THE SCIENTIST-MYSTIC: MYSTICAL MARRIAGE OF SCIENCE AND SPIRITUALITY

By

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# Introduction

We see ourselves living in primarily a physical world. We earn physical money so that we nourish our physical bodies with physical sustenance and protect us from the physical environment. Reading this paper requires the physical sense of sight, which depends on the detection of photons vibrating at the frequencies needed to emit visible light that enters the physical eye. However, I have learned there is more to The Universe than what meets the eye. Likewise, I have learned there is more to us than our physical “selves.”

I often wonder if it is unusual for a person with a vocation in science and engineering to understand there is a non-material and spiritual characteristic in our environment around us that is worth investigating. This is where I am. I got here despite previously being convinced of the possibility that I am an atheist.

You may ask how I got here. Well, I grew up reading books by renowned science writers such as Dr. Carl Sagan. I learned the scientific method as a tool to help us understand the physical world. In fact, this upbringing was a significant influence for my career span of 34 years. Then, a handful of years ago, I suddenly realized that science seems to peek into the non-material, metaphysical world. While reading physicists and cosmologists such as Max Tegmark, Brian Greene and Sean Carroll, I felt as if they were talking to me in metaphysical terms.

To be clear, I am not suggesting that these science writers unequivocally claim to be writing about the metaphysical world. However, when they discuss the implications of the Many Worlds Interpretation (MWI), quantum superposition, Wave-Particle Duality, the “Arrow of Time” as it relates to the 2nd Law of Thermodynamics, and the claim that the wave function never collapses, (to name a few topics) it is hard to ignore the metaphysical significance. And these are relatively recent scientific breakthroughs; well within the last 100 years.

What I have recognized is that we have been practicing the discipline of science, as we know it today, for well over 1,000 years. Before that, we can retroactively apply the scientific method against evidence collected since the period of recorded history of some 5,000 years (Kleiner n.p.). The apparent capacity for science to reveal evidence of non-material, or metaphysical, aspect of our environment appears to be a recent phenomenon.

With this newly found insight, I re-read all of Dr. Sagan’s books to make sure I remained scientifically grounded and have not gone down a rabbit hole of irrationality. To my surprise, Dr. Sagan, read with this fresh perspective, revealed to me how much he acknowledged and valued the spiritual aspect of humanity. I could now conclude that I was still on a sound path for both science and spirituality.

What is causing this shift? Why does it seem as if we are entering a fundamental change where our knowledge of the physical and metaphysical seems to overlap? This idea was my cue to look for answers.

Since I have had this discovery, I have lived a more spiritual life. I found a spiritual teacher (he actually found me) and have become involved in a spiritual congregation. I don’t know if it is synchronicity, law of attraction, grace, karma, or a combination of these factors, but the people in my circle introduced me to enough esoteric astrology to learn about the astrological ages. Immediately, I started my research into the “Great Year” as well as understanding the implication of the “Age of Aquarius.”

As part of my studies as a student of the spiritual aspect of life, I have also learned that balance is important. Many spiritual teachers recognize that our society puts too much emphasis on rational left-brain thought. Right-brain intuitive thinking is just as important, if not more so, for one to be a spiritually whole person. As a result, I have recognized that it is ideal for me to have the science teacher in Dr. Sagan, along with the many teachings that I get from my spiritual community, such as the sacred writings and the teachings of Dr. Paul Leon Masters. Doing so has taught me much joy in maintaining a balance between intellect and spirituality; a balance that I have only begun to practice in the last five years of my life.

With my observation of the apparent recent convergence of science with spirituality (or perhaps the convergence of the physical with the metaphysical), along with my recent discovery into what the “New Age” means astronomically and astrologically, I intend to present evidence showing the relation of these events. Also, I intend to show evidence of why this shift is happening. Hence, before we complete this journey, I intend to show how scientific thought is experiencing a new period of enlightenment as we enter the astrological Age of Aquarius, resulting in a societal transformation through increased cooperation among practitioners of science and spirituality. This increased cooperation will result in a more harmonious existence for mankind and increased support for life on Earth.

# Review of Literature

## Definitions

Since this thesis discusses the convergence of science and spirituality in the New Age, it is important to be clear up front about the terminology used. For “spirituality,” a definition provided in Charles Fillmore’s *The Revealing Word: A Dictionary of Metaphysical Terms* will suffice:

“The consciousness that relates man directly to his Father-God. It is quickened and grows through prayer and other forms of religious thought and worship” (“Spirituality”).

For the definition of “science,” the following definition from *Merriam-Webster* describes this author’s intended meaning:

“Knowledge or a system of knowledge covering general truths or the operation of general laws, especially as obtained and tested through scientific method” (“Science”).

Furthermore, it is important that astrological and astronomical terms are defined:

Precession of the Equinoxes is the estimated 25,800-year cycle of the 23.5 degree eastward North Pole axial shift of the Earth (Holberg “Appendix A”). The period of the complete cycle of the Precession of the Equinoxes is also referred to as the “Great Year” (Cruttendon 12).

In western astrology, The Great Year has been divided into 12 ages of about 2,000 Earth years, with each age given a name that corresponds to the signs of the zodiac (Cruttendon 56). Each age is assigned a name based on the zodiacal constellation that the Sun rises on the spring equinox.

