Chronology 316: Timeline of Biblical World History

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Period One: Creation to the Birth of Isaac (Part 1)
Basic Numerical Amounts from Genesis

This section will include the total period from creation to the Flood, from the Flood to Abraham's Birth, and from Abraham's Birth to the Birth of Isaac.

The first section of this period of biblical history spans the beginning of creation to the Flood. Biblical data for this period is contained in the genealogical accounts of Genesis 5 and 7. Below is a list of the relevant amounts of time along with the relevant scripture passages where that information is provided.

Adam was created on the sixth day of creation (Genesis 1:23-31) and he was **130 years** old when Seth was born (Genesis 5:3).
Seth was **105 years** old when Enos was born (Genesis 5:6).
Enos was **90 years** old when Cainan was born (Genesis 5:9).
Cainan was **70 years** old when Mahalaleel was born (Genesis 5:12).
Mahalaleel was **65 years** old when Jared was born (Genesis 5:15).
Jared was **162 years** old when Enoch was born (Genesis 5:18).
Enoch was **65 years** old when Methusaleh was born (Genesis 5:21).
Methusaleh was **187 years** old when Lamech was born (Genesis 5:25).
Lamech was **182 years** old when Noah was born (Genesis 5:28-29).
According to Genesis 7:11, Noah was **600 years** old when the Flood occurred.

If we simply add up the numbers provided in these accounts of the ages of the patriarchs we arrive at a total of 1656 years.

The next segment of this period of biblical history proceeds from the Flood to the birth of Abraham. As with the previous period this section of biblical history is provided through genealogical data. This data is derived chiefly from Genesis 11. But in order to calculate the amount of time to Abraham's birth we will need to do a little bit of cross referencing with other verses.

Genesis 11:26 states that Terah (Abraham's father) was 70 years old and that he begat three sons: Abraham (Abram,) Nahor, and Haran.

Genesis 11:26 And Terah lived seventy years, and begat Abram, Nahor, and Haran.

As we can see, this verse does not tell us how old Terah was at the birth of each of his sons (or more specifically at the birth of Abraham.) We can determine Terah's age at Abraham's birth by looking at a few other nearby verses.

Genesis 11:32 explains that Terah died in Haran at 205 years of age.

Genesis 11:32 And the days of Terah were **two hundred and five years: and Terah died in Haran.**

Just after this, Genesis 12:4 tells us that Abraham left Haran at 75 years of age.

Genesis 12:4 So Abram departed, as the LORD had spoken unto him; and Lot went with him: and **Abram *was* seventy and five years old when he departed out of Haran.**

By putting the information contained in these passages together we can see that Abraham was 75 years old when his father Terah died at age 205. So, if Abraham was 75 when Terah died at 205, then Terah must have been 130 when Abraham was born (205 – 75 = 130.)

Now that we know how old Terah was when Abraham was born we can add this to numbers provided in the genealogical account of Genesis 11.

Noah's son Shem had a son named Arphaxad, **2 years** after the Flood (Genesis 11:10).
Arphaxad was **35 years** old when he had a son named Salah (Genesis 11:12).
Salah was **30 years** old when he had a son named Eber (Genesis 11:14).
Eber was **34 years** old when he had a son named Peleg (Genesis 11:16).
Peleg was **30 years** old when he had a son named Reu (Genesis 11:18).
Reu was **32 years** old when he had a son named Serug (Genesis 11:20).
Serug was **30 years** old when he had a son named Nahor (Genesis 11:22).
Nahor was **29 years** old when he had a son named Terah (Genesis 11:24).
Terah was **130 years** old when he had a son named Abram (Genesis 11:26,32, 12:4, Acts 7:4).

By simply using these biblically-provided numbers, we arrive at a total number of 352 from the time of the Flood until the birth of Abraham. The next portion of this period of biblical history spans to the birth of Isaac.

Genesis 21:5 states that "Abraham was 100 years old when his son Isaac was born."

Genesis 21:5 **And Abraham was an hundred years old, when his son Isaac was born unto him.**

These numbers provided in Genesis 5, 11, and 21, coupled with deductions regarding Terah's age at Abraham's birth can be used to arrive at our first option regarding the periods of time from creation to the Flood, from the Flood to

Abraham's birth, and from Abraham's birth to Isaac's birth. If we simply add the numbers mentioned in these accounts we get a total number from creation to the Flood of 1656 years.

This method would place the Flood in the year 1656 AM (Anno Mundi, "From Creation"). Then we could add another 352 years from the Flood to the birth of Abraham. This would place Abraham's birth in the year 2008 AM (1656 + 253 = 2008). Another 100 years could then be added to arrive at the birth of Isaac which would be placed in the year 2108 (2008 + 100 = 2108). Using this method the total number of years from creation until Isaac's birth would be calculated at 2108 years (1656 + 352 + 100 = 2108).

We should note that taking the approach of simply adding together the numbers mentioned in these texts results in significant biblical events which do not take place in 50-year increments from creation.

God's destruction of the world by the Flood is a very significant event in history. However, we should note that (using this simple accounting) this event would not take place in a 50-year increment (or jubilee cycle). We might suppose that an event of monumental importance such as the Flood would take place on a special year in human history – perhaps at the close of the first thousand years or the second thousand years. Perhaps we would expect the Flood to occur at exactly 1000, 1500, or 2000 years after creation. But, as we can see, simply adding together the numbers provided in these biblical passages would place the Flood at 1656 years after creation – that's not an even number of years.

Neither would Noah have been born in a special 50-year increment after creation. According to this approach, Noah was born 600 years before the Flood. This would make the year of Noah's birth 1056 from creation. Likewise, although Abraham would have been born relatively close to the 2,000 year mark (in 2008 AM), the birth of Abraham (a significant figure in biblical history) would not coincide with a 50-year increment from creation. The same would also be true for Isaac's birth in 2108 AM.

This failure of significant events to occur in 50-year increments (from creation) should be kept in mind as we continue to chart the potential dates of other significant events in biblical, world history.

Before we proceed to the period of time beginning after the birth of Isaac, we need to mention two additional issues that may affect our calculation of the years of biblical, world history from creation to the birth of Isaac. These issues may cause us to adjust the totals (dates) derived by simply adding the numbers provided in Genesis 5, 11, and 21 as we have above. The first issue involves the question of possible amounts of unaccounted time produced by differences in the birthdays of the fathers and sons in the Genesis accounts. The second issue concerns whether we should understand the age numbers provided in the Genesis genealogies to refer to the number of years already completed or to the number of

the current year the patriarch was living in but had not yet completed. We will consider these two issues in two separate sections below.

Period One: Creation to the Birth of Isaac (Part 2)
Additional Factors that May Affect Calculation: Birthday Differentials

The first potential factor that may require a readjustment of our calculation concerns the birthdays of the fathers and sons in the Genesis accounts. It is obvious that the sons of the Genesis genealogies were not born on the exact same day of the year as their father's were. This may imply that the biblical records have not taken into account the added months and days between a father's previous birthday and the actual day and month of the son's birth the following year. If the numbers provided in the Genesis genealogies don't take into account this differential between the father's previous day of birth and the birth of his son the following year, we would need to find a way to account for that missing time. Over many generations these additional months and days could add up to additional years of time. In this section of our study we will look at one particular attempt to solve this potential problem. Then we will further examine whether this suggested problem should be treated as an actual problem for biblical chronologists.

