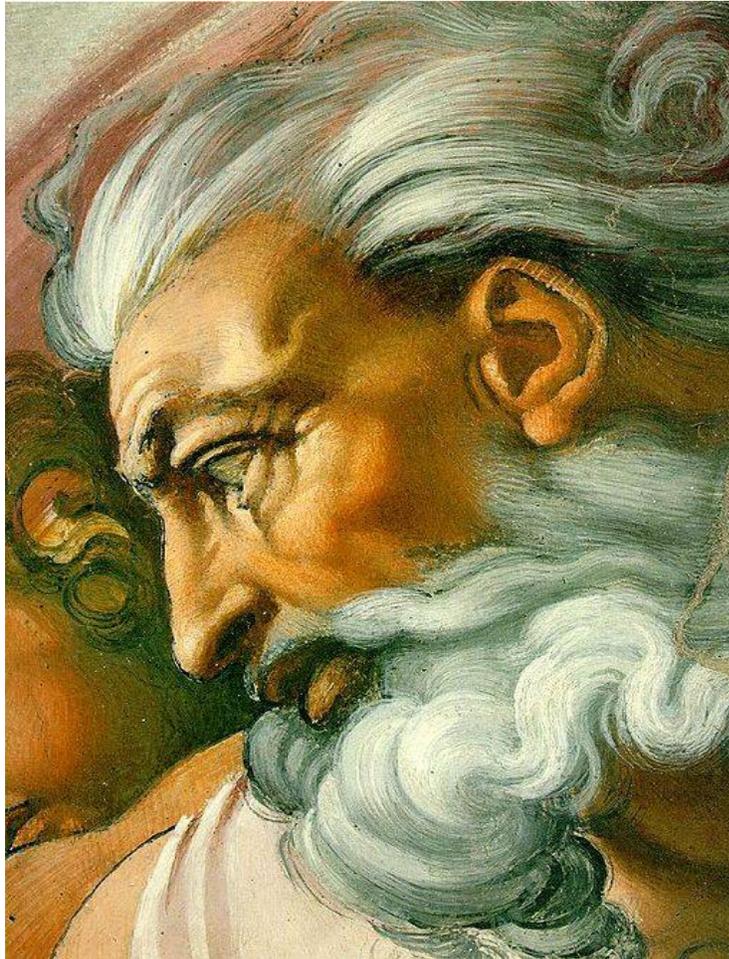


HOW GOD MADE THE WORLD

by Swami Abhayananda



How God Made The World ¹ **(6-7-2013; last revised 2-15-2019)**

Existence

The ‘creation’ of the world appears to have been accomplished by a great bursting forth of God’s essence—which we call “light”—occurring around fourteen billion years ago. There is abundant scientific evidence to suggest that an immense field of high-frequency light suddenly appeared and transformed itself into particulate entities which combined to constitute the many observable forms that make up our world. Over time, stars, planets, oceans formed, allowing for the eventual accommodation of God’s life and consciousness in every field and stream. In short, God produced a world of form from Himself; and since it is contained within Himself, every particle of it is inhabited by His Consciousness. Clearly, He is all, and all is He.

When we speak of God, we must understand that we are speaking of an infinite, eternal, and omnipotent Mind. It follows therefore that whatever is manifested by Him—i.e., ‘the Great Radiance’ and the ensuing ‘material’ universe, including ourselves—is necessarily a *mental* creation, existing only as an imagination within that Divine Mind. In other words, this universe and all within it is a figment of God’s imagination. He is the only one who really is; and all these forms and all these “I’s” exist within that one infinite Mind, and for that reason are permeated by Him—just as our own thought-forms are permeated by our own conscious minds in which those thought-forms are created and exist.

A personage in a dream is not only permeated with the consciousness of the dreamer, he is *made of* the consciousness of the dreamer. He is essentially *identical* with the consciousness of the dreamer. In just the same way, we are not only permeated by God’s Consciousness, we are *made of* His essence; we are projections of His light. And our consciousness is essentially identical with the Consciousness of God. When we look deeply within ourselves, we discover that we are manifestations of the one Mind, and essentially identical to the one Mind. For, just as a dream-person looking within to inquire who he is

would discover that he is in fact the dreamer, so do we, inquiring within, discover that we are the limitless Mind in whom all things and all beings exist.

