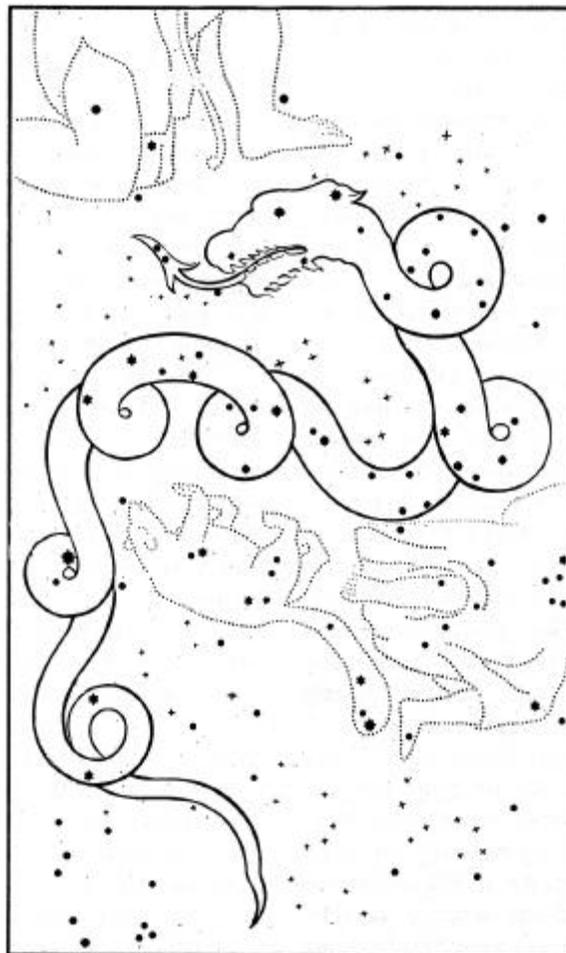


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(Publications list continued from the back cover.)

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Cover: The constellation of Draco the dragon along with Ursa Minor and parts of Hercules (top) and Cassiopeia (lower right).

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EDITORIAL

This issue is about two months late in coming. Part of the reason is the amount of research and concentrated effort that was necessary to produce the first two articles. These deal with the popular subject variously known as the gospel in the stars or the witness of the stars. The general idea is that God, when he created the stars for signs, placed into the constellations the gospel of the Lord Jesus Christ. That gospel depicted in the heaven, is that no man is righteous and that all have sinned and deserve eternal damnation in hell. But God, willing to make his mercy known, reconciled man to himself in the person of his Son, the Lord Jesus Christ; who was fully God and fully man, and who without sin shed his blood on the cross as a sacrifice for all sin. Thus he cleansed us of all our sins past, present and future; and all who believe that simple fact, not seeking to establish their own (self-) righteousness but accepting the imputed righteousness of God, are counted righteous in the sight of God and will live eternally with him in undescrivable joy.

That said, the first article introduces the celestial pageantry and the second article looks at the constellation Draco, the dragon. The Draco article resulted from a discovery made while researching the name, Lucifer. The results of the latter research appeared in an article entitled "The Morning Stars" in the Summer 2001 issue (p. 69) of *The Biblical Astronomer*. That article looked at the higher-critical method of interpreting the Holy Bible in the context of the morning stars and concluded that Lucifer is a valid and sound translation of the Hebrew *helel* (Isaiah 14:12); and that there is absolutely no grounds for changing the King James Bible's "Lucifer" to either "the morning star" or "the day star," both of which are titles of Christ (Revelation 22:16 and 2 Peter 1:19). In the course of that research, the source of several other higher-critical changes was found. These appear in all modern versions, and are absolutely spurious, without any justification whatsoever other than to discredit the authority of Holy Writ and to cast doubt on the aforementioned gospel of grace. The two articles in this issue present some of that evidence and along the way show how the constellation of Draco is anciently associated with dragons, serpents, judgments, and disasters.

Also in this issue is an obituary of Sir Fred Hoyle. Though not a Christian, Fred Hoyle was honest about the shortfalls of modern science. Though not generally credited with it, he is the first person to apply the term "big bang" to the popularly accepted fable for the origin of the universe. Meant for ridicule, Hoyle never used it again after it became a common moniker for the myth. By contrast, Hoyle promoted

an infinite universe called the Steady-state model, and was able to adjust the model to accommodate the detection of the cosmic background radiation in the 1960s. Though not as well known as his panspermia model for the origin of life (that life arrived on earth via comets—just how that solves the problem for the atheistic origin of life is not clear; it only defers the problem), he also believed that the intermediate fossil, archaeopteryx, was a hoax and wrote a book about it with fellow cosmologist Chandra Wickramasinghe.¹

Also in this issue is a report on the fly-by of comet Borrelly by NASA's Deep Space 1 probe. Again, the standard model of what a comet looks like appears to be wrong. The age of the comet is called into question by the data sent from the probe.

Miscellaneous announcements

Work is still proceeding on the *Technical Supplement No. 2*, which will be sent out to members within the next month or so, Lord willing. The supplement will present all of the e-mails and articles, pro and con, that the *Biblical Astronomer* has received in rebuttal to Danny Faulkner's antigeocentric article of last year (*Ex Nihilo Technical Journal* **15**(2):110–121, 2001).

The book, *Geocentricity*, is sold out. No copies remain. It is hoped that a revised second edition will be available in print sometime within the next few months. Also, *The Book of Bible Problems* is nearly sold out. Fewer than 25 copies remain. No revision is needed for it, but a reprinting will undoubtedly increase the price because of the need to make smaller printing runs of both books. There is not enough space to store the 50 cases of books generated by a run.

¹ Hoyle, F., and C. Wickramasinghe, 1986. *Archaeopteryx the Primordial Bird: A Case of Fossil Forgery*, (C. Davies Publ. Ltd.: Swansea, U.K.)

THE WITNESS OF THE STARS

Gerardus D. Bouw, Ph.D.

Ancient names tell a story

Many *Biblical Astronomer* readers are familiar with a notion variously called “the gospel in the stars,” or “the witness of the stars.” Over the past dozen decades, several Christian authors and leaders, among whom the most stellar is Dr. D. James Kennedy, have promoted these ideas in print. Invariably, their books are based on the works of Ethelbert Bullinger¹ and Joseph Seiss.² Neither of these two works is original. Both are based on Frances Rolleston’s monumental tome, *Mazzaroth or, the Constellations*.³ Regrettably, Mrs. Rolleston died before finishing her research. At the time of her death she was investigating constellation and star names in some very ancient works and archaeological finds. Still, that leaves us with three complete parts and a partial fourth.

Throughout most if not all of the twentieth century, professional astronomers considered Richard Allen’s *Star-Names and Their Meanings* to be the definitive work on constellation and star names.⁴ Allen’s research goes back to the times of Seneca and Virgil, that is, roughly the time of Christ. He concludes that most of the Arabic names were taken from Greek, namely, that the Arabs, starting in the eighth century, adopted many of the Greek names by translating them into Arabic. Allen was aware of more ancient finds from the Fertile Crescent, leastwise, apparently more ancient than the time of Christ. Insofar as the Chinese literature goes, most if not all of Allen’s names date no earlier than the seventh century B.C.

Allen knew of the gospel in the stars tradition and mentions that it goes back at least to the time of the Reformation. Apparently he was not aware of Rolleston’s work, or if he was, he chose to ignore it. Beginning late in the eighteenth century and maturing in the first quarter of

¹ Bullinger, E. W., 1893. *The Witness of the Stars*, (Grand Rapids, MI 49501: Kregel Publications).

² Seiss, J. A., 1972. *The Gospel in the Stars*, (Grand Rapids, MI 49501: Kregel Publications). This is an illustrated edition. The original is entitled *The Gospel in the Stars; or, Primeval Astronomy*, 1882, (Philadelphia: E. Claxton & Co.).

³ Rolleston, F., 1862. *Mazzaroth or, the Constellations*. (London: Rivington’s, Waterloo Place).

⁴ Allen, R. H., 1899. *Star-Names and Their Meanings*, (G. E. Strechert) reprinted in 1963 by Dover Publications under the title *Star Names: Their Lore and Meaning*.

the nineteenth century, the goal of science changed from finding out how God created and structured the universe to how the universe could come to exist and function without God. Today, the de-Godification of creation is the paradigm of science and is why evidence for the special creation of the universe and evidence for the universe's geocentric nature are not admissible in the "recognized" literature and practitioners of science.

At the time science was revolting against God, the French astronomers Volney and Depuis felt the need to counter the tradition of the gospel in the stars. Together with Francis Baily of England, they poured contempt on the subject but failed to provide any real proof against it. Instead, while collecting a great deal of traditional astronomical lore, they inadvertently proved not only the great antiquity of the constellations but also showing the correspondence between them and the story of Christ and the gospel of salvation.

In response, Roberts and Faber countered the three atheistic astronomers. In light of their arguments, the scoffers were obliged to admit that the facts of the correspondence were strong, and that the facts did not support their claim that the constellations were purely of pagan origin with no contact with either Judaism or the Scriptures.

The foundational principle undergirding the witness of the stars is found in the word "signs" of Genesis 1:14—"And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years." The most obvious of signs are the constellations, of which formally there are 88. Of those, about forty are ancient. The constellations of the southern hemisphere are mostly modern, that is, created in the last 500 years.

The Decans

The ancients divided the sky into 36 parts called *Decans*. The word, Decans, means pieces, divisions, or faces. Today we still see the root word when we talk about the deck of a ship. The decans were divided into twelve groups of three each, and each group of three was associated with one of the constellations of the zodiac. The word *zodiac* does not relate to our English word, *zoo*, but instead stems from the Arabic word for way, that is, path. The zodiac follows the path traced out by the sun in the course of a year. The moon also moves through the zodiac in the course of a month, and all the planets except Pluto move through the zodiacal constellations in the course of their years. (Pluto's orbit is so highly inclined to the yearly path of the sun about the earth that it passes north of the constellation Scorpius, through Ophiuchus, and south of Aries, through Cetus.)

Although we cannot know for certain what day of the year the creation week started, the best evidence appears to suggest the first day of fall. At the time, the sun would be crossing the equator southwards in the constellation of Virgo. For that reason, the Decans of Virgo, that is to say the decans assigned to Virgo, is listed first in the ancient lists. The twelve groups are, as listed using their common names:

Decans of **Virgo** (the virgin):
 Coma Berenices or Berenice's hair,
 Centaurus the Centaur,
 Boötes the herdsman.

Decans of **Aquarius** the water bearer:
 Pisces Austrinus the southern fish,
 Pegasus the flying horse,
 Cygnus the swan.

Decans of **Libra** the scales:
 Crux the Southern Cross,
 Lupus the wolf,
 Corona Borealis, the Southern Crown.

