

Chapter 6

The Isle of Paradise

The Universal Father is cosmically focalized, spiritually personalized, and geographically resident at this center of the universe of universes. ^{11:1.2}

The Universal Father, the Eternal Son, and the Infinite Spirit forever dwell on the Eternal Isle. The Isle of Paradise is a “material sphere,” ^{11:0.1} “the geographic center of infinity,” ^{11:9.2} and “the dwelling place of Deity.” ^{11:1.1} The personal presence of the Universal Father is the supreme destiny of the finite children of God. “The Father in heaven will not suffer a single child on earth to perish if that child has a desire to find the Father and truly longs to be like him.... When men begin to feel after God, that is evidence that God has found them, and that they are in quest of knowledge about him.” ^{131:10.4} The smallest flicker of desire to find God is the first personal proof of the Fatherhood of God. “You go in quest of a dear friend, and then you discover him within your soul.” ^{131:1.5}

The Eternal Isle is an elliptical disk with upper and lower planes and a peripheral surface. The Paradise Trinity and all other residents of Paradise dwell on the upper surface of Paradise. Near the Trinity at the center of upper Paradise is the rendezvous of the Seven Master Spirits, who are created by the Infinite Spirit, and Majeston, the first and only being so far personally created by the Supreme Being.

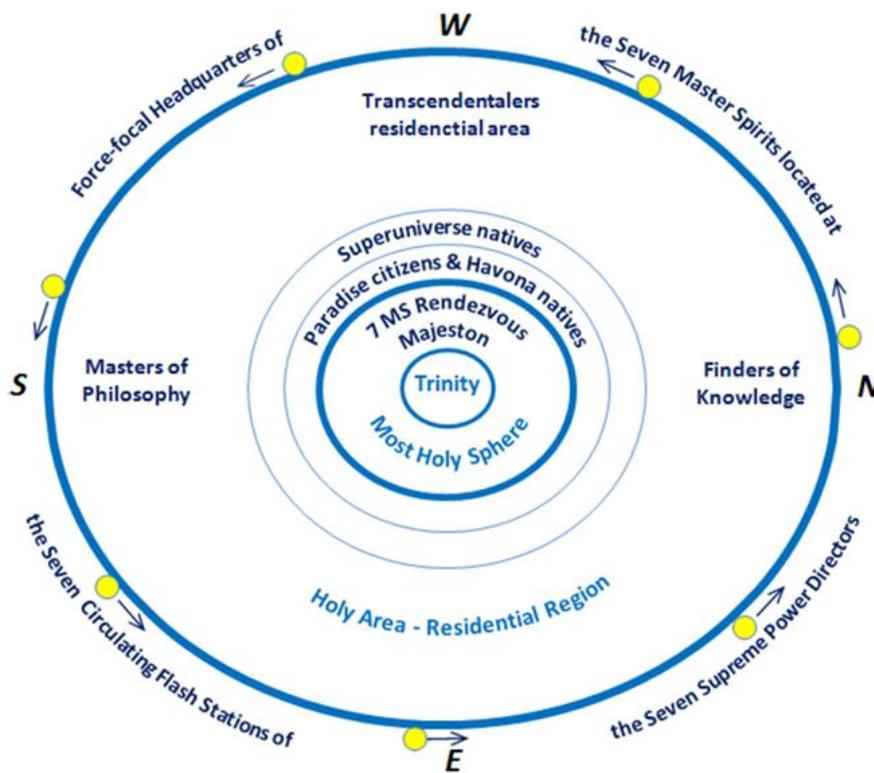
The impersonal energy activities of Paradise occur on the nether surface of Paradise. No personalities can venture onto the nether surface. Cosmic force circulates through the inner zone of this region. The space potency manifest in the free space presence of the Unqualified Absolute appears to originate in unimaginable agitations occurring in the outer zone of this region. Energy-power is transmitted from Paradise to each of the seven superuniverse capitals and then distributed to the local universes, eventually reaching the inhabited worlds. The universe will not run down, since energy pours forth continuously from Paradise.

The Isle of Paradise is the one thing in the universe of universes which is at absolute rest. Because it is, all absolute motion occurs relative to Paradise.

Circular motion is absolute motion, as Newton first hypothesized, because all circular motion is measured relative to the stationary sidereal frame defined by very distant stars. Time results from the absolute circular motion of a spacetime frame of reference relative to the stationary reference frame anchored to Paradise. The absolute circular motion of local spacetime frames and the absolute revolution of these frames about Paradise create the finite and bounded inertial frame of the master universe.

1. Upper Paradise

Fig 8: The Upper Surface of Paradise



The material beauty of Paradise consists in the magnificence of its physical perfection; the grandeur of the Isle of God is exhibited in the superb intellectual accomplishments and mind development of its inhabitants; the glory of the central Isle is shown forth in the infinite endowment of divine spirit personality—the light of life. ^{11:0.2}

Upper Paradise is occupied with personality activities. The Paradise Trinity dwells at the very center of upper Paradise. "This Paradise presence of the Universal Father is immediately surrounded by the personal presence of the Eternal Son, while they are both invested by the unspeakable glory of the Infinite Spirit." 11:1.1 The realities of personality, spirit, and mind are held in the absolute gravity grasp of the Universal Father, the Eternal Son, and the Infinite Spirit, respectively. These manifestations of gravity centering in the Father, Son, and Spirit are "absolute presence circuits and like God are independent of time and space." 12:3.6 The reality of energy-matter is held in the absolute gravity grasp of the Isle of Paradise. The time-space status of these presence circuits is absolute; they function within the absolute, infinite, and eternal extension in which Paradise exists.

The *Deity presence* of the Paradise Trinity is surrounded by the vast open region of the *Most Holy Sphere*, which "is reserved for the functions of worship, trinitization, and high spiritual attainment. There are no material structures or purely intellectual creations in this zone; they could not exist there." 11:3.1 Near the center of the Eternal Isle, only spiritual realities are present. Also located in this area is the rendezvous of the Seven Master Spirits, who are "the primary personalities of the Conjoint Creator." 9:4.3 The Master Spirits are domiciled on the seven worlds of the Infinite Spirit, which orbit about the Eternal Isle. "The seven worlds of the Infinite Spirit are occupied by the Seven Master Spirits..." 13:0.5 Periodically, the Master Spirits assemble on Paradise about the Infinite Spirit: "... when the Seven Master Spirits vacate their individual seats of personal power and superuniverse authority and assemble about the Conjoint Actor in the triune presence of Paradise Deity..." 16:1.3 The center of the Supreme mind, in the person of Majeston, is located at this rendezvous of the Seven Master Spirits. "Majeston ... maintains permanent Paradise headquarters near the center of all things at the rendezvous of the Seven Master Spirits." 17:2.3

The Supreme Being, the evolving Deity of the grand universe, is not yet personally contactable, which is sometimes indicated by use of the name, the Immanence of the Projected Incomplete. The Seventh Master Spirit compensates to some degree for this absence of the person of the Supreme. "During the present universe age of the noncontactability of the person of the Supreme, Master Spirit Number Seven functions in the place of the God of ascendant creatures in the matter of personal relationships." 16:3.19 Although the person of the Supreme Being is not yet contactable, the spiritual, material, and mindal aspects of his personal being are present in God the Supreme, the Almighty Supreme, and the Supreme Mind. "God the Supreme in Havona is the personal

spirit reflection of the triune Paradise Deity.” 0:7.7 “The Almighty Supreme is evolving as the overcontroller of the physical power of the grand universe.” 116:5.11 The Supreme Mind is the consciousness of the Supreme Being, and this mind was bestowed upon the personality of the Supreme by the Infinite Spirit. At the same time, the personality of the Supreme is the creator of Majeston.

The Supreme Being is not a direct creator, except that he is the father of Majeston. 0:7.9

Majeston is ... the only existing personality of divinity created by the Supreme Being in functional liaison with the Deity Absolute. 17:2.4

The creation of Majeston signalized the first supreme creative act of the Supreme Being. This will to action was volitional in the Supreme Being, but the stupendous reaction of the Deity Absolute was not foreknown. Not since the eternity-appearance of Havona had the universe witnessed such a tremendous factualization of such a gigantic and far-flung alignment of power and co-ordination of functional spirit activities. 17:2.5

In the context of eternity events, the appearance of Majeston is on a level of cosmic significance which is comparable to the eternity-appearance of the Infinite Spirit and the central universe of perfection. The personality of the Supreme “grasps” the mind reality bestowed by the Infinite Spirit and creates the person of Majeston, who appears to be the personal intellectual identity of the Supreme, at least when viewed from a human perspective.

Majeston is a true person, the personal and infallible center of reflectivity phenomena in all seven superuniverses of time and space. 17:2.3

The focalization of reflectivity in Majeston appears to constitute him the reflective self-conscious identity of the Supreme Being. “Reflectivity appears to be omniscience within the limits of the experiential finite and may represent the emergence of the presence-consciousness of the Supreme Being.” 9:7.5 “During the present universe age the space range of the extra-Paradise reflectivity service seems to be limited by the periphery of the seven superuniverses.” 17:3.10 “If the Supreme is not concerned in reflectivity, we are at a loss to explain the intricate transactions and unerring operations of this consciousness of the cosmos.” 9:7.4 We are the children of the Supreme, as well as being children of the Universal Father. It is because Majeston dwells so near the Paradise Trinity that we can hope, as children of the Supreme, to draw so near to the Paradise presence of the Universal Father.

