such is consistent with RBL book [4] where he discovered and disclosed  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$  enrichments in DNA and RNA alter protein translation [4]. The observed enrichments of protists with  $^{13}\text{C}$  and  $^{15}\text{N}$  [10,11] are consistent with RBL previously proposed theory of the ability to alter RNA translation of proteins [4]. The prior theory in the authors book of  $^{13}\text{C}$ ,  $^{15}\text{N}$ , and  $^{17}\text{O}$  altering DNA and RNA for altering protein translation is proven by recent experiments with protists where scientists observed protists altering amino acid translation of proteins by RNA [ 12].

## Discussion

Discuss Aspartame Results In Context of Prior Gravitational and NMM Theory of Little

The author has discovered and invented the alterations of chemical reactions by gravity and stronger fields coupling gravity to electric and magnetic fields by Little's Rules. Subsequently, scientists have computed intense gravity producing light [13] in support of Little's theory. (Just as results here

show simulated zero gravity in bacterial fermentative experiments in space.) The author [4,5] has applied his theory to explain data of NASA and the effects of zero gravity on humans and other living materials. On such basis, the author proposed the alteration of biochemistry as organisms are displaced from the gravity at the earth's surface into free fall and zero gravity as satellites as on board the experimental laboratories on the International Space Station. Due to difficulty and expense of transporting samples to International Space Station, scientists have attempted to simulate zero gravity by free fall in aircraft in earth's atmosphere [14]. Scientists have also attempted to simulate zero gravity by rotations in centrifuges [15]. The author has proposed altered gravity in free fall for killing cancer cells as during parachuting [4]. The author has proposed that centrifuging release biomolecules when biochemists extract proteins and nucleic acids from cells during centrifugation [16]. The author further proposed and applies here his prior discovery and results here of centrifugations altering isotopic enrichments and the author reasons such centrifugations alter the productions of L amino acids during biofermentative productions of amino acids by bacteria, alga, protists, mold and fungal cultures in massive industrial processes. The author here demonstrates the identical phenomena of chiral modifications experienced by organisms in space and satellite of the International Space Stations by zero gravity and altered gravity of bacterial and fungal cultures in centrifuges of industrial fermentative amino acid reactors by simulated zero gravity and / or excessive gravity. Scientists have observed altered biochemistry aboard International Space Station [17], in this work the direct effect of zero gravity and accelerations on chirality and biochemical reaction is given by the author to explain such effects of zero gravity.

#### Excessive and Reduced Gravity and Changing Accelerations Couple More Strongly to NMMs to Cause Cancer and Disease in Organisms and to Kill Cancer Cells

Excessive gravity couples to nonzero NMMs more strongly for altered nucleophilic attacks to alter chirality for causing cancer. The author proposed altered biochemistry by reducing terrestrial gravity may cause greater harm to cancer cells by greater altered biochemistry by nonzero NMMs in cancer cells by heavier isotopes relative to lesser altered biochemistry in normal cells having common less massive isotopes mostly of 0 NMMs [1-3]. The author proposed intrinsic isotopic enrichments in cancer cells of  $^2\text{D}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ ,  $^{25}\text{Mg}$  and  $^{33}\text{S}$  may cause greater sensitivity to altered gravity relative to isotopes having zero NMMs so that increased gravity and pressure helps cancer cells like in tumors and decreases gravity like in space kills cancer cells. But how?

#### RBL's Theory of Thermal and Gravitational Spaces Interacting with Quanta and Vice Versa

The author proposed thermal space is superluminous, infinitesimal, irrational numbers and thermal space integrates to gravitational irrationalities of superluminous integer + fractional irrationalities. The author reasoned matter is space and space is matter. More details of RBL's mechanism are given here. By such irrationalities acting on integer quanta of electric (E) and magnetic (B) fields to reversibly, fractionally fission the integer quanta E and B fields. The E and B fields by the author's theory compound to leptons of  $e^- e^+$  and quarks for hadrons and nuclei. And the author proposed the  $e^- e^+$  and quarks compound to nucleons, nuclei, atoms and atoms in compounds of molecules and formula units. Gravity (G) affects nuclei; and G affects nonzero NMMs more than zero NMMs. Nonzero NMMs have denser rationalities to couple with irrational G and fission greater rational fields to electronic lattices and surroundings of atoms and molecules to alter their dynamics. So changing G changes zero NMMs to nonzero NMMs by isotopic replacements and enrichments. Then placing biomolecules and microbes in  $G = G_{\text{max}} \leftrightarrow G = G_{\text{earth}}$  alters their dynamics and metabolisms by turning off centrifuge and observing altered biochemistry after centrifuging due to isotopic replacements. The altered gravity during centrifuging enriches the biomolecules with heavier isotopes of nonzero NMMs thereby making them more sensitive to change in gravity relative to the prior

