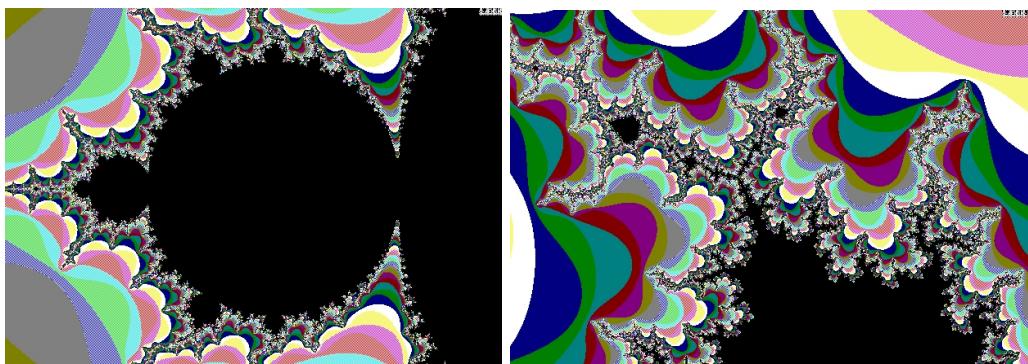


Complexity and Christian Faith: A Fractal Theology

RJ Tulip

1. This paper suggests that complexity theory can support a rational foundation for systematic Biblical theology. The hypothesis is that the nature of time justifies Christian faith, based on analysis of the structure of time in terms of fractal geometry and western astrology. In claiming that Christ is central to the natural structure of terrestrial time, the essay seeks to combine a scientific perspective with the premise that the Bible reveals God. This analysis is presented as a bridge between science and theology, providing a rational ground for orthodox Christology and pointing to a new cosmology with a high degree of explanatory power.
2. Christianity teaches that Jesus Christ stands at the centre of human time as the alpha and omega point of history.¹ This claim is particularly mysterious, as it is unclear why time should have a centre or what this could mean except as a mythic vision. The hypothesis here is that the place of Christ at the centre of time has a real scientific basis reflected in the relation between the earth and the cosmos, defined through analysis of time as a fractal structure. This essay approaches Christology by applying the fractal mathematics of complexity theory to the long-term astronomical rhythm of precession of the equinox. The goals are to situate history within a unitary horizon of cosmic evolution, to ground an ethical meaning for humanity within the mathematical structure of time, and to show how theology can use this fractal framework to explore how humanity relates to the universe, and hence to God.
3. Complexity theory, as a multi-disciplinary approach to understanding the behaviour of natural systems, observes that events are inherently unpredictable in the precise mechanical sense of classical physics, but that universal patterns, such as fractals, often link seemingly random events.² Fractals are shapes which possess the property of self-similarity at different scales. The picture below is an example,³ showing how each part of a fractal system is similar to its surrounds, reflecting the causal influence of all parts of the whole.

4.



5. Complex natural systems such as trees, weather systems, galaxies, rivers, etc tend to follow fractal patterns. Their irregular features tend to share a common systemic character, mirroring the patterns of the whole according to the fractal principle of self-similarity. Using fractals as a model for the geometry of nature, the question here is whether time, as a regular natural structure, has fractal patterns that could support a systematic approach to faith within the limits of reason.
6. The accommodation of Christian theology within the fractal structure of time would be an important step towards reconciling faith and science. I argue here that this accommodation is possible through the introduction into theology of empirical structures of time described in astrology, justified by fractal geometry. Leaving aside the magical and irrational sides of astrology, the aim here is to use its observations in a rigorous logical way to suggest that the fractal relation between the annual cycle of the seasons and the long term structure of precession of the equinox provides scientific support for Christian faith.
7. The assumptions of Christian theology are contestable, and many people now doubt that an eternal God provides the inherent direction of the universe, or that an ultimate purpose for the world is revealed through Jesus Christ. For theology to justify such beliefs it must delineate how God could relate to a scientific understanding of reality. A starting place for this question is the scientific assumption that one reality is given for us to know, and its implications that all true statements are mutually compatible and that truth is ultimately a single whole. As a foundation for theology and philosophy, these unifying assumptions provide a basis for exploring religious questions against rational criteria.⁴ These assumptions also provide the logical basis for fractal geometry. In modelling the wholistic operation of natural systems, from the shape of a tree to the history of the world to the galaxies of the big bang, fractal theory therefore has potential to serve as a bridge between empirical science and the wholistic approach of theology. The goal here is to define a wholistic fractal structure encompassing human time as a foundation for theology.
8. Time can be defined as enduring regularity within chaos. The regularity of ordinary human time is structured by daily and annual rhythms of the earth and the sun which provide the basis of our clock and calendar. But these ordinary rhythms are not the only natural patterns structuring human time. Beneath our familiar temporal framework, nature follows larger encompassing patterns which have shaped the environment in which humanity has evolved. The suggestion here is that time has a fractal structure, whereby terrestrial cycles such as the day, the lunar month, the year and longer periods relate to each other as part of an encompassing whole. The bonds between the levels of time must in turn condition everything on earth, including the rhythms of life. This essay looks for such patterns at an intermediate magnitude between the historical and the geological, suggesting that analysis of these structures of time can help answer theological questions.
9. All the parts of our galaxy, including our solar system, have been shaped by billions of years of natural cosmic inter-relationships. These relations have only the tiniest immediate effects for any given situation, considering the massive