Decans of **Pisces** the fishes:
 The Band joining the fish,
 Cephus the king,
 Andromeda the chained lady.

Decans of **Scorpio** or scorpion
 Serpens the serpent,
 Ophiuchus the physician serpent holder,
 Hercules.

Decans of **Aries** the ram:
 Cassiopeia the queen,
 Cetus the whale,
 Perseus the slayer of Medusa.

Decans of **Sagittarius** the archer:
 Lyra the lyre,
 Ara the altar,
 Draco the dragon.

Decans of **Taurus** the bull:
 Orion the giant,
 Eridanus the river,
 Auriga the charioteer.

Decans of **Capricornus** the (sea) goat:
 Sagitta the arrow,
 Aquila the eagle,
 Delphinus the dolphin.

Decans of **Gemini** the twins:
 Lepus the hare,
 Canis Major the big dog,
 Canis Minor the little dog.

Decans of **Cancer** the crab:
 Ursa Major the big bear,
 Ursa Minor the little bear,
 Argo Navis the Argonauts'
 ship.

Decans of **Leo** the lion:
 Hydra the water snake,
 Crater the cup,
 Corvus the crow.

Using the constellation names of the decans, and the Semitic roots of the star names, an apparently ancient account of the Gospel of the Lord Jesus Christ can be traced. Starting with Aries, said to be a ram (Gen. 22:13) but looking like a lamb (Gen. 22:8), the lamb is sent forth, cut off, the exalted head who is lifted up. Associated with the constellation is the first decan, a queen, freed on a throne of liberty. Under the lamb is the whale—symbol of death (Jonah 1:17, Mat. 12:40)—which is overthrown. The third decan is the breaker, holding the enemy's head and who carries away like a celestial David carrying Goliath's head, one of whose eyes the Arabs call Algol, "the ghoul"

After Aries comes Taurus, the bull. The constellation has rather a double meaning. Some aspects and names seemingly relate to Christ, yet the face of a bull is associated with the face of a cherub (compare Eze. 1:10 with 10:14) and Satan is a cherub. Israel had Aaron make a golden calf at Mt. Sinai, and the northern kingdom, from Jeroboam's day forward worshipped the golden calves at Bethel and Dan. The Pleiades, also known as the seven stars in the Bible, are a type of the Church, the influence of the Gospel. Though now reckoned as part of Taurus, originally it was a separate constellation.¹ Most of the associations with Christ which Rolleston, Seiss, and Bullinger read into Taurus really stem from the Pleiades. The first decan of Taurus is Orion, the giant. In Hebrew he is called *Kesil*, the fool. It is said that once the constellation may have referred to the Messiah, but that Nimrod took it to himself. Most of the names refer to strength, a prince, and a stock or branch. Next is Eridanus the river of judgment in Hebrew. It appears to relate to the Jordan (descender) River, a type of death. The third decan is Auriga, a shepherd (now charioteer) holding Capella (she-goat) and her kids.

Then comes Gemini, the twins or united. The first decan is the enemy (Lepus), fool, deceiver, plucked up. The second is the big dog with reference to mighty, prince who shall come, leader, and shining one. The little dog refers to redeemer, prince, chief ruler, and burdened.

That is followed by cancer the crab. The Hebrew name means "who holds or binds." Its stars relate to the multitude offspring, sheltering, lambs. The little bear is the first decan meaning awaiting the coming,

¹ Bouw, G.D., 1999. "The Bible and the Pleiades," *Biblical Astronomer* 9(87):4.

assembled. The great bear is next, the sons of Ash, the assembly, the sheepfold, purchased (i.e., peculiar), and cut-off. The third decan is Argo, the ship that releases, the desired, of him who comes. The Egyptians saw Cancer as a scarab beetle.

Leo the lion comes next. The Lord judge, who rends, puts down the enemy, and comes quickly. Hydra the abhorred is the first decan, a water snake over whom the cup of wrath (second decan) is about to be poured. The third decan, the crow, is about to eat the serpent.

Next is the virgin and its three decans, we find a child (Coma), who is the desired one, the branch, and the avenger. The next decan is the centaur, the despised one, the sin offering, and the smitten king. The final decan in Virgo is Boötes, the coming one, the keeper of the flock, who bruises by treading under foot.

Next comes Libra, the scales. The scales speak of a judgment, a weighing or meting-out in payment, gain, and battle. The first decan is a cross whose stars speak of boundary, mark, and cutting off. Second is the "victim," the one who is destroyed, the beast, the animal. Third comes the crown, speaking of the shining and encompassing kingdom.

After Libra comes Scorpio, speaking of conflict. There is war, oppression, conflict and battle in its star names. Looming over the scorpion is Ophiuchus, holding a serpent in his hands. His foot star is called bruise. The brightest star in the serpent is the accursed, the reptile. The third decan is Hercules, the strong one who was wounded and now chastens, the kneeling branch about to bruise the serpent, Draco.

Next comes Sagittarius, the bowman, who swiftly comes down from heaven to fire a dart, and who graciously labored. The first decan is the lyre, which is sent forth to rejoice for triumph in battle. Next is the altar, which is perfect for sacrifice. The last decan is Draco, the dragon, the punished enemy, the tread-upon.

After Sagittarius come Capricornus, the goat cut off, that is, the scapegoat (Leviticus 16) that has the record of the cutting-off, that is, of sin. The first decan is the arrow, destroying and making desolate. Next is the eagle, the bright scarlet wounded falling one. Thirdly is the dolphin, which the ancients viewed as a vessel pouring out water and the star names speak of swift as water, coming or flowing quickly.

Aquarius is next. He is the one who pours out the water and has the record of pouring forth. The water flows to the (southern) fish's mouth. The second decan is Pegasus, the horse coming from heaven with the righteous branch coming quickly and joyfully. Cygnus is the third decan, a swan (also the northern cross) who gads about, flees, going about in a circuit.

Last is Pisces, the fishes. The fish have lengthened (eternal) life, sons, the fish of him that cometh, the united ones and upheld. The first decan is the band that connects them. It speaks of a bond or bridle. The second decan is Cephus, a king holding a branch. The stars say he is the redeemer branch, who goes about breaking underfoot. The third decan is Andromeda, the chained lady. Though in chains and poor, faint and smitten, yet she shall be set free from death.

This finishes our brief overview of the tale of salvation and damnation as seen in the stars and constellations. The picture is not perfect, but then God nowhere promised that the constellation gospel would be perfect and preserved. He did make that promise for his words, however, in Psalm 12:7.

Using stars and constellations to correct the Bible

There is no doubt that at least some, if not all, of the stellar pagantry is very ancient. The witness of the stars approach takes the Greek, Roman, and Arabic names and searches for Hebrew or Semitic equivalents. Sometimes it works, sometimes the matches are far-fetched.

Take the brightest star in the constellation Leo, for example. Today we know it by the name of Regulus, which is Latin for little king. The word has a sense of directing in a straight line, to lead, to rule. The Hebrew is *regel* which means foot or big toe. Thus Rolleston says, “The treading under foot” as the meaning of the star’s name. True, the sense of walking is in the Latin, we even have a foot-ruler of twelve inches in length that ties the two concepts together. Linguists, however, ignore Hebrew roots, insisting that word roots have to come from somewhere else, like India or Persia. However, the view that European languages stem from India is really quite recent. Hebrew roots of European languages, especially English were universally recognized before the Jesuit conquest of the European educational institutions in the eighteenth century. Our Regulus example is typical of the relationship found by Rolleston and her predecessors.

During the eighteenth century, corresponding with the rise of the higher and lower Bible criticisms, scholars searched for ways to remove what they thought were superstitious or mythical elements from the Holy Bible. To do so, they looked away from the sacred writings of the ancients and looked into the pagan writings, holding them even more authoritative than the Christian and Jewish writers. Some, like Westcott and Hort, openly claimed that when it came to the Bible, Christians were infinitely more likely to lie than atheists. But the higher critics did not stop with the secular writings, they read the gospel in the stars, too.

DRACO THE DRAGON

Gerardus D. Bouw, Ph.D.

The embarrassment of dragons

“Everyone *knows* it. Scientists have proven it dozens of times. Dragons are mythological; they never existed, leastwise, not while man roamed the earth. True, the ancient Chinese, Indians, Europeans, Amerindians, Africans, Australians, and others believed dragons existed in their time. They described dragons, told tales of killing them, and of the pestilences coming from dragons. But today we are much wiser and know that such ancient lore is nothing but myth. We are *humanists*, the measure of all things! We don’t need God. God is just a crutch for the feeble-minded, the weak. Today we know infinitely more than those grunting cave men. They and their dragon-infested Bible: bah!”

“Hey!” a voice responds. “We’re not humanists. We believe in God, and we, too, know that dragons are mythological. Ignorant, superstitious men introduced the dragons into the Bible. We now have the correct interpretation for those problematic words. They’re not dragons but jackals. We’re *Bible critics*, the measure of all things! We find out what God really *meant* to say but could not say plainly because of the cave-man mentality he had to address in His Word!”

Now, that the author of this article totally disagrees with both the above statements let that be understood from the start. If that means being labeled feeble-minded, so be it. We think better of the ancients. Having studied their technology, we find them to be very clever and inventive, and we suspect that they could think circles around the aforementioned humanist and critical geniuses of today. We know the ancients were more honorable than we today (2 Tim. 3:13), and so we believe that they really did have dragons in those days. Some tales were embellished over time, but that’s true even of science today. The world has just as many myths today as it had 3000 years ago. Can we help if the humanists and Bible critics have swallowed every myth we have today while rejecting the Truth as myth? Having said that, we need to prove our point for we are, after all, challenging the established belief system.

Dragons throughout history

The word *dragon* is used throughout Europe to describe a type of animal known around the world. The *Authorized Bible* mentions dragons

35 times. Of these, all are in the Old Testament except for 13 occurrences in the Revelation. Here are the properties which the *Authorized Bible* assigns to the dragons: they are venomous (De. 32:33); they may be found on land (Is. 34:13) or in the sea (Ps. 74:13); they live in dens (Jer. 9:11); they snuff the wind (Jer. 14:6); they wail (Mic. 1:8); they can live in a waste wilderness (Mal. 1:3); Satan is called a dragon with seven heads (Re. 12:4); and finally, a serpent is a dragon (Re. 20:2).

The modern versions avoid dragons like the plague they are. The NASV translates the Hebrew word as a serpent in Deu. 32:33, but then translates the same word as a “jackal” in Isa. 34:13. In Psa. 74:13 the translating committee felt it safe to translate the Hebrew as “sea serpent” but in Jer. 9:11; 14:6; Mic. 1:8, and Mal. 1:3, it’s back to a “jackal” again. For some reason, the committee decided that it’s all right to use “dragon” in Revelation. Perhaps this is because most believe it to be “merely” figurative. The NIV translators disagree with those of the NASV when they say Deu. 32:33 refers to serpents. They agree with the NASV in its use of jackals. In Psa. 74:13, the NIV changes the NASV’s sea serpent to a “monster in the waters.” The NKJV translators saw serpents in Deu. 32:33 and jackals elsewhere. In Ps. 74:13 they, however, see “sea serpents” instead of either a “sea serpent” or “monster in the waters.”

