

United Church of God, *an International Association*

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## **Hebrew Calendar Appendices**

### *Doctrinal Study Paper*

*Approved by the Council of Elders April, 2023  
(Revised December, 2023)*

*These Appendices Provide Supplementary Information  
Pertaining to The Hebrew Calendar Summary.*

All scriptures are quoted from *The Holy Bible*, New King James Version, unless otherwise noted.

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## *Appendix A—The Calendar Must Accurately Place God’s Holy Days*

### **A.1—The importance of direct statements and direct implications of Scripture**

Questions regarding the Hebrew calendar and which is *the* truly “biblical calendar” are not new. Indeed, calendar disputes have occurred throughout history, and recorded at least from the time of the Second Temple before Christ,<sup>1</sup> as well as for many centuries after Christ.<sup>2</sup> As J.B. Segal notes, “There has been scarcely a single sectarian movement in Judaism that has not been associated with a desire to manipulate the calendar” (*Intercalation and the Hebrew Calendar*, 1957, p. 260). In reality, calendar control often amounted to ultimate religious control.

Research on the calendar is a very complex and controversial issue. There are many technical details to consider. The varied opinions are seemingly unending and are a source of extensive dialogue and debate. Over many years, several people and organizations have investigated the subject of calendric determinations and have reached various and differing conclusions. They range from wholly accepting the Hebrew calendar, or partially accepting it, or totally rejecting it by following only lunar observations (which themselves have various interpretations and disagreements), or even developing a completely different set of guidelines and recommendations to determine when to correctly observe God’s Holy Days.

The analyses of historical records or statements regarding the calendar have many diverse opinions and often contain contradictions, inaccuracies and varying biases depending on who writes that historical record or observation. To prove a researcher’s desired outcome, the researcher typically quotes those records that support his interpretation, whether they are historical writings, inscriptions, Hebrew sources (such as the Mishnah or its interpretations in the Talmud), secular sources and extremely technical details by astronomers or other authorities. Frequently, the material is confusing to the majority of readers. Yet, many of these diverse and often contradictory records and conclusions cannot be depended upon, when honestly looked at in the light of the Scriptures. So, a member of God’s Church needs to carefully discern the facts which match the scriptural record from those that do not.

In the study of any doctrine or biblical principle, a biblical student needs to faithfully receive the Word with all readiness of mind and search the Scriptures to discover the truth about the matter as the Christians in Berea did (Acts 17:11).

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<sup>1</sup> A calendar disagreement with the priests in Jerusalem caused the Essenes (100 B.C.—A.D. 100) to distance themselves from the Jerusalem priesthood to the Dead Sea (David Flusser, “The Spiritual History of the Dead Sea Sect,” *The Anchor Bible Dictionary*, 1989, Vol. 1, “Calendars”).

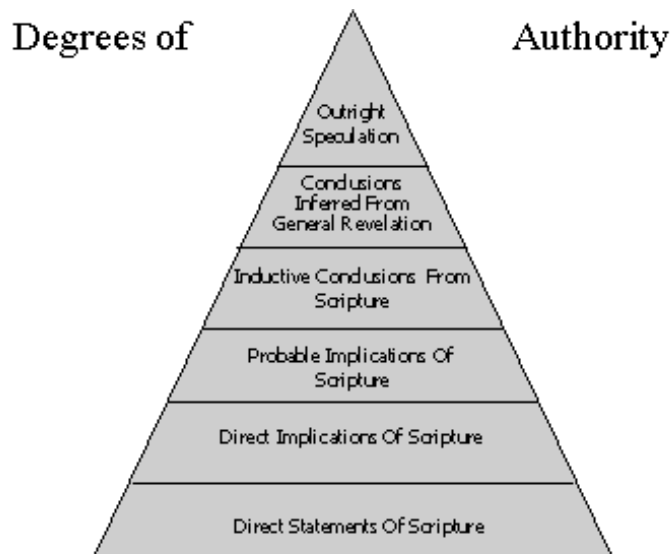
<sup>2</sup> “Under the reign of Constantius [II] (337-361), the persecutions of the Jews reached such a height that all religious exercises, *including the computation of the calendar*, were forbidden under pain of severe punishment.... The persecutions under Constantius finally decided the patriarch, Hillel II (330-365) to publish rules for the computation of the calendar, which *had hitherto been regarded as a secret science*” (*The Jewish Encyclopedia*, A Descriptive Record of History—Vol. 3, p. 500, emphasis added throughout).

In the years A.D. 601-800 various sects appeared in the East which did not accept the Hebrew calendar. One such sect was headed by Anan ben David, the founder of the Karaites, who reinstated the lunar observation-only approach of determining months as opposed to calendar calculations. It was not until the 1300s that they accepted the 19-year cycle, and then only in areas far away from Jerusalem (James Hastings, *Encyclopedia of Religion and Ethics*, 1910, Vol. 3, “Calendar”).

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When one reads a biblical text, one needs to be careful to not inject into it or infer a meaning based on one’s preconceived ideas (called eisegesis). One must be diligent to interpret a text by way of a *thorough analysis of its content and extract its intended meaning within its context* (called exegesis).

Examples of interpretation errors through eisegesis are to read a specific meaning into the Bible by, for instance, deducing *probable implications* or *induce conclusions* from a single or a few Hebrew words of Scripture (see “*Degrees of Authority*”<sup>3</sup> graphic). The outcome of these approaches is to state with great confidence that a specific scripture has a specific humanly reasoned meaning (eisegesis) in an attempt to prove their idea, theory or conclusion is true. This error is quite common in calendar studies and papers.



What needs to be done in any biblical research is to follow *basic rules of biblical interpretation* (hermeneutics), which include extracting or drawing from the text its intended meaning (exegesis). As such, the basis of our doctrinal studies needs to be on *direct statements of Scripture* and *direct implications of Scripture*,<sup>4</sup> thereby “rightly dividing the word of truth” (2 Timothy 2:15). We need to be careful we do not place any private interpretation into any teaching of Scripture (2 Peter 1:20).

If one wants to find a specific calendar which enables one to observe God’s Holy Days at His “appointed times” (Leviticus 23:4), one needs to search the Bible for such a system to *fix divisions of the year and arrange days, weeks and months in a definite order*, according to direct statements and direct implications of Scripture. Such a calendar has to accurately place God’s Holy Days at their appointed times (seasons). It must be in harmony with God-created astronomical events caused by movements of the “lights in the firmament of the heavens” which provide distinguishing marks (*signs*)

<sup>3</sup> The “degrees of authority” chart above (<https://bible.org/article/establishing-doctrinal-taxonomy-hierarchy-doctrinal-commitments>) describes “the degrees of authority necessary to develop theological statements” (Millard Erickson, *Christian Theology*, 1990, p. 65). It is commonly used to illustrate where one’s doctrines originate. The foundation of the pyramid is “*direct statement of Scripture*.” This is always the surest source of doctrinal teaching. As you work your way up the pyramid, the doctrinal position is further and further away from this simple approach.

<sup>4</sup> One common concern with many calendar documents is their use of “*probable implications of Scripture*” or “*induced conclusions from Scripture*.” That process puts meaning *into* the passage (eisegesis), rather than drawing *from* the passage (exegesis) an informed understanding of the text. Exegesis draws the meaning of a passage or its interpretation from “*direct statements of Scripture*” and “*direct implications of Scripture*” in their own context. The science by which the meaning, interpretation and application of the biblical text is determined follows basic and accepted rules of biblical interpretation (hermeneutics).

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and identify the *seasons*. They orderly divide *days and years* (Genesis 1:14). This calendar must also orderly divide the year into weeks and months.

While months, years and days can be directly related to astronomical events like the rotation of the Earth around its axis or a complete orbit of the Earth around the sun or of the moon around the Earth, it is not so with the weekly cycle. This seven-day cycle was set in motion by God at creation, and has *never been interrupted* since creation. Sacha Stern notes, “Indeed, we do not find any reference in any ancient source, whether Jewish, Christian, or other, to any dispute or division about the reckoning of Sabbath and the days of the week” (*Calendar and Community: A History of the Jewish Calendar 2nd Century BCE to 10th Century CE*, 2005, p. 107).

Further historical evidence shows God’s people have also been martyred since the time of Jesus Christ because of Sabbath observance. In fact, *time has never been lost* as far as the understanding of when the weekly Sabbath takes place. Also, no calendar adjustments or differences of opinion related to the beginning of a month or the beginning of a year have ever affected the weekly seven-day cycle. Any heresies about the *change of the Sabbath to Sunday* or that *the weekly cycle is restarted every new moon* is *absolutely false and cannot be supported by Scripture or history*.<sup>5</sup>

What about defining when the months actually begin? God does directly state in the Bible which days of the month are defined as days of annual *holy convocations* (Leviticus 23:7, 8, 21, 24, 27, 35, 36) and annual Holy Days. Any proclamation defining when the *first and seventh months* begin will affect these Holy Days. Considering that only God can sanctify (set apart for holy use) time,<sup>6</sup> the proclamation of the *new moon* is critically important, *particularly when it affects the first and seventh months of the year during which most of His Holy Days fall*.

Here are two basic reasons for calendar controversies:

1. **NEW MOON:** The Bible does *not* have *any direct statement or a direct implication* of the precise definition of how to determine and declare a specific day as the “*new moon*,” so that one may determine with all certainty every single time *when* the lunar month begins and *how* the beginning of the month is determined.
2. **NEW YEAR:** The Bible does *not* have *any direct statement or a direct implication* of the precise definition of the beginning of the “*new year*” (in religious terms), so the *intercalation* of an extra *month* to the year, or of *postponements* of an extra *day or days* to the year, may be implemented according to biblical injunction.

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<sup>5</sup> Refer to UCG’s study guide *Sunset to Sunset: God’s Sabbath Rest* for additional biblical evidence about the weekly Sabbath. As a matter of fact, the weekly cycle and the Sabbath of the seventh day have never been lost. Additionally, there is absolutely no biblical support nor any historical occurrences of the weekly cycle ever being restarted at the beginning of every new moon. The new moon is never stated in the Bible as a Holy Day or Sabbath, as some allegedly claim, except when it deals with the Feast of Trumpets (Leviticus 23:24).

<sup>6</sup> Only God can set something or someone apart for holy use (sanctify): “I am the LORD who sanctifies you” (Exodus 31:13; Leviticus 20:8; 22:32). God took the Levites instead of the firstborn of Israel, whom God had sanctified (Numbers 3:12-13). God’s presence made the ground holy when Moses stood at Mt. Horeb, the mountain of God (Exodus 3:1-5). God sanctifies time, for instance, the Sabbaths (Genesis 2:3; Ezekiel 20:12). God sanctifies faithful Christians by the sanctification of the Spirit (Romans 15:16; 2 Thessalonians 2:13; Ephesians 4:11-13). God sanctified His Word (the Holy Bible) and delegated to some of His servants (e.g., the prophets and the apostles) the responsibility to write it under His inspiration (Isaiah 8:16; 2 Timothy 3:16-17; Hebrews 1:2; 2 Peter 1:15; 3:16).

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Is the intercalation of the extra month, which causes a postponement of God’s Holy Days for 30 days during that year, done regularly or irregularly? What is the exact instruction that leaves no room for divisive disputes? Is the postponement of the year by one or more days biblical? What are the seasonal limits of intercalation and postponements for Nisan and Tishri, so God’s Holy Days can still fall within the God-appointed seasons?

In light of the lack of such *direct biblical statements* or *implications* of the precise definitions, we are left with the simple question of who has the God-given authority to make such decisions so that the beginning of the month and year may be proclaimed in accordance with God’s will. (This delegated authority is discussed in section 2, pages 2 and 3, of “The Hebrew Calendar Summary.”)

Indeed, it gets down to a question of *trusting those to whom God has given that authority*, which is nothing else than a matter of having faith in God directing His ordained leadership. This is the crux of the whole calendar matter.

### **A.2—Complexities of calendar considerations**

While most of those who design their own calendars claim their position comes from Scripture, it is apparent that *all must go outside the Bible* to construct *their* calendar since not all the specifications are found in the Bible. *The International Standard Bible Encyclopedia, Revised* states, “First, despite many references to different calendrical systems, the biblical texts do not provide a detailed, clear ‘calendar’ that will explain the calendrical science of ancient Israel at all times and in all places” (1979, Vol. 1, “Calendar,” p. 578).

Here are some of the complexities of the problem:

1. While we find the basic components of a calendar mentioned in the Bible—hours, days, months, seasons, and years—we do not have all the details defined or explained enough to fully develop a calendar. God did set “*lights* (plural) in the firmament of the heavens” to be “for signs, and for seasons,<sup>7</sup> and for days, and years” (Genesis 1:14, King James Bible) and He did give specific dates for keeping His Holy Days (Leviticus 23). Yet, we do not have *all the detailed rules for developing a complete calendar*. (For more information on God’s requirements for a calendar to accurately place God’s Holy Days, refer to Appendix A.3.)
2. *What exactly defines the new moon?* The new moon is accepted as the beginning of the month, but what determines or defines a new moon *cannot be accurately determined from the Bible alone*. For instance, is the new moon biblically determined by visible sighting of the first faint waning crescent moon? Or is it by the sighting of the waxing crescent moon, or by the actual conjunction of the sun, moon and the Earth? Is it by an adjusted average of the conjunctions

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<sup>7</sup> *Mo’edim* may be translated as “*appointed feasts*” (or just as “*feasts*”) or as “*appointed times*” (or just as “*seasons*”), depending on context as, for instance, in Leviticus 23:4. In the sentence “*These are the feasts of the LORD . . .*” it is translated as “feasts” in the KJV and NKJV or as “appointed feasts” in the Revised Standard Version, English Standard Version and New International Version. And in the sentence “. . . *which ye shall proclaim in their seasons,*” the latter part is translated as “appointed times” in the NKJV, “the time appointed for them” in the RSV, or as “seasons” in the KJV, Darby and the Septuagint. According to *John Gill’s Exposition of the Bible Commentary*, “. . . *which ye shall proclaim in their seasons*” refers to “the proper times of the year, the day or days, and month in which they are to be observed” as proclaimed by the priests.

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(*molad*)? If we determine the new moon by some form of sighting, where must that sighting be done from, according to the Bible? Or if we determine the new moon by an adjusted average of the conjunctions, how is that average calculated according to God’s Word?

After agreement is reached as to when the precise hour and minute of the declaration of the “new moon” is, when is the first day of the new month? Does it start “on the day of the *new moon*” declaration, or on the day after the declaration, particularly in the case where most of the day has passed, when the precise hour and minute of the sighting or declaration of the new moon is made?

For example, if the agreed declaration of the new moon is only in the afternoon before sunset, does the new month start *after* the sunset or on the current day that the sighting was declared? If it starts on the next day after sunset, isn’t that a man-made postponement? Does that postponement have God’s approval? Where, then, is that stated in the Bible? If one does not postpone, and if that day was the first day of the seventh month (the first of Tishri, the Feast of Trumpets), most of the Holy Day would have gone by when it is declared a Holy Day. In such cases, it would then be a Holy Day that we had not faithfully observed beginning from the previous sunset, nor had we properly prepared for it.

In fact, this is one of the rules of postponements of the Hebrew calendar, if the above-mentioned situation occurs on the first day of Tishri (the seventh month, the Feast of Trumpets), and only on that day. Those who follow the observation-only approach criticize this action, while they do the same thing. For instance, if the moon is obscured from view at sunset (e.g., the sky is overcast), or was witnessed by people in different locations *but not in Jerusalem*, or by various people in Israel *but only by one person in Jerusalem*, they postpone the month by a day if it occurs on the 29th day of the month. That may really be postponing a Holy Day.

Moreover, can one, using one’s own reasoning of *possible implications* or *induced meanings* of certain Hebrew words, conclude with certainty which is the first day of the month as *God* intends?

Because the Bible does not clarify these situations, different man-made interpretations and opinions have arisen and, in some cases, caused divisions. Which ruling is duly authorized by God? (For more information about the *new moon* refer to Appendix B.1.)

3. *From where does one declare the new moon?* Some few consider the new moon should be determined from one’s own geographical location, wherever that might be. Most advocates for an observed-moon calendar, however, use Jerusalem as the geographical location for observing the new moon. Nevertheless, to determine a purely *biblical* calendar, one has to admit that stating Jerusalem as the standard geographical site to observe or calculate the new moon *is not found in Scripture*. In fact, when God gave the Holy Days to ancient Israel at Mount Sinai, they were not in the land of Judah and would spend an additional 40 years in the wilderness. As a matter of fact, Moses never entered or lived in Jerusalem and Jerusalem would not be under Israelite control for several more centuries until the time of King David.



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The Karaite Yefet b. Ali stated: “The festivals used to be a matter of division and dispute, because in the days of the early sages they used to (make) sightings of the (new) moon, and those who *lived in cities on mountain tops* would sight it on its day (on the 30th day of the last month), and declare (the date of) the (subsequent) festival (accordingly), whereas those who *lived in cities in the plain* would sight it (the new moon) on the next day, and declare (the date of) the festival one day later, (in accordance with) when they had sighted (the new moon). And the people of Israel were distressed at this, because the festivals were distorted, some (observing them) on one day and others on the next” (Stern, p. 233).

This reflects an example of “every man [doing] what is right in his own eyes” (Deuteronomy 12:8; Judges 21:25), rather than following God’s instruction of the proclamation of His Holy Days. (For more information about challenges with the observation-only approach see Appendix B.2.)

4. *Has the lunar cycle changed from Moses’ day?* Some few believe that during the times of Moses and even as far as David’s time, the months were always exactly and consistently 30 days long, making the year 360 days long. Those few further state that only in the eighth century B.C. did the year change to what it is today, having approximately 365¼ days. (For more information about the length of the year during Moses’ time, refer to Appendix B.10.)
5. *Which month is the first month of the year?* The lunar month is about 29½ days long. Twelve lunar months add up to approximately 354 days, or a *lunar year*, which is approximately 11¼ days short of a *solar year* of an average of 365¼ days. Hence, a 13th month has to be added (intercalated) to the year every two to three years to keep God’s Holy Days at their appointed times in the proper seasons of the year. This is referred to as a “leap” or “pregnant” year. When do we add a 13th month, as it postpones the first month, Abib, which is to be the beginning of months (Exodus 12:2; 13:4)?

The term Abib means “ears” or “green ears of grain” in Hebrew, which ripen in early spring.<sup>8</sup> The precise definition of spring has generated differences of opinion in some “border-line” lunar years (i.e., years when the beginning of spring could fall in either of two lunar months). In those years, one also needs to ensure the Feast of Tabernacles is at the turn of the agricultural year (refer to Appendices A.8.2 and B.9).

There are no direct or implicit instructions in the Scriptures related to the limits of the seasonal cycle and the exact intercalation of a 13th month and its frequency.<sup>9</sup> Since at the end of every 19 years the sun and moon end up in practically the same position as 19 years before,<sup>10</sup> should

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<sup>8</sup> The first month (Abib) must coincide with spring (Exodus 12:2; 13:4).

<sup>9</sup> In some cases, the year was postponed by a month due to other “extraneous considerations, e.g., social, political or economic” (Stern, p. 47). “A special committee of the Sanhedrin, with its president as chairman, had the mandate to regulate and balance the solar with the lunar years. This so-called Calendar Council (*Sod Haibbur*) calculated the beginnings of seasons (*Tekufoth*) on the basis of astronomical figures which had been handed down as a tradition of old ... However, the astronomical calculation was not the only basis for intercalation of a thirteenth month ... The Talmudic sources report that the Council intercalated a year when the barley in the fields had *not yet ripened* . . . when the *winter rains* had not stopped, when the *roads* for Passover pilgrims *had not dried up* . . .” (Arthur Spier, *The Comprehensive Hebrew Calendar*, p. 1).

<sup>10</sup> This 19-year cycle is called the *Metonic* cycle, because it was first published, to our knowledge, by Greek astronomer Meton in 432 B.C. This cycle was, however, already known to ancient Babylonian and Chinese

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calendric calculations with the intercalation of a 13th month every two to three years consider this 19-year time cycle? Indeed, the Bible *does not* mention a 19-year time cycle, much less *when to start* that cycle, nor does it give the order of leap years. All this can cause division. (For more information about intercalation refer to Appendices B.5 and B.6.)

6. *Must the first month of the year always be after the vernal equinox?* The vernal (spring) equinox is generally referred to as the first day of spring. But is the vernal equinox the precise biblical definition of the beginning of spring? Scripture does not say. Some believe the whole month of Abib (or Aviv, also called Nisan—Esther 3:7) *must be after the spring (or vernal) equinox*. Must one declare *the whole* month of Abib to be in the spring, or *only most of* the month, provided the barley is ripe for the wave sheaf (Leviticus 23:11), or *only part of* the month? And what about the Feast of Tabernacles? Must it be after the *autumnal equinox*? All these issues have also caused division. (For more information about “the early spring harvest” and the “latter harvest at the turn of the year” (*tekufah* of Tishri), refer to Appendices A.8 and B.9.)
7. *How credible is the present Hebrew calendar since some allege it only came into existence in A.D. 358?* The Hebrew calendar was made public by Hillel II in A.D. 358,<sup>11</sup> although it “had hereto been regarded as a secret science” according to the *Jewish Encyclopedia* and the *Comprehensive Hebrew Calendar*.<sup>12</sup>

In A.D. 325, the Council of Nicaea under emperor Constantine introduced the pagan Easter tradition by stating that it was “. . . unbecoming in Christians to follow the usage of the unbelieving, hostile Jews, and ordained that Easter should always be celebrated on the first Sunday after the first full moon succeeding the vernal equinox (March 21), and always after the Jewish Passover . . . Henceforth the Quartodecimans were universally regarded as heretics and were punished as such” (Phillip Schaff, *History of the Christian Church*, 1987, Vol. 2, pp. 218-219). However, faithful Christians in the Church of God continued observing the Passover on Nisan 14 and got the date from the Jewish community’s then-proclaimed Hebrew calendar, probably through Jewish Christian brethren.<sup>13</sup>

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astronomers. It was known in China by about 600 B.C. and was called the zhang cycle (*The Mathematics of the Chinese Calendar*, <http://www.math.nus.edu.sg/aslaksen/calendar/calendar-talk-Chinese-handout.pdf>, Helmer Aslaksen, Department of Mathematics National University of Singapore; “Exploring Ancient Skies: A Survey of Ancient and Cultural Astronomy,” David Kelley, Eugene Milone, 10.1.4.1, “Chinese Time-Keeping and Calendar,” p. 327). For additional details about the 19-year cycle, refer to Appendix C.3.

It is possible that, “the sons of Issachar who had understanding of the times, to know what Israel ought to do” (1 Chronicles 12:32), means they had the understanding of the movement of the heavenly bodies, and thereby determined this heavenly pattern to keep God’s Holy Days at their appointed times. If so they would have “handed down as a tradition of old” (*ibid.*, p. 1) this knowledge for the priestly use.

<sup>11</sup> In A.D. 358 Hillel ben Yehudah (Hillel II), who held the office of *Nasi* (President) of the ancient Jewish Sanhedrin, promulgated the fixed arithmetic Hebrew calendar which had been used internally by the Sanhedrin as a guide for calendar decisions (Spier, p. 2; Isidore Singer, *The Jewish Encyclopedia*, 1992, Vol. 3: “History of the Calendar, Talmudic Period,” p. 500; Segal, p. 306; Dr. Irv Bromberg, *The Seasonal Drift of the Traditional (Fixed Arithmetic) Hebrew Calendar*, p. 8).

<sup>12</sup> Spier, p. 2, “a closely guarded secret”; Singer, p. 500, “a secret science.”

<sup>13</sup> “The fact that Christianity had never had religious fellowship with non-Christian Jews means the Jews referred to were Christian Jews. The reference to Jews instructing Christians how to observe the Christian Passover feast could only be applicable to Christian Jews, as non-Christian Jews did not tell Christians how to observe Passover. The fellowship from which Constantine wanted the church to withdraw was fellowship with Christian Jews” (*Passover Before Messiah and After*, Donna and Mal Broadhurst, 1987, p. 147.)

## *Appendix A—The Calendar Must Accurately Place God’s Holy Days*

8. *How credible is the Hebrew calendar, considering its history?* Bromberg records the following set of historical events regarding the Hebrew calendar:

“In Julian year AD 358 (mid fourth century) the Roman Emperor Constantius II [Constantine’s son], wanted to prevent Christians from determining when to celebrate [Passover] by asking Jews when will be the date of *Passover* [Nisan 14], so he outlawed new moon announcements [by the Jewish Sanhedrin] with the intent of quashing the Hebrew calendar. Hillel ben Yehudah [Hillel II], the second-last President of the Sanhedrin (his son was the last) responded by promulgating the fixed arithmetic Hebrew calendar,<sup>14</sup> which had probably been developed a century earlier in Babylonia by Amora Shmuel of Nehardea (“Shmuel the Astronomer”) and which had since then been used internally by the Sanhedrin as a guide for calendar decisions.

“Release of the fixed arithmetic calendar rules had to be carried out in a hurry, otherwise Jewish communities would not have known when to observe ritually significant days [God’s Holy Days]. When the Romans later realized that their attempt to quash the Hebrew calendar had failed, they raided the Sanhedrin headquarters and confiscated all property and records. After that raid the Sanhedrin ceased to exist . . .

“Constantius II was scathingly anti-Semitic in his conversations, orders, speeches and writings . . . which *lead* [sic] *to increasingly severe abuse of Jews* throughout the Roman Empire and beyond.

“On the other hand, Hillel ben Yehudah [Hillel II] may never have published and written documents outlining the rules of the fixed calendar, for the following reasons:

- “release of the calendar had to be carried out in a hurry, so there wasn’t time for scribes to copy and verify the many necessary copies;
- “he was afraid that such documents would fall into the wrong hands (e.g., the Romans);
- “he only intended the fixed calendar as a temporary measure, but documenting it would have made it seem permanent.

“So he sent out into the diaspora his *most knowledgeable* colleagues and students, entrusting them with the rules of the calendar, and compelling them not to reveal those rules to the Romans. The calendar became an orally transmitted tradition . . . Hillel ben Yehudah considered the promulgation of the Hebrew calendar to be so important that he traded off the future of the Sanhedrin in order to ensure the future of Judaism.

“Much later, *Rambam* [Rabbi Moshe ben Maimon, also known by his Greek name, Moses Maimonides (1135-1204), a most comprehensive source for Hebrew calendar criteria and arithmetic, published the details of the calendar because he was afraid that the rules would otherwise be lost or corrupted . . .” (Bromberg, pp. 8-9, online at <http://individual.utoronto.ca/kalendis/hebrew/drift.htm>).

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<sup>14</sup> In Jewish law (*halachah*), a ruling by any authority can only be changed or overruled by an authority of equal or higher authority. Therefore, the fixed arithmetic Hebrew calendar can only be changed by a present era or future Sanhedrin or a higher authority.

## ***Appendix A—The Calendar Must Accurately Place God’s Holy Days***

It is further alleged that the Hebrew calendar still evolved and the postponement rules were then added over the centuries, until possibly the 10th century,<sup>15</sup> purely for “Jewish convenience.” But is that really the case? (Refer to Appendix B.4—Historical events, quotes and comments—for additional information.)

9. *How credible is the Hebrew calendar since its calendric rules were not documented for centuries?* Since the Hebrew calendar’s history before A.D. 358 is vague and “regarded as a secret science,”<sup>16</sup> because its calendric rules were not precisely documented for centuries, and because some allege it evolved over the centuries, some critics state it could not be the calendar in existence during Christ’s time and therefore question its credibility.

What calendric rules were used during Christ’s time by the Sanhedrin (who regulated the calendar, and to which Christ never is seen to object), if any, or was it only a calendar based on observation? If the Sanhedrin used calendric rules, were they the same as the ones used by the Hebrew calendar as we have it today? (Appendices B.3 and B.4 address this question in greater detail).

10. *If one rejects the Hebrew calendar, which calendric approach should one follow?* From the above list of complexities, it should *not* be construed there are no scriptures that give information about *calendar requirements* to properly keep God’s Holy Days. Such scriptures *do exist* because God tells us very specifically which days of the month to observe His Holy Days on and He commands us to observe His Holy Days at their appointed times. As *The International Standard Bible Encyclopedia, Revised* notes, “Other systems . . . were surely also in use, but the evidence points to a fairly consistent usage of the Jewish calendar in the religious life of the people through the late O.T. and the N.T. periods” (1979, Vol. 1, “Calendar,” p. 578).

### **A.3—The spiritual meaning and intent of God’s Holy Days**

Considering we cannot derive a calendar directly from biblical instructions alone, what are the biblical requirements for man to create a calendar which accurately fixes God’s Holy Days and festivals according to God’s will and instructions?

In the first place, what are the spiritual guiding principles for God’s Holy Days? How should we decide on the elements of a calendar? Can we determine what calendric rules were in use during Christ’s time? Can we be confident we are using the same calendric rules as those in Christ’s day and, therefore, be assured time has not been lost?

God’s Festivals and His Holy Days (annual Sabbaths), as we will see, have a far greater *spiritual significance* beyond merely physically observing the moon.

#### **A.3.1—Why does God want us to observe His Holy Days?**

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<sup>15</sup> “If the calendar was a *gradual evolution* and not a ruling from the president of the Sanhedrin, then it would only be required to obtain consensus of respected rabbinic authorities in Israel to make changes to it” (Bromberg, p. 9).

<sup>16</sup> See footnote 12.

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God’s Festivals and His Holy Days, including the weekly Sabbath, reveal to us *His great plan of salvation*. It fulfills His great purpose of creating children of God in His family (Hebrews 2:10). God’s Holy Days, therefore, help us comprehend His *master plan*—the way He intends for us to become part of His family. They will forever be a memorial of these milestones in this awesome plan.

Notice this ultimate goal of God’s plan of salvation: “Behold, the tabernacle of God is with men, and He will dwell with them, and they shall be His people. God Himself will be with them and be their God” (Revelation 21:3).

Step by step, His Holy Days show us how this beautiful picture will become a reality. God has revealed to us in His Word that He created man in His image and likeness through the Word, who became flesh and is now Jesus Christ, the Son of God, the Living Head of the Church (John 1:1-3, 14; Colossians 1:16-18). God’s plan of salvation is initiated by Christ our Passover Lamb (1 Corinthians 5:7) and the festivals and Holy Days which follow the Passover further expound on this plan. (Refer to our study guide *God’s Holy Day Plan: The Promise of Hope for All Mankind* for a full explanation of this significance.)

### **A.3.2—When does God want us to keep His Holy Days?**

The obvious answer to the question above is, “at their appointed times” (Leviticus 23:4), from the Hebrew *mo’edim*,<sup>17</sup> because they are “a shadow of things to come” (Colossians 2:16-17).

The God-ordained biblical festivals and Holy Days fall during three seasons of the year—the early spring harvest, the late spring harvest, and the end of the agricultural year with the autumn harvest—in the land of biblical Israel. These days portray God’s plan to have a great *spiritual harvest* of sons and daughters of God who are given eternal life in the last days, as spoken by Jesus Christ (John 4:35-38; 5:39-40) and prophesied in the book of Revelation (Revelation 14:15-16).

These festival observances serve as timeless reminders of how God’s plan will give *eternal life* to mortal man. Our Creator will bring His plan to fruition, in spite of man’s choices and actions which have consistently led to separation from God, suffering and death (Proverbs 14:12; 16:25; Isaiah 59:1-8; Jeremiah 10:23). These festivals reveal the unfolding of God’s plan for humanity and how He will establish His Kingdom on Earth. This is the *good news* of the Kingdom of God, the gospel Jesus Christ preached (Mark 1:14-15).

In Leviticus 23, we find a listing of God’s festivals. After discussing the weekly Sabbath, the text describes special annual celebrations, such as the Feast of Unleavened Bread and the Feast of Tabernacles—the word “Feast” in these instances (verses 6, 34, 39, 41) is translated from the Hebrew *chag* or *hag*, meaning a “*festival, a festival-gathering*” (*Strong’s Concordance* H2282).

God also instructed Moses to make it clear these are “*the feasts of the LORD*” (verses 2, 4, 37, 44). In these instances, the word translated “feasts” is the Hebrew *mo’edim* (and not the word *chag* or *hag*), which means “*appointed times; sacred seasons*” (*Strong’s Concordance* H4150).

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<sup>17</sup> See footnote 7.

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These are *appointments with God at their appointed times* (verse 4) which He wants us to attend and where He is spiritually present.

### **A.3.3—The biblical requirement for a calendar**

The observance of God’s weekly Sabbath and His annual Holy Days are holy convocations. In other words, they are assemblies set apart by God with important *spiritual significance*. They point us to God’s plan of salvation, provide us an opportunity to learn godly fear (Deuteronomy 14:23) as well as to stir up love and good works (Hebrew 10:24-25).

Thus, the basic biblical requirement for a calendar is to ensure we celebrate a feast with God (Leviticus 23:39, 41; Deuteronomy 16:15; Heb. *chag* or *hag*) and to meet with God at preset *appointed times* (*mo’edim*) on specific calendar dates. These appointments with God are *holy convocations* (sacred assemblies) which the priesthood is to *proclaim* (Leviticus 23:4). We all are commanded to attend these weekly and special annual convocations with God at their appointed times.

As early as Genesis 1:14, God points to a *spiritual priority* in setting up such a system to fix days and years: “Let there be lights<sup>18</sup> in the firmament of the heavens to divide the day from the night; and let them [plural] be *for signs and seasons, and for days and years*.” These “lights” are positioned and move according to God’s design in such a controlled, precise and accurate way in relation to the Earth to make possible the physical conditions on Earth to support physical life. But they are also to be “*for signs and seasons, and for days and years*.”

Note that this sentence construction implies an order of *spiritual priority*:

- First, “*for signs and seasons*” and
- Secondly, “*for days and years*.”

We will now briefly analyze this important priority.

#### **(1)—Why *signs and seasons* first?**

In Genesis 1:14, “*signs*” was translated from the Hebrew *owth*, which means “*a distinguishing mark*” (*Strong’s Concordance* H0226). These represent special, noticeable markers in the heavens, which are obviously related to the motions of the sun, moon and stars as visible from the Earth. Such visible *astronomical* phenomena are, for instance, solstices and equinoxes of the solar year, as well as solar and lunar eclipses. Both of these sets of signs were and are carefully observed and measured.

Solar eclipses are fairly numerous, about two to four per year, but the area on the ground covered by totality is only about 50 miles wide. Eclipses of the moon by the Earth’s shadow are actually less numerous than solar eclipses,<sup>19</sup> and number on average two per year. Each lunar eclipse is visible from over half the Earth at the same time in various time zones.

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<sup>18</sup> Note that it states “lights.” It is plural, namely the heavenly bodies, such as the sun, moon and stars, and their relative movement. It is not referring to the singular “light” of the new moon crescent as some claim.

<sup>19</sup> Refer to NASA.gov for more information on eclipses.

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From all these astronomical events, such as solstices, equinoxes, lunar phases, eclipses and other stellar markings, astronomers may determine the beginnings of the solar seasons which affect agriculture (Deuteronomy 33:14), the length of the mean lunar month and the mean astronomical conjunction of the Earth, sun and moon.<sup>20</sup>

In Genesis 1:14, the term “seasons” was translated from the plural *mo’edim* of the Hebrew word *mow’ed* and can also mean “*appointed times* or *sacred seasons*.” Several modern translations give this meaning, “And God said, ‘Let there be lights in the firmament of the heavens to divide the day from the night; and let them be for signs and for *appointed times* and for days and years’” (Jubilee Bible 2000); “Let there be lights in the vault of the sky to separate the day from the night, and let them serve as signs to *mark sacred times*, and days and years” (NIV, 2015); and *mo’edim* is translated as “religious festivals” (GNB).

Notice how it was translated in Leviticus 23, where God’s feasts and Holy Days are listed in order: “Speak to the children of Israel, and say to them: ‘The feasts [*mo’edim*] of the LORD, which you shall proclaim to be holy convocations, these are My feasts [*mo’edim*] . . . These are the feasts [*mo’edim*] of the LORD, holy convocations which you shall proclaim at their appointed times [*mo’edim*]’” (Leviticus 23:2, 4).

This seasonal focus of God’s festivals accurately portrays the *spiritual intent and meaning* which foreshadows *God’s great plan of salvation for mankind* (Colossians 2:16-17). (For a further discussion on “signs,” see Appendix C.2.)

### **(2)—Why *days and years* next?**

Continuing with the analysis of Genesis 1:14, it says, “Let there be *lights in the firmament of the heavens to divide the day from the night* . . . [let them be] . . . *for days and years*,” that is, let them exist to effectively determine when certain days (God’s Holy Days) arrive and when the years begin. These elements are required for a calendar. This determination of days and years is *second* in priority after the seasons of the year to finely calibrate God’s “Sabbath-rests” within the spiritual intent and meaning of God’s feasts at the appointed times [*mo’edim*] as shadows of God’s spiritual plan of salvation (Colossians 2:16-17).

Consequently, the placing of God’s Holy Days in a calendar must *first be at their appointed times (seasons)* and then *on the days determined by God’s commandments*. That includes the correct day of the month as well as the proper sabbatical observance of those annual Holy Days which are also stipulated by the law to be “*Sabbath-rests*” (Leviticus 23:24, 32, 39). Lengths of years are also to be considered to maintain the calendar with these days in their appointed seasons.

Therefore, to accurately fulfill those commandments, the calendar needs to be *calibrated*:

- 1) “*for signs and seasons*” defining the beginning of the religious year (Nisan or Abib) to ensure the calendar remains in its “appointed times [seasons]” in accordance to the law (Leviticus 23:4);

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<sup>20</sup> The true conjunction may precede or follow the mean conjunction by several hours, according to the time of year, since the motions of the Earth, sun and moon are elliptical and irregular. Some mathematicians note this elliptical irregularity is fairly important, mathematically speaking, to ensure its stability.

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- 2) “*for days and years*” to ensure proper observance of God’s annual Holy Days which are defined as “*Sabbath-rests*” in the law (Leviticus 23:24, 32, 39). Those specified as Sabbath-rests point to future events, which will bring a sabbatical “*rest* for the people of God” at Christ’s return (Hebrews 4:9).

Adjustments in the Hebrew calendar, such as intercalation and postponements, affect the “days and years.” (Refer to Appendix C.2 to see how a postponement of any number of days, be it an intercalation of 30 days and/or a postponement of a day, will affect that whole year.)

In this way, the Holy Days are not actually postponed. These adjustments are required as discussed in Appendices C.2 and C.3 so that God’s Holy Days are kept in the proper time of year according to the spiritual principles required by God’s law, foreshadowing things to come (Colossians 2:16-17). (Refer to Appendices B.5 and B.6 for additional information about intercalation and Appendix C.4 for additional information about postponements.)

### **A.4—Some of the lunar and solar considerations**

There are basically four units of time measurement in developing a calendar: *day, week, month and year*. God starts *the day* at sunset (Leviticus 23:32 and Genesis 1) and God sanctified the *weekly Sabbath* at creation (Genesis 2:2-3). The first two units of time, the day and the weekly cycle, were defined by God at creation, and require no further discussion as far as the objectives of this paper. (Refer to footnotes 5 and 6 which address the heresies regarding the change of the Sabbath to Sunday or the false notion that the weekly cycle is restarted every new moon.)

The *month* and *year* are the two time-measurement units which require further consideration to develop a calendar compliant with God’s guidelines. These two units of time are the main ones discussed in this study paper.

- *How do we know when a month starts?*

God’s months begin with the new moon, but *the Bible does not exactly define the term “new moon.”* Therefore, the interpretation of when is *the day of the new moon* varies between people. The new moons are never defined as Holy Days, except for the first day of the seventh month which is the Feast of Trumpets (Leviticus 23:24).

Determining the beginning of the month is complicated because the lunar month, demarcated by the elliptical orbit of the moon around the Earth, *varies* in length. More to the point, a lunar month is not an exact whole number of days such as 29 or 30 days. The *mean* (average) length of the “synodic month” (lunar month) is 29.53059 days (29 days, 12 hours, 44 minutes, 2.8 seconds). Obviously, a month in a calendar cannot be 29½ days in length. Therefore, generally speaking, any lunar calendar will alternate six of the months of the year with 29 days with six months of 30 days. In an “observation-only” method, the generally accepted approach is, if the new moon has not been observed on the 29th day, the 30th day is automatically the beginning of the next month, even if the lack of observation was merely due to weather conditions. Note that such a postponement is man-made, as it is nowhere specified in the Bible. (For more information, refer to Appendices B.1 and B.2.)



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- *The calculation of the year is also complicated.*

The *mean* (average) tropical year is approximately 365 days, 5 hours, 48 minutes and 45 seconds. But a year with 12 lunar months (that is, with six months of 30 days and six months of 29 days) has a total of only 354 days. So, a calendar with merely 12 lunar months per year would slip behind *in the solar-based seasons* by a little over 11 days in a year, or more than a month (more than 33 days) every three years.

So, *intercalation* (adding a 13th month of 30 days every two to three years) is absolutely necessary to keep God’s Holy Days at their appointed seasonal times, and *postponements* are equally necessary to add the extra few days to make up any remaining difference of days. This combination of intercalation and postponements are adjustments to keep the Holy Days carefully synchronized within a 19-year cycle and also ensure that God’s spiritual intent of the fall festivals pictures the *Sabbath-rest* to come. (For more information refer to Appendices B.5, B.6, C.2 and C.4.) Otherwise, after three years God’s Holy Days would be creeping back by 33 days and 66 days in 6 years. This would effectively mean that the Passover would creep into winter over a period of time, and the Holy Days would not stay in their seasons, as commanded. It is possible to determine by the chronology in Ezekiel 1-8 that a 13th month was being added.<sup>21</sup> The question is how and when, as such instructions are *not* specified in the Bible. (For more information about intercalation refer to Appendix B.5.)

### **A.5—The proclamation of God’s Holy Days and the creation of a calendar**

It is important to understand that the proclamation of God’s annual Holy Days is different than the proclamation of the weekly Sabbath. The weekly cycle was initiated during the creation week and the seventh day was proclaimed by God as the Sabbath. It was *sanctified* (set aside for a special purpose; made holy) by God at creation (Genesis 2:3). It is to be remembered and observed every seventh day thereafter. That cycle *has never been lost* (refer to footnote 5). Our duty is to *remember to keep it holy* (Exodus 20:8).

However, according to God’s decree (see section 2, pages 2 and 3 of “The Hebrew Calendar Summary—*Who is to proclaim God’s Holy Days at the proper times of the year?*”), the annual Holy Days were set aside (*sanctified*) by God and proclaimed by the duly authorized priesthood (Leviticus 23:2, 4, 21, 27, 36-37). God delegated to the priesthood the responsibility of making those proclamations by observing God’s created astronomical movements of the “lights in the firmament of the heavens to divide the day from the night” as “signs” or distinguishing markers of the “seasons” (appointed times). (As mentioned previously in Appendix A.3.)

