

# **Gravitational and Rotational Entanglements of Nuclear Magnetic Moments for Nonlocal Biomolecular Recognition and Charging and Macro-Entanglement of Planetary Clouds**

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## **Abstract**

Fermentative productions of amino acids are thought to retain homochirality. This work can propose rotational motions for accelerations by centrifugations during fermentative processes enrich heavier, stable isotopes of differing nuclear magnetic moments (NMMs) with consequent possibility of altered chirality and magnitude of rotating polarized light for altering chemical, physical and biological phenomena of such enantiomers. 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 of enantiomers in hosts eating fermentative produced amino acids. Cancer was determined from eating heavier 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 by collisional exchange to accumulate and exchange charges in clouds and collisional exchange solute negative NMMs were reasoned to alter charge for production of leaders and 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 explaining 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 despite its similar atmospheric composition but warmer (-193 °C) as Uranus. The charged  $^1\text{H}$  atmosphere of Neptune is thereby the basis for charging Neptune's atmosphere and the author thereby explains the disappearance and reappearance of Neptune's clouds by magnetic coupling of charged atmosphere of Neptune to Sun's magnetic field.

## **Introduction**

The mechanism of interactions between biomolecules (in a different world of nuclei and atoms from our world on the size of the human body) for manifesting life has confounded scientists for over 200 years. This works further considers and draws analogy the mechanism of charge interactions between atoms, ions, and molecules (in another world of planets and stars on the size of the solar system) for manifesting the life of the cloud and charge activity and energy production within storms. In this work the author introduces and further develops his theory of the nuclear magnetic moments (NMM) of nuclei of atoms composing these systems in our world on size of meters and sizes of different world of atoms and nuclei and intervening mixed world of nanostructures and the vast sizes of another world of planets and the solar system. The author demonstrates the NMMs provide phenomena for coupling gravity (based on its proposed superluminality in this work) and the bigger, vast another world of planets and stars to the different, tiny world of atoms and nuclei on relativistic bases.

On such basis of nuclear magnetic moments (NMMs), the author determines that the organisms and cells (liquid, solid and gas) may be appreciated in some sense as a compress cloud (gas and transient plasma) with the nuclear magnetic moments of such complex structures manifesting interactions discovered by the author and used to explain complex dynamics of life and on same basis complex dynamics of charge organization and lightning mechanism of thunderstorms and coupled interactions of electric storms on planets with solar storms and magnetic phases of the sun. The author in this work makes such analogy on basis of elemental make up of cells of organisms on earth and varying element make up of atmospheres of the 8 planets and the Sun (star) at the center. The biomolecules are further presented as composed of mostly elements of H, C, N, O, Mg, P, S, Cl, Na, Ca, K, Fe, and Zn and in particular H, C, N, O, Mg, S and P. The author further develops his notion that the key to mystery of life are the positive NMMs of  $^1\text{H}$ ,  $^{14}\text{N}$ , and  $^{31}\text{P}$  each having over 99% relative abundance on earth. The author develops further his prior theory of the gravitational and thermal spaces interacting with these NMMs under conditions for life of temperature, pressure, and volume for stimulating fractional, reversible fission and fusion of nuclear and strong fields and NMMs from these elements to activate dissipative phenomena of proteins, DNA, RNA, carbohydrates, lipids and other biomolecules for driving activated states in hidden way of biochemical reactions and various metabolic processes. By such fractional fission and fusion of these stable isotopes and dominating  $^1\text{H}$ ,  $^{14}\text{N}$ , and  $^{31}\text{P}$ , the author proposed that homochirality is induced in the thermal and gravitational fields of the earth for explaining homochirality gravitationally. The author strengthens his theory of NMMs of  $^1\text{H}$ ,  $^{14}\text{N}$ , and  $^{31}\text{P}$  organizing replication, transcription and translation by comparing his theory to the recently observed alteration of protein translation by some protists by disclosing in this work the protists' inclination to enrich their carbohydrates, proteins and DNA and RNA with  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$  and  $^{18}\text{O}$  for  $^{18}\text{O}$  induced alteration of DNA and RNA to  $^{18}\text{O}$  enriched G\* and T\* having induced +NMM of  $^{18}\text{O}$  for G\* behaving as A and T\* behaving as C for explaining the misreading of aspartic acid and glutamine and the altered genetic expression of some protists. On such basis the author proposes alterations of normal biochemical reactions for causing disease, aging and eventual death by clumpings and accumulations of trace, uncommon stable isotopes of  $^2\text{D}$  (smaller +NMM),  $^{13}\text{C}$  (+ NMM),  $^{15}\text{N}$  (-NMM),  $^{17}\text{O}$  (-NMM),  $^{18}\text{O}$  (induced + NMM),  $^{25}\text{Mg}$  (-NMM),  $^{26}\text{Mg}$  (induced + NMM),  $^{33}\text{S}$  (+NMM),  $^{40}\text{K}$  (-NMM),  $^{41}\text{K}$  (induced - NMM), and/or  $^{43}\text{Ca}$  (-NMM) relative to more commonly [primordial amounts found in normal, healthy cells], stable isotopes of  $^1\text{H}$  (induced negative NMM),  $^{12}\text{C}$  (+ NMM),  $^{14}\text{N}$  (+ NMM),  $^{16}\text{O}$  (zero NMM),  $^{24}\text{Mg}$  (0 NMM),  $^{32}\text{S}$  (0 NMM),  $^{39}\text{K}$  (+ NMM), and/or  $^{40}\text{Ca}$  (0 NMM). The author demonstrates in this work the altered gravity by displacement in space and even accelerated motions (centrifugation) on earth for inducing replacement of common stable isotopes of these elements by their corresponding less common nonprimordial stable isotopes with consequent different biochemistry for changes in metabolism for explain diseases like cancer, diabetes, Alzheimer's disease and more.