‘But how,’ we might wonder, ‘could an entire universe that appears so substantial and physical be a mere imagination, a Mind-born projection of Thought?’ And the answer might be found in the recent results of science’s continuing investigation into the nature of matter. The science of physics, for all its denial of the supernatural reality, has done more in the last one hundred years to dispel the notion of the substantiality of the material world than all the theologians throughout history. During that time, the discoveries of physicists have reminded us of the declarations of the Upanishads that the appearance of matter, i.e., the phenomenal universe, is an illusion, a product of *Maya*, the creative power of the One (*Brahman*). Contemporary science has shown that the universe does indeed consist of an Energy that transforms into material particles; but these material particles are really nothing more than submicroscopic electromagnetic impulses, mere ‘points of Energy’, interacting in such a way that the appearance of substance is produced—forming, in other words, an illusory world.

How do these “points” or “fields” of Energy, these so-called ‘wave-particles’ that began as “photons” of light, manage to produce the illusion of form and substance? In the hot, dense environment in which they began, the intensely energetic photons of which that initial radiation consisted spontaneously transformed into particles such as quarks and electrons—which combined to form protons and neutrons—which combined to form atoms; and the atoms combined to form molecules, which combined in vast numbers to form perceptible gases, liquids, and solids in a variety of sizes and configurations.²

The elementary ‘particles’ themselves are unimaginably tiny: according to the physicists of the Large Hadron Collider at CERN, “protons are 100,000 times smaller than the simplest atom, hydrogen; and quarks are 10,000 times smaller than protons. For comparison, if a hydrogen atom were six miles across, a quark would still measure less than four-thousandths of an inch.”³

Clearly, the atoms of which all perceivable gases, liquids, and solids consist are mostly empty space in their interior. In fact, physicists tell us that all of what we call *Matter* is 99.999999999999 percent empty space; the other infinitesimal part seems to be nothing more than energy wavelets and intangible forces. Subatomic wave-particles consist of intangible electromagnetically charged

impulses held in proximate “orbits” about one another by invisible forces to form the appearance of much grander substantial entities. And these appearances are multiplied in infinite profusion and variety as if by some magician’s hand, to appear before our eyes as a multitudinous world of objects. And so, this ‘material’ world, this phenomenal reality of ours, is a marvelous magic show of truly immense proportions!

This Light, these particles and forces—what a marvelous universe they make! How real it all seems! A great burst of Light, and all congeals into a universe of form and color, intelligence and emotion, *sturm und drang*. Time drags the whole process out, making it all seem quite natural, making it seem, from the perspectives of our individual lives, a long and gradual evolution. But, from God’s eternal perspective, His Mind-born creation is accomplished in its fullness in an instant.

Is this Light-energy by which God forms the universe simply the substance of His Thought—or what is analogous to Thought in a Divine Mind? Who can say? Ultimately, all radiation consists of vibratory movement at various levels of frequency within a specific medium. But in this case, the medium is divine and unknowable. We have identified a whole array of different ‘wave-particles’ that make up the material world, but that does not mean that these constituent entities are really separate substantial ‘things’ in themselves. We have simply given names to the common impulses and forces inherent in God’s Light-illusion, as one might examine and give names to the cohesive thought-constituents within a dream. This world-appearance does indeed seem substantial; but it is God’s illusion—as the light-circle produced by a whirling flame is an illusion.

In the aggregate of trillions of these illusory wave-particles, a vast, complex, visual illusion is produced—which, by reflecting millions of photons onto our retinas, produces electrical impulses in our brains, which in turn produces an image to our conscious minds; while the gentle forces produced by the motion of electrons presents a tactile sensation in another section of our brains, and is interpreted in our minds as the sensation of touch, confirming our impression of substantial form. But it is only a marvelous masquerade of light—God’s light; and it is all His grand illusion.

Consciousness.

Now, let us discuss consciousness. Over three thousand years ago, sages of Egypt and Israel proclaimed that life and consciousness was inspirated or otherwise instilled into man by God; and that this ‘breath’ or ‘spark’ of God’s Consciousness constituted one’s “soul”. Some others, like Plato and Plotinus, thought that God’s conscious “Soul” was not infused exclusively into man, but into the entire universe, guiding and regulating every aspect of it from within. To this day, these age-old concepts constitute the framework of our theology and the imagery of our religious imagination. Our minds continue even now to operate in these established patterns, utilizing these ancient conceptualizations, to which we have become habituated for so long.

