

THE FIRST DAY AND THE LAST DAY OF THE MANNA

A STUDY CENTERED AROUND EXODUS 16 AND JOSHUA 5

WHAT IF GOD FIRST RAINED MANNA ON A SUNDAY?

WHAT IF THE LAST OF THE MANNA WAS MARKED BY A SABBATH PASSOVER?

IF SO, WHAT CIRCUMSTANCES OF DATING SURROUND THE EXODUS?

IF SO, WHAT CIRCUMSTANCES OF DATING SURROUND THE SINAI COVENANT?

WHAT IF THE DATING OF THIS ACCOUNT IS PART OF PROVING ITS ACCURACY?

WHAT BASES SHOULD DEMONSTRATE OLD AND NEW TESTAMENT TYPES?

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Contents

1. The Riddle of Exodus 16 and Joshua 5:10-12 1

2. What Is So Important About This Riddle In Exodus 16? 5

3. The Verdict of the Hebrew Callendar 7

 A. A Hebrew Callendar Which Could Not Occur 7

4. New Moons the Years of the Exodus and the Jordan Crossing 10

 A. An 876 Year and 5 Day Gap 11

 B. Testing the Accuracy of My Figures 12

 C. Estimating the New Moon From the Time of the Conjunction 15

 D. New Moons Separated By Forty Years 20

5. An Alternative to Lunar Observation 22

 A. Josephus and the Dates In Genesis 11 22

 B. The Twofold Riddle of the Callendar of the Flood Account 24

 C. The 150 Days Which Rule Out Sabbaths 26

 The Verdict of the Modern Hebrew Callendar 26

 E. Lunar Observation and the Flood Account 30

6. The Exodus and the Egyptian Lunar Callendar 31

 A. Fixing Egyptian Lunar Dates 33

 B. The Verdict of the Egyptian Callendar 36

 C. Between the Evenings 39

 D. The Ten Commandments and Pentecost 40

 E. The Verdict of Numbers 10:11,33 42

 F. Comparrisons of Callendars (1443-1442 B.C.) 44

7. The Judgment of Historians Against the Hebrew Callendar 45

8. The Dilema of the Astronomical Evidence 46

9. A Pattern Emerges 47

10. A Key But Not Quite a Solution 49

11. A Theory Which Fits the Data Presented 52

12. Gains Made Through This Study 56

1. The Riddle of Exodus 16 and Joshua 5:10-12

About thirty days after the Exodus, God began providing the manna for the Israelites. The record of this event is found in Exodus chapter 16. God provided the manna for just one month short of forty years. The manna ceased as recorded in Joshua 5:10-12.

Read through Exodus 16 and make yourself familiar with it. It is mostly self explanatory. I can then continue on here with some points which aren't self explanatory. Notice carefully verses 1, 4-5, 8, 13-14, 19, 21-27, and 35.

The second month mentioned in verse 1 is identified in 1 Kings 6:1 as the month of Ziv (R.S.V.), and it is called Iyar on modern Hebrew calendars. This month of Ziv or Iyar was a lunar month. A lunar month begins near the time of the new moon, and the full moon occurs in about the middle of any lunar month.

Verses 1, 8, and 14 show that God first provided the manna on the 16th of this second month in the morning. What if it can be known what day of the week this was? On today's Hebrew calendar, the 16th of Iyar falls on a Sunday provided the following Trumpets day falls on a weekly sabbath. If the time of the event were known with a few years of uncertainty, then just what if God first rained the manna on a Sunday morning?

Verses 21-22 tell us that morning after morning, the people gathered their daily provisions of manna. On the sixth day, they gathered twice as much. Verses 22-25 make clear that God rained the double provisions on the day before the weekly sabbath. The sixth day mentioned in verses 5 and 22 is a Friday. Search carefully, however. The account does not specifically say that this was the sixth time that God provided the manna. What if verse 26 sheds light upon the point? "Six days you shall gather it," Moses instructed. However, as verse 25 shows, that instruction was looking ahead to future weeks now that this first week in question was a thing of the past.

Why does Exodus 16 nowhere specify that God first provided the double provisions the sixth time that He was doing the providing? Is it because the day the Israelites entered the wilderness of Zin (verse 1) would have to have been a Saturday? Would a righteous God have had the people journeying on a Saturday even if the instruction concerning the sabbath had yet to be given to them? Questions like this seem simple to people to answer who believe that having the mind of Christ puts God's nature into them so that these answers are evident by spiritual discernment.

What if the Israelites entered the wilderness of Zin on a Sunday or a Monday? What if God gave them three or four days of daily provisions, and then, what if on about the fourth or fifth day of this activity, God gave them double provisions. What if He told Moses a day after to tell the people that from now on, they should expect to work during a six-day weekly routine and use their double provisions of the sixth week day for the seventh day? What evidence would suggest that God did not begin to rain the manna on the first day of the week? The evidence is that of Joshua 5:10-12, Leviticus 23:15-16 and the pattern of any series of new moons which are forty years separated from one another.

The fact remains that God began to rain the manna on the morning of the 16th of the lunar month of Ziv. We turn to Joshua 5:10-12 and find out that the manna ceased on the day following the keeping of the Passover. The Passover was kept on the 14th of the month of Abib. Abib was the month of the Exodus (Ex. 13:4) and had just been established as the first month of the sacred year (Ex. 12:2). The manna ceased, because it was no longer needed. It was no longer needed, because the Israelites were eating from the land's fresh Spring harvest. Leviticus 23:14 specifies that the Israelites were not to eat of the fresh harvest until after the wave offering had been brought before God. Verses 15-16 immediately following specify that this offering was to be presented on the day following the weekly sabbath. So, the day following the Passover of Joshua 5:10-12 was a Sunday, and the Passover was on a sabbath.

The people of Israel ate the manna forty years (Ex. 16:35). Common sense happens to guess right on this one. It was one month short of forty years from the time God began to rain the manna on Ziv 16 to the day the Israelites began to eat of Canaan's harvest on Abib 15. Remember, however, anyone with a bit of common sense knows that fifty days after a Sunday is a Monday. Read carefully 2 Kings 18:9-10, and apply common sense on that problem. The siege of Samaria lasted two years to our way of thinking, but to the Jewish chroniclers, it lasted three years. To our way of thinking, it was forty-nine days from the moment of the wave offering to Pentecost morning, but to the Levitical chronicler, it was fifty days. Common sense has been known to be ignorant of foreign ways of viewing the world. Did the Israelites really eat manna for one lunar month short of forty years? Let's understand the evidence.

Moses kept time by looking back to the Exodus. Don't take this for granted, because not everyone did. After all, if the passover occurred in the first month of the year, why does the Jewish New Year fall on the day of Trumpets? Why are the land sabbaths counted from Trumpets day? Why does God's calendar use Trumpets day and not the first day of Abib (or Nisan) as its point of reference? How do you know that Moses did not use Trumpets day to number the years immediately following the Exodus? The prophecy of Daniel 9:25 uses Trumpets day. The kings of Judah counted their reigns from Trumpets day from 928 until 604 B.C. when those pagan Babylonians made them change it. Nehemiah reckoned the reign of Artaxerxes from Trumpets day! That's amazing, because that pagan Artaxerxes reckoned his own reign from the Spring. Moses and Aaron reckoned their years from the Spring too! But where is the evidence?

