

Science in The Holy Qur'an

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From a Gaseous Mass to the Heavens and the Earth

The Qur'an was revealed in the seventh century. Many statements pertaining to physical phenomena are dispersed throughout the Qur'an. These are there in the Qur'an to draw the attention of people to the wonders of Allah's creation.

Any other seventh century book making statements about the physical universe would surely contain mistakes. Our knowledge of physical sciences in the twentieth century is far advanced beyond the imagination of people living the seventh century. What will come as a surprise to many people is that of all the numerous statements about scientific matters found in the

Qur'an, not one of those have proved contrary to the established facts of science. On the other hand, many of those statements have already been verified by modern scientific studies, and we confidently expect that as various fields of knowledge advance, other Quranic statements will likewise prove true.

Let us look at some of the statements which science has already verified. Concerning the creation of the heavens and the earth, the Qur'an says that prior to the creation, the Heaven was smoke. God then commanded it and the earth to come into being and they came willingly (see surah 41:1-5). How does that compare with modern scientific explanations? Let us hear a scientific explanation and then judge for ourselves.

The French scientist Dr. Maurice Bucaille in his book called *The Bible, the Qur'an and Science* explains: "At the earliest time it can provide us with, modern science has every reason to maintain that the universe was formed from a gaseous mass principally composed of hydrogen and a certain amount of helium that was slowly rotating" (p.147).

Didn't the Qur'an say that the Heaven was smoke before its creation? Dr. Bucaille explains the connection between his description and that of the Qur'an as follows: "Smoke is generally made up of a gaseous substratum, plus, in more or less stable suspension, fine particles that may belong to solid and even liquid states of matter at high or low temperature" (p. 143).

He therefore sees no contradiction of the Quranic use of the Arabic word *dukhan* (translated smoke) and a modern interpretation of that word as a gaseous mass with fine particles when speaking of the formation of the universe.

We notice here two remarkable features of the Qur'an. The first feature is that it expresses scientific truths that will be verified many centuries later. The second feature is that the Qur'an

expresses those truths using terms and expressions that would avoid confusing its first readers in the seventh century. The seventh century reader of the Qur'an can easily relate to the image of smoke, and the twentieth century scientist can easily interpret the word as a gaseous .mass

The Fusing and Separating of the Heavens and the Earth

How do modern scientists explain the formation of the universe? Dr. Maurice Bucaille explains it in his book, *The Bible, the Qur'an and Science*, as follows:

"The basic process in the formation of the universe . . . Lay in the condensing of material in the primary nebula followed by its division into fragments that originally constituted galactic masses. The latter in their turn split up into stars that provided the subproduct of the process, i.e. the planets" (p. 149).

Does the Qur'an say anything about this condensing and separation of the primary material to result in the formation of our universe? Let's have a look. Our creator, Allah, says in his final book: "Do not the unbelievers see that the heavens and the earth were joined together, then we clove them asunder . . ." (Qur'an 21:30). This could also be translated as follows: "Do not the unbelievers see that the heavens and the earth were fused together, then we separated them . . ." (Qur'an 21:30).

Dr. Bucaille sees this as "the reference to a separation process of a primary single mass whose elements were initially fused together" (p.143). Thus the Qur'an gives an accurate account of the formation of the universe to call upon humankind to recognize the power of their creator. This raises an interesting question: How could a man living in the seventh century invent these ideas which could not be confirmed until modern times? And how could he in so doing avoid the mythical and fanciful ideas prevalent in human history?

Dr. Bucaille mentions some of these myths for contrast: "When, as in Japan, the image of the egg plus an expression of chaos is attached to the above with the idea of a seed inside an egg (as for all eggs), the imaginative addition makes the concept lose all semblance of seriousness. In other countries, the idea of a plant is associated with it; the plant grows and in so doing raises up the sky and separates the heavens from the earth. Here again, the imaginative quality of the added detail lends the myth its very distinctive character" (p. 152). In contrast to those myths, the Qur'anic statements are "free from any of the whimsical details accompanying such beliefs; on the contrary, they are distinguished by the sober quality of the words in which they are made, and their agreement with scientific data" (p. 152).

