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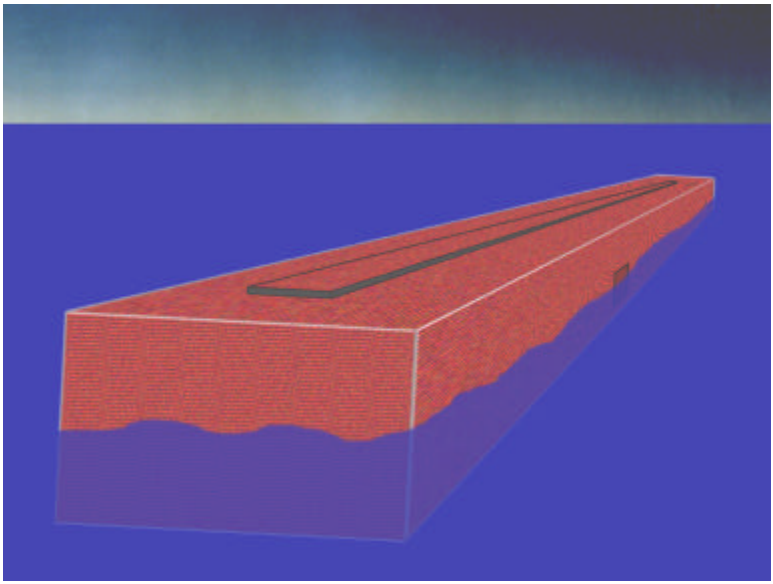
THE BIBLICAL ASTRONOMER

SUMMER 2003



(Publications list continued from the back cover.)

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Cover: This depiction of Noah's ark on the Flood waters at dusk was made for the *Biblical Astronomer* by Steven Jones of Caithness, Scotland. For more on the Flood waters see "Small comets and the Flood" in this issue.

THE
BIBLICAL ASTRONOMER

Volume 13, Number 105
SUMMER 2003

TABLE OF CONTENTS

Editorial 79

Small Comets and the Flood 81
G. D. Bouw

Panorama 94

EDITORIAL

This is issue number 105 of *The Biblical Astronomer* and it is the first issue printed entirely in color. In light of this momentous occasion, not to mention a plethora of readers who were not on board from the beginning of this publication, it appears an appropriate time to review the history of this publication.

The Biblical Astronomer was not the original name of this publication, and your current editor was not its founder, either. I became editor in 1984 with issue number 38. At the time, the publication was called *The Bulletin of the Tychonian Society*. It became *The Biblical Astronomer* in January 1991 with issue number 55. The first issue of *The Bulletin of the Tychonian Society* was number sixteen, in May of 1977. From issues five (1971) through fifteen, it was called *The Bulletins of the Tychonian Society*. Prior to issue number seven, however, the numbers are confused. It is not too difficult to put them in proper order, however by eliminating the numbers of the enclosures.

Issue number one appeared in 1967 as a 33-page booklet entitled *The Heart of the Matter: An Approach to a Study in Scriptural Cosmology*. It was written and published by the founder of the Tychonian Society and editor of the publication through 1983, the late Walter van der Kamp. It was, of course, not numbered, and the numbering system began in earnest with number six in 1974. The second issue appeared in booklet form in 1968 and was entitled, *Airy Reconsidered: an Approach to the Problem of Demonstrating a Preferred Frame of Reference*. It had with it a typed letter entitled "He hangeth the Earth Upon Nothing." Walter numbered it no. 3, but the final numbering sequence he adopted ignored the numbered letters.

The actual issue number 3 (with a circled four on it) was an enlarged revision of number 2, with the modified title of *Airy's Failure Reconsidered: the Truth behind the Veil of Facts*. The 18-page booklet appeared in 1970. It, too, had a letter in it, which on its back had a copy of a review of the booklet. The review was by Dr. George Mulfinger, then of Bob Jones University and now long deceased. It appeared in the July-August issue of the *Bible-Science Newsletter*.

Number four (with a circled five) was the first issue to bear the name *Bulletins of the Tychonian Society* and marks the beginning of the Society. It was a handwritten edition dated March 1971. Number five (with a circled six) appeared in August of 1973 and it, too, was handwritten. Issue six (numbered so on the masthead) appeared in August of 1974, was typed and xeroxed, and marks the start of a more or less regular publication schedule.

Walter van der Kamp founded the modern geocentric movement, of which there are now several. His is now 36 years old. Your editor has been a geocentrist for 26 of those years.
A quarterly in color is, of course, more expensive than one in black and white. For that reason we have decreased the number of pages in this issue. It saves money in postage, for one thing, not to mention printing cost.

A large section of this issue is devoted to coverage of the small comets. This is so because the small comets may play a significant role in the Biblical accounts of creation and the Flood. It is possible that the small comets are leftover residue of the waters that once covered the earth as mentioned in Genesis 1:1-2. It is also possible that the small comets may be a legacy of the time the windows of heaven opened to provide the waters for Noah's flood. These things are explored in the article, but much of the coverage is devoted to present the proofs of the existence of the small comets. Modern astronomers are not yet ready to embrace their existence despite observations from space and the ground.

Panorama also presents new evidence for a young solar system, and it seems that one of evolutionists' most promising hope for finding life in the solar system refuses to cooperate. Also, find out the latest about the James ossuary. And was there an atomic blast in India 4,000 years ago? Read Panorama and find out.

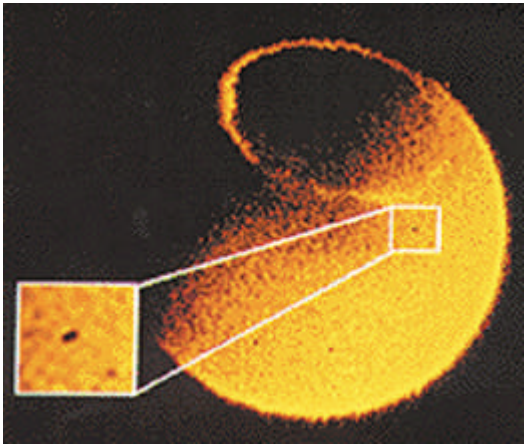
Important notice: The office of the Biblical Astronomer will be closed from July 12 until August 8. Orders and correspondence received between those dates cannot be processed during that time.

SMALL COMETS AND THE FLOOD

Gerardus D. Bouw, Ph.D.

Introduction

In 1981 the University of Iowa was allowed to send three ultraviolet cameras in space on board the Dynamics Explorer-I spacecraft. The purpose of the cameras was to study the northern and southern lights, the Aurora borealis and Aurora australis, and in particular the phenomenon where the aurora forms a complete ring around the magnetic pole. The photos were widely circulated, and one even appeared on the cover of *Geophysical Research Letters*, as pictured here. But the cameras also presented a puzzle. Spots would appear and disappear on the pictures, each of which took about half a minute to take.



At first, it was thought that the spots were flaws in the equipment. The pictures used pixels, so that each picture was made up of thousands of tiny squares. Occasionally, one of the pixels might get a kick from a cosmic ray, or just get hit by Schott noise, that is, by random fluctuation of heat due to Brownian motion. When questioned about these by other scientists, the team members would say that it was a flaw in the camera, or some noise introduced while the image was being transmitted to earth. However, the spots were so persistent that graduate student John Sigwarth was commissioned to pin down their exact cause.