It makes sense to consistently translate one noun in Hebrew to the same noun in English, although that is not always the possible. Of all the versions and translations, however, the Authorized Bible is the most consistent here. Indeed, since the new versions do not use “dragon” anywhere in the Old Testament, it suddenly shows up in Revelation 12 without any cross-reference to the Old Testament. Not until Revelation 20 do the new versions reveal that the dragon is Satan.

Are the translating committees right in avoiding dragons? Certainly, no one can mistake a sea serpent for a jackal. Stories of dragons abound around the world. The memoirs of Alexander the Great tell of seeing a dragon kept in a cave in India. The creature hissed frightfully and was over 100 feet long. Chinese history tells of using dragon eggs for medicine and of a family which raised and trained dragons to pull the emperor’s chariot on special occasions. The Italian naturalist, Ulysses Androvanus, documented the death of a dragon in painstaking detail because they had become so rare. He tells of a peasant, named Baptiste, who met the dragon on May 13, 1572 near Bologna and clubbed it to death with his staff. Reports of dragons were common through about the tenth century. As for the dragons in the seas, both the Vikings and the Chinese formed their ships in their image. So dragons, although now apparently extinct, were still fairly common 1,000 years ago. The evidence for their existence is overwhelming. For example, how did the

Chinese know of dragon eggs? In examining the tales around the world it is clear that dragons and dinosaurs are, if not the same, at least related. So the critics err by relegating dragons to mythology.¹

Draco

The constellation of Draco the dragon has long been associated with the serpent which tempted Eve. To the Babylonians the constellation represented the Great Dragon they worshipped with Bel (Baal). The Babylonians saw in the constellation a dragon and a snail, and also, the constellation as a whole was the serpent *Sir*.

The constellation Draco is referred to in the Scripture. In both Job 26:13 and in Isaiah 27:1, it is called “the crooked serpent.”² The ancient Arabs called it *Al Tinnim*, and *Al Thuban*, which names Ptolemy translated into Greek as “the dragon.” This agrees with the Authorized Version which translates the Hebrew word, *tannim* as dragon.

The names of most the stars in the constellation also support the dragon title. Referring to the star map on the next page and starting at Draco’s tail, the stars’ names and their meanings are:

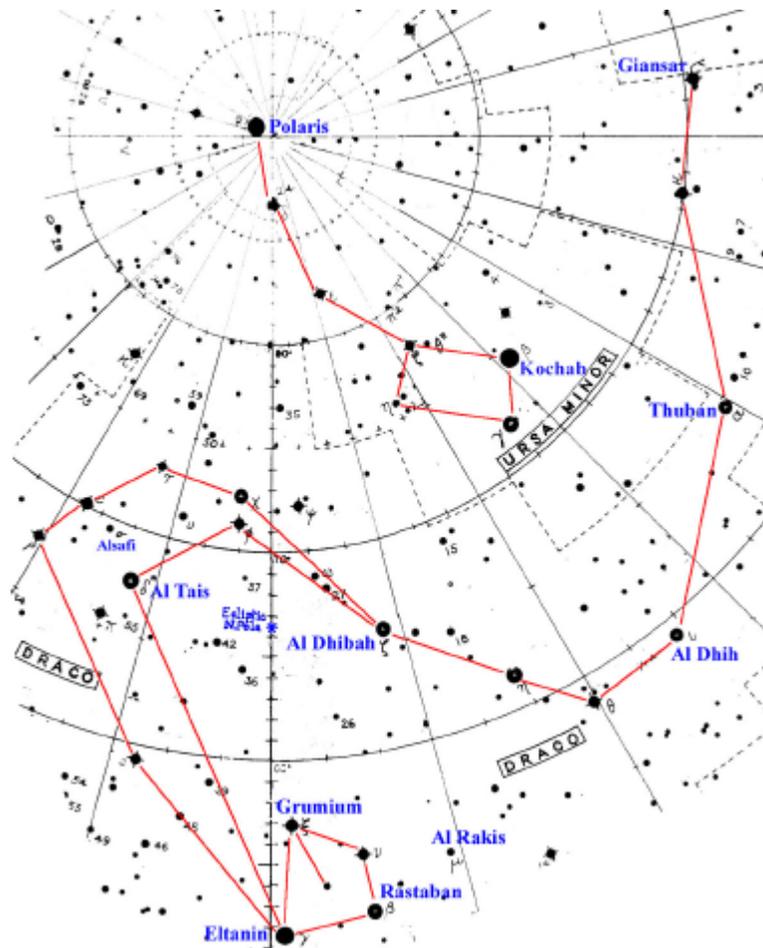
Giansar = poison place, punished enemy
Thuban = dragon; Arabic: serpent
Al Dhih = hyena, wolf, originally called
Al Dib = the reptile
Al Dhibah = reptile, hyena, made accursed
Al Tais = the goat
Eltanin = the dragon; the star is also called
Ras Elatanin = dragon’s head
Rastaban = dragon’s head, also called
Al Waid = the one to be destroyed; mother camel
Grumium = dragon’s jaw, deceiver, subtle
Al Rakis = the dancer, trotting camel; the bound or caught

Most of the names are Arabic, translated from the Greek names in Ptolemy’s star list. A few, such as Thuban, the brightest star in the con-

¹ Most of the historical accounts in the paragraph are based on evidence presented and documented in *The Great Dinosaur Mystery* videotape, (Mesa Arizona: Films for Christ).

² *Job 26:13* — By his spirit he hath garnished the heavens; his hand hath formed the crooked serpent.

Isa. 27:1 — In that day the LORD with his sore and great and strong sword shall punish leviathan the piercing serpent, even leviathan that crooked serpent; and he shall slay the dragon that *is* in the sea

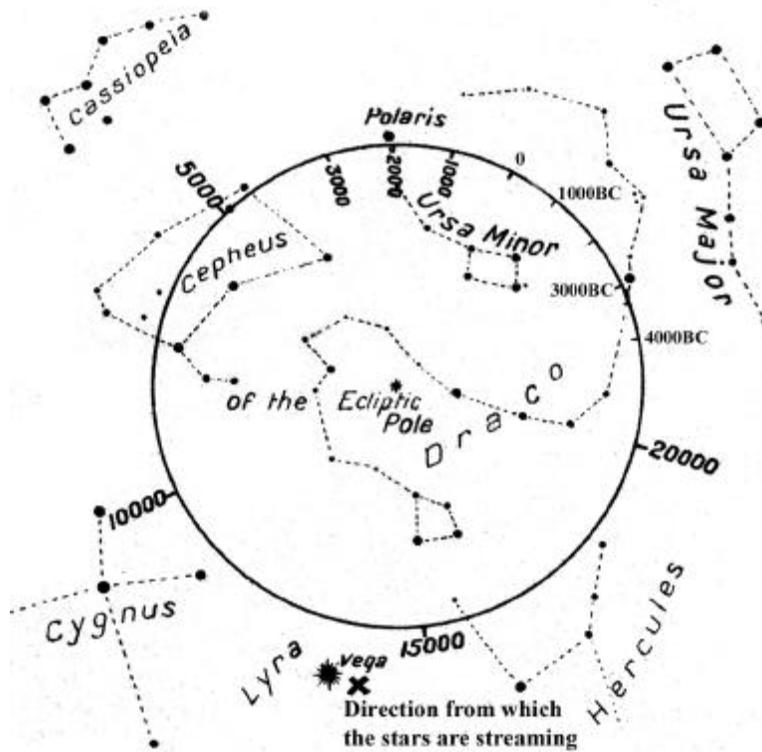


stellation, still reflect their Semitic origin, *viz.* Eltanin, Rastaban, and Dhibah. The names beginning with “Al” are Arabic.

Thuban

Thuban and Al Tannin are the Arabic designations for the entire constellation. These were translations of Ptolemy’s $\Delta\rho\alpha\kappa\omega\nu$, *Drakon*, from which was derived the Latin, *Draco*. The Egyptians called the constellation *Tanem*, the Hebrews called it *Tannim*, and in Aramaic its name is *Tannin*. Among the Arab names inscribed on the Borgian sky globe, over the stars β and γ atop the head of Draco, are the words *Alghavil* *Altannin*. Assemani translates these words as the Poisonous Dragon.

tannin. Assemani translates these words as the Poisonous Dragon. This inscription stemmed from the belief of early astrologers that when a comet was located in the head of the dragon, that poison was scattered all over the world. In China Draco was Tsi Kung, which seems to be a variant of Thuban, translated as the palace of the heavenly emperor, but the Chinese constellation of a dragon was among the stars of Libra.



About 3000 B.C., roughly at the time of the Flood, Thuban was the pole star. One of the motions of the heaven is called the precession of the equinoxes, where the north pole turns counter-clockwise about a point in Draco. It takes roughly 26,000 years to make one revolution about the ecliptic pole. Roughly speaking, the Ecliptic North Pole is the point in the sky to which points the sun's north pole. Technically, it is the pole of the path the sun traces about the earth throughout the course of the year. So the placement of Draco in the sky is focused on the sun, and spiritually, the dragon is associated with the worship of the sun.

In the figure on the previous page, the entire scene is reminiscent of Lucifer's boast recorded in Isaiah 14:12—"For thou hast said in thine heart, I will ascend into heaven, I will exalt my throne above the stars of God: I will sit also upon the mount of the congregation, in the sides of the north: I will ascend above the heights of the clouds; I will be like the most high." This is especially seen in that the constellation of Ursa Minor (the little dipper) was associated by the ancients with a throne, and with a little flock or congregation, and the star we now call Polaris was called *Unosoura*, meaning high-rising one. There is also a very ancient name for Polaris placing it at the end of a tail. The Greeks took it for a dog's tail, others for a tail or train of light. It makes little sense to think of the little dipper as a bright tail, because its stars are faint, but the title could be a reference to the tail of Draco. Unfortunately, not enough ancient history of the constellation survives to be certain of this. Nevertheless, Polaris is called the *Polus* of Lucan³ (pole of light) by both Hipparchus and Euclid. The Finns called Polaris *Tahti*, the Star at the Top of the Heavenly Mountain.

Of camels and jackals

Having seen the spiritual significance of the crooked serpent, let us now look at what some other peoples have seen in the constellation. For instance, there is a star on the large chart of Draco, called, Alsafi, that has not yet been mentioned. The name, given by nomadic Bedouin Arabs, is a corruption of *Athafiyy*, according to Allen, referring to the cooking tripods of their open-air kitchens. Indeed, the nomadic desert tribes had a totally unique set of constellations, and star names. Thus, in Draco, instead of the head of a dragon, they saw a ring of mother camels (formed by the stars γ , ξ , ν , and β on p. 54) surrounding a baby camel (the faint star at the end of the mouth in the figure), with another mother camel, Al Rakis (μ), running to join them. The camels were seen protecting the baby from a line of charging hyenas (Al Dhih, θ , η , and ζ).

