THE ORIGIN OF THE UNIVERSE

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The currently popular theory of the origin of the universe held by the vast majority of astronomers involves a gigantic explosion of matter and energy about fifteen billion years ago (the "big bang" theory), with subsequent cosmic expansion and evolution. The authors examine this cosmogony from both scientific (empirical) and Biblical (exegetical) perspectives, and conclude that it does not fit the facts of general and special revelation.

Introduction

The dominant theme in astronomy today is that the universe was spontaneously born out of chaos. This "big bang" interpretation assumes that an immense explosion of mass-energy took place fifteen billion years ago. Ever since, fragments of matter and space itself have been expanding outward like a fireworks display. Stars and galaxies, planets and people are said to have gradually formed from these fragments in a purely mechanistic and random fashion.

However, in spite of the current popularity of this theory, the dramatic beginning of the universe which the "big bang" assumes has proven to be an embarrassment to many cosmologists. Where did the initial mass-energy come from? What caused it to become unstable and begin to expand? Natural science simply does not have answers to these fundamental questions. Some scientists have desperately tried to avoid the entire question of ultimate origins by appealing to oscillating or steady state models of the universe which have neither a beginning nor an end. However, neither of these perpetual motion models is conformable to the presently known laws of physics. Thomas Gold, one of the originators of the steady state idea, now supports it mainly as "an excellent model against which to compare observations."[1] Others have tried to read the big bang theory directly into the first verses of Genesis. For example, the American astronomer Robert Jastrow feels that God somehow orchestrated the explosion as the Divine method of creation. This is an unsatisfactory compromise, as admitted by Jastrow in the beginning of his book, *God and the Astronomers:*

> It should be understood from the start that I am an agnostic in religious matters. In the searing heat of the first moment, all evidence needed for a scientific study of the cause of the great explosion was melted down and destroyed.[2]

Steven Weinberg, of Harvard, one of the leading proponents of the big bang, echoes this same frustration:

> Can we really be sure of the standard (big bang) model? Will new discoveries overthrow it and replace the present standard model with some other cosmogony, or even revive the steady-state model? Perhaps. I cannot deny a feeling of unreality in writing about the first three minutes (of the universe) as if we really know what we are talking about.[3]
>
> The more the universe seems comprehensible (via the big bang) the more it also seems pointless.[4]

The big bang theory continues to lead many others to this same despairing view of the origin and purpose of the universe.

From a Biblical standpoint, such frustration is perfectly understandable, and for two prominent reasons. First, the concept of a living, personal, all-knowing, all-powerful and transcendent God is almost totally absent from the thinking of modern cosmologists. Faith in such a God has been replaced by faith in chance through time. All that is really left, however, according to the title of one of Isaac Asimov's latest books, is "A Choice of Catastrophes."[5]

Secondly, even the knowledge that a personal God rules the universe does not necessarily remove all human fear. Though he possessed a profound knowledge of God, David, overwhelmed by the magnitude and silence of the universe around him, could ask, "What is man that Thou does take thought of him?" (Ps 8:5-8).[6] Thus, a confidence that God truly exists must be coupled with a deep confidence that he has revealed his clear plan and purpose for men in the words of holy Scripture. "We have the prophetic word made more sure, to which you do well to pay attention as to a lamp shining in a dark place" (2 Pet 1:19).

Evidence Adduced for the Big Bang

Two major discoveries have helped promote the big bang theory in recent years. The *first* is a measured red shift in the light radiated from distant stars. This effect on starlight is believed to be similar to the lowering in pitch of a departing train whistle, also known as the Doppler Effect. Light from most stars is found to be of longer wavelength, i.e. reddened as if the stars were moving away from the earth at various rates of speed. According to a basic assumption (note not observation) called the cosmological principle, the stars would show an identical expansion from any vantage point in the universe. Thus the shift to the red is taken as direct evidence of a big bang explosion in the remote past.

However, there are a variety of other recognized possible explanations for the stellar red shift which do not require any explosion or expansion of the universe. For example, light can also be reddened by gravity, the attractive force between all matter in the universe. This gravitational effect on light, first predicted by Einstein in 1912, can be demonstrated in laboratory experiments such as Mossbauer Spectroscopy.[7] This effect is readily discussed in terms of photons, although the ordinary Doppler effect is explained in terms of waves.

