Biblical Chronology and Dating of the Early Bible

by Curt Sewell

Introduction

Until a few years ago, I thought that if one accepted the idea that the early Genesis chronology is reliable, one would automatically arrive at a date of about 4000 BC for the creation of the world. It turns out that may not be quite true. In this chapter, we will look at several different methods of dating these early events. This chapter is an upgraded and expanded revision of an article that I wrote, published in *Bible and Spade* magazine. Curt Sewell, Biblical Chronologies Compared, in "*Bible and Spade*," Vol.8, No.1, Winter 1995, pp. 20-31.

First, however, we should understand that secular scientists and others who do not accept the Bible as the inspired Word of God think the world must be extremely old -- 4-1/2 billion years is the usual age cited for Earth, and several million years for Homo sapiens, or human beings. These ages completely disagree with the Bible, and therefore must be rejected by those who take the Bible to be an accurate historical record.

Archaeologists also usually differ somewhat with a 6000-year age for the earth, but not by nearly as wide a margin. These scientists have studied the artifacts left by civilized people, and usually agree that civilization began no more than about 10,000 years ago. Although some of their age-dates are too old to agree with most Biblical interpretations, they are at least in the same ballpark.

We'll use two different systems to indicate dates -- AM and BC (sometimes called BCE, meaning "Before the Common Era"). The AM system, meaning "Anno Mundi," or "Year of the World," begins with year 0 as the date of Creation, and the numbers increase as time moves toward the present.

The year 1 BC, meaning "Before Christ," is the first year before the assumed birth-year of Jesus. The following year is called AD 1, meaning "Anno Domini, the year of our Lord." Secularists often call this CE, meaning "Common Era." There is no year zero.

The Bible contains enough information so that we can calculate AM dates directly, with just a little addition and subtraction. In this way, we can show exact AM birth and death dates for all the major patriarchs from the Creation to the Exodus from Egypt. Converting these to the BC system is more difficult, as we'll show later.

Sources of Biblical Differences

There are three ancient text versions of the Old Testament -- the Septuagint, the Masoretic, and the Samaritan Pentateuch. Although scholars say that all agree on the important doctrines, there are noticeable differences between them. Of particular interest to us now are the different numbers in the genealogies that are given in the 5th and 11th chapters of Genesis, which record the number of years from the Creation until the birth of Abraham.

There are also at least two different methods of calculating genealogical timing. We will refer to them as the "Ussher Method" and the "Patriarchal Age Method." These will be described in later paragraphs.

The Three Ancient Text Versions

We do not possess any of the original Biblical manuscripts (or autographs). There are several theories as to how they were first written, but most conservative scholars agree that they finally appeared in paleo-Hebrew script early in the history of the Israelites, and this was probably in the land of Israel.

However, by the end of the fourth century BC, many Jews were living in Egypt; probably most of them had immigrated there during Nebuchadnezzar's invasions and his destruction of Jerusalem shortly after 600 BC. They undoubtedly took copies of their Scriptures with them.

When Alexander the Great conquered Egypt and the Middle East in 332 BC he began to unify his world -- a process called "Hellenization." He had the great library at Alexandria built, and brought with him a form of Greek known as *koine* Greek. It quickly became the common language of the known world and later was used in the original New Testament writings. But the Jewish Scriptures were still in Hebrew. Many Egyptian Jews, however, spoke *koine* Greek, but not Hebrew.

The Septuagint

In the early part of the third century BC, a group of 70 (or 72) scholars were brought to the Alexandrian library by the Egyptian ruler Ptolemy-1, to translate the Hebrew scriptures into Koine Greek. The result of their work became known as the Septuagint text (meaning "70," and sometimes called the "LXX"). This became the Bible for the "man on the street" for many centuries. It was the Bible used in Israel during the time of Jesus and the writers of the New Testament. There are internal evidences showing that Luke probably used the Septuagint when he wrote his Gospel and the Acts of the Apostles.

Samaritan Pentateuch

The Samaritan Pentateuch is used today by the several hundred people known as Samaritans, who live in the central part of Israel. They are descendants of intermarriage between native Israelites and settlers brought in by the Assyrians and Babylonians after their conquests in the eighth and sixth centuries BC. It is said that the nephew of Sanballat (see Nehemiah 2:10,19, 4:1-8 etc.) came from Egypt in the mid-400's BC and brought a copy of the Hebrew Scriptures with him. The Samaritan Bible consists only of the "Pentateuch," the first five books of the Old Testament.

The Masoretic

Finally, in about the fifth century AD, a group of Jewish scholars known as Masoretes met in Jerusalem to consolidate their Scriptures. The resulting text is called the Masoretic text. It is the basis for most modern Old Testaments. It is generally considered to be extremely faithful to the original manuscripts. But it is based on sources that are certainly much more recent than those of either the Septuagint or the Samaritan Pentateuch.

Which is Best?

Many people including this writer believe, as an article of faith, that the Bible in its original writing was inerrant, that is, was inspired by God and was absolutely accurate in all respects; and, as copies and translations were made, God preserved all important facts and doctrines. One principle used by scholars to judge manuscripts is that, barring other factors, the oldest one is probably the most accurate. Therefore let us compare the relative age of the sources for these three text versions.

The Samaritan Pentateuch is said to have been brought to Samaria from Egypt during the fifth century BC. Many modern scholars do not consider this to be a valid claim. But the fact that it has only the first five books, and none of the later ones, is a point in favor of the extreme antiquity of the Samaritan text. However there are many spots where it's apparently been altered at some early date. The oldest copy in their possession today dates from about AD 1200.

The Septuagint is known to have been translated from Hebrew into koine Greek in the early third century BC (about 275 BC).

The Masoretic text was produced by Jewish scholars beginning in about the fifth century AD, and continuing until almost AD 1000. They are thought to have worked from manuscripts that were copied in about the second century AD. Thus, this is the newest version in terms of source material. However, the old Jewish scribes were noted for their extreme care and accuracy.