In his articles on chronology, Tim Warner argues that birthday differential between fathers and sons is a real problem requiring a solution. He states that we cannot simply add the numbers of years provided in the Genesis accounts. Instead, he argues that the biblical record does not inform us about an unknown number of months (and days) between each father's previous birthday and the day of their son's birth the following year. In his article, Warner offers a potential solution for accounting for this unknown differential in birthdays between fathers and sons.

But, **simply adding up the years of each father when his son was born makes a faulty assumption: that each child was born on the birthday of his father. That is simply not realistic. There is a margin of error of between 0 to 12 months per generation.** For example, Seth was born in Adam's 130th year. Was that the day Adam began his 130th year, six months later, or even eleven months later? Adam remained 130 years old for 12 full months, any of which could have been Seth's birth month. **Each generation listed in the early Genesis genealogies must be viewed as the specified years plus an unknown number of months (between 1 and 12). Compounding over the 20 generations from Adam to Abraham, this error could be anywhere from 0 to 20 years,** (zero if every child was born the day of his father's birthday, and 20 if every child was born the day before his father's next birthday). Since births are random throughout the months, **the solution is to average the potential error to 6 months per generation.** – Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, www.120jubilees.org

Warner notes that there are 20 generations from Adam to Abraham. Twenty generations of additional months and days between each father's birthday and that of his son could add up to anywhere from 0 to 20 years. Birthday differential between fathers and sons can be anywhere from 0 days to not quite 12 full months. A birthday differential of 0 days would occur if the son was born exactly on his father's birthday. A birthday differential of not quite 12 full months would occur if the son was born on the day immediately before his father's next birthday. The later scenario would mean that the simple figures of 2008 years from creation to Abraham's birth or 2108 years from creation to Isaac's birth might need to be adjusted by adding as much as another 20 years. According to this view, the added 20 years would be necessary in order to account for the missing months between each father's birthday and that of his son. (The maximum addition of 20 years would be necessary only in the unlikely case that each son was born the day immediately before their father's next birthday. In this way, almost a full year's time might need to be added to each generation.) Ultimately, depending on what that unknown birthday interval is in each generation, the correct total amount could therefore be anywhere between 2008 and 2028 for the year of Abraham's birth.

In order to mathematically account for the randomness of birthday differential between fathers and sons, Warner simply adds 6 months to each generation. (Six months is an average between 0 days and 12 full months.) Adding 6 months each to 20 different generations would result in a total of 10 additional years to be added to the date of 2008 AM for the birth of Abraham that is derived from simply adding the numbers provided in Genesis. Simply applying Warner's proposed methodology to solve this issue would produce a new total of 2018 years from creation to the birth of Abraham (with Isaac's birth 100 years later).

As we assess this potential adjustment we must pay particular attention to a few, additional biblical details. As Warner states, there are 20 generations from Adam to the birth of Abraham.

1. Adam
2. Seth
3. Enos
4. Cainan
5. Mahalaleel
6. Jared
7. Enoch
8. Methusaleh
9. Lamech
10. Noah
11. Shem
12. Arphaxad
13. Salah
14. Eber
15. Peleg
16. Reu

17. Serug
18. Nahor
19. Terah
20. Abraham

God made Adam only six days after the start of creation itself. So, we wouldn't need to account for any additional months of time between the beginning of creation and Adam's creation. Therefore, if there indeed is unknown time to account for between the birth months and days of fathers and sons, adding in time to account for these differentials would begin with Seth.

Application of this line of thinking would work as follows. Adam passes a birthday and turns another year older. Seth is born some number of months and days between that birthday and Adam's next birthday. We do not know exactly when Seth was born in relation to Adam's birthday. It could be anywhere from 0 days to one day short of 12 full months. Therefore, we would add the average amount of time between these two maximum values. The average between 0 days and 12 full months is six months. So, we would add six months' worth of time between Adam's previous birthday and the birth of his son Seth. The first day of creation was the first day of the first month of the first year. And we know that Adam was created just six days after the first day of the first month of the year. Therefore, if we place Seth's birthday at six months after Adam's birthday, Seth would be born in the beginning of the seventh month of the year.

This pattern of adding six months between each father's birthday and the birthday of his son would repeat in each generation. We would add six months' time between Seth's previous birthday and the birth of Enos before Seth reached his next birthday.

If we apply this method, by the time we reach the birth of Noah we would have added six months on 9 occasions:

1. Between Adam and Seth
2. Between Seth and Enos
3. Between Enos and Cainan
4. Between Cainan and Mahalaleel
5. Between Mahalaleel and Jared
6. Between Jared and Enoch
7. Between Enoch and Methusaleh
8. Between Methusaleh and Lamech
9. Between Lamech and Noah

These 9 additions of six months would add a total of 4 1/2 years of time between creation and the birth of Noah. Instead of being born in the year 1056 AM which is derived from simply adding the numbers provided in the Genesis genealogies, Noah would be born early in the seventh month of the year 1060 AM. Noah's birth in the seventh month of the year is consistent with the results Warner offers in his study where he places Noah's birth in the seventh month of the year 1051

AM. The ".5" represents Noah's birth half way through the year which would be at the very beginning of the seventh month. (In a later section we will explain why Warner's chronology places Noah's birth in the year 1051 AM rather than the year 1056 or 1060 AM.)

Noah was born in 1051.5. The flood began in Noah's 600th year. – Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, Page 2, Endnote 3, www.120jubilees.org

Noah was born in 1051.5AM, making his 500th year 1550.5AM. 13– Tim Warner, The 120 Jubilee Year Calendar According to Scripture, www.120jubilees.org

There are several potential problems with this kind of approach.

The first can be seen now that we have computed Noah's birth using the type of approach offered by Tim Warner. Warner's model places Noah's birth in the beginning of the seventh month of the year. However, information provided in Genesis 7 and 8 may indicate that Noah's birthday did not occur in the seventh month.

Genesis 7:11 states that the Flood began in the second month of the year and that at this time Noah was in the 600th year of his life.

Genesis 7:11 **In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month,** the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.

Likewise, in Genesis 8:13 we are told that Noah is in the 601st year of his life during the first day of the first month of the year.

Genesis 8:13 **And it came to pass in the six hundredth and first year, in the first *month*, the first *day* of the month,** the waters were dried up from off the earth: and Noah removed the covering of the ark, and looked, and, behold, the face of the ground was dry.

Warner's model understands Genesis 7:11 to mean that Noah was seven months into the 600th year of his life when the Flood began in the second month of the calendar year. Similarly, Warner's model understands Genesis 8:13 to mean that Noah was six months into the 601st year of his life when the waters of the flood were dried up in the first month of the following calendar year.

