

Theological Research Report

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In Loving Memory

of

Dr. Charles V. Dorothy

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We are grateful to those who have contributed to the support of this journal. The donations that we received have not only made it possible for us to continue publishing the Report but also to begin to publish over 50 years of Biblical research on our new Internet *SkyDrive Archival System*. This entire body of research is being provided free of charge to help our brethren grow in the knowledge of God's Word and avoid being led astray by false doctrines.

PLEASE TAKE NOTE OF NEW TEMPORARY ADDRESS as we have moved to Tucson, AZ: Carl D. Franklin, 4950 S. Outlet Center Dr., Room 108, Tucson AZ 85706.

Be sure you visit the Exhibits at end of this Issue for technical information regarding the Calculated Hebrew Calendar (CHC) as well as definition of calendric and astronomical terms.

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Introductory Remarks

Issue 36

June 30, 2016

Dear friends,

The *Theological Research Report* is directed toward the interests and needs of Christian Sabbatarians and will present in-depth reviews, critiques, exegesis and original research of various theological topics including but not limited to church history, church government, history of church finance, covenant theology, historical prophetic fulfillments, Biblical chronology, Biblical archaeology, the Hebrew Calendar, healing and principles of spiritual growth.

Beginning with Issue 36 we will focus our attention for a few issues on Scriptural, historical, astronomical and mathematical evidence supporting the antiquity, structure and accuracy of the Calculated Hebrew Calendar. This project will allow me to collect scattered material published in the TRR over the years, will buy us some time as we recover and regroup from our recent move and will require no original research.

The first phase of this endeavor will cover the pivotal, foundational period of 5 BC to 70 AD—Christ's birth to the destruction of the temple. Subsequent Issues will cover the pre-Christian calendric evidence going back to the Flood of Noah as well as calendric evidence covering apostolic times onward.

When Jesus was twelve years old, He observed the Passover season with His parents and thousands of other Jews in Jerusalem. Our Savior, Jesus Christ, the Son of God, observed over 600 feast days during His lifetime from 5 BC to 30 AD. Throughout His ministry, from the fall of 26 AD to the spring of 30 AD, He observed the feast days with His disciples, whom He appointed as His apostles.

From the time of His ascension in 30 AD to the destruction of the temple in 70 AD, more than 760 feast days were observed by the apostles and believers in Jerusalem and in other nations where the Jews had been scattered. There is no evidence that Jesus or the apostles who lived during the period between 5 BC and 70 AD observed these holy days, with the exception of Passover, on any days other than those observed by the majority of the Jews of that time.

The New Testament records show that in regard to keeping the holy days, the early apostolic church functioned in perfect harmony, with widely scattered Jewish and Gentile believers observing the festivals on the same dates. The apostle Paul, who traveled throughout Asia Minor, Macedonia and Greece in his ministry to the Gentiles, observed the festival days at the same dates and times as did the Christians of Judea.

When Peter and the party of the circumcision arrived in Antioch to observe Passover and Unleavened Bread, they observed these days at the same time as the Gentile believers who were with Paul. When Paul returned to Jerusalem from Corinth in the fall of 53 AD, he observed the Feast of Tabernacles at Jerusalem with Peter, James and John at the same time they did, and at the same time the temple authorities did.

How did Paul know when to leave for Jerusalem? The city of Corinth was located many hundreds of miles from Jerusalem. Without advance notice of the date of the festival, Paul would not have been able to arrive at Jerusalem in time for this observance.

The evidence that is presented in this and subsequent issues will demonstrate that the calendar in use at the time of Christ and the apostles was calculated in the same manner in which we calculate the Hebrew Calendar of today. Without a calendar that was published well in advance and accessible to all, daily business, governmental and religious activities at the time of Christ and the apostles would have been impossible. The existence of such a calendar is amply demonstrated in the writings of the New Testament and in secular and religious histories.

New material has been unearthed which contains clear proof that the intercalary cycle of today was in effect in the days of Jesus and the apostles, and that the rules of postponement were also a vital part of the calendar of New Testament times. Historical and astronomical records of 5 BC, combined with the chronology of the events of 30 AD, 66 AD, 69 AD and 70 AD, establish a fixed time frame for the calendar years in the lifetime of Jesus and the apostles.

The validity of the four Gospels and the book of the Acts of the Apostles stands or falls on the declarations of the Calculated Hebrew Calendar of the first century AD. These books of the New Testament clearly record that the feasts observed by Jesus and the apostles were based on these declarations. When viewed in the light of historical and astronomical records, the evidence that is presented in the pages of the New Testament offers irrefutable proof that the Calculated Hebrew Calendar of today was the calendar of Jesus and the apostles. With issue 36 we begin to set forth the evidence that this was so in a clear and understandable manner for all who desire to know and follow the truth.

Some of our brethren over the past 40 years have construct their own calendars, believing that the Calculated Hebrew Calendar is not valid for us today. Some have published papers in an attempt to discredit the Calculated Hebrew Calendar, causing some of our people to turn to observation of the New Moon or the size of the new barley crop of Palestine or to the astronomical conjunction as their authority. In their misguided zeal, they have rejected the calendar that has been the authority for the observance of God's holy days from the time of Noah to the founding of the New Testament church, and is still the authority for the observance of these holy days by Christians today—a period of nearly 4385 years!

Warm regards,
Carl and Jeanie Franklin

Please note: The following material is technical and assumes a basic working knowledge of the basic units of the Calculated Hebrew Calendar. Help with terminology has been provided at the very end of this issue.

Trumpets 70 AD Civil Year 3831

We will begin our investigation with historical evidence demonstrating the utilization of the Calculated Hebrew Calendar in Christ's day. Josephus' narration of the destruction of the temple and the upper city of Jerusalem in 70 AD, Hebrew Calendar year (civil year) 3831, gives us the first clues to its construction. Josephus records that the temple was destroyed on the 10th of Ab, the same date on which the first temple was destroyed.

So Titus retired into the tower of Antonia, and resolved to storm the temple the next day, early in the morning, with his whole army, and to encamp round about the holy house. But as for that house, God had, for certain, long ago doomed it to the fire; and now that fatal day was come, according to the revolution of ages; **it was the tenth day of the month Lous, [Ab,] upon which it was formerly burnt by the king of Babylon**; although these flames took their rise from the Jews themselves, and were occasioned by them; for upon Titus's retiring, the seditious lay still for a little while, and then attacked the Romans again, when those that guarded the holy house fought with those that quenched the fire that was burning the inner [court of the] temple; but these Romans put the Jews to flight, and proceeded as far as the holy house itself. At which time one of the soldiers, without staying for any orders, and without any concern or dread upon him at so great an undertaking, and being hurried on by a certain divine fury, snatched somewhat out of the materials that were on fire, and being lifted up by another soldier, he set fire to a golden window, through which there was a passage to the rooms that were round about the holy house, on the north side of it. As the flames went upward, the Jews made a great clamor, such as so mighty an affliction required, and ran together to prevent it; and now they spared not their lives any longer, nor suffered anything to restrain their force, since that holy house was perishing, for whose sake it was that they kept such a guard about it (Josephus, *Wars*, 6:4:5).

<http://www.ccel.org/j/josephus/works/war-6.htm>

We know from history that this occurred in 70 AD. The *Encyclopaedia Judaica* testifies that the temple was destroyed on the 9th of Ab, 70 AD. As was the case with the first temple, the temple was breached on the 9th of Ab, fire was set to the temple and it burned on through the 10th of Ab finally fully destroying it.

With the siege of Jerusalem, the Temple became the focus of the whole war. The Romans' first step toward capturing the Temple Mount was their breach of the wall of the Fortress

of Antonia (on the third of Tammuz). On the ruins of this fortress, they constructed a ramp which reached the inner wall of the court in four places (Wars 6:150–1). On the 17th of Tammuz the *tamid* sacrifice ceased to be offered (Ta'an. 4:6)—possibly because there were no priests available capable of performing the prescribed service (Wars 6:94). The Temple porticos were destroyed by fire between the 22nd and 28th of Tammuz (*ibid.*, 164–8; 177–9, 190–2). The frequent Roman assaults on the wall of the court were repulsed until the eighth of Av, when Titus gave orders to set fire to the gates of the court (*ibid.*, 241). The next day a council was held at the Roman headquarters to decide upon the fate of the Temple. According to Josephus (*ibid.*), Titus did not want the Temple to be demolished, but a different source, probably based on Tacitus, states that he demanded its destruction. In Josephus' account the burning of the Temple is accidental, resulting from a Roman soldier having thrown a burning torch through a window into one of the Temple chambers on the north side. In spite of Titus' efforts to contain the flames (so Josephus says), another torch was thrown against the Temple gate (apparently the gate of the sanctuary because the entrance hall was not closed by a gate), and the entire building went up in flames, except for two gates (Wars 6:281). The Jewish defenders fought with desperate bravery until the very last, and when they saw the edifice go up in flames many threw themselves into the fire. According to Josephus (Wars, 6:248–50) **the catastrophe occurred on the tenth of Av in the year 70 C.E.; according to the Talmud (Ta'an. 29a) on the ninth.** Some of the Temple vessels were saved from destruction and fell into the hands of the Romans. They are depicted on one of the reliefs on Titus' victory arch in Rome (see Titus, Arch of) (*Encyclopaedia Judaica*, s.v. “Temple”).

Rabbinic authorities quoted in Babylonian Talmudic Tractate Ta'anith 29a record that the 10th of Ab in both cases was a Sunday.

[ON THE NINTH OF AB] THE TEMPLE WAS DESTROYED THE FIRST TIME. For it is written, **Now in the fifth month, on the seventh day of the month, which was the nineteenth year of King Nebuchadnezzar, king of Babylon, came Nebuzaradan the captain of the guard, a servant of the King of Babylon, unto Jerusalem. And he burnt the house of the Lord** etc. And it is further written, **Now in the fifth month [Ab], in the tenth day of the month, which was the nineteenth year of King Nebuchadnezzar, king of Babylon, came Nebuzaradan the captain of the guard, who stood before the king of Babylon into Jerusalem** etc. With reference to this it has been taught: We cannot say that this happened on the seventh, for it has already been stated that it was ‘in the tenth’; and we cannot say that this happened on the tenth, for it has already been stated that it was ‘on the seventh’. How then are these dates to be reconciled? **On the seventh [of Ab] the heathens entered the Temple and ate therein and desecrated it throughout the seventh and eighth [of Ab] and towards dusk of the ninth [of Ab] they set fire to it and it continued to burn the whole of that day, as it is said, Woe unto us! for the day declineth, for the shadows of the evening are stretched out. And this is what R. Johanan meant when he said: Had I been alive in that generation I should have fixed [the mourning] for the tenth [of Ab], because the greater part of the Temple was burnt thereon.** How will the Rabbis then [explain the contradiction]? — The beginning of any misfortune is of greater moment.