If a material object were to be thrown up from a star,

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say, its velocity, and hence kinetic energy, would decrease as it rose. When light is concerned, the speed can not change, but the energy of the photons, in terms of which the matter can be considered, decreases. The energy E is given in terms of the frequency ν, and Planck's constant h, by $E = h\nu$.

If the mass of the star were M, and the frequency γ_0 at a distance r_0 from the center, at a distance r_1 the energy would differ by $GMm\ (1/r_0 - 1/r_1)$ (Which is the negative of the difference of gravitational potential energy.) Hence the frequency differs: the difference being given by $h\nu_0 - h\nu_1 = GMm\ (1/r_0 - 1/r_1)$. The mass m of the photon, incidentally, is related to the energy E and the speed of light c by $E = mc^2$. So $h\nu_1 = h\nu_0\ [1 - (GM/c^2)\ (1/r_0 - 1/r_1)]$. Here G is the gravitational constant.

If the light moves away from the star its energy is thus lessened and its frequency ν_1 is shifted toward the red part of the spectrum. If it moves *toward* it, the negative sign becomes positive and the light is blue shifted. This explanation for stellar red shift on a universal scale has been ruled out because of asymmetry. Mainly red shifts are seen in every direction of the sky. This observation could only be compatible with the gravitational explanation if the Earth were situated at the precise center of an inhomogeneous universe. Such a requirement both defies the cosmological principle and gives the earth a preferred position which secular science cannot permit. Various spatial geometries have been proposed which *do* explain stellar red shift on the basis of gravitational interaction.[8] They involve curved space and an earth positioned at a point of minimum mass. The conclusion here is simply that a gravitational explanation for the observed red shift is a possible alternative to a big bang expansion. This alternative is *not* a revival of historic geocentricism, since the earth in such a position could still rotate upon its axis and revolve around the sun. Although not essential to a Biblical view of creation, this possibility of a special location of planet earth is intriguing in view of the special emphasis given to the earth throughout the Scripture.

The expansion interpretation of stellar red shift also leads to a number of astrophysical problems. For example, the spiral galaxy NGC 4319 and the object Markarian 205 appear to be attached closely together in space by a luminous bridge.[9] However, their Doppler Effect velocities as calculated from the red shifts are 1800 km/sec and 21000 km/sec respectively. How can two objects in space be attached and yet have relative speeds differing by 1000%? The separation distance of the two "connected objects, as calculated from the questionable Hubble law, is more than a billion light years. Such inconsistencies provide more reminder that the red shift may well be (for instance) a gravitational effect rather than expansion. Of course, even if universe expansion *is* going on today, extrapolation backward through billions of years and light years to a big bang beginning is a spectacular leap of faith into uncertainty.

The *second* discovery supporting a big bang is the presence of weak microwave radiation throughout space. It was first detected by A. Penzias and R. Wilson of Bell Laboratories, who subsequently received the Nobel Physics Prize in 1978 for their work.[10] This background radiation is found to have a characteristic temperature just 2.7 degrees Kelvin above absolute zero. It is interpreted as a "last fading ember" from the great explosion itself, and was actually predicted by the big bang theorist George Gamow three decades ago. As with the red shift, however, there are a variety of other possible sources for these detected microwaves. They may be radiated from distant regions of the universe, perhaps from certain varieties of stars. Perhaps the radiation is due to a large number of undetected stars characterized by low energy emission. The physical universe is permeated with a complex variety of waves and particles, including the energetic cosmic rays, whose origin and ultimate purpose we simply don't know at this time. To claim that the microwave background is necessarily fossil radiation from a big bang explosion is a biased interpretation based on an unwarranted extrapolation into the past. In conclusion, the two major evidences for the big bang, red shift of starlight and background radiation, are by no means conclusive.

Missing Links

Although the big bang theory is accepted today by the majority of scientists as the final and correct view of cosmic origins, it actually is faced with a number of difficult and fundamental problems. There are several "missing links" in the theory.