The evidence comes together like a jigsaw puzzle in Exodus 7:7, Numbers 33:38-39, Deuteronomy 1:3, and 34:7. Aaron was three years older than Moses (Ex. 7:7). Aaron died in the Summer (Num. 33:38-39), and Moses died in the Winter (Deut. 1:3, 34:7) before Abib 1 (Deut. 34:8, Josh. 5:10). Noah's example indicates that a man was identified as being a year older either on Abib 1, or on Trumpets day (Gen. 8:13).

Which way did Aaron and Moses work it out? Each of them added one to his years at the Spring New Year. Moses died about six months after Aaron had died. Trumpets day occurred between the two men's deaths. If Moses, who was three years younger than Aaron, had become a year older on Trumpets day, then he would have died at an age two years and not three years less than that of Aaron. Aaron was a son of 123 years upon his death, while Moses was a son of 120 years upon his death six months later.

Why is it important to understand that Aaron and Moses numbered the years from the month of Abib? If they had counted the years from the fall, this might have placed the crossing of the Jordan 39 years and not forty years after the Exodus. After all, the Deuteronomy was given to the Israelites in the eleventh months of the fortieth year after the Exodus (Deut. 1:3). The manna ceased two or three months later. If they had counted the years from the Fall before the Exodus, then the second year counting from the Exodus would have begun on the Trumpets day just five and a half months after the Israelites came up out of Egypt. Thirty-nine years would be all that would have separated the Exodus from the day that the manna ceased. The whole problem with which I am dealing in this paper would be different.

And, what is that problem? What happened forty years before a sabbath passover? Did God rain the manna for four, five, or six days before the Israelites kept that first weekly sabbath which they were instructed to keep? Common sense can't answer that one. Do your own sample checking from Parker and Dubberstein's Babylonian Chronology. What happens 39 years and 11 lunar months apart? B.C. or A.D. years don't matter. Mark the earlier year as year 1 and the one forty years later as year 41. Ask yourself, if Ziv 16 of my trial year 1 falls on a Sunday, where does that place Abib 15 of my trial year 41? If you find any that come out on the same week day, I want to hear about it. Could Ziv 16 the year of the Exodus have fallen on the same week day as Abib 15 the year the Israelites crossed the Jordan?

2. What Is So Important About This Riddle In Exodus 16?

What is so important about some obscure date in Exodus 16:1? Why is it of value to find out whether the week day of that 15th of Ziv can be known? How does it fit in on a new-moon chart forty years less one lunar month prior to a sabbath passover? Where in the Old Testament outside of Joshua 5 can you find any lunar date identified by its week day? You will look long and hard to find anything. What if the first day and the last day of God's giving of the manna involve something very rare in the Scriptures? What if both the first and the last raining of the manna involve dated sabbaths? What if interesting evidence which upholds the accuracy of the Bible is involved?

What if Exodus 16 was detailed in such a way that it was impossible that it could have been fabricated? Why was a jar containing an omer of manna kept for later generations to see it (Ex. 16:32-34)?

Anyone can believe that God first rained the manna on a Sunday who hasn't investigated fully Joshua 5:10-12. I wrongly took for granted that God first rained the manna on a Sunday morning, and I mentioned my dogmatic conclusion to Dr. Hoeh. He replied, "Now, I used to take that for granted too, if I can approach it that way. Because it fitted all that I knew. I have carefully read over the account and draw the conclusion that the statement there does not say that they gathered manna that week for six days. There was an issue about being hungry, and God, that evening and the next morning, began to give them certain physical blessings, and then on the sabbath He'd double it before then; they would not have to gather on that day.

I do not think that the statement precludes the conclusion that you or I or others have sometimes come to, but I think that it is clear that it is not demonstrable as something that is proved. I think that the implication may well be, when we get it, that it was very shortly after the sabbath that they had arrived, and they didn't arrive on the sabbath.

And there is no statement---I checked this carefully so that I hadn't taken anything for granted . . . --there is no statement saying that they gathered for six days at that point. When the sabbath is defined then it is given as a command to know what they are to do: six days you do this and you rest the seventh." That's what Dr. Hoeh told me in the Fall of 1977.

I figured that the first sabbath which the Israelites kept was on the 22nd of the month of Ziv. What made it clear to Dr. Hoeh that "it is not demonstrable as something that is proved"? What if he tested the Hebrew calendar out on the problem? B.C. dates don't matter for now. What happens forty years before a sabbath passover? Worse yet, what if B.C. dates do matter?

According to 1 Kings 6:1, the Exodus occurred 479 calendar years prior to the time Solomon began to build the temple in the fourth year of his reign. The detailed chronology in MacMillan's Bible Atlas lists Solomon's reign as in the years 968-928 B.C. What if this is correct, and the day of Trumpets was the New Year used to count the years of Solomon's reign? Exodus 16, Joshua 5:10-12, and 1 Kings 6:1 requires that Solomon's reign must have begun 435 years after a sabbath passover. Could there have been a sabbath passover in 1403 B.C.? Could Ziv 22 in 1443 B.C. have been the first sabbath kept by the Israelites? Political events in Egypt and Assyria make these dates look impressive. What about the evidence related to the lunar calendars?

Solomon's reign is dated by means of a difficult and detailed comparison of the books of Kings and Chronicles with the Assyrian and Babylonian chronicles. Interesting circumstantial evidence dates various peace times in the days of the Judges with events in Egypt and the Hittite kingdom. The paper deals with the remaining problem, and that is with the evidence of various lunar calendars. Does the evidence of the new moons undo the comparisons between the Bible and the chronicles of other nations? What if the lunar evidence reveals something in the Biblical account which could not have been fabricated? The jar containing the omer of manna served as a testimony to some Israelites of old? What if there is a testimony of proof left for us as well?

3. The Verdict of the Hebrew Calendar

What if the modern Hebrew calendar were applied to Exodus 16 and Joshua 5? The Comprehensive Hebrew Calendar by Arthur Spier and the Mathematical introduction by John Kosey each provide the needed material which I am not including here. Could Sunday the 16th of Iyar be followed forty years later by a sabbath passover? If this happened, the following calendar dates would have to fall on those week days listed for each date.