After four years of trying to force the spots to be artifacts of the system, the team leader, Louis A. Frank, could no longer evade the inevitable conclusion that these spots were not flaws in the equipment or in transmission; they were real. “There were two choices available to us,” he wrote, “put the results into our desk drawers and lead a relatively

peaceful life, or publish the results and suffer the criticism, and the sometimes extreme animosity of colleagues and previous friends. [There] was only one choice with integrity in this matter, the work had to be submitted for publication."

Drs. Frank and Sigwarth

Introducing the Small comets

The spots were not artifacts of the system. That they were real was based on several evidences. First, they were persistent. A single spot could last for several minutes. Second, they moved. As the spacecraft orbited the earth, the spots would lag behind. If they were due to flaws in the camera then they would stay in the same place on the frame and not lag behind the camera. Indeed, most spots moved eastwards. Third, they would grow in size. Over the course of their lifetimes, some spots would expand, as if spreading out. Fourth, the spots covered many, some over a hundred, pixels. If the spots were due to instrumental failures in the camera, then only one picture element, i.e., one light-detection cell would be affected. Candidate spots spanned multiple adjacent pixels. Fifth, the spots, also called "atmospheric holes," favored the late morning hours, which is also observed with meteors. Sixth, as the spacecraft descended to lower altitudes, the holes became larger. And finally, the frequency (or counts) of the spots was correlated with the seasons, which is also true of meteors observed in daylight by ground-based radar stations.

The objects had to be high up in the atmosphere. The cameras were designed to record in the ultraviolet (UV). At the surface of the earth, we are protected from the eye-destroying UV rays, but up in space they serve to record the light from the aurora, as the crown around the earth in the first photo. In that picture, the yellow is a false-color image of the ultraviolet light reflected from the sun by the upper atmosphere. Anything that absorbs ultraviolet light and is located between that reflective surface of air and the spacecraft would show up as a dark spot. It turns out that the most likely substance that would absorb light at that wavelength is water vapor. So the spots are due to a cloud of water vapor some 25-30 miles in diameter in the upper atmosphere.

The observations showed that the amount of water needed to make one of the atmospheric holes fell in the range of 30 to 40 tons (~2 x 10^7 g). If this much water were balled up into a snowball, the snow-

ball would be about forty feet in diameter, about the size of a moderately sized house (about 12 yards or meters in diameter). The typical snowball approaches the earth at about 35,000 miles per hour or ten miles per second (56,000 km/hour or 16 km/sec). At about 800 miles above the surface of the earth the snowball is disrupted and spreads out like a pancake. It rapidly expands until it is some tens of miles in diameter, large enough to be detected by the camera. The water from the cloud is deposited on the earth's surface as a gentle mist.

The first word that comes to an astronomer's mind when encountering with such a scenario is "Comet!" Now a comet is like an icy mud-ball, made up of dust and grit and ice. If these snowballs are small comets, then the dust and grit should also be present, but they are not. These objects are not typical comets. They may have a small amount of dust, but for the most part, they consist of water. To dub them "small comets" is thus slightly misleading, but for lack of a better word, we will persist, though some have suggested "cometessimals."

Small comets? Bah! Humbug!

Now astronomers are fairly open-minded about such things as snowballs from space. They can tolerate an occasional one or two. Even ten a year is acceptable; but ten million small comets hitting the atmosphere per year? Impossible! Why, half the science textbooks in the world would have to be rewritten. Thousands of scientists in many disciplines objected, each one certain it was an error.[1] And so the small comet controversy settled down as the scientific community convinced themselves that the holes were merely camera noise.

Actually, it was a period of relatively little activity. To prove the reality of the small comets, another set of auroral cameras was built at the University of Iowa for the Polar spacecraft. The ability to detect both holes and small comets was specifically built into the cameras. If atmospheric holes were real, these cameras would leave no doubt.

Small comets confirmed!

Besides their ability to detect the holes, one important capability of the new cameras was that they could detect the passage of the comets as they crashed through the atmosphere. The comets would leave a glowing oxygen trail behind them as they disrupted. This, the cameras could observe thousands of miles above the earth. The cameras could also optically detect fragments of the comets as they descended.

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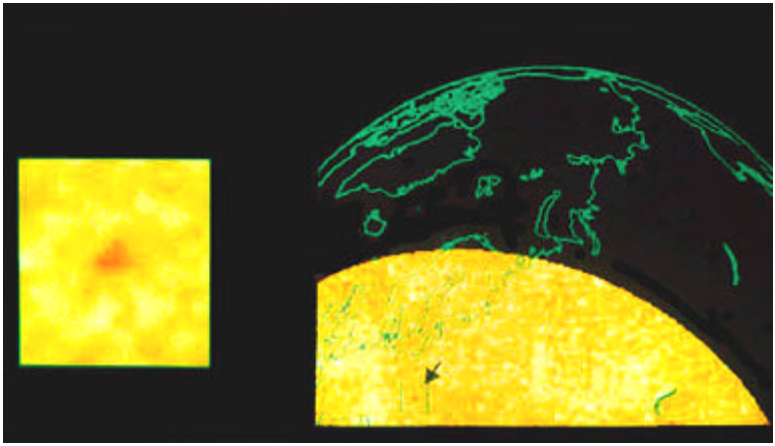
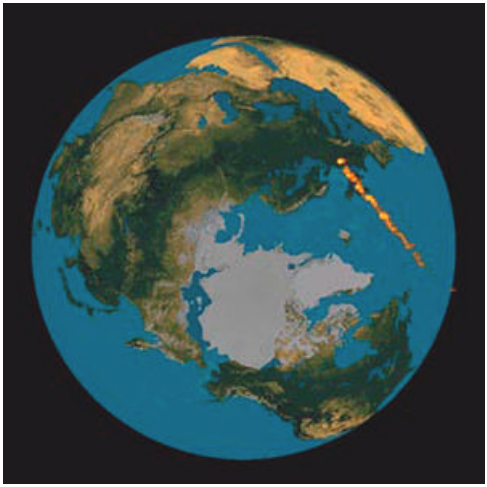
[1] For instance, see Panorama, 1998. "More about the watery comets," *B.A.*, **8**(84):19.

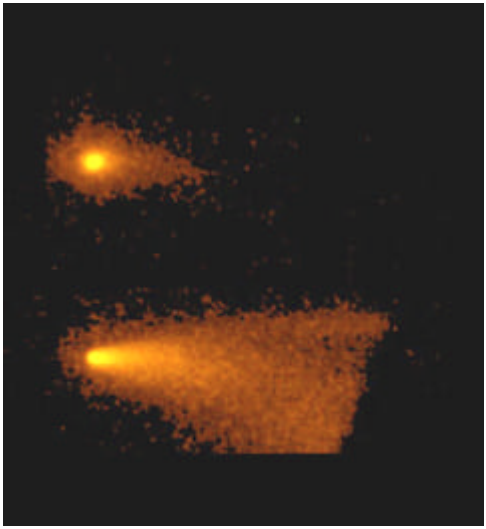
The Polar spacecraft was launched in early 1996, and as soon as the cameras were calibrated and started, the holes were detected. Again the team took their time confirming and reconfirming their findings. In May 1997, they released their findings at a NASA press conference. Below are some of the photos taken by the Polar satellite confirming the small comets. Interestingly, even with its higher resolution of totally different cameras, the Polar satellite observed the same flux in incoming objects as was detected by Dynamics Explorer I.