For approximately the 2,000 Earth years following the birth of Christ, the Sun has risen in the constellation of Pisces, or the Age of Pisces, during the spring equinox. Since the Great Year is a precession, the Sun’s rising on the spring equinox moves in retrograde of the zodiacal constellations, resulting in the next age being referred to as the “Age of Aquarius” (Cruttendon 114). However, it is difficult to determine when the next age has or will arrive since the dates proposed by publications such as *The Book of World Horoscopes* put the range of these years to somewhere between 1447 and 3597 CE (Campion 489-495).

## History of Scientific Thought

Throughout the accounts of western science ranging from classical antiquity to the present, some 2,600 years, scientific thought has gone through many changes in philosophy, approaches, and names (Sagan “The Backbone of Night”). When Aristotle (384-322 BCE) described his observations of his natural environment, science was a branch of philosophy that went by many names, including natural philosophy (Gal 53-55). There was no scientific method or established research protocols in his day. Science started out as a purely philosophical enterprise, and it wasn’t until the late 17th century that the term “science” took hold as a term for what it means today. Also, it was about this period when a scientific method took form somewhat as we know it today (Lindberg ”Science before the Greeks”). It was during this time, with Isaac Newton’s (1642-1727) mathematical description of celestial mechanics, that the idea of a mechanical paradigm to describe natural events took shape. This idea was a scientific philosophy that served well alongside with the theologically supported watchmaker analogy during the same period (Sagan “One Voice in the Cosmic Fugue”).

## Quantum Mechanics and Universal Intelligence

This paradigm of a “mechanical universe” was an obvious conclusion made from throughout history by western thinkers starting around the time of Thales to the early 20th century; some 2,500 years. Then, in the early 20th century, there was a significant fundamental change in this scientific view of the world when a new theory called quantum mechanics. This theory switched the perspective from a mechanical causality to effects influenced through conscious causality (Stapp “Science, Consciousness and Human Values”).

One way causality through consciousness can be demonstrated is through an experiment known as “the double-slit experiment”. In this experiment, we can shine a beam of light through an opaque barrier with two slits cut out. Behind the double-slit barrier, a light detection screen (such as a photographic plate) is placed to detect the light passing through the two slits. When deducing what we know about classical physics and behavior of light, we expect such an experiment to detect two stripes, one behind each slit. However, a third stripe, known as an interference pattern, emerges as if the photons traveling from the light source can be in two places at once (known as the wave aspect). If a detector is placed to observe which slit each photon travels, the interference pattern is no longer manifested and is thereby exhibiting a particle aspect of wave-particle duality. This experiment demonstrates that when photons are not observed, they act as a wave. When they are observed, they act as a particle. It is almost as if the particles are aware of whether they are observed or not (Levy 9-11). Levy’s conclusion is “This suggests that the quantum world is truly sentient, as well as holistic; each of its parts are in touch with the whole” (Levy 11). This conclusion, as demonstrated by the science of quantum mechanics, is that there is evidence that everything in the universe is connected through a Universal Intelligence as also described by Dr. Paul Leon Masters (*Ministers/Bachelor’s Degree Modules* 1: 2).

## The Collective Unconscious and Universal Mind

A psychological theory also born in the early 20th) century by the prominent psychiatrist C. G. Jung (1875-1961) was the concept of a collective unconscious, or objective psyche (Levy 226). In this theory, it is believed that humans from isolated cultures worldwide and throughout history share similar memories as they relate to art, mythology and religious practices, to name a few examples. Although Jung’s proposed theory constrains the sharing of this psyche to human beings, such a constraint is not required (if a consciousness can be shared among humans, there is no reason to consider the possibility that it can be shared among non-humans as well) (Tarnas 57). What we can conclude is that what the spiritual teachings call the “Spiritual Consciousness” is now being described, with supporting evidence (*Ministers/Bachelor’s Degree Modules* 1: 21).

## The Multiverse and Free Will

In quantum mechanics, there is a concept formulated by Niels Bohr (1885-1962) and Werner Heisenberg (1901-1976) known as the “Copenhagen Interpretation” (Tegmark 177). Details for the reason this interpretation was developed is beyond the scope of this paper (background information can be found in *Mathematical Universe*). The brief explanation is that the early pioneers needed to explain what is observed at the quantum level that can be explained in classical Newtonian physics. It is with this proposed interpretation where Albert Einstein (1879-1955) famously proclaimed “I can’t believe that God plays dice” (qtd. in Tegmark 178). The reason for the disagreement between Einstein and Bohr-Heisenberg is that, according to the Copenhagen Interpretation, observable outcomes at the quantum level seem to be random events (a concept known as “wavefunction collapse”) (Tegmark 178). Agreeing with Einstein, Hugh Everett III (1930-1982) proposed a theory, known as the “Many-Worlds Interpretation,” that could explain quantum reality without wavefunction collapse (Tegmark 186). In this interpretation, Everett hypothesizes the reason wavefunction will never collapse is because, when an event that appears to result from random behavior (let’s use flipping a coin and getting a result of “heads” as an example), all results occur. The reason the observer witnesses a seemingly random result (in this case, call it “heads”) is because, from the perspective of the observer’s universe, the result was pre-determined and other (or parallel) universes are proposed to exist that produce alternate outcomes (Tegmark 186-197). This interpretation proposed that randomness is an illusion (Tegmark 191-197).