3. A. A Hebrew Calendar Which Could Not Occur

Month	Day	Exodus year	Year of Jordan crossing
Nisan	1, Thursday		Sunday
Nisan	14, Wednesday		Sabbath
Iyar	1, Saturday		Tuesday
Iyar	16, Sunday		Wednesday
Sivan	1, Sunday		Wednesday
Sivan	7, Sabbath		Tuesday
Tammuz	1, Tuesday		Friday
Ab	1, Wednesday		Sabbath
Elul	1, Friday		Monday
Tishri	1, Sabbath		Tuesday

During the nine Hebrew months of which Tishri is the last, each month has a regulated number of days. As indicated above, Nisan, Sivan, Ab, and Tishri, each have thirty days. Iyar, Tammuz, and Elul, each have twenty-nine days. Iyar 1, Sivan 7, and Trumpets day fall on the same week day. That's what happens within the same year.

What happens to two calendars which are separated by forty years? The column shown above for the year of the Jordan crossing shows what happens on the modern Hebrew calendar for the year 1403 B.C. Trumpets day that year fell on a Tuesday.

A calculation must be worked out to identify Trumpets day for any year. The result of the calculation points to a time which roughly approximates the time of the passing of the moon between the earth and the sun a day or two before the new moon. The time worked out in the calculation is given in hours per day and parts per hour. Of course, there are 24 hours in a day; there are 1080 parts in an hour. Each parts is equal to 3 and 1/3 seconds. Eighteen parts make up a minute. It is much easier to do arithmetic with parts than it is with minutes and seconds.

In 1403 B.C., the time of the molad of Tishri, that estimated time of the passing of the moon between the earth and the sun, was Monday, October 7, 17 hours, and 929 parts. In this case, as long as the molad occurred on or after 9 hours and 589 parts, Trumpets day would fall on a Tuesday. Any earlier, and Trumpets day would be on a Monday, that is beginning at sunset Sunday evening.

Even if the molad had occurred at that earliest possible time on Monday morning, no Trumpets day could have occurred on a sabbath forty years earlier. There is no need to look in some year other than 1403 B.C. when applying the Hebrew calendar to find out when God last provided the manna. How can we know this? Let's take the earliest possible working out of a Tuesday Trumpets day and work back forty years. What happens?

We work back in time past 495 new moons. How? One average lunar month consists of 29 days, 12 hours, and 793 parts. John Kosey provides exercises for becoming skilled at working out the calculations. I am only providing the absolute necessities here. Try multiplying 29 days, 12 hours, and 793 parts by 495. That work takes some getting used to! Calculators are only a limited help.

I'll save those who have no reason to work it out the trouble, but I appreciate independent checking of my work.

We begin with Oct. 7, 1403 B.C., Monday, 17 hours, and 929 parts. That Oct. 7 is a Julian date which is standard when working with the Hebrew calendar as it was in history before A.D. 1582. Forty years earlier takes us

On the Julian calendar, the molad forty years more ancient appears earlier by seven days, fifteen hours, and 495 parts.

Forty years before 1403 B.C. takes us to 1443 B.C. Seven days before October 7 takes us to September 30. Fifteen hours before 17 hours or 5 P.M. takes us to 2 A.M. 495 parts before 929 parts takes us to 434 parts.

The molad of Tishri in 1443 B.C. occurred on September 30, (a Sunday) at 2 hours and 434 parts. According to the standards of the ~~modern~~ modern Hebrew calendar, Trumpets day would have occurred on Monday.

The latest possible time for a sabbath Trumpets molad would always be Saturday at eleven hours and 1079 parts. That's one part before noon. In 1443 B.C., the molad occurred 14 hours and 435 parts too late for a Trumpets day to fall on the weekly sabbath. In 1403 B.C., the molad occurred only 8 hours and 340 parts later than the earliest possible time for Trumpets day to fall on a Tuesday.

Regardless of the year, no Tuesday Trumpets day could occur forty years after a weekly sabbath Trumpets day. Suppose you pick a year in which the latest possible molad for a sabbath Trumpets day occurs. What would happen if you worked ahead forty years from that? What would happen is that forty years later, Trumpets day would fall on a Monday. The molad would occur 6 hours and 95 parts too early for any Tuesday Trumpets day at best. If you worked forty years back from the earliest possible Tuesday Trumpets day molad, you would end up 6 hours and 95 parts too late for a weekly-sabbath Trumpets day. That is the verdict of the Hebrew calendar.

According to the modern Hebrew calendar, God did not begin reigning manna on a Sunday, and forty years later have it cease after a sabbath passover.

What if the Hebrew calendar cannot be disregarded? What if it is God's calendar? Don't try to predict what I am trying to prove. I am just asking the questions right now. The answers either come in fragments or not at all! Is it an accident that the Hebrew calendar shows a sabbath passover in 1403 B.C.? If a new moon calendar were to show different results, what would that suggest?

4. New Moons the Years of the Exodus and the Jordan Crossing

The ancient Babylonians identified the first of the month by the first appearance of the new moon near a sunset. What if God's people did the same before working out the fixed calendar with which we are familiar today? Accordint to it, when did the Israelites cross the Jordan? What if the month of Abib told of in Joshua 5 began with the first appearance of the new moon? What if there were a simple way to find out? What if, as usual, the Hebrew calendar anticipated the new moons by about a day in 1403 B.C.? According to lunar observation, the passover in 1403 occured on a Sunday not on a sabbath. According to lunar observation, there was a sabbath passover in 1409 B.C. However, a reconstruction of the books of judges and kings six years earlier doesn't harmonize as well with the chronicles of Egypt and Assyria. The Hebrew months tend to begin one day before the new moon. Suppose the Genesis account of the flood hinted of the use of a calendar that also anticipated the new moons by a day. Why do the Jews say that their calendar predates the flood? What if a comparison of the flood story with Joshua 5:10-12 left of hint that this is true? What if Noah knew of the sabbath? Why did so many events during Noah's time in the ar ark occur seven days apart? What if that could not have occured on any known Hebrew calendar, so that story could not have been fabricated? Suppose some evidence of the Bible's credibility is possibly to be pieced together here? Where do we get evidence as to when the new moons occured?

Three charts must suplement this paper. They are these: (1.) In the book Babylonian Chronology by Parker and Dubberstein, every new moon is dated from 626 B.C. to A.D. 75. (2.) E. J. Bickerman's Chronology of the Ancient World (beginning on page 110) includes a chart of the time of day of all the lunar conjunctions between 605 B.C. and A.D. 308. (3.) Eclipses In the Second Millenium B.C. by George Van Een Bergh (Pages 58-59). His list of solar eclipses demonstrates the degree of accuracy and error of my work.

Now to begin unraveling the dates of the new moons during the century of the Exodus, and that of the flood for that matter! Here is the procedure. A. We identify lunar conjunctions using Bickerman's chart. It is easy to bridge a gap of 876 years and five days. B. We check for accuracy by making a comparison with George Van Den Bergh's work. Here I can directly compare dates in the century of the Exodus. (3.) We compare the times of conjunctions listed by Bickerman with corresponding new moons listed by Parker and Dubberstein. Actually, if there is a new moon on a given Julian day, there is probably one 876 years and five days earlier. D. Then we can find out about events separated by forty years.

