

Astro Physics

By
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One of the most intriguing questions being asked today is “Does God exist?” Related to that question are the questions: “How can we know if God exists?” “Is there any empirical evidence that God exists?” “If God exists, did He have a part in designing and creating the universe and life?” “Is there any proof for intelligent design?” “Can we, as rational beings, believe in such a God?” “If God exists, what should be our response in relation to this knowledge?” The following discussions will consider these questions and discuss the evidences for the existence of God.

Many times the discussion of these subjects is discouraged or forbidden in the processes of education. The often used excuse for not being able to discuss these issues is that they have religious connotations. It is often argued that our constitution has an amendment that separates between religious and governmental issues. It is argued that with the separation of church and state in our constitution, it is forbidden to discuss any religious issue in the processes of education. The amendment to the constitution was written for the sake of prohibiting the government from interfering with our rights to believe as we wish and to prevent the government from forcing the individual to join a state sponsored church as was done in England. It was not written to forbid the discussion of any subject that had spiritual connotations as long as coercion was not involved.

In education people should be safe to think for themselves, to examine all available evidence, and to openly discuss any subject that is relevant to the data being studied. There should be no forbidden subjects or positions to be avoided in investigating reality, for only through open discussion can errors in interpretation be corrected and creativity be stimulated. Although, in education, certain subjects and positions should be prescribed as mandatory for discussion in the curriculum, the discussions should not be regulated or the final conclusions dictated. When all known facts are open to discussion then theories can be corrected and brought into harmony with reality.

Often you will hear people espouse a certain philosophy and mark it as scientifically proven. Then, when people question their conclusions or express doubt in their particular stand or mention evidence that tends to disprove their argument, they get angry, argumentative, or scornful of the person that holds a divergent view to their own opinions. When all the known facts are openly discussed the objective data can be evaluated and a scientifically accurate conclusion can be reached. All too often much time is wasted in espousing false conclusions in science and in other areas of study, and an honest evaluation of the conclusions reached is not allowed.

The following discussion is an attempt to investigate what is believed concerning the evolution of the material universe, to reinvestigate the data discovered in scientific study concerning the beginning of all matter, to re-evaluate the conclusions held, and to state a position in harmony with scientifically known data.

What is science?

Science is the systematized knowledge derived from observation, study, and experimentation carried on in order to determine the nature or principles of what is being studied and to define the processes of nature in succinct scientific terms in the form of natural laws. Science is based on the collection of data derived from objective observation and measurement of the universe and the reduction of this data gathered to succinct laws and mathematical formulae that describe all phenomena in relation to any other similar study of similar areas of nature.

Can science give us understanding of the unseen?

The observation and measurement of the seeable often gives us knowledge of the unseen. Through careful observation of the seen and an accurate understanding of science we are able to apply the laws of science to mathematically calculate precisely the characteristics of the unseen that are causing the observed phenomena in the seen.

Brownian movement.

If you look through a microscope at a solution containing visible particles you will observe a vibration in these particles. This phenomenon is called Brownian motion. If you heat the mixture you will be able to witness a measurable increase in the vibration of the viewed particles. The vibration is a result of atomic or molecular collisions with the visible suspended particles as the atoms vibrate with heat.

Stellar wobble and other planetary systems.

In the 1960's astronomers were using negatives of star groups to compare for movement, seeking asteroids as they moved through our stellar background. The stars remain relatively in the same position in relation to other stars and any movement of light reflecting from moving asteroids can be easily detected. What the astronomers found astounded them. When comparing photographs of star clusters taken a few months apart the astronomers noticed that there were stars that had a wobble in their position in the star field. The astronomers realized that they had just discovered the first planetary systems outside of our own solar system. By knowing the mass of the stars by their main sequence classification, by measuring the stellar distance from our position by using the Mass-Luminosity law of astronomy, and by measuring the angle of deviation of the star position, they were able to calculate the mass of the planet or planets causing the gravitational pull on the star. By 2005 astronomers had discovered over 160 different planetary systems.

Much can be added to our knowledge by noting the observed and using the observed to discover and measure the unobservable. By applying the tested laws of physics we can obtain much understanding of the existence and characteristics of the unobservable. Let's consider that principle and see where it can lead us in acquiring new knowledge or verifying unobserved fact.