Consider first the concept of *missing mass*. If an expanding universe were to consist of sufficient material and unlimited time be available, gravity would eventually stop the outward motion and pull everything back together again into a cataclysmic fireball. This might even lead to a rebounding universe with endless expansions and contractions on an 80 billion year cycle. As mentioned earlier, many scientists find this oscillating universe idea attractive since it postpones the embarrassment of explaining an ultimate origin and a final destiny for the universe. The minimum density of mass in space to ensure collapse is only 5×10^{-30} grams/centimeter^3, or abut one atom per cubit foot.

However, recent data reveal that there is simply not enough material in space to draw the universe back upon itself. The mass density of the universe is too small by a factor of forty or more.[11] Desperate attempts to locate this "missing mass" in the form of oscillating neutrinos or invisible black holes remain speculative. The universe is found to be "open" and *not* in an eternal state of alternating expansion and collapse. This conclusion is in agreement with a *one-time* creation origin, even though it is the authors' position that no random big bang explosion has occurred.

Time is another missing link in the big bang theory. Many observations indicate a recent creation of the universe, only thousands of years ago instead of the assumed billions of years of history. These observations include studies of comets, galaxy shapes, and individual stars.[12] A complex theoretical cycle of evolution has been established for the stars. They are assumed to form initially within vast clouds of gas and dust by gravitational contraction. Then they mature slowly through stages called protostars, main sequence stars, red giants, and finally white dwarf stars. A billion-year time scale

is assumed for these changes as the stars power themselves by nuclear fusion. Our own sun is thought to have five billion more years of steady light as a main sequence star before it swells into its red giant phase and extinguishes life on earth. Even so, the sun has a very short life compared to the time span of the big bang. It is called a second or third generation star, not having formed until long after the initial explosion. The sun, the earth, and life on the earth are said to be made from the remains of stars that exploded and died a long time ago.

Historical records of the star Sirius B, however, tell a different story about the time scale of stellar decay. This binary star of Sirius A has visibly and unexplainably changed from a red giant star to a white dwarf within only a thousand-year period.[13] The star is evidently decaying on a time scale which is much shorter than current theory indicates. This finding is appropriately called a "Sirius problem"! The giant star Betelgeuse, among others, has also shown color changes during recorded history.[14] Such findings challenge the vast time scales assumed for the life cycle of stars, a time scale required by a big bang. Physicist Kenneth Brecher of MIT concludes, "I would much prefer to learn stellar evolution from the ancient myths of man than from the modern myths of the computer!"[15]

Even our nearest star, the sun, has recently raised serious questions about the assumptions of time and stellar energy. It has been taught for a half-century that the sun heats itself by way of nuclear fusion, converting hydrogen into helium. Such a reaction should also produce an intense flood of sub-atomic particles called *neutrinos*. The flux of solar neutrinos at the surface of the earth is estimated to be $10^{12}/cm^2$. sec. That is, one trillion neutrinos should impinge on every square centimeter of earth, every second, day and night. Being very non-interactive, neutrinos would pass right through the 8,000 mile diameter earth and continue onward at the speed of light. Such neutrinos would be the only possible messenger of the fusion reactions going on inside the sun. Thus they would also be the only possible physical evidence of stellar evolution by long term fusion. Current experiments are underway to detect some of these elusive solar neutrinos and verify the theoretical nuclear reactions. After ten years of careful searching, the result is that the particles *cannot* be found in sufficient numbers to verify the fusion theory.

Could it be that the sun is producing energy by some other mechanism than by nuclear fusion? The next most likely source of solar energy would be a gravitational contraction of the sun, first proposed by Helmholtz a century ago. Since this type of mechanism cannot possibly exist on a billion-year scale, it has been totally rejected by modern astronomy. However, the problem of *missing neutrinos* may well be a testimony to a recent creation of the sun. Solar physicist John Eddy concludes:

> I suspect that the sun is 4.5 billion years old. However, given some new and unexpected results to the contrary, and some time for frantic recalculation and theoretical readjustment, I suspect that we could live with Bishop Ussher's value for the age of the Earth and Sun. I don't think we have much in the way of observational evidence in astronomy to conflict with that.[16]