AND [THE TEMPLE WAS DESTROYED] THE SECOND TIME. Whence do we know this? For it has been taught: Good things come to pass on an auspicious day, and bad things on an unlucky day. It is reported that the day on which **the First Temple was destroyed was the eve of the ninth of Ab [Ab 10], a Sunday**, and in a year following the Sabbatical year, and the Mishmar of the family of Jehoiarib were on duty and the Levites were chanting the Psalms standing on the Duchan. And what Psalm did they recite? — [The Psalm] containing the verse, And He hath brought upon them their own iniquity; and will cut them off in their own evil [Psalm 94:23]. And hardly had they time to say, ‘The Lord our God will cut them off’,¹⁹ when the heathens came and captured them. The same thing too happened in the Second Temple.

Cassius Dio, a Roman historian, records that the Temple was breached on the Sabbath.

Titus, who had been assigned to the war against the Jews, undertook to win them over by certain representations and promises; but, as they would not yield, he now proceeded to wage war upon them. The first battles he fought were indecisive; then he got the upper hand and proceeded to besiege Jerusalem. This city had three walls, including the one that surrounded the temple. The Romans, accordingly, heaped up mounds against the outer wall, brought up battering engines, joined battle with all who sallied forth to fight and repulsed them, and with their slings and arrows kept back all the defenders of the wall; for they had many slingers and bowmen that had been sent by some of the barbarian kings. ³ The Jews also were assisted by many of their countrymen from the region round about and by many who professed the same religion, not only from the Roman empire but also from beyond the Euphrates; and these, also, kept hurling missiles and stones with no little force on account of their higher position, some being flung by the hand and some hurled by means of engines. They also made sallies both night and day, whenever occasion offered, set fire to the siege engines, slew many of their assailants, and undermined the Romans' mounds by removing the earth through tunnels driven under the wall. As for the battering-rams, sometimes they threw ropes around them and broke them off, sometimes they pulled them up with hooks, and again they used thick planks fastened together and strengthened with iron, which they let down in front of the wall and thus fended off the blow of still others. But the Romans suffered most hardship from the lack of water; for their supply was of poor quality and had to be brought from a distance. The Jews found in their underground passages a source of strength; for they had these tunnels dug from inside the city and extending out under the walls to distant points in the country, and going out through them, they would attack the Romans' water-carriers and harass any scattered detachments. But Titus stopped up all these passages.

In the course of these operations many on both sides were wounded and killed. Titus himself was struck on the left shoulder by a stone, and as a result of this accident that arm was always weaker. In time, however, the Romans scaled the outside wall, and then, pitching their camp between this and the second circuit, proceeded to assault the latter. But

here they found the conditions of fighting different; for now that all the besieged had retired behind the second wall, its defence proved an easier matter because its circuit was shorter. Titus therefore once more made a proclamation offering them immunity. But even then they held out, and those of them that were taken captive or deserted kept secretly destroying the Romans' water supply and slaying any troops that they could isolate and cut off from the rest; hence Titus would no longer receive any Jewish deserters. ⁴Meanwhile some of the Romans, too, becoming disheartened, as often happens in a protracted siege, and suspecting, furthermore, that the city was really impregnable, as was commonly reported, went over to the other side. The Jews, even though they were short of food, treated these recruits kindly, in order to be able to show that there were deserters to their side also.

Though a breach was made in the wall by means of engines, nevertheless, the capture of the place did not immediately follow even then. On the contrary, the defenders killed great numbers that tried to crowd through the opening, and they also set fire to some of the buildings nearby, hoping thus to check the further progress of the Romans, even though they should gain possession of the wall. In this way they not only damaged the wall but at the same time unintentionally burned down the barrier around the sacred precinct, so that the entrance to the temple was now laid open to the Romans. Nevertheless, the soldiers because of their superstition did not immediately rush in; but at last, under compulsion from Titus, they made their way inside. Then the Jews defended themselves much more vigorously than before, as if they had discovered a piece of rare good fortune in being able to fight near the temple and fall in its defence. The populace was stationed below in the court, the senators on the steps, and the priests in the sanctuary itself. ³And though they were but a handful fighting against a far superior force, they were not conquered until a part of the temple was set on fire. Then they met death willingly, some throwing themselves on the swords of the Romans, some slaying one another, others taking their own lives, and still others leaping into the flames. And it seemed to everybody, and especially to them, that so far from being destruction, it was victory and salvation and happiness to them that they perished along with the temple. Yet even under these conditions many captives were taken, among them Bargiora, their leader; and he was the only one to be executed in connexion with the triumphal celebration.

Thus was Jerusalem destroyed on the very day of Saturn [Saturday, Ab 9, 70 AD], the day which even now the Jews reverence most. From that time forth it was ordered that the Jews who continued to observe their ancestral customs should pay an annual tribute of two denarii to Jupiter Capitoline. In consequence of this success both generals received the title of imperator, but neither got that of Judaicus, although all the other honours that were fitting on the occasion of so magnificent a victory, including triumphal arches, were voted to them.

Loeb Classical Library, 9 volumes, Greek texts and facing English translation: Harvard University Press, 1914 thru 1927. Translation by Earnest Cary. Cassius Dio, Roman History, Epitome of Book LXV:LXVI:4-7

http://www.ukans.edu/history/index/europe/ancient_rome/E/Roman/Texts/Cassius_Dio/65*.html

Putting all these reports together we realize that the temple was set fire on a Saturday, Ab 9 and burned through Sunday, Ab 10, 70 AD. These dates including the very day of the week agree perfectly with the calculations of the Hebrew Calendar!

A few paragraphs later, and in the same narrative, Josephus states that after the destruction of the temple, the armies of Titus set about to raise banks against the upper city of Jerusalem. Josephus records that this work began on the 20th of Ab:

NOW when Caesar perceived that the upper city was so steep that it could not possibly be taken without raising banks against it, he distributed the several parts of that work among his army, and **this on the twentieth day** of the month Lous [or Loos-Hebrew Ab] (Josephus, *Wars*, 6:8:1).

<http://www.ccel.org/j/josephus/works/war-6.htm>

THE MACEDONIAN CALENDAR		
MACEDONIAN	ATTIC	MODERN
Dios	Pyanopsion	October
Apellaios	Maimakterion	November
Audonaivos	Poseideon	December
Peritios	Gamelion	January
Dystros	Anthesterion	February
Xandikos	Elaphebolion	March
Artemisios	Mounichion	April
Daisios	Thargelion	May
Panemos	Skirophorion	June
Loos	Hekatombaion	July
Gorpiaios	Metageitnion	August
Hyperberetaios	Boedromion	September

Now, as the following table illustrates, the 20th of Ab, 70 AD was a Wednesday.

Saturday,	August 4, 70 AD	Ab 9	Temple Burned
Sunday,	August 5, 70 AD	Ab 10	Temple Burned
Monday,	August 6, 70 AD	Ab 11	
Tuesday,	August 7, 70 AD	Ab 12	
Wednesday,	August 8, 70 AD	Ab 13	
Thursday,	August 9, 70 AD	Ab 14	
Friday,	August 10, 70 AD	Ab 15	
Saturday,	August 11, 70 AD	Ab 16	
Sunday,	August 12, 70 AD	Ab 17	
Monday,	August 13, 70 AD	Ab 18	
Tuesday,	August 14, 70 AD	Ab 19	

Wednesday, August 15, 70 AD Ab 20

Josephus also records that this work was completed in eighteen days on the 7th of Elul:

And now were the banks finished on the seventh day of the month Gorpheus, [Elul,] in eighteen days' time, when the Romans brought their machines against the wall (Josephus, *Wars*, 6:8:4).

<http://www.ccel.org/j/josephus/works/war-6.htm>

As the following table illustrates, the 7th of Elul, 70 AD was a Saturday.

Thursday,	August 16, 70 AD	Ab	21
Friday,	August 17, 70 AD	Ab	22
Saturday,	August 18, 70 AD	Ab	23
Sunday,	August 19, 70 AD	Ab	24
Monday,	August 20, 70 AD	Ab	25
Tuesday,	August 21, 70 AD	Ab	26
Wednesday,	August 22, 70 AD	Ab	27
Thursday,	August 23, 70 AD	Ab	28
Friday,	August 24, 70 AD	Ab	29
Saturday,	August 25, 70 AD	Ab	30
Sunday,	August 26, 70 AD	Elul	1
Monday,	August 27, 70 AD	Elul	2
Tuesday,	August 28, 70 AD	Elul	3
Wednesday,	August 29, 70 AD	Elul	4
Thursday,	August 30, 70 AD	Elul	5
Friday,	August 31, 70 AD	Elul	6

Saturday, September 1, 70 AD Elul 7

It is plain to see, therefore, that the month of Ab, 70 AD had 30 days just as it does today. There is no other way to arrive at a count to Elul 7—unless Ab has 30 days. But how many days did Elul have? The Talmud records that the length of Elul had been fixed at 29 days since the days of Ezra. Hinena b. Kahana of Babylonia, an early third century AD rabbi, is quoted as stating that Elul had never been prolonged; i.e., had a 30th day added to it. Notice that both sides in the argument agree on this:

‘From the days of Ezra onwards we have found no instance of Elul being prolonged’! — [Exactly so]: ‘We find no instance’, Talmud - Mas. Rosh HaShana 19b

Scripture also verifies that Elul had 29 and only 29 days from the time of Ezra. The following quote is taken from our paper *The Feast of Trumpets 2000*, page 14. In reference to the length of Elul at Haggai’s time, we wrote:

Haggai 1:14-15 Confirms the Calendar Calculations of 519 BC

And the LORD stirred up the spirit of Zerubbabel the son of Shealtiel, governor of Judah, and the spirit of Joshua the son of Josedech, the high priest, and the spirit of all the remnant of the people; and they came and did work in the house of the LORD of hosts, their God, in the four and twentieth day of the sixth month, in the second year of Darius the king" (Hag. 1:14-15).

History places the second year of Darius Hystaspes in 519 BCE (April to April, Persian reckoning). Haggai dates the building of the temple from the twenty-fourth day of the sixth month—less than a week before the declaration of Tishri 1, the first day of the seventh month. The calculations of the Hebrew Calendar for that year place the *Molad* of Tishri at 5:31 PM (Jerusalem Time. Hereafter JT) on Friday, September 14. Since the *Molad* did not fall before noon of that day, as required by Postponement Rule 2, the declaration of Tishri 1 was made on the following day, Sabbath, September 15.