molecules having common isotopes of zero NMMs or + NMMs of  $^{14}\text{N}$ ,  $^{31}\text{P}$  and  $^1\text{H}$  (causing the primordial dynamics). By RBL theory the nuclei with nonzero NMMs should have more dynamical motions for less inertia and less dissipations of their motions and altered chemical dynamics and altered nuclear transmutations. Then if the humans are taken to outer space, then the gravity is reduced even more for those with heavier isotopes to alter properties even more with greater effects on cancer, which by RBL theory has more nonzero NMMs. So the cancer is altered by the zero gravity more than the normal cells as the cancer cells have the greater change in dynamics due to their dynamics involving nonzero NMMs.

#### Gravity Induced Fiss and Fuse of Heavier and Lighter Nuclei for Different Effects for Varying Intensity Gravity

The author reasoned that just as gravity in its irrationality causes E and B fields to fractionally, reversibly fiss and fuse, so also the author proposed gravity causes the  $e^- e^+$ , atoms, quarks, nuclei, atoms and compounds to fractionally, reversibly fiss and fuse. Thereby thermal space and gravity acting on objects causes the atoms of the objects to fractionally, reversibly fiss and fuse. Fissing and fusing are used to explain phenomena of transport, transformation, and transmutations of matter as the atoms reversibly transform to space as induced by gravity and thermal space. How are fissing and fusing involved with dynamics in general? Thereby irrational gravity and thermal spaces couple more strongly to quarks, nucleons and nuclei than  $e^- e^+$  due to greater denser masses of quarks. Thereby the nuclei with non-zero NMMs would release more net B, E, G and quarks fields than null NMMs as thermal spaces and gravity spaces may more intensify, induce and agitate their reversible, fractional fissing and fusing during transportation, transformation and transmutations and energetics. Nuclei with nonzero NMMs fiss to release greater QF, B, and E fields than those with zero NMMs. Nuclei with zero NMMs fiss and fuse to release more balanced fields of + and – electric fields E; and N and S magnetic fields. On such basis the heavier, isotopically, enriched atoms in compounds like amino acids, carbohydrates, nucleic acids and lipids composing living matter (organisms) by the author theory will release more intense QF, B, and E fields as induced by fractional, reversible fissing and fusing. Such greater released fields more alter quanta fields in biomolecules are proposed by the author to alter the biochemistry of cells having these heavier isotopic enriched biomolecules. Such phenomena release more intense fields from nuclei to more alter molecules to disrupt cancer in space to release molecules in microbes to cause cancer in humans. The heavier molecules in humans in altered gravity alter metabolisms. But heavier molecules as in cancer are more altered in their dynamics in space due to the cancer having heavier molecules more relative to normal cells having lighter molecules and less released nuclear fields for altering their dynamics. Such altered biochemistry is proposed by the author to cause disease in zero gravity and further more to harm cancer cells in more detrimental ways than normal cells.

So the author reasons that the aspartame caused by heavier isotopes from centrifugations is eaten by humans; and the humans are not in motion like microbe in centrifuges and the human metabolism is altered due to heavy isotope enrichments with nonzero nuclear magnetic moments (NMMs) to cause cancer by heavy molecules in the aspartame. But then changing gravity (by taking into outer space) then kills the cancer cells more due to the heavier (nonzero NMMs) isotopes of either different NMMs and/or nonzero NMMs in the cancer and more sensitive to the change in gravity heavier isotopes for killing cancer faster in normal cells. Then so it is that gravity caused the heaviness (and nonzero NMMs) causing the cancer then the change in gravity or zero gravity more affects the heavy (and nonzero NMMs) molecules in cancer than lighter molecules in normal cells. So is it that the changing motions caused cancer by increasing the gravity. Then to remove the gravity the cancer is more affected as the molecules are heavier (with different and nonzero NMMs). The chemistry is here noted to be nanoscale and of greater gravity and more collective interactions and dynamics. Organic chemistry is atomic and weaker gravity and less collective dynamics.