distances and times involved, but their long term effects establish the initial conditions to which all complex systems must adapt. The relative permanence of galactic structures means that everything within our galaxy has co-evolved in such a way that the common cosmic origin creates a common resonant fractal character.

10. Just as drops of water at one point of a river are bonded by the greater patterns of the river, so everything in the river of time is ultimately bound together by the natural causal circumstances of the evolution of the universe. The natural bonds linking each moment are embedded in chaotic feedback structures of living systems, making them difficult to quantify, but fractal geometry has begun to provide the tools to explore such questions.
11. Fractal geometry gives a scientific basis to the intuition of traditional systems of wisdom that at any given moment all events have a common bond. As renowned scientist Stephen Jay Gould has said, ‘macrocosms are fractals of microcosms’.⁵ This observation reflects the traditional religious aphorism ‘as above, so below’, the belief that events on earth can be understood as part of a larger causal whole.⁶
12. Discussion of genetics will clarify the rational grounds for the approach to time suggested here. The causal model of fractal geometry has strong application to genetics, in that evolution through natural selection makes genes, like the organisms they form, into fractal reflections of their circumstances. Most human genes are common to all primates and all have evolved from our nearly four billion year long genetic inheritance. All the genes on earth have adapted to current features of their environment, such as temperature and air pressure, but also to the regular background environmental circumstances of the structure of time.
13. A feature of fractal systems, including the genetic code, is their sensitivity to initial causal conditions. Minor differences of context can cause major changes through escalating feedback, allowing seemingly innocuous factors to permeate systems.⁷ The principle of sensitivity makes it reasonable to expect that evolution would favour genes which exhibit a subtle, deep and regular harmony with the resonant patterns of nature. The evolution of life on earth has created patterns of astonishing fragility and sensitivity, and all within ecosystems formed within the rhythms of nature.⁸ As evolutionary biology has shown,⁹ every marginal adaptation which improves the fitness of an organism to its environmental niche confers cumulative genetic advantages. The weight of this argument means we should expect that our genes would be sensitively attuned to rhythms of terrestrial time which have existed largely unchanged for billions of years.¹⁰ The human mind, as the most complex and sensitive structure we have yet encountered, can plausibly be expected to exhibit such attunement to a high degree.
14. The stable periodic systems of the earth include the day and night, the ocean tides caused by the gravity of the moon, and the annual seasons caused by the earth’s tilted rotation around the sun. These temporal structures affect every level of the earth’s environment, as every living gene has evolved to harmonise with their patterns. Adaptation to seasonal climates, whereby seasonal cycles are coded into genes for dormancy and activity, provides a model of adaptation to the rhythms of

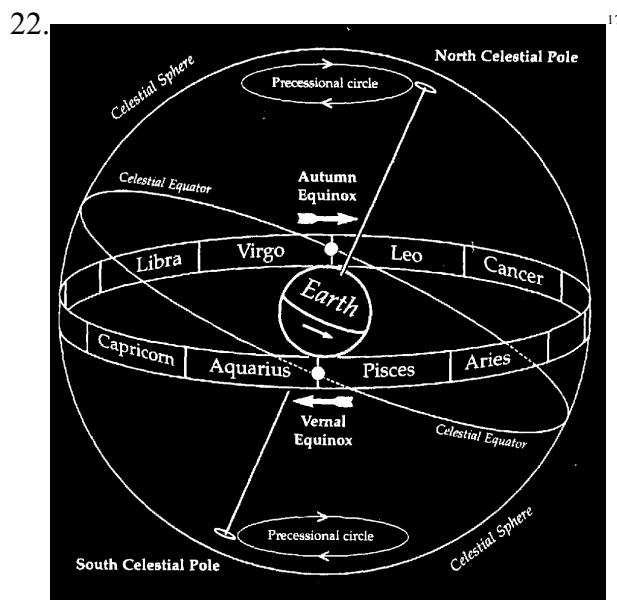
time. The background rhythmic structures of the seasons are part of the niche of the world, just as a certain colour of leaf may be part of the niche (or telos¹¹) of an insect. The effects of the seasons have been genetically magnified by their presence for every living thing over four billion years, as genes which maximised their attunement to the resonant patterns of time acquired a subtle advantage.