The fact that the first day of the seventh month, or Tishri 1, was a weekly Sabbath demonstrates that the sixth month, or Elul, was only twenty-nine days in length, as it is today. If the month of Elul had consisted of thirty days, the twenty-fourth day of that month would have fallen on a weekly Sabbath (counting backward from Tishri 1). The Scriptures rule out any possibility of the twenty-fourth day being a weekly Sabbath, as Haggai records that the people spent that day working on the temple. Thus Haggai’s account of the building of the temple supports the calculations of the Hebrew Calendar for the end of the sixth month and the beginning of the seventh month, or Tishri.

Haggai’s confirmation of the Hebrew Calendar carries even more weight when we understand that the declaration of Tishri 1, the first day of the seventh month, was made before the new crescent was visible. Astronomical calculations for the year 519 BCE place the conjunction of the moon after the *Molad*, which fell at 5:31 PM (JT) on Friday evening. Since the new crescent does not become visible until at least 17.2 hours after the astronomical conjunction which fell at 9:52 PM (00.04 Universal Time. Hereafter UT) Friday, September 14, there was no possibility of sighting the new crescent until after the day had been declared. As in 536 BCE, the declaration of the Feast of Trumpets in 519 BCE was based strictly on calculation.

Both sides in the rabbinic debate acknowledge that from the time of Ezra, Elul had 29 days. And, that if Elul were to be intercalated by the Jewish Babylonians it would truly “mess up” the calendar season for Tishri and the rest of the year. This means the calendar courts had kept detailed records for centuries before Christ.

Continuing our count from Elul 7 through Elul 29 we learn that the Feast of Trumpets in 70 AD occurred on a Monday, September 24. This date was gleaned from the facts of history and also just happens to match the date declared by the Hebrew Calendar we currently use!

Sunday,	September 2, 70 AD	Elul 8
Monday,	September 3, 70 AD	Elul 9
Tuesday,	September 4, 70 AD	Elul 10
Wednesday,	September 5, 70 AD	Elul 11
Thursday,	September 6, 70 AD	Elul 12
Friday,	September 7, 70 AD	Elul 13
Saturday,	September 8, 70 AD	Elul 14

Sunday,	September 9, 70 AD	Elul 15
Monday,	September 10, 70 AD	Elul 16
Tuesday,	September 11, 70 AD	Elul 17
Wednesday,	September 12, 70 AD	Elul 18
Thursday,	September 13, 70 AD	Elul 19
Friday,	September 14, 70 AD	Elul 20
Saturday,	September 15, 70 AD	Elul 21

Sunday,	September 16, 70 AD	Elul 22
Monday,	September 17, 70 AD	Elul 23
Tuesday,	September 18, 70 AD	Elul 24
Wednesday,	September 19, 70 AD	Elul 25
Thursday,	September 20, 70 AD	Elul 26
Friday,	September 21, 70 AD	Elul 27
Saturday,	September 22, 70 AD	Elul 28

Sunday,	September 23, 70 AD	Elul 29
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Monday,	September 24, 70 AD	Tishri 1 Trumpets
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When we check the Hebrew Calendar for civil year 3830, 70 AD we should find Ab 9 listed as a weekly Sabbath day. And, when we check the civil year 3831 we should find that the Feast of Trumpets has been declared for a Monday, September 24, 70 AD. Indeed, this is exactly what we find! The Feast of Trumpets is declared for a Monday, September 24, 70 AD and Ab 9 is declared for a weekly Sabbath, August 4, 70 AD!

A Hebrew Calendar utilizing a 3, 6, 8, 11, 14, 17 and 19 intercalary pattern thus matches the facts of history for 70 AD as recorded by the Jewish historian Flavius Josephus, the Roman historian Cassius Dio and attested to by the *Encyclopaedia Judaica* and the Talmud. This Hebrew Calendar also informs us that civil year 3830, Trumpets 69 AD, was the 11th year of the 19-year cycle and the 4th of 7 leap years in that cycle and contained 384 days. As this Hebrew Calendar matches the facts of history, there is no reason to doubt that civil year 3830, beginning with Trumpets 69 AD is a leap year and that the 3, 6, 8, 11, 14, 17 and 19 intercalary cycle it utilizes is the correct cycle.

However, a Hebrew Calendar utilizing a 2, 5, 7, 10, 13, 16 and 18 year intercalary pattern, as does that of Herman Hoeh, John Kossey, Robert Newman, Frank Nelte and Ambassador College, does not declare civil year 3830, Trumpets 69 AD a leap year. It declares it a common year of 354 days. Thus, this calendar does not match the facts of history. It does, however, declare the Feast of Trumpets for a Monday, September 24, 70 AD, as does a 3, 6, 8, 11, 14, 17 and 19 year cycle, and gives the length of year as 355 days. Civil year 3829, Trumpets 68 AD is declared a leap year of 385 days (instead of 355 days as it should be declared), the 4th year of the 2, 5, 7, 10, 13, 16 and 18 year intercalary cycle and the 10th year of the 19-year cycle.

We know from history that the 9th of Ab fell on a Sabbath in 70 AD. As we have demonstrated above, Ab 70 AD had 30 days. This fact leaves 21 remaining days in Ab before Elul 1. We have also demonstrated that Elul had 29 days, 70 AD. 21 days plus 29 days equals 50 days. 50 days from Ab 9 places the Tishri 1 on a Monday, 70 AD.

The astronomical conjunction of Tishri, 70 AD occurred at 6:37 AM (04:37 Universal Time. Hereafter UT) Jerusalem time, on a Sunday, September 23. The *molad* of Tishri, 70 AD fell at 5:47 PM (15:47 UT), late Sunday afternoon, September 23. **Therefore, Trumpets, 70 AD, by reference to either conjunction or *molad* calculation, was postponed by Rule 2 to Monday, September 24. Rule 2 states:**

Rule Two: When the *Molad* of Tishri occurs at noon or later (18 hours 0 parts) or more, the declaration of Tishri 1 is advanced to the next day.

Opponents of a calculated Hebrew Calendar would have Trumpets 70 AD, fall on Sunday, September 23 in synchronization with the astronomical conjunction. The facts contained above prove, however, that Trumpets 70 AD did not fall and could not have fallen on a Sunday. The historical facts place the destruction of the temple on Sabbath, Ab 9 70 AD and place Trumpets on Monday, September 24, 70 AD.

Trumpets 66 AD
Civil Year
3827

Josephus also records that a Galilean murdered the High Priest Ananias and his brother Hezekiah—the murder’s name was Manahem son of Judas. This murder took place on the Hebrew Calendar date of Elul 7 at the beginning of the Jewish Wars with Rome. Josephus is using the month names of the Macedonian Calendar.

But Manahem and his party fell upon the place whence the soldiers were fled, and slew as many of them as they could catch, before they got up to the towers, and plundered what they left behind them, and set fire to their camp. **This was executed on the sixth day of the month Gorpheus [Elul].**

But on the next day the high priest was caught where he had concealed himself in an aqueduct; he was slain, together with Hezekiah his brother, by the robbers: hereupon the seditious besieged the towers, and kept them guarded, lest any one of the soldiers should escape. Now the overthrow of the places of strength, **and the death of the high priest Ananias**, so puffed up Manahem, that he became barbarously cruel; and as he thought he had no antagonist to dispute the management of affairs with him, he was no better than an insupportable tyrant...(Josephus, *Wars*, 2:17:8-9).

Josephus also records that this murder took place on the weekly Sabbath.

...for indeed it so happened that this murder was perpetrated on the sabbath day, on which day the Jews have a respite from their works on account of Divine worship (Josephus, *Wars*, 2:17:9).

THE MACEDONIAN CALENDAR		
MACEDONIAN	ATTIC	MODERN
Dios	Pyanopsion	October
Apellaios	Maimakterion	November
Audonaios	Poseideon	December
Peritios	Gamelion	January
Dystros	Anthesterion	February
Xandikos	Elaphebolion	March
Artemisios	Mounichion	April
Daisios	Thargelion	May
Panemos	Skirophorion	June
Loos	Hekatombaion	July
Gorpiaios	Metageitnion	August
Hyperberetaios	Boedromion	September

History records that the year of Ananias murder was 66 AD, at the very beginning of the Jewish Wars with Rome (*Encyclopaedia Judaica*, s.v., “Menahem Son of Judah”).

Below is a reconstruction of the Hebrew month Elul to the Hebrew month Tishri 1, civil year 3826, 66 AD demonstrating from history that Tishri 1 that year occurred on Monday, September 8:

Elul

1	Sunday	August 10	
2	Monday	August 11	
3	Tuesday	August 12	
4	Wednesday	August 13	
5	Thursday	August 14	
6	Friday	August 15	
7	Saturday	August 16	Date Ananias Murdered
8	Sunday	August 17	
9	Monday	August 18	
10	Tuesday	August 19	
11	Wednesday	August 20	
12	Thursday	August 21	
13	Friday	August 22	
14	Saturday	August 23	
15	Sunday	August 24	

16	Monday	August 25
17	Tuesday	August 26
18	Wednesday	August 27
19	Thursday	August 28
20	Friday	August 29
21	Saturday	August 30
22	Sunday	August 31
23	Monday	September 1
24	Tuesday	September 2
25	Wednesday	September 3
26	Thursday	September 4
27	Friday	September 5
28	Saturday	September 6
29	Sunday	September 7

Tishri Civil Year 3827 66 AD

1 Monday September 8

When we check the Hebrew Calendar for the civil year of 3826, 66 AD, we should find Elul 7 listed as a weekly Sabbath day, August 16. And, when we check the calendar for Tishri 1, civil year 3827, 66 AD, we should find that the Feast of Trumpets has been declared for a Monday, September 8. Indeed, this is exactly what we find! The Feast of Trumpets is declared for a Monday, September 8, 66 AD and Elul 7 is declared for a weekly Sabbath, August 16, 66 AD!

However, a Hebrew Calendar utilizing a 2, 5, 7, 10, 13, 16 and 18 year intercalary pattern declares civil year 3826, Tishri 1, 65 AD a leap year of 385 days. In so doing, it places Trumpets for civil year 3827 on a Thursday, October 9, 66 AD, one full month later than a Hebrew Calendar utilizing a 3, 6, 8, 11, 14, 17 and 19 year intercalary pattern. This of course places the 7th of Elul, 66 AD on a Saturday, September 16, instead of Saturday, August 16! The following chart illustrates this point.