Truth is factual and can be scientifically tested.

Reality defines truth through observable facts. Truth is its own defense. You should never be discouraged from seeking and investigating the truth and evaluating your position in relation to the facts discovered in your investigation. Fanaticism is born and ignorance is perpetuated when investigating reality and seeking truth is suppressed and replaced by the blind acceptance of formerly held opinions. In education there should be no suppression or restrictions placed on the subjects being discussed or to the questioning and verification or rejection of theories. Theory is tested through questions and the correlating of collected objective data.

There are many people in this world that have been confused by the persuasion of the agnostics who tell them that there is no evidence for the existence of God. These people can have this confusion dispelled easily through the contact with the facts of science, because the facts of science uphold the Biblical account of creation. I Peter 3:15 commands us to be always prepared to present these evidences and the Biblical facts which form the foundation for our faith. The following material will help you to organize your knowledge of science and briefly present some of the scientific evidence for the existence of God. This will also help you give answers to show that the arguments for the theory of organic evolution are not completely valid, and therefore are extremely limited in their application scientifically. Remember that you will not be able to prove the existence of God through objective science. On the other hand, if you enlist the people to whom you are witnessing to study His fingerprints in creation, and answer the doubts that have been drowning them spiritually, they will hardly be able to reject the idea of the existence of God.

Keeton and McFadden defined a very important scientific principle when they stated: "No theory in science is ever absolutely and finally proved. Scientists should be ready to alter or even abandon their most cherished generalizations when new facts contradict them. They must always remember that their theories, even their physical laws, are dependent on observable facts and not vice versa." (Keeton & McFadden, 1983. p. 3)

Honest scholars and scientists must review all data objectively and will alter their views relative to the evidence available. They will continue to search the universe of facts, and will not offer excuses for ignorance as a defense for not assuming the responsibility for making decisions and assuming moral positions. Agnosticism is, in my opinion, a very unscientific approach to important eternal questions. Excusing oneself for not having sufficient evidence for a decision when the available evidence has not been thoroughly digested is not a true intellectual doubt. Agnosticism is, rather, passive rebellion, the rebellion of a small child who refuses to do his homework.

Causes of doubt.

Uneducated or ignorant, not knowing the facts (I Thes. 4:13).
The confusion of education in conclusions, not objective facts (Psalm 1:1).
Deciding not to believe the facts and suppressing the truth (Rom. 1:18).
Peer pressure and ridicule (I Cor. 15:33, 34).
Brain damage.
Emotional disturbance (Neurosis, etc.).
Toxicity.
Unstable personality (James 1:8, 4:8).

Aldous Huxley honestly stated his reasons for doubting. He stated that it was not because of lack of evidence, but he and his colleagues made their choice to justify their life style. He states in his book, *Ends and Means* the following.

“Does the world as a whole possess the value of meaning that we constantly attribute to certain parts of it (such as human beings and their works); and, if so, what is the nature of that value and meaning? This is a question which, a few years ago, I would not even have posed. For, like so many of my contemporaries, I took it for granted that there was no meaning. This was partly due to the fact that I shared a common belief that the scientific picture of an abstraction from reality was a true picture of reality as a whole; partly also to other, non-intellectual reasons. I had motives for not wanting the world to have a meaning; consequently assumed that it had none, and was able without any difficulty to find satisfying reasons for this assumption.

Most ignorance is vincible ignorance. We don't know because we don't want to know. It is our will that decides how and upon what subjects we shall use our intelligence. Those who detect no meaning in the world generally do so because, for one reason or another, it suits their books that the world should be meaningless" (Huxley, 1937, p. 312).

"For myself as, no doubt, for most of my contemporaries, the philosophy of meaninglessness was essentially an instrument of liberation. The liberation we desired was simultaneously liberation from a certain political and economic system and liberation from a certain system of morality. We objected to the morality because it interfered with our sexual freedom... The supporters of these systems claimed that in some way they embodied the meaning (a Christian meaning, they insisted) of the world. There was one admirably simple method of confuting these people and at the same time justifying ourselves in our political and erotic revolt: we could deny that the world had any meaning whatsoever" (Huxley, 1937, p. 316).