15. The fractal resonance between seasons and genes provides a conceptual basis for the suggestion that all the regular cycles of the earth are reflected in the genes of those organisms which have evolved within them. The observation of such relationships has to date largely eluded science, and remains at the pre-scientific level of astrology. However, the fact that quantification of these effects remains rudimentary, albeit more than is commonly known,¹² does not affect the logical expectation that such structures should exist. Astrology is widely viewed as discredited by the irrational nature of its popular forms, but its weaknesses do not affect the possibility that it describes real structures of time.
16. The astrological approach to natural cosmic patterns has an elegant fit with the axiomatic framework of fractal geometry. In locating each process within larger patterns which share a common character, astrology views the human mind and other chaotic systems of the earth as reflective microcosms in constant fractal relation to the rhythms of the cosmos, freely inclined but not compelled to have a similar character at any given moment to that exhibited by the macrocosm. This approach supports the fractal maxim ‘as above so below’ by seeing our minds and the patterns of the seasons as simultaneous expressions of the structure of time.
17. The sun signs are the main example of these natural rhythms.¹³ In purely scientific terms, the twelve sun signs of astrology are defined by equal monthly division of the periods between each solstice and equinox. The solstices and equinoxes mark the natural year of the earth, including the four seasons of earth’s northern temperate zone, with the result that each season has three sun signs. The astrological tradition has discerned a profound perpetual rhythm in this natural cycle, reflected in climate and psyche. Over the millennia, astrology has observed and distilled the characteristic rhythms of the natural year, establishing a detailed body of observations of the structure of time, beginning with Aries at the spring equinox on March 21 and flowing through to the end of the natural year in Pisces.¹⁴
18. The relevance of astrology to the nature of time starts from the claim that the meaning of each sign correlates with the character of its season. For example, the reflective hibernatory end of the natural northern year in early March correlates with the reflective symbolic meaning attached to the sign of Pisces. The bursting energy of spring at the end of March mirrors the energetic character of Aries, high summer is symbolised in the dominating sign of Leo, while Capricorn reflects the practical utility needed at the beginning of winter. Similar correlations exist for each sign and season.
19. The conjecture here, flowing from the expectation that fractal structures form all natural systems, is that fractal structures formed by the sun signs of astrology define the temporal character of the earth. The next step is to extrapolate the

fractal structure of the seasons to the long term framework for time found in the astronomical cycle of precession of the equinox.¹⁵

20. Precession is the star clock of the earth. It describes the slow movement of the position of the sun at a given time of the year around the star path of the zodiac. As a result of precession, the observed position of the sun against the natural year of the seasons - for example at the March equinox - moves to a slightly earlier point each year against the stars of the zodiac. The equinox precesses at a rate of one degree of arc every 71.7 years, with the full cycle around the ecliptic completed in about 25,826 years, a period known in astronomy as the great year.¹⁶ Underlying the earth's daily and annual cycles, the great year is the main regular long term physical cycle of the earth's position against the galaxy.

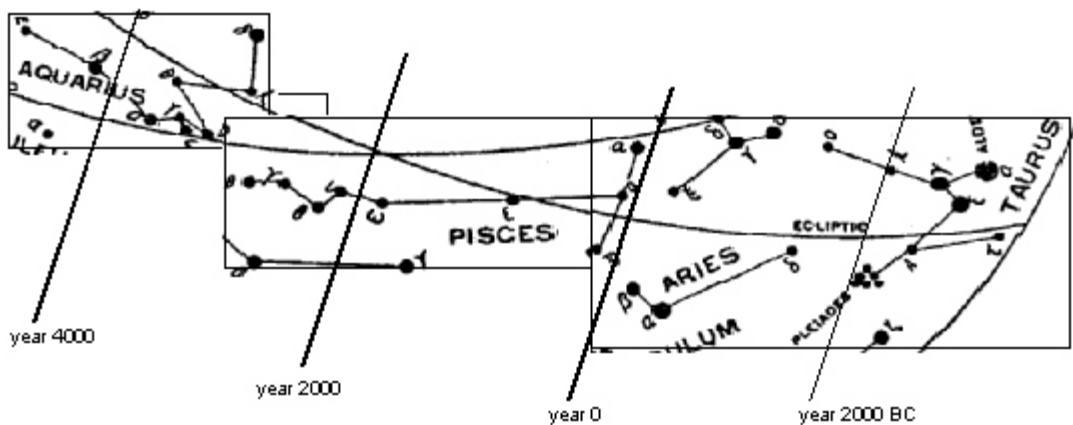
21. Precession is caused by a slow periodic wobble of the earth's polar axis, like the circle drawn by the axis of an unevenly spinning top, as shown in the diagram below. This slow axial wobble causes the celestial poles to move against the fixed stars, so the north pole has moved over the last few thousand years from the constellation of Draco to its present position near Polaris in the Big Dipper, following a circular path that has existed largely unchanged for millions and perhaps billions of years. The regular wobble in the earth's axis also produces the precessional cycle of the equinox, whereby the equinoctial point journeys around the zodiac every 25,826 years.