The main argument used by those who favor the Septuagint text is that this is the one that was used during the first century AD; it is the Bible that Jesus read, and that the New Testament writers must have used when they quoted from Old Testament verses; this shows up in a number of spots. For example, in Luke's genealogy of Jesus (Luke 3:36), the name Cainan appears between Arphaxad and Shelah; this name is shown in Genesis 11 in the Septuagint version but not in the others. However, it's not in the short list given in I-Chronicles 1 in either the Septuagint or Masoretic. It's even missing in Genesis 11 in some of the older Septuagint manuscripts. This name is probably the result of a copyist's error, possibly in one of the early Luke manuscripts. Scholars still debate the source of this discrepancy.

One strike against the Septuagint is the fact that, when a time-line chronology is calculated by the usual "Ussher Method" (described later), Methuselah died some 14 years after the Great Flood of Noah. (Could he have been able to swim for a year? Not likely!) Thus there must be some numerical error somewhere. These issues as well as many others are discussed in an excellent article by Pete J. Williams, "Some Remarks Preliminary to a Biblical Chronology," in Creation Ex Nihilo Technical Journal, Vol.12, No.1, 1998, pp.98-106. Dr. Williams professes belief in biblical inerrancy, and offers explanations for a number of discrepancies between the different ancient texts, as well as probable reasons for these discrepancies.

There's a point that favors the Masoretic. Several spots in Genesis 15 to 21 mention that Abraham thought he was too old (at age 100) to become a father. But the Septuagint puts all of his ancestors at least 130 at the birth of their heir, thus putting Abraham at a good child-bearing age. If that were the case, there would be no problem.

One obvious difference between the sets of numbers in the two texts is in the age of the patriarchs at the birth of their heir -- in a surprising number of cases the Septuagint shows them to be exactly 100 years older than does the Masoretic. Their ages at death are, in most cases, the same in both texts. This difference might be partially explained by the fact that the Hebrew alphabet doesn't have characters for numerals; it uses an alphabetic character to represent a number.

Most modern Bible scholars prefer the Masoretic, even though there are some (disputed) arguments favoring the Septuagint. But only a few people have chosen the Samaritan Pentateuch. Most present-day Bibles are based on the Masoretic version, often simply called "the Hebrew text," and that's what we'll do in this book you're reading now.

Early Chronographers

Flavius Josephus was a famous Jewish historian who lived in the first century AD. In his Antiquities he wrote:

That history [of the Jewish race] embraces a period of five thousand years, and was written by me in Greek on the basis of our sacred books.

Note that "five thousand years" is a Septuagint number, not from the Masoretic text.

Another famous historian was Eusebius, who lived in Caesarea during the third century AD. He published tables comparing the three texts spoken of above; he preferred the Septuagint, as did Julius Africanus, a church writer who lived in AD 170-240.

Jack Finegan, in *Handbook of Biblical Chronology*, wrote:

In general he [Eusebius] thinks that mistakes and inconsistencies are evident in the extant Hebrew text and that the Septuagint was translated from ancient and accurate copies of the Hebrew text and therefore to be preferred. [Jack Finegan, *Handbook of Biblical Chronology*, Princeton, NJ: Princeton University Press, 1964, pg. 156.]

Table 3 (all Tables are listed in Appendix A) shows a summary of some key dates, taken from Eusebius' Chronicle. It is obvious that this came from the Septuagint.

What Do The Texts Say?

The genealogy in Genesis 5 covers the time span before the Great Flood of Noah; Genesis 11 takes it from there, up to the birth of Abraham's father Terah. In each case, a patriarch is named, his age at the "begetting" of the next generation is stated, and his age at death is given. The next verse describes the next patriarch in a similar way. There are no apparent gaps. A typical entry is in Genesis 5:25-27:

And Methuselah lived 187 years, and begat Lamech: And Methuselah lived after he begat Lamech 782 years, and begat sons and daughters: and all the days of Methuselah were 969 years, and he died. (From the KJV,or King James Version, sometimes called the Authorized Version -- this came from the Masoretic text.)

Other than different numbers, the only big difference between the texts is that the Septuagint inserts the name "Cainan" between Arphaxad and Salah in Genesis 11:13 and a few other places. This is not the same Cainan who appears in Genesis 5:12-14, over a thousand years earlier.

The Ussher Method of Calculation

Almost all chronologists, except for one whom we will discuss later, have considered the verses quoted above to mean:

When Methuselah was 187 years old his son Lamech was born; then Methuselah lived another 782 years, and died at the age of 969.

This is true for Josephus, Africanus, and Eusebius, as well as Ussher and many more recent writers. With a little simple arithmetic, the elapsed time from Adam to Abraham can easily be calculated.

Most people have heard of the "Ussher Chronology," which used this method of interpreting the data. James Ussher (1581-1656) was archbishop of Armagh in Ireland. His chronology was published in 1650 in *Annales Veteris et Novi Testamenti*, and was inserted in the margin of reference editions of the King James Bible, which had been first published in 1611. It follows the Hebrew (that is, the Masoretic) text, and puts the Creation at 4004 BC and the Flood at 2349 BC. Table 4 (see Appendix A) shows a number of Ussher's dates, for the period we're interested in in this book you're now reading.

Tables 5 and 6 (see Appendix A) are revisions of this sort of information, based on newer estimates of ancient history, and what I think is a more correct interpretation of the Biblical text. The biggest differences between Ussher's numbers and mine are that I show the Great Flood of Noah to have begun in 2519 BC, and the initial Creation of the earth to have occurred in 4175 BC. These discrepancies are discussed later in this chapter.

Eugene Faulstich, of the Chronology-History Research Institute, refined the above Ussher method. He knew that Biblical months always began on the evening of a new moon, and that years began on a vernal equinox. So Faulstich used a computer program to calculate many timing cycles, including precise moon phases, vernal equinoxes, Sabbath and Jubilee years, priestly cycles, astronomical events such as eclipses, and also backward-

extrapolated Gregorian (modern calendar) equivalent dates. By careful study of Biblical texts, as well as some extra-Biblical sources such as Babylonian king-lists, he arrived at what he considers much more precise dating of most Old Testament events. For example, his creation week occurred March 20-26, 4001 BC, at a time known to have a highly unusual planetary alignment. He based his work on the Hebrew (Masoretic) text.. [E.W. Faulstich, *Bible Chronology and the Scientific Method, Part II: Creation Through the First Temple.*, Spencer, Iowa: Chronology-History Research Institute, 1990]).