But, as we have already suggested, there is another, perhaps more accurate, way of viewing the permeation of man and matter by God’s conscious Spirit: not by seeing it as an “infusion” or “inspiration”, but rather as the ‘containment’ of the phenomenal universe within the one Mind. Consider how our own individual human consciousness permeates our thoughts and dream-images. Our thoughts and mental images are permeated by our consciousness because these thoughts and images are contained *within* our conscious minds. May we not conclude that, likewise, the Consciousness of God, the Divine Mind, permeates the universe because the universe is contained *within* God? After all, where else would a Divine Mind’s creations exist but *within* Himself? ⁴

There is one Consciousness. It is the Consciousness of the One Mind. And every object in this phenomenal universe exists within that one conscious Mind, is constituted of that Mind, and partakes of that one Consciousness to the degree that it is capable. The various objects of this manifest universe move and operate, not by individual forces or laws of physics, but in and by that One.⁵ When the individual mind becomes illumined by that Consciousness, and is one with it, it is able to see that: “all things move together of one accord; assent is given throughout the universe to every falling grain.” Who, then, is doing what? In Him we live and move. In Him one Will operates throughout. And we, mere dust motes dancing in His sunbeam, are swallowed and encompassed in His light.

The Divine Mind, which is the source of Consciousness, is beyond time and space, and all manifestation; It is the eternal Identity of all that exists. It transcends the universe, while constituting its essence—as a dreaming mind transcends its dream-images, while constituting their essence. Consciousness is

not the property of matter, or of any individual being. It is not produced by any material process; but rather is a Divine stream of Intelligence filling the entire universe. It is the fundamental nature of Being, the foundation of the phenomenal universe, and the light of awareness filling it.

By following our own consciousness back to its Source, we are able to discover the one Self.⁶ That Self is God. He is the one Source of the material universe and He is the life and awareness pervading it. But, of course, we must come to know Him for ourselves. Our soul/mind must be illumined by the eternal Light itself and drawn into Its hidden depths. We do not come to know God through arguments and proofs, but by His grace. And though we may associate grace with this or that religion, it is universal and originates in God. To obtain that grace, all men focus their minds on Him through prayer and contemplative longing, and He shines His Light on whom He will. Those who have received that grace, realize beyond all doubt that their bodies are His light-forms, and that they are animated and made conscious by the all-pervading presence of His living Consciousness.

The personal consciousness that we regard as our “soul” derives its existence and its inherent bliss from the Consciousness of the Divine Mind in whom it exists. But souls *do* have a semblance of individual existence. While the Divine Mind, the Self, is universal and without characteristics of Its own, It manifests as a multitude of individual psyches, or souls. Each of these individual souls possesses its own unique characteristics and evolves from birth to birth toward the knowledge and awareness of its one true eternal Identity. The individual soul is therefore a pretended, or imagined, identity of the Self, whose only actual and realizable Identity is the one indivisible Mind.

Each individual soul is confined to a body that defines the extent of its individual being in the spatio-temporal universe. We regard what is not within that limitation as “outside” of us and “other” than us. But God has no body or any limit to His extent. There is no “outside” of Him; no “other”. Even if He were to create an outside, it would be within Him. God is an infinite, eternal Mind; He transcends space and time. Space and time are His creations, and they exist within Him. *Whatever* He creates is within Him. We, and the entire universe, exist within Him. Our own minds are limited; each one has its own perspective and considers itself to be the “subject”; and what is external to it is regarded as the “object”. But in God’s divine Consciousness, subject and object are one. He is unlimited and undivided. His Consciousness pervades everything and everyone.

We must understand that the separation of body and soul, of Matter and Spirit, exists only in the temporal world of appearance. In the Eternal (the Divine Mind), this duality, this separation, does not exist. In the Divine Mind, they are indistinguishable. Like water and ice in a glass, they are separable in appearance though they are one in essence. Those who have ‘seen’ into their own eternal reality have realized that their body and soul, their consciousness and their form, are one living reality in God. The mystic, therefore, while experiencing his identification with the Divine Mind, experiences himself, not simply as Soul, but as an illimitable awareness that is *both* universal Soul *and* universal Energy/Matter. In the Divine Mind, the unmanifest Light and the manifested Light together form all that is. Ultimately, they are one, as they both derive from the same One, and are resolved in the same One.