It must be that the Qur'an is not the product of any human or humans, but a revelation from Allah. The Qur'an says: "The revelation of the scripture whereof there is no doubt is from the

.(Lord of the Worlds" (Qur'an 32:2

Avoiding the Mistakes of Genesis

As we saw in chapter 2, both the Quran and modern science confirm that the heavens and the earth were created simultaneously, having been separated from a primary nebula. It is important to understand that the Bible, the most famous record of the creation prior to the Quran gives a sequence for the creation of the heavens and the earth that is today found unacceptable from a scientific standpoint. If the Quran was the work of human beings it is difficult to imagine how they could have avoided the human errors so firmly fixed in the minds of people from the previous records.

In the Bible, in Genesis, chapter 1, we read that God created light which He called day, and separated it from the darkness which He called night (see v. 3). Today we know that the alternation of day and night is caused by the earth's movement in relation to the sun. But, according to Genesis, the sun was not created until the fourth day (see v. 16). So how could day and night alternate before that?

A related problem is that vegetation is created on the third day (see vv. 11-12) whereas the sun which is necessary for sustaining vegetation does not appear until the fourth day. "What is totally untenable" says Dr. Bucaille, "is that a highly organized vegetable kingdom with reproduction by seed could have appeared before the existence of the sun" (The Bible, the Quran and Science, p. 42).

We have already seen that the Quran states, and modern science confirms, that the heavens and the earth were formed together. Dr. Bucaille explains as follows: "Earth and moon emanated, as we know, from their original star, the sun. To place the creation of the sun and moon after the creation of the earth is contrary to the most firmly established ideas on the formation of the elements of the solar system" (p. 42).

By giving a sequence in which the sun and moon are created after the creation of the earth, the Genesis account proves erroneous. On the other hand, the Quran, by speaking of the simultaneous creation of the heavens and the earth, has judiciously avoided the errors of the Genesis account.

Could the Quran have been authored by a human? No! Dr. Bucaille asks: "How could a man living fourteen hundred years ago have made corrections to the existing description to such an extent that he eliminated scientifically inaccurate material and, on his own initiative, made .(statements that science has only in the present day been able to verify?" (p.151

Six Days of Creation or Six Periods?

Today we know that the creation process can be measured in billions of years. The priestly editors of the Bible could not have known this. In their eagerness to enjoin Sabbath observance on others they wrote that God rested on the very first Sabbath day after finishing up his work of creating the heavens and the earth.

The six days of creation in the book of Genesis, then, are clearly like six days of any seven-day week. The Priestly editors have made it clear that a day is meant a period from one sunset to another. Six days meant from Sunday to Friday. They believed that the reason the Sabbath day

became holy is that God Himself had rested on that day. Thus the editors tell us: "By the seventh day God had finished the work he had been doing; so on the seventh day he rested from all his work. And God blessed the seventh day and made it holy, because on it he rested from all the work of creating that he had done" (Genesis 2:2).

If that is not far enough, the editors took the idea that God rested farther still when they wrote as follows: "In six days the Lord made heaven and earth, and on the seventh day he rested, and was refreshed" (The Holy Bible, King James Version, Exodus 31: 17).

The idea that God rests like humans and gets refreshed like humans had to be corrected by Jesus, on whom be peace, when, according to John, he declared that God never stops working, even on the Sabbath day (see John 5:16). God clarified the matter in His own words when he declared: "And verily we created the heavens and the earth and all that is between them in six days, and naught of weariness touched us" (Quran 50:38 see also v. 15).

The above quranic verses clearly refute the idea that God rested. God, according to the Quran does not get tired. Neither slumber nor sleep overtakes him (Quran 2:255).