Some conclusions that may be made from the Many-Worlds Interpretation include supported evidence that free will is an illusion and everything that a participant of The Universe experiences is pre-determined by The Universal (or, shall we say, “Multiversal”) Intelligence has also supported in scripture. For example, *The Holy Bible: New International Version* gives us the verse “And even the very hairs of your head are all numbered” (Matthew 10:30).

Ultimately, despite differences in cultural, religious and racial heritage, humans remain a united species. As we enter the Age of Aquarius, we will recognize the individual with the collective and then the collective and the cosmos (Howell 24).

## The Coming Age

As previously described, 25,800 Earth Years is the approximate length of a Great Year. The precession marked by the Great Year moves along the night sky at a rate of approximately 1 degree every 72 years and, thus, each astrological age is approximately 2,000 years (Cruttendon 114). In the 2,000-year astrological age from about the period leading up to Jesus’ birth, was known as the Piscean Age and is characterized by a dichotomy in faith and marked struggle between religion and science (Howell 221). The following Age of Aquarius is described by Thomas Burgoyne in *The Light of Egypt* as “…intellectual in character, scientific, philosophic, artistic, intuitive and metaphysical” (9).

## Lunisolar Theory

The prevalent theory, known as the lunisolar theory, describes how the earth’s axial orientation is affected by gravitational forces from the Sun and Moon tugging on the Earth’s slight bulge at the equator. However, there is a reasonable argument that the Earth’s precessional period of some 25,800 years doesn’t match known cycles for celestial bodies found in the solar system. Opponents of this theory suggest that it is more likely caused from influences by celestial bodies that interact with the Earth over much longer times and distances (Cruttendon 143). Also, the International Astronomical Union (IAU), in a decision made in 2003, declared that methods used to calculate precession using the lunisolar model are inconsistent with what we know about how orbital mechanics work (Cruttendon 147).

## The Binary Hypothesis

A competing idea to the lunisolar theory, known as the Binary Hypothesis, suggests that the cause of the precessional wobble of the Earth’s axis, as well as the analogous effects to other planets in the solar system, is because the Sun is part of a star system and therefore in an orbital pattern with its potential companion(s) (Cruttendon 148). Some reasons this hypothesis gained acceptance include the IAU’s decision in 2003 and because of the recent empirical evidence that stars not being a part of a star system is the exception rather than the rule (Cruttendon 150). A massive body such as a companion star or black hole in a long-period orbit with our Sun could explain the long precessional period of the Earth (235). Evidence that supports the Binary Hypothesis is that our solar system seems to travel in a helical pattern, just as a star would if it were in an orbit with a companion. This helical movement through the Milky Way could not be caused by Lunisolar forces (Melchizedek 135). Finally, it is noted that researchers of mainstream astronomy in the United States are engaged in the search for the sun’s companion (Cruttendon 312).

## Doppler Shift

Just as one can hear the rise (shorter wavelength) and fall (longer wavelength) in pitch of a passing car’s horn, a similar phenomenon can be observed with light. If an object such as a star is approaching the observer, it will appear as a shorter wavelength color (blue-shifted) in the light spectrum. If a star is moving away from the observer, it will appear as a longer wavelength color (red-shifted). The amount of shift experienced depends on the radial velocity (velocity component along the line of sight of a star) of the object being observed. Also, the shift can be measured based on the known makeup of a star. So, for example, if the star is a certain class of young stars burning mostly hydrogen, we can use known spectral lines for hydrogen at known light wavelengths to measure the shift from reference (Holberg “An Odd Pair”).

## Sirius

Sirius-A, the brightest of the two stars in the Sirius system, is also the brightest star in our night sky. Because of its historical significance, it is a star with a well recorded past. Because of the close monitoring of Sirius, we now have evidence that the star appeared prominently as a red star some 1,500 years ago. We now have evidence that Sirius is approaching the Earth at a brisk radial velocity of about 9 kilometers per second (km/s) and is a star bluish in color (Holberg “Appendix B”). Since we have evidence that Sirius was once seen as a red star and is now a blue star (and measured to be approaching us at a high velocity), it can be concluded that it is possible that the color inconsistencies could be because Sirius was moving away from us 1,500 years ago (Cruttendon 206).

Figure 3 depicts a binary system where the two stars recently left a point known as “apoapsis” (The point at which the stars are farthest from each other) (Cruttendon 143). This is also the point where the velocity of the two stars relative to each other approach 0 km/s. Figure 1 describes the configuration of a binary system at “periapsis” (the stars are closest in their orbit) (Cruttendon 143). When these bodies leave apoapsis and continue their orbit toward periapsis, they will approach each other at an increasing velocity (i.e., no longer appear red-shifted). Consequently, the two bodies will appear (increasingly) more blue-shifted until they reach periapsis. Figure 2 approximates the proposed configuration of our sun and Sirius at about 500 years ago when Sirius no longer appeared red. If Sirius is the binary companion of our sun, the approximate current configuration resembles Figure 3. With close to 8.6 Light Years (LY) between Earth and Sirius, (Holberg “Appendix B”) and approximately 12,900 years for these bodies to go from apoapsis to periapsis (1/2 of a Great Year), the combined average radial velocity of both bodies would need to be close to 200 km/s (according to this author’s calculations) which is within thresholds of the velocity of the Sun now estimated at 370 km/s (Hinshaw n.p.).