The figure above shows a cloud over Poland. It was recorded April 6, 1996. It is an ultraviolet image. The figure below at left is a map of the earth superimposed under an image of a bright trail of atomic oxygen. It, too, is an ultraviolet image with a computer-generated map behind it. This particular comet burst at a much higher altitude than most. The path moved from over the Atlantic Ocean, ending over eastern Germany.



The third camera looked at the ultraviolet spectrum nearer to the visible spectrum. It observed in a portion of the spectrum used for the



study of large comets. The detected light is emitted when sunlight separates a hydrogen atom from its oxygen atom in a water molecule. The picture on the right is a photo of Hale-Bopp as it approached the sun. The upper picture shows the comet in the fragmented water spectrum just mentioned while the lower shows it in light emitted by sodium and dust. This proves the Polar cameras are capable of seeing comets.

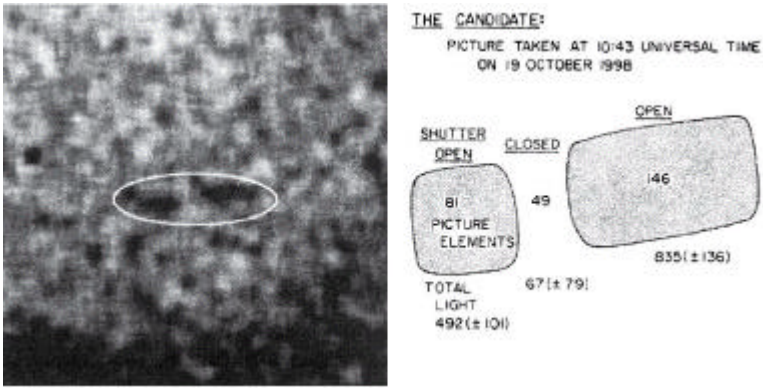
When the cameras were tuned to view the small comets which were hitting the earth's upper atmosphere. The cameras yielded a sequence

of three exposures such as the one shown above. A surprising result was the absence of sodium and dust in the small comets. This explained why they had no bright tails, which would make them easier to detect. Sodium and dust would yield bright impacts. Thus the small comets differ significantly in composition from the large comets.

Ground-based detection

But the evidence does not stop there. So far all the detection has been by from satellites in space. From October 1998 through May 1999, the Idaho Robotic Observatory in Arizona was used in a quest to see the holes from the ground. Preliminary searches were conducted a decade earlier by Clane Yeates of JPL. Yeates was a doubter but he did detect the comets from the ground. Skeptics then demanded two pictures of each comet to show it persisted in time. When Yeates was successful in that, they demanded a three-image sequence.

The new survey took two images of each comet on the same plate. The shutter makes a double exposure. Below is a double-image multi-



ple exposure taken by the ground camera. The left image is a negative, and the black streak at the bottom is a star trail. (The camera was fixed to the earth and not following the stars in their courses since the comet in the atmosphere would not follow the stars either.) The two images are made by keeping the shutter open for several second, then closing the shutter for a few seconds and the reopening it for a shorter duration than the first. The diagram at right of the photographic image is a detailed sketch of the two parts of the trail. It shows how many pixels are involved in producing the image (81 for the short, second exposure and 146 for the first, longer exposure). The mottled appearance in the left picture is due to camera noise. After the two parts of the comet's trail are photographed, the film is advanced for the next two exposures.

Wouldn't they hit the earth?

So the small comets have been detected from space and from the ground. Should not some of their cores crash to earth, especially large, icy ones? It turns out that there is evidence that some do hit the earth.

For years Chinese peasants have reported finding icy blocks in their fields. The blocks may be jagged or spherical and have a strange color. The earliest report of an icefall in Europe comes from England: A man left a pub and was almost hit by a block of ice falling from a clear night sky. It was dismissed as "too much to drink." That was in the eighteenth century. The ice falls are usually dismissed as blocks falling from air liners, and, indeed, their holding tanks do have a "blue juice" preservative in them, which explains the color. But the Chinese accounts are not along major airways, and there were no airliners in the eighteenth century.

Some years ago a block of ice fell from the sky in Europe. Blue in color, it was dismissed as an icefall from a jet liner.[2] The incident caught the attention of Europeans and reports of icefalls multiplied. Some of the blocks were placed in freezers and were analyzed by experts. Some were deemed to come from airplanes, but some were "not ordinary water."

What is "ordinary water?" A water molecule is made up of three atoms: one oxygen and two hydrogen. Now hydrogen comes in three forms. The basic form has one proton in the nucleus and one electron surrounding the proton. But in addition to the proton, the nucleus can also have a neutron. When the hydrogen nucleus consists of a proton and a neutron, it is called "Deuterium." It is also possible for the nucleus to have two neutrons in addition to the proton. In that case it is called "Tritium." For terrestrial water the ratios of deuterium to normal hydrogen and tritium to normal hydrogen are consistently the same. So when a study says it is not normal water, it means that the amount of deuterium (or tritium) is different than expected from a terrestrial sample. The ratio has also been determined for comets and found to be different from the terrestrial sample, also. This is a major impediment to the evolutionary theory that says that the water for the earth's oceans came from a rain of comets hitting the dry earth billions of years ago.[3] There are other problems with the theories for the origin of the ocean, but we cannot go into those now. The ratios for the small comets is not known, though one might expect it to be the same as for large comets if they both originate from the Oort cloud or Kuiper Belt.

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[2] The author's son has worked in "lav and water" at Cleveland International Airport and has encountered the ice in the drains, but he reports that it is almost impossible for large chunks of ice to form during flight. Aircraft do not dump their sewage in flight, even if they did, the impact with air would form a spray, not a solid.

[3] Some scientists such as the late Carl Sagan believe that those comets brought life to earth in the form of organic molecules. However, large comets would burn up like meteors and hit with violence, which would destroy any organic molecules they may bear to earth.

Since the large comets were apparently not the source of the earth's oceans, could the small comets provide enough water? The observed rate would raise the ocean levels about one inch (25 mm) every 10,000 years. At that rate Frank estimates it would take two to three billion (10^9) years to fill the ocean.

Impact on the terrestrial planets

What about the effect on other planets? Would not the small comets supply water to them? The numbers show that these small comets would boil away at a distance from the sun about two-thirds of the sun-earth distance. That means that Venus is too close to the sun to receive water from the small comets. Ditto for Mercury.