There is also a *missing explanation* for the initial formation of stars. The classical theory of star formation from a contracting gas cloud was formulated by Sir James Jeans in 1902.[17] He compared the inward gravitational force $F_g = (3GM^2)/(2r^2)$ and the competing outward force of gas pressure of a spherical cloud, $F_p = (3nRT)/r$. Here G = gravitational constant, M = mass of gas cloud, r = radius of cloud, R = gas constant, T = temperature of cloud, n = number of moles of material in cloud. The gravitational force is seen to vary as r^{-2} while the gas pressure varies as r^{-1}. Thus for a given temperature and mass, there is a critical radius r_c for which gravitational contraction will dominate the system. This value of r_c, sometimes called the "Jeans length," is found by equating the inward and outward forces, and is $r_c = (GM^2)/(2nRT)$.

However when typical values of interstellar cloud mass M and temperature T are inserted r_c is found to be 50-100 times smaller than average nebular size. The conclusion is that stars will not spontaneously form in space since the dominant outward gas force will forbid collapse. Instead, gas clouds dissipate outward. Furthermore, this simple force comparison ignores the dispersive effects of nebular magnetism, rotation, nonsphericity and turbulence. Exceptions to the rule may be certain objects called Bok Globules, nebula which are indeed very dense and *perhaps* contracting. However these few nebula are certainly not adequate to provide the dozens of new stars per year required in our own galaxy to balance the continual loss of stars by nova explosion. The simplest conclusion is that the total number of stars available is rapidly decreasing in accordance with the second law of thermodynamics, the universal tendency toward disorder.

To circumvent this natural formation problem, it is currently proposed that gases may be squeezed together by nearby exploding stars called supernovas.[18] This interesting explanation says that stars form from stars! But if the universe began with a big bang explosion, how did the first stars originate? Furthermore, supernovas are a rare phenomenon, unable to produce the vast number of stars visible. The last supernova observed in our *galaxy* was recorded by Kepler in 1604. It is certainly presumptuous to maintain that the formation of our solar system itself was triggered by a nearb supernova.

The fundamental star origin problem extends even to the makeup of our own bodies. Big bang calculations show that only the simple elements hydrogen and helium could possibly form in space following such an explosion, and, even then, only after 700,000 years![19] All the varieties of atoms other than hydrogen and helium could naturally form only within the cores of mature stars, assuming nuclear fusion was occurring. Thus the poetic statement is made that "our bodies are made of stardust"! however, if a big bang cannot produce stars to begin with, it also cannot produce the atoms of which we ourselves are made. We shouldn't be here!

Biblical chronology fixes the creation of stars after the creation of the planet earth and before the creation

ברא	bara	created
עשה	asah	made
תהו	tohu	empty

Table 1. This gives the Hebrew, the transliteration, and the translation of some of the Hebrew words mentioned in this article. The perfect is commonly taken as the standard form of Hebrew verbs; consequently there is a tendency to represent them by a past tense in a language such as English.

of the human race, within a 24-hour period. Some have objected that Gen 1:16 does not state that the stars were "created" (*bara*) but merely that there were "made" (*asah*). (See Table 1 about these and other Hebrew words.) But this does not produce a significant distinction of meaning in the context of Genesis 1. The two terms are used interchangeably in creation contexts elsewhere. For example, marine creatures were "created" (*bara*), on the fifth day, but land animals were "made" (*asah*) on the sixth day. Obviously, no distinction is intended.[20]

Biblical revelation points clearly to a *completed creation*, with no new materials or basic kinds of things being added from time to time. "Thus the heavens and the earth were completed, and all their hosts. And by the seventh day God completed His work which He had done; and He rested on the seventh day from all His work which He had done. Then God blessed the seventh day and sanctified it, because in it He rested from all His work which God had created and made" (Gen 2:1-1; cf. Exod 20:8-11; 31:17). The author of Hebrews presupposes a literal interpretation of Gen 2:1-3 when he builds his argument for the necessity of entering into God's completed work of salvation (Heb 4:4, 10).[21]

So far from evolving into higher and higher levels of cosmic complexity, the stars we observe appear to be slowly *dying out* one by one. As they exhaust their nuclear fuel, some stars contract into burned-out cinders. Ones with a mass greater than 1.4 times that of the sun may die violently in infrequent supernova explosions. Still larger stars (3 or more times as heavy as the sun) may collapse without limit under the force of gravity. Calculations indicate that their size should decrease to that of the earth, then a baseball, and finally to a mathematical point![22] Thus, some stars *may* eventually collapse out of sight and into the speculative realm of *black holes* in space. Any object trespassing within a critical distance of this singularity would be permanently captured by its gravity. For a collapsed star of 3 solar masses, this distance, known as the Schwarzschild radius, would extend outward for 3 kilometers.