Patriarchal Age Method of Calculation

Harold Camping, in his book *Adam When?*, (Oakland, CA: Family Stations; and Alameda CA: Frontiers for Christ, 1974) uses a completely different way of interpreting verses such as Genesis 5:25-27 (quoted above). As a result, his dates are more ancient, especially for the earliest entries. For example, according to his calculations, the creation took place in 11,013 BC.

Camping's method is highly unorthodox. What is significant, however, is that many of his dates correlate very closely with those of secular archaeologists and historians. And, even though it is a very unusual way of interpretation, this writer cannot find any obvious violation of Scriptural integrity, only long-established custom.

Camping noticed that in a few places the verbal formula quoted above is different. Instead of simply saying "begat," some of the verses insert the additional phrase "called his name." He also noticed that in some texts (Matthew 1:8 for example) "begat" means a descendant, not an immediate father-son relationship. There are also several places, such as Genesis 10:31, where the word "sons" is used in other than immediate father-son relationships. But where the phrase "called his name" is used, there is always a direct next-generation relationship.

Camping repeatedly emphasizes his belief in the integrity of the Bible as the Word of God; he also realized that Genesis 5 and 11 contain so many numbers that these must have been important to God, and therefore should be important to us. But he concluded that many of them do not necessarily represent direct father-son descendants. So he proposed the "patriarchal age" concept, as explained below.

If the phrase "called his name" is used, or if there's some other means of definitely showing direct father-son relationship, then the verse is to be interpreted in the same way that Ussher and others have done. But if such evidence is not present, then Genesis 5:25-27, for example, should be interpreted as:

When Methuselah was 187, he had a son who, in turn, had a direct descendant named Lamech. Methuselah then lived another 782 years, and Lamech was born in the same year that his ancestor Methuselah died at the age of 969.

According to this "patriarchal age" theory, we have no way of knowing how many generations actually occurred between Methuselah and Lamech, but we do know how many years this took. In that way, the "age of Methuselah" lasted for 969 years, and was then immediately followed by the "age of Lamech," which lasted another 777 years, according to Genesis 5:31.

The men who were clearly the direct sons of those mentioned just before them were Seth, Enos, Noah, Shem, and Abram. All others in those two chapters, according to Camping, were indirect descendants of their predecessor.

The effect of this "Patriarchal Age" method, as compared to the more familiar "Ussher Method," is to greatly increase the number of years in the Biblical record of ancient times. These results are so different from what is generally believed that it is at first shocking. See Table 4 in Appendix A. But we must admit that it seems to fit

history, and it seems to solve what has always been a vexing problem. However I don't know of any other Bible scholar who accepts this method -- we won't here either.

Calculating Dates A.M. (Anno Mundi, or year of the world)

It's not possible to obtain conventional BC dates directly from the Bible, because there's no solid temporal connection between the two Testaments, and no solid connection to a confirmed date of ancient history. Thus the only authentic set of Biblical dates possible must be referenced to the beginning, or "Dates After Creation," sometimes called AC or more often AM, meaning Anno Mundi or "Year of the World." This statement applies to the period from the Creation to the Israelites' Egyptian exile.

Table 5, "Dates AM" (see Appendix A), illustrates these dates for the events between the initial Creation and the death of Joseph. Most of the data are given in chapters 5 and 11 of Genesis, as is shown in Table 1, "Comparing Three Texts" (see Appendix A). Notice that we're restricting our study to the Masoretic text.

The notations in the right-most column of Table 5 (see Appendix A) show scripture references that provide the data for each item. Most of the calculations use straight-forward arithmetic, but a few require some additional logic. These are shown as NOTE-1, NOTE-2, and NOTE-3 in Appendix A.

To make a set of AM dates, begin at the top, and add the ages at which each patriarch begat the next significant son. For example, Adam was "born" in the year 0 AM, Seth was born in 130 AM, Enos in 235 AM, etc. The list goes on smoothly through Noah, who was born in 1056 AM. But the Biblical text is somewhat different there, since it says, in Gen.5:32, "And Noah was five hundred years old: and Noah begot Shem, Ham, and Japheth." Does that mean that Noah had triplets? No, a little logic, shown in NOTE-1 in Appendix A, gives the definite answer that Japheth was born in 1656 AM (when Noah was 500), Shem 2 years later in 1658 AM, and Ham sometime after that.

A similar problem crops up regarding the birth of Abram. NOTE-2 in Appendix A explains this one. It shows that Abram had an older brother who was born when their father Terah was 70, but Abram wasn't born until Terah was 130. In this case, we don't know which of Abram's brothers was the oldest.

A third problem area relates to Jacob's age at the time Joseph was born. When we look in the Genesis chapters describing the birth of those sons, we find the numbers to be completely missing. In fact, many people have pondered how long Jacob lived in Haran, and how old he was when he first went looking for a wife. I've seen several guesses, and some of them were wrong. As it turns out, that information is irrelevant for purposes of chronology. We need to go forward into Genesis 41-47 for that information. That logic is explained in NOTE-3 in Appendix A.

At this point in the Genesis chronology we run out of easy links. Almost no details are given for the period the Israelites lived in Egypt. And the history of Egypt doesn't help much either. But to come up with a BC date for any of what we've discussed so far, we have to have some link with secular history.

There are two verses that can help with that. The first is Exodus 12:40-41:

Now the sojourning of the children of Israel, who dwelt in Egypt, was four hundred and thirty years.

And it came to pass at the end of the four hundred and thirty years, even the self-same day it came to pass, that all the hosts of the LORD went out from the land of Egypt.

The phraseology here certainly sounds as if it's intended to be used as a chronology verse.

The beginning of this "sojourning of the children of Israel" must have begun with the entry of Jacob and his family into Egypt, when he was 130 years old, that is, in 2298 AM. Thus the Exodus from Egypt must have been in 2298 + 430 = 2728 AM.

The next step toward secular reality can be found in I-Kings 6:1, which says:

And it came to pass in the four hundred and eightieth year after the children of Israel were come out of the land of Egypt, in the fourth year of Solomon's reign over Israel, in the month Zif, which is the second month, that he [Solomon] began to build the house of the LORD,

We can thus figure this date for the start of Temple construction as 2728 AM + 480 = 3208 AM.
This is within the range of secular history, and is the most recent event that can be directly linked, through straightforward Biblical data, back to the Creation of the world.