## Greater Details of G and Acceleration Altering Molecules by Coupling More Strongly to Nuclei of Non-zero NMMs

Why does the gravity couples (C Frame) more to interior nuclei and leptons (RS, NS and LS Frames) than to quantum orbitals (of L Frame)? The C Frame macro-motions have interior motions of L Frames and RS, NS and LS Frames. The author already published energetically why gravity and thermal spaces cannot as effectively energetically couple directly to L Frames, but they can energetically couple to RS, NS and LS Frames by Little Rules 1 and 3 [1-3]. But now indirectly, the author noted that the C Frame can energetically couple to L Frames by coupling to RS, NS and LS Frames and the fissing and fusing of RS, NS and LS Frames energetically affect the intervening L Frames. (Here it is discuss why NMMs and nuclei cause stronger gravity) But here the author notes further in terms of momenta rather than energies in the macro-outer (C Frame), intermediary quanta ( L Frames), and inner quark/hadron (RS and NS Frames). The C Frame momenta are affected more strongly by electron spins (LS Frames) than the electron orbitals ( L Frames) affect C Frame. The Coupling to C Frame also increases with the number of electrons. Such phenomena was already disclosed by the author already published in 2022 [18] as the change in number from 1 to 2 molecules to moles to macro numbers involve change (increasing) in surface to volume of spins. The surface to volume of motions (momenta) in C Frame and its component spins in LS Frame have more internal motions (momenta) in C frame due to greater number of internal spins (in microvolume relative to nanovolumes and atomic volumes). Thereby the spins unpaired in macroscopic C Frames and exhibit ferromagnetism with more stabilizing rapid C Frame motions (momenta) as the many internal motions (momenta) can cancel each other by exchange so the backward internal motions (momenta) are not opposing the macromotion as much. Here the author determines altered electron and fermion exchange from atomic to nano to macro systems in motion. But as the size is reduced to nanomotions (nano-momenta) the number of internal spins diminish so the compensation of macro motion is lost so the spins can flip to diamagnetism to pair to stabilize the bulk motion nano systems and subnanosystems (momenta) as size reduces from macrometer to nanometer and to even smaller sizes. Thereby the author in this work proposes that nano to macro size objects polarize electrons and fermions as they move faster and faster for ferromagnetism. And the author proposes form smaller objects from nano size to molecular to atomic to nuclear to quarks unpolarized or pair their spins and fermions as they move faster and faster for diamagnetism.

So the orbitals in submacroscopic sizes do not couple as strongly to C Frame motions (momenta). And the electron fissing does not as much help the electronic orbital to couple to the C Frame as the masses are too tiny of the electrons and the energies produced by fissing electrons. But many electrons may increase the effective mass for fissing of many electrons for noticeable effect of electrons on L Frame for affect C Frame by bending the light rays for explaining refractions (by Little's Rules 1 and 3) as light traverses different materials by wave natures of electrons as electrons fission and fuse to waves by quantum fluctuations. But during absorption of space or photons the wave fuse to electrons (few electrons are involves) so the space is decoupled from the electron spin by the electron being particle and the fusing takes in energy so the coupling cannot occur by Little's Rules 1 and 2. So absorption and emission are decoupling and removing energy as quanta of electrons from and to space by Little's Rules 1,2 and 3. So for purely electronic phenomena the spins do not as well couple to the space except at limit of speed by photons and electromagnetic waves. But the photons change the electrons orbitals in this way as the C Frame couples with fissioned electrons or electron waves so the C Frame alters the orbital. But the orbitals are in one way so motion can cause the electrons to fission and alter the orbitals in two ways; as the spins can reinforce the orbitals or oppose the orbitals. The spins fissioned by C Frame perturbations that reinforce the orbitals are the favored. It is on such basis that magnetic and gravitational fields can cause homochirality by coupling to electron spin so spin alters

orbitals unsymmetrically. But the magnetic is more local effect. The gravity is more global and the gravity would amplify homochirality as it is global and acts on many electron spins (assuming zero NMMs of nuclei of these electrons) at once by Little's Rules 1 and 3 by wave nature of electrons. But the non-zero NMMs can allow gravity to act locally and even for weaker gravity fields act locally to alter momenta and alter chirality. But the magnetic field acts on fewer electrons (assuming zero NMMs of nuclei having these electrons) but involving high spin density of higher spin energy of the fewer electrons for altering the electrons by weaker gravity. Nuclei with nonzero NMMs may act under weaker magnetic fields. So this is why Little is correct and Naaman is not correct by magnetism causing homochirality. But Little's gravity is global but weak. But next RBL notes how his gravity is amplified by NMMs!