We are made of the Consciousness and Energy of God. His Consciousness manifests as our conscious soul, and His Energy is sent forth as light to establish the material universe at the ‘Big Bang’, ‘Big Burst’, ‘Great Radiance’, or whatever you wish to call it. And the ultimately true Origin, Source, and Father of that field of Consciousness and Energy, is the One. All that exists is His. It is His projection, His exuberant radiance. Nothing else exists but that One. Our sense of ‘I’ too is Him. ‘I’ am the one and only ‘I’ that is. My consciousness is His consciousness. My body, as well as the whole universe, is His manifest form. I am in Him and He is in me. I and the Father are one.

If you ask a beam of sunlight, “Who are you?” it will answer, “I am the Sun.” If you ask a wave on the sea, “Who are you?” it will answer, “I am the ocean.” If you ask a soul, “Who are you?” it must answer, “I am the One in all. I am He who alone exists now and forever. I am the light of the one Sun; I am a wave on the one Sea; I am a living breath of the one Life. I am in all that is seen or unseen. I am the One in all.”

Jesus said, “I am the Light that is over all things. I am all: From me all has come forth, and to me all returns. Split a piece of wood; I am there. Lift up the stone, and you will find me there.”⁷

Unfortunately, there are many who believe that this is a truth that applies only to one unique historical figure; but it is a *universal truth*, a truth for all, and a truth to be realized: *I* am not merely this body, not just this spark of consciousness, nor merely the entire manifested universe; I am the Source of the universe, and the

universe itself. I am both the subject and the object. There is nothing else here but I AM. Listen to what the great Shankaracharya said:

The fool thinks, 'I am the body'. The intelligent man thinks, 'I am an individual soul united with the body'. But the wise man, in the greatness of his knowledge and spiritual discrimination, sees the Self as [the only] reality, and thinks, 'I am Brahman'.⁸

I am that Brahman, one without a second, the ground of all existences. I make all things manifest. I give form to all things. I am within all things, yet nothing can taint me. I am eternal, pure, unchangeable, absolute.

I am that Brahman, one without a second. Maya, the many-seeming, is merged in me. I am beyond the grasp of thought, the essence of all things. I am the truth. I am knowledge. I am infinite. I am absolute bliss.

I am beyond action; [I am] the reality which cannot change. I have neither part nor form. I am absolute. I am eternal. Nothing sustains me, I stand alone. I am one without a second.

I am the soul of the universe. I am all things, and above all things. I am one without a second. I am pure consciousness, single and universal. I am joy. I am life everlasting.⁹

You and I—we are alive in God. Become awake and sense Him—within you, around you, constituting your body and your awareness, the earth, the heavens. This ocean of existence is His. Nothing exists outside of God. To know God is to know your Self. It is to know the originating Mind of the Father, the One. It is to know the Source of all existence, the Source of all consciousness, and the Source of all bliss. What will you do with this knowledge? Praise Him in your thoughts, and in your words and in your actions. Find your delight in Him—seeing only Him, loving only Him, praising only Him.

God, being so close, is easily accessible to us;
 He is always within the reach of our call,
 Always ready to provide succor in our need,
 And the light of wisdom in our times of darkness.
 Our own soul is the conduit of this accessibility,
 This communication, this succor and this wisdom.

In our own soul, when the chattering of the mind is silenced,
 And all our attention is focused on His presence,
 There He is found in the very qualities of the soul;
 For we are rays from His brilliance,
 Diminished only by our unwillingness
 To manifest His light.

He is the air in our nostrils and the earth under our feet.
 He is the light of our eyes and the music in our breast.
 He is the bright awareness that lives as you,
 And He is the storied tale your living tells.
 You dance in His firelight; you float on His sea.
 You breathe by His breathing; you move by His joy.

No matter how far you may gaze into the rolling
 Galaxies cascading above;
 No matter what dark or clownish scenes you dream,
 Or terrestrial landscapes you cross;
 In the depths of the ocean, or on the chilly
 Snow-peaked mountains;
 And even in the abyss of death and darkness,
 You are ever within His close embrace.