Calculating BC Dates

The section above established a set of "Dates AM" (Anno Mundi, or "Year of the World"), which are useful for comparing the relative ages of the characters from Adam through Joseph, and for seeing how their lives may, or may not, have overlapped. But these aren't of much value for correlating with world history such as interactions with other nations or known world events. For that, we need "Dates BC" (or BCE, which is preferred by many secularists).

To do that, we need some event that is accurately known in both the AM and the BC systems. The most accurately known such event is the destruction of Solomon's Temple in Jerusalem, by Nebuchadnezzar. This took place in 586-587 BC. However the Biblical trail for this is not clearly defined. Different scholars have different ways of tracing the exact number of years leading up to this. Length of reign for the various Hebrew kings is given, but there are conflicts in a number of spots, so that this "paper trail" is not clear.

Therefore, the most practical choice for an AM / BC correlation point, in this writer's opinion, is the beginning of construction of King Solomon's Temple. We've shown above that this occurred in 3208 AM. Many conservative Biblical scholars, and several secular historians, agree that this took place within a few years of 967 BC.. This date of 967 BC is taken from E.R. Thiele's "The Mysterious Numbers of the Hebrew Kings," (Grand Rapids, MI: Eerdmans, 1965). Thus these two numbers occur at the same point in time, and the correlation becomes a matter of fairly simple arithmetic.

This is the spot on the tables where we should begin our calculations. We've developed the intervals between various events; so we simply add those intervals to the known BC dates. For example:

(Temple Start) + 480 = (Exodus Date)
967 BC + 480 = 1447 BC

(Exodus Date) + 430 = (Egyptian Entry)
1447 BC + 430 = 1877 BC

(Egyptian Entry) + 130 = (Jacob's birth)
1877 BC + 130 = 2007 BC

(Jacob's Birth) + (Isaac's Beget Interval) = (Isaac's Birthdate)
2007 BC + 60 = 2067 BC

This process can be continued in a "daisy-chain" manner all the way back until we find the BC Date for the Creation of the World, which might be called Adam's "birthdate."

The numbers built up in this manner can be used to compile the data for Table 6, "BC Date Calculations" (see Appendix A for all Tables). Notice that we've duplicated the two left-most columns, the Biblical data for the "Age at Beget" and the "Age at Death" of the various patriarchs. These were also shown in Tables 1 and 5. The data in Table 6 can be used to build the time-line of Table 3.

Some Confusing Scriptures

There are a few spots in the Bible where some number of years is given, and it's not easy to see how these verses fit. One of these is Genesis 15:13-21. Here God told Abram that

"... thy seed shall be a stranger in a land that is not theirs, and shall serve them; and they shall afflict them four hundred years; ... But in the fourth generation they shall come hither again..."

Many people have wondered about this. I have a few guesses, but no positive explanation. It doesn't seem to fit properly into this chronology. Most scholars think this refers to the Israelite's Egyptian exile. But the details don't fit properly. However, "four hundred years" doesn't fit well with "fourth generation." This will take special explanation from God.

Another verse that has puzzled many people, especially those who choose the "short Egyptian sojourn," is Galatians 3:17,

"And this I say, that the covenant, that was confirmed before of God in Christ, the law, which was four hundred and thirty years after, cannot disannul..."

This one is easier. At first glance, this seems to say that Moses' trip to Mount Sinai, where he received the Ten Commandments, took place 430 years after God made His covenant with Abram in Genesis 15. This would contradict other more definite scriptures.

But notice that this verse doesn't refer to when the covenant was given, it refers to when it was confirmed. It was first given to Abraham in Genesis 15:13-21, then was later passed on to Isaac, and then to Jacob. The final confirmation (as mentioned in Galatians 3) is described in Genesis 46:1-5, at Beersheba, just before Jacob and his family entered Egypt. This mentions the same things as did the original covenant -- that God would be with Jacob, that he would go down into Egypt, that his descendants would become a great nation, and that they would come out again. This occurred in 1877 BC, according to Table 6 (see Appendix A).

The giving of the law was at Mount Sinai, just a few months after the Exodus from Egypt, in 1447 BC. Thus the period of time that Paul mentioned in Galatians 3:17 is

1877 BC - 1447 BC = 430 years.

This shows perfect agreement between Paul's statement and the Old Testament record.

Comparing Two Sets of Dates

The dates that we've given here are different from those given by Archbishop James Ussher in 1650 that are shown in Table 4 (see Appendix A). There are two main sources for this difference. One is that Ussher used a "correlation date" for the start of construction of the Temple of 1012 BC, while I've used the more modern date of 967 BC. (This difference is still a matter of debate among scholars of different views.)

Another major difference, which I think is important, is the length of time between the entry into Egypt by the Israelites and their Exodus from Egypt. This is clearly given in Exodus 12:40-41 as 430 years. But Ussher used an interval of

1706 BC - 1491 BC = 215 years.

The logic behind his use of this number is debatable. Ussher didn't publish his reasoning for choosing his dates, so we can't know for sure. But we can make some reasonable guesses.

It's known that rabbinical Jews in about the 1st century AD felt embarrassed about the Israelites' long period of Egyptian enslavement, and tried to reduce the record to show 210 years, instead of 430. This apparently started a tradition, which Ussher must have used in his chronology. Several chronologists have considered this so-called "short sojourn" to fit better within their framework. But this writer chooses to stay with the simple and very explicit statement in Exodus 12:40,41. This seems to say clearly that they had spent 430 years in Egypt.

There's another sort of consideration that might be pondered on. It relates to the question of "long-vs-short-sojourn" and population growth rates. We'll use the simple equations often used in growth analysis, shown in a box at right.

We're told in Genesis 46:11 that Kohath (son of Levi and grandson of Jacob) was one of the group who moved to Egypt with Jacob. Numbers 26:58-59 says that Kohath was the father of Amran, whose wife was Jochebed, and whose children were Aaron, Moses, and Miriam. Exodus 6:16-20 says that Levi died at age 137, Kohath at 133, and Amran at 137. Moses, of course, was 80 when he led the Israelites out of Egypt. The language of these verses sounds like these are direct father-son relationships. However, the ages given don't allow for more than about 280 years at most for the interval between Kohath's entry into Egypt until the Exodus from Egypt. This argument favors the "short sojourn" of 210 or 215 years. However, even though a number of chronologists use this number, there is no Biblical verse that informs us of this. Many people, including this writer, argue for unmentioned intermediate generations here, and there are other problems.