## Why Astrology?

The study of astrology is borne out of an ancient discipline when science and spirituality were one. When these concepts of observation and awe split, spirituality lost its ability to bring evidence through observation. Likewise, science lost the ability to bring mysticism to the world. However, there may be a reason for this polarization of the two disciplines: a better understanding of how exploring astrology could bring awareness of the similarities of these disciples. When spirituality and science are reunited, there is a chance for us to bring peace and harmony to Earth (Howell 28).

## Why Does the Cycle of the Great Year Affect Us?

In the introduction of his book, *The Holy Science*, Sri Yukteswar Giri writes “When the sun in its revolution around its dual comes to the place nearest to this grand center, the seat of Brahma (an event which takes place when the Autumnal Equinox comes to the first point of Aries), dharma, the mental virtue, becomes so much developed that man can easily comprehend all, even the mysteries of Spirits“ (4). To understand what this means in relation to the western zodiacal system we have explored one must first understand that this passage is describing the autumn equinox as it relates to the ages. Swami Sri Yukteswar actually referred to the opposite sign of Aries (Libra) in that passage. He is describing the point of periapsis coincides with the Libra sign, and, therefore, we can assume that the point of apoapsis coincides with the end of Aries, or beginning of Pisces (Recall that the Great Year moves in retrograde of the zodiacal constellations). The Swami seems to indicate that we arrive closest to the seat of Brahma (or creative energy of the Universe) during the age of Libra when we are closer to the center of the galaxy (the Vedic tradition teaches that the Seat of Brahma is at the center of our galaxy) and our spiritual knowledge will increase as we move closer to this point (Selbie 32).

Dr. Richard Tarnas, in his book *Cosmos and Psyche: Intimations of a New World View*, presents a similar explanation:

I believe that a more plausible and comprehensive explanation of the evidence would rest on a conception of the universe as a fundamentally and irreducibly interconnected whole, informed by creative intelligence and pervaded by patterns of meaning and order that extend through every level, and that is expressed through a constant correspondence between astronomical events and human events. (77)

The evidence appears to be pointing at the idea that events that occur within our environment, or outer world, affect us within ourselves, or inner world. Examples of this correspondence include the comparison of celestial motion and the shape of DNA (Schmidt n.p.). Therefore, based on the evidence described in *The Holy Science* and the evidence in *Lost Star of Myth and Time*, that puts Sirius at about 8.6 Light Years away from us and approaching our solar system at a significant velocity (Cruttenden 201).

## The Philosophy of Nadi

The diagram in Figure 11 describes the orientation of the Pingala (Gold) and Ida (Silver) serpents represented in the caduceus, with the corresponding orientation in Figure 8. As the figure describes, the Pingala of the brain’s left hemisphere has just left the maxima point from the center and is returning towards the Ajna, Third Eye or pineal gland as it moves in a clockwise motion. The same is true for the Ida in the Right hemisphere (Hall 325). The arrangement of the serpents symbolizes the movement of the oppositional forces cooperating in resulting in the higher “self” (Nuit 39). Functions of the right hemisphere of the brain include creativity, intuition, and pattern recognition (spiritual). The left hemisphere is responsible for functions such as critical, analytical and rational thinking (material) (Sagan “The Persistence of Memory”). This process is known in mystery school traditions under names such as the alchemical marriage, chemical marriage or mystical marriage (amongst others) and involves the triune constitution of man and comprising the sprit/spirituality (Ida), mind (Ajna) and physical body/science (Pingala) resulting in the spiritual transmutation of the self, resulting in reunification with the Divine Source (The Secret Teachings “The Chemical Marriage”).

# Discussion

As we contemplate the history on the trends in scientific thought, we see patterns that seem to match with the hypothesized fall and impending rise of man. If we put the shift for fall to rise at somewhere between 1 and 500 CE, the historical evidence presents a humanity with profound interests in knowledge beyond the physical into the metaphysical. The thinkers before this era invested a lot of time thinking in this realm beyond what can be sensed directly by man; as demonstrated in art, architecture, writings, and engineering. It is easy to understand why we have forgotten that this fact was also true of the spiritually minded. We should be reminded that evidence shows that such thinkers were less materialistic than they are today. Comparing scriptures written before this time period, such as the Vedas and the Buddhist Pali Canon, demonstrates minds who put less attention towards the physical and more towards the spiritual.

## Vedic Cosmology

One of this author’s favorite quotes, from the book *Cosmos* by Dr. Carl Sagan, reveals this point succinctly:

The Hindu religion is the only one of the world’s great faiths dedicated to the idea that the Cosmos itself undergoes an immense, indeed an infinite, number of deaths and rebirths. It is the only religion in which the time scales correspond to those of modern scientific cosmology. Its cycles run from our ordinary day and night to a day and night of Brahma, 8.64 billion years long. Longer than the age of the Earth or the Sun and about half the time since the Big Bang. (273)

Here, Dr. Sagan recognized that there are clear parallels between an ancient belief and the science of today, as modern understanding of cosmology has us asking questions at a significantly higher rate than our answers. Meanwhile, the answers we get often demonstrate that the ancients were, at least at time, closer to the truth.