You cannot leave Him, nor scamper from His sight.
 For you are in Him as a fish is in the ocean
 Or a bird is in the sky.
 His love surrounds and holds you,
 And He sees all through your eyes.

Bliss

There is one spiritual issue on which science, secular society, and the various religious traditions all agree: the freedom and accountability of the human will. The ancient Jews were keenly aware of the fact that it was man's free will that allowed for the disobedience of God's will, as illustrated in their Biblical 'garden of Eden' story. Later, Christians declared that God sacrificed His own son on the cross to redeem 'believers' from that earlier 'Fall from grace'. Other spiritual teachers, such as the Buddha, Shankara and Plotinus, also postulate the human

‘will to separateness’ as the instigator of human suffering. Here, for example, is Plotinus’ take on man’s Fall:

What can it be that has brought the souls to forget the Father, God, and, though [they are] members of the Divine and entirely of that world, to ignore at once themselves and It? The evil that has overtaken them has its source in self-will, in the entry into the sphere of process, and in the primal differentiation with the desire for self-ownership. They conceived a pleasure in this freedom and largely indulged their own motion. Thus, they were hurried down the wrong path, and in the end, drifting further and further, they came to lose even the thought of their origin in the Divine.¹⁰

The Jews, Christians, the Buddha, Shankara, Plotinus—all put the blame for human suffering upon the separative will of the individual. And rightly so, no doubt; for in the Divine Itself, there is no suffering. Had the One no hand, then, in the creation of the defiant soul? Must we not wonder if anything at all comes to pass that is not of His doing? The soul’s ability to will freely—had He no hand in that? May it not be that our embodied existence in this spatio-temporal world is also His doing? Is it not possible that this going forth into the school of separate existence is, as the Vedantists assert, His play or sport? And is it not possible that we are sent forth into this material school to prove and improve, to be tested and to evolve in His knowledge, in His joy? It is indeed we who create suffering through ignorance and error; but it is He who comprises the essence of this soul with its capacity for willing, and it is He who fashioned this universal school for the soul’s correcting. Can we imagine that He was ignorant of the outcome?

We are but waves on His infinite ocean; and while the wave’s suffering of separation from the ocean might seem real enough to the wave, it is actually based on illusion. Once the wave realizes its true nature, all suffering disappears. We are in a similar situation: unknowing, we suffer; knowing, we rejoice. It is not existence that constitutes suffering, but existence in delusion. When we awake to our Divine existence, all suffering vanishes. Is this not the message of all who have seen the truth?

All creatures, down to the smallest microbes, and up to the great apes, have the power of will; but only the creature known as man has the ability to know his Source and Ground as Spirit, and strive to overcome his merely fleshly impulses. Is that circumstance only accidental, or is there a purposeful

evolution at work here? Man is the culmination of God's purposes; and only he is able to find within himself the eternal One. It's true that, in following his own appetites and cravings, man brings himself to know suffering; but, even though the expanse presented before him is broad and vast and his opportunities many, experience leads him inexorably to wisdom; the Divine in him leads him eventually to Itself. The soul, being of Divine lineage, cannot long refuse the lure and fragrance of its homeland. By its own power, or rather by the power of the Divine in it, the soul stirs and awakes in its proper time, follows the trail of bliss leading it home, and at last is illumined by the inner light of God to know the One in whom it lives, and from whom it has never been separated.

The separate identity you thought was your own, the body and soul you thought was yours, is in fact God's. There is no yours. That illusory separate identity, or individual ego, common to all embodied souls, is an extremely subtle and deceptive mirage. It masks the nondual reality, and it is dispelled only by the grace of God. This ego is a veil blinding us to and separating us from the awareness of our true Self, our Godhood; and it is a veil only He, the Divine Mind, can lift.

What *is* this ego that stands to block our view of eternity? How impossible it is to comprehend! It can't be grasped or dispelled or even held up to the light of knowledge. It seems that it is an imposed ignorance that automatically accompanies embodiment. In effect, it is our Lord who casts this dust in our eyes, blinding us to our true eternal Self; and He alone has the power to dispel it. No matter how we try to escape the ego's limiting perspective, we are steadfastly caught in its grip. It separates us out from our limitless being, squeezing us into a narrow individuality, hiding from us God's face and our own divinity in Him. We can only raise our eyes to Him in love and longing, praying that He will soon return us home once again to His all-inclusive awareness.