Elul 66 AD

7	Saturday	September 16
8	Sunday	September 17
9	Monday	September 18

10	Tuesday	September 19
11	Wednesday	September 20
12	Thursday	September 21
13	Friday	September 22
14	Saturday	September 23
15	Sunday	September 24
16	Monday	September 25
17	Tuesday	September 26
18	Wednesday	September 27
19	Thursday	September 28
20	Friday	September 29
21	Saturday	September 30
22	Sunday	October 1
23	Monday	October 2
24	Tuesday	October 3
25	Wednesday	October 4
26	Thursday	October 5
27	Friday	October 6
28	Saturday	October 7
29	Sunday	October 8

Tishri 66 AD

1 Monday October 9

Dr. Hoeh's calendar as well as Nelte's calendar places Elul 7, 66 AD on a Saturday, September 16. But there is no way this date can be reconciled with the facts of history. Therefore, a 2, 5, 7, 10, 13, 16 and 18 year intercalary pattern is a myth. It never was utilized in Hebrew Calendar calculations. It should not be utilized in our Hebrew Calendar calculations. But it should be forever discarded to the junk heap of untenable ideas.

The astronomical conjunction occurred at 12:15 PM (10:15 UT), Jerusalem time, Monday, September 8, 66 AD. The *molad* of Tishri occurred on Monday, 11 hours and 77 parts, September 8, 66 AD. The Feast of Trumpets was declared by *molad* (not by lunar conjunction, which by Rule 2 would have declared for Tuesday) time for Monday, September 8, 66 AD.

We have demonstrated that a Hebrew Calendar utilizing an intercalary sequence of 3, 6, 8, 11, 14, 17 and 19, agrees with the facts of history at two critical check points:

the date of the death of the high priest Ananias at the beginning of the Jewish Wars Saturday, August 16—Elul 7, 66 AD;

and the destruction of the temple at the end of the Jewish Wars Saturday, August 4—Ab 9, 70 AD.

With this in mind, let us now reconstruct civil year 3830, 69 AD and then leap back in time from the period of the Jewish Wars to the time of the birth of Christ in 5 BC. As we shall see, we also have a lock on two more historical dates that perfectly match the pattern of the Hebrew Calendar we use today.

Trumpets 69 AD Civil Year 3830

The historical evidence that we have presented clearly demonstrates that Trumpets 70 AD fell on a Monday, September 24. This evidence also demonstrates that Trumpets 66 AD fell on a Monday, September 8. Both dates agree with and independently confirm the accuracy of a Hebrew Calendar utilizing a 3, 6, 8, 11, 14, 17 and 19 leap year* pattern. This intercalary pattern also declares 66 AD a leap year as well as 69 AD. But how many days did this leap year have—383, 384 or 385? We will now determine the length of this leap year without relying on the Hebrew Calendar. In order to determine this figure we must determine the date of the Feast of Trumpets, 69 AD. By this means we will then be able to determine the number of days between Tishri 1, 69 AD and Tishri 1, 70 AD.

The Feast of Trumpets fell in September in 69 AD. We know that the feast was observed in this month because a Tishri 1 observance in October would give us a year of only 355 days in length. This is at least 30 days too short for the year, which was a leap year. No leap year is ever less than 383 days long. If we place Trumpets in the month of August 69 AD, this would give us a year from Tishri 1, 69 AD to Tishri 1, 70 AD of over 400 days. This is astronomically impossible—no year of any lunar calendar has ever been 400 days or more in length.

September 69 AD, therefore, is the only month that fits the astronomical and historical facts. But on which day of this month did Tishri 1 fall? In order to determine this, we must look at the records of astronomy. The astronomical conjunction of September 69 AD fell at 11:21 AM (09:21 UT)

* A **leap year** is any of three types of years in the Hebrew Calendar; a deficient leap year contains 383 days (353 + 30), a regular leap year contains 384 days (354 + 30) and a perfect leap year contains 385 (355 + 30) days. See also **common year**.

Jerusalem time, Monday, September 4. The *molad* for this month occurred at 8:10 PM (18:10 UT) Jerusalem time, Monday, September 4. If we declare Tishri 1 for a Monday, September 4, the year 69 AD will be 385 days in length. On the other hand, if we declare Tishri 1 for Tuesday, September 5, the year 69 AD will be 384 days in length.

Now, if we were to declare Trumpets 69 AD for Monday, September 4, we push Elul 69 AD back one day, thus shifting every month backward by one day through the historically verified events of 66 AD as we would be pushing an established number of days for this span backward into the next span. Doing so would shift the date of the assassination of the High Priest Ananias from Saturday, Elul 9, 66 AD to Friday, Elul 8, 66 AD. We must therefore declare Tuesday, September 5 the Feast of Trumpets 69 AD, thus making the year one of 384 days. It so happens that a Hebrew Calendar utilizing a 3, 6, 8, 11, 14, 17 and 19 leap year pattern declares the Feast of Trumpets, 69 AD for Tuesday, September 5, the same date as we have just declared mathematically and astronomically.

Now, since the astronomical conjunction of Tishri, 69 AD fell at 11:21 AM (09:21 UT) Jerusalem time, Monday, September 4. And, the *molad* of Tishri occurred at 8:10 PM (18:10 UT) Jerusalem time, Monday, September 4, but Trumpets was not declared until Tuesday, September 5, we know that it was postponed either by Rule 2 or possibly by Rule 4 but not by conjunction.

Rule 2: When the *molad* of Tishri falls on or past the 18th hour (noon), it is postponed to the following day. If the following day happens to be a Sunday, Wednesday, or Friday, it is postponed yet another day, in accordance with Rule 1.

Rule 4: When the *Molad* of Tishri of a common year immediately following an Intercalary year occurs on a Monday, at or after the 2nd Day, 15 hours and 589 parts, the declaration of Tishri 1 is advanced to Tuesday.

Now, what have we learned about Trumpets 69 AD?

That Trumpets was declared by *molad* calculations, and not by the lunar conjunction or observation. Why? Because the conjunction occurred at 11:21 AM (09:21 UT), Jerusalem time, Monday, September 4, 69 AD, but the *molad* of Tishri occurred about 10 hours later that evening. Therefore, a Tuesday Trumpets was declared by the *molad*, and not on Monday by the conjunction or observation.

If we insist on declaring Trumpets by conjunction, (70 AD already being fixed by facts we have already proven), we would create a 385-day year. What would one then have to admit? That postponements did exist, since 385-day years cannot mathematically or astronomically happen without postponements.

Conclusion. In every example we find, where there is a question of conjunction or *molad* times, the day is always declared according to the *molad* calculation of the calculated Hebrew Calendar. On dates we can prove, the conjunction is superseded by the *molad* when they fall on opposite sides of the 12:00 noon, 18 hour limit.

If not postponed until Tuesday by Rule 2, this means it was declared Monday, which is a real problem for those who do not like postponements. Why? **Have we not learned that we can only have a 385-day lunar year when postponements are present? Yes, indeed!** Knowing that 70 AD Trumpets was declared on Monday (for reasons already validated), and that **the Hebrew Calendar has declared the period 69-70 AD as a 384-day year**, if we back Trumpets 69 to Monday instead of Tuesday, we have 385 days.

No, we cannot move 70 AD back to Sunday (instead of Monday) to avoid 385 days. Why? Again, have we not learned that Elul can have only 29 days, in which case Trumpets 70 AD had to fall on Monday in order that Ab 9 could be declared on a weekly Sabbath. Else we back up Elul, thus backing up Ab, causing the 9th to occur on Friday, which history and calendar calculations validate that it fell on Sabbath. So, we are stuck between a rock and a harder place, and both of them are postponements.

We should also mention since we can demonstrate that both Trumpets 69 AD and 70 AD were accurately declared according to the same rules of the Hebrew Calendar that are still extant, this places Tabernacles 69 AD beginning on September 19, a full 5 days before the fall equinox. (The fall equinox occurred on September 24 at 22:33:57 UT in 69 AD.) Yet there are those who ignore the Hebrew Calendar and declare Tishri 15, the High Sabbath beginning the Feast of Tabernacles, 2002 a month later on October 21, 2002. Why? Because they feel that the Hebrew Calendar declares Tishri 15 too early by placing it on Saturday, September 21—2 days before the fall equinox which occurs at 4:56:28 UT on September 23, 2002.*

Now that we have established the date of Trumpets 69 AD and that its length is 384 days, we may now proceed to determine the lengths of months for civil year 3830—69 AD. We will do so in two parts: first by providing several examples of the dates and times of lunar declarations of the summer of 70 AD, which clearly demonstrate a lunar calendar based on an averaging process of calculation, and not one based on finite declarations referenced to the exact time of the *molad*, lunar conjunction, or visible crescent. And, second we will “flesh out” the remaining months by working forward from Tishri 69 AD to Nisan 70 AD.

The leap year of civil year 3830 beginning with Trumpets 69 AD, had a length of 384 days as we have just demonstrated. As such it is classified as a leap regular. Common regular years, the parent of a common leap regular, have 354 days and are modeled after the average length of a lunar year; i.e., the average lunar month has 29.5 days. Multiply this number by 12 lunations in a solar year and we arrive at the figure 354 days. Thus the length of the year is set by astronomical fact.

* Frank Nelte teaches that both the Passover and Tabernacle seasons of 2002 are declared too early by the Hebrew Calendar. As we can see by the evidence presented above this teaching is simply not true and has no historical or calendric standing whatsoever. Nelte places Passover/Unleavened Bread 2002 a month too late and does the same for the fall Tabernacles festival season.

Each month in a common civil year, beginning with Tishri, alternates between 30 and 29 days. This is due to the fact that Hebrew Calendar days run from sunset to sunset, each day being 24 hours. Thus calendar days must be represented in whole numbers. The only way of doing this is to alternate months between 30 and 29 days. In a common regular year the month of Tishri has 30 days, while each following month alternates between 29, then 30 then 29 and so on until we reach the 12th month of Elul which ends the year with 29 days.

A leap regular year is simply a common regular year plus a leap or intercalary month of 30 days, thus giving us a year length of 384 days. The point being, the lengths of the months in a common regular and a leap regular are the same and also have the same 30/29/30/29 rotation cycle with a second Adar of 30 days thrown in as the only difference.

With this knowledge in hand, we should expect to see month lengths and a month sequence for civil year 3830, 69-70 AD as follows:

Tishri with 30 days, Heshvan with 29 days, Kislev with 30 days, Tevet with 29 days, Shevat with 30 days, Adar I (the leap month) with 30 days, Adar II with 29 days, Nisan with 30 days, Iyar with 29 days, Sivan with 30 days, Tammuz with 29 days, Ab with 30 days and Elul with 29 days.

This is exactly what we see when we reconstruct this year from astronomical data. Let us begin our archaeological dig in astronomical data, totally independent of Hebrew Calendar declarations, to verify that the above assertion is indeed true. Our adventure takes us first of all to the period of Nisan, 70 AD to Tishri, 70 AD. We will work backwards from Tishri through Nisan to demonstrate our point with astronomical data.