#### From leptons to Quarks for More Mass and More Fissing

But the nucleons, nuclei and quarks (RS and NS Frames) are denser so by Little's Rules these heavier leptons and quarks can fission to couple more strongly to C Frame. This is how the gravity is amplified. Whereas gravity cannot couple to L Frames and electron spins as well, gravity by Little's Rules couples more strongly to RS and NS Frames due to greater energy densities and momenta of such nucleon and nuclear frames. The gravity acts thereby by internal to NS and RS Frames to perturb nuclear magnetic moments (NMMs) to release NMMs into L Frames to indirectly affect L Frames and quantum mechanics. (Nuclei are heavier and compounded of both Br and Dk. Hadrons differ from leptons as hadrons have both Br and Dk. Hadrons differ from leptons as hadrons have both Br and Dk. Protons have excess Br. Neutrons have excess Dk. The mystery of Dk is in the neutrons. – NMMs are ways to counter entropy and energy crisis! ) This is how RBL's theory, gravity is intensified in force and manifests amplification over larger spaces for causing homo-chirality. Furthermore, nuclei and nucleons can have positive and negative clockwise and counterclockwise chiralities. Thereby gravity can if negative NMMs are present cause counter orbitals of electrons for serious transport, transform and transmuting, and thermodynamic effects. Thereby the changing surface to volume from macro to atomic sizes causes increased surface to volume for the nuclei and nucleons to experience thermal space and gravity space to fractionally fission and fuse so that the nuclei and nucleon spins and orbitals can alter orbitals as objects move in C Frame at higher velocities. The nucleons can polarize orbitally to compensate the macromotions for Little Effect. The nucleons can flip spins to compensate the macro motions for Little Effect. The nuclei and nucleons can manifest relativistic mass-energy conversions for enhancing the motions and fields from fissioned nuclei both clockwise and counterclockwise. So by such, the  $^1\text{H}$ ,  $^{14}\text{N}$ , and  $^{31}\text{P}$  are more common and positive NMMs and composing proteins and nucleic acids and may explain the D chirality of nucleotides and the L chirality of proteins. Gravity on earth is bright, so by author's theory, gravity twists the chirality in one direction. But the uncommon isotopes of  $^{15}\text{N}$  and  $^{17}\text{O}$  can act to locally alter the Br gravity for twisting and the homochirality as  $^{15}\text{N}$  and  $^{17}\text{O}$  have negative NMMs of induced opposite chirality to the positive NMMs of  $^1\text{H}$ ,  $^{14}\text{N}$  and  $^{31}\text{P}$ . The author notes gravitational effects on chirality may manifest more strongly in molecules having heavier nuclei and nuclei of nonzero NMMs. The purely magnetic effects on chirality may involve molecules having less massive nuclei.

#### Acceleration Increases Thermal Space To Alter Quanta and Limit Recovery For More Fissing

Not only gravity would affect the chirality due to the NMMs more strongly coupling to the gravity, but by general relativity the acceleration is indistinguishable from a gravity. So the gravity causes the accelerations and here RBL notes also that the accelerations cause the gravity. So as nuclei fission and fuse the released fields can momentarily increase gravity and vice versa gravity can be altered by changing motions to fuse to center. The accelerations and changing motions can also cause altered enrichments of isotopes. Therefore in accelerated motions of the bacteria and fungi, the NMMs in their molecules can cause stronger couplings to the accelerations for altering nucleophilic attack for changing

biochemistry and chiralities. The motions back and forth can have altered gravity and altered spin flippings of nuclei to alter motions and ease of motions and accelerations at edge. The vibrational motions may be twisted in accelerations due to NMMs as the NMMs flip spins in linear accelerations and decelerations and the flipped spins alter the magnetic moments and the altered magnetic moments by Little Effect can twist the linear motions to circular motions. So nuclear spins can cause C Frame vibrational motions to transform to L Frame circular quantum motions. NMMs may cause such transformations at lower speeds so C Frame  $\leftrightarrow$  L Frame transitions occur at lower energies; when they have nuclei of nonzero NMMs.

The author notes here that materials having nonzero NMMs may also undergo less inertia relative to nuclei with zero NMMs. The author notes that nucleophilic attacks may momentarily alter nuclear magnetic moments! The vibrations are not only driven by NMMs but the NMMs are altered by vibrations. Like in superconductivity, the phonons induce altered NMMs and vice versa for NMMs to diminish effects of phonons. The author here predicts many new phenomena based on this theory put forth here. The author is applying this to the centrifugations of the C Glatamicum forming phenylalanine and B. Flavum forming aspartic acid in the aspartame synthesis for altered chirality and  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  enrichments in these amino acids during the centrifugations for the isolations of these products during fermentative productions of aspartic acid. This explains by the author's theory why the aspartame causes cancer, diabetes and other diseases due to its fermentative productions by the bacteria and fungi in simulated zero gravity in the centrifuges during separations. The author further predicts that bats due to their awkward motions produce chiral molecules that fights viruses and bacteria and cancer in more effective ways than humans [19]. Bats sleep upside down in gravity field and their biochemistry is altered. Spiders hang in web upside down and their biochemistry is altered so spider venom kills cancer. Bees and their simulated zero gravity produce biomolecules that fight cancer. Accelerated bacteria and viruses may produce strains that are resistant to immune response of humans. Accelerated viruses and bacteria in bats, bees, mosquitos produce viruses and bacteria that are not in humans and cause illness in humans.