But how about the period of creation? Was that six days in the Quran too? In the above quotation from the Quran the term translated 'days' could mean, according to Dr. Maurice Bucaille, "not just 'days', but also 'long periods of time', an indefinite period of time (but always long)" (The Bible, the Quran and Science, p. 139).

Dr. Bucaille notes that the Quran also speaks of "a day whereof the measure is a thousand years of your reckoning" (Quran 32:5). The Quran also speaks of a day whereof the measure is 50,000 years" (Quran 70:4).

Dr. Bucaille also points out that long before our modern ideas of the length of time involved in the creation, commentators of the Quran understood that when the Quran speaks of six days of creation, it does not mean six days like ours, but rather six periods. Abu al Su'ud, for example, writing in the sixteenth century, understood it as six events (see The Bible, the Quran and Science, p.139).

Again, we see that the Quran has avoided repeating an error which was established in a

previous book an error that will not be discovered until modern times. In view of this, can anyone insist that the Quran is the work of a man

How Old is the Earth?

The Bible provides a chronology of history that extends back to the creation of Adam and Eve and to the creation of the earth. From this chronology it is possible to determine the date of the creation and hence the age of the earth.

Archbishop Ussher of Armagh (1581-1657) had calculated the year of creation to be 4004 BC. If that was not precise enough, Dr. Lightfoot of Cambridge worked out that the exact time when God completed His creation was 9 a.m. on Friday, October 23, 4004 BC (see the book *Thinking about God* by Sr. R. W. Maqsood, p. 63).

Many religious groups and sects have used this date in predicting precise dates for the end of the world, but all such predictions have so far proved erroneous. The one fact against them is that the world is still intact and we are very much alive. One reason all of those predictions failed is that they are calculated from a false date of creation. If 4004 BC was the year of creation, that would make the earth less than six thousand years old. No scientist can accept this today.

Modern scientists estimate that the earth is 4.5 billion years old with a maximum error of 2.2 % (see *The Bible, the Quran and Science*, p. 148).

Knowing this, many educated people lost faith in religion. They naturally felt that the Word of God should not contain errors of this kind. Others maintain that the Word of God was meant to teach only that truth which God wanted put into the scriptures for our salvation. It is therefore immaterial if the book contains historical or scientific errors.

As the scientist Galileo put it, the Bible is there to teach people how to go to heaven; it is not there to teach people how the heavens go. Some maintain, therefore, that it is understandable that the book will contain some historical and scientific errors since it was written by human beings who lived a long time ago and did not share our modern knowledge.

The Quran, on the other hand, does not contain any historical or scientific or any kind of error.

God challenges us to test this claim by examining the book for ourselves (see Quran 4:82). The Quran does not repeat the incorrect biblical chronology we have seen above. The Quran does not give a chronology since its purpose is not to provide us with the details of history, but only to teach us the lessons arising from specific events in history.

The Quran does, however, tell us that God measured the sustenance of the earth in four periods (Quran 41 :10). As to what could be the significance of these four periods, Dr. Bucaille comments as follows: "One could perhaps see in them the four geological periods described by

modern science, with man's appearance, as we already know, taking place in the quaternary era. This is purely a hypothesis since nobody has an answer to this question" (The Bible, the Quran and Science, p. 150).

How did the author of the Quran avoid the mistake in chronology committed by so many others, and believed in by so many others even up to our present day? Could a man in the seventh century have known that the earth was much more than six thousand years old? How could he come by this modern knowledge unless God was revealing knowledge to him? .(God tells us that the Quran is His book and not the work of any man (see Quran 10:37

Interstellar Galactic Material

The Quran mentions a rather curious category of created things, namely things between the heavens and the earth. Dr. Bucaille observes that this mention in the Quran "may surprise the twentieth century reader of the Quran" (The Bible, the Quran and Science, p. 144). For example, one verse says as follows: "To Him (God) belongs what is in the heavens, on earth, between them and beneath the soil" (Quran 20:6; other verses include 25:59, 32:4 and 50:38). What is that between the heavens and the earth? Dr. Bucaille explains as follows: "The creation outside the heavens and outside the earth is a priori difficult to imagine. To understand these verses, reference must be made to the most recent observations on the existence of cosmic extragalactic material, and one must indeed go back to ideas established by contemporary science on the formation of the universe . . ." (p. 145).