When looking solely at these 2 verses, Warner's conclusions are certainly possible. However, other alternatives are possible as well. We start by noting that Genesis 7:11 demands that Noah entered the 600th year of his life before the seventeenth day of the second month of the calendar year. Likewise, Genesis 8:13 demands that Noah entered the next year of his life either on or before the first day of the first month of the following calendar year. If Noah entered his 601st

year before the first day of the first month, his birthday could be in any month from almost the third month through the twelfth month. Tim Warner's model operates within this basic scenario. And, for the sake of assuming an average duration between the birthdays of one generation and the next, Tim Warner's model effectively counts Noah's birthday as occurring at the beginning of the seventh month halfway through the year.

However, it is also possible that Noah was counted as entering next year of his life at the same time as the start of the calendar year. In this way, Noah's 600th year of life would begin in the first month of the year. The Flood would begin weeks later in the second month of that same year. And Flood would end as Noah's 601st year began on the first day of the first month of the following year.

This alternative interpretation has on its side, several exegetical and cultural-historical factors. As will become apparent, the considerations discussed below bare enormous potential relevance to the theory that there are missing amounts of time between the birthdays of fathers and sons in biblical chronological data. If true, these exegetical and cultural-historical factors will eliminate any room for supposing such missing intervals of time. We will deal with the cultural-historical issues first.

The suggestion that the Genesis genealogies omit unaccounted for intervals of time related to birthday differentials between fathers and sons itself inherently relies upon our modern, westernized notion of aging and the manner in which we count ages. Our modern, westernized culture employs a method of aging in which each person is counted to have aged one year upon the arrival of the anniversary of their individual month and day of birth. Because most of us have never experienced or even thought of any other possible method for reckoning age, we will naturally be led to assume that the ancient world, including the pre-Flood patriarchs and the ancient Israelites (at the time of Moses and afterwards) employed the same approach. With such an assumption in place it is natural to arrive at questions about the relationship of the ages of fathers and sons in the Genesis genealogies. We will be led to ask what the time interval was between the father's last birthday and the day and month their son was born. However, before we seek to answer such questions we must first at least consider whether it is reasonable to simply assume that the ancients reckoned age in the same way we do today.

To explore this more fundamental question further requires becoming familiar with the fact that our modern, westernized method is neither universally practiced today nor was it universally practiced by cultures throughout history.

In some eastern societies the entire country ages together on New Year's Day. (This would be as if everyone in the United States were considered to be a year older on January 1 each year.) Furthermore, this eastern practice is an ancient one. It may, in fact, have been the practice of most ancient cultures and biblical peoples including the Israelites.

East Asian age reckoning – East Asian age reckoning is a concept and practice that originated in China and is **used in East Asian cultures. Chinese culture, Japanese culture, Korean culture, Vietnamese culture, and others share this traditional way of counting a person's age.** Newborns start at one year old**, and each passing of a Lunar New Year, rather than the birthday, adds one year to the person's age.** In other words, the first year of life is counted as one instead of zero, so that a person is two years old in their second year, three years old in their third, and so on.[1][2] Since **age is incremented on the new year rather than on a birthday,** people may be 1 or 2 years older in Asian reckoning than in the Western system. **Today this system is commonly used in everyday life by Chinese in certain regions.** For instance young people still use Xusui commonly in Shanghai.[citation needed] The system is also widely used by Koreans, with the exception of the legal system and newspapers. – wikipedia.org

Birthday – The celebration of the anniversary of one's birth is a phenomenon of modern industrial society. It is connected to the rise of a scientific way of thinking and to new attitudes about children and childhood. Perfection of the calendar by the Egyptians and Mesopotamians enabled people to reckon exact birth dates, but **ancient and classical cultures rarely celebrated birthdays,** except for those of royalty. **In the East,** Chinese families often recognized birthdays, though mainly for adults; the Japanese, on the other hand, **often collapsed all birthdays to New Year's Day, which they made into a common celebratory event.** – Encyclopedia.com

There are reasons to consider whether this corporate method of age reckoning may have been the practice of most ancient cultures including biblical peoples like the patriarchs of Genesis and the Israelites. For instance, Herodotus, the ancient Greek historian of the fifth century BC, indicates that the celebration of an individual's birthday was a peculiar custom that in his day (c. 484 BC – c. 425 BC) was only known among the Achaemenid Persians.

Birthday – History – Herodotus considers Achaemenid Persians (Iranians), among first who celebrated birthday. He states that: "Of all the days in the year, the one which they celebrate most is their birthday. It is customary to have the board furnished on that day with an ampler supply than common... They eat little solid food but abundance of dessert, which is set on table a few dishes at a time... They are very fond of wine."[1] – wikipedia.org

If the practice of individualized age reckoning began in the fifth century AD with the Archaemenids and is not known to have been practiced by other cultures at that time or earlier, then it is very reasonable to conclude that those who lived prior to the Archaemenids (including the biblical patriarchs and the Israelites at the time of the Exodus) must have practiced some other method.

In fact, JewishEncyclopedia.com states that there is "no positive data" that the ancient Jews kept individual birthdays. It also notes that the Talmud (dated to around 200 AD) forbid Jews from doing business with the heathen during the days of the heathen king's birthday celebration.

Birthday – There are no positive data in the Bible or in rabbinical literature concerning birthday festivals among the ancient Jews. – jewishencyclopedia.com, http://www.jewishencyclopedia.com/view.jsp?artid=1088&letter=B&search=birthday

Birthday – The birthday anniversaries of heathen kings, are considered by the rabbis of the Talmud as legal heathen holidays, which count among those holidays on the three days preceding which **Jews are by Talmudic law required to abstain from concluding any business with a heathen** (Mishnah 'Ab. Zarah i. 3). – jewishencyclopedia.com, http://www.jewishencyclopedia.com/view.jsp?artid=1088&letter=B&search=birthday#ixzz0wMMY396y

Biblical historian and scholar Ernest L. Martin reports that it may have been common among the ancient biblical peoples (including the Jews) to add a year of life corporately on New Year's Day (Rosh Hashanah for the Israelites) just as some eastern cultures still do today.

…**the Day of Trumpets (the first day of Tishri — the start of the Jewish civil year)** an impressive amount of symbolic features emerge on the biblical and prophetic scenes. **Before the period of the Exodus in the time of Moses, this was the day that began the biblical year. It also looks like this was the day when people were advanced one year of life — no matter at what month of the year they were actually born.** – Ernest L. Martin, *The Star that Astonished the World*

Martin points out that Genesis 8 seems to support the conclusion that the ancient, biblical peoples used corporate age-reckoning methods wherein everyone aged one year together on New Year's Day. We will now examine the evidence from Genesis 7 and 8 for this method of reckoning.