Thus, like an adult that covers his or her ears with the hands and shouts "I will not listen to this!" or the child that puts his fingers in his ears and starts singing as loudly as possible in order to avoid listening to a hated statement, any person who refuses to listen to the truth cannot alter the truth in the minutest way. But, the future of that person may well be determined by this doubt-causing rebellion of the will. When these issues have eternal implications, as the issues of

whether God exists or not, or the deity of Christ, His historic death on the cross for our sins, and the individual's relationship with Him by faith, the importance of careful study of the issues and facts becomes even more imperative.

This type of doubt is not changed through the intellectual confrontation with the evidence that God created the heavens and the earth. This type of doubt is an act of passive spiritual rebellion and cannot be convinced through argument.

When you deal with honest seekers of the truth, present facts that contradict the current theories, such as the theory of organic evolution, that keep them from the truth of Christ. After you have dealt with their doubts concerning contradictory theories, introduce them to the mass of data that demonstrates the trustworthiness of the Bible, the Word of God, as our only authority for spiritual issues and answers. Lastly, use the Scriptures to introduce them to the Lord Jesus Christ as Savior and God. Belief is the foundation for all teaching and counsel that you can give (I Cor. 3:11, 12). Anything else will be wasted effort.

The Question: Does God Exist?

In a world of turmoil, this question is essentially answered through two basic hypotheses. The materialist will answer the question with a resounding “No!” Religious people will answer the Question with “Yes!” Many people differentiate the answers given by stating that the one answer is scientific and the other is religious. They state that a religious belief does not have to be rooted in scientific fact and truth is determined by what is believed. Belief does not have to be substantiated by evidence. The materialist believes that there is no credible evidence that God exists and that the vast preponderance of evidence demonstrates that the universe and every thing in the universe came into being through natural processes.

These positions may be stated in the form of the following hypotheses.

Hypothesis # 1. The materialist’s hypothesis: “There is no God, and all existing matter came through gradual natural processes.”

Hypothesis # 2. The believer’s hypothesis: “God exists, and it is God who created everything that exists.”

We will attempt to evaluate both these hypotheses to determine which is the most credible and acceptable according to the observable facts of science. Our evaluation of scientific evidence will attempt to determine which hypothesis is best supported by the objective evidence of science and to present the evidence in an objective way so the individual can decide which hypothesis is best supported by the facts. Let us consider the following laws of physics and astronomy.

A. The evolution of stars.

A study of any popular astronomy textbook will give you the theory of the birth of stars. This theory progresses as follows.

1. The diffused gas phase. 99% of all matter is hydrogen. In outer space there are immense clouds of hydrogen gas that are whirling around in eddy currents and are held together in the vacuum of outer space by mutual gravitation.

2. The compression phase. When the hydrogen gas clouds become large enough, the gas in the center of the cloud is compressed in the center of the cloud by gravity.

3. The heat phase. When the compression of the gas in the center of the cloud becomes dense enough, the heat of compression is accumulated in the core of the cloud.

4. The nuclear reaction phase. When the heat of the hydrogen core of the gas cloud becomes hot enough, a thermonuclear reaction occurs which begins the life of the star.

5. The development phase. When the star is new, it is supposed to be almost totally hydrogen. During the life of the star and the metabolism of the star, the hydrogen is transmuted to other heavier elements, from hydrogen to helium, and successively up through iron.

6. The mature phase. Different stars have differing rates in their metabolism, and there are many varieties of stars as there are racial varieties of human beings. These types of stars are arranged on a main sequence to show the age and metabolic characteristic of each type of star, with a few types that are not represented by the main sequence pattern as illustrated by the Hertzsprung-Russel Diagram.

7. The death phase. In the death phase of the star, the thermonuclear energy of the star has been used up. The thermonuclear transmutation of elements has gone as far as the matter and mass of the star will allow. Then the star has to pay back the borrowed energy to the universe in a short period of time. Some stars, as in the red giant stars, collapse and become low energy emitting cinders called white dwarfs. Other stars nova or super-nova, blow up, and transmute most of their heavier elements back to helium. Regardless, the stars wear out and the universe runs down. It is from this stellar debris that the new stars are supposed to evolve.