Surrounding the vast open region of the *Most Holy Sphere* is the *Holy Area* or *Holy Land*, which is separated into seven concentric residential zones. “The inner

or first zone is occupied by Paradise Citizens and the natives of Havona who may chance to be dwelling on Paradise.” 11:3.3 Paradise citizens are co-ordinate Trinity-origin beings. “There are resident on Paradise numerous groups of superb beings, the Paradise Citizens.... There are more than three thousand orders of these supernal intelligences.” 19:7.1 “The next or second zone is the residential area of the natives of the seven superuniverses of time and space.” 11:3.3 This second residential area is subdivided into seven sectors, one for each of the seven superuniverses. “As finaliters you will be domiciled on Paradise, but Ascendington will be your home address at all times, even when you enter service in outer space.” 13:2.1 Within the finaliters’ residential areas “there are abundant souvenirs of your material days in the Holy Land sectors.” 11:3.2 The inhabitants of the remaining five residential zones are not identified. Presumably, ascenders from the outer space levels will eventually take up residence in four of these zones. We are told about certain other areas and activities on the upper surface of Paradise.

In the west of Paradise is the residential area of the Transcendentals. “The entire order of the Transcendentals live in the west of Paradise in a vast area which they exclusively occupy.” 31:8.1 “The Architects of the Master Universe are the governing corps of the Paradise Transcendentals ... the senior Master Architect is the co-ordinating head of all Paradise intelligences below the level of Deity.” 31:9.1 There are 28,011 Architects of the Master Universe. They are transcendental, ultimate personalities “eventuated in the dawn of eternity” who are “neither Creator nor creature.” 31:9.3 “When Urantia astronomers peer through their increasingly powerful telescopes into the mysterious stretches of outer space and there behold the amazing evolution of almost countless physical universes, they should realize that they are gazing upon the mighty outworking of the unsearchable plans of the Architects of the Master Universe.” 12:2.1

We are instructed that the ultimate reality level intervenes between the finite and absolute levels of reality. In the section on the Master Architects we learn that these ultimate personalities “exist in seven levels of the absonite.” 31:9.2

The absonite level of reality is characterized by things and beings without beginnings or endings and by the transcendence of time and space. Absoniters are not created; they are eventuated — they simply are. The Deity level of Ultimacy connotes a function in relation to absonite realities. 0:1.12

These seven absonite levels of the Ultimate are directly related to seven different segments of the master universe. The senior or first Master Architect acts on the first absonite level and “functions as the exquisite co-ordinator of Paradise and its twenty-one worlds of associated activities.” 31:9.3 On the second

absonite level the next three eventuated Architects are “devoted to the coordination of the one billion perfect spheres of the central universe.” 31:9.4 The superuniverse space level has seven Master Architects. “They are the supercoordinators of the grand universe.” 31:9.5 The fourth through seventh absonite levels are associated with the four outer space levels, respectively, and the number of Master Architects increases on each successive absonite level.

The space levels of the master universe are realized in different time-spaces. “The central universe is the creation of eternity; the seven superuniverses are the creations of time; the four outer space levels are undoubtedly destined to eventuate-evolve the ultimacy of creation.” 12:1.16 Since the Ultimate associates finite creation with the Absolute, it seems to make sense that different absonite dimensions are required to associate these differing actualizations of time-space with the Absolute.

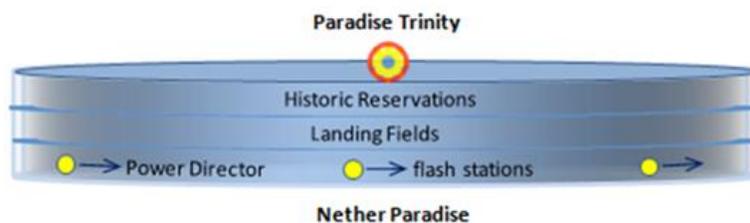
In the north of Paradise dwell the primary supernaphim who are known as the finders of knowledge. “At the northern extremity of the Isle there are available the living finders of knowledge...” 27:5.2 It is “inherently impossible for an untruth to gain lodgment in the minds of these perfect and replete repositories of the truth of eternity and the intelligence of time.” 27:5.1 Primary supernaphim are the “angels of the Eternal Isle.” They are created directly by the Infinite Spirit and are the highest beings of the angelic order. “Primary supernaphim are also placed in command of the seraphic hosts ministering on worlds isolated because of rebellion.... On Urantia the present ‘chief of seraphim’ is the second of this order to be on duty since the times of the bestowal of Christ Michael.” 27:0.2

In the south of Paradise are found the primary supernaphim who are known as the masters of philosophy. “At the southern extremity of the vast Paradise domain the masters of philosophy conduct elaborate courses in the seventy functional divisions of wisdom.” 27:6.3 “Next to the supreme satisfaction of worship is the exhilaration of philosophy. Never do you climb so high or advance so far that there do not remain a thousand mysteries which demand the employment of philosophy in an attempted solution.” 27:6.1 “The master philosophers of Paradise delight to lead the minds of its inhabitants, both native and ascendant, in the exhilarating pursuit of attempting to solve universe problems.” 27:6.2

2. Peripheral Paradise

“The periphery of Paradise provides for activities that are not strictly personal or nonpersonal.” ^{11:2.8} Three areas are mentioned relative to peripheral Paradise – the historic reservations, the landing fields, and the circulating flash stations of the Supreme Power Directors.

Fig. 9: The Peripheral Surface of Paradise



“Here on peripheral Paradise are the enormous historic and prophetic exhibit areas assigned to the Creator Sons, dedicated to the local universes of time and space. There are just seven trillion of these historic reservations now set up or in reserve.” ^{11:4.3} These reservations account for only about four percent of the area set aside on peripheral Paradise for historic purposes. This implies that the remaining 96 percent are reserved for the four outer space levels. There will eventually be 700,000 local universes within the seven superuniverses established by an equal number of Creator Sons and Creative Spirits of Paradise origin. Christ Michael is a Creator Son who is “the personification of the 611,121st original concept of infinite identity of simultaneous origin in the Universal Father and the Eternal Son.” ^{33:1.1} There are ten million inhabited worlds in each local universe. This number of local universes times this many inhabited worlds implies that there is one historic reservation on peripheral Paradise for each of the seven trillion inhabited planets projected to eventually exist in the superuniverses. There are currently “3,840,101 inhabited planets in Neadon” ^{32:2.9} out of the 10 million projected to eventually populate our local universe. One of these areas has exhibits on both the history and prophetic destiny of Urantia.

Those who have residential status on Paradise, such as finaliters, are able to come and go on their own. Others must rely upon transport supernaphim to reach the shores of Paradise. All personalities come and go from the Eternal Isle

by way of the landing fields on peripheral Paradise. "The peripheral surface of Paradise is occupied, in part, by the landing and dispatching fields for various groups of spirit personalities. Since the nonpervaded-space zones nearly impinge upon the periphery, all personality transports destined to Paradise land in these regions." 11:4.1 Midspace separates the innermost time-space of Havona from the eternal absolute extension of Paradise. "The relatively motionless midspace zones impinging on Paradise ... are the transition zones from time to eternity..." 12:5.4

The seven spheres of the Infinite Spirit are in revolution about the absolutely stationary Isle of Paradise. The Seven Master Spirits dwell upon these worlds, but they exercise control over spiritual, mindal, and material energies going forth to their respective superuniverses from peripheral Paradise. "The Seven Master Spirits have their personal seats of power and authority on the seven spheres of the Spirit ... but they maintain force-focal headquarters on the Paradise periphery." 11:4.2 At these force-focal points are located the Seven Supreme Power Directors. "The Seven Supreme Power Directors are stationed on peripheral Paradise, where their slowly circulating presences indicate the whereabouts of the force-focal headquarters of the Master Spirits." 29:1.3 The Isle of Paradise is absolutely stationary, and the seven superuniverses are in counterclockwise revolution about Paradise. The location of the Supreme Power Directors circulates about the peripheral surface of Paradise, so that each Power Director is always directly opposite and facing the capital of a particular superuniverse. "Each Master Spirit maintains an enormous force-focal headquarters, which slowly circulates around the periphery of Paradise, always maintaining a position opposite the superuniverse of immediate supervision and at the Paradise focal point of its specialized power control and segmental energy distribution." 16:0.12

Material energy originating on Paradise proceeds from the semi-material Supreme Power Directors out to the capitals of their respective superuniverses. "The Seven Supreme Power Directors are the physical-energy regulators of the grand universe. Their creation by the Seven Master Spirits is the first recorded instance of the derivation of semimaterial progeny from true spirit ancestry." 29:1.1 "These power directors function singly in the power-energy regulation of the superuniverses but collectively in the administration of the central creation." 29:1.3 This transmission of material power from a single Supreme Power Director to a single superuniverse is accompanied by the spirit influence and cosmic mind of a single Master Spirit. Both this superuniverse specific spirit and cosmic mind are transmitted from the circulating locations of the Supreme Power Directors. "The

Seven Master Spirits radiate their influence out from the central Isle, thus constituting the vast creation one gigantic wheel, the hub being the eternal Isle of Paradise, the seven spokes the radiations of the Seven Master Spirits, the rim the outer regions of the grand universe." 15:0.1

Since Paradise is absolutely stationary, peripheral Paradise is also stationary. There is no indication that either the landing fields or the historic reservations are anything but permanent and fixed locations on peripheral Paradise. However, the force-focal headquarters marking the flash stations of the Seven Supreme Power Directors do not have permanent locations, since they slowly circulate about the periphery. It seems unlikely that the track followed by the circulating Power Directors would pass over either the landing fields or the reservations. Immense quantities of energy are being transmitted by the Supreme Power Directors, and it might be expected that such energy activities would be disruptive to landing fields and historic reservations.