We start by noting that throughout the books of Moses (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy) whenever the day and the month are specified they are used in reference to the calendar year. The rest of the Old Testament likewise specifies day and month in reference to the calendar year. Therefore, there is a good exegetical basis to conclude that the identification of month and day in Genesis 7:11 and 8:13 are likewise referring to the days and months of the calendar year. If we simply interpret Genesis 7:11 and 8:13 in the same manner we would any other "month and day" reference in the books of Moses, we would conclude that these verses are referring to the months and days of the calendar year. This conclusion is not really controversial since that is how scholars interpret this passage. In his study, Tim Warner also states this conclusion.

Noah was born in 1051.5. **The flood began in Noah's 600th year. But it began in the second month of the calendar year** (on the fall – fall calendar, about

October), **covering most of a single calendar year,** (Gen. 7:11, Gen. 8:14). – Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, Page 2, Endnote 3, www.120jubilees.org

However, while it is clear that the month and days given in Genesis 7:11 and 8:13 are according to the calendar year, it is equally clear that the years themselves denote the years of Noah's age. Since Genesis 8 identifies the year as the "601st," it cannot be talking about the calendar year according to world history. It had already been much more than 601 years since creation. Consequently, this 601st year is the year of Noah's age.

Genesis 8:13 And **it came to pass in the six hundredth and first year, in the first month, the first day of the month,** the waters were dried up from off the earth: and Noah removed the covering of the ark, and looked, and, behold, the face of the ground was dry.

And, of course, Genesis 7 openly declares that these are the years of Noah's life.

Genesis 7:11 **In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month,** the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.

Moreover, the relationship between the days and month is identical to the relationship between the months and years. For instance, regarding Genesis 7:11, suppose we asked which month this was the seventeenth day of. The answer is clearly that it is the seventeenth day of the second month. Likewise, regarding Genesis 8:13, suppose we asked which month this was the first day of. Again, the clear answer is that it is the first day of the first month. But how do we know that Genesis 7:11 is referring to the seventeenth day of the second month and not simply to the seventeenth day of some other month? How do we know that Genesis 8:13 is referring to the first day of the first month and not the first day of some other month? The answers to these questions seem fairly obvious. We know what month the specified day belongs to because the month is related to the day in the text of the verses. By the same token then we might ask regarding Genesis 7:11, which year this was the second month of. Or, regarding Genesis 8:13, which year was this the first month of. The same logic leading us to conclude that it is the seventeenth day of the second month in Genesis 7:11 and that it is the first day of the first month in Genesis 8:13, would also lead us to conclude that Genesis 7:11 is referring to the seventeenth day of the second month of the 600th year of Noah's life and that Genesis 8:13 is referring to the first day of the first month of the 601st year of Noah's life.

These two observations lead us to two conclusions. First, the months and days mentioned in Genesis 7:11 and 8:13 correspond to months of the calendar year just like all other month and day identifications in the books of Moses and the rest of the Old Testament. In addition, since the days and months are according to the calendar, it is natural to conclude that the years are also marked by the calendar. Second, the months and days mentioned Genesis 7:11 and 8:13 correspond to the

months and days of the current year of Noah's life. In other words, the flood not only began on the seventeenth day of the second month of the calendar year but the seventeenth day of the second month of Noah's six hundredth year of age. The calendar year and the year of Noah's age correspond. They begin on the same date. Perhaps Noah was actually born on New Year's Day. Or, a second option would be that Noah was simply reckoned to have aged in accordance with New Year's Day regardless of what day and month of the year he was actually born on. Given the improbability of Noah actually being born on the first day of the year, the second option is more reasonable especially because it is consistent with other known ancient and eastern age-reckoning practices prior to the Archaemenids. It would also be unlikely that Noah was unique among the patriarchs and the only one reckoned to age at the turn of the calendar year. The age of Noah is presented in the text unexplained and in no need of further explanation by the author. Such presentation implies that the author perceived his audience would not be surprised to find Noah aging this way and that it was a common practice they would have been readily familiar with. These exegetical cues give us good reason to consider that like Noah, the other patriarchs were considered to have aged one year of life correspondent to the coming of New Year's Day rather than in concert with the actual days on which they were individually born.

In fact, as Ernest L. Martin reports, the Artscroll Machzor (a popular and commonly used book of Jewish prayer used on Rosh Hashanah) notes that many of the Jewish patriarchs were born on New Year's Day. This tradition may simply reflect the notion of corporate age-reckoning for the patriarchs in accordance with New Year's Day (Rosh Hashanah). Though the list is partial, these texts along with biblical information in Genesis provide solid historical and biblical basis for concluding that at least Adam, Noah, Abraham, Isaac, Jacob, Joseph, and Samuel were all either born on, or more probably counted to have aged on, New Year's Day.

Rosh ha-Shanah [Heb.,= head of the year], **the Jewish New Year, also known as the Feast of the Trumpets. It is observed on the first day of the seventh month, Tishri, occurring usually in September…A distinguishing feature of the New Year is the blowing of the shofar (a ram's horn),** which summons Jews to penitential observance. – Columbia Encyclopedia

The Patriarchs Abraham and Jacob were born on Rosh Ha-Shanah. – *Artscroll Machzor*, p.xvi, italics and bracketed Ernest L. Martin, *The Star that Astonished the World*

On Rosh Ha-Shanah God remembered three barren women, the Matriarchs Sarah and Rachel, and Hannah the mother of the prophet Samuel and decreed that they would give birth. Not only was Rosh Ha-Shanah a turning point in the lives of these great and worthy women, but **the births of their children were momentous events for all Jewry, because they were the historic figures Isaac, Joseph, and Samuel.** – *Artscroll Machzor*, p.xvi, italics and bracketed Ernest L. Martin, *The Star that Astonished the World*

Corporate aging of everyone at the same time on New Year's Day would fit well with the ancient Jewish view that Rosh Hashanah (New Year's Day) was the day on which creation actually began.

As shown before, among the Jews this day was called Rosh ha-Shanah (the Feast of the New Year). The majority belief of Jewish elders (which still dominates the services of the synagogues) **was that the Day of Trumpets was the memorial day that commemorated the beginning of the world. Authorized opinion prevailed that the first of Tishri was the first day of Genesis 1:1–5. It "came to be regarded as the birthday of the world."** – Ernest L. Martin, *The Star that Astonished the World*

Rosh Hashana – Rosh Hashana is also known as the Day of Remembrance, for **on this day Jews commemorate the creation of the world,** and the Jewish nation recalls its responsibilities as God's chosen people. – Encyclopedia Britannica

These cultural-historical factors establish another reason why it would be unnecessary to account for any differential between the birthdays of fathers and sons in the Genesis genealogies. We have very good reason to believe that the ancient world (at least prior to the fifth century BC) counted all people as aging on the same day of the year (New Year's Day) rather than on their actual, individual days of birth.

While the interpretation required by Warner's approach is also possible, it must be emphasized that the bible does not tell us that any time is missing in the genealogical accounts. Likewise, the bible does not provide any reason to place Noah's birth in the seventh month of the year. On the contrary, the only rationale for placing Noah's birthday in the seventh month of the year comes not from exegetical grounds, but from the application of a hypothetical convention attempting to account for theoretical missing time between the birthdays of the biblical patriarchs. In contrast, while it is not absolutely necessitated by the text, counting Noah's birthday/age according to the first day of the first month of the year is based on simple exegetical, logical, and even cultural-historical considerations. Furthermore, without the conclusions necessitated by Warner's purely hypothetical construct, we would be all the more lead by contextual reasons outlined above to conclude that Noah's birthday/age corresponded with the first day of the first month of the calendar year.

