

The dubious apologetics of Hugh Ross

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Introduction

The astronomer Hugh Ross has had a great impact on many churches and individuals in recent years. His organization, *Reasons to Believe*, coordinates his many speaking engagements and publishes a newsletter called *Facts and Faith*. He has written six popular level books on the Bible, science, and apologetics.¹⁻⁶ The secret of Ross's appeal is that he claims that modern science has confirmed many things about the origin and history of the world that the Bible had previously told us. This gives some believers spiritual encouragement and a great deal of intellectual satisfaction.

To accomplish this harmonization of the Bible and science, Ross has embraced much of what modern science has to say about origins. In short, Ross supports the big bang theory, the 4.6 Ga (1 Ga = 10⁹ years) age of the earth, and virtually all of what establishment paleontology claims about the history of life on earth including the order of appearance of different groups. In fairness to Ross, it should be emphasized that he does reject the concept of biological evolution, opting instead for progressive creation.

Ross argues that science alone can drive men to the correct understanding of our origin and hence see the necessity of a Creator. But this assumes that fallible men using a man-made (and hence fallible) methodology (science — in particular origins science⁷) with an incorrect postulate (atheism) can come to the truth about God. It would be most unexpected and illogical for a system of thought to reach a conclusion that is in contradiction to one of the basic postulates of that system.

This paradox underscores Ross's greatest misconception of how modern science works *vis-à-vis* the question of origins. As Johnson has pointed out, modern science, even origins science, by its very nature starts with the assumption of materialism.⁸ This assumption excludes consideration of any metaphysical reality, and leads to such quotes as those of the late Carl Sagan, *The cosmos is all that is or ever was or ever will be.*⁹ This assumption is blatantly atheistic. That does not mean that all, or even most, scientists are atheists. It merely means that the total exclusion of any possibility of a Deity makes most of modern science an atheistic enterprise, at least tacitly.

Ross brings the question of a Deity into the discussion rather late, which makes God an *ad hoc* insertion. This also fails to correctly estimate the true atheistic nature of science as practised today. This is best illustrated by Ross's use of the big bang model as a large part of his apologetic, which will be explored later.

Van Bebber and Taylor have reported on the questionable biblical teachings of Ross.¹⁰ While this work has alerted some to Ross's theological problems, many in the church resist that message, primarily because they are convinced that Ross has overpowering scientific arguments for an old earth and universe to which the Bible must be accommodated. Of course, accommodating the Bible to science is the exact opposite of what many intend, but this is what I have observed. Most theologians, pastors, and laymen lack the expertise to adequately evaluate Ross's scientific claims. Most critiques of Ross have taken the approach of attacking his theological position, because this is obviously the root of his problem. But are the scientific arguments of Ross as powerful as many seem to think?

This paper will examine some of the scientific claims of Hugh Ross, particularly in his discipline of astronomy. While science is the primary emphasis here, it is important to mention a few theological issues as well. It will be shown that in both science and theology, Ross often grossly overstates his case and handles information incorrectly.

Biblical issues

General and special revelation

Psalm 19:1-4 and Romans 1:19-20 state that the world around us indicates that there is a Creator. This limited information of God that the physical world impresses upon the minds of men is often called *general revelation*, as opposed to *the special revelation* of the Bible. Both reveal some information about God, but Ross elevates what the physical world reveals nearly to the level of Scripture itself. This is called the *dual revelation theory*. It is argued that since God is the author of both books, the Bible and the book of nature, the two must necessarily agree. Ross has expanded the dual revelation theory to the point of likening nature to the sixty-seventh book of the Bible.¹¹

There are several problems with this approach. First, the Bible never makes such a claim for nature. While the two passages mentioned above state that God's existence can be inferred from nature, they hardly elevate nature to the level to which Ross insists it must be raised. Ross lists a number of other biblical texts that supposedly support his position on dual revelation.¹² An examination of all of those verses reveals that they do no such thing: they generally give fewer specifics than Psalm 19 and Romans 1. The equation of nature as the 67th book of the Bible is an **inference** that Ross has made. Any systematic study of Scripture involves inferences, but those inferences must be continually compared to other passages to check their legitimacy. This

is particularly sobering in light of the warning of Revelation 22:18 against adding to the words of the Bible. Such a major expansion of God's revelation should be very carefully scrutinized. Ross has overstated his argument for the dual revelation theory, and the many passages used to allegedly make his case illustrate his attempt to win the reader's support with a blizzard of citations.