When in the eighteenth century the Jesuits—who were formed to counter the influence of the English Bible so to destroy the power of Great Britain—founded higher criticism, their goal was to make the English Bible seem unscholarly.⁴ Since the English Bible speaks of dragons, and everyone "knows" that only ignorant, uneducated, simpleton troglodytes believe in such "myths," the "original" Hebrew and Greek must

³ For more insight into this name, see: G. D. Bouw, 2001. "The Morning Stars," *B. A.* **11**(97):69

⁴ Gipp, S. C., 1987. *An Understandable History of the Bible*, (Macedonia, Ohio: Bible Believers Baptist Bookstore).

have meant something different, something that escaped the translators because they didn't have at their disposal the latest manuscripts and scholarship. So to seem more scholarly, the critical "scholars" took the Arabic nomads' story and applied the line of hyenas, or jackals, to the whole constellation. On that basis, the dragon became a jackal, for it could not become a camel because that is too obvious a nonsense. From that time forward, all Bible dictionaries have insisted that jackal is the correct translation and meaning of the Hebrew "original," even though the historical evidence flies in the face of that conclusion. The "scholars" had this going for them, though, that the evidence lies deeply hidden in the constellations, where few people would even think to look, or be interested in researching, let alone having access to the meaning of names in multiple languages. So the Hebrew words based on *tan* have been jackals ever since.

Of whales and dragons

The Hebrew word for whale used in the Scripture is the word *tan*. Of it, Strong's Concordance says:

"8565, ... from an unused root probably meaning to *elongate*; a *monster* (as preternaturally formed), i.e. a *sea-serpent* (or other huge marine animal); also a *jackal* (or other hideous land animal): — dragon, whale. Compare 8577."

According to Strong, *tan* is translated both as dragon and whale by the translators of the King James Bible. Yet a search through the concordance reveals not a single incidence of *tan* (8565) being translated as dragon. It is always translated as "whale" in the Authorized Bible.

The word translated exclusively as dragon is Strong's number 8568, of which he wrote "probably feminine of 8565; a female jackal—dragon." Note that the female monsters of 8565 are now assuredly jackals. No allowance is made for any of the monsters listed in the "masculine" case of this word (8565) *tannah* to have a mate. Note carefully, however, the words "probable" and "probably" in Strong's definitions so far; for according to the dictionaries *prior* to those of the higher critics, *tan* was a whale and *tannah* a dragon. The word *tannah* is used once in the A.V., in Mal. 1:3, where it appears as dragon.

The third word involved in the dragon controversy is *tannin*, the Hebrew name of the constellation Draco itself. Numbered 8577 in Strong's Concordance, Strong wrote of it: "intensive from the same as 8565; a marine or land *monster*, i.e. a *sea-serpent* or jackal: —dragon,

sea-monster, serpent, whale.” The range of meanings assigned this word by the A.V. translators corresponds to the range of meanings we discovered for the constellation Draco throughout the Fertile Crescent, the Mid-East and Europe. Only the Arab nomads introduced the concept of jackals into the constellation, but then, they also saw jackals in the constellations Ursa Major, Ursa Minor, and Boötes.⁵

Strong’s definitions are his own. In checking with a Hebrew scholar with some fifty years of reading and speaking Hebrew, we find that “...the root is *tannah* meaning to shriek or wail. Serpents are called shriekers from the horrid whining or hissing noise they make. Jim Hanson thinks the dragons were the original dinosaurs. ... Now, I do not know whether Jim has dated them, though some think this is a ‘Golden Legend,’ deriving from the myth of Perseus slaying of the sea monster at Arsuf or Joppa, both cities in the neighborhood of Lydda, but his contention is that these legends about dragons are really validated by the skeletal remains of the so-called dinosaurs. ...

“These are the type of connections that are laughed at by contemporary scientists as they laughed at the citation of Biblical cities such as Ur of the Chaldees, or Troy of Homer as mythical, only to have archeologists decades later actually find the remains of these cities exactly where they were supposed to be.”⁶

Conclusion

The modern conjecture, that the dragons in the Bible are merely jackals, evidently stems from some Arab names applied to some stars in the constellations of Draco. The names are variants of *dhih*, meaning hyena or jackal in Arabic. Even at that, the nomadic Arabs may have misunderstood, or in isolation evolved, the name “Al Dib,” the reptile, into *al dhih*, the jackal. Because Draco has stars named Thuban (a derivative of *tannin*) and *Eltanin*, and because the constellation is called *Al Tinin* and *Al Thuban* in Arabic, and *Etanim*, *Aben*, *Taben*, and *Etabin* in Armenian, and because the Babylonian and Egyptian and Hebrew designations for the constellation agree to this, and because the existence of dragons was still commonly reported and documented well into the Middle Ages, we conclude that to change the Hebrew meaning and root of *tannin* from dragon (shrieker) to jackal (elongate) is without foundation and so is not only baseless, but by obscuring the identity of the enemy of our souls and our God, is also blasphemy.

⁵ Allen, R. H., 1899. *Star-Names and Their Meanings*, (G. E. Strechert) reprinted in 1963 by Dover Publications under the title *Star Names: Their Lore and Meaning*.

⁶ Lifschultz, David, 2001. Private communication.

READERS' FORUM

The windows of heaven

Thanks for your reply, Dr. Bouw. ... By the way, how do you think we are to take the description in Acts (1:9-11) of Jesus' Ascension? Since He'd already said Heaven was God's throne and the Earth, his footstool, then where did He go when He "went up"? I find it very annoying to be precise, because I prefer to always take the Bible as literally as possible.

I don't claim to have the answer to your question, but I do have a theory. The windows of heaven (Gen. 7:11; 8:2; Sol. 2:9; Isa. 24:18; & Mal. 3:10) are apparently about cloud-high. True, the firmament is called heaven (Gen. 1:8), but there are two firmaments (manifestations?) in Genesis 1:

- 1) the open firmament where the birds fly (v. 20)
- 2) the closed firmament where the stars are (vv. 14-17)

It seems reasonable then that the windows are at the boundary between these two firmaments. The birds fly as high as the clouds and Jesus was taken up from the disciples into a cloud (Ac. 1:9). Apparently, he passed through the windows of heaven.

A mathematician a several years ago said that the properties of the firmament (vacuum state) were indistinguishable from God. Ergo...

Anyhow, that's my theory.

Source of the NASA moon hoax

Commenting on the tale that NASA did not go to the moon, we note the following forwarded to the *Astronomer* from D.L.: "It is Fidel Castro's Cuba that teaches the United States did not go to the moon."

Modern worship of Lillith

This from Suzanne: "[I w]ent to library and charged out several books on the *Cabala*.¹ Regarding abortion, I see that the goddess Lillith roams the world and 'eats' human babies so that they can become part of her 'spirit' world. There is a big music festival, national, that goes all over the country, titled 'The Lillith Fair.' Planned Parenthood is one of

¹ The Cabala is an occult Jewish book, regarded by certain kinds of Jews and the Roman Church as based on the scriptures of God; but it runs contrary to the *Holy Bible*.

its major front sponsors. There is more from what I have already read that is entrenching my hypothesis that the 'way' of the Cabbala is not so much the text but as I say the 'way' to which humanity is being proselytized."

More on HAARP

Regarding the HAARP article, Daniel wrote: "I showed it to a former military person who implied its a big bluff. He really wouldn't say. I had to guess at his meaning and whether he was being straight about it. He certainly did know it was there."

Considering the plethora of fables associated with HAARP,² it may well be a bluff. It is certain that a few megawatts of power is not sufficient to do the damage described in the article anymore than a ten-year old child could push a 300-pound (150 kilo) man on a swing level with the bar in one push. Still, just as the child could swing the man to bar-height with many small pushes timed just right, even so the official 3.5 MW HAARP could eventually induce the necessary current to do the reported damage. The question is then, just how effective are the magnetic poles as mirrors.

Truth in Layers

Before I digest your reply, I want to take a minute and thank you for responding so promptly! As a Christian, I have learned that Truth seems to come in layers. For instance, one may travel this path: evolution, theistic evolution, creation but with day-age theory, special 6,000 year-old earth creationist. Or no interest in Bible, interest in Bible, discriminate against *The Living Bible* and *Reader's Digest Bible* as being flawed, accept KJV as being the authoritative Bible for English speaking people. Very rarely does one go from the first stage straight to the last without any of the intermediate phases.

Even though geocentrism sounds very far fetched to me at the moment, so did the 6,000-year-old earth to the evolutionist. I've realized that many of the truths I now hold dear were once things I scoffed at.

Thanks!
Paul

² The 2001 Fall issue, no. 98, of *The Biblical Astronomer* was devoted to the HAARP matter. Also, see the Winter 2002 issue, p. 3.

PROFESSOR SIR FRED HOYLE

1915-2001

Sir Fred Hoyle, astronomer and writer, born June 24, 1915, died on August 20, 2001 at the age of 86. Hoyle was born at Bingley in Yorkshire, the son of a wool merchant and a teacher. By the age of ten he could navigate by the stars. From Bingley grammar school, he went up to Emmanuel College, Cambridge and there was the Mayhew Prizeman in the 1936 Cambridge Mathematical Tripos. He was elected to a fellowship at St John's in 1939.



During those years, he became associated with R. A. Lyttleton and they worked on problems of accretion of dust and gas around large bodies. Thereby Hoyle shifted his interest from mathematical physics to astronomy and, in later years, this association led to his work on the formation of planetary systems and to his conviction that life must be of frequent occurrence in the universe.

During World War II Hoyle worked at the Admiralty Signals Establishment, later Admiralty Weapons Establishment, where he participated in the development of radar. There he met Hermann Bondi and Thomas Gold. Together they developed the revolutionary “continuous creation” theory or the “steady-state” cosmology. According to the theory, the universe has existed for an infinite past time and will continue infinitely into the future. Every now and then a proton, neutron, or electron spontaneously drops out of the vacuum, so the pressure of the universe is steadily increasing, and it thus expands into emptier regions of infinite space. Hoyle’s paper was published in the journal of the Royal Astronomical Society in 1948, two months after Gold and Bondi’s paper. Hoyle’s *Nature of the Universe* (1950) introduced the theory to a wider audience.