Scientists tell us that a primary nebula condensed, then divided up into fragments. These fragments, these galactic masses, further split up into stars and their sub-products, the planets. Each time such a division or split occurred, there remained extra material apart from the principal elements newly formed. The scientific name for these extra materials is 'interstellar galactic material'.

Is this extra material significant? Yes. Experts in astrophysics are quite aware of such material which have "a tendency to interfere with photometric measurements" (The Bible, the Quran and Science, p. 149). The extra material is so rarefied that they may be referred to as dusts or smokes or gases. Yet they altogether occupy so much total space that they may correspond to "a mass possibly greater than the total mass of the galaxies" (p. 149).

Again, we must face up to the implication of all this. How could a man living fourteen hundred years ago have known about interstellar galactic material? Was Muhammad, on whom be peace, well versed in modern astrophysics? Or is the Quran nothing but the Word of God? Allah, the only true God, declares in His book: "The revelation of the scripture is from Allah, the Mighty, the Wise. Surely We [Allah] have revealed the scripture unto you [Muhammad] with

.(truth; so worship Allah, making religion pure for Him (only)" (Quran 39:1-2

How Many Earths are There?

If you open the Quran to the first surah, you will notice it begins as follows: "In the name of Allah, the Beneficent, the Merciful. Praise be to Allah, Lord of the Worlds." Worlds? Not just one? Yes . . . worlds! There is the physical world, the spiritual world, the world of bacteria, and so forth. That, obviously, is one sense in which we can understand 'worlds'.

Another verse of the Quran, however, makes it clear that there are many earths (see Quran 65:12). Is it possible that there may be other earths out there?

No one expects to find another earth within our solar system. But scientists say it is likely that in our galaxy there are many earths outside the solar system. They say that approximately 50 billion stars in the Milky Way rotate slowly, as does the sun. This characteristic indicates that those stars are surrounded by planets that are their satellites.

The Bernard Star, for example, is believed to have at least one planetary companion. (see The Bible, the Quran and Science, p. 148). Dr. Bucaille quotes P. Guerin as follows: "All the evidence points to the fact that planetary systems are scattered in profusion all over the universe. The solar system and the earth are not unique" (p. 148-9).

In a recent article published in the Toronto Star, two scientists advanced evidence that there may indeed be many earths waiting to be discovered. The headline read: "Earths may be dime a dozen out there."

The Quran also uses the symbolic plural number 7 to indicate the existence of a plurality of heavens (see Quran 2:29, for example). Dr. Bucaille comments that this is "confirmed by modern science due to the observations experts in astrophysics have made on galactic systems and their very large number" (p. 150).

Once again we find that the Quran says something and scientists later discover it to be true. Can we resist believing in this book of God? God says: "Those who disbelieve in the Reminder when it comes unto them (are guilty), for indeed it is an unassailable Scripture. Falsehood cannot come at it from before it or behind it. (It is) a revelation from the Wise, the Owner of .(Praise" (Quran 41 :41-42

Organization of the Universe

What the Quran mentions about the organization of the Universe is important because "these references constitute a new fact of divine Revelation" (The Bible, the Quran and Science, p. 153). The Quran deals with this matter in depth although this is not dealt with in the previous scriptures.