The second problem is the specific attributes of God that Ross claims can be deduced from general revelation. Ross has given a list of seven such attributes.¹³ The first attribute claimed, that God exists, comes straight out of Romans 1. Romans 1 also states that God's mighty power may be inferred from nature, which appears to be part of Ross's attribute number two. While Romans 1 only mentions these two attributes, Ross continues with four or five more, including such items as God's perfection, justice, love, and mercy. Since neither Romans 1 nor Psalm 19 in any way mention those attributes in the context of general revelation, Ross must have gleaned them from elsewhere. The most obvious source is the rest of the book of Romans and the Bible, which illustrates the gross inadequacy of general revelation. General revelation is sufficient to draw man's mind to the thoughts of a creator; but to really know God, one must turn to special revelation.

This inadequacy of general revelation is clearly illustrated by the entire Psalm 19. The first four verses discuss the declaration of God's glory by the heavens, and the next two expand on the sun's role in the heavens. Verse three is translated in the KJV (and similarly in the NIV) as, '*There is no speech nor language, where their voice is not heard,*' which is usually understood to refer to the universality of their message. Three of those words are in italics in the KJV, indicating that they are not in the original Hebrew. It is possible that verse three actually should read, '*no speech nor language, their voice is not heard.*' This is the sense of the translation of the NASB, NJB, and NRSV. In other words, what may be emphasized here is that the message of the heavens is non-verbal and unwritten. Such communication is quite limited, which is why the remainder of the Psalm is so important. The final seven verses delineate what the Law and the Prophets can do. The seventh verse alone states, '*The law of the LORD is perfect, converting the soul: the testimony of the LORD is sure, making wise the simple.*' Notice that this is far more specific and powerful than any claim made for general revelation.

The truly important things about God that one must know can be found only in Scripture. Ross obviously knows these things from Scripture, and he attempts to imprint them onto general revelation. Scripture does not support this. Indeed, it appears contrary to clear teaching of Scripture — if Ross were right, there would be no need for missionary activity, contrary to Rom. 10:13 ff. In his zeal to make a strong case, Ross has grossly overstated this argument. At best, this is sloppy logic and exegesis, and his equation of general and special revelation is seriously flawed.

A third problem for the dual revelation theory is the

question of what constitutes data in either case. If the facts of nature and the facts of the Bible must agree, then what are the facts of either domain? We can agree that the 66 canonical books of the Bible are the facts of special revelation, but what are the facts of nature? Ross would have us accept the *interpretations* of the majority of scientists as the 'facts' of science or nature. But new 'facts' or interpretations of science are discovered every day, while old 'facts' are just as often discarded. The history of science is littered with the wrecks of ideas that were at one time considered to be 'true', but have long since fallen out of favour. Elevating this body of knowledge with its changing character to the same level as the Bible should alarm all Christians who are committed to the authority of Scripture.

A fourth problem is Ross's slick exchange of science for nature. Ross argues as follows. There are two books: the book of nature and the Bible. God is the author of both, so both must agree. So far this seems reasonable. Then Ross subtly equates science for nature, from which one could infer that science and the Bible should be equated in authority. Most of Ross's intended audience would have abandoned him had he made such a claim, because this is precisely the sort of equation that most liberals have made. Science is the (man-made) way that we have to study nature. If Ross wants to make the correct analogy, it should be to exegesis, which is the (man-made) way of studying the Bible. It is not clear whether Ross consciously made this slippery switch. More likely, this swap escaped his notice. If that is so, then such a logical fallacy would cast doubt on his competence.

Fifth, Scripture teaches that the creation is cursed (Gen. 3:17-19, Rom. 8:20-22), but Scripture itself is 'God-breathed' (2 Tim. 3:15-17). So how can a cursed creation interpreted by a fallible methodology of sinful humans determine how we interpret the perfect, unfallen Word of God? As the systematic theologian Louis Berkhof pointed out:

'...Since the entrance of sin into the world, man can gather true knowledge about God from His general revelation only if he studies it in the light of Scripture, in which the elements of God's original self-revelation, which were obscured and perverted by the blight of sin, are republished, corrected, and interpreted. ...

*Some are inclined to speak of God's general revelation as a second source; but this is hardly correct in view of the fact that nature can come into consideration here only as interpreted in the light of Scripture.'*¹⁴

Christless creationism?

Ross's general sloppiness in handling Scripture was greatly demonstrated by an address that he recently gave at Dallas Theological Seminary. In that address he stated:

'Therefore it allows me to make an interesting paraphrase of John 3:16, if you'll permit— "For

God so loved the human race that He went to the expense of building a hundred billion trillion stars and carefully shaped and crafted them for sixteen billion years so that at this brief moment in time we could all have a nice place to live. ¹⁵

Anyone even remotely familiar with John 3:16 is struck by the glaring omissions of this paraphrase. No mention is made of such important terms as 'only begotten (Greek **monogenes** = unique, special)' 'Son,' 'believe,' 'not perish,' and 'everlasting life.' This is either blasphemy to the point of heresy or gross carelessness of the first rank.