At the time the prevailing model for the atheistic creation of the universe was the Condensed Model. In ridicule, one time about 1950, Hoyle referred to it as the “Big bang.” Much to his chagrin, the term

stuck, and he studiously avoided its use for the rest of his life. Although the “big bang” hypothesis was apparently confirmed in 1960s, Hoyle continued to examine its weak points. The big bang hypothesis had been introduced in the 1920s by Georges LeMaitre (1894-1966), a Roman Catholic priest and cosmologist. While evolution theory had been a problem for the Catholic church, the “big bang” was not—partly because it strongly supported a semblance of creation. Today Pope John Paul II has declared that there is no inherent contradiction between evolution and the dogma of the Catholic church.

In the 1950s Hoyle collaborated with William Alfred Fowler and Geoffrey and Margaret Burbidge in developing a theory on the origin of the elements, which earned Fowler the Nobel Prize for physics in 1983. In 1957, they published *I. Synthesis of the Elements in Stars*, the first comprehensive account how the elements are produced in the interior of stars. The “I” in the title meant that there would be a second paper. However, part II never appeared. Prior to this theory, the general belief was that all the elements must have been produced in the hot primordial universe. The new theory showed how the elements could be produced from primordial hydrogen by nucleosynthesis in the hot interiors of stars. The theory gave a satisfactory account of the relative abundances of the elements, provided an explanation of the direction of stellar evolution and gave an objective basis for calculation of the internal constitution of stars. The theory also confirmed a prediction of Hoyle's that there must be an excited state of the carbon twelve isotope—at the energy he had predicted from a consideration of the evolution of red giant stars. This, incidentally, was agreeably consistent with the steady state cosmological theory, since there was no necessity for an initial hot condition of a primordial universe.

Although there were four authors to the 1957 paper, it is widely known that the Burbidges contributed the data from their stellar observations and that the core and essence of the paper was the work of Fowler and Hoyle. Fowler was awarded the Nobel Prize for physics in 1983, and why Hoyle was not included in this award remains a mystery hidden in the confidential documents of the Royal Swedish Academy. Fowler has acknowledged his debt to Hoyle in his autobiography written for the Nobel Foundation: “Fred Hoyle was the second great influence in my life. The grand concept of nucleosynthesis in stars was first definitely established by Hoyle in 1946.” The editor of the scientific journal *Nature* suggested that the Academy did not wish to be associated with any endorsement of another idea then being promulgated by Hoyle. This was linked to Hoyle's belief that life must be of frequent occurrence in the universe. He argued that the primeval molecules from which life evolved on earth had been transported from elsewhere in the universe. In itself this idea,

today called “panspermia,” would not necessarily be rejected as absurd by the scientific community, but Hoyle had publicized a further argument that influenza epidemics were associated with the passage of the earth through certain meteor streams, the particles of which conveyed the virus to earth.

This was dismissed as fictional by nearly all members of the biological and physical scientific disciplines. Indeed, the idea belonged more to Hoyle’s activity as a writer of science fiction for over three decades. His most famous novel was *October the First Is Too Late*, and several others, such as *The Black Cloud* (1957) and *A for Andromeda* (1962), which was made into a television serial, achieved a wide circulation. Another, coauthored with his son, Geoffrey, *Rockets in Ursa Major* (1962), was also produced as a play.

Hoyle played a prominent part in the scientific affairs of the UK. He served on the council of the Royal Society as vice president from 1969 to 1971 and was president of the Royal Astronomical Society 1971-73. As a member of the Science Research Council from 1967 to 1972 he was active in the assessment of the astronomical facilities in the southern hemisphere, which led to the creation of the 150-inch Anglo-Australian telescope at Siding Spring in New South Wales. He was a member of the joint policy committee from 1967 during the planning stage for the telescope, became chairman of the Anglo-Australian telescope board in 1973, and presided at the inauguration of the telescope in 1974 by the Prince of Wales.

Although the occupant of such distinguished offices, he became immensely unhappy with his life in Cambridge. Indeed, his work in Australia as part of the telescope project was at the time viewed by many astronomers as an exile, either self-imposed if not strongly urged by Cambridge. The crisis came to a head over a dispute concerning the election to a professorial chair and he tendered his resignation as Plumian professor in 1972 and as director of the institute in 1973.

“I do not see any sense in continuing to skirmish on a battlefield where I can never hope to win,” wrote Hoyle in a letter to Bernard Lovell. “The Cambridge system is effectively designed to prevent one ever establishing a directed policy—key decisions can be upset by ill-informed and politically motivated committees. To be effective in this system one must forever be watching one’s colleagues, almost like a Robespierre spy system. If one does so, then of course little time is left for any real science.” Thus at the age of 57, Hoyle retired from his formal appointments in the UK, residing first in the Lake District and then on the south coast. He held honorary research professorships at the University of Manchester and University College, Cardiff, from which he published extensively with N. C. Wickramasinghe on the biological aspects of his astronomical

concepts. He did much of his work in the United States, particularly in the California Institute of Technology, where he was appointed visiting associate in physics in 1963, and at Cornell, where he held a visiting professorship for six years after he retired from Cambridge.

Hoyle was awarded numerous honorary doctorates, medals and prizes. His many books included *Frontiers of Astronomy* (1955), *Men and Materialism* (1956), *Star Formation* (1963), *Galaxies, Nuclei and Quasars* (1965), *The Relation Of Physics and Cosmology* (1973), *Nicolaus Copernicus* (1973), *Ten Faces Of the Universe* (1977) and *On Stonehenge* (1977). His autobiography, *Home Is Where the Wind Blows*, was published in 1994. Several of these freely admit the viability of the geocentric model.

Hoyle was knighted in 1972. In 1974, he was awarded the royal medal of the Royal Society, and on that occasion, the president said of him that Hoyle was one of the most original minds in present-day astronomy and that his “enormous output of ideas are immediately recognized as challenging to astronomers generally... his popularization of astronomical science can be warmly commended for the descriptive style used and the feeling of enthusiasm about his subject which they succeed in conveying.” Indeed, Hoyle packed the lecture rooms wherever he spoke in the world, and “according to Hoyle” was a frequent catchphrase of the second half of the 20th century.

He is survived by his wife, Barbara Clark, whom he married in 1939, and by his son and daughter.

***** **Hoyle on geocentricity** *****

We know that the difference between a heliocentric theory and a geocentric theory is one of relative motion only, and that such a difference has no physical significance.

Astronomy and Cosmology (1975), p. 416.

Tycho Brahe proposed a dualistic scheme ... and in making this proposal he thought he was offering something radically different from Copernicus...[and] Kepler obviously thought so, too. Yet in principle there is no difference.

Nicolaus Copernicus (1973), p. 3.

Today we cannot say that the Copernican theory is “right” and the Ptolemaic theory is “wrong” in any meaningful physical sense. The two theories ... are physically equivalent to one another.

Ibid., p. 88.

VISIT TO A DRY COMET

On September 22, 2001, NASA's Deep Space 1 (DS1) spacecraft flew by the comet Borrelly. The flyby was an extra task assigned the spacecraft at the end of its life, and, indeed, the spacecraft was shut down on December 18. As is typical for evolutionary scientists, the results sent back from the spacecraft are "puzzling."



Borrelly as seen from earth

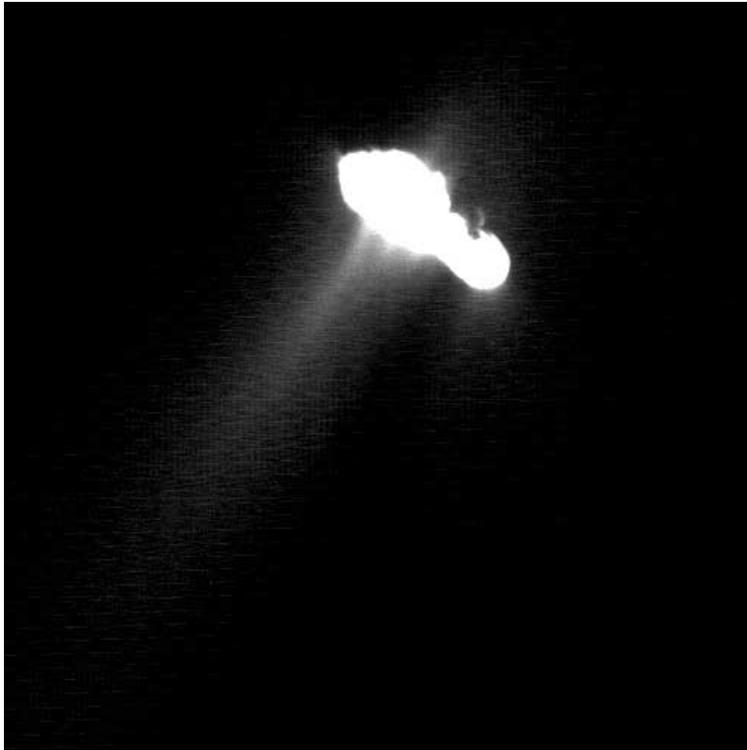
It is generally taken for granted that as a comet approaches the sun, dust, water ice and other chemicals boil off its nucleus, generating a cloud of debris called a coma, or head. During the flyby, Deep Space 1 measured the interaction between the comet's ejected material and the solar wind-charged particles that flow out from the sun. As expected, the solar wind flowed around the comet, but the nucleus was not at the center of the flow. It was like watching the wake of a boat spread farther and faster on one side than on the other. Another instrument on the spacecraft, called PEPE (Plasma Experiment for Planetary Exploration), also examined the coma and confirmed the offset coma.

The easiest explanation for that anomaly is if there were a jet driving the ejected material off to one side, but the jets photographed by DS1 are pointing the wrong way. The observed jets shoot out about 37 miles (60 km) from the five-mile (8 km) long potato-shaped nucleus. Most of the material in the jet comes from the middle of the comet and is not pointing to the sun as happens in most comets where jets are observed. Astronomers expected a more evenly distributed emission. Near the sun, Borrelly is ejecting about two tons per minute, which means that it will not last more than about 10,000 years before breaking up. Although evolutionists believe that comets are billions of years old, the number of them that will not last more than 10,000 to 100,000 years is so great that astronomers have had to invent sources to provide a steady influx of new comets. The Oort and Kuiper clouds are two of those. The former has never been observed, and the latter, observed but not previously suspected, is too close to the sun and planets to supply billions of years worth of fresh comets.

Another Borrelly enigma is its albedo. *Albedo* is the percentage of light hitting an object that is reflected by the object. So a low albedo means that the object is dark, reflecting a small fraction of incident light.