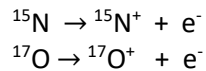
#### RBL Theory Explaining Planetary Lightning

Just as in life world in geosphere of atmosphere, NMMs under gravity and magnetic fields of the earth drive dynamics and phenomena: lightning. Here, the author develops more his theory of isotopes of + and - NMMs of  $^{14}\text{N}$  and  $^{15}\text{N}$  cause lightning on earth. Also lightning on Jupiter, Saturn and Uranus are explained by  $^{15}\text{N}$  of - NMM and  $^{14}\text{N}$ ,  $^1\text{H}$ , and  $^{13}\text{C}$  of + NMMs. But recently lack of lightning on Venus is explained by the author's theory as due to  $\text{CO}_2$  in Venusian atmosphere. The much lower temperature and raining of  $\text{N}_2$  of  $^{14}\text{N}$  and  $^{15}\text{N}$  from Neptunian atmosphere are used to explain the lack of lightning in Neptune.

#### RBL's Theory Invents Negative NMMs of $^{15}\text{N}$ and $^{17}\text{O}$ for induced Ionization by Their $e^-$ Loss

On this basis, the author introduces new theory for electron avalanche for generating lightning on basis of NMMs in some planets. Can acceleration cause  $^{15}\text{N}$  to ionize or  $^{17}\text{O}$  to ionize during collisions of atoms? Yes, by the author's theory the negative NMMs of  $^{15}\text{N}$  and  $^{17}\text{O}$  can cause them to push out electrons under electronic collisions and atomic collisions for more easily forming cations of  $^{15}\text{N}$  and  $^{17}\text{O}$  for explaining such phenomena as  $^{15}\text{N}$  and  $^{17}\text{O}$  in the atmosphere causing streamers for organizing lightning strikes in the resistive atmosphere of planets. Phenomena of superconductivity in Ranga Dias room temperature and near ambient superconductivity can be explained by such  $^{15}\text{N}$  under pressure ionizing to  $^{15}\text{N}^+$  and transfer electrons to  $\text{LuH}^-$ . Also the replacement of few Pb ions by Cu in Lead Apatite with  $^{17}\text{O}$  enrichment in such material can be superconductive as the  $^{17}\text{O}$  (relative to  $^{15}\text{N}$ ) at ambient temperature can more readily release electrons to Cu for the superconductivity due to the negative

NMM of  $^{17}\text{O}$ . And in proteins  $^{15}\text{N}$  and  $^{17}\text{O}$  can release electrons to surrounding electrophilic centers for forming stronger nucleophilicity of the attacking  $^{15}\text{N}$  and  $^{17}\text{O}$  as during centrifugal accelerations. But back to the lighting, such ease of ionizing  $^{15}\text{N}$  and  $^{17}\text{O}$  in the Earth's atmosphere can explain lightning. Moreover as electrons collide with these isotopes of  $^{15}\text{N}$  and  $^{17}\text{O}$  as during electric discharge, the resulting acceleration in the strong electric fields cause RBL's newly discover (as given here) ionizations of  $^{15}\text{N}$  and  $^{17}\text{O}$  as first determined and reported here. So lightning for instance may originate by electron induced ionization of  $^{15}\text{N}$  and  $^{17}\text{O}$  due to the negative NMMs causing fractional fission of nuclei of  $^{15}\text{N}$  and  $^{17}\text{O}$  for lowering ionization energies of  $^{15}\text{N}$  and  $^{17}\text{O}$ :



By such ionization of the  $^{15}\text{N}$  and  $^{17}\text{O}$  the numbers of electrons increase in the electron avalanche for accelerating the breakdown and the charging of the atmosphere and thereby increases the conductivity of the insulating gas for streamers for conductive path of lightning. Here the author reports his original theory of the lightning mechanism and applies it to understand why various planets like Earth, Venus, Jupiter, Saturn, Uranus and Neptune vary in their ability to manifest lightning activities.

#### RBL Theory Explains Lack of Lightning on Venus due to $\text{CO}_2$ having No NMMs

As the author here contemplates that 2 publications in Sept 2023 [20,21] further substantiate RBL's theory of lack of NMMs explaining that  $\text{CO}_2$  in Venus prevents Venusian lightning as  $^{12}\text{C}$  and  $^{16}\text{O}$  compose over 99% of  $\text{CO}_2$  and both  $^{12}\text{C}$  and  $^{16}\text{O}$  have 0 NMMs so lacking NMMs Venus should not have lightning. Although there is trace  $^{17}\text{O}$  in Venusian atmosphere with its -NMM for possibly discharging a huge potential difference in Venusian dust, aerosols, gases, and clouds, there is no excess nuclei of +NMMs to build-up the charge to create such huge potential differences in Venusian atmosphere. These two studies [20,21] substantiate my theory as they determine Venus has little to no lightning (due to magnetic disturbances causing whistlers [21]) and (due to meteors causing light flashes previously thought to be lightning [20]).