God's grace cannot be earned or deserved. It is freely given and may descend upon you at any time. It is experienced as an awakening to the Divine presence in yourself and in the world, and it fills your heart with a new love and joy, stirring your mind to a new understanding of the spiritual nature of life. When God's grace awakens you, your mind begins to turn gratefully to God, and a physical pleasure, like a chill rising up the spine, occasionally reminds you of His inward presence. In your desire to draw nearer to God in worshipful devotion, you spend long hours in contemplation and prayer. And in the moment when you become completely surrendered in silence to that Divine

presence, He may lift from your mind the veil of separation and reveal that you and He are one. In that moment you will know the reality of God's immediate and all-embracing presence, the untranslatable, inconceivable, gladness of unlimited being that requires no explanation, no concepts, no theories, but clearly and self-evidently *is*. And you will live the rest of your life in the blissful awareness of the Truth.

Knowledge

When He reveals Himself in you, you will know that 'He' alone is, that 'you' are but one of His forms; and you will declare:

O my God, even this body is Thine own!
 Though I call to Thee and seek Thee amidst chaos,
 Even I who seemed an unclean pitcher amidst Thy waters —
 Even I am Thine own.

It will be immediately and abundantly clear to you that you are to God as a wave is to the ocean, as the mountains and the valleys are to the earth, as a pebble is to stone:

Does a wave cease to be of the ocean?
 Do the mountains and the gulfs cease to be of the earth?
 Or does a pebble cease to be stone?
 How can I escape Thee?
 Thou art even That which thinks of escape!

When He reveals Himself, the semblance of a separate identity vanishes in the One who alone is.

Even now, I speak the word, "Thou", and create duality;
 I love, and create hatred;
 I am in peace, and am fashioning chaos;
 Standing on the peak, I necessitate the depths.

All such dualities are but mind-creations, each invention bringing into existence its opposite as well. These dualities exist only in His Mind-creation; when He merges your mind in His, all dualities are dissolved in His oneness. And you will know that:

... now weeping and laughing are gone;
 Night is become day;
 Music and silence are heard as one;
 My ears are all the universe.

All motion has ceased; everything continues.
 Life and death no longer stand apart.
 No I, no Thou; no now, or then.
 Unless I move, there is no stillness.

This is the Mind of God. Your separate mind is merged into His.

Nothing to lament, nothing to vanquish,
 Nothing to pride oneself on;
 All is accomplished in an instant.
 All may now be told without effort.
 Where is there a question?
 Where is the temple?
 Which the Imperishable, which the abode?

Here, the distinction between the imperishable Spirit and the bodily abode no longer exists. There is no separation here; in God there is only the One, the all. He is life. He is the source of joy, and He is also the source of our unknowing.

I am the pulse of the turtle;
 I am the clanging bells of joy.
 I bring the dust of blindness;
 I am the fire of song.
 I am in the clouds and in the gritty soil;
 In pools of clear water my image is found.

Look at your reflection! Is it not an image of God's manifest glory?

I am the dust on the feet of the wretched,
 The toothless beggars of every land.
 I have given sweets that decay to those that crave them;
 I have given my wealth unto the poor and lonely.
 My hands are open — nothing is concealed.

See how we chase after the things of the world that only crumble eventually to dust in our hands, while turning our backs on all that is eternal sweetness and light. The choice is ours, and ours alone.

All things move together of one accord;
 Assent is given throughout the universe to every falling grain.
 The Sun stirs the waters of my heart,
 And the vapor of my love flies to the four corners of the world;
 The moon stills me, and the cold darkness is my bed.

Perfect justice permeates all in a perfect unfolding, in a perfect rhythm; and every ending is followed by a new beginning.

I have but breathed, and everything is rearranged
 And set in order once again.
 A million worlds begin and end in every breath,
 And in this breathing, all things are sustained.

