

The True Meaning of Aviv *and* The Beginning of the Year

Introduction

Ah, the barley-equinox question, by far the largest area of disagreement between feast keepers regarding when to start the festal year. In a nutshell the two different beliefs are as follows:

- Equinox (“equinox method” throughout) – Adherents to this method believe that the vernal (or Spring) equinox is the marking point from which the first day of the festal year should be determined. Some believe that the new moon nearest to the vernal equinox is the correct moon to start the year; others believe only the new moon on or after the equinox is the correct moon.
- Barley (“barley method” throughout) – Adherents to this method hold to a belief that the appearance of a specific state of the barley crop, the state which they call *aviv*, is the proper marking point from which the first day of the festal year should be marked. They believe that the first new moon that appears after the *aviv* state barley appears is the correct new moon to start the year.

Before delving in any deeper it is important to note that adherents to both methods of determining the first of the year often observe the same appointed times. It is typically in “close call” years where the controversy arises and arguments ensue. Prayerfully this article will aid in quelling the controversy and divisions between the two groups.

The goal of this article is to bring about unity between these groups by establishing from both scripture and referential sources what the true, ancient meaning(s) of *aviv* really is(are) and how it affects the Wave Sheaf *omer* offering and the beginning of the year. Why is this important? Well, not understanding or knowing the true meaning of *aviv* can actually be the very cause of these divisions. Or rather, a proper understanding and knowledge of the true meaning of *aviv* can allow both groups to come into agreement about when to start the festal year.

I will be presenting evidence from numerous sources including, but not limited to, the Bible (Masoretic Text and Septuagint [LXX]), the Liddell-Scott Greek-English Lexicon, Gesenius’ Hebrew and Chaldee Lexicon, numerous Bible dictionaries, Philo, Josephus, and more. First, let’s examine the evidence we are presented with in scripture.

What Can Aviv Mean?

Most people's understanding of what *aviv* means is very restricted. But what does scripture say? Is *aviv* truly limited to just what a certain crop (mostly barley) looks like? Although the following is a valid definition of *aviv*, we will see that it cannot be limited to that.

In the eyes of the adherents of the barley method the meaning of the word *aviv* is usually restricted to this (taken from <http://www.karaite-korner.org/aviv.shtml>):

“In summation, barley which is in the state of *aviv* has 3 characteristics:

1. It is brittle enough to be destroyed by hail and has begun to lighten in color (it is not ‘dark’).
2. The seeds have produced enough dry material so it can be eaten parched.
3. It has developed enough so that it will be harvest-ready 2-3 weeks later.”

To determine whether or not this definition is accurate and/or complete we must use the most important rule in studying scripture – study in context. Let's keep in mind that there are no known surviving “Farmer's Almanacs” from Moses' day, so we need to be very careful to define *aviv* from the evidence we do have from his day – the Torah. So, to do that we need to examine all of the scriptures in which the word, *aviv* (Strong's #H24), is used. Before we do this it would be beneficial for us to look at the word that is the root of *aviv* – אָבִיב, *ev*. (Strong's #H3).

אָבִיב – *greenness, verdure*.¹

Now we can examine the verses that contain the word *aviv*. Specific verses will be addressed after this list.

Exodus 9:31 (NASB) – “Now the flax and the barley were ruined, for the barley was **in the ear** and the flax was in bud.”

Exodus 13:4 (NASB) – “On this day in the month of **Aviv**, you are about to go forth.”

Exodus 23:15 (NASB) – “You shall observe the Feast of Unleavened Bread; for seven days you are to eat unleavened bread, as I commanded you, at the appointed time in the month **Aviv**, for in it you came out of Egypt And none shall appear before Me empty-handed.”

Exodus 34:18 (NASB – twice) – “You shall observe the Feast of Unleavened Bread For seven days you are to eat unleavened bread, as I commanded you, at the appointed time in the month of **Aviv**, for in the month of **Aviv** you came out of Egypt.”

¹ Gesenius, Wilhelm. “Entry for אָבִיב.” Hebrew and Chaldee Lexicon to the Old Testament Scriptures. London, UK: Samuel Bagster & Sons, Limited, exact publication date unknown.

Leviticus 2:14 (NASB) – “Also if you bring a grain offering of early ripened things to יהוה, you shall bring **fresh heads of grain** roasted in the fire, grits of new growth, for the grain offering of your early ripened things.”

Deuteronomy 16:1 (NASB – twice) – “Observe the month of **Aviv** and celebrate the Passover to יהוה your Elohim, for in the month of **Aviv** יהוה your Elohim brought you out of Egypt by night.”

For future reference the most common translations of *aviv* today are “in the ear, in the head, green ears, and green ears of corn.” The first verse listed, [Exodus 9:31](#), is one of the most commonly used verses when attempting to prove the barley method. It is said that it clearly defines exactly what *aviv* means. Let’s examine the Hebrew text of [Exodus 9:31](#) (from left to right for ease of reading).

וְהַפְּשֵׁתָהּ וְהַשְׁעֵרָה נִכְּתָה כִּי הַשְׁעֵרָה אָבִיב וְהַפְּשֵׁתָהּ גִבְעַל

And the flax and the barley, it was smitten, for the barley *aviv* and the flax *givol*.

Two words in this verse, *aviv*, and גִּבְעַל, *givol* (Strong’s #H1292), are both related in that they are describing what the barley and flax (respectively) look like and/or what they are doing. So the question is: How do we know which one fits best? The fact is if the words simply describe what they look like, the verse makes no sense. In Hebrew, when two nouns are placed side by side it is meant to form what is known as the “construct chain.” The construct chain is the Hebrew language’s way of showing possession.² Does it make sense when we use it in the Hebrew construct chain? Here is how it would read: “The flax and the barley were smitten, for the barley of the *aviv* and the flax of the *givol*.” The possessive phrases make no sense in this verse. The other option in Hebrew is that these two phrases, “barley *aviv*” and “flax *givol*,” are in a “predicate adjective” format. When in this format, the proper form of the verb “to be” is inserted between the noun and adjective to bring clarity to the phrase.³ The purpose of a verb is to express an action or a state of existence.⁴ All versions of scripture are required to insert verbs in these phrases in order for the scripture to be read and understood properly in English. The King James Version (KJV) reads:

Exodus 9:31 (KJV) – “And the flax and the barley was smitten: for the barley **was in** the ear, and the flax **was** bolled.”

² Pratico, Gary D. & Van Pelt, Miles V. [Basics of Biblical Hebrew](#). Grand Rapids, MI: Zondervan, 2001. Chapter 10, *Hebrew Construct Chain*.

³ Pratico, Gary D. & Van Pelt, Miles V. [Basics of Biblical Hebrew](#). Grand Rapids, MI: Zondervan, 2001. Chapter 7, *Hebrew Adjectives*.

⁴ "Verb." Collins English Dictionary - Complete & Unabridged 10th Edition. HarperCollins Publishers. 27 Jan. 2011. <Dictionary.com <http://dictionary.reference.com/browse/verb>>.

Adding “was in” and “was” expresses existence and action. The verse then makes sense. Likewise, the New American Standard Bible (NASB) reads:

Exodus 9:31 (NASB) – “Now the flax and the barley were ruined, for the barley **was in the ear** and the flax **was in bud**.”

Once again, “was in” and “was in” are added in front of both *aviv* and *givol*, respectively, in order for the reader to understand what is being said. It is pretty clear that *aviv* in this scripture is required to be in verb form to express its existence or an action it is taking. So, exactly what action is the barley taking in this verse? Well, we must also take into account what the flax is doing. *Givol*, literally meaning “bud”⁵, is expressing the state (or existence) that the flax was in. While the flax was flowering the barley was doing what? The barley was shooting forth. As flax matures it begins to form flowers in which the seeds form. At the same time of the season barley begins to sprout or shoot forth from its stalk. We must keep in mind that although *aviv* in this verse is used to describe what the barley is doing, it is not restricted to barley alone any more than flax is the only plant that flowers.

But, can “sprouting” or “shooting forth” be validated? Well, as can be seen from the versions that follow, all the translations of *aviv* express the same thing – the fact that the barley had grown forth from the stalk.

Companion Bible – “And the flax and the barley was smitten: for the barley **was in the ear**, and the flax **was blossomed**.”

Bishop’s Bible – “And so the flaxe and the barlye were smytten, for the barly **was shot vp**, and the flaxe **was bolled**.”

Geneva Bible – “And the flaxe, & the barley were smitten: for the barley **was eared**, & the flaxe **was bolled**.”

Literal Translation of the Holy Bible – “And the flax and the barley were stricken. For the barley **was in head**, and the flax in **bud**.”

American Standard Version – “And the flax and the barley were smitten: for the barley **was in the ear**, and the flax **was in bloom**.”

Young’s Literal Translation – “And the flax and the barley have been smitten, for the barley **[is] budding**, and the flax **forming flowers**.”

Darby Translation – “And the flax and the barley were smitten; for the barley **was in the ear**, and the flax **was bolled**.”

⁵ The Lockman Foundation. “Entry for גִּבְעֹל.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

Holman Christian Standard Bible – “The flax and the barley were destroyed because the barley **was ripe** and the flax **was budding**.”

Look also at the entries found in the following lexicons.

“אָבִיב m. prop. **sprout**, hence *ear* of grain. Ex. 9, 31, *time of ears, month of ‘Abhibh*. Ex. 13, 4, i.e. **of blooming** or of green ears.”⁶

“אָבִיב n.m.^{Lv2,14} coll. (Lag^{BN207} Inf.) 1. fresh, young ears of barley Ex 9³¹; indef. Lv 2¹⁴. 2. חֹדֶשׁ הָאָבִיב [chodesh haAviv] **month of ear-forming, or of growing green, Aviv**, month of Exodus & Passover. From the root אָב (ev), meaning “**freshness, fresh green, green shoots**, or greenery.”⁷

“**Spring, bud out...**(a season) אָבִיב.”⁸

“אָבִיב **Budding, sprout, ear**.”⁹

One thing is perfectly clear. The barley was indeed shooting forth and the flax was flowering. So, can the definition of “shooting forth” hold up with the rest of the scriptures in which *aviv* is used? Let’s look at the next few verses in the list. We can deal with [Exodus 13:4](#), [23:15](#), [34:18](#), and [Deuteronomy 16:1](#) at the same time in this instance, since the message is the same. In all of these verses there are two important phrases, “in the month *Aviv*,” and “came out, go forth, or brought out.”

First let’s look at the definitions of these important words and phrases. The phrase “in the month *Aviv*” in Hebrew is בְּחֹדֶשׁ הָאָבִיב, *beChodesh haAviv*. Literally rendered it reads: “in the month of the *aviv*.” Needless to say, most adherents to the barley method say, “There, it says that it is the month in which *aviv* can be found.” But, is that what it really says? In light of the information above is this really the only way this can be read? I propose a different reading, one that actually has a significant tie into the action of the barley during that time. I propose the following, the significance and meaning of which will follow after.

[Exodus 13:4 \(NASB – modified\)](#) – “On this day in the month of **the shooting forth of crops**, you are about to go forth.”

⁶ Davies, Benjamin. “Entry for אָבִיב.” *Student’s Hebrew Lexicon*. London, UK: Asher & Co., 1872.

⁷ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for אָבִיב.” *Hebrew and English Lexicon of the Old Testament*. Oxford, UK: Oxford University Press, 1906.

⁸ Newman, Selig. “Entry for אָבִיב.” *An Hebrew English and Hebrew Lexicon*. London, UK: Printed for the Author, 1832.

⁹ Young, Robert. “Entry for אָבִיב.” *Analytical Concordance to the Holy Bible*. London, UK: Religious Tract Society, Publication Year Unknown.

So, what is the significance? To understand that we need to define the second word/phrase mentioned above. In [Exodus 13:4](#), [23:15](#), [34:18](#), and [Deuteronomy 16:1](#) the following phrases are found in the NASB: “go forth,” “came out,” “came out,” and “brought you out,” respectively. These phrases are all derived from the same Hebrew word, **יָצָא**, *yatsa* (Strong’s #H3318), which means “go out, come out, go forth, lead out, brought out, cause to go out,”¹⁰ and many other variations of the same. So basically, the same time of the year when the barley was shooting forth from its stalk the Hebrews were to shoot forth from Egypt. Let’s see how inserting our definition of *aviv* and the other meanings of *yatsa* into the other verses, [Exodus 23:15](#), [34:18](#), and [Deuteronomy 16:1](#), make them look.

Exodus 23:15 (NASB – modified) – “You shall observe the Feast of Unleavened Bread; for seven days you are to eat unleavened bread, as I commanded you, at the appointed time in the month **of the shooting forth of crops**, for in it you **went forth** from Egypt And none shall appear before Me empty-handed.”

Exodus 34:18 (NASB – modified) – “You shall observe the Feast of Unleavened Bread For seven days you are to eat unleavened bread, as I commanded you, at the appointed time in the month **of the shooting forth of crops**, for in the month **of the shooting forth of crops** you **went forth** from Egypt.”

Deuteronomy 16:1 (NASB – modified – twice) – “Observe the month **of the shooting forth of crops** and celebrate the Passover to יהוה your Elohim, for in the month **of the shooting forth of crops** יהוה your Elohim **caused you to go forth out** from Egypt by night.”

Again, the same time of the year that the barley was shooting forth from its stalk, the children of Israel went forth, or shot forth, from Egypt. Did or does this have any practical or spiritual application for them and for us today? Well, think about it. In the same month that the life of the land started to once again sprout or shoot forth the children of Israel also went forth from Egypt. In the same month that the land grew and acquired new life the children of Israel also started their new lives. In the same month the Passover is celebrated, which Yeshua the Messiah represents for us, they shot forth from Egypt. After embracing and devoting ourselves to him new life also shoots forth in us and from us. Does this definition of *aviv* not carry much more value and worth than just “green ears,” or “young ears,” or “in the ear?” Yet at the same time the action of the barley is all the while maintained – it was shooting forth from the stalk.

Now, there is other scriptural evidence that holds to this meaning. Let’s examine some of the same scriptures in the Septuagint (LXX). As a background, the LXX is the Koine Greek version of the Old Testament, along with some other Apocryphal books, which was composed between the 3rd and 1st centuries BCE. It was most likely composed in Alexandria, Egypt, which was the home of the largest community of the Jewish Diaspora. It is believed that it was composed for

¹⁰ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for יָצָא.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

two purposes: 1) Because many Jews outside of Judea needed a Greek version of the Scriptures for synagogue readings and religious study, and 2) so that it may be a contribution to the Hellenistic culture. Several well known historians and theologians, such as Philo and Josephus show a strong reliance on the LXX in their writings. It can also be shown, based on the numerous quotes contained within the New Testament, that the first followers of Messiah Yeshua were also familiar with the LXX. It is worth noting that the LXX gradually fell out of use amongst the Jewish communities. One supposed reason for this includes the Jews' desire to separate themselves from early Christianity, a large portion of which were Greek-speaking. Another supposed reason is that the Jews fled from the Greek-speaking part of the Roman Empire to an Aramaic-speaking part of the Parthian Empire. Whatever the reason, the text of the LXX is still valuable, although not essential for us for study this subject. Okay, so here is [Exodus 9:31](#) in the LXX.

[Exodus 9:31 \(LXX\)](#) – “τὸ δὲ λίνον καὶ ἡ κριθὴ ἐπλήγη· ἡ γὰρ κριθὴ παρεστηκυῖα, τὸ δὲ λίνον σπερματίζον.”

Literally rendered it reads: “And the flax and the barley were struck. For the barley was **standing**, and the flax was seeding.” Here we can see that the word used in place of the Hebrew *aviv* is the Greek παρεστηκυῖα, *paresthechia*, which comes from the root παρίστημι, *paristhmi*, meaning “to place beside, to present, stand by, appear.”¹¹ This by no means restricts *aviv* to meaning a specific state of barley defined as a “partially ripe, yet not fully dried head of barley to be fully harvest ready in two weeks,” (the common understanding of what *aviv* is). This actually gives strong testimony to the definition I have proposed above, that *aviv* more accurately means “shooting forth.” The Jewish scribes who translated the LXX did not choose to use the Greek words for “green,” “ears,” “young,” or any other common translations of *aviv* in various other versions. Why is that? Again, the word *aviv* carries with it much more meaning than just the look of the crop.

What about some of the other verses above? Well, let's see how [Exodus 34:18](#) looks in the LXX.

[Exodus 34:18 \(LXX\)](#) – “καὶ τὴν ἑορτὴν τῶν ἀζύμων φυλάξῃ· ἑπτὰ ἡμέρας φάγη ἄζυμα, καθάπερ ἐντέταλμαί σοι, εἰς τὸν καιρὸν ἐν μηνὶ τῶν νέων· ἐν γὰρ μηνὶ τῶν νέων ἐξῆλθες ἐξ Αἰγύπτου.”

Literally rendered it says:

“And the holiday of the unleavened *bread* you shall guard; seven days you shall eat unleavened *bread*, just as I gave charge to you, at the time in *the* month of the **new produce**. For in the month of the **new produce** you came forth out of Egypt.”

¹¹ The Lockman Foundation. “Entry for παρίστημι.” [New American Standard Exhaustive Concordance](#). La Habra, CA: Zondervan, 2004.

Interesting, nay, mind-boggling! There are two occurrences of the word *aviv* in the Hebrew version of this verse. And the LXX translation, in both occurrences, uses the Greek νέων, *newn*, which is from νέως, *neos* (Strong's #G3501), which means "new, that is, (of persons) youthful, or (of things) fresh; figuratively regenerate."¹² The full Hebrew phrase, *chodesh haAviv*, is translated as μηνὶ τῶν νέων, *meni twn newn*, or "month of the new *crops*." The word "crops" is inserted for clarification on what exactly is new at this time. Now, if the translators of this verse were translating this with the intention of keeping the words of the Hebrew Bible available to the Jews living in Alexandria, who were quickly slipping away from speaking Hebrew, how could they make such a mistake so as to translate a word that is supposed to mean "an almost harvest ready crop" as "new?" It seems like a stretch. What seems more likely is that these translators knew more about what *aviv* truly was than we do today.

For the word *yatsa* in the Hebrew the translators used ἐξῆλθες, *exshlthes*, which comes from the root ἔρχομαι, *erchomai*, meaning "to come, go."¹³ What is interesting about this word is that it also has a great metaphorical interpretation as well, which is extremely pertinent what we are studying. It can also mean "to come into being, arise, come forth."¹⁴ This again shows more proof that *aviv* has a much more significant meaning than we are all used to hearing. As mentioned above, as the Hebrews came forth from Egypt they also came into new life. This same concept holds true for the other verses that uses these words – [Exodus 13:4](#), [23:15](#), and [Deuteronomy 16:1](#).

There is one more very important verse that contains *aviv* that we must now discuss – [Leviticus 2:14](#). The Hebrew of this verse is as follows.

וְאִמְתַּקְרִיב מִנְחַת בְּכוֹרִים לַיהוָה אָבִיב קִלְיֵי בָאֵשׁ גָּרֵשׁ כֶּרְמֶל
תִּקְרִיב אֶת מִנְחַת בְּכוֹרֶיךָ

And if you will bring near a first fruits offering to יהוה, *aviv* roasting in fire, crushed new grain, you will bring near the offering in your first fruits.

Here enters the other definition of *aviv*. Just as *aviv* is required to be in verb form in the previous verses examined, it is required to be in noun form here. So, can we relate the proposed definition of *aviv* to what is required in this verse? Absolutely! One must only ask: "What 'shoots forth' from a barley stalk?" Here is where referring back to the root of *aviv*, *ev*, really helps to give us some insight. As seen above *ev* has the meaning of "freshness, fresh green, green shoots, or greenery." So, what shoots forth from a barley stalk are fresh, green shoots of barley, otherwise known as heads of grain. One translation puts as such:

¹² Strong, James. "Entry for νέως." [The Exhaustive Concordance of the Bible](#). New York: Methodist Book Concern, 1923.

¹³ The Lockman Foundation. "Entry for ἔρχομαι." [New American Standard Exhaustive Concordance](#). La Habra, CA: Zondervan, 2004.

¹⁴ Thayer, Joseph Henry. "Entry for ἔρχομαι." [Thayer's Greek-English Lexicon of the New Testament: Coded with Strong's Concordance Numbers](#). [S.l.]: Hendrickson Publishers, Inc., 2007.

Leviticus 2:14 (NASB) – “Also if you bring a grain offering of early ripened things to יהוה, you shall bring **fresh heads of grain** roasted in the fire, grits of new growth, for the grain offering of your early ripened things.”

So, literally rendered it would more accurately read as follows:

Leviticus 2:14 (NASB – modified) – “And if you bring a grain offering of first-fruits to יהוה, you shall bring **fresh heads of grain** roasted in the fire, grits of new growth, for the grain offering of your first-fruits.”

But, what does the LXX say in this verse?