4. A. An ⁷⁶867 Year and Five Day Gap

How can we find out when a lunar conjunction was before any given new moon? The Hebrew calculates compute as if the time from one moon to the next were always the same. The Hebrew calendar is designed so that an estimate is all that is necessary. Calculating the precise time that the moon passes between the earth and the sun is difficult. Bickerman lists the time of each lunar conjunction to within a hundredth of a day. That suggests an error in each case of up to 7 minutes and 24 seconds.

I studied the chart and was plagued by a problem. The time from one lunar conjunction to one many years away would vary slightly. How could this chart be used to predict the time of a conjunction centuries before any date on the chart itself? I embarked upon a systematic procedure not worth explaining here, and either with luck or God's help made a break through.

Every 876 years and 4.99 days, plus or minus .03 days, I found I could find the time of a lunar conjunction. Bickerman's figures are in Greenwich Mean Time. Each date refers to twelve noon of that day. Each figure after the decimal point is a fraction of the 24 hours after that high noon. So, 12.25 points to the 12th of the month at 6 P.M. Six A.M. the following morning would be represented as 12.75. Bickerman's own figures appear in the two rightmost columns of the following chart. Compare the two rightmost columns

and see how I arrived at the figures in the two leftmost columns.

2324 B.C.	1448 B.C.	572 B.C.	A.D. 305
Mar. 26.25	Mar. 31.24	Apr. 5.23	Apr. 10.23
Apr. 24.87	Apr. 29.86	May 4.85	May 9.86
May 24.51	May 29.50	June 3.49	June 8.49
June 23.14	June 28.13	July 3.12	July 8.12
July 22.74	July 27.73	Aug. 1.72	Aug. 6.72
Aug. 21.30	Aug. 26.29	Aug. 31.28	Sept. 5.27
Sept. 19.83	Sept. 24.82	Sept. 29.81	Oct. 4.78
Oct. 19.32	Oct. 24.31	Oct. 29.30	Nov. 3.27
Nov. 17.78	Nov. 22.77	Nov. 27.76	Dec. 2.74
Dec. 17.24	Dec. 22.23	Dec. 27.22	A.D. 306
2323 B.C.	1447 B.C.	571 B.C.	Jan. 1.20
Jan. 15.76	Jan. 20.66	Jan. 25.65	Jan. 30.63
Feb. 14.09	Feb. 19.08	Feb. 24.07	Mar. 1.06
Mar. 15.54	Mar. 20.53	Mar. 25.52	Mar. 30.51
Apr. 14.01	Apr. 19.00	Apr. 23.99	Apr. 29.00
May 13.56	May 18.55	May 23.54	May 28.54

4. B. Testing the Accuracy of My Figures

What is Van Den Bergh's verdict on my above figures for the century of the exodus? His work involves the calculation of eclipses at the time of the exodus. An eclipse of the sun by the moon would correspond to the time of a lunar conjunction. I am not interested in solar eclipses, but I am very interested in the time of any lunar conjunction near the time of the exodus or the crossing of the Jordan. So, Van Den Bergh's work provides independent calculations from those used for the above chart. This will establish a firm foundation for the work here, so that we can proceed further with confidence.

Van Den Bergh's figures are given in Greenwich Mean Time as also were those of Bickerman. However, while Bickerman divided the 24-hour day into a hundred decimal parts, Van Den Bergh used minutes and seconds. One hundredth of a day equals 14 minutes and 24 seconds. Bickerman's error was half of that.

The four columns below display the amount of error in my work. Column 1 counting from left to right gives figures found in Bickerman's chart. The next column shows my extrapolation back 876 years and 4.99 days. Then comes the times of day of the lunar conjunction of a solar eclipse listed by Van Den Bergh. The rightmost column shows the error in column 2.

Bickerman	Extrapolation	Van Den Bergh	Error in extrapolation
587 B.C. Feb. 21.43	1463 B.C. Feb. 16.44	1463 B.C. 10:28.01M.	
Aug. 16.92 586 B.C.	Aug. 11.93 1462 B.C.	8:53 A.M. 1462 B.C.	-.05
Jan. 1.77 585 B.C.	Dec. 27.78 1461 B.C.	6:23 A.M. 1461 B.C.	-.014
June 26.38	June 21.39	8:41	-.03 .03
Dec. 29.76 584 B.C.	Dec. 15.77 1460 B.C.	5:47 A.M. 1460 B.C.	-.03
June 16.09	June 11.10	2:00 P.M.	-.017
Dec. 09.79 582 B.C.	Dec. 4.80 1458 B.C.	6.49 A.M. 1458 B.C.	-.016
Apr. 26.37	Apr. 21.38	8:16 P.M.	-.036
Oct. 20.25 581 B.C.	Oct. 15.26 1457 B.C.	6:02 P.M. 1457 B.C.	-.01
Apr. 14.40	Apr. 9.41	8:51 P.M.	-.04
Oct. 8.88 580 B.C.	Oct. 3.89 1456 B.C.	9:03 A.M. 1456 B.C.	-.014
Apr. 3.60	Mar. 29.61	1:57 A.M.	-.03
Sept. 28.29 578 B.C.	Sept. 23.30 1454 B.C.	6:51 P.M. 1454 B.C.	-.017
Feb. 12.41	Feb. 7.42	10:00 P.M.	-.0033
Aug. 7.76 577 B.C.	Aug. 2.77 1453 B.C.	4:49 A.M. 1453 B.C.	-.0693
Feb. 1.98	Jan. 27.99	11:58 A.M.	+0.009
July 27.09 576 B.C.	July 22.10 1452 B.C.	1:18 P.M. 1452 B.C.	-.03
July 16.69 575 B.C.	July 11.70 1451 B.C.	4:15 A.M. 1451 B.C.	-.023
June 7.10	June 2.11	1:50 P.M.	-.024
Nov. 30.62 574 B.C.	Nov. 25.63 1450 B.C.	2:43 A.M. 1450 B.C.	-.02
May 27.60	May 22.61	2:04 A.M.	-.024
Nov. 20.03 573 B.C.	Nov. 15.04 1449 B.C.	12:52 P.M. 1449 B.C.	-.004
May 15.81	May 10.82	7:02 A.M.	-.027
Nov. 8.65	Nov. 3.66	3:58 A.M.	+0.005