Do black holes really exist? Evidence remains uncertain; none has been clearly detected. However, the idea is in keeping with the observed rapid unwinding and decaying of all things in the universe.

All of this is in complete harmony with the inspired statements of the psalmist written 3000 years ago: "Of old, Thou didst found the earth; and the heavens are the work of Thy hands. Even they will perish, but Thou dost endure; and all of them will wear out like a garment; like clothing, Thou wilt change them, and they will be changed" (Ps 102:25-26; quoted in Heb 1:10-12, cf. Luke 21:33). More than 200 years later, the prophet Isaiah confirmed this analysis of universal processes which we now describe in terms of the Second Law of Thermodynamics: "Lift up your eyes to the sky, then look to the earth beneath; for the sky will vanish like smoke, and the earth will wear out like a garment, and its inhabitants will die in like manner" (Isa 51:6a). Thus, the non-technical but completely accurate perspectives of Scripture combine with the detailed and prolonged empirical observations of science to contradict the evolutionary presuppositions of the currently popular big bang theory of the origin of the universe.

The trustworthy laws which govern the universe demonstrate the *missing randomness* predicted for an undesigned universe. Ever since its discovery by Isaac Newton 300 years ago, the form of the gravitational force law has interested scientists. The gravitational law states that there is an attractive force F between any two masses m_1 and m_2, varying inversely with the square of their separation r, so that $F = (Gm_1\ m_2)/r^2$ where G is once again the gravitational constant. As *Science News* recently said, this relation "has always seemed just a little too neat. Is the (r) exponent some fraction near two, which would be messy but might seem more empirical?"[23] The article goes on to recast the force law into the form $F = (Gm_1\ m_2)/r^{2+n}$ where n is a small correction term. Recent precise measurements of the gravitational force using a torsion balance have shown that n is at least smaller than 10^{-5}, and is probably exactly zero.[24] Also, for n not zero the orientation of planetary orbits would change with time. Indeed, the exact value of 2 for the exponent of r *is* "too neat" to have resulted from a big bang. Isaac Newton himself was more aware of created design than are many scientists today. Public comments on design in nature are usually couched in vague language, as that of astronomer William Kaufman:[25]

> Like most scientists, Einstein included, I have an almost religious belief in a basic underlying order—a belief that natural forces are just manifestations of some deeper thing.

The inverse r^2 force dependence just discussed also appears in the electric force expression between charges. With this large Coulomb force, the exponent is found to be exactly 2 up to at least 16 decimal places,[26] i.e. $|n| \leq 10^{-16}$ The physical laws of the universe are faithful, symmetrical and certainly not random.

Life in Space

An intense search is underway to find life in space. If this universe and life itself began with a spontaneous explosion, many then reason that life must also have

arisen in countless other places. A typical astronomy text reads:

> If any planet has surface conditions suitable or at least tolerable to any terrestrial organisms, life may be assumed to have developed there.[27]

Even more dogmatic is the 1976 pronouncement of Robert K.G. Temple, author and researcher:

> An attitude which asserts that man is the only intelligent life form in the universe is intolerably arrogant. Anyone holding such an opinion today is an intellectual freak.[28]

Massive books have been written on the general subject of alien life in space, called exo-biology, without a shred of supporting data.[29] Man seems determined to prove that he is the result of blind chance rather than special creation! For twenty years, radio telescopes have been searching deep space for intelligent signals. The results so far point to a final missing link in big bang cosmogony, namely, that of *no life* in space. Table 2 summarizes some of the efforts that our country has made in the futile search for life in space. Probes sent to the moon, Mars, Venus, and the moons of Jupiter have revealed hostile, sterile surfaces. Where is everybody? It is not surprising that there is a growing feeling among astronomers that man may be alone in the universe after all:

> There is a deeply ingrained conviction in the great majority of mankind, to which the appeal of science fiction and fantasy bears witness, that the universe is so constituted that if an opportunity exists for hominids to evolve, that too will be actualized. Whatever may be the basis for such convictions, it clearly must be sought outside the domain of science. The most this study has been able to establish is that even the opportunity for such achievements occurs quite rarely among the vast profusion of forms in which matter is consolidated in the universe.[30]

Could it be that life exists uniquely on the earth because God created it here and nowhere else?