#### RBL Theory Explains Lack of Lightning on Neptune Due to Its Raining $\text{N}_2$ to Strip Away $^{15}\text{N}$

But now in this work, the author also focused more on Neptune and Uranus and both having  $\text{H}_2$  and He atmosphere with trace of  $\text{NH}_3$  and  $\text{CH}_4$  in Uranus and trace of  $\text{CH}_4$  in Neptune. But the author in this work discovered and disclosed [22] that lightning on Neptune and Uranus would form  $\text{N}_2$  by decomposing  $\text{NH}_3$ . The author noted that the resulting  $\text{N}_2$  would be like on earth having  $^{14}\text{N}$  and  $^{15}\text{N}$  and the author realized  $^{15}\text{N}$  forms the leaders for lightning in background  $^{14}\text{N}$  as I did publish for earth [18,22]. But RBL noted [22] that for Uranus and Neptune the warmer Uranus would have  $\text{N}_2$  as gas, but the cooler Neptune would condense  $\text{N}_2$  from its atmosphere [22]; so without  $^{15}\text{N}$  in Neptune's atmosphere there is no mechanism for charge to form leaders for lightning discharge [22]! The author (RBL) thereby just enhanced his nuclear magnetic moment (NMMs) theory of lightning by Little Effect as the author discloses in this work a critical idea of why cooler temperatures of Neptune prevent lightning relative to warmer temperatures of Uranus. Neptune's average temperature ( $-214^\circ\text{C}$ ) is near but below the boiling point ( $-195^\circ\text{C}$ ) of molecular nitrogen ( $\text{N}_2$ ) and Uranus average temperature ( $-195^\circ\text{C}$ ) is well above the boiling point of liquid  $\text{N}_2$ . Although both Uranus and Neptune rain  $\text{N}_2$ , Uranus is warm enough to perpetually evaporate and rain  $\text{N}_2$ . But Neptune is so cold that the vapor pressure of  $\text{N}_2$  is too low to rain  $\text{N}_2$  so Neptune condenses  $\text{N}_2$  to strip its atmosphere of  $\text{N}_2$  for lack of  $^{15}\text{N}$  for negative NMMs for streamers to discharge the huge potential in clouds of Neptune! RBL predicts Neptune's clouds may have persistent huge charge and potential. Today (Oct 8, 2023), the authors discovered that by his theory he can explain the disappearance of Neptune's clouds as observed in Aug 2023 [23]. Scientists have coupled the flip of the magnetic field of the sun to appearance and disappearance of Neptunian

clouds by the change in UV radiation from the sun with its flip of its magnetic field [23]. But here RBL gives a different theory as by RBL theory of lightning by trace negative NMMs and the lack of  $^{15}\text{N}$  of negative NMMs in Neptunian atmosphere for persistent charge separation in Neptunian atmosphere by RBL theory and RBL in this work proposes coupling of such charge layers to the sun's magnetic field and gravity. So the flip in the sun's magnetic field every 11 years magnetically alters charge layers in clouds of Neptune by RBL theory to explain the disappearance and appearance of Neptune's clouds! By RBL theory of the persistent charging in Neptune atmosphere due to its  $^1\text{H}$  and  $^{13}\text{C}$  in  $\text{CH}_4$  for charge accumulations due to their positive NMMs but lack of  $^{15}\text{N}$  for streamers to discharge the Neptunian atmospheric charge by lightning, the charged Neptunian clouds may couple more strongly to suns magnetic field and flip its clouds with the flip in the sun's magnetic field by RBL theory as noted in this work. Some may criticize RBL's gravito-magnetic coupling between Neptune and the Sun for explaining the appearance and disappearance of Neptune's clouds by claiming the magnetic field is weak between Neptune and the sun. The author here notes his theory couples gravity to magnetic field for longer range action of suns magnetic field to Neptune via the gravity. The author also here gives criticism of the UV theory as the author here detracts from the UV theory and substantiates his theory by the fact that Uranus also has clouds and UV is more intense on Uranus than Neptune. But Uranus clouds do not disappear, therefore the UV explanation cannot explain the disappearance of Neptune's clouds as if it were the UV then Uranus clouds would also disappear by changing UV from the sun due to flip in magnetic poles of the sun. The author theory of gravitomagnetic coupling between the sun and Neptune is stronger for explaining magnetic pole reversal of sun causing magnetic disappearance and reappearance of Neptune's clouds charging of Neptune's clouds and magnetization of Neptune's clouds by the charging; as this theory of RBL also can explain lack of disappearing clouds on Uranus as Uranus has lightning and no charge accumulation like Neptune.