It seems reasonable to assume that the moving flash stations of the Supreme Power Directors circulate on a track which is near the lower rim of peripheral Paradise, where peripheral and nether Paradise converge, although no statements are made which directly support this. Assuming this is the case, the regions for the landing fields and historic reservations would be above this circulating track.

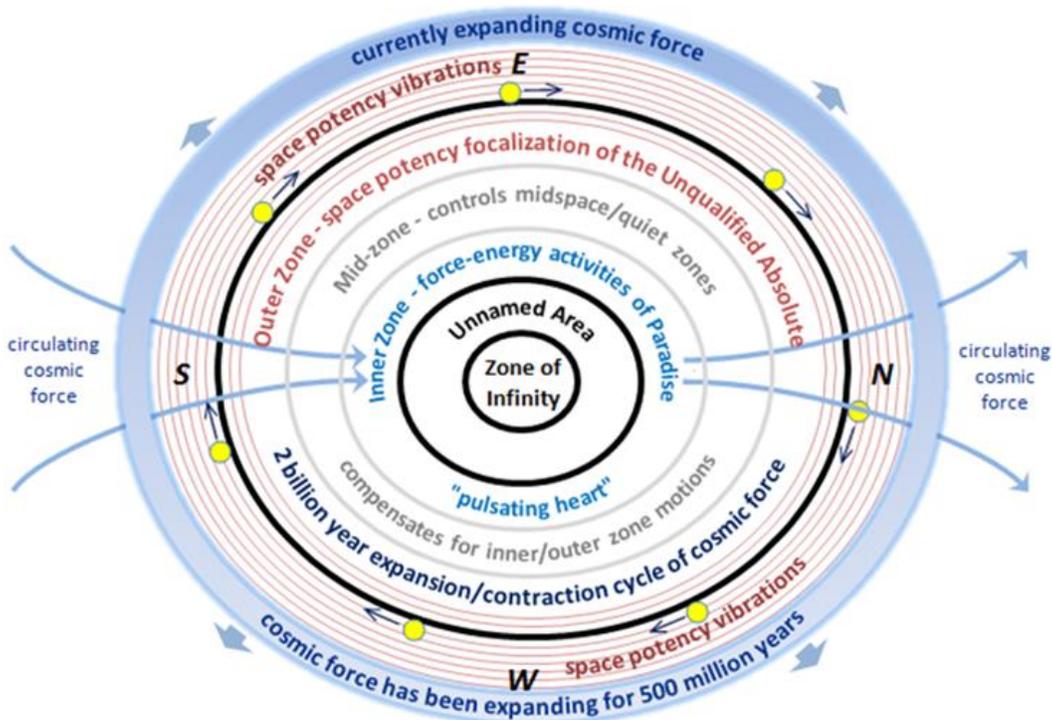
3. Nether Paradise

Nether Paradise is the lower surface of the Eternal Isle and is the region of nonpersonal activities controlled by Deity. "The Trinity seems to dominate the personal or upper plane, the Unqualified Absolute the nether or impersonal plane." 11:2.8 The Perfector of Wisdom tells us, "...we know only that which is revealed We are informed that all physical-energy and cosmic-force circuits have their origin on nether Paradise." 11:5.1

Directly beneath the Paradise Trinity on the upper surface is "the unknown and unrevealed Zone of Infinity," 11:5.2 which is encompassed by an Unnamed Area. The Zone of Infinity on the nether surface appears to be the absolute focal point of Paradise gravity. "Any and all that responds to the material-gravity

circuit centering in nether Paradise, we call matter — energy-matter in all its metamorphic states.” 0:6.1 “The gravity forces of the material universes are convergent in the gravity center of nether Paradise. That is just why the geographic location of his person is eternally fixed in absolute relation to the force-energy center of the nether or material plane of Paradise.” 0:3.13 “Did he move, universal pandemonium would be precipitated, for there converge in him at this residential center the universal lines of gravity from the ends of creation.” 11:1.4 It is somewhat surprising at first to realize that the personal presence of the Universal Father is eternally fixed at a single universe location. Although the Father-I AM segments his spiritual personality from his material reality so that the first is on the upper surface of Paradise and the second is on the nether surface, the force of absolute gravity centering in the Zone of Infinity cannot be fully separated from his personal presence.

Fig. 10: The Nether Surface of Paradise



Surrounding the Unnamed Area is the outer region of nether Paradise, which is mainly concerned with space potency and force-energy. This outer region consists of three concentric zones of absolute force presence and performance. “These triconcentric zones are the centrum of the Paradise cycle of cosmic

reality." 42:2.4 Although the Fourth Triunity "eternalizes the beginnings and the endings of all energy reality, from space potency to monota," 104:4.22 it does not appear to be directly involved in the universal focalization of space potency of the Unqualified Absolute, which occurs in these triconcentric zones. "The activities of this vast elliptical force center are not identifiable with the known functions of any triunity, but the primordial force-charge of space appears to be focalized in this area." 11:5.4

The first of these triconcentric zones is the *inner zone*, which is "the focal point of the force-energy activities of Paradise itself." 11:5.4 Pulsations in this inner zone direct and modify currents of cosmic force throughout pervaded space. This inner zone "directs and modifies force-energies but hardly drives them.... The mother force of space seems to flow in at the south and out at the north through the operation of some unknown circulatory system which is concerned with the diffusion of this basic form of force-energy." 11:5.5 Cosmic force is not responsive to absolute gravity, but it does respond to cosmic gravity. "The bestowal of cosmic force, the domain of cosmic gravity, is the function of the Isle of Paradise." 12:8.2 "Though nonresponsive to Paradise gravity, this force-charge of space, the ancestor of all materialization, does always respond to the presence of nether Paradise, being apparently circuited in and out of the nether Paradise center." 15:4.1 The cause of this circulation is not given, but cosmic force is directed through the inner zone so that there is a "greater out-pressure of force-energy at the north end of the Isle, mak[ing] it possible to establish absolute direction in the master universe." 11:2.3

This description of the circulation of cosmic force through the inner zone seems analogous to the circulation of magnetic force. A magnetic field is generated by the motion of electric charge. In a bar magnet electrons share enough common motion to create a magnetic field about the magnet. The force of the magnetic field circulates in closed loops, entering at the South Pole, exiting at the North Pole, and looping around outside the magnet to return to the South Pole. Cosmic force flows "in at the south and out at the north." The direction of magnetic force at the North Pole is outward. Cosmic force has a "greater out-pressure of force-energy at the north end of the Isle." The magnetic field of Urantia is comparable to a bar magnet and is used in navigation to establish terrestrial direction. The circulation of cosmic force through the inner zone "make[s] it possible to establish absolute direction in the master universe."

The *mid-zone* appears to be the control mechanism for midspace and the quiet zones. Space is a bestowal of Paradise, and this *mid-zone* appears to be responsible for the selective transmutation of relatively immovable midspace

into movable pervaded and unpervaded space and the relatively quiescent space regions separating the space levels. The Perfector of Wisdom relates:

It is believed by many that the mid-zone is the control mechanism of the midspace or quiet zones which separate the successive space levels of the master universe, but no evidence or revelation confirms this. This inference is derived from the knowledge that this mid-area is in some manner related to the functioning of the nonpervaded-space mechanism of the master universe. 11:5.6

The *outer zone* "is believed to be the central focalization, the Paradise center, of the space presence of the Unqualified Absolute." 11:5.7 The space presence of the Unqualified Absolute is the prereality of space potency. "*Space potency...* is the unquestioned free space presence of the Unqualified Absolute." 42:2.3 "This space presence is entirely impersonal notwithstanding that in some undisclosed manner it seems to be indirectly responsive to the will and mandates of the infinite Deities when acting as the Trinity." 11:5.7 The vibrations of space potency emanate from the outer zone.