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571 B.C. Mar. 25.52	1447 B.C. Mar. 20.53	1447 B.C. 11:54 P.M.	-.034
Sept. 19.15 570 B.C. Mar. 15.09	Sept. 14.16 1446 B.C. Mar. 10.10	2:53 P.M. 1446 B.C. 1:44 P.M.	-.0039 -.039
Sept. 8.21 569 B.C. Mar. 3.78	Sept. 3.22 1445 B.C. Feb. 27.79	3:56 P.M. 1445 B.C. 6:36 A.M.	-.057 -.015
Aug. 27.22 567 B.C. Jan. 12.09	Aug. 22.23 1443 B.C. Jan. 7.10	4:13 P.M. 1443 B.C. 2:22 P.M.	-.055 -.003
July 7.70 566 B.C. Jan. 1.08	July 2.71 Dec. 27.09 1442 B.C.	4:19 A.M. 1:45 P.M. 1442 B.C.	-.030 -.017
June 27.40	June 22.41	9:29 P.M.	-.015
Dec. 21.14 564 B.C. May 6.65	Dec. 16.15 1440 B.C. May 1.66	3:08 P.M. 1440 B.C. 2:42 A.M.	-.02 -.05
Oct. 30.61	Oct. 25.62	2:58 A.M.	+ .004
.			
535 B.C. Apr. 16.15	1411 B.C. Apr. 11.16	1411 B.C. 2:35 P.M.	-.052
Oct. 10:82 534 B.C. Apr. 5.74	Oct. 5.83 1410 B.C. Mar. 31.75	6:46 A.M. 1410 B.C. 5:17 A.M.	-.048 -.030
Sept. 29.85 533 B.C. Mar. 25.44	Sept. 24.86 1409 B.C. Mar. 20.45	7:03 A.M. 1409 B.C. 10:30 P.M.	-.066 -.01250
Sept. 17.85 531 B.C. Feb. 2.73	Sept. 12.86 1407 B.C. Jan. 28.74	7:28 A.M. 1407 B.C. 5:51 A.M.	-.0376 + .004
July 30.85 Jan. 22.73	July 40.84 Jan. 17.74	7:53 P.M. 5:22 A.M.	-.0215 -.016
July 19.03 529 B.C. Jan. 11.83	July 14.04 1205 B.C. Jan. 6.84	12:35 P.M. 1205 B.C. 7:39 A.M.	-.016 -.02
528 B.C. May 28.18	1204 B.C. May 23.19	1204 B.C. 3:23 P.M.	-.05
Nov. 21.37 527 B.C. May 17.24	Nov. 16.38 1403 B.C. May 12.25	10:55 P.M. 1403 B.C. 4:30 P.M.	-.009 -.062500
Nov. 10.97	Nov. 5.98	11:10 A.M.	-.015
526 B.C. May 6.50	1402 B.C. May 1.51	1402 B.C. 11:15 P.M.	-.041

The + figures in my error column show the few times in which my extrapolations came out too early. The - figures show the usual tendency for my estimates to be too late. A corrected figure can be arrived at by adding the figure in column 4 to the figure on the same line in the second column from the left. This is very instructive. From this, my figures can be improved upon.

Notice the occasion of my earliest estimate and that of my latest estimate. My estimate for June 21, 1461 B.C. was .009 days early. My figure for August 3, 1454 B.C. was .0693 days late. Midway between these two extremes is the all-important figure which tells how much my figures need to be corrected. I was estimating unnecessarily late by .03 days. From now on, I am expecting to work back from the sixth century B.C. 876 years and 5.02 days (.03 days more than I have been) in order to identify a lunar conjunction in the 15th century B.C. My greatest possible error appears to be .0395 days. My figures will be early or late by up to 56 minutes and 53 seconds. This will only present a problem for lunar conjunctions between noon and 3:30 Greenwich Mean Time as we are to see later.

4. C. Estimating the New Moon From the Time of the Conjunction

Now find out what is displayed when Bickerman's list of conjunctions is placed side-by-side with Parker and Dubberstein's list of new moons. Already, our period of uncertainty for estimating the lunar conjunctions at the time of the exodus is 1 hour 53 minutes and 46 seconds. Using Bickerman's figures and those of Parker and Dubberstein together without any help beyond what I've shown here from Van Den Bergh's chart, this period of uncertainty greatly increases for estimating the new moons. Horn and Wood in their book The Chronology of Ezra 7 have provided evidence that Parker and Dubberstein should be expected to have an error of 30 percent in predicting the day of the new moon. The following chart should help us to identify the times of day where lunar conjunctions are the least helpful and the most helpful in dating the new moon.

THE FIRST DAY AND THE LAST DAY OF THE MANNA

Conjunctions	New Moons	Conjunctions	New Moons
574 B.C.	574 B.C.	534 B.C.	534 B.C.
Mar. 29.48	Apr. 1	Apr. 5.74	Apr. 8
Apr. 28.09	Apr. 30	May 5.06	May 7
May 27.60	May 30	June 3.43	June 6
June 26.04	June 28	July 2.88	July 6
July 25.40	July 28	Aug. 1.43	Aug. 4
Aug. 23.05	Aug. 26	Aug. 31.10	Sept. 3
Sept. 22.14	Sept. 25	Sept. 29.85	Oct. 2
Oct. 21.56	Oct. 24	Oct. 29.62	Nov. 1
Nov. 20.03	Nov. 22	Nov. 28.37	Dec. 1
Dec. 19.58	Dec. 22	Dec. 28.06	Dec. 30
573 B.C.	573 B.C.	533 B.C.	533 B.C.
Jan. 18.18	Jan. 20	Jan. 26.62	Jan. 29
Feb. 16.83	Feb. 19	Feb. 25.08	Feb. 27
Mar. 17.51	Mar. 20	Mar. 25.44	Mar. 28
Apr. 16.18	Apr. 19	Apr. 23.75	Apr. 26
May 15.81	May 18	May 23.04	May 25
June 14.39	June 17	June 21.35	June 24
July 13.90	July 16	July 20.74	July 24
Aug. 12.36	Aug. 15	Aug. 19.23	Aug. 22
Sept. 10.09	Sept. 13	Sept. 17.85	Sept. 20
Oct. 10.22	Oct. 13	Oct. 17.59	Oct. 20
Nov. 8.65	Nov. 11	Nov. 16.41	Nov. 19
Dec. 8.10	Dec. 10	Dec. 16.20	Dec. 19
572 B.C.	572 B.C.	532 B.C.	532 B.C.
Jan. 6.59	Jan. 9	Jan. 14.95	Jan. 17
Feb. 5.11	Feb. 7	Feb. 13.57	Feb. 16
Mar. 6.65	Mar. 9	Mar. 15.06	Mar. 17
Apr. 5.23	Apr. 8	Apr. 13.46	Apr. 16
May 4.85	May 7	May 12.77	May 15
June 3.49	June 6	June 11.04	June 13