The moon is further from the sun, so there should be water on the moon from these small comets. But the moon's gravity is not strong enough to hold the water vapor, so the moon would remain dry except in very cold regions where the snow might have a chance to refreeze before escaping. Indeed, there is evidence to suggest that there may be water locked in deep craters right at the moon's north and south poles.[4] Whether or not these are due to the infall of small watery comets is up in the air. Indeed, whether or not the water is there is subject to doubt.[5]

Mars is a most interesting case. The orbiters over the last several decades have presented evidence for water on Mars. River valleys, hilly forms suggesting glacier-caused drumlins, water vapor in the atmosphere and water on the polar ice caps all suggest that Mars still has water and may have had more in the past. The number of small comets incident on Mars is expected to be about the same number per unit area as at the earth. Computations show that if Mars gets too much water it may be subject to a run-away greenhouse effect.

Most people have heard of the myth that the increase of carbon dioxide in the earth's atmosphere will cause global warming and that if there is too much, we will get a runaway greenhouse effect and the earth will get as hot and dry as Venus. But this is a myth, at least as far as carbon dioxide is concerned.[6] According to theoretical calculations, the real culprit is water vapor. On Mars, the situation is such that water can build up and heat up the atmosphere. At some point the water vapor pressure reaches a critical point and the vapor explodes into space. It is assumed that the water would build up and reach the critical point again every several tens of millions of years, but that is speculative. It provides us with a means by which a 6,000-year old Mars could have

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[4] Panorama, 1998. "Ice on the moon," *B.A.*, **8**(85):23.
[5] Panorama, 1999. "No water ice on the moon?" *B.A.*, **9**(90):24.
[6] Bouw, G. D., 2001. "The morning stars," *B.A.*, **11**(97):69.

supported and lost its water. Perhaps its water contributed to Noah's flood, but that is speculative

From whence the small comets?

Dr. Frank believes that the small comets come from the Oort cloud, a shell of icy mud-balls postulated to exist around the sun at a distance ranging from about 300 to 100,000 a.u.[7] He believes that there is a faint, undetected star located in the cloud. That star, called the "Dark Star," would disturb comets in the Oort cloud and send some of them to the inner solar system where we see them as long-period comets. The Oort cloud is a working hypothesis, there is no direct evidence for its existence. It was invented in 1950 by Dutch astronomer Jan Oort to explain the presence of long-period comets. Without the cloud, there should be no long-period comets if the solar system is billions of years old. We cannot elaborate on this here.

Frank's speculation is doubtful, for no one has yet computed an orbit for a small comet. To do that, two or more satellites would have to detect and chart the oxygen trail of the same impact (e.g., figure on the bottom of page 84). Over the years we have learned that the number of small comets hitting the earth varies with the seasons. Indeed, the comet flux correlates with that of meteors, excluding meteor showers. This is shown on the figure on the next page. The top chart plots the number of holes per minute observed by Dynamics Explorer I from the region of the sky bounded by solar-ecliptic latitudes 30° to 90° and longitudes 285° to 315° from November 1981 through January 1982. This covers an area of 4.3 million square miles (1.1×10^7 km^2). The bottom chart shows the radar-determined meteor flux detected from Ottawa for the same months in 1955 and 1956. The meteor counts for the showers (Taurids, Leonids, Geminids, etc.) are shown as open circles. The closed circles are for background meteors, that is, those not identified with a shower.

The third part of the figure is on the facing page (91) which shows the flux measured in counts per pixel from the Polar satellite observed from November 1997 through January 1998. The interval marked "No Data" from November 6-7 was because of a solar proton storm. Here, as with the Dynamics Explorer satellite's counts, we see a maximum in early November and a minimum in mid-January. Though the minimum is correlated with the meteor counts, the maximum is not. This is an important clue to the origin of the small comets.

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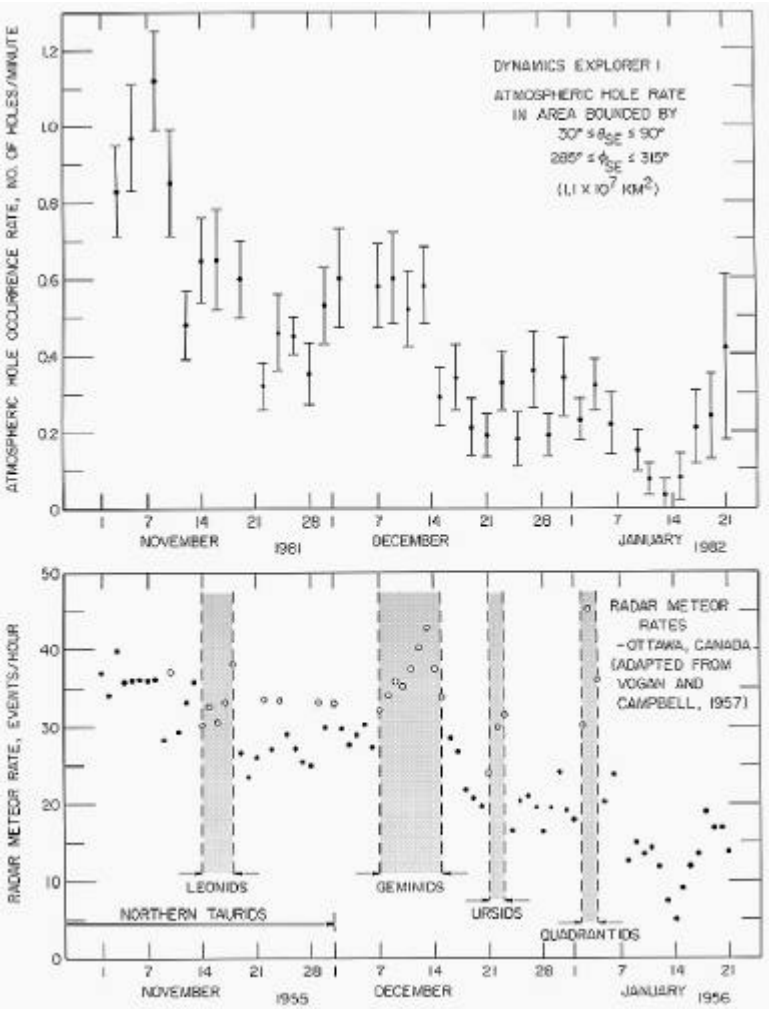
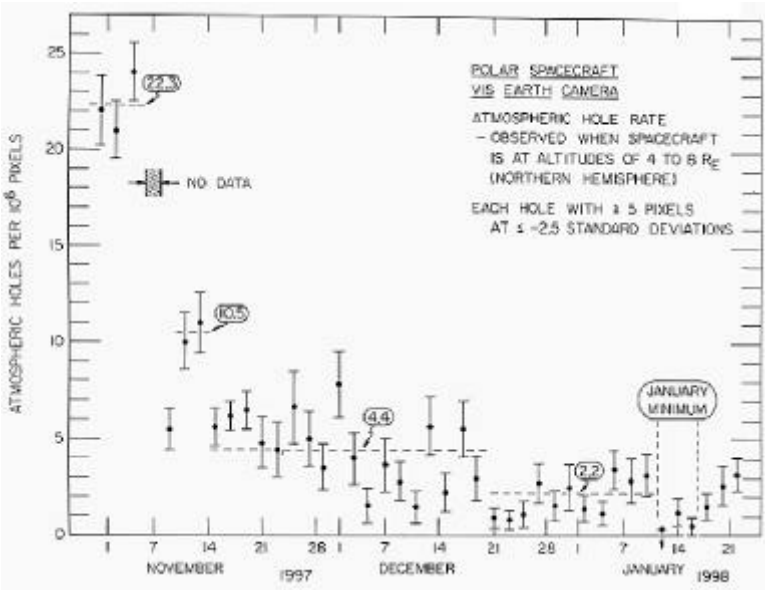
[7] One astronomical unit (a.u., also commonly contracted to AU) is the earth-sun distance of 93 million miles or 150 million kilometers.