The author, by the same consideration of nuclear magnetic moments and the composition of atmospheres of the different planets gives more details concerning his theory of cloud formation and lightning generation. The earth's atmosphere is composed mostly of  $\text{N}_2$  and  $\text{O}_2$  with cloud formation from  $\text{H}_2\text{O}$  vapor. The author draws analog to common atomic composition of the earth's atmosphere and the proteins, carbohydrates and nucleic acids composing living organisms for his theory of NMMs of N in  $\text{N}_2$  and H in  $\text{H}_2\text{O}$  also by fractional fission and fusion in the thermal, accelerative, gravitational, electric and magnetic conditions of the gas organizing atoms, ions and molecules for driving cloud formations and charge accumulations and lightning mechanism by trace  $^{15}\text{N}$  and  $^{17}\text{O}$  of negative NMMs. Venus is different, having atmosphere of over 99%  $\text{CO}_2$  and the lack of NMMs of sufficient relative abundance in Venusian atmosphere is described for explaining the lack of lightning in Venus. The gas giants (Jupiter, Saturn, Uranus and Neptune) have atmospheric compositions of mostly H and He with trace amounts of  $\text{H}_2\text{O}$ ,  $\text{NH}_3$  and  $\text{CH}_4$ . The author describes how the fractional fission and fusion of  $^1\text{H}$  and

its positive NMMs (in analog to  $^{14}\text{N}$  on earth) gives mechanism for charging and cloud formation in these gas giants with lightning by trace amounts of  $^{15}\text{N}$  and  $^{17}\text{O}$  in these gas giants. But the author introduce even greater credence to his theory as he reveals Neptune's great distance from Sun and cooler temperatures stripping  $\text{N}_2$  and  $\text{NH}_3$  by rain and sleet from Neptunian atmosphere for clouds of  $\text{CH}_4$  and  $\text{H}$  and  $\text{He}$  at higher heights for lack negative NMMs in  $\text{CH}_4$  clouds of Neptune for dissipating its charged clouds as  $^{17}\text{O}$  and  $^{15}\text{N}$  of negative NMMs on earth and in the other gas giants perturb the positive NMMs of  $^1\text{H}$  and  $^{14}\text{N}$  for producing electric leaders for causing charge dissipation and lightning on earth and in the other gas giants with exception of Neptune! The author further discloses a new theory for disappearance and reappearance of Neptunian clouds by the gravito-magnetic coupling Neptunian clouds to the magnetic cycle of the sun.

#### General Method of Amino Acid Productions

The isolation of amino acids from plants and animals involves isolation from natural plants, animal and human sources, chemical formations, and fermentative productions from microbes. The isolation from humans, animals and plants is 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 for explaining why ultra-processed foods are not healthy. The microbial fermentative processes are thought to preserve 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, 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 cause mutations in genes of the microbes during centrifugation. The eating of such altered 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, fissioning 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).

#### Fractional Reversible Fissing/Fusing Nuclei Explains Phenomena

By such fractional, luminous, reversible fissing and fusing of quanta and integer, rational reversible fusing of space and fractional, irrational fissing of quantum, the quantum fluctuations and entanglements are explained here by the author's theory [4]. Such fractional, reversible fusing of space and fractional, irrational fissing of quanta also explains 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 operations predict, discover and account for alter chirality. The author notes the superluminous irrationality of gravity and thermal space for coupling to rational, luminous quantum 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. Based on 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 fissing and fusing of the quanta to alter the transports, 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 motions, chemical reactions, 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) heightens 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 transportation to outer space changes the gravity on 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 provides diets 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 changes in motion and gravity on the body of the astronauts change the 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 considerations 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 hypothesizes 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.

## Scale-Up and Stronger Centrifugal Acceleration

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 (products like aspartame) as these biomolecules are often in fermentative processes produced in nonchiral environments and involve  $\text{S}_{\text{N}}1$  reactions racemizations and inversions occur by the theory here. In living organisms such reactions may occur enzymatically in the chiral environments of the biomolecules. The author has noted steric effects of proteins, nucleic acids and complex carbohydrates steer the stereochemistry and prevent inversions even for  $\text{S}_{\text{N}}1$  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 and partial or complete racemization. So, some inversions and partial racemizations can occur more readily for peptides, dipeptides, nucleotides and oligonucleotides produce industrially due to less crowding about reaction centers relative to macromolecular chiral environments with more crowding by folded macromolecules 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. The application of the nuclear magnetic moments (NMMs) theory of RBL involved considering the stable isotopes of each element of the substances composing the carbohydrates, proteins and nucleic acids and their NMMs with signs

(chiralities or parities). Likewise the NMMs of the atoms, ions and molecules composing the atmospheres of Venus, Earth, Jupiter, Saturn, Uranus and Neptune are considered by the parities (chiralities) of the NMMs for the alterations of the physical and chemical phenomena are reasoned for possible: 1) vapor-liquid transformations and cloud formation; 2) liquid solid transformation with cracking of ice and charging for electrification of the clouds; 3) entanglement of charges of atoms, ions, molecules and nanoparticles of ice in the cloud; and 4) sparking or leader transients for induction of lightning strikes. The effects of chiralities (parities) of uncommon isotopes relative to the molecules of common isotopes are considered for altering the chemical, physical and biological phenomena in both biomolecules in cells and in clouds in atmospheric cells of planets.

## Results

### New Results Here Missed by Prior Science

Prior science has missed these effects as given here by the author (as results) on enzymatic productions of amino acid and lightning production by  $^{14}\text{N}$  and  $^{15}\text{N}$  and other positive and negative NMMs in Earth, Jupiter, Saturn, Uranus, and Neptune. 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.