Leviticus 2:14 (LXX) – “ἐὰν δὲ προσφέρῃς θυσίαν πρωτογενημάτων τῷ κυρίῳ, νέα πεφρυγμένα χίδρα ἐρικτὰ τῷ κυρίῳ, καὶ προσοίσεις τὴν θυσίαν τῶν πρωτογενημάτων.”

Literally rendered it says:

“And if you should bring a sacrifice of first-produce to the Lord, *it shall be* new parched ground green wheat to the Lord, and *thus* you shall bring the sacrifice of the first-produce.”

There are some very important things to point out in this verse. First, the Hebrew word *aviv* is once again translated from *neos*, “new,” here. Another interesting thing to note is the word for “green wheat” here, χίδρα, *chidra*, is the plural form of χίδρον, which means “**unripe** wheaten-groats {rubbed from the ear in the hands}.”¹⁵ Once again this brings a far different meaning to the word *aviv* than we are used to hearing. This *aviv*, offered as a first fruits offering, is to be unripe grain (that which can be gleaned, rubbed in the hands, and eaten) parched and ground up into flour. Philo agrees with this understanding of *aviv*.

“And of the seven days, Moses pronounces two, the first and the last, holy; giving, as is natural, a preeminence to the beginning and to the end; and wishing, as if in the case of a musical instrument, to unite the two extremities in harmony. And the unleavened bread is ordained because their ancestors took unleavened bread with them when **they went forth out of Egypt**, under the guidance of the Deity; or else, because at that time (I mean at the **spring season**, during which this festival is celebrated) the crop of wheat is not yet ripe, the **plains being still loaded with the corn**, and it not being as yet the harvest time, and therefore lawgiver has ordained the use of unleavened food with a view to **assimilating it to the state of the crops**. For unleavened food is also **imperfect or unripe**, as a memorial of the good hope which is entertained; since nature is by this

¹⁵ Henry George Liddell. Robert Scott. “Entry for χίδρον.” *A Greek-English Lexicon*. Oxford, UK: Clarendon Press., 1940.

time preparing her annual gifts for the race of mankind, with an abundance and plenteous pouring forth of necessities.”¹⁶

Fresh heads of grain, from a root which means “freshness, fresh green, green shoots,” new parched ground green wheat, from a root which means “unripe wheaten-groats,” ...it seems pretty clear that the grain being spoken of here is not and need not be fully mature for offering. It can even mean that it shouldn't be fully mature. These translators are clearly stating that *aviv* is considered something new that can be parched and ground into flour immediately. Is this possible only with fully harvest ready grain? We shall see more on this later.

Concluding this section we can clearly see and confidentially say that “shooting forth” and “green shoots (i.e. fresh heads of grain)” are more accurate and much more meaningful definitions of *aviv*. Both of these definitions are supported not only by other scholars and scripturalists in the past, but by the rest of the context of scripture as well. The crops shoot forth; the Hebrews went forth; and new life shoots forth in us. Yet at the same time the meaning of that which is shot forth, the heads of grain, is all the while maintained. So, what is the significance of all of this information about the true meaning of *aviv* and how it does relate to the beginning of the year? Well, if the definition is not limited to it being a specific look or static state (i.e. brittle, lightened, harvest ready in 2-3 weeks) then the start of the year could be earlier than is typically understood. The barley shoots forth from its stalk before it reaches the typical understanding of the state of *aviv*. So, must one really look for the green shoots of barley to be brittle, lightened, and harvest ready in 2-3 weeks? Let's look into that a little further.

- Brittle Barley? -

It is asserted above that the barley, in order for it to be in the *aviv* state, it must be brittle enough to be destroyed by hail. But, is this accurate? Does really take all of the information contained in scripture into consideration? Well, let's look at the hail plague a little bit closer. We see in [Exodus 9:18 & 23](#) that this is no normal hail storm.

Exodus 9:18 (NASB) – “Behold, about this time tomorrow, I will send a very heavy hail, such as has not been *seen* in Egypt from the day it was founded until now.”

Exodus 9:23 (NASB) – “Moses stretched out his staff toward the sky, and יהוה sent thunder and hail, and fire ran down to the earth. And יהוה rained hail on the land of Egypt.”

¹⁶ Philo. "De Specialibus Legibus, II, 157-158." [The Works of Philo: Complete and Unabridged](#). Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

Along with this horrible hail, the kind of which had never been in Egypt before, came thunder and fire. This kind of hail brings along with it more destructive power than your typical hail storm.

Exodus 9:25 (NASB) – “The hail struck all that was in the field through all the land of Egypt, both man and beast; the hail also struck every plant of the field and shattered every tree of the field.”

All that was in the fields, man, beast, plants, and trees, were destroyed. The Hebrew word for “all” in this verse is כָּל, *kol* (Strong’s #H3605), which literally means “the whole, all.”¹⁷ Let’s see what the LXX’s version of this verse says:

Exodus 9:25 (LXX) – “ἐπάταξεν δὲ ἡ χάλαζα ἐν πάσῃ γῆ Αἰγύπτου ἀπὸ ἀνθρώπου ἕως κτήνους, καὶ πᾶσαν βοτάνην τὴν ἐν τῷ πεδίῳ ἐπάταξεν ἡ χάλαζα, καὶ πάντα τὰ ξύλα τὰ ἐν τοῖς πεδίοις συνέτριψεν ἡ χάλαζα.”

In this version the word for “all” is from the Greek πᾶς, *pas*, which once again means “all, every.”¹⁸ It is extremely clear from these scriptures that this hail and fire was powerful enough to destroy all man and beast, anything that had any way to resist the hail, any strength of stance. The barley didn’t have to be brittle to be destroyed in this storm, the hail was powerful enough to kill man and beast, it was surely enough to destroy young, non-brittle barley. The standing barley definitely provided enough resistance to be destroyed. Another question comes up, though. What happened to the wheat? To properly understand this we need to examine the verse that mentions it.

Exodus 9:32 (NASB) – “But the wheat and the spelt were not ruined, for they ripen late.”

Exodus 9:32 (KJV) – “But the wheat and the rie were not smitten: for they were not grown up.”

What peculiar thing do you see that is similar between these two verses? In the last part of the verse both version add a word that is not in the Hebrew. The word for “late” and “not grown up” is from the Hebrew אֶפֶילֹת, *aphilot* (Strong’s #H648) which means “late (in the sense of weakness); unripe.”¹⁹ It comes from the root אָפַל, *awfale* (Strong’s #H651) which means “darkness, gloom.”²⁰ The main point of this word is to say that it was nowhere near ripe. Some

¹⁷ The Lockman Foundation. “Entry for כָּל.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

¹⁸ The Lockman Foundation. “Entry for πᾶς.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

¹⁹ The Lockman Foundation. “Entry for אֶפֶילֹת.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004. Strong, James. “Entry for אֶפֶילֹת.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

²⁰ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for אָפַל.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

even say that the “darkness” mentioned means that the wheat was actually still underground, but this is highly unlikely due to the time of the year. The wheat was typically sown in late October – early November after the former rains had softened the soil for tilling and sowing. The wheat would sprout just a little bit from the ground before going dormant in the winter. What is more likely meant by the “darkness” is that the leaves were so fresh, so young, that they were really dark to the eye. In addition to this it can be said that the seeds or grain of the wheat was hidden from the eye. So, the leaves of the wheat plants, unlike those of the barley, provided little to no resistance to the hail. And even if some were destroyed the plant was in such a young stage of growth that it could still have sprung up before the summer harvest. The true translation of this phrase makes this point very clear.

Exodus 9:32 (YLT) – “And the wheat and the rye have not been smitten, for **they are late.**”

Exodus 9:32 (LXX) – “ὁ δὲ πυρὸς καὶ ἡ ὀλύρα οὐκ ἐπλήγη· ὄψιμα γὰρ ἦν.”

Young’s Literal Translation brings the translation across exactly as it is meant, as does the LXX. The phrase ὄψιμα γὰρ ἦν, *opsima gar hn*, means “late for it was,” or “for it was late.” Why clarify this point? Well, when you add the word “ripen” into the verse it brings along with it the implication that it had already begun the ripening process after the grain had shot forth from the stalk. But, removing the word, as the literal text of scripture has, shows once again that the age of the wheat can be much younger than typically understood. This is yet more evidence that allows the beginning of the year to be earlier than always assumed.

- The Hail Plague -

Even more evidence is found in the timing of the hail plague itself. If the timing can be reasonably determined, or even approximated, then we may further understand the time when the barley was considered *aviv*. As mentioned above, the wheat was still very young in its growth stage. Since the wheat doesn’t come out of dormancy until the weather becomes warmer it can be assumed that it was still winter while the plague happened. For the wheat to be this young the hail plague must have occurred from middle-late February to early March. The barley at this very same time was considered *aviv*. Let’s look at some other references that support this.

“The writer has himself seen a very little, and has known of one instance when a considerable quantity of hail as large as small marbles fell. Lightning, also, is not as frequent in Egypt as in many semi-tropical countries, yet great electric storms sometimes occur. This plague is quite accurately dated in the seasons of the year (9 31.32). As the first plague was just before the rising of the Nile, so this one is evidently

about 9 months later, when the new crops after the inundation were beginning to mature, **January-February.**²¹

“Wheat was the chief produce; barley and spelt (as in Exodus 9:32) ought to be translated instead of ‘rie,’ *Triticum spelta*, the common food of the ancient Egyptians, now called by the natives doora, the only grain, says Wilkinson, represented on the sculptures, but named on them often with other species) are also mentioned. The flax was ‘bolled,’ i.e. in blossom, at the time of the hail plague before the Exodus. This accurately marks the time just before Passover. In northern Egypt the barley ripens and flax blossoms in the **middle of February or early in March**, and both are gathered before April, when wheat harvest begins.”²²

“The third group began with the hail, which as in the present day prevailed from the **middle of February to the beginning of March**. Moses for the first time warned Pharaoh to bring all cattle out of the field, on pain of their destruction.”²³

“Pharaoh for the first time cried, ‘I have sinned this time, Jehovah is righteous, I and my people are wicked’ (Exodus 9:27). The flax being ‘bolled,’ i.e. in blossom, marks the time as the **middle of February**, when also the ‘barley’ is ‘in the ear.’”²⁴

“Exodus 9:31, ‘the flax was bolled,’ i.e. ‘in blossom’; the boll, related to bowl and ball, being the pod. Marking the time, the **end of February or beginning of March**. Linen was exclusively used by the priests.”²⁵

“As the first plague was just before the rising of the Nile, so this one is evidently about 9 months later, when the new crops after the inundation were beginning to mature, **January-February.**”²⁶

“It is the fact that in Egypt when barley is in ear (**about February**) flax is blossoming.”²⁷

“It is probable that the plagues extended through a period of several months. The first plague occurred probably during the annual inundation of the Nile, hence, about the middle of June, (Edersheim). The second, that of the frogs, in September, the time when Egypt often suffers in this way. The seventh, (hail), came when the barley was in ear,

²¹ [The International Standard Bible Encyclopedia](#). “Plagues of Egypt.” Edited by: James Orr, John L. Nuelsen, Edgar Y. Mullins, and Morris O. Evans. Vol. IV. Chicago, IL: Howard-Severance, 1915.

²² Fausset, Andrew R. [Fausset’s Bible Dictionary](#). “Egypt.” 1949.

²³ Fausset, Andrew R. [Fausset’s Bible Dictionary](#). “Exodus, The Book of.” 1949.

²⁴ Fausset, Andrew R. [Fausset’s Bible Dictionary](#). “Exodus, The Book of.” 1949.

²⁵ Fausset, Andrew R. [Fausset’s Bible Dictionary](#). “Flax.” 1949.

²⁶ [The International Standard Bible Encyclopedia](#). “Plagues of Egypt.” Edited by: James Orr, John L. Nuelsen, Edgar Y. Mullins, and Morris O. Evans. Vol. IV. Chicago, IL: Howard-Severance, 1915.

²⁷ M.G. Easton M.A., D.D. [Illustrated Bible Dictionary](#). Third Edition. “Bolled.” Published by Thomas Nelson, 1897.

and before the wheat was grown, and hence, **in February**; and the tenth came in the following March or April.”²⁸

“31, 32. **The flax and the barley was smitten, etc.** — The peculiarities that are mentioned in these cereal products arise from the climate and physical constitution of Egypt. In that country flax and barley are almost ripe when wheat and rye (spelt) are green. And hence the flax must have been ‘bolloed’ - that is, risen in stalk or podded **in February**, thus fixing the particular month when the event took place. Barley ripens about a month earlier than wheat. Flax and barley are generally ripe in March, wheat and rye (properly, spelt) in April.”²⁹

So, what is the consensus? It is clear that all of these sources agree that the hail plague took place sometime between the middle of February and the beginning of March. This also means that the flax was flowering and the barley was shooting forth at this time. Again, this shows that the year can start earlier than always assumed. This will become clearer after the following section is read.

We must note that it is extremely important to not insert our doctrines on to the text. We must question ourselves, “Can what I am believing about *aviv*, that it is brittle, light, and will be harvest ready in 2-3 weeks, really be found in scripture? Do the scriptures say that the *aviv* was brittle, or are we inserting that belief? Is the barley light in color or did we also insert that? Can we really find that the barley must be 2-3 weeks away from harvest?” This last question is what we will now deal with.

The Wave Sheaf Offering

After all of my research I have found that the controversy between the equinox method adherents and the barley method adherents really boils down to the Wave Sheaf offering. Why? Well, the first fruits of grain have to be available for offering during the Feast of Unleavened Bread. I believe the misunderstanding lies in the mistaken belief that the barley has to be fully harvest ready by the Feast. It is important to note that this is nowhere specified in the scriptures. We will see how the scriptures properly portray what type of grain is acceptable for the Wave Sheaf Offering.

²⁸ Smith, William Dr. Smith’s Bible Dictionary. “Plagues, The Ten.” 1901.

²⁹ Jamieson, Robert, D.D. Commentary Critical and Explanatory on the Whole Bible. “Commentary on Exodus 9. 31,32” 1871.

- Flour or Stalks? -

First, we must clear up a common misunderstanding. It is commonly understood that the offering of the first fruits of the new barley crop each year had to be made from the new grain, parched, and then ground into fine flour. It is true that there is an instruction in Torah for how to offer grain offerings.

Leviticus 2:14 (NASB) – “Also if you bring a grain offering of early ripened things to יהוה, you shall bring fresh heads of grain roasted in the fire, grits of new growth, for the grain offering of your early ripened things.”

As we learned above “fresh heads of grain” is the Hebrew word *aviv*, which we have determined to more correctly mean “shooting forth” in addition to “green shoots (i.e. fresh heads of grain).” So, it is thought that these fresh shoots of grain were to be roasted or parched, then ground up into flour or grits. From first glance it would seem that this is the method by which the *omer* offering was to be presented. But, let’s examine the entire passage surrounding the *omer* offering.

Leviticus 23:10-14 (NASB) – “Speak to the sons of Israel and say to them, ‘When you enter the land which I am going to give to you and reap its harvest, then you shall bring in the sheaf of the first fruits of your harvest to the priest. He shall wave the sheaf before יהוה for you to be accepted; on the day after the Sabbath the priest shall wave it. Now on the day when you wave the sheaf, you shall offer a male lamb one year old without defect for a burnt offering to יהוה. Its grain offering shall then be two-tenths of an ephah of fine flour mixed with oil, an offering by fire to יהוה for a soothing aroma, with its drink offering, a fourth of a hin of wine. Until this same day, until you have brought in the offering of your Elohim, you shall eat neither bread nor roasted grain nor new growth. It is to be a perpetual statute throughout your generations in all your dwelling places.’”

Now we need to point out several important things in this passage. First let us examine the word for “sheaf,” which is the Hebrew עֹמֶר, *omer* (Strong’s #H6016). The definitions according to three major Hebrew lexicons for *omer* are as follows:

“From H6014; properly a *heap*, that is, a *sheaf*; also an *omer*, as a dry measure: - omer, sheaf.”³⁰

“omer (771b); from an unused word; a *sheaf*: - sheaf (5), sheaves (3).”³¹

³⁰ Strong, James. “Entry for עֹמֶר.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

³¹ The Lockman Foundation. “Entry for עֹמֶר.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

“1) omer, 1a) a dry measure of 1/10 ephah (about 2 litres); 2) sheaf”³²

As one can plainly see there are generally two definitions. The first is an actual sheaf of grain, which is a bundle in which cereal grains are bound. The second is an actual dry measure like that of fine flour. So, can we be 100% conclusive from these definitions that the *omer* that is being spoken of in [Leviticus 23:10-14](#) is one of fine flour as it is traditionally understood? No. So, what other evidence can we find? The LXX provides some helpful information.

[Leviticus 23:10 \(LXX\)](#) – “Εἶπὸν τοῖς υἱοῖς Ἰσραὴλ καὶ ἐρεῖς πρὸς αὐτούς “Ὅταν εἰσέλθητε εἰς τὴν γῆν, ἣν ἐγὼ δίδωμι ὑμῖν, καὶ θερίζητε τὸν θερισμὸν αὐτῆς, καὶ οἴσετε δράγμα ἀπαρχὴν τοῦ θερισμοῦ ὑμῶν πρὸς τὸν ἱερέα.”

The word used in the LXX for the Hebrew *omer* is δράγμα (*dragma*) which means “handful; esp. as many stalks of corn as the reaper can grasp (in his left hand).”³³ It is clear from this that the translators of the LXX wanted to convey that the *omer* was to be a sheaf of freshly cut grain. There is further evidence of this in the book of Ruth.

[Ruth 2:7 & 15 \(NASB\)](#) – “And she said, ‘Please let me glean and gather after the reapers among the sheaves [*omerim* – pl. of *omer*].’ Thus she came and has remained from the morning until now; she has been sitting in the house for a little while... When she rose to glean, Boaz commanded his servants, saying, ‘Let her glean even among the sheaves [*omerim*], and do not insult her.’”

Can we really imagine Ruth stopping in the fields to take the time to thresh, clean, parch, and ground the grain before eating it? Surely not! She was following behind the reapers, as was common in those days, to pick up the fallen kernels of grain or glean from the sheaves the reapers had gathered into bundles. This is further proof that scripture easily allows the *omer* offering to be a sheaf waved before יהוה as opposed to a dry measure of crushed flour.

There are also commands in the Torah that relate *omer* specifically and clearly to a sheaf of grain as opposed to a dry measure of flour.

[Deuteronomy 24:19 \(NASB\)](#) – “When you reap your harvest in your field and have forgotten a sheaf (*omer*) in the field, you shall not go back to get it; it shall be for the alien, for the orphan, and for the widow, in order that יהוה your Elohim may bless you in all the work of your hands.”

Again, a reaper would clearly not have threshed, cleaned, parched, and crushed the grain into flour and left it in the field.

³² Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for עֹמֶר.” [Hebrew and English Lexicon of the Old Testament](#). Oxford, UK: Oxford University Press, 1906.

³³ Henry George Liddell. Robert Scott. “Entry for δράγμα.” [A Greek-English Lexicon](#). Oxford, UK: Clarendon Press., 1940.

Some would say that because there is a grain offering instruction in [Leviticus 2:13](#), which instructs every grain offering to be seasoned with salt that this *omer* also had to be in flour form. But this, again, is inaccurate. Let's examine [Leviticus 23:12-13](#).

[Leviticus 23:12-13 \(NASB\)](#) – “Now on the day when you wave the sheaf, you shall offer a male lamb one year old without defect for a burnt offering to יהוה. Its grain offering shall then be two-tenths of an ephah of fine flour mixed with oil, an offering by fire to יהוה for a soothing aroma, with its drink offering, a fourth of a hin of wine.”

Certain offerings were special and unique in themselves. The Wave Sheaf offering was one such offering. The Wave Sheaf offering had its own prescribed grain offering that was to be offered along with it. There is no instruction for the Wave Sheaf to be offered up in smoke on the altar.

In addition to all of that, if we think of how the antitype of this event is fulfilled we might also have some additional light shed on the topic. We know that Yeshua fulfilled the wave sheaf *omer* offering when he ascended to the Father (or was raised from the dead) on the day after the Sabbath. How does this symbolism apply to that? Well, was not Yeshua given new life at his resurrection? The sheaf of grain was new and fresh. Yeshua was not to be touched until he ascended to the Father ([John 20:17](#)). Could this also mean that the sheaf for the *omer* offering was also not to be touched (i.e. corrupted by man's hands)? If so, how can threshing, cleaning, parching, grinding into flour, and being tested several times be considered not touching the new grain?

- *Young or Mature?* -

So another question comes up: “Is this kind of grain, grain which is *aviv* according to the Karaite's definition above, acceptable as the *omer* offering?” The *omer*, after it is offered, was supposed to be for the priests. What good is a sheaf of grain that has no value? It had to be good for something. So, we can conclude from this logic, and the scriptures below, that the maturity of the grain offered must be enough for it to be of value for food for the priests.