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<sup>21</sup> Ezekiel 1-8 can indicate biblically that a 13th month was intercalated. In Ezekiel 1:1-2 Ezekiel received a vision on the fifth day of the *fourth month* in the fifth year of King Jehoiachin's captivity. Ezekiel stayed with the captives by the River Chebar, astonished, for seven days (Ezekiel 3:15), bringing him at least to the 11th day of the *same month and same year*. In Ezekiel 4:1-11, God tells Ezekiel to lay on his left side for 390 days and then on his right side for 40 days—a total of 430 days. After Ezekiel *completed those 430 days*, we see him back in his home the following year in the fifth day of the *sixth month* (Ezekiel 8:1). That is a year and two months later, which would only be 414 days later from the fifth day of the fourth month of the previous year, considering that the lunar months have on average 29½ days. A full 430 days can only be fulfilled if there was a 13th month intercalated (414 + 30 = 444 days) and it allows for the seven days (430 + 7 = 437 days) he sat astonished by the River Chebar. This careful analysis of Ezekiel 1-8 likely indicates that intercalation is biblical and it was practiced in the Old Testament times.

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When there was a need to make a priestly decision about any matter that affected the observance of God’s law, such as when to adjust the beginning of a year by either 30 days or a single day, and thereby affecting the day when a Holy Day would occur, the priesthood was to pronounce a judgment. In such cases the people were to do according to the pronouncement and not to act presumptuously (Deuteronomy 17:9-12). (For more information, refer to section 2, pages 2 and 3 of “The Hebrew Calendar Summary.”)

After centuries of observing these signs, it is reported that the “Jewish authorities of the 2nd century B.C. [which by Christ’s time were called the Sanhedrin] had achieved precision in their computation of the luni-solar calendar” (Segal, p. 296). (Refer to also Appendix B.4.2 for additional historical quotes and proofs.)

The priesthood, as God’s delegated authority, calculated the “days and years” and were to proclaim the new moons<sup>22</sup> and the months, including God’s annual Holy Days, in advance. This action of fixing the beginning, length and the division of the year, and arranging days, weeks and months in a definite order, is the creating of a calendar.

This calendar was proclaimed by the “so-called Calendar Council (*Sod Haibbur*) [which] *calculated the beginnings of the seasons (Tekufah) on the basis of astronomical figures* which had been handed down as a tradition of old” (Spier, p. 1). The calculation based on annual *seasons* is required because God’s festivals and Holy Days are memorials of major milestones in God’s plan of salvation which are symbolically linked to the harvest seasons. This science, as mentioned before, was a “closely guarded secret” by the priesthood<sup>23</sup> until Hillel II released these calculations and proclaimed what is now called the Hebrew calendar in A.D. 358 (see Appendix C.1). This was due to the Roman authorities’ religious persecution against “Judaizing” faithful Christians after the Council of Nicaea’s ruling in A.D. 325 (refer to Appendix A.5.4—The Romans attempt to change times and law).<sup>24</sup>

Here is God’s wisdom and foresight in revealing to God’s people the way to determine God’s Holy Days during the many decades that followed after the Levitical priesthood was essentially dispersed and disbanded. This was done “until such time as a new, recognized

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<sup>22</sup> Segal, p. 260, footnote 5: “We are told, indeed, once fixed, the day of the new moon remained valid even if it had been fixed under duress” (Tos. Rosh haShanah iii. 1. Cf. JT Shebhicith x. 2. (fol. 39c) and Rosh haShanah ii. 8 (fol. 58b)): “If they have sanctified and afterwards the witnesses are found to be deliberately false, the sanctification is nevertheless valid.”

<sup>23</sup> Spier, p. 2; Singer, p. 500; Stern, p. 189.

“According to Bornstein, the calendar calculation may have remained secret till as late as mid-10th c., even after the R. Saadya-Ben Meir controversy,” Bornstein (1922b) 286; Jaffe (1931) 55-6 (ibid., footnote 142).

Segal, p. 260: “The secrets of intercalation were handed down by the Nesi’im from father to son. (So BT Rosh haShanah 25a: ‘Rabban Gamaliel said to the sages, “The following formula has been handed down to me from the house of my father’s father: Sometimes the moon traverses the sky . . .”’ cf. JT Rosh haShanah ii. 7 (fol. 58b). They were not known outside the group of three or five or seven “wise men,” (Mish. Sanhedrin i. 2. See BT Megillah 12b: “Who are the wise men? The Rabbis...Those who know the times” [1 Chronicles 12:32], that is, who know how to declare years embolismic [intercalated years] and fix new moons.” Cf. also BT Sanhedrin 110a: “The most distinguished men of the community...were skilled in declaring years embolismic and fixing new moons,” and further BT Kethuboth 112a, JT Rosh haShanah ii. 6 (fol. 58b), and parallel passages).”

<sup>24</sup> Also refer to Appendix B.4.4.

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Sanhedrin would be established in Israel” (Spier, p. 2).<sup>25</sup> This proclamation by the duly authorized Jewish priesthood enables God’s people around the world to keep God’s Holy Days on the same date, ensuring the unity of faith and practice. Note that Christ never contradicted the Sanhedrin’s calendric authority on their proclamations of the Hebrew calendar, which was then a closely guarded secret.

Some scholars, in an attempt to disprove that the Hebrew calendar was promulgated by Hillel II, claim this Roman persecution to be only a theory. As Stern notes, “The traditional and generally accepted theory accounting for the institution of the fixed calendar is what I shall call the ‘*persecution theory*’ (p. 212).

However, *The Jewish Encyclopedia* states: “The persecutions under Constantius finally decided the patriarch, Hillel II, (330-365), to publish rules for the computation of the calendar, which had hitherto been regarded as a secret science” (Singer, p. 500). We in God’s Church are well aware that this persecution during this era was mainly aimed at Sabbath and Holy Day-keeping Christians.

That external pressure from the Roman authorities, compounded by all the *internal infighting among the Jews due to their diverse views of the calendar*, compelled the Jewish leadership to publish the closely guarded rules in an attempt to strive for calendric unity among the Jewish communities.<sup>26</sup>

### **A.5.1—Diversity of calendars among the Jews**

Stern confirms this diversity of calendars among the Jewish community, stating, “The Jewish calendar could vary significantly from one community to the next” (p. 79).

In Constantine’s report of the decisions of the Council of Nicaea (A.D. 325), he referred to the Jews’ diversity in celebrating the Passover, by saying “they celebrate Passover twice in the same year” (pp. 80-81). Stern comments: “The correct interpretation of Constantine’s letter, in my view, follows precisely from this point. By stating that the Jews ‘celebrate Passover twice in the same year’, he simply meant that different Jewish communities observed the festival at different times, and hence, that the Jews *as a whole* could be seen to observe it, every year, on two occasions. The context of the council of Nicaea makes this interpretation all the more plausible. One of the stated purposes of the council of Nicaea—indeed, its main purpose—was to achieve the unity of the Church” (p. 83).

Stern continues, “Thus Constantine’s letter can be taken as further confirmation of the diversity that existed, in the early fourth century, between the calendars of various Jewish communities . . .” (p. 85).

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<sup>25</sup> “Nahmanides went as far as suggesting that Hillel sanctified in advance all new moons to occur between his time and the end of history” (Stern, p. 176, footnote 84).

<sup>26</sup> “In the fourth century, however, when oppression and persecution threatened the continued existence of the Sanhedrin, the patriarch Hillel II took an extraordinary step to preserve the unity of Israel. In order to prevent the Jews scattered all over the surface of the earth from celebrating their new moons, festivals and holidays at different times, he made public the system of calendar calculation which up to then had been a closely guarded secret” (Spier, p. 2).

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Stern adds, “All the evidence suggests, in fact, that Diaspora communities took charge of their own calendar, *without ever referring to Palestinian calendric authority* [the Sanhedrin’s Calendar Council]” (p. 83).

It appears by rejecting the Palestinian calendric authority, *the diaspora communities resorted to local visibility*. Visibility of the new moon varies “considerably from place to place because of different geographical co-ordinates, weather conditions, and human observational accuracy. As a result, different Jewish communities are likely to have observed the festivals at slightly different times” (p. 119).

This divergent outcome by observation-only followers was described by Karaite Yefet b. Ali as follows: “The festivals used to be a matter of division and dispute, because in the days of the early sages they used to (make) sightings of the (new) moon, and those *who lived in cities on mountain tops* would sight it on its day (on the 30th day of the last month), and declare (the date of) the (subsequent) festival (accordingly), whereas those who *lived in cities in the plain* would sight it (the new moon) on the next day, and declare (the date of) the festival one day later, (in accordance with) when they sighted (the new moon). And the people of Israel . . . were very distressed at this, because the festivals were distorted, some (observing them) on one day and others on the next” (p. 233).<sup>27</sup>

Without a “single, identical calendar in all Palestinian and Diaspora communities . . . calendric unity would have been [*and is*] virtually impossible. Different communities would have sighted the new moon at different times, resulting in festivals being observed on different days. . . . *The institution of a fixed calendar would have made it possible for all Jewish communities to observe the festivals on exactly the same days. Indeed, the same calendric calculation could be carried out by any Jewish community, anywhere in the world*” (p. 232).

Time and again, we see the Jewish community *not obeying* God’s instructions and, in this instance, *not obeying* the instruction of Deuteronomy 17:10: “Then you shall do according to what they declare to you from that place that the LORD will choose. And you shall be careful to do according to all that they<sup>28</sup> direct you” (ESV).

God’s disagreement with *the independent spirit of the dispersed community* to disregard “what they declare to you” by the duly appointed authorities, is clearly evident in verse 12: “Now the man who acts *presumptuously* and will not heed the priest who stands to minister there before the LORD your God, or the judge, that man shall die. So you shall put away the evil from Israel.”

### **A.5.2—Jewish communities in the dispersion continued to disobey God’s instructions**

The instruction to observe God’s annual Holy Days is to keep them on *very specific days* of the months, and for *the whole assembly of God’s people to keep them on the same day* (Leviticus 23). Due to the discrepancies in the determination of the new moon and of when to intercalate a 13th month, different communities or fellowships took on themselves to do what seemed to be

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<sup>27</sup> See also Appendix A.2 (3).

<sup>28</sup> The priests, the Levites, and the judges (Deuteronomy 17:9).

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*“right in their own eyes,”* and division resulted. A similar independent spirit still persists today. *Only when His people respected (and do respect) those whom God appointed as His representatives, was there (and is there) peace and unity among His people.*

As we have seen, the calendar which places God’s annual Holy Days in their seasons, was *not* proclaimed and set apart at Creation. This is different from the weekly Sabbath cycle, which God proclaimed and set apart (or sanctified) at Creation.

Just like God assigned people during the time of Moses with specific skills to build the tabernacle, it is possible God imparted the “understanding of the times” to the sons of Issachar (1 Chronicles 12:32)<sup>29</sup> and to any others that He may have chosen to give those special skills. With that understanding of the times by observing the signs of the lights in the firmament, the priesthood was commissioned by God to proclaim God’s Holy Days at their appointed times, according to the commandment from year to year. They were also to declare any required adjustments (of 30 days or any additional days), as God’s delegated authority for the nation (Leviticus 23:4; Deuteronomy 17:8-13).

*The beginning of the seasons* (namely the beginning of spring on the *first* month, and the beginning of autumn on the *seventh* month) are of paramount importance, as they have a direct connection to the spiritual significance of God’s Holy Days.

Indeed, God’s annual festivals fall on specific dates of the *first* month (as well as counting 50 days from the wave sheaf during the first month) and on specific dates of the *seventh* month. These are the two decisive months, around *the beginnings of the seasons*, from which God’s feasts and annual Holy Days can be determined.

### **A.5.3—The calendar proclamation during Christ’s time was calculated**

During the period of the Second Temple (515 B.C. to A.D. 70), which encompassed the time of Christ, the authority to proclaim God’s feasts and the respective annual holy convocations at their appointed times was vested in the Sanhedrin. They were a group of authorized and ordained *priests* (along with others), in whom many could claim a chain of ordination going back to Aaron, the original high priest.

“A special committee of the Sanhedrin, with its president as chairman, had the mandate to regulate and balance the solar with the lunar years. This so-called Calendar Council (*Sod Haibbur*) *calculated the beginnings of the seasons (tekufah)* [mainly the first and seventh month as they affect God’s Holy Days] on the basis of *astronomical figures* which had been handed down as a tradition of old” (Spier, p. 1).

Those whom God had given special skills to do so (perhaps such as the sons of Issachar) developed careful astronomical calculations over the years to determine seasons—that is, calendric intercalation. They did so by observing the astronomical signs (such as eclipses, equinoxes,

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<sup>29</sup> “The children of Issachar, which were men that had understanding of the times, to know what Israel ought to do” (1 Chronicles 12:32). “The tribe of Issachar is associated, in rabbinic literature, with calendar reckoning” (Stern, , p. 178). See *Targum* ad loc., and *Pesiqta de-Rav Kahana* 1 (ibid., footnote 93).

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solstices, etc.) caused by the movements of sun, moon and stars (lights in the heavens) in relation to the Earth (Genesis 1:14).

As we have read, the Talmud confirms astronomical calculations: “Everyone knows that intercalation *depends on computation*” (BT Rosh haShana, 7a). “We have a clear indication that Jewish authorities of the 2nd century B.C. had achieved precision in their computations of the luni-solar calendar” (Segal, p. 296; BT Sanhedrin 12a; Sanhedrin 1. 2 (fol. 18d)), see also Appendix B.5.)

Over time, the “method of intercalation was based no longer on astronomical observation but *on computation*—[which] was probably in use among the Jews in second century B.C. They had certainly acquired proficiency in its use before the destruction of the Temple in AD 70” (Segal, p. 284).

At the time of Christ, *the Sanhedrin allowed other postponements of the first month* for obvious reasons such as “when the barley in the fields had not yet ripened.” But they also allowed postponements of the year for other reasons which may not be obvious in our more modern societies, such as “when the winter rains had not stopped, [and] when the roads for Passover pilgrims had not dried up . . . The Council on intercalation *considered the astronomical facts* [note the consideration of “astronomical facts” involves calculations] together with the religious requirements of Passover *and the natural conditions of the country*” (Spier, p. 1; Segal, p. 284; see also footnote 9).

Apparently, Jesus did not object to these calendric measures because we see Him keeping the Holy Days on the dates the Jews did,<sup>30</sup> which was at the time the Sanhedrin proclaimed them. Hence, He did not object to the operation of the Sanhedrin in this matter.

“The *computation* of the synodic month<sup>31</sup> at the time of the Talmud is *certain*. Already in the second century Rabbi Judah the Nasi treated witnesses concerning the new moon with studied *indifference* as, indeed, Rabbi Aqiba had before him.”<sup>32</sup> “Rabbi Yohanan declared in the following century: ‘One does *not pay over-much attention to witnesses* concerning the new moon.’”<sup>33</sup> This assertion also confirms that *a fixed calendar was already in use* by the Sanhedrin as early as the second century, *well before* Hillel II proclaimed it publicly in the fourth century (A.D. 358).

Stern states, “The existence of a *fixed calendar* in the late Amoraic period [circa A.D. 358] is *confirmed beyond doubt* in a passage of the Palestinian Talmud” (p. 171). Stern quotes Rabbi Yose’s comments regarding *Mishna Megillah* 1:2: “‘*If (Purim) occurs on Monday*’ . . . does not apply; and ‘*if (Purim, 14 Adar) occurs on the Sabbath*’ . . . (also) does not apply. (For) if it occurs on Monday, the great fast [Day of Atonement] will be on Sunday, and if it occurs on the Sabbath, the great fast will be on Friday.” Stern adds in footnote 67 that “R. Yose’s view that the occurrence

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<sup>30</sup> Except the Passover. Jesus Christ observed the Passover at the beginning of the 14th as commanded (Leviticus 23:5) while the Jews killed the Passover lamb on the afternoon of the 14th and ate the Passover meal at the beginning of the 15th, as most still do today.

<sup>31</sup> The time between two successive occurrences of an astronomical new moon or full moon is called a synodic month, and equals 29.5306 days (29 days, 12 hours, 44 minutes, 3 seconds).

<sup>32</sup> Segal, p. 288; BT Sanhedrin 10b on Mish. Sanhedrin 1.2; BT Rosh haShanah 20a. The rules of the rabbis on the fixing of the new moon are admirably set out by Zuckermann, op. cit., 7ff. Mish. Rosh haShanah i.6.

<sup>33</sup> Segal, p. 288; JT Shabbi’ith x.2 (fol. 39c), Rosh ha Shanah iii.1 (fol. 58c).

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of 14 Adar [Purim] on the Sabbath is ‘impossible’ [not permitted] is reiterated in *Y. Megillah* 1:4 (70b).”

The above is very significant because it means:

- 1) There was a fixed number of days between Purim (in the 12th month) and Atonement (the following year’s seventh month), and therefore confirms the existence of *a fixed calculated calendar*;
- 2) That *postponement rules were already in place* to ensure that the Day of Atonement would not fall on a Friday or a Sunday.

So, the notion that postponements only came into existence in later centuries, or as late as in the 10th century A.D., is also incorrect. In Stern’s own words, “the existence of *a fixed calendar* in the late Amoraic period [c. A.D. 358 when Hillel II proclaimed it] *is confirmed beyond doubt*” (p. 171).

Any calendric adjustment the Calendar Council of the Sanhedrin would proclaim affected the whole year *by as much as a whole month* (intercalation rules) *or by as little as a day* (postponement rules). In both cases, it considered the “astronomical facts together with the religious requirements” (Leviticus 23:2, 4, 21, 27, 36-37; Numbers 10:8, 10) and therefore it did *not* truly postpone God’s Holy Days. Furthermore, *it was done by those God authorized to do so*. If there was a situation when a judgmental decision had to be made regarding an intercalation or postponement, God authorized the priesthood to do so (Deuteronomy 17:9-12).

### **A.5.4—The Romans attempt to change times and law**

*“He shall speak pompous words against the Most High, shall persecute the saints of the Most High, and shall intend to change times and law. Then the saints shall be given into his hand for a time and times and half a time” (Daniel 7:25).*

During the Council of Nicaea (A.D. 325), Rome “*intended to change times and the law*” as prophesied. Sunday was decreed as the day of weekly worship instead of the Sabbath, and Easter Sunday was imposed instead of the Passover of the 14th of Nisan.<sup>34</sup> (This attempt is also discussed in greater detail in the UCG study guides *Sunset to Sunset: God’s Sabbath Rest and Holidays or Holy Days: Does It Matter Which Days We Observe?* The outcome was the persecution of Sabbath keepers and those who kept God’s Holy Days.)

Roman persecution in the years A.D. 351-352 led to the defeat of a major revolt by the Jews, causing many Jewish communities to be destroyed. “In Julian year 358 AD (Hebrew year 4119) the Roman Emperor Constantius II (who converted the Roman government and society to

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<sup>34</sup> “The Paschal Controversy was ‘settled’ at the Council of Nicaea—not theologically, but politically. It was settled by eliminating one of the viewpoints. Church law had been laid down. No longer could any Christian celebrate Christian Passover the way John, Philip and other Jews had celebrated it. All were required to celebrate on the Sunday following the 14th. Once-respected ‘Quartodecimans’ who persisted in the belief handed down to them from the Apostles, would henceforth be called heretics. Their way of celebrating on 14th Nisan, which had once been accepted was now forbidden” (Broadhurst, *op. cit.*, p. 148).

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Christianity), wanted to prevent Christians from determining when to celebrate Easter [Passover of Nisan 14] by asking Jews when will be the date of *Passover*, so he outlawed new moon announcements with the intent of quashing the Hebrew calendar” (Bromberg, p. 8).

In A.D. 358, “when the oppression and persecution threatened the continued existence of the Sanhedrin, the patriarch Hillel II took an extraordinary step *to preserve the unity* of Israel. In order to prevent the Jews scattered all over the surface of the earth [and by implication also God’s Church] *from celebrating their new moons, festivals and holidays at different times, he made public* the system of calendar calculation which up to then *had been a closely guarded secret*” (Spier, p. 2).

The public proclamation of the Hebrew calendar calculations, previously kept secret by the priesthood, made it possible for those Jews submissive to the Calendar Council decisions, and the persecuted little flock of God’s Church, wherever they were, to observe God’s Holy Days in unity.

### **A.6—Hebrew calendar objections**

Some disagree with the position that the majority of the modern era Church of God fellowships has followed, which is to accept the calculated Hebrew Calendar as the calendar that identifies when God’s Holy Days are to be observed. Their major objections are:

#### ***Calendar objection #1: The Hebrew calendar was not used at Christ’s time***

The first objection of those who disagree with the Hebrew calendar is that *the current Hebrew calendar is not the calendar that was used at Christ’s time*, because it was only made public in A.D. 358. The fact that the currently used Hebrew calendar was only *made public* in A.D. 358 is explained above (Appendix A.5).

As was demonstrated above, allegations stating that calculations were only introduced when the calendar was made public, and that during the second temple times (the time of Christ’s ministry) the Sanhedrin’s proclaimed calendar was by observation-only, cannot be substantiated, because “the system of calendar calculation” was, up to A.D. 358, a “closely guarded secret” (Spier, p. 2). We have also shown that the calendar proclaimed by the Sanhedrin in Christ’s time was subject to calculations, intercalations and postponements (refer to Appendix A.5.3).

The history of the calendar is further complicated because Jewish communities were often not in accord and there were many diverse opinions, such as still exist today (refer to Appendices A.5 and B.4 to see some examples of ongoing Jewish diversity in calendric opinions).

Consequently, any claims about what happened to the Hebrew calendar between the time of Christ and the time it was made public is a subject of many debates. Some refer to quotes discrediting the approach of the calendar being calculated during the time of Christ and until it was made public in the fourth century. However, there are also many quotes, which often are not mentioned, indicating the calendar *was* calculated during that period. Some of those often-omitted quotes were already mentioned above and additional quotes are listed in Appendix B.4.2. Indeed “profane history only contradicts itself, is inaccurate, cannot be depended upon, and HAS NO



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AUTHORITY WHATSOEVER. There is no Bible authority for any of it” (Herbert W. Armstrong, *Good News* letter, “*How to Figure Passover*,” July 1940, p. 3).

God says that at the time of the end, the saints are “those who keep the commandments of God and the faith of Jesus” (Revelation 14:12; see also Revelation 12:17). So, we need a way of knowing when to keep God’s commandments regarding His Holy Days in the midst of this diversity of opinions.

We are thus left with the choice that the major Church of God fellowships in the modern era have adopted. This follows Paul’s injunction to the Romans: “What advantage then has the Jew, or what [is] the profit of circumcision? Much in every way! Chiefly *because to them were committed the oracles of God*” (Romans 3:1-4; see also Romans 9:3-5). This does not imply that God gave the Jews a calendar but that God did instruct the priesthood to proclaim the Holy Days (Leviticus 23:4). Indeed, many Jewish communities have not believed or followed the priesthood’s decisions. God calls them presumptuous with their spirit of independence (Deuteronomy 17:9-12). Paul states: “Will their unbelief make the faithfulness of God without effect? Certainly not!” (Romans 3:3-4).

God in His faithfulness has left His disciples with the means to be able to observe His Holy Days in peace and unity. It is through observing the current Hebrew calendar.

Nonetheless, it is incumbent upon us to “prove all things” (1 Thessalonians 5:21, KJV). (In Appendix D, “*God’s Holy Days in Christ’s Time*,” we look at Christ’s age and how the different calendars match the gospel record.)

The conclusion reached in Appendix D is that the *Hebrew calendar with its postponements best fits the Gospel record*.

### ***Calendar objection #2: Postponements were not in existence at Christ’s time***

Some of those who say that the current Hebrew calendar is not the calendar used at Christ’s time (allegedly because it was only made public by Hillel II in A.D. 358) add an additional objection. *They claim the current Hebrew calendar evolved from the fourth century until around the 10th century A.D., during which period the postponement rules were gradually added.* (In Appendix A.5.3, we have addressed this objection, and it is covered in further detail in Appendix C.3.)

### ***Calendar objection #3: The Hebrew calendar is a rabbinical calendar***

A few others allege Hillel II didn’t even exist, labeling the calculated Hebrew calendar as a *rabbinical* calendar which evolved from the fourth century through to the 10th century. The “*rabbinical*” label, which is intended to be derogatory, is added to differentiate the calculated Hebrew calendar from an observation-only calendar, which is then labeled to be the true “*biblical*” calendar. Various quotes from the Mishna, the Talmud or various other Jewish controversies are used to confirm this point of view (though other quotes from these and other secular sources contradict these often-used quotes). (Refer to Appendix B.4.)

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This objection of a “biblical” versus a “rabbinical” calendar is addressed by analyzing the various “non-biblical” determinations which must be made in developing a workable calendar:

- 1) Human decisions must be made regarding the number of complexities and concerns related to new moon determination. (Refer to Appendices A.2 and B.2.)
- 2) The actual day of the week and month in which the new year begins will sometimes need to be postponed with the addition of a 13th month to the year before. (Refer to Appendices B.5 and B.6.)
- 3) Someone must make such decisions. But who has the *God-given authority* to make such calendric decisions? (Refer to Appendix A.7.)

### **A.7—Minds and hearts tested**

Notwithstanding all the objections mentioned above, divergent opinions continue and it appears no form of discussion about the calendar will ever be resolved to everyone’s agreement. So why is there such a great degree of calendar diversity and controversy? There are various reasons, including the following:

- It is possible God has designed the division of the number of days in a month and in a year to be *fractional* numbers to test our hearts and minds (Jeremiah 17:10). This series of fractional numbers of days creates a situation in which many of the specific details required to make a “biblical calendar” are “not recorded in the Bible, which gives us absolutely nothing more to go on . . . [and] history is vague on the subject, shedding little light which can be asserted and trusted” (Armstrong, *ibid.*).

- Then, there is a great *deceiver*, Satan (Revelation 12:9), who wants to deceive people by changing or confusing the times and years in whatever ways possible (Daniel 7:25). He does not want people to peacefully and unitedly keep God’s weekly and annual Sabbaths.

- Furthermore, our own carnal minds are by nature hostile towards God (Romans 8:7), and our hearts are deceitful above all things (Jeremiah 17:9). Also, some suppose religion is based on personal gain or control (1 Timothy 6:5; Titus 1:11). According to the *Encyclopedia Britannica, New Edition*, in its article “Judaism,” a cause to this diversity and controversy is the desire of *religious control*. Segal notes, “There has scarcely been a single dissenting movement in Judaism that has not been associated with a desire to manipulate the calendar” (p. 260).

This is the crux of the matter: *To whom has God delegated the authority to proclaim a calendar to fix God’s Holy Days at their appointed times?* Do we trust God to be able to tell us when to keep His festivals, even though we receive the calendar through human leaders who are subject to imperfection?

The reality is Christ *never* commanded God’s Church to develop a calendar. Rather, His instructions to His disciples are to “observe all things that I have commanded you” (Matthew 28:20). Christ always pointed to the law and its spiritual intent. So, the question comes back to this: Who has the delegated authority by God to make those decisions regarding the calendar as it affects God’s Holy Days?

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As discussed in Appendix A.5, God has delegated to the Aaronic priesthood the right to proclaim His annual Holy Days. This delegation was exercised by the Sanhedrin during Christ’s time, and Paul indirectly referred to such delegation when he said, “unto them were committed the oracles of God” (Romans 3:2). The Sanhedrin’s Calendar Council was responsible for the regular proclamation of the Hebrew calendar, and when under Roman pressure it became necessary to publicly release these calculations, which had been kept secret, the President (Nasi) of the Sanhedrin (Hillel II) did so as a matter of urgency, considering it to be a temporary measure (see Appendix A.2 (8), and also Appendix A.5.) Because the public proclamation of the Hebrew calendar was rushed and intended to be temporary, its details were not documented. As an unintended consequence, many *diverse opinions* evolved over the years and *many disputes occurred and do occur* about the calendar. Later, at the end of the 12th century, *Rambam* (Rabbi Moses ben Maimon, also known as Maimonides [1135-1204]), published the details of the Hebrew calendar which is in use today. (Refer to Appendices B.4.5 thru B.4.7 for discussion of a few of those disputes, which are considered important by calendar historians.)

The fact is, God’s Church was never commissioned by Jesus Christ to develop a different calendar. As explained previously, the early New Testament Church followed *the then-proclaimed* Hebrew calendar as set out by the Jews.

God has delegated to His priesthood, according to the order of Aaron, the proclamation of His Holy Days, and the modern era Church of God has followed *the same example* as the early New Testament Church by accepting *the then-currently proclaimed* Hebrew calendar as the one which correctly places God’s festivals and Holy Days.

Additionally, the Church of God, under the High Priesthood of Jesus Christ, of the order of Melchizedek, is allowed to make judgmental decisions as far as how to observe God’s festivals (Matthew 18:18; Colossians 2:16-17; Hebrews 7:11-28; 13:7, 17). In fact, the Church of God leadership in all major Church of God fellowships in this modern era has made the same decision to follow the *currently existing* Hebrew calendar to determine when to observe God’s Holy Days.

It now becomes a matter of *trust* and *faith* in God’s appointed leadership.

Even though God has delegated to His priesthood the proclamation of His Holy Days, and the Church is in its full rights to make judgmental decisions on the matter, we as individual members are still expected to prove all things (1 Thessalonians 5:21).

### **A.8—God’s Holy Days calendar and the seasonal harvests**

#### **Signs and seasons**

The first consideration in setting up the calendar to correctly place God’s Holy Days is “*signs and seasons*.” (For more information, refer back to Appendix A.3.3 (1)—Why *signs and seasons* first?)

The calendar *must have its average yearly length approximate the mean length of a solar year*, as the seasons are determined by the solar year. As a result, various *calibrating* (or

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synchronizing) *adjustments have to be made* to the lunar-based calendar, such as adding a whole month or a day or two.

Adding an extra 30-day 13th month to the year (*intercalating*) every two or three years, or adding a day or two to the year (*postponing*), may be viewed by some as “*postponing*” or “*moving*” the Holy Days. But in reality, this addition of a 30-day month, or an extra day or two to the luni-solar year, actually synchronizes the luni-solar year to the mean length of the solar year, and thus calibrates the calendar to the seasons within a 19-year cycle. In this way, the Hebrew calendar conforms to God’s biblical principles, which state that God’s Holy Days must be observed at their appointed times or seasons (Leviticus 23:4).

To understand how intercalation, for instance, affects the whole year, let’s look at one example. If a year were to be intercalated, and if in that year the Feast of Trumpets falls on a Thursday by intercalating a 30-day month, the Feast of Trumpets would now be *postponed by four weeks and an additional two days later in the week*. This means due to this “*intercalation*” of an extra 30-day month, we have in effect a *postponement*, even though, technically, it is not called a postponement. The Feast of Trumpets, in this case, would be postponed by four full weeks, and two days in the weekly cycle, to a *Sabbath* (from a *Thursday*). So, adding a 13th month in a year affects (by postponing) *all* the annual Holy Days for that year. This is the identical effect of postponing one day in the year. (For further detail on Hebrew calendar rules, refer to Appendix C.4.)

### **Days and Years**

The Bible states in Genesis 1:14 that *the lights in heaven* are for determining “*days and years*.” A second biblical consideration in setting up a calendar to correctly place God’s Holy Days has to do with both “days and years.” Calibrating the year to ensure God’s “Sabbath-rests” (Leviticus 23:24, 32, 39) are properly kept is achieved when the rules of postponement of the Hebrew calendar are applied. (Refer back to Appendix A.3.3 (2)—Why *days and years* next? and Appendix C.4).

When the Feast of Trumpets (day one of the seventh month) is postponed by one or two days, according to the Hebrew calendar, the actual day of the week of all the annual Holy Days *for that year* starting from Nisan (the first month of that year) are postponed by one or two days. (Except for Pentecost which is counted from the wave sheaf.) In other words, both intercalation and postponements of *days do the same thing to the whole year*—they move all the Holy Days for the whole year by one or two days further down in the week.

It can be said that *intercalation* is a calibration of the calendar by *30 days at a time* every two to three years, because the lunar year is a little *over* 11 days shorter than the solar year. (Refer to signs and seasons, Appendices A.3.3 (1) and A.4.)

Additionally, *postponements* finely calibrate the calendar by a *day at a time* to account for the remaining difference of days from the lunar year to the solar year, and ensure that the annual Holy Days of the seventh month, which are uniquely defined by the law as *Sabbath-rests* (Leviticus 23:24, 32, 39), are treated as Sabbaths just like the weekly Sabbath. (Refer to Appendices A.3.3. (2); C.2 and for postponements, C.4).

## ***Appendix A—The Calendar Must Accurately Place God’s Holy Days***

The combination of *intercalation* and *postponements*, together, ensure that the Holy Days are kept at the proper appointed times, sabbatical requirements are adhered to and the years are accurately synchronized within the 19-year astronomical cycle (Appendices B.5 and B.6).

As a result, whether a year *is intercalated* or not by adding or not adding a 13th month, or whether a year *is postponed* or not by adding or not adding one or two days, may cause division. This division occurs because some people will agree with the Hebrew calendar intercalation or postponement rules and some will not agree.

It is also important to note that the observation-only method *also* causes postponements and disagreements among those who follow this methodology. One such example is if the crescent of the moon was not observed on the 29th day of the month, because of cloud cover in Jerusalem, even though the crescent moon should have been seen. In that case, some who follow the observation-only methodology will postpone the day of the new moon by one day, to the 30th day, while some may decide not to do so. If that postponement, due to weather conditions, was done on the Feast of Trumpets, in effect it would have postponed the Holy Days for the month, namely the Feast of Trumpets as well as all the festivals and Holy Days of the seventh month.

### **A.8.1—The early spring harvest**

Intercalation, defined as the addition of a 13th month, is determined by considering first the “lights in the firmament of the heavens” as “signs” to set God’s appointed times according to Genesis 1:14 (see further discussion in Appendix A.3.3).

The beginning of the religious year, as defined by the Bible, is during the month of Abib.<sup>35</sup> It says, “This month *shall be* your beginning of months; it *shall be* the first month of the year to you” (Exodus 12:2). The Passover, followed by the Feast of Unleavened Bread, is during the first month of the year, at the time of the early grain harvest during the spring<sup>36</sup> (in the area of the Promised Land, and not, for instance, in the southern hemisphere). “Observe the month of Abib, and keep the Passover to the LORD your God, for in the month of Abib the LORD your God brought you out of Egypt by night” (Deuteronomy 16:1).

The declaration of the first month of spring (the new religious year) can also lead to some additional calendar complications, as briefly mentioned before (refer to Appendix A.2 (5) and (6)).

Some of the questions are:

- Must the beginning of the first month be after the spring (vernal) equinox? In other words, must the whole month be in the spring, after the spring equinox? (The equinox is the time when the sun crosses the equator, making the length of the day and night nearly equal).
- Or can the beginning of the first month be before the equinox, provided God’s Feast Days (Passover and Unleavened Bread) fall after the equinox (in the spring)?

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<sup>35</sup> For a further discussion on Abib and declaration of a new year, refer to Appendix B.6.

<sup>36</sup> Spring is referred to as it relates to the Promised Land, which is located in the northern hemisphere. Those living in the southern hemisphere must keep God’s Holy Days at the same time of the year as those in the northern hemisphere, even though it is not spring in the southern hemisphere. “Out of Zion shall go forth the law, and the word of the LORD from Jerusalem” (Isaiah 2:3).

## ***Appendix A—The Calendar Must Accurately Place God’s Holy Days***

- Or must the beginning of the first month be only when the first green ears of the barley harvest appear?
- Or is it when the barley is ripe (in a state of maturity) for harvesting? (Leviticus 23:10-11).

The ripening of the early barley and the appearance of the new buds in the trees are closely linked to the timing of the *spring equinox*.<sup>37</sup> They are *re-affirmations* that spring is in the air.

The month of Abib (also called Nisan in Esther 3:7) is during the beginning of spring in the area of the Promised Land (and Jerusalem), when the barley is “Abib,” that is, it is in a state of maturity or ripe. But must the whole month be in spring, or partially in spring, or it does not matter because what matters is whether the barley grain is ripe?

Logically, the barley needs to be *in a state of maturity* to be harvested. The command is no newly harvested barley grain could be *eaten* until the wave sheaf offering was carried out on the morrow after the weekly Sabbath during the Feast of Unleavened Bread (Leviticus 23:14-17). Immediately after the wave sheaf offering, on the first day of the week, symbolic of the first work day, the ripened barley could be eaten. This was possible because this Feast of Unleavened Bread was “*in its season from year to year*” (Exodus 13:7, 10).

(For more information about when the barley harvest occurs during the month of Abib, when exactly the month of Abib occurs, about the spring equinox and the early spring harvest spiritual implications, refer to Appendix B.6—Intercalating a 13th month—observation or calculation?)

### **A.8.2—The latter harvest at the turn of the year**

The other seasonal requirement for setting up the calendar to correctly place God’s Holy Days as defined in the Bible is to keep “the Feast of Ingathering [the Feast of Tabernacles] *at the end of the year*” (Exodus 23:16). Exodus 34:22 says we are to observe “the feast of Ingathering *at the turn of the year*” (Darby’s Literal Translation).

Some infer from this verse that all the days of the Feast of Tabernacles *must* take place *after* the autumnal equinox. Since there are years on the Hebrew Calendar when some days of the Feast fall on or before the autumnal equinox, they conclude the Hebrew Calendar must be wrong. But what does this verse really say? Does it state that the Feast of Tabernacles can only occur *after* the autumnal *equinox*? The autumn (fall) equinox usually occurs on *September 22 or 23*, but it can very rarely fall on September 21 or September 24.

It should be noted that the English translations of Exodus 34:22 do *not* use the word “equinox” nor do they use the preposition “after.” The literal translation of this verse would be: “Observe (*asah*) feast (*chag*) weeks (*shabua*) firstfruits (*bikkuwr*) wheat (*chittah*) harvest (*qatsiy*) feast (*chag*) ingathering (*acyph*) year’s (*shaneh*) end (*tekufah*).”

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<sup>37</sup> It is true in post-biblical Jewish writings, *tekufah* is used for equinox. But that does not address the usage of the word in the Hebrew of the Bible. Refer to Appendix B.7 for more information on *tekufah*.

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Literally this verse tells us that we are to observe the Feast of Weeks with the firstfruits of the wheat harvest, and the Feast of Ingathering at the end of the year. The key word in Exodus 34:22 is the Hebrew word *tekufah*.

It is true, in *post-biblical* Jewish writing, this term is used for equinox. But this does not address the usage of the word in the Hebrew of the Bible.

Even if one imposes the term *equinox* in place of *tekufah*, there is still *no concrete evidence for concluding this verse requires the Feast to begin after the autumnal equinox*. There is no such requirement in any biblical verse. The Feast of Tabernacles, according to the Hebrew calendar, occurs at the turning of the agricultural year (at the end of summer/beginning of fall in the northern hemisphere). This would fulfill the verse even if we conclude *tekufah* means equinox. The Feast is to be observed “at” or “around” or “near” the year’s end (*tekufah*)—all of the above terms are permissible.

The Hebrew word in Exodus 34:22 for “*at the end*” or “*at the turn*” of the year is *tekufah*. *Young’s Literal Translation* renders it as “the feast of in-gathering, *at the revolution* of the year” and the *2003 Holman Christian Standard Bible* translates it as “the Festival of Ingathering *at the turn* of the [agricultural] year.” This “*at the turning* of the year” is *not a specific day* in the lunar month, but *a period of time* when one agricultural year “*turns*” into another.

The nature of the word *tekufah* in Exodus 34:22 means, “circuit of time or space, a turning,” according to *Strong’s* number 8622. So the Feast of Tabernacles will be “at the turning of the year,” a period of time, a turning, when the agricultural year turns into another, which is *around* the date of the *fall equinox* (in the area of Jerusalem).

It is important to note Scripture divides the year *by the harvest cycle—not by equinoxes and solstices*. The Roman view of seasons is based on equinoxes and solstices, and even though they are closely linked to the seasons, the actual days of the equinoxes and solstices are *not* the basis of God’s meaning for His Holy Days.

(For more information about the use of the word *tekufah* in the Bible, including a comparison of the other three places where *tekufah* is used (1 Samuel 1:20; 2 Chronicles 24:23; Psalm 19:6), about the month of Tishri, the autumnal equinox and the fall harvest season’s spiritual implication, refer to Appendix B.8.)

### **A.9—The calendar must place God’s Holy Days according to scriptural guidelines**

It’s vital to keep in mind the purpose of the timing of God’s festivals: *The scriptural reason* why God’s Holy Days and festivals need to be around harvest seasons in the area of Jerusalem is because *they point to God’s great plan of salvation in bringing about a great spiritual harvest of human beings*.

They indicate the spiritual meaning for the Passover, for the Days of Unleavened Bread in the early spring, and for the feast of Pentecost towards the end of spring, and have been symbolically fulfilled during Christ’s first coming and the events following His resurrection.

## ***Appendix A—The Calendar Must Accurately Place God’s Holy Days***

Additionally, the Holy Days *at the turn* of the agricultural year (at harvest time, late summer to early autumn), point to future fulfillments related to Christ’s second coming. They symbolize the wonderful *Sabbath-rest* to come, and the great *harvest of humanity* when all people then alive will learn God’s ways and will have the opportunity to be transformed into spirit beings. These autumn (fall) Holy Days are shadows of things to come, where the Earth will enter a millennial age of worldwide rest, followed by periods of opportunity and judgment (Colossians 2:16-17; Hebrews 4:9; Revelation 20). Humanity will at last be restored to a right relationship with God (Isaiah 11:9-10).

God’s Holy Days and festivals are maintained in their harvest seasons year by year by adding a 13th month to the year every second or third year. The annual “*Sabbath-rests*” as defined in Leviticus 23 (verses 24, 32 and 39), are properly respected by allowing time for the physical preparation of the Sabbaths (Exodus 16:4-5) due to the addition of an extra day or two to a year, as necessary, according to the postponement rules.<sup>38</sup>

In summary, the basic biblical requirement for a calendar is to use “the lights in the firmament of the heavens” to place God’s Holy Days correctly, fulfilling their *spiritual significance*, far beyond the purely physical observation of the moon. Thus, God’s festivals must fall in the seasonally appointed times (the “*signs and seasons*” of Genesis 1:14). The additional “*days and years*” (Genesis 1:14) synchronization of the calendar with the solar cycle enable the *days* of the autumn (fall) festivals to accurately picture the *Sabbath-rest* to come (see Appendices A.3 and C.3), and the *years* to stay in the seasons over the decades and centuries. Lastly, the calendar needs to be proclaimed by the God-appointed priesthood (Leviticus 23:4).

Beyond that, the Bible does not directly state or even imply many of the additional details and definitions of *specific* terms. Further details required for a biblical calendar, such as when is the new month, whether the new moon must be on the “visibility of the lunar crescent,” when to add an extra month or day to the new year, and whether the *whole* first month of the year needs to be in the spring or not, are not defined or spelled out in the Bible.

Because these additional calendar details mentioned above, among others, are not directly stated in the Bible, people have made assumptions, or have looked for historical quotes to support their views, or have induced technical explanations of a Hebrew word to prove their calendric conclusions. In other words, they have done eisegesis instead of exegesis.<sup>39</sup>

So how does the priesthood determine a new month? When is the new moon? When is the new year? The next Appendix addresses these questions.

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<sup>38</sup> For more information regarding postponements, see Appendices C.4 and C.5.

<sup>39</sup> Refer to the chart about degrees of authority in Appendix A.1.