B. The age of the universe.

There is considerable debate on the age of the universe among astronomers and astro-physicists. The evidence for the age of the universe comes from many sources, the main source being from the expansion of the universe as measured through the Doppler shift in the color of light from the stars. Various astronomers interpret the data differently and believe that the age of the universe is as follows.

NAME	AGE OF THE UNIVERSE
1. Gamow	4.3–5 billion years
2. Peebles and Wilkinson	7 billion years
3. Ashford	10–15 billion years
4. Sheklovski	70 billion years
5. Alfven	One trillion years
6. Hoyle	Infinite age (retracted)

C. Some problems with the Astronomical Evolutionary Theory.

Although the discussion of the details of astronomy seems to be scientific, it rapidly becomes apparent that there is little about this branch of study that is clearly known. Because of this lack of clarity there are many obvious problems with accepting the formation of the universe, its contents, their design, and the laws under which the universe functions as simple products of blind random chance. Consider the following factors.

1. The best of astro-physicists **cannot agree** concerning the age of the universe, solar system, planets, or satellites.

2. Astronomers use **circular reasoning** in their evolutionary theory. They say that they can tell the age of a star by its position on the evolutionary Hertzsprung-Russel main sequence of stars, and then they say that the position of the star on the main sequence proves that stellar evolution occurred.

3. The **transmutation** of the heavier elements is limited. The thermonuclear transmutation progresses from hydrogen to helium, to carbon, to neon, to magnesium, to iron. When the star completes the thermonuclear cycle, the star super-novas or "blows up," and the majority of these elements are converted back to helium.

4. The **law of the "conservation of energy"** and the **"law of entropy"** demonstrate that the universe is running downward and dissipating, not running upward and becoming more complex. The law of entropy states that energy tends to go from a position of greater usability to lesser usability, and matter tends to go from a position of greater organization to a position of random distribution, unless acted upon by an outside, organizing force. This law applies to temperature, volume, velocity and mass, vector and mass, spin and mass, gravity and mass, charge, and other factors. All these factors are altered by physical pressures. The greater the organizing force, the greater the observable design. The less the pressure with the passage of time, the greater the randomization of the distribution of matter. Most scientists point to the end of the universe in maximum entropy, where in infinity, all matter will be randomly and evenly spread out throughout space where everything will achieve "heat death."

5. The expanding universe and **age dating the universe**. The methods used to date the universe are apparently quite precise as measurements.

a. Electromagnetic radiation vibrates in a frequency which is characteristic to each type of radiation. You have probably noticed this by the sound dropping in pitch as a car passes you blowing its horn. Radar is used the same way in measuring the change of frequency of a radar beam of known frequency as it returns after bouncing off your approaching auto. The change in frequency can be calibrated to determine the speed of your auto. This phenomenon is called the "Doppler shift."

b. The spectra of the stars were analyzed by astro-physicists to determine the chemical composition of the stars. When these spectra were analyzed, it was noticed that some of the spectra were shifted toward the blue end of the spectrum, and that others were shifted toward the red end. When analyzing the results, it was discovered that light shifts like any other electromagnetic radiation, and that this shift is measurable relative to the speed of the light-emitting object in relation to the position of the measuring instrument.

c. Through measuring the extent of the shift of the stellar spectra, the vector, and therefore, the speed of the star can be calculated relative to its approaching toward or receding from the earth.

d. Calculating the star's or galaxy's direction and speed relative to the earth, it is possible to trace the stars or galaxies backwards to see where they were in space relative to earth and each other at any specific time in the past.

e. When the astro-physicists traced the paths of the stars backwards, they were amazed to discover that all the astronomical bodies in the universe converged backwards to one central point in space at one point in time. Concerning this sudden expansion, Barnett states,