The author (RBL) explained in more details his theory of NMMs of  $^1\text{H}$  and  $^{14}\text{N}$  causing lightning on earth and on Jupiter and Saturn and Uranus. Considering that Neptune's (-201 Celsius) atmosphere is about 80.0%  $\text{H}_2$  and 19.0% He and 1%  $\text{CH}_4$  (methane). Uranus's atmosphere (-193 Celsius) is 82%  $\text{H}_2$  and 15.2% He and 2.3%  $\text{CH}_4$  with trace of  $\text{NH}_3$  and  $\text{H}_2\text{O}$ . Saturn's atmosphere is 96.3%  $\text{H}_2$ , 3.25% He. Jupiter's atmosphere is 89.8%  $\text{H}_2$  and 10.2% He. I think  $\text{NH}_3$  in Neptune and Saturn can by lightning strikes form  $\text{N}_2$  gas. But by RBL's theory the  $\text{N}_2$  gas in Uranus (average temp - 193 Celsius) is not as liquified ( $T < -210$  Celsius) in Neptune as Uranus; as Uranus (-193 Celsius) is slightly warmer than Neptune; and Uranus temperature is above boiling point of  $\text{N}_2$  gas whereas Neptune's temperature (-214 Celsius) is near boiling point of  $\text{N}_2$ . So Neptune rains  $\text{N}_2$  to deplete its atmosphere of  $^{14}\text{N}$  and  $^{15}\text{N}$  to explain why Neptune lacks lightning even though the composition of its atmosphere is similar to the composition of the atmosphere of Uranus. I think - NMM of  $^{15}\text{N}$  causes leaders in charged atmosphere, but such  $^{15}\text{N}$  in Neptune's atmosphere is missing as Neptune is so cold the  $\text{N}_2$  gas is condensed to liquid  $\text{N}_2$  and solid  $\text{NH}_3$ ! On earth the  $\text{N}_2$  gas with 1%  $^{15}\text{N}$  allows leaders. Jupiter and Saturn, Uranus have trace  $^{15}\text{N}$  (-NMMs) in  $\text{N}_2$  for lightning leaders! But Neptune lacks trace  $^{15}\text{N}$  to provide leaders for lightning.

## Conclusion

RBL thereby determines Neptune rains earth's atmosphere ( $\text{N}_2$  and its nuclear magnetic moments positive and negative,  $^{14}\text{N}$  and  $^{15}\text{N}$ ) stripping Neptunian atmosphere of lightning for explaining lack of lightning on Neptune. Venus is hot as earth's volcanic lava, but Venusian  $\text{CO}_2$  (of zero nuclear magnetic moments, NMMs) and cannot host lightning by RBL's theory of NMMs. So unlike Tolbachik volcano on earth and volcanic lightning, Venus lacks lightning! And further by lack of Neptunian lightning and persistent charging of Neptunian atmosphere, RBL explains Neptune coupling to the sun magnetically so 11 year cycle of solar magnetic pole flips modulate the appearance and disappearance of Neptunian clouds.

Just as the NMMs can explain these atmospheres of planets and lightning activities and clouds appearing and disappearing, RBL theory also explains gravity effects on the NMMs in living organisms as life on earth is shown to organize its homochirality by Earth's Gravity. The author demonstrates that based on gravities effect on homochirality, scientists and engineers have unknowingly imposed excess gravity by centrifugation on living organisms to alter the some chiralities in these microbial organisms during fermentative amino acid industrial productions. The human consumptions of the product amino acids as in aspartame has so impurity D isomers with L isomers by the authors theory to explain the ill effects of aspartame. The author notes such change in chirality can further explain aspartame being a carcinogen. The author notes changes in chirality can in general explain all cancers and NMMs in his theory altering chiralities. Thereby the author reasons reducing gravity affects cancer in different way than normal cells as cancer has clumped  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{17}\text{O}$  of enrichments for stronger response to the reduced gravity for killing the cancer.