Because of the obvious failure to find any evidence of intelligent physical life outside of the planet earth, a two-day symposium was held at the University of Maryland late in 1978 to explore the topic, "Implications of Our Failure to Observe Extra-Terrestrials." In an article describing this symposium, James Oberg commented that this topic "was bound to be provocative. For most of those attending, the implications were clear: since we haven't seen any trace of (extra-terrestrials), either they aren't there or there is something fundamentally wrong with our comprehension of the universe."[31]

There are a number of Biblical indications that point clearly in the direction of the absolute uniqueness of physical life on the earth. Psalm 115 focuses our attention upon the uniqueness of our God as creator and con-

Table 2. American Research Projects that Involve the Search for Life

Date	Project Name	Description	Cost (Dollars)	Results
1960	Ozma I	Green Bank radio telescope probe of two nearby stars (Epsilon Eridoni, Tau Ceti) for intelligent signals	1 million	No signals detected
1969-72	Apollo	Exploration of the moon	20 billion	No life detected
1972	Pioneer 10	First probe to leave the solar system; carries a plaque describing life on earth	—	—
1973	Ozma II	Monitoring of 500 nearby stars for intelligent radio signals	—	No signals detected
1974	Arecibo	Largest radio telescope on earth continuously monitors nearby stars for signals	—	No signals detected
1974	NRAO	National Radio Astronomy Observatory scanned ten nearby stars for signals	—	No signals detected
1977	Viking	Two landers designed specifically to detect life on Mars	1 billion	No organic material detected in spite of the presence of C, N, O, H
1977	Voyager I, II	Probes to the outer planets carrying detailed messages from earth	—	No life detected
1978	Pioneer Venus	Multiple Venus probes measured the atmosphere and surface for life possibilities	230 million	Extremely hostile and sterile environment
1980	VLA	"Very Large Array" of 27 radio antennas in New Mexico. Will probe for evidence of organic molecules in interstellar gas clouds	78 million	—
1980	Mariner-Jupiter-Saturn	Observation of Saturn's satellite, Titan, for life possibilities	—	No life detected
1983	Large space telescope	Orbiting telescope will search for planets of other stars	—	—
1980's	Cyclops	Proposed construction of 1000 connected radio telescopes for detection of deep space signals	20 billion	—

troller of the universe in total contrast to the man-made deities that characterize pagan religions. The Psalmist climaxes his message with this statement in v 16: "The heavens are the heavens of the Lord; but the earth He has given to the sons of men." A valid implication of this inspired statement is that those who truly know the Lord cannot possibly be threatened by anything that is in the universe beyond. In other words, the only "extra-terrestrial intelligence" men need be concerned about is the intelligence of God Himself, as revealed in his Word.

Isa 45:18 adds significant light to this fascinating question: "For thus says the Lord, Who created the heavens (He is the God who formed the earth and made it, He established it and did not create it a waste place, but formed it to be inhabited), 'I am the Lord, and there is none else.' " Since the Hebrew word translated here "a waste place," also appears in Gen 1:2, this statement in Isa 45:18 has frequently been used to support the so-called Gap Theory interpretation. This view maintains that God created an originally perfect earth (Gen 1:1), which later became "a waste place" because of the fall of Satan. Then, millions or billions of years later, the earth was recreated in six literal days. However, this is really not the thrust of Isaiah's statement. Isaiah is saying that God did not create the earth to be a waste place, but created it to be inhabited (in contrast to all other planets). As we turn to Genesis chapter one, we discover that is the way the earth was created. It was not created to remain empty, but within six brief days to be fully inhabited.