It is almost inconceivable that Ross really believes this, so one must conclude that he was shooting from the hip. Assuming that that is the case, then it appears that Ross is guilty of dealing with Scripture in a cavalier manner, which is precisely my point. Ross has received a virtual free ride from many pastors and apologists despite these sorts of outrageous views, primarily because these Christian leaders have been intimidated by his scientific pronouncements. But his science is full of errors, contrary to what many believe. His sloppy handling of Scripture and manner of gross overstatement are unfortunately his method of operation in science as well.

Problems with the 'day-age' theory

Most of Ross's intended audience know little about science, so they will accept his pronouncements on scientific issues without much question. This deference to the supposed impressive science permits him to play loosely with biblical texts. Like any other 'day-age' proponent, Ross believes that the days of the creation week were long periods of time. Of course, there are numerous textual problems with the day-age theory that are discussed elsewhere.^{17,18}

Another major problem is that the ordering of the events of Genesis does not even agree with the pronouncements of modern science, with which day-age theorists are so eager to harmonise. To answer this difficulty, Ross appeals to overlapping days.¹⁹ For instance, the creation of plants was on the third day, before the creation of animals on days five and six. But the plants that are specifically mentioned as being created on day three are flowering plants, plants that according to most scientists appeared very recently. This would seem to place these plants during day six when creeping things were created. Ross explains this by claiming that it is the first appearance of plants that is important, hence their mention so early on day three. On the other hand, Ross claims that birds and fish are mentioned on day five, despite the fact that this makes no sense in terms of the usual order that modern science claims. Does Ross reject modern science on this? No, he argues that day five overlaps partly with days three and four, and probably six as well. It is interesting that the details of Ross's teaching on this are not found in references 2-5. His latest book contains some details,²⁰ but the greatest

details are found in his audio tapes and pamphlets, which enjoy far less circulation and publicity than his books.

Ross repeatedly shuffles the events of creation to claim that those events that occurred on different days did not, while those events that occurred on the same day actually happened at different times. Under such contrived rules of interpretation the motif of a six-day creation, if you will, begins to collapse. What would have happened to the ancient Hebrews if they would have applied this reasoning to their week (Exodus 20:6)? They could have concluded that if they rested during some of the first six days of the week, then they could have worked on the Sabbath. After all, the Lord had overlapped his actions during the days of the creation week, so why could not they? It is obvious that such an attitude would have been an affront to the Lord of Creation. In like fashion, so is Ross's 'overlapping days' notion.

Ross's pronouncement that the book of nature (science) is akin to the 67th book of the Bible is frightening enough. Yet the manner in which he cavalierly reinterprets Scripture to match what science says, clearly demonstrates that he really holds science in higher esteem, contrary to Berkhof's wise admonition.¹⁴

Equally frustrating is Ross's claim that modern (uniformitarian) science has borne out the claims of the Bible about origins. Both of these practices amount to deceptive advertising. When one really examines his claims, it is obvious that Ross can only achieve the harmonization he desires by conducting surgery on the biblical account of creation. Unfortunately, most people in his intended audience never grasp what he has done. In retailing, this sort of practice is known as 'bait and switch.'

Looseness with lexicons

Ross's poor scholarship extends to biblical studies as well. For instance, Van Bebbler and Taylor have shown that Ross has cited lexicons and word books to support his claims to meanings of Hebrew words, when in reality those references say exactly the opposite of what Ross claims.²¹ From this one can only conclude that either Ross is dishonest or that he is a careless and incompetent researcher. Neither possibility should be palatable to those who rely upon his apologetics. The biggest puzzle is why so many Christian leaders and seminary professors have not abandoned him already.

Scientific issues

Ross's big bang apologetic

Before turning to scientific issues, it would be good to briefly discuss the biblical issues surrounding one of the main thrusts of Hugh Ross's apologetics, the big bang. His argument has some similarity to that of Robert Jastrow more than two decades ago in his book, *God and the*

*Astronomers.*¹⁶ Jastrow pointed out that throughout time, most people have believed that the universe had always existed. Only in the 20th century and with the rise of the big bang model have most people come to believe that the universe had a beginning. Of course this one point is in agreement with what Christian theologians have supposedly said all along, which is the whole point of Jastrow's book. While Jastrow is an agnostic, he found it fascinating that modern science has grudgingly come into agreement with the Bible on that one issue. Ross goes beyond Jastrow and argues that the big bang model is in perfect agreement with the biblical account of creation.