### Quantum Matter Fissions and Incomplete Recovery

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. Why should nucleons with 3 interior dynamical quarks not pull in surrounding fields reversibly with release of fields to alter  $e^-$  dynamics in new ways? The fission quanta cannot fully recover during transportations, transformations, and transmutations. The residual fields produce results noted here. Motions in motions in motions cannot fully recover quanta during dynamics so nuclear quanta fractional seepings. 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 equivalence 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 proposed that neutrons inside nuclei also fission and fuse to  $e^- + p^+$  and the surrounding  $p^+$  rapidly refuse the electron [3-5]. RBL here notes further  $p^+$  and  $n^0$  undergoes dynamical strong and weak forces as agitated by even tiny, macro-space (C Frame) thermal agitations. The author notes further that the magnitude of such strong and weak induced dynamics increases with the intensity of agitation for greater seeping of fields into surrounding  $e^-$  lattices about nuclei. Based on such dynamics of  $p^+$  and  $n^0$ , RBL's 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, surrounding 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's theory.

### Details of Aspartame Production

Aspartame is made from two amino acids 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 of 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 induce cancer. Then the altered chiral biomolecules have been placed in lesser gravity by stopping the acceleration and rotations during centrifugations. The +/- NMMs are affected more by reduced gravity than the isotopes of zero NMMs in the biomolecules before centrifugation. The centrifugation may enrich and clump heavier isotopes and consequent heavier isotopes in rotation may alter chiralities. 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 are composed of 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 isomers 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.

#### C Glatumicum and B. Flavum Produce Phenylalanine and Aspartic Acid

The fermentative synthesis of aspartame involves forming phenylalanine in a bioreactor having C Glatumicum 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 partially racemic mixtures. The recycling 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 separations by centrifugations genetically alter the bacteria and fungi and other microbes with alterations 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  $^{17}\text{O}$ . The heavier isotopes are induced to replace lighter isotopes in biomolecules. 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.

#### Multiplication of Bacteria in Fermentative Processes and Possible Genetic Alterations

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 amino acids with ammonia and 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.

#### Synthesis of Aspartame (Dipeptide) from Phenylalanine and Aspartic Acid

The amino acids from the fermentative process are then used to synthesize aspartame. Methanol is combined with 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. The phenyl group also increases the mass of the dipeptide. So, the dipeptide is re-exposed to heavier leaving groups during separation for reforming the reactant from the product with entering group by attack from opposite side. 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 demonstrated 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, accelerations and changing accelerations cause stronger effects than the magnetic fields.

#### Feeding $^{13}\text{C}$ , $^{15}\text{N}$ , $^{17}\text{O}$ and $^{18}\text{O}$ Enriched Waste to Microbes in Industrial Fermentative Process for Enhanced Chiral Inversion

Applying RBL theory to this process leads to the centrifugations altering the chiralities of some of the products. The use of urea further gives environment for altered chiralities 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 some of the products. Crystallization is known to be affected by magnetic field so different magnetic noise can selectively crystallize on enantiomer. The result of applying RBL's theory can result in the aspartame product having 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.

#### Isotopically Altered DNA, RNA and Protein Replications, Transcriptions and Translations

Such phenomena are related to the author previously noting in his book [4] that  $^{15}\text{N}$ ,  $^{13}\text{C}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  replacements in DNA and RNA alter the translations of proteins for altering patterns of amino acids in proteins [4]. Animal and human wastes are also known to enrich in  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  biomolecules [9]. The author notes that many bacteria, mold, fungi, protists [10,11] and alga readily enriching  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  and give  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  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  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  enrichments in DNA and RNA for altering protein translations [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]. As protists are common in ponds, lakes and ocean blooms, the water has a lot of  $^{17}\text{O}$  and  $^{18}\text{O}$  for enrichment of the protist's proteins and DNA and RNA with  $^{17}\text{O}$  and  $^{18}\text{O}$  to induce -NMMs and +NMMs, respectively, alter biomolecular properties. The prior theory in the authors book [4] of  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$  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].

Explaining Protists Divergent Genetics by  $^{18}\text{O}$  Enrichment for Misreading G and T and misreading A and C