While the case is not conclusive for either position, we must ask which alternative has a stronger textual rationale. At the very least, these issues highlight the significant potential difficulties and the amount of assumptions that are involved in approaches which attempt to account for possible missing months and days in the patriarchal genealogies of Genesis.

Lastly, if Noah's birthday/age is counted as corresponding to the first day of the first month of the calendar year, then Warner's model must be adjusted because it warrants placing Noah's birthday in the seventh month of the year.

The second problem concerning the model offered by Tim Warner has to do with statistical norms. Adding six months' time between the birthdays of each generation of fathers and sons in Genesis is merely a simple, mathematical convention. It may be useful for giving us a good estimate by utilizing probability and averages. However, taking such a hypothetical as accurately representing real history is potentially problematic. In point of fact, there is no reason to assume that the birthdays of any particular set of fathers and sons can adequately be reckoned to the six month average between 0 days and 12 full months. While probability dictates that tossing a coin will result in heads 50 percent of the time and tails 50 percent of the time, an actual series of coin tosses will almost never produce this ratio. This variance between probability and reality is especially true when there is a small number of coin tosses. If we have over a million coin tosses, we may safely estimate the ratio to be 50 percent heads and 50 percent tails. However, any given set of 10 actual coin tosses will produce series in which either heads or tails will have a much higher ratio than fifty-fifty. Ten coin tosses is unlikely to result in 5 heads and 5 tails.

In his book, *Intelligent Design*, Christian philosopher and mathematician, Dr. William Dembski offers relevant commentary on these factors.

A standard trick of statistics professors with an introductory statistics class is to divide the class in two, having students in one half of the class each flip a coin 100 times, writing down the sequence of heads and tails on a slip of paper and having students in the other half each generate purely with their minds a "random looking" string of coin tosses that mimics the tossing of a coin 100 times, also writing down the sequence of heads and tails on a slip of paper. When the students hand in their lists of sequences, the professor must sort them into two piles, those generated by flipping a fair coin and those concocted in the student's heads. To the amazement of the students, the statistics professor is typically able to sort the papers with 100 percent accuracy. There is no mystery here. **The statistics professor simply looks for a repetition of six or seven heads or tails in a row to distinguish the truly random from the pseudo-random sequences. In 100 coin flips, one is quite likely to see six or seven such repetitions.** On the other hand, people concocting pseudo-random sequences with their minds tend to alternate between heads and tails too frequently. – William A. Dembski, Intelligent Design, p. 135

Notice that, according to Dembski, a truly random flipping of a coin will quite likely result in repetitions where six or seven heads or tails occur in a row. If we were to sample any particular set of 10 coin tosses, what we find may differ greatly from the expected ratio or 5 heads to 5 tails and from our likely expectation that the total results will evenly balance between possible outcomes.

When applied to a small set of human births (9 or 10) the same differential will likely occur. While it would be reasonable to think that counting the dates for 1 million human births would average to the middle of the year, actual results of smaller sample sizes will tend not to match this prediction. Contrary to our

expectations, the outcome may be a disproportionate amount of births occurring very near the same time of year as one another and less alternation of births occurring in early, middle, and late months. Randomness is just as likely to produce 5 or 8 (out of 12) babies in a row who were all born during the first six months of the year as it is to have 1 of each of those 12 babies born in a different month of the year. In addition, it is also noteworthy that strict averaging, such as assuming a 6-month average, does not take into account potential environmental or cultural factors that may have biased conceptions and births regularly to favored months or times of the year. Concerning such factors, again we have no biblical information and so this kind of approach forces us to stack assumption upon assumption, starting with the theory of missing time and then adding assumptions about how random or non-random birth days were in ancient history.

Admittedly, this comparison between coin tosses and birthdays is limited. There are only two possible results in a coin toss, while the possible outcomes for birthdays over the course of a year are between 354 and 365 (depending on the calendar). Despite this difference, plotting unknown birthdays of fathers and theirs sons on a calendar year is likely to have some measure of the same kind of disparity between theoretical probability and actuality as will be the case with coin tosses.

For comparison, a dice with twelve sides was rolled in 8 series. Each series contained 10 rolls of the dice. The expected average roll would be 6. However, no single series of 10 rolls resulted in an average of 6. To the contrary, the first series averaged at 8.2. The second was 6.6. The third was 5.3. The fourth was 7.6. The fifth was 5.8. The sixth was 7. The seventh was 5.3. And the eighth was 6.4. In this comparison, each roll represents a generation. And each roll represents the differential between the birth months of the fathers and their sons. An average of 8.2 months exceeds the expected average of 6 months by 2.2 months. Over 10 generations, those 2.2 extra months (for each generation) adds up to 22 extra months. That's almost 2 years more time than estimated in the 6 month expectation.

An average of 6.6 months will add an extra 6 months to the total 10 generation calculation. An average of 5.3 will be short 7 months over 10 generations. An average of 7.6 will add 16 months to the total time occupied by 10 generations. An average of 5.8 months is equivalent to 2 months less than that expected if a 6 month average is applied over 10 years. An average of 7 months will be 10 months longer over 10 years than the six month expectation. An average of 6.4 will be 4 months longer over 10 generations.

Of these 8 series depicting 10 generations, all but two were 6 months or more off of the total that was expected for 10 generations using a six month average. Again, these differences are only significant if we seek a total that is exact and precise, such as an exact, specific identification of the year of Christ's return.

This example shows how quickly the application of an expected average can differ from reality by as much as a few years especially when the sample size is

small as it is in the case of the pre-Flood patriarchs. In the case of Genesis, we are only plotting 9 birthdays (generations) before the Flood and 10 afterwards. Given that these are very small sample sizes, the actual occurrence of the birthdays of the patriarchs are not very likely to conform to the six month average Warner has employed. This likelihood is exemplified by our exercise with the dice and by Dembski's discussion of applied probability. In historical reality, averages are more likely to deviate from the proposed six month average than they are to conform to it. In any given family unit of 6 to 10 births, the reality may be at least 6 months (perhaps up to a year or more) off of the total time occupied by adding six months to each birth.

At this point we have to ask whether adding an assumed six months to each generation capably resolves the potential chronological difficulty it is proposed to address. Or, does this approach seem to be complicating the matter with additional, potentially unreliable data? If we assume that there is missing time in the biblical accounts and our goal is to be within a few years or decades of the overall total, then perhaps this method is effective enough. On the other hand, if our goal is to be within a few years of the overall total, then perhaps this method isn't necessary in the first place. After all, we are already going to be within a few years or decades of the actual total even without the potential "missing months" between the birthdays of fathers and sons. If however, our purpose is to produce an exact year, then perhaps we should reconsider whether this method is really capable of achieving that goal.