Conjunctions 572 B.C.		New Moons 572 B.C.		Conjunctions 532 B.C.		New Moons 532 B.C.	
July	3.12	July	6	July	10.32	July	13
Aug.	1.72	Aug.	4	Aug.	8.68	Aug.	11
Aug.	31.28	Sept.	3	Sept.	7.13	Sept.	9
Sept.	29.81	Oct.	2	Oct.	6.70	Oct.	9
Oct.	29.30	Nov.	1	Nov.	5.39	Nov.	8
Nov.	27.76	Nov.	30	Dec.	5.17	Dec.	8
Dec.	27.22	Dec.	29	531 B.C.		531 B.C.	
571 B.C.		571 B.C.		Jan.	3.97	Jan.	6
Jan.	25.65	Jan.	28	Feb.	2.73	Feb.	5
Feb.	24.07	Feb.	26	Mar.	4.41	Mar.	7
Mar.	25.52	Mar.	28	Apr.	2.96	Apr.	5
Apr.	23.99	Apr.	26	May	2.40	May	5
May	23.54	May	26	May	31.74	June	3
June	22.16	June	25	June	30.04	July	2
July	21.81	July	24	July	29.35	July	31
Aug.	20.48	Aug.	23	Aug.	27.69	Aug.	30
Sept.	19.15	Sept.	22	Sept.	26.11	Sept.	28
Oct.	18.77	Oct.	21	Oct.	25.64	Oct.	18
Nov.	17.35	Nov.	20	Nov.	24.25	Nov.	27
Dec.	16.86	Dec.	19	Dec.	23.97	Dec.	27
750 B.C.		570 B.C.		530 B.C.		530 B.C.	
Jan.	15.31	Jan.	18	Jan.	22.73	Jan.	25
Feb.	13.73	Feb.	16	Feb.	21.48	Feb.	24
Mar.	15.09	Mar.	17	Mar.	23.17	Mar.	26
Apr.	13.44	Apr.	16	Apr.	21.77	Apr.	24
May	12.84	May	15	May	21.27	May	24
June	11.30	June	14	June	19.67	June	22
July	10.83	July	13	July	19.03	July	21
Aug.	9.49	Aug.	12	Aug.	17.38	Aug.	20
Sept.	8.21	Sept.	10	Sept.	15.76	Sept.	18

Conjunctions 570 B.C.	New Moons 570 B.C.	Conjunctions 530 B.C.	New Moons 530 B.C.
Oct. 7.96	Oct. 10	Oct. 15.17	Oct. 18
Nov. 6.68	Nov. 9	Nov. 13.66	Nov. 16
Dec. 6.34	Dec. 9	Dec. 13.21	Dec. 16
Conjunctions 569 B.C.	New Moons 569 B.C.	Conjunctions 529 B.C.	New Moons 529 B.C.
Jan. 4.91	Jan. 7	Jan. 11.83	Jan. 14
Feb. 3.38	Feb. 6	Feb. 10.49	Feb. 13
Mar. 3.78	Mar. 6	Mar. 11.20	Mar. 14
Apr. 2.10	Apr. 4	Apr. 9.87	Apr. 12
May 1.41	May 4	May 9.51	May 12
May 30.73	June 2	June 8.07	June 10
June 29.12	July 1	July 7.56	July 10
July 28.61	July 31	Aug. 6.00	Aug. 8
Aug. 27.22	Aug. 30	Sept. 4.42	Sept. 7
Sept. 25.94	Sept. 28	Oct. 3.82	Oct. 6
Oct. 25.72	Oct. 28	Nov. 2.25	Nov. 5
Nov. 24.51	Nov. 27	Dec. 1.71	Dec. 4
Dec. 24.26	Dec. 27	Dec. 31.21	528 B.C. Jan. 3
Conjunctions 568 B.C.	New Moons 568 B.C.	Conjunctions 528 B.C.	New Moons 528 B.C.
Jan. 22.89	Jan. 25	Jan. 29.74	Feb. 1
Feb. 21.41	Feb. 24	Feb. 28.31	Mar. 3
Mar. 22.81	Mar. 25	Mar. 29.91	Apr. 1
Apr. 21.12	Apr. 23	Apr. 28.54	May 1
May 20.41	May 23	May 28.18	May 30
June 18.70	June 21	June 26.81	June 29
July 18.03	July 20	July 26.40	July 29
Aug. 16.47	Aug. 19	Aug. 24.93	Aug. 27
Sept. 15.03	Sept. 17	Sept. 23.44	Sept. 26
Oct. 14.72	Oct. 17	Oct. 22.91	Oct. 26
Nov. 13.50	Nov. 16	Nov. 21.37	Nov. 24
Dec. 13.30	Dec. 16	Dec. 20.83	Dec. 23

Conjunctions 567 B.C.	New Moons 567 B.C.	Conjunctions 527 B.C.	New Moons 527 B.C.
Jan. 12.09	Jan. 15	Jan. 19.27	Jan. 22
Feb. 10.77	Feb. 13	Feb. 17.70	Feb. 20
Mar. 12.34	Mar. 15	Mar. 19.16	Mar. 21
Apr. 10.77	Apr. 13	Apr. 17.66	Apr. 20
May 10.12	May 12	May 17.24	May 19
June 8.41	June 11	June 15.85	June 18
July 7.70	July 10	July 15.50	July 18
Aug. 6.02	Aug. 8	Aug. 13.17	Aug. 16
Sept. 4.42	Sept. 7	Sept. 12.81	Sept. 15
Oct. 3.93	Oct. 6	Oct. 16.41	1 Oct. 15
Nov. 2.56	Nov. 5	Nov. 10.97	Nov. 14
Dec. 2.29	Dec. 5	Dec. 10.47	Dec. 13

The examples which identify the period of uncertainty for dating the coming new moons involve the conjunctions on July 3, 534 B.C. and July 29, 531 B.C. The conjunction identified by Bickerman as being at about 9:07 A.M. on July 2 might be expected to precede a new moon which would be visible the evening before July 5. Parker and Dubberstein's figures say that it would not have been visible until the evening before July 6. In the one recorded by Bickerman for about 8:24 P.M. July 29, Parker and Dubberstein note as a visible new moon that following evening. . . . Their period of uncertainty then is from 9 A.M. to 8:32 after adding on the error in Bickerman's decimal figures. The peak of this uncertain period is at 1:46 P.M.

An error of 30 percent noted by Horn and Wood leads me to the following conclusion. (1.) Poor weather conditions would allow for uncertainty after any lunar conjunction. However, if the month had already gone 30 days, the new month would be inaugurated even if the new moon were not seen. (2.) We can at least admit to the error or possible alternative dates when ever the problem arises. We can be fairly certain of the time that a new moon appears after a night-time lunar conjunction.

4. D. New Moons Separated by Forty Years

The chart just presented is valuable partly because years separated by forty years are listed across from one another. Week days are not accounted for, but one basic principle helps us to understand them. Any Julian date moves up one week day every forty years. Since May 5, 1443 B.C. was a Saturday, May 5, in 1403 B.C. was on a Sunday.

The riddle of Exodus 16 and Joshua 5:10-12 actually involves one month short of forty years. Could Ziv 16 have occurred on a Sunday and Abiv 14 forty years later have been on a sabbath? If so, Ziv 1 (two weeks after the Exodus) would have occurred one week day later than Abib 1 the year of the Jordan crossing.

What do the figures in the above chart show? The years are not of immediate importance and neither are the exact months. However, we are interested in new moons which are separated by about three weeks short of forty Julian years.