This outer zone is also referred to as "the activated zone of the Unqualified Absolute," 11:5.8 "the Paradise force center," 11:5.9 and "the fulcral zone of the Unqualified Absolute." 42:2.4 Cosmic force emanates from the activated zone of the Unqualified Absolute and fills the pervaded space of the master universe. "The river of energy and life is a continuous outpouring from the Deities, the universal and united stream of Paradise force going forth to all space. This divine energy pervades all creation." 42:1.5 Cosmic force is either outgoing from or incoming to this outer zone. This outgoing and incoming occurs in two billion year cycles which are synchronized with the expansion and contraction cycles of space respiration. "For a little more than one billion Urantia years the space-force of this center is outgoing; then for a similar length of time it will be incoming." 11:5.8 However, space respiration is not caused by the synchronized pulsations of cosmic force from beneath Paradise. Space is a bestowal of Paradise, but space does not originate in the fulcral zone of the Unqualified Absolute. "Though the outer zone of the Paradise force center is the source of space-energies, space does not originate there." 11:5.9 "Space is not force, energy, or power." 11:5.9 "Space is neither a subabsolute condition within, nor the presence of, the Unqualified Absolute, neither is it a function of the Ultimate. It is a bestowal of Paradise." 11:7.4

4. Power Distribution from Paradise

Orvonton is pervaded by numerous spiritual and mindal circuits emanating from Paradise, but there are just two levels of physical energy circuits: “the superuniverse circuits and the local universe circuits.” 15:9.2 The superuniverse circuits carry power-energy from Paradise to Uversa. “There is a distinct segregation of energy and a separation of the circuits of power between each of the seven supercreations.” 29:4.3 The local universe circuit carries power-energy from Uversa to Salvington, the headquarters of Nebadon, our local universe. “The headquarters spheres of the superuniverses are so constructed that they are able to function as efficient power-energy regulators for their various sectors, serving as focal points for the directionization of energy to their component local universes.” 15:8.1

The Seven Master Spirits created the Seven Supreme Power Directors to be “the physical-energy regulators of the grand universe.” 29:1.1 “The bifurcation of energy and spirit (stemming from the conjoint presence of the Eternal Son and the Paradise Isle) was symbolized in the superuniverse sense when the Seven Master Spirits unitedly engaged in their first act of collective creation. This episode witnessed the appearance of the Seven Supreme Power Directors.” 116:5.10 The Supreme Power Directors are “stationed on peripheral Paradise, where their slowly circulating presences indicate the whereabouts of the force-focal headquarters of the Master Spirits.” 29:1.3 “Throughout the evolutionary ages the physical power potential of the Supreme is vested in the Seven Supreme Power Directors.” 116:1.3 The Supreme Power Directors and their progeny are “the intellect of the power system of the grand universe.” 29:2.9

The Supreme Power Director for Orvonton transmits energy from the flash station on the periphery of Paradise to the one thousand Supreme Power Centers stationed on Uversa. “Occupying an enormous area on the capital sphere of each of the seven superuniverses are one thousand power centers of the third order. Three currents of primary energy of ten segregations each come in to these power centers, but seven specialized and well-directed, though imperfectly controlled, circuits of power go forth from their seat of united action. This is the electronic organization of universe power.” 29:2.13 “The electronic organization of universe power functions in seven phases and discloses varying response to local or linear gravity. This sevenfold circuit proceeds from the superuniverse power centers and pervades each supercreation. Such specialized currents of time and space are definite and localized energy movements initiated and directed for

specific purposes, much as the Gulf Stream functions as a circumscribed phenomenon in the midst of the Atlantic Ocean." 29:2.15

One of the 1,000 third order power centers on Uversa transmits energy to the 100 fourth order power centers on Salvington. "On the headquarters of each local universe are stationed one hundred power centers of the fourth order. They function to downstep and otherwise to modify the seven power circuits emanating from superuniverse headquarters they are engaged in the orderly dispatch of effective energy to the subsidiary constellations and systems to provide intensified lanes of energy useful for interplanetary communication individualized stream[s] of power." 29:2.16

The 100 Salvington power centers then transmit energy to "ten ... living power centers ... stationed in each constellation, functioning as energy projectors to the one hundred tributary local systems. From these beings there go forth the power lines for communication and transport..." 29:2.17 Unlike the power centers on Uversa and Salvington, the ten constellation fifth order power centers are not located on Edentia. "In Norlatiadek, your constellation, they [i.e. power centers] are not stationed on the headquarters sphere but are situated at the center of the enormous stellar system which constitutes the physical core of the constellation." 41:1.4

One of the ten constellation power centers then transmits energy to a "Supreme Power Center ... permanently assigned to each local system. These system centers dispatch the power circuits to the inhabited worlds of time and space." 29:2.18 Like the Norlatiadek power centers, the Supreme Power Center for Satania is not located on Jerusem. "One Supreme Power Center of the sixth order is stationed at the exact gravity focus of each local system. In the system of Satania the assigned power center occupies a dark island of space located at the astronomic center of the system." 41:1.5

From this dark island of space at the astronomic center of Satania, the sixth order power center directs "the streams of more materialized power to the Master Physical Controllers on the evolutionary planets of space." 41:1.5 "The physical controllers are chiefly occupied in the adjustment of basic energies undiscovered on Urantia. These unknown energies are very essential to the interplanetary system of transport and to certain techniques of communication." 29:4.14 The major and minor sector capitals are not an integral part of the transmission and regulation of these channels of power-energy coming down to the inhabited worlds of time and space from peripheral Paradise.

Newton is reputed to have commented near the end of his life that God would eventually have to do something to prevent the universe from running down. In 1852 William Thomson formulated the second law of thermodynamics. The second law holds that the entropy (disorder) of any closed system increases over time. The universe is a closed system and so must run down until it reaches a maximum state of entropy. In this state of maximum disorder the universe becomes filled with randomly distributed particles having the lowest possible potential energy. This idea has since become popularized as the heat death of the universe.

Since this prediction arises from the indestructibility of energy (first law) and the tendency toward a state of energy equilibrium (second law), the final heat death of the universe has long been deemed inevitable. This might be the fate of universe, except for the fact that stupendous quantities of physical power pour forth continually from the Isle of Paradise, constantly re-energizing the superuniverses. In addition, the living agents of power control are able to release energy and decrease entropy.

The superuniverse of Orvonton is apparently now running down; the outer universes seem to be winding up for unparalleled future activities; the central Havona universe is eternally stabilized. Gravity and absence of heat (cold) organize and hold matter together; heat and antigravity disrupt matter and dissipate energy. The living power directors and force organizers are the secret of the special control and intelligent direction of the endless metamorphoses of universe making, unmaking, and remaking. Nebulae may disperse, suns burn out, systems vanish, and planets perish, but the universes do not run down.
15:8.10

Energy is "beamed" from nether Paradise to the superuniverse capitals and then down to the local universe capitals, the constellations, the local systems, and the inhabited planets. In addition to this well-defined channel of physical power descending from Paradise, the power directors establish specialized energy currents between the individual stars. "The Universe Power Directors initiate the specialized currents of energy which play between the individual stars and their respective systems. These solar furnaces, together with the dark giants of space, serve the power centers and physical controllers as way stations for the effective concentrating and directionizing of the energy circuits of the material creations."
41:3.1

Suns dissipate tremendous quantities of energy, which should cause them to run down. The theory of stellar evolution relies upon the second law of thermodynamics, in which suns have a life cycle governed by how much energy they lose over time. Our sun is thought to be about 4.6 billion years old. It was

thrown off by Andronover about 6 billion years ago. This difference in age might be accounted for by the specialized energy currents created by the power directors. The third most important source of solar energy out of seven listed is “the accumulation and transmission of certain universal space-energies.” 41:7.6 This accumulation and transmission of energy appears to refer to suns acting as “way stations” in the power lanes set up by the power directors. Our sun is part of these power lanes and circuits, since it sustains a nuclear chain reaction. “In those suns which are encircuited in the space-energy channels, solar energy is liberated by various complex nuclear-reaction chains.” 41:8.1 If energy is being accumulated by our sun, then the time line of its stellar evolution will be extended; it will appear to be younger than it actually is.

The fate of the cosmos is not solely decreed by the indiscriminate action of immutable physical laws governing energy-matter, which would lead to a final heat death for the universe. Great streams of unimaginable power pour forth endlessly from Paradise, sustaining and stabilizing the superuniverses, the everlasting domain of the Almighty Supreme.

5. Absolute Rest and Circular Motion

The Isle of Paradise defines an absolute frame of reference in which absolute motion is possible. Newton was the first to propose the existence of absolute motion in the rigorous context of absolute space and time. In his *Principia* Newton assumes that Euclidean geometry corresponds to the objective form of absolute space, and absolute time is a universal sequence of moments of equal duration. Absolute space has an infinite number of places and each is immovable. Newton understands a “place” as a volume, instead of a simple location. “Place is a part of space which a body takes up, and is according to the space, either absolute or relative.” [23] Location is dimensionless and Newton considers location to be a property of place; positions are measured relative to the places of bodies, not to abstract locations in empty space. “Positions properly have no quantity, nor are they so much the places themselves, as the properties of places.” [23]

A body at absolute rest takes up a volume of absolute space and this absolute place is part of the whole of the body. "The place of the whole is the same thing [as] the sum of the places of the parts, and for that reason, it is internal, and in the whole body." [23] This concept of a material body containing, or capturing, the space it occupies is qualitatively identical to general relativity's concept of space as a property of energy-mass. Revelation presents a somewhat comparable concept of the relative relationship between space and matter. "When a body moves through space, it also takes all its properties with it, even the space which is in and of such a moving body." 118:3.6

Absolute space is at absolute rest, and the immovable place occupied by a body is its preferred place. The body remains at absolute rest, unless acted upon by a force from outside the body, because it contains an immovable place. Newton calls this preference of matter for places of rest *vis insita* or force of place. *Vis insita* is the potential for force-reaction to motion inherent in the places of absolute space. In current terms, it is the potential for inertial response. Where current thought considers this potential an inherent property of relative mass, Newton considers this potential an inherent property of absolute space.

When an external force accelerates resting matter, the space it contains is also accelerated. Based upon general relativity, current thought also conceives of space moving with matter, and revelation agrees. The acceleration induced by external force causes the potential for force-reaction inherent in this space, its *vis insita*, to become an actual force, *vis inertia*, or the force of inactivity. *Inertia* is the actual force-reaction of physically contained space to acceleration caused by external force in Newton's thought. In current thought it is the force-reaction arising from relative mass instead of from space. The *vis insita* of absolute space makes it an absolute inertial frame of reference in Newton's conception. Revelation describes an absolute inertial frame anchored to Paradise, but this frame is absolute extension, not physical space. Relativity does not admit the possible existence of an absolute inertial frame.