Numbers 1:1-47 tells us that, when the Israelites left Egypt at the Exodus, the total number of Israelite men over age 20 (omitting the tribe of Levi) was 603,550 men (not counting women and children). We can guess that the total people might have been some two million. Genesis 46:8-27 tells us that the total number of men, women and children who entered Egypt with Jacob was 70. If seventy people multiplied to two million in 215 years, the growth rate must have been almost 5% per year, an extremely large figure, but possible. However, if 430 years is available, the rate would be reduced to 2.4% per year, still twice as high as the highest rate achieved for the U.S. at any time during the last 150 years. This argument bolsters the "long sojourn" position. Partly for this reason, but mainly because of scriptural reasons, within the context of this present book, I'm staying with the more conventional dating scheme given in Table 6 (see Appendix A). We'll see that this will allow correlation with Egyptian secular history, and also agrees with the dates used by many archaeologists.

Actually, Biblical chronology, which sounds as if it should be a fairly simple thing, turns out to be quite a controversial subject, not nearly as easy as I had thought a few years ago. I'm including a couple of short descriptions, at the end of this chapter, of two chronologies prepared by men who've given this a lot of study, and have reached conclusions different from those I've described here. Each of their lines of reasoning follow good arguments, and might be correct, but I'm not quite convinced.

Archaeologists' Dates

Archaeologists and historians have found many artifacts of ancient civilizations which they date back to at least 3000 BC. Civilization in the Mesopotamian valley is thought to be at least a few thousand years older than that.

This record cannot be easily reconciled with Ussher's date of 2349 BC for the Great Flood of Noah (see Table 4 in Appendix A), or my date of 2519 BC (see Table 6 in Appendix A).

And yet archaeologists don't date their finds by dubious methods such as comparing them with fossils, or by other methods based on the assumption of evolution, as most anthropologists, paleontologists and geologists do. Any sort of dating based on the fantasy of evolutionary theory and millions-of-years age of the earth should be rejected by the Bible believer.

Archaeological dates are sometimes based on historical records, or occasionally, on C-14 dating or other scientific methods. But the two most common dating methods for archeologists (at least for Bible-land artifacts) are 1) observing the material and/or design of various pieces of pottery and 2) in the case of shards having fragments of writing, by the shape of the characters. Styles of writing do change, down through the years.

Even these are subject to a good bit of debate among people of different backgrounds. A later chapter in this book discusses, in some detail, the dating of the destruction of Jericho. That argument hinges on some particular styles of pottery decoration, and just when this style was used in the Jericho area. This one is an important debate, because the belief about the historicity of the Biblical account of Joshua's conquest of Jericho is strongly affected by the outcome, and there are strong opinions on each side.

In the late 1940's, a shepherd boy found a cave with pottery storage jars, filled with ancient scrolls. Later many more were found, near that Qumran site by the north-west corner of the Dead Sea. Many scholars have spent thousands of hours since then, carefully scrutinizing the thousands of fragments of text. Paleographers (those who study ancient texts) were able to date these important documents to within a few decades of when they were written, over 2000 years ago. Carbon-14 tests have agreed with almost all of these paleographic determinations. A great deal of information has come from these studies, many of which have confirmed that Old Testament texts haven't really changed since 200 BC.

There is a strong disagreement between the dates arrived at by archeologists, compared to the beliefs of evolutionist paleologists. The latter speak of millions of years of development of the human race, culminating in people gradually becoming civilized many tens of thousands of years ago. But their dating methods are based on much speculative belief in evolution, and therefore lack validity -- they're faith, not fact.

The great William F. Albright wrote:

Archaeological research has established that there is no focus of civilization in the earth that can begin to compete in antiquity and activity with the basin of the Eastern Mediterranean and the region immediately to the east of it. ... The Obeidan is the earliest clearly defined culture of Babylonia, where we find its remains underlying nearly all of the oldest cities of the country such as Ur, Erech, Lagash, Eridu, etc. This proves that the occupation of the marshlands of Babylonia by human settlers came rather late in history of the irrigation culture, probably not far from 3700 BC. [William F. Albright, *From Stone Age to Christianity*, New York: Doubleday, 1957, pg.32.]

David Livingston also describes a number of evidences from archaeology and ancient literature,. David Livingston, *The Date of Noah's Flood: Literary and Archaeological Evidence*, in "Archaeology and Biblical Research, Vol.6, No.1, pp.13-17. showing that when any sort of "hard evidence" is discussed, there's very little reason to date civilizations earlier than about 3000 BC.

Some dates in the range of 5,000 to 10,000 BC have been reported in the Babylonian region, but they have not been as solidly established. Dates in Egypt range back to about 3200 BC. No other area in the world is seriously thought to predate these civilizations.

Let us now consider when, and by whom, writing was developed. Sir Leonard Woolley said:

All the archaeological evidence available seems to prove that true writing was first developed in southern Mesopotamia, and in view of the incalculable importance of the invention for human progress everywhere we are entitled to ask the further question, why was that invention made by the Sumerians rather than any other ancient people? ... It is not possible to trace the development of writing in Egypt with the same detail as in Sumer ... [but] the simple but sufficient reason for this is that the Egyptians took over the principle of writing ready-made from the Sumerians. ... The earliest examples of the Indus Valley script that have yet been found date to about the 24th century BC ... that India owed its art of writing to the Sumerians cannot be proved, but it is highly probable. ... On the whole it is probable the Chinese derived from Sumer the principle of writing. [Leonard Woolley, *The Beginnings of Civilization,* New York: New York American Library, 1965, pg. 364.]

The Bible agrees that Mesopotamia (the area included in the Tigris and Euphrates valleys) was the beginning of civilization, as we know it. There is no way of knowing where the Garden of Eden was located -- the Great Flood almost certainly changed the features of Earth's surface. But Noah's ark landed on the mountains of Ararat, which are in Turkey, just north of the heads of both of these rivers. Abraham came from the city of Ur, not far from where the Euphrates flows in to the Persian Gulf.

Patriarchal Longevity

We read in Genesis that the early patriarchs lived for what sounds like ridiculously long lifetimes. Look at Table 5 in Appendix A. The first ten men mentioned in the Bible (Adam through Noah) all lived for about 900 years, except for Enoch, who didn't die but who "walked with God: and he was not; for God took him" (at the age of 365).