Can a new moon occur one week day earlier than the one about twenty-one days short of forty years later? Yes. Here are some examples: November 22, 574 (all figures are B.C.) and November 1, 534; it happened again thirty days later; and again, January 20, 573 and Dec. 30, 534; and again thirty days later; four consecutive times from December 10 573-March 9, 572 to November 19, 532-February 16, 532; from December 29, 527 to December 8, 532; four consecutive times from Feb. 26-May 26, 571 to Feb. 5-May 5, 531; five times from March 13-July 13, 570 to February 24-June 22, 530; from Sept. 10, 570 to August 20, 530; from April 4, 569 to March 14 529; the three from June 2-July 31, 569 to May 12-July 10, 529; from September 28, 569 to September 7, 529; the four from July 20-October 17, 568 to June 29-September 26, 528 ; and a fifth from November 16, 568 to October 26, 528; from August 8, 567 to July 18, 527; and from October 6-December 5, 567 to September 15-November 14, 527.

The examples attest that it could have happened? But when at the time of the Exodus? It was not in 1443 B.C. ~~Don't~~ Don't disregard the following

example: Note the conjunction April 13.44, 570 B.C. This identifies one 876 years and 5.02 days earlier at April 8.42, 1446 B.C. This quite solidly points to a new moon on the evening before April 11. That was a sabbath. Forty years later, a conjunction occurs on March 23.17, 530 B.C. This points back to a conjunction on March 18.15, 1406 B.C. The new moon may have appeared the evening before March 20, but it is much more likely that it appeared the evening before Sunday March 21. That is too early in that it would place the seventh day of the feast of Tabernacles two or three days before the fall equinox. But what if the leap-year month was added before Trumpets day?

Suppose the Exodus had been in 1446 B.C. Solomon would have begun the temple in 967 B.C. Ahab would have died in the spring of 853. Shalmanezar III would have credited Ahab for contributing manpower to the coastal alliance even though Ahab had just been killed while fighting in league with Judah. The reigns of Zechariah and Shallum would be easier to account for being a year later. Pekah would only have reigned in Samaria one year instead of two which might be a problem.

If the prospects of the use of lunar observation are any indication, the circumstances at the time of the exodus were these:
 A total eclipse (not all that spectacular as viewed from Egypt) occurred around 1:44 P.M. G.M.T. March 10. If the eclipse was followed by a quickly visible new moon, then the passover occurred on Wednesday March 25. The exodus occurred Thursday March 26. The Israelites entered the wilderness of Zin Saturday April 25, and the first sabbath which they kept was May 2. The 6th of Sivan when the Talmud says the ten commandments were given (with Sivan 7 as an alternative) would favor the conclusion that the ten commandments were given Saturday Sivan 7, May 15. The rabbis agree that the occasion was a sabbath. In a test case of Num. 10:11,33, the three-day journey of Ziv 20-22 was from Wednesday May 18 to Friday May 20, 1445 B.C. The year of the Jordan crossing may have been marked by a sabbath passover, April 3, 1406 B.C. The manna ceased

5. An Alternative to Lunar Observation?

Only two possibilities for the exodus may conceivably be harmonized with the historical and astronomical evidence. If the months began with the new moon, the possibility of a 1446 B.C. exodus is worth considering. But the modern Hebrew calendar suggests that a sabbath passover occurred in 1403 B.C. The modern Hebrew calendar rules out an initial six-day raining of manna in 1443 B.C. But, we have been challenged by the evidence of lunar observation. Now we know that the possibility that God first rained the manna on a Sunday cannot be ruled out on astronomical grounds. We need to know whether or not observational evidence stands alone as the only possible calendar which allows for God to have first rained the manna on a Sunday.

The calendar which underlies the account of the flood may provide the key. Ancient evidence discussed in The Hebrew Union College Annual Volume 17, year 1942-1943, published in Cincinnati, Ohio by the Hebrew Union College lays the foundation for the possibility I am presenting. First, the foundation upon which the year of the flood is determined is to be presented.

5. A. Josephus and the Dates In Genesis 11

The dating which I am working out is based upon the Masoretic text of the Bible. The problem is that almost every ancient text of Genesis 11 is united in opposition against it. The Samaritan text dates the flood 550 years before that indicated in the Masoretic text. The Latin Vulgate in near agreement dates the flood another ten years earlier. The Alexandrian Septuagint agrees with the Samaritan text except that this Septuagint includes Cainan, placing the flood 130 years earlier. Other texts of the Septuagint date the flood another 100 years earlier.

The Samaritan and Septuagint texts originated at a time when people like those of Egypt and Babylon competed to see whose history was the most ancient. If the Masoretic text is correct, scribes would have been tolerated who claimed that it listed too few years in its history. No Masoretic text would have been

tolerated if the Samaritan or Septuagint figures had been the most accurate.

Josephus's account originally differed from that of the Masoretic text of Genesis 5 and 11 only in the case of Jared's age upon the birth of his son.

A reader, possibly of the Vulgate, changed the text of Antiquities 1:6 but overlooked Josephus's figure for Nahor's age upon the birth of Terah and the figure for the number of years from the flood to Terah's 70th year. Antiquities 1:6:5 and 10:8:5 shows that Josephus was a witness of the general accuracy of the Masoretic text against that of the Septuagint.

The reverse possibility seems less likely. The unknown scribe who read the Masoretic text (according to this view) would have to have changed the totals given by Josephus and the individual figure involving Nahor while leaving the obviously ironious figures for the ages from Arpaxchad to Serug. Furthermore, the one departure Josephus made from the Masoretic text in Genesis 5 is confirmed in the reference to Jared and in the totals from Adam to Jerusalem's fall. Josephus himself is the only logical candidate for that discrepancy.

How many years was it from the flood to the Exodus? Josephus identified 292 years from the flood to Terah's 70th year (Ant. 1:6:5) correctly following the Masoretic text of Genesis 11. Acts 7:4 (compared with Genesis 11:32 and 12:4) makes clear that Abraham was born sixty years after Terah's 70th year. Josephus misunderstood Genesis 11:26 and logically thought that Abraham was born in Terah's seventieth year. Josephus's figures indicate that there were 603 years between Abraham's birth and the Exodus. Genesis 17 tells of the only dated events in Abraham's life (when he was a son of 99 years) which is specifically referred to as a covenant. Galatians 3:17 says that it was 430 years from the covenant to the giving of the law. There it appears to have been 529 years from Abraham's birth to the lawgiving the year of the exodus. All together, it was ³8~~4~~1 years from the flood to the exodus. We are examining 2327 and 2324 B.C. in our analysis of the account of the flood.

THE FIRST DAY AND THE LAST DAY OF THE MANNA

5. B. The Twofold Riddle of the Calendar of the Flood Account

What calendar of months underlies the flood account? Why are a number of events separated by seven days? These two questions make up the twofold riddle, and there is a good reason for seeking their answers. An omer of manna, kept in a jar as a witness to future generations, encouraged me into looking out for evidence which would serve as a testimony of the accuracy of Exodus 16. Peter has indicated that the fact that the flood occurred could only be ignored if done so deliberately (2 Peter 3:5-6). Where outside of the accounts of the flood, Exodus 16 and Joshua 5 is there the potential for studies of calendars in pointing out the accuracy of the Bible?