Dr. Maurice Bucaille also points out the important fact that the Quran does not contain "the theories prevalent at the time of the Revelation that deal with the organization of the celestial world" (p. 153). If the Quran was authored by any human being, he or she would have naturally included the ideas prevalent at the time. But many of those ideas were later shown to be inaccurate. How did the author of the Quran know enough to exclude those ideas, unless the author is God himself.

Those who say that Muhammad authored the Quran think that the Arabs were very knowledgeable in the field of Science, and Muhammad was of course one of them. But this explanation is based on the incorrect assumption that the Arabs knew Science before the Quran was revealed. As pointed out by Dr.

Bucaille, the fact is that Science in Islamic countries came after the Quran, not before. "In any case", writes Dr. Bucaille, "the scientific knowledge of that great period would not have been sufficient for a human being to write some of the verses to be found in the Quran" (The Bible, the Quran and Science, p. 153-154)

Modern astronomers are aware that the stars and planets are kept within ranges of precise distances from each other. Had it not been for this fact, collision between them would be inevitable. The author of the Quran was also aware of this. In the Quran we read "the sun and the moon (are subjected) to calculations (Quran 55:5).

Again, we read: "For you (God) subjected the sun and the moon, both diligently pursuing their courses" (Quran 14:33). The phrase 'diligently pursuing their courses' is a translation of the Arabic term *daa'ib* which here means 'to apply oneself to something with care in a perseverant, invariable manner, in accordance with set habits' (The Bible, the Quran and Science, p.155). And that indeed is how the sun and moon behave.

Another verse in the Quran says, "the stars are in subjection to His command" (Quran 16:12). Order in the universe is essential for its preservation. God, who subjected them to that order .knew about it before any scientist

What Holds up the Sky?

Today scientists speak of gravitational forces that hold the heavenly bodies apart from each other and prevent them from colliding with each other. How was this to be conveyed to the first readers of the Quran? God tells us in the Quran that He is the One Who raised the sky (Quran 55:7) and that he holds it back from falling on the earth (Quran 22:65). But how exactly does God do this?

If the author of the Quran was a human being, it would have been very easy for the author to copy the answer to this question from the Bible. But today no one will believe that answer.

In the New American Bible, a picture is drawn to show how the authors of the Bible imagined the world to look like. In that picture, the sky "resembles an overturned bowl and is supported by columns" (The New American Bible, St. Joseph's Medium Size Edition, pp. 4-5). The earth in that picture is flat, and is also supported by pillars. After describing the picture at length, the editors of that Bible conclude by calling that idea of the world a "prescientific concept of the universe."

At the time when the Quran was being revealed, anyone could have easily believed this description which was already found in the Bible. It is only in modern times that people would know better. How did the author of the Quran avoid this mistake? God says in the Quran that He created the heavens "without any pillars that you can see" (Quran 31:10). Again, the Quran says: "God is the One Who raised the heavens without any pillars that you can see" (Quran 13:2). Dr. Maurice Bucaille comments: "These two verses refute the belief that the vault of the heavens was held up by pillars, the only things preventing the former from crushing the earth" (The Bible, the Quran and Science, p. 154). To be able to avoid that prescientific error, the author of the Quran must have been either a .modern scientist, or God Himself

Comparing Apples and Oranges

The sun and the moon are different from each other not only in terms of size, but also in terms of function. The sun generates light, but the moon does not. The moon merely reflects the light coming from the sun. Every high school student today knows this. A man or woman in the seventh century, however, would not have known about this fine distinction between the sun and the moon. To such a person, the two would appear as a greater light and a lesser light. Such a person would observe that the greater light lights up the day and the lesser light lights up the night. And this indeed is how the sun and the moon were described in previous books.

The Bible, describing the creation, says: "God made two great lights the greater light to govern the day and the lesser light to govern the night" (Genesis 1: 16). The author of the Qur'an however, was aware that this comparison between the sun and the moon is not adequate.