An example of Hindu scripture that describes cosmology that seems to parallel modern thought can be found in *The Mahabharata*, where it describes cycles known as “Brahma’s Day”; a period of millions of years (Dharma 307). In each day of Brahma, it is said, at the end of each day of Brahma, the universe is destroyed and at the beginning of each day the universe is re-created (Dharma 308). Of course, scientists presently put the age of the Universe in the tens of billions of years (a period significantly longer than the millions of years described in *The Mahabharata*). However, as previously discussed briefly in this paper, we still are uncertain how time works. We would not know if the Universe went through renewal every handful of a million years if the “arrow of time” that appears to us to always point toward the future periodically changed directions to the outside observer.

To expound on this idea, Thomas Gold (1920-2004) described the possibility of an expanding universe with the “arrow of time” pointing to the direction of the expansion until the universe reaches a state of equilibrium when the arrow reverses direction (Carroll 184). The implication is that, according to the Second Law of Thermodynamics, “The entropy of an isolated system either remains constant or increases with time” (Carroll 31), the change in the direction of the “Arrow of Time” is because of the reversible process of the Second Law (i.e., The time of an isolated system either remains constant or advances with entropy) (Carroll 184) and gives evidence, just as Sagan described, that the cosmology described in *The* *Mahabharata* and the current science, at least in this matter, agree.

## The Coming Age

Here is a riddle: How can a star be moving away from the earth in the distant past, yet now appears to be approaching us? One possible answer is in understanding orbits of binary systems. Astronomers have studied these systems (they are easy to find because there are so many) and have observed consistent behavior in the orbits of these binary systems. For example, the stars seem to do a sort of dance where they line up along a center point known as the “center of mass” (see Figure 3). Note the arrows next to the representations of the stars that indicate orbit direction. An animated representation of Figure 3 can also be found at <https://sites.ualberta.ca/~pogosyan/teaching/ASTRO_122/lect13/Orbit5.gif>. This animation will help support the understanding of explanations that follow in the possibility that Sirius is a companion of our sun.

Figure 4 demonstrates the velocity of Sirius from the perspective of our Sun/Solar System/Sol. It also demonstrates how the Sirius red shift/blue shift transition that was observed circa 500 CE when the direction of Sirius changed from moving away from Sol to moving toward Sol. Since Figure 4 depicts direction and not absolute velocity, the red/blue shift transitions may be counterintuitive. Figure 5 depicts the same curve with absolute velocity. This figure should provide a clearer explanation of the causes of the red shift/blue shift transitions.

Along with the evidence that the mass of the Sirius system is approximately three times the mass of our solar system (since Sirius A is about the same mass and Sirius B is about two times the mass of Sol), the estimation of orbital orientation distances described in Figure 4 have been calculated by this author. Based on these calculations that produced the distances in Figure 4, Figure 5 provides the estimated distance that Sol would travel over a period of The Great Year with the closest distance to the Seat of Brahma being 5.7 Light Years closer than we are now. This implies that, based on a previous discussion of Sri Yukteswar’s writings about the Seat of Brahma, puts everyone, including the science-minded at an ever-increasing closeness to The Divine.

## Breath of Brahma

As described earlier, the 23.5 degree tilt of the earth (depicted in Figure 6) completes a rotation over a period of the Great Year. As depicted in the figure, both the north pole and south pole are 23.5 degrees from rotational center. Figure 7 demonstrates this wobble over time (as well as the movement of the solar system through the galaxy) which yields a double helix. This pattern was also demonstrated in Figure 8. This double helix pattern is seen everywhere in nature. We find it in orbits of the Earth, Moon and shapes of DNA molecules (Melchizedek 138). This idea can also be experienced in radio waves, sound waves, as well as biological processes such as breathing patterns. Figure 8 demonstrates the wave pattern in Figure 7 again in two dimensions.

Figure 8, a two-dimensional representation of Figure 7, is included since it is more common to describe waves in two dimensions even though they occur in at least three dimensions. This approach allows us to do things easier, such as demonstrate wave propagation, amplitude, and frequency, since two-dimensional graphs are easier to read on paper. It also makes things clearer when talking about breathing patterns.

Alistair Conwell describes in his book *The Audible Life Stream* the concept of Audible Life Streams. According to his description, these are sound currents that souls use to return to The Source. It is vibratory energy that resonates with one’s soul (Conwell 53). He continues to make a connection with the law of correspondence through the comparison of the vibrational repetitive movement of celestial bodies (including The Earth) with the vibrational frequency observed at the subatomic level (Conwell 64). Also, the first verse of the *Gospel According to John* declares “In the beginning was the Word, and the Word was with God, and the Word was God” (John 1:1) and Conwell also describes Vedic makes mention of the *Anahata*, or the spiritual cosmic sound (Conwell 77). It does not take much effort to associate these descriptions of sound and vibratory energy from the celestial to the subatomic level as more evidence of the presence of The Source.