"While the nearer galaxies, about one million light years away, are traveling at a mere 100 miles a second, those 250 million light years away are flying off at the fantastic rate of 25,000 miles a second, almost one seventh the velocity of light... Calculations based on the velocities of the receding galaxies show that they must have separated and started their flight from the 'center' of this shrunken universe about five billion years ago." (Barnett, p. 100, 101)

f. The age of the planets, satellites, the earth, and moon through **all different scientific data tends to indicate that these are also about the same age as the stars and galaxies.** Because of solid scientific data, Hoyle, the chief proponent of the steady state theory that the universe had no beginning or end, had to conclude: "Evidently the earth is not very much younger than the whole Milky Way itself." (Hoyle, 1963, p. 139, c.f. Barnett, 1958, p. 105-106).

g. Conclusion from the evidence:

The galaxies, stars, planets, and all other bodies appeared to come into being suddenly at a specific time in the past, and this "creation" was sudden according to scientific calculations. There is no conflicting evidence to this "big bang" of sudden creation.

6. Neutron stars exist as super atoms.

a. Neutron stars are relatively small stars of densely packed matter. The body of the star seems to be solid nuclear material instead of consisting of elements. It is as though the body of the star was a nucleus of a super atom. The density of the gravitational field of the star is so great that the star pulls anything straying into its area of space into its mass and absorbs it. Any light passing near the neutron star is bent by the intensity of the gravitational field, and any light that may be emitted from that type of star is drawn back by its gravitational field. Large neutron stars are also called "black holes." We discover neutron stars and black holes through the gravitational effect they have on other astronomical bodies near them or by the lensatic effect of bending light emitted from another star passing behind the neutron star.

b. Conclusion: Because the elements are normally formed by the transmutation of hydrogen within the masses of the stars as we have seen, because the heaviest elements do not seem to be formed by transmutation in this way, and because the heavier elements in stars seem to be transmuted back to helium when the stars supernova, the neutron stars must have been formed through some other process. Many astro-physicists have suggested that these stars were formed as a part of the process of the original creation at the "big bang."

7. Anti-matter.

a. The existence of anti-matter: In 1954 a meteorite hit a weather balloon instrument package. The examination of the results of this collision showed that the damage reduced the protons in the matter in the instrument package to nothing while releasing the electrons. This was the beginning of the corroboration of the existence of anti-matter predicted by Einstein. Since 1994 anti-matter has been corroborated many times in modern physics laboratory experiments and measurements.

b. The significance of anti-matter: Since the combination of anti-matter with matter converts the two types of matter back to energy, and since both matter and anti-matter still exist, the universe could not have been in existence for an infinite period of time. All collisions between matter and anti-matter would already have occurred if there had been an infinite amount of time in which these collisions could have occurred, consequently there would be no matter left in existence.

8. Star formation and the laws of physics.

Stars, as all other factors in the material universe, were supposed to have been formed by natural processes over long periods of time and not as a creative act by an intelligent designer, according to the evolutionists. There are, however, many physical laws and investigations that seriously question the blind acceptance of the evolution of stars by blind chance. Let us look at the law of entropy and the law of gravitation to see if the evolutionists' position is reasonable.

a. The law of entropy, as already stated, indicates that energy tends to go from a position of greater usability to one of lesser usability, and that matter tends to progress from a position of greater organization to one of lesser organization unless acted upon by an external organizing force. Barnett pointed out concerning Tolman's pulsating universe theory:

"These cycles are governed by changes in the amount of matter in the universe; for as Einstein showed, the curvature of the universe is dependent on its content. The difficulty with this theory is that it rests on the assumption that somewhere in the universe matter is being formed. Although it is true that the amount of matter in the universe is perpetually changing, the change appears to be mainly **in one direction, towards dissolution. All the phenomena of nature, visible and invisible, within the atom and in outer space, indicate that the substance and energy of the universe are inexorably diffusing like vapor through the insatiable void.**

The sun is slowly but surely burning out, the stars are dying embers, and everywhere in the cosmos heat is turning to cold, matter is dissolving into radiation, and energy is being dissipated into empty space... The universe is thus progressing toward an ultimate 'heat death,' or as it is technically defined, a condition of 'maximum entropy.' When the universe reaches this state some billions of years from now all the processes of nature will cease. All space will be at the same temperature. No energy can be used because all of it will be uniformly distributed through the cosmos. There will be no light, no life, no warmth— nothing but perpetual and irrevocable stagnation. Time itself will come to an end. For entropy points the direction of time... And there is no way of avoiding this destiny. For the fateful principle known as the Second Law of Thermodynamics, which stands today as the principal pillar of classical physics left intact by the march of science, proclaims that the fundamental processes of nature are irreversible. Nature moves just one way." (Barnett, p. 102-103.)