Therefore the Qur'an does not refer to them as being a greater and a lesser light. The Qur'an says: "God is the One who made the sun a shine and the moon a light" (Qur'an 10:5).

Commenting on this, Dr. Bucaille says: "Whereas the Bible calls the sun and moon 'lights', and merely adds to one the adjective 'greater' and to the other 'lesser', the Qur'an ascribes differences other than that of dimension to each respectively" (The Bible, the Qur'an and

Science, p. 156). Similarly, the Qur'an says: "Blessed is the One Who placed the constellations in heaven and placed therein a lamp and a moon giving light" (Qur'an 25:61). Here again, the difference between the sun and the moon is noted. The sun is called a lamp, and the moon is called an object giving light. Again in the Qur'an God says that He "made the moon a light" and "made the sun a lamp" (Qur'an 71:15-16). Furthermore, God calls the sun a "blazing lamp" (Qur'an 78:12-13). This term which is used for the sun is never used for the moon in the Qur'an. In all of these verses, God expresses the notion that the sun and the moon are "not absolutely identical lights" (The Bible, the Qur'an and Science, p. 156).

Dr. Bucaille draws his conclusions from what he found in the Qur'an about the sun and the moon: "What is interesting to note here is the sober quality of the comparisons, and the absence in the text of the Qur'an of any elements of comparison that might have prevailed at the time and which in our day would appear as phantasmagorical" (The Bible, the Qur'an and Science, p 157). In short, "There is nothing in the text of the Qur'an that contradicts what we .(know today about these two celestial bodies." (The Bible, the Qur'an and Science, p. 157

The Sun & Moon and Their Orbits

Today we know that the Moon revolves around the earth in approximately 29.5 days. The sun also revolves in its own orbit. To understand the sun's orbit, Dr. Bucaille says that the position of the sun in our galaxy must be considered, and we must therefore call on modern scientific ideas (The Bible, the Qur'an and Science, p. 162).

Our galaxy, the milky way galaxy, includes one hundred billion stars situated in such a formation that the galaxy is shaped like a disc. This disc turns around its center like a gramophone record. Now, it is obvious that when a gramophone record turns, any point on the disc would move around and come back to its original position. Similarly, every star in the galaxy moves as the galaxy rotates on its axis. Therefore the stars that are away from the center of the galaxy orbit around the axis. The sun is one of those stars.

Dr. Bucaille explains that modern science has worked out the details of the sun's orbit as follows: "To complete one revolution on its own axis, the galaxy and the sun take roughly 250 million years. The sun travels roughly 150 miles per second in the completion of this" (The Bible, the Qur'an and Science, p. 162).

After describing this, Dr. Bucaille comments: "The above is the orbital movement of the sun that was already referred to in the Qur'an fourteen centuries ago." (The Bible, the Qur'an and Science, p. 162)

And yet this is a new finding. As Dr. Bucaille says, the knowledge of the sun's orbit is an

acquisition of modern astronomy (The Bible, the Qur'an and Science, p. 162). Two verses in the Qur'an refer to the orbits of the sun and moon. After mentioning the sun and the moon, God says: "Each one is travelling in an orbit with its own motion" (Qur'an 21:33; 36:40). How did the author of the Qur'an know of this? Even after the Qur'an was revealed, early commentators could not conceive of the orbits of the sun and moon. The tenth century commentator Tabari could not explain this so he said, "It is our duty to keep silent when we do not know" (XVII, 15 quoted in The Bible, the Qur'an and Science, p. 161). Dr. Bucaille comments: "This shows just how incapable men were of understanding this concept of the sun's and moon's orbit." (The Bible, the Qur'an and Science, p. 161). From this it is clear that if the Qur'an was here expressing an idea already known to the people, the commentators would have easily understood it. But this, as Dr. Bucaille explains was "a new concept that was not to be explained until centuries later" (The Bible, the Qur'an and Science, p. 161). This confirms what God said to his prophet, on whom be peace: "This is of the tidings of the Unseen which we inspire in you (Muhammad). Neither you nor your people knew it before this" ((Qur'an 11:49

The Sun & Moon Move With Their Own Motion

The Qur'an makes the following statement about the sun and the moon: "Each one is travelling in an orbit with its own motion" (Qur'an 21:33; 36:40). Why did the Qur'an say that the sun and moon move with their own motion? And, if that is true, where did the author of the Qur'an get this information?