## As Above, So Below. As Below, So Above

With the law of correspondence, the ancient knowledge of the recession of the equinoxes and the recent discoveries in quantum mechanics as it relates to the observer’s paradox and the embracing by mainstream science the possibility that we are in a panpsychic universe is more evidence that there continues to be a congruence of scientific ideas with spiritual concepts (News n.p.). We are now realizing that when we observe effects at the subatomic level, such as the previously described double-slit experiment involving photons, our conclusion is that we are looking in on ourselves. We realize we must remain the observed in a fully connected universe where the sole observer is The One.

## The Historical Record

If one were to want to look for evidence of a pattern of convergence of science with spirituality, another approach would be to look at the physical evidence. Figure 9 is presented to provide approximate time periods for the previous cycle of The Great Year. The previous ascension that spans from the Age of Pisces (Circa 25,000 BCE) to the Age of Virgo (Circa 13,000-10,000 BCE) with the Age of Virgo being the previous peak to the Golden Age (the point at which The Earth was closer to The Seat of Brahma) (Yukteswar 5). The evidence of human development during this period of ascension is very slim and certainly not anything of significance to demonstrate a trend of science and spirituality convergence. However, as we look at the start of the descension period (Circa 11,825 – 2500 BCE), the following evidence has been discovered:

Göbekli Tepe was constructed in about 9,500 BCE (Age of Leo). Mainstream archeologists agree that the evidence shows that the complex was used for spiritual and worship purposes. This site was designed and built with impressive engineering, even by today’s standards (Selbie 223).

The Piri Re’is Map is a cartographic artifact and features the coastline of Antarctica with accuracy that has been confirmed to have coastline detail consistent with modern capabilities of seeing through ice. The interesting points of this map include the fact that it is alleged to have been created in 1513 (before the discovery of Iceland) and includes evidence that the map must have been made when Antarctica’s coastline was without ice; a time estimated at between 5,000-3,000 BCE (Ages of Gemini or Taurus) (Selbie 292).

The Great Pyramid, even by today’s standards, was built with exquisite design and precision. It’s orientation with true north and measurements that are seemingly in scale with that of the Earth’s dimensions along with the ratios that reveal measurements of π (3.141) and ф (1.618, and is also known as The Golden Ratio) are mysteries since there is otherwise no evidence that the designers of the time of construction (between 3,400 and 2,900 BCE, or The Age of Taurus) knew how to calculate these ratios. As well, it is a mystery how the designers knew the circumference of earth some 5,000 years ago (Selbie 311).

The design and construction of Stonehenge is as mysterious as The Great Pyramid. The tremendous weight of the stones (50 tons) along with the evidence that transportation of the center stones came from a quarry about 200 miles away, marks Stonehenge as an amazing feat in construction (Selbie 340). Also, the measurements of the site, as it relates exactly to ratio measurements of The Great Pyramid, are astounding (Michell xxxi).

Although these are just a sample of notable undertakings from before the shift of around 1-500 CE, there are likely countless other examples that are lost to us today. Artifacts such as those that may have been contained in The Library of Alexandria would have undoubtedly provided us with more evidence of knowledge we have forgotten.

As a final discussion on this subject, we should recognize the fact that ancient cartographers, architects, and engineers could create these marvels alone is not presented as evidence that there is a convergence of science and spirituality. To demonstrate that, we should look closer at why these artifacts were created. Evidence demonstrates that Stonehenge, The Great Pyramid and the Göbekli Tepe complex were meeting places of a spiritual nature. None of these sites seem to have provided a practical function to the societies at the time they were constructed.

## How Does the Cycle of the Great Year Affect Us?

The double-helix waveform in Figure 7 has a significant symbolic meaning. For example, compare the figure to the Caduceus symbol in Figure 10. The Caduceus represents the ascent and descent of man and return to The Source (Carey 97). It represents the balance of two opposing forces (depicted by the two serpents) along with the representation of the rod, representing the spinal column, and the top of the rod and wings which represent the pineal gland and brain (Hogan 60) (Hall 325). These serpents represent the Ida and Pingala (Hall 325). The Pingala refers to the masculine “Sun Channel” associated with the right brain. The Ida refers to the feminine “Moon Channel” associated with the left brain (Schmidt n.p.). Since the Sun (as well as the masculine) represents positive energy, we can associate the south pole to the gold line in Figure 7 (since the south pole is the positive magnetic pole). Likewise, the north pole is associated with the silver line in Figure 7 (NASA n.p.). Based on this correlation, the current location of the Pingala and Ida is represented in Figure 11.

As humankind starts its ascent towards the golden age of Virgo, the Pingala and Ida of humanity will be united with Ajna. This unification is demonstrated in Figure 12. As we move through the ascension of man for a period of about 13,000 years, we will move ever closer to the Seat of Brahma, where spirituality and science will align. The result is what is known as a mystical marriage as we move though the ascension of the Great Year, which will yield a society where science and spirituality will once again be in full cooperation and a common interest in unification with The Source.

# Conclusion

Since the start of the first millennium, there is scant evidence of the great minds of science aligning with the spiritual and divine. However, evidence retrieved from 100 years of research in the scientific fields of quantum mechanics, psychology, cosmology seems to bring science ever closer to the non-physical reality of our universe. This evidence, along with the evidence of pre-historic knowledge that went into building sacred sites such as The Great Pyramid, Stonehenge and Göbekli Tepe demonstrates that The Great Year (a period of about 25,800 years) and the celestial forces that act on our world seem to cause the convergence with science and spirituality.