We have demonstrated that the Feast of Trumpets of 70 AD was declared by history for Monday, September 24, 70 AD. Both sides in the rabbinic debate acknowledge that from the time of Ezra, Elul had 29 days. And, that if Elul were to be intercalated by the Jewish Babylonians it would truly mess up the calendar season for Tishri and the rest of the year. This means the calendar courts had kept detailed records for centuries before Christ.

Data of the lunar phases of the summer of 70 AD already given demonstrates clearly that the length of Ab was fixed at 30 days, just as it still is in 2002 AD, and that this fixing is done by an averaging method of calculation, which, at times, may ignore any reference to the moon's finite phase, once the calculation of Tishri 1 has been determined. That is, day one of the sixth month Elul, 70 AD was fixed and, in effect, backed up 29 days from Trumpets, and the first of Ab was fixed and backed up 30 days from Elul, just as is still done in our time. The *molad* and conjunction times of the first day of Elul, 70 AD, will prove that to be the case.

Since Tishri 1, by the Hebrew Calendar was declared on Monday, September 24, 70 AD, we can know that the day was not declared by the astronomical conjunction, as that time occurred at 6:37 AM (04:37 UT), Sunday morning, September 23, 70 AD, Jerusalem time, while the *molad* calculation fell at 5:47 PM (15:47 UT), late Sunday afternoon. Therefore, Monday was declared by *molad* averaging of 29.53 days per month. Likewise, Tishri 1 was not declared by the visible crescent of the eve of Trumpets, as the conjunction falling at 6:37 AM does not allow enough time for the crescent to appear as the *molad* of Tishri occurred a little more than 12 hours later at 5:47 PM. A minimum of 17.2 hours must pass from the time of the astronomical conjunction before the new crescent can possibly be seen by the naked eye of a trained observer working under perfect weather conditions.

If declaration had been concluded by conjunction time, Sunday would have been declared Trumpets in that year. This would place the ninth of Ab on a Friday instead of the weekly Sabbath (by a 29 day reckoning for Elul). But, both the Talmud and *Encyclopaedia Judaica* record that the fire that burned the second temple began on the ninth of Ab, which is said to have been a weekly Sabbath. The Hebrew Calendar confirms this lunar date as a Sabbath by day of the week. Moreover, the Talmud records that Elul had been fixed at 29 days since the days of Ezra. So, we are faced with a set of known cross points which agree in witness that the Hebrew Calendar of today is still determined by the same methods; as those methods, rolling back to 70 AD, agree with the statements of the Talmud, *Judaica*, simple mathematics, historical and astronomical data.

By simply counting 29 days back from Monday, September 24, 70 AD, we arrive at the first day of Elul—Sunday, August 26, 70 AD. The astronomical conjunction of Elul occurred at 4:28 PM (14:28 UT) Jerusalem time, on Friday, August 24, in 70 AD, but the *molad* calculation fell about 5:00 AM (03:00 UT), Jerusalem time on Saturday, August 25, 70 AD. We calculate the *molad* of Elul by knowing that one month previous to Tishri 1 would be 1.53 days earlier than the 5:47 PM *molad* near the evening of Trumpets. But, Elul was not declared until Sunday, August 26. This plainly tells us that the month of Elul was not declared by either *molad* or astronomical conjunction, as both would place the first day of Elul on Saturday, yet it was not declared until Sunday. So, we see that Elul was not declared by a finite definition based on either the conjunction or *molad* times, but simply, as it were, by backing up 29 days from Trumpets.

If we want to say that a visible crescent was present on Saturday evening, therefore Elul was declared by observation, then, in the same breath, we must admit that trumpets was not declared by observation in the same year. So, no pattern can be gathered from the facts at hand, other than the fact that Elul was not declared, as already stated, by any constant pattern of astronomical evidence. It was declared rather by a fixed method, which required a sixth lunar month of 29 days. The finite lunar phase was not a consideration in that instance, any more than it is for the declarations of the Gregorian Calendar, which is also proclaimed by an averaging process. The declaration of the Day of Trumpets is the only annual lunar date consistently locked to finite *molad* calculations, but even then, the formula is often modified by the averaging rules of postponement. Jesus did not object to such methods of calculation during His ministry, and they are still in use today.

Data of the lunar phases of the summer of 70 AD also clearly demonstrates that the length of Ab was fixed at 30 days, just as it is to this very day, and that this fixing is done by an averaging method of calculation, which, at times, may ignore any reference to the moon's finite phase, once the calculation of Tishri 1 has been determined. That is, day one of the sixth month Elul, 70 AD was fixed and backed up 29 days from Trumpets, and the first of Ab was backed up 30 days from Elul, just as is still done in our time. The *molad* and conjunction times of the first day of Elul, 70 AD, prove this to be the case.

30 days previous to Sunday, August 26 would place the first day of Ab on Friday, July 27, 70 AD. Now, the *molad* of Ab fell at about 4:19 PM (14:19 UT), Jerusalem time, Thursday, July 26, 70 AD, but the astronomical conjunction occurred about 5:36 AM (03:36 UT) Jerusalem time, Thursday morning, July 26, 70 AD. The first day of Ab, by counting back fixed month lengths was declared to be Friday, July 27, 70 AD; therefore it could be referenced to the *molad* (which fell in the afternoon of the day before), but not the astronomical conjunction, which occurred well before 12:00 noon. If by conjunction, the day before, Thursday, would have been declared. But that would give Ab 31 days, and not 30 as it was so fixed in 70 AD. To conclude, the re-construction of Ab and Elul verify that Ab had 30 and Elul 29 days, just as they still do today. To think otherwise does not agree with the provable facts.

The *molad* of Tammuz, 70 AD can be calculated to about 3:35 AM (01:35 UT), Jerusalem time, Wednesday morning, June 27, 70 AD. The astronomical conjunction fell at about 9:18 PM (19:18 UT), Jerusalem time, Tuesday, June 26, 70 AD. The fixed length averaging method assigned Tammuz a length of 29 days, as it still does, with the first day of the month declared on Thursday, June 28 of that year. So, we see that Tammuz was not declared by *molad* calculation, which fell well before noon on Wednesday, nor was it declared on Wednesday by the lunar conjunction of 6:58 PM Tuesday evening. Rather it was declared by a fixed averaging method which pre-determined that Tammuz should have 29 days, following a 30 day Sivan, and followed by the 30 days of Ab. This would have to place Tammuz 1 on Thursday, June 28, regardless of the exact lunar phase.

The *molad* of Sivan in 70 AD occurred about 2:51 PM (12:51 UT), Jerusalem time, Monday afternoon, May 28, 70 AD, with the astronomical conjunction occurring at 2:20 PM (12:20 UT) on the same day. In this case, both the *molad* and conjunction times would agree on a declaration of Tuesday, May 29, 70 AD, as the Hebrew Calendar verifies. Obviously, this declaration is merely coincidental, since declarations of other months demonstrate that neither a conjunction or *molad* determination is necessary for declaration of months other than Tishri, and even that has rules of modification already in place.

Josephus strongly implies in his discourse of the Wars of the Jews, 5:11:4, that Iyar was assigned 29 days in 70 AD, just as it is today. The *molad* of Iyar for that year is calculated to have occurred at about 1:35 AM (23:35 UT), Sunday, April 29; and the astronomical conjunction took place at 7:30 AM (05:30 UT) Jerusalem time, on the same day. Both of these events are well before noon on Sunday, but the first day of Iyar was not declared until the next day, Monday, April 30, 70 AD. That date was not declared by *molad* calculation, but by a fixed length, which says, that Nisan has 30 days.

Why does Josephus say Iyar 29 rather than the first of Sivan? For the same reason one today might say, “by December 31,” meaning the last day of one time before a new point in time is reached.

Now, when did the *molad* of Nisan, 70 AD occur? Twenty-eight days places successive days of a month on the same day, but we are dealing with a *molad* circle average, which says that we are 1.53 days previous to that on the month before. So, this places the *molad* of Nisan one day and 12.73 hours before 1:46 AM (23:46 UT), Jerusalem time, Sunday, April 29 (which is Iyar 1), which is 36.73 hours before, or just about 1:00 PM (11:00 UT), Friday, March 30, 70 AD. But, the astronomical conjunction fell at 11:46 PM (21:46 UT) Jerusalem time that same day, on Friday evening.

Once again, we have a coincidence of the conjunction, *molad* calculation, and Hebrew Calendar dates all falling on the same day by 12:00 noon rule, as the Hebrew Calendar declared Saturday, March 31, 70 AD, Nisan 1. So, as stated previously, sometimes the lunar phase is finitely matched to the lunar date, but often it is not, being determined by fixed averaging of set lengths of 29 or 30 days. Neither Jesus Christ, nor the apostles, nor the early New Testament church took issue with these known methods of lunar calendar declarations.

Thus, the Hebrew Calendar of 70 AD utilized a method of calculation that permanently fixed the length of certain lunar months by a set number of days. The first six months of the year from Nisan through Elul were fixed at 29 or 30 days, regardless of *molad* averaging, calculations, astronomical conjunctions, or the appearance of the first visible crescent moon at Jerusalem. The eighth and ninth lunar months were made variable between 29 or 30 days, according to fixed rules of calculation, but all other months were permanently assigned either 29 or 30 days every year.

We have reconstructed the six-month period of 177 days from Trumpets, 70 AD back to Nisan 1, 70 AD. Now we shall tackle the remaining 207 days of civil year 3830 from Tishri 1 to Nisan 1, 69 AD. This task will be relatively easy. The spring of 70 AD was intercalated, since civil year 3830, 69 AD was the 11th year of the 3, 6, 8, 11, 14, 17 and 19 year intercalary cycle. Thus, a thirteenth month was added between the months of Shevat and Adar—a second Adar named Adar I. The original Adar is now named Adar II. As we are dealing with a common leap year of 384 days, and as this period has 177 days + 30 days for a total of 207 days, the months are averaged in a rotating 29/30/30/29/30/29/30 day fashion. Thus Adar II has 29 days, Adar I has 30 days, Shevat has 30 days, Tevet has 29 days, Kislev has 30 days, Heshvan has 29 days and Tishri has 30 days.