The fact is that the sun and moon rotate on their axes and are in part animated by this rotating motion. The phrase "travelling with its own motion" in the verses quoted above is a translation of the Arabic verb 'yasbahoon'. This could also be translated 'they swim.' In that case, the verse would read that the sun and the moon, "Each swim in its own orbit." Those who translate the verse this way explain that the term swim refers to movement with one's own internally generated force. Furthermore the movement of a swimmer is graceful, measured, and smooth. This is a very fitting description for the movement of the stars and planets including the sun and the moon.

After describing the scientific data concerning the rotation of the sun and the moon, Dr. Bucaille says: "These motions of the two celestial bodies are confirmed by the data of modern science, and it is inconceivable that a man living in the seventh century A.D.... could have imagined them" (The Bible, the Qur'an and Science, p. 163).

It is also amazing that the Qur'an uses a different term for the movement of the clouds and the

mountains (see Qur'an 27:88). Obviously, the clouds and mountains are driven by external forces. The cloud is driven by the wind and the mountains move with the rotation of the earth. The sun and moon, however, move with their own motion, and therefore the Qur'an uses a peculiar term "they swim" to refer to their smooth, graceful, self-propelled movement. How did the author of the Qur'an know enough to make this choice of words that will reflect a .modern scientific truth? The Qur'an is no less than a revelation from God

What Shape is the Earth?

Today we can look at a globe and know that the earth is somewhat like a ball, a sphere. The Qur'an makes certain statements that led Muslim scientists to understand long before their European counterparts that the earth is spherical. When Europe was in the dark ages thinking that the earth was flat, Muslim students were using globes for studying the earth in Islamic universities.

Since it was not the purpose of the Qur'an to teach science, the Qur'an did not need to state explicitly that the earth is spherical in shape (or more precisely, a geoid). But some of what the Qur'an says stimulates you to think of the world as a globe. Take, for example, the following verse: "Have you not seen how God merges the night into the day and merges the day into the night?" (Qur'an 31:29).

Another verse tells us that God coils the day and night around: "He coils the night upon the day and He coils the day upon the night" (Qur'an 39:5). The word 'coils' in the verse above is a translation of the Arabic verb kawwara which is used in describing the action of coiling a turban around the head. To understand this statement fully, readers of the Qur'an had to think of the earth as a sphere.

To fully appreciate the above two statements in the Qur'an, try this experiment at home: You need a flashlight and a globe. Take these items into a dark room. Using the flashlight to simulate the light of the sun, shine the light upon the globe. Notice that only one half of the globe is lighted up.

The other half is in darkness. Half the world is having day, the other half is having night. Now, recall that the earth is continuously rotating on its axis and will go around completely in twenty four hours. Slowly turn the globe around to simulate this rotation. Notice that as the globe turns, the day is going around the globe to light up the other half of the world. The night is also going around the globe to give rest to the other half of the world.

The day and night are perpetually coiling around the earth with some degree of interpenetration. This is exactly how it appears to astronauts during their space flights. Dr. Bucaille makes the following remark: "This process of perpetual coiling, including the

interpenetration of one sector by another, is expressed in the Qur'an just as if the concept of the earth's roundness had already been conceived at the time—which was obviously not the case." (The Bible, the Qur'an and Science, p. 165). How do we explain the presence of this knowledge in the Qur'an? This obviously did not reflect the level of learning of the time, but was .helpful in stimulating Muslim scientists to conceive of the earth in its real shape