## References

1. McConathy J, Owens MJ. Stereochemistry in Drug action. *Prim Care Companion J Clin Psychiatry*. 2003; 5(2):70-73.
2. Murtas G and Pollegioni L. A-Amino Acids and Cancer: Friends or Foes? *Int J Mol Sci*. 2023; 24(4):3274.
3. Little RB. A theory of the relativistic fermionic spinrevorbital. *Int. J. Phys. Sci.*,2015;10(1):1–37.
4. Little RB. On the Carcinogenic Mechanism and Cure for Cancer: Ferrochemistry for Cause of Warburg Effect. Published as Book (BP International); <https://www.bookpi.org/bookstore/product/on-the-atomic-carcinogenic-mechanism-and-cure-for-cancer-ferrochemistry-for-cause-of-warburg-effect/> .
5. Little RB. On the terrestrial gravitational bending of quantum fields during optics, enzymatics and catalyses of biomolecular and nanoscale chemical reactions. *Chemrxiv*. (2020). Available from:<https://doi.org/10.26434/chemrxiv.11634786.v1>.
6. Lavergne, A., Harrison, S. P., and Prentice, I. C.: Investigating C3/C4 plants competition using carbon isotopes and optimality principles, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-1111, <https://doi.org/10.5194/egusphere-egu22-1111>, 2022.
7. The NNPDF Collaboration. Evidence for intrinsic charm quarks in the proton. *Nature* 2022; 608, 483-487.
8. Furkan Ozturk S., Liu Z, Sutherland JD, Sasselov DD. Origin of biological homochirality by crystallization of an RNA pre-cursor on a magnetic surface. *Science Advances* 2023; 9(23); DOI: 10.1126/sciadv.adg8274.
9. Czank C, Cassidy A, Zhang Q, Morrison DJ, Preston T, Kroon PA, Botting NP, and Kay CD. Human metabolism and elimination of anthocyanin, cyanidin-3-glucoside: a  $^{13}\text{C}$  tracer study. *Am J. Clin. Nutr.* 2013;97:995-1003.
10. Orsi WD, Wilken S, del Campo J, Heger T, James E., Richards TA, et Identifying protist consumers of photosynthetic picoeukaryotes in the surface ocean using stable isotope probing. *Environmental Microbiology*. 2018; 20(2): 815-827.
11. Kuppardt S, Chatzinotas A and Kastner M. Development of a fatty acid and RNA stable isotope probing-based method for tracking protist grazing on bacteria in wastewater. *Applied and Environmental microbiology*. @010; 76(24): 8222.
12. McGowan J, Kiliyas ES, Alacid E, Lipscombe J, Jenkins BH et al. Identification of a Non-Canonical Ciliate Nuclear Genetic Code Where UAA and UAG Code for Different Amino Acids, *PLoS Genetics* (2023). doi.org/10.1371/journal.pgen.1010913 .

13. Brandenberger R, Delgado PCM, Ganz A, and Lin C. Graviton to photon conversion via parametric resonance. *Physics of Dark Universe*. 2023; 40: 101202.
14. Topal U and Zamur C. Microgravity, stem cells, and cancer: A new hope for cancer treatment. *Stem Cells Int*. 2021: 2021: 5566872.
15. Shamloo A, Naghdloo A, and Besanjideh M. Cancer cell enrichment on a centrifugal microfluidic platform using hydrodynamic and magnetophoretic techniques. *Scientific Reports* 2021; 11: 1939.
16. Little RB . author personal communication in 2018.
17. Grimm D, Wehland M, Corydon TJ, Richter, Prasad B, Bauer J, Egli Marcel, Kopp S, Lebert M, Kruger M. The effects of microgravity on differentiation and cell growth in stem cells and cancer stem cells. 2020; 9(8): 882.
18. Little RB. Nano-domains of nuclear magnetic moments for gravitational stimulation of biological processes. *European Journal of Applied Physics*. 2022; 4(2): 14.
19. Little RB. Possible treatment of corona-virus and other viruses by stable isotopes and electromagnetic fields and waves. *viXra*. 2020; <https://vixra.org/abs/2003.0493>.
20. Blaske CH, O'Rourke JG, Desch SJ, and Borrelli ME. Meteors may masquerade as lightning in atmosphere of Venus. *JGR Planets*. 2023;128(9); e2023JE007914.
21. George H., Malaspina DM, Goodrich K, Ma Y, Ramstad R., Conner D, Bale SD, and Curry S. Non-lightning-generated whistler waves in near-Venus space. *Geophysical Research Letters*. 2023; 50(19): e2023GL105426.
22. Little RB. Public Communication on LinkedIn on Oct. 4, 2023; [https://www.linkedin.com/posts/reginald-little-10ab0038\\_venusian-lightning-may-be-a-rare-phenomenon-activity-7115168566127075328-OY2A?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/reginald-little-10ab0038_venusian-lightning-may-be-a-rare-phenomenon-activity-7115168566127075328-OY2A?utm_source=share&utm_medium=member_desktop) .
23. Chavez E, de Pateer I, Redwing E, Molter EM, Roman MT, et al. Evolution of Neptune at near-infrared wavelengths from 1994 through 2022. 2023; 404: 115667.