The counts were also correlated with the height of the satellite above the earth. The maximum occurred at about three earth radii (3R$_A$). Above that the counts decreased as the angular diameter of the holes fell below the selection criteria. Also at higher altitudes the noise from energetic electrons increased as the satellite moved deeper into the earth's radiation belts. Below 3R$_A$, the counts decreased because the satellite saw progressively less of the earth as its altitude decreased.





Small comets and the Flood

So far we have not said but one thing about the title of this paper: "Small Comets and the Flood." Of course, we have had to establish the evidence for the existence of small comets and we looked at several characteristics. For their existence, we found that they were discovered by satellite, but that they have also been observed from the ground by specially-designed cameras. We also found that cores may have struck the ground. For their characteristics we noted their size, mass, frequency of occurrence, and evidence for their orbital properties. In connection with that we here note that the plane of their orbit seems to be inclined about thirty degrees to the plane of the ecliptic.

First, let us consider how many small comets it would take to amount to the ocean. In his 1951 paper on the earth's water resources, William Rubey estimated the mass of water on the earth, including the biosphere and atmosphere to be 1,660,000 trillion (10^{12}) tons. That figure included 210,000 trillion tons trapped in rocks, which, if we subtract that water from the total, leaves us with 1,460,000 trillion tons of free water, most of it in the oceans. Given that each small comet weighs in at 20 tons, 73,000 trillion small comets are needed to make up the water in the oceans. At the current rate of 10 million comets per year, it would take 7.3 billion years to fill the oceans, too long for the 4.5 billion years that the evolutionist demands, and longer than Frank's esti-

mate note on p. 88. Still, one can reasonably postulate that the influx of small comets was greater in the past.

We will not enter in here with a debate about Noah's Flood. We take it as a given that the flood covered all the earth (Gen. 7:19-20). We know that there were two sources of water, the fountains of the great deep and the windows of heaven (Gen. 7:11). Generally speaking, the fountains of the great deep are interpreted to mean subterranean water and the windows of heaven regular rainfall. But there is a problem with that.

For the waters to cover the highest mountains of the earth by fifteen cubits (about 22 feet or seven meters), a great deal of water is necessary. Indeed, so much water is necessary that some creationists have postulated that there was once a canopy surrounding the earth. Made variously of water, ice, or vapor, the canopy is said to collapse and that is equated to the "windows of heaven." That then leaves the problem of where the water went after the Flood. The Bible says it went into the earth; it does not say that the water returned through the windows of heaven. (Gen. 8:3.) It is clear to Creationists who hold to the splitting of the continents in Peleg's day[8] that the tallest mountains today (Mt. Everest and the mountains of Nepal, the ranges from Alaska to the Andes, etc.) were caused by continental drift. The highest mountains that are not obviously formed by plate tectonics include Ararat (16,945 ft. or 5168 m) and Kilimanjaro (19,340 ft. or 5,899 m). But Ararat, at least, shows that it was below sea level before it was raised up by strata containing marine fossils, and I recall something similar of Kilimanjaro. Hence we may conclude that the mountains before and during the flood were lower than these.

For an optimum climate in the pre-Flood days, mountains are expected to be under about 3,000 feet in height. That is somewhat less than 121 million cubic miles of water (420 million km^3). To raise the water level by 3,000 feet in 40 days would require an average rainfall of more than three feet (1 m) per hour. The water would rise more quickly at first and then decrease in its rate as more and more land was inundated.

Is it possible that when the windows of heaven were opened that the water arrived in the form of such small comets? Yes, it is possible. Various peoples have a tradition that the Flood started in the fall of the year. Small comets also have the advantage that they would arrive in the form of rain, and not as catastrophic impacts such as Tunguska, which destroyed thousands of square miles in a single cometary fall. It does not seem likely from the description in Scripture that these comets

[8] Gen. 10:25, And unto Eber were born two sons: the name of one *was* Peleg; for in his days was the earth divided.

started out from the creation of the solar system. I suppose it is possible that the windows of heaven were opened 120 years earlier and that the comets were started more than the distance of Uranus from earth, but that is speculation. We really don't know. A straightforward reading of Scripture implies that the waters originated from above the firmament. As for the watery comets, well, we won't know anything for certain until their deuterium and tritium ratios can be determined.

Pictures from: http://smallcomets.physics.uiowa.edu/

QUOTES

Government will be OF the people, BY the people, and FOR the people, except where taxes, integration, fluoride, parochial schools, land banks, etc., are concerned!

–Dr. Peter S. Ruckman, *The Sure Word of Prophecy*,
(Bible Believers Press), pp. 67-68.

ONE-LINERS

He who laughs last, thinks slowest.

Despite the cost of living, have you noticed how it remains so popular?

Latest survey shows that 3 out of 4 people make up 75% of the world's population.

Everyone has a photographic memory. Some just don't have film.

On the other hand, you have different fingers.

I feel like I'm diagonally parked in a parallel universe.

PANORAMA

Ancient Indian City destroyed by a nuclear blast?

Not all uncontrolled nuclear reactions result in an atomic blast. In rich Uranium deposits, such as at Oklo, the uranium-bearing rock has undergone a slow reaction, releasing heat and working just as a nuclear reactor power plant. Now comes a report that such a deposit may have gone critical in recorded history.

There is an area in Rajasthan, India, ten miles west of Jodhpur, with a layer of radioactive ash covering a three square-mile area. The radiation is so intense that the area is considered dangerous. The site, which was being developed into a housing area, is now under investigation. During the construction phase, it was reported, it was noted that the area had a high incidence of birth defects and cancer. The levels of radiation measured so high on instruments that the Indian government has now restricted access to the area. Construction was halted while a five-member team investigates.

The investigators report that an ancient city at the site shows evidence of and atomic blast. Recognized experts date the event back to between 8,000 and 12,000 years ago. If the "age" is based on standard uncorrected carbon-14 dating, that translates to roughly 2000 B.C.,[9] about the time of Abraham. The blast destroyed most of the buildings and probably a half-million people, according to the same scientists. One researcher has estimated that the blast was comparable to one of the bombs dropped over Japan during W.W. II.