In comparing the statement of Isa 45:18 with Gen 1:2, Edward J. Young comments:

> Isaiah does not deny that the earth was once a *tohu:* his point is that the Lord did not create the earth to be a *tohu*, for an earth of *tohu* is one that cannot be inhabited, and has not fulfilled the purpose for which it was created. The purpose rather was that the earth might be inhabited.[32]

If intelligent physical life exists only on the earth, the question must be asked, "Why do countless stars and galaxies exist throughout the universe? Many Christians have asked, "Why would God go to all the work of creating billions of galaxies and then put life on only one comparatively small planet?" In answer to this question, it must be recognized, first of all, that it required no more exertion of energy for God to create a trillion galaxies than to create one planet. "Do you not know? Have you not heard? The Everlasting God, the Lord, the creator of the ends of the earth does not become weary or tired. His understanding is inscrutable. He increases power" (Isa 40:28-29).

God has condescended to give to men three basic reasons for his work of creating the stellar universe. "Let them be for signs, and for seasons, and for days and years; and let them be for light in the expanse of the heavens to give light on the earth" (Gen 1:14-15). The three stated purposes for the existence of the universe, as far as man is concerned, are: (1) signs, (2) a clock-calendar system, and (3) illumination by day and by night for earth dwellers. A fourth reason is conspicuous for its absence, namely, platforms for extra-terrestrial intelligent beings. The sign-value of the stellar universe is clearly emphasized in Psalm 8, Ps 19:1-2 and Rom 1:18-19. God apparently considers these three basic purposes sufficient for the creation of the stellar universe, and therefore it is unnecessary to multiply reasons beyond God's statement in Scripture.

The most significant Biblical evidence for the uniqueness of life on the earth is the incarnation and Second Coming of Jesus Christ. The second person of the triune God, through whom the entire universe was brought into existence (John 1:1-3, Col 1:16-17, Heb 1:1-2), became a permanent member of the human race by incarnation (John 1:14). The staggering implication of this fact dare not be minimized by those who profess to be Bible-believing Christians. There is not a shred of evidence in Scripture that the first coming of Christ was a comparatively insignificant event in the career of the Son of God, stopping briefly on earth, as it were, on his way to other planets and galaxies to carry on a cosmic ministry of revelation and redemption. The great Creator who became our Saviour also told us to pray: "Our Father, who art in heaven, hallowed be Thy name. Thy kingdom come. Thy will be done, in earth as it is in heaven" (Matt 6:9-10). The earth, not some other planet, will be the location of Christ's Kingdom.

In isolation, not one of these Biblical evidences is sufficient in itself to demonstrate the uniqueness of life on earth. However, in a book that professes to give to men all that is necessary for our understanding of life and the universe, it is highly significant that not one word is given that would support the concept of extra-terrestrial intelligent life. Secular scientism is haunted by the fear that we are totally alone in the universe. But this is not the Biblical perspective at all. Many millions of spirit beings, called angels, are deeply involved in the affairs of men (e.g., Dan 10:20, Luke 20:36, Heb 1:14). Infinitely above all of these invisible and powerful creatures, however, is God, the creator of all things, who has revealed himself to men as the Father, the Son, and the Holy Spirit.

God created men in such a way that they cannot find full and deep satisfaction apart from him. Utterly frustrated by the inequities and frustrations of this life, a psalmist by the name of Asaph entered into the sanctuary of God, and thus gained a totally new perspective on the world (Ps 73:17). He concluded with these inspired words: "With Thy counsel Thou wilt guide me, and afterward receive me to glory. Whom have I in heaven but Thee? And besides Thee, I desire nothing on earth" (Ps 73:24-25). The ultimate tragedy of cosmic evolutionism is that it virtually ignores the very God who created us to find our fulfillment in him alone. The secular scientific establishment, with its big bang cosmogony, has deliberately rejected the Christ "in whom are hidden all the treasures of wisdom and knowledge" (Col 2:3). In all of their vaunted brilliance, men are bypassing the Son of God "in whom all the fulness of the Deity dwells in bodily form," for "in Him" the apostle Paul asserts, "you have been made complete, and He is the head over all rule and authority" (Col 2:9-10). To the Christian, the universe is not meaningless. We are not alone.