Ross makes much use of the principle of causality in conjunction with the big bang to argue for God's existence. Causality means that any event that occurs (an effect) has some cause. Let A be a cause, and B be its effect. Then logically one can say that A causes B. All effects in turn become causes of new effects, and so forth. At any time there are countless chains of cause and effect that are parallel and intertwined with one another. Conversely every effect must have a cause. Logicians and philosophers have long recognized that in the distant past there may have been an 'uncaused cause.' That is, there was a cause that was not the effect of an earlier cause, and from which all subsequent cause and effect relationships descended. There are philosophical debates on causality that cannot be covered here.

Of course many would identify the uncaused cause as God. However, in an eternal universe there would be no need of an uncaused cause, because cause and effect would have been operating over all time. This avoidance of an uncaused cause may have been the appeal that the eternal universe had in Western thought. As Jastrow

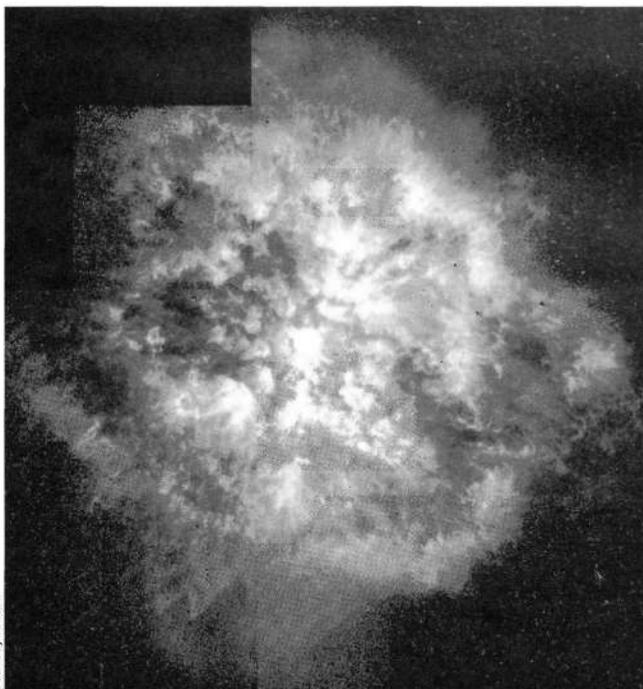
and Ross point out, the big bang theory posits that the universe had a beginning, so that an infinite chain of cause and effect relationships is no longer tenable. Jastrow and Ross disagree on the identity of the uncaused cause. Ross certainly identifies it as the God of the Bible. Jastrow would insist that the big bang was the uncaused cause. He is not alone: many other scientists share this assessment, as shown below.

Ross also claims that many astronomers have been led to a belief in a personal Creator because of the big bang model, but he fails to mention any names. To the contrary, the biggest names in cosmology today could be described as agnostics or pantheists at best. Most are avowed atheists, so for Ross to mislead people in this way is unconscionable. Much speculation and theoretical research has been expended in developing a way in which the universe could come into existence strictly by natural processes consistent with the physical laws operating in the universe. The majority agrees that the most promising mechanism is the view that the universe arose as a quantum fluctuation, with no supernatural agent involved.

The quantum fluctuation theory of the big bang will not be elaborated here. Suffice it to say that following the Heisenberg uncertainty principle of quantum mechanics, there can be trifling violations of the law of conservation of energy, provided that the violations exist for very short periods of time. The smaller an energy violation, the longer that the violation can last. In this view, the total energy of the universe is precisely zero, so the violation (the universe) could exist forever. Astrophysicists must very cleverly devise ways in which the total energy of the universe can be zero. While this idea is not universally accepted, and there are major logical problems with it,²² it is the obvious trend of current research.

There are other non-theistic possibilities that leading big bang cosmologists have explored. The inflationary model of the universe is a related topic. Alan Guth, the author of this idea, has stated that *'In the context of inflationary cosmology, it is fair to say that the universe is the ultimate free lunch.'*²³ Some models postulate a number of inflationary universes. These seem to suggest that the universe has a 'frothy' structure so that new (potential) universes pop into existence through quantum fluctuations. Most of these cease to exist very quickly, but occasionally some undergo rapid expansion (inflation), and in the process separate from our universe. Just as our universe gives birth to new universes, ours was birthed by an earlier one (without the need of a deistic midwife). This obviously becomes a metaphysical exercise, but the theory does allow our finite universe to be a small link in an eternal chain, so that a Creator is again unnecessary.