In September 2023, scientists reported the alteration of protein translation by protists, *Oligohymenophorea* sp. PL0344 [12]. The scientists noted that this protist altered its translations of lysine and glutamic acid and stops during protein translation of the RNA. Such genetic diversity of *Oligohymenophorea* sp. PL0344 can be explained here by RBL theory as by clumping of  $^{18}\text{O}$  in  $\text{C} \leftrightarrow \text{C}^*$  and  $\text{G} \leftrightarrow \text{G}^*$  nucleotides to form  $\text{C}^* \approx \text{A}$  and  $\text{G}^* \approx \text{T}^*$  or  $\text{U}^*$ . So that the  $^{18}\text{O}$  with its induced positive nuclear magnetic moments (NMMs) enriched  $\text{C}^*$  and  $\text{G}^*$  cause the  $\text{C}^*$  and  $\text{G}^*$  to have same number of positive NMMs in the nucleosides of A and T, respectively for DNA For RNA the  $\text{G}^*$  has same nucleosides as U and the  $\text{C}^*$  has same positive NMMs for hydrogen bonding as A. Therefore, the protists can hydrogen bond and read  $\text{G}^*$  as T and read  $\text{C}^*$  as A. RBL has previously proposed [4, 24] that the proteins select nucleotides for DNA replication by specific proteins by their number of NMMs nonlocally with entanglement interacting to read and hydrogen bond specific oligonucleotides and nucleotides by their number of NMMs. And RBL noted [4,24] that RNA translates by proteins enzymes by nonlocally interacting and entangling for hydrogen bonding and reading sections of DNA by NMM patterns and selective nucleotides by NMM patterns for RNA construction for transcription. RBL further noted [4,24] amino acids by their patterns of NMMs are selected for translation by favorable nonlocally interactions by entanglements with patterns of NMMs of oligonucleotides of RNA. Thereby here RBL notes that protists have been measured to possess enrichment of  $^2\text{D}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ ,  $^{18}\text{O}$  and other stable isotopes in their biomolecules [10,11]. Thereby RBL notes in this work that enrichment of  $^{18}\text{O}$  with its induced + NMM in C and G nucleotides for  $\text{C}^*$  and  $\text{G}^*$  can cause  $\text{C}^*$  to appear as A by same number of + NMMs along their pyrimidine portions of nucleosides for comparable hydrogen bonding of  $\text{C}^*$  and A and  $\text{G}^*$  to appear as T by same number of positive NMMs along their pyrimidine portions of nucleosides for comparable hydrogen bonding of  $\text{G}^*$  and T to affect DNA replication and  $\text{G}^*$  to appear as T and  $\text{C}^*$  to appear as A in RNA transcription. Prior paper by Little's Theory [4] and Little and Uziel [24] measure  $\text{C} \leftrightarrow \text{A}$  and  $\text{T} \leftrightarrow \text{G}$  by isotopic enrichments and functionalizations. In 2023, this genetic diversity observed in protists *Oligohymenophorea* sp. PL0344 [12] is explained by Little's theory [4] and Little and Uziel's data [24]. Such transformations or reading are determined by RB Little theory as the 2023 observed *Oligohymenophorea* sp. PL0344 conversion of STOP (UAA) to Lys {Lysine} (AAG) by  $\text{U}^* \leftrightarrow \text{G}$  so STOP enriches  $^{18}\text{O}$  in  $\text{U}^*$  so UAA of STOP becomes  $\text{U}^*\text{AA}$  which reads as GAA for reading Lys. The STOP (UGA) converts to Glu {glutamic acid} (GAG) by G in STOP enriching  $^{18}\text{O}$  to become  $\text{U}^*\text{GA}$  which is equivalent to GAG or Glu. So that only UGA in *Oligohymenophorea* sp. PL0344 translates as STOP. Such misreading can be explained by Little's theory [4] Little and Uziel observed data [24]. By  $\text{T}^* \leftrightarrow \text{G}$ , UAG (STOP)  $\leftrightarrow$  GAC for reading (Lys) and by  $\text{T}^* \leftrightarrow \text{G}$ , UGA of (STOP)  $\leftrightarrow$  GAG for reading Glu by RBL theory thereby explaining the divergent genetics of the *Oligohymenophorea* sp. PL0344 [12].

## Discussion

### Gravitational and NMM Theory of Little for Altering Chemical Reactions

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 a 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.

### Accelerative Equivalence of Gravity for Altered Chemistry

Due to the difficulty and expense of transporting samples to the 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 bio-fermentative 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 effects of zero gravity and accelerations on chirality and biochemical reactions are 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 further notes motional, collisional, and thermal gravitational irrationality inducing NMMs in elements of even atomic numbers and mass numbers. As in  $^{18}\text{O}$  the thermal and gravitational irrationality by the authors theory induces  $n^0$  in  $^{18}\text{O}$  to transmute reversibly to  $p^+$  and  $e^-$  for momentarily nucleus of  $\text{O}^*$  having  $9p^+ + 9n^0 + e^-$ . As  $9p^+$  NMMs of dominate – NMM of  $9n^0$  due to net charge of proton by RBL theory the  $\text{O}^*$  is reasoned to have transient + NMM with accelerating  $e^-$  inside the nucleus. (Scientists reason strong force increases in power as quarks pull apart. But RBL considers nucleon---nucleon interactions to counter the huge strong force inside the two nucleons. RBL further notes the proton and neutron in gravity and thermal space can be induced in changing motions to flip some pieces of the proton and neutrons as the interior of the nucleons then act internally in contrary ways to sustain fissioning. But eventually further perturbations induce it to refuse. But externally it is hard to pull  $p^+$  and  $n^0$  apart. But the irrationality and motions can cause inside to alter to counter refusing to prolong fissioning and ease fissioning. Also, the weak interaction is an alteration of internal so as to flip the inside to alter the proton and neutrons during reverse beta. Rotational motions alter the breaking of nucleons.) Thereby  $^{18}\text{O}$  is predicted to have collisional, thermal,

and gravitational induced + NMMs for explaining novel chemical, physical and biological phenomena. RBL here notes not only do collisions, thermal and gravity induce nonzero NMMs in nuclei of even atomic numbers and /or mass numbers. But collisions, thermal and gravity and strong interactions also alter NMMs in nuclei of odd mass numbers and atomic numbers. The NMMs are not static. The quarks and nucleons intrinsically rotate. The rotations intrinsically result from thermal space agitation and the release and reabsorption of the torqued space in irrationality. The knotting due to the denseness and the sensitivity so pulling apart accelerates more for more binding. But if flip some DK to Br and Br to Dk then stabilize with finite size preventing black hole from collapsing. The author proposed intrinsic isotopic enrichments in cancer cells of  $^2\text{D}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$ ,  $^{18}\text{O}$ ,  $^{25}\text{Mg}$  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 spaces integrate 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 (and quanta of particles) to reversibly, fractionally fission the integer quanta E and B fields (and particle quanta). The E and B fields by the author's theory compound to form leptons of  $e^-$  or  $e^+$  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. The gravity and thermal spaces can also transiently transmuted the zero NMMs to induce momentary nonzero NMMs in zero NMMs for transiently altering the electronic shells of atoms having zero NMMs like  $^{18}\text{O}$  require more intense higher energies and fields. The nonzero NMMs may manifest smaller inertia at lower activations relative to zero NMMs. Zero NMMs have more inertia and manifest mass. 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 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, cancer is altered by zero gravity more than the normal cells as the cancer cells have the greater change in dynamics due to their dynamics involving nonzero NMMs. But RBL notes that in altered gravity whether excess gravity or reduced (zero) gravity, atoms of zero NMMs can be strongly and intensely activated at high temperatures and/or strong fields. So NMMs are induced in the nuclei for altered chemistry. Lightning is an example considered next.