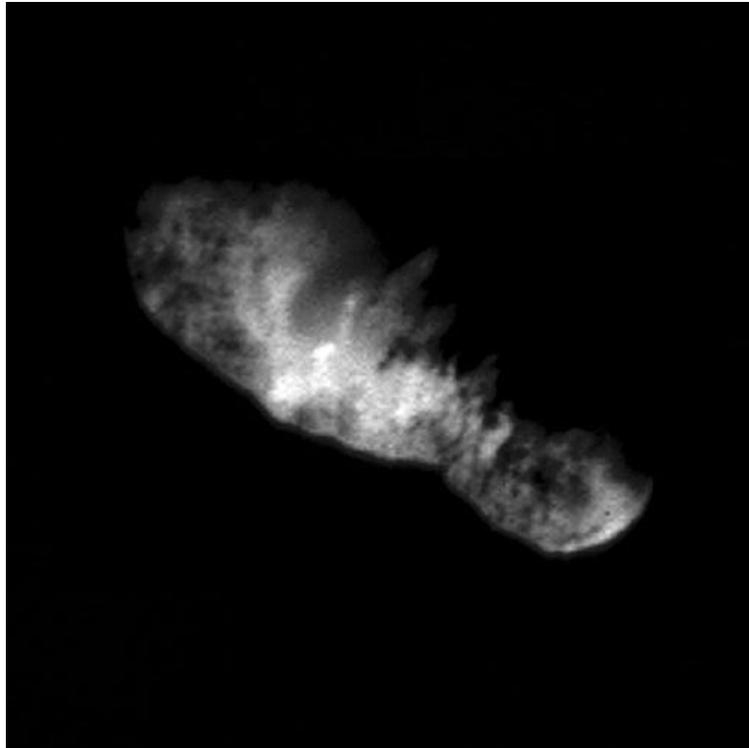
Borelly reflects 3% of the light that hits it. This is darker than most asteroids and meteors. Prior to Borelly, Halley's comet was darkest, reflecting 4% of the light hitting it. The moon reflects twice as much light as does Borelly.

As mentioned above, textbooks typically describe comets as "dirty snowballs," Deep Space 1 failed to detect frozen water on its surface. It is presumed that Borelly has plenty of ice beneath its black surface, and that any ice exposed to sunlight has vaporized away. "The spectrum suggests that the surface is hot and dry. It is surprising that we saw no traces of water ice," said Dr. Laurence Soderblom of the U.S. Geological Survey's Flagstaff, Ariz., station, lead author of a report on the Borelly flyby results appearing in the online edition of the journal *Science*. "We know the ice is there," he said. "It's just well-hidden. Either the surface has been dried out by solar heating and maturation or perhaps the very dark soot-like material that covers Borelly's surface masks any trace of surface ice."



On the facing page: a Deep Space 1 photo taken by the spacecraft while approaching the comet before passing within 1,349 miles (2171 kilometers) of the comet's solid nucleus on September 22, 2001.

The photo below was taken at closest approach to the comet.



When Borrelly is in the inner solar system, its temperature ranges between 80 and 161 degrees Fahrenheit (26 and 71 degrees Celsius). Since water boils in a vacuum at such temperatures, any water ice on the surface would change quickly to a gas. The evaporating water leaves behind a crust, like the crust left behind by dirty snow.

Borrelly is unusually dark for an object in the inner solar system. It is more like objects in the outer solar system such as the dark side of Saturn's moon Iapetus and the rings of Uranus. Ground-based observations estimated that 90 percent of Borrelly's surface might be inactive, and the observations taken by Deep Space 1 show that this is indeed true.

PANORAMA

Hot spot on Jupiter cooks theory¹

A pulsating hot spot of X-rays has been discovered in the polar regions of Jupiter's upper atmosphere by NASA's Chandra X-ray Observatory. Previous theories cannot explain either the pulsations or the location of the hot spot, prompting scientists to search for a new process to produce Jupiter's X-rays.

"The location of the X-ray hot spot effectively retires the existing explanation for Jupiter's X-ray emission, leaving us very unsure of its origin," said Randy Gladstone of the Southwest Research Institute in San Antonio and lead author of a paper on the results in the Feb. 28, 2002, issue of the journal *Nature*. "The source of ions that produce the X-rays must be a lot farther away from Jupiter than previously believed." Chandra observed Jupiter for 10 hours on Dec. 18, 2000, when NASA's Cassini spacecraft was flying by Jupiter on its way to Saturn. The X-ray observations revealed that most of the auroral X-rays come from a pulsating hot spot that appears at a fixed location near the north magnetic pole of Jupiter.

Bright infrared and ultraviolet emissions have also been detected from this region in the past. The X-rays were observed to pulsate with a period of 45 minutes, similar to the period of high-latitude radio pulsations detected by NASA's Galileo and Cassini spacecraft. An aurora of X-ray light near Jupiter's polar regions had been detected by previous satellites. However, scientists were unable to determine the exact location of the X-rays. The accepted theory holds that the X-rays are produced by energetic oxygen and sulfur ions that became excited as they ran into hydrogen and helium in Jupiter's atmosphere. Oxygen and sulfur ions (originally from Jupiter's moon Io) are energized while circulating around Jupiter's enormous magnetosphere. And some—the purported X-ray producers—get dumped into Jupiter's atmosphere when they return to the region of Io's orbit. Chandra's ability to accurately determine the location of the X-rays proved this model incorrect, as ions from regions of Jupiter's magnetic field near Io cannot reach the high Jovian latitudes where most of the X-rays were observed.

This result has its own problems. At the large distances required for the source of the ions—at least 30 times the radius of Jupiter—spacecraft

¹ Beasley, D., S. Roy, and M. Watzke, "Jupiter hot spot makes trouble for theory," NASA Press release 02-34, Feb. 27, 2002.

measurements have shown that there are not nearly enough energetic oxygen and sulfur ions to account for the observed X-ray emission. One possibility is that heavy ions among the particles flowing out from the sun as the solar wind are captured in the outer regions of Jupiter's magnetic field, then accelerated and directed toward its magnetic pole. Once captured, the ions would bounce back and forth in the magnetic field from pole to pole in an oscillating motion that might explain the pulsations.²

Its catch and release season on light pulses³

Researchers have trapped a kilometers-long laser pulse inside a small glass chamber—and released it again intact. Such extraordinary command of light could lead to mind-boggling new technologies.

We can create light (turn on a flashlight) and destroy it (shine it on black asphalt). We can measure it, bend it, and slow it down. We can use it to propel spacecraft, to transmit telephone conversations, to perform surgery. There seems to be no end to what light can do. Yet until recently there was one thing we couldn't do with light: pause it. Stopping light in its tracks and releasing it again unchanged was beyond human ken. But now scientists have figured out how to do even that.

Last year, physicists at Harvard University shined a laser beam into a glass cell filled with atomic vapors. The light went in, but it didn't come out again. It was not destroyed or absorbed, but rather stored—ready to emerge intact at the scientists' bidding. The laser pulse was miles-long before it entered the cell, yet the pulse fit intact within the inches-wide chamber.

Quantum mechanics describes the bizarre rules of light and matter on atomic scales. In that realm, matter can be in two places at once. Objects can be particles and waves at the same time. And nothing is certain—only probable or improbable. This improbable feat of stopping light was accomplished by two teams. One was led by Ron Walsworth, a physicist at the Harvard-Smithsonian Center for Astrophysics, and the other by Lene Hau of Harvard University's Department of Physics. Walsworth's group used warm rubidium vapors to pause their laser beam; Hau's group used a super-cold sodium gas to do the same thing.

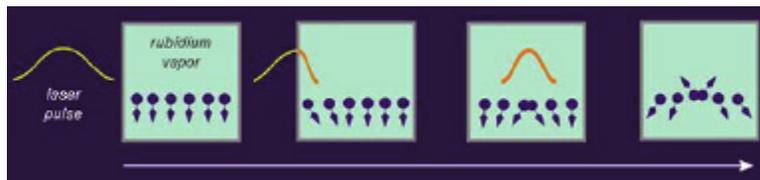
The Harvard researchers stopped their laser beams by “weighing the photons (particles of light) down.” The technique requires two lasers: a “control laser” and a “signal laser.” The signal laser is the one to be stopped. Using the control laser, Walsworth's team caused rubidium gas

² Reminiscent of the HAARP effect discussed in “What is HAARP?” *Biblical Astronomer* 11(98):119, Fall 2001.

³ *NASA Science News* for March 27, 2002 11:00:00 A.M. via e-mail.

in the glass cell to become “dispersive”—in other words, the velocity of light passing through the gas depended sensitively on the color of the light. (Prisms work much the same way, although the analogy is not exact.) In such a dispersive gas, atoms and photons interact strongly, says Walsworth. “Effectively dragged down by strong interactions with atoms, the photons slowed to a crawl.” Physicists call such an atom-photon system a “polariton.”

Next, they reduced the intensity of the signal laser until the polariton was 100% atomic. There were no photons left inside the chamber. Yet the imprint of the photons remained—on the atoms themselves. Like a child’s top, atoms spin. (Physicists say they “carry angular momentum.”) Information describing the fading laser pulse was stored, like a code, in the up-and-down patterns of the atoms’ spin axes.



Above: As the laser pulse enters the chamber containing the rubidium vapor, the information that defines the light becomes imprinted on the atoms’ spin states (indicated by the small arrows). In the moment that the light is “stopped,” only the spin states exist.

Freeing such a stored pulse is easy: another laser beam directed through the chamber can release it. “In the near future, this technique may enable efficient, reversible mapping of quantum information between light and atoms,” says Walsworth. The possibilities are mind-boggling: “Suppose you have some information encoded in atoms,” says Walsworth. “You could map that information onto light, send it over to some other group of atoms, and imprint the information there.” Walsworth calls this “quantum communication.”

The next steps are rather obvious. Right now, once the signal is released the “memory” of it in the medium is destroyed. The next step is to retain it so it can be released over and over again. This will replace audio and video CDs and make DVDs obsolete, not to mention computer memories. How to do it? For one, feed part of the signal back into the other end of the capture medium.

The experiment opens the possibility that the firmament might be a massive recording device which “records” history as a succession of moments, each of which is a layer or stratum like the pages of a book. The record could be played back when exposed to a triggering Light.

An early NASA Pioneer still on the job in deep space⁴

It took a little extra effort, but NASA on the weekend of March 1-3 bridged a nearly seven-and-a-half billion-mile span to make contact with Pioneer 10, a plucky space probe that first left earth more than 30 years ago. On Friday, scientists at the NASA Jet Propulsion Laboratory's (JPL) Deep Space Network in Goldstone, Calif., sent a signal to the spacecraft, which is still hurtling toward the fringes of the solar system. Twenty-two hours later, at 1:47 p.m. E.S.T., researchers at the network's facility in Madrid, Spain, carefully monitoring a 230-foot (70-meter) diameter dish antenna, heard Pioneer's response.

NASA lost contact with Pioneer 10 in August 2000,⁵ but made contact again in April of 2001 by switching the spacecraft to a different communications mode. NASA most recently made contact with the spacecraft on July 9, 2001.