## Appendix B—The New Moon

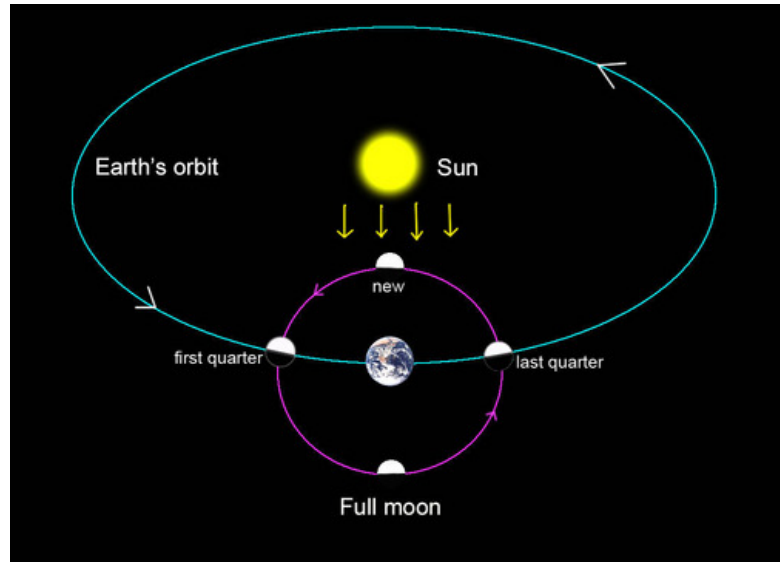
### B.1—When is the new moon?

To begin with, we cannot find a verse in Scripture with a direct statement, or a direct implication, which instructs us to use the visible crescent of the moon as the monthly marker.<sup>40</sup>

What actually is the new moon? To be technically correct, “The new moon is the moon’s phase when it is in conjunction with the sun so that its dark side is toward the earth” (*Merriam-Webster Dictionary*, “new moon,” 10th edition, 1999). In other words, its illuminated half is facing away from the Earth, and therefore the part that faces us is totally dark. In the vernacular, people refer to the new moon when one is actually seeing “the *thin crescent moon* seen shortly after sunset for a few days after the actual occurrence of the new moon phase” (*ibid.*).

The moon’s phases are determined by its position in orbit relative to the sun and Earth. In order for the moon to be a *new moon*, it needs to be between the Earth and the sun. For us to look at a new moon, we would necessarily be looking at the sun as well.

On the day of the “new moon,” *the moon rises when the sun rises, and it sets when the sun sets* and is *not* visible at night *at all*. It crosses the sky *with* the sun during the day. In other words, during the new moon phase, the moon is in the sky during the daytime. We cannot see the new moon from Earth, *except* during the *solar eclipse*. Solar eclipses always occur during the astronomical new moon conjunction, but not at every conjunction.



The closest you can get to “*seeing*” the *new moon phase* is either a “*waning crescent moon*” right before the sun rises (early dawn), or the “*waxing crescent moon*” right after the sun sets (early dusk or twilight).

The last visible “*waning crescent moon*” occurs between a day to two days *before* the astronomical new moon conjunction and is seen *before sunrise*. This is because at the *waning crescent phase*, the moon rises in the eastern sky immediately *before* sunrise, and then the moon sets in the western sky immediately *before* sunset. As a result, right *before sunrise*, in early dawn, the slim crescent moon rises in the east. The waning crescent is therefore visible before the new moon occurs and during the dawn of the morning. As *the beginning of the day is at sunset*, (God

<sup>40</sup> Refer to “degrees of authority chart” in Appendix A.1 and footnotes 3 and 4.

## *Appendix B—The New Moon*

counts days from sunset to sunset; Genesis 1:5; Leviticus 23:32), the waning crescent *has no real impact on the calendar*, besides giving a fairly close indication that the “new moon” is about to occur and that the “new moon phase” is starting.

The “*waxing crescent moon*” becomes visible between a day to two days *after* the astronomical new moon conjunction. The moon then sets after the sun sets. This is because at the *waxing crescent phase*, the moon rises immediately *after* the sun rises, and sets immediately *after* the sun sets. It then cannot be seen for the rest of the night. Note that this waxing crescent visibility is dependent on weather conditions, such as when there are no clouds in the area of observation of the crescent moon.

The moon’s crescent will typically be visible *only very briefly after sunset* as the sun’s glare fades into dusk (twilight). “It is only in this short period of time, when the sun is ‘isolated’ from the moon and deep enough below the horizon, that the sky becomes sufficiently dark for the thin moon crescent to become visible against its background” (Sacha Stern, *Calendar and Community*, p. 100). However, depending on the age of the new moon (that is, the number of hours since the astronomical lunar conjunction) and other atmospheric conditions, the waxing crescent moon may become *visible* in the day sky. “With some variations, the *waxing crescent Moon* rises in the daytime before noon and becomes visible in the day sky. It gets more visible around sunset but normally sets before midnight.”<sup>41</sup>

“The time interval between conjunction and first evening of visibility is often as long as one day (24 hours); it ranges, however, at Mediterranean latitudes between a minimum of about 15 hours and a maximum of well over two days. This variation depends on earthly co-ordinates and the relative positions of sun and moon at sunset. First sighting of the new moon can also be further delayed, sometimes considerably, by weather conditions” (ibid.). The thin *crescent moon*, informally referred to as the *new moon*, is seen *for a few days* after the actual occurrence of the new moon phase.

### **Visibility of the first sliver of the crescent moon**

Due to the fact that the *astronomical* new moon is *not* visible in the sky and when *the waxing crescent moon appears*, *it is seen for a few days*, we need to ask where in the Bible and when does God pinpoint the actual first day of the new month? In other words, exactly “*when is the new moon*” in God’s eyes?

That is one of the major causes of the calendar complications and disagreements. The Bible does **not** define the term *new moon*. Many say that the new moon is “when *the first sliver* of the *waxing crescent* appears,” that is, *when we can briefly see* the first light on the moon appear, typically at dusk. After that the moon sets, soon after the sunset, and for the rest of the evening we have a moonless sky. However, *the first sliver of the waxing crescent moon may be seen at different days* by different people, depending on where they are, their experience level, the age of the new moon (from the astronomical conjunction), weather conditions (even if just some clouds in that area of the sky), altitude, latitude and longitude of the observation location, availability of telescopes, etc.

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<sup>41</sup> <https://www.timeanddate.com/astronomy/moon/waxing-crescent.html>

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The US Naval Observatory website, Astronomical Applications Department, makes some interesting and *unbiased* comments in their website, regarding new moon visibility:

“Although the date and time of each [astronomical] new moon can be computed exactly, the *visibility of the lunar crescent* as a function of the Moon’s ‘age’—the time counted from [astronomical] new moon—depends upon many factors and cannot be predicted with certainty. *During the first two days* after [the astronomical] new moon, the young crescent Moon appears [becomes visible] very low in the western sky after sunset, must be viewed through bright twilight, and sets shortly after sunset. *The sighting of the lunar crescent within one day of* [astronomical] new moon *is usually difficult*. The crescent at this time *is quite thin, has a low surface brightness, and can easily be lost in the twilight*. Generally, the lunar crescent will become visible *to suitably-located, experienced observers with good sky conditions* about one day after new moon. However, the time that the crescent actually becomes visible varies quite a bit from one month to another. Naked-eye sightings as early as **15.5 hours after** [the astronomical] **new moon** have been reliably reported while observers with telescopes have made reliable reports as early as **12.1 hours after** [the astronomical] **new moon**. Because these observations are exceptional, crescent sightings this early in the lunar month should not be expected as the norm.

“The visibility of the young lunar crescent depends on *sky conditions* and the *location, experience, and preparation* of the observer. Generally, low-latitude and high-altitude observers, who know exactly where and when to look will be favored. For observers at mid-northern latitudes, months near the spring equinox are also favored, because the ecliptic makes a relatively steep angle to the western horizon during these months” (<http://aa.usno.navy.mil/faq/docs/crescent.php>).

As we can see, the first major problem with the approach of those who support a calendar based purely on observation is *the possible disagreement between different people about which is “the actual day of new moon” and additionally which is “the first day of the month.”* Also note that the Bible *never* uses the Hebrew word for *crescent* in reference to the moon, much less does it define “new moon” in a precise manner.

### B.2—Concerns with the “*observation-only*” method

Let’s consider these facts in more detail. A day or two after the astronomical new moon, the moon will normally reappear briefly (becomes visible) in the west after sunset, as a slim waxing *crescent*, and soon after it becomes visible, the moon will set, just like the sun did, for the night. Additionally, note that it may become visible before sunset depending on the “age of the moon” and other atmospheric conditions, as explained above (refer to “waxing crescent moon”).

A very experienced so-called *trusted observer* might see the first faint sickle of the waxing crescent moon in the sky, *weather permitting*. Notwithstanding his capabilities, he could observe it a day earlier (or later) than another experienced *trusted observer* due to various prevailing conditions. Which observer do we follow?

## *Appendix B—The New Moon*

Then there is the question of “*where should the observer be located?*” Could various *trusted observers* in Israel, or in the same longitude around the world, see the lunar crescent while possibly only one so-called *trusted observer* sees it in Jerusalem? Yes, it does happen. Would that make it a new month?

As Leroy Doggett and Bradley Schaefer point out, “Honest observers may make honest mistakes, for there are many objects in the sky (e.g., wisps of cloud or aircraft illuminated by the sun) that can be mistaken for a crescent. Furthermore, the power of an observer’s imagination (particularly that of an *inexperienced* observer) is undoubtedly a significant factor in false sightings” (“Lunar Crescent Visibility,” *Icarus*, February 1994, p. 398).

A few people go even further and state that the observation is to be done at the geographical area *where one lives*. The new moon (according to their definition) would then be on different days according to their geographical location. This variance of the visibility of the first sliver of the waxing crescent moon is possible in certain months due to different time zones and when the sun sets in that longitude. The outcome would be that people in one region of the world would have a Holy Day on one day (for instance, the western United States or Hawaii), and people in another region of the world would have the Holy Day on a different day (for instance, the eastern United States or Australia).

Moreover, *if* the new moon observation by geographical area happens to be on different days, what about if the month being declared is the first month of the year, in other words, the beginning of the year? The whole *year could be off by one day* from one geographical area to another! Obviously, most will outrightly reject this approach, but some people do support it.

An additional variant is that some few follow the idea that the actual season should be according to their geographical hemisphere. Consequently, this would result for those who live in the southern hemisphere to have the Holy Days shifted by six months. These options are examples of the wide variety of human reasoning that exists.

Lastly, the point can be argued that if one says the observation of the first sighting of the faint lunar waxing crescent should be done in Jerusalem, then how can one defend this view, considering that Moses *was not* in Jerusalem during the 40 years in the wilderness? Furthermore, Jerusalem was not occupied by the Israelites until many years later, during David’s reign, more than 400 years after the Exodus.

Stern accurately states that “under the empirical system [observation-only method], indeed, calendric unity would have been virtually impossible. Different communities would have sighted the new moon at different times, resulting in festivals being observed on different days” (p. 232).

We get back to the basic question: *Who has the God-given authority to proclaim which days are God’s Holy Days and therefore make calendric decisions?* As we have studied, that is *not* an individual responsibility. That responsibility rests in the ones assigned to do so by God as discussed in Appendix A.5.

## ***Appendix B—The New Moon***

### **The problem with determining the *Feast of Trumpets***

Another concern with the observation of the first sliver of the waxing crescent moon, as the way to declare the beginning of the month, is regarding the Feast of Trumpets.<sup>42</sup> The Feast of Trumpets is the only annual Holy Day that falls on the first of the month, namely on the first day of the seventh month.

If the so-called *trusted observer* in Jerusalem were to declare that “*today is the first day of the seventh month,*” the observer would then have the responsibility to immediately tell every believer around the world that it is the new moon, the beginning of the seventh month, the Feast of Trumpets.

During the past centuries, the Jews and the members of God’s Church have been scattered around the world. Therefore, how could the *trusted observer* inform the rest of the dispersed God-fearing community around the world *to keep the Feast of Trumpets at the appointed time*, particularly for those further *east*, if the observer only declares it on the day itself?

Even in today’s age of instant communication, with mobile phones and instant messaging, by the time one would hear that “*today*” is the Feast of Trumpets, particularly for those that are further east from Jerusalem, *for instance in Australia*, a number of hours of the Holy Day would be basically gone due to the geographical time zone difference. In that situation, one cannot say, as some have said, “*that would not be a problem, as they would then just observe it the next day.*” Now that would indeed be a postponement of a Holy Day without God’s endorsement. The Holy Day (Trumpets) would be postponed by one day to the second day of the month for that geographical region and therefore the Feast of Trumpets would be kept on two different days, which is contrary to Scripture! That *type* of postponement is surely *not* what God desires.

The Feast of Trumpets is defined in Leviticus 23:24-25 as a “*Sabbath-rest*” and therefore requiring preparation *before* the Sabbath, as is the case before any weekly Sabbath (Exodus 16:5, 22-29). To adequately prepare for any Sabbath, we have to know when the Sabbath is in advance. Note that preparation for a Holy Day does not involve only food preparation. Those with families and various other responsibilities know this very well. Therefore, because the Feast of Trumpets is the day of the new moon (the first day of the seventh month, Tishri), advanced notification is required to determine when the new moon is, to be able to adequately prepare for this Holy Day.

### **Should we decide *according to our conscience* which calendar to follow?**

If we in the Church of God were to freely decide which calendar to follow, who would be the *trusted observer* that *all* the Church of God fellowships and its members agree to follow? Would one individual member in the Church of God be fully entitled to appoint himself and *act presumptuously*, not heeding God’s appointed priesthood (Deuteronomy 17:8-13) and proclaiming a different day holy? Would it not just create more division?

When the northern kingdom of Israel separated from the southern kingdom of Judah after the death of Solomon, Jeroboam, king of Israel, effectively devised a new calendar to celebrate the

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<sup>42</sup> Refer also to Appendix 1.2.3 for additional observation concerns related to the *Feast of Trumpets*.

## *Appendix B—The New Moon*

feasts at different times than Judah to keep the people under his control (1 Kings 12:32-33). In fact, “there has scarcely been a single dissenting movement in Judaism that has not been associated with a desire to manipulate the calendar” (*Intercalation and the Hebrew Calendar*, J.B. Segal, p. 260).

God states that His feasts are to be *proclaimed* by the Levitical priesthood (Leviticus 23:4). Therefore, *neither* the king of Israel (Jeroboam) *nor* an *individual* member in the Church of God *is ecclesiastically authorized* by God to determine, according to his “own conscience,” when God’s Holy Days fall.

Some interpret Romans 14 as giving them license to choose which days to keep the Sabbath or the annual Sabbaths. That is not the case. Romans 14:5-6 says: “One person esteems one day above another; another esteems every day alike. Let each be fully convinced in his own mind. He who observes the day, observes it to the Lord; and he who does not observe the day, to the Lord he does not observe it. *He who eats, eats to the Lord*, for he gives God thanks; *and he who does not eat, to the Lord he does not eat*, and gives God thanks.”

When this scripture is read in its proper context, it is talking about which days to personally *fast* (which days to eat or not). Obviously, it was not talking about the Day of Atonement, which the apostle Paul was still keeping (Acts 27:9). This verse is not giving an individual Christian ecclesiastical authority to pick and choose which days should be proclaimed as God’s annual Sabbaths or Holy Days “according to his or her conscience.” As an ancient commentator, Pelagius, mentions, “Therefore Paul is speaking here about fasting and abstinence, which are not treated under a fixed provision of the law. Each individual should do whatever he sees fit in the light of his desire to share in the reward. Thus it follows that in a matter of this kind one should simply do what he himself has judged to be better” (*Pelagius’s Commentary on Romans*, section 141).

Does God expect members in the Church of God to *decide for themselves* which calendar to use? If so, we would be in a position that everyone would be doing “*what was right in his own eyes*” (Judges 21:25). Indeed, the approach to decide for yourself on *matters of controversy* within God’s law is defined by the law itself as being *presumptuous* (Deuteronomy 17:12) and only causes division.

There are many possibilities of controversy once one rejects the Hebrew calendar and then decides to follow observation-only approaches.

Is this approach adding meaning to the greater spiritual intent of God’s Holy Days? Does this approach promote unity in the Body of Christ? The fruit is that those who follow this approach disagree among themselves in a number of these very issues.

### **B.3—Biblical cases of proclamation before observation**

As we have carefully analyzed, the Bible does not specify all required details for us, as individuals, to proclaim God’s Holy Days, but it does state that His priesthood is to make those

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proclamations based on observation of the heavenly distinguishing signs (astronomical events<sup>43</sup>) to determine days and years.<sup>44</sup>

Therefore, the new moon proclamation was done decently and in order *before* the waxing crescent moon was observed. *Let us examine some biblical cases which confirm this.*

### **David declares that “tomorrow is the new moon”**

In 1 Samuel 20:5, when the Israelites had not yet taken possession of Jerusalem, David is quoted as saying to Jonathan, “*tomorrow* is the new moon . . . that I may hide myself unto *the third day at even.*”

That meant that the “new moon” (day one of the new month) would be in the future and refers to a pre-determination of the “new moon” before it was actually observed, based on some type of calculation. David hid until the evening of the third day, “and so it was, in the morning, that Jonathan went out into the field at the time appointed with David, and a little lad was with him” (verse 35).

If the new moon proclamation at that time was done by observation, the priests would only be able to proclaim the new moon after the observation of the waxing crescent, and David could have not known when the new moon would have been. Some say that David knew when the new moon banquet would occur because it had been more than 29 days from the previous moon. That is an assumption and cannot be proved.

### **Traveling to God’s Feasts requires preparation**

Another biblical evidence in favor of a calculated calendar proclamation before the observance of the waxing crescent moon is that Jews, devout men and proselytes during Christ’s time from every nation under heaven traveled to Jerusalem (Acts 2:5-11) and brought their offerings during those pilgrim feasts (Deuteronomy 14:23-25).

They traveled often as families with women, children, money, sheep and cattle. The roads and regions they traveled through could be dangerous. Flavius Josephus describes the dangers that these festival pilgrims encountered. As far as possible, they traveled in large armed groups. These caravans traveled for weeks and the journey sometimes took months,<sup>45</sup> particularly if they came

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<sup>43</sup> Astronomical events caused by the sun, moon and stars (Genesis 1:14-16).

<sup>44</sup> Refer to Appendix A.5.

<sup>45</sup> “Jews, devout men, from every nation under heaven” (Acts 2:5) traveled to Jerusalem to keep Pentecost, showing they kept the three pilgrim festival seasons (Deuteronomy 16:16). Jews and proselytes came from such areas as Egypt, Babylon, Persia and Media, and from the west, Greece, Rome and Cyrene (Acts 2:9-11). Festival pilgrims carried money for the temple in Jerusalem and encountered various dangers as they traveled. Therefore, as far as possible, they traveled in large armed groups. These caravans traveled for weeks and sometimes the journey took months. On the first day of Adar, which is six weeks before the Passover, workers appointed by the authorities were assigned “*to repair the roads, squares* (from the winter), *and mikva’ot* (ritual baths to enable pilgrims to immerse themselves so that they would arrive in Jerusalem in a state of purity), *to ensure the gravesites were properly marked*” so that the pilgrims would not be exposed to ritual impurity (Mishnah Shekalim 1:1). If these repairs required extra time to complete, the Sanhedrin could postpone the observance of Passover by one month, and thereby postpone all of God’s Holy Days for that year (BT Sanhedrin 11:A).

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from such faraway regions as Babylon or Rome (Acts 2:9-11). Such trips required careful preparation and they needed to have the proclamations of God's Holy Days well in advance to make such long journeys. If a 13th month were added, those who did travel from the diaspora did not want to start the trip to Jerusalem to observe the Passover one month too early.

Likewise, those in the diaspora who could not travel, but kept the festivals in their remote areas far away from Jerusalem, also needed to know the dates of God's Holy Days to observe them at the appointed times in their geographical areas. This is particularly relevant whether the years were or were not intercalated, as well as during the Feast of Trumpets.

Even when Paul and the apostles traveled to gentile areas, very far away from Jerusalem, they knew when to keep the festivals at the appointed times (Acts 20:6; 27:9; 1 Corinthians 5:8). In some years, Paul strove to be in Jerusalem for the festivals, and this required travel plans (Acts 18:21).

Without advance notification of when the festivals would be, Christians in gentile areas could not keep the festivals at the right time, nor could Paul and early Christians plan correctly to be in Jerusalem at the right time. The Church of God during the early New Testament times and during the Middle Ages needed to know when God's Holy days occurred, as is true for us today.

Another biblical evidence that the Jews knew in advance when God's Holy Days were to be observed is when "Hezekiah sent to all Israel and Judah, and also wrote letters to Ephraim and Manasseh, that they should come to the house of the LORD at Jerusalem, to keep the Passover to the LORD God of Israel. For the king and his leaders and all the assembly in Jerusalem had agreed to keep the Passover in the *second* month. For they could not keep it at the regular time, because a sufficient number of priests *had not* consecrated themselves, *nor had the people gathered* together at Jerusalem . . . So they resolved to make a proclamation throughout all Israel . . . Then the runners went throughout all Israel and Judah with the letters from the king and his leaders" (2 Chronicles 30:1-6). It did take special effort and time to prepare the priests and to notify all people. They must have known in advance when God's Holy Days fell to proclaim God's festivals.

### **B.4—Historical events, quotes and comments**

The calendar has been a source of great controversy and division. One finds a *great degree of opposition* against the Hebrew calendar, as there are *many differences of opinion and justifications* to allegedly prove that the Hebrew calendar is incorrect.

Some of the arguments of those against the Hebrew calendar need to be addressed, and we will endeavor to answer many of them throughout this study paper.

#### **B.4.1—Talmud examples which highlight diversity of opinions**

Some quote the Talmud or the Mishnah to prove that a calculated calendar, such as the Hebrew calendar, was not used at the time of Christ.

The *Talmud* has two components: the Mishnah (ca. year 200) and the Gemara (ca. year 500). The Mishnah is a written compendium of Rabbinic Judaism's Oral Law, and the Gemara is a rabbinical analysis and commentary of the Mishnah.



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### B.4.1 (1)—Regnal years of kings—were they dated from the spring or the fall?

One example that highlights a diversity of opinions is that the Talmud *insists* (compare *Rosh-ha-Shanah 1a*, as one example) that regnal years of kings were always reckoned *from spring to spring* (Nisan 1 to Nisan 1). However, is that how the years of a king's reign were always counted? Are they counted from spring (spring dating) or from autumn (using the civil year way of counting)?

To explain why this simple question can be controversial, we need to analyze a few historical details. (This information is carefully analyzed and detailed in this Appendix and it will also be useful later in Appendix D.1 to determine which year Christ died.)

The Jews observed, according to biblical instruction, a *sacred year* from Nisan 1, the first month, and a *civil year*, from Tishri 1 (the Feast of Trumpets), the seventh month. Indeed, today the Jews still do the same and call the Feast of Trumpets (the first day of the seventh religious month) their civil New Year's day (Rosh Hashana).

As we will see, the portion of the year during which the kings ascended to the throne was not considered his first year. That was considered *the accession year* of the king, and the year counted as his "year one" was *the first full year* from fall to fall (fall dating).

To add to the complexity, the Israelite (northern kingdom) and the Jewish (southern kingdom) nations did *not always use* the same methodology. There were differences whether they *counted or did not count the accession year*, as well as whether they used *spring or fall dating*.

Andrew Steinmann in his work on the biblical chronology, *From Abraham to Paul*, states on page 128, "Since a large number of chronological information is supplied in the books of Kings and Chronicles, one might expect that it would be relatively easy to determine the dates for the reigns of the monarchs of the divided kingdom. However, there are a number of factors that make determining the chronology of these kingdoms very complex."

Edwin Thiele's reconstruction of the chronology of the reigns of the kings of Israel and Judah during the Divided Monarchy comments on this chronology complexity. He argues that Judah (the southern kingdom) followed the *accession-year* system from Rehoboam to Jehoshaphat, the *non-accession-year* system from Jehoram to Joash, and the *accession-year* system again from Amaziah to Zedekiah. He further argues that Israel (the northern kingdom) followed the *non-accession-year* system from Jeroboam I to Jehoahaz, and the *accession-year* system from Jehoash to Hoshea (*Chronology*, Edwin Thiele, pp. 87-88). This is also confirmed by Steinmann, *From Abraham to Paul*, (p. 128).

Additionally, "for Judah there is a matter of coregencies. Especially when the reigning king was unable to fulfill all his duties (e.g. Uzziah; 2 Chronicles 26:21) or when there was an unstable political situation, the king's son may have been named coregent with his father. Thus, the years of their reigns may have overlapped" (*ibid.*, p. 128).

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“In the *united* kingdom of Israel *before* the splitting of the kingdom after Solomon’s death a king’s regnal years were reckoned on an *autumn-to-autumn* basis [*fall dating*, Tishri-to-Tishri]. The same was done in the kingdom of Judah [southern kingdom] after Solomon’s death.”<sup>46</sup>

“This Tishri-to-Tishri year is confirmed by 2 Kings 22:3; 23:23. Josiah began building the temple in his eighteenth year. After the passing of Nisan 1, Josiah celebrated the Passover, but it was still his eighteenth year. This indicates that a new year did not begin in Nisan, but in Tishri [in the kingdom of Judah – the Southern Kingdom].”<sup>47</sup>

“A careful analyses of the synchronisms of Shallum (2 Kings 15:13), Menahem (2 Kings 15:17), Pekahiah (2 Kings 15:23), and Pekah (2 Kings 15:27) with Uzziah demonstrates that Israel’s calendar [northern kingdom] did not start in Tishri.”<sup>48</sup> Steinmann states that the nations of Israel (northern kingdom), Babylon and Persia counted the years from Nisan (*spring dating*).<sup>49</sup>

In the Old Testament, the months of the year are often *named by their number* in the religious year (for instance Nisan is the *first month* and Tishri is the *seventh month*), regardless of whether the reckoning of the regnal year is from spring or fall.<sup>50</sup> Therefore, when the Old Testament refers, for instance, to the “*seventh month*” it is actually talking about the biblical name of the month (like saying the “*month of Tishri*” or as we would refer today to September/October), and is *not* talking about the seventh month of that king’s reign.

This approach of a *religious* year (spring dating in which Nisan is the first month) and a *civil* year (fall dating in which Tishri is the seventh month) is still used by the Jewish nation today. The beginning of the civil year in the seventh month (Tishri) is called Rosh Hashanah.

Many writers use scriptures that refer to *the number of the month* as proof that the kingdom of Judah was using a spring dating methodology. For instance, some use Jeremiah 36:22, which states, “Now the king was sitting in the winter house in the ninth month, with a fire burning on the hearth before him.” The ninth month is obviously a reference to *Kislev* (November/December) and *not* defining when the regnal year started.

In *contradiction* to the biblical proofs mentioned above, the Mishnah in Rosh Hashanah 2a states that the kingdom of Judah used spring dating for regnal years: “On the first of Nisan is the New Year for kings; it is from this date that the years of a king’s rule are counted. And the first of Nisan is also the New Year for the order of the Festivals, as it determines which is considered the first Festival of the year and which the last . . . On the first of Tishri is the New Year for counting years . . . for calculating Sabbatical Years and Jubilee Years . . .” It appears that it is due to this Mishnah account that many state that the kingdom of Judah followed spring dating.

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<sup>46</sup> Fall dating in Judah (Steinmann, p. 18).

<sup>47</sup> Ibid., p. 20; p. 128, footnote 182.

<sup>48</sup> Ibid., p. 128, footnote 182.

<sup>49</sup> Persians counted regnal years from *Nisan* (ibid., p. 213) and used the accession method.

<sup>50</sup> Steinmann, p. 17; Thiele, pp. 51-52: “In the Hebrew Scriptures the months are numbered from Nisan, regardless of whether the reckoning of the year was from the spring or fall.”

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But that assertion is *denied* by the Bible (compare Nehemiah 1:1 and 2:1, for example) and historical records.<sup>51</sup> When one compares biblical kingly chronology with other historical records, we conclude that the Jews reckoned the reign of both Jewish and gentile kings from fall to fall (Tishri 1 to Tishri 1). They still did so as late as Ezra's time, which was after Judah (the southern kingdom) had returned from captivity in Babylon.

### B.4.1 (2)—The Mishnah

As an attempt to disprove the Hebrew calendar, and particularly, the postponement rules,<sup>52</sup> some quote the Mishnah (a late second century compilation of the Oral Law) redacted by Yahudah Ha Nasi (Judah the Prince), and state that it contains no day prohibitions. According to them, the Mishnah actually *allows* any day of the week to be a Holy Day.

However, one has to also be careful with the accuracy of some opinions stated in the Mishnah. To demonstrate we need to be careful, look at this example regarding the Sabbath and the Holy Days in *Shabbat 19:5* (Danby Edition, p. 117):

“A child can be circumcised on the eighth, ninth, tenth, eleventh, or twelfth day, but never earlier and never later. How is this? The rule is that it shall be done on the eighth day; but if the child was born at twilight the child is circumcised on the ninth day; and if at twilight on the eve of Sabbath, the child is circumcised on the tenth day; if a Festival-day falls after the Sabbath the child is circumcised on the eleventh day; *and if the two Festival-days of the New Year fall after the Sabbath* [Sunday and Monday] the child is circumcised on the twelfth day.”<sup>53</sup>

What is interpreted by some according to the latter part of the above quote is that the Jews did *not* postpone the Holy Days for the Sabbath preparation. Such quotes are used to disprove the Hebrew calendar's postponements by saying that annual Sabbaths could be back-to-back with a weekly Sabbath.

However, the Mishnah quote above raises the following questions:

- The quote states that the Jews would not circumcise a child on the Sabbath, or on an annual Holy Day, so as not to break the Sabbath law. That seems to back up the Sabbath day and not allow circumcision on the Sabbath. But is that what everyone did according to Christ?
- Christ said they did circumcise on the eighth day even if it was a Sabbath: “Moses therefore gave you circumcision (not that it is from Moses, but from the fathers), and *you circumcise a man on the Sabbath*. If a man receives circumcision on the Sabbath, so that the law of Moses should not be broken, are you angry with Me because I made a man completely well on the Sabbath?” (John 7:22-23).

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<sup>51</sup> Steinmann, p. 18: “In the *united* kingdom of Israel *before* the splitting of the kingdom after Solomon's death a king's regnal years were reckoned on an *autumn-to-autumn* basis [*fall dating*, Tishri-to-Tishri]. The same was done in the kingdom of Judah [southern kingdom] after Solomon's death”; Thiele, pp. 51-52.

<sup>52</sup> The postponement rules allow for proper observance of God's *Sabbath-rests* (refer to Appendix C.3).

<sup>53</sup> Mishnah, Danby Edition, *Shabbat 19:5*, <http://www.emishnah.com/PDFs/Shabbat%2019.pdf>.

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- What this quote highlights is, once again, there was *diversity of opinions* among the Jews, because according to Christ's recorded statement in the gospel record of John, they did circumcise on the Sabbath.
- Therefore, just as this quote about circumcision on the Sabbath is not an accurate reflection of what was done by *everyone* in Christ's time, can we rely on this quote to state that postponements were *not* done in Christ's time? Obviously not.<sup>54</sup>

The conclusion is that some people refer to quotes from the Mishnah or the Talmud to provide proof of their opposition of the Hebrew calendar. However, we can see that Christ's statement directly contradicted the Mishnah in this specific case. Therefore, just because one quote in the Mishnah or the Talmud says something, one cannot always take that as an irrefutable fact that *everyone* was doing so. There was often a *diversity of opinions* among the Jewish people. One's opinion does not mean that it was a general opinion held by all.

### B.4.2—Some quotes which support calendar calculations

Here are some quotes *often not mentioned*, which support *calendar calculations* were used before the Hebrew calendar was promulgated by Hillel II in A.D. 358,<sup>55</sup> and some quotes even support calendric calculations before the time of Christ:

1. "Method of intercalation was based no longer on astronomical observation but on *computation* in **2nd century before Christ** . . ." (J.B. Segal, *Intercalation and the Hebrew Calendar*, p. 284).
2. "Jewish authorities of the **2<sup>nd</sup> century B.C.** [some 200 years *before* Christ] had achieved **precision in their computations** of the luni-solar calendar" (Segal, p. 296; *BT Sanhedrin* 12a; *Sanhedrin* 1. 2 (fol. 18d)).
3. *Bornstein*, Mabloqet Rav Saadia Gaon uven Meir, 18, has assembled a great number of references to **calendar computation in the Talmud** (Segal, p. 284).
4. Rabbis insist that those who had the **ability to compute the calendar** should not withhold their services (*BT Shabbath* 75a).
5. "**Everyone knows** that intercalation depends on *computation*" (*BT Rosh haShana* 7a).
6. "The *computation* of the synodic month at the time of the Talmud **is certain**" (Segal, p. 288).
7. The Mishnah refers to *computation* (*BT Sanhedrin* 10b on *Mish. Sanhedrin* 1. 2).
8. The rules of the Rabbis on **fixing of the new moon** (*Zuckermann, op. cit.*, 7 ff). "A statement is made in the Babylonian Talmud that 'now, we know the fixing of the (new) moon'<sup>56</sup>. This meant that it was now possible, even in Babylonia, **to be certain about the**

<sup>54</sup> For more about postponements see Appendix C.3.

<sup>55</sup> Refer to Appendices A.5.3 and A.5.4.

<sup>56</sup> *B. Betzah* 4b, a statement attributed to R. Zeira (Stern, p. 170, footnote 62).

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**dates of the new moons that had been set** by the Palestinian court [Sanhedrin]. On the strength of this statement, indeed, the Talmud goes on to question the necessity of two festival days” (Stern, p. 170).

9. “I am not aware of any evidence suggesting that *any observational method* was officially employed by the *Sanhedrin* to determine whether to declare a leap year or not. The probable reason is that the *Sanhedrin* had to make equinox predictions and leap year declarations sufficiently *far in advance* so that pilgrims would know when to begin their journey, **so they relied on calculations instead**” (Bromberg, p. 7).
10. “The Babylonian Talmud frequently cites a saying attributed to Rav (Babylonian Amora, early third century), that **since the days of Ezra** [nearly 500 years before the time of Christ] *the month of Elul* [the sixth month] *had never been full* [never been 30 days long] . . . the reference to Ezra suggests, nevertheless, that this rule existed already in the Mishnaic period [before Hillel II], and even *long before*. This rule is also attributed to Rav in the Palestinian Talmud, but without reference to the days of Ezra. Similar to this is the rule that ‘**Adar adjacent to Nisan** is *always defective*’ [that is, is always 29 days long]. It is attributed in the same passage of Palestinian Talmud to Rabbi, the redactor of the Mishnah, and elsewhere to R. Yehoshua b. Levi” (Stern, pp. 165-166). The implication here is of a calculated calendar.



11. “According to the Palestinian Talmud, indeed, the rule was firmly established that Yom Kippur [the Day of Atonement] **could never occur** on Friday” (Stern, p. 136). “The day of Atonement **cannot occur on a Friday or on a Sunday**. This rule is mentioned in the Palestinian Talmud as well as in the Babylonian Talmud . . .” (ibid., p. 166 and related footnotes 44 and 45 on that page). The implication here is again that postponements were already in place *before* Hillel II.
12. “The present day **prohibition of Rosh ha-Shanah** [Feast of Trumpets] **on Sunday** draws its origin from another passage of the Palestinian Talmud (*Y. Sukkah* 4:1 (54b))” (Stern, p. 194). The implication here is again that postponements were in existence *before* Hillel II.
13. Stern (p. 171) states that “the existence of *a fixed calendar* in the late Amoraic period [A.D. 358 falls in that period] is **confirmed beyond doubt** in a passage of the Palestinian Talmud.” Stern quotes Rabbi Yose’s comments regarding Mishnah Megillah 1:2: “*If (Purim) occurs on Monday*’ . . . does not apply; and ‘*if (Purim, 14 Adar) occurs on the Sabbath*’ . . . (also) does not apply. (For) if it occurs on Monday, the great fast [Day of Atonement] will be on Sunday; and if it occurs on the Sabbath, the great fast will be on Friday.” Stern adds in footnote 67 that “R. Yose’s view that the occurrence of 14 Adar

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[Purim] on the Sabbath is ‘impossible’ [not permitted] is reiterated in *Y. Megillah* 1:4 (70b).”

The implications of the above back up both a calculated calendar and postponements:

1. there was a *fixed number of days* between Purim (during the 12th month, or the 13th month in an intercalated year) and Atonement (the *following* year’s seventh month), and therefore confirms the existence of a *fixed calculated calendar*;



2. that *postponement rules were already in place* before the time of Hillel II to ensure that the Day of Atonement would not fall on a Friday or a Sunday. Therefore, the postponement rules were *not* added *centuries after* Hillel II, as some opposing the postponement rules claim.

14. In the second century Rabbi Judah ha-Nasi<sup>57</sup> and Rabbi Aqiba *treated witnesses concerning the new moon with indifference* (*Mish. Rosh haShanah* 1.6).

This statement clearly affirms that during the first centuries of the early New Testament Church, the Jews already *disregarded* observation of the new moon to set the calendar. This was well before the Council of Nicaea in the fourth century (A.D. 325) and also therefore before Hillel II’s proclamation of the Hebrew calendar in A.D. 358.

15. Rabbi Yohanan in the third century declared: “**One does *not* pay over-much attention to witnesses concerning the new moon**” (*JT Sh<sup>e</sup>bb ‘ith* x. 2 (fol. 39c), *Rosh haShanah* iii. 1 (fol. 58c).

Notwithstanding the above quotes, in the fourth century, rabbis still urged the public to examine the sky for the crescent moon (*BT Rosh haShana* 20a). Therefore, there are many references to observation in the Talmud. The question is *why this dual approach* seeing that Rabbi ha-Nasi already disregarded observation, as quoted above?

<sup>57</sup> Judah ha-Nasi (“Judah the Prince” ca. 135-220), grandson of Gamaliel (at whose feet Paul had been taught, Acts 22:3) was a second-century rabbi and chief redactor and editor of the *Mishnah*. Judah ha-Nasi succeeded his father, Simeon ben Gamaliel II, as patriarch (head) of the Jewish community in Palestine and, consequently, of the Sanhedrin as well, at that time chiefly a legislative body (in earlier times, the Sanhedrin had been primarily a court) (*Encyclopedia Britannica* and Wikipedia).

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Segal (p. 285) gives an answer to that question: “They appear, indeed, at different levels of the population . . . An official body was responsible for *fixing the calendar* among the Jews both in the Mishnaic period and later (*JT Rosh haShana* ii.6 (fol. 58d); *Sanhedrin* i. 2 (fol. 18c); *BT Kthuhoth* 112a and parallel passages), and by them, it is clear, *the calendar was fixed by computation* . . . It was *the general public who watched for the new crescent* at the beginning of each lunation.”

The last quote above from Segal is rather worth re-emphasizing: “*The calendar was fixed by computation* . . . (and) *it was the general public who watched for the new crescent*” (ibid.).

### **B.4.3—The brethren around the world watch the full moon on God’s Holy Days**

Today in God’s Church we also note the moon, in a *similar* fashion. The Holy Days are set according to the calculated Hebrew calendar, but many brethren still enjoy taking note of the full moon on the *Night to be Much Observed* (the 15th of the *first* month; Exodus 12:42; Deuteronomy 16:1), which marks when the Israelites left Egypt, and symbolically represents us leaving spiritual Egypt (committing to leave this world of sin). Some brethren also admire the full moon on the 15th of the *seventh* month (first day of the Feast of Tabernacles).

Those two Holy Days, which mark the beginning of the two annual *seven-day* festivals (Unleavened Bread and the Feast of Tabernacles), are observed at their appointed times on the 15th of the first and seventh months respectively according to the law. They are in the middle of the month (the 15th) and therefore they are full moon nights. That is because just short of 15 days (actually 14.75 days) after the astronomical new moon, the moon is halfway through its revolution and it is illuminated in the night sky. At this time the moon rises at sunset, and it sets at sunrise.<sup>58</sup>

Note, however, that technically speaking the moon may not be 100% illuminated as that may occur only at a very specific hour and minute, and there may be minor variations of the degree (or percentage) of full moon illumination due to the geographical coordinates in the area of the Promised Land versus your specific location’s geographical coordinates. It is a recorded fact that there is greater percentage of full moon illumination when comparing the average of these two annual Holy Days using the Hebrew calendar *with* postponements, versus the Hebrew calendar *without* postponements, as well as versus the observation-only method.<sup>59</sup>

When the brethren in every country around the world watch the full moon on these two annual Holy Days, this is a semiannual confirmation that the calculated Hebrew calendar does indeed follow the distinguishing marks (signs) of the lights in the firmament of the heavens (Genesis 1:14-16), and that the Holy Days are at their appointed times.

During the conjunction, if the moon is on the same physical plane as the Earth and the sun, then the distinguishable sign of a lunar eclipse occurs. *A lunar eclipse can only happen during a full moon*, which is in the middle of the lunar month, on the 15th.

Lunar eclipses occur, on average, twice a year, every six months or so. A recent specific example of four consecutive lunar eclipses that were widely publicized was the case of the four

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<sup>58</sup> See picture on Appendix B.1.

<sup>59</sup> Refer to Appendix C.3 for more information.

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so-called *blood moons* of 2014/15. The moon earns this nickname, because during a *total lunar eclipse*, when *the shadow of the Earth covers the moon*, the moon appears reddish. (Refer to Appendices B.1 and C.2 for more details on eclipses.)

These four consecutive total lunar eclipses occurred on April 15, 2014, October 8, 2014, April 4, 2015, and the fourth on September 27, 2015. These were the exact dates for the 15th of the first and seventh months in those two consecutive years according to the calculated Hebrew calendar (and obviously using postponements). Other calendars, such as those based on observation-only or on the Hebrew calendar calculated *without* postponements, did not have *all four* God-given distinguishable signs of total lunar eclipses falling on the 15th of their months.

### **B.4.4—Persecution triggers the change in the proclamation of the Hebrew calendar**

Stern considers the position that an *observation* calendar system was “*abandoned because the Jews went into exile and the calendric court was consequently discontinued*” to be “a *theory*” which he rejects, as being “historically implausible” (p. 234).

Even though Stern is technically correct when he states that the “calendric court was not discontinued due to the Jews going *into exile*,” historic facts do, however, support that persecution of Jews and Christians did trigger a change in the manner that the Hebrew calendar was proclaimed. To understand how persecution triggered a change in the proclamation of the Hebrew calendar, we will briefly highlight some facts about persecutions, in a chronological sequence:

- In A.D. 66, the Jews revolted against the Roman rule which led to the destruction of the temple in A.D. 70. Later, the *Bar-Kokhba* Jewish revolt in A.D. 132 caused Jews and Christians to be expelled from Jerusalem. After the *Bar-Kokhba* revolt ended in A.D. 136, the spiritual life of the Jewish population in Israel became centered in Galilee. For a time, Tiberias in Galilee became the seat of the Sanhedrin, the high rabbinical court.
- Anicetus, bishop of Rome, ca. A.D. 160, tried to outlaw the observance of Passover as a method of avoiding the charge of “*Judaizing Christianity*.” Opposition to this effort came in the person of Polycarp, who lived in Asia Minor at that time.<sup>60</sup>
- Pope Victor I, bishop of Rome in A.D. 196, attempted to rule the Christian churches in Asia Minor by changing the Passover from the *14th day of the first month*, to the Roman custom of *Easter Sunday*. The churches of Asia Minor led by *Polycrates*, who presided over the church of Ephesus, in which the traditions of the Apostle John were fresh in their minds at the date of his birth, informed Victor that they could not comply. As a result, Victor “published *bitter invectives against all the churches of Asia*” (Bower, *History of the Popes*, Vol. 1, p. 18).