Any read of the plethora of popular books about the big bang reveals just how out of step Ross is on the point



Courtesy NASA

of theism and the big bang theory. It is very clear that in *God and the Astronomers*, Jastrow does not endorse theism but only comments that Christian and Jewish theologians were apparently right all along on the question of whether our universe had an origin. While Hawking²⁴ and Davies²⁵ frequently use the word 'God', it is quite obvious that they have an entirely different definition of the word than Christians do. Their God (or more properly, god) is identical to how Einstein used the term. All three use 'god' to mean some order imposed upon the physical universe. No matter what Ross claims, their views are completely contrary to the personal God of the Bible. Many other scientists who have written on the topic, such as Weinberg²⁶ and Rees²⁷ pretty much remain silent about the topic of a deity. The obvious implication is that most of these researchers and writers view a Creator as totally unnecessary.

This is a fundamental misunderstanding of the big bang model (philosophy) that Ross and other Christian apologists who embrace the big bang have. The big bang is the ultimate atheistic, purely physical, totally naturalistic explanation. Russell Humphreys has pointed out a very important popular misunderstanding of the big bang by Ross and other popular writers. The 'big bang' is actually based on a non-scientific *assumption* called the *cosmological principle*, which states that an observer's view of the universe depends neither on the direction in which he looks nor on his location. That is, the earth is nowhere special.²⁸

Biological evolution is an attempt to explain life apart from a creator, and Ross rightly rejects this, though his alternative of progressive creation is fraught with problems. Geological evolution does the same for the earth, and Ross seems to accept all of it, although it is intimately related to biological evolution. The big bang model is an attempt to explain the origin of the universe apart from a Creator, though Ross and others fail to see this. Contrary to what Ross claims, nearly all big bang cosmologists are not theists and are very vocal about their beliefs (or disbeliefs). Most would view the introduction of a Creator at some point as an *ad hoc* assumption. For Ross to mislead his readers by claiming that they have accepted a personal Creator is inexcusable.

String theory in the Bible?

When presenting an argument, Hugh Ross frequently overstates his case. A good example can be found in his fourth book, *Beyond the Cosmos*. Some of my observations on the work have been previously published in a book review.²⁹ In this book, Ross uses a very current idea called string theory to explain a number of theological problems. String theory postulates that there are six dimensions of space in addition to the normal three dimensions. These extra six dimensions are not directly observable today, but according to the theory

they do have effects upon the interaction of elementary particles and the structure of the universe. The theory was devised to explain some features of the universe. The problem is that there is as yet no confirming evidence that this theory is true. The theory is controversial, and there are competing theories. The highly speculative nature of the theory would not be grasped by most people who read Ross's book, because Ross presents it as if it is well established.

Assuming that string theory is true, Ross concludes that God must work in these extra dimensions. Ross further argues that there must be at least one extra time dimension in which God works, for a total of at least eleven dimensions at God's disposal. This extra-dimensionality becomes the thesis of *Beyond the Cosmos*. Since God is working in extra dimensions and especially the extra time dimension, God has an infinite amount of time during each instant to accomplish His many tasks. This supposedly enables God to hear the prayers of millions of believers simultaneously and for Jesus to have suffered for each person individually during His crucifixion. Ross also claims that this extra-dimensionality explains other difficult topics such as the Trinity, omnipresence, and predestination.

Besides the questionable status of string theory, there are several problems with Ross's approach here. It seems presumptuous to the point of arrogance to suggest that only in the latter twentieth century have we learned enough to finally grasp some of the theological issues raised and supposedly answered by Ross. Ross argues that Augustine made a mistake and took nearly everyone afterwards with him in concluding that God operates outside of space and time. Instead, Ross insists that God must operate within space and time, which necessitates the additional dimensions. Ross's claims on this matter seem to suggest that God is somehow confined by time. Of course God can operate in or out of time as He chooses, so why would He confine Himself to operate within one of His own creations? Even a self-described Ross-supporter, the philosopher/apologist William Lane Craig, has severely criticised Ross's teachings on this:

'... I have been mystified by evangelicals' apparently uncritical acquiescence to some of the positions advocated in this book [Ref. 4].

... I find his attempt to construe God as existing in hyper dimensions of time and space and to interpret Christian doctrines in that light to be both philosophically and theologically unacceptable.'³⁰

Misunderstanding general relativity.