Geometry is the assumed form of space and *vis insita*, the potential for force-reaction, is the elemental content of the form of space. In some ways Newton's distinction between the form and content of absolute space parallels the distinction between the form of absolute extension and the quiescent content of the Unqualified Absolute. Newton sees the unlimited potential for the force-reaction of *vis insita* as being inherent in absolute space. The quantity of the force-reaction of *vis inertia* depends upon the magnitude of the external force applied. Inertial force acts from a place in the vacuum of absolute space and acts upon the relative place within a body in direct opposition to external force.

Revelation leads us to the idea that *vis insita* is inherent in the stationary places contained by prereal *absoluta* in absolute extension. There is an unlimited potential for force-reaction in *absoluta*. Inertial force might be thought of as acting from immovable *absoluta* in absolute extension, instead of from places in the void of absolute space. Inertia acts upon the energy-mass of the body, instead of upon the relative space contained within the body. Space potency is a prereality, and *absoluta* in absolute extension are essentially indistinguishable from empty places in physical space. Inertia derives from the static energy quiescence of the Unqualified Absolute instead of from absolute space or extension.

The acceleration of a body which was at absolute rest results in absolute motion, and this includes the place of the body. In Newton's conception, the translation of a body's volume from one absolute place to another changes it from immovable absolute space into movable relative space. "Relative space is some movable dimension or measure of the absolute spaces, which our senses determine by its position to bodies." [23] The *vis insita* inherent in absolute space is also inherent in the relative space of a moving body. "If a place is moved, whatever is placed therein moves along with it." [23] The stationary whole of absolute space is replicated within a body in uniform linear motion; that is, the body contains preferred places of rest which are stationary relative to the whole of its moving volume. The whole body constitutes a relative inertial frame. The relative *vis insita* of these stationary places in the moving body explains its preference for uniform linear motion.

In the absence of an external force, a body moves in a straight line through absolute space with a constant absolute velocity, because of *vis insitia*. In the presence of an external force which changes its constant motion, the potential force of *vis insita* becomes the active force-reaction of inertia, opposing any change in a body's uniform linear motion. The *vis insita* of relative space makes it a relative inertial frame of reference. A part within a body that is in absolute motion can move relative to the body's relative inertial frame and define a third inertial frame. Any number of levels of relative motion can extend upward from the original level of absolute motion. This is the classical concept of relative inertial frames existing in a hierarchical order on top of the underlying inertial frame of absolute space.

On each inertial level a body has a single motion relative to absolute space and multiple motions with respect to the inertial frames of other bodies. Since a body can have any number of relative motions in addition to a single absolute one, it is difficult to distinguish its absolute motion from its relative motions. Absolute motion is only measurable relative to something which is known to be

absolutely motionless, but all of the celestial bodies we can observe may be in motion. As Newton notes, "There may be some body absolutely at rest, but impossible to know ... absolute rest cannot be determined from the position of bodies in our regions." [23]

The absolute motion of a body cannot be determined by examining its motion relative to other bodies. Newton reasons that "relative motion may be generated or altered without any force impressed upon the body." [23] For example, the relative motion of a body may change without any change in its absolute motion, if there is a change in the observer's motion. Conversely, the absolute motion of a body may change, while its relative motions remain unchanged. A resting sphere and all of its parts may be given an absolute motion, and the relative motions between all of its parts may remain unchanged. "Any relative motion may be changed when the true motion remains unaltered, and the relative may be preserved when the true suffers some change." [23]

Ultimately, absolute motion cannot be discriminated from relative motion by examining the velocities between bodies, all of which may be relative. There is, however, one type of motion which occurs independently of all relative motions between bodies: "The effects which distinguish absolute from relative motion are the forces of receding from the axis of circular motion." [23]

In a famous example of absolute motion, Newton describes the centrifugal force of "receding from the axis of circular motion" with the motion of water in a spinning bucket. When the bucket is at relative rest, the surface of the water is flat. As the bucket starts to rotate, its sides move past the stationary parts (molecules) of the water, transmitting motion to them by friction. As motion is progressively conveyed to the parts by contact, they recede from the axis of rotation, and the surface of the water becomes concave. The motion of the parts up the sides of the bucket, in opposition to the force of gravity, is the result of centrifugal force. Centrifugal force is the inertial force-reaction arising in the parts from their circular motion about the center. "There is only one real circular motion of any one revolving body, corresponding to only one power of endeavouring to recede from its axis of motion... but relative motions, in one and the same body, are innumerable, according to the various relations it bears to external bodies..." [23]

Circular motion is a singular and self-contained motion occurring in the place of a body. Since this motion occurs without reference to any other external body, Newton reasons that it can only occur relative to absolute space. The rotation of the body relative to the relative absolute space it contains is the cause of the

inertial force-reaction of centrifugal force. Therefore, circular motion is an absolute motion, and centrifugal force is an absolute force caused by the rotation of matter in the inertial frame of absolute space.

As proof of the absolute nature of circular motion, Newton offers the example of two spheres connected by a tether. If there is a constant tension in the tether, the spheres are known to be in common revolution about a center, and the quantity of tension in the tether is directly proportional to the centrifugal force causing them to recede from one another. If there is no constant tension in the tether, there is no centrifugal force, and the spheres are known not to be in common revolution. The tethered globes may be in the midst of other spheres or alone in an immeasurably large and empty region of space. Since the tension is the same in both cases, the centrifugal force caused by circular motion clearly occurs relative to absolutely stationary space. The centrifugal force arising from circular motion is, therefore, empirical proof of absolute space.

Relativity has since discovered that space is not absolute, which means that inertia cannot arise from the *vis insita* inherent in the places of absolute space. The classical concept of inertial frames carries over into relativity, but there is no necessary hierarchical order to relative inertial frames. Relativity does not recognize any absolute inertial frame or absolute motions; all frames and motions are taken to be equally relative. Inertia is understood as an inherent property of relative energy-mass, and the quantity of mass is just the relative quantity of its inertial resistance to relative acceleration.

In current thought centrifugal force is taken to be a fictitious or apparent force, since it is just the relative response of mass to a real centripetal force pulling a body toward a center of rotation. Under this interpretation, in Newton's bucket experiment a molecule of water resting against the inside surface is given a linear motion by frictional contact, while also being pushed at the same time toward the central axis of rotation. The net effect of these two forces results in the circular motion of the molecule. This net effect is fully equivalent to a centripetal force attracting the molecule toward the center of the bucket. This centripetal force alters the uniform linear motion of the molecule, and it is this centripetal force which causes an inertial response, not a fictitious centrifugal force. When centrifugal force is understood in this way, Newton's proof of absolute motion is invalidated. This understanding does not, however, account for all of the empirical facts associated with circular motion.

In a variation of Newton's tethered globes, two small spheres of equal mass can be attached to an axle by two springs, and the globes can be put into

revolution about the axle. The centrifugal acceleration on each sphere equals the radial distance r from the axis of rotation multiplied by the square of the angular velocity ω of rotation: $a_{cf} = -r\omega^2$. (The centrifugal acceleration has a negative sign by convention, since it is directed away from the center.) If these two revolving spheres are placed at the North Pole with the axle vertically oriented, the revolving spheres have a relative angular velocity with respect to the surface of the earth. If this relative angular velocity is used in this formula, the calculated centrifugal acceleration will always be different from the actual measured quantity, because the earth is a rotating non-inertial frame. The actual centrifugal acceleration always equals the radial distance times the square of the *true* angular velocity as measured in an inertial frame. This true angular velocity can only be measured in the sidereal frame of reference, which is approximated by the most distant stars. The sidereal frame is the inertial frame relative to which all true circular motion must be measured. The true angular velocity of any circular motion is scale invariant, because there is only one sidereal frame of reference in which circular motion occurs.

Distant stars have always been used as a proxy for the sidereal frame, but it is reasonable to assume that all observable celestial objects have some degree of relative motion. Although a truly stationary sidereal frame cannot be derived from moving celestial objects, very distant objects can approximate an inertial frame of reference to a very high degree of precision. The International Celestial Reference Frame (ICRF) is a practical realization of the universal inertial frame in which all true circular motion is measured. This frame relies upon 295 extremely distant radio sources which have no detectable proper motion. As of 2009 (ICRF2), this universal inertial frame is defined with an accuracy of 0.01 milliarcseconds or 2.77×10^{-9} degrees.

From the perspective of relativity theory, there can be no truly stationary sidereal frame, since inertial frames can only exist relative to some aggregation of energy-mass. The inertial frame in which a body rotates is exclusively defined in relativity by the spin axis passing through the center of the rotating object; in relativity an inertial frame is always locally defined and only exists by virtue of its relation to a specific rotating body. However, the local inertial frame in which a body rotates cannot be determined from the rotating body. All local inertial frames are assumed to be *non-rotating* in the universal inertial frame defined by the ICRF. When inertial frames are defined in this way, the actual centrifugal acceleration always equals the radial distance multiplied by the square of the true angular velocity. There is a constant, non-relative relationship between all local inertial frames, since every one is non-rotating in the ICRF.