23. Every 2152 years (one twelfth of 25,826), precession causes the position of the sun at the March equinox to traverse another of the twelve constellations of the zodiac. For about the last 2000 years the equinoctial point has moved through Pisces, the last sign of the zodiac, and for the 2152 years before Christ the equinox precessed through Aries, the first sign. The zodiacal ages are a key astronomical concept emerging from this temporal framework. They are the periods, about 2152 years long, in which the equinoctial point is located in each zodiacal constellation. On the basis of the zodiacal ages we are now near the end of the age of Pisces and will enter the age of Aquarius in about 150 years.

24. Over the last two thousand years, the movement of the equinoctial point to a slightly earlier position each year within the constellation of Pisces has created an ever-widening misalignment between the astrological signs, based on the seasons, and their constellations. The present position of the equinoctial point, marking the beginning of spring and the first point of Aries for astrology, can be seen from the star map below as the point in Pisces where the ecliptic crosses the celestial equator. The diagram shows the millennial movement of the equinoctial point from about 3000BC to 4000 AD.

25.



26. The natural rhythm of precession provides a scientifically demonstrable structure of time for our planet, but to move beyond the factual observation to find a meaning in this rhythm is another question entirely. The aim here is to interpret the slow movement of the equinox along the star path of the zodiac as the context of history, establishing a structure of time that provides a framework for scientific speculation about human evolution. My question is how precession can be explored scientifically through use of complexity theory to support a unifying synthesis for thought. The objective is to justify this synthesis by showing how facts from astronomy can explain observations in history and theology.

27. As a result of precession, the natural year on earth defining the sun signs aligns with the stars of the zodiac only once every 25,826 years, when the monthly period of each astrological sign occurs while the sun is in its corresponding constellation. This moment of alignment marks the beginning and end of the great

year, and occurs when the equinoctial point stands between the first zodiacal constellation Aries and the last constellation Pisces. This moment last occurred at the time of the birth of Christ, and will not occur again for about 24,000 years.

28. The hypothesis here is that precession provides an overall structure of human time with a high level of explanatory power, based on its strong correlation with the structure of history. The following table summarises this model.

The Structure of Time						
Beginning of Age	10716 BC	8614 BC	6462 BC	4309 BC	2157 BC	5BC
Sign at equinox	Leo	Cancer	Gemini	Taurus	Aries	Pisces
Governing Principle	will	feel	think	have	am	believe
Christ						
Beginning of Age	2147 AD	4299 AD	6452 AD	8604 AD	10756 AD	12908 AD
Sign at equinox	Aquarius	Capricorn	Sagittarius	Scorpio	Libra	Virgo
Governing Principle	know	use	see	desire	balance	analyse

29. This table shows the structure of time over one great year according to the precession of the zodiac, based on applying the commonly designated astrological principle of each sign to its corresponding age. The claim here is that the cycle of the great year can meaningfully be understood by viewing the zodiacal ages as marking the evolution of human society through stages characterised by the principal attributes seen by astrological tradition in each sign. This table therefore summarises key organising principles of the historical evolution of humanity. The claim is that each age develops according to the inherent astrological principle of its governing sign, a principle variously akin to an attractor of complexity theory, an adaptive evolutionary telos and a structural periodic niche.

30. The period of each zodiacal age is defined by the position of the equinoctial point. So for example from approximately 5BC to 2147AD the location of the equinoctial point in the constellation of Pisces means this period is designated the age of Pisces. This period is designated the age of belief in accordance with the claim of astrology that belief is the ruling principle of Pisces. Similarly, the period from 4299 to 6452AD will be the age of Capricorn, symbolically marked by the Capricornian principle of use. The cycle of the great year has recurred in this form for billions of years, providing a stable long term rhythmic context for the evolution of life.

31. The hypothesis here is that the precessional cycle structures time through a fractal resonance between the character of each sun sign and the period in which the equinoctial point traverses its constellation - that the annual rhythm of the signs stands in direct fractal relation to the larger rhythm of precession. A problem for this hypothesis is of course the scientific question of how the position on the zodiac marked by each constellation could possibly correlate with its corresponding astrological sign. Given the massive distances between the stars, the organic unity of the constellations depends largely on our earthly point of reference. Even granting

that the signs of astrology structure the natural year, it must be asked why this annual rhythm should have anything to do with the precessional cycle, why the principle of the age should correspond to the principle of the sign, and why one point of the cycle should mark a beginning any more than another.