NOTES AND REFERENCES:

1. This article is a condensation or capsulization of my book, *Body And Soul: An Integral Perspective (Third Edition)*, currently available on amazon's Kindle.
2. The question, 'How did God create the universe?' is one that is unanswerable. But, the most plausible theory, suggested by an enormous amount of evidence—that God produced from within Himself a great Light (an electromagnetic field) potentially containing all material forms and their evolutes—is here offered as the most probable beginning to the history of the universe:

Light is a unique form of energy, neither wave nor particle, though it can appear in either guise. It is not a substance, but an intangible and indefinable *essence* that some have likened to a mental rather than a physical reality; and yet all that we perceive as the physical, 'material' world is made of it. This 'stuff' called *light* is miraculously endowed with the ability to transform itself into what we call 'material' particles; and, even though we can describe and predict this transformation, it is clearly an *a priori* capability that can only be described as

“miraculous”. We may justly say, therefore, that this Light, which contains the potentiality of all forms, is God’s Creative Power, the substance of His imagination—though scientists prefer to call it, ‘the electromagnetic spectrum’.

This great Light, or electromagnetic field, became the universe of form in a quite amazing and miraculous fashion: The sudden burst of what we call electromagnetic energy from the Mind of God nearly 140 million centuries ago was a roiling, boiling maelstrom of light and heat, which some later referred to as ‘the Big Bang’. Though it was solely God’s Light, it would have appeared as an immense ball of fire, fiercely intense as it transformed into material particles for the building of a universe.

Physicists describe this “Big Bang” as an immense burst of Light in which an inconceivably dense and intensely energetic swarm of light-particles (photons) danced in close proximity and incessant flux, colliding with each other, producing particles and antiparticles in pairs, which then, themselves colliding, annihilated back into high frequency electromagnetic radiation, and then back to particle-antiparticle pairs again, in rapid succession.

Such Energy-to-Matter and Matter-to-Energy transformations would have alternated in rapid flux in those first moments. Expanding at the speed of light, some of that Energy would have been converted to particle-antiparticle pairs, most of which would have been annihilated, and some of the remaining matter in the form of quarks, along with their interacting gluons (what is called a *quark-gluon plasma*), would have eventually combined to form protons and neutrons. This quark-gluon plasma (QGP), theorized to have been produced in the first few microseconds of the ‘Big Bang’, was recently reproduced at the Brookhaven National Laboratory by colliding gold ions at nearly the speed of light in their Relativistic Heavy Ion Collider, a 2.4 mile-circumference “atom smasher”, thereby creating a “liquid matter” (QGP) at a temperature of “about 4 trillion degrees Celsius”—about 250,000 times hotter than the center of the Sun. (from Brookhaven National Laboratory, reported by Physorg Newsletter, February 15, 2010; www.physorg.com.)

It is asserted by physicists and cosmologists that the production of particle-antiparticle pairs by the initial high-frequency radiation (which we call gamma radiation) occurred in the first few seconds at temperatures in excess of 10^{12} K (a trillion degrees Kelvin). This is regarded as the ‘heavy- particle era’, during which particles such as protons and antiprotons were created. Shortly thereafter, the universe entered the ‘light particle era’. As the temperature of the early

universe decreased along with the energy of the photons, the rapidly spreading photons were no longer capable of converting to heavy particles like protons and neutrons but were capable of producing only lighter particles such as electron-positron pairs.

The highest frequency radiation, Gamma radiation, is radiation that reaches a frequency of 10 exahertz, or 10^{19} Hz, with a wavelength less than 10 picometers, and energies from 400 GeV (billion electron volts) to 10 TeV (trillion electron Volts). Since energy and mass are interconvertible ($E=mc^2$), energy converts to mass, and mass converts to energy. In that immense “fireball” at the beginning of time, trillions upon trillions of photons of gamma radiation collided, and each of these photons converted to a particle-antiparticle pair. So long as the energy of the photon is equal to or exceeds the mass of the particles produced, this conversion occurs. The reverse process also occurred: for example, the mass of an electron-positron pair equals 1.02 MeV (million electron volts); when such a pair collides, it is annihilated, and in its place are two photons of at least 0.51 MeV each.