There is the correlated fact that the spin axis anchoring the local inertial frame of a rotating body maintains a fixed and constant orientation in the universal inertial frame (ICRF), so long as no net torque acts upon the spin axis of the body. If a spinning gyroscope is mounted in a gimbaled frame, the rotor's spin axis will be free from any external torques which might be mechanically transmitted to the rotor by the frame holding it. If the gimbaled gyroscope is then placed anywhere on the earth's surface, it will perpetually point in a fixed direction in the universal inertial frame, as long as its angular velocity remains undiminished. A radial line extending from the center of the earth out through the location where the gyroscope is resting will rotate in the universal inertial frame, but the spin axis of the gyroscope will maintain a constant orientation in the sidereal frame.

The spin axis orientation of the gimbaled gyroscope is constant over time. From this it can be deduced that the gyroscope is rotating in an inertial frame which exists independently of the earth's rotating frame and its gravitational field. External circular motions, gravitational fields, and linear velocities and accelerations do not change the sidereal orientation of the gyroscope's spin axis. Since all rotating bodies, without exception, maintain a constant universe orientation in the absence of net torque, all circular motion necessarily occurs in a universal inertial frame. All local inertial frames are non-rotating translations of a single universal inertial frame, which is very closely approximated by the sidereal frame defined by the ICRF.

There is no absolute space and a universal inertial frame cannot be derived from distant stars. Nevertheless, the empirical evidence for the existence of a universal inertial frame is beyond any doubt. Inertial frames may be treated as isolated realities anchored to individual rotating masses, but they are also movable non-rotating wholes of a single universal inertial frame. Relativity requires that an inertial frame be anchored to a physical mass. Revelation states that the universal inertial frame is anchored to the physical reality of Paradise. Relativity is compatible with absolute motion, but absolute motion is meaningless unless at least one absolutely motionless thing can first be identified. The Isle of Paradise is this one thing, and it has recently become possible to identify its location in the universe. Relativity argues that centrifugal force is fictitious, that it is a reaction-response to a local centripetal force causing circular motion in a local inertial frame. It is an empirical fact that centrifugal force is only quantifiable in the universal inertial frame or in a moving, non-rotating, local inertial frame that is a replication of it. The force-reaction of inertia

occurs due to the absolute nature of circular motion in a universal inertial frame. Circular motion is absolute because it is scale invariant in this frame.

Newton observes that the “circular motion of any one revolving body, correspond[s] to only one power of endeavouring to recede from its axis of motion.” Since circular motion is singular and self-contained, he concludes that it must be an absolute motion. Under the assumption, it follows that centrifugal force is also absolute. But physical space and time are not absolute, which means that neither centrifugal nor centripetal force are absolute. The spacetime of the local inertial frame underlying the circular motion of a body varies with the body’s relative velocity. This variation in spacetime causes the relative quantity of energy-mass to vary. Force equals mass multiplied by acceleration, and the centrifugal force arising from circular motion is not a constant (absolute) quantity from one inertial frame to another. Since the units of time and distance in a local inertial frame vary with relative velocity, the quantity of centrifugal acceleration is not absolutely constant.

Relativity demonstrates that all of the quantitative measures of motion, force, energy and mass may vary, depending upon the local spacetime in which they are measured – except for one quantity. The circular motion of a body in radians (or degrees) is constant across all inertial frames and at all relative velocities, because true angular velocity is always measured relative to the stationary and universal inertial frame.

6. Relative and Absolute Motion

The universal inertial frame is absolutely stationary, since it is anchored to the Isle of Paradise. Absolute motion occurs in this frame and relative to Paradise. “From a practical viewpoint, motion is essential to time...” ^{12:5.1} The absolute circular motion of a body about the universal center of Paradise is essential to the physical reality of time from a scientific viewpoint. Without this essential circular motion of revolution, the body would exist in the eternity of absolute extension; there would be no measurable time and, therefore, no measurable space. Absolute circular motion is directly observable, but the universal inertial frame in which it occurs is not. This universal frame is not a spacetime frame. It is the

eternity frame of infinite absolute extension, in which Paradise and the Unqualified Absolute exist.

Relativity appears to be correct in its assumption that no material body can exist in time and space and also be at absolute rest relative to all other bodies. (Paradise does not exist in time and space). To be consistent from both a theoretical and empirical perspective, relativity must also assume that all bodies are rotating about their spin axes as measured in the universal inertial frame, since otherwise they would be in a form of absolute rest. "All units of cosmic energy are in primary revolution..." ^{12:4.1} If there was a non-rotating body in the spacetime, it would be stationary relative to all other bodies and would be a unique and preferred location in the universe. However, under the assumption that all bodies are rotating, there can be no absolute inertial frame in time and space which is defined by another material body in time and space; there can be no preferred physical object in spacetime against which the rotation of other bodies can be measured.

At the same time experience and experiment prove that the true rotational state of a body can only be measured relative to the universal inertial frame. Since true angular motion can only be measured relative to this frame, this universal inertial frame of reference must be real. It must also exist independently of any and all physical bodies in spacetime, under the assumption that all such material bodies have some linear or angular motion. Relativity cannot escape the need for final foundations, but this universal inertial frame is not Newton's absolute space and time. The local inertial frames of relativity are spacetime copies of the pre-spacetime eternity frame of infinite absolute extension in which Paradise establishes the places of absolute rest and the Unqualified Absolute is the absolute origin of the potential of inertia.

The existential Seven Absolutes of Infinity can be thought of as existing relative to unqualified eternity, which is infinite and, theoretically, absolutely static. This unqualifiedly eternal frame of infinite absolute extension can be thought of as a static circle: "the circle of infinity." ^{104:3.13} The perfect stasis of unqualified eternity becomes dynamic existential eternity at that "hypothetical eternity moment" when the Infinite Spirit and the central universe appear at the "beginning" of the cycles of eternity. A cycle of existential eternity can be conceived of as one complete revolution relative to the absolutely static circle of infinity. Existential eternity consists of the endless cycles of eternity about the unqualified eternity of the static circle of infinity.

The circular motion of the first cycle of existential eternity about the I AM at the center of the circle of infinity begins simultaneously with the start of the first absolute revolution of the Havona worlds in time and space about the Eternal Isle of Paradise. The cycles of time that begin in Havona are coordinated with the cycles of eternity. "A cycle of eternity [is] in some way synchronized with the transient material cycles of time." 32:5.4 In the most fundamental sense, time (change) is always measured by cycles. As a practical matter, finite duration is always measured by cycles of simple harmonic motion, such as one cycle of a pendulum, one vibration of a cesium atom, or one rotation of the earth. A body's absolute motions relative to the Isle of Paradise determine its time and space.

If time is only measured in terms of the cycles of circular motion and not duration, then "time" is the same in both the local and universal inertial frames. A cycle of circular motion is an absolute measure because it occurs independently of duration, distance, and location of observation. The radians of a body's circular motion are the same, regardless of where in the universe they are measured from or what scale they have. Angular velocity (ω) is measured in radians (θ) per unit time. Angular velocity does not depend on the specific radial distance at which rotation occurs. The radians of revolution do not depend upon the spacetime perspective from which they are measured, since circular motion is always measured in the universal inertial frame. There is an intimate relationship between time and radians of revolution. Every material body is absolutely rotating on its own axis, while the center of the body is also revolving absolutely about Paradise. "All units of cosmic energy are in primary revolution... while swinging around the universal orbit." 12:4.1

Underlying every rotating body is a local inertial frame, which is anchored to it and moves with it as the frame revolves about Paradise. At the same time, the local inertial frame maintains a constant absolute orientation in the universal inertial frame. Because of this, every local inertial frame must rotate relative to the location of Paradise as it revolves about Paradise, in order to maintain its constant orientation in the universal inertial frame. After one complete rotation of a body about its own axis, the direction from the body to Paradise changes, due to the body's revolution about Paradise. This miniscule change in the direction to Paradise after one cycle distinguishes the spacetime of the local inertial frame from the universal inertial frame. If the direction to Paradise did not change, if a local spacetime inertial frame did not revolve about Paradise, the local frame would be indistinguishable from the universal and absolute inertial frame. The absolute frame exists *relative* to spacetime frames, but this eternal

reference frame does not exist *in* time and space. Time is possible in a local frame because it rotates relative to Paradise while also revolving about it.

In this context, the observer-time in a local inertial frame is determined by the frame's absolute velocity. Circular motion in radians (θ_0) in the absolute frame equals circular motion in radians (θ) in any relative spacetime frame: $\theta_0 = \theta$. A local spacetime frame cannot be at rest in the absolute frame; it always has some absolute angular velocity of $\omega_0 = \theta_0/t_0$ due to its revolution about Paradise. Its relative angular velocity, $\omega = \theta/t$, will be different as measured in the local inertial frame, because the local frame has an absolute orbital velocity v_0 about Paradise which results in time dilation. Duration in the local inertial frame (t) is longer when it is measured in the local frame than when it is measured from the position of Paradise (t_0). Time dilates by $t = t_0/\sqrt{1 - v^2/c^2}$ and the local frame's relative angular velocity ω is less than its absolute angular velocity ω_0 .

$$\omega = \frac{\theta}{t} = \frac{\theta}{\left(\frac{t_0}{\sqrt{1 - v_0^2/c^2}}\right)} = \omega_0 \sqrt{1 - v_0^2/c^2}$$

$$1 = \frac{\theta}{\theta_0} = \frac{t \sqrt{1 - v_0^2/c^2}}{t_0}$$

Universal time is measured by cycles of revolution in radians. It is not measured by moments of fixed duration existing independently of motion, as Newton proposed. A day is one rotation of the earth about its axis, and one earth day equals $2\pi\theta$ (radians) of absolute circular motion in every inertial frame. The passage of time is constant in an inertial frame, because it is determined by the velocity of light, which is also constant in every inertial frame. The relationship between the relative angular velocity of a local inertial frame and its absolute angular velocity is the reciprocal of the Lorentz factor.

$$\frac{\omega}{\omega_0} = \sqrt{1 - \frac{v_0^2}{c^2}}$$

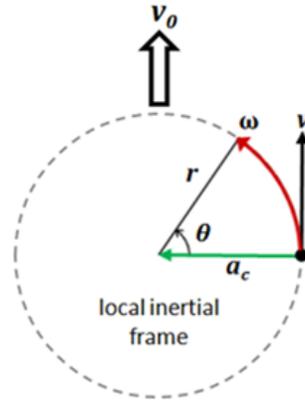
The Lorentz factor ($1/\sqrt{1 - v^2/c^2}$) is fundamental to the equations of special relativity, which describes the spacetime relationships between inertial frames. Relativity finds the ground for an absolute inertial frame when the Lorentz factor uses the absolute velocity v_0 relative to Paradise instead of a relative velocity (v) measured with respect to some physical object in spacetime. Absolute orbital velocity can be determined, since the Isle of Paradise can be located.