32. For precession to meaningfully mark the ages of the earth, the first point of the constellation of Aries must have a special significance as the starting point of the zodiac, mirroring the special significance of the first point of the astrological sign of Aries as the beginning of the natural year at the spring equinox. Otherwise each zodiacal age would have no intrinsic connection to the character observed in each sun sign.

33. Fractal geometry provides a framework to explore how such a correspondence is possible, through the observation that all regular fractal structures exhibit a directional reflection between their various scales. For example the fractal correlation between a tree trunk and the veins of each leaf reflects the directionality of the top and bottom of the tree. If a fractal resonance exists between the annual rhythm of the earth and the great year, this resonance should have a specific directionality reflecting the rhythm of the zodiacal cycle.

34. The inference is that the sun signs are a middle level pattern within a larger fractal structure. Just as the smaller branches of a tree reflect both the larger structure of its boughs and the smaller structures of its twigs and leaves, so the natural rhythm of the sun signs, defined by the northern seasons of the earth, should both reflect a larger whole and flow through to every sub-system. On this basis the causal theme ‘as above, so below’ should apply to the patterns of our galactic neighbourhood. Insofar as our galactic environment shares a common origin and is therefore a single system, fractal theory tells us that the natural cycles of the earth should exhibit harmonic resonance with galactic patterns. Like whorls in a cosmic whirlpool, the rhythm of the seasons should in some way reflect the fractal whirlpool energy of our spiral galaxy. The question is whether such a fractal reflection corresponds to the observations of astrology.

35. The suggested fractal relationship between the signs and the stars is supported by the astrological theory of progression, which holds that time has an observable fractal reverberation between its cycles, such as the day, the year and the great year. For example in natal astrology, the theory of progression claims that the positions of the planets on each day after birth resonate with the life situation of the person at each corresponding year of life, because of a natural fractal reverberation between the day and the year. Progression suggests that the annual rhythmic form of the natural year produces resonant fractal images of each sign, like furrows in time, which resonate with corresponding structures of the day and the great year. The progression of the year against the age involves a natural cosmic reflection of the structure of a year in the structure of the great year, such that the symbolic meaning of each sign also applies to its age. If such a progression exists, the overall structure of the great year is a harmonic progression of the seasonal structure of the earth’s annual cycle.

36. The empirical question is whether examples exist to support the claim that the principle of a ruling sign characterises its age. The model requires that the last 2000 years form the Piscean age of belief, while the coming 2000 years will be the

Aquarian age of knowledge. The age of Pisces is the main period which can be investigated for such a correlation. It does in fact provide strong support for the model. At the start of the age, at the time of the birth of Christ, the principle of belief was introduced by Christianity in a radical way, incomprehensible and unacceptable to the dominant powers of the old age, producing a paradigm shift in the way humanity lived. In terms of Christian theology, the birth of Christ was the beginning of the age of universal belief, marking the inbreaking of an energy - God as Logos or Divine Word - into a world which had hitherto only partially glimpsed this possibility. The early church then used the Piscean symbol of the Christian fish as a sign meaning Jesus Christ Son of God, an acronym of the Greek word ichthos or fish. The Piscean attributes of belief, compassion and service, summed up by the theme of faith in grace,¹⁸ then grew in power until they dominated the age. At the midpoint of the age of Pisces in about 1075AD, the spirit of belief had permeated the world, even beyond Christendom, and become the main organising principle giving meaning to human life.

37. Describing the age of Pisces primarily in Christian terms is not intended to devalue other religions, but to suggest that Christ had a unique position as the founder of the age and to observe that Christianity has a dominant place in the world through the power of Europe and America. It could be argued that the principle of belief applies even more strongly for Islam. The delay of the eschaton - Christ's prediction of his return to reign in power - has meant the age of Pisces has faced an enduring doubt about whether the message of Christ was true. The church has responded to this lack of knowledge by emphasising belief, defining faith as 'the assurance of things hoped for, the conviction of things not seen'.¹⁹ Although much about the world contradicts the Piscean themes, the evolution of human society over the last 2000 years has seen major effort to make belief and compassion the guiding principles of human life.

38. The age of Aries which preceded Christ provides another example of the correlation between age and sign. The self-assertion of its dominant figures such as Abraham, Moses, Ulysses, Alexander and Caesar reflected the impulsive and assertive Arian character, whose essential attribute is sheer being - as God told Moses 'I am'.²⁰ The Christian dogma that Christ brought a transition from the rule of law to the rule of grace²¹ corresponds to the astrological transition from the age of Aries to the age of Pisces. The power of the Roman Empire, with its spiritual roots in pagan mythology, marked the culmination of the age of Aries. Rome's institutional power continued well into the age of Pisces, but as Saint Augustine observed, Rome fell because of its spiritual emptiness.