The next several generations showed decreasing lifetimes. Shem died at the age of 600. The next three men lived for between 400 and 500 years, then there were several who lived over 200 years, then for a few hundred years the lifetime seems to have been between 100 and 200. How can we account for these extreme ages, and the fairly sudden decrease in lifetime?

We can only speculate. Let's start with God's statement in Gen.1:31, "And God saw everything that he had made, and behold, it was very good." He found no defect with the early world and its inhabitants. Those first humans had not experienced any mutations -- their cell structure was still perfect, as the Creator had planned, and presumably they could have lived forever if they hadn't sinned. Indeed, we're told in several Biblical spots that death first came into the world as the result of human sin.

Notice on the table that the real change in human longevity began just after the Great Flood, which must have almost completely changed the environment of Earth. Shem was born a century before the flood, but most of his life was post-flood. His descendants were all born, lived, and died in the post-flood world. The environmental disruption of the Flood must have been the primary factor that caused decreased longevity.

There's an interesting article that discusses genetic factors involved in the aging process.. Carl Wieland, "Living for 900 Years," in "Creation ex Nihilo," Vol.20, No.4, Sept. - Nov. 1998, pp.10-13. Research was done on the ancestry of Jeanne Calment, who died in 1997 at the age of 122 and was called the longest-living person in modern history. It was found that for five generations back, each of her ancestors were also very long-lived. Their average death-age was 10.5 years longer than others who were contemporary with them.

Scientists have found cap-like tips, called telomeres, on each cell's chromosomes that control the aging process. These shorten with each cell division, and when they get short enough, the cell can no longer divide. This amounts to a genetic factor that controls the maximum lifespan for each individual. It's obvious that mutations

can easily have an effect on the lifetime, not only of a person who experiences that mutation, but on all of his descendants. We know that environmental factors have a strong effect on mutation rate.

Most Bible-believing scientists say that some sort of water vapor canopy surrounded the early earth, and that it became almost depleted at the time of the Flood. It's been shown conclusively that this canopy couldn't have been the source of more than a few inches of floodwater over the entire globe – most of the water for the Flood came from the "fountains of the deep," undersea volcanoes most likely. But even a moderate water vapor surrounding our atmosphere would have had beneficial results in at least two ways.

Many of our health problems are caused by defects in body organs, most of which must have originated with mutations caused by radiation from outer space, cosmic rays, etc. Much of this radiation would have been stopped by water vapor surrounding the earth. There's also good reason to believe that the earth's magnetic field was much stronger in those early days – this too would have repelled much of the radiation. Thus mutations must have been rare during the early centuries. However, when the Flood removed the vapor canopy, this protection would have been lost.

Conclusion

We've shown in earlier pages that the Patriarchal Age Method and the Septuagint text have attractive features, in that they show more ancient years in which to shove secular history. Even so, there are reasons to cause us to doubt whether their use is proper or justified.

Most conservative Biblical writers who attach dates to events in times prior to Abraham's lifetime use the Ussher Method (but not his dates) with the Masoretic text, even though there are a few conflicts with some archaeological and historical data. The data given in the time-lines of Tables 1, 2, and 3 in Appendix A illustrate this dating system.

There's another factor that we haven't discussed in this chapter -- the exact numerical chronology is not the most vital aspect of the Biblical record -- gaining the proper relationship with God through His Son Y'Shua (or Jesus) is our ultimate goal. It's much more important for us to accept God's account of the activity when He created His wonderful world and all of its inhabitants, rather than quibble about the exact dates or ages of those long-ago patriarchs. It's vitally important for us, that we acknowledge His claims -- that we yield ourselves to Him, respect and love Him, and try our best to obey Him. Jesus came to Earth to die as an atonement for our sins. He's given us the Bible as a "user's manual," a guide book for us to follow throughout our lives on His earth. Let's use it carefully and prayerfully.

Source: http://www.ldolphin.org/sewell/sewellchron.html

Appendix A - Tables

Table 1: Comparing Three Texts			
Patriarch	**Masoretic** Begat Died	**Septuagint** Begat Died	**Samarian** Begat Died
Adam	130 930.	230 930	130 930
Seth	105 912	205 912	105 912
Enos	90 905.	190 905	90 905
Cainan	70 910.	170 910	70 910
Mahalaleel	65 895.	165 895	65 895
Jared	162 962.	162 962	62 847
Enoch	65 365	165 365	65 365
Methuselah	187 969	187 969	67 720
Lamech	182 777	188 753	53 653
Noah	502 950	502 950	502 900
Flood began	600	600	600
Shem	100 600	100 600	100 600
Arphaxad	35 438	135 535	135 438
Cainan	--- ---	130 460	--- ---
Salah	30 433	130 460	130 433
Eber	34 464	134 404	134 404
Peleg	30 239	130 339	130 239
Reu	32 239	132 339	132 239
Serug	30 230	130 330	130 230
Nahor	29 148	179 304	79 148
Terah	70 205	70 205	70 145
Abram	100 175	100 175	? ?

NOTES: Columns show that patriarch's age at birth of the next generation, and at his own death. The Flood began when Noah was 600 years old. These numbers are taken from R.A. Teachout's study, *A New Case for Biblical Chronology*, in "Bible-Science Newsletter," Vol.9, No.1, January, 1971, pp. 1-7.