As shown in later chapters, the absolute orbital velocity of Orvonton about Paradise is on the order of a couple of hundred kilometers per second, or $\sim 7/1000^{\text{th}}$ of the velocity of light. At this absolute velocity the ratio of the relative and absolute angular velocities of the local inertial frame anchored to Orvonton's energy-mass differs from unity by less than one part in a million. The equations of special relativity describe the relationships between local inertial frames and the absolute inertial frame, as well as between local inertial frames. The radians of circular motion are a measure of universal time common to both the local and absolute frames. Time dilates in a local inertial frame due to the absolute orbital velocity of the frame's center about Paradise. The spacetime in a local frame varies with absolute orbital velocity, and all local inertial frames can be related to one another through the absolute inertial frame centered on Paradise.

Fig 11: The Spacetime of Local Inertial Frames
Is derived from

Circular Motion, Absolute Velocity, and the Velocity of Light

$$\begin{aligned} \theta &= \theta_0; \omega t = \omega_0 t_0 \\ \omega &= \omega_0 \sqrt{1 - v_0^2/c^2} \\ t &= \frac{t_0}{\sqrt{1 - v_0^2/c^2}} = \frac{\theta}{\omega_0 \sqrt{1 - v_0^2/c^2}} \\ r = ct &= \frac{ct_0}{\sqrt{1 - v_0^2/c^2}} = \frac{\theta c}{\omega_0 \sqrt{1 - v_0^2/c^2}} \\ c &= \frac{r}{t} = \frac{r_0}{t_0} \\ v = r\omega &= \frac{ct_0}{\sqrt{1 - v_0^2/c^2}} \cdot \omega_0 \sqrt{1 - v_0^2/c^2} = \theta c \\ a_c = v\omega &= r\omega^2 = a_0 \sqrt{1 - v_0^2/c^2} \end{aligned}$$



The radians of circular motion are equal in the relative and absolute frames. The radians of motion equal the relative angular velocity multiplied by the relative time: $\theta = \omega t$. The radians of motion also equal the absolute angular velocity multiplied by the absolute time: $\theta_0 = \omega_0 t_0$. The ratio of relative to absolute angular velocity of a local inertial frame equals the reciprocal of the absolute Lorentz factor: $\omega/\omega_0 = \sqrt{1 - v_0^2/c^2}$. Relative time in a local inertial frame equals the absolute time multiplied by the absolute Lorentz factor: $t =$

$t_0/\sqrt{1 - v_0^2/c^2}$. Distance is measured in every inertial frame by the velocity of light multiplied by time. The relative distance equals $r = ct$ and the absolute distance equals $r_0 = ct_0$. The ratio of the radius over time is constant in both inertial frames and equals the velocity of light: $c = r/t = r_0/t_0$. The relative velocity equals the velocity of light multiplied by the radians of absolute circular motion, $v = \theta c$, where $\theta = \omega_0 t \sqrt{1 - v_0^2/c^2}$. The relative centripetal acceleration of circular motion equals the relative orbital velocity multiplied by the relative angular velocity: $a_c = v\omega$. The relative centripetal acceleration also equals the absolute centripetal acceleration multiplied by the reciprocal of the absolute Lorentz factor: $a_c = a_0 \sqrt{1 - v_0^2/c^2}$.

7. Finite and Bounded Inertial Frames

The scientific enterprise is grounded in the assumption that the laws of physics are the same in every inertial frame. The spacetime of an inertial frame in both classical physics and special relativity is described by Euclidean geometry and is assumed to extend indefinitely in every direction. Since inertial frames are infinite and unbounded, physical laws discovered in one inertial frame are universally valid in all others, once relative motions are accounted for. However, the conception of an infinite inertial frame is unsatisfactory, since it does not distinguish finite space from infinite absolute space. If space is absolute, then it must be infinite, because it is infinitely divisible into absolute geometric points. If space is infinite, it must be absolute, since it is completely unqualified.

Relativity has discovered that absolute space does not exist, so there must be a finite limit to spacetime inertial frames. The general theory of relativity proposes that gravity causes spacetime to curve. Where a light ray travels in a straight line in the "flat" Euclidean space of an inertial frame, gravity causes light to follow a curved path in spacetime. Einstein uses the two-dimensional surface of a sphere as an analogy for the curved three-dimensional spacetime of the universe. The surface of a sphere is finite but it is also unbounded in the sense that it has no center, no circumference, and no boundaries. On a cosmic scale light emitted in one direction from the earth will eventually be detected coming from exactly the opposite direction, because the universe is finite and unbounded. By analogy,

light follows the curved path of a great circle on the surface of a cosmic sphere and ends up where it started from.

In this conception, inertial frames are always small portions of much larger, curved, non-inertial spacetime frames. General relativity does not recognize the possible existence of an inertial frame on the largest cosmic scale. Under this theory no universal inertial frame is possible, despite the empirical evidence which demonstrates that it exists. Neither does it recognize the possibility of a rotational or gravitational center to the universe, since there is no possible center, periphery, beginning, or end in this concept of curved spacetime. There is a finite limit to the quantity of space, but space has no boundaries. Because the universe has no boundaries, there is no possibility of cosmically orientating ourselves in universe. Every point in curved spacetime is indistinguishable from every other point.

This has been and still is the most influential of all concepts of the universe. Yet, after almost a century, this conception is significantly contradicted by the data. Apart from the overwhelming empirical evidence which demonstrates the existence of a universal inertial frame, there is now conclusive evidence that the cosmic geometry of spacetime is essentially Euclidean in structure, as far as observation extends. This severely challenges the conception of a finite and unbounded universe.

In 2001 NASA launched its Wilkinson Microwave Anisotropy Probe (WMAP) to obtain more accurate measurements of the cosmic microwave background radiation. After a decade of extensive analysis from this and other experimental data, it has been discovered that the spacetime of the observable universe has a flat Euclidean geometry. According to NASA's website, "We now know (as of 2013) that the universe is flat with only a 0.4% margin of error. This suggests that the Universe is infinite in extent." [24] The 2013 results of the European Space Agency's Planck Satellite, which measure CMB temperatures to an unprecedented degree of accuracy, determine that the space-time of the universe is flat to within 0.1 percent. [96] Within the limits of the observable universe, which is thought to extend at least 14 billion light-years (Bly) in every direction, the universe has the flat Euclidean geometry of an inertial frame.

If the general theory is assumed to be correct, this 28 Bly wide flat spacetime must be an extremely small portion of the curved spacetime of the whole universe, since it does not deviate by more than 0.4 percent from being perfectly flat. If the observable universe has an exactly flat geometry, then the unobservable and inaccessible portion of the universe must be infinite, which

means it cannot be described under the theory of general relativity. In any event the data is only consistent with a universe that is virtually unlimited in extension, since there is no way to tell how far beyond 14 Bly flat spacetime extends. Given this reasonably conclusive evidence, it is clear that general relativity has failed in its effort to distinguish a finite universe from an infinite one, to discriminate between finite and infinite space.

To the limits of observation, the universe has an essentially flat spacetime, which is consistent with the existence of a universal inertial frame. However, the confirmation of the flat spacetime of the universe creates paradoxes for physical theory. If space is infinite in extent, this drives theory inexorably toward the idea of absolute space, which has been conclusively shown not to exist. Recent findings demonstrate that space can be treated as a property of matter. If space is infinite, then matter would also need to be infinite. This would cause the universe to collapse into a gravitational singularity, which does not occur. There is no way to establish a finite limit to the universe in either classical or relativistic physics which might resolve these paradoxes. There is, however, a possibility of limiting inertial frames within finite bounds, if inertial spacetime frames are defined by their absolute velocity relative to Paradise.