#### Gravity Induced Fission and Fusion 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 fission and fuse, so also the author proposed gravity causes the  $e^- e^+$ , atoms, quarks, nuclei, atoms, and compounds to fractionally, reversibly fission and fuse. Thereby thermal space and gravity

acting on objects causes the atoms of the objects to fractionally, reversibly fission and fuse. Fission and fusion 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 fission and fusion 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 be more easily activated than the nuclei of zero NMMs and nuclei of non-zero NMMs would also release more net B, E, G and quark fields than null NMMs as thermal spaces and gravity spaces may more intensify, induce and agitate their reversible, fractional fission and fusion during transportation, transformation and transmutations and energetics. The author thereby introduces motional induced isotopic fractionations. Nuclei with non-zero NMMs fission to release greater QF, B, and E fields than those with zero NMMs. But nuclei of zero NMMs if energized and forced more intensities can relativistically alter to release NMMs and alter their NMMs. Nuclei with zero NMMs fission 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's theory will release more intense QF, B, and E fields as induced by fractional, reversible fission and fusion. Such greater released fields more alter quanta fields in biomolecules are proposed by the author to alter the biochemistry of cells having these heavier isotopically 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 furthermore to harm cancer cells in more detrimental ways than normal cells.

#### Centrifugal Microbial Isotopic Enrichment and Altered Stereochemistry of Aspartame for Cancer and Zero Gravity Killing Cancer

So, the author reasons that the D-aspartame (caused by heavier isotopes from centrifugation) is eaten by humans; and the humans are not in motion like a microbe in centrifuges and the human metabolism is altered due to heavy isotope enrichments with non-zero nuclear magnetic moments (NMMs) in the bacterial produced aspartame 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 (non-zero NMMs) isotopes of either different NMMs and/or non-zero 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 non-zero NMMs) causing the cancer then the change in gravity or zero gravity more affects the heavy (and non-zero NMMs) molecules in cancer than lighter molecules in normal cells. So it is that the changing motions caused cancer by increasing gravity. Then to remove the gravity the cancer is more affected as the molecules are heavier (with different and non-zero 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.

#### Thermal Space, Gravity Space and Collisions and Motions Alter Exchange and Correlations from Macro to Nano to Atomic to Nuclear Sizes

Why does gravity couple (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 fission and fusion of RS, NS and LS Frames energetically affect the intervening L Frames. (Here it is discussed 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 were 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 of molecules 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 Frames have more internal motions (momenta) in C frame due to greater number of internal spins (in microvolume relative to nano-volumes and atomic volumes). Thereby the spins unpaired in exchange and correlations in macroscopic C Frames and exhibit ferromagnetism with more stabilizing rapid C Frame motions (momenta) as the many internal motions (momenta) by exchange and correlations can cancel each other by exchange so the backward internal motions (momenta) are not opposing the macro-motion as much. Here the author determines altered electron and fermion exchange and correlations from atomic to nano to macro systems in motion. The changing exchange and entanglement with size can redistribute isotope in bond specific ways. But as the size is reduced to nano-motions (nano-momenta) the number of internal spins diminish so the compensations of macro motion is lost so the spins can flip by exchange and correlation to diamagnetism to pair to stabilize the bulk motion nano systems and sub-nanosystems (momenta) as size reduces from macro-meter 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 forming 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 sub-macroscopic sizes do not couple as strongly to C Frame motions (momenta). And the electron fission 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 fission electrons. But many electrons may increase the effective mass for fission of many electrons for noticeable effect of electrons of L Frames for affecting 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 absorptions of spaces or photons the waves fuse to electrons (few electrons are involved) 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 spins; so, spins alter 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 chiralities. But the magnetic field acts on fewer electrons (assuming zero NMMs of nuclei having these electrons) but involving high spin densities of higher spin energies 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 RB 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 than leptons ( $e^-$  and  $e^+$ ) so by Little's Rules these heavier leptons and quarks can fission to couple more strongly to C Frame. This is how gravity is amplified. Whereas gravity cannot as easily 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. Due to differences in masses and interior charges and charge motions, lighter elements couple to gravity in different more strong way than heavier elements. Such follows as the core electrons in heavier atoms shield nuclei from perturbing gravity and lower fission and fusion of their nuclei. For instance, comparing  $^{16}\text{O}$ ,  $^{17}\text{O}$ , and  $^{18}\text{O}$ , the  $^{16}\text{O}$  and  $^{18}\text{O}$  have null (zero) NMMs but the heavier  $^{18}\text{O}$  couple to gravity and accelerations by fissioning its nucleons in its nucleus to form  $^{18}\text{O}^*$  with  $9p^+$  and  $9n^0$  and  $e^-$  and the  $9p^+$  dominate the  $9n^0$  to manifest induced net positive NMMs. The RF selective rotations of  $^{18}\text{O}$  may selectively induce positive NMMs to kill cancer as cancer maybe enriched with  $^{18}\text{O}$ . The gravity acts thereby by internally on NS and RS Frames to perturb nuclear magnetic moments (NMMs) to release NMMs into L Frames for C Frame to indirectly affect L Frames and quantum mechanics via denser RS and NS Frames. (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. Negative (-) NMMs are ways to counter entropy and energy crisis!) This is how RBL's theory determines that gravity is intensified in force by nonzero NMMs and even 0 (null) NMMs under more energetic conditions with stronger fields. On such basis, gravity via NMMs manifests amplification over larger spaces for causing homo-chirality. On the basis of NMMs, RBL couples gravity to magnetic as by nonzero NMMs gravities transduce magnetism to denser gravities and vice versa. 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 macro-motions for Little Effect. And vice versa, macro-motions can alter orbital polarities and nuclear magnetic moments. The nucleons can flip spins to compensate the macro motions for Little Effect. And vice versa, the macro-motions can flip nuclear spins. 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 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 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.