The reality is that, like the occurrence of six or seven heads in a row, the patriarchs' birthdays may randomly have tended to group towards the same time of year. Or, perhaps there is some unknown, but real reason that would have resulted in children being born at about the same time of the year generation after generation.

While Warner's calculations might offer a good estimate of the amount of potentially unknown months and years between fathers and sons' birthdays, we must ultimately concede that it is probably very unlikely that this estimate actually represents the real intervals between the birthdays of the patriarchs. The real and likely difference between Warner's estimate and the real birthdays of the patriarchs would mean that his calculations for the year of Abraham's birth have a good chance of being inexact by at least a year or more. This may not be important when the purpose is merely to provide a reliable estimate for the amounts of historical time, but it is necessary to recognize the potential significance of these issues when the result is claimed to be highly precise, to accurately represent historical reality, and to identify the exact year of Abraham's birth after creation (Anno Mundi). Of course, this kind of precision is only necessary in a system which predicts and requires key events (such as Abraham's birth) to occur in 50-year increments from creation. On the other hand, if we accept a chronology that is accurate within a few years or perhaps decades, if we don't insist on exactness down to the month, and if we don't require jubilee correspondence, then why do we need to be concerned with constructing an artificial device to account for potential birth month and day differentials between

fathers and sons which will only add up to a few years or maybe a decade at the most.

A third potential problem with the solution Warner offers relates to the generations around the time of the Flood itself. Calculations for the time period after Noah's birth and the Flood do not involve Shem's birthday or age. Rather, the amount of time for this period is derived based on two markers, the years of Noah's life and the birth of Shem's son Arphaxad two years after the Flood.

Genesis 11:10 These are the generations of Shem: Shem was an hundred years old, **and begat Arphaxad two years after the flood:**

According to Genesis 8:13 the flood waters had dried up from off the earth on the first day of the first month of the year. Noah and his family waited another month and twenty seven days and then exited the ark to begin their lives anew on the twenty-seventh day of the second month.

Genesis 8:13 **And it came to pass in the six hundredth and first year, in the first month, the first day of the month, the waters (04325) were dried up from off the earth:** and Noah removed the covering of the ark, and looked, and, behold, the face of the ground was dry. **14 And in the second month, on the seven and twentieth day of the month, was the earth dried.** 15 And **God spake unto Noah, saying,** 16 **Go forth of the ark,** thou, and thy wife, and thy sons, and thy sons' wives with thee. 17 Bring forth with thee every living thing that is with thee, of all flesh, both of fowl, and of cattle, and of every creeping thing that creepeth upon the earth; that they may breed abundantly in the earth, and be fruitful, and multiply upon the earth. 18 **And Noah went forth,** and his sons, and his wife, and his sons' wives with him:

By looking at these details from Genesis 8 and 11, we can see that the Flood effectively was over when the waters were all dried up on the first day of the first month of the year and also that Arphaxad was born two years after the Flood. Therefore, counting the years of history forward from the point of Noah's birth requires the amount of years Noah lived before the Flood occurred, the amount of time the Flood waters covered the earth, and the amount of time after the Flood before Shem's son Arphaxad was born. Shem's age in regard to the Flood and his age at the birth of Arphaxad are not necessary factors in calculating this period. Rather, the occurrence of the Flood serves as a substitute demarcation in the place of Shem in these calculations of biblical, world history. Likewise, as we have seen, the Flood ended in correspondence to the first day of the first month of the year. For these reasons, any differential between Noah's birthday and Shem's is not necessary for the purposes of determining the total amount of time before Abraham's birth.

But, we do need to consider whether any added time must be included regarding Arphaxad's birth. Genesis 11:10 states that Arphaxad was born two years after the Flood. This could be taken to mean that Arphaxad was born exactly two years

after the Flood ended. If this is the case, then no time would be needed to account for any differential regarding Arphaxad's birth.

On the other hand, it is possible that Arphaxad was born a few months or even several months before or after two full years had passed. Perhaps then, we would need to account for a differential of months and days between Arphraxad's birthday and the day the Flood ended. A look at Warner's chart counting the ages of the patriarch's and his notes explaining that chart shows that he believes such an interval exists. He dates Arphaxad's birth to two full years after the Flood plus his added six month average to account for the differential. (Warner has the Flood taking place in the year between 1651 and 1652 AM and then dates Arphraxad's birth to two years and six months later at 1654.5 AM.)

Flood, 1 year, 1651 – 1652…Shem's son, Arphaxad, was born *"two years after the flood"* when Shem was 99.5, (Gen. 11:10). If we take *"after the flood"* to mean after the flood ended, then **Arphaxad was born in the year 1654.5.** – Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, www.120jubilees.org

By comparison, Warner doesn't see the need to add six months between the time of Noah's birthday and Shem's birth. In his chart of the ages of the patriarchs, the interval between Noah's birthday and Shem's birth is the only generation in which the added six month interval is not inserted. While the births of the rest of the patriarchs represented as alternating between an even year and half way through the year, Warner has both Noah and Shem born half way through the year. This demonstrates that Warner does not add his required six month adjustment to account for birthday differential between Noah and Shem.

Name	*Lifespan*	*Age at Son's Birth*	*Born AM*
1. Adam	929.5	129.5	1
2. Seth	911.5	104.5	129.5
3. Enos	904.5	89.5	234
4. Cainan	909.5	69.5	323.5
5. Mahalalel	894.5	64.5	393
6. Jared	961.5	161.5	457.5
7. Enoch	364.5	64.5	619
8. Methuseleh	968.5	186.5	683.5
9. Lamech	776.5	181.5	870
10. **Noah**	949.5	5032	**1051.5**
11. **Shem**	599.5	99.5	**1554.5**
Flood	1 year		1651 – 1652
12. Arphaxad	437.5	34.5	1654
13. Salah	432.5	29.5	1688.5
14. Eber	463.5	33.5	1718
15. Peleg	238.5	29.5	1751.5
16. Reu	238.5	31.5	1781
17. Serug	229.5	29.5	1812.5
18. Nahor	147.5	28.5	1842
19. Terah5	204.5	129.5	1870.5

20. Abram 174.5 99.5 2000
– Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, www.120jubilees.org

To be clear, the bible doesn't specify exactly how old Noah was when Shem was born. We also do not know if Arphaxad was born exactly two full years after the Flood or perhaps 2 1/2 years after the Flood as Warner suggests. Likewise, Warner suggests that Noah was born half way through the year, but this conclusion is only based on his hypothetical construct of adding six months' time to the birth of each of the patriarchs. The bible itself either provides no indications of what time of year Noah was born or it indicates that his birth corresponded with the first day of the first month of the year. Even though we know the relative ages of Noah and Shem in regard to the Flood, the fact that we do not know what time of the year Noah, Shem, or Arphaxad were born prevents us from determining the differential between their birthdays and months. While we may construct working solutions to these questions (as Warner does in his study), we must remember that those constructions are based on simply making selections and assumptions about several factors without biblical direction. These particular selections are not based on necessity. Constructing working solutions based on assumptions is possible. But it is not possible to identify one working solution as correct while dismissing other working solutions as incorrect.