To add fuel to the fire, the *Mahabharata*, an immense, ancient Indian historical and religious work, recounts a devastating explosion that shook the continent.... "A single projectile charged with all the power in the universe.... An incandescent column of smoke and flame as bright as ten thousand suns, rose in all its splendor...it was an unknown weapon, an iron thunderbolt, a gigantic messenger of death which reduced to ashes an entire race...the corpses were so burned as to be unrecognizable. Their hair fell out, pottery broke without any apparent cause, and the birds turned white. After a few hours, all foodstuffs were infected. To escape from this fire, the soldiers threw themselves in the river." Historian Kisari Mohan Ganguli says that old Indian writ-

[9] The corrected date, corrected by radiocarbon dates of known age and the decay of the earth's magnetic field, was done by the Biblical Astronomer's C-14 computer program, available from the Biblical Astronomer for $6 postpaid in the U.S. It may be downloaded for free at http://www.geocentricity.com, and is also on the biblicalastronomer.org CD.

ings are full of such descriptions. References in the ancient writings mention fighting sky chariots and the final weapons. "An ancient battle is described in great detail in the writing titled the 'Drona Pavra,' which is a section of the *Mahabharata*. The passage tells of combat where explosions of final weapons decimate entire armies, causing crowds of warriors with steeds and elephants and weapons to be carried away as if they were dry leaves of trees," says Ganguli.
Archeologist Francis Taylor says that etchings in some nearby temples he has translated suggest that the people prayed to be spared from the great light that was coming to lay ruin to the city. The radioactive ash seems to add credibility the ancient Indian records that describe atomic warfare thousands of years before our discovery of the atom.

The Indian records may be a mixture of prophetic events and past events. Joshua's Long Day and Hezekiah's Sign are also mentioned in the *Mahabharata*.

The mystery of the disappearing disks

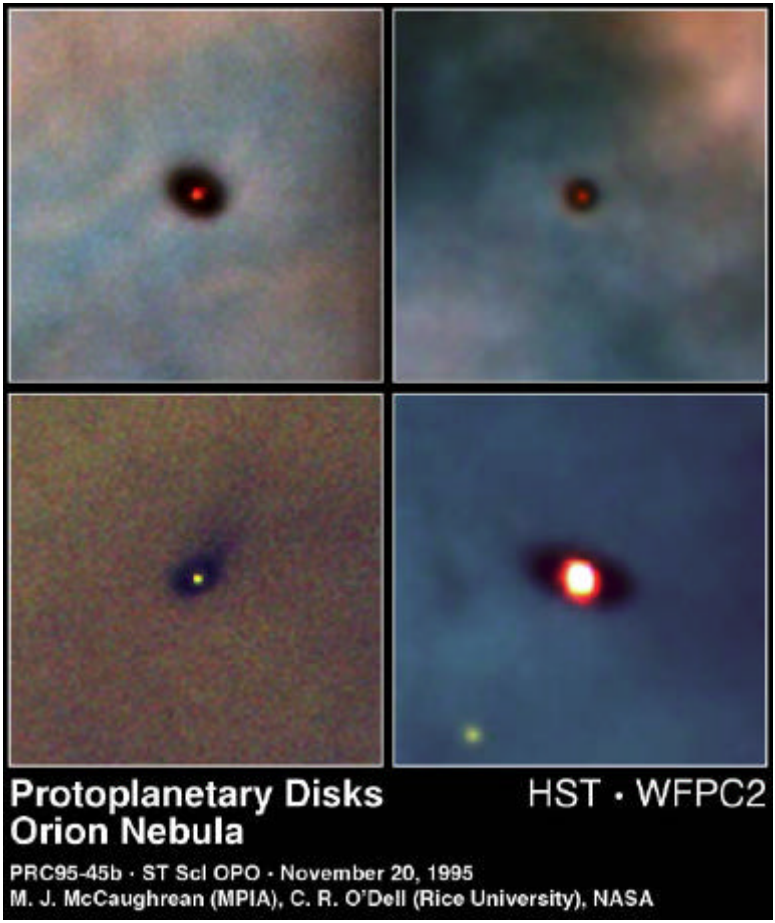
Last issue we reported the results of a study by Thomas Quinn that Jupiter-sized planets formed in hundreds of years, not millions.[10] From the American Astronomical Society's 202nd meeting, held in Nashville, Tennessee this past June (2003), we hear that the problems with the old solar system formation theory are worse than ever.

According to the old theory still advocated at the AAS meeting—which nearly all astronomers now agree has problems—matter collapses to form a star. The surrounding gas and dust swirls around it in a flat disk, called a protoplanetary disk, in which dust collides and, by those collisions, builds rocks that eventually grow into large, potential planets called planetesimals. Some of the planetesimals grow larger by accreting more dust and rocks and eventually become like Mars. Others, farther out, use their gravity to attract gas and end up like Jupiter. The process for building a gas giant planet is thought to take about 10 million years.

Now, a team led by Elizabeth Lada of the University of Florida, studied four star clusters in so-called stellar nurseries and found that in dozens of stars in the clusters, the dust is 90 percent gone in about 5 million years. In roughly half the cases, the dust is nowhere to be found after a "mere" 3 million years.

Other recent research suggests that the outer portions of protoplanetary disks, consisting of gas and dust and found in the most extremely active stellar environments, can evaporate in 100,000 years,

[10] 2003. "Jupiter-like planets formed in hundreds of years," Panorama, *The Biblical Astronomer*, **13**(104):58.



leading some astronomers to suggest that the formation of Jupiter-like planets may be rare. However, since more than a hundred heavy planets have been discovered around Sun-like stars, which conventional wisdom says were probably born in such star clusters, it's clear that large gaseous planets are not rare. So the building blocks of planets, the planetesimals, must form very quickly.

"If the gas is coupled to the dust, which we expect it should be, that means that the formation of the gas giant planets may occur much more quickly than previously thought," Lada said. But it seems that Quinn's finding, mentioned at the start of this note, is not supported by other research presented in the same session at the conference.

Another team studied similar Sun-like stars and came away with a different interpretation. Jeff Bary and David Weintraub of Vanderbilt University found ample hydrogen around a dozen young stars that had apparently lost their dust disks. They concluded that the dust is not there because it has coagulated into larger objects. They maintain that the larger objects — things the size of rocks, boulders or even moons — have less total surface area than bits of dust, and so they reflect less light. In other words, the dust is still there but it could not be detected by Lada's instruments. The result is consistent with Quinn's finding.

Joel Kastner, of the Rochester Institute of Technology, presented observations from NASA's Chandra X-ray Observatory that show dust disks around young stars go away inside 10 million years, evidence he says supports Weintraub's suggestion that the dust has coalesced into larger, invisible objects.

Giant planets appear to be common, Weintraub and others conclude, but many of the huge worlds already found are far more massive than Jupiter and orbit extremely close to their host stars. Nobody claims to know for sure how these planets got there, but they are presumed to have spiraled inward over time. If so, they would have wiped out any earth-sized planets along the way. A handful of other solar systems have giant planets farther out. The only thing that's known for sure is that solar systems come in diverse arrangements.