(1). Entropy formulae. You can find the following formula for calculating the change of entropy and the data for the sizes, weight, and temperature of stars and interstellar dust clouds in physics and astronomy texts.

$$\Delta S = C_p \frac{\Delta T_1/T_2 + R \Delta V_1}{V^2} \text{ where}$$

S = Entropy

$$C_p = \text{Molar heat capacity} = \frac{5}{2} \text{ Radius of the gas cloud}$$

T=Temperatures before and after compression = 100 & 100,000 degrees Kelvin

V=Volume of the gas cloud before and after compression = 564 followed by 45 zeros (5.64 X 10⁴⁷ cu. m.), and 14 followed by 32 zeros (1.4 X 10³³ cu. m.).

R=universal gas constant = 2 Calories / mole in degrees Kelvin

Δ= change

(2). Significance of the law of entropy. Applying the data concerning the physical measurements of interstellar gas clouds and the physical properties of stars to the formula for determining the effect of entropy on the formation of stars, it is demonstrated that there would have to be a reduction of entropy 33 times per mole of material in the interstellar gas cloud in order to form stars by natural processes or by accident.

Concerning the implications of the law of entropy, Barnett states:

"There is an important philosophical corollary to this view. For if **the universe is running down** and **nature's processes are proceeding in just one direction**, the inescapable inference is that **everything had a beginning**: somehow and sometime the cosmic processes were started,

the stellar fires were ignited, and the whole vast pageant of the universe brought into being. Most of the clues, moreover, that have been discovered at the inner and outer frontiers of scientific cognition suggest a definite time of Creation. The unvarying rate at which uranium expends its nuclear energies and the absence of any natural process leading to its formation indicate that all the uranium on earth must have come into existence at one specific time, which, according to the best calculations of geophysicists, was between four and five billion years ago. The tempo at which the wild thermonuclear processes in the interior of stars transmute matter into radiation enables astronomers to compute with fair assurance the duration of stellar life, and the figure they reach as the likely average age of most stars visible in the firmament today is five billion years. The arithmetic of the geophysicists and astrophysicists is thus in striking agreement with that of the cosmogonists who, basing their calculations on the apparent velocity of the receding galaxies, find that the universe began to expand five billion years ago. And there are other signs in other areas of science that submit the same reckoning. So all the evidence that points to the ultimate annihilation of the universe points just as definitely to an inception fixed in time." (Barnett, 1958, p. 105-106).

b. Gravity and the universal gas laws.

Interstellar gas clouds are supposed to grow as they accumulate more matter through increasing gravitation. They are also supposed to compress the central portion of the gas cloud through mutual gravitation until the matter in the interior of the central mass becomes dense enough and hot enough to initiate a thermonuclear reaction and become a star. An application of the gas laws as correlated with the laws of gravitation lends serious doubt to this theory.

(1) The outward forces on the gas from thermal pressure. Gases heat when compressed, and exert an outward force when heated. The question that arises in the theory of stellar evolution is whether the pull of gravity in the vacuum of space is sufficient to compress the interstellar gas to the extent that it will heat up to the point of critical mass for a thermonuclear ignition.

The formula for the pressure/heat ratio in gasses is as follows:

$$P = \frac{nRT}{V} \text{ where}$$

P = the pressure in Newtons

n = numbers of moles in the gas cloud, or 2×10^{30} moles of hydrogen

R = the universal gas constant, or 2 calories per mole in degrees Kelvin

T = the temperature in degrees Kelvin and

V = the volume of the gas cloud figuring from a radius of 5.13×10^{15} meters

When the data for interstellar gas clouds are fed into this formula, the gravitational pressure needed to compress interstellar gas clouds to the point of thermonuclear ignition is 9.72 X 10²⁰ Newtons of pressure.