39. Reliance on belief was a defining and uniting theme of the Piscean period, only starting to diminish with the rise of modern science over the last 500 years. Before Columbus and Copernicus, the world was profoundly ignorant of the nature of reality, and depended on mythical beliefs in the absence of knowledge. Galileo's condemnation by the church in 1633 for saying the earth went round the sun indicated the profound cultural tension between the dominant system of belief and the nascent scientific knowledge. Before then, the flat earth idea of God in heaven and the devil in hell, all within a universe physically centred on the earth and established by God with the creation of Adam and Eve, had provided a false mythological story as the structure for human understanding. Within that false story there was also a true story

about the relation between humanity and God revealed in Christ, but the absence of scientific knowledge meant the practical foundation for faith was a mythological belief structure which contained many things that were not true.

40. The old frameworks of belief have weakened in the modern era as modern scientific knowledge has spread to the entire planet, steadily reducing the scope for beliefs which are demonstrably false. A central feature of contemporary social evolution is that false beliefs which formerly underpinned many social practices are becoming less tenable, while old true beliefs are subject to scientific confirmation. This is leading to the decline of untrue beliefs and the incipient emergence of a new age of knowledge, the age of Aquarius. In similar vein to the transition from Aries to Pisces, the natural cycle is causing the Piscean principle of belief to lose its creative dynamism, even as it maintains its institutional power alongside the incipient growth of the Aquarian principle of knowledge.

41. The attributes traditionally linked to Aquarius are knowledge, association and rationality. The key change from the age of Pisces to the age of Aquarius is therefore from a society ordered on the basis of belief to a society ordered on the basis of knowledge. This unfolding transformation in human history suggests a turning point between epochs, away from the stage in human evolution in which no final certainty was available - the Piscean age of belief - and towards an age when scientific knowledge will become the basis of human activity - the Aquarian age of knowledge. A possible interpretation of the transition from the age of Pisces to the age of Aquarius is that the eschaton, as the moment of knowledge when God will be revealed in a new age with the return of Christ to reign in power, will equate to the dawn of the age of Aquarius. On this model eschatology would become the study of the transition from the age of Pisces to the age of Aquarius.

42. At the turning point at the close of the age the paradigm suggests the principle of the age of Aquarius will emerge, and knowledge will become the ruling principle of life on earth. In astronomical terms the precise timing of the ages is uncertain, but the assumption here is that the Piscean age is due to end in about the year 2147, when the sun will begin the natural year in Aquarius. The equinox will then precess through the sign of Aquarius over the next 2152 years, defining the age of Aquarius.

43. This model of time has implications for Christology. The exact alignment between the natural year of the seasons on earth and the constellations of the zodiac last occurred at the time of the birth of Jesus Christ in about 5BC. Whatever the exact year, Christ was born in the decade of the beginning of the great year, at the time of exact cosmic alignment between the signs and the stars 2000 years ago. At that time, for the first time in almost 26,000 years, the spring equinox occurred with the sun at the beginning and at the end of the zodiac. At that moment, the world was in tune with the galaxy. It was quite literally the alpha and omega point, the beginning and end, both in terms of nature's great year marked by the precession of the zodiac, and in terms of Christian faith that Jesus Christ was the Son of God, the divine human at the centre of time.

44. The birth of Christ is the birthday of the world in terms of our calendar, and is remembered each year in the major festival of the Christian world at Christmas. Our human system for counting the years and the theology of the dominant religion of the

world therefore originate at the central moment of the natural structure of the great year. This coincidence suggests a profound human recognition of the temporal structure of our cosmic environment, with major implications for the meaning and validity of Christian faith.

45. If Christianity is a true religion, we should expect to be able to find empirical scientific evidence supporting the theological dogma that Jesus Christ incarnated a cosmic harmony at the centre of time. The claim here is that the natural structure of time revealed in the cycle of the great year provides this evidence. By seeing the incarnation of Christ as a focus of the resonance between the galaxy and the earth at the centre of time, the suggestion is that the historical vision of the Bible has a sound basis in reality. This correlation provides the key natural condition for the possibility of faith by showing how God was revealed through an observable structure of nature.

46. The correlation between the alpha and omega point of Christianity and the beginning and end of the great year may help to explain the miraculous energy observers saw in Jesus, why Jesus above all others has been uniquely exalted as divine, and why Christianity is correct in its dogma that the incarnation unlocked a resonance between the earth and the cosmos which helps to explain the connection between Christ and God. That one individual should be so exalted is a great mystery, but it could be explained if the energy of the alignment of the great year found expression in his person.