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<sup>60</sup> Epiphanius, *Adversus haereses* 70, 10, *Patrologiae Graeca* 42, 356, quoted in Samuele Bacchiocchi, *God’s Festivals in Scripture and History*, 1995, p. 101. *The Ecclesiastical History of Eusebius Pamphilus*, 1955, pp. 210–211.



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- This Roman imposition came to a head from A.D. 303 to 313 when Roman Emperor Diocletian unleashed a persecution for 10 years on Christians.
- In A.D. 325 at the Council of Nicaea, Constantine's powerful influence urged the following reasoning: "Let us, then, have nothing in common with the most hostile rabble of the Jews" (*Boyle's Historical View of the Council of Nice*, ed. 1842, p. 52). The Council formally approved the change from Sabbath to Sunday and the Passover of the 14th of Nisan to Easter Sunday (Eusebius, *Encyclopadia Britannica*, and Mosheim's *History of the Church*).
- Those truly committed to the truth did not follow the directions of the Roman Catholic Church. The Emperor then issued this instruction:

"Forasmuch, then, as it is no longer possible to bear with your pernicious errors, we give warning by this present statute *that none of you henceforth presume to assemble yourselves together*. We have directed, accordingly, that you *be deprived of all the houses* in which you are accustomed to hold your assemblies: and (we) forbid the holding of your superstitious and senseless meetings, *not in public merely, but in any private house or place whatsoever* . . . Take the far better course of entering the Catholic Church . . . We have commanded . . . That you be positively deprived of every gathering point for your superstitious meetings, I mean all the houses of prayer . . . And that these be made over without delay to the Catholic Church; that any other places be confiscated to the public service, and no facility whatever be left for any future gathering, in order that from this day forward none of your unlawful assemblies may presume to appear in any public or private place. Let this edict be made public" (Eusebius, *Life of Constantine*, book 3).

- In A.D. 351-352, the Jews in the Syria-Palestine province revolted against the rule of the local Roman governor, Constantius Gallus, brother-in-law of Emperor Constantius II and Caesar of the Eastern Roman Empire. This revolt was crushed by Gallus' general Ursicinus.

"Under the reign of Constantius (AD 337-361) the persecutions of the Jews reached such a height that all religious exercises, *including the computation of the calendar*, were forbidden under pain of severe punishment . . . The persecutions under Constantius finally decided the patriarch, Hillel II (AD 330-365), to publish rules for the computation of the calendar, which *had hitherto been regarded as a secret science*" (*The Jewish Encyclopedia*, "A Descriptive Record of History," Vol. 3, p. 500).

- Bromberg records the following set of additional historical events:

"In Julian year AD 358 [mid fourth century] the Roman Emperor Constantius II [Constantine's son], *wanted to prevent Christians from determining when to celebrate [Passover] by asking Jews when will be the date of Passover [Nisan 14]*, so he outlawed new moon announcements [by the Jewish Sanhedrin] with the intent of quashing the Hebrew calendar. Hillel ben Yehudah [Hillel II], the second-last President of the Sanhedrin

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(his son was the last) responded by promulgating the fixed arithmetic Hebrew calendar<sup>61</sup> (no doubt hoping it would only be a temporary measure), which had probably been developed a century earlier in Babylonia by Amora Shmuel of Nehardea (“Shmuel the Astronomer”) and which had since then been used internally by the *Sanhedrin* as a guide for calendar decisions . . .

“Release of the fixed arithmetic calendar rules had to be carried out in a hurry, otherwise Jewish communities would not have known when to observe ritually significant days [God’s Holy Days]. When the Romans later realized that their attempt to quash the Hebrew calendar had failed, they raided the *Sanhedrin* headquarters and confiscated all property and records. After that raid the Sanhedrin ceased to exist . . .” (Dr. Irv Bromberg, *The Seasonal Drift of the Traditional (Fixed Arithmetic) Hebrew Calendar*, pp. 8-9).

### B.4.5—A gradual acceptance of the released Hebrew calendar rules

Stern affirms that it was *most plausible* that a fixed (calculated/arithmetic) calendar was introduced at the time of the fourth century, during Hillel II’s time, even though he suggests that its general adoption or transition may have been slow and gradual: “The ‘one-calendar theory’ remains in my view most plausible . . . Attention must also be given to the fact that the medieval ‘one-calendar theory’ assumes that the fixed calendar was formally ‘instituted’ by the rabbinic court, at a given moment of rabbinic history; whereas in Ch. 4, section 4.2.5 [chapter and section of his book], I [Sacha Stern] have suggested that the transition from empirical [observation method] to fixed calendar [Hebrew calendar] may have been slow and gradual” (p. 240).

Bromberg of the University of Toronto explains *why* the Hebrew calendar rules may have never been published (as written documents, even though the rules were distributed and proclaimed) by Hillel II, the Nasi (President) of the Sanhedrin and its calendar court, and also why *the adoption* was slow and gradual:

“Hillel ben Yehudah may never have published any written documents outlining the rules of the fixed calendar, for the following reasons:

- release of the calendar had to be carried out in a hurry, so there wasn’t time for scribes to copy and verify the many necessary copies,
- he was afraid that such documents would fall into the wrong hands (*e.g.*, the Romans),
- he only intended the fixed calendar as a temporary measure, but documenting it would have made it seem permanent.

“So he sent out into the diaspora his most knowledgeable colleagues and students, entrusting them with the rules of the calendar, and compelling them *not to reveal those rules to the Romans*. The calendar became an orally transmitted tradition . . .

“The oral tradition continued, and when the *Talmud* was later put down in writing the details of the fixed calendar rules were not included because *the calendar was still properly considered to be only temporary* . . .

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<sup>61</sup> In Jewish law (*halachah*) a ruling by any authority can only be changed or overruled by an authority of equal or higher authority. Therefore, the fixed arithmetic Hebrew calendar can only be changed by a present era or future Sanhedrin or higher authority.

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“Much later, *Rambam* [Rabbi Moses ben Maimon, Maimonides, A.D. 1135-1204] published the details of the calendar because he was afraid that the *rules* would otherwise be lost or corrupted, or that calendar disputes would arise . . .

“A non-traditional theory, suggesting that there was a *gradual evolution* to today’s fixed arithmetic Hebrew calendar, based primarily on alternative interpretations of *Talmudic* sources . . . but as will be shown below, *it was only in the era of Hillel ben Yehudah that it simultaneously exactly matched* the *Talmud* equinox criteria with respect to both the actual astronomical spring equinox as well as the traditional equinox approximation of Rav Adda bar Ahavah [refer to Appendix C.7 for more information on this topic].

“In Jewish law (*halachah*), a ruling by any authority can only be changed or overruled by an authority of equal or higher authority. *Therefore if the fixed arithmetic Hebrew calendar was a ruling of the Sanhedrin, as is traditionally held, then it can only be changed by a present era or future Sanhedrin*, whereas if the calendar was a gradual evolution then it might only be necessary to obtain the consensus of respected rabbinic authorities in Israel.

“As soon as Hillel ben Yehudah [Hillel II] promulgated the fixed arithmetic calendar, *part of the Jewish population immediately accepted it*, and their descendants comprise most of the Jewish population of today, *but some Jews rejected it*, continuing to follow an observational calendar . . .” (Bromberg, pp. 9-10).

Historical evidence supports that persecution, in one form or another, did trigger the Sanhedrin’s move to reveal the Hebrew calendar rules. They were not published in the hope that the Sanhedrin would continue with its calendric responsibilities once the Roman anti-Semitic attitudes would subside. Some accepted this change and some took time to gradually accept these rules released by Hillel II. Jews have been very diverse in their acceptance of calendric rules, and Stern frequently confirms this in his book *Calendar and Community*.<sup>62</sup> But that does not mean that the rules were not in existence, but rather that different communities accepted them at different times.

### B.4.6—The Exilarch’s letter

Stern suggests that not only the *acceptance* of the fixed calculated calendar took time, but he also adds that the postponement rules were added slowly and gradually over time from the fourth century (Hillel’s time).

One of the major reasons Stern uses to claim that the postponement rules were added slowly and gradually is because of the ‘Exilarch’s letter’<sup>63</sup> of A.D. 835/6. His comments based on his *own* translation of that letter read as follows:

“Of far greater importance, however, is a much later document from the Cairo Geniza: a letter of a Babylonian exilarch—one of the main leaders of the Rabbanite community—with detailed calendrical instructions for the year 835/6 CE. The letter reveals that Passover

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<sup>62</sup> Diversity existed “in the early fourth century, between the calendars of various Jewish communities, particularly regarding the Passover month and hence, the intercalation . . . But the general conclusion that emerges is that calendric diversity persisted, among various Jewish communities, till at least the sixth century” (Stern, pp. 41, 79, 83, 85, 98).

<sup>63</sup> The *Exilarch*, literally ‘*the head of the exile*,’ was the head of the *diaspora Jewish community*.

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(15 Nisan)<sup>64</sup> in that year was due to occur on a Tuesday; whilst according to the present-day rabbinic calendar, it should have occurred on Thursday. According to the exilarch, the setting of Passover on Tuesday was dictated by a concern to avoid visibility of the new moon before the first day of the month. This concern does not exist in the present-day rabbinic calendar. Once discovered and published in 1922, the exilarch's letter proved beyond doubt that almost five hundred years after R.Yose and 'Hillel the Patriarch', the fixed calendar in its present-day form had still not been instituted" (pp. 184-185).

But not everyone agrees with his interpretation of that letter. In a careful *rebuttal* to that conclusion, Richard Fiedler<sup>65</sup> from *sodhaibur.com* states:

"... The source of Sacha Stern's error is his misunderstanding of the moon that was sighted being the *new moon*. Actually it was the *Old Moon*... It was the possibility of sighting the Old Moon, not the new moon, that concerned the Exilarch. Because such a sighting would aid the Karaites in proving that the rabbis were not properly observing Passover at the correct time." *This problem developed because some Jews were not observing the Molad Zaqen rule.*<sup>66</sup>

Stern's alleged evidence that the postponement rules evolved gradually over the centuries, based on the Exilarch's letter, cannot be considered full proof according to the objections raised above by Fiedler. It should also be noted that it is Stern's own translation. Considering all the continued *diverse* Jewish practices over the centuries, one cannot reach a conclusion based on the evidence of *one* Jewish community, or *one* source, as there is, even today, *diversity of calendric practices* among some religious Jews.

Stern himself highlights the *great diversity* that existed between the various Jewish communities (pp. 41, 79, 83, 85, 98). Additionally, the statement that the postponement rules evolved gradually contradicts a number of his own quotes and statements in his book *Calendar and Community*. Refer to the following quotes in Appendices:

B.4.2 (10) – "since the days of Ezra the month of Elul had never been full" (pp. 165-166);

B.4.2 (11) – "According to the Palestinian Talmud, indeed, the rule was firmly established that Yom Kippur [the Day of Atonement] could never occur on Friday" (ibid., p. 136). "... The day of Atonement cannot occur on a Friday or on a Sunday. This rule is mentioned in the Palestinian Talmud as well as in the Babylonian Talmud..." (p. 166);

B.4.2 (12) – "the present day prohibition of Rosh ha-Shanah on Sunday" (p. 194);

B.4.2 (13) – "the existence of a fixed calendar in the late Amoraic period is confirmed beyond doubt in a passage of the Palestinian Talmud... if (Purim) occurs on Monday does not apply; and if occurs on the Sabbath (also) does not apply" (p. 171).

### B.4.7—The Rabbis Saadia vs. Ben Meir controversy in A.D. 921

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<sup>64</sup> Biblically speaking, it was actually the first Day of Unleavened Bread. Note that the Jews refer to the 15th of Nisan as the Passover, while we know that the Bible says it is the 14th of Nisan that is the Passover (Leviticus 23:5).

<sup>65</sup> <http://sodhaibur.com/sacha-stern-2.html>.

<sup>66</sup> The Molad Zaqen rule (late) postpones the first of the month if the molad of Tishri occurs on or after the 18<sup>th</sup> hour (i.e. on or after 12 noon). See Appendix C.3 for more information regarding the Hebrew calendar's postponements.

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In the summer of A.D. 921 a controversy arose concerning the Passover of A.D. 922 using the Hebrew calendar. The Hebrew calendar had been based on a series of calculated rules referred to today as postponements. One of these rules (the *Molad Zaqen* rule)<sup>67</sup> required the date of Rosh Hashanah (the first day of the seventh month) to be postponed if the calculated lunar conjunction (*molad*) occurred at noon or later.

Rabbi Aaron ben Meir, the Gaon [Head] of the leading Talmudic academy in Israel (then located in Ramle [southeast of Tel Aviv]), claimed a tradition according to which the cutoff point for the postponement was *only if* the *molad* occurred about **35 minutes** after 12 noon (more precisely, 642/1080 parts of an hour after 12 noon). In that particular year, A.D. 922, according to Ben Meir, this would mean that there would be *no* postponements and the 15th of Nisan [the first Day of Unleavened Bread, which the Jews incorrectly called, and still call today, Passover] would be on a Sunday,<sup>68</sup> while according to the generally accepted rules of the Hebrew calendar it would be on Tuesday.<sup>69</sup> This small difference in the interpretation of the *Molad Zaqen* rule would result in a two-day schism with the major Jewish communities in Babylonia.

Rabbi Saadia was in Aleppo, on his way from the East, when he learned of Ben Meir's interpretation of the Hebrew calendar's *Molad Zaqen* rule. According to Rabbi Saadia, the *Molad Zaqen* rule of 18 hours (midday, 12 noon) could find support in the Talmud (BT Rosh Hashanah 20b), whereas Ben Meir's addition of 642 parts (to the 18 hours) was absurd and purely fabricated (Stern, p. 266).

Saadia addressed a warning to him, and in Babylon he placed his knowledge and pen at the disposal of the exilarch David ben Zakkai and the scholars of the academy, adding his own letters to those sent by them to the communities of the diaspora. In Babylonia he wrote his "Sefer ha-Mo'adim," or "Book of Festivals," in which he refuted the assertions of Ben Meir regarding the calendar, and helped to avert from the Jewish community the perils of schism (Wikipedia, "Saadia Gaon" and Stern, pp. 264-265).

This disagreement does *not* imply that the postponement rules did not exist, but rather it implies that *there were two divergent interpretations* of the *Molad Zaqen* rule and that other postponement rules also existed. These divergent interpretations occurred either because the calendar rules were not documented yet, or because of timing differences between Palestine and Babylon. Later, at the end of the 12th century, Rabbi Moses ben Maimon [1135-1204], also known as Maimonides or *Rambam*, published the details of the Hebrew calendar.

Therefore, we conclude that some Jewish communities were following the Hebrew calendar rules, including the postponement rules, although some had slightly different interpretations.

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<sup>67</sup> Refer to footnote 89.

<sup>68</sup> The *Molad Zaqen* interpretation by Ben Meir: Because the molad of Tishri was on a Tuesday before 12 noon and 642 parts (before approximately 12:35p.m.), no postponement would have been required and the Holy Day on the 15th of Nisan would be on Sunday.

<sup>69</sup> The *Molad Zaqen* interpretation of the Hebrew calendar: Because the molad of Tishri was after 12 noon on Tuesday, the first of the seventh month was postponed to Wednesday. Further, as Wednesday was not a permitted day of the week for the first of Tishri, it was postponed to Thursday. Therefore calculating back, the Holy Day of the 15th of Nisan in A.D. 922 would be on a Tuesday.

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### **B.4.8—Secular sources are not always reliable**

In summary, the Jewish calendric history has been one of controversy and diversity. Secular and historical sources are not always reliable, are rather divergent, can be extremely confusing, do take a tremendous time to research, and in the end, we may in fact be more confused than when we started.

Conversely, to say that because among the Jews there have been calendric disagreements *is not* a proof that the Hebrew calendar did not exist or is not valid. Diversity of opinions among the Jewish communities is a reality.

Stern admits: “Sources from before the beginning of our period [2nd century B.C.]<sup>70</sup> are remarkably *uninformative about the calendar*. Although the dates of the annual festivals and of historical events are frequently given in biblical sources, *the Bible has no apparent interest in explaining how these dates were reckoned*” (p. 2).

The Bible and secular sources are vague about the so-called “biblical” calendar. Why? Because God had delegated the proclaiming of God’s Holy Days to the priesthood,<sup>71</sup> and it was a closely guarded secret (*The Comprehensive Hebrew Calendar*, Arthur Spier, p. 2). “It is the glory of God to conceal a matter, but the glory of kings is to search out a matter” (Proverbs 25:2). Additionally, secular and historical information about the Hebrew calendar is not clearly documented until the 12th century A.D. by Maimonides.<sup>72</sup>

Therefore, many have drawn the conclusion that the Hebrew calendar evolved and question which is God’s calendar or the “biblical” calendar. It is self-evident that there has been a diversity of opinions and practices about the calendar. But that does not negate the conclusion, based on the facts mentioned above, that some Jewish communities were following the Hebrew calendar rules, including the postponement rules, and some were not.

### **B.5—Intercalation and the 19-year time cycle**

It is absolutely essential that the calendar, as proclaimed by the priesthood, must enable God’s people to correctly observe God’s Holy Days at their appointed times, and at the proper

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<sup>70</sup> “Our period”: The period of Stern’s analyses in his book *Calendar and Community*, which is from 2<sup>nd</sup> century B.C. and ends in 10<sup>th</sup> century A.D.

<sup>71</sup> Refer to Appendix A.5.

<sup>72</sup> “In 1178 CE, Maimonides (Rambam) wrote in the Mishneh Torah, Sanctification of the Moon (11.16), that he had chosen the epoch from which calculations of all dates should be as ‘the third day of Nisan in this present year . . . which is the year 4938 of the creation of the world’ (March 22, 1178 CE). He included all the rules for the calculated calendar and their scriptural basis, including the modern epochal year in his work, and beginning formal usage of the *anno mundi* era. From the 11th century, *anno mundi* dating became dominant throughout most of the world’s Jewish communities. Today, the rules detailed in Maimonides’ calendrical code are those generally used by Jewish communities throughout the world.

“Since the codification by Maimonides in 1178 CE, the Jewish calendar has used the Anno Mundi epoch (Latin for ‘in the year of the world,’ abbreviated *AM* or *A.M.*; Hebrew לבריאת העולם), sometimes referred to as the ‘Hebrew era’, to distinguish it from other systems based on some computation of creation, such as the Byzantine calendar” (*Hebrew calendar*, from *Wikipedia*, the free encyclopedia, section 1.4.1--“Anno Mundi”).

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lunar months' dates. The Hebrew calendar is a luni-solar calendar, following the phases of the moon, but also ensuring that God's festivals always occur at their appointed seasons.

A *synodic lunar* month is defined as the time required for a complete cycle of the moon phases as seen from Earth, i.e., it is the time from the new moon back to the next new moon. The lunar month averages  $29\frac{1}{2}$  days in length (more precisely 29.530588 mean solar days, i.e., 29 days, 12 hours, 44 minutes, 3 seconds).

A lunar year consists of 12 lunar months, about 354 days, while the solar tropical year is about  $365\frac{1}{4}$  days long (more precisely 365.242190 days). The lunar year is therefore about  $11\frac{1}{4}$  days shorter than the solar tropical year. *After three years it amounts to about  $33\frac{3}{4}$  days shorter.*

The reality is that we count the number of days in months and years as whole numbers, but astronomically they are fractional numbers. Therefore, whichever way one looks at it, *there has to be regular adjustments to account for the remainder fractional numbers.* That is true for any calendar.

To keep any luni-solar calendar in its seasons, *an extra 30-day month plus a few extra days* need to be added every two to three years. These adjustments, which add days to the beginning of the year in the Hebrew calendar, are called intercalations and postponements. Together, intercalations (the addition of an extra 30 days at a time) and postponements (the addition of an extra day or two at a time) to the beginning of the lunar year calibrate the lunar year to the solar seasons. This will be discussed in detail in Appendices C.2 and C.3.

The Greek astronomer Meton<sup>73</sup> of Athens (late fifth century B.C.) first *publicly stated and published*, ca. 432 B.C., that a period of 19 years is almost exactly equal to 235 lunar months, placing the Earth, sun and moon in practically the same position as 19 years before. This 19 tropical years' cycle is known as the Metonic cycle and is discussed in more detail in Appendices C.5.2 and C.6.

This close correlation of the lunar months in a cycle of 19 tropical years is used by the Hebrew calendar to keep the three festival times, according to Deuteronomy 16:16 of Unleavened Bread, Pentecost and Tabernacles,<sup>74</sup> at their appointed times (seasons). This is achieved by having

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<sup>73</sup> This cycle was already known to ancient Babylonian and Chinese astronomers. It was known in China circa 600 B.C. and was called the zhang cycle (*The Mathematics of the Chinese Calendar*, <http://www.math.nus.edu.sg/aslaksen/calendar/calendar-talk-Chinese-handout.pdf>, Helmer Aslaksen, Department of Mathematics National University of Singapore; Exploring Ancient Skies: A Survey of Ancient and Cultural Astronomy, David H. Kelley, Eugene F. Milone, 10.1.4.1 – Chinese Time-Keeping and Calendar, p. 327). For additional details about the 19-year cycle, refer to Appendix C.3.

It may be possible that “the sons of Issachar who had understanding of the times, to know what Israel ought to do” (1 Chronicles 12:32), could have had the understanding of the movement of the heavenly bodies, and thereby determined this heavenly pattern to keep God's Holy Days at their appointed times. If so they would have “handed down as a tradition of old” (Spier, p. 1) for the priestly use.

<sup>74</sup> Refer to Appendices B.6 and B.7 for the scriptural background regarding the appointed times of both the early harvest festivals and the late harvest festivals at the turn of the year.

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*seven intercalary years of 13 months and 12 common years of 12 months. The numbers seven and 12 have a biblical implication of completeness and perfect organization.*<sup>75</sup>

We have a strong case for biblical evidence that a 13th month was intercalated during the time of Ezekiel. This can be concluded by a careful reading of Ezekiel 1-8.<sup>76</sup> This was *before* the Jewish captivity to Babylon. However, again, we find *no intercalation rules* specified in the Bible.<sup>77</sup>

The *Tractate Sanhedrin folio 11a* of the Talmud relates that Gamaliel II (mentioned in Acts 5:34) said to an uninvited member of the Sanhedrin “you are worthy of intercalating all years [in need of such], but it is a decision of the Rabbis that it *should be done only by those who have been specially appointed for the purpose.*” This shows that this person had the recognized skills to know how to intercalate years in a 19-year cycle,<sup>78</sup> and it endorses that there was a proper delegated *chain of authority* for these calculations of the calendar during Christ’s time.<sup>79</sup>

When a month is determined to be the first month of the new year and therefore declared Abib, it may need a 13th month intercalated (added) to the previous year, which effectively postpones all of God’s Holy Days for that new year by four weeks and two days later in the week.<sup>80</sup>

### B.6—Intercalating a 13th month—observation or calculation?

There are basically two methods that different people use to determine the first month of spring (Abib or Aviv), which affects *whether a 13th month is intercalated or not* and when the year begins: by *observation* of the barley or *calculation* developed from observing the heavenly signs caused by the movement of “the lights in the firmament of the heaven.”

The ***observation method*** for determining the first month of spring is typically based on the observation of the barley grain in Israel. Extra considerations could also be taken, such as “when winter rains had not stopped, when the roads for Passover pilgrims had not dried up, and when the young pigeons had not become fledged” (Spier, p. 1).

In the 40 years that the Israelites were in the wilderness they could not have observed the barley in Israel. The same is true during their captivity and during a great portion of the last two millennia, because the Israelites were not living in Israel at all. In such circumstances they could not have observed the “green ears” barley in Israel.

When God curses the land, such as during the time of Elijah the Tishbite and Ahab, there was no dew or rain for three years in the land (1 Kings 17). Barley would have not ripened.

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<sup>75</sup> Could the relationship of seven and 12 years (meaning complete and perfect organization) in a 19-year cycle be coincidental?

<sup>76</sup> Refer to footnote 21 under Appendix A.4.

<sup>77</sup> Refer to Appendix A.4—Some of the lunar and solar considerations.

<sup>78</sup> It may be possible that “the sons of Issachar who had understanding of the times, to know what Israel ought to do” (1 Chronicles 12:32), could have had the understanding of the movement of the heavenly bodies, and thereby determined this heavenly pattern to keep God’s Holy Days at their appointed times. If so they would have “handed down as a tradition of old” (Spier, p. 1) for the priestly use.

<sup>79</sup> Refer to Appendix A.7.

<sup>80</sup> Refer to Appendices A.8 and B.6.



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It is self-evident that the Bible *does not* provide direct biblical statements about observing the barley crop, so that a Bible student may determine *with confidence* when a year is to begin or what constitutes a year based on barley observation. This is particularly so in those years in which two possible months could be defined as the month of Abib (the first month of spring), due to the seasons not being directly aligned with the lunar year.

In such years, there can be disagreements among those that look for the ripening barley, as the indicator of the beginning of spring. Such disagreement occurred by those that looked for the ripening barley in 2016. Some started the year in one lunar month and others, who also adhered to observing the ripening of the barley, started the year the following lunar month. That is clearly divisive, ending with two sets of Holy Days one month apart throughout the whole year.

Intercalation would become “irregular and largely unpredictable” and would still be dependent “on an authoritative person or body of people who are responsible for deciding, every year, whether or not to intercalate” (Stern, pp. 47-48).<sup>81</sup>

The *calculation method* is based on a fixed cycle determined by observing the signs and seasons caused by the movement of the “lights in the firmament of the heaven” (Genesis 1:14). From this astronomical observation various cycles may have been used by different communities, cultures and ages in the past. Yearly cycles commonly found are of three, eight, 19, 25 or 30 years (Stern, p. 48).

The Hebrew calendar cycle is 19-years<sup>82</sup> and “was probably in use among the Jews in the 2nd century B.C. [*before* Christ]. They had *certainly* acquired proficiency in its use *before* the destruction of the Temple in A.D. 70” (Segal, p. 284).

Segal adds:

“It is commonly held that, even for some centuries after the final redaction of the Talmud, the Jewish calendar was based *partly* on computation but still partly on the *observation of natural phenomena*, and that intercalation was irregular. This view is indeed derived from the Talmud, but it is founded, I believe, upon an *uncritical acceptance* of the numerous and *varied* statements that are found there.

“There are, in fact, two opposing tendencies in the Talmud.

“*On the one hand*, it is *certain* that the Jews of Palestine *did employ calculation in their calendar reckonings*, and Bornstein has assembled *a great number of references to calendar computation in the Talmud*. This is to be expected; the Jews were surrounded by peoples who had used this method [calculation] for centuries. At one time, as we have seen, calendar reckoning among the Hebrews, as in other nations, *was a preserve of the priests*. Even at a later age, there was still a marked reluctance to engage in an occupation [calculation] that had once been restricted to a privileged community [the priests]. It is, therefore, *an indication of the extent to which computation of the calendar was accepted* in Palestine that the Rabbis insist that whoever had the ability to compute

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<sup>81</sup> Refer to Appendix A.2 (5).

<sup>82</sup> Refer to Appendix C.3.

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should not withhold his services. ‘Everyone knows that intercalation depends on computation’ (BT Ros haShanah 7a).

“On the other hand, attachment to the popular criteria of calendar reckoning continued. References to *actual observation of the state of the grain crops are, it is true, rare*. But as late as the 4th century Rabbis were urging the public to examine the sky for the crescent moon which marks the opening of a new lunation.

“The two opposing trends must be analyzed separately. They appear, indeed, at different levels of the population. An official body was responsible for fixing the calendar among the Jews both in the Mishnaic period and later, and *by then, it is clear, the calendar was fixed by computation*. It was the general public who watched for the new crescent at the beginning of each lunation” (pp. 284-285).

“It was this way that the general public could be convinced that those who computed and proclaimed the calendar—and in times of emergency deferred or advanced the embolismic [intercalated] year—were not acting arbitrarily and without proper regard for the course of the seasonal year and the requirements of the nation” (p. 304).

Spier concurs with Segal and adds: “A special committee of the Sanhedrin, with its president as chairman, had the mandate to *regulate and balance the solar with the lunar years*. The so-called Calendar Council (Sod Haibbur) *calculated the beginnings of the seasons (Tekufoth)* on the basis of *astronomical figures* which had been handed down as a tradition of old . . . The Council on intercalation considered the *astronomical facts* together with the *religious requirements of Passover* and the natural conditions of the country” (ibid. p. 1).

### **B.7—A precise heavenly clock**

Even though the lunar orbit has many irregularities, God has maintained a precise heavenly clock based on lunar and solar cycles (Genesis 1:14-16). The astronomical seasons based on movements of the heavenly bodies (including equinoxes and solstices) can be calculated back and forwards for thousands of years by astronomers, because God has these bodies moving through space according to His precise laws.

God has also declared prophecies that are very specific and precise to occur at certain times. A number of events in the past happened exactly at the time that God decreed, including the correct day of the week (e.g. Christ’s death). Some prophetic events, like the day and hour of Christ’s return we do not know, but the Father does know (Matthew 24:36). God is supreme and in perfect control of time. God’s plan of salvation has a time frame. We do not know all the timings today, but one day when we will understand, we will see that God did, does and will do everything on time and at the right time.

The basic principles of calendric calculations were ordained by God, and we are able to observe them from the moon and solar cycles.<sup>83</sup> They were given to the Israelites and were committed to the priesthood to proclaim them at their seasons. They were preserved by the priests,

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<sup>83</sup> Refer to Appendix A.3.3.

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and during Christ's time they were preserved by a formal priestly body, the Sanhedrin. Christ never objected to their proclamations of God's Holy Days. Jesus and the apostles kept the Holy Days according to the Sanhedrin's proclaimed Hebrew calendar.

According to Polycrates, the early Church followed the Hebrew calendar as proclaimed at the time to be able to keep the Passover on Nisan 14. "Why need I mention the bishop and martyr Sagaris who fell asleep in Laodicea, or the blessed Papirius, or Melito, the Eunuch who lived altogether in the Holy Spirit, and who lies in Sardis, awaiting the episcopate from heaven, when he shall rise from the dead? All these observed the fourteenth day of the passover according to the Gospel, deviating in no respect, but following the rule of faith. And I also, Polycrates, the least of you all, do according to the tradition of my relatives, some of whom I have closely followed. For seven of my relatives were bishops; and I am the eighth. And my relatives always observed the day when the people put away the leaven" (quoted in *The History of the Church*, Eusebius, Book V, Chapter XXIV, verses 2-7. Translated by A. Cushman McGiffert. Digireads.com Publishing, 2005, p. 114).

Today the Church of God also follows the Hebrew calendar as proclaimed at the current time. God delegated the responsibility to develop a calendar within His God-given parameters to His servants as described in the Summary sections 2 through 5. Otherwise, how could we keep God's Holy Days at His appointed times? One has to conclude that this is the way God allowed and intended.

### **B.8—The month of Abib and when to add a 13<sup>th</sup> month**

Passover must fall in the first month of spring, the month of Abib: "Observe the month of Abib, and keep the Passover to the LORD your God, for in the month of Abib the LORD your God brought you out of Egypt by night" (Deuteronomy 16:1).

At the beginning of spring, the barley ripens to be harvested. The first fruit of the barley harvest is required for the wave sheaf offering, on the first day of the week during the Days of Unleavened Bread, and it represents Jesus Christ being accepted in our behalf (Leviticus 23:11; Hebrews 9:12; 10:10, 14).

The time when the barley is ready for harvesting, according to the observation method, can be subjective to interpretation of what the "Abib" barley grain is, particularly in the years where the spring equinox is just before the full moon (15th of the month). In those cases, two months in spring may fulfill the interpretation that the barley is "Abib" and ready for harvesting.

When the spring (vernal) equinox is near and before the 15th (near and before the first Day of Unleavened Bread, which is a full moon) it is possible that the barley may not ripen in time for the wave sheaf offering. A determination needs to be made *before* the beginning of the month (before the beginning of Nisan (Abib)) to decide whether to intercalate (add) an extra month in the year before. That way the barley, under normal weather conditions, would be ripe by the time of the wave sheaf offering.

According to the Hebrew calendar, if a 13th month (with 30 days) needs to be added, it is added between the 11th and 12th month, and is called Adar I. The month of Adar (with 29 days)

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is now renamed to Adar II and it actually becomes the 13th month. The year (that is ending) then becomes a leap year, because it has a 13th month added.

The Jewish celebrations that were planned for Adar, such as Purim, will now fall in Adar II. The following month, Nisan (or Abib), the first month of the following year, is therefore effectively delayed (postponed) by at least 30 days, and the festivals will be perceived by the brethren today to be “late” in relation to the current Gregorian calendar in use.

Stern confirms that calculations were used (rather than observation of the barley), when he states that according to the Palestinian Talmud this 29-day month of “Adar adjacent to Nisan *is always defective*”<sup>84</sup> (with 29 days). Stern adds that the Babylonian Talmud also concurs with the Palestinian, and he adds that in the same passage, the Babylonian Talmud referring to the month of Elul [the sixth month], says it “had never been full (30 days)” *since the days of Ezra*.<sup>85</sup> *These Talmudic quotes therefore support a calculated Hebrew calendar since the times of Ezra* [nearly 500 years before Christ].<sup>86</sup>

If one is following the observation-only methodology, this intercalation decision is made by searching the fields around Jerusalem to determine if the barley is Abib before the observation of the new moon. This determination that the barley is Abib can be subjective and become divisive even among those very same people who observe the barley when the spring equinox is near and before the 15th.

A typical situation occurred in 2005. The vast majority of those Karaite observers (Jews who do not observe Talmudic law), who searched north and south of Israel for the early green sheaves of the Abib barley in late February/early March 2005, did not determine the barley to be Abib (in early March). However, some few Karaite observers did decide that the barley was Abib. The outcome was a division among those observers of the barley. Some few observers of the barley began the year (Nisan 1) about mid-March and other observers of the barley intercalated an extra month, pushing Nisan 1 to mid-April as according to the Hebrew calendar in that year.

Due to a “late” winter in 2004/2005, the barley was planted late and had not ripened. Critics of the Hebrew calendar were closely monitoring the situation that specific year to prove that the Hebrew calendar was wrong. But the Hebrew calendar was in season.

According to the Hebrew calendar in 2005, we had an intercalation by adding an extra 30-day month in mid-February (Adar I) and the regular Adar, which includes Purim, became Adar II. Therefore, Nisan 1 of the following new religious year, according to the Hebrew calendar started on April 10, 2005, and thus it was a so-called “late” Passover (in relation to the Gregorian calendar), but accurate according to God’s timing. The timing for the calculated Hebrew calendar ended up to be in agreement (in season) with those observers who did not find the barley to be Abib in late February/early March 2005.

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<sup>84</sup> Stern, page 166.

<sup>85</sup> Stern, page 165 and footnote 36, B. RH 19b and 32a; B. Betzah 6a and 12b.

<sup>86</sup> Refer to Appendix B.4.2.

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Those Karaite Jews who declared that the barley was Abib (ripened grain) earlier, began the year in March. For them the Feast of Tabernacles started on September 18, 2005, and therefore most of the Feast of Tabernacles (five days of it) was in summer (before the autumn equinox). That causes a concern for some people based on their interpretation of Exodus 34:22. That concern is discussed in Appendices A.8.2 and B.9. According to the calculated Hebrew calendar, the Feast of Tabernacles in 2005 fell fully after summer, in the fall.

### **B.8.1—When is the barley Abib?**

What does the Bible *precisely* define as Abib grain? The word Abib is mentioned in the Bible eight times, and six of them (in Exodus 13:4; 23:15; 34:18 and Deuteronomy 16:1) merely name the month. The other *two* instances are Leviticus 2:14 and Exodus 9:31.

In Leviticus 2:14 when God is giving the instruction regarding the “meat offering” (grain offering), He indicates what He means by being Abib: “If you offer a grain offering of your firstfruits to the LORD, you shall offer for the grain offering of your *firstfruits* green heads (Abib) of grain roasted on the fire, grain beaten *from full heads*.” In this offering, Abib grain is defined as being the *firstfruits* (the first crops that ripened and were *mature* for harvesting) being roasted, as well as being beaten from full heads or ears (that is, *mature*).

This “meat offering” (grain offering) was also symbolic of “service to others” and more specifically, it pointed to Christ’s offering of service to us as *the bread of life*. The spiritual significance is that we are likewise to “become *mature*, attaining to the whole measure of the *fullness* of Christ” (Ephesians 4:13, NIV). The symbolism of the wave sheaf offering of barley therefore represents the mature, adult, resurrected Christ “accepted on our behalf” (Leviticus 23:11). There is nothing in this offering that justifies *green* in the sense of grain which is not ripe, although many experts in Hebrew will assert that Abib grain means green grain. God further clarifies that Abib grain is mature (ripe) “*firstfruits . . . grain from full heads*,” and it represents Christ as a *mature* offering.

The above explanation is further corroborated with the case in Egypt that the barley crop was destroyed when it was Abib during the seventh plague of Egypt. “Now the flax and the barley were struck, for the barley was *in the head* (Abib) and the flax was in bud. But the wheat and the spelt were not struck, for they are late crops” (Exodus 9:31-32). The barley crop was Abib, which means it had begun to ripen, taking on a yellowish hue and becoming brittle, therefore affected by the hail. This is contrasted with the wheat and the spelt, which are later crops, earlier in their ripening process, and therefore they were flexible and not damaged by the hail.

That was the state of the barley during the seventh plague of Egypt. Then the Egyptians still had the occurrence of the plague of locusts (eighth plague, Exodus 10:4-19) and the plague of darkness for three days (ninth plague, Exodus 10:21-23) before the beginning of the month (Exodus 12:1). This is strong evidence that the month of Abib started, in this instance, *after* the barley was Abib. So when there are two months in succession which could fit the interpretation of Abib because, for instance, the equinox is well into the month, intercalating a month, as the Hebrew calendar does, is biblical.

### **B.8.2—The barley needs to be ripe for the wave-sheaf offering**

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The Karaites state that the barley is in an Abib state when the barley is young and green; which could imply that it does not have to be ripe. They use Leviticus 23:14 to prove their point. However, Leviticus 23:14 states that “You shall *eat* neither bread nor parched grain nor fresh grain *until* the same day that you have brought an offering [the wave-sheaf offering] to your God.” This verse indicates they were *not to eat* the newly harvested grain until after the wave-sheaf offering. Leviticus 23:10 adds, “when you come into the land which I give to you, and *reap its harvest*, then you shall bring a *sheaf* of the *firstfruits* of your *harvest* to the priest.”

The wave-sheaf offering is from the first stalks (the firstfruits) of the harvest and is to be waved on the *day after the Sabbath* (Sunday), during the Days of Unleavened Bread. “He shall wave the sheaf before the LORD, to be accepted on your behalf; on *the day after the Sabbath* the priest shall wave it” (Leviticus 23:11; refer also to Joshua 5:11). The Days of Unleavened Bread are from the 15th of the month for seven days (Leviticus 23:6).

As the barley is ripe, the harvest is to begin, and the counting of 50 days to Pentecost starts from and including the day of the wave-sheaf offering. “You shall count seven weeks for yourself; begin to count the seven weeks *from the time you begin to put the sickle to the grain*” (Deuteronomy 16:9). “And you shall count for yourselves from the day after the Sabbath, *from the day that you brought the sheaf of the wave offering*: seven Sabbaths shall be completed” (Leviticus 23:15).

Barley must be ripe and therefore ready for *the sickle to be put to the grain* by the first day of the week during Unleavened Bread. Leviticus 23:14 does *not* define what Abib grain is, and *only allows one to eat the newly harvested ripe grain after the wave-sheaf ceremony* on the first day of the week (the Sunday) during the Days of Unleavened Bread. Therefore, it is critical for the month of Abib to be a month during which the barley is ripe, without any uncertainty.<sup>87</sup>

The above example is not a justification to intercalate a year so that all the barley is ready for harvesting. Some fields may ripen before others. The wave-sheaf offering of barley is by its very nature an offering of “a sheaf of the firstfruits of your harvest” (Leviticus 23:10). The harvesting therefore may begin if the specific field is ready for harvesting, but the harvested barley is not to be eaten until after the wave-sheaf offering. Hence, when there was a need for a decision to be made about the beginning of the year, that was also a responsibility of the priesthood (using the principle of Deuteronomy 17:8). And such a decision regarding the beginning of the year had to be made sufficiently far in advance because the notification of the festival dates had to reach the pilgrims in time for them to plan, purify themselves and travel to Jerusalem.

It should be considered that when God does not bless the land, barley may not be ripe at the correct season. For instance, during the three-year drought in Ahab’s time, barley would have not ripened. Additionally, during the time of Moses’ life before the Israelites got to the Promised Land (while they were in the wilderness for 40 years and were eating manna), they could not look for the barley to determine when the year was to start. They also could not look for the barley in Jerusalem when they went into captivity and when they were dispersed for centuries around the world.

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<sup>87</sup> Refer to Appendix B.8.4 for an explanation of the spiritual implication.

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Finally, and most important of all, looking for the ripe barley in Israel is not a biblical requirement to determine when to start the year. In effect, the seasonal cycle is what automatically causes the barley to be ripe.

### **B.8.3—When is the month of Abib?**

Let's look at what God declared in the week that man was created, regarding days, weeks and years:

- 1) Days as proclaimed by God are from sunset to sunset. "Evening and morning were the first day" (Genesis 1:5).
- 2) The seven-day weekly cycle and the seventh-day Sabbath rest were sanctified by God during the week that man was created (Genesis 2:2-3). This weekly cycle has never been broken.
- 3) During the week that man was created, God also declared that astronomical events derived from the movements of the sun, moon and stars in relation to the Earth (Genesis 1:14-16) were to be for "signs and seasons" with which "days and years" were to be determined. These signs include lunar phases, solar seasons, eclipses, and their relative position in the starry sky as observed from the Earth.

God appointed the beginning of the day at sunset, and the weekly Sabbath at creation. However, the arranging of "days and years" in a definite order was to be determined by the priesthood using "signs and seasons" derived from the movements of the "lights in the firmament of the heavens," namely the sun, moon and stars (Leviticus 23:4).

The month of Abib is the beginning of spring, the month of *green ears* when the fields have a lovely green look, the plants bud and the early grain crops ripen, under normal weather conditions. This seasonal budding is "the precious fruits brought forth by the sun, and for the precious things put forth by the moon," in that sequence (Deuteronomy 33:14, KJV). The ripening of the barley as well as when trees bud are closely linked to the *spring (vernal) equinox* relative to the lunar months, particularly in the Promised Land which is just north of the tropic of cancer. This is the case even though the equinox itself is not critical, and the spring equinox is not mentioned in the Bible. The extra sunlight due to longer days as the equinox approaches and then passes, together with moon phases, affect when to harvest, as experienced farmers will attest.