### Nonzero NMMs with Motions and/or Gravity Alters Living Organisms

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 alterations of NMMs and vice versa for NMMs can 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  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{17}\text{O}$  and  $^{18}\text{O}$  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 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 fight 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 the 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 living world in geosphere of atmosphere, NMMs in the atmosphere 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  $^3\text{He}$ ,  $^{17}\text{O}$ ,  $^{15}\text{N}$  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  $\text{N}_2$  and  $\text{NH}_3$  of  $^{14}\text{N}$  and  $^{15}\text{N}$  from Neptunian atmosphere are used to explain the lack of lightning in Neptune.

As water evaporates, molecules in droplets are entangled due to NMMs and spread entanglements in space of resulting vapor as liquid droplets evaporate to voluminous vapor. RBL

already published that the NMMs cause liquid state [18]. And as liquid with entangled NMMs vaporize there is memory of entanglement of the intimate NMMs --- NMM interactions of the vaporizing liquid. Thereby the condensation of the vapor to liquid as discovered here is facilitated by entangled NMMs of atoms, ions, and molecules of the vapor. This is why  $\text{Pb}_9\text{Cu}(\text{PO}_4)_6\text{O}$  requires sublimation and re-condensation. If no NMMs, then the vapor forms solid for deposition.

On Venus,  $\text{CO}_2$  cannot liquify, therefore deposits and sublimates and the  $\text{CO}_2$  lacks sufficient entanglement, exchange, and correlation in vapor in atmosphere of Venus due to the low relative abundance of  $^{13}\text{C}$  and  $^{17}\text{O}$ . So, the charges cannot organize lightning to explain absence of lightning in atmosphere of Venus. The reverse process of vaporization has solid of zero NMMs subliming or nonzero liquid of nonzero NMMs evaporating to vapor with separation of NMMs from liquids, but they correlate and exchange by quantum of droplets. If macro-space, then the droplets do not exchange. Droplets introduce quantum mechanics during cluster to vapor physical transformations, so the vapor molecules are entangled, correlated, and exchanged due to quantum mechanics. The positive NMMs keep charge separated but tiny. But bulk liquid lacks such quantum mechanics and vaporization is classical and involves less entanglement of species in resulting vapor. The  $\text{N}_2$  and its +/- NMMs mediate the entanglements of the water molecules on earth. After evaporation of bulk water as the droplets in clouds undergo vaporization and re-condensation of droplets with multitudinous cycles entangling more and more atoms, ions and molecules in the cloud. Such entanglement causes collective dynamics of droplets. In Saturn, Jupiter, Uranus and Neptune the  $\text{H}_2$  and He gives NMM solvents to exchange the  $\text{NH}_3$  ice and  $\text{N}_2$  NMMs. As the NMMs exchange the isotopes are redistributed in bond specific ways.

The Clusters of  $\text{NH}_3$  vaporize to media lightning. The exchange of H and He involves the strong force and is greater than the  $\text{N}_2$  on earth and its exchange by nuclear force. These interactions of molecules ( $\text{H}_2\text{O}$  on earth,  $\text{NH}_3$  on gas giants) entangle lakes of water and ammonia in steam and vapor of clouds with  $\text{N}_2$  gaseous solvent on earth mediating the entanglement of  $\text{H}_2\text{O}$  on earth (with  $\text{H}_2$  and He solvent on gas giants mediating entanglement of  $\text{NH}_3$ ). The condensation of water molecules on earth to liquid droplets changes the NMMs of the H atoms and polarization with change in size from subnano to nano to macro sizes. The ice changes internal spin polarization by altered internal exchange and correlation. So, the core of ice negatively charged, the surface positively charges and the surface fragments. This is the first consideration of such nucleation in gravity and in acceleration and in magnetic field and the NMMs for new perspective on nucleation of seed clusters and evaporation of cloud droplets and freezing of liquid in motion in gravity and NMMs. The NMMs order when liquid  $\leftrightarrow$  solid as discovered by RBL. As the nano droplet increases in size the surface freezes with interior liquid and include surface pressure so small cluster is solid due to pressure and grow and interior melts and surface freezes so the melting pulls isotopes from interior to surface to fractionate at surface. Differences in NMMs can cause charge separation in the particles. The increase in size of nano-liquid droplet in the cloud also changes exchanging and correlation in the core of the droplet relative to the surface of the liquid droplet as the core maintains diamagnetic polarization of NMMs and  $e^- e^-$ . But the larger surface layer grows and the liquid droplet changes to ferromagnetic polarization of NMMs. And  $e^- e^-$  magnetically polarize. So, Pauli exclusion principle push  $e^-$  from bonding molecular orbitals to antibonding molecular orbitals to fragment the freezing liquid surface from the denser liquid core. The resulting charged particles are entangled by colliding particles in gravity. So as the charges pull together, they affect each other due to entanglement over miles so this gathers lightning in clouds. The core of the liquid surface freezing causes difference of nuclear spins polarizations as  $e^- e^-$  exchange and correlate in core differ from surface. The denser core and magnetization stabilize electrons and  $^{18}\text{O}$  in core. The thin surface and diamagnetic exchange correlation stabilize + charge with more  $^{17}\text{O}$  at surface. By RBL theory the acceleration of the ice in gravity accelerates charges transfer due to NMMs of  $^1\text{H}$ ,  $^{17}\text{O}$ ,



and  $^{18}\text{O}$ ,  $^{14}\text{N}$  and  $^{15}\text{N}$ . This is analog to acceleration causing changing in centrifugation of biomolecules due to NMMs.