Elapsed Time Summary Number of Years			
Time Period	**Masoretic**	**Septuagint**	**Samaritan**
From Creation to Flood	1656	2262	1307
From Flood to birth of Abram	352	1232	1002 (?)
Total, Creation to birth of Abram	2008	3494	2309 (?)
	(when calculated by the "Ussher Method")		

Table 2: Date AM* Calculations Using Septuagint Text				
	Bible Ages		Calculated Dates AM* "Ussher Method"	
Patriarch Name	**Age at Begot**	**Age at Death**	**Date at Birth**	**Date at Death**
Creation	0	---	0	---
Adam	230	930	0	930
Seth	205	912	230	1142
Enos	190	905	435	1340
Cainan	170	910	625	1535
Maleleel	165	895	795	1690
Jared	162	962	960	1922
Enoch	165	365	1122	1487
Mathusala	167	969	1287	2256
Lamech	188	753	1454	2207
Noah	502	950	1642	2592
Flood Began	**600**		**2242**	
Shem	100	600	2144	2744
Arphaxad	135	535	2244	2779
Cainan	130	460	2379	2839
Sala	130	460 .	2509	2969
Heber	134	404	2639	3043
Phaleg	130	339	2773	3112
Ragau	132	339	2903	3242
Seruch	130	330	3035	3365
Nachor	179	304	3165	3469
Tharrha	130	205	3344	3549
Abram	100	175	3474	3649
Isaac	60	180	3575	3721
Jacob	~91	147	3634	3781

*AM means "Anno Mundi"

NOTE: This table showing dates obtained from the LXX (or Septuagint text) is included here for the purpose of giving the reader some information, even though this writer doesn't consider it to be the literal truth. Later discussion will show several reasons to consider that this text probably was "tinkered with."

Table 3: Some Entries From Eusebius' Chronicle		
Event	**Years from Adam**	**Dates BC/AD**
Adam's creation	0	5200 BC
The Flood	2242	2959 BC
Birth of Abraham	3184	2017 BC
Last year before the Exodus	3689	1512 BC
Foundation of the Temple laid, in the 4th year of Solomon	4168	1033 BC
First year of Babylonian captivity	4611	590 BC
Rebuilding of the Temple, in the second year of Darius	4681	520 BC
Birth of Jesus	5199	2 BC
Jesus' death and resurrection	5231	AD 31
Destruction of Jerusalem	5270	AD 70

NOTE: The column showing BC and AD dates was added by Jerome's Latin translation in AD 381.

Table 4: Some Ussher Dates (taken from an old 1924 Family Bible		
BC Date	**Event**	**Calculated AM Date**
4004 BC	The Creation	0
3874	Seth born	130
3769	Enos born	235
3679	Cainan born	325
3609	Mahalaleel born	395
3544	Jared born	460
3382	Enoch born	622
3317	Methuselah born	687
3130	Lamech born	874
2948	Noah born	1056
2448	Shem, Ham, Japheth	1556
2349	Great Flood of Noah	1655
2346	Arphaxad born	1658
2311	Salah born	1693
2281	Eber born	1723
2247	Peleg born	1757
2218	Nimrod born	1786
2217	Reu born	1787
2185	Serug born	1819
2155	Nahor born	1849
2126	Terah born	1878
1996	Abram, Nahor, Haran	2008
1921	Terah died	2083
1897	Isaac born	2107
1837	Jacob & Esau born	2167
1729	Joseph sold into Egypt	2275
1706	Jacob moved to Egypt	2298
1689	Jacob died at age 147	2315
1635	Joseph died	2369
1571	Moses born	2433
1491	Exodus from Egypt	2513
1490	Tabernacle completed	2514
1451	Moses died	2553
1056	King Saul died	2948
1048	David king of all Israel	2956
1012	Start of Solomon's Temple	2992

Calculation : AM dates = 4004 - BC dates

Note 1 -- Noah's three sons: Gen. 6:1 Noah had 1st son at age 500. Gen. 7:6,11 Noah was 600 when Flood began. Gen. 11:10 Shem's son was born when Shem was 100, 2 years after the Flood. Thus Noah was 502 when Shem was born and Noah was 602 when Shem's son was born, and Shem was not the oldest son. Gen. 9:24 Ham was Noah's youngest son. Thus Japheth must have been the oldest, Shem was in middle, and Ham was the youngest. Gen. 9:28-29 Noah lived for 350 years after Flood, and died at age 950. Gen. 11:11 Shem died 500 years after birth of son, at age 600.

Note 2 -- Terah's three sons: Gen.11:26 At age 70, Terah had the first of 3 sons. Gen. 11:32 Terah died at age 205. Gen. 12:4 Abram was 75 when he left Haran, soon after Terah had died. Thus Terah must have been 205 - 75 = 130 when Abram was born. Thus Abram had one brother who was 60 years older than Abram. We don't know whether that was Haran or Nahor. We don't know whether Abram was son #2 or #3.

Note 3 -- Jacob and Joseph: To calculate Jacob and Joseph's relative birthdates, begin with Genesis 41 - 50 and find their relative ages. Then work backward. Gen.37:2 Joseph was 17 when sold into Egypt. Gen.41:46 Joseph was 30 when he became Chief Food Administrator. Gen.41:46-48 The 7 good years began at that time, followed by the start of 7 years of famine. Gen.45:6,11 During the 2nd year of famine, Joseph's brothers made their 2nd trip to buy grain. Joseph must have been 30 + 7 + 2 = 39. Gen.45:16 - 46:7 Joseph's brothers went home and brought Jacob and their families to Egypt. Gen.47:9 Jacob was 130 at that time. Therefore Jacob must have been 130 - 39 = 91 when Joseph was born.

Table 5 -- Dates AM Using Masoretic Text and Ussher Method					
	Bible Ages		**Calculated Dates AM (from Creation)**		
Patriarch Name	**Age at Begot**	**Age at Death**	**Date at Birth**	**Date at Death**	**Bible Reference**
Creation	0	---	0	---	
Adam	130	930	0	930	Genesis 5:3-5
Seth	105	912	130	1042	5:6-8
Enos	90	905	235	1140	5:9-11
Cainan	70	910	325	1235	5:12-14
Mahalaleel	65	895	395	1290	5:15-17
Jared	162	962	460	1422	5:18-20
Enoch	65	365	622	987	5:21-24
Methuselah	187	969	687	1656	5:25-27
Lamech	182	777	874	1651	5:28-31
Noah	502	950	1056	2006.	9:28-29, 11:10 See Note 1
Flood Began		600		1656	7:6, 7:11 See Note 1
Shem	100	600	1558	2158	11:10-11 See Note 1
Arphaxad	35	438	1658	2096	11:12-13
Salah	30	433	1693	2126	11:14-15
Eber	34	464	1723	2187	11:16-17
Peleg	30	239	1757	1996	11:18-19
Reu	32	239	1787	2026	11:20-21
Serug	30	230	1819	2049	11:22-23
Nahor	29	148	1849	1997	11:24-25
Terah	130	205	1878	2083	11:26-27, 11:32, 12:4 Note 2
Abram	100	175	2008	2183	21:5, 25:7-8 Note 2
Sodom destroyed				2107	17:17, 18:10, 19:23
Isaac	60	180	2108	2288	25:26, 35:28
Jacob	~91	147	2168	2315	See Note 3 and Table 1
Joseph	~33	110	2259	2369	
Israelites into Egypt				2298	Genesis 47:9
Exodus from Egypt				2728	Exodus 12:40
Start of Temple				3208	I Kings 6:1