We will now focus our attention on 5 BC, the year of Jesus' birth. Once again we will examine evidence that 5 BC was a leap year in the 3, 6, 8, 11, 14, 17 and 19 year intercalary cycle. Once it is demonstrated that the year of Jesus' birth was indeed a leap year, we will have a 5 BC to 66 AD to 70 AD lock on a 76-year intercalary cycle nestled in 4 19-year luni-solar cycles. As we proceed we will examine the debates that centered on which *molad* was the epochal *molad*, and examine as well the calendar according to Herman L. Hoeh and Frank W. Nelte. After examining the significance of this material we will examine calendar mathematics after which we will begin the detailed reconstruction of the *Calendar of Christ and the Apostles* from 5 BC to 70 AD.

Trumpets 5 BC Civil Year 3757

The Jewish historian Josephus records that a great autumnal eclipse of the moon occurred a few months before the death of Herod the Great, who died in February 4 BC. This lunar eclipse thus occurred in the fall 5 BC*.

But the people, on account of Herod's barbarous temper, and for fear he should be so cruel and to inflict punishment on them, said what was done was done without their approbation, and that it seemed to them that the actors might well be punished for what they had done. But as for Herod, he dealt more mildly with others [of the assembly] but he deprived Matthias of the high priesthood, as in part an occasion of this action, and made Joazar, who was Matthias's wife's brother, high priest in his stead. 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 [Day of Atonement]. 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 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** (Josephus, *Antiquities of the Jews*, 17:6:4).

The only lunar eclipse recorded for the fall of 5 BC occurred on the evening of September 15 (Liu and Fiala, *Canon of Lunar Eclipses: 1500 BC—AD 3000*, p. 89). Astronomers inform us that this total eclipse began at 8:33 PM (17:33 UT) Jerusalem time, Friday evening, September 15, 5 BC and ended at 2:09 AM (23:09 UT) Jerusalem time, Saturday morning, September 16, 5 BC.

* For detailed evidence of the dates of Herod's death and the birth of Christ see *A Harmony of the Gospels* by Fred R. Coulter.

Now some will insist that there was no such lunar eclipse in 5 BC and that astronomers inform us instead that the above eclipse occurred in 4 BC. In citing the above reference for example, they will make note of the fact that the above eclipse is listed for 4 BC. However, 4 BC in the Canon of Liu and Fiala is actually 5 BC as they utilize a year “0” in their dating system. Notice the declaration of their dating convention at the beginning of the book:

Dating convention used for this Canon. This work contains all lunar eclipses between 1501 BC and AD 3015. Before the Christian era, the years are designated in the Astronomical System, i.e., the year 0 corresponds to 1 BC and the year -1 to 2 BC, etc.

A Hebrew Calendar, using an intercalary sequence of 3, 6, 8, 11, 14, 17 and 19, informs us that the High Sabbath of the Feast of Tabernacles occurred on September 16 that year, thus matching the historical and astronomical data, as Josephus records that this eclipse occurred shortly after the Day of Atonement. Trumpets, September 2, 5 BC also begins the 14th year of the 19-year cycle, which also happens to be the 5th intercalary year of that cycle.

To some it may appear that Josephus places the date of this eclipse at the time of the Day of Atonement. This is not true, and is simply the case of a misplaced antecedent:

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 [Day of Atonement]. The occasion was this: This Matthias the high priest, on the night before that day when the **fast was to be celebrated [Day of Atonement]**, 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 [Day of Atonement]. But Herod deprived this Matthias 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 [the night Herod deprived Matthias of the high priesthood, and burnt the other Matthias—not the night of the Day of Atonement]** (Josephus, *Antiquities of the Jews*, 17:6:4).

It is also a fact of astronomy that eclipses cannot occur on the 10th day of a lunar month. So, there can be no question that this eclipse was not on the eve following Atonement.

However, proponents of an intercalary cycle of 2, 5, 7, 10, 13, 16 and 18 place the High Sabbath of Tishri 15, 5 BC on October 16, 5 BC, thus missing the historical, astronomical and calendrical facts by one full month!

Since Trumpets, 5 BC began the 14th year of the cycle, a leap year, and since Josephus, the Hebrew Calendar, and astronomers declare the seventh month in September and not October, once again, the believers of the 2, 5, 7, 10, 13, 16 and 18 year pattern have nothing to stand on to justify their belief for 5 BC. These intercalary patterns run in cycles of 19-years that occur century after century in an unbroken chain. If the cycle is off in one leap year it will be off in every leap year and must be discarded—this is exactly the case of the 2, 5, 7, 10, 13, 16, and 18 year intercalary pattern.

We now have an iron grip lock on four very important dates in history (5 BC, 66 AD, 69 AD and 70 AD), which agree perfectly with the declarations of a Hebrew Calendar utilizing an intercalary sequence of 3, 6, 8, 11, 14, 17 and 19. As we demonstrated for calendric years 66-70 AD, the above intercalary pattern from Trumpets 5 BC to Trumpets 70 AD must also be valid or the Hebrew Calendar would not match any of the verifiable date links of history. However, all historical dates and Hebrew Calendar declarations agree in perfect harmony! We have a calendric lockdown for a period of 76 years covering the birth of Christ in 5 BC, through Christ's ministry, the early apostolic era and the destruction of the Jewish Temple in 70 AD!

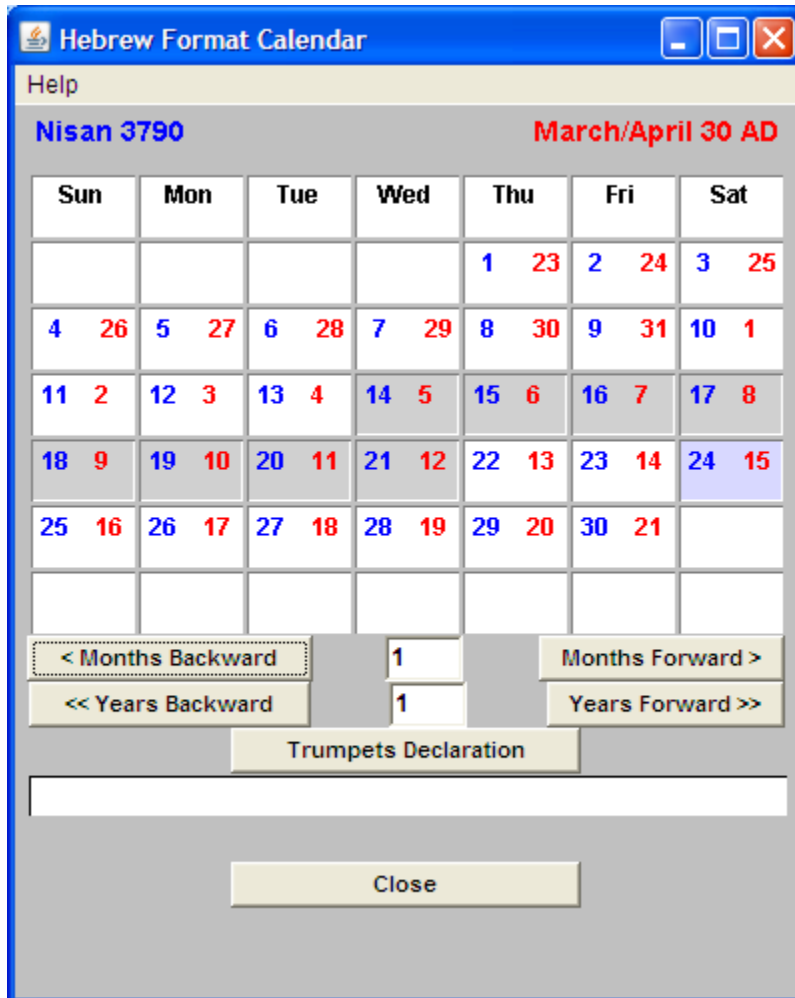
A Hebrew Calendar utilizing an intercalary sequence of 3, 6, 8, 11, 14, 17 and 19 declares leap years for 5 BC, 66 AD and 69 AD. Therefore, the pattern of declared leap years falling between these benchmark dates must be accepted as valid. The reason? If any leap year length were changed by one day; i.e., adding a day making the year too long or subtracting a day making the year too short. If the pattern of the year lengths or the pattern of intercalation were changed in any way, the calendar would not agree with the facts of history.

A reconstruction of the 19-year cycles and their attendant intercalary sequences is given later in this paper for this entire period. But before we get to this reconstruction of the calendar of Christ, we must address the issue of the debate of the date of creation. It is a gross misunderstanding and misapplication of this argument that lead our modern day church leaders to accept not only a 2, 5, 7, 10, 13, 16 and 18 year intercalary pattern with the wrong 19-year cycle dates, but also a 31 AD crucifixion date for Christ.

Exhibit 1

Passover in the Year of the Crucifixion

The following **Hebrew Format Calendar** for the month of Nisan in 30 AD, the year of the crucifixion and resurrection of Jesus, is generated by the **CBCG Calculated Hebrew Calendar, version 1.0**. Blue dates are those of Nisan, 30 AD, and red dates are the corresponding months of March/April, 30 AD. The Passover was observed on the eve of Nisan 14, which corresponds to the night of Tuesday, April 4. The gray shaded dates represent the Passover Day, April 5, and The Feast of Unleavened Bread, April 6-12. Sunday, Nisan 18/April 9, was the Wavesheaf Day, the day on which the resurrected Christ ascended to His Father. The blue shaded date of Sabbath, Nisan 24/April 15 represents the end of the first week in the seven-week count to the Feast of Pentecost.



Passover in 2016

The Hebrew Calendar Format below gives the dates of the Passover Day and the Feast of Unleavened Bread in 2016. In this year, the month of Nisan corresponds to the Roman months of April/May. The Passover is observed on the eve of Nisan 14, which begins at sunset on Thursday, April 21. Friday, April 22, is the Passover Day, and Sabbath, April 23, is the first day of the Feast of Unleavened Bread. The second day of the Feast, Sunday, Nisan 16/April 24, is the Wave Sheaf Day. Nisan 22/April 30 is the end of the first week in the seven-week count to Pentecost. Nisan 29/May 7 is the end of the second week in the count.

Hebrew Format Calendar

Help

Nisan 5776 **April/May 2016 AD**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 9
2 10	3 11	4 12	5 13	6 14	7 15	8 16
9 17	10 18	11 19	12 20	13 21	14 22	15 23
16 24	17 25	18 26	19 27	20 28	21 29	22 30
23 1	24 2	25 3	26 4	27 5	28 6	29 7
30 8						

Exhibit 2

A Summary of Calendar Facts

It can be Scripturally, Historically, Astronomically and Mathematically Documented and Demonstrated that:

1) A calendar utilizing a 3, 6, 8, 11, 14, 17 and 19 year intercalary cycle has been in force since the time of Ezra.

2) A calendar utilizing the postponement rules has been in force since the time of Noah, and that knowledge of a 19-year cycle has existed since the dawn of time.