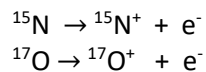
The phase change from liquid to solid occurs if temperature drops too low. Here RBL further applies his theory of NMMs affecting liquids forming solids [18]. By RBL theory the liquid droplet solidifies from its surface to core for  $\text{H}_2\text{O}$  and possibly  $\text{NH}_3$  due to greater density of the liquid states of these substances. The freezing to solid particles polarizes NMMs in the solid particles at the edge. The magnetic edge and paramagnetic NMM core cause the fragmenting of the edge of the nanodroplet as they freeze. The greater atomic density of the + NMMs and lesser atomic density of the – NMMs cause + NMMs to segregate to liquid core and – NMMs to segregates to edge solid of the freezing nanocluster. The + NMMs in denser core tend to pull  $e^-$  and – NMMs in the surface freezing solid tend to lose  $e^-$  to charge the ice with + charge and liquid core with – charge. The lesser dense + ice fragments separate from the denser – water droplet to structure clouds with + NMM tops and – charge base of cloud. The charge separation helps suspend the cloud against gravity. The surrounding N solvent gas separates the charged + ice droplets at the top of cloud and – water droplets at base of cloud. The positive NMM of  $^{14}\text{N}$  and  $^1\text{H}$  (in earth and gas giants, respectively) facilitate entanglement between the + ice particles and between the water droplets and between + top and – bottom of cloud to build huge megavolts to gigavolts of potential difference in the cloud. The greater the charging cause stronger E fields and B fields to increase the fractional fissing of NMMs to more strongly polarize the nano ice and nano-water droplets. The polarization of NMMs in + ice and NMMs in – water droplets prevent the melting of + ice droplets and freezing of – water droplets.

The tiny – NMMs of  $^{15}\text{N}$ ,  $^{17}\text{O}$  and  $^3\text{He}$  and  $^{17}\text{O}$  in the  $^{14}\text{N}$  (earth) and  $^1\text{H}$  (gas giants) atmospheres can in the huge electric field polarize to create channels of low resistance to charge transfer. Such is mechanism for leader formations to cause the lightning stroke mechanism in the charged cloud on earth and in the gas giants. -NMMs of  $^{15}\text{N}$ ,  $^{17}\text{O}$  and  $^3\text{He}$ ,  $^{17}\text{O}$  on earth and gas giants, respectively, frustrate the NMM entanglement of  $^{14}\text{N}$  and  $^1\text{H}$  in these atmospheres to frustrate entanglement of  $\text{H}_2\text{O}$ ,  $\text{NH}_3$  ice and  $\text{H}_2\text{O}$ ,  $\text{NH}_3$  liquid droplets. So, ice can melt and release charge conducted by line of  $^{15}\text{N}$  and  $^3\text{He}$ . The pockets of melting ice create rain and the pockets of negative water droplets produce rain with  $e^-$  flow from bottom of cloud to top for lightning discharge in the cloud. The build-up of charge in both of cloud can polarize the ground for electron flow from bottom of cloud to ground. The build of + charge in top of cloud can cause electron flow from ground to top of cloud. Of the gas giants, Neptune is different as it is stripped of its  $\text{NH}_3$  and  $\text{N}_2$  due to its lower temperature it rains and sleets most of its  $\text{NH}_3$  and  $\text{N}_2$  from its atmosphere. So there is less charging dissipation of Neptune's  $\text{CH}_4$  clouds as the  $^3\text{He}$  is above the  $\text{CH}_4$  cloud as He is much less dense and floats in layer above the  $\text{CH}_4$  clouds. So  $^3\text{He}$  cannot produce leaders to cause lightning mechanism in Neptune and  $\text{N}_2$  and  $\text{NH}_3$  are stripped from Neptunian atmosphere by condensation to liquid and ice.

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 ions 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 weaker nucleophilicity of the attacking  $^{15}\text{N}$  and  $^{17}\text{O}$  as during centrifugal accelerations. But back to the lightning, 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 fissioning 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 contemplate that 2 publications in Sept 2023 [20,21] further substantiate RBL's theory of lack of NMMs explaining that  $\text{CO}_2$  in Venus prevent 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 huge potential differences 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 °C) is near but below the boiling point (-195 °C) of molecular nitrogen ( $\text{N}_2$ ) and Uranus average temperature (-195 °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!  $^3\text{He}$  in Neptune is less dense and it

exist in upper atmosphere above the clouds and even escaping atmosphere of Neptune. So  $^3\text{He}$  is not able to accumulate and discharge lightning deep inside Neptune. So, Neptune's atmosphere is charge.

#### Prediction of Cause of Disappearance and Reappearance of Neptune's Clouds

RBL predicts Neptune's clouds may have persistent huge charge and potential. Today (Oct 8, 2023), the authors discovered that by his theory. RBL can explain by RBL's theory 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 for Neptunian cloud appearance and disappearance 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. RBL in this work proposes coupling of such charge layers in clouds 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's 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. There is some  $^3\text{He}$  in upper atmosphere of Neptune but it is above Neptune's clouds. The  $^3\text{He}$  in upper atmosphere may interact with Sun's magnetism to affect Neptune's clouds. Neptune is cooler and allows longer NMM polarizations due to its lower temperature relative to the warmer temperatures of Uranus, Saturn and Jupiter. This is why the Sun's magnetic field can more strongly couple to NMMs in Neptune's atmosphere and the sun's magnetic field flip the NMM polarizations of Neptune's clouds and causes the clouds to disappear and reappear over 11- year cycle of the sun's changing magnetic field and flip of the solar magnetic poles. The changing magnetic field of the Sun disrupts the entanglement of electric charge layers in Neptunian clouds. The change in entanglement of + charge ice in upper clouds causes them to melt to rain. The change in entanglement of - liquid particles in lower cloud causes them to rain to cause disappearance of Neptunian clouds by changes in suns magnetic field during 11 year solar cycle. During the 5.5 years the changing magnetic solar field cycle cause the vapor in the Neptunian atmosphere to condense and freeze with cloud reformations with the 5.5 years the magnetic field changes so the clouds disappear again to repeat the cycle of cloud disappearing, reappearing and disappearing and reappearing as the Sun's magnetic field weakens flips, strengthen and then weaken and flip and strengthen again over the 11 - year solar cycle.