While the focus of this paper has been to demonstrate where science and spirituality appear to enjoy increased cooperation in recent history, future investigations into the corresponding divergence of religion and spirituality appear to be worthy of investigation.

# Works Cited

Burgoyne, Thomas H. The Light of Egypt, Or, the Science of the Soul and the Stars - Volume 2. H.O. Wagner, 1967. Print.

Campion, Nicholas. *The Book of World Horoscopes*. The Wessex Astrology, 2004. Print.

Carey, George W., and Inez Eudora Perry. *The Zodiac and the Salts of Salvation*. The Carey-Perry School of the Chemistry of Life, 1932. Print.

Carroll, Sean M. From Eternity to Here the Quest for the Ultimate Theory of Time. Dutton, 2016. E-Book.

Conwell, Alistair. The Audible Life Stream: Ancient Secret of Dying While Living. O Books, 2010. E-Book.

Cruttenden, Walter. *Lost Star of Myth and Time*. St. Lynns Press, 2006. E-Book.

Dharma, Krishna. Mahabharata: The Greatest Spiritual Epic of All Time. 2014. E-Book.

“Earth's Magentic Dipole.” *NASA's Cosmos*, ase.tufts.edu/cosmos/print\_images.asp?id=29. Web. Oct. 9, 2021.

Fillmore, Charles. The Revealing Word: A Dictionary of Metaphysical Terms. Unity House, 2004. E-Book.

Gal, Ofer. The Origins of Modern Science from Antiquity to the Scientific Revolution. Cambridge University Press, 2021. E-Book.

Hall, Manly P. *Man: The Grand Symbol of the Mysteries*. Borodino Books, 2018. E-Book.

---. *The Secret Teachings of All Ages*. Blackmore Dennet, 2019. E-Book.

Hinshaw, G., et al. “Five-Year Wilkonson Microwave Anisotropy Probe Observations: Data Processing, Sky Maps, and Basic Results.” *The Astrophysical Journal Supplement Series*, vol. 180, no. 2, 2009, pp. 225–245., doi:10.1088/0067-0049/180/2/225. Web. Oct. 9, 2021.

Hogan, Timothy. *Entering the Chain of Union*. Lulu Com, 2012. E-Book.

Holberg, Jay B. *Sirius Brightest Diamond in the Night Sky*. Springer, 2007. E-Book.

Holy Bible: New International Version. Zondervan, 2017. Print.

Howell, Alice O. The Heavens Declare: Astrological Ages and the Evolution of Consciousness. Quest Books, 2013. E-Book.

Kleiner, David. “The Cuneiform Writing System in Ancient Mesopotamia: Emergence and Evolution.” *NEH*, 12 Feb. 2020, edsitement.neh.gov/lesson-plans/cuneiform-writing-system-ancient-mesopotamia-emergence-and-evolution. Web. Oct. 9, 2021.

Levy, Paul. The Quantum Revelation: A Radical Synthesis of Science and Spirituality. SelectBooks, Inc., 2018.

Lindberg, David C. The Beginnings of Western Science: The European Scientific Tradition in Philosophical, Religious, and Institutional Context, Prehistory to A.D. 1450. International Society for Science and Religion, 2008. E-Book.

Masters, Paul Leon. “Minister’s/Bachelor’s Degree Curriculum. 4 Vols.” Burbank, CA: Burbank Printing. PDF File.

Melchizedek, Drunvalo. The Ancient Secret of the Flower of Life: An Edited Transcript of the Flower of LIFE WORKSHOP Presented Live to Mother Earth from 1985 to 1994. Vol. 1, Light Technology Pub., 1998. E-Book.

Michell, John F. *The View Over Atlantis*. Abacus, 1973. Print.

News. “Why Is Science Growing Comfortable with Panpsychism (‘Everything Is Conscious’)?” *Mind Matters*, 4 Apr. 2021, mindmatters.ai/2020/05/why-is-science-growing-comfortable-with-panpsychism-everything-is-conscious/. Web. Oct. 9, 2021.

Nuit, Natasa P. *Spiritual Symbols With Their Meaning*. Artof4Elements, 2018. E-Book.

Sagan, Carl, and Neil deGrasse Tyson. *Cosmos*. Ballantine, 2013. E-Book.

Schmidt, Daniel, director. *Inner Worlds, Outer Worlds*. Gaia, 2012. Film.

“Science.” *Merriam-Webster*, Merriam-Webster, www.merriam-webster.com/dictionary/science. Web. Oct. 9, 2021.

Selbie, Joseph, and David Steinmetz. The Yugas: Keys to Understanding Man's Hidden Past, Emerging Present and Future Enlightenment: From the Teachings of Sri Yukteswar & Paramhansa Yogananda. Crystal Clarity Publishers, 2010. E-Book.

Stapp, Henry P. Mindful Universe Quantum Mechanics and the Participating Observer. Springer Berlin, 2014. E-Book.

Tarnas, Richard. *Cosmos and Psyche: Intimations of a New World View*. Penguin Group USA, 2007. E-Book.