A Theistic Big Bang

The big bang theory, aside from the multiple problems of missing links in astronomy, clearly and directly contradicts the order of creation events in Genesis 1. Thus, there is no legitimate way of harmonizing the big bang theory with a Christian theistic view. Christian theism presupposes the authority and infallibility of the Bible. An honest and consistent application of hermeneutical principles in analyzing the Biblical record of ultimate origins leads one to a complete impasse in accommodating it with the most popular cosmogonical theory of our generation. Theistic evolutionists speak much of God (or "a god"); but they apparently have not heard the clear message of His Word.

In contrast to the six-day creation period of Genesis, for example, the big-bang concept does not envision even such simple elements as hydrogen and helium appearing until about 700,000 years after the explosion. Stars did not form for perhaps another billion years. How can this be reconciled with the declaration of God that the planet earth was created *before* the stars?

The big bang theory postpones man's appearance until twenty billion years of apparently purposeless natural processes have run their course. But the Genesis record depicts man as the true king of the earth at the very beginning of earth history, exercising dominion over all animals, including those in the depths of the seas (Gen 1:26-28; cf. Ps 8:5-8), within a matter of hours of their creation. Even the stars of the heavens antedated man by the space of only two days (Gen 1:19, 31; cf. Exod 20:11); for they had no independent purpose of existence. They were created for the Son of God (Col 1:16) and for those who have been created and renewed in his image (1 Cor 3:21-23; Col 3:10). They did not wait billions of years to accomplish what they were created for, namely, to serve as "signs" to men of God's creative wisdom (Gen 1:14; Rom 1:20). Only by denying the clear testimony of the chronological sequences of Genesis can one speak in terms of a "theistic big bang."[33]

A specific description of origins cannot be *proved* by science, whether a random explosion or a supernatural creation. The origin of the universe is a single past event. Thus, it is not subject to the scientific method of testing and reproducing. As God asked Job long ago, "Where were you when I laid down the foundation of the earth! Tell Me if you have understanding" (Job 38:4). Today science is depended upon for a great variety of answers, including origins. However, there is much more at stake here than the latest temporary theories of man. A deep personal faith is required, either in a random big bang or in an orderly creation by the God of the universe. But these alternative faith commitments cannot be equal options for men who bear the image of God indelibly imprinted upon their innermost being. The God of creation simply will not allow himself to be compared with any other "deity," including evolutionary time/chance: " 'To whom then will you liken Me that I should be his equal?' says the Holy one. Lift up your eyes on high and see who has created the stars, the One who leads forth their host by number. He calls them all by name; because of the greatness of His might and the strength of His power . . . " (Isa 40:25-26).

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[16]Kazmann, *op. cit.* James Ussher (1581-1656), a brilliant Irish archbishop, concluded, on the basis of his analysis of biblical genealogies, that the world was created in 4004 B.C. For evidence that these genealogies may point to a somewhat earlier date for creation (perhaps 8,000-10,000 B.C.), see Whitcomb, J.C. and H.M. Morris, 1961. *The Genesis Flood.* Presbyterian and Reformed, Nutley, N.J., p. 474-89.
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[20]Compare also Gen 1:26 with 1:27, Gen 2:4a with 2:4b, Gen 1:1 with Exod 20:11, and Gen 1:16 with Ps 148:3-5 and Isa 40:26 (where we learn that stars were "created"—bara). For a more detailed analysis of this question, see Whitcomb, J.C. and D.B. DeYoung, 1978. *The Moon: Its Creation, Form and Significance.* BMH, Winona Lake, In., p. 72, n. 31. For the theological significance of the creation of the sun and moon after the creation of life on the earth, see *ibid.*, 153-55. If the sun and moon were created after the earth, nothing is gained toward a harmonization of Genesis with evolutionary cosmogonies by stretching the creation days to long ages. For biblical evidence for twenty-four-hour creation days, see *ibid.*, 76-83.
[21]"The labors from which God rests are the works of creation; but He continues to be active in providence, in judgment, and in grace" (Hughes, P.E., 1977. *A Commentary on the Epistle to the Hebrews.* Eerdmans, Grand Rapids, p. 61). Cf. Lenski, R.C.H., 1946. *Interpretation of Hebrews/James.* Wartburg, Columbus, Oh., p. 132, 133.
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