[Leviticus 6:17 & 29 \(NASB\)](#) – “It shall not be baked with leaven. I have given it as their share from My offerings by fire; it is most holy, like the sin offering and the guilt offering. Every male among the sons of Aaron **may eat it**; it is a permanent ordinance throughout your generations, from the offerings by fire to יהוה. Whoever touches them will become consecrated...Every male among the priests **may eat of it**; it is most holy.”

[Leviticus 7:6 \(NASB\)](#) – “Every male among the priests **may eat of it**. It shall be eaten in a holy place; it is most holy.”

Numbers 18:8-10 (NASB) – “Then יהוה spoke to Aaron, ‘Now behold, I Myself have given you charge of My offerings, even all the holy gifts of the sons of Israel I have **given them to you as a portion** and to your sons as a perpetual allotment. **This shall be yours from the most holy gifts reserved from the fire; every offering of theirs, even every grain offering and every sin offering and every guilt offering, which they shall render to Me, shall be most holy for you and for your sons.**’ As the most holy gifts you shall eat it; every male shall eat it. It shall be holy to you.”

Deuteronomy 18:1 (NASB) – “The Levitical priests, the whole tribe of Levi, shall have no portion or inheritance with Israel; **they shall eat יהוה’s offerings** by fire and His portion.”

It is extremely clear that the priests’ portions were their parts of the offerings of the people. In light of this knowledge we must now understand exactly what levels of maturity for the grain were acceptable for use as food. For this we go to Leviticus 23:14.

Leviticus 23:14 (NASB) – “Until this same day, until you have brought in the offering of your Elohim, you shall eat neither bread nor roasted grain nor new growth. It is to be a perpetual statute throughout your generations in all your dwelling places.”

The underlined words are all different types of food that can be made from the grain. Let us closely examine each of these. The word for “bread” comes from the Hebrew **לֶחֶם**, *lechem* (Strong’s #H3899), which means “food (for man or beast), especially bread, or grain (for making it).”³⁴ The word for “roasted grain” comes from the Hebrew **קָלִי**, *qaliy* (Strong’s #H7039), which means “parched, roasted grain.”³⁵ If you look back above to the Hebrew of Leviticus 2:14 you will see the word *qaliy*. It is clear that *aviv*, which we have seen to be fresh green shoots, are suitable to roast with fire and become *qaliy*. So, the grain being spoken of here in Leviticus 23:14 need not be mature grain roasted, but can be young grain. The word for “new growth” comes from the Hebrew **כַּרְמֶל**, *karmel* (Strong’s #H3759), which means “a planted field (garden, orchard, vineyard or park); by implication garden produce.”³⁶ For reference purposes let’s compare that scripture and those words with the same verse in the LXX.

Leviticus 23:14 (LXX) – “καὶ ἄρτον καὶ πεφρυγμένα χίδρα νέα οὐ φάγεσθε ἕως εἰς αὐτὴν τὴν ἡμέραν ταύτην, ἕως ἂν προσενέγκητε ὑμεῖς τὰ δῶρα τῷ θεῷ ὑμῶν νόμιμον αἰώνιον εἰς τὰς γενεὰς ὑμῶν ἐν πάσῃ κατοικίᾳ ὑμῶν.”

³⁴ Strong, James. “Entry for **לֶחֶם**.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

³⁵ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for **קָלִי**.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

³⁶ Strong, James. “Entry for **כַּרְמֶל**.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

The Greek word ἄρτον, *arton*, comes from ἄρτος, *artos*, which means “cake or loaf of wheat-bread.”³⁷ The Greek word πεφρυγμένα, *pefrugmena*, comes from φρυγω, *frugw*, which means “roast or parch, roasted barley.”³⁸ The Greek words χίδρα νέα, *chidra nea*, come from χίδρον, *chidron*, meaning “unripe wheaten-groats,” and νέος, *neos*, meaning “new,” respectively. Together they would be rendered “new green wheat.”

What is extremely apparent from both the Hebrew and Greek is that roasted, parched grains, along with fresh grain on the stalk, are things that could be eaten (i.e. valuable for food).

Another important point that can be drawn from these scriptures is that none of these were allowed to be made and/or eaten from the new year’s crop until the wave sheaf was offered. Gleaning was the eating of grain whether directly off of the stalk or from that which had dropped to the ground during the harvesting. Gleaning from the new year’s crop was, like everything else, forbidden until the wave sheaf was offered. The Jamieson, Fausset, Brown Bible Commentary gives us a great insight into this common practice in ancient biblical times.

“Gleaners were sometimes allowed, by kind and charitable masters, to partake of the refreshments provided for the reapers. The vessels alluded to were skin bottles, filled with water - and the bread was soaked in vinegar (Ruth 2:14); a kind of poor, weak wine, sometimes mingled with a little olive oil - very cooling, as would be required in harvest-time. This grateful refection is still used in the harvest-field...some of the new grain, roasted on the spot, and fit for use after being rubbed in the hands - a favorite viand in the East. He (Boaz) gave her so much, that after satisfying her own wants, she had some (Ruth 2:18) in reserve for her mother-in-law.”³⁹

The point of parching the new grain is to dry out the kernel for easier eating. If the kernels were all fully harvest ready they would contain very little to no moisture.

What all of this also implies is that all three of these were able to be present when the wave sheaf is offered. If that is not the case why mention the others at all? If all the grain was completely harvest ready by the Feast of Unleavened Bread as the Karaites propose, how can there still be “new growth” to eat from? Some might say, “Does *karmel* really mean ‘new growth’?” Well, the following translations of scripture use either “fresh ears,” “green ears,” “new grain,” or “new growth” for *karmel* in this scripture: LITV, ASV, Bishop’s Bible, Geneva Bible, ESV, JPS, KJV, NASB, NIV, NCV, DARBY, The Scriptures (1998), and HCSB. In addition, the following sources agree with the meaning of *karmel* as being grain that is not yet fully mature.

³⁷ Henry George Liddell. Robert Scott. “Entry for ἄρτος.” A Greek-English Lexicon. Oxford, UK: Clarendon Press., 1940.

³⁸ Henry George Liddell. Robert Scott. “Entry for φρυγω.” A Greek-English Lexicon. Oxford, UK: Clarendon Press., 1940.

³⁹ Jamieson, Robert, D.D. Commentary Critical and Explanatory on the Whole Bible. “Commentary on Ruth 2. 9” 1871.

“Green ears, the cultivated field.”⁴⁰

“(Biblical) damp grain, unripe grain; fertile agricultural area.”⁴¹

“518. Not to eat bread [*lechem*] made of new grain before the Omer of barley has been offered up on the second day of Passover (Leviticus 23:14) (CCN101).

519. Not to eat roasted grain [*qaliy*] of the new produce before that time (Leviticus 23:14) (CCN102).

520. Not to eat **fresh ears** [*karmel*] of the new grain before that time (Leviticus 23:14) (CCN103). See The Counting of the Omer.”⁴²

“Karmel [fresh corn] means, rak [tender] and mal [easily crushed].⁵ (Footnote #5: The Heb. כַּרְמֶל is interpreted as two words: רַךְ (by transposing the first two letters of the word) ‘soft’, ‘tender’, and מַל ‘brittle’, ‘easily crushed’.”⁴³

It is clear from this information that *karmel* is not another form of fully ripe grain. It is grain that is used for food as it is still attached to the stalks, fresh grain. There is still more evidence that grain was eaten in a fresh, unripe, and unprepared state.

“The chief place among the foodstuffs of Orientals must be accorded to the cereals, included in the American Standard Revised Version under the generic term “grain,” in the King James Version and the English Revised Version ‘corn.’ The two most important of these in the nearer East are wheat (*chittah*) and barley (*seorah*). The most primitive way of using the wheat as food was to **pluck the fresh ears** (Leviticus 23:14; 2 Kings 4:42), remove the husks by rubbing in the hands (Deuteronomy 23:25; Matthew 12:1), and eat the grains **raw**. A common practice in all lands and periods, observed by the fellaheen of Syria today, has been to **parch or roast the ears and eat the grain not ground**. This is the parched corn (the American Standard Revised Version ‘grain’) so often mentioned in the Old Testament, which with bread and vinegar (sour wine) constituted the meal of the reapers to which Boaz invited Ruth (Ruth 2:14).”⁴⁴

“Food was prepared for use in various ways. The cereals were sometimes eaten **without** any preparation (Leviticus 23:14; Deuteronomy 23:25, 2 Kings 4:42).”⁴⁵

⁴⁰ Frey, Rev. Joseph Samuel C. F. *A Hebrew English Dictionary*. London, UK: Printed for Thomas Tegg, 1842.

⁴¹ "Translation results for: כרמל." *Morfix Dictionary*. 21 Sept. 2012 <<http://www.morfix.co.il/en/כרמל>>.

⁴² "Judaism 101: A List of the 613 Mitzvot (Commandments)." *Judaism 101: A List of the 613 Mitzvot (Commandments)*. 21 Sept. 2012 <<http://www.jewfaq.org/613.htm>>.

⁴³ Tractate “Menachoth”. “66b.” *Babylonian Talmud*. 31 Jan. 2011. <<http://halakhah.com/pdf/kodoshim/Menachoth.pdf>>

⁴⁴ *The International Standard Bible Encyclopedia*. “Food, 2. Cereals.” Edited by: James Orr, John L. Nuelsen, Edgar Y. Mullins, and Morris O. Evans. Vol. IV. Chicago, IL: Howard-Severance, 1915.

⁴⁵ M.G. Easton M.A., D.D. “Entry for ‘Food’.” *Illustrated Bible Dictionary*. Third Edition. Published by Thomas Nelson, 1897.

In addition, we are given an example by Yeshua and the apostles themselves in the New Testament.

Mark 4:26-29 (NASB) – “And He was saying, ‘The kingdom of Elohim is like a man who casts seed upon the soil; and he goes to bed at night and gets up by day, and the seed sprouts and grows--how, he himself does not know. The soil produces crops by itself; **first the blade, then the head, then the mature grain in the head.** But when the crop permits, he immediately puts in the sickle, because the harvest has come.’”

The Greek word for “head” in this verse is στάχυς, *stachus* (Strong’s #G4719) meaning “a head of grain (as standing out of the stalk).”⁴⁶ The Hebrew equivalent seems to be שִׁבְלֵת, *shibboleth* (Strong’s #H7641), which means “a *stream* (as *flowing*); also an *ear* of grain (as *growing out*); by analogy a *branch*.”⁴⁷ It would seem from this definition that it does not define a mature head of grain, but rather one that is still growing (i.e. “flowing out” of the stalk). *Stachus* is different than the word for “grain” later in the same passage in regards to maturity. The Greek word for “grain” above is σῖτος, *sitos* (Strong’s #G4621), which means “grain, especially wheat.”⁴⁸ Now, *sitos* would seem to be the more mature stage...that which is either fully ripe or already plucked from the plant. According to various definitions in *A Greek-English Lexicon*, by Henry George Liddell and Robert Scott, it can mean “grain, ground corn, food made from grain (bread, etc.),”⁴⁹ and the like. Yeshua, living in an agrarian society, would most certainly have been aware of the basics of agriculture, such as the various stages in barley growth. Continuing, in [Matthew 12:1](#) we read:

“At that time Yeshua went through the grain fields on the Sabbath, and His disciples became hungry and began to pick the heads of grain and eat.”

Once again, the word in this verse for “heads” is *stachus*. Yeshua and the apostles seemed very comfortable with eating grain in the “*stachus*” stage, the stage in which the grain was shooting forth from the stalk but not yet fully mature. It is important to remember here that none of this grain they were eating could be eaten prior to the first fruits being offered, whether barley or wheat. The first fruits of everything was for יהוה. Until they were offered, no one was permitted to eat of them.

There is another important word we also need to examine when discussing the Wave Sheaf *omer* offering. If we refer back to [Leviticus 23:10](#) we see that the word used to describe the

⁴⁶ Strong, James. “Entry for στάχυς.” *The Exhaustive Concordance of the Bible*. New York: Methodist Book Concern, 1923.

⁴⁷ Strong, James. “Entry for שִׁבְלֵת.” *The Exhaustive Concordance of the Bible*. New York: Methodist Book Concern, 1923.

⁴⁸ Strong, James. “Entry for σῖτος.” *The Exhaustive Concordance of the Bible*. New York: Methodist Book Concern, 1923.

⁴⁹ Henry George Liddell. Robert Scott. “Entry for σῖτος.” *A Greek-English Lexicon*. Oxford, UK: Clarendon Press., 1940.

necessary state of the *omer* for the Wave Sheaf offering is the Hebrew ראשית, *reyshiyth* (Strong's #H7225), which means "the first (in place, time, order or rank)."⁵⁰ Although this word can be used to refer to the best of something, it can also be used to refer to the very beginning of something. An example of this usage is in one of the most commonly known verses in the world, even amongst unbelievers, [Genesis 1:1](#).

[Genesis 1:1 \(NASB\)](#) – "In the **beginning** Elohim created the heavens and the earth."

Here the word for "beginning" comes from *reyshiyth*. This is the very beginning of the beginning of creation. Would יהוה say that this was the best part of creation? I doubt it. Why? Because I believe He took the most joy and pleasure in creating mankind, who is created in His own image. In light of the information above, we must conclude that *reyshiyth* in this context means the very beginning of what is harvested. There is nothing in this passage that says that the entire harvest must begin on this day. No one can truly guarantee that *aviv* stage barley will be fully harvest ready in two weeks. What if there are weather conditions, such as an extreme amount of rain after *aviv* and before fully harvest ready? What if the Karaites proposition above, that the *aviv* could also be three weeks away from harvest-ready, but the day of the wave sheaf is at the beginning of two weeks? The barley wouldn't be fully ready for harvest for another week. The fact is they started the full harvest when the harvest was ready. But that doesn't change what was acceptable for the Wave Sheaf offering. The Wave Sheaf is nowhere required to be made from fully harvest ready barley.

Another helpful example lies in other types of offerings. The morning and evening sacrifices were also made with very young animals.

[Exodus 29:38 \(NASB\)](#) – "Now this is what you shall offer on the altar: two one year old lambs each day, continuously."

One year old is hardly a full and mature age for a ram. It is highly likely that the reason for offering animals this young is so that they can avoid being defiled. Sacrifices with blemishes were not permitted for offerings unto יהוה. But, it is still true that יהוה accepted this animal in the beginning of its life while it was still very young.

Let's think a little bit about what has been established thus far. We know that the common understanding is that there has to be fully ripened grain ready for the wave sheaf offering during the Feast of Unleavened Bread. We have also shown that what is important regarding any offerings is that they be valuable for food. We have also seen how *karmel*, although young and fresh, is acceptable as food and was a common snack during biblical times. In order for this *karmel* to lawfully be eaten the wave sheaf must have been offered prior. So, we can safely conclude that what was really needed for the wave sheaf *omer* offering was not fully ripened

⁵⁰ Strong, James. "Entry for ראשית." [The Exhaustive Concordance of the Bible](#). New York: Methodist Book Concern, 1923.

grain, but grain that was valuable enough for food. *Karmel*, being younger and therefore available earlier, would be acceptable as the wave sheaf offering.

As an additional note we must also make it clear that the harvesting methods in ancient times, before hybrid seeds and harvesting machines, were much different. Harvesting hundreds, even thousands of fields throughout ancient Israel would take much longer than today because each sheaf had to be hand-picked, cut with a sickle, bound up by hand, gathered into threshing barns, threshed by hand, and then cleaned before it could be used. Today, combines can perform all of these actions in one single pass through a field and do it for a 10-15+ foot span at a time. Easton's Bible Dictionary says:

"It began with the feast of Passover and ended with Pentecost, thus lasting for seven weeks."⁵¹

Likewise the Jewish Encyclopedia says:

"The Palestinian harvest began in April with the cutting (hence "kazar") of the barley. The lentil and pea ripened at the same time, and the reaping of the wheat and spelt followed two weeks later, although, of course, the time varied with the climatic conditions in the different districts. While in the lowlands around Jericho the barley harvest began early in April, along the coast it began eight days later, and in the mountains it was often from two to four weeks later. The harvesting of grain usually lasted seven weeks."⁵²

The beginning of this roughly seven week period would also vary based on location. The sub-tropical climate of the Jordan Valley near the Dead Sea would produce an earlier harvest. On the contrary, the higher altitude and colder conditions in the mountains would produce a later harvest. The difference of time between the beginnings of the harvests in each of these areas could be up to 4 weeks.

If the requirement to have fully ripened barley for the wave sheaf offering is removed, the time period in which the new year can be declared shifts backward, making it earlier. If all that is needed for the wave sheaf is *aviv* stage barley, that is, fresh green shoots parchable by fire and valuable for food, then the beginning of the year is able to begin that much earlier. In other words, if the new moon is approaching, the new moon that could be the one to start the year, one need not look for *aviv* barley in order to declare it, one only needs barley that will be aviv by the time of the wave sheaf. This *aviv*, which can be *qaliy* after roasted, is most definitely suitable for food. There are absolutely no scriptures that require that the barley be fully harvest ready before the harvest begins. There are also absolutely no scriptures that show that

⁵¹ M.G. Easton M.A., D.D. "Entry for 'Harvest'." Illustrated Bible Dictionary. Third Edition. Published by Thomas Nelson, 1897.

⁵² The Jewish Encyclopedia. "Harvest." Edited by: Isidore Singer, Cyrus Adler, and others. Vol. VI. New York and London: Funk & Wagnalls, 1901.

the full harvest must take place after the Wave Sheaf is offered. In fact, given the fact that the difference in ripening times from one part of Israel to another can be up to four weeks due to climactic differences, this would be virtually impossible.

Think of the practical purposes of this. Being able to offer the sheaf earlier, not needing fully ripe barley, allows individual farmers to start their harvests earlier, the poor, orphans, and widows can begin gleaning earlier, and the crop stored from the previous year would go farther.

How This Relates to the Beginning of the Year

Okay, barley method adherents don't cover your eyes. Keep all of the evidence in mind while reading this section and take all things in. It has already been stated and emphasized that barley is necessary for the *omer* offering. That belief is not under debate. That being said, we must now move on to how the beginning of the year fits into all of this. Because there are so many facets of this, different sections will address different things and lay the foundation for the other following sections.

- The Foundation -

First we need to closely examine the scriptures that give us the clues we need to determine when to start the festal year. As a starting note let me state that I believe that since יהוה desires so much that we observe His appointed times, He would have provided us with all the information necessary to observe them properly. It should also be noted that it is not within the scope of this study to reconcile any solar calendar with the festal calendar of the scriptures. The appointed times in the scriptures are determined by the moon ([Psalm 104:19](#)), with the sun just being a marker telling us when the first moon of the new festal year is. Okay, we must first set the foundation for determining the biblical year.

Genesis 1:14-16 (NASB) – “Then Elohim said, ‘Let there be lights in the expanse of the heavens to separate the day from the night, and let them be for signs and for seasons and for days and years; and let them be for lights in the expanse of the heavens to give light on the earth;’ and it was so. Elohim made the two great lights, the greater light to govern the day, and the lesser light to govern the night; He made the stars also.”

Okay, we are all familiar with this verse, but let's examine it a little closer. First, there are six functions of these heavenly lights that are outlined in this passage: 1) to separate day from night, 2) to be for signs, 3) to be for seasons (clarification follows), 4) to be for days, 5) to be for years, and 6) to give light on the earth. Second, we need to clarify that the word for “seasons” in this passage is the Hebrew מועד, *moed* (Strong's #H4150), which actually means “appointed

time, place, or meeting.”⁵³ This is the exact same word used when scripture talks about the festal Holy Days of יהוה, all of which are mentioned in Leviticus 23.

Okay, some other words need to be defined clearly before we move on. The Hebrew word for “lights” in this passage is מָאוֹר, *maor* (Strong’s #H3974), which means “a luminary.”⁵⁴ It is worth noting for later that this word is drastically different than the Hebrew word for “heat,”⁵⁵ חֹם, *chom* (Strong’s #H2527). We will see how this comes into play later. Also, the word for “years” in this passage is the Hebrew שָׁנָה, *shanah* (Strong’s #H8141), which means “a year (as in a revolution of time, a measure of time, or an indication of age).”⁵⁶ Let’s look at what some Bible Dictionaries and Encyclopedias have to say about *shanah*.