One interpretation is that the "month of Abib" (Nisan) has to be the *first full lunar month after* the vernal (spring) equinox. Others consider the "month of Abib" (Nisan) to be the month during which the spring equinox actually falls. Neither of these can be biblically substantiated, either by direct or implied biblical statements. (Refer to appendix A.1.)

By observing the distinguishing signs and seasons caused by the lights (sun, moon and stars) in the firmament as instructed (Genesis 1:14), the priesthood, possibly with the help of the sons of Issachar,<sup>88</sup> was able to astronomically calculate and determine in advance the month of Abib.

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<sup>88</sup> "The sons of Issachar who had understanding of the times, to know what Israel ought to do" (1 Chronicles 12:32).

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Historical and recorded evidence indicates that “the beginnings of the seasons (*tekufah*)”<sup>89</sup> were astronomically calculated.<sup>90</sup> These seasonal beginnings are particularly important as they relate to the *first* month (Abib—the month of the Passover/Unleavened Bread season) and the *seventh* month, at the turn of the agricultural year (the fall<sup>91</sup> Holy Day season). The calculations of the first month also determine in which years to intercalate a 13th month. These astronomical calculations are according to the guidelines in Genesis 1:14.<sup>92</sup>

### **B.8.4—The spring harvests’ spiritual implication**

One of the *spiritual lessons* from the spring harvests in the New Testament is that God loves us so much that He gave up “His only begotten Son” (John 3:16), and that He is now “risen from the dead, and has become the firstfruits of those who have fallen asleep” (1 Corinthians 15:20). The wave-sheaf offering of barley’s firstfruits in the early spring represented Jesus Christ, who was not “immature” but a *mature* and “*perfect man*” (Ephesians 4:13) who was the “firstborn over all creation” and the “firstborn from the dead” (Colossians 1:15, 18).

Consequently, this offering during the Days of Unleavened Bread in which the first sheaf of grain of the spring harvest was to be waved before God, represented the resurrected Christ, presenting Himself to God the Father and “accepted *on our behalf*” (Leviticus 23:11; compare with John 20:17; Matthew 28:9; Hebrews 9:12; 10:12-13). As Hebrews 10:14 emphasizes, “For by one offering He has perfected forever those who are being sanctified.” Thus, the spiritual work of Jesus Christ in the heavenly Holy of Holies, now officially accepted by the Father *on our behalf*, gives us access to the Holiest by His blood by “a new and living way” (Hebrews 10:19-20).

On the 50th day from that wave sheaf, the Father fulfilled His promise to give us His Spirit which Christ sent to us from the Father, begetting us as His children, and fulfilling the meaning of the day of Pentecost (John 14:16, 26; 15:26; 16:7; Romans 8:16-17; Acts 2:1; Leviticus 23:15-17).

### **B.9—The Feast at the year’s end (Exodus 34:22)**

After Pentecost, in the northern hemisphere, we move into summer where the fruits and crops grow *until the end* of the agricultural year, when the time for *harvesting* arrives. This is analogous to God’s spiritual plan of salvation, where a member’s spiritual growth is required. After

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<sup>89</sup> Spier, page 1.

<sup>90</sup> “It is *certain* that the Jews of Palestine *did employ calculation in their calendar reckonings*, and Bornstein has assembled a *great number of references to calendar computation in the Talmud*” (Segal, page 284). “The Babylonian Talmud frequently cites a saying attributed to Rav (Babylonian Amora, early third century), that since the days of Ezra the month of Elul [6<sup>th</sup> month] had never been full (30 days). It does acknowledge that this ‘rule’ was not always observed, as ‘Ulla once explicitly reported. But the reference to Ezra suggests, nevertheless, that this rule existed already’ in the Mishnaic period, and even long before” (Stern, page 165). These quotes support an astronomically calculated Hebrew calendar during the time of Christ. Also refer to Appendices B.4.2, B.5 and B.6.

<sup>91</sup> The fall Holy Days season occurs at the turn of the seasons—from summer to autumn—in the northern hemisphere, and therefore its name “fall Holy Days.” However, it should be noted that the usage of the term “fall Holy Days” is a colloquial usage today by the Church. The four so-called fall Holy Days occur at the turn of the seasons, and therefore they may be at the end of summer or at the beginning of autumn, as they are related to the end of summer harvest. What is meant by our colloquial usage is that they occur at that time period of the year. Also refer to Appendix B.7.

<sup>92</sup> Refer to Appendix A.3.3.



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we receive God’s Holy Spirit, we need to be “growing in the grace and knowledge of our Lord and Savior Jesus Christ” (2 Peter 3:18) and “overcoming *until the end*” (Revelation 2:26).

God gives us instructions to keep four Holy Days “*at the end of the year*, when you have gathered in the fruit of your labors from the field” (Exodus 23:16) to celebrate this last harvest season.

Therefore, the requirement is for the Feast of Tabernacles to be “*at the year’s end*” (Exodus 34:22). The word “*end*” in Exodus 34:22 is translated from the Hebrew word *tekufah*. This word is used in the Bible four times.

As briefly mentioned in appendix A.8.2 above, *some infer* from the Hebrew word *tekufah* in Exodus 34:22 that the Feast of Tabernacles *must fall in its entirety* during the fall season (autumn in the northern hemisphere). Since there are, on average, two years in a 19-year cycle on the Hebrew calendar when the Feast of Tabernacles does not fall entirely in the autumn, they state that the Hebrew calendar must be wrong.

Indeed, the Talmud uses the term *tekufah* in reference to the equinox. As far as we can presently determine, during the time of the writing of the Talmud the term *tekufah* could mean four specific days of the year (equinoxes and solstices) as well as the four respective seasons that began with those four days.

However, one must keep in mind that the Talmud was written much later than the text of the Hebrew Old Testament. The Talmud was composed between the years A.D. 200 and 600. This is more than 1,500 years after the time of Moses. Much can change in a language over 1,500 years.

For instance, many words in English have changed meaning over the centuries. The English word “meat” used to refer to food in general—solid food of a variety of kinds (not just animal flesh). The word “cute,” which means pretty in a youthful way, used to mean clever or shrewd. Likewise, the same appears to have happened to the word *tekufah*. We need to allow the Bible to interpret itself and compare that with the meaning understood during the time of the Talmud.

### **B.9.1—Exodus 34:22, *tekufah* and the Feast of Tabernacles**

We read in Exodus 34:22, “And you shall observe the Feast of Weeks, of the firstfruits of wheat harvest, and the Feast of Ingathering at the year’s end.” What exactly does Exodus 34:22 mean? Does it say that the Feast of Tabernacles can only occur *after* the autumn equinox in the northern hemisphere?<sup>93</sup> What difference does the equinox make? One must also ask what part the autumn equinox played in any of the Hebrew calendar calculations in the ancient world. The current Hebrew calendar is based on the revolution of the Earth around the sun (determining the length of a year) and the cycles of the moon (determining the length of a month), but it is not based on the equinoxes.

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<sup>93</sup> The autumn equinox in the northern hemisphere usually occurs on September 22 or 23 but can very rarely fall on September 21 or 24.

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Let's look at this verse without any preconceived ideas. The term *tekufah* is translated in the NKJV as “at the year’s end.” Other translations of the term are “at the turn of the year” (NIV) and “at the close of the year” (New American Bible).

Note that not one of the translations uses the term “equinox” or the word “after.” Yet this verse is widely used to support the idea that the Feast must take place *after* the equinox. “Rabbinic sources interpret this phrase as meaning the (autumn) equinox, but it is unlikely to have been its original meaning” (Stern, p. 52).

By looking at the Hebrew of this verse, we can begin to piece together a proper explanation. In none of the English translations do we find a requirement for the Feast of Tabernacles to occur after the autumn equinox. To interpret this from the English is simply not proper. Exodus 34:22 is reproduced below from the Hebrew text. There are no prepositions.

haš šā-nāh.	tə-qū-paṭ	hā-'ā-sīp,	we-haḡ	hit-tīm;	qə-sīr	bik-kū-rē	lə-kā,	ta-'ā-šeh	šā-bu-'ōt	we-haḡ
הַשָּׁנָה:	תְּקוּפַת	הָאֲסִיף	וְחַג	חִטִּים	קִצִּיר	בִּכּוּרֵי	לָךְ	תַּעֲשֶׂה	שָׁבֻעַת	וְחַג
of at the year	end	of Ingathering	and the Feast	wheat	of harvest	of the firstfruits	you	shall observe	of Weeks	And the Feast

The literal translation of this verse would be: “Observe (*asah*) feast (*chag*) weeks (*shabua*) firstfruits (*bikkuwr*) wheat (*chittah*) harvest (*qatsiyr*) feast (*chag*) ingathering (*acyph*) year’s (*shaneh*) end (*tekufah*).” (Note that Hebrew is written from the right to the left).

Literally, this verse tells us that we are to observe the Feast of Weeks with the firstfruits of the wheat harvest and the Feast of Ingathering at the end of the year. The key word in all of this is the Hebrew *tekufah* (underlined in the literal translation above). It is true that in post-biblical Jewish writing this term is used for equinox. But that does not address the usage of the word in the Hebrew of the Bible. Even if one imposes the term equinox in place of *tekufah*, there is still no concrete evidence to conclude that this verse *requires* the Feast to begin *after* the equinox. There is no such requirement in the verse since the Feast always occurs near the autumn equinox. It would clearly fulfill the intent of the verse even if we conclude that *tekufah* means equinox. The Feast is to be observed “at” or “around” or “near” the year’s end (*tekufah*)—all such translations are permissible.

There is another possibility which should not be overlooked in our studies. In fact, when combined with other verses in the Bible, it is clear that the Hebrew *tekufah*, as used in Exodus 34:22, doesn’t refer to the equinox at all. The word in Hebrew (as used in Scripture) has a more generic meaning as a “cycle” or a “circuit” or a “completion of a cycle.”

When compared to other verses, it is evident that the correct explanation is that the Feast of Tabernacles (Ingathering) is to occur when the cycle or circuit of harvest has been complete. The Hebrew term for “ingathering” refers to harvest. This is the descriptive phrase attached to the Feast and it has reference to harvesting the crops, under normal weather conditions, hence the term “ingathering.” As the weather changes towards the end of summer, the days get shorter and cooler, and based on the number of days since planting, the harvest is completed. In reality, the actual day of the equinox has little bearing on the completion of harvest.

### B.9.2—The biblical use of *tekufah*

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By going to all the sources we have available, we can get a clearer picture of what is meant by this term *tekufah*. But before we look at the definitions collected from outside the Bible (in appendix B.9.3), let's go to the Bible itself and see how this term has been used. It isn't a very exhausting process, since there are *only three other verses* (besides Exodus 34:22) in the entire Old Testament which use the Hebrew word *tekufah*. None of these verses confirms the use of *tekufah* as equinox. The evidence will show that the usage of the term was much broader in the days of the Bible.

Psalm 19:4-6: "Their line has gone out through all the earth, and their words to the end of the world. In them He has set a tabernacle for the sun, which is like a bridegroom coming out of his chamber, and rejoices like a strong man to run its race. Its rising is from one end of heaven, and its circuit [*tekufah*] to the other end; and there is nothing hidden from its heat."

Here we have the sun described as a bridegroom going forth from its tabernacle. It is described as a hero that runs along a path. What is being described is the daily journey of the sun (as it appears from Earth) from the time it rises until it sets. The conclusion of verse 6 mentions that there is "nothing hidden from its heat" which would be a reference to the daytime. This would appear to be discussing a normal day and certainly not the equinox.

In addition, the ends of the sun's circuit would be at the two solstices (summer and winter). In the Northern Hemisphere in the winter, the sun rises at its farthest point to the south of due east and in the summer it rises at its furthest point north of due east. In other words, the solstices, and not the equinoxes, would mark the ends of the circuit. The equinoxes occur in spring and fall. This is the middle of the sun's path when it rises and sets directly over the equator, making the days and nights of equal length. It would be quite a stretch to believe the author used *tekufah* in Psalm 19:6 to mean the equinox. He used the word in the generic sense of a circuit and not the more limiting term "equinox."

2 Chronicles 24:23: "So it happened in the spring [*tekufah*] of the year that the army of Syria came up against him; and they came to Judah and Jerusalem, and destroyed all the leaders of the people from among the people, and sent all their spoil to the king of Damascus."

In the NKJV the word *tekufah* is translated "spring." In the Authorized Version it is translated as "end of the year." It refers to the time that the armies went to battle. This was certainly in the spring of the year after the winter rains when the mud on the roads had dried. But there is another term used in Hebrew for the time to go to war. It is found in 1 Kings 20:22 and 26. The word translated "return of the year" is the Hebrew *teshuvah* and it means "return." The return of the year is when the year has been completed and a new year begins.

The first month of the Hebrew Calendar is always in the spring, although not always *entirely* in the spring (for there are years when the equinox occurs *after* the first day of Nisan or Abib). There is no requirement that the first day of Nisan begins after the equinox, but that the vernal equinox will always occur either just prior to the beginning of the first month or during the first month. In other words, there is never a year when the first month is entirely *before* the vernal equinox. The return of the year is comparable to spring and is so translated in the NKJV.

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While there is a relationship between the equinox and spring, the two terms are not synonymous. The equinox is a singular astronomical event that is used to declare the first *official* day of spring, but spring is a *season* that lasts for about three months. Thus, 2 Chronicles refers to a season of the year when travel and fighting were easier *and not to a specific date* on the calendar. Spring weather can begin before the equinox or afterward. Once again, a more generic definition of the Hebrew *tekufah* is apparent instead of a narrower definition as some prefer.

“So it came to pass in the process [*tekufah*] of time that Hannah conceived and bore a son, and called his name Samuel, saying, ‘Because I have asked for him from the LORD’” (1 Samuel 1:20). This is the story of the birth of Samuel. The term “process of time” is used in the NKJV. Other translations use different terms: “course of time” (NIV); “due time” (NASB); “end of her term” (New American); and “when the time was come about” (AV).

There is no doubt this verse is speaking of the end of Hannah’s pregnancy when she gave birth to Samuel. Note there is no reference to the equinox in this verse! Once again, it is obvious the term *tekufah* generally refers to the conclusion of a circuit, a cycle or a term of time. In this case it is the term of a pregnancy that came to its conclusion. This is a specific time period which has a beginning and an end. There are other cycles or circuits as well, such as the agricultural cycle, with a definite beginning and ending. It also repeats itself each year—for, there will always be “seedtime and harvest” (Genesis 8:22) as long as the Earth remains.

These are the only four places in Scripture where the Hebrew term *tekufah* is found. Based upon these scriptures, we can conclude *tekufah* is a broad term that can be used as:

- 1) a general term for the end of the year, referring to the end of the harvest season (Exodus 34:22);
- 2) the rising and setting of the sun (Psalm 19:4-6);
- 3) the time of going to war, in the springtime (2 Chronicles 24:23); or
- 4) the length of a term of a woman’s pregnancy (1 Samuel 1:20).

Hence, to translate the word *tekufah* as “equinox” in any of the last three scriptural examples would make no sense. Therefore, why should one translate it as “equinox” in the first scriptural example in Exodus 34:22?

### **B.9.3—Definitions of *tekufah***

We have seen how the term *tekufah* is used in the Bible. Now we will look at the definition of *tekufah* as determined by different writers of lexicons and concordances of the Old Testament:

*The Abridged Brown-Driver-Briggs Hebrew-English Lexicon of the Old Testament:*  
[tekufah] n.f. coming round, circuit—circuit (completion).<sup>94</sup>

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<sup>94</sup> Richard Whitaker, editor, *The Abridged Brown-Driver-Briggs Hebrew-English Lexicon of the Old Testament* (Oak Harbor, WA: Logos Research Systems, Inc.), 1997.

## ***Appendix B—The New Moon***

*The Englishman's Hebrew and Chaldee Concordance of the Old Testament* offers these for synonyms: “revolution of the year;” “come about;” and “circuit.”<sup>95</sup>

*Enhanced Strong's Lexicon*: [Tek-oo-faw'] coming round, circuit of time or space, a turning, circuit 1a) at the circuit (as adverb).<sup>96</sup>

Although the Talmud uses the term *tekufah* in reference to the equinox, keep in mind that the Talmud was written much later than the text of the Hebrew Old Testament. The Scriptures (and other study resources) indicate the word *tekufah* is a generic term that can be used for any type of cycle or circuit which has a repeating pattern to it. This could include the equinox, though the Bible does not use the term in this fashion.

There is always a danger when one tries to read a meaning backward into the Scriptures (eisegesis—refer to appendix A.1). Languages change constantly and to fully understand the Hebrew of the Old Testament, one must find how that term is used in other places during that time context, as expounded in appendix B.9.2. This is a key to understanding *tekufah*.

### **B.9.4—Importance of Exodus 23:16 and Leviticus 23:34**

There are two other verses which shed light on our understanding of Exodus 34:22. As in all cases of exegesis, we must take the Bible as a whole and not isolate single verses in an effort to establish our argument. These additional verses explain the nature and character of the Feast of Tabernacles. It is a harvest feast set to occur on a certain date on the calendar. There is no mention of the equinox in any discussion of the Feast of Tabernacles (unless Exodus 34:22 is used incorrectly for that argument).

Exodus 23:15-16: “You shall keep the Feast of Unleavened Bread (you shall eat unleavened bread seven days, as I commanded you, at the time appointed in the month of Abib, for in it you came out of Egypt; none shall appear before Me empty); and the Feast of Harvest, the firstfruits of your labors which you have sown in the field; and the Feast of Ingathering at the end of the year, when you have gathered in *the fruit of* your labors from the field.”

Leviticus 23:34: “Speak to the children of Israel, saying: ‘The fifteenth day of this seventh month shall be the Feast of Tabernacles for seven days to the LORD.’”

The Feast of Tabernacles (Ingathering) is at the end of the agricultural year, when the farmers in the Promised Land region would have gathered in *the fruit of* their labors from the field, for seven days from the 15th of the seventh month, a reference to a calendar date and not an equinox date. The amount of sunlight over the fields, and therefore the equinox, will affect the agricultural season, but there is no implication given in Exodus 23:16 to state that the Feast must be *after* the equinox.

Crucially, the Feast of Tabernacles is a harvest festival, not an equinox festival. It occurs *at the end of the agricultural year* after the harvest, at the end of summer, beginning of autumn

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<sup>95</sup> *The Englishman's Hebrew and Chaldee Concordance of the Old Testament* (London: Samuel Bagster and Sons, LTD.), 1890.

<sup>96</sup> *Enhanced Strong's Lexicon* (Oak Harbor, WA: Logos Research Systems, Inc.), 1995.

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(fall) in the northern hemisphere. On average, two years out of 19 years the Feast of Tabernacles will actually begin before the autumn equinox, according to the Hebrew calendar. In other words, it is at the turning of the year, the period of time when the agricultural year ends in the northern hemisphere, complying with the requirement for it to be a harvest festival. The focus is on the harvest and not on the autumn equinox.

Exodus 23:16 is a very telling scripture. The same language is used here in Exodus 23:16 (“You shall keep . . . the Feast of Ingathering *at the end of the year*, when you have gathered in the fruit of your labors from the field”) as we find in Exodus 34:22 (“And you shall observe . . . the Feast of Ingathering *at the year’s end*”). There is a slight difference in the word translated “end.” This word in Exodus 23:16 is not *tekufah*, but *tzet ha shannah* (end or turn of the year). Since the phrase is so similar, we can learn more of what is meant in Exodus 34:22.

The meaning of Exodus 23:16 is also quite clear. The focus is on the harvest—“the Feast of Ingathering at the end of the year, *when* you have gathered in *the fruit of* your labors from the field.” When does the Feast of Tabernacles occur? We read that it is *at the end (or turn) of the agricultural year—when the fruit has been gathered from the fields*. The Feast of Tabernacles is therefore called the Feast of Ingathering. The Feast and the Eighth Day are the end of God’s festivals of the year, which point to the completion of God’s spiritual plan of salvation. The Feast is the celebration of the great harvest (vs. the spring harvest) at the end of the year’s agricultural cycle. The Feast begins on the 15th day of the seventh month. This requires a calendar that takes into consideration the growing and harvest seasons of the various crops. To tie the dating of the Feast to the actual autumn equinox is to read something into the account that is not there.

### **B.9.5—The Feast and the Hebrew calendar**

Much is made about the interpretation of Exodus 34:22 by some who oppose the Hebrew Calendar. They arrive at their conclusions by reading more into the text of this verse than is truly warranted. But *even if* one concludes that the Hebrew word *tekufah* means equinox, Exodus 34:22 does not state *after tekufah* as the word “*after*” as a preposition does *not* appear in the text. Therefore, Exodus 34:22 does *not* require one to observe the Feast of Tabernacles after *tekufah*.

According to the Hebrew Calendar, the Wave Sheaf Offering occurs after the vernal equinox, which ensures there will be green ears during the Days of Unleavened Bread, and therefore the barley and other grains can be harvested by Pentecost. The summer crops and fruit (in the area of the Promised Land) will also be able to be harvested in plenty of time prior to the Feast of Tabernacles in the fall.

There is therefore no need to manipulate the calendar to accommodate the autumn equinox. This is all a part of the regular cycle or circuit of the agricultural year. The ripening of crops at the end of summer is determined by the time of planting and the weather. The autumn equinox is simply the day the sun rises and sets directly over the equator, causing day and night to be of equal length. The actual day of the autumn equinox does not determine “*when* you have gathered in *the fruit of* your labors from the field.” In Exodus 23:16, the meaning is quite clear. The focus is on the harvest—“the Feast of Ingathering at the end of the year, *when* you have gathered in *the fruit of* your labors from the field.”

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As seen, there are many lessons to be learned about the Bible and the calendar. One very important lesson is that Scripture is not of any “private interpretation” (2 Peter 1:20). Sometimes, we can be swayed because someone says it is so, but in reality, the position must be supported by Scripture and not by personal opinions. This is the case with Exodus 34:22. Whatever interpretation you accept of the Hebrew word *tekufah*, Exodus 34:22, as seen, is not being violated by the use of the Hebrew Calendar.

God’s plan of salvation represented by God’s Holy Days is accurately remembered annually when, in unity, God’s people celebrate these days at their appointed times, as proclaimed by the Hebrew calendar.

### **B.10—The calendar before Moses**

There is one further consideration regarding the lunar cycle to be analyzed. Was the lunar cycle *always* approximately 29½ days, at least from the time of Moses onward? Or was it exactly 30 days long even during the time of Moses?

If the lunar cycle *at the time of Moses was 30 days*, then God did not need to give detailed instructions to Moses on how to observe the movement of the heavenly bodies to determine when to proclaim God’s festivals and His Holy Days based on a lunar cycle of 29½ days, as it is currently. Therefore, if there was a change from 30 days to 29½ days after Moses, when did such a change occur?

The question regarding the length of the lunar cycle before the time of Moses is raised because of the following Genesis record:

Genesis 7:11, 24: “In the six hundredth year of Noah’s life, in the *second month*, the *seventeenth day of the month*, on that day all the fountains of the great deep were broken up, and the windows of heaven were opened . . . And the waters prevailed on the earth *one hundred and fifty days*.”

Genesis 8:3-4 “And the waters receded continually from the earth. *At the end of the hundred and fifty days* the waters decreased. Then the ark rested in the *seventh month*, the *seventeenth day of the month*, on the mountains of Ararat.”

The biblical record states that the Flood started on the 17th day of the second month and that after 150 days the ark rested on the mountains of Ararat on the 17th day of the seventh month. We have an exact period of five months (compare Genesis 7:11 with 8:4), which is also stated twice to be exactly 150 days (Genesis 7:24; 8:3). Therefore, for five months to be exactly 150 days, the months before the Flood had to be an exact duration of 30 days. The time before the Flood is the reference Noah would have used as he was in a covered ark, not concentrating on observing the sun and moon, but rather looking after the animals and his family in the ark.

If the lunar cycle before the Flood was 29½ days (as it is today), then the count of days from the second month to the seventh month would have been a period of 147 days and not 150 days. Additionally, for Noah to count this way during the 40 days of continuous rain and while the ark’s window was closed (the first mention that the ark’s window was opened is after the 10th

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month, according to Genesis 8:5-7) is biblical evidence of the length of the months before the Flood.

Therefore, the question is: *when* did the moon cycle change from 30 days to 29½ days? Was it during the Flood itself, or during any other major astronomical event recorded in the Bible after Moses, such as Joshua's long day (Joshua 10:12-13) or when the sun went back 10 degrees during the time of Hezekiah, ca. 702 B.C. (2 Kings 20:8-11; Isaiah 38:8)?

Some use secular quotes, such as those by the author Immanuel Velikovsky, to prove their conclusion that the year length changed about the eighth century before Christ. But such quotes are not biblical and they raise more questions regarding their own accuracy and validity in their attempt to answer the original query.

Obviously, God is Almighty and is able to change the times and seasons as He wishes (Daniel 2:20-21). However, there is no biblical evidence that miraculous events, such as Joshua's long day, or the sun moving 10 degrees back on the sun dial during Hezekiah's day, altered the heavenly cycles (namely the length of the year and of the month). Nor can we assume changes to the heavenly cycles occurred after the time of Moses, as there is no such direct biblical affirmation.

Furthermore, *we cannot* biblically nor secularly prove that during the time of Moses the month was exactly 30 days. In fact, Egyptian studies indicate the Egyptians had more than one calendar at the time of Moses, and both calendars show the months were not exactly 30 days long.

One of the Egyptian calendars was a 360-day civil calendar with five epagomenic (extra) days added to make a total of 365 days for the year, causing the year to wander (Latin *annus vagus*) backwards against the seasons by one day every four years (*Journal of the American Research in Egypt*, 1995, Vol. 32, p. 44).

They also had a religious lunar calendar where they accounted for 365¼ days per year by taking in consideration the heliacal rising of the star Sirius, which began the Egyptian religious year (refer to "Egyptian Calendars—Crystalinks" and "The calendars of ancient Egypt").<sup>97</sup> This observation was important to the Egyptian farmers because soon after the rising of Sirius<sup>98</sup> the Nile would flood, around late July/August so they could plant their crops after the flood season.

In summary, the important point is that the months *were already 29½ days long at the time of Moses*. We do not know when, before Moses, the monthly lunar cycle changed from 30 days long to 29½ days, and it is not necessarily critical for our calendar discussion. The important consideration is that the basic principles that God gave to Moses to observe the "lights in the firmament of the heaven to . . . be for signs, and for seasons" to develop a calendar (Genesis 1:14)

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<sup>97</sup> <https://www.crystalinks.com/calendaregypt.html> and <http://fliphtml5.com/nilh/fffh/basic>.

<sup>98</sup> The oldest Egyptian calendar was an ecclesiastical lunar calendar used for setting dates and times for religious (pagan) sacrifices, festivals and holidays. It also recognized seasonal events, such as *the annual flooding of the Nile* and it *began the Egyptian year* by the heliacal rising of the star Sirius (Sopdet) which occurred during late July in our Gregorian calendar. This proves that the year was 365.25 days long—before the time of Moses. The Egyptians had other calendars, such as the civil *annus vagus* (wandering year) calendar of 12 months of 30 days plus an additional five epagomenal (intercalary) days. For additional information refer to *The Reconstructed Chronology of the Egyptian Kings*, by M. Christine Tetley, Vol. 1, Chapter 3, "Investigating Ancient Egyptian Calendars."



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are applicable today as the length of the solar and lunar cycles have not changed since at least the time of Moses.

The Israelites in slavery did not have much of an understanding of the weekly Sabbath (which had been sanctified by God at creation), nor did they have the capability and skills to develop a lunar calendar. God had to show and teach them about the weekly Sabbath through the miracle of the manna (Exodus 16) after the Exodus.

Since the religious new year in Egypt started after the rising of Sirius (late June/July), God through Moses instructed the Israelites *which month* was to be the first month of the year. That was done *before* they had left Egypt (Exodus 12:2). Later that year, after Moses received God's oracles at Mount Sinai (compare Exodus 20 with Acts 7:37-38), they were told to proclaim God's festivals and holy convocations at the appointed seasons (Leviticus 23:4; Romans 3:2). Those guidelines were kept secret by the priesthood until, due to Roman persecution, those instructions were announced publicly and later published.<sup>99</sup>

### **B.11—Summary of key calendric facts mentioned above**

The calendric *facts listed in this and preceding Appendices* may be summarized as follows:

1. The length of the lunar cycle of 29½ days has been so since the time of Moses. God did give Moses instructions for us to keep God's Holy Days at their appointed times.
2. God declared which specific days of the month we are to keep His Holy Days and festivals (and in the case of Pentecost, when to start counting the 50 days).
3. The priesthood had the delegated responsibility to proclaim God's holy convocations. They did so by declaring the new moons (the beginning of the various months) and the beginning of the year in its season.
4. Over the years the priesthood was able to accurately determine in advance when these festivals were to occur, by observing the signs and seasons caused by the movements of the lights in the firmament of the heavens in relation to the Earth, and it appears, using the special talents given to some of the tribes of Israel, such as the sons of Issachar.
5. During the time of David, the months were already calculated and proclaimed in advance.
6. There is recorded evidence of calculations occurring during the time of Christ by the Sanhedrin, the priestly leadership of the time.
7. Astronomical cycles were understood and closely guarded by the priestly authority (the Sanhedrin in Christ's day).
8. There is recorded evidence of intercalation and postponements during Christ's time as well as during the early Church period before Hillel II's time.
9. The early Christian Church looked to the Jews to determine such festivals as the Passover.
10. Due to Roman pressure, the Sanhedrin was forced to divulge its closely guarded calculations during the time of Hillel II.

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<sup>99</sup> See Appendix A.5.

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11. The Jews thought that these measures were temporary during the current ruling Roman leadership, and therefore did not publish these calculations.
12. The unintended outcome was the increased diversity of Jewish calendric opinions over time.
13. It was only due to later arguments among the Jewish authorities that the calculated Hebrew calendar divulged by Hillel II was published.
14. The Church of God, in the early years and during the years of persecution in the Middle Ages, as well in the last century, has followed, as the norm, the Hebrew calendar as declared by the Jewish authorities at the time.
15. The Hebrew calendar fully supports the greater spiritual implication of God's festivals in their harvest seasons, as they point to God's plan of salvation.

## *Appendix C—The Hebrew Calendar*

### **C.1—Historical background**

Although the Bible does not provide us with a detailed or complete *biblical* calendar, nevertheless, the essential elements of a calendar are found in Scripture. For instance, we do know which month is the first month of the year (Exodus 12:2). We also find there are normally 12 months in the year (Esther 3:7). But a calendar, in addition to its basic elements, includes specific determinations of days and years based on distinguishing *signs* caused by the movements of the lights in the firmament of the heavens (Genesis 1:14).

These specific determinations are not included in the Bible. So, God delegated and assigned that responsibility and authority to His appointed priesthood. The Bible clearly states that it was a proclamation by an authoritative body, the sons of Aaron, the appointed priests: “The sons of Aaron, the priests, shall blow the trumpets; and these shall be to you as an ordinance forever throughout your generations . . . in the day of your gladness, in your appointed feasts, and at the beginning of your months” (Numbers 10:8, 10).

During David’s time, there is biblical evidence that the months were already calculated and proclaimed in advance (1 Samuel 20:5-35) so pilgrims and those far away could travel opportunely to attend God’s festivals (refer to Appendix B.3). We also have scriptural evidence of a 13th month (leap year) having been intercalated in Ezekiel’s time, which can be determined by a careful reading of Ezekiel 1-8 (refer to footnote 21).

The historical record also shows that festival dates were already fixed as early as the days of Ezra (refer to Appendices B.3 and B.4).

After the destruction of the second temple in A.D. 70, the Pharisees took over the leadership of the Sanhedrin. From that time forward, and for various centuries later, the methods for determination of the calendar went through a period of turmoil due to a desire by some independent rabbis to change them. The outcome was a sharp disagreement and diversity of opinions among Jewish communities, and particularly among Talmudists, regarding determinations about the calendar and even about the temple liturgy. The leap year sequence, the number of 30-day months in the year and the length of the year *became irregular* throughout various dispersed Jewish communities. (Refer to Appendices A.5 and B.4 for additional detail.)

Later, a civil law issued by Constantine in A.D. 321 and the edicts of the Council of Nicaea in A.D. 325 were two main events in the early fourth century that led to changing the weekly day of rest and worship from the Sabbath to Sunday and changing observance of the Passover of the 14th to Easter Sunday, respectively. That was a deliberate attempt by Roman authorities and the Roman Church to change some of the Ten Commandments, particularly the Fourth, by causing believers not to keep the Sabbath. It also eliminated the need to use the Hebrew calendar, as proclaimed annually by the Sanhedrin, to determine the correct date (14th of Nisan) for the Passover. Thus, the prophecy in Daniel 7:25 was, in part, fulfilled: “He shall speak pompous words against the Most High, shall persecute the saints of the Most High, and shall intend to change times and law” (Daniel 7:25).

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Yet that did not stop faithful Christians from keeping the Sabbath and the Passover instead of Easter Sunday. They obtained the Passover date from the Jewish community. That further angered the Roman Church and the Roman government. In an additional attempt to “*change the times*,” the Roman Church, through the Roman authorities, disbanded the Sanhedrin so they could not annually proclaim the Hebrew calendar dates and thereby true Christians would not know when the Lord’s Passover occurred.

However, before the Sanhedrin was disbanded, under the leadership of Hillel II, it decided in A.D. 358 to release its previously closely guarded calendric calculations to the dispersed Jewish communities. (For more detail refer to Appendices A.5, B.4.4 and B.4.5.) From that time, the method of Hebrew calendar calculations became public domain.

In hindsight, we can see God miraculously working through those circumstances so His people could observe His Holy Days “at their appointed times” (Leviticus 23:4) even in a disobedient Jewish world with a *diversity* of calendric opinions (Romans 3:2-4).

As Dr. Irv Bromberg notes: “When the Romans later realized that their attempt to quash the Hebrew calendar had failed, they raided the *Sanhedrin* headquarters and confiscated all property and records. After that raid the Sanhedrin ceased to exist . . .” (*The Seasonal Drift of the Traditional (Fixed Arithmetic) Hebrew Calendar*, 2011, pp. 8-9).

The ultimate outcome of divulging such calendric information is that we now have the current Hebrew calendar with rules “by which the astronomical facts [were] combined with the religious requirements into an admirable calendar system” (Arthur Spier, *The Comprehensive Hebrew Calendar*, p. 2). This calendric knowledge from the Sanhedrin has permitted God’s people to have a time-tested method to determine when His Holy Days are celebrated.

Moreover, in Revelation 14:9 God warns mankind not to follow the Beast and his image and not to receive his mark on one’s forehead or hand. By not having his mark, people will not be able to work and support their families (Revelation 13:16-17).

God gives a warning against the society that follows the Beast and has its mark. God also gives encouragement to His saints: “Here is the patience of the saints; here are those *who keep the commandments of God* and the faith of Jesus” (Revelation 14:12).

How can the saints at the time of the end be keeping God’s commandments, which include observing God’s holy convocations on the weekly Sabbaths and during His annual Holy Days? It is because God has provided His Church with a calendar that correctly places God’s Holy Days and festivals at their appointed times. Indeed, it is a great blessing that God has done so for His people.

### **C.2—The basic signs used by the Hebrew calendar to stay *in season***

In Genesis 1:14 we are told that “the lights in the firmament of the heavens” are to be used “for signs and seasons, and for days and years.” The distinguishing *signs* (Hebrew *owth*) caused

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by the movements of these lights (specifically the sun, moon and stars, as defined in Genesis 1:16) are equinoxes, solstices, eclipses, as well as the heliacal risings and settings between certain stars.

Two of the major distinguishing signs for determining the *seasons* (Hebrew *moedim*—appointed times) and the *days and years* (for the determination of months) are the solar and lunar eclipses:

**SOLAR ECLIPSES:** A *solar eclipse* is one of the signs created by the monthly lunar conjunction of the sun, moon and Earth, called the ***new moon phase***. During the *new moon phase*, the moon is not visible in the sky because it rises with the sun and sets with the sun, and we cannot see the moon because of the glare of the sun and because the sun is shining on the opposite side of the moon. Additionally, when the three heavenly bodies are on the same plane during this *new moon phase*, a *solar eclipse* occurs. The *solar eclipse* is caused by the moon being exactly between the sun and the Earth, preventing the sunlight from reaching certain parts of the Earth. A *solar eclipse* occurs during the *new moon phase* conjunction on average *twice a year* and, because it is only visible in a limited path across the Earth, it is perceived to be less frequent than what it really is. The *solar eclipse* is visible in a regional band of the Earth, and therefore less widely noticed.

**LUNAR ECLIPSES:** The other major sign is the *lunar eclipse*, and it occurs when these three bodies are again in a straight line but the moon is now on the opposite side of the Earth (called *lunar opposition*). The Earth is now between the sun and the moon and we have what is called a ***full moon***. During the *full moon* the moon is fully lit in the night sky because it rises when the sun sets and sets when the sun rises. When the three heavenly bodies are on the same plane during the *full moon*, a *lunar eclipse* occurs. The cause of a *lunar eclipse* is the Earth's shadow falling on the moon, preventing the moon from receiving the sun's light and therefore not being able to reflect the sun's light during that period of the night. A *lunar eclipse* can only happen during a *full moon* (the 15th of the lunar month) and occurs on average *twice a year*. It is visible from every location on the Earth on the night-side of the Earth, creating the impression that a lunar eclipse is more frequent than a solar eclipse. (Refer to Appendix B.1 for more details about these signs.)

Upon observation and careful study of these two major distinguishing signs (besides other heavenly signs), skilled men with God's guidance identified *cycles, averages and patterns*, which are used in the Hebrew calendar to place God's Holy Days at their appointed times.

The complications arise due to the movement of these heavenly bodies and their interrelationship. We have to deal with the astronomical reality that the average of the number of days in a month and in a year are *not whole numbers* of days, but *fractional numbers*. Therefore, in any counting of a whole number of hours, days, months or years to develop a calendar, *there is always a fractional remainder*, which accumulates over a period of time, be it after a number of months, or a number of years, or even after a number of centuries. To take into account that accumulated remainder, periodic adjustments have to be made. Such adjustments are a mathematical necessity.

### **C.2.1—The length of 12 lunar months vs. the length of a solar year**

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The first cycles and averages to consider are the average length of the lunar month of (approximately)  $29\frac{1}{2}$  days in length vs. the average length of the tropical (solar) year of (approximately)  $365\frac{1}{4}$  days. (Refer to Appendix B.5 for more precise numbers and further explanations.)

The average lunar year, with six months of 29 days and six months of 30 days, adds up to 354 days. That is about  **$11\frac{1}{4}$  days shorter** than the average tropical (solar) year. After three years the lunar year is about  **$33\frac{3}{4}$  days shorter** than the solar year. The net effect is that God's Holy Days move earlier and earlier in the season (*a seasonal shift*), regardless of which calendar one uses. At some point, the calendar has to be adjusted in order for God's Holy Days to remain in their God-appointed times (seasons). This is accomplished by (1) **intercalating** a 30-day month, which *postpones the year* by 30 days during a time period of seven out of 19 years and by (2) **postponing** some years by a day or two. Those adjustments move the whole year as a unit, and are designed to keep both the spring<sup>100</sup> and the autumn Holy Days at their appointed times (seasons).

Note that God's Holy Days do shift within their appointed seasons because they are based on a lunar month. In other words, God's design includes a degree of *seasonal shift* of His Holy Days, provided they remain within their appointed times (seasons). This *seasonal shift* is evidenced by the simple fact that every two or three years an intercalation of 30 days plus a few extra days has to occur, to account for the difference of  $11\frac{1}{4}$  days between the average lunar year and the average solar year.

### C.2.2—Intercalating a 13th month in a fixed 19-year cycle pattern

The Hebrew calendar intercalates a 13th month every two to three years in a 19-year *pattern* (**12 years** of 12 months and **seven years** of 13 months<sup>101</sup>) because the moon's phases recur practically in the same order and on the same days after every 235 synodic<sup>102</sup> lunar months, which equates to every 19 years.<sup>103</sup> The Hebrew calendar adds an extra month just before the spring equinox on a fixed schedule of years: years 3, 6, 8, 11, 14, 17 and 19 of each 19-year cycle.

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<sup>100</sup> The spring Holy Days are made up of the early spring Holy Days, during the Days of Unleavened Bread (Leviticus 23:6-8), and the latter spring Holy Day, Pentecost (Leviticus 23:15-22). Pentecost must not occur in summer.

<sup>101</sup> The sum of the intercalation of 7 years of 13 months ( $7 \times 13 = 91$  months) with 12 years of 12 months ( $12 \times 12 = 144$  months) equals to a total of 235 months in a 19-year period.

<sup>102</sup> Synodic means "relating to the period between two successive conjunctions of the same celestial bodies (such as the moon and the sun)" as observed from Earth (<https://www.merriam-webster.com/dictionary/synodic>). In other words, a synodic lunar month is basically a lunar month.

<sup>103</sup> This 235 synodic lunar months' cycle is normally referred to as the 19-year cycle or Metonic cycle. It gets its name because it was first published, to our knowledge, by Greek astronomer Meton in 432 B.C. This cycle was however already known to ancient Babylonian and Chinese astronomers.

It was known in China by about 600 B.C. and was called the *zhang* cycle (*The Mathematics of the Chinese Calendar*, <http://www.math.nus.edu.sg/aslaksen/calendar/calendar-talk-Chinese-handout.pdf>, Helmer Aslaksen, Department of Mathematics National University of Singapore; Exploring Ancient Skies: A Survey of Ancient and Cultural Astronomy, David H. Kelley, Eugene F. Milone, 10.1.4.1 – Chinese Time-Keeping and Calendar, p. 327). It may be possible that "the sons of Issachar who had understanding of the times, to know what Israel ought to do" (1 Chronicles 12:32), could have had the understanding of the movement of the heavenly bodies, and thereby determined this heavenly pattern to keep God's Holy Days at their appointed times. If so they would have "handed down as a tradition of old" (ibid., p. 1) for the priestly use.

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This 19-year cycle repeats itself cycle after cycle. However, there is still a *fractional remainder* in that the Hebrew calendar year (averaged over 19 years and including the years with 13 months) is 0.00461 days longer than the average solar tropical year. At the end of 19 years that accumulates to 2 hours, and at the end of 216.3 years it accumulates to one day. This fractional remainder is referred to as a *seasonal drift* and is addressed in Appendices C.5.2 and C.6.

In summary, God’s festivals and Holy Days are placed by this Hebrew calendar at their appointed times, based on identified *cycles, averages and patterns*, derived from observing God’s lights in the firmament of the heavens.