Table 6: BC Date Calculations Using Masoretic Text					
	Bible Ages		**Calculated Dates B.C. "Ussher" Method**		
Patriarch Name	**Age at Begot**	**Age at Death**	**Date at Birth**	**Date at Begot**	**Date at Death**
Creation	0	---	4175.	4175.	---
Adam	130 *	930	4175.	4045	3245
Seth	105 *	912	4045	3940	3133
Enos	90	905 *	3940	3850	3035
Cainan	70	910 *	3850	3780	2940
Mahalaleel	65	895 *	3780	3715.	2885
Jared	162	962 *	3715	3553	2753
Enoch	65	365 *	3553	3488.	3188
Methuselah	187	969 *	3488.	3301	2519
Lamech	182 *	777	3301	3119.	2524
Noah	502 *	950	3119.	2617.	2169
Flood Began	2519 -- 2518				
Shem	100	600 *	2617	2517	2017
Arphaxad	35	438 *	2517	2482	2079
Salah	30	433 *	2482	2452	2049
Eber	34	464 *	2452.	2418.	1988
Peleg	30	239 *	2418.	2388	2179
Reu	32	239 *	2388.	2356	2149
Serug	30	230 *	2356	2326	2126
Nahor	29	148 *	2326	2297	2178
Terah	130 *	205	2297	2167	2092
Abram	100 *	175	2167..	2067.	1992
Sodom destroyed	~ 2068				
Isaac	60 *	180	2067	2007	1887
Jacob	91 *	147	2007	1916	1860
Joseph	~32	110	1916	---	1806
Entry to Egypt	1877				
Exodus	1447				
Start of Temple	967				

Basis for Calculations

967 B.C. + 480 = 1447 B.C. = Start of Exodus (See 1 Kings 6:1)
1447 B.C. + 430 = 1877 B.C. = Start of Egyptian Exile (See Exodus 12:40, 41)

Population Growth Equations	
Equation	**Where**
$P_N / P_0 = (1 + R) N$	P_0 = Orig. Population
$N = \frac{\log (P_N / P_0)}{\log (1 + R)}$	P_N = Final Population
	R = Growth Rate / Yr.
$R = (P_N / P_0) 1/N - 1$	N = Number of Years

Appendix B - Barry Setterfield's Biblical Chronology

And it gets more complicated, as described by Australian scientist and Bible scholar Barry Setterfield in his article "A Revised Biblical Chronology,"

Setterfield's primary "anchor date," which he uses as a reference, is 586 BC, the destruction of Solomon's Temple by Nebuchadnezzar. From there he interprets the prophecy in Ezekiel 4:1-5 as referring to Israel's 390-year period of idolatry, which had begun with the division of the monarchy into the northern and southern kingdoms, at the death of Solomon. He takes this to mean that Solomon's death was in (586 + 390) BC = 976 BC. Since Solomon reigned for 40 years, and 1 Kings 6:1 says he started the Temple in his 4th year, that must have been 36 years earlier than his death, or in 1012 BC.

From scriptures given in Acts and 1 Kings, Setterfield sums up the time from the Exodus to the building of the Temple, as follows: 40 years in the wilderness (Acts 13:18), 450 years during the time of the Judges (Acts 13:20), 40 years under King Saul (Acts 13:21), 40 years under King David (1 Kings 2:11), and the first 3 years of King Solomon's reign (1 Kings 6:1). This totals 573 years. Thus the Exodus would have been in (1012 + 573) = 1585 BC.

He describes a technique that he refers to as the "Omission Principle." He writes "Briefly stated, it asserts that the years during which the Children of Israel were out of fellowship with the LORD are often omitted from the Divine record. There are a number of examples of this. It is not only done in the Bible, as kings throughout history have omitted from the record their years of servitude to foreign powers. In this King Solomon was no exception."

Using this Omission Principle, Setterfield lists several periods of bondage in the book of Judges -- 8 years under the king of Mesopotamia, 18 years under the king of Moab, 20 years under the King of Canaan, 7 years under the Midianites and 40 years under the Philistines, a total of 93 years. He adds this to the 480 years of 1 Kings 6:1, and got 573 years, leading to an Exodus date of (1012 + 573) = 1585 BC. Notice that's the same date arrived at above. He considers this to be a confirmation.

Using several rather complex calculations like this, and using the Septuagint text, Setterfield arrives at a date for the Exodus of 1585 BC, the birth of Abraham at 2304 BC, the Great Flood at 3536 BC, and the initial Creation at 5792 BC. Notice that all these dates are considerably more ancient than the ones I've given in Table 6 above.

Patriarch	Birthdate	Speed of Light	Atomic Time BP
Creation	5792 BC		
Adam	5792 BC	10.6 million x	14.8 billion years
Methuselah	4505 BC	5.8 million x	4.35 billion years
Noah	4136 BC	4.3 million x	2.5 billion years
Flood	3536 BC	2.0 million x	600 million years
Salah	3269 BC	1.1 million x	230 million years
Eber	3005 BC	615 thousand x	196 million years
Reu	2875 BC	78 thousand x	63 million years
Abraham	2304 BC	approx as present	
Egypt Entry	2015 BC		
The Exodus	1585 BC		

Setterfield's other work, too complex to be described in this book, attempts to solve the question of, "How did light from distant stars get to the Earth in less than 8,000 years?" He suggests that the speed of light was originally very much faster than it is today, and has been slowing ever since the Creation. His chronology lists various calculated speeds down through ancient history. This work is supported by a number of historical measurements, however not many other scientists have accepted it.

The table above shows a few dates from Setterfield's list. In addition it shows several of the calculated C-values (speed of light) as factors higher than the present value. It also shows "atomic time" for these few events, calculated from these higher speeds for C. His chronology doesn't explain this calculation -- that's the subject of a different work.

Source: http://ldolphin.org/barrychron.html.