“Heb. *shanah*, meaning ‘repetition’ or ‘revolution’ (Genesis 1:14; Genesis 5:3). Among the ancient Egyptians the year consisted of twelve months of thirty days each, with five days added to make it a complete revolution of the earth round the sun. The Jews reckoned the year in two ways,

- (1.) according to a sacred calendar, in which the year began about the time of the vernal equinox, with the month Aviv; and
- (2.) according to a civil calendar, in which the year began about the time of the autumnal equinox, with the month Nisan. The month Tisri is now the beginning of the Jewish year.”⁵⁷

“*Shanah*, a repetition, like the Latin *annus*, “year.” Literally, a circle, namely, of seasons, in which the same recur yearly. The 360 day year, 12 months of 30 days each, is indicated in Daniel 7:25; Daniel 12:7, time (i.e. one year) times and dividing of a time, or 3 1/2 years; the 42 months (Revelation 11:2), 1260 days (Revelation 5:3; Revelation 12:6). The Egyptian vague year was the same, without the five intercalary days. So the year of Noah in Genesis 7:11-24; Genesis 8:3-4; Genesis 8:13; the interval between the 17th day of the second month and the 17th of the seventh month being stated as 150 days, i.e. 30 days in each of the five months. Also between the tenth month, first day, and the first day of the first month, the second year, at least 54 days, namely, 40 + 7 + 7 (oxen. Genesis 8:5-6; Genesis 8:10; Genesis 8:12-13). Hence, we infer a year of 12 months. The Hebrew month at the time of the Exodus was lunar, but their year was solar.”⁵⁸

⁵³ The Lockman Foundation. “Entry for מוֹעֵד.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

⁵⁴ The Lockman Foundation. “Entry for מָאוֹר.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

⁵⁵ The Lockman Foundation. “Entry for חֹם.” New American Standard Exhaustive Concordance. La Habra, CA: Zondervan, 2004.

⁵⁶ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for שָׁנָה.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

⁵⁷ M.G. Easton M.A., D.D. Illustrated Bible Dictionary. Third Edition. “Harvest.” Published by Thomas Nelson, 1897.

⁵⁸ Fausset, Andrew R. Fausset’s Bible Dictionary. “Year.” 1949.

“Yēr (שנה, *shanah*, Aramaic שנה, *shenah*, ‘a return’ (of the sun), like the Greek ενιαυτος, *eniautos*; ימים, *yamim*, ‘days,’ is also used for ‘year,’ and the Greek ημεραι, *hemerai*, corresponds to it (Joshua 13:1; Luke 17, 18); ετος, *etos*, is also employed frequently in the New Testament; for the difference between *etos* and *eniautos*, see Grimm-Thayer, under the word): The Hebrew year was solar, although the month was lunar, the adjustment being made in intercalation.”⁵⁹

“The highest ordinary division of time. Two years were known to, and apparently used by, the Hebrews.

1. A year of 360 days appears to have been in use in Noah's time.
2. The year used by the Hebrews from the time of the Exodus maybe said to have been then instituted, since a current month, Aviv, on the 14th day of which the first Passover was kept, was then made the first month of the year.

The essential characteristics of this year can be clearly determined, though we cannot fix those of any single year. *The year was essentially solar* for the offering of productions of the earth, first-fruits, harvest produce and ingathered fruits, was fixed to certain days of the year, two of which were in the periods of great feasts, the third itself a feast reckoned from one of the former days. But it is certain that *the months were lunar*, each commencing with a new moon. There must, therefore, have been some method of adjustment. The first point to be decided is how the commencement of each year was fixed.

Probably, the Hebrews determined their new year's day by the observation of heliacal or other star-risings or settings known to mark the right time of the solar year. It follows, from the determination of the proper new moon of the first month, whether by observation of a stellar phenomenon or of the forwardness of the crops, that the method of intercalation can only have been that in use after the captivity, -- the addition of a thirteenth month whenever the twelfth ended too long before the equinox for the offering of the first-fruits to be made at the time fixed.”⁶⁰

Since the subject of *shanah*, the year, is so important, let's also examine what a couple Bible commentaries have to say about the “years” mentioned in [Genesis 1:14](#).

“**And years.** That is, those grand divisions of time by which all *succession* in the vast lapse of duration is distinguished. This refers principally to a complete revolution of the earth round the sun, which is accomplished in 365 days, 5 hours, 48 minutes, and 48

⁵⁹ [The International Standard Bible Encyclopedia](#). “Year.” Edited by: James Orr, John L. Nuelsen, Edgar Y. Mullins, and Morris O. Evans. Vol. IV. Chicago, IL: Howard-Severance, 1915.

⁶⁰ Smith, Willim Dr. [Smith's Bible Dictionary](#). “Year.” 1901.

seconds; for though the revolution is that of the earth, yet it cannot be determined but by the heavenly bodies.”⁶¹

“and let them be for signs, and for seasons, and for days and years; for ‘signs’ of good and bad weather; for the times of ploughing, sowing, reaping... and for the “seasons” of summer and winter, spring and autumn; for ‘days’ by a circular motion for the space of twenty four hours; and for ‘years’ by annual motion for the space of three hundred sixty five days and odd hours. The Targum of Jonathan is, ‘and let them be for signs and the times of the feasts, and to reckon with them the number of days, and, sanctify the beginnings of the months, and the beginnings of the years, and the intercalations of months and years, the revolutions of the sun, and the new moons, and cycles.’

And so Jarchi interprets ‘seasons’ of the solemn festivals, that would hereafter be commanded the children of Israel; but those uses were not for a certain people, and for a certain time, but for all mankind, as long as the world should stand.”⁶²

And yet another piece of information that we can gather regarding *shanah*, is the Greek word used for “years” in [Genesis 1:14](#) in the LXX. The word is ἐνιαυτός, *eniautos*, which once again literally means “a year,”⁶³ (more on this below). We can confidently say that, from all of the information above, the word *shanah* refers to a revolution, or time period, that is established by the motion of the heavenly bodies, in this case the Earth’s annual revolution around the Sun.

Okay, the foundation for the following sections has now been laid. If more details on the aforementioned words or verses are necessary they will be included in the following sections.

- *Tequphah & Teshubah* –

These are by far the most important words in any study on when the Biblical festal year begins. They are also the most debated. Some say they mean equinox, others say turns of the year marked by the harvest season. We will see what the scriptures say about this verse. תְּקוּפָה, *tequphah* (Strong’s #H8622), is only found four times in the entire whole of scripture ([Exodus 34:22](#), [1 Samuel 1:20](#), [2 Chronicles 24:23](#), and [Psalm 19:6](#)). We will look at each of these to see if we can determine the best understanding of it. *Tequphah* is defined as “a revolution (that is, of the sun), course (of time), lapse, a coming round or circuit.”⁶⁴ It is clear that none of these definitions mean equinox directly. So how are they used in scripture?

⁶¹ Clarke LL.D, Adam. The Holy Bible Containing the Old and New Testaments with a Commentary and Critical Notes. “Commentary on Genesis 1, and years.” London, UK: Ward, Lock, & Co., Warwick House, 1881.

⁶² Gill, John. The New John Gill Exposition of the Entire Bible. “Commentary on Genesis 1:14.” 1999.

⁶³ Strong, James. “Entry for ἐνιαυτός.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

⁶⁴ Strong, James. “Entry for תְּקוּפָה.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

1 Samuel 1:20 (NASB) – “It came about in due time, after Hannah had conceived, that she gave birth to a son; and she named him Samuel, saying, ‘Because I have asked him of יהוה.’”

The important phrase in this verse is “It came about in due time.” This is a very strange rendering of the original Hebrew behind the verse. In Hebrew it reads “לְתִקְפוֹת הַיָּמִים וַיְהִי” *wahyehi litequphot hayamim*, which literally render reads “And it was to *tequphot* of the days.” The context makes it clear that the “days” that are spoken of here are the days of Hannah’s gestational period with Samuel. So what are the *tequphot* of these days? Well, we are told in the same verse that she gave birth to Samuel. It seems clear that the *tequphot* being spoken of in the verse is the last day of the gestational period. The phrase would then read “And it came to **the circuit** of the days...that she gave birth to a son...” Now, the end of this circuit is not an indefinite point in time. If this were the case the definite event of the birth of Samuel wouldn’t fit the text. *Tequphot* in this verse refers to a specific and definite point in time, the last day of the circuit of Hannah’s gestational period, the turning point from pregnant to not pregnant, the crossing of the finish line. The LXX also confirms the fact that it is a specific and definite point in time.

1 Samuel 1:20 (LXX) – “καὶ συνέλαβεν. καὶ ἐγενήθη τῷ καιρῷ τῶν ἡμερῶν καὶ ἔτεκεν υἱόν· καὶ ἐκάλεσεν τὸ ὄνομα αὐτοῦ Σαμουηλ καὶ εἶπεν Ὅτι παρὰ κυρίου θεοῦ σαβαωθ ἦτησάμην αὐτόν.”

The Greek word καιρῷ, *kairw*, comes from καιρός, *kairos*, which means “a fixed and definite time, the time when things are brought to crisis, the decisive epoch waited for.”⁶⁵ In another place it is defined as “an occasion, that is, set or proper time.”⁶⁶ It is very clear, this *tequphah*, is a set, fixed, and definite point in time, not a general space of time (i.e. the last days of her pregnancy).

Some might question, “Why did you put use **to** *tequphot* in there, instead of **at** *tequphot*, or **in** *tequphot*?” Well, the Hebrew letter לְ, *lamed*, when preceding this noun acts as the preposition “to, toward, or for.” “At” is just not a proper rendering.

Psalms 19:6 (NASB) – “Its rising is from one end of the heavens, and its **circuit** to the other end of them; and there is nothing hidden from its heat.”

Again, the English translation here can be very deceiving on the surface. Let’s look at the actual Hebrew text.

מִקְצֵה הַשָּׁמַיִם מוֹצְאוֹ וְתִקְוֹתָו עַל־קְצוֹתָם וְאִין נִסְתָּר מִחַמָּתּוֹ

⁶⁵ Thayer, Joseph Henry. “Entry for καιρός.” Thayer's Greek-English Lexicon of the New Testament: Coded with Strong's Concordance Numbers. [S.l.]: Hendrickson Publishers, Inc., 2007.

⁶⁶ Strong, James. “Entry for καιρός.” The Exhaustive Concordance of the Bible. New York: Methodist Book Concern, 1923.

So, literally rendered it would read something like the following.

“From an end of the heavens *is* its rising, and its circuit upon the ends of them, and nothing *is* being concealed from its heat.”

Here, like in [1 Samuel 1:20](#), there is a preposition used that is translated differently than its meaning. The Hebrew על, *al* (Strong’s #H5921), means “on, upon, or against.” So many versions translate it as “unto” or “to” and I can’t understand why. The Hebrew preposition for “unto” or “to” is אל, *el* (Strong’s #H413). It is clear that this scripture is showing that the Sun goes forth from one end of the heavens and returns to the other. But, the circuit is on the ends of the heavens, not just one end. It goes from one end of the heavens (the East), and makes its *tequphah* on the ends of them. Again, because the preposition is here properly understood it once again shows that there are two distinct *tequphot* of the path of the sun on any given day, the Eastern and Western horizons, the place of “going forth” and the place of “return.” But, what this preposition does not mean is that the entire course of the sun through the sky is its *tequphah*. The ends of the heavens are its *tequphot*. This *tequphah* is once again a specific and definite place.

[2 Chronicles 24:23](#) (NASB) – “Now it happened **at the turn of the year** that the army of the Arameans came up against him; and they came to Judah and Jerusalem, destroyed all the officials of the people from among the people, and sent all their spoil to the king of Damascus.”

[Exodus 34:22](#) (NASB) – “You shall celebrate the Feast of Weeks, that is, the first fruits of the wheat harvest, and the Feast of Ingathering **at the turn of the year.**”

In these verses the phrase “at the turn of the year” are very similar. In [2 Chronicles 24:23](#) the Hebrew is לְתִקְוַת הַשָּׁנָה, *litequphat hashanah*, which literally reads “toward *tequphah* of the year.” To understand the “toward” in this passage refer back to the description of the preposition *lamed* just above [Psalm 19:6](#). [Exodus 34:22](#) is very similar, but the preposition isn’t at the beginning of *tequphah*. The Hebrew there is תִּקְוַת הַשָּׁנָה, *tequphat hashanah*, which literally reads “at *tequphah* of the year.” Since they contain the word we defined above, *shanah*, we know they pertain to “a year (as in a revolution of time, a measure of time, or an indication of age).” So what is the *tequphah* of a year? Before we address this let’s look at another verse specifically related to the timing of the Feast of Tabernacles.

[Exodus 23:16](#) – “Also *you shall observe* the Feast of the Harvest *of* the first fruits of your labors *from* what you sow in the field; also the Feast of the Ingathering **at the end of the year** when you gather in *the fruit of* your labors from the field.”

In this verse the phrase “at the end of the year” is בְּצֵאת הַשָּׁנָה, *betsath hashanah*, which literally means “in the going out of the year.” So, somehow this “going out of the year” and “*tequphah* of the year” are related. One is equivalent to the other, or they are both describing

the same thing in different ways. Both of these phrases are also related in that they are both in the construct chain form. Once again, construct chain is the way which the Hebrew language shows possession. So, when you read “the going out of the year” or “*tequphah* of the year,” they can also be read “the year’s going out” and “the year’s *tequphah*.” Why is this significant? It creates an unbreakable tie in the relationship between *shanah* and the other respective words. In other words, the *tequphah* is something that the year possesses. A year possesses approximately 365 days, 5 hours, 48 minutes, and 46 seconds, for example. We must ask ourselves, “What other attributes does a year possess?”

What this relationship also shows is that the *tequphah* of the year has nothing to do with the harvests. In other words, the *tequphah* is related to the yearly motion of the heavenly bodies (Earth around Sun), not the earthly harvest times. It is the *shanah*’s (annual orbit of the Earth) *tequphah* (circuit), not the harvest season’s *tequphah*. A biblical year, *shanah*, is not from the end of one harvest season to another. This belief completely and totally removes the *shanah* from its meaning; it is a heavenly, not an earthly event. Another reason that this cannot be is because that would mean the entire harvest season “circuited” at that moment. We know that this cannot be true because there is no guarantee that each of the main summer/fall fruits, namely figs, olives, and grapes, will be completely harvested by the Feast of Tabernacles. Each of these crops has their own maturing and harvesting time, which do not necessarily end at the same time each year. However, we are commanded to celebrate the Feast at the same time each year, the *tequphah*. Referring back to the beginning of the Foundation section we can easily see that the Sun, Moon, and/or stars are for *shanaim*, years. The Earth is not for years. To investigate this further we can look at the same verses in the LXX. You will notice that the words that are used in these scriptures in place of the Hebrew *tequphah* give even more insight into its meaning.

1 Samuel 1:20 (LXX) – “καὶ συνέλαβεν. καὶ ἐγενήθη τῷ **καιρῷ** τῶν ἡμερῶν καὶ ἔτεκεν υἱόν· καὶ ἐκάλεσεν τὸ ὄνομα αὐτοῦ Σαμουηλ καὶ εἶπεν Ὅτι παρὰ κυρίου θεοῦ σαβαωθ ἠτησάμην αὐτόν.”

The bolded word above is one that we have already defined, *kairw*, which means “a fixed and definite time, the time when things are brought to crisis, the decisive epoch waited for,” or “an occasion, that is, set or proper time.” The explanation for this has already been provided above.

Psalms 19:6 (LXX [18:7]) – “ἀπ’ ἄκρου τοῦ οὐρανοῦ ἡ ἔξοδος αὐτοῦ, καὶ τὸ κατάντημα αὐτοῦ ἕως ἄκρου τοῦ οὐρανοῦ, καὶ οὐκ ἔστιν ὃς ἀποκρυβήσεται τὴν θέρμην αὐτοῦ.”

Here the word for *tequphah* is κατάντημα, *katanthma*, which means “end, goal.”⁶⁷ Now you tell me, does this sound like a journey or course of some sort? Again, as mentioned above, the *tequphah* mentioned in this scripture does not refer to the entire course of the sun through the

⁶⁷ Liddel, Henry George and Scott, Robert. “Entry for κατάντημα.” A Greek-English Lexicon. Oxford, UK: Clarendon Press, 1940.

sky in any given day. It refers to the specific and definite places where the sun apparently rises and sets, the Eastern and Western horizons, respectively.

2 Chronicles 24:23 (LXX) – “καὶ ἐγένετο μετὰ τὴν **συντέλειαν** τοῦ ἐνιαυτοῦ ἀνέβη ἐπ’ αὐτὸν δύναμις Συρίας καὶ ἦλθεν ἐπὶ Ἰουδαν καὶ ἐπὶ Ἱερουσαλημ καὶ κατέφθειραν πάντας τοὺς ἄρχοντας τοῦ λαοῦ ἐν τῷ λαῷ καὶ πάντα τὰ σκῦλα αὐτῶν ἀπέστειλαν τῷ βασιλεῖ Δαμασκοῦ.”

Again, the word in bold is in place of the Hebrew *tequphah*. *συντέλειαν, sunteleian*, comes from the Greek *συντέλεια, sunteleia*, which means “completion, consummation, end.”⁶⁸ This is a very intriguing translation of this Hebrew word into Greek. As will be seen below in discussing the Hebrew word *teshubah* this word further aids our understanding of what occurs at this time of the year. *Teshubah* refers to the return of the year and *sunteleian* refers to the completion of a year. The completion of one year is also the return to the time of the beginning of another year. Again, a full cycle has been completed and this point of completion is a specific and definite time. If it were not, how could it truly be known when a year was completed?

Signs such as weather conditions or crop growth are far too inconsistent for there to be an established time which can be labeled the completion of the year. What if the end of the winter season was unseasonably warm? Would that be the completion of the year even though it could be several weeks before the next season? What if extremely harsh conditions prevented a barley harvest? What would be the completion of the year then? Using these earthly signs create a very inconsistent definition of completion. There is a point in time that represents the completion of the year and the return to another. What this marker in time is will be discussed more below.

Exodus 34:22 (LXX) – “καὶ ἑορτὴν ἑβδομάδων ποιήσεις μοι ἀρχὴν θερισμοῦ πυρῶν καὶ ἑορτὴν συναγωγῆς **μεσοῦντος** τοῦ ἐνιαυτοῦ.”

The word in bold here is from the Greek *μεσώω, mesow*, which means “to be in the middle.”⁶⁹ Again, this is a very enlightening word. Why? Well, again, as said above, the *tequphat hashanah* has nothing to do with the harvest seasons. It is something that the solar year (*shanah*) possesses. This word strengthens that even more. Those who believe that Feast of Tabernacles is to be celebrated at the going out of the year, where “going out” refers to the end of the harvest season, are at a loss to explain what this “middle” is. How can the end of a harvest season also be the middle of it? But, this word makes perfect sense when taking *shanah* for what it really is. The “going out” of the year is when the year is starting its last half, the ending half of the year. It is going out towards its *sunteleia*, its completion. This is also the

⁶⁸ Thayer, Joseph Henry. “Entry for συντέλεια.” Thayer's Greek-English Lexicon of the New Testament: Coded with Strong's Concordance Numbers. [S.l.]: Hendrickson Publishers, Inc., 2007.

⁶⁹ Thayer, Joseph Henry. “Entry for μεσώω.” Thayer's Greek-English Lexicon of the New Testament: Coded with Strong's Concordance Numbers. [S.l.]: Hendrickson Publishers, Inc., 2007.

middle of an entire solar year. There are no contradictions between the Hebrew and Greek when the proper understanding of the words is brought it.

Another attribute the biblical year possesses is found in another word altogether, with a very similar meaning. The Hebrew תְּשׁוּבָה, *teshubah* (Strong's #H8666), which means “a recurrence, an answer, or a return,”⁷⁰ is found 8 times in scripture (1 Samuel 7:17, 1 Kings 20:22 & 26, 2 Samuel 11:1, 1 Chronicles 20:1, 2 Chronicles 36:10, Job 21:34, Job 34:36). Five of these verses are very significant in this study. 1 Kings 20:22 & 26, 2 Samuel 11:1, 1 Chronicles 20:1, and 2 Chronicles 36:10 all contain the phrase לְתֵשׁוּבַת הַשָּׁנָה, *liteshubat hashanah*, which literally reads “toward *teshubah* of the year.” Here is one of the verses.

1 Kings 20:26 (NASB) – “**At the turn of the year**, Ben-hadad mustered the Arameans and went up to Aphek to fight against Israel.”

The highlighted phrase is *liteshubat hashanah*. This phrase is used all of these five times when describing the time of the year that the kings went out to battle. The latter rains were ending so the roads were dryer. The temperature was warmer and the crops were blooming so that the soldiers and animals could live and eat. All of these things happened toward the turn of the year. The same phrase is used in 2 Chronicles 24:23 above, where the Arameans set off to war with Judah and Jerusalem, only *tequphah* is used instead of *teshubah*. This *teshubah* and *tequphah* are one in the same. This “return” of the year is also a “circuit” of the year. So, according to Exodus 23:16 and 34:22 there is a *tequphah* at the “going out” of the year, and according to 2 Chronicles 24:23 and 1 Kings 20:26 there is a *tequphah* at the “return” of the year. Let us once again keep in mind that *shanah* is a celestial event unrelated to the harvests or crops of the earth. So, what specific and definite place(s) in time, as it relates to a solar year (*shanah*), occurs at the “return” of the year and the “going out” of the year, at the time when the kings go to war and when the Feast of Tabernacles is to be celebrated? Using what we learned in the previous section, that *shanah* is a period of time determined by the movement of the Earth around the Sun (i.e. a heavenly event), and what we learned in this section, that *tequphah* is a definite and specific place or time, what is the *tequphat hashanah*, the year’s circuit? There must be a definite and specific place or time in the annual rotation of the Earth around the Sun that is used to determine when the Feast of Tabernacles is to be observed. What is this heavenly marker? Prayerfully this question will be answered by the end of the study.