When highly energetic photons collide, they convert to matter, becoming a particle-antiparticle pair, such as a proton and an antiproton, or an electron and a positron. These two members of a symmetrical pair possess opposite electric charges, and annihilate upon contact, turning back once again to light (photons). One would expect that, this being the case, every matter-antimatter pair would have annihilated over the course of time, and that consequently there would be no material universe. However, there *is* a material universe. And so, we must assume there was an asymmetry that found its way into this process, sparing approximately one matter particle in every 10 billion produced, which matter particles now constitute what is our material universe. Why and how this asymmetry should exist, however, has not yet been explained.

All of this conversion, or transformation, of Light to Matter took place within the first few moments after the initiation of “the Big Bang” or “Great Radiance”. After that, as the nascent universe expanded, the temperature (the energy of the photons) became too low to continue to produce particle-antiparticle pairs. And after about one million years, as the temperature reduced to about 3000 degrees Kelvin, the period of ‘recombination’ commenced, as the remaining nucleons (protons and neutrons) began to capture electrons to form neutral atoms, such as those of hydrogen, deuterium, and helium. (See Michael Zeilik, *Astronomy: The Evolving Universe*, Cambridge University Press, 2002, ninth edition; pp.470-475.)

These atoms of hydrogen and other gases collected in clouds; and these gas-clouds, reaching a large enough volume, were affected by the gravitational force (that Einstein says is a function of the geometry of spacetime), which, in turn, drew such gas nebulae into a density great enough to initiate nuclear fusion; and thus stars, and whole galaxies of stars were born. In the interior furnaces of these stars, heavier elements were created; and when the cores of the stars collapsed, the stars exploded into space; and their remnants formed into a second generation of stars, like our sun and its satellite planets. And, of course, all of this began with a great burst of light!

It seems likely as well, that what we call *spacetime* is a correlate of light and its innate proclivity for very rapidly spreading itself in all directions. Where there is extension, there is *space*; where there is a sequence of events, there is *time*. And while time and space are relative to the speed of light, light itself, the primary ‘stuff’ of the universe, is the sole constant by which time and space are measured. Like Einstein, we can describe and measure it, but we struggle unsuccessfully to know and understand just what it is unless we are aware that it is the very substance of God’s Creative Power.

3. “Large Hadron Collider could reveal our origins”, April 19, 2010 by Roger S. Boyd, copyright 2010 McClatchy-Tribune Information Services; appeared April 19, 2010 in PhysOrg Newsletter, www.physorg.com/news190869267.html.

4. That we exist in God is not a new idea. In the *Bhagavad Gita* (written circa 500 B.C.E.), the Lord, Krishna, says, “By Me, in my unmanifested form, are all things in this universe pervaded. All beings exist in Me; I do not exist in them.” (*Bhagavad Gita*: 9:4); and in the Christian scriptures, the apostle Paul says, “In Him we live and move and have our being.” (*Acts 17:28*). The entire universe exists within God. He produces the appearance of universal matter from Himself, within Himself. And while it appears that the Spirit and Matter are two substances intermingled, it is all only Himself, and so He remains one Being forever. He empowers the universal appearance within Himself, and the dynamic universe continually evolves to more fully express the glory of His Being.

5. The classical ‘mechanistic’ way of conceiving the universe regarded all the things, particles, and individual beings as separate independent objects and creatures that interacted in accordance with physical ‘laws’. The illumined way of conceiving of the universe regards every particle, object, and living being as inseparably united in an integral conscious continuum of which all particles, things, and beings are constituted.

Everything that once appeared to be random (the propitious outcomes of merely blind forces)—including the *quanta* that seemed to be governed by laws of probability—is now seen to be acting in mutually harmonious accord within an interdependent whole conceived and contained within the one Mind. “All things move together of one accord; assent is given throughout the universe to every falling grain.”

6. The most amazing and most wonderful aspect of this new way of seeing the universe is the recognition that every individual mind is a limited version of the one Mind and is capable not only of establishing an open connection to the one Divine Mind, but of actually experiencing its identity as that one all-pervasive Mind.

7. Saying of Jesus, from *The Gospel of Thomas*, 77.

8. Shankaracharya, *The Crest-Jewel of Discrimination*, trans. by Swami Prabhavananda & Christopher Isherwood, Hollywood, Vedanta Press, 1947; p. 58.

9. *Ibid.*, p. 118.

10. Plotinus, *Enneads*, V.I.I: “*The Three Initial Hypostases*”.

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