3) The calendar of the New Testament:

a) utilized 19-year luni-solar cycles;

b) declared leap years by utilizing a fixed 3, 6, 8, 11, 14, 17 and 19 year set intercalary cycle—but not by the condition of the barley crop;

c) utilized six year lengths with the following number of days:

common years: 353, 354 and 355 days

leap years: 383, 384 and 385 days

d) utilized two months of varying lengths placed immediately after Tishri (years of—355 and 383 days. And, years of—353 and 385 days set only by postponement rules. Impossible to have 353 and 385 year lengths without activation of postponement rules). Heshvan and Kislev are used in combination:

Heshvan	29 days	353 length year
Heshvan	29 days	354 length year
Heshvan	30 days	355 length year

Heshvan	29 days	383 length year
Heshvan	29 days	384 length year
Heshvan	30 days	385 length year
Kislev	29 days	353 length year
Kislev	30 days	354 length year
Kislev	30 days	355 length year
Kislev	29 days	383 length year
Kislev	30 days	384 length year
Kislev	30 days	385 length year

e) utilized fixed, rotating month lengths in common years for:

Tishri	30 days
Heshvan	29 days
Kislev	30 days
Tevet	29 days
Shevat	30 days
Adar	29 days
Nisan	30 days
Iyar	29 days
Sivan	30 days
Tammuz	29 days
Ab	30 days
Elul	29 days

f) utilized fixed, rotating month lengths in leap years but added an additional Adar of 30 days between Shevat and Adar for:

Tishri	30 days
Heshvan	29 days
Kislev	30 days
Tevet	29 days
Shevat	30 days
Adar I	30 days (added month)
Adar II	29 days

Nisan	30 days
Iyar	29 days
Sivan	30 days
Tammuz	29 days
Ab	30 days
Elul	29 days

An Adar of 29 days is always placed immediately before to Nisan

g) calculated the *molad* of Tishri not the *molad* or conjunction of Nisan by:

the rules of postponement,

h) calculated year lengths by:

utilizing day-of-week rules of slippage which then set day variations in Heshvan and Kislev;

utilizing fixed month lengths,

utilizing a 3, 6, 8, 11, 14, 17 and 19 year intercalary cycle

i) calculated Nisan 1 by utilizing the 177-day rule

the 177-day rule matches the most common and most stable of the lunar ecliptic cycles (full moon of Nisan 15 to full moon of Tishri 15) and was written about in priestly literature as early as the 3rd century BC.

The 176-days and the 178 days compose the remaining lunar ecliptic cycles (full moon of Tishri 15 to full moon of Nisan 15). There are years when a lunar eclipse occurs at the full moon of Tishri, the full moon of Nisan and then the full moon of Tishri.

$177 + 177 = 354$ -day year (Heshvan 29/Kislev 30)

$177 + 176 = 353$ -day year (Heshvan 29/Kislev 29)

$177 + 178 = 355$ -day year (Heshvan 30/Kislev 30)

j) Trumpets was never declared by the astronomical conjunction by any record we know of.

k) Trumpets was always declared by the calculation of the *molad* of Tishri—utilizing postponements where necessary.

l) Trumpets was sanctified whether there was a visible crescent of the moon or not. Sometimes a visible crescent would coincide with the sanctification but such occurrences are impossible without the activation of postponement rules.

4) In the year of Jesus' birth, civil year 3757, 5 BC, Trumpets fell on a Saturday, September 2. This fact can be determined by astronomy and history without utilization of the Hebrew Calendar. It is also a fact that Trumpets in 5 BC was postponed by Rule 2. Tishri 22 was also celebrated before the fall equinox.

5) Trumpets, 26 AD, the year Jesus began His ministry and a leap year, was postponed by rules 1 and 2. Trumpets, 27 AD was postponed by rules 1 and 3. This was the acceptable year of the Lord.

6) In the year of Jesus' crucifixion, civil year 3791, 30 AD, Trumpets fell on a Saturday, September 16. Trumpets was declared for this date even though there was no possibility of a visible crescent.

7) In the year of Jesus' crucifixion, civil year 3791, 30 AD, Passover fell on a Wednesday, April 5. Nisan 1 was declared for Thursday, March 23, 30 AD even though there was no possibility of a visible crescent.

8) In 31 AD Passover fell on a Monday and not on a Wednesday. Trumpets fell on a Thursday and not on the weekly Sabbath.

9) Trumpets was declared on Monday, September 8, in 66 AD, civil year 3827, as recorded by both history and the declarations of the Hebrew Calendar.

10) Trumpets was declared on Tuesday, September 5, in 69 AD, civil year 3830 and this fact can be verified by both historical and Hebrew Calendar record.

11) Trumpets was postponed by Rule 2 and was therefore declared on Monday, September 24, in 70 AD, civil year 3831. Both of these facts can be documented and proven by agreement among history, astronomy and Hebrew Calendar declarations.

12) We can document the use of months of fixed length in the Nisan through the Elul period of 66 to 70 AD.

13) Therefore, the Hebrew Calendar of 5 BC to 70 AD was declared by an averaging process, involving set lengths for certain months of the year. Months were not declared by time of conjunction or crescent moons.

14) Nisan 14 was celebrated before the spring equinox on:

March 22,	5 BC
March 19,	2 BC
March 21,	7 AD
March 22,	15 AD
March 19,	18 AD
March 21,	26 AD
March 22,	34 AD
March 20,	37 AD
March 20,	45 AD
March 19,	56 AD
March 21,	64 AD
March 21,	72 AD
March 20,	75 AD

15) Tishri 22 was celebrated before the fall equinox on:

September 23,	5 BC
September 19,	2 BC
September 22,	7 AD
September 23,	15 AD
September 20,	18 AD
September 25,	23 AD
September 23,	26 AD
September 23,	34 AD
September 21,	37 AD
September 25,	42 AD
September 21,	45 AD
September 24,	53 AD
September 20,	56 AD
September 24,	61 AD

September 22,	64 AD
September 22,	72 AD
September 21,	75 AD

16) **Rule One:** When the *Molad* of Tishri or advancement occurs on a Sunday, Wednesday, or Friday, the declaration of Tishri 1 is advanced one day to a Monday, Thursday or Sabbath respectively, was activated on:

Friday,	September 17,	1 BC
Wednesday,	September 23,	5 AD
Sunday,	September 12,	6 AD
Sunday,	September 20,	16 AD
Sunday,	September 1,	26 AD
Friday,	September 19,	27 AD
Wednesday,	September 5,	31 AD
Wednesday,	September 24,	32 AD
Sunday,	September 2,	53 AD
Friday,	August 31,	64 AD

17) **Rule Two:** When the *Molad* of Tishri occurs at noon or later (18 hours 0 parts) or more, the declaration of Tishri 1 is advanced to the next day, was activated on:

Friday,	September 1,	5 BC
Saturday,	September 11,	6 AD
Saturday,	August 31,	26 AD
Monday,	September 26,	29 AD
Monday,	September 3,	42 AD
Wednesday,	September 6,	58 AD
Sunday,	September 23,	70 AD

18) **Rule Three:** When the *Molad* of Tishri of a common year falls on a Tuesday, at or after the 3rd day, 9 hours and 204 parts, the declaration of Tishri 1 is advanced to Wednesday. The application of Rule One advances the declaration one more day to Thursday. Rule three was activated on:

Tuesday,	September 22,	5 AD
Tuesday,	September 23,	32 AD

19) **Rule Four:** When the *Molad* of Tishri of a common year immediately following an intercalary year occurs on a Monday, at or after the 2nd Day, 15 hours and 589 parts, the declaration of Tishri 1 is advanced to Tuesday. Rule four was not activated during this period.

Exhibit 3

Example of 19-Year Metonic Cycle 18 BC-1 AD

Metonic Cycle Year	Year BC/AD	Tishri 1 Declaration	Year Common/ Leap	Year Days	Letter Sequence Common/ Leap	Numeric Leap Year Frequency
1	18 BC	Saturday September 26	Common	355	C	
2	17 BC	Thursday September 15	Common	354	C	
3	16 BC	Monday September 4	Leap	383	L	3rd Yr-3
4	15 BC	Saturday September 22	Common	355	C	
5	14 BC	Thursday September 12	Common	354	C	
6	13 BC	Monday August 31	Leap	385	L	6th Yr-3
7	12 BC	Monday September 20	Common	353	C	
8	11 BC	Thursday September 8	Leap	385	L	8th Yr-2

**Example of 19-Year
Metonic Cycle
18 BC-1 AD
(continued)**

Metonic Cycle Year	Year BC/AD	Tishri 1 Declaration	Year Common/ Leap	Year Days	Letter Sequence Common/ Leap	Numeric Leap Year Frequency
9	10 BC	Thursday September 28	Common	354	C	
10	9 BC	Monday September 16	Common	355	C	
11	8 BC	Saturday September 6	Leap	383	L	11th Yr-3
12	7 BC	Thursday September 24	Common	354	C	
13	6 BC	Monday September 13	Common	355	C	
14	5 BC	Saturday September 1	Leap	385	L	14th Yr-3 (Jesus' Birth Year)
15	4 BC	Saturday September 22	Common	353	C	
16	3 BC	Tuesday September 10	Common	354	C	

**Example of 19-Year
Metonic Cycle
18 BC-1 AD
(continued)**

Metonic Cycle Year	Year BC/AD	Tishri 1 Declaration	Year Common/ Leap	Year Days	Letter Sequence Common/ Leap	Numeric Leap Year Frequency
17	2 BC	Saturday August 30	Leap	385	L	17th Yr-3
18	1 BC	Saturday September 18	Common	355	C	
19	1 AD	Thursday September 8	Leap	383	L	19th Yr-2

Exhibit 3

The Rules of Postponement

Postponements are part of the process of calculating the new moon day of Tishri. After calculating the molad, the following requirements must be met before the declaration of Tishri 1 is made.

- Rule 1: When the Molad of Tishri or advancement occurs on a Sunday, Wednesday, or Friday, the declaration of Tishri 1 is advanced one day to a Monday, Thursday or Saturday (Sabbath) respectively.
- Rule 2: When the Molad of Tishri occurs at noon (18 hours 0 parts) or later, the declaration of Tishri 1 is advanced to the next day.
- Rule 3: When the Molad of Tishri of a common year falls on a Tuesday, at or after 9 hours and 204 parts, the declaration of Tishri 1 is advanced to Wednesday. The application of Rule 1 advances the declaration one more day to Thursday.
- Rule 4: When the Molad of Tishri of a common year immediately following an intercalary year occurs on a Monday, at or after 15 hours and 589 parts, the declaration of Tishri 1 is advanced to Tuesday.