- Heavenly Phenomena -

There are four specific things in Genesis 1:14-16 that the lights of the heavens determine: signs, appointed times, days, and years. There are various celestial phenomena that occur, which

⁷⁰ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for תְּשׁוּבָה.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

determine these appointed times and years. The following is a list of several things that are considered celestial phenomena.

- Sunrise
- Moonrise
- Solar Eclipse
- Crescent Moon
- Equinox
- Planetary Transit
- Perihelion
- Sunset
- Moonset
- Lunar Eclipse
- Full Moon
- Solstice
- Planetary Conjunction
- Aphelion

These are just a few examples of the many celestial phenomena that the planetary bodies are a part of. Note that none of these events are mentioned in [Genesis 1:14-16](#), yet regardless of this fact we use some of them to determine those four specific things. Let's keep that fact in mind for later.

- Direct and Indirect Effects of Sunlight -

Given the information above, especially the fact that the year, *shanah*, is a celestial, not earthly event, which is measured by the motions of the heavenly bodies, barley method adherents are hard pressed to find a way to explain how the heavenly lights determine their years. The most common if not universal belief is that the sun indirectly determines the years by causing the barley to grow. At first glance this seems like a reasonable assumption and possibility. Let's investigate this belief a little closer.

As I mentioned in the Foundation section above there is a drastic difference in the Hebrew words for light, *maor*, and heat, *chom*. During any given cloudless day the sun shines light with a brightness of about 50,000 - 100,000 lux or lumens per square meter. To give a contrast, a full moon on a clear night is about 1 lux. The change in the amount of light given on any place on earth, especially between the tropics, is negligible. The change in the amount of heat from the sun, however, is significant, as we all know.

Why is this important? Well, the signs, appointed times, days, and years are to be determined by the lights of the heavens, not any heat they produce. Some grasses and crops, such as Bermuda grass and wheat, go dormant in the winter months. This is not because the light of the sun is drastically different during those times of the year, but because the heat of it is. This lack of heat changes the growth rate of the plants causing them to go dormant.

A very strong point needs to be taken into consideration at this point. Many barley method adherents believe that using the equinox, for example, for reckoning time means they are observing something pagan. But, they must strongly re-consider this position. Why? Well, every time they, or anyone else for that matter, use the terms "Spring," "Summer," "Fall (Autumn)," or "Winter" they are using terms that are inseparably linked to the equinoxes and

solstices. The beginning days of these seasons, and the duration of the seasons themselves, are determined by these four heavenly phenomena. The seasons have been determined by these phenomena since times long before the time of Moses. They are mentioned in scripture as far back as the time of Noah ([Genesis 8:22](#)). So, when they would say, “We observe the Feast of Tabernacles in the Fall,” they are unwittingly linking the time period of its observance with the very thing they desire to disassociate it with. They might as well say, “We observe the Feast of Tabernacles in the season brought on by the autumnal equinox,” because that is the truth. We must go into some discourse about this highly debated topic. But first, as always, let us lay the foundation, which will prepare us for a proper understanding of the tools, knowledge, and technology of the ancient past.

- *Tools and Techniques of the Ancient Hebrews* -

When considering the argument of the equinox the question of the Hebrews knowledge of astronomy very readily comes up. “The ancient Hebrews didn’t have advanced knowledge of astronomy or the movements of the heavenly bodies!” This is a common declaration by those wishing to cast away any possibility of a solar and/or other celestial event being used to determine the year. But, is this statement really based on all of the available information? We need to examine carefully what the ancient Hebrews and other cultures of their time knew and practiced.

Let’s first examine some very easy to locate Biblical crafts – the articles of the Tabernacle. We are told about some very complex works of craftsmanship that the people of Israel were endowed with the knowledge to create. One such piece is the *menorah*.

[Exodus 25:31 \(NASB\)](#) – “Then you shall make a lampstand of pure gold. The lampstand *and* its base and its shaft are to be made of hammered work; its cups, its bulbs and its flowers shall be *of one piece* with it.”

The detailed description of its makeup and appearance continues through [Exodus 25:37](#). Now, with today’s technology, this is something that could probably be made much more simply. Create a mold, heat the gold, pour it in the mold, and out comes the finished product. But, they didn’t have all of this sophisticated machinery as we do today. They had the ability, using comparatively primitive tools and techniques, to create a beautiful and ornate work such as this lampstand. They were able to make cups that looked like almond blossoms. And it is said that all of this was to be one solid unit of hammered work. This was not a small feat. They were knowledgeable and skilled enough in smelting, molding, hammering, and the like to make such beautiful things as this. The same complex techniques were also used when making the table, incense altar, and ark of the testimony with its *cherubim*.

[Exodus 26:1 \(NASB\)](#) – “Moreover you shall make the tabernacle with ten curtains of fine twisted linen and blue and purple and scarlet *material*; you shall make them with cherubim, the work of a skillful workman.”

The curtains and coverings of the tabernacle are likewise the product of skilled workmen. They were to be intricately woven with four different colors of thread and incorporated detailed images of cherubim throughout. With machines that can pump out T-Shirts by the hundreds this work would be much easier today. But they were able to accomplish this without this machinery while still meeting the standards of quality required for יהוה's own abode.

Genesis 6:14 (NASB) – “Make for yourself an ark of gopher wood; you shall make the ark with rooms, and shall cover it inside and out with pitch.”

Another great example of complex workmanship, which we are not given as many details about, is the ark built by Noah. Think about it. This ark had to be 450 feet long, that's a football field and a half. It had to be 75 feet wide, that's the approximate height of a 7-story building. And it had to be 45 feet high, which is 5 feet taller than the top of a football goalpost. This is an enormous boat. To make such a craft required advanced knowledge of carpentry, including milling and framing. Each level had to be sturdy enough for many animals. In addition to this it obviously had to be seaworthy. We are told it was to be covered inside and out with pitch. It's not like Noah could have gone to a nearby Home Depot or Lowes and bought a truck load of roofing caulk. Making pitch was a slow process of distilling and processing the resin of trees or some sort of coal. This entire building process was done by hand, without the use of heavy gas or electric powered machinery. Again, this is another amazing feat.

Moving on to another culture we can come to Egypt in the time of Moses. It is supposed that Moses lived between the 16th and 14th centuries BCE. Now, as most know, the Egyptians are pretty famous for their pyramid building. The most well known and recognized pyramids are the three pyramids at Giza. These enormous structures were constructed in the 26th century BCE. That is a whole millennium before Moses came on the scene. Why is this significant? Because scientists to this day still don't know how the ancient Egyptians did what they did in constructing them. The largest stone amongst these three pyramids is estimated to weigh in at about 15 tons. That's 30,000 pounds! The Great Pyramid was believed to have stood at almost 500 feet tall, with the average stone weighing in at an estimated 2.5 tons. How did they haul 2.5 ton stone blocks to the top of a 480 foot structure with no modern equipment? How did they cut the blocks at such perfect right angles that not even a sheet of paper can slide between them? They were skilled, that's how. They had advanced knowledge of masonry, mining, simple machinery, mathematics, geometry, and structural engineering, amongst many other things.

There are some extremely amazing pieces of information about the Great Pyramid itself. One is the fact that its base is almost a perfect square. There is only a 19 cm difference between its longest and shortest sides. It is almost perfectly level. The sides of the square base are closely aligned to the four cardinal compass points, within 4 minutes of arc, based on true North, not magnetic North. That's only 67 hundredths of a degree. True North can only be determined by the lights of the heavens. The Great Pyramid, along with its two large counterparts, was at one point perfectly aligned with the stars in Orion's Belt. These last two pieces of information help to lead us into our next section.

The information above is just a very brief glance at what was possible back in those ancient days around and before the time of Moses. There are many other things that could be listed, but that is not the main point of this study.

- *Ancient Astronomy* -

This is an important point that needs to be made. The ancient Hebrews were not ignorant of the movements of the heavens, but were very familiar with them. One important scripture helps to lead us into this section.

Deuteronomy 4:19 (NASB) – “And *beware* not to lift up your eyes to heaven and see the sun and the moon and the stars, all the host of heaven, and be drawn away and worship them and serve them, those which יהוה your Elohim has allotted to all the peoples under the whole heaven.”

The Sun, Moon, Stars, and all of the other hosts of heaven, such as the other Planets, are allotted to all peoples. The whole earth is exposed to the lights of the heavenly bodies and every person under heaven is allowed to use them for time-keeping. Commentators agree with this.

“...***which the Lord thy God hath divided unto all nations under the whole heaven***; the sun and the moon by their constant revolutions visit all the parts of the world, and stars are fixed in both hemispheres, so that all nations of the earth receive the benefit and advantage of all these heavenly bodies; but were never designed to be the objects of their worship, as might be learnt from their being divided to them, sometimes one part of the earth enjoying them, and then another, and not present with them all at one and the same time, which, if deities, would have been necessary; see (Psalm 19:6) (Matthew 5:45).”⁷¹

“*Secondly*, Yet he shows how weak the temptation would be to those that would use their reason; for these pretended deities, the *sun, moon, and stars*, were only blessings which the Lord their God, whom they were obliged to worship, had imparted to all nations. It is absurd to worship them, for they are man's servants, were made and ordained to give light on earth; and shall we serve those that were made to serve us? The sun, in Hebrew is called *shemesh*, which signifies a *servant*, for it is the minister-general of this visible world, and holds the candle to all mankind; let it not then be worshipped as a lord. Moreover, they are God's gifts; he has imparted them; whatever

⁷¹ Gill, John. The New John Gill Exposition of the Entire Bible. “Commentary on Deuteronomy 4:19.” 1999.

benefit we have by them, we owe it to him; it is therefore highly injurious to him to give that honour and praise to them which is due to him only.”⁷²

The heavenly bodies in themselves are not evil or idols, but they can be and have been worshipped as such. Nevertheless, there are plenty of scriptures that show how the heavenly bodies were used by the ancient Israelites for reckoning time.

Genesis 1:19 (NASB) – “There was evening and there was morning, a fourth day.”

Joshua 10:13 (NASB) – “So the sun stood still, and the moon stopped, until the nation avenged themselves of their enemies. Is it not written in the book of Jashar? And the sun stopped in the middle of the sky and did not hasten to go *down* for about a whole day.”

Psalms 90:4 (NASB) – “For a thousand years in Your sight are like yesterday when it passes by, or *as* a watch in the night.”

Psalms 119:148 (NASB) – “My eyes anticipate the night watches, that I may meditate on Your word.”

Proverbs 4:18 (NASB) – “But the path of the righteous is like the light of dawn, that shines brighter and brighter until the full day.”

Jeremiah 31:35 (NASB) – “Thus says יהוה, Who gives the sun for light by day and the fixed order of the moon and the stars for light by night, Who stirs up the sea so that its waves roar; יהוה of hosts is His name.”

Much time will not be taken in this study to examine how the heavenly lights, specifically the sun, determine days. It is common knowledge that the rising and setting sun determines daytime and nighttime hours.

Genesis 8:22 (NASB) – “While the earth remains, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease.”

Psalms 74:16-17 (NASB) – “Yours is the day, Yours also is the night; You have prepared the light and the sun. You have established all the boundaries of the earth; You have made summer and winter.”

These two verses make it clear that the seasons of the year are not only condoned by יהוה, but that they were created by him. As we learned above the seasons are inseparable from that which makes them so, the solstices and equinoxes. These seasons are not simply determined

⁷² Henry, Matthew. Matthew Henry Complete Commentary on the Whole Bible. “Complete Commentary on Deuteronomy 4.” 1706.

by the increase or decrease of heat, for we know that hot days can very well occur in colder months and vice versa. The seasons are present in most, if not all ancient cultures and are all recognized as being brought on by the movements of the heavenly bodies.

Psalm 81:3 – “Blow the trumpet at the new moon, at the full moon, on our feast day.”

Psalm 104:19 (NASB) – “He made the moon for the appointed times; the sun knows the place of its setting.”

These, amongst many other verses, show how the appointed times, the feasts of **יהוה**, are determined by the heavenly lights.

Job 9:7-10 (NASB) – “Who commands the sun not to shine, And sets a seal upon the stars; Who alone stretches out the heavens And tramples down the waves of the sea; Who makes the Bear, Orion and the Pleiades, And the chambers of the south; Who does great things, unfathomable, And wondrous works without number.”

Job 38:-31-33 (NASB) – “Can you bind the chains of the Pleiades, or loose the cords of Orion? Can you lead forth a constellation in its season, and guide the Bear with her satellites? Do you know the ordinances of the heavens, or fix their rule over the earth?”

Isaiah 13:10 (NASB) – “For the stars of heaven and their constellations will not flash forth their light; the sun will be dark when it rises and the moon will not shed its light.”

Amos 5:8 (NASB) – “He who made the Pleiades and Orion and changes deep darkness into morning, Who also darkens day *into* night, Who calls for the waters of the sea and pours them out on the surface of the earth, **יהוה** is His name.”

All of these scriptures prove that not only were the constellations created by **יהוה**, but that they were traced out, found, and recognized by the ancient peoples. These are not readily known to the common man today. We have lost much of our reliance on the heavenly bodies for time-reckoning since watches and clocks have been invented. But even then, we still must consider that the time on all of our clocks and watches are somehow or another linked to the movement of the Earth around the Sun.

It is clear from the above that the ancient Hebrews had a strong knowledge of the movements and arrangements of the heavenly bodies. They knew when seasons began and ended. They knew when certain constellations would be visible. They knew when to expect the sunset and sunrise. They knew when certain night watches began based on the rising and/or setting of certain stars. And they knew that all of these things were set in a fixed and predictable pattern and that they were made for all peoples on the earth to govern time. So, what knowledge did other ancient cultures at the time of Moses possess? We will examine the achievements and knowledge of the Egyptian culture during Moses’ time and earlier to establish this. We will be

examining this based on the scripture below. Again, we must always keep in mind that the Sun, Moon, and stars were the ancient peoples' only method of reckoning time.

Acts 7:22 (NASB) – “Moses was educated in all the learning of the Egyptians, and he was a man of power in words and deeds.”

For the sake of brevity, I will list several facts with references that can be researched independently, as it is not the focus of this study to give a history lesson.

- The Egyptians, starting at least as far back as the Old Kingdom (2630 BCE – 2150 BCE), had an advanced knowledge of astronomy.⁷³
- They used the heliacal rising of the star Sirius to know when the annual inundation of the Nile was coming. The length of the year from one heliacal rising of Sirius to another was only 12 minutes short of the true solar year. That is extremely accurate. The time of this helical rising was at the Summer Solstice.⁶⁰
- The heliacal risings of 36 other stars were used to divide the year into many parts, every 10 ten days, which were called decans.⁶⁰
- They were one of the first cultures to recognize the approximate length of the solar year as being 365.25 days.⁷⁴
- It has been shown the Pyramids were aligned towards the pole star, which, because of the precession of the equinoxes, was at that time Thuban, a faint star in the constellation of Draco.⁷⁵
- Evaluation of the site of the temple of Amun-Re at Karnak, taking into account the change over time of the obliquity of the ecliptic, has shown that the Great Temple was aligned on the rising of the sun on the winter solstice.⁷⁶
- The Great Sphinx is a perfectly aligned equinoctial marker facing directly due east, parallel with the rising sun on the days of the equinoxes.⁷⁷
- The Egyptian festival of Sham El-Nessim, still celebrated today, coincided with the vernal equinox.⁷⁸

This is only one culture that existed in pre-Mosaic times. Many, many others had greatly advanced observational knowledge on the movement of the heavens, which are shown by other various monuments and records. These other cultures are found all around the world. From the temples at Angkor Wat in Cambodia, which mirror the constellation Draco, to the Mayan temple at Chichen Itza, which is aligned such that a spectacular event is displayed on the

⁷³ Jack Finegan, *Handbook of Biblical Chronology*, Chapter 2, Part B, #38

⁷⁴ Jack Finegan, *Handbook of Biblical Chronology*, Chapter 2, Part A, #33

⁷⁵ Ruggles, C.L.N. (2005), *Ancient Astronomy*, pages 354-355 <http://www.scribd.com/doc/24515341/Ancient-Astronomy>

⁷⁶ Krupp, E.C. (1988). "Light in the Temples", in C.L.N. Ruggles: *Records in Stone: Papers in Memory of Alexander Thom*. CUP, 473-499

⁷⁷ Graham Hancock, Robert Bauval, *The Message of the Sphinx*, p. 59

⁷⁸ Dr. Mohamed Ibrahim Bakr, Former Chairman of the Antiquities Authority, http://en.wikipedia.org/wiki/Sham_el-Nessim

day of the vernal equinox, it is clear that ancient cultures had significant knowledge of the motions of the heavenly bodies. It can be seen above that much of this knowledge was put to use in Egypt when building their temples and monuments. Different clocks were used, such as water clocks and shadow clocks. It would be absolutely naïve of us to think that Moses, who we are told was “[educated in all the learning of the Egyptians](#),” wasn’t familiar with the solstices, equinoxes, heliacal risings, lunar phases, and various other heavenly phenomena. Ancient Egypt set the bar for many ancient cultures which followed them, discovering and inventing the first of several things relating to astronomy.

- Biblical Time-Telling Examples –

Several of us read scripture every day. Sometimes we do intense studies like this one where we are focused on pulling out certain pieces of information to get the Bible’s contextual viewpoint on a certain topic. Other times we just read it because we just love to hear what יהוה may have to tell us that day. Regardless of which of these you do there are certain things that most will just glance right over thinking nothing of it. Elements of time-telling are some of these very things.

In our day and age we are all too familiar with the terms “year,” “month,” “day,” and “hour.” So, we don’t think much of it when we see those terms in scripture. But, we need to remember that without the clock on the wall or the watch on our wrist most of us would be utterly lost when needing to tell time today. However, they didn’t have clocks on their walls or watches on their wrists in biblical times. What did they have? They had the heavenly lights.

One of the most well known biblical occurrences of time telling is in [Isaiah 38:8](#) and the more complete account in [2 Kings 20:8-11](#).

[Isaiah 38:8 \(NASB\)](#) – “Behold, I will cause the shadow on the **stairway**, which has gone down with the sun on the **stairway** of Ahaz, to go back ten steps.” So the sun's shadow went back ten steps on the **stairway** on which it had gone down.”

[2 Kings 20:8-11 \(NASB\)](#) – “Now Hezekiah said to Isaiah, ‘What will be the sign that יהוה will heal me, and that I shall go up to the house of יהוה the third day?’ Isaiah said, ‘This shall be the sign to you from יהוה, that יהוה will do the thing that He has spoken: shall the shadow go forward ten steps or go back ten steps?’ So Hezekiah answered, ‘It is easy for the shadow to decline ten steps; no, but let the shadow turn backward ten steps.’ Isaiah the prophet cried to יהוה, and He brought the shadow on the **stairway** back ten steps by which it had gone down on the **stairway** of Ahaz.”

It is thought that there is much controversy over the bolded word above, which is the Hebrew מַעְלָה, *maalah* (Strong’s #H4609), which means “[step, stair, steps \(of a sundial\), step or grade](#)”

mark.”⁷⁹ But, there isn’t really as much controversy over it as one may think. Let’s evaluate these scriptures a little closer before getting into what others have concluded about them. As mentioned in a previous section there are direct and indirect effects of sunlight. Shadows, which are clearly being used in some way in these passages, are a direct effect of sunlight. In the cases of indirect effects an additional step exists between the light of the Sun and its product. Shadows, though, are a direct product of the Sun’s light on an object.

The whole point of Hezekiah requesting this sign is to prove that יהוה would heal him. For Hezekiah the sign he was given had to be something that only יהוה could be the cause of. Surely this was a heavenly event. When the scripture speaks of the shadow moving ten steps back it must be referring to a step of some sort by which time was typically measured on. This object on which this miracle was witnessed was something in the possession of Hezekiah, the stairway (or *dial*, in the KJV) of Ahaz. But, some would say that this is literally just a set of stairs as opposed to a tool or structure built for time reckoning. But, can it be both? Take a look at some of the pictures below of a model of a step dial that was discovered in Egypt. This model was built by an organization called Neot Kedumim⁸⁰.



This is a picture of the dial from a distance. It is positioned on an exact East-West line.