47. If Jesus at his birth took on the unique character of the once-in-26,000 year alignment of nature, he was not just a man but an earthly channel of celestial harmony. This cosmic interpretation of Christ helps to explain the mystery of Christology - how the man Jesus with his entirely human nature could also be the divine Christ, the only Son of God. The interpretation here is that the Christ-nature was a unique natural phenomenon arising from Jesus' position as a channel of galactic energy. As Christ, Jesus actually was the alignment of the heavens marked by the correspondence between the seasons and the stars at the moment of his birth. The presence of this alignment opened a channel for the natural energy of the cosmos, and his participation in this energy made Jesus a divine instrument of love.

48. The fact that this alignment marked not only the transition from the age of Aries to the age of Pisces, but the transition from one great year to the next, suggests that Jesus was more than the founder of the age of Pisces. His position at the start of the whole cycle means Jesus also encompassed the meaning of the entire zodiac and so was the genius of the entire great year, containing not only the Piscean spirit but the integral spirit of the entire cycle.

49. The overflowing grace of Jesus has been understood by theology as revealing the stupendous power of God. This elemental power of God manifest in Christ overwhelmed Saint Paul, who was transformed and consumed by the raw psychic experience of his conversion on the Damascus road, as he bears witness in the Epistles. Although only seeing as through a glass darkly,²² Paul saw that Christ had brought a new creation reconciling us to God.²³ When Paul spoke of the whole creation groaning in travail,²⁴ and of Christ emptying himself of all but love,²⁵ he showed the centrality of the cosmic Christ. Paul attributed a cosmic foundational

status to Christ as the ground of our being with his statement that there is ‘one Lord Jesus Christ through whom are all things and through whom we exist’.²⁶ Similarly, Paul says Christ ‘is the image of the invisible God ... in him all things are created in heaven and on earth ... he is before all things and in him all things hold together ... for in him the fullness of God was pleased to dwell and through him to reconcile to himself all things whether on earth or in heaven, making peace by the blood of his cross’.²⁷ Paul says Jesus ‘reflects the glory of God and bears the very stamp of his nature, upholding the universe by his word of power’.²⁸ Paul’s vision is supported by Saint John, who expressed the cosmic tragedy of Christ in his statement that ‘the world was made through him yet the world knew him not’.²⁹

50. The interpretation here sees the Christ-structure as a real temporal phenomenon connecting the expression of God through the natural rhythm of the universe with the spirit of humanity as the image of God. On this basis, Paul’s claim that Christ existed ‘before the foundation of the world’³⁰ is a profound intuition of how the natural rhythm of time found expression in the incarnation. The claim here that Christ integrated the fractal meaning of the great year gives scientific form to Paul’s metaphysical ideas, by explaining how the divine perspective of Christ, existing in cosmic terms before the whole of history, transcends the changing moment to establish a vision in which all times and places are equally real.

51. Precession is the prism of eternity and Christ is the focus of the prism. This cosmic connection to the eternal could be the essence of the holiness of Christ and the source of the miraculous energy attested by the Gospels. By focussing on connecting fallen humanity to the image of human perfection through Christ, Christianity envisages a connection between human life and the one eternal God. The approach developed in this essay supports this connection by explaining the place of Christ at the natural and spiritual centre of history, providing a framework to connect humanity to the larger structures of time.

52. Interpreting Jesus on the basis of his birth at the start of the great year enables a larger and more precise eschatological picture to be drawn than has been available hitherto. A key part of this picture is Saint Paul’s understanding of the parousia as a time when Christ ‘must be king until he has put all his enemies under his feet ... so that God may be all in all’.³¹ Paul’s vision of God as ‘all in all’ can be understood as articulating the nature of heaven as connectedness with the universe - seeing heaven as the transformation of the earth through the grace of Christ to a world where alienation and hostility are replaced by belonging and love. Such a transformation is entirely possible, although the hellish situations of war and hatred still happening on earth show how difficult it will be to achieve.

53. The understanding presented here of Jesus as a channel of cosmic energy can be clarified through a fractal model of the Holy Trinity. The interpretation here glorifies God as infinite and eternal, but suggests this infinity is mediated through the finite temporal universe, and that large directional structures of our galaxy are signs of the pathway to the infinite and eternal God. On this basis, God the Father can be thought of as the creating unity of the galaxy and ultimately of the universe. In terms of the zodiacal structure discussed here, God the Father can be thought of as revealed in the meaningful unity of the zodiac itself in its majestic inter-stellar immensity. Following through the fractal theme that Jesus is the point of human connection to

this galactic structure, God the Son can be considered, in the person of Jesus Christ, as the redeeming point at which this purposive cosmic unity finds full human expression on earth. By incarnating the meaning of the great year at the harmonic moment when the rhythms of the earth were fully in accord with the rhythms of the cosmos, Jesus is the person whose nature as the image of God fully reflects the fractal structure of our universe in our galactic neighbourhood. On this model God the Holy Spirit is the sanctifying reverberation through history of the immense energy produced by the cosmic resonance between the Father and the Son.