Launched on March 2, 1972, Pioneer 10, built by TRW Inc., Redondo Beach, Calif., is now 7.4 billion miles from Earth. Pioneer 10 was the first spacecraft to pass through the asteroid belt and the first to make direct observations and obtain close-up images of Jupiter. During its tour of the Jovian system, Pioneer 10 also charted Jupiter's intense radiation belts, located the planet's magnetic field, and established that Jupiter is predominantly a liquid planet.

In 1983, it became the first man-made object to leave the solar system when it passed the orbit of Pluto, the most distant planet from the sun. The spacecraft continued to make valuable scientific investigations in the outer regions of the solar system until its science mission ended on March 31, 1997. Pioneer 10's weak signal continues to be tracked by the Deep Space Network as part of an advanced concept study of communications technology. The probe was also used to help train flight controllers how to acquire radio signals from space.

Pioneer 10 is headed toward the constellation Taurus, where it will pass the nearest star in the constellation in about two million years.

Scientific data received from Pioneer 10's Geiger-Tube Telescope instrument is analyzed by original principal investigator Dr. James Van Allen of the University of Iowa, who discovered the Earth's radiation belts bearing his name. Based on the previous data received, Van Allen concluded that galactic cosmic radiation is being moderated by the Sun's influence, meaning Pioneer 10 has not yet crossed the boundary into interstellar space.

⁴ Beasley, D., M. Mewhinney, NASA Press Release 02-44, March 4, 2002.

⁵ See Panorama, 2000, *Biblical Astronomer*, 10(94):34.

Further information about Pioneer 10 is available on the Internet at: http://spaceprojects.arc.nasa.gov/Space_Projects/pioneer/PNhome.html.

Pioneer puzzle persists

The mysterious slowing of the Pioneer spacecraft persists. Researchers first noted that the spacecraft Pioneers 10 and 11 seem to be pulled back to the sun by an unknown force. The effect shows no sign of weakening as the spacecraft travels deeper into space, and scientists are considering the possibility that the probe has revealed a new force of nature.

Philip Laing of the Aerospace Corporation of California and a member of the research team tracking the craft, said: "We have examined every mechanism and theory we can think of, and so far nothing works. If the effect is real, it will have a big impact on cosmology and spacecraft navigation." Both probes are traveling at 27,000 miles per hour toward stars that they will not encounter until millions years from now. Pioneer 10 is more than 7 billion miles from earth right now.

Research to be published shortly in a leading physics journal, however, will show that the speed of the two probes is being changed by about 6 mph per century—a barely perceptible effect about 10 billion times weaker than gravity. Scientists initially suspected that gas escaping from tiny rocket motors aboard the probes or heat leaking from their nuclear power plants might be responsible. Both now have been ruled out. The team says no current theories explain why the force stays constant. All the most plausible forces, from gravity to the effect of solar radiation, decrease rapidly with distance. The bizarre behavior also has eliminated theories that the two probes are affected by the gravitational pull of unknown planets beyond the solar system.

Claims by some scientists that the force is the result of a quirk in the Pioneer probes have also been disproved by the discovery that the effect seems also to be affecting Galileo and Ulysses, two other space probes still well within the solar system. Data from these two probes suggest the force is of the same strength as that found for the Pioneers.

Duncan Steel, a space scientist at Salford University in Manchester, England, says even such a weak force could have huge effects on a cosmic distance scale. "It ... raises the question of whether we know enough about the law of gravity."

Until 1988, Pioneer 10 was the most remote object made by man; a distinction now held by Voyager 1.

Fred Hoyle on new theories⁶

The March 1995 issue of *Scientific American* had a profile of Sir Fred Hoyle. On page 47 of that article, Hoyle is quoted on attempts by scientists to publish new findings leading to a modification or overthrow of an existing theory. His findings are particularly true for geocentricity and creationism, although they also apply to such findings as the rotation of clusters of galaxies. Hoyle says: “Science today is locked into paradigms. Every avenue is blocked by beliefs that are wrong, and if you try to get anything published by a journal today, you will run up against a paradigm, and the editors will turn it down.”

This also applies to propositions to conduct experiments to which “conventional wisdom” already “knows the answer.” It would not be possible, for example, to repeat the Michelson-Morley experiment with higher accuracy since the conclusion is deemed forgone. Ditto experiments designed to show the one-way velocity of light. After all, relativity “proves” that the one-way speed is the same regardless of the direction in which the light travels.

ET, where are you?⁷

Sir Fred Hoyle may have believed that the universe is widely inhabited by extraterrestrial (ET) beings, and the late Carl Sagan founded the “science” of exobiology on that belief, but today’s researchers are apparently returning to the skepticism that characterized the view of twentieth century science, prior to the space race of the 1960s.⁸

“The more scientists learn about the conditions that make life possible on earth, the more they realize how complex those factors are, and how a relatively small change in one condition or another could have rendered the planet uninhabitable,” Solomatov said. “It’s a very finely tuned system. Some of the factors are well known, but we still don’t know what all the factors are.” Solomatov’s contribution to the examination of conditions necessary for life focuses on tectonics, continental drift. Whether continental drift is necessary for life to persist, let alone generate spontaneously as evolution requires, is not known. It was not so long ago that scientists first recognized the importance of plate tectonics in maintaining

⁶ Reprinted from “Panorama” 1996. 6(77):18.

⁷ This is a brief report of the work of New Mexico State University physicist Slava Solomatov who is part of a NASA funded project to ascertain the conditions that make life possible. The source article appeared at www.terraily.com on Jan. 7, 2002.

⁸ For a summary of belief in extraterrestrials accompanying the development of the Copernican Revolution, see I. B. P. Dobson, 2001, *Biblical Astronomer*, 11(95):15.

earth's long-term temperature stability. Plate tectonics can circulate carbon dioxide from the earth's interior into the atmosphere. "Because carbon dioxide is a greenhouse gas, it helps to keep our planet warm," Solomatov said. "Of course, too much of it is not good, but without this cycle over the centuries the temperature would drop and you might have the 'Snowball Earth' scenario." No planet yet examined has plate tectonics.

"We think this is normal and there should be planets all around the universe like earth," he said. "The more I work in this area, the more I realize the chances really are very slim." It's not enough for a planet to be the right size, to have water, and to be located the right distance from a star of the right size. Without the giant planet Jupiter as a neighbor, and without our moon, earth might not be the living planet that it is, according to Solomatov. Evolutionarily speaking, Jupiter has protected earth from too many cataclysmic asteroid collisions, he explained; but on the other hand, a neighbor much larger than Jupiter would not allow formation of an earth-like planet in the first place. Similarly, the moon is just the right size to help stabilize earth's spin axis and, as a consequence, the earth's climate. With a bigger moon, or no moon at all, a planet similar to earth in other respects might not sustain life over evolutionary times.

"At the moment there are two camps of believers," Solomatov said. "One believes in the 'Rare Earth' hypothesis, and the other thinks life is smart and can adapt to extreme conditions." The "Rare Earth" hypothesis, which takes its name from a book by University of Washington scientists Peter Ward and Don Brownlee, holds that microbial life might be common in planetary systems, but advanced life is rare. Solomatov favors the "Rare Earth" hypothesis: "We don't have enough data yet but all the evidence we have now points out that the earth is a very special place."

Biblically, the earth is a special place. Earth is the place where God's grace and his wrath are revealed (Rom. 9:22-23⁹), and it is the reason for the creation. What the continued research above shows is that life is rare in the universe and if there is no creator, the possibility of life springing up spontaneously does not exist. Creationism is still far, far more the reasonable and scientific model, and evolution is nothing more than superstition.

Anglicans and Catholics say Creationism is a myth?

"Scientists yesterday warned that 'young earth' creationists who dismiss evolution as a lie are gaining strength in the UK and are trying to

⁹ *What* if God, willing to show *his* wrath, and to make his power known, endured with much longsuffering the vessels of wrath fitted to destruction: And that he might make known the riches of his glory on the vessels of mercy, which he had afore prepared unto glory.

give themselves credibility by establishing dialogue with British academics.” So starts an article posted by the Guardian Unlimited news service of the United Kingdom.¹⁰ Commenting on a questionnaire circulated by the British office of Creation Research, John Farrar, an environmental scientist at the University of Wales, said: “It is clearly coming from a creationist perspective. I can’t complete it because it’s uncompletable—it is so badly worded that it clearly is not written by someone who knows about the area—but I’m going to write back making my views clear. Scientists have a responsibility to get involved in this kind of debate.” Farrar’s lament is typical of evolutionists, who appeal to the pride of the reader to agree with them or face the charge that disagreeing with evolution makes one look foolish. Finally, the article brings in religion by ending with: “The Catholic and Anglican hierarchies accept evolution and last week the Bishop of Oxford said that young earth creationists brought Christianity into disrepute.” There, that’s proof that creationists are nuts. Even the Catholic and Anglican “nuts” attest to that!

But there is more to the story than that. Bartholomew Dobson was present at the meeting, conducted by Ken Ham. In response to an earlier article than the one referenced above, Bartholomew had written a letter to the editor of the leftist Guardian. He writes:

“My letter (after they edited it!) can be read at:

<http://www.guardian.co.uk/Archive/Article/0,4273,4371719,00.html>

If I didn’t believe in the devil, I’d have been amazed at the response I got. Notice that I didn’t say I believed creation, [in the letter—*Ed.*] or that I was a Christian! I think it’s interesting that the only person who e-mailed me and DIDN’T assume I was a Christian was a Christian herself! (In fact, it was the lady who wrote the letter that appears after mine). Actually, I’ve always disliked the Guardian (because of its left-wing stance), and I only read the article because someone at the meeting showed it to me.

...And [the press] found out that they didn’t teach evolution as fact—merely showing evidence for creation AND evolution! Since you’ve read the articles, you’ll have seen how ridiculous the whole thing is. They pulled in an Anglican church that had nothing to do with it; a Christian charity (the “Christian Institute”), which had nothing to do with it; even the school had little to do with it—a creationist group (which they mentioned only once and didn’t name at

¹⁰ Branigan, T., 2002. “Scientists sound alarm over advance of Creationists,” Guardian Unlimited, Manchester, England, 3/25.
<http://www.guardian.co.uk/Archive/Article/0,4273,4380944,00.html>

all) had just hired out the hall! I don't know if you know much of the geography of Britain, but Gateshead is a city next to the city of Newcastle-upon-Tyne, which is close to Durham, where I'm studying. Also, I know some of the teachers at the school, because they come to my church—and they took me along.

The meeting was good fun—although Ken Ham said some untrue things about the Galileo affair and about the earth's rotation. I went up to him afterwards to tell him that it actually wasn't the Roman Catholics' adoption of the scientific world view of the day that got them into trouble with Galileo; but it was their adoption in the Biblical ideas of the motion of the earth, plus a by then out-of-date model of the universe. However, he gave me a stupid answer. He said that verses about the earth not moving were in the Psalms. I answered that in his talk he'd said Psalm 104:8 gave evidence for the mountains rising and the valleys sinking (which is a mistranslation, of course)—so why didn't he look at verse 5? He then said that if you want a cosmology, you can only get it from Genesis! Sorry—I must have missed that 'signpost' in my Bible! And as for Joshua's long day, he of course said it was in 'language we can understand'... However, I do think it sad the way so many creationists want to ignore geocentric verses to make themselves look credible. I wish they'd see that in the eyes of the world they're no more credible for shunning geocentrism than they are for agreeing with us.