Early Morning



Late Morning

As you can see in the images above the position of the shadow on the steps can easily be used to determine the time of day. It is believed that Ahaz’s steps were sized such that each step represented half of an hour. Some even think it was as specific as one step per quarter hour. Either way, the science behind this structure is by no means complex given the other

⁷⁹ Brown, Francis & Driver, S. R. & Briggs, Charles A. “Entry for מַעְלָה.” Hebrew and English Lexicon of the Old Testament. Oxford, UK: Oxford University Press, 1906.

⁸⁰ http://www.neot-kedumim.org.il/public/english/what/newsletter/2005_ye/ahaz.htm (as of 01/31/2011)

accomplishments and skills that the ancient Hebrews possessed. Some commentators believe that there was an actual tool or structure that Ahaz built for the purpose of telling time. Others believe that he simply used the steps leading up to his palace. Either way, there were some “steps” of some sort that were used to tell time and display that miraculous sign to Hezekiah.

Let’s now see what some commentators have to say about these passages of scripture.

“Degrees (maalah) - These degrees were lines in the dial: but whether each of these lines or degrees noted an hour, or half an hour, or a quarter of an hour, is uncertain. But the sun itself went back, and the shadow with it. This miracle was noted by the Babylonians, who, having understood that it was done for Hezekiah's sake, sent to enquire into the truth and manner of it, 2Chronicles 32:31. Of Ahaz - Which Ahaz had made in the king's palace. This dial he mentions, because the truth of the miracle might be best and soonest discovered there, this dial possibly being visible out of the king's chamber, and the degrees being most distinct and conspicuous in it.”⁸¹

“**On the top of the stairs** - The Chaldee, the rabbins, and several interpreters, understand this of the public sun-dial; which in those ancient times, was formed of steps like stairs, each step serving to indicate, by its shadow, one hour, or such division of time as was commonly used in that country. This dial was, no doubt, in the most public place; and upon the top of it, or on the platform on the top, would be a very proper place to set Jehu, while they blew their trumpets, and proclaimed him king. The Hebrew (maaloth) is the same word which is used 2Kings 20:9-11, to signify the dial of Ahaz; and this was probably the very same dial on which that miracle was afterwards wrought: and this dial, (maaloth), from (alah), to go up, ascend, was most evidently made of steps; the shadows projected on which, by a gnomon, at the different elevations of the sun, would serve to show the popular divisions of time.”⁸²

“מַעְלוֹת אֶחָז” cannot be understood, as it has been by the LXX, Joseph., Syr., as referring to a flight of steps at the palace of Ahaz, which was so arranged that the shadow of an object standing near indicated the hours, but is no doubt a gnomon, a sun-dial which Ahaz may have received from Babylonia, where sun-dials were discovered (Herod. ii. 109).⁸³

“‘Steps of Ahaz’ was the name given to a sun-dial erected by him. As maalah may signify either one of a flight of steps or a degree (syn. madrigah), we might suppose the reference to be to a dial-plate with a gnomon; but, in the first place, the expression points to an actual succession of steps, that is to say, to an obelisk upon a square or circular elevation ascended by steps, which threw the shadow of its highest point at

⁸¹ Wesley, John. John Wesley's Explanatory Notes on the Whole Bible. “Commentary on 2 Kings 20.” 1765.

⁸² Clarke, Adam. The Adam Clarke Commentary. “Commentary on 2 Kings 9.” 1832.

⁸³ Delitzsch, F. & Keil, C. F. Biblical Commentary on the Old Testament. “The Books of the Kings – 2 Kings 20:11” Edinburgh, UK: T & T Clark, 1872.

noon upon the highest steps, and in the morning and evening upon the lowest either on the one side or the other, so that the obelisk itself served as a gnomon.”⁸⁴

“The shadow had gone down on the dial by the regular course of the sun. Ahaz was the father of Hezekiah; and it is evident from this, that the dial had been introduced by him, and had been used by him to measure time. ...Interpreters have differed greatly in regard to the form of the sun-dial used by Ahaz, and by the ancients generally. Cyril of Alexandria and Jerome believed it was a staircase so disposed, that the sun showed the hours on it by the shadow. This, as we have seen, was the opinion of Josephus; and this opinion has been followed by many others. Others suppose it was an obelisk or pillar in the middle of a smooth pavement on which the hours were engraved, or on which lines were drawn which would indicate the hours.”⁸⁵

“**Which is gone down on the sundial of Ahaz**, the first sundial we read of; and though there might be others at this time, yet the lines or degrees might be more plain in this; and besides, this might be near the king's bedchamber, and to which he could look out at, and see the wonder himself, the shadow to return ten degrees backward; what those degrees, lines, or marks on the dial showed, is not certain. The Targum makes them to be hours, paraphrasing the words thus:

‘behold, I will bring again the shadow of the stone of hours, by which the sun is gone down on the dial of Ahaz, backwards ten degrees; and the sun returned ten hours on the figure of the stone of hours, in which it went down.’”⁸⁶

“Various conjectures have been formed as to this dial. The word in the original is ‘degrees,’ or ‘steps,’ and hence many commentators have supposed that it was a stair, so artfully contrived, that the shadows on the steps indicated the hours and course of the sun. But it is more probable that it was a proper instrument, and, from the Hebrews having no term to designate it, that it was one of the foreign novelties imported from Babylon by Ahaz. It seems to have been of such magnitude, and so placed in the court, that Isaiah could point to it, and the king see it, from his chamber. The retrogression of the sun’s shadow on the dial was miraculously accomplished by the omnipotent power of Elohim; but the phenomenon was temporary, local, confined to the notice, and intended for the satisfaction, only of Hezekiah and his court.”⁸⁷

“Josephus thinks these degrees were steps ascending to the palace of Ahaz; the time of day was indicated by the number of steps reached by the shadow. But probably a

⁸⁴ Delitzsch, F. Biblical Commentary on the Prophecies of Isaiah. “Isaiah 38:7, 8.” Edinburgh, UK: T & T Clark, 1886.

⁸⁵ Barnes, Albert. Notes, Critical, Explanatory, and Practical, on the book of the Prophet Isaiah. Vol. II. “Isaiah 38:8.” New York, NY: Leavitt & Allen, 1854.

⁸⁶ Gill, John. The New John Gill Exposition of the Entire Bible. “Commentary on Isaiah 38:8.” 1999.

⁸⁷ Jamieson, Robert & Fausset, A. R. & Brown, David. A Commentary, Critical and Explanatory, on the Old and New Testaments. Vol. I., Old Testament. Glasgow, UK: William Collins, Queens Printer, 1863.

sundial, strictly so called, is meant; it was of such a size, and so placed, that Hezekiah, when convalescent, could witness the miracle from his chamber.”⁸⁸

“**The sun dial:** Heb. the degrees by, or, with the sun, Or, as the Hebrew might be rendered, "the steps of Ahaz." The researches of curious travellers in Hindostan, observes Bp. Stock, have lately discovered in that country, three observatories of similar form, the most remarkable of which is to be seen within four miles of Delhi, the ancient capital of the Mogul empire. A rectangled triangle, whose hypotenuse is a staircase (apparently parallel to the axis of the earth), bisects a zone, or coping of a wall, which wall connects the two terminating towers at right and left. The coping itself is of a circular form, and accurately graduated, to mark, by the gnomon above, the sun's progress before and after noon.”⁸⁹

Stairs, sundial, gnomon and plate, whatever...the main point of showing this information is not to prove that this tool or structure is any particular thing. The main point is to once again emphasize the fact that the Hebrews knew very well how to tell time using the heavenly lights. If they used the heavenly lights to determine every single other aspect of time, hours, days, months, and appointed times, is it that hard to believe that they also used them for determining their years? Below are some examples of more detailed time-telling from the New Testament.

Mark 15:25 & 33 (NASB) – “It was the third hour when they crucified Him...When the sixth hour came, darkness fell over the whole land until the ninth hour.”

Acts 2:15 (NASB) – “For these men are not drunk, as you suppose, for it is only the third hour of the day.”

Acts 3:1 (NASB) – “Now Peter and John were going up to the temple at the ninth hour, the hour of prayer.”

These scriptures all show that Yeshua and the Apostles knew how to determine even which hour of the day it was. This took practice and knowledge of the motions of the heavenly bodies. They had to be able to recognize that the Sun was in a certain place in the sky, at a certain height, to know which hour of the day it was. They wouldn't just say, “Hey, it feels like I've been up for about three hours, so let's call it the third hour of the day.” No, they knew how to determine the hours in the day and did it by using the apparent motion of the Sun in the sky. Remember, parents back then would teach their children how to tell time just as we do today. But again, the main difference is that we teach our children how to read the numbers on the face of a clock and they taught theirs to mark the time based on the positions and motions of the lights of the heavens.

⁸⁸ Jamieson, Robert & Fausset, A. R. & Brown, David. A Commentary, Critical and Explanatory, on the Old and New Testaments. Vol. I., Old Testament. Glasgow, UK: William Collins, Queens Printer, 1863.

⁸⁹ Torrey, R. A. The Treasury of Scripture Knowledge. “Commentary on Isaiah 38.” About 1880.

- The Heavenly Marker -

We have now laid the foundation necessary to answer the question we posed above: “Using what we learned in the previous section, that *shanah* is a period of time determined by the movement of the Earth around the Sun (i.e. a heavenly event), and what we learned in this section, that *tequphah* is a definite and specific place or time, what is the *tequphah hashanah*, the year’s circuit?” The only solar event that occurs anywhere near the time of the Feast of Tabernacles is the *tequphah* of Fall, more commonly known as the autumnal equinox.

We need to clear some things up, though, before we move on. First, don’t forget what was mentioned above. The various heavenly phenomena, although created and condoned by יהוה, were all used for the worship pagan deities at some point in time. This includes the new crescent moon, which still continues to be a symbol of pagan Islam to this day. Take a look [here](#)⁹⁰ for an extensive list of cultures that worshipped the moon.

Second, we cannot be quick to jump on the “pagan train” when it comes to mentioning the word or discussing the subject of the equinox. Some barley method adherents are so quick to point the finger at those who use the equinox to reckon the year all the while worshipping on a day on which pagans in the past and present did and do. Equinox method adherents don’t use the day of the equinox for any worship. It is just a point in the year used to reckon time, just like sunset, and just like the new crescent moon. There is no pagan worship intended or implied. It is a natural celestial phenomenon created by the heavenly lights that יהוה placed in the sky that is used to reckon time, period. If any barley method adherent dare bring an accusation of pagan worship against a child of יהוה, who uses the equinox as a point of time-reckoning (and nothing more), they’d better be prepared to answer for themselves, who use the New Moon day as a day of worship as the pagans of the past did. So, let’s just drop this as an issue. The equinoxes are celestial phenomena just like the New Moon, Full Moon, and the like. Using it as a point of reference is totally different then worshipping a false deity on that day.

Third, the word “equinox” is just a word that derives from two different words put together. It comes from the Latin *aequinoctium*, which is *aequus* (equal) and *noctis* (night).⁹¹ At the time of the equinox the days and nights appear to be of equal length. However, this is not the true solar autumnal *tequphah*. The true solar autumnal *tequphah* occurs when the sun rises and sets in the same line. On this day the shadow of a vertical object will draw a straight line the whole day, whereas every other day of the year the line of the shadow will be a curve.

These true equinoxes are how the Egyptians and other ancient cultures lined up their monuments with true North-South, and East-West cardinal directions. In fact, if you think

⁹⁰ http://en.wikipedia.org/wiki/Moon_worship

⁹¹ <http://www.etymonline.com/index.php?search=equinox&searchmode=none>

about it, there is no North, South, East, or West without the movements of the sun through the solstices and equinoxes. The very definition of East shows its relationship to North – “a cardinal point of the compass, 90° to the right of north.”⁹² The only, solitary way to find true North, and thereby find East, is to use the movement of the heavenly bodies, the Sun and stars in this case.

There is absolutely no denying the fact that the *tequphat hashanah* spoken of in [Exodus 34:22](#) is the autumnal circuit of the sun, the specific and definite point in time in the yearly motion of the Earth around the Sun, more commonly known as the autumnal equinox. The only way to guarantee that the Feast of Tabernacles occurs at its *tequphah* is to use the vernal equinox to determine when to start the year. Below are several sources that support and confirm that method.

“This month was called Aviv, Exodus 13:4, which signifies an ear of corn, and at this time we find that the barley was in ear, Exodus 9:31 which clearly shows in what month the above things were transacted; afterwards it was called Nisan, which seems to be the Chaldean name for it, Nehemiah 2:1, it shall be the first month of the year to you; which before was the seventh; while the Israelites were in Egypt they observed the same beginning of the year and course of months as the Egyptians, as Josephus (z) intimates; and with the Egyptians, the month Thot was the first month, which answered to Tisri with the Jews, and both to our September, or a part of it, so that the beginning of the year was then in the autumnal equinox, at which season it is thought the world was created; but now to the Israelites it was changed unto the vernal equinox, for this month of Aviv or Nisan answers to part of our March and part of April...”⁹³

“**And it came to pass in the first month, in the second year,**.... Of the departure of the children of Israel out of Egypt:
on the first day of the month, that the tabernacle was reared up; so that this was in the spring of the year, about the vernal equinox, on a new year's day, that this was done, which was beginning the year well...”⁹⁴

“**in the beginning of the year, in the tenth day of the month;** the Jews had two beginnings of their year, the one on civil accounts, which was in the autumnal equinox, in the month Tisri, which answers to part of our September; and if this is meant here, the tenth day of it was the day of atonement, in which the Jews were to afflict their souls; but on this day the prophet has a view of the Gospel church, which receives the atonement by the sacrifice of Christ: the other beginning of the year, which was on ecclesiastic accounts, was in the vernal equinox, the month Nisan, which answers to part of our March; and the tenth day of it was the day that the Passover lamb was separated from the flock, and kept up till the fourteenth...”⁹⁵

⁹² <http://dictionary.reference.com/browse/East>

⁹³ Gill, John. *The New John Gill Exposition of the Entire Bible*. “Commentary on Exodus 12:2.” 1999.

⁹⁴ Gill, John. *The New John Gill Exposition of the Entire Bible*. “Commentary on Exodus 40:17.” 1999.

⁹⁵ Gill, John. *The New John Gill Exposition of the Entire Bible*. “Commentary on Ezekiel 40:1.” 1999.

“The passover was always in the spring of the year, when nights are commonly cold, as they are generally observed to be at the vernal equinox...”⁹⁶

“From the Targum of Jonathan on this verse we learn that in Palestine their seed-time was in September, at the autumnal equinox; their harvest in March, at the vernal equinox; that their winter began in December, at the solstice; and their summer at the solstice in June.”⁹⁷

“As the Israelites went out of Egypt at the vernal equinox, the morning watch, or, according to the Hebrew, באשמרת הבקר, *beashmoreth habboker*, the watch of day-break, would answer to our four o'clock in the morning - Calmet.”⁹⁸

“**In the beginning of barley harvest** - This happened in Judea about the vernal equinox, or the 21st of March.”⁹⁹

“After the passover. Perhaps there never was a more unhappy, not to say absurd, translation than that in our text. But, before I come to explain the word, it is necessary to observe that our term called Easter is not exactly the same with the Jewish passover. This festival is always held on the fourteenth day of the first vernal full moon; but the Easter of the Christians, never till the next Sabbath after said full moon; and, to avoid all conformity with the Jews in this matter, if the fourteenth day of the first vernal full moon happen on a Sabbath, then the festival of Easter is deferred till the Sabbath following. The first vernal moon is that whose fourteenth day is either on the day of the vernal equinox, or the next fourteenth day after it.”¹⁰⁰

“וְחֹרֶף קִיץ are / the two halves of the year: summer including spring (אָבִיב), which begins in Nisan, the spring-month, about the time of the vernal equinox, and autumn including winter (צִתּוֹ)...”¹⁰¹

“The primeval year commenced about the autumnal equinox; we may say, on the nearest new moon.”¹⁰²

⁹⁶ Gill, John. The New John Gill Exposition of the Entire Bible. “Commentary on John 18:18.” 1999.

⁹⁷ Clarke LL.D, Adam. The Holy Bible Containing the Old and New Testaments with a Commentary and Critical Notes. “Commentary on Genesis 8:22.” London, UK: Ward, Lock, & Co., Warwick House, 1881.

⁹⁸ Clarke LL.D, Adam. The Holy Bible Containing the Old and New Testaments with a Commentary and Critical Notes. “Commentary on Exodus 14:24.” London, UK: Ward, Lock, & Co., Warwick House, 1881.

⁹⁹ Clarke LL.D, Adam. The Holy Bible Containing the Old and New Testaments with a Commentary and Critical Notes. “Commentary on 2 Samuel 21:9.” London, UK: Ward, Lock, & Co., Warwick House, 1881.

¹⁰⁰ Clarke LL.D, Adam. The Holy Bible Containing the Old and New Testaments with a Commentary and Critical Notes. “Commentary on Acts 12:4.” London, UK: Ward, Lock, & Co., Warwick House, 1881.

¹⁰¹ Delitzsch, F. Biblical Commentary on the Psalms. “Commentary on Psalm 74:12-17.” Edinburgh, UK: T & T Clark, 1892.

¹⁰² Barnes, Albert. Albert Barnes' Notes on the Bible. “Commentary on Genesis 7:10-16.”

[AUTHOR'S NOTE: It is supposed that the original new year was the new moon nearest to the autumnal equinox. But we know that it was changed during the Exodus from Egypt to the new moon nearest to the vernal equinox.]

“The seventh month began usually with the new moon nearest the vernal equinox, or the 21st of March.”¹⁰³

[AUTHOR'S NOTE: See note above. Just as the new moon nearest the autumnal equinox was considered in the ancient past to be the first month of the year, the new moon nearest the vernal equinox was considered the seventh month of the year.]

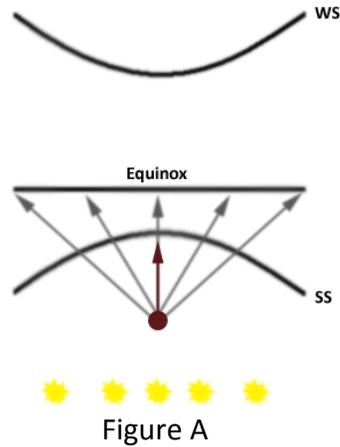
What is abundantly clear from the above is that the new year started at the vernal equinox. This is the *tequphah* of the Spring. These are only four of several scholarly works on the Entire Bible. The consensus among these scholars is that the new moon nearest the vernal equinox is the beginning of the first month of the year. As we will see later this is not only the view of several modern scholars (more quotes below) but also that of several ancient sources.

- *How to Determine the Day of the Tequphah* -

Some think that determining the day of the autumnal *tequphah* is a difficult thing. This couldn't be farther from the truth. There are several ways to do this. First of all, let it be noted that there is absolutely no record of there being calculated astronomy in the days of the Ancient Egyptians and/or Moses.

One way to determine the equinox is to trace the movement of a shadow through any given day. On the day of the equinox the shadow of a vertical object, a gnomon, traces a straight line (See Figure A). Any other day of the year the line would be a curve, becoming more drastic as it approaches the solstices.

¹⁰³ Barnes, Albert. Albert Barnes' Notes on the Bible. "Commentary on Genesis 8:1-14."



Another way is to have an object point directly at the sun at noon on the day of the equinox. How was this done? We know from above that the Egyptians, for one, knew how to establish right angles, as did the Hebrews. First you need to find North using the Pole star. Affix a stick or some other straight object to a flat object of some sort. Point the stick (North Star stick) directly at the North Star (See Figures B1 and B2). Next, use a different stick (Right Angle stick) and make a right angle with it and the North Star stick (See Figure B3). You have just created a tool, using only the heavenly lights that will point directly at the sun only on the days of the equinoxes. At high noon on the day of the equinox the Right Angle stick will cast no visible shadow. If you desire to know one way to determine a perfect right angle see Figure B4. You use the same method of pointing a stick directly at the North Star at night, but the next day, using a vertical stick, you mark two places, one on each side of the North Star stick, where the shadow of the tip of the stick is, one place in the morning and one in the afternoon. The line between these two markers is a direct East-West line, which is of course perfectly perpendicular to the North-South line you established by pointing the stick directly at the North Star.