(2). Gravitational pull exerted by the mass in the gas cloud. Is the gravitational force in a gas cloud of this magnitude sufficient to be able to compress the gas to the point of thermonuclear ignition? Let us consider the facts. The formula for gravity is as follows.

$$F = \frac{3GM^2}{2r^2} \text{ where}$$

F = gravitational force exerted by the mass involved

G = the gravitational constant, or 6.67 X 10⁻¹¹

M = the cloud mass, or 2 X 10³⁰ moles of hydrogen

r = the radius of the gas cloud, or 5.13 X 10¹⁵ m.

The gravitational force of an interstellar gas cloud of this magnitude would be:

$$F = 1.52 \times 10^{19} \text{ Newtons.}$$

(3). The differential between the actual gravitational force exerted by the interstellar gas cloud and the amount of force needed to compress the gas cloud sufficiently to heat the interior of the cloud to get thermonuclear ignition can therefore be calculated by dividing the forces exerted outward by the gas cloud compressed sufficiently to achieve ignition by the force exerted on the interior of the gas cloud by mutual gravitation. The formula would be

$$\text{Differential} = \frac{P}{F} \text{ or } D = \frac{9.72 \times 10^{20}}{1.52 \times 10^{19}}$$

$$D = 64$$

This indicates that it would take 64 times the gravitational force involved in an interstellar gas cloud in order to compress the center of the gas cloud to the heat and density needed for thermonuclear ignition and the birth of a star.

(4). Conclusion. Considering that it would take a reduction of 33 times the entropy per mole of material in a gas cloud, and an increase of 64 times the gravity involved in the interstellar gas cloud to reach a point of thermonuclear ignition, it seems more reasonable to assume that stars, as well as the heavier elements in all of nature, and neutron stars are immediate products from the compression of the original "big bang," not as gradual products of slow and random evolution.

9. The laws of angular momentum.

The great astronomer, Johannes Kepler, discovered the laws of angular momentum as applied to satellites. He discovered that the distance between revolving bodies cubed was equal to the time of rotation squared. This can easily be experienced by anyone on a turn table or spinning on skates. When the arms are outstretched, the speed of the spin is slower. When the skater pulls the arms in, however, the speed of spin increases. Since interstellar gas clouds spin, by the time they had been compressed to the size of a star, the speed of the surface of the star would be traveling faster than the speed of light. Centrifugal force would have torn the star apart long before the thermonuclear reaction could have started the star "burning."

10. Binary stars.

Binary stars are stars that rotate around a common axis. They would have to be of the same age by formation, but are of a different H-R classification on the main sequence. Hoyle points out "The evidence is that the two stars of a double system are always born at closely the same time and place. This view which I think is shared by all astronomers leaves us with an evolutionary paradox." (Hoyle, 1963. p. 180). Astronomers would classify them as of different evolutionary age if viewed separately. This raises questions concerning the classifying stars according to ages, and not according to separate metabolic speed of aging.

10. The existence of Isotopes.

Radioactive isotopes degrade according to specific half lives, (Uranium degrades to lead). The fact that there are radioactive isotopes still in existence demonstrates that the universe had a beginning and is not infinite in time.

11. The death of stars.

The Royal Astronomical Society of Great Britain reported that more stars are burning out than are created and that the main amount of stars in extent in the universe today came into being about 6 billion years ago.

The report states: "Our analysis confirms that the age of star formation is drawing to a close. . . The number formed in the huge sample of galaxies (40,000) we studied has been in decline for around 6 billion years-roughly since our Sun came into being." (Heavens, Institute for Astronomy, University of Edinburgh, quoted in Monthly Notices of the British Royal Astronomical Society, August 21, 2002).

12. Stephen Hawking, Alan Guth, and the beginning of the universe.

In 1980, the American physicist Alan Guth devised a way around these problems. He theorized that shortly after the Big Bang (10^{-35} seconds, or 100 billionth trillionth trillionths of a

Actual speed of expansion

$$S_a = \frac{D_a}{D_e} = \frac{2.5}{1.2 \times 10^{-24}}$$

$S_a = 2.1 \times 10^{24}$ times the speed of light

- S_a = actual speed of expansion
- D_a = actual distance traveled (2.5 inches)
- D_e = expected distance traveled in 10^{-33} sec.