Exhibit 3

The Months of the Hebrew Calendar

Name of Month	Roman Month
Nisan	March-April
Iyar	April-May
Sivan	May-June
Tammuz	June-July
Ab	July-August
Elul	August-September
Tishri	September-October
Marcheshvan	October-November
Kislev	November-December
Tebeth	December-January
Sh'bat	January-February
Adar	February-March
V' Adar	

Exhibit 4

Glossary of Terms

Note: All astronomical definitions are taken from Norton's 2000.0 Star Atlas and Reference Handbook

Astronomical conjunction the point in time during the dark phase of the moon, when the earth, moon and sun line up on the same axis. The astronomical conjunction is not the Molad which follows soon after this conjunction during the dark of the moon.

Astronomical new moon the moon's phase at total darkness. See also **dark of the moon**.

Autumnal equinox the point where the sun crosses the celestial equator moving southward, about September 23 each year

Common year any one of three types of years in the Hebrew Calendar; a deficient common year contains 353 days, a regular common year contains 354 days and a perfect common year contains 355 days. See also **leap year**.

Conjunction See **astronomical conjunction**.

Dark of the moon the totally dark phase of the moon. Referred to by astronomers as the "new moon." Period during which Molad or "rebirth" of moon occurs.

Equinox the time when the sun crosses the equator, making the length of day and night equal

Fall equinox See **autumnal equinox**.

Greenwich Mean Time (GMT) the mean solar time at the longitude of Greenwich, counting from midnight. See also **Universal Time (UT)**.

Jerusalem time (JT) the mean solar time at the longitude of Jerusalem, counting from midnight. Expressed in hours and minutes; (i.e., 7:45 PM). Expressed in Hebrew Calendar time (19:35, that is, 12:00 plus 7:35 hours equals 19:35).

Julian Date (JD) a system of dating used by astronomers that counts the number of days that have elapsed since a given starting date. Julian dates are reckoned from Greenwich noon and are given in decimal form. (For example, 2000 January 1 at Greenwich noon is JD 2451545.0.) Not the same as AD/BC dating as Julian dating has a year “0”.

Intercalary year a year with a thirteenth month, specifically, years 3, 6, 8, 11, 14, 17, 19 of each 19-year cycle. Frequency in years between leap years in 19-year cycle = 3323332. See also **leap year**.

Latitude the angular distance, measured in degrees, north or south of the equator

Leap year any of three types of years in the Hebrew Calendar; a deficient leap year contains 383 days, a regular leap year contains 384 days and a perfect leap year contains 385 days. See also **common year**.

Longitude the angular distance, measured in degrees, east or west of the prime meridian of Greenwich.

Lunation the time taken by a complete cycle of moon phases, such as one Dark of the Moon to the next. Average lunation lasts 29.53 days. Same as a synodic month.

New moon of Scripture is the minute *invisible crescent* that forms at the “rebirth” of each lunar cycle during the Dark of the Moon. This *invisible crescent* is also known as the Molad.

Metonic cycle the period of 19 calendar years (6939.6 days) after which the moon’s phases recur on the same day of the year. There are 235 lunations in a Metonic cycle.

Molad the mean or average conjunction of the earth, moon and sun; its mean or average length is 29.53059 days. The *Molad* is not the same as the astronomical conjunction which is a pinpoint in time. See also **synodic month**.

Part a measurement of time in the Hebrew Calendar equating to $3^{1/3}$ seconds. There are 18 parts to a calendric minute and 1040 parts to a calendric hour.

Postponement a one or two day adjustment to the calculation of the Molad of Tishri. The Rules of Postponement enable the process of calculating the declaration of the new moon of Tishri to achieve the greatest degree of accuracy in relationship to the lunar cycle. Regulated by the weekly cycle of days from Sunday through Saturday.

Spring equinox see **vernal equinox**.

Synodic month the interval between successive new moons. It is also known as a lunation. Its mean or average length is 29.53059 days, but the actual value can vary between $29\frac{1}{4}$ and $29\frac{3}{4}$ days.

Time zones are 24 divisions of the earth, each 15 degrees broad, with the prime zone centered on the Greenwich meridian. Time in the zones to the east of Greenwich is ahead of GMT, while zones to the west of Greenwich are behind GMT. Jerusalem is east of Greenwich and therefore ahead of Greenwich Time by two hours.

Universal Time (UT) the name given to Greenwich Mean Time (GMT) in 1928 for scientific purposes.

Vernal equinox the point where the sun crosses the celestial equator moving northward on or about March 21 of each year.

Exhibit 5

The Timing of the Molad or “Rebirth” of the Moon

Volume 7 October/November/December 2015 Issue 34

Introductory Remarks Issue 34

December 31, 2015

Dear friends,

The *Theological Research Report* is directed toward the interests and needs of Christian Sabbatarians and will present in-depth reviews, critiques, exegesis and original research of various theological topics including but not limited to church history, church government, history of church finance, covenant theology, historical prophetic fulfillments, Biblical chronology, Biblical archaeology, Sabbatarian liturgy, the Calculated Hebrew Calendar, healing and principles of spiritual growth.

Issues 34 and 35 will focus on the astronomical timing of the declaration of Tishri 1. From beginning to end, where does the declaration of Tishri 1 fit in with the astronomical declaration of the conjunction of the earth, moon and sun? As Tishri 1 is the linchpin around which the Hebrew Calendar is constructed, so the monthly astronomical conjunction of the Earth with the Sun is the linchpin around which each monthly lunation is pivots in an ever ascending cycle.

Once a month the Earth, Moon and Sun line up in perfect pinpoint fashion at transition point 0.0—the “0.” to the left of the decimal represents what is left of the Waning Gibbous and the “.0” to the right of the decimal represents, what is to become in a split-second, the “Wane Crescent.” The “Wane Crescent” is what astronomers call the embryonic, invisible, minutes old crescent of the Wane or dark of the moon. So, once the moon transitions into the realm of “.0” side of the lunation it is the “astronomical Molad” which means the crescent has been “reborn” and is now in the first few minutes of a new lunation. Another way of putting it is that lunation 1159 is now lunation 1160-but in its first minutes. Let me reiterate: this

means the Moon has transitioned from the old moon (lunation 1159) into the new moon of lunation 1160. That is, a “Molad” or rebirth of the moon has occurred.

All of this occurs during the **dark of the moon**. None of this is visible to the human eye or any telescope accessible to the average person. Thus it is only “visible” through the mathematics of the human mind. So, to repeat the question asked before, “where does the declaration of Tishri 1 fit into the scheme of things?” Simply put—it is down the road a few hours after the astronomical conjunction but within the short period of lunar transition known as the **Dark of the Moon**.

Without calendric mathematics the correct day of the month and day of the week for Tishri 1 is impossible to determine. The initial step in this process is the calculation of the Molad of Tishri, placing the day, hour and parts of the day somewhere in the transition period known as the **Dark of the Moon**. The day of the week is then further refined synchronizing Tishri 1 with the weekly cycle of days which are part of a continuous chain of weekly cycles by application of the Postponement Rules.

I have reproduced the following unpublished material as it a very unique look at that phenomenon we call the Molad of Tishri.

Warm regards,
Carl and Jeanie Franklin

**19-Year Metonic Cycle
2016 AD through 2034 AD
Year 2016 AD**

**Chart 1
Saturday, October 1, 2016
The Calculation the Molad of Tishri**

AM/PM	UTC/GMT Time	Jerusalem Times and Events
12 Midnight	00	
1	01	
2	02	
3	03-0 ¹	3:22 AM The Astronomical Conjunction of Earth/Moon and Sun
4	04-1	(Occurs during the Dark of the Moon)
5	05-2	
6	06-3	
7	07-4	
8	08-5	
9	09-6	
10	10-7	
11	11-8	
12 Noon	12-9	
1	13-10	
2	14-11	
3	15-12	
4	16-13	
5	17-14	
6	18-15	
7	19-16	
8	20-17 ²	8:00 PM The Molad of Tishri—Saturday, October 1, 20h 724p
9	21-18	(This Scriptural new moon crescent rebirth occurs during the
10	22-19	Dark of the Moon many many hours before any so called
11	23-20	new moon crescent of Barley Sprout watchers)
12 Midnight	00 (see Midnight top of Chart 2)	Saturday Evening Midnight

¹ The **orange** numbers represent the elapsed time from the Astronomical Conjunction Time of 0.0 to the calculated **Molad of Tishri** time of Saturday, October 1, 20 hours, 724 parts.

² The **green** numbers represent the elapsed time between the Astronomical Conjunction Time of 0.0 to the beginning of The Feast of Trumpets, at **sunset 6:22 PM**, Sunday, October 2, 2016

**19-Year Metonic Cycle
2016 AD through 2034 AD
Year 2016 AD**

**Chart 2
Sunday, October 2, 2016
The Celebration of Trumpets
Sunset Sunday, October 2 to
Sunset Monday, October 3, October 3**

AM/PM	UTC/GMT Time	Jerusalem Times and Events
12 Midnight	00-21 ²	Sunday Morning Midnight
1	01-22	
2	02-23	
3	03-24	
4	04-25	
5	05-26	
6	06-27	
7	07-28	
8	08-29	
9	09-30	
10	10-31	
11	11-32	
12 Noon	12-33	
1	13-34	
2	14-35	
3	15-36	
4	16-37	
5	17-38	
6	18-39 6:22 PM	Jerusalem Sunset Time— Begin Feast of Trumpets
7	19	(Google: <i>Jerusalem Sunset Time October 2, 2016</i>
8	20	Result = ((GMT +2)) = 6:22 PM
9	21	
10	22	
11	23	
12 Midnight	00 (see Midnight top of Chart 3)	Sunday Evening Midnight

² The **green** numbers represent the elapsed time from the Astronomical Conjunction Time of 0.0 to the beginning of **The Feast of Trumpets**, at **sunset 6:22 PM**, Sunday, October 2, 2016

**19-Year Metonic Cycle
2016 AD through 2034 AD**

Year 2016 AD

**Chart 3
Monday, October 3, 2016
The Declaration of Tishri 1**

AM/PM	UTC Time	Jerusalem Times and Events
12 Midnight	00	Monday Morning Midnight
1	01	
2	02	
3	03	
4	04	
5	05	
6	06	
7	07	
8	08	
9	09	
10	10	
11	11	
12 Noon	12	
1	13	
2	14	
3	15	
4	16	
5	17	
6	18	6:21 PM Jerusalem Sunset Time— End Feast of Trumpets
7	19	(Google: <i>Jerusalem Sunset Time October 2, 2016</i>
8	20	Result = ((GMT +2)) = 6:21 PM
9	21	
10	22	
11	23	
12 Midnight	00	Monday Evening Midnight