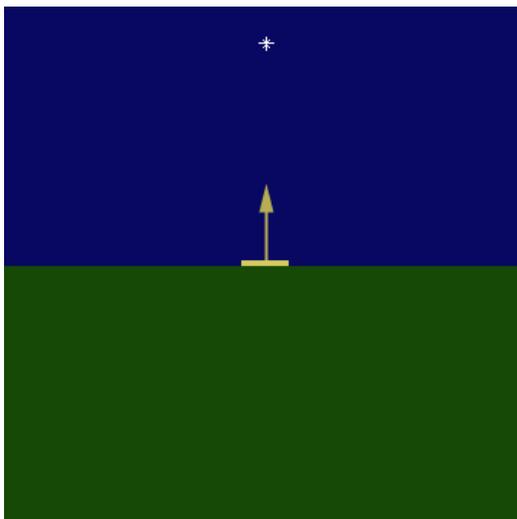


Figure B1 (Rear View)

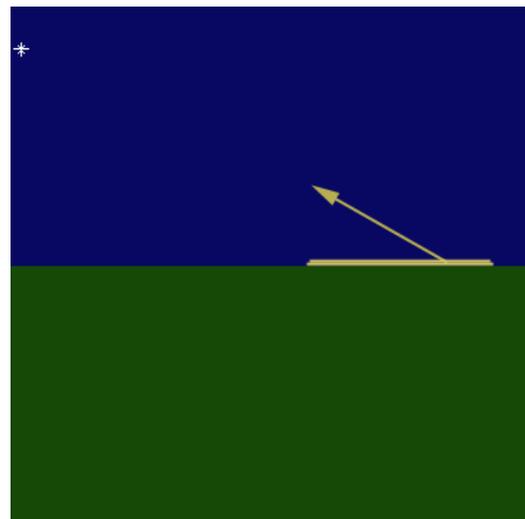


Figure B2 (Side View)

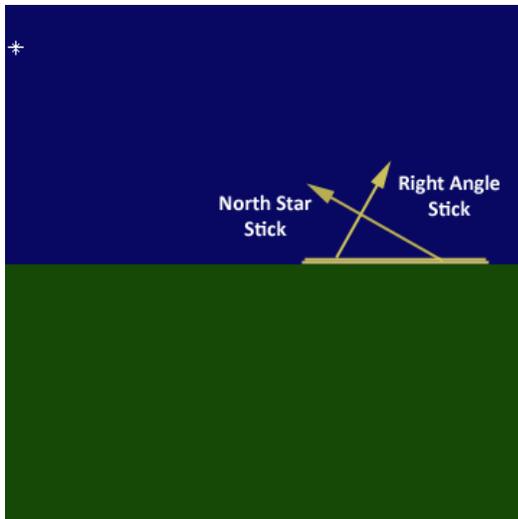


Figure B3 (Side View)

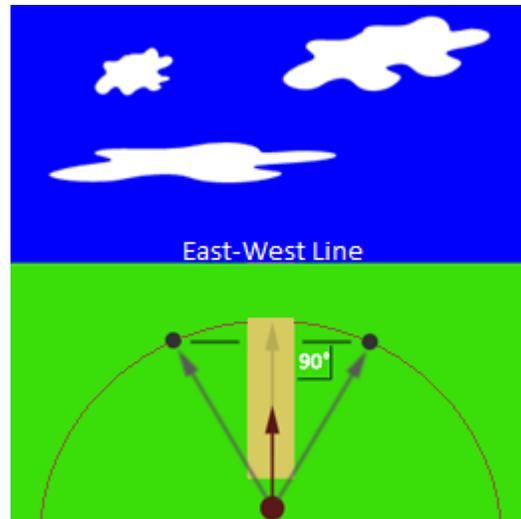


Figure B4

A third way to help determine the day of the equinox is to simply count. People often forget that counting days was much more common in ancient times. We have calendars printed years in advance. They didn't have these fixed calendars to go by. How did the ancient Hebrews know about when to expect the next New Moon? They counted the days and watched the cycles. Likewise they could count the days of the year until the next *tequphah*. There are approximately 186 days from vernal equinox to autumnal equinox, and 180 days from autumnal equinox to the next vernal equinox. The difference in these amounts is explained by the elliptical orbit of the Earth around the Sun. As soon as one *tequphah* is found, the next one is a known span of time away. So, there is no need to watch for the *tequphah* until it gets near the end of that time period. Keep in mind, the Egyptians, long before Moses, were one of the first civilizations that discovered that a solar year has approximately 365.25 days. Moses and the Hebrews would have been familiar with this. They knew how long what we call a "tropical" year is and they adjusted the start of the festal year accordingly.

- *How Many Feasts Per Year?* -

This seems like a silly question to those who keep the feast, but all of the information above isn't usually taken into consideration when answering this question. You see, the *shanah* is a heavenly cycle, a revolution of the Earth around the Sun. The end of one year and beginning of the next is determined by a *tequphah*. The barley method could, albeit in rare occurrences, allow there to be two Passovers in one *shanah*. If *aviv* is spotted early enough, prior to March 6th, and the new moon likewise falls on that day, the Passover would be celebrated twice in that year since the next solar year had not yet started. The only way to permanently prevent this from happening is to have the beginning and end of the year tied to something that is not variable – the motions of the heavenly bodies.

- *Which Method?* -

As mentioned in at the very beginning of this study there are two “equinox methods” that are used. The first is to always use the new moon that falls on or after the vernal equinox. The second is to use the new moon which is nearest to the equinox. Using only the new moon on or after the equinox shares a huge pitfall with the barley method. Both of these methods, if used in the ancient past, could have delayed the harvest by up to six weeks.

If the new moon falls the day just before the equinox, not on or after, the “on or after” equinox method adherent waits another full six weeks after the equinox before celebrating Passover. Now, realistically speaking, what if the barley reached an acceptable state of maturity for the wave sheaf offering the day immediately following the equinox? That barley is sitting in the fields wasting away. None can be eaten and nothing can be made from it until the wave sheaf is offered, which isn’t until the Feast of Unleavened Bread six weeks away. The entire harvest is delayed! The same case is true with the barley method. Just this past year, in 2009, the Karaites in Jerusalem found *aviv* barley on March 26th.¹⁰⁴ The new moon for them was seen on March 27th.¹⁰⁵ In a message dated February 27, 2009, Nehemia Gordon, leader of the Jerusalem Karaite Movement, stated that it was a possibility for the Feast of Unleavened Bread to be in May.¹⁰⁶ If that *aviv* hadn’t been found this would have happened. He admits that it is a possibility, even though it didn’t happen.

It is not just that the Feast of Unleavened Bread is pushed into May. The problem really lies with the fact that the Feast of Tabernacles is no longer at the *tequphat hashanah*, which occurs around September 22nd/23rd. If that had happened the Feast of Tabernacles wouldn’t have been celebrated until November 3rd. That is 40+ days removed from the *tequphat hashanah*. Once again, the variability of the weather and harvest seasons, if depended upon for determination of the festal calendar, can cause serious problems when celebrating the feasts. Several others major issues arise in this possible situation. First, it is highly likely that all of the summer harvest had long been brought in before November 4th. This is the time of the year when they would have already had most of the Spring crops sown, such as barley and flax. What is there to “ingather” at the Feast of the Ingathering if it had all already been brought in? Second, if the first month of the year was pushed back that far, so that the Feast of Tabernacles started on November 4th, it is highly likely that year will only have eleven months. The New Moon of March, 2010, is going to appear around March 16th/17th. If *aviv* barley is found before then, which is highly probable, then the 2009 festal year would have only been 11 months. The Feast of Purim, although not commanded in Torah, was commanded by Esther to be observed by all Jews on the 14th and 15th days of Adar, the 12th month in the festal year (*Esther 9*). If there was no 12th month this command by Esther could not have been carried out. Sadly, even though this is a rare occasion, the barley method can permit this in certain years. What can be concluded from this is that the only acceptable equinox method is to use the new moon nearest to the equinox.

¹⁰⁴ http://groups.yahoo.com/group/karaite_korner_news/message/396 (as of 1/31/2011)

¹⁰⁵ http://groups.yahoo.com/group/karaite_korner_news/message/399 (as of 1/31/2011)

¹⁰⁶ http://groups.yahoo.com/group/karaite_korner_news/message/390 (as of 1/31/2011)

- Ancient Extra-Biblical Supporting Evidence -

It is whole-heartedly acknowledged by the author that relying solely on extra-biblical information for the establishment of doctrine is a very foolish idea. But, ancient sources are often very helpful in supporting doctrines that have a foundation and establishment in scripture. Below are some sources that show how the heavenly bodies and their phenomena, the equinoxes in particular, were used to establish the biblical year.

The first is a quote from Josephus. Josephus was a Jewish Pharisaical priest who fought the Romans in the first Jewish-Roman war, the one that resulted in the destruction of the Temple in 70 CE. The circumstances that resulted in his being taken prisoner, being released, becoming a Roman citizen, and working for the very Emperor that destroyed his country are admittedly less than noble. It is actually said that he suggested some form of "Russian Roulette" with suicide as the bullet. Regardless of his lack of morals, Josephus' works are respected for their aid in understanding certain events in history, or at least how some in his day understood those events.

"In the month of Xanthicus, which is by us called *Nisan*, and is the beginning of our year, on the fourteenth day of the lunar month, when the sun is in Aries, (for in this month it was that we were delivered from bondage under the Egyptians,) the law ordained that we should every year slay that sacrifice which I before told you we slew when we came out of Egypt, and which was called the *Passover*; and so we do celebrate this passover in companies, leaving nothing of what we sacrifice till the day following."¹⁰⁷

Today the sun is in Aries from approximately April 19 – May 14. Taking into consideration that a full cycle through the precession of the equinoxes, the thing that causes the date of the vernal equinox to "precess" through the constellations, is approximately 26,000 years...at 365.2422 days/year we arrive at approximately one day's movement through the precession cycle about every 71 years. This means that about 1,911 years ago, the approximate time that Josephus wrote his Antiquities, the sun would have been in Aries from about March 24 – April 18. What does this mean? This means that in Josephus' day the day of Passover could not have fallen later than April 18. How is this significant to us? Well, as seen above, using the barley method can allow Passover to fall as late as May 3. That's fifteen days after April 18.

The next set of quotes is from Philo. Philo often gets a bad rap because of his tendency towards philosophical thought. We must understand one thing. There is nothing in scripture that speaks against learning philosophy. Philo didn't use this to go against scripture, but to explain it in more depth. Whether he was correct in all of his philosophical illustrations or not, his motives were to exalt יהוה, not men, and not any pagan deities. Having said that, Philo had some extremely noble qualities that prove his devotion to יהוה and to his faith. Gaius

¹⁰⁷ Josephus, Flavius. "Antiquities of the Jews, Book III, Chapter 10, 5." [The Complete Works of Josephus](#). Translated by William Whiston. Grand Rapids, MI: Kregel Publications, 1981.

Caligula, the Roman Emperor during Philo's life, was, as were the rest of the Roman Emperors, received as a "god-man." Alexandria, Philo's hometown, was the city with the largest population of Jews outside of Judea. Several of the Romans in Alexandria, one of which was Apion (who Josephus wrote a whole treatise against), brought the idea to Gaius to erect a statue of himself in synagogues and the Temple in Jerusalem. Philo was selected as an ambassador of the Jewish people in Alexandria to bring a petition to Gaius. Josephus speaks of him in this situation.

"There was now a tumult arisen at Alexandria, between the Jewish inhabitants and the Greeks; and three ambassadors were chosen out of each party that were at variance, who came to Gaius. Now one of these ambassadors from the people of Alexandria was Apion, who uttered many blasphemies against the Jews; and, among other things that he said, he charged them with neglecting the honors that belonged to Caesar; for that while all who were subject to the Roman empire built altars and temples to Gaius, and in other regards universally received him as they received the gods, these Jews alone thought it a dishonorable thing for them to erect statues in honor of him, as well as to swear by his name. Many of these severe things were said by Apion, by which he hoped to provoke Gaius to anger at the Jews, as he was likely to be. But Philo, the principal of the Jewish embassy, a man eminent on all accounts, brother to Alexander the alabarch, and one not unskillful in philosophy, was ready to betake himself to make his defense against those accusations; but Gaius prohibited him, and bid him begone; he was also in such a rage, that it openly appeared he was about to do them some very great mischief. So Philo being thus affronted, went out, and said to those Jews who were about him, that they should be of good courage, since Gaius's words indeed showed anger at them, but in reality had already set God against himself."¹⁰⁸

Josephus held Philo and his bold actions in high regards. Several of Philo's bold actions can be found in his work entitled *Embassy to Gaius*. Needless to say, unless proper research is done on the life and actions of Philo we should not be quick to dismiss his writings as philosophical blabbering for the sake of destroying his credibility. He was a Jew, a devout and bold one, who stood in the face of persecution and death to defend and stand up for his faith.

Moving on, we can see how explicit and plain Philo was in his understanding of the timing of the beginning of the year and the Feasts. First, Philo makes clear his understanding of what determines the days, months, and years.

"And what else could exhibit to us the days and the nights, and the months and the years, and in short the divisions of time, but the harmonious and inconceivable revolutions of the sun, and moon, and other stars?"¹⁰⁹

¹⁰⁸ Josephus, Flavius. "Antiquities of the Jews, Book XVIII, Chapter 8, 1." [The Complete Works of Josephus](#). Translated by William Whiston. Grand Rapids, MI: Kregel Publications, 1981.

¹⁰⁹ Philo. "De Specialibus Legibus, I, 90." [The Works of Philo: Complete and Unabridged](#). Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

He agrees with scripture and the rest of the commentators. The days, months, and years are determined by the sun, moon, and stars. Just like none of the rest mention earthly phenomena or characteristics, neither does Philo.

“The vernal equinox is an imitation and representation of that beginning in accordance with which this world was created. Accordingly, every year, Elohim reminds men of the creation of the world, and with this view puts forward the spring, in which season all plants flourish and bloom; for which reason this is very correctly set down in the law as the first month, since, in a manner, it may be said to be an impression of the first beginning of all, being stamped by it as by an archetypal Seal.”¹¹⁰

“Moses puts down the beginning of the vernal equinox as the first month of the year, attributing the chief honour, not as some persons do to the periodical revolutions of the year in regard of time, but rather to the graces and beauties of nature which it has caused to shine upon men; for it is through the bounty of nature that the seeds which are sown to produce the necessary food of mankind are brought to perfection.”¹¹¹

“(Scripture) thinks it proper to reckon the cycle of months from the vernal equinox. Moreover, (this month) is said to be the ‘first’ and the ‘beginning’ in synonymy, since these (terms) are explained by each other, for it is said to be the first both in order and in power; similarly that time which proceeds from the vernal equinox also appears (as) the beginning both in order and its power, in the same way as the head (is the beginning) of a living creature. And thus those who are learned in astronomy have given this name to the before mentioned time. For they call the Ram the head of the zodiac since in it the sun appears to produce the vernal equinox...And that (Scripture) presupposes the vernal equinox to be the beginning of the cycle of months is clear from the notions of time held in the ordinances and traditions of various nations. And one may make certain of this from the sheaves of first-fruits which (Scripture) commands (us) to bring on the second day of the festival for the needs of the service, and spring is the season of harvest.”¹¹²

Philo very clearly believed that scripture and Moses thought that the vernal equinox was the marking point of the beginning of the year. It is the same time when plants flourish and bloom. The first month of the year is intimately linked with the vernal equinox.

“But to the seventh day of the week he has assigned the greatest festivals, those of the longest duration, at the periods of the equinox both vernal and autumnal in each year;

¹¹⁰ Philo. "De Specialibus Legibus, II, 151-152." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹¹ Philo. "De Vita Mosis, II, 222." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹² Philo. "Quaestiones et Solutiones in Exodum, I, 1." Philo Supplement II: Questions and Answers on Exodus. Translated by Ralph Marcus, PH.D. Cambridge, MA: Harvard University Press, 1953.

appointing two festivals for these two epochs, each lasting seven days; the one which takes place in the spring being for the perfection of what is being sown, and the one which falls in autumn being a feast of thanksgiving for the bringing home of all the fruits which the trees have produced.”¹¹³

“In the first season--he calls springtime and its equinox the first season--he ordered that a feast which is called ‘the feast of unleavened bread’ be celebrated for seven days and declared that every day was equal in honor in religious services.”¹¹⁴

“And the sun, the ruler of the day, making two equinoxes every year, both in spring and autumn. The spring equinox in the constellation of Aries, and the autumnal one in Libra, gives the most evident demonstration possible of the divine dignity of the number seven. For each of the equinoxes takes place in the seventh month, at which time men are expressly commanded by law to celebrate the greatest and most popular and comprehensive festivals; since it is owing to both these seasons, that all the fruits of the earth are engendered and brought to perfection; the fruit of corn, and all other things which are sown, being owing to the vernal equinox; and that of the vine, and of all the other plants which bear hard berries, of which there are great numbers, to the autumnal one.”¹¹⁵

“...for it was the general festival of the Jews at the time of the autumnal equinox, during which it is the custom of the Jews to live in tents; but none of the usual customs at this festival were carried out at all...”¹¹⁶

“The last of all the annual festivals is that which is called the feast of tabernacles, which is fixed for the season of the autumnal equinox.”¹¹⁷

It is very clear that Philo believed that the two greatest Feasts of the year, the Feast of Unleavened Bread and the Feast of Tabernacles, were to be celebrated at their respective equinoxes. Please note that Philo did not say that he believes the Feasts are to be held after their respective equinoxes, but at them. He uses these equinoxes as marking points in time, not days of worship. The Feasts were tied to them, but they were not feasts themselves. Just like Josephus’ writings, Philo’s are completely void of any instructions to use growth stages of plants to determine the beginning of the festal year.

¹¹³ Philo. "De Decalogo, 161." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹⁴ Philo. "De Specialibus Legibus, I, 181." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹⁵ Philo. "De Opificio Mundi, 116." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹⁶ Philo. "In Flaccum, 116." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

¹¹⁷ Philo. "De Specialibus Legibus, II, 204." The Works of Philo: Complete and Unabridged. Translated by Charles Duke Yonge. Peabody, MA: Hendrickson Publishers, 1993.

The next set of quotes is from a 3rd Century Christian bishop named Anatolius. Not all of his writings are found but several are quoted in the writings of a contemporary of his, Eusebius of Caesarea. Anatolius, like Philo, was also born and raised in Alexandria, Egypt, and was schooled in many areas of higher education including arithmetic, physics, and astronomy. The following quotes come from a writing called “The Paschal Canon of Anatolius of Alexandria.”

“There is, then, in the first year, the new moon of the first month, which is the beginning of every cycle of nineteen years, on the six and twentieth day of the month called by the Egyptians Phamenoth. But, according to the months of the Macedonians, it is on the two-and-twentieth day of Dystrus. And, as the Romans would say, it is on the eleventh day before the Kalends of April. Now the sun is found on the said six-and-twentieth day of Phamenoth, not only as having mounted to the first segment, but as already passing the fourth day in it. And this segment they are accustomed to call the first dodecatemorion (twelfth part), and the equinox, and the beginning of months, and the head of the cycle, and the starting-point of the course of the planets. And the segment before this they call the last of the months, and the twelfth segment, and the last dodecatemorion, and the end of the circuit of the planets. And for this reason, also, we maintain that those who place the first month in it, and who determine the fourteenth day of the Paschal season by it, make no trivial or common blunder. Nor is this an opinion confined to ourselves alone. For it was also known to the Jews of old and before Christ, and it was most carefully observed by them. And this may be learned from what Philo, and Josephus, and Musæus have written; and not only from these, but indeed from others still more ancient, namely, the two Agathobuli, who were surnamed the Masters, and the eminent Aristobulus, who was one of the Seventy who translated the sacred and holy Scriptures of the Hebrews for Ptolemy Philadelphus and his father, and dedicated his exegetical books on the law of Moses to the same kings. These writers, in solving some questions which are raised with respect to Exodus, say that all alike ought to sacrifice the Passover after the vernal equinox in the middle of the first month. And that is found to be when the sun passes through the first segment of the solar, or, as some among them have named it, the zodiacal circle. But this Aristobulus also adds, that for the feast of the Passover it was necessary not only that the sun should pass the equinoctial segment, but the moon also. For as there are two equinoctial segments, the vernal and the autumnal, and these diametrically opposite to each other, and since the day of the Passover is fixed for the fourteenth day of the month, in the evening, the moon will have the position diametrically opposite the sun; as is to be seen in full moons. And the sun will thus be in the segment of the vernal equinox, and the moon necessarily will be at the autumnal equinox. I am aware that very many other matters were discussed by them, some of them with considerable probability, and others of them as matters of the clearest demonstration, by which they endeavour to prove that the festival of the Passover and unleavened bread ought by all

means to be kept after the equinox... But that the first month among the Hebrews is about the equinox, is clearly shown also by what is taught in the book of Enoch.”¹¹⁸

“For even in the ancient law it is laid down that this is to be seen to, viz., that the Passover be not celebrated before the transit of the vernal equinox, at which the last of the autumnal *term* is overtaken,' on the fourteenth day of the first month, which is one calculated not by the beginnings of the day, but by those of the moon.”¹¹⁹

“But nothing was difficult to them with whom it was lawful to celebrate the Passover on any day when the fourteenth of the moon happened after the equinox. Following their example up to the present time all the bishops of Asia — as themselves also receiving the rule from an unimpeachable authority, to wit, the evangelist John, who leant on the Lord's breast, and drank in instructions spiritual without doubt – were in the way of celebrating the Paschal feast, without question, every year, whenever the fourteenth day of the moon had come, and the lamb was sacrificed by the Jews after the equinox was past.”¹²⁰

Here Anatolius makes it clear that the day of Passover is to be celebrated after the vernal equinox. He teaches that this is not only the view of those in his day, but those of the ancient saints, those in Messiah and those not, as well.