Beyond the Cosmos also contains some scientific errors that illustrate how poorly Hugh Ross handles scientific issues. For instance, Ross states that general relativity (GR) does not allow for any absolute reference

frame with which to measure velocities.³¹ This is probably one of the most common incorrect but popular beliefs about GR. Mach's principle, which is one of the basic assumptions of GR, states that the velocity of an object may be measured unambiguously with respect to the sum of the rest of the material in the universe. Thus this frame of reference constitutes the preferred frame for the universe. Classically, this preferred frame of reference has been distant stars or galaxies. With today's understanding of cosmology, it is believed that the 3 K cosmic background radiation (CBR) represents the preferred frame of Mach's principle. Anisotropy in the CBR has enabled us to measure our speed through space with respect to this frame. It is quite surprising that Ross does not realize this.

Comets

In his book *Creation and Time*, Ross commits other blunders that call into question his competence. He discusses the claim that the existence of comets is an argument for a recent origin for the solar system³² (an issue I have recently reviewed³³). Amazingly, Ross dismisses this argument by insisting that comets have an interstellar origin. That is, comets are not part of the solar system but merely pass through the inner solar system from time to time. Interstellar comets would enter the solar system with hyperbolic orbits and speeds exceeding the escape velocity, but this is not observed. Therefore while this answer has been entertained in the past, virtually no astronomers accept it today. Nearly all astronomers believe that comets come from either the hypothetical Oort cloud or from the Kuiper belt. It is almost inconceivable that an astronomer would not know this. Since Ross places so much store in the consensus view of astronomers, it would behoove him to



Courtesy NASA

better understand that view before attacking recent creationists.

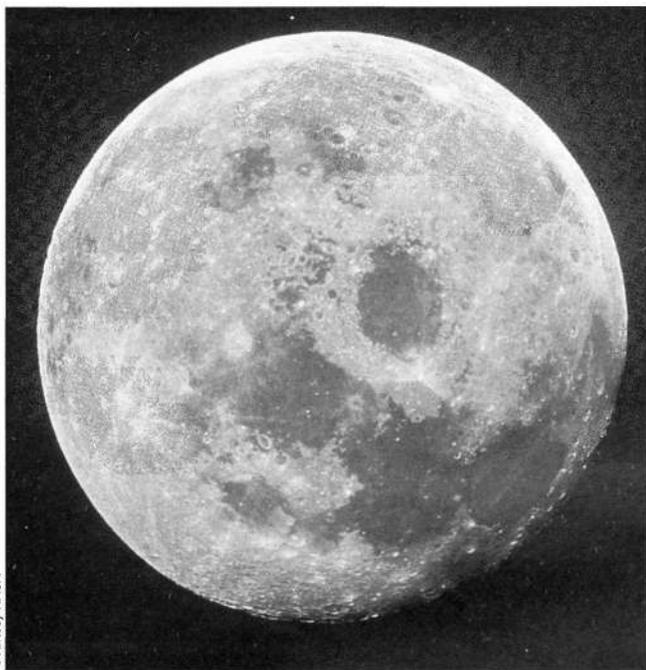
MACHOs

The Creator and the Cosmos contains several obvious errors or misstatements, despite having undergone revision in 1995. For instance, Ross garbled the discussion of observational evidence (via gravitational lensing) that dark matter may consist of MACHOs (MASSive Compact Halo Objects).³⁴ First, Ross has the first 10-m Keck telescope and the Hubble Space Telescope (HST) playing key roles in this discovery. In fact, most of the work was done with much smaller telescopes wholly dedicated to the study. The largest telescopes in the world cannot be tied up in time-consuming programs such as this one. Second, Ross stated that MACHOs were detected in the Large Magellanic Cloud (LMC), a satellite galaxy of the Milky Way. In reality, the MACHOs were believed to be in the Milky Way or between the Milky Way and the LMC. What confused Ross was the fact that the objects that were lensed were stars in the LMC. If Ross had carefully read just the titles of the articles that he referenced on this topic, he should have been able to figure this out.

Fine-tuning of the universe — Ross's overstatements

In discussing how finely balanced the expansion of the universe must be to permit the existence of life, Ross states that the expansion rate "...cannot differ by more than one part in 10^{55} from the actual rate."³⁵ Ross gives no reference for this figure, so one is left to guess where he got this nonsense. In the 1990s, there has been a major debate on the value of the Hubble constant, H_0 , which measures the expansion rate of the universe. For a while it appeared that we might not know H_0 within a factor of two, though the situation appears to have improved a bit. Still, it would seem that if it were thought that the expansion rate could not vary by over one part in 10^{55} for life to exist, we would have to know the expansion rate with that precision. The value of H_0 continues to be revised by amounts far larger than one in 10^{55} .