### **C.3—The proclamation of the *months and the molad* of Tishri**

The determination of the first day of the seventh month (the day of the Feast of Trumpets) is a critical element in the timing of the Hebrew calendar since all other months of the year are calculated from it. Some of the reasons of its pivotal role in the calendar include:

1. It is the only Holy Day which falls on a new moon (Leviticus 23:24).
2. It is the first Holy Day of only four which are defined as Sabbath-rests (Leviticus 23:24, 32, 39), and which point to the “Sabbath rest” (Hebrews 4:9, Greek *sabbatismo*) that remains and which will be fulfilled at Christ’s return. All these four Sabbaths fall in the seventh month.
3. It represents the time when “the stone [that] was cut out of the mountain without hands” will utterly shatter all human kingdoms, establishing the Kingdom of God on Earth (Daniel 2:34, 44-45). Spiritually speaking, this is pivotal as it symbolizes Christ’s coming as King of Kings and Lord of Lords (Revelation 11:15; 19:16).
4. It symbolizes the first resurrection at the beginning of the reign of Jesus Christ on Earth (Revelation 11:15, 1 Corinthians 15:52).
5. It is the Holy Day that symbolizes the series of events which will herald world peace and ultimately will make salvation and eternal life possible to all mankind under Christ’s rule.

This specific new moon (*molad*) of the seventh month (Tishri) is a central element in Hebrew calendar calculations.

The Hebrew calendar defines the *molad* (a word which means “birth”) as an average of the lunar conjunction time. The true (or exact) astronomical lunar conjunction is not at an exact number of days, hours and seconds from the previous true astronomical conjunction. It actually moves back and forth from month to month. Through past observation of the heavenly bodies’ signs, as previously mentioned, the average astronomical conjunction<sup>104</sup> of the new moon can be determined. The *molad* is such an average and may therefore vary from *a maximum of about six hours before* the true astronomical conjunction in a specific month to *a maximum of about 14 hours after* the true astronomical conjunction. (The perceived inaccuracy of the *molad* being up to a maximum of about six hours *before* the true conjunction during the *molad of Tishri* is effectively

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<sup>104</sup> The monthly *lunar conjunction* occurs when the sun, moon and Earth are in a line and in that order, that is, when the moon is in between the sun and the Earth.

## Appendix C—The Hebrew Calendar

annulled by the second postponement rule, Dehioth #2, also called the *Molad Zagen* rule. Refer to Appendix C.3 for additional details on postponements.)

The visibility of the faint waxing crescent of the moon (called the *phasis*), during the time frame of the Day of Trumpets, is 20 to 72 hours after the true conjunction. “In the region of Jerusalem . . . shortly before the autumnal equinox the minimum interval from the true conjunction to the *phasis* is *approximately 20 hours, while the maximum is close to 72 hours*” (“Calendar,” *Encyclopedia Judaica*, col. 46). Therefore, around the fall equinox, when the faint waxing crescent appears, the moon is basically one to three days old as measured from the true conjunction.

The Hebrew calendar’s *molad of Tishri* is therefore closer to the true astronomical conjunction of the new moon than the visibility of the faint waxing crescent of the moon during the seventh month.

The length of a lunar month according to the Hebrew calendar (from *molad* to *molad*) is an average of 29.53059 days. The Hebrew calendar divides the hour into 1,080 parts. Therefore, 29.53059 days equates to 29 days, 12 hours and 793 parts as the average length of a lunar month, according to the Hebrew calendar. This number has an error, according to NASA (National Aeronautics and Space Administration), *of only two hours in 2,000 years*. (Refer to Appendix C.5.1 to confirm how accurate this lunar month length average is against the most accurate data from NASA about the moon cycle.)

Some, trying to discredit the Hebrew calendar, say the Jews got this number for the average mean lunation (of 29 days, 12 hours and 793 parts) from Babylonian, Greek or Egyptian astronomers. But the number used by ancient astronomers of other nations is not as accurate as that of the Hebrew calendar. A more precise NASA number (than the Hebrew calendar’s number) has only been attained due to satellite and computer-based computations in the last century.

The lunar mean conjunction (*molad*) of any particular month is calculated on the basis of two values:

- (a) A fixed starting point, known as the *molad moment*, which represents the mean conjunction on the seventh month at a specific year over 5,780 years ago.<sup>105</sup> This is the *molad of Tishri* at a specific reference point (*epoch*); and
- (a) By adding the number of months (a multiple of the mean lunation of 29 days, 12 hours and 793 parts) from that *molad moment*.

Once the first day of the seventh month is determined, then the Hebrew calendar is calculated backwards to the first month. The first month has 30 days and the months following alternate in a fixed pattern of 29 and 30 days until the seventh month, which also has 30 days, as shown in the graphic below. So the first day of the year (first day of Nisan) is 177 days before the Feast of Trumpets. The Holy Days are therefore *locked* in their relationship and distance to each other within the year according to the Hebrew calendar. Thus, any postponement of the year by 30 days or a single day does not postpone the Holy Days.

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<sup>105</sup> Refer to Appendix C.5, footnote 8 (Why about 200 years short?).



## *Appendix C—The Hebrew Calendar*



Due to the careful observation of the heavenly signs (refer to Appendix C.2) and the proclamation of the months from the *molad of Tishri*, this calendar places God’s Holy Days at their appointed times, in their seasons. Once the Holy Days are at their appointed times, the Hebrew calendar then performs a finer calibration “for days and years” through the postponements, fulfilling the sequence of calendric development as highlighted in Genesis 1:14, “for signs, and for seasons, and for days, and years.” (Refer to Appendix A.3.3—The biblical requirement of a calendar.)

### **C.4—Postponements to finely calibrate days and years**

Some people ask, since one cannot postpone the Sabbath, how can one postpone a Holy Day using the Hebrew calendar postponement rules? It is a reasonable question, but it is based on a misconception.

When properly understood, the Hebrew calendar’s postponement rules *do not actually postpone* a Holy Day! The adjustment of the whole year, be it by a month of 30 days (intercalation), or by a day (postponement) does not change the fixed day of the Holy Day. All Holy Days in the year are *locked* in a fixed sequence of days in the first seven months of the Hebrew calendar.

All of God’s seven annual Holy Days fall within the first seven months of the year (the year beginning in the month of Nisan in the spring in the northern hemisphere) on a fixed number of days from the beginning of the year till the end of the seventh month. Only the eighth and ninth months may have 29 or 30 days. All the days from the first day of the first month until the last day of the seventh month are not changed or postponed in relation to each other.

The two sets of Hebrew calendar rules within the 19-year time cycle are:

- 1) the *intercalation rules* which calibrate (postpone) the whole calendar a *month at a time* to synchronize it with the solar cycle to ensure that the Holy Days are at their appointed times (refer to signs and seasons, Appendix A.3.3 (1)); and
- 2) the *postponement rules* which are a finer calibration of the whole calendar a *day at a time* to comply with God’s requirements for “*Sabbaths*” (Leviticus 23:24, 32, 39) while at the same time ensuring that the years remain at their appointed times by maintaining the Hebrew calendar synchronized with a 19-year (Appendix C.2) seasonal cycle (refer to *days and years*, Appendix A.3.3 (2)).

## *Appendix C—The Hebrew Calendar*

Those who claim that the Hebrew calendar postpones the Holy Days are the ones who in turn actually *do* postpone a Holy Day based on self-imposed observation rules. They *also* postpone a Holy Day by arbitrarily postponing a month's beginning. For instance, the seventh month is postponed by a day if they cannot see the faint waxing crescent when it should have been seen. Note, they could also postpone a month by a day, particularly within the first seven months of the year, and effectively postpone a Holy Day of the seventh month, if (for instance) the lack of observation is merely due to weather conditions that evening, even though they knew the waxing crescent should be visible according to their own calculations. In this case, they are indeed postponing the fall Holy Days, by postponing a month within the year, particularly between the first and seventh month.

Are these annual calendric adjustments, such as intercalations and postponements, directly stated or defined in the Bible? Indeed, they are *not* stated or defined in the Bible, just as there is *no* definition in the Bible of the various details to determine when is the new moon as defined by God, or of exactly when to begin the new year. We do know, as clearly explained in previous Appendices, that God delegated certain decisions to the priesthood. The priesthood, in the form of the Sanhedrin, proclaimed the calendar at the time of Christ. There is also no dispute recorded in the Bible regarding the calendar calculations and the respective proclamations during the time of Christ and the apostles.

Following Christ's death, the temple was destroyed in A.D. 70. Persecution ensued against faithful Christians, culminating in a civil law issued by Constantine in A.D. 321 and the edicts of the Council of Nicaea in A.D. 325 that enforced Sunday observance, instead of the biblical Sabbath, and Easter Sunday instead of the Passover of Nisan 14th. Faithful Christians were instructed not to "*Judaize*" Christianity. Roman pressure also increased on the Jewish community for them to not inform faithful Christians as to when to keep God's Holy Days at the appointed times. That situation ultimately led the Sanhedrin to instruct its president (Nasi) Hillel II to disclose in A.D. 358 to the dispersed Jewish community the intercalation and postponement rules for calendar calculation, which previously were a closely held secret of the priesthood. (Refer to the Hebrew Calendar Summary section 5 [The New Testament Church example], and Appendices A.5 [Proclamation of God's Holy Days and the creation of a calendar] and B.4 [Historical events, quotes and comments]).

As we have seen, only the priesthood appointed by God has the ecclesiastical authority to proclaim God's Holy Days. Therefore, no individual person, even if he has the skills to observe the heavenly signs caused by the sun, moon and stars, has God's delegated authority to independently make a calendric decision. Any such action by an unauthorized person (skilled or not) is deemed to be presumptuous according to God's law (Deuteronomy 17:9-12) (Refer to Appendix A.7). It comes down to respect and submission to God's appointed authority and faith that He does lead through His appointed ministers. His ministry uses the Hebrew Calendar as its tool to proclaim God's Holy Days in their appointed times. As with all elements of salvation, we must follow God and Jesus Christ and be taught by those that They appoint (Ephesians 4:11-16). The calendar is but one point where the saints' hearts are again tested.

### **C.4.1—Concerns about postponements**

The Hebrew calendar operates with four postponement rules. These rules enable God's people to properly prepare for the Holy Days, particularly in the fall, and to enhance the spiritual benefits of keeping those days as God intended. In some years, the year is postponed by a day, or occasionally by two days. This postponing effect is very similar to the addition of "intercalary

## *Appendix C—The Hebrew Calendar*

months,” which is the adding of an additional 13th month in seven years out of a 19-year cycle. Such years that are postponed by a day, or occasionally by two, or by a month, do not cause the shifting of the holy convocations from their appointed days in the month or from their appointed seasons (or times).

Postponements, just like intercalations, serve an important purpose: They continuously finely calibrate the Hebrew calendar with the “heavenly clock,” ensuring that God’s festivals remain in their seasons. Postponements also manage the “year” lengths over a 19-year astronomical cycle, again ensuring that the Holy Days stay within the appointed seasons over a longer period. Postponements ensure that the annual Holy Days of the seventh month, which are defined as “Sabbath-rests” in the Law (Leviticus 23:24, 32, 39), are observed according to sabbatical biblical requirements with proper preparation time. All these rules fully comply with Genesis 1:14 and are further discussed in greater detail below.

It is therefore not surprising that the average percentage of full moon visibility on both Holy Days which fall on the 15th of the month (the first Day of Unleavened Bread and the first day of the Feast of Tabernacles) is greater with these Hebrew calendar postponements than without (See Appendix C.4.3 for further evidence).

For instance, the so-called four “blood moons” (four consecutive full lunar eclipses) of 2014 and 2015 fell exactly on the first Day of Unleavened Bread and first day of the Feast in those two consecutive years, according to the Hebrew calendar with postponements. That would not have been the case in every one of those four eclipses if the months in those years were to be determined by other methods. This demonstrates that God’s Holy Days fell exactly at their appointed times when the Hebrew calendar with postponements was used.

### **C.4.2—The rules of postponement of the Hebrew calendar**


**① - The first of the postponement rules (Dehioth #1)** forbids the first of Tishri falling on a “Sunday, Wednesday or Friday.” This rule is known in Hebrew as the “*lo ADU Rosh* postponement rule.”

Those who voice objections to this *lo ADU Rosh* postponement rule falsely allege that it postpones the Holy Days with the intent to make it *convenient* for people. But the reality is that, in addition to fine tuning the accuracy of the calendar (refer to Appendix C.4.3), this rule also creates the blessing of appropriate preparation time for the autumn Holy Days occurring in a short time. In fact, time for appropriate preparation in three weekends out of four is a blessing created by the accurate application of this postponement rule (see Appendix C.4.3).

Let us analyze the practical implications of this “*no Sunday, Wednesday or Friday day of Trumpets*” rule:

- a) If the first of Tishri (Feast of Trumpets) were to be observed on a **Sunday**, then also the first day of the Feast of Tabernacles and the Eighth Day would be on Sundays (see graphic below).

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sabbath
Trumpets	2	3	4	5	6	7
8	9	Atonement	11	12	13	14
FOT 1	16	17	18	19	20	21
LGD	23	24	25	26	27	28
29	30					

From a purely physical point of view, three back-to-back Sabbaths (the weekly Sabbath followed by an annual Holy Day the next day) in the period of four weekends in succession would constitute a hardship resulting in the spiritual focus of these Sabbaths being reduced. Is there biblical justification to prevent back-to-back Sabbaths *in the seventh month*?

Normally the keeping of a Sabbath requires a day of preparation (Exodus 16:21-30). In practical terms before any of God's festivals, one does need time to prepare. For instance, we all do considerable preparation before the Feast of Unleavened Bread, and the Jews during Christ's time, did consider the day before the first Day of Unleavened Bread, the Festival of Passover, the 14th Nisan, as a day of preparation (Luke 23:54). One God-ordained exception to this is the Day of Firstfruits or "Pentecost"—which means "fiftieth"—and is counted numbering seven weekly Sabbaths from the day of the wave sheaf offering, with the fiftieth day—a Sunday—following God's designated counting instructions for that Holy Day (Leviticus 23:25-26).

- b) If the Feast of Trumpets occurred on a **Wednesday**, the Day of Atonement would occur on a Friday, which should be the preparation day for the weekly Sabbath. In that case the whole year from Nisan 1 would be adjusted by one additional day (see graphic below).



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sabbath
			Trumpets	2	3	4
5	6	7	8	9	Atonement	11
12	13	14	FOT 1	16	17	18
19	20	21	LGD	23	24	25
26	27	28	29	30		


There would also be a concern many do not realize with the Passover in such a year. This is because the first of Nisan is exactly 177 days before the first of Tishri. Therefore, if the Feast of Trumpets would fall on a Wednesday, the Passover (14th of Nisan) would then be on a Sunday, and the Passover never occurs on a Sunday according to the Hebrew calendar.

## Appendix C—The Hebrew Calendar

If the Passover (14th of Nisan) would be on Sunday (the first day of the week), the Passover ceremony is the night before, and therefore it would be held on Saturday night, which is after the weekly Sabbath, requiring much preparation and set-up for Passover during the actual Sabbath afternoon. This situation is avoided in the Hebrew calendar due to this *lo ADU Rosh* rule.

Note, however, that the Roman Catholic pagan substitution of Passover, *Easter*, always occurs on a Sunday. But a Sunday Passover never happens on the Hebrew calendar as proclaimed by the priesthood duly authorized by God, because of this postponement rule.

- c) If the Feast of Trumpets were on a **Friday**, there would be *no preparation day for the weekly Sabbaths* occurring during the time of the fall Holy Days. We find several references in the Bible indicating the preparation for the Sabbath is very important to God. Additionally, the Day of Atonement would also fall on Sunday, and we would have in four consecutive weekends four back-to-back Sabbaths (see graphic below).



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sabbath
					Trumpets	2
3	4	5	6	7	8	9
Atonement	11	12	13	14	FOT 1	16
17	18	19	20	21	LGD	23
24	25	26	27	28	29	30

Based on the “no Sunday, Wednesday or Friday Feast of Trumpets” (*lo ADU Rosh*) prohibition, some may conclude that the calendar postponement rules are Pharisaical and are only there for *convenience* sake.

However, that logic is also faulty since Christ did not accuse the Pharisees of making things easier or convenient. Christ did accuse the scribes and Pharisees of exactly the opposite, of binding “heavy burdens, hard to bear, and lay[ing] them on men’s shoulders” (Matthew 23:4). This postponement rule is not binding heavy burdens, but it is implementing the spirit and intent of *Sabbath-rests*.

The prohibition of the Feast of Trumpets to fall on these three days of the week means that there are only four days of the week that may be the first day of the year (177 days before). This is referred to as the “four gates” or as the “four parts table.” “This table . . . was an ‘ancient’ tradition inherited from their fathers, and which was followed, according to R. Saadya, by ‘all Jews in the east, west, north, and the islands’” (*Calendar and Community*, Sacha Stern, pp. 193, 266, 268).

② - **The second rule (Dehioth #2)** states: If the *molad of Tishri* occurs at or after noon time of the day (according to Jerusalem time), the first day of Tishri on the calendar must be postponed to the next day. This rule is also referred to as the *Molad Zaquen* rule (late conjunction).

## Appendix C—The Hebrew Calendar

In other words, if the *molad of Tishri* occurs after 18 hours of the day have passed (the day having started at sunset the evening before), the first day of Tishri would then start a few hours later, after sunset. Since there is no direct scriptural affirmation describing the method for establishing the new moon, this *Molad Zagen* rule does make logical sense, as most of the day has already passed by the time of the *molad*.

As the *molad* may in very rare occasions be *six hours before the true conjunction* (the *molad* is on average between six hours before to 14 hours after the true conjunction), this rule would surely avoid ever having the Feast of Trumpets before the true conjunction.

This rule was the source of the argument in A.D. 921 between rabbis Saaya and Ben Meir as described in Appendix B.4.7. This argument was not about the actual rule, but whether the rule was to be applied exactly after noon, or 35 minutes after noon.

With this postponement, as with all other postponements, as well as intercalation, the whole calendar year from Nisan 1 is postponed.

③ and ④ - **Rules three and four** regulate the length of year in the Hebrew calendar to prevent deviation from the 19-year cycle and thereby keep the Holy Days at their appointed times. Most people do not raise objections to these last two postponement rules.

There is no biblical rule that states that the first day of Tishri must begin on the exact day of the *molad*. The *molad* is part of the determination of the beginning of the month, but there are additional circumstances, such as proper Sabbath observance, which allow for the actual start of a month to *be postponed* by a day or two.

### C.4.3—The rules of postponement finely calibrate God’s Holy Days

This fine calibration of “days and years” due to the postponement rules also ensures the two festival Holy Days which occur respectively on the 15th of the first month (Nisan) and the 15th of the seventh month (Tishri) occur on full moons. The ram’s horn was to be blown on all 12 of the first days of the new months (new moons), as decreed by the priesthood, as well as on the two Holy Days, which occur when the moon is full. “Sound the ram’s horn at the new moon, and *when the moon is full, on the day of our Feast*;<sup>106</sup> this is a decree for Israel, an ordinance of the God of Jacob” (Psalm 81:3-4, NIV).

Year after year, there is a higher percentage average (up to 99.9%) of full moon visibility of these two Holy Days combined, when using the Hebrew calendar with postponements, than without the postponements or just using the observation method. Please refer to the table below for details from 1978 through to 2023.

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<sup>106</sup> Both “seven-day festivals” (Unleavened Bread and the Feast of Tabernacles) start on a full moon, on the 15th of their respective months (Leviticus 23:6, 39). It should be added that Psalm 81 does not state that God expects the months to start with the full moon, as some try to convey such an unbiblical idea.

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Fullness of Moon on the eve of 1DUB & 1FOT at Moonrise in Jerusalem Hebrew Calendar Postponements vs. Without Postponements (Overview)									
Year			Fullness of Moon (%) at Moonrise on the eve of 1DUB & 1FOT Combined			Notes & Comments			
Hebrew Year	Year Cycle	Gregorian Year	With Postponements % Full	Without Postponements % Full	Delta %	Days Postponed	Postponement Rule	Molad of Tishri	
5783/4	8	2023	99.80%	98.20%	-1.60%	1	sun-wed-fri rule	Friday at 11 hour, 882 halaqim	
5782/3	7	2022	99.05%				no postponements this year	Monday at 3 hour, 6 halaqim	
5781/2	6	2021	98.75%				no postponements this year	Tuesday at 5 hour, 497 halaqim	
5780/1	5	2020	99.30%	97.35%	-1.95%	2	sun-wed-fri rule, 18-hour rule	Thursday at 20 hour, 701 halaqim	
5779/80	4	2019	99.80%	98.55%	-1.25%	1	sun-wed-fri rule,	Sunday at 11 hour, 905 halaqim	
5778/9	3	2018	98.30%				no postponements this year	Monday at 14 hour, 316 halaqim	
5777/8	2	2017	98.90%				no postponements this year	Thursday at 5 hour, 520 halaqim	
5776/7	1	2016	99.65%	97.00%	-2.65%	2	sun-wed-fri rule, 18-hour rule	Saturday at 20 hour, 724 halaqim	
5775/6	19	2015	99.45%	96.60%	-2.85%	1	18-hour rule	Sunday at 23 hour, 135 halaqim	
5774/5	18	2014	99.75%	97.90%	-1.85%	1	sun-wed-fri rule	Wednesday at 14 hour, 339 halaqim	
5773/4	17	2013	97.40%				no postponements this year	Thursday at 16 hour, 830 halaqim	
5772/3	16	2012	99.75%	98.65%	-1.10%	1	sun-wed-fri rule	Sunday at 7 hour, 1034 halaqim	
1413887	15	2011	99.50%	97.10%	-2.40%	2	sun-wed-fri rule, common-year rule	Tuesday at 23 hour, 158 halaqim	
5770/1	14	2010	99.40%				no postponements this year	Thursday at 1 hour, 649 halaqim	
5769/70	13	2009	97.85%				no postponements this year	Saturday at 16 hour, 853 halaqim	
5768/9	12	2008	98.55%				no postponements this year	Tuesday at 7 hour, 1057 halaqim	
5767/8	11	2007	99.95%	98.40%	-1.55%	1	sun-wed-fri rule	Wednesday at 10 hour, 468 halaqim	
5766/7	10	2006	99.25%				no postponements this year	Saturday at 1 hour, 672 halaqim	
5765/6	9	2005	99.65%	97.55%	-2.10%	1	leap-year rule	Monday at 16 hour, 876 halaqim	
5764/5	8	2004	99.25%	97.15%	-2.10%	2	sun-wed-fri rule, 18-hour rule	Tuesday at 19 hour, 287 halaqim	
5763/4	7	2003	99.85%	98.60%	-1.25%	1	sun-wed-fri rule	Friday at 10 hour, 491 halaqim	
5762/3	6	2002	98.35%				no postponements this year	Saturday at 12 hour, 982 halaqim	
5761/2	5	2001	99.25%				no postponements this year	Tuesday at 4 hour, 106 halaqim	
5760/1	4	2000	99.25%	97.45%	-1.80%	2	sun-wed-fri rule, 18-hour rule	Thursday at 19 hour, 310 halaqim	
5759/60	3	1999	99.45%	97.00%	-2.45%	1	18-hour rule	Friday at 21 hour, 801 halaqim	
5758/9	2	1998	98.05%				no postponements this year	Monday at 12 hour, 1005 halaqim	
5757/8	1	1997	99.00%				no postponements this year	Thursday at 4 hour, 129 halaqim	
5756/7	19	1996	99.75%	98.80%	-0.95%	1	sun-wed-fri rule	Friday at 6 hour, 620 halaqim	
5755/6	18	1995	99.45%	96.85%	-2.60%	1	18-hour rule	Sunday at 21 hour, 824 halaqim	
5754/5	17	1994	99.30%				no postponements this year	Tuesday at 0 hour, 235 halaqim	
5753/4	16	1993	98.20%				no postponements this year	Thursday at 15 hour, 439 halaqim	
5752/3	15	1992	99.65%	98.95%	-0.70%	1	sun-wed-fri rule	Sunday at 6 hour, 643 halaqim	
5751/2	14	1991	98.65%				no postponements this year	Monday at 9 hour, 54 halaqim	
5750/1	13	1990	99.20%				no postponements this year	Thursday at 0 hour, 258 halaqim	
5749/50	12	1989	97.70%				no postponements this year	Saturday at 15 hour, 462 halaqim	
5748/9	11	1988	99.65%	97.45%	-2.20%	1	sun-wed-fri rule	Sunday at 17 hour, 953 halaqim	
5747/8	10	1987	99.70%	98.50%	-1.20%	1	sun-wed-fri rule	Wednesday at 9 hour, 77 halaqim	
5746/7	9	1986	99.40%				no postponements this year	Saturday at 0 hour, 281 halaqim	
5745/6	8	1985	99.75%	99.30%	-0.45%	1	sun-wed-fri rule	Sunday at 2 hour, 772 halaqim	
5744/5	7	1984	99.20%	98.00%	-1.20%	2	sun-wed-fri rule, common-year rule	Tuesday at 17 hour, 976 halaqim	
5743/4	6	1983	99.60%	97.60%	-2.00%	1	18-hour rule	Wednesday at 20 hour, 387 halaqim	
5742/3	5	1982	98.30%				no postponements this year	Saturday at 11 hour, 591 halaqim	
5741/2	4	1981	99.00%				no postponements this year	Tuesday at 2 hour, 795 halaqim	
5740/1	3	1980	99.90%	98.90%	-1.00%	1	sun-wed-fri rule	Wednesday at 5 hour, 206 halaqim	
5739/40	2	1979	99.50%	97.00%	-2.50%	1	18-hour rule	Friday at 20 hour, 410 halaqim	
5738/9	1	1978	98.20%				no postponements this year	Monday at 11 hour, 614 halaqim	
Average			99.14%	97.87%	-1.74%	Calculation Note: The fullness of the moon in percent (%) is calculated as the average between the First Day of Unleavened Bread (1DUB) and the First Day of the Feast of Tabernacles (1FOT) at moonrise as it appears in Jerusalem. This calculation was done for Hebrew Calendar date with postponements and without postponements to determine which date has the fullest moon. The above values were calculated using the programs at the links below. <a href="https://stevemorse.org/jcal/">https://stevemorse.org/jcal/</a> <a href="https://www.mooncalc.org/">https://www.mooncalc.org/</a>			
Max			99.95%	99.30%	-0.45%				
Min			97.40%	96.60%	-2.85%				
Range			2.55%	2.70%	2.40%				
StdDev			0.65%	0.79%	0.67%				

A recent example of the accuracy of this finer calibration of the Hebrew calendar when using postponements is the case of the four consecutive so-called *blood moons* which occurred on April 15, 2014, October 8, 2014, April 4, 2015 and September 27, 2015. *These were the exact dates for the 15th of the first and seventh months in those two consecutive years according to the Hebrew calendar using postponements.* Other calendars, such as those based on observation or the

## *Appendix C—The Hebrew Calendar*

Hebrew calendar without postponements, did *not* have all four God-given signs of total lunar eclipses falling on the 15th of their months.

Without these postponement rules, the Hebrew Calendar would be in a perpetual state of confusion. The lengths of years would also be irregular. This is avoided by applying these four postponement rules.

God's Holy Days are based on the observations of the distinguishing signs caused by the "lights in the firmament of heaven." These signs are "for [the determination of] seasons, and for [the determination of] days, and years [a calendar]" (Genesis 1:14). Basing the determinations on these heavenly signs, the seasons will automatically fall in place, and the religious year will automatically begin during the beginning of spring—the time that the fields have a lovely and bright green look (Abib). The heavenly clock is God's precise measurement of time. The priesthood used these heavenly signs to determine and reveal the calculated Hebrew calendar (Leviticus 23; Numbers 10:8, 10).

### **C.5—Are there errors in the Hebrew calendar?**

In addition to the postponement objections which we have addressed, others claim the Hebrew calendar rules are not *derived directly from biblical instructions alone*. Indeed, the Bible does not provide detailed biblical instructions to develop a complete biblical calendar. For instance, it does not specifically define when the new moon begins, nor does it define the detailed guidelines for when to start the new year.

Men have created rules they allegedly say come directly from the Bible. However, these rules which are claimed to be biblical are more often than not injected meanings into specific Hebrew words to prove a specific conclusion. That is not exegesis, as discussed in Appendix A of this paper. Every calendar has some man-made features, including the Hebrew calendar. The question should be: To whom has God delegated the authority to proclaim God's Holy Days? These points have already been discussed in great detail.

Some also claim some rabbis injected additional errors into the calendar and thus the Hebrew calendar is flawed. Indeed, some errors were introduced by certain rabbis but we can easily spot them with the Bible, and correct them accordingly, namely:

- The Hebrew calendar clearly admits that Tishri, the starting month of the Hebrew calendar, is the seventh month. The Hebrew calendar therefore lists the months as a civil calendar, but numbers them according to the biblical reckoning.
- The Hebrew calendar places Pentecost on a fixed date of the third month, instead of "counting 50" days to Pentecost from the date of the wave sheaf, as clearly specified in the Bible. To overcome that error, we simply count 50 days from the day of the wave sheaf according to the biblical instruction (Leviticus 23:15-16; Joshua 5:11).
- The Hebrew calendar lists the 15th of Nisan as the Passover, instead of the 14th as stated in the Bible. Again, that is easy to correct, by simply keeping it at the beginning of the 14th (Leviticus 23:5).



## *Appendix C—The Hebrew Calendar*

- The Hebrew calendar states the day of the beginning of creation is approximately 5780 years ago, which is about 200 years too short when we carefully analyze the biblical genealogies.<sup>107</sup> In practical terms, though, this issue does not affect the Holy Days.

Notwithstanding the above mentioned and easily corrected points, the Hebrew calendar does place God's Holy Days for us at the appointed times (Hebrew *moedim*—seasons). We therefore are able to observe God's festivals and Holy Days as a yearly reminder of God's spiritual plan of salvation for mankind (Colossians 2:16-17).

What about the Hebrew calendar's accuracy vs. the movements of the lights (sun and moon) in the firmament? Does the Hebrew calendar maintain its months in exact alignment with the lunar months and does it follow the seasons with 100 percent accuracy after hundreds of years, well beyond the 19-year cycle? How accurate is the Hebrew calendar vs. the moon cycle (lunar month) and vs. the sun cycle (solar year)?

As discussed before, the way God designed the heavenly bodies' movements, the number of days in a lunar month, and in a solar year are *not measured in whole numbers* but in *fractional numbers*. In any determination of a fixed number of days into fractional numbers of months or years, such as what is required to have in any calendar, there will always be a *fractional remainder* of time, be it in seconds, minutes or hours. That fractional number will accumulate over a period of time causing a deviation which will need to be regularly corrected, either annually, or every 19 years, or over a certain number of centuries. That correction is *not* because of a wrong determination or calculation, but due to the fact there are no whole numbers between days and lunar months, and between days and solar years. That is just a simple matter of mathematics.

There are two key measurements of days for us to consider about their accuracy. One is in relation to the moon cycle (lunar months vs. solar months) and the other in relation to the sun cycle (lunar year vs. solar year).

### **C.5.1—Accuracy of the months vs. the moon cycle**

The time between one new moon and the next one is 29.530588 days (according to NASA<sup>108</sup>) while that measured by the Hebrew calendar's *molad to molad* is 29.53059 days. The difference between NASA's figures and the Hebrew Calendar is 0.000002 or *two millionths of one*

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<sup>107</sup> Why about 200 years too short: According to James Ussher's Classic Survey of World History entitled "*The Annals of the World*," Appendix G, pp. 931-932, he states there was a deliberate "shorting of the span of the Persian Empire" to readjust the Daniel 9:25 70 Weeks prophecy. He further adds that Rabbi Simon "Schwab, along with other Jewish commentators, further suggests that the reason God directed the sages of the 2<sup>nd</sup> century AD to become involved in falsifying the data was to confuse anyone who might try to use the prophecies of Daniel to predict the time of the Messiah's coming." Later he adds that "the real reasons for the deliberate altering of their own chronology in the *Seder Olam* [the *Book of the Order of the World*] were: (1) to conceal the fact that the Daniel 9:25 prophecy clearly pointed to Jesus of Nazareth as its fulfillment and therefore the long awaited Messiah; (2) and to make that seventy weeks of years prophecy point instead to Simon Bar Kokhba!" (ibid., p. 933). Clearly a Jewish justification to deny that Christ was indeed the Messiah and that He came at the correct time as prophesied by Daniel. For a further analysis on Daniel 9:25, refer to Appendix D.1.

<sup>108</sup> NASA is the acronym for National Aeronautics and Space Administration.

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day (Avraham Yaakov Finkel, *The Essence of the Holy Days: Insights from the Jewish Sages*, 1993, p. 141).

That deviation has accumulated to approximately two hours since the divulgence of the Hebrew calendar by Hillel II in A.D. 358, nearly 1,700 years ago. “The *molad* is nowadays about 2 hours behind the astronomically accurate mean conjunction, if we assume that it is based on Jerusalem Mean Time. This 2-hour [and 21 minutes Universal Time] discrepancy is currently increasing at a rate of 10 minutes per 100 years, but this rate of increase has not always been the same [because it is a nonlinear function of time and variations in the mean lunation<sup>109</sup>]. On this basis, *molad* and accurate mean conjunction are thought to have *coincided around the fourth century CE*<sup>110</sup> (Loewinger 1996b: 75)” (Stern, p. 112).

Interestingly, this statement supports the fact that the Hebrew calendar became public in A.D. 358. Also refer to Appendix A.5 (Proclamation of God’s Holy Days and the creation of a calendar) and Appendix B.4.4 (Persecution triggers the change in the proclamation of the Hebrew calendar).

The Hebrew calendar’s *molad* has tracked the moon cycle very accurately over the centuries and gives us a very accurate determination of the new moon.

### C.5.2—Accuracy of the seasons vs. the sun cycle

The second fractional measurement of days for us to consider is the Hebrew calendar’s accuracy in relation to the solar cycle and its ability to place God’s Holy Days at their appointed seasons (Leviticus 23:4).

The number of days in a solar year is approximately 365 days, 5 hours, 48 minutes and 45 seconds (365.24219 days). A solar year of 12 months means that a solar month is 30.436849 days (30 days, 10 hours, 29 minutes and 4 seconds), while the Hebrew calendar’s *molad* to *molad* (month) is 29.53059 days (29 days, 12 hours, 44 minutes and 3 seconds). The solar month is therefore nearly one day longer (actually 0.906259 days) than the *molad* to *molad* lunar month.

However, as we have to count months and years as whole numbers (not fractional numbers), an average 12-month lunar year will consist of six months of 29 days and six months of 30 days, adding up to a total number of 354 days in a lunar year. That means that the lunar year is short by about 11¼ days.<sup>111</sup>

After three years, the lunar year is about 33¾ days shorter than the solar year. To keep the Holy Days in their appointed seasons, a 13th month of 30 days is added by the Hebrew calendar seven times in a 19-year cycle (refer to Appendices B.5 and B.6). Additionally, a finer calibration of adding one or two more days is done in some years, through the postponement rules (refer to Appendix C.3). These postponement rules also synchronize the months to the 19-year cycle.

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<sup>109</sup> See Loewinger, Y (1996b) 75 (Stern, p. 112, footnote 42).

<sup>110</sup> CE stands for Current Era, referred to in this paper as A.D. Fourth century C.E. represents years A.D. 301 till A.D.400.

<sup>111</sup> A solar year is 365 days, 5 hours, 48 minutes and 45 seconds (365.24219 days). A lunar year of 12 months is 354 days. The difference is 11.24219 days which is approximately 11¼ days short.

## *Appendix C—The Hebrew Calendar*

In our daily life, the outcome of this difference of days between the solar year and the lunar year is that God's Holy Days regularly move earlier into the season by about 10 or 11 days a year and then they are shifted back by a 30-day month seven times in a 19-year cycle. That is why in some years we loosely state that "*the Holy Days are early,*" and in some years we say "*the Holy Days this year are late*" (see also Appendix B.6). Throughout this process of the Holy Days *moving back and forth* by about a month relative to the Roman calendar, they nonetheless stay within their seasons. Some years they fall a little earlier, other years a little later, but still they are within their biblically defined seasonal requirements.

These seasonal requirements for God's festivals were explained in the discussions of when is a month Abib according to Exodus 12:2 and Deuteronomy 16:1 (refer to Appendices A.8.1 and B.6) and that the Feast of Tabernacles must be at the *year's end (tekufah)* according to Exodus 34:22; Exodus 23:16 and Leviticus 23:34 (refer to Appendices A.8.2 and B.7).

This *moving back and forth* of the Holy Days within the biblically defined seasonal limits is repeated every 19 years (235 lunar months). This occurs because after every 19 years, the Earth, sun and moon are in practically the same position as 19 years before, but not exactly in the same position. The intercalation of seven months in a 19-year cycle and the additional postponements of the whole year by a day in some years keep the number of days and months in the Hebrew calendar in practically the same position as the sun, moon and stars (the heavenly clockwork).

However, once again, we note these heavenly movements are measured in fractional numbers and over the centuries there is a remainder, which accumulates and requires a correction or adjustment after a number of centuries. "Computation from modern data shows that 235 lunations [lunar months] are 6,939 days and 16.5 hours, while 19 [tropical] solar years are 6,939 days and 14.5 hours" ([britannica.com/science/Metonic-cycle](http://britannica.com/science/Metonic-cycle)).

In other words, the length of the lunar year in accordance with the Hebrew calendar, as an average over the 19-year cycle of 235 lunations with its intercalations and postponements, is 365.2468 days, and the actual *solar tropical year* (time from equinox to equinox) is 365.24219 days. The Hebrew calendar's average year over the 19-year cycle is therefore 0.00461 days longer than the solar tropical year. In other words, the accumulated deviation over the 19-year period is about two hours. This further accumulates over 216.3 years to being one day.

This *one-day seasonal drift after 216 years* means the back-and-forth movement of the Holy Days actually drifts by one day later from the vernal equinox every 216 years. Bromberg of the University of Toronto, Canada, states that "the average Hebrew calendar solar drift has accumulated to about  $7\frac{2}{5}$  days later [than the equinox]" (p. 10).

Bromberg adds, "There are many other theories about the origin of the fixed calendar [the Hebrew calendar], but . . . *it was only in the year of Hillel ben Yehudah [Hillel II] that it simultaneously exactly matched the Talmud equinox criteria with respect to both the actual astronomical spring equinox as well as the traditional equinox approximation of Rav Adda bar Ahavah*" (p. 9, emphasis in the original document).

## Appendix C—The Hebrew Calendar

In other words, Bromberg affirms this drift of about  $7\frac{2}{5}$  days (after *about 1,700 years*<sup>112</sup>) is actually *a proof* that the Hebrew calendar was promulgated at the time of Hillel II in A.D. 358. “So those who argue that the traditional Hebrew calendar was a subsequent gradual evolution would have a hard time explaining why ‘somebody’ made it so” (p. 21). He goes on to say, “In the era of Hillel ben Yehudah, year 1 of each 19-year cycle had its equinox closer to molad of Nisan than any other year in the cycle . . . This evidence is strongly suggestive that at least the fixed leap year cycle of the traditional Hebrew calendar was started in the era of Hillel ben Yehudah” (p. 35).

### C.6—Seasonal drift over the centuries

Does this currently accumulated Hebrew calendar seasonal drift of  $7\frac{2}{5}$  days (after *about 1,700 years*) from the actual astronomical spring equinox place God’s Holy Days outside of biblically defined seasonal requirements for God’s festivals? These seasonal requirements are defined by “when is a month Abib according to Exodus 12:2 and Deuteronomy 16:1” (refer to Appendices A.8.1 and B.6) and by “when is the Feast of Tabernacles,” which is at the *year’s end* (*tekufah*) according to Exodus 34:22; 23:16 and Leviticus 23:34 (refer to Appendices A.8.2 and B.7).

The cyclical movement back and forth of God’s festivals from year to year, even with this currently accumulated Hebrew calendar solar drift of  $7\frac{2}{5}$  days (after *about 1,700 years*), still places God’s three festival seasons, namely Unleavened Bread, Pentecost and the Feast of Tabernacles, at their appointed times. Year after year, Unleavened Bread is in the month of Abib, in early spring, Pentecost is 50 days later from the wave sheaf, but still in the spring, and the Feast of Tabernacles is at the year’s end.

The current modern-era Sanhedrin, in its English website (in the section “legal rulings and opinions to date” and in subappendices “Committee concerning the fixing of the Calendar/Mathematical Calendar of Hillel II”) states an adjustment would be required by Hebrew calendar year 6000. At the time of writing (Roman year 2023) we are in *Hebrew calendar year 5783/84*. Therefore, according to the modern-era Sanhedrin we have over 200 years from the current date before we need a seasonal shift adjustment.

The seasonal drift of  $7\frac{2}{5}$  days from the actual astronomical spring equinox also proves that a seasonal shift adjustment was made *about 1,700 years* ago. This is because, by the time of Hillel II, the Hebrew calendar “simultaneously exactly matched the Talmud equinox criteria with respect to both the actual astronomical spring equinox as well as the traditional equinox approximation of Rav Adda bar Ahavah” (Bromberg, p. 9).

These recent studies, as the studies of Loewinger<sup>113</sup> and of Bromberg<sup>114</sup> both respectively confirm, the Hebrew calendar’s months (the *molad*) discrepancy of two hours and the seasonal

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<sup>112</sup> This number of *about 1,700 years* (actually 1,665 years) is an approximation to the nearest 100 of the difference of years from the year of writing this document (year 2023) to the year of Hillel II (A.D. 358).

<sup>113</sup> The “*molad* and accurate mean conjunction are thought to have *coincided around the fourth century CE* [Current Era] (Loewinger 1996b: 75)” (Stern, p. 112).

<sup>114</sup> “It was only in the year of Hillel ben Yehudah [Hillel II] that it simultaneously exactly matched the Talmud equinox criteria with respect to both the actual astronomical spring equinox as well as the traditional equinox approximation of Rav Adda bar Ahavah” (Bromberg, p. 9).

## ***Appendix C—The Hebrew Calendar***

drift of 7½ days were finely reset when Hillel II proclaimed it in the fourth century (refer to Appendices C.5.1 and C.5.2).

Stern, in his study of the Hebrew calendar,<sup>115</sup> adds that “the Jewish calendar of early fourth-century CE Antioch [that is, in the early A.D. 300 years in the area of Antioch, a few decades before Hillel II] was compatible with the conjunction, and thus presumably calculated” (p. 132). In other words, the Hebrew calendar as proclaimed (and closely guarded) by the Sanhedrin a few years *before* the public proclamation by Hillel II (A.D. 358) was compatible with the conjunction.

As we saw from Bromberg, the same was true with the Hebrew calendar publicly proclaimed in the fourth century (A.D. 358). Hillel’s proclamation matched the Sanhedrin’s proclamation just a few years before. Therefore, Hillel’s proclamation was the release of the rules previously held in confidence by the priesthood (Arthur Spier, *The Comprehensive Hebrew Calendar*, p. 2).

Stern also concurs with a seasonal shift occurring in the Hebrew calendar and that the current Hebrew calendar was instituted in the fourth century: “The 19-year cycle assumes an average year length that is slightly longer than the tropical solar year; as a result, it accumulates a discrepancy of approximately one day in 216 years. Nowadays the discrepancy appears to have reached about 7 days. This suggests that the cycle was instituted in the fourth century, when the discrepancy would have been nil” (p. 198).

### **C.7—The Hebrew calendar at the time of Christ**

Stern also gathered factual evidence *that the festivals at the time of Christ were celebrated late*. “A passage in Josephus suggests that before the destruction of the Temple in 70 CE [A.D. 70], Passover could be celebrated relatively late” (p. 55).