The truth and consensus that can be drawn from these ancient sources is that they understood that the Passover, the first commanded Feast day, must be celebrated after the beginning of the new solar year. If this does not happen, two Passover celebrations have been celebrated in the same year.

- *Other Supporting Sources* -

Here are some other references that mention when the beginning of the biblical year is.

“The Hebrew year was as nearly solar as was compatible with its commencement coinciding with the new moon or first day of the month. They began it with the new moon nearest to the equinox, yet late enough to allow of the firstfruits of barley harvest being offered about the middle of the first month. So Josephus (Ant. 3:10, section 5)

¹¹⁸ Anatolius. “Vol. XIV: The Paschal Canon of Anatolius of Alexandria, II – V.” [Ante-Nicene Christian Library: Translations of the Writings of the Early Church Fathers Down to A.D. 325](#). Edited by Alexander Roberts & James Donaldson. Edinburgh, UK: T. & T. Clark, 1869.

¹¹⁹ Anatolius. “Vol. XIV: The Paschal Canon of Anatolius of Alexandria, XV.” [Ante-Nicene Christian Library: Translations of the Writings of the Early Church Fathers Down to A.D. 325](#). Edited by Alexander Roberts & James Donaldson. Edinburgh, UK: T. & T. Clark, 1869.

¹²⁰ Anatolius. “Vol. XIV: The Paschal Canon of Anatolius of Alexandria, X.” [Ante-Nicene Christian Library: Translations of the Writings of the Early Church Fathers Down to A.D. 325](#). Edited by Alexander Roberts & James Donaldson. Edinburgh, UK: T. & T. Clark, 1869.

states that the Passover was celebrated when the sun was in Aries. They may have determined their new year's day by observing the heliacal or other star risings or settings marking the right time of the solar year (compare Jdg 5:20-21; Job 38:31). They certainly after the captivity, and probably ages before, added a 13th month whenever the 12th ended too long before the equinox for the offering of the firstfruits to be made at the time fixed."¹²¹

"The Jews reckoned the year in two ways,
(1.) according to a sacred calendar, in which the year began about the time of the vernal equinox, with the month Aviv; and
(2.) according to a civil calendar, in which the year began about the time of the autumnal equinox, with the month Nisan. The month Tisri is now the beginning of the Jewish year."¹²²

"Probably, the Hebrews determined their new year's day by the observation of heliacal or other star-risings or settings known to mark the right time of the solar year. It follows, from the determination of the proper new moon of the first month, whether by observation of a stellar phenomenon or of the forwardness of the crops, that the method of intercalation can only have been that in use after the captivity, -- the addition of a thirteenth month whenever the twelfth ended too long before the equinox for the offering of the first-fruits to be made at the time fixed."¹²³

"The Hebrew year (שנה, *shanah*) was composed of 12 or 13 months, the latter being the year when an intercalary month was added to make the lunar correspond with the solar year. As the difference between the two was from ten to eleven days, this required the addition of a month once in about three years, or seven in nineteen years. This month was added at the vernal equinox and was called after the month next preceding, *w^e*-*'adhar*, or the 'second Adar.'"¹²⁴

"Anthropological evidence from many regions show that it was possible in the most ancient times to chart the course of the sun in its annual orbit, which occurs in approximately 365 days. The vernal and autumnal equinoxes (the day in the spring and fall, respectively, when days and nights are of equal lengths) were commonly designated as the beginning of a new year...This type of calendar had wide currency among the more advanced societies. It is called 'lunar-solar' because it allowed the sun's orbit to mark the years' beginning, but based the beginning of months on observation of the phases of the moon."¹²⁵

¹²¹ Fausset, Andrew R. Fausset's Bible Dictionary. "Year." 1949.

¹²² M.G. Easton M.A., D.D. Illustrated Bible Dictionary. Third Edition. "Year." Published by Thomas Nelson, 1897.

¹²³ Smith, William, Dr. Smith's Bible Dictionary. "Year." 1901.

¹²⁴ The International Standard Bible Encyclopedia. "Time, Year." Edited by: James Orr, John L. Nuelsen, Edgar Y. Mullins, and Morris O. Evans. Vol. IV. Chicago, IL: Howard-Severance, 1915.

¹²⁵ Holman Bible Dictionary. "Calendars." Edited by Trent C. Butler. Broadman & Holman, 1991.

“The observation of the autumnal equinox, i.e. ‘the going out of the year’ (see Exodus 23:16), and of the spring equinox, called the ‘return of the year’ (I Kings 20:26, II Chronicles 36:10) was important for controlling the calendar and consequently the festivals. Thus the year began with the new moon nearest the vernal equinox when the sun was in Aries, and the Passover on the 14th of Nisan coincided with the first full moon.”¹²⁶

“‘The end of the year, when thou gatherest in they labours out of the field’ (Ex. 23.15, 16); ‘The Feast of Ingathering at the year’s end [R.v. marg. *Revolution*]’ (34:22). But in order to define time more exactly, it would be found necessary to divide this longer period into shorter ones. The moon, appointed ‘for seasons’ (Ps. 104.19), provides the standard of measurement. A fixed number of ‘moons’ would not, however, coincide with the harvest. The astronomical lunar month is 29 days, 12 hours, and 793 parts (the hour being divided into 1,080 parts). Twelve lunar months are 354 days, 8 hours, 876 parts, but the solar year is 10 days, 21 hours, 204 parts, *i.e.* approximately 11 days, longer than this. The discrepancy would, therefore, be serious in the course of a few years unless rectified by some means. The Heb. Year was indissolubly associated with the two harvests. (1) The 15th day of the 7th month (Ethanim, 1 K. 8.2; the post-Exilic Tishri) was the Feast of Tabernacles, the thanksgiving for the completed harvest (Lev. 23.34; Num. 29.12), held at the autumn equinox. (2) On Aviv 16 (the post-Exilic Nisan) the firstfruits of the barley harvest were offered. This was also a harvest festival, at the spring equinox.”¹²⁷

“The Hebrew year (like the Babylonian) consisted of 12 lunar months of alternately 30 and 29 days, beginning with the new moon about the vernal equinox.”¹²⁸

“Twelve lunar months making but three hundred and fifty-four days and six hours, the Jewish year was short of the Roman by twelve days. To recover the equinoctial points, from which this difference of the solar and lunar year would separate the new moon of the first month, the Jews every three years intercalated a *thirteenth* month, which they called *Ve-adar*; the second *Adar*. By this means their lunar year equalled the solar; because in thirty-six solar months there would be thirty-seven lunar months. The Sanhedrim regulated this intercalation, and the thirteenth month was placed between Adar and Nisan; so that the Passover was always celebrated the first full moon after the equinox.”¹²⁹

“The year of the Hebrews consisted of twelve months (1 Kin. iv. 7; 1 Chron. xxvii. 1-15). These appear to have been lunar (see MONTH), and the year would accordingly contain 354 days, 8 hours, 48 minutes, 32.4seconds. The annual festivals were inseparably

¹²⁶ J. D. Douglas & N. Hillyer. Illustrated Bible Dictionary. “Calendar.”

¹²⁷ Murray’s Illustrated Bible Dictionary. “Year.” Edited by Rev. William C. Piercy. London, UK: John Murray, 1909.

¹²⁸ Murray’s Illustrated Bible Dictionary. “Agriculture.” Edited by Rev. William C. Piercy. London, UK: John Murray, 1909.

¹²⁹ Calmut, Augustin. Dictionary of the Holy Bible. “Month.” Boston, UK: Crocker & Brewster, 1832.

linked with the agricultural seasons. A strictly lunar year would cause these festivals, as fixed by the calendar, to constantly recede from their appropriate season. It was necessary to bring the lunar year into correspondence with the solar year of 365 days. This was doubtless accomplished by the intercalation of an additional month every three or four years, although the custom is not mentioned in the Bible. The year began with the month Aviv or Nisan (Exodus xxii. 2; xxiii. 15; Esther iii. 7), with the new moon next before or next after the vernal equinox, when the Sun is in Aries (Antiq. iii. 8, 4; 10, 5); but there was from the earliest times a civil, or rather agricultural, year which began in the autumn (cp. Exodus xxiii. 16; xxxiv. 22; Leviticus xxv. 4, 9, seq.).”¹³⁰

Just like the ancient sources above, these all agree that the new year was determined by the timing of the vernal equinox. It should be noted that none of these scriptures and sources say that the equinox must first have passed before the new year can be declared. What is important is that the Feasts take place in their proper seasons and only take place once per solar year (*shannah*).

- Unanswered Barley Issues -

There has been mention above of a few issues that exist with the barley method. Below is a list of these and several others that have yet to be answered or responded to. When deciding whether or not to use the barley method one must consider the following and ask themselves, “Am I willing to use this method even though there are all of these unanswered questions?”

- Using the barley method can cause the Feast of Unleavened Bread to occur in the first couple weeks of May, 50+ days away from its *tequphah*. This will likewise cause the Feast of Tabernacles to occur well into November, far away from its *tequphah*. Exodus 34:22 makes it clear that we are to observe the Feast of the Ingathering (Tabernacles) at the *tequphat hashanah* (the circuit of the year).
- Using the barley method can, albeit in rare instances, cause the festal year to only be 11 months long. There is absolutely no restriction in the barley method that prevents this from happening. This prevents the command from Esther to all Jews from taking place, that being to observe Purim on the 14th and 15th days of Adar, the 12th Biblical month.
- Using the barley method removes the requirement of having the lights of the heavens to determine their *shanaim*, solar years. It desires to replace this required heavenly phenomenon with an earthly one, the growth state of crops.
- Using the barley method could cause the barley to stand in the fields for up to six to seven weeks before harvest. If one uses the new moon after *aviv* is seen, and *aviv* is available the day after the 1st month is declared, then the new month won't begin for another month. Because of this the Wave Sheaf could be up to even three weeks after that, making a total of seven weeks from when *aviv* was first available.

¹³⁰ Davis, John D. A Dictionary of the Bible. “Year.” Philadelphia, PA: The Westminster Press, 1911.

- The only way for any conclusive decision to be made using the barley method today is if the barley in the entire country of Israel is inspected every day during the last few days of the 12th Biblical month. If only a few fields, in a few locations are checked, there is no guarantee that there wasn't *aviv* available somewhere else. Not to mention, we are not looking for *aviv* to begin with. Only barley that will be *aviv* for the Wave Sheaf offering is necessary.
- There are absolutely no ancient sources that say that the state of the barley crop was the sole criteria for establishing the start of the festal year. The only texts that directly mention the state of the barley crop as being a determining factor, the Talmudic texts, don't even say that the state of the barley crop, by itself, is enough to intercalate. Yet, that is exactly what the barley method proposes and does.
- There is never a command in scripture to look for a state of the barley crop before starting the year, nor is there any example of people in scripture doing such a search. However, as we can see from above, the *tequphat hashanah*, the year's circuit, was watched for every year so that the Feast of Tabernacles could take place at the proper time each year. Likewise, there are several other examples of the Hebrews using the heavenly bodies to determine things such as when certain night watches began, when certain constellations would rise, when the new and full moons would appear, etc. Not to mention there is the direct command to use the heavenly lights to establish the years.
- Using the barley method proves to be extremely difficult for Hebrews living outside of Israel to properly observe the feasts. If *aviv* barley needed to be spotted prior to the declaration of the year, then there is absolutely no way to officially expect the new year to start at a certain time. Travel in ancient times wasn't as easy as stepping into a plane. Communication wasn't as easy as picking up the phone. For messengers to travel from Israel to the various other countries where Hebrews lived would take quite a bit longer than it would today. For instance, Saul was from Tarsus, Turkey. Tarsus is hundreds of miles away from Jerusalem. The messenger would have had to have walked or ridden an animal at least this far to inform the Hebrews in Tarsus that *aviv* barley had been found. Those people would then have had to prepared their carriages, horses, camels, whatever, for the trip to Jerusalem. The fastest horses would have extreme difficulty doing this without ever taking a break. And there were Hebrews as far away as Rome. How would that Hebrew know when to pilgrimage to Jerusalem for the three Feasts? If one of these Hebrews decided to make the pilgrimage to Jerusalem towards the end of the 12th month, thinking that would be the last month of the year, what happens if there is a 13th month? That Hebrew would then have to either make the pilgrimage back just to leave again soon after, or wait in Jerusalem for an entire month and a half until the Feast began. This is quite a long time away from one's family, especially as head of household and potentially the only male to do the hard work.
- If there is severe drought or other severe weather that prevents a barley harvest altogether, how is the first month of the year determined. This is also a very rare case because barley is a very resilient crop, but it is still a possibility nonetheless. What would barley method adherents do then? I have heard some of them say that they

would then use the new moon nearest to the equinox. So, why is it acceptable then, but not any other time?

Conclusion

We have now seen sufficient evidence to be able to determine when the Biblical festal year is to begin and more specifically when the Feast of Tabernacles is to be observed. Let's pull together all of the information that we learned above in to a very condensed list.

- *Aviv* has two meanings in scripture – “shooting forth” and that which is shot forth, “green shoots (fresh heads of grain).”
- The Month of *Aviv* is the month of the shooting forth of crops (month of the new in the LXX).
- Barley needs only to be parchable and edible to be considered *aviv*.
- The barley didn't have to be brittle enough or light enough in color to be destroyed by normal hail. The Hail Plague consisted of extraordinary hail. Since the standing barley and flax provided more resistance to the hail and fire than the new wheat sprouts did, the former were destroyed while the latter survived.
- The agreement amongst scholars is that the Hail Plague took place sometime between the middle of February and the beginning of March. The barley was already considered to be *aviv* during this time.
- The Wave Sheaf *omer* was a handful of freshly cut stalks of grain, not a dry measure of flour.
- Barley need only be of value, acceptable as food for the priests, to be offered as the Wave Sheaf.
- There are no scriptures that say that the barley for the Wave Sheaf offering must be from fully harvest ready barley.
- There are no scriptures that say that the harvest must begin immediately after the Wave Sheaf is offered. It simply means that it can begin.
- The Biblical Calendar including, day, night, signs, appointed times, months, and years are all determined by the heavenly lights, the Sun, Moon, and stars. None of these are ever said to be determined by an earthly sign and/or phenomenon.
- The Hebrew *shanah*, year, is a solar year, a rotation of the Earth around the Sun.
- *Shanah* is not a cycle through the harvest seasons.
- *Tequphah* is a circuit, a specific and definite point in time or space.
- The *tequphat hashanah* is the year's circuit, an attribute that a solar year possesses.
- *Teshubah* is also a certain time of year, specifically the Spring, which begins at the vernal equinox.
- Both *Tequphah* and *Teshubah* refer to points in a solar year, not harvest seasons.
- There are several heavenly phenomena, some of which are listed in scripture and others that are not.

- Just because certain heavenly phenomena aren't listed in Genesis 1:14-16 doesn't mean that they cannot be used to reckon time. The new crescent moon is a great example. It is never mentioned, but is used to determine the beginning of each month.
- Just because certain phenomena were worshipped or celebrated as a day of worship in the past doesn't mean that they are pagan in themselves. Again, the new crescent moon is a perfect example.
- It is the light of the heavenly lights that determine the years, not any heat that they may or may not produce.
- The ancient Hebrews, along with other cultures before and during their time, were very advanced in their knowledge and use of craftsmanship, structural design, simple tools and machines, metal-working, and observational astronomy.
- The *tequphot* that mark the beginning of the year and the time at which the Feast of Tabernacles is to be observed are also known as the vernal and autumnal equinoxes, respectively.
- Determining these *tequphot* is not difficult and can be done with very simple instruments using only the lights of the heavens.
- There can only be one of each festal day per solar year. The barley method can allow 11 month festal years.
- There is extensive modern and ancient supporting evidence that proves that using heavenly, not earthly phenomena is the way the beginning of the year was determined in the past. This evidence conclusively points to the new moon nearest to the vernal equinox as being the first new moon of the festal year.

So, it is now time to bring this article full circle. At the very beginning of this study I set out with one goal in mind – unity. This unity was to be gained through a proper scriptural understand of what *aviv* truly means and how it affects the Wave Sheaf *omer* offering and the beginning of the year. Can we now understand this? Can we meet this goal? I believe we have. The following synopsis brings it all together.

By determining the scriptural meaning of *aviv*, we can clearly see that *aviv* does not have to be the state of the barley that will be harvest ready in two to three weeks. It can be earlier than that. The barley needs only to be old enough to be parchable and edible. Because of this fact, the Wave Sheaf *omer* offering can be made earlier. You see, there is no scripture that says that the *omer* that is waved has to be fully harvest ready barley. In fact, the scriptures actually say that there are several stages of barley present when the harvest begins, some of which are younger than harvest ready. All that is necessary for the Wave Sheaf offering is that it be of value to the priests. This fact allows the Wave Sheaf to be offered earlier, possibly up to a couple weeks. This, in turn, allows the full harvest to take place earlier and doesn't require that the farmers wait to reap their harvest. If *aviv* stage barley is all that is needed for the Wave Sheaf offering, not harvest ready barley, then one need not wait until *aviv* is seen before looking for the new moon of the first month. The only barley necessary for the offering is *aviv*.

Why is all of this so important? Well, the number one concern in most, if not all barley method adherents' minds is that using the new moon nearest to the equinox could mean that there

wouldn't be ripe enough barley for the Wave Sheaf offering. Showing that the stage of barley that is acceptable for the offering is up to two weeks earlier than normally understood allows this concern to melt away. The point is, there will be *aviv* stage barley by the time of the Wave Sheaf offering when using the new moon nearest to the equinox to start the year. Further evidence of this is found in the timing of the Hail Plague. They considered the state of the barley crop to be *aviv* at the very end of February and/or very beginning of March. Following the new moon nearest to the equinox allows the new year to start no earlier than March 7th, placing the Wave Sheaf on or after March 20th. This is well past the very beginning of March. March 7th is the earliest date that ensures that the day of Passover always falls in the new solar year.

When establishing a conclusion, we must always remember that there is absolutely no evidence or information in scripture that says that any earthly phenomenon is responsible for determining the start of the year. The growth stages of crops are earthly phenomena. What there is plenty of evidence for, however, is that the heavenly lights are responsible for determining the start of the year. The ancients did not have wrist watches or nuclear clocks like we do today. They only had the Sun, Moon, and stars. It would be absolutely naïve of us to think that the ancient Hebrews didn't have a good enough knowledge of the motions of these bodies to determine the start of the year by them, especially having lived among a culture that is famous for their ability to track the motions and timing of the heavenly bodies – the Egyptians. And all the more, their leader, Moses, was learned in all of the ways of the Egyptians. What better way to learn advanced observational astronomy?

The fact is, even our calendar today is founded upon the motions of the heavens. When the calendar gets out of alignment, it is once again adjusted such that the vernal equinox is in its proper season. There is absolutely no escaping the fact that the ancient cultures of the past used the Sun, more specifically the motion of the Earth around the Sun, to determine the start of their year, just as we still do today.

Concluding, the following are necessary to ensure that the proper new moon is selected for the new year.

- 1) A heavenly, not earthly, phenomena is used to determine its start
- 2) The Feast of Passover will occur in a new solar year, *shanah*, at its *tequphah*, otherwise known as the vernal equinox
- 3) The Feast of Tabernacles will occur at its *tequphah*, otherwise known as the autumnal equinox

The sole and solitary way to ensure that all of these criteria are met is to use the new moon nearest to the vernal equinox as the first new moon of the festal year. *Aviv* stage barley is necessary for the Wave Sheaf *omer* offering, but is not biblically necessary for the declaration or establishment of the new festal year. Since what the ancients considered to be *aviv* was available as early as the beginning of March in Moses' day, having the required *aviv* for the Wave Sheaf will never be a problem using this method, save some detrimental weather

conditions where no harvest at all is possible. This is especially true considering that the earliest the Wave Sheaf day could occur is March 21st.

So how does this bring unity? Well, as mentioned above, the barley method adherents' number one concern regarding the equinox method, that being that there wouldn't be ripe enough barley for the Wave Sheaf offering, dissolves knowing the information above. *Aviv* stage barley is perfect acceptable as an offering, fully ripe barley isn't necessary. This allows the start of the new year to come earlier because spotting the *aviv* before declaration of the new year isn't necessary. It also removes all of the unanswered barley issues mentioned above.

Let us use the heavenly lights for what they were created for – “...signs and for appointed times and for days and years.” (Genesis 1:14)

May יהוה Almighty continue to bless each of His children and lead them through His Spirit into all truth and unity through Messiah Yeshua! HalleluYah!