We conclude that Fourier, the nineteenth century mathematician who proved that given enough cyclical arguments one can explain anything, is correct. A theory in trouble can be saved like magic simply by having the problem disappear. How to tell what is what? Measure the rotation of enough of the stellar disks to give meaningful mass estimates and mass distribution. I might also point out that when a star is embedded in a cloud of gas and dust such the protoplanetary disks pictured on the previous page, the infall of gas and dust on its surface will make it look "younger" and hotter than it actually is. Many of these problems are solved by a young universe.

As a postscript, when asked if solar systems like ours are common, Weintraub said: "I think 20 years ago we all knew the answer, and it was *yes*, but we've learned a lot since then. Now I think the answer is a whole lot harder. Now I'm more of a skeptic. I think the answer is going to be *no*."

Chaos and the moons of Jupiter

In ancient Babylon, the God of creation was demoted to Chaos, the creator of the cosmos and now the god of evolutionists. Over the last thirty years, a branch of mathematics has even called itself Chaos The-

ory, a bit of a misnomer given that the results it produces are anything but chaotic.

For years evolutionists believed that all the moons of Jupiter and Saturn were captured during the nebular collapse (the protoplanetary phase referred to in the previous section), but as more and more moons are found, it became increasingly more difficult to explain the "irregular moons," moons that orbited the planet in the wrong direction. Now, chaos theory has come to the rescue.[11]

In the last couple of years, many small moons have been found orbiting the giant planets in our Solar System. Jupiter now has 60 moons, and Saturn more than 30. "Astronomers believe that understanding the nature of these moons can reveal important clues about the early history of the planets. Such insights into understanding our own Solar System will help us understand how other solar systems came into being, and whether they might be favourable to life," says the press release. One would think that after 150 years of searching for understanding of our solar system and planetary origins, the matter would be settled by now; but the understanding is just as elusive today as 150 years ago.

The moons can be divided into two groups, regular and irregular. Regular moons have a roughly circular orbit around their planet and are presumed to have been formed there during the early history of the solar system billions of years ago. They have *prograde* orbits, meaning that they orbit their planet the same way as its rotation, which is counterclockwise as seen from the north pole. Irregular moons have *retrograde* orbits that are highly elliptical, orbiting the planet at a distance of many millions of miles. These are thought to have originally encircled the sun and to have been subsequently captured by the planet they now orbit.

Stephen Wiggins and Andrew Burbanks, mathematicians at Bristol University, along with David Farrelly and Sergey Astakhov, theoretical chemists at Utah State University, were using chaos theory to understand the mechanics of chemical reactions. They realized that the approach they had been using in chemistry might also be applied to the problem of capture. Furthermore, they thought that if they could solve the capture problem it might give them some insight into their chemistry problems.

To model how a body orbiting the Sun could be brought into an orbit around a giant planet, they simulated the "switching mechanism" (the body "switches" to a new orbit) and found that chaos allowed the capture process to take place. Their explanation not only agrees well

[11] http://www.bris.ac.uk/news/2003/188, "Chaos theory explains origin of new moons," University of Bristol (United Kingdom) NASA press release, *Nature*, May 15, 2003

with the observed locations of the known irregular moons, but also predicts new regions where moons could be located. The ability to predict where new moons might be found should make it much easier for astronomers facing the daunting task of searching huge regions of space for them.

To explain how retrograde orbits could outnumber prograde orbits, the team showed that the moons initially captured into prograde orbits have a tendency to approach the region very close to the planet. This means that they have a greater chance of being eliminated by collisions with the inner giant moons or the planet, thereby explaining the far larger number of retrograde moons, especially around Jupiter.

Does this mean that evolution wins another victory over the young universe creationist model? Not at all. It suggests that evolution needs chaos in order to survive, just as it does in politics.

Galaxies old or young

Also from the AAS convention in Nashville comes news that galaxies come in two colors: red and blue. According to the big bang theory, the oldest galaxies should be the reddest, and new as galaxies formed over time, they, having younger stars, should appear bluer. Evolution predicts a gradual progression from blue galaxies to red galaxies as we look deeper out into space.

Astronomers Alex Szalay and Tamás Budávari presented an analysis of two million of the about 50 million galaxies observed thus far. They found a sharp division along color lines. So-called "old," red galaxies clump tightly into clusters while the "young," blue galaxies are more loosely connected. This is similar to the red globular clusters versus the blue galactic clusters of stars. The survey denies the middle ground that evolution requires.

Mysteries of the red soil on the moon

On 11 December 1972, Apollo 17 landed in the Valley of Taurus-Littrow. On board was Harrison Schmitt, the only trained scientist to set foot on the moon. Schmitt shared his synthesis of the research of many lunar rock researchers last October 29th at the annual meeting of the Geological Society of America in Denver, CO. Schmitt spoke at the GSA Planetary Geology division's Gilbert Lecture and Award Ceremony. His speech was entitled, "A Lunar Field Geologist's Perspective 30 Years Later: Shocking Revelations about the Moon, Mars, and Earth."

Shocking?

Yes, to an evolutionist, at least.

The orange "soil" or pyroclastic (molten by impact) glass that Schmitt found on the moon, which on sight he declared to be from under the surface of the moon, is said to "continue to provide clues about the origin of the moon." But you could have fooled your editor. Actually, it says that the prevailing theory for the origins of the mare, the *giant impact hypothesis*, doesn't work. "The major problem with this hypothesis," said Schmitt, "is that the interior of the moon is not cooperating." Most importantly, the lower lunar mantle, based on analyses of the Apollo 17 orange pyroclastic glass, has a chondritic, that is to say, a specific meteor-like composition and isotopic imprint. The imprint, which is caused by radioactive decay of elements within the crystals of the rock, should have been destroyed, or have been significantly modified if the mantle of the moon was solid when the impact occurred.

According to Schmitt, "If the giant impact hypothesis is not compatible with this evidence, alternatives to it should be considered, including capture of a small, independent planet from a solar orbit near that of the earth's." In other words, move the problem away from earth. What Schmitt does not say, of course, is that his alternative theory acceptable to atheists for the origin of the moon is equally flawed.[12]

So the problem is that three is no direct evidence that the mare were formed by impacts, whereas everyone "knows" that they had to be formed that way. The creationist model for the sudden creation of the moon does not rely on impacts to create the maria but simply areas of unequal heat release. That they are exclusively on the earth-facing side suggests that the earth was present when they were formed on the fourth day of creation. Furthermore, that the mantle of the moon is chondritic implies that the rocks on the moon are not identical to the rocks on the earth, that is, rocks created the fourth day (including meteoroids) are different than rocks created earlier in the creation week.

James ossuary a hoax

Back in the 1970s an Israeli collector bought an inscribed ossuary, which is a limestone box that held the bones of an individual after the body had decayed in its grave (usually a rented cave). This one measures about twenty inches long, ten inches wide, and twelve inches high. The Jews used them from 10 B.C. until the fall of Jerusalem in A.D. 70 because of the lack of grave space. In 2002, a French linguistic scholar, André Lemaire, translated the inscription to say "James, son of

[12] For a summary of the three theories see Bouw, G. D., 1999. "The formation of the moon," *BA* **9**(88):22-25.

Joseph, brother of Jesus" and declared the inscription genuine. Inscribed ossuaries are rare and reserved for prominent individuals.