Referring to the Berenike<sup>116</sup> inscription, Stern states, after analyzing various dates: “If 26 October 41 BCE is accepted as the date of this inscription, and identified as the first day of Tabernacles, the festival of Tabernacles would have occurred remarkably late. Indeed, *it would have been observed much later than the rule of equinox demanded*. Passover would have occurred, in the same year, on 29 April, well over a month after the vernal equinox. Within the terms of the rule of equinox, however, Passover should have been observed in the previous month, on 31 March” (pp. 60-61).

Stern adds, “events of 37 CE (AD 37), as told by Josephus, and the Berenike inscription, suggest that *the festivals in the first century BCE [B.C.] to the first century CE [A.D.] were celebrated late*” (p. 61, refer also to p. 122). This fully supports what the Church of God has said for many decades, that the Passover season was late in A.D. 31.

Thus, we see in the first century, at the time of Christ, the calculated Hebrew calendar, as then proclaimed (refer to Appendix B.4.2), placed *the festivals late in the seasons*. And, we also

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<sup>115</sup> (*Calendar and Community, a history of the Jewish Calendar, 2<sup>nd</sup> century BCE – 10<sup>th</sup> century CE* [from the 2<sup>nd</sup> century BC till the 10<sup>th</sup> century AD]).

<sup>116</sup> “Inscription from Berenike (Cyrenaica), commonly dated to 24 CE, that refers to the festival of Tabernacles,” *ibid.* p.58.

## Appendix C—The Hebrew Calendar

saw in Appendix B.6 that in the fourth century the Hebrew calendar placed *the festivals early in the seasons* (that is, when the *molad* and the mean conjunction coincided<sup>113</sup> and the Talmud equinox criteria matched both the astronomical spring equinox as well as the traditional equinox<sup>114</sup>).

Therefore, the above proves that *a seasonal shift adjustment* occurred to move the later festivals (during the time of Christ) to an earlier time in relation to the seasons in the fourth century.

In summary, a *seasonal shift adjustment* occurred somewhere between years A.D. 70 to A.D. 358. We do not know the exact year when such a seasonal adjustment was made because all calendric determinations were a closely guarded secret (Spier, p. 2; refer also to his footnote 23). However, because in the first century the festivals were late, and by the fourth century they were already early, *the change must have occurred during the second or third century A.D.*

Additionally, with the current seasonal drift of  $7\frac{2}{5}$  days from the actual astronomical spring equinox, we are now, in the 21st century, in a similar situation as in the first century during Christ's time in which the festivals are, again, late.

John Kossey in *The Hebrew Calendar: A Mathematical Introduction*, p. 21, states that such a seasonal shift change occurred through a change in the 19-year cycle. We do not know when this shift occurred, although the above (as explained in Appendix C.6) confirms it was done in the second or third century.<sup>117</sup> The actual date of this adjustment is not critical for the purpose of this calendar study, except for the awareness that it did occur sometime in that period of great calendric turmoil.

How did the *postponement of the 19-year intercalation cycle by one year once*, somewhere in the second or third century, *resynchronize* the calendar with the seasons?

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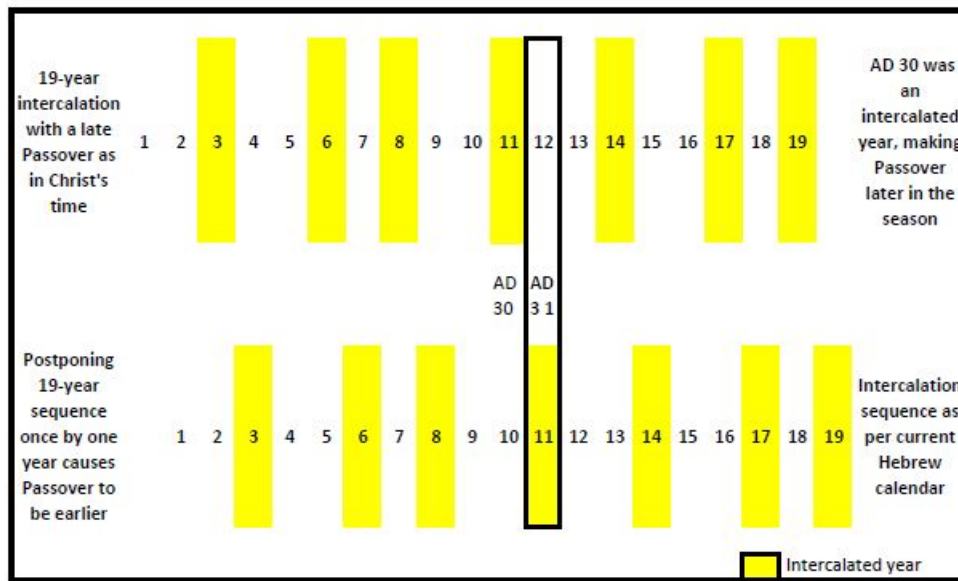
<sup>113</sup> The “*molad* and accurate mean conjunction are thought to have *coincided around the fourth century CE* [Current Era] (Loewinger 1996b: 75)” (Stern, p. 112).

<sup>114</sup> “It was only in the year of Hillel ben Yehudah [Hillel II] that it simultaneously exactly matched the Talmud equinox criteria with respect to both the actual astronomical spring equinox as well as the traditional equinox approximation of Rav Adda bar Ahavah” (Bromberg, p. 9).

<sup>117</sup> Herman Hoeh and Ernest Martin suggested this seasonal shift adjustment was done in A.D. 142 because that is when the real paschal controversies started raging. The strife seemed to have started originally because of this seasonal shift adjustment and calling it *Judaizing* to keep the new cycle. It is possible this change triggered the Christian change to Easter Sunday. Some also say this change occurred later in A.D. 162 or A.D. 256.

## Appendix C—The Hebrew Calendar

Sample chart that shows how postponing the 19-year cycle by *one* year, *once*, causes the festivals in the 19-year cycle to be earlier in the seasons:



Using year A.D. 31 as an example, the 19-year cycle on the upper section of the chart above shows the 11th year of the cycle (A.D. 30) as an intercalated year with a 13th month, and therefore Passover in the year A.D. 31 began late. This intercalation sequence concurs with the historical evidence above from quotes by Stern and Josephus, allowing for the festivals to be late at the time of Christ.

The lower section of the chart shows the effect of *postponing the intercalation sequence by one year, just once*. All intercalated years in this lower section of the chart (the shaded years in yellow) are one year later than in the upper section of the chart.

Consequently, A.D. 31 is late in the upper section of the chart, but on the lower section A.D. 31 would be early if the intercalation sequence postponement had *already occurred*. The lower section is the intercalation sequence as it is reflected in today's Hebrew calendar.

Therefore, those Hebrew calendar computer programs that go back to year A.D. 31 and which *do not take* into account this intercalation sequence postponement<sup>118</sup> show that in A.D. 31, Passover would be early. But computer programs that *do take* into account this intercalation sequence postponement<sup>119</sup> do show a correct Passover in A.D. 31 (refer to Appendix D.4.1).

The net effect of this one single postponement sometime in the second or third century shifts the cyclical movement of the Holy Days within the 19-year cycle to occur earlier in the seasons, correcting the seasonal drift, for about the next 2,000 years. That also explains why the Hebrew

<sup>118</sup> Sample computer program of today's Hebrew calendar which *does not take* into account this intercalation sequence postponement: <https://www.fourmilab.ch/documents/calendar/>.

<sup>119</sup> Sample computer program of today's Hebrew calendar which *does take* into account this intercalation sequence postponement: <http://www.cgsf.org/dbeattie/calendar/?roman=31>.

## *Appendix C—The Hebrew Calendar*

calendar will stay in its seasons for an additional 200 years from today, until the Hebrew calendar year 6000, as discussed above.

So, God did ensure we do have a calendar which was set up by His duly appointed priesthood, namely the Sanhedrin, which correctly identifies the days of the months for us today, so that we are able to determine God's Holy Days at their appointed times and in their seasons.

When one discards or deviates from the Hebrew Calendar, which other calendar can one follow? It is also indicative of distrust in those whom Christ has appointed to minister to His flock (Ephesians 4:11). The fruits are division and discord (as clearly shown in previous Appendices). God is faithful to His children! Despite some men's unfaithfulness to Him, God has preserved for us a way for us to declare His Holy Days at their appointed times (Leviticus 23:4, Romans 3:1-4). It is a matter of faith in God and trusting His faithful servants.



## Appendix D—God’s Holy Days in Christ’s Time

### D.1—Years of Christ’s ministry based on fulfilled prophecy and the Gospels

A question is often asked, “*Which calendar did Christ use?*”

As we have explained, *before* A.D. 358 (Hillel II’s time) there is no historical record of a published Hebrew calendar with God’s festival dates listed for the following years, as there is today. At the time of Christ, the priesthood had the God-given authority to proclaim God’s Holy Days in their seasons and they did so annually, as previously seen.

Due to Israel’s continued sin, the temple was destroyed in A.D. 70 and the Jewish people suffered further persecution and dispersion. As traditional Christianity became more prominent in the Roman empire, the Roman civil and religious authorities did not want to “Judaize” Christianity, and therefore attempted to “change times and law” (Daniel 7:25). A civil law issued by Constantine in A.D. 321 and the edicts of the Council of Nicaea in A.D. 325 changed the Passover date from the biblical 14th of Nisan to Easter Sunday, and the Fourth Commandment regarding the Sabbath was changed to a Sunday observance law. The Roman civil and religious authorities later put pressure on the Jewish religious leadership to not inform Christians when the 14th of Nisan took place (refer to Appendix A.5).

This Roman pressure to prevent the proclamation of God’s festivals by the Jewish authority (the Sanhedrin), influenced the Sanhedrin’s decision to authorize their leader Hillel II in A.D. 358 to release the heretofore-unpublished *calendric rules* by oral means to the Jewish dispersion, in the hope that these measures would be temporary. The historical record shows that the Roman rule and oppression intensified, the Sanhedrin was disbanded, and the Jews continued dispersed for many centuries. Those *initially unpublished* calendric rules appear to have been transmitted only orally until their documentation by Rambam in the 12th century, at which time they were documented and became the basis for what we call today the *Hebrew calendar* (refer to Appendix B.4.4).

Therefore, the question initially asked should more accurately be, “*Which calendric rules applied during Christ’s time?*”

To answer that question, we will start by examining the best available evidence regarding which year was likely the beginning of Christ’s ministry, based on fulfilled prophecy (refer to Appendices D.1.1 and D.1.2). By determining which year Christ began His ministry, we will then proceed to show He ministered for 3½ years, according to prophecy and from the Gospel record. In this way, we determine the year of His death (refer to Appendix D.1.4). We will also double-check those dates through a careful analysis of the historical record of leading persons mentioned in the Gospels (refer to Appendix D.2).

Subsequently, knowing the actual years of Christ’s ministry, we are also able to determine the actual years in which three specific festivals fell, which in turn also fell on specific days of the week. These three festival dates are, namely, the date of the Wednesday Passover of Christ’s

## *Appendix D—God’s Holy Days in Christ’s Time*

crucifixion, and two other annual Holy Days that fell on weekly Sabbaths during two different years (refer to Appendix D.3).

We will then compare these three festival days of the week and years against three basic calendric rules to determine which calendric rules match the biblical record for those years. The three calendric rules that we will compare are:

1. the Hebrew calendar with postponements;
2. the Hebrew calendar without postponements, and;
3. the observation-only approach.

The outcome of this analysis will show us which of these three calendric rules are applicable to all these three specific festival days, and thus it will help determine which calendric rules are applicable to Christ’s time (refer to Appendix D.4).

It should be emphasized that this proof-testing method of which calendric rules apply to Christ’s time is only a confirmatory test, and not the basis of the Church’s decision to follow the Hebrew calendar rules.

The starting point is to identify the year that Christ began His ministry. That can be determined by correlating Daniel 9’s prophecy with the events in Ezra 7.

Note that we cannot use the calendar to prove the calendar. We have to start by dating God’s 70 weeks prophecy relating to the Messiah’s first coming in Daniel 9:24-27.

### **D.1.1—Artaxerxes’ decree to rebuild Jerusalem**

“Know therefore and understand, that from the going forth of the commandment *to restore and to build Jerusalem* unto the Messiah the Prince shall be *seven [7] weeks and threescore and two [62] weeks*: the street shall be built again, *and the wall*, even in troublous times” (Daniel 9:25, KJV).

The mere fact that God gave us a total of 69 weeks (483 years)<sup>120</sup> to count from the giving of the command to restore and build Jerusalem, including the wall, “unto the Messiah the Prince” supports this prophetic dating to determine the beginning of Christ’s ministry.

A question that comes up is: Which was the command (or decree) that was given to restore and build Jerusalem? Some say it was the decree in Ezra 7 while others claim it was the one in Nehemiah 2.

The decree of Artaxerxes, recorded in Ezra 7:13-27 and issued during his seventh year (verse 8), provides for the complete restoration of the Jewish state: “And whatever seems good to you and your brethren to do with the rest of the silver and the gold, do it according to the will of

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<sup>120</sup> A total of 69 weeks at seven days per week equals 483 days. Using the “day for a year” prophetic principle (Numbers 14:33-34; Ezekiel 4:5-7), this represents 483 years.

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your God . . . And I, even I, Artaxerxes the king, issue a decree to all the treasurers who are in the region beyond the River, that whatever Ezra the priest, the scribe of the Law of the God of heaven, may require of you, let it be done diligently” (Ezra 7:18, 21).

Notice this decree recorded in Ezra 7 and issued in the seventh year of King Artaxerxes was *not* about *rebuilding the temple*. The temple had *already been completed* some 59 years before, according to Ezra 6:15 (circa 516 B.C.). This decree was actually about the *rebuilding of the city* and the wall of Jerusalem. So, Ezra and other Jews with him who came from Persia set about to restore and rebuild Jerusalem.

Shortly after that date, the enemies of the Jews “wrote to Artaxerxes king of Persia” (Ezra 4:7) complaining: “Be it known unto the king, that the Jews which came up from thee to us are come unto Jerusalem, *building the rebellious and the bad city, and have set up the walls [thereof], and joined the foundations*” (verse 12, KJV). This shows that for the first time after the return of the Jews from Babylon, work was being done to rebuild the city and the walls. But this work was temporarily halted (verse 23) for 13 years until the 20th year of Artaxerxes’ reign (Nehemiah 1:1; 2:1).

### **D.1.2—From which year to start the count? 458 B.C. or 457 B.C.?**

Another question often asked is from which year to count this decree? From 458 B.C. or from 457 B.C.? This has to do with the question whether to have a *spring* or *fall* dating of the seventh year of Artaxerxes.

“And he [Ezra] came to Jerusalem in the *fifth* month [the month of Ab, normally falling during July/August], which was in the *seventh* year of the king [Artaxerxes]” (Ezra 7:8, KJV).

The debate about the beginning year of Artaxerxes’ reign deals with how regnal years were considered by the Jews and specifically in the books of Ezra and Nehemiah. (Note that these two books were considered as one book according to the Jewish Old Testament canon). Therefore, if the regnal year, as written in Ezra 7, was based on *spring dating*, the fifth month falls in 458 B.C., and if it was *fall dating*, the fifth month is one year later, 457 B.C. What does the Bible actually say about the dating format used by Ezra and from what year do we start counting the 483 years until the coming of the Messiah?

Nehemiah received news in the month of Chislev (which is the ninth month, or November/December) of the 20th year (as reckoned by Jewish regnal dating and not the Persian method, Nehemiah 1:1). The decree issued by Artaxerxes (Ezra 7:12-26) some 13 years earlier was not being executed, and the walls of Jerusalem were still broken down. Nehemiah 2:1 records the following year in the month of Nisan (the first month, March/April), which is still the 20th year of Artaxerxes, as reckoned by the Jews. This shows that the Jews, and specifically Ezra, were using the *fall* dating. (Refer to Appendix B.4.1 (1)—*Regnal years of kings—were they dated from the spring or the fall?* to see further scriptural evidence that this was the way regnal years were counted.) Hence, the counting in Ezra of the seventh year of Artaxerxes indicates a “fall to fall” counting (which is Tishri-to-Tishri or Trumpets to Trumpets), as the Jews do today.

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Moreover, this scriptural record is further supported by a double-dated papyrus (AP6) written by the Jews of Elephantine (an island of the Nile, opposite Aswan) during the same century as Nehemiah. This papyrus, from the beginning of January 464 B.C., is double-dated to year 21 of Xerxes (a posthumous year due to the political intrigue mentioned before) and the accession year of Artaxerxes. The paper “The Accession of Artaxerxes I” by Julia Neuffer, dated 1968, downloadable from Andrews University archives at [andrews.edu/library/car/cardigital/Periodicals/AUSS/1968-1/1968-1-05.pdf](http://andrews.edu/library/car/cardigital/Periodicals/AUSS/1968-1/1968-1-05.pdf), analyzes various papyri, including AP6 and the Hellenistic tablet LBART No. \*1419, and explains this in great detail.

From these papyri, we draw the conclusion that Xerxes’ reign was stretched by the chroniclers to cover this period until Artaxerxes took the throne. In this case, year 21 of Xerxes becomes the accession year of Artaxerxes and the *fall 465 to fall 464* date, by Jewish fall-to-fall reckoning according to Nehemiah 1:1 and 2:1, is confirmed.

The study “Babylonian Chronology 626 B.C.–A.D. 45” by Richard A. Parker and Waldo H. Dubberstein of the Oriental Institute of the University of Chicago, dated 1942, page 15, also refers to papyrus AP6, and the later Brown Press edition, dated 1956, page 17, refers to the Hellenistic tablet LBART No. \*1419. It also supports this conclusion that Artaxerxes’ Accession year was 465/464 B.C., which places his first reigning year as 464/463, and his seventh year as 458/457.

As a result, it is shown that Artaxerxes’ seventh year was most likely from *fall 458 to fall 457*—as the Church has maintained in the past.

“Figure 2” below, from page 81 of the paper “The Accession of Artaxerxes I” by Julia Neuffer,<sup>121</sup> graphically explains the dating of Artaxerxes’ year 1 using the three then- prevailing calendars and plotting the LBART tablet and papyrus AP6:

The explanation of the three horizontal bands in the chart below is as follows:

1. The Egyptian civil calendar of 365 days loses a day every four years (December–December).<sup>122</sup>
2. The Persian calendar: lunar-based from spring to spring (Nisanu I). Artaxerxes’ year 1 is from 464 B.C. to 463 B.C. and *the seventh year is 458/457 B.C.* (spring to spring).
3. The Jewish civil, regnal calendar: lunar based with a Jewish New Year on the first of Tishri (seventh month). Artaxerxes’ year 1 is from 464 B.C. to 463 B.C. and the seventh year is 458/457 B.C. (fall to fall).

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<sup>121</sup> The paper “The Accession of Artaxerxes I” by Julia Neuffer, dated 1968, is downloadable from Andrews University archives at [andrews.edu/library/car/cardigital/Periodicals/AUSS/1968-1/1968-1-05.pdf](http://andrews.edu/library/car/cardigital/Periodicals/AUSS/1968-1/1968-1-05.pdf).

<sup>122</sup> *Handbook of Biblical Chronology, Revised*, Jack Finegan, 1998, p. 21, paragraph 41. This was also called a “shifting” or “sliding” calendar.

## Appendix D—God's Holy Days in Christ's Time

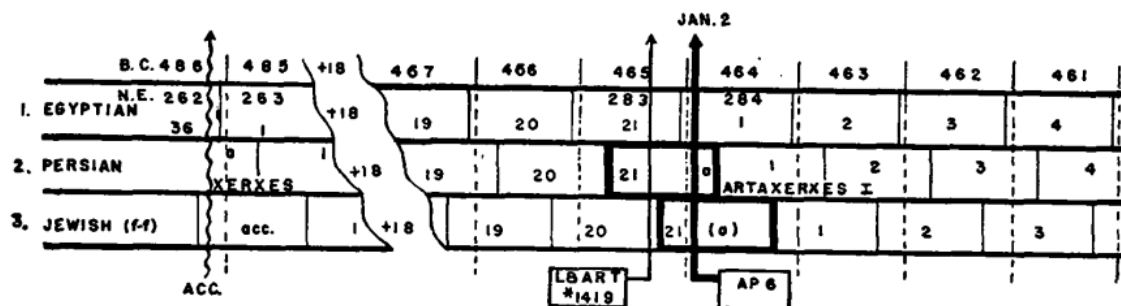
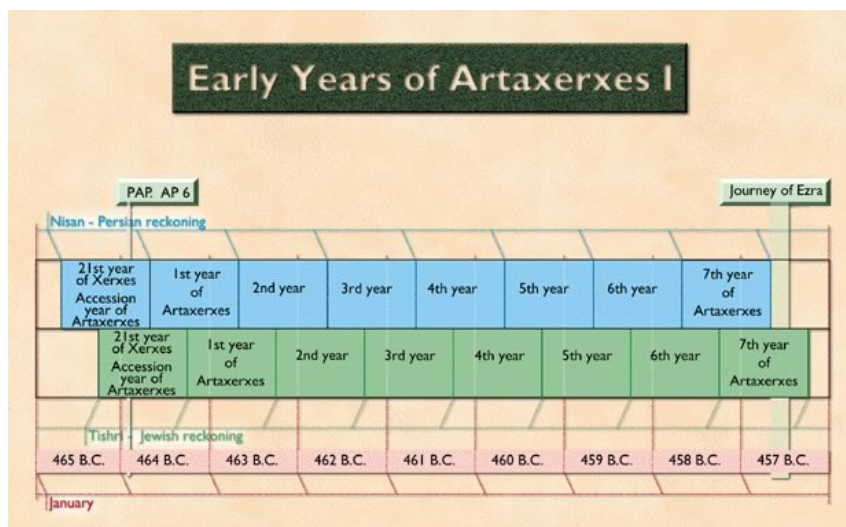


Figure 2. *Xerxes and Artaxerxes in Three Calendars*

The regnal years of Xerxes (shortened in this drawing by an 18-year gap) and the early years of Artaxerxes are shown as reckoned (1) in the Egyptian calendar (with years beginning in December), (2) in the Persian calendar (with years beginning in the spring), and (3) in the Jewish calendar (with years beginning in the autumn), all three aligned against the background of the B.C. years (extended by broken lines). The three vertical arrows represent, from left to right, (1) the accession of Xerxes (some time in November, 486 B.C.), (2) the death of Xerxes as indicated by the tablet *LBART \*1419* (August 4-8, 465 B.C.), and (3) the date of the papyrus *AP 6* (January 2/3, 464 B.C.).

The webpage *Bible Chronology Timeline*<sup>123</sup> graphically depicts the same content as the one above from the document “The Accession of Artaxerxes I” by Julia Neuffer, and adds the count to Artaxerxes’ seventh year:



<sup>123</sup> biblechronologytimeline.com/biblechronologytimeline6b.html

## Appendix D—God’s Holy Days in Christ’s Time

This webpage (*Bible Chronology Timeline*) also dates the journeys of Ezra and Nehemiah as follows:

**The Journeys of Ezra and Nehemiah.**—The dates of Ezra’s and Nehemiah’s journeys, in terms of Artaxerxes’ regnal years, are given as follows:

Year	Month	Day		
7	1	1	Ezra and party set out for Judea	Ezra 7:9
7	1	12	Ezra and party leave Ahava	Ezra 8:31
7	5	1	Ezra and party arrive at Jerusalem	Ezra 7:8, 9
20	[9]	(Kislev)	Nehemiah receives news from Judea	Nehemiah 1:1
20	[1]	(Nisan)	Nehemiah gains permission to leave	Nehemiah 2:1

Remember that regnal years are counted from the seventh month (fall dating), and the first month according to the Bible is Nisan (falling in March/April). Thus, according to Ezra 7:9, Ezra started his journey to Jerusalem in the first month (in March/April, which in the seventh year of Artaxerxes’ regnal year, is 457 B.C.) and arrived in Jerusalem four months later in the fifth month (in July/August 457 B.C.). The “going forth of the command to restore and build Jerusalem” (Daniel 9:25) was from *the arrival of Ezra (on the first day of the fifth month)*, which would be late summer 457 B.C. *The decree therefore went forward in the fifth month of 457 B.C.,* as best as can be determined.

Nehemiah’s last act in *rebuilding Jerusalem* was in the 15th year of Darius Nothus, in 408 B.C., which is from 457 B.C., according to the historian Prideaux, *exactly 49 years*—seven weeks of years (Albert Barnes, *Book of Daniel*, p. 403). This could explain why the prophecy of Daniel 9:25 separates seven weeks from the additional 62 weeks. *This again confirms the 457 B.C. date.*

Another 62 weeks of years (434 years) would have to pass (a total of 69 weeks of years or 483 years) until the Messiah, the Prince (Jesus Christ), was to start His ministry.

Adding 483 years to 457 B.C., and also adding one because there is no year zero, we come to Jesus starting His ministry in A.D. 27, likely around the time of the fall Holy Days (Trumpets/Feast of Tabernacles). The fall Holy Days season as the beginning of His ministry is also supported by the prophetic record (refer to Appendix D.1.4).

### D.1.3—Are the 483 years prophetic years of only 360 days per year?

Some ask: In this prophecy of Daniel 9:25, should we use the “day for a year” prophetic principle, in which the prophetic year is 360 days long, to determine the actual number of years? Using the 360-day prophetic year, 483 years would actually compute to only 476 years.<sup>124</sup> In other words, is it *actually* 483 years that we need to count, or is it only 476 years?

<sup>124</sup> A total of 483 prophetic years of 360 days per year equates to 173,880 days (360 days x 483 years). That number of literal days, divided by an average of 365.25 days in a solar year, results in only 476 *solar years* (seven years less than the prophesied 483 years).

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Counting 476 years after year 457 B.C. would compute to Jesus Christ beginning His ministry seven years earlier, in A.D. 20 instead of A.D. 27. That is obviously inaccurate, and no one argues that Jesus started His ministry around the year A.D. 20.

Additionally, it is not necessary to readjust the number of years, as the prophecy of Daniel 9 is *not* about counting “*days for a year*” but about counting “*weeks for a year*.” Also, the 70 sevens (weeks) of years prophecy is connected to the 70 years of captivity that accumulated for land Sabbaths, which again relates “*weeks for a year*” (2 Chronicles 36:21; Daniel 9:2).

Subsequently, the 483 years calculation involves a pattern of *actual years*, and is *not* based on prophetic years of only 360 days per year.

### **D.1.4—Gospels support Jesus’ ministry starting in the fall season of A.D. 27**

We have determined according to Daniel 9’s prophecy that Jesus started His earthly ministry around the fall of A.D. 27 (refer to Appendix D.1.2). The Gospel record also backs Jesus starting His ministry around the fall season.

Luke’s Gospel states that Jesus “*began to be about thirty years of age*” (Luke 3:23, KJV) when He was baptized.<sup>125</sup> The Darby version puts it, “And Jesus himself was *beginning to be about thirty years old*.” The *Jamieson, Fausset, Brown Commentary* states He “was about entering on His thirtieth year.” Luke does not say that Jesus was *to be about 29* years old or *to be about 31* years old. That means *He was probably about to turn 30* years old. Hence, His baptism likely took place not long before His 30th birthday.

After His baptism, we read that He “was led by the Spirit into the wilderness, being tempted for *forty days*” by Satan. He then started His ministry after that (Luke 4:1-15). We also know that according to the law, the priests needed to be 30 years old to minister (Numbers 4:47). Jesus did fulfill the law (Matthew 5:17), and so it is likely He started His earthly ministry when He turned 30, or immediately after He turned 30 years old and not before. Going back 30 years from A.D. 27, we get to the fall season of 4 B.C. (remember to add one because there is no year zero). Therefore, His birth would be in 4 B.C. (Refer to Appendix D.2 for confirmation of this date against the historical record of that era.)

Also, the biblical account, based on the conception and birth of John the Baptist, points to the fall season of the year as the time of Jesus’ birth. Since Elizabeth (John’s mother) was in her sixth month of pregnancy when Jesus was conceived (Luke 1:24-36), we can determine the approximate time of the year Jesus was born if we know when John was born.

John’s father, Zacharias, was a priest serving in the Jerusalem temple during the course of Abijah (Luke 1:5). Historical calculations indicate this course of service (done twice in a year) likely had the first turn take place in June 13-19 in that year (E.W. Bullinger, *The Companion*

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<sup>125</sup> Luke 3:23 in some translations adds Jesus “began *His ministry*” at about 30 years of age but the reference “His ministry” is incorrect and is not in the original Greek.



## Appendix D—God’s Holy Days in Christ’s Time

*Bible*, 1974, Appendix 179, p. 200). (Jesus dying at the Passover and having a 3½ year ministry when he was turning 30 years of age in the fall strengthen this point.)

It was during this time of temple service that Zacharias learned that he and his wife, Elizabeth, would have a child (Luke 1:8-13). After he completed his service and traveled home, Elizabeth conceived (Luke 1:23-24). Therefore, John’s conception likely took place after Zacharias returned home near the end of June. Adding nine months brings us to the end of March (probably around Unleavened Bread time) as the most likely time of the year for John’s birth. Adding another six months (the difference in ages between John and Jesus) brings us to the end of September, the fall festival season, as the time of Jesus’ birth.

This subject of the time of the year of John’s and Jesus’ births is covered in more detail in UCG’s study guides *Holidays or Holy Days: Does It Matter Which Days We Observe?* and *Jesus Christ: The Real Story* in the box titled “Was Jesus Born on Dec. 25?”<sup>126</sup>

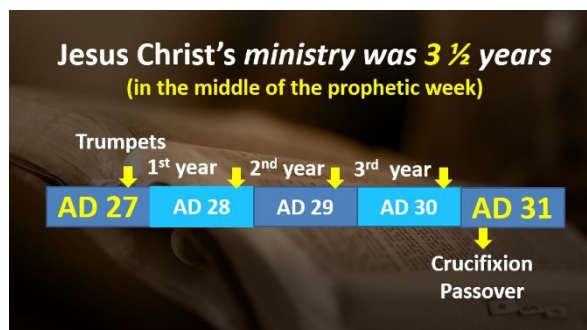
Another indicator is that it was also the time of the census decreed by Caesar Augustus (Luke 2:1-3) so there was no room in the guest-chamber (Luke 2:7, YLT). Refer to “Was There Really ‘No Room in the Inn’?” in this link: [ucg.org/the-good-news/was-there-really-no-room-in-the-inn](http://ucg.org/the-good-news/was-there-really-no-room-in-the-inn) for more information about this expression in Luke 2.

Putting all this together, it appears that Christ was baptized about 40 days before the beginning of the fall festival season, which puts His baptism during the fifth month. So His baptism would have been (at least to the month) 483 years after Ezra got to Jerusalem with the decree from Artaxerxes (Ezra 7:8-9). (Refer to Appendix D.1.2.)

Consequently, both prophecy and the gospel record indicate that Jesus started His earthly ministry around the fall season in A.D. 27.

### D.1.5—Christ’s ministry lasted 3½ years until A.D. 31

Daniel 9:27 adds “But in the middle of the week He shall bring an end to sacrifice and offering.” As Paul explained, Christ “appeared to put away sin by the sacrifice of Himself . . . [He] offered once to bear the sins of many” (Hebrews 9:26, 28) and fulfilled that prophecy. And He did so by giving His precious blood and life for us in the middle of that 70th prophetic week (Hebrews 10:12), that is, after 3½ years, on Passover A.D. 31.



In what appears to be a duality of prophetic meaning, it also implies that Christ would die in the middle of a literal week, on a Wednesday, as evidenced by the gospel record. To the best of

<sup>126</sup> [ucg.org/bible-study-tools/booklets/holidays-or-holy-days-does-it-matter-which-days-we-observe/biblical](http://ucg.org/bible-study-tools/booklets/holidays-or-holy-days-does-it-matter-which-days-we-observe/biblical) and [ucg.org/bible-study-tools/booklets/jesus-christ-the-real-story/was-jesus-born-on-dec-25](http://ucg.org/bible-study-tools/booklets/jesus-christ-the-real-story/was-jesus-born-on-dec-25).



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our knowledge, Christ died on Passover A.D. 31, which was also on a Wednesday, fulfilling His prophetic statement that He would be in the grave for three days and three nights (Mathew 12:40). (Refer to *Holidays or Holy Days: Does It Matter Which Days We Observe?*, “The Chronology of Christ’s Crucifixion and Resurrection,” p. 29.)

The gospel record also indicates that Christ’s ministry was for 3½ years. In John’s gospel we see three references to three different Passovers. The first Passover mentioned is in the spring of A.D. 28, six months into Jesus’ earthly ministry (John 2:13-23), when He “made a whip of cords . . . drove them all [money changers doing business] out of the temple, with the sheep and the oxen, and poured out the changers’ money and overturned the tables” (John 2:15).

John’s account of Christ’s ministry focuses on events that clearly display Him as the Son of God. Starting from John 6:4, it concentrates on Christ’s last year of His life, from the Passover one year before His death (A.D. 30), to the Passover in the year of His crucifixion (A.D. 31), as well as the events immediately following His resurrection.

John’s Gospel does not cover a great portion of Jesus’ ministry in Galilee, including, for example, the selection of His apostles. These events occurred after John 2 and before Christ’s last year of His life (covered from John 6:4 onward). The three synoptic Gospels of Matthew, Mark and Luke do cover this aforementioned period in more detail.

One of the events recorded in that time frame (between John 2:15 and John 6:4) is when the disciples plucked ears of grain to eat as they walked with Jesus through the grain fields (Matthew 12:1-8; Mark 2:23-28; Luke 6:1-5). This had to be after the wave sheaf and appears to be during the count towards Pentecost (Leviticus 23:15-16). (Refer to Appendix D.3.3 for further explanation of this event.)

The placement of this event according to the story flow of Mark and Luke indicates it occurred after John 2:13 (the Passover in A.D. 28) and before the last year of His ministry (before the Passover of John 6:4 in A.D. 30), and thus would be during the Spring Holy Day season of A.D. 29. This event would point to the second Passover during Christ’s ministry and it would be in A.D. 29.

Another Passover (the third during Christ’s ministry) is mentioned in John’s Gospel in John 6:4. This apparently was the Passover of the year A.D. 30. The fourth and final Passover season during Christ’s ministry is mentioned in John 11:55 and is described by all four Gospel writers. This would place it in the year A.D. 31.

Consequently, Christ started His earthly ministry in autumn A.D. 27, and His ministry was for 3½ years according to the prophecy of Daniel 9. The gospel record, as noted above, also indicates that His ministry was for 3½ years by referring to four Passover seasons, concluding that His death and crucifixion was on Passover day, 14th Nisan, A.D. 31, which was on a Wednesday.

### **D.2—Confirming these dates with the gospel record**

## ***Appendix D—God’s Holy Days in Christ’s Time***

### **D.2.1—When was Christ’s birth? 4 B.C. or 5 B.C.?**

Some argue that Christ was not born in the fall of 4 B.C. because they assert that Herod the Great was already dead by then. They allege that Herod died in early 4 B.C.

Based on that *alleged* timing, they put Christ’s birth earlier, in 5 B.C., which contradicts Bible prophecy based on Daniel 9, as seen above. On that account, to make prophecy fit, they then set the date of the start of the count of Artaxerxes’ decree to one year earlier by changing Artaxerxes’ regnal years counting to a *spring dating*. They make the counting of the 70 weeks prophecy start in 458 B.C., instead of 457 B.C. (Refer to Appendix D.1.2—From which year to start the count? 458 B.C. or 457 B.C.?)

The cascading effect is that Christ’s ministry would then have started in A.D. 26 and His death in A.D. 30, which creates other problems, as we will see in the following paragraphs. One such problem is that it does not give enough time for the biblical events mentioned between Christ’s birth and Herod’s death.

To give more time for the biblical events mentioned between Christ’s birth and Herod’s death, some loosely mention that maybe Christ’s birth was just one year earlier, in 6 B.C., but as we saw, then there are even more details that don’t fit the chronological puzzle, and the only answer given is that these technical details are not required for salvation. In that way, they avoid any detailed calculation of Daniel 9’s prophecy, any explanation of their new dates of Christ’s ministry, and the gospel record that some specific festival days fall on specific days of the week. Thus, 4 B.C. as the year for Christ’s birth correctly fits the whole picture of the dating of His ministry and crucifixion and not 5 B.C. (refer to appendices D.2, D.3 and D.4).<sup>127</sup>

Any date deviation to an earlier year than 4 B.C. raises many other concerns and requires one to make other dating adjustments and additional human reasoning regarding the dating of Christ’s ministry. Once one event is incorrectly dated, many other events and their dating become questionable. It is like the analogy of loosening one brick, and then slowly another brick is dislodged, and then another, and so on. All the pieces need to fit together as seamlessly as possible.

But not all historical sources place Herod’s death in 4 B.C. There are others that place Herod’s death in early 1 B.C. We will now carefully analyze the date of Herod’s death.

### **D.2.2—The death of Herod the Great**

#### ***(1) Herod’s attempt to kill the child Jesus***

Matthew’s Gospel states that Jesus was born before the death of Herod the Great, and God warned Joseph in a dream to take Mary and the infant Jesus to Egypt (Matthew 2:1-13). Let’s analyze this period of the magi’s visit and Herod wanting to kill Jesus.

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<sup>127</sup> The year of 3 B.C. could also fit as the year of Christ’s birth if counting His age to 30 years old is inclusively dated. This would not affect the years of His ministry (A.D. 27 to A.D. 31).

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Herod inquired carefully from the wise men when Jesus was born, and as a result he killed children two years old and younger (Matthew 2:16). “This suggests,” states Jack Finegan, “that what the wise men told Herod made him think that Jesus was already up to two years old, thus born up to two years before. That time was obviously somewhat prior to Herod’s death . . . That the magi came when Jesus was two years old was an opinion held by some of the early Christian writers. Passages found in Origen, Eusebius, and Epiphanius (*Panarion* 51.10.1) state that Jesus was two years old when the wise men came and when he was taken to Egypt, that he remained in Egypt for two years and was four years old when he returned from there” (p. 297).

A time line of Jesus’ birth in the fall of 4 B.C. could have Him fleeing to Egypt in late 2 B.C., Herod dying in 1 B.C., and waiting for the additional enemies to die (Matthew 2:20), which appear to fit the scriptural record.

### ***(2) Herod the Great dies at about 70 years of age***

Josephus states (*Antiquities of the Jews*, 14:9:2, as annotated in footnote 19) that Herod was 25 years old when his father Antipater I appointed him governor of Galilee, and he was appointed governor in 47 B.C. (*World History Encyclopedia*, [www.worldhistory.org/Herod\\_the\\_Great/](http://www.worldhistory.org/Herod_the_Great/)). Additionally, Josephus’ *Antiquities of the Jews*, 17:6:1 says that “as he despaired of recovering, for he [Herod] was about the *seventieth* year of his age, he grew fierce, and indulged the bitterest anger upon all occasions.”

Because he died at about 70 years of age, his death was therefore at least 45 years after 47 B.C. That calculation brings Herod’s death to the year 2 or 1 B.C. (depending on the month of his birth) and does not support the date of early 4 B.C. that many historians suggest was the date of Herod’s death.

### ***(3) Josephus’ account of the lunar eclipse dates the year of Herod’s death***

Indeed, many historians, since the publication of Schürer’s *History of the Jewish People in the Time of Jesus Christ*, state that Herod died early 4 B.C., before Passover (April 11, 4 B.C.) but after a *partial* lunar eclipse on March 13, 4 B.C. Schürer uses some of Josephus’ markers, including that an eclipse occurred before Herod died, and a Passover fell after he died. Based on that date of Herod’s death, and knowing that Herod wanted to kill Christ, those historians assume Christ’s birth to be fall of 5 B.C.

Let us carefully read Josephus’ record, which some historians incorrectly use to prove Herod died in early 4 B.C. Josephus narrates a number of valuable chronological details in *Antiquities of the Jews* about the time period just before Herod’s death:

“Now it happened that during the time of the High Priesthood of this Matthias, there was another person made High Priest for a single day; that very day which the Jews observed as a fast. The occasion was this: This Matthias the High Priest, *on the night before that day, when the fast was to be celebrated, seemed, in a dream, to have conversation with his wife:* and because he could not officiate himself on that account, Joseph, the son of Ellemus, his kinsman, assisted him in that sacred office. But Herod deprived this Matthias

## *Appendix D—God’s Holy Days in Christ’s Time*

of the High Priesthood: and burnt the other Matthias, who had raised the sedition, with his companions, alive. And *that very night there was an eclipse of the moon*” (*Ant.* 17:6:4).

In what year was this fast and eclipse before Herod died?

a) Josephus records that the night before a fast the High Priest had “conversation” with his wife. He further states that a few days after the fast, Herod “burnt the other Matthias, who had raised the sedition, with his companions, alive. And *that very night there was an eclipse of the moon*.”

b) To determine what year that was, let us look at the years during which there were lunar eclipses visible in the Holy Land from 7 B.C. through 1 B.C.:

- 7 B.C. and 6 B.C.: No lunar eclipses visible.
- 5 B.C., March 23, 8:30 p.m., *total* eclipse (elapsed time between eclipse and Passover: 29 days).
- 5 B.C., September 15, 10:30 p.m., *total* eclipse (elapsed time between eclipse and Passover: seven months).
- 4 B.C., March 13, 2:20 a.m., *partial* eclipse (elapsed time between eclipse and Passover: 29 days).
- 3 B.C. and 2 B.C.: No lunar eclipses visible.
- 1 B.C., January 10, 1:00 a.m., *total* eclipse (elapsed time between eclipse and Passover: 12½ weeks).

c) Some, thinking that Josephus was referring to the fast of the seventh month (Day of Atonement), place the date of the eclipse as September 15, 5 B.C., allowing seven months from the eclipse to the next Passover. However, the fact that “this Matthias . . . in a dream” had a “*conversation with his wife*” (a euphemism for sexual intercourse) on the “night before” the day of the fast implies it was not the Day of Atonement (a 24-hour fast, the fast of the seventh month).

d) Therefore the fast of the 10th month (Tebeth; Zechariah 8:19), a 12-hour fast in December/January, seems to be the one that is referred to by Josephus. That reduces the possible eclipses which fit this scenario to the full lunar eclipse of 1 B.C. Jan. 10, at 1:00 a.m.; the evening of January 9-10, 1 B.C. also allows sufficient elapsed time between the eclipse and the Passover for the series of events that happened in that period and were described by Josephus. This total eclipse was also only *a few days* after the fast of the 10th month (Zechariah 8:19) on January 6, 1 B.C., again fitting Josephus’ record.

Josephus (*Ant.* 17) also mentions a series of *events from the eclipse through to Herod’s death*.<sup>128</sup>

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<sup>128</sup> Refer to Finegan, p. 300, paragraph 515.