The stakes in the controversy over the value of H_0 have been high, because an increased Hubble constant leads to a younger universe. For a while it appeared that globular star clusters were older than the universe. In *The Creator and the Cosmos*, Ross ignores the astronomers who have presented evidence of higher values of H_0 . Teams led by Wendy Freedman and Michael Pierce have given strong cases for this. Yet in discussing new measurements of H_0 , Ross does not mention these, but opts instead to rely solely upon his good friend Allan Sandage,³⁶ who is one of the leading figures arguing for a lower value of H_0 . Such gross



Courtesy NASA

oversimplification and overstatement of his case is all too common with Ross. Another example is his handling of COBE (COsmic Background Explorer) data.³⁷ Ross states that the observed inhomogeneities in the cosmic background radiation (CBR) found '... were just what astrophysicists thought they would find.' The truth is that the COBE was designed to detect the temperature fluctuations that astrophysicists expected, but that the original COBE data showed a perfectly smooth distribution. It was not until some very high-powered statistical techniques were applied to the data that much lower than originally expected fluctuations were found. At that point, big bang models were recalculated to 'predict' the data. How this shows perfect harmony with theory and observation as Ross claims is a mystery.

Earth-moon lunacy

In discussing the moon, Ross states that the moon at 4.25 Ga is younger than the earth at 4.59 Ga,³⁸ hence they could not have formed at the same time. But this confuses several things. The oldest accepted radiometric ages for lunar rocks are about 4.25 Ga, but the oldest accepted terrestrial rocks have ages of about 3.95 Ga. How is this explained? Both bodies are thought to have undergone geological activity, so that no primordial rocks exist on either one. The earth is obviously more geologically active, so its oldest rocks are expected to be younger than the moon's oldest rocks. Therefore the correct raw numbers as accepted by most scientists indicate just the opposite of what Ross concludes. If there are no primordial rocks on the earth, whence comes the 4.59 Ga age for the earth? That age comes from radiometric dates of a certain class of meteorites, from

which the age of the solar system, and most of the bodies in it, has been inferred. So Ross has mixed two very different figures here. The facts have been so garbled that it questions his competence.

On the next page, Ross briefly discusses the currently accepted scenario for the origin of the moon.³⁹ This theory suggests that the earth formed as a single body, but that early in its history the earth suffered a collision with another body that was a significant fraction of its own size, possibly twice the mass of Mars.⁴⁰ The earth absorbed most of the colliding body, while the remaining debris was blasted into orbit to eventually coalesce into the moon. Ross states that this was a 'head-on' collision. In physics, a head-on collision is one in which the paths of the centers of mass of the bodies intersect. Alternatively, the angle of incidence for the incoming body is perpendicular to the surface of the impacted body. Ross is wrong: this scenario requires that the impacting body approach the earth at a glancing angle. Only for a glancing collision is enough material ejected with the proper trajectory to form the moon (although there are still unsolved problems with excess angular momentum⁴⁰). One must ask whether Ross merely misunderstood the origin scenario or if he does not know what a head-on collision is. The former possibility suggests sloppiness; the latter suggests incompetence.

Ross's oral oversights

Ross's books are generally well polished and have obviously been edited. However, his pronouncements in public addresses and on-air presentations are much less guarded. Davidheiser⁴¹ and Sparks⁴² have documented a number of scientific blunders made by Ross in these other venues. Those blunders will not be overly elaborated here, but a few must be mentioned. Sparks demonstrated numerous and monstrous errors of math and values of exponentials.

On a number of occasions Ross has stated that DNA is either made of proteins or is itself a protein. This error appeared in the first edition of *The Fingerprint of God*, but was corrected in the second edition.

Ross has completely botched the story of the peppered moths of England. He has called them butterflies, and said that they were green. The latter gaffe is apparently because he misunderstands the nature of the moths' alleged evolutionary advantage, thinking that the moths were supposed to be found on foliage rather than trunks of trees. It is common for evolutionists to blow the story of the peppered moths,⁴³ but Ross has exceeded them all.

Ross has said that average human eyesight is three times better than it was 2,000 years ago. This is another example of an absurd and unfounded claim made entirely without documentation.

Ross also claimed that the Pacific Ocean basin is the scar left from when the moon was formed by separation

from the earth. That is a very old idea that was discarded decades ago. Today, the Pacific Ocean basin is explained entirely by plate tectonics. These blunders and outdated ideas are inexcusable for a scientist. That is ironic, because Ross often dismisses his creationist critics for supposedly not having the credentials to adequately understand science.