Some may want to argue then that for consistency's sake we should add six months' time between the turn of the year and Arphaxad's birth. The problem here is that even Warner's model does not uniformly add six months to each generation. As we have seen, Warner doesn't place his average six month interval between the birthday of Noah and the birthday of Shem. To be clear, the available biblical data would allow for Noah and Shem to be born on the same day of the year. But it does not require it. In the exact same way, the biblical data would also allow for all the patriarchs to be born on the same day of the year. The point is once a model places fathers' and sons' births on the same day of the year without adding an interval to account for birthday differential (as in the case of Noah and Shem in Warner's model) there ceases to be a strict rationale insisting that six months must be added to all the other generations including that of Arphaxad.

These biblical observations affect any place where additional time may be needed to account for potential differentials between the birth months and days of the patriarchs. While there are 20 generations from Adam to Abraham, only 17 of them could necessarily require added time to account for birth month and day differentials. Shem would not require any such adjustment, because his age is not factored into calculations of this time period. Likewise, the biblical data either does not allow for an added six months between Noah's birthday and the Flood or it provides no indication either way. Similarly, the bible does not tell us if Arphaxad was born exactly two years after the Flood or if he was born six months or more after that second full year was completed.

If we apply this method, by the time we reach the birth of Noah we would have added six months on 9 occasions. We might add another six months between

Noah's birthday and the beginning of the Flood and perhaps another six months between the anniversary of the Flood's end and Arphaxad's birth. There would also be another 8 additions of six months' time from Arphaxad's son Salah through the birth of Abraham. Therefore, by the time of Abraham's birth we would have added six months on a total of 19 six-month intervals (17 if we don't include the additional six months between Noah's birthday and the Flood and between the anniversary of the Flood and Arphaxad's birth).

1. Between Adam and Seth
2. between Seth and Enos
3. Between Enos and Cainan
4. Between Cainan and Mahalaleel
5. Between Mahalaleel and Jared
6. Between Jared and Enoch
7. Between Enoch and Methusaleh
8. Between Methusaleh and Lamech
9. Between Lamech and Noah

10. Between Arphaxad and Salah
11. Between Salah and Eber
12. Between Eber and Peleg
13. Between Peleg and Reu
14. Between Reu and Serug
15. Between Serug and Nahor
16. Between Nahor and Terah
17. Between Terah and Abraham

At the most then the total potential adjustment that could be added before the Flood is 4.5 or 5 years (six months each on 9 or 10 occasions depending on whether we include time between Noah's birthday and the start of the Flood). After the Flood, the most we could add is 4 or 4.5 years (depending on whether we include time between the anniversary of the Flood's end and Arphaxad's birth). The total time that could be added before Abraham's birth would then be 8.5 or 9.5 years. (We would not be adding a round number of 10 years, which would result if we simply added an adjustment of six months each for 20 generations.)

In his calculations Warner inserts 18 six-month additions for the period prior to Abraham's birth placing Abraham's birth precisely in the year 2000 AM. As his chart shows, this is accomplished by placing the end of the Flood in 1652 AM and Arphaxad's birth two years later in 1654.

Name	*Lifespan*	*Age at Son's Birth*	*Born AM*
12. Arphaxad	437.5	34.5	**1654**

– Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, www.120jubilees.org

However, as we saw earlier, Warner's endnote places Arphaxad's birth in 1654.5 AM which would be a 19th addition of six months and which would subsequently seem to require placing Abraham's birth in 2000.5 AM.

[Chart:] **Flood, 1 year, 1651 – 1652, Arphaxad, 1654…Endnote 2: Shem's son, Arphaxad, was born *"two years after the flood"*** when Shem was 99.5, (Gen. 11:10). If we take *"after the flood"* to mean after the flood ended, then **Arphaxad was born in the year 1654.5.** – Tim Warner, Jubilee Calendar, Creation to the Birth of Abraham, www.120jubilees.org

As a result the logical consistency of how Warner applies his six-month addition method is difficult to determine. It is also difficult to determine whether it is the exegetical data that is producing Warner's chronological model or whether the chronological model itself is directing his exegetical choices so as to support that model.

Utilizing Warner's method then requires one to determine exactly how many occasions warrant the addition of a six month period between the generations of the patriarchs surrounding the Flood. Depending on the selections one makes to add or not add six months on particular occasions one can arrive at differing dates for the Flood and Abraham's birth and can adjust the timetable as predicted by the model. If we combine this approach with an alteration related to another issue (to be discussed shortly) we may be able to place Abraham's birth at exactly 2000 AM as Warner does.

Warner's results seem acceptable enough as estimates, but it should be noted that the motivations for the selections which produce them are not necessarily driven by exegetical necessity, logic, or consistency. No method based on the assertion that the bible fails to specify unknown amounts of time can claim to conclusively and precisely date events like Abraham's birth at exact, 50-year increments from creation. If our purpose is to arrive at a responsible understanding of biblical chronology we should be careful not to mistake working solutions for necessity or certain solutions. And we should be equally careful to avoid being selective in our exegetical choices because our chronological model necessitates a certain result. Likewise, we should be careful not to offer results based on working assumptions as exact and certain representations of real history.

Suggested solutions to the possible problem of missing and unknown amounts of time regarding birthdays in the Genesis genealogies come with complexities and challenges of their own. They largely require making selections which aren't necessitated by exegesis or logic and do not offer more compelling exegetical or logical grounds than equally or perhaps more valid alternatives. And, they rely on statistical projections which have a good chance of diverging from reality to a degree significant enough to undermine the desired precision they hope to achieve. We must keep in mind that in the first 1650 years of biblical, world history we are only talking about a potential of around 4-5 missing years. And we're only discussing a potential 9-10 years over the first two millennia. Isn't this precise enough? And if we desire to be more precise than that should we adopt

methods which are not likely to provide that much more precision? And if the methods we derive involve a decree of complexity that can't guarantee absolute precision, then we have to consider whether we're better off just going with the straightforward count of the biblical data without all the complications.

In summary, we have seen the following. We have seen that the timing cues surrounding the births of Noah, Shem, and Arphaxad in combination with the end of the Flood provide additional difficulties for the assumptions about adding six-month intervals between the births of fathers and sons. We have seen that assuming a statistical average may be mathematically simple and straightforward but is very unlikely to correspond to reality. And we have seen that there is also a good historical and biblical basis for concluding that the ancient Jews (including Moses who transcribed the Genesis accounts) likewise reckoned the patriarchs to have aged in accordance with New Year's Day. Furthermore, there is admittedly little or no biblical support for the conclusion that ancient Jews (including the biblical authors) celebrated individual birthdays or used them as a means to calculate age. These considerations constitute yet another reason to conclude that there is no need to account for any time differential between the birthdays of the fathers and sons in the Genesis accounts. Rather, the ages of fathers and sons would all be based on the coming of New Year's Day each year and the numbers mentioned in Genesis would provide a full count of the years of biblical history from creation without any missing amounts of time.