## Appendix D—God’s Holy Days in Christ’s Time

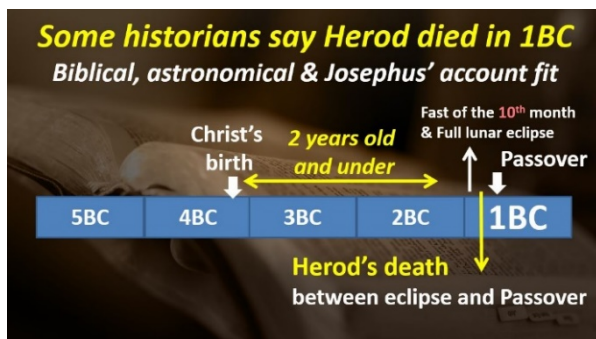
- a. On the night of the eclipse, Herod had two rabbis burned alive for involvement in the destruction of his golden eagle at the temple gate;
- b. Due to his ill health, he traveled from Jericho to the hot baths in Callirrhoe near the northeast end of the Dead Sea;
- c. After numerous baths and immersion of warm oil failed, he returned to Jericho;
- d. At Jericho he sent for prominent Jewish elders so that they would be killed at his death. This would cause mourning throughout the land. This was due to the fact he was hated by most and they would not mourn his death;
- e. Receiving a letter from Augustus allowing him to exile or execute his son Antipater;
- f. He altered his will and designated the leaders to follow him;
- g. He murdered his son Antipater (five days before he died).

In addition, Josephus detailed Herod’s rapidly approaching an extremely painful death. “But now Herod’s distemper greatly increased upon him after a severe manner, and this by God’s judgment upon him for his sins; for a fire glowed in him slowly, which did not so much appear to the touch outwardly, as it augmented his pains inwardly . . . His entrails were also ex-ulcerated, and the chief violence of his pain lay on his colon; an aqueous and transparent liquor also had settled itself about his feet, and a like matter afflicted him at the bottom of his belly. Nay, further, his privy-member was putrefied, and produced worms; and when he sat upright, he had a difficulty of breathing, which was very loathsome, on account of the stench of his breath, and the quickness of its returns; he had also convulsions in all parts of his body, which increased his strength to an insufferable degree” (*Ant.* 17:6:5).

Herod then set his house in order and organized a large burial ceremony for himself. “When he had done these things, he died, the fifth day after he had caused Antipater to be slain; having reigned, since he had procured *Antigonos to be slain, thirty-four years*; but since he had been *declared king by the Romans, thirty-seven*” (*Ant.* 17:8:1). “And thus did Herod end his life” (*Ant.* 17:8:3).

Herod died possibly *sometime in January, after the full eclipse* on the night of January 9, 1 B.C. and after the events listed above. A period of mourning and many other chronological events are also documented by Josephus that occurred between Herod’s death and the Passover.

In 1 B.C. there was a time gap of 12½ weeks (nearly 90 days) between the eclipse and Passover, allowing for sufficient time for all these documented events to occur. These events “would have taken a *minimum of 41 days* had each one of them taken place as quickly as possible. A more reasonable estimate is between 60 and 90 days” (Andrew Steinmann, *From Abraham to Paul*, 2011, p. 231).



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This further evidence supports that the partial lunar eclipse before Passover on March 13, 4 B.C. is *not* the correct eclipse, as there would have only been 29 days for all these events to occur between the eclipse and the Passover.

All these above-mentioned events that Josephus narrates regarding Herod’s death appear more accurately dated during 1 B.C. This correlates with the biblical record of Herod’s attempt to kill the child Jesus, as well as with Herod’s age and Herod’s regnal years.

### (4) *Herod’s regnal years*

Two dates regarding the period of Herod’s reign also need to be considered. Josephus notes, “Having reigned, since he had procured *Antigonus to be slain, thirty-four years*; but since he had been *declared king by the Romans, thirty-seven*” (*Ant.* 17:8:1).

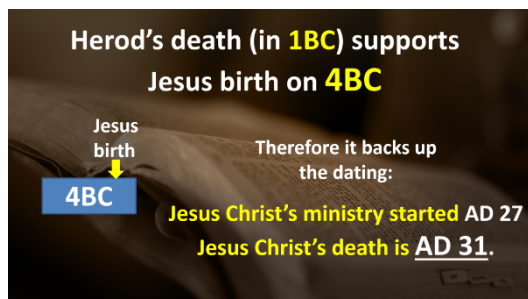
Josephus stated a little earlier when Herod was declared king: “And thus did this man receive the Kingdom; having obtained it on the *hundred eighty fourth olympiad; when Caius Domitius Calvinus was consul the second time; and Caius Asinius Pollio [the first time]*” (*Ant.* 14:14:5).

Andrew Steinmann concludes that the chronological dating of Herod’s appointment is “problematic” and cites that “the 184th Olympiad ended in June 30, 40 B.C., whilst Calvinus and Pollio were not appointed consuls until after the Treaty of Brundisium on October 2, 40 B.C. Thus Josephus is in error.” Steinmann also adds that Appian in *Civil Wars* 5.8.75, appendices 69-79, places Herod’s appointment in 39 B.C. (*When Did Herod the Great Reign?* Novum Testamentum, Vol. 51, Fasc. 1 [2009], p. 7).

Steinmann continues: “Herod was actually appointed [king by the Romans] late in 39 BCE (since he came to Rome in the winter, *Ant.* 14.376). Since Herod was appointed by a Gentile power, he probably began to count his official regnal years as beginning on the following Tishri (September/October) of 38 BCE (since the Jewish civil year began on Tishri) . . . In *Antiquities* Josephus numbered Herod’s regnal years from his appointment by the Romans. Late 39 BCE until the beginning of Tishri 38 BCE was Herod’s accession year. *Tishri 38 BCE through Elul 37 BCE was Herod’s first official regnal year*” (ibid., pp. 26-27).

In summary we have Herod’s *first regnal year as 38/37 B.C.*, and “since he had been declared king by the Romans, [he reigned] thirty-seven [years]” (*Antiquities* 17:8:1). This brings us to his *death in January, 1 B.C.*

All four above-mentioned witnesses regarding Herod’s death concur with a 1 B.C. date and this is the likely explanation.



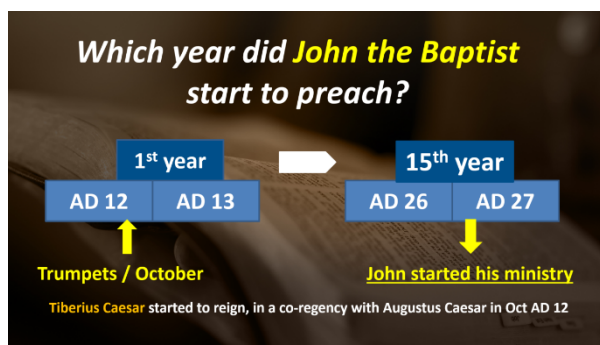
### D.2.3—The 15th year of Tiberius Caesar

## Appendix D—God’s Holy Days in Christ’s Time

Another separate and independent way to date the beginning of Jesus’ ministry is to use the start of *John the Baptist’s ministry* according to Luke 3:1, 3: “Now in the *fifteenth year of the reign of Tiberius Caesar*, Pontius Pilate being governor of Judaea, and Herod being tetrarch of Galilee, and his brother Philip tetrarch of Ituraea and of the region of Trachonitis, and Lysanias the tetrarch of Abilene . . . [John] came into all the country about Jordan, preaching the baptism of repentance for the remission of sins . . .” (KJV).

The dating of Tiberius Caesar’s reign is open to some debate. His sole reign began in A.D. 14 when Augustus Caesar died. Augustus had been ill for some years and Tiberius had been appointed his co-regent *two years prior* in A.D. 12 (Finegan, p. p. 331).

The Jewish counting of civil years began in the fall. The fall of A.D. 12 to the fall of A.D. 13 would be the first year of Tiberius’ joint “rulership” (hegemony), and the fall of A.D. 26 to the fall of A.D. 27 the 15th year of Tiberius Caesar’s reign.



Considering that John the Baptist was born in the spring, according to the order of Abijah (Luke 1:5-24), he began his ministry, according to the law, when he turned 30 years old, in the spring of the 15th year of the reign of Tiberius, A.D. 27. As Jesus Christ was six months younger than John, His ministry would have started six months later in the fall of A.D. 27.

### D.2.4—46 years building the temple

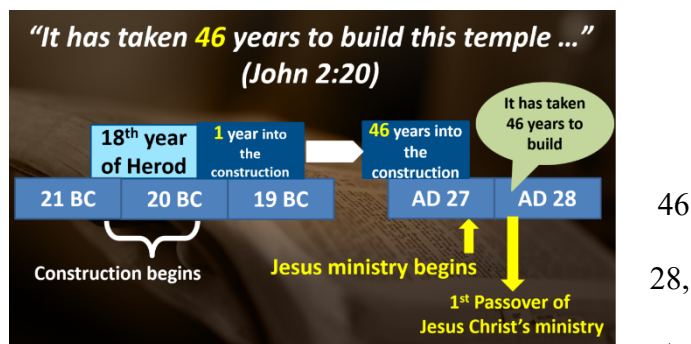
In John 2:13, 18-20 we read about Jesus’ first Passover during His ministry. “Now the Passover of the Jews was at hand, and Jesus went up to Jerusalem . . . ‘What sign do You show to us, since You do these things?’ Jesus answered and said to them, ‘Destroy this temple, and in three days I will raise it up.’ Then the Jews said, ‘It has taken *forty-six years* to build this temple, and will You raise it up in three days?’”

From *Antiquities of the Jews*, 15:11:1, we read: “And now Herod, *in the eighteenth year* of his reign, and after the acts already mentioned, undertook a very great work, that is, to build of himself the temple of God, and make it larger in compass, and to raise it to a most magnificent altitude . . .”



## Appendix D—God’s Holy Days in Christ’s Time

Herod’s first regnal year was 38/37 B.C. (refer to Appendix D.2.2 (4)). In the 18th year of his reign he undertook to build (add to) the temple of God, which would have been 21/20 B.C. During Christ’s first Passover (John 2:20) it had already taken years of construction; they were now in the 47th year. That puts us into Passover A.D. which would have been Christ’s first Passover during His ministry. (Remember add one year because there is no year zero.) His 3½-year ministry would therefore end during Passover A.D. 31.



### D.2.5—Pontius Pilate starts his governorship in Judea

The dating of Pilate’s governance is based on Josephus’ statement, “So Pilate, when he had tarried ten years in Judea, *made haste to Rome* . . . but before he could get to Rome, Tiberius was dead” (*Ant.* 18:4:2). It is also based on the fact that Tiberius died on March 16, A.D. 37.

“Since Pilate ‘*made haste to Rome*,’ he must have departed on a first voyage of the season. The sailing season normally opened on February 8 [Pliny the Elder, *Natural History*, 2:47] . . . It is likely that he departed in early February and arrived several weeks after the death of Tiberius” (Kenneth Frank Doig, *New Testament Chronology*, Chapter 11:1).

Because Pilate was in Judea 10 years, he must have started his governorship A.D. 26/27. “Pontius Pilate was the fifth governor of the Roman providence of Judea, serving under Emperor Tiberius from 26/27 to 36/37 AD” (Wikipedia, Pontius Pilate). This puts John the Baptist’s ministry starting in the spring of A.D. 27 according to Luke’s Gospel: “Now in the fifteenth year of the reign of Tiberius Caesar, Pontius Pilate being governor of Judaea, and *Herod being tetrarch of Galilee*, and his brother Philip tetrarch of Ituraea and of the region of Trachonitis, and Lysanias the tetrarch of Abilene . . .” (Luke 3:1, KJV).

This historical fact gives further support to Jesus Christ starting His ministry six months later in the fall of A.D. 27 and with a 3½-year ministry, which places Jesus Christ’s crucifixion in A.D. 31.

### D.2.6—The reign of Philip, Herod’s son.

Information about dating the reign of Herod’s son Philip in relation to the reign of Tiberius Caesar is used to show the possibility of Herod dying in 1 B.C. (Finegan, p. 299). Many researchers now accept this dating. Even though the evidence for the reign of Herod’s son is only an approximate time marker, it nevertheless supports the conclusions above that Herod did not die in 4 B.C.



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### **D.2.7—Irenaeus, Tertullian and Origen place Jesus’ birth in 4 B.C.<sup>129</sup>**

Floyd Nolen Jones mentions, “Around A.D. 180, Irenaeus penned: ‘Our Lord was born about the 41st year of the reign of Augustus’” (*The Chronology of the Old Testament*, Revised and updated edition, 2009, p. 209; see Irenaeus, *Against Heresies*, iii, xxi, 3). The first year of Augustus was 44 B.C. and his 41st year was 4 B.C. (ibid., p. 256).

Jones further states, “Tertullian, another early church father, writing about A.D. 198 stated that Augustus began to reign 41 years before the birth of Christ. This also converts to a 4 B.C. date” (ibid., p. 209).

He also adds, “In a Greek fragment of the *Homilies*, Origen (c. A.D. 185-c. 254) says that Christ Jesus was born in the 41st year of Caesar Augustus (4 B.C.)” (ibid., p. 209).

### **D.2.8—Historical record supports Christ’s ministry from A.D. 27 to A.D. 31**

Starting from the prophecy of Daniel 9 (refer to Appendix D.1), we conclude that Christ started His ministry in A.D. 27. The historical facts mentioned above give evidence of Christ being born in the fall of 4 B.C. and starting His ministry when He was 30 years old around the fall of A.D. 27. We also saw that John the Baptist apparently started his ministry six months earlier in the spring of A.D. 27. Christ had a 3½-year ministry, and His crucifixion was in the spring of A.D. 31 (refer to appendices D.2.1 until D.2.7).

### **D.3—Three festivals in three different years of Christ’s ministry**

We have thus determined the years of Christ’s ministry, from around the fall A.D. 27 until spring A.D. 31, based on fulfilled prophecy and indications from the gospel record. We also support these dates of Christ’s ministry by correlations with the dates of concurrent rulers mentioned in the Gospels.

Now we will look at three specific festivals in three different years during Christ’s ministry. Those festivals fall on specific days of the week.

#### **D.3.1—A.D. 31—Passover on a *Wednesday***

We have provided evidence that Christ’s crucifixion was in A.D. 31. We also know from Scripture that in the year that Christ died, the Passover was on a Wednesday (refer to Appendix D.1.5).

This fact of a Wednesday crucifixion is shown by careful analysis of the gospel record and the fulfillment of Christ’s sign in Matthew 12:40, “For as Jonah was three days and three nights in

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<sup>129</sup> Some scholars, using the three references mentioned (Irenaeus, Tertullian and Origen), place the birth of Christ in year 3/2 B.C., which would place Jesus death in A.D. 33 and therefore support a Friday date for the Passover and crucifixion using either the Hebrew calendar or the observation methodology. Dating Christ’s birth in 3/2 B.C. supports the incorrect notion that Christ died on a Friday and was resurrected on a Sunday.

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the belly of the great fish, so will the Son of Man be three days and three nights in the heart of the earth.” (Refer to *Holidays or Holy Days: Does It Matter Which Days We Observe?*, “The Chronology of Christ’s Crucifixion and Resurrection”).<sup>130</sup>

### D.3.2—A.D. 30—The Eighth Day was a *Sabbath*

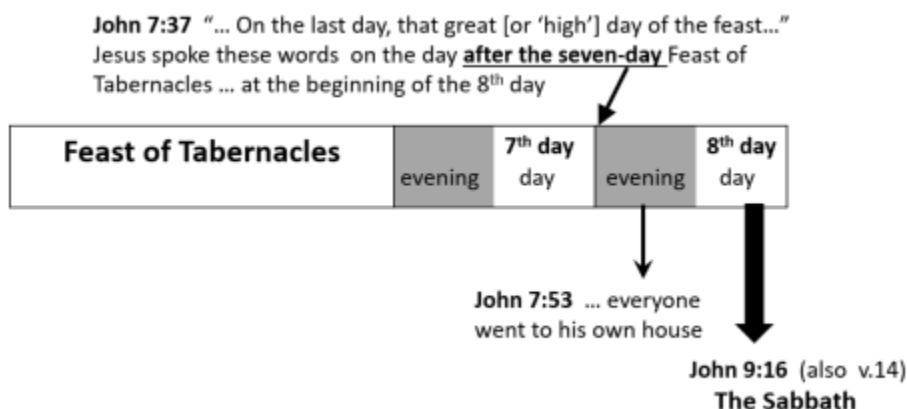
The Feast of Tabernacles and the Eighth Day in the year before Christ’s crucifixion recorded in John’s Gospel would have been in A.D. 30. All the events in that festival season are recorded from John 7:10 through to John 10:21.

The apostle John in chapter 7:37, when referring to “the last day, that *great* [Greek 3173: *megas*] day of the Feast” uses the same Greek word when referring to the Sabbath that was a *high* [Greek 3173: *megas*] day in John 19:31.

The English translators used a different English word when translating the same Greek word *megas* in John 7:37 (*great*) than in John 19:31 (*high*). This can cause confusion to English readers. Literal translations, like Darby and YLT, translate *megas* in both John 7:37 and John 19:31 as *great*. In other languages, such as Spanish and Portuguese, the translators used the same word in both cases (*gran* in Spanish and *grande* in Portuguese, which mean “great”). Both these language translations also came directly from the Greek.

Hence, to be consistent in English, John 7:37 could have equally been translated as “the last day, that *high* day of the Feast,” or alternatively, John 19:31 could have been translated “for that Sabbath was a *great* day.” Thus, this day was a “high day,” an annual Holy Day, and more specifically the Eighth Day.

So, when reading the context around John 7:37, we see it was towards sunset, as the seventh day ended and as the Eighth Day began. Then later that evening, they left their “booths” as the seven-day period of living in *booths* (tabernacles) had ended and *they went back to their own houses* (John 7:53).



<sup>130</sup> <https://www.ucg.org/bible-study-tools/booklets/holidays-or-holy-days-does-it-matter-which-days-we-observe/the-chronology>.

## ***Appendix D—God’s Holy Days in Christ’s Time***

The events during the day portion of the Eighth Day are detailed from John 8:2 until John 10:21. This day is described as a Sabbath (John 9:14) and it is further reinforced as *the* Sabbath (John 9:16).

Christ’s miracles and sayings during this Eighth Day Festival are particularly meaningful in light of God’s plan of salvation and the meaning of the day which represents the second resurrection and the events during that Judgment period.

Consequently, with this detailed analysis, we can be fairly certain the Eighth Day was a weekly Sabbath in A.D. 30. And according to Leviticus 23:36, it was a “sacred assembly” (in Hebrew *atsarah*), which closes all God’s Holy Days for that year.

It is not possible that the Eighth Day in A.D. 30 could have been on a Friday, and the next day the Sabbath. Astronomically, and according to both the Hebrew calendar and the observation method of calendric calculation, the Eighth day could not be on a Friday. (Refer to Appendix D.4.1—Alternative Holy Day occurrences for the years A.D. 26 to A.D. 34.)

### **D.3.3—A.D. 29—Last Day of Unleavened Bread was a *Sabbath***

In Appendix D.1.5, we showed that in A.D. 29, during Christ’s earthly ministry’s second Passover season, the disciples plucked ears of grain to eat as they walked with Jesus through the grain fields (Matthew 12:1-8; Mark 2:23-28; Luke 6:1-5).

We know this plucking of the ears of grain and the subsequent healing were during a weekly Sabbath because the Pharisees criticized Christ for breaking the Sabbath (Matthew 12:2; Mark 2:24; Luke 6:2). Luke 6:1 further describes this Sabbath as “*the second Sabbath after the first.*”

The Greek phrase used in Luke 6:1 is *en deuteroprotos sabbaton*, and it literally means “*second-first Sabbath.*” The word *deuteroprotos* (in the indicative) is a compound of *deuteros* (G1208) meaning “second (in time, place or rank)” and *protos* (G4413) meaning “first (in time, place or rank),” according to *Strong’s Definitions, Outline of Biblical Usage* (Larry Pierce, *Online Bible*).

This expression is “one of the most discussed textual problems in the Gospel of Luke.”<sup>131</sup> Scholars are unsure about this word partly because 1) of the uniqueness of the term; 2) they don’t see an importance in the spring Holy Days being “high” and “holy” days and Sabbaths, as we would; and 3) they mostly accept the Pharisaic reckoning of using the First Day of Unleavened Bread to count seven weeks until Pentecost. Therefore, they don’t place very much emphasis on the term in their commentaries and most modern Bibles translate Luke 6:1 simply as “on a Sabbath.”

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<sup>131</sup>Darrell Bock, Luke: Volume 1: 1:1-9:50. *Baker Exegetical Commentary on the New Testament*, p. 522.

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Yet, vital to this discussion is the term *protos*, which means “first in time or place in any succession of things or persons first in rank, influence, honor, chief, principal, first, at the first” (*New Testament Greek Lexicon*). It makes good sense that *protos* could mean “first in importance,” since the First Day of Unleavened Bread is called a “high” or “great” (*megas* in Greek) day in John 19:31 and “preparation day” in Matthew 27:62, as it was an annual Sabbath as well. Thus, the Last Day of Unleavened Bread is also a “high” or “great” day, the second of God’s annual Holy Days, which was a very important day to keep holy in Jesus’ day, just as it is for those who keep it today.

Jeremy D. Myers discusses 12 “theories” or possible meanings of *deuteroprotos*, from least likely to most likely, and lists the Last Day of Unleavened Bread as a likely meaning of *deuteroprotos*.

Under the heading, “*The Second High Sabbath*,” he states: “The ninth view is similar to the seventh, but understands *prōtō* not as referring to ‘the greatest’ but to ‘highest, most holy, or of first importance.’ Based on this premise, those who hold to this view believe that Luke may be referring to the second of seven Holy Days which were treated like Sabbath days. This is somewhat related. There are seven holidays through the Jewish Year on which no work is to be done. Three occur in the spring, the first and last days of Pesach (Passover), and Shavuot (Pentecost), and the final four occur in the fall, Rosh Hashanah (Feast of Trumpets), Yom Kippur (Day of Atonement, the Sabbath of Sabbaths), and the first and last day of Succoth (Feast of Tabernacles). In this theory then, *deuteroprōtō* could be the second of these Holy Days, which would be the last day of Pesach.”<sup>132</sup>

Hence, there is a strong possibility that *deuteroprotos* is referring to *the second* (*deuteros*) high Sabbath during the Days of Unleavened Bread and additionally it could also refer to *the first* (*protos*) weekly Sabbath of the Days of Unleavened Bread when one counts seven Sabbaths until Pentecost (Leviticus 23:15-16). This reckoning is an unusual situation which only happens when Passover is on a Sabbath and it may explain the rarity of the term “*deuteroprotos*.” This circumstance also happened in Joshua 5:11, “and they ate of the produce of the land on the day after the Passover, unleavened bread and parched grain, on the very same day.” This possibility is illustrated in the chart below.

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<sup>132</sup> Jeremy D. Myers, *What’s on Second? Who’s on First? Deuteroproto in Luke 6:1*, [redeeminggod.com/deuteroproto-in-luke-61](http://redeeminggod.com/deuteroproto-in-luke-61), 2010.

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sabbath
						Passover day Nisan 14
1st day UB First High Day wavesheaf (Note 1)	Nisan 16	Nisan 17	Nisan 18	Nisan 19	Nisan 20	Last Day UB Second High Day First Sabbath to Pentecost (Note 2)
						Second Sabbath
						Third Sabbath
						Fourth Sabbath
						Fifth Sabbath
						Sixth Sabbath
						Seventh Sabbath
Pentecost						

**Note 1:** The First Day of Unleavened Bread, in this possibility, would be the FIRST High Day (“*prōtōs*”) Sabbath after Passover. Since the wave sheaf offering is always on the first day of the week during the Days of Unleavened Bread (see Joshua 5:11), in this special case, it would also be the day which would start the count towards Pentecost (Leviticus 23:15-16).

**Note 2:** The Last Day of Unleavened Bread would therefore be the SECOND (“*deuteros*”) High Day (“*prōtōs*”) Sabbath. It would also be the FIRST Sabbath (or week) completed on the count towards Pentecost. “And you shall count for yourselves from the day after the Sabbath . . . seven Sabbaths shall be completed” (Leviticus 23:15).

In this case, the Last Day of Unleavened Bread would have been on a Sabbath in A.D. 29, and would literally be the “second-first” Sabbath, the *en deuteroprotos sabbaton*.

### **D.4—Which calendric rules concur with these three festivals?**

Above, we identified the three festivals, in three different years and on specific days of the week, which help us determine which calendric rules were in use at the time of Christ. The three festivals are:

A.D. 29—Last Day of Unleavened Bread was likely a weekly *Sabbath*;

A.D. 30—Last Great Day (Eighth Day) was also a weekly *Sabbath*;

A.D. 31—14th Nisan, Passover, was on a *Wednesday*.

#### **D.4.1—Alternative Holy Day occurrences for the years A.D. 26 to A.D. 34**

To determine the Holy Day occurrences for the years around the period of Christ’s ministry (A.D. 27 to A.D. 31) we will use computer programs available on the web to roll back the

## *Appendix D—God’s Holy Days in Christ’s Time*

astronomical clock to those years. The table below covers Holy Day occurrences from one year before Christ’s ministry (A.D. 26) until three years after His death (A.D. 34).

Please note, as discussed in Appendix C.6, there is a seasonal drift over the centuries which needs to be considered. Appendix C.7 demonstrates how this seasonal shift is accounted for by postponing the 19-year cycle by *one year, once*. In the table below we are using a sample computer program of today’s Hebrew calendar which *does take* into account this intercalation sequence postponement. This program is available at: <http://www.cgsf.org/dbeattie/calendar/?roman=31>.

Note: The observation dates on the table below, are based on details provided from a variety of sources, including: Herman H. Goldstein, *New & Full Moons: 1001 B.C. to A.D. 1561, Vol. 94*, 1973; Colin J. Humphreys and W.G. Waddington, “Dating the Crucifixion,” *Nature* 306 (December 1983): 743–746; Jean Meeus, *Astronomical Formulae for Calculators*; Karl Schock, *Table for the Visibility of the New Crescent*; and the *Royal Nautical Almanac*.

### Alternative Holy Day occurrences for the years A.D. 26 to A.D. 34 (Julian dates)

YEAR	Festival	Calculated W/Out Postponements	Calculated With Postponements <sup>133</sup>	Observation <sup>134</sup>
AD 26	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Friday, April 19 Saturday, April 20 Friday, April 26 Monday, Sept. 30 Monday, Oct. 14 Monday, Oct. 21 <b>Molad:</b> Mon Sept. 30 2h, 375p <sup>135</sup>	Friday, April 19 Saturday, April 20 Friday, April 26 Monday, Sept. 30 Monday, Oct. 14 Monday, Oct. 21	Sunday April 21 Monday, April 22 Sunday, April 28 Wednesday, Oct. 2 Wednesday, Oct 16 Wednesday, Oct 23
AD 27	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Tuesday, April 8 Wednesday, April 9 Tuesday, April 15 Friday, Sept. 19 Friday, Oct. 3 Friday, Oct. 10	Wednesday, April 9 Thursday, April 10 Wednesday, April 16 Saturday, Sept. 20 Saturday, Oct. 4 Saturday, Oct. 11	Thursday, April 10 Friday, April 11 Thursday, April 17 Sunday, Sept. 21 Sunday, Oct. 5 Sunday, Oct. 12

<sup>133</sup> Refer to sample computer program of today’s Hebrew calendar which *does consider* intercalation sequence postponement. This program is available at: [cgsf.org/dbeattie/calendar/?roman=31](http://cgsf.org/dbeattie/calendar/?roman=31) (Refer to appendices C.6 and C.7).

<sup>134</sup> The observation dates are based on details provided from a variety of sources, including: Herman H. Goldstein, *New & Full Moons: 1001 B.C. to A.D. 1561, Vol. 94*, American Philosophical Society, Philadelphia, 1973; Colin J. Humphreys and W.G. Waddington, “Dating the Crucifixion,” *Nature* 306 (December 1983): 743–746; Jean Meeus, *Astronomical Formulae for Calculators*; Karl Schock, *Table for the Visibility of the New Crescent*; and the *Royal Nautical Almanac*.

<sup>135</sup> The hours of the Molads of Tishri shown in this table are based on the Roman day, starting at midnight. Molads of Tishri given in *The Comprehensive Hebrew Calendar*, by Arthur Spier, are expressed in terms of the Hebrew calendar day, starting at 6 p.m.

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		<b>Molad:</b> Fri. Sept. 19 11h, 171p	Dehioth # 1	
AD 28	Passover First Day of UB Last Day of UB Trumpets first Day of FOT Eighth Day (LGD)	Monday, April 26 Tuesday, April 27 Monday, May 3 Thursday, Oct. 7 Thursday, Oct. 21 Thursday, Oct. 28 <b>Molad:</b> Thur. Oct. 7 8h, 760p	Monday, April 26 Tuesday, April 27 Monday, May 3 Thursday, Oct. 7 Thursday, Oct. 21 Thursday, Oct. 28	Wednesday, April 28 Thursday, April 29 Wednesday, May 5 Saturday, Oct. 9 Saturday, Oct. 23 Saturday, Oct. 30
AD 29	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Friday, April 15 Saturday, April 16 Friday, April 22 Monday, Sept. 26 Monday, Oct. 10 Monday, Oct. 17 <b>Molad:</b> Mon. Sept. 26 17h, 556p	Saturday, April 16 Sunday, April 17 <b>Saturday, April 23</b> Tuesday, Sept. 27 Tuesday, Oct. 11 Tuesday, Oct. 18  Dehioth # 2	Monday, April 18 Tuesday, April 19 Monday, April 25 Thursday, Sept. 29 Thursday, Oct. 13 Thursday, Oct. 20
AD 30	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Wednesday, April 5 Thursday, April 6 Wednesday, April 12 Saturday, Sept. 16 Saturday, Sept. 30 <b>Saturday, Oct. 7</b> <b>Molad:</b> Sat. Sept. 16 2h, 352p	Wednesday, April 5 Thursday, April 6 Wednesday, April 12 Saturday, Sept. 16 Saturday, Sept. 30 <b>Saturday, Oct. 7</b>	Friday, April 7 Saturday, April 8 Friday, April 14 Monday, Sept. 18 Monday, Oct. 2 Monday, Oct. 9
AD 31	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Tuesday, April 24 Wednesday, April 25 Tuesday, May 1 Friday, Oct. 5 Friday, Oct. 19 Friday, Oct. 26 <b>Molad:</b> Thur. Oct. 4 23h, 941p <sup>136</sup>	<b>Wednesday, Apr. 25</b> Thursday, April 26 Wednesday, May 2 Saturday, Oct. 6 Saturday, Oct. 20 Saturday, Oct. 27  Dehioth # 1	<b>Wednesday, Apr. 25</b> Thursday, April 26 Wednesday, May 2 Saturday, Oct. 6 Saturday, Oct. 20 Saturday, Oct. 27

<sup>136</sup> This Molad of Tishri is on Thursday night. However, according to the Hebrew calendar it is on the sixth day of the week, as the day starts at 6 p.m. Hence it requires a postponement as per rule of postponement Dehioth #1 (refer to Appendix C.4.2).

## *Appendix D—God’s Holy Days in Christ’s Time*

AD 32	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Saturday, April 12 Sunday, April 13 Saturday, April 19 Tuesday, Sept. 23 Tuesday, Oct. 7 Tuesday, Oct. 14 <b>Molad:</b> Tue. Sept. 23 8h, 737p	Monday, April 14 Tuesday, April 15 Monday, April 21 Thursday, Sept. 25 Thursday, Oct. 9 Thursday, Oct. 16  Dehioth # 3	Sunday, April 13 Monday, April 14 Sunday, April 20 Wednesday, Sept. 24 Wednesday, Oct. 8 Wednesday, Oct. 15
AD 33	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Wednesday, April 1 Thursday, April 2 Wednesday, April 8 Saturday, Sept. 12 Saturday, Sept. 26 Saturday, Oct. 3 <b>Molad:</b> Sat. Sept. 12 17h, 533p	Friday, April 3 Saturday, April 4 Friday, April 10 Monday, Sept. 14 Monday, Sept. 28 Monday, Oct. 5  Dehioth #'s 2 & 1	Friday, April 3 Saturday, April 4 Friday, April 10 Monday, Sept. 14 Monday, Sept. 28 Monday, Oct. 5
AD 34	Passover First Day of UB Last Day of UB Trumpets First Day of FOT Eighth Day (LGD)	Tuesday, April 20 Wednesday, April 21 Tuesday, April 27 Friday, Oct. 1 Friday, Oct. 15 Friday, Oct. 22 <b>Molad:</b> Fri. Oct. 1 15h, 42p	Wednesday, April 21 Thursday, April 22 Wednesday, April 28 Saturday, Oct. 2 Saturday, Oct. 16 Saturday, Oct. 23  Dehioth # 2	Thursday, April 22 Friday, April 23 Thursday, April 29 Sunday, Oct. 3 Sunday, Oct. 17 Sunday, Oct. 24

### **D.4.2—The calendric rules that fit these three festivals**

Therefore, the only calendar rules which fit the requirements for the Last Day of Unleavened Bread to be on a *Sabbath* in A.D. 29 and the Last Great Day of the Feast (the Eighth Day) to be on a *Sabbath* in A.D. 30 and also the Passover to be on a *Wednesday* in A.D. 31 are the ones of the Hebrew calendar with postponements. Furthermore, it is when the seasonal drift as discussed in appendices C.6 and C.7 is also considered.

We want to re-emphasize that this methodology of verifying against these three festivals has not been the source reference to prove the Hebrew calendar. We determined the dates of Christ’s ministry using our best understanding of prophecy and the gospel record. We have also confirmed the Hebrew calendar in a separate manner. This is only an additional point of verification in this gigantic puzzle of dates, quotes and historical facts.

Let’s also check a few additional points:



## *Appendix D—God’s Holy Days in Christ’s Time*

People who follow the *observation-only* (first light) approach of calendric rules have a match for A.D. 31 Passover on a Wednesday. But for that to fit, those *observation-only* followers also require the seasonal drift intercalation postponement as discussed in Appendices C.6 and C.7. Otherwise, A.D. 31 Passover would be one month earlier, on March 26, and Christ’s death would be a Monday, not a Wednesday. We can verify that calculation by using a program that does not take into consideration the intercalation postponement.<sup>137</sup>

Additionally, those who follow the *observation-only* method to keep God’s Holy Days also require an A.D. 31 crucifixion, and not an A.D. 30 crucifixion, because according to the *observation-only* method, an A.D. 30 crucifixion would fall on a Friday. (Refer to the table in Appendix D.4.1.)

Finally, for those who require a calendar based on the *observation-only* method, it would put the Eighth Day (Last Great Day) of A.D. 30 on a Monday, which is inaccurate according to the gospel record.

Those who say A.D. 30 could be the year of Christ’s crucifixion because it would also fit the Hebrew calendar with and without postponements, but then the Eighth Day in A.D. 29 is a Tuesday with postponements, a Monday without postponements and a Thursday using the observation-only method. That clearly does not fit the gospel record. In addition, in that situation of A.D. 30 to be the year of the crucifixion, the Last Day of Unleavened Bread in A.D. 28 is a Monday according to the Hebrew calendar and a Wednesday according to the observation-only method. Again it does not fit the gospel record.

There are many historians who put Christ’s death in A.D. 33. We have indicated prophetically and by the gospel record that this cannot be the case. Additionally, by looking at the table in Appendix D.4.1 we can see why there is a desire for it to be in A.D. 33—it is because in A.D. 33, the Passover was on a Friday! (Both according to the Hebrew calendar, with postponements, and according to observation.)

Lastly, in Appendix D.1.5, we made reference that in John’s Gospel there is a direct mention of three Passovers during Christ’s ministry. We have shown that in John 2:13, it is referring to His first Passover during His ministry in A.D. 28. We have also indicated that in John 6:4 it is referring to the Passover of A.D. 30, and obviously we have the Passover of His death in A.D. 31 from John 13 onward.

However, in John 5:1 it mentions “a feast of the Jews, and Jesus went up to Jerusalem,” and in John 5:10 and 16 we can see that it was a Sabbath. What festival was this one? The chronological record of John indicates it was after the Passover of A.D. 28 and before the Passover of A.D. 30. By looking at the table in Appendix D.4.1, we can be relatively sure that it was the Passover of A.D. 29. This occurs because the events of the Last Day of Unleavened Bread are different as related by the synoptic Gospels and particularly Luke 6:1. As a result, we can likely conclude that John’s Gospel does mention four Passovers during Christ’s ministry.

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<sup>137</sup> To verify A.D. 31 by rolling back today’s Hebrew calendar without taking into account the intercalation sequence postponement (Appendices C.6 and C.7) go to: <https://www.fourmilab.ch/documents/calendar/>.

## *Appendix E—Faith, Fruits and Unity*

### **E—Faith, Fruits and Unity**

In the spring of 1940, Mr. Armstrong wrote a letter addressing this very topic about which calendar to observe. There was division within the Church of God (Seventh Day). Mr. C.O. Dodd had rejected the Hebrew calendar and was planning to observe the Passover a month earlier. Mr. Armstrong studied the issue and then wrote a letter to the membership. Here are his conclusions from 1940:

“Briefly, after very exhaustive study, and counsel with brethren who also have made thorough study of the question for years, the facts are these: . . . Research reveals two basic points on this question [intercalary months], 1st, GOD DID NOT RECORD IT IN THE BIBLE, which gives us absolutely NOTHING more to go on than I have stated above. 2nd, History is vague on the subject, shedding little light that can be accepted and trusted. Yet we know God gave HIS PEOPLE A FIXED RULE for calculating TIME PERIODS, and for figuring WHEN to hold the Festivals . . . In conclusion, unless God has preserved His sacred calendar thru the Jew, then WE DO NOT KNOW how to figure Passover or ANY of the holydays this year. For there is NO AUTHORITY for any other way. There is NO BIBLE AUTHORITY WHATSOEVER for figuring the 1st day of the 1st month from the new moon NEAREST the Spring equinox! . . . God did not commit His oracles, or the preservation of His TIMES to profane history, or to the Roman Catholics, but to the Israelites. And they have been preserved BY THE JEWS” (*Good News letter*, 1940, Herbert W. Armstrong).

As early as 1940, the Church of God has “*unanimously agreed that the Hebrew calendar [the basic principles and rules] has been preserved correctly by the Jews*” (ibid.).

In this study we have addressed and analyzed just about every angle and possible argument about the calendar. We have gathered substantial evidence that the early Church has followed the historic Hebrew calendar, and also that at the time of Jesus, the calendric rules as applied by today’s Hebrew calendar are valid.

The determination of when God’s festivals and Holy Days occur, through a calendar, continues to be a source of division among some.

We do know that God’s people will be keeping His commandments at the time of the end, since that is prophesied (Revelation 14:12). The letter to the angel of the church in Philadelphia also states that some of God’s people have kept His Word and obeyed the commandment to persevere. They will be kept from the hour of trial which will come upon the whole world (Revelation 3:8, 10).

As a result, God’s commandments will be obeyed at the time of the end, and this must include keeping His annual festivals and Holy Days. God thus left us a way to know when to keep His Holy Days. We have shown that God has been faithful, and that He has indeed left us a way to know when His festivals and Holy Days are to be kept through the Hebrew calendar. He is indeed true and faithful! (Romans 3:3-4).

## *Appendix E—Faith, Fruits and Unity*

The Hebrew calendar shows us when to celebrate God’s Holy Days and festivals. Where man’s traditions have been added to the Hebrew calendar, we reject them, such as changing the keeping of the Passover on the 14th to the 15th, or not having to count 50 days to Pentecost. We faithfully follow God’s instructions and observe the Passover on the 14th, on the night that our Lord was betrayed (1 Corinthians 11:23), and continue counting to Pentecost from the date of the wave sheaf offering (Leviticus 23:15-16). We consequently reject human traditions added to the Hebrew calendar, which are contrary to God’s direct biblical instructions.

History and the fruits borne have clearly shown time and again that *once you discard the Hebrew calendar, it will create division*. Indeed, when the Hebrew calendar is rejected, whose interpretation of the calendric rules or observations are going to be followed?

When and where do we find that God has delegated to such a person or group of persons the authority to proclaim when a day is holy? Who is going to be the self-appointed observer or proclaimer of another version of a calendar that *all* the fellowships of the Churches of God *and all* the Jews would agree to follow?

We have also indicated that when individuals create or choose their own calendar and then choose their own dates for the Holy Days, *they do not have the divinely delegated authority to do so*, and thus their actions cause division rather than unity of the Body. Sadly, we have seen many times the divisive fruits of such actions.

Obviously, it is necessary for us to ensure that we have done our best to prove all things (1 Thessalonians 5:21), and search the Scriptures daily to find out whether these things are so (Acts 17:11). That is what we have done extensively on the calendar subject in this study.

Assembling together as a Body on the proper Holy Days *is an issue of faith and submission to Christ and His appointed leaders and ministers*. If we don’t do so, we are at risk of being seen by God as presumptuous (Deuteronomy 17:9-12).

Even God’s ministry in the Church of God does *not* have the God-given authority to create a calendar, *much less* an individual member of the Church. Nevertheless, the Church of God does have a responsibility to make a judgment on this matter. Paul teaches, “Let no man therefore judge you in meat, or in drink, or in respect of an holyday, or of the new moon, or of the Sabbath days: Which are a shadow of things to come; but the body [*is*] of Christ” (Colossians 2:16-17, KJV), which is the Church of God (Colossians 1:18, 24). This verse clearly states that the Holy Days and Sabbaths are currently observed and are an image of things prophesied. This refers back to verses 4 and 8 where we are told not to let men who speak philosophy, deceit and the traditions of the world to judge us for keeping them. The last phrase completes the concept that we are to follow the “body of Christ” or the teachings handed down by Jesus through the apostles.

Jesus Christ gave His ministry in His Church the responsibility and authority to spiritually build up (or edify) the Church in the unity of love, faith and doctrine which knits God’s people together, with the ultimate goal for us to become “a perfect man, to the measure of the stature of the fullness of Christ” (Ephesians 4:11-16). To worship in unity on the correct days, we need an authoritative calendar which clearly identifies God’s Feasts and annual Sabbaths (Holy Days).

## ***Appendix E—Faith, Fruits and Unity***

God’s ministers have the responsibility to teach the brethren to observe what Christ taught us. The United Church of God ministry has therefore the God-given responsibility and authority under Christ to call the commanded assemblies of the brethren according to the calendar that has been entrusted to the Jews and handed down to us, until Christ restores all things (Matthew 28:19-20; Acts 3:21).

As the apostle Paul instructs us: “Obey those who rule over you, and be submissive, *for they watch out for your souls*, as those who must give account. Let them do so with joy and not with grief, for that would be unprofitable for you” (Hebrews 13:17). As ministers it is “not that we have *dominion* over your faith, but [we] are fellow workers for your joy: for by *faith* you stand” (2 Corinthians 1:24).

We don’t need to be apologetic in sharing Paul’s instruction: *This is a test of our submission to God’s authority in faith that He is faithful and He will guide us.*

Let’s now move forward by not neglecting “the weightier matters of the law: justice and mercy and faith” (Matthew 23:23). Let’s put on the mind of Christ “by being like-minded, having the same love, being of one accord, of one mind” (Philippians 2:2). As His disciples, let us in our Christian conduct focus on edifying the body, which is the Church of God, in godly love (Ephesians 4:16). “Let us therefore follow after the things which make for peace, and things wherewith one may edify another” (Romans 14:19, KJV).