The limit R of the universe is thought to be ~ 13.8 Bly, by some estimates, which equals 1.31×10^{26} meters. This distance can be treated as the finite radius of the inertial frame centered on our location near the center of Orvonton. Orvonton's inertial frame maintains a constant orientation in the absolute inertial frame. The maximum possible orbital velocity about Uversa, the center of Orvonton's inertial frame, at a radial distance R is the velocity of light c , which cannot be exceeded in any inertial frame. This defines a limiting angular velocity relative to Orvonton's inertial frame that is equal to the velocity of light divided by the radius R .

$$\omega = \frac{c}{R} = \frac{299,792,458 \text{ m/s}}{1.31 \times 10^{26} \text{ m}} = 2.3 \times 10^{-18} \text{ } \theta/\text{s}$$

As noted earlier, the difference between the relative angular velocity of Orvonton ω and its absolute angular velocity ω_0 (as measured from Paradise) is less than one part in one million. The centrifugal acceleration at the radial limit of Orvonton's inertial frame equals the orbital velocity c multiplied by the angular velocity ω : $a_{cf} = c\omega = 6.9 \times 10^{-10} \text{ m/s}^2$. If this centrifugal acceleration is expressed in kilometers per second per megaparsec, it equals $71 \text{ kms}^{-1}/\text{Mpc}$ ($31,557,600 \text{ sec/yr}$; $3,261,564 \text{ ly/Mpc}$). This acceleration approximately equals a

Hubble constant of $72 \text{ kms}^{-1}/\text{Mpc}$, which is the rate of acceleration at which space expands.

The current value of the Hubble constant has been laboriously determined after analyzing a great deal of local astronomic data. The distance of 13.8 Bly is predominantly based upon the idea that matter accelerated at the Hubble constant for 13.8 billion years will reach the velocity of light after this time. Light emitted now from galaxies at this distance cannot reach us, because the velocity of recession equals the velocity of light. What has not been noticed before, since it has been assumed that the universe cannot revolve, is that the Hubble constant can be derived from the angular velocity of the universe, which equals the orbital velocity of light divided by the radius of the universe.

This relationship between centrifugal (or centripetal) acceleration and orbital velocity is characteristic of simple harmonic motion. Time is always measured by the cycles of simple harmonic motion. A defining feature of simple harmonic motion is that the angular velocity in such a system is constant at all radial distances. This establishes a constant relationship between the ratio of orbital velocity over the radius and the ratio of centripetal acceleration over orbital velocity: $\omega = v/r = a_c/v$. Orbital velocity increases in direct proportion to the radius, and the centripetal acceleration increases in direct proportion to the orbital velocity. From this we can conclude, based upon the current understanding of space expansion and its measurement by the Hubble constant, that the inertial frame of the observable universe conforms to and is limited by the model of simple harmonic motion.

We view the universe from our location in the superuniverse of Orvonton. The center of the spacetime inertial frame anchored to the galaxies of Orvonton is revolving about Paradise, while at the same time maintaining a constant orientation in the universal inertial frame. The distance to Paradise is about 9 Mly, as shown later. Based upon this distance and angular velocity, the orbital velocity of Orvonton and its inertial frame about Paradise is about 196 km/s.

$$v = r\omega = 8.51 \times 10^{22} \text{ m} * 2.3 \times 10^{-18} \frac{\theta}{\text{s}} \cong 196 \text{ km/s}$$

Spacetime inertial frames are finite and bounded because their revolution relative to Paradise is limited by the velocity of light on two levels. This limiting velocity applies within the spacetime of an inertial frame and also to the motion of the inertial frame with respect to the absolute inertial frame. The boundary of an inertial frame is where the constant angular velocity times the radius equals c in the frame. The vector of orbital velocity at the periphery of the inertial frame

(v) is, at one location, exactly the same as the vector of the inertial frame's orbital velocity about Paradise (v_0). In classical mechanics these two velocities would simply be added to find the velocity u relative to Paradise: $u = v + v_0$. Since the orbital velocity v at the boundary equals c , simply adding v_0 would make u greater than c , which is not possible under special relativity. Einstein's addition theorem for velocities must be used to find the resultant velocity u . (Max Born gives a detailed derivation of this theorem. [25])

$$u = \frac{v + v_0}{1 + \frac{v \cdot v_0}{c^2}}$$

If a space vehicle has a velocity v_0 of 200 km/s relative to a planet and emits a photon in the direction of its linear motion, the photon will have a velocity of c in the inertial frames of both the planet and the vehicle. As measured in the planet's frame, time dilates and space contracts in the vehicle's frame. This same relationship pertains to the orbital velocity c of an inertial frame and the orbital velocity v_0 of the whole frame about Paradise. The angular velocity of an inertial frame is a constant, since it models simple harmonic motion. If the revolution of inertial frames about Paradise in the absolute inertial frame also follows this model, there is a single absolute angular velocity ω_0 for all local inertial frames in their revolution about Paradise. As the distance from Paradise increases, the absolute orbital velocity v_0 increases, and the relative angular velocity decreases by the reciprocal of the absolute Lorentz factor: $\omega = \omega_0 \sqrt{1 - v_0^2/c^2}$. As the limit of the universe is approached, the relative angular velocity of a local inertial frame approaches zero. Since spacetime inertial frames must have an angular velocity relative to Paradise that is greater than zero, they cannot exist beyond the limit of the universe. Beyond this limit there is only the pre-spacetime of the absolute inertial frame.

At the limit of the universe, inertial frames revolving about Paradise reach their smallest dimensions. As the absolute orbital velocity of the center of a frame approaches the velocity of light near the boundary of the universal inertial frame, its relative angular velocity approaches zero under the addition theorem for velocities. Time within this inertial frame dilates, $t = t_0/\sqrt{1 - v_0^2/c^2}$, and space contracts, $d = d_0\sqrt{1 - v_0^2/c^2}$. Under quantum theory the Planck time of 5.391×10^{-44} s is the minimum possible unit of time, and this equates to the Planck angular velocity (ω_p) of 1.86×10^{43} θ/s : $\omega_p = \theta/t_p$. This angular frequency equates to the Planck energy of 1.96×10^9 Joules. Orbital velocity divided by angular velocity equals the radius: $r = v/\omega$. The maximum possible orbital velocity in an inertial frame is the velocity of light, so at the Planck angular

velocity the radius cannot exceed $r = c/\omega_p = 1.62 \times 10^{-35}$ meters, which is the Planck length (l_p). The maximum centripetal acceleration equals the orbital velocity of c multiplied by the Planck angular velocity of ω_p : $a_c = c\omega_p = 5.56 \times 10^{51}$ m/s². The Planck acceleration multiplied by the Planck time equals the velocity of light, $c = a_c t_p$, just as the Hubble constant times the radius of the universe equals the velocity of light, $c = H_0 R$. The radius l_p divided by the time to rotate through one radian t_p equals c . The universe radius R of 13.8 Bly divided by the time T of 4.35×10^{17} seconds to rotate through one radian equals the velocity of light: $c = R/T$.

The extent of an inertial frame decreases as the distance from Paradise increases. Suppose there is a body with its local inertial frame at an absolute radius r_0 of 13.79 Bly (1.304×10^{26} m) from Paradise, or 13.8 Mly less than the radius of the universe. It has an absolute orbital velocity v_0 of 2.995×10^8 m/s or 99.9 percent of the velocity of light.

$$v_0 = r_0 \omega_0 = 1.304 \times 10^{26} \text{ m} * 2.296 \times 10^{-18} \frac{\theta}{\text{s}} = 2.995 \times 10^8 \frac{\text{m}}{\text{s}}$$

The extent of this local inertial frame is limited by the orbital velocity of light about the center of the frame, which is anchored to and defined by the body. If a radial line is drawn from Paradise through the center of this frame, then the orbital velocity of light at r is the boundary of the frame. In the addition theorem for velocities, the resultant velocity u is found using the velocity of light c for the added velocity v , and the initial absolute velocity v_0 is the absolute velocity of $0.999c$. Solving the equation for u gives the velocity of light in the absolute Paradise frame, which is the same as the velocity of light within the local frame.

$$u = \frac{v + v_0}{1 + \frac{v \cdot v_0}{c^2}} = \frac{c + 0.999c}{1 + \frac{c \cdot 0.999c}{c^2}} = c$$

The radius of the local frame is 13.8 Mly (1.306×10^{23} m), the distance from the center of the frame to the boundary of the universe. The angular velocity of light in this frame equals the orbital velocity of light divided by the radius.

$$\omega = \frac{c}{r} = \frac{2.998 \times 10^8 \text{ m/s}}{1.306 \times 10^{23} \text{ m}} = 2.3 \times 10^{-15} \frac{\theta}{\text{s}}$$

The angular velocity of light about the center of this local frame is 1,000 times faster than it is for the universe. The closer a body and its local inertial frame are to the boundary of the universe, the smaller its radius and the faster its angular velocity. At the universe boundary inertial frames approach Planck dimensions,

angular velocity, and energy; they approach the status of the *absoluta* of space potency. In describing the evolution of energy from space potency towards the electronic matter of the superuniverses, the Mighty Messenger refers to a conceptual motion from the boundary of the universe toward Paradise: "In concept this narrative has been moving Paradiseward as transmuting space-force has been followed, level by level, to the working level of the energy-power of the universes of time and space." ^{42:2.16} The narrative moves from *absoluta* at the concept periphery of the master universe inwards.

The inertial frame containing the maximum Planck energy is finite and bounded by the velocity of light and the relationships of simple harmonic motion. The Planck energy cannot extend beyond the radius of the Planck length without the orbital velocity exceeding the velocity of light. The universal inertial frame containing the total energy-mass of the universe is also finitely limited and bounded by the velocity of light and the relationships of simple harmonic motion. Simple harmonic motion describes the cycles of time and the limits of space in inertial frames on all scales from the quantum to the universal.