When asked for more information about the innocent organizations mentioned in the article, Mr. Dobson replied:

Emmanuel College is a "city technology college," which runs as a kind of "public-private partnership" (Tony Blair's words). It was set up with both public money and money from a Christian called Sir Peter Vardy, but the day-to-day running costs are paid by the state. It has a Christian ethos, but does not select AT ALL on the basis of religion (or lack of it). The school gets very good results - one of the preferred ways of comparing schools here is to see how many of their pupils get five or more GCSE (general certificate of secondary education) grades from A* - C (the grades go: A*, A, B, C, D, etc.). The national average is under 50%. The Gateshead (the city where Emmanuel College is located) average is less than 40%. Emmanuel College's average is 98%! However, it is hated by many (particularly socialists), who think no school should have a leaning towards any particular "faith" (although all the ordinary schools seem to be rooted in the faiths of secular socialism and pluralism);

and also by those who are just jealous. Since most of the media in England lean towards the left, it is not surprising the way in which they vilify it. Amazingly, Tony Blair actually defended it when asked about it in Prime Minister's Questions!

But on the subject of evolution: The national curriculum says something like this (though this isn't a direct quote): "pupils should learn about the way in which the same evidence can be interpreted in different ways, e.g. Darwin's theory of evolution." Darwinism is mentioned explicitly. And this is exactly what the teachers there teach. They teach the evidence both for AND against evolution, and don't tell their pupils which they should believe! In fact, the majority (I am told by people who teach there) do not end up believing in creation—most of the brighter children come away thinking that we just can't know (we weren't there!); whereas the less bright children just continue to believe evolution because they're told it's true by everyone else. For those who say they might twist the evidence to make it look like evolution has no evidence, I'd just say, "look at the results!" They are required to know evidence for evolution and the big bang in order to pass their exams. Do they, or do they not?

Now, as for Jesmond Parish Church: this is an Anglican church in Newcastle-upon-Tyne (a city very close to Gateshead), whose vicar, David Holloway, founded a movement called "Reform," which aimed to reform the Church of England back to the state it was soon after the Reformation. He also helped found a charity called the Christian Institute. Neither the church nor David has anything at all to do with Emmanuel College, or the meeting held there. In fact, he isn't even a six-day creationist (though he doesn't believe in evolution). This, however, has not stopped him being dragged into this supposed "fundamentalist conspiracy" in the North-East of England.

Finally, the Christian Institute is a charity set up to campaign for Christian standards in public life. Consequently, it is hated by sodomites; baby-murderers (people who advocate abortion); gamblers (those who support the National Lottery); fornicators; evolutionists; and a whole lot more. It just so happens that many of those involved in one of these organizations are involved in one or more of the other two. So, some of the teachers at Emmanuel have given lectures at Christian Institute meetings about evolution, and it is portions of these lectures which some of the media have seized.

All in all, this creationist meeting, "Say Yes to Genesis," had nothing to do with the Christian Institute or Jesmond Parish Church; and the creationist group who put it on simply hired the school hall

at Emmanuel. The ridiculous media coverage just proves the Devil is scared of people even glimpsing the truth.

Why is this issue important? Why argue against evolutionists, or against theistic evolutionists such as Dr. Hugh Ross? Should we not be witnessing to the lost instead of wasting the Lord's resources and time arguing about such trivial, irrelevant matters? Here is what a member of the Soviet Communist Party, Prof. Pinkevitch of the Department of Education, had to say in 1921: "The world is getting too small for the Book; either the Book will have to go or the world will have to go." Now the "Book" he referred to is none other than *The Holy Bible*. The problem is that the Book makes it clear that it is the world, not the Book, which will "go." So those that love the world¹¹ rather than the Book, see it as a struggle for their very existence. They have to get rid of the Book or be confined to the fire of hell. Their only hope for survival is to get rid of the Book that says that the world will pass away but the Book (the word of God) will not pass away (Mat. 13:49 and 24:35).

In order to do that, secular humanists, all of whom are evolutionists, must make the Book evil. So "tolerance" of sin and worldly superstitions becomes a virtue and the Bible's "intolerance" of them becomes the supreme evil. The creation account and the universal flood become "fables" while evolution becomes "fact." So evolutionists must lie about creation and creationists to try to save the world from the Book.

Relativity and rotating orbits¹²

Supposedly, one of the crowning "proofs" of the theory of Relativity is that it correctly predicts how fast the orbit of Mercury (the entire orbit, not Mercury itself) should rotate about the sun. Have you ever wondered why only Mercury is ever noted as a "proof?" The reason is simplicity itself: Relativity only accounts for Mercury's "perihelion precession," as the orbital rotation is called. Relativity gives the wrong values for all the other planets' orbits. Now, it seems, it's even giving the wrong answers for stellar orbits.

The double star DI Herculis is a faint binary about 2,000 light-years from us. The system is made up of two blue stars (hot and heavy) which

¹¹ 1 John 2:15 —Love not the world, neither the things *that are* in the world. If any man love the world, the love of the Father is not in him.

¹² Naeye, Robert 1995. "Was Einstein wrong?" *Astronomy*, 23:54. Reprinted from "Panorama," 1996. *Biblical Astronomer* 6(77):20.

are less than 20 million miles apart. It takes them a bit over ten-and-a-half days to complete a revolution about each other. Now relativity predicts that their orbit should rotate 4.27° per century, but the actual rate is 1.05° per century. This is too small for relativity.

As if that were not bad enough, another binary star system, AC Camelopardalis exhibits the same problem with relativity. Apparently, whenever strong gravitational fields are involved, relativity fails to account for the observations. Yet it is precisely such circumstances for which relativity was developed!

Are you listening, Dr. Danny Faulkner?

Quark stars?¹³

NASA's Chandra X-ray Observatory has found two stars—one too small, one too cold—that reveal cracks in our understanding of the structure of matter. These discoveries open a new window on nuclear physics, offering a link between the vast cosmos and its tiniest constituents. Chandra's observations of RXJ1856.5-3754 and 3C58 suggest that the matter in these stars is even denser than nuclear matter found on Earth. This raises the possibility these stars are composed of pure quarks or contain crystals of sub-nuclear particles that normally have only a fleeting existence following high-energy collisions.

By combining Chandra and Hubble Space Telescope data, astronomers found that RXJ 1856 radiates like a solid body with a temperature of 1.2 million degrees Fahrenheit (700,000 degrees Celsius) and has a diameter of about seven miles (11.3 kilometers). This size is too small to reconcile with standard models for neutron stars—until now the most extreme form of matter known. “Taken at face value, the combined observational evidence points to a star composed not of neutrons, but of quarks in a form known as strange quark matter,” said Jeremy Drake of the Harvard-Smithsonian Center for Astrophysics (CfA) in Cambridge, Mass., and lead author of a paper on RXJ1856 to appear in the June 20, 2002, issue of *The Astrophysical Journal*. “Quarks, thought to be the fundamental constituents of nuclear particles, have never been seen outside a nucleus in earth-bound laboratories.”

Chandra also yielded another startling result. It failed to detect the expected X-radiation from the hot surface of 3C58, a neutron star believed to have been created in an explosion witnessed by Chinese and Japanese astronomers in A.D. 1181. The team concluded that the star has

¹³ Beasley, D., S. Roy, and M. Watzke, 2002. “Cosmic X-rays Reveal Evidence for New Form of Matter,” NASA press release 02-65, Apr. 10.

a temperature of less than one million degrees Celsius, which is far below the predicted value. Apparently, neutron stars aren't pure neutrons but a new form of matter is evidenced.

Nevertheless, the observations of RXJ1856 could be interpreted as a normal neutron star with a hot spot. However, the hot-spot model requires a very special orientation of the star with respect to the Earth to explain the absence of pulsations, which would be expected from the hot spot. The probability of such an orientation is quite small. Such an apparent geocentric orientation will take some time to test, as many more such stars need to be found for this to be evidence for geocentricity. Nevertheless, it is just one more example of new results that at first, at least, present the earth in a special place.

Our main objection to the pseudo-scientific philosophy of this present generation is that it manifests an amazing willingness to surrender the eternal verity of God's revelation for the unfounded theories propounded by men who are utterly without ability to prove their wild imaginings.

—Harry Rimmer, *The Harmony of Science and Scripture*, p. 12.

The evidence for heliocentrism is even weaker than the evidence for evolution.

—Dr. Jim Paulson, Prof. biochemistry at the
University of Wisconsin-Oshkosh

As long as the theory of evolution became more popular, the leaders and theologians of popular Christianity began to squirm. To maintain their popularity they needed to somehow adapt their doctrines to the new belief. They needed a Christianity that was compatible with evolution that did not teach the sinfulness of man, that left out the Creation story, and that could coexist with natural selection. This need was amply supplied by modernism.

—Lester Bauman, quoted in
Hite's Home Mission Outreach Newsletter,
816 E. Birch St., Palmyra, PA 17078.

CREDO

The Biblical Astronomer was founded in 1971 as the Tychonian Society. It is based on the premise that the only absolutely trustworthy information about the origin and purpose of all that exists and happens is given by God, our Creator and Redeemer, in his infallible, preserved word, the Holy Bible commonly called the King James Bible. All scientific endeavor which does not accept this revelation from on high without any reservations, literary, philosophical or whatever, we reject as already condemned in its unfounded first assumptions.

We believe that the creation was completed in six twenty-four hour days and that the world is not older than about six thousand years. We maintain that the Bible teaches us of an earth that neither rotates daily nor revolves yearly about the sun; that it is at rest with respect to the throne of him who called it into existence; and that hence it is absolutely at rest in the universe.

We affirm that no man is righteous and so all are in need of salvation, which is the free gift of God, given by the grace of God, and not to be obtained through any merit or works of our own. We affirm that salvation is available only through faith in the shed blood and finished work of our risen LORD and saviour, Jesus Christ.

Lastly, the reason why we deem a return to a geocentric astronomy a first apologetic necessity is that its rejection at the beginning of our Modern Age constitutes one very important, if not the most important, cause of the historical development of Bible criticism, now resulting in an increasingly anti-Christian world in which atheistic existentialism preaches a life that is really meaningless.

If you agree with the above, please consider becoming a member. Membership dues are \$25 per year. Members receive a 15% discount on all items offered for sale by the *Biblical Astronomer*.

To the law and to the testimony: if they speak not according to this word, it is because there is no light in them.

– Isaiah 8:20

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