Additionally, the age of creation coincides with the coming of New Year's Day. And the first patriarch's (Adam's) age also closely corresponded to New Year's Day. These facts would have been apparent to Moses as he recorded the Genesis accounts. To provide a total history of the world, all he had to do then was tell us what age each father was during the year his son was born. To illustrate how this would work, let us start with Adam. According to Genesis 5, Adam was 130 years old when Seth was born. For the moment let us assume that this means that Adam was counted to have completed 130 years of life at Rosh Hashanah (New Year's Day). Then, at some point during the year following that Rosh Hashanah when Adam was counted as having lived 130 years, Seth was born. The following Rosh Hashanah everyone was advanced one year of life including Seth. So, even though Seth may have been only months old, he was counted as 1 year old when the next Rosh Hashanah (New Year's Day) arrived. In this way, Adam would have turned 131 years old on the same day when Seth was counted as turning 1 year old.

Since he was created on the sixth day, Adam's year of life corresponded to the age of creation. Therefore, since Seth's first year would correspond to Adam's 131st year, we could compile the total years of creation by simply adding additional years for Seth's life at the birth of his son Enos to the 130 years Adam had lived before Seth was born. In this way, the Genesis genealogies would add up simply to a total that would precisely and reliably tell us the age of creation (the total years of biblical, world history).

We can see then that this alternative method for understanding age reckoning and the numbers provided in the Genesis accounts is consistent with the necessary premise for attempting a total count of world history using data provided in the scripture. Likewise, historical and biblical evidence give us good reason to suppose that corporate age-reckoning may be, in fact, a more justifiable approach to understanding the Genesis genealogies than the assumption that Moses and the pre-Flood patriarchs employed the same individualistic approach to age-reckoning as we do in the modern, westernized world today and which seems not to have been practiced widely prior to the Archaemenids in the fifth century BC.

However, it should also be mentioned that Warner's method of adding six months for each generation to account for birthday differentials does offer one, particular benefit. Warner's method is uniquely suited to allow a biblical chronologist to construct a total history of the world wherein key events can be assigned dates which correspond to a 50-year (jubilee) cycle. For those who are persuaded that such events fall in jubilee cycles, this may, in fact, be the most compelling reason for selecting Warner's approach over the viable alternatives to it. In subsequent sections, it will be shown that on its own Warner's approach to calculating the ages of the patriarchs (at the birth of their sons) is not sufficient in order to maintain an alignment with a proposed 50-year cycle. Rather, Warner's birthday differential calculations must be coupled with particular choices and approaches to other chronological questions that we will discuss. Only with Warner's six month additions for birthday differentials and his approach to the chronological issue we discuss below can a chronology be constructed which corresponds world history to 50-year increments (jubilee cycles) from creation.

Having discussed the potential feasibility and effectiveness of solutions to the possible problem of birthday differential in the Genesis genealogies, we will now turn to the more primary question of whether this possible problem should be treated as an actual problem.

Are the Genesis genealogies really in need of supplementation by an artificial device to account for missing months or years of time? It is important to note that on some level the suggestion that Genesis fails to account for important durations of time is a suggestion that inherently challenges the sufficiency of the chronological data contained in these passages when it comes to the purpose of adequately informing us of the amount of time that transpired during this period.

Furthermore, suggesting that up to 20 years (or even just 10 years) are not accounted for in the Genesis genealogies amounts to a somewhat significant degree of insufficiency. If the Genesis genealogies do not account for 10-20 years' time, then we must conclude that the authors didn't intend for us to have a greater degree of specificity than a 10-20 year estimate. If that is the case, then we must consider whether we are licensed or capable of accomplishing a task that the biblical authors (in this case Moses) did not intend or provide for. In this case the specific task would be constructing a history of the patriarchal period that has a more precise count of years than what the bible itself provides.

This fundamental observation would itself argue against accepting an alternative wherein the chronological data provided in Genesis is insufficient in its account of the patriarchal period. By comparison, an approach which takes the numbers provided in the Genesis genealogies as a complete accounting which on its own is capable of producing a precise calculation of this time period remains wholly consistent with the premise that biblical data is sufficient for deriving a bible-based chronology of world history.

These are logical reasons to potentially disregard the suggested need to fix the biblical data because of possible missing time due to birthday differentials. The main questions to consider are as follows.

Why should we conclude that there are missing months and days that need to be accounted for which are not accounted for in the Genesis genealogies? Must we conclude that there are unaccounted for months and days simply because Genesis doesn't delineate the intervals of time between the births of fathers and sons in terms of months and days but only in years?

As we examine these questions, we must keep in mind that the creation of a chronology of biblical world history involves two critical components. First, as we have said, any calculation of world history that uses and relies upon the figures provided in the biblical texts is inherently founded on the premise that the biblical authors intended for the numbers they supply to be used to adequately and accurately measure the time periods they are chronicling. Second, the calculation of biblical, world history is measured in years. What is needed then to calculate biblical, world history is for the biblical authors to tell us the amount of time that transpires in any given chronological sequence or span of time in units of years. In this way we can compile the total (or estimated total) number of years of biblical, world history.

When we look at the data preserved in the Genesis account what we find then is that the biblical authors seem to have provided precisely what we need: periods of elapsed time provided in units of years. To suggest then that the biblical authors failed to inform us of what may amount to years of time undermines and runs contrary to a fundamental premise of calculating history using biblical data. We are operating under the premise that the biblical authors intended for this data to be used to understand the amount of years that elapsed during particular periods of history. To be consistent with that necessary premise it seems that we should operate as if the numbers provided in the biblical accounts are adequate for deriving an accurate count of world history. To do otherwise would perhaps suggest that the biblical data is insufficient for providing an accurate count of history. If the biblical data is insufficient for this task, it is inconsistent to then fabricate a count of world history based on the biblically-supplied accounts.

Therefore, principle would seem to dictate that since the Genesis genealogies convey time using units of years we should be inclined to accept these amounts of time as sufficient and reliably accurate for calculating the total time period discussed in the texts rather than suggesting that these years do not accurately or

adequately account for the time that transpired during these periods. For these reasons it seems sensible that if we wish to compile a count of the years of world history using the data contained in the Genesis accounts, we ought to or perhaps need to operate as if the numbers provided in the genealogical records are adequate and by no means lacking. These considerations lead in the direction of operating under the fundamental principle that Moses (who transcribed the Book of Genesis) has already found a way to present the correct amount of time to us in a way that accounts for and overcomes any potential difficulties that may have been related to differentials between the birthdays of fathers and sons. Correspondingly, these considerations seem to undermine the suggestion that we must find a way to account for supposed, unaccounted amounts of time in the Genesis records.

In the next section we will take a look at the other issue related to understanding the age numbers provided in the Genesis genealogies. This issue will deal with whether the number of years mentioned in the Genesis genealogies refers to full, completed years the patriarch had already lived prior to the birth of their sons or the current, partial year of life that the patriarch was still living in (but had not yet completed) when their sons were born.