The inscription caught the imagination of the Christian world. Could the box have contained the bones of James, the son of Joseph and brother of the Lord Jesus Christ and the author of the New Testament book of James? Could bone fragments found in the box give the genetic imprint of the family of Jesus? James, it is reported in the histories, was beaten and stoned to death by a Jerusalem mob about A.D. 62. At the time it was noted that James, Jesus, and Joseph were common

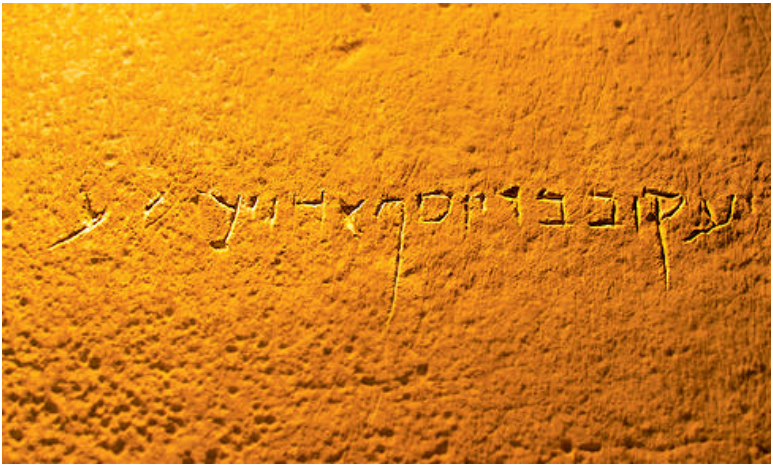
enough in Jerusalem that these need not be the same as the Bible personages.

Now among the three men called James in the New Testament, one is said to be both an apostle and "The Lord's brother."[13] He is regarded as the one who penned the epistle of James because the other apostle, James the son of Zebedee and brother of John,[14] was slain by Herod Agrippa I who ruled from A.D. 42-44,[15] died too early to be its writer. Then, too, the epistle of James reflects the doctrine of James summarized in Ac. 15:13-20, which must be the Lord's brother because the council at Jerusalem happened *after* the death of James the son of Zebedee. Although the Roman Catholic church claims that James was the

[13] Galatians 1:19.
[14] Luke 5:10. The third James is the son of Alphaeus, mentioned in Mark 3:18.
[15] Acts 12:2.

Lord's cousin, Mark 6:3 belies this when it says of the Lord Jesus, "Is not this the carpenter, the son of Mary, the brother of James, and Joses, and of Juda,[16] and Simon? and are not his sisters here with us? And they were offended at him."[17] This is the James whose bones may have rested in the ossuary.

Now a June 18 press release from Shuka Dorfman, president of Israel's Antiquities Authority, calls the inscription a forgery. The ossuary is real enough; it is the inscription carved into it that is a hoax. The investigation committee, which according to its chairman Dr. Gideon Avni, was unanimous in its decision, noted that the stone of the ossuary was more typical of northern Syria and Cyprus than of Israel. Furthermore, the inscription cut through the stone's fossilized sheen (its patina) and was in modern Hebrew text, written by someone trying to imitate the ancient Biblical font.



The inscription (false color to enhance contrast).

Now only a Laodicean Christian would miss these points:

1. The church at Jerusalem was too poor to waste money on an ossuary. It periodically needed assistance from Gentile churches to survive.[18]

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[16] Probably the writer of the epistle of Jude.

[17] Also see Matthew 13:55-56 and Psalm 69:8. The latter says, "I am become a stranger unto my brethren, and an alien unto **my mother's children**." (Emphasis added.) That this refers to Jesus the Christ follows not only from the context but also from the next verse, verse 9 which is applied to Jesus in John 2:17 ("the zeal of thine house hath eaten me up").

[18] Romans 15:26; 1 Corinthians 16:3; Acts 11:29.

2. Believers would not care for the dead that way in light of Jesus' admonition of Mat. 8:22 and Lu. 9:60.
3. The early church did not expect the resurrection anytime soon. The modern opinion that they were looking for a soon return of Christ stems from a misunderstanding of the term "generation," viz. the loss of the cross reference to Psalm 22:30.

So we should not be surprised that the inscription turns out to be a forgery. Even if it were not, there is no compelling reason to conclude that the James of the ossuary is the same as James the brother of our Lord.

Titan Reveals a Surface Dominated by Icy Bedrock[19]

Scientists who have peered through the smoggy orange haze of Saturn's largest moon, Titan, have discovered that the surface is not entirely covered by liquid and solid organic materials that rain out of the atmosphere. Extensive areas of icy bedrock lie exposed on Titan's surface, they report in the April 25, 2003 issue of *Science*.
"Titan's surface reflectivity looks a lot like that of Jupiter's moon, Ganymede. This is somewhat surprising because Titan is believed to have a lot of organic gook on its surface," said Caitlin A. Griffith of the University of Arizona Lunar and Planetary Laboratory.
Once more we see the key role that water played in the creation of the cosmos. Secular scientists were hoping to find life on Titan, given the "organic gook" they think is on its surface. So far the gook has evaded the holes in the haze.

Binaries in the Kuiper Belt

In the last few years, more than 500 objects have been observed in the Kuiper belt, a gigantic ring of icy cometary bodies beyond the orbit of Neptune. Of these, seven so far have turned out to be binary systems, that is, two objects that orbit each other. The binaries all seem to be pairs of widely separated objects of similar size. This is surprising because usually satellites, such as the earth/moon system, tend to be unequal in size and closer together relative to their size. For instance, the moon is 60 earth radii from the earth, and that is the largest ratio observed among the planets. The seven Kuiper belt pairs are separated from 100 to 1,000 times their radii of about 60 miles (100 kilometers), that is, their separations range from 6,000 to 60,000 miles.

[19] Stiles, L., 2003. NASA JPL Press release, April 24.

To explain the enigma, scientists from the California Institute of Technology have devised a theory. According to Re'em Sari, the model to explain the satellites of the planets does not work for Kuiper belt objects. His proposed theory works as follows. The region where the gravitational influence of a body dominates over the tidal forces of the sun is known as its Hill sphere. For a 120-mile diameter body located in the Kuiper belt, this extends to about 600,000 miles (a million km). Bodies orbiting within that sphere will not be disrupted by the sun. If, while two bodies are within their Hill spheres a third body is also present (estimated to happen once in 300 times), the two bodies could form a binary system. Normally they would perturb one another but not stay together, but if the third body is in a special position, it can slow one or both bodies down enough to let the two stay together. Once in every 30 such triple encounters, they slowed down sufficiently to become bound.

Of course, other passing bodies could disrupt the system, and still others will move them closer together. The younger the Kuiper belt is, the more bodies will have greater separation. The older, the more pairs will have coalesced into a single body. So far, no tests of the theory have been possible. The ratio of close binaries to distant binaries is needed to confirm or deny the theory. Don't be surprised if the first observations will be "surprising" and will require a modification of the theory or a new theory.

It would be interesting to know if the orbits are prograde or retrograde. Does the chaotic capture theory presented on page 97 play a role in the Kuiper belt?

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.

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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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