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 that his theory couples gravity to magnetic field for longer range action of Sun's 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's 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.

What about gravity differences between the planets?

What about the sun's magnetic field coupling by gravity to affect the planets magnetically by gravito-magnetism and NMMs assist this. NMMs of earth, Saturn, Jupiter, Neptune and Uranus causes stronger magnetic interactions with sun than Venus. What about Mercury it is closer to the sun but not as hot as Venus. Mercury has thin atmosphere composed of mostly sodium, magnesium, calcium with trace amounts of oxygen, hydrogen, helium and potassium that forms by the solar wind blasting these off the surface of Mercury. Mercury's lack of atmosphere causes it to be cooler in spite of being closer to sun than Venus. The CO<sub>2</sub> making up Venus temperature causes the dissipation of charge to thermal energy and green house effects of Venus. It is thought that atmospheres lacking convection cannot have lightning. Mercury lacks convection and this may diminish charging effects of its Sodium of positive NMMs and the <sup>25</sup>Mg (magnesium) of negative NMMs in its thin atmosphere.

Does <sup>1</sup>H of Saturn, Neptune, Jupiter, Uranus have couple sun's magnetic field to these planets. Then earth's N<sub>2</sub> atmosphere? Yes, H and He lack outer e<sup>-</sup> e<sup>-</sup>. So, the nuclei couple directly to e<sup>-</sup> e<sup>-</sup> in Jupiter, Saturn, Neptune and Uranus. The O and N have core e<sup>-</sup> e<sup>-</sup> in earth's atmosphere so they couple to sun via nuclear force and e e cores shielding the valence electrons. So, the valence electrons of N, O do not feel direct gravity. So, the gravity of Uranus, Saturn, Neptune and Jupiter couple directly to nuclei of H and He, so as to fiss their nucleons (strong) fields. N<sub>2</sub> and O<sub>2</sub> on earth fiss nuclear fields as the nucleon nucleons in these heavier atoms manifest nuclear fields and not strong field. The nucleon fields of O<sub>2</sub> and N<sub>2</sub> on earth as weaker than the strong field of protons of Jupiter, Saturn, Uranus and Neptune at cooler temperatures for allowing stronger polarization of their proton magnetic moments by the sun's gravitomagnetic field. These Gas Giants are heavier and couple gravitationally more strongly to the H and He nuclei. This can explain stronger magnetic fields of the gas giants relative to earth's magnetic field.

The author (RBL) explained in more details his theory of NMMs of <sup>1</sup>H and <sup>14</sup>N causing lightning on earth and on Jupiter and Saturn and Uranus. Considering that Neptune's (-201 Celsius) atmosphere is about 80.0% H<sub>2</sub> and 19.0% He and 1 % CH<sub>4</sub> (methane). Uranus's atmosphere (-193 Celsius) is 82% H<sub>2</sub> and 15.2% He and 2.3% CH<sub>4</sub> with trace of NH<sub>3</sub> and H<sub>2</sub>O. Saturn's atmosphere is 96.3% H<sub>2</sub>, 3.25% He. Jupiter's atmosphere is 89.8% H<sub>2</sub> and 10.2% He. I think NH<sub>3</sub> in Neptune and Saturn can by lightning strikes form N<sub>2</sub> gas. But by RBL's theory the N<sub>2</sub> 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 N<sub>2</sub> gas whereas Neptune's temperature (-214 Celsius) is near boiling point of N<sub>2</sub>. So, Neptune rains N<sub>2</sub> to deplete its atmosphere of <sup>14</sup>N and <sup>15</sup>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 <sup>15</sup>N causes leaders in charged atmosphere, but such <sup>15</sup>N in Neptune's atmosphere is missing as Neptune is so cold the N<sub>2</sub> gas is condensed to liquid N<sub>2</sub> and solid NH<sub>3</sub>! On earth the N<sub>2</sub> gas with 1% <sup>15</sup>N allows leaders. Jupiter and Saturn, Uranus have trace <sup>15</sup>N (-NMMs) in N<sub>2</sub> for lightning leaders! But Neptune lacks trace <sup>15</sup>N to provide leaders for lightning.

I can explain the disappearance of Neptune's clouds by change in NMM polarization as solid ↔ liquid ↔ gas. RBL used prior paper where gas has diamagnetic spins of NMMs and liquids have varying polarization of NMMs due to closer interactions and rolling nature of liquids in contact. RBL notes that the NMMs cause the nuclei to rotate in the liquid state. Thereby RBL theory the liquid state forms due to NMMs. Life itself has H<sub>2</sub>O with rotating NMMs and the liquid in life. If change NMMs then change life. But solids have polarized NMMs, in a size varying way. The formation of solid in atmosphere of planets has surface pressure inducing solid with smaller size. But as increase size the surface pressure

diminishes. And with larger size the exchange and entanglement of spins change as the exchange has diamagnetic nuclear magnetic moments on atoms molecule scale and this changes to ferromagnetic polarization on macroscales. The exchange of nuclear rotations by NMMs can be a basis for biomolecules to recognize each other. The clouds have ice particles with polarized NMMs and sun's magnetic field can couple to clouds of polarized NMMs. When sun's magnetic field weakens and disappears then the cloud ice particles cannot polarize. UV excitation helps the polarization and depolarization in manner already proposed by RBL for curing cancer. In some ways thunderstorms on earth couple to sun's magnetic field.

## Conclusion

RBL thereby determines Neptune rains earth's atmosphere ( $N_2$  and its nuclear magnetic moments positive and negative,  $^{14}N$  and  $^{15}N$ ) stripping Neptunian atmosphere of lightning for explaining lack of lightning on Neptune. Venus is hot as earth's volcanic lava, but Venusian  $CO_2$  (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  $^{13}C$ ,  $^{15}N$  and  $^{17}O$  of enrichments for stronger response to the reduced gravity for killing the cancer.

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