54. This interpretation retains the trinitarian core of traditional orthodoxy while understanding it through finite structures, interpreting the mystical cosmology of theology against the real structure of human time. Looking at God through the fractal lens of time makes it sensible to interpret God the Father through our connectedness with our galaxy. The next step, following Christ, is to interpret the human path of redemption as the Aquarian evolution of human consciousness towards participation in the natural divine whole.

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¹ Rev 1:8; 21:6; 22:13

² A general description is in James Gleick (1987) *Chaos: Making a New Science*, Heinemann

³ Generated from a mathematical algorithm developed by the founder of fractal geometry Benoit Mandelbrot, the picture on the right is a detail from the top of the picture on the left, showing how self-similar fractal patterns continue within each other at smaller and smaller levels.

⁴ The unity of truth was used by Plato, Anselm, Aquinas and Hegel to support the idea that the true is the whole.

⁵ Stephen Jay Gould (1993) *Eight Little Piggies - Reflections in Natural History*, p.11

⁶ This belief is found in various forms in such ancient sources as the Bible, the Koran, Aristotle, Egyptian hermetic writings, the Jewish Qabala, the Almagest of Ptolemy, the Hindu Upanishads, the Buddhist Dhammapada, and the Chinese Tao Te Ching, and was endorsed in modern times by the astronomers Kepler and Newton.

⁷ An example of causal sensitivity from climatology is the butterfly effect, described by Gleick as the principle that tiny changes as small as a butterfly flapping its wings can cause a change in global weather events through escalating feedback within natural systems.

⁸ Ward & Brownlee (2000): *Rare Earth - Why Complex Life is Uncommon in the Universe*, Copernicus, New York, explain the fragility of our cosmic context

⁹ Richard Dawkins, in *The Blind Watchmaker*, presents an excellent summary of Darwin's explanation of the mechanism of evolution

¹⁰ A.T. Mann (1987) *The Future of Astrology*, Unwin Hyman, London, p.86 suggests a similarity between the double helix of DNA and the spiral patterns created by the movement of our solar system through the galaxy.

¹¹ The concept of telos, or purposive intentional structure, should not imply an unscientific role for God. Consilience requires that if God does shape evolution, it is only through the Darwinian mechanism of cumulative adaptation.

¹² Statistical findings of Michel Gauquelin (in Mann op. cit.) and Gunter Sachs (1999) *The Astrology File* are of great interest both for the empirical basis they provide for astrological claims and for the furious and irrational reaction of scientists to their work.

¹³ This essay refers only to western astrology. A good explanation of astrological meanings is in Sakoian and Acker (1973) *The Astrologer's Handbook*, Harper & Row, New York

¹⁴ The signs of astrology are based on the seasons, not the stars. Aries, Taurus and Gemini are and always have been the signs following the northern spring equinox, Cancer, Leo and Virgo the signs after the summer solstice, Libra, Scorpio and Sagittarius the signs after the autumn equinox, and

Capricorn, Aquarius and Pisces the signs following the winter solstice. Tropical and southern climates of the earth also contribute to the structure of time, but the natural scale and clarity of the northern seasons gives them a unique resonant power, perhaps resulting from the placement of the continents,¹⁴ creating the dominant annual rhythm of human life.

¹⁵ The research of Graham Hancock and Robert Bauval provides illuminating historical information about knowledge of the precession of the equinox in ancient Egypt and Cambodia and has been used in formulating the ideas here.

¹⁶ The period of the great year is given variously in different sources between 25,800 and 26,000 years.

¹⁷ <http://www.perceptions.co.uk/precess.html>. A way to visualise how the wobble in the earth's axis produces the precession of the equinox is to consider the movement of the solstices around the earth's orbit.¹⁷ The northern summer solstice on June 22 occurs when the earth's axial tilt of 23.5 degrees is oriented directly towards the sun, exposing the maximum amount of the northern hemisphere to the light. 13,000 years later, the axial wobble will have caused the solsticial point, where the north pole is closest to the sun, to shift half way around the earth's orbit. Midsummer's day will occur on the opposite side of the earth's orbit, with the sun in the opposite zodiacal constellation.

¹⁸ Eph. 2:5

¹⁹ Heb 11.1

²⁰ Ex.3:14

²¹ Rom 10.4

²² 1 Cor.13

²³ 2 Cor. 5

²⁴ Romans 8:22

²⁵ Phil. 2; trans. J Wesley

²⁶ 1 Cor 8:6

²⁷ Col 1:15-20

²⁸ Hebrews 1:3

²⁹ John 1.10

³⁰ cf John 17:24, Eph 1:4; 1 Pet 1:20

³¹ 1 Corinthians 15