Tegmark, Max. Our Mathematical Universe: My Quest for the Ultimate Nature of Reality. Penguin Books, 2015. E-Book.

Yukteswar, Swami Sri. *The Holy Science*. 2019. E-Book.

# Appendix

Center of Mass

Figure 1: A Binary System at Periapsis

Center of Mass

Figure 2: A Binary System at Apoapsis

Center of Mass

Figure 3: Orbit of a Binary System

Chart

Description automatically generated

Figure : Velocity Curve of Sirius from Sol's Perspective

Chart

Description automatically generated

Figure : Absolute Velocity of Sirius from Sol's Perspective

A picture containing radar chart

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Figure : 23.5 Degree Wobble of the Earth

A picture containing text

Description automatically generated

Figure : Precessional Wobble of the Poles over Time in Three Dimensions

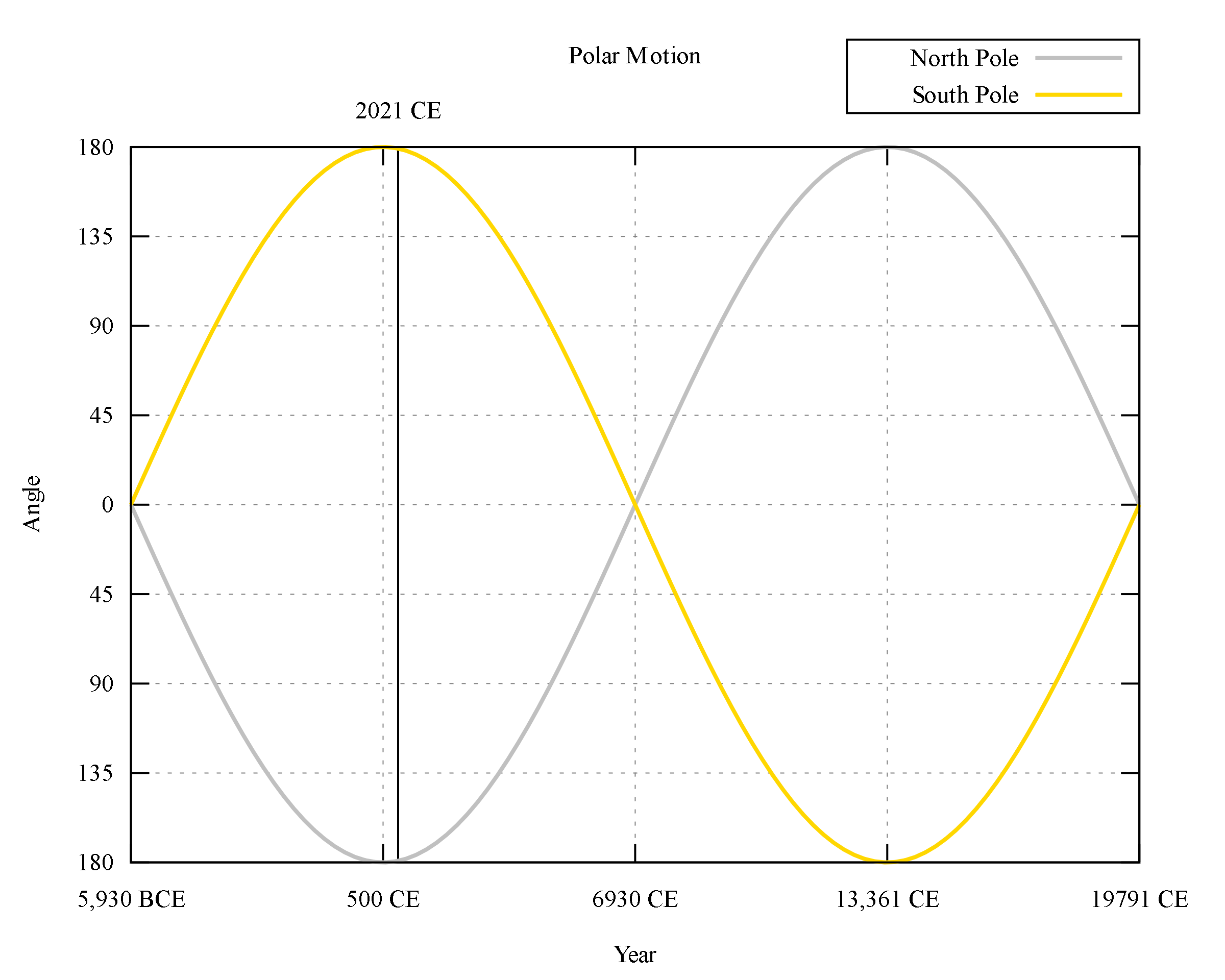


Figure : Precessional Wobble of the Poles over Time in Two Dimensions

Chart, timeline

Description automatically generated

Figure : Approximate Time Periods from the Previous Age of Aquarius (All years BCE Unless Specified Otherwise)

Logo

Description automatically generated with medium confidence

Figure : The Caduceus

Shape, circle

Description automatically generated

Figure : Orientation of Ida and Pingala with the Hemispheres of The Brain

Shape, circle

Description automatically generated

Figure : The Future Age of Virgo