Both Davidheiser and Sparks show the sloppy manner in which Ross approaches science and facts in general. One illustration dealing with astronomy will demonstrate this. A few years ago, Hugh Ross and Duane Gish were guests on James Dobson's popular radio program, *Focus on the Family*. During the discussion, the question of star formation came up. Gish questioned the possibility and observations of star formation today. In his response Ross, blithely stated that '... we see star formation in real time. You can take your pair of binoculars out tonight and watch it. It's actually happening.'⁴⁴ That is a blatantly false statement that no other astronomer would endorse. Perhaps what Ross meant to say was that with a pair of binoculars anyone could see regions in space where stars are thought to be forming now. Most astronomers today would consider that statement to be true. However, that is not what Ross said. He was either being very sloppy or incompetent. In either case his statement certainly misled many people.

Ross's book blunders

While Ross's biggest blunders occur in public addresses, even his books contain some careless errors. For instance, his most recent book places the Scopes trial in 1927,⁴⁵ not correctly in 1925. Subtler, but equally troubling examples, of bungling abound. For instance, Ross recently claimed that the current 71 to 29 percent ratio of water-to-land surface on the earth '... has been theoretically and observationally demonstrated to provide the maximum possible diversity and complexity of life.'⁴⁶ No reference was given for this statement, so it is impossible to determine where Ross discovered this 'fact' or if indeed he incorrectly handled it as well. Given the many variables involved in determining such a thing, it is difficult to conceive that one could reach such a conclusion theoretically. But even more troubling is the assertion that this has been 'observationally demonstrated'. Short of observing a large number of earth-like worlds with various water-to-land ratios and counting the flora and fauna on each, just how could such a thing be demonstrated observationally? In the same book Ross writes that *theory and observations both confirm that all planets start with opaque atmospheres.*⁴⁷ Again, no references were given, but short of directly observing the birth and development of a large number of planets, how could this be observationally tested? To some these may seem like petty objections, but these sorts of misstatements are common in Ross's works.

Ross's personal testimony

Ross's testimony is contained in nearly all of his books. The elements are essentially this. Ross was raised in a moral, but not Christian, or even religious, family. As a teenager, he became very interested in science. At the age of 15, he concluded that the big bang must be true, and that the existence of the world demanded that there be a Creator, so he began a study of religions. He decided that the one true religion should be self-consistent and that it should agree with the natural world. He began reading the Bible, starting with Genesis, and he saw that it alone met the requirements of being the one true religion. He found that the Bible contained no errors or contradictions, which led him to salvation through the blood of Jesus.

This story reflects the statements of Romans 1 regarding what is called natural revelation, and we can rejoice in his salvation. But Ross claims that as a teenager he was struck with how well the Genesis account agreed with what he knew that science had revealed about the origin of the world. That is difficult to believe. Nearly everyone who reads the Genesis creation account for the first time comes away with the strong impression that the Bible and 'science' have serious disagreements about origins. That is why there are so many different ways in which harmonization is attempted.

Much of Ross's harmonization is very similar to that of the late Peter Stoner, who had a popular level book that enjoyed broad readership about the time that Ross was a teenager.⁴⁸ Could it be that Stoner influenced Ross? If so, why does Ross fail to acknowledge this? Interestingly, Hugh Ross wrote the foreword to the progressive creationist book by Stoner's grandson, which echoes Ross's scientific sloppiness, egregious eisegesis, and general *Scriptura sub scientia* approach.⁴⁹ Ross clearly implies that he came to his understanding of Genesis solely by his own reading of the passage. If there were any other influences that guided him, then his repeated omissions go far beyond merely misleading.

Conclusion

Just a few of the incorrect and untrue statements of Hugh Ross have been explored. The concentration here has been on scientific issues. Others, such as Van Bebbler and Taylor,¹⁰ and Kelly,¹⁸ have documented many of Ross's outrageous biblical assertions, which demonstrate that Ross's poor scholarship extends to biblical studies as well.

Dishonesty or incompetence? It is difficult to say. While I cannot decide which explanation best characterizes Ross, I am very concerned with his inability to correctly handle factual information. On many occasions Ross has greatly bungled information. On other occasions he has appeared to have a total disregard for the truth. Some have found that when Ross is informed of his gaffes, he blithely goes on as if he never heard the criticism. There seems to

be no accountability. Ross frequently overstates his arguments. There are very serious problems with his biblical studies and questions about his scientific competence. I hope that the issues raised here will cause those who entertain Ross's teachings to re-examine his pronouncements. Contrary to what many believe, Ross's case is riddled with errors. Those who agree with his approach to Genesis should be embarrassed with the extent of his sloppy work.

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