Average speed of expansion of the early universe

- $S_e = \frac{S_1 + S_2}{2} =$
- **$\frac{2.1 \times 10^{24} + .17}{2} = 1.05 \times 10^{24}$ times the speed of light**
- S_e = Speed of expansion
- S_1 = Speed of expansion at beginning (2.1×10^{24})
- S_2 = 17 % the speed of light in miles per second or 31,620 (3.1×10^4) mps.

The time needed to reach the present apparent position of the universe

- $T_n = \frac{D}{S} = \frac{6 \times 10^9}{1.05 \times 10^{24}} =$
- $T_n = 5.7 \times 10^{-15}$ year or
- **.000000000000057 year.**
- T_n = Time to reach present position
- D = Distance to present position or 6×10^9 light years
- S = Average speed of expansion or **1.05×10^{24}** times the speed of light

Days needed to reach the present known position

$$T = Yr \times T_n = 365.25 \times 5.7 \times 10^{-15} =$$

T = Time required
 Yr = Days in a year
 T_n = Time to reach present position

Are you ready for this?

- $T = 2.1 \times 10^{-12}$ Days or 1.8×10^{-7} second (.00000018 second), or 1.8, or 18 hundred millionths of a second from zero space/matter for the universe to expand to the present visible position.

• If you blinked, you missed it all.

I do not believe that Hawking and Guth's figures reflect the actual expansion of the universe, but the data tends to indicate that it suddenly began and that the expansion was so massive that the universe appeared to leap into existence instantly. Even if we allow for exponential deceleration of the expanding universe from the very beginning the universe would have suddenly appeared in such a small fraction of a second that any observer would see only the sudden appearance of all matter.

14. The study of variations in the brightness of galactic microwave radiation has demonstrated that the universe expanded to nearly the size of the present universe in about a trillionth of a second after the "Big Bang." This conclusion was reached by data gathered from the Wilkinson Microwave Anistomy Probe (WMAP) satellite launched by NASA in 2001 and the conclusion was announced by Charles Bennete of Johns Hopkins University and two Princeton colleagues, Lyman Page and David Spergel (Crenson, March 17, 2006).

Conclusions:

- 1. The universe came into being **from nothing** to its present mass through a massive explosion.
- 2. Black holes, neutron stars, normal stars and elements came into being **immediately after the universe began to expand.**
- 3. Black holes, neutron stars, normal stars and higher mass elements were not formed through random natural processes, but were **products of the "Big Bang"**.

- 4. It took only **a small fraction of a second** to reach the present observable position of the newly created universe after the “Big Bang”.
- 5. **The universe is inexorably running down**, not evolving upward to greater complexity.
- 6. The existence of **anti-matter** proves that the universe is not eternal, but finite.
- 7. The Bible in Genesis 1:1, 2 describes this sudden appearance of the universe by saying, **“In the beginning God created the heavens and the earth.”** The original Hebrew word used in Genesis 1:1 is **“Bara”** meaning to make de novo, or to make something that did not exist before.
- 7. All these issues contradict what is being presently taught of a gradually evolving universe from natural causes and allow for the existence of **an intelligent designer-creator**.
- 8. Believing in the existence of an intelligent designer, creator is **far more scientific** than believing that random forces accidentally were responsible for all the material universe. We call Him God.

Psalm 19:1 states:

“The heavens declare the glory of God and the firmament shows His handiwork. Day unto day utters speech, and night unto night shows knowledge.”

Therefore, we reject hypothesis # 1, that the material universe is a product of natural events that happened over billions of years of time without a cause or organizing factor. The scientific data and evidence supports hypothesis # 2, that the universe came into being immediately about six billion years ago and has been running down ever since.

Genesis 1:1 states, “In the beginning God created the heavens and the earth.” The Hebrew word “to create” (Bara) indicates original creation. It describes a sudden creation or bringing into existence of the universe. This is more in harmony with the Biblical account of creation and an intelligent creator.

Which conclusion do you believe?

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