Review Genesis 7 and 8. Key verses include 7:4,11-12,24, 8:3-14,20. There were 150 days from the seventeenth day of the second month to the seventeenth day of the seventh month. The Egyptian civil calendar and the 385 (complete leap) year of the modern Hebrew calendar allow for this. Lunar observation occasionally allows for 149 days which could be counted inclusively as 150 days. The Hebrew Union College study suggests that a fixed lunar calendar was used in which the first six months of the year each had 30 days, months 7-12 each had 29 days, and the extra leap-year month would have had 30 days. It suggests that the lunar dates were inserted by a later scribe to the ancient story, and that an Amorite harvest calendar containing seven fifty-day seasons is older than the lunar calendar and also underlies the account of the flood.

Lunar dates were not necessarily inserted into the account. Interesting evidence for this is found in Hasting's Encyclopedia of Religion and Ethics Volume 3, Page 73. The new year of the most ancient Mesopotamian lunar calendars was in the fall, but Sargon (a preflood contemporary of Noah) introduced a Spring new year. This shows that a spring new year in the Genesis account is possible. This is important, because we cannot depend upon the Hebrew Union College study alone for this conclusion.

Why are so many events separated by seven days? What if those events which were separated by seven days occurred on weekly sabbaths? Some Assyrians are known to have abstained from certain actions on ill-fated days which included the 7th, 14th, 21st, and 28th of a month, as well as the 19th of the month which was actually the 49th day counting from the 1st of the preceeding month. These ominous days, then, were part of a 49-day system. The number 7 was at the root of the counting of days. Some have alledged that the seven-day week had its origin in the number of days from one phase of the moon to the next.

Did the origin of the seven-day week depend upon the phases of the moon? The forty-nine day pattern of ominous days of Assyrian abstinence was not well integrated with the phases of the moon. Seven-day feasts of ancient Mesopotamia were religious and not civil. A certain Gudea, (a ruler of the 23rd century B.C. according to the Hebrew Union College study, page 3-4) in two inscriptions stated that the dedication of a temple was celebrated by a seven-day feast. Seven days were also the time during which certain stelae were set up in a newly erected house of worship. Later cuneiform writings refer to seven-day periods only in mythology, ~~myth~~ penitential activities, or other rituals. In Babylon and Assyria, the seven-day activities came to be cultic while the civil activities were tied into the lunar calendar. "In consideration of the well-known fact that throughout the ages, religious rituals preserve calendaric systems which have long-since become obsolete in civil life, this observation leads to the conclusion that the seven-day week belongs to a calendar which as early as the 23rd century B.C. had been abandon in Babylonia and Assyria in favor of the lunar or lunasolar system," (Hebrew Union College study, Page 4).

Events separated by seven days in the flood account suggest the following to those who claim that sabbath days are involved. The 17th day of the second month fell on a sabbath. Consecutive sabbaths occur beginning forty days after the first day of the 10th month. Noah left the ark on a sabbath.

5. C. The 150 Days Which Rule Out Sabbaths

If every month from the second through the sixth in the flood account had thirty days, then there would have been 150 complete days from the 17th day of the second month to the 17th day of the seventh month.

NOah entered the ark and seven days later, the rains came. If these two events occurred on sabbaths, then the 150 days from then to the time that the ark settled takes us to a Tuesday. The seventh month had to begin on a Sunday.

Under these circumstances, could the tenth month have begun on a Tuesday? It had to in order for a sabbath to occur at the end of forty days counting from that day. The answer is "no" in the case of the Egyptian civil calendar. All of its months had thirty days. The answer is also "no" in the case of the lunar calendar suggested in the Hebrew Union College study. According to it, the seventh, eighth, and ninth months each had 29 days. Each month would begin one week day later than any day 29 days earlier. So, if the seventh month began on a Sunday, then the eighth began on a Monday, the ninth on a Tuesday, and the tenth on a Wednesday.

If sabbaths occur involving events separated by seven days, then the 150 days from the second month to the seventh month must be counted inclusively or there must be a 28-day month on the calendar. That is not worth guessing on without historical foundation. Lunar months can only be expected to have 29 or 30 days unless documentation records otherwise. So, Genesis 7:24 and 8:4 refers to 150 inclusive days or 149 complete days if a series of sabbaths are to be found in the account. Two calendars allow for this. They are the 385-day year of the Modern Hebrew calendar and lunar observation.

5. D. The Verdict of the Modern Hebrew Calendar

According to the modern Hebrew calendar as it would have to be explained by Genesis 7:11,24, and 8:4, the year would have begun on a Tuesday. The seventh month would be ^{L ADAR}~~Nisan~~ and would have to fall on a sabbath. The 150 day period can only occur in a leap year of 385 days. Only then is the number of 29-day

months down to the minimum of one between the second and the seventh month.

Unfortunately, a 385-day Hebrew year can never begin on a Tuesday. For proof, suppose the latest possible molad for a Tuesday Trumpets day is considered. It would be at precisely one part before noon on that Tuesday. After the impending leap year, the next molad would occur on Monday at 588 parts after 9 A.M. This is precisely one part too early for the preceding year to last the required 385 days, ~~In the 384 day year,~~ shortening the very month during which the rains began. After a leap year, the molad on Monday morning must occur at or after 589 parts after 9 A.M.

The account as recorded in Genesis 7:24 and 8:4 requires at least 149 days from the second to the seventh month. Events are separated by seven days in some cases, but the Bible does not require sabbaths in the account. Can any 385 day year be located at a time when the flood may have occurred?

Year 1 of a nineteen-year cycle began in the fall of 2336 B.C. Ever since the feasts were running late in some years the designated leap years were moved up a year. A.D. 141-142 was originally scheduled to be a leap year. However, the thirteenth month was delayed until A.D. 143. Since then the leap years have always occurred in years 3, 6, 8, 11, 14, 17, and 19. At the time Christ lived on the earth, they were in years 2, 5, 7, 10, 13, 16, and 18. What if at the time of the flood, they were in years such as 1, 4, 6, 9, 12, 15, and 17?

If year 10 had been a leap year in Noah's day as it was much later, Tishri's molad in 2327 B.C. would have been September 23, 14 hours and 12 parts (or 12 parts after 2 P.M.) The date is Julian, meaning that Trumpets day would have occurred about 20 days before the equinox. Trumpets day doesn't occur that early today! On the other hand, if years 9 and 12 back then had been leap years, this would make B.C. years ~~2327~~ 2328-2327 and 2325-2324 leap years.

The year 2328-2327 B.C. would if it were a leap year but with ^{postponements} ~~no~~ ^{postponements} ~~postponements~~ have lasted 385 days. Molads would have occurred at 5 hours 216

parts, Thursday, October 4, 2328 B.C. That Trumpets day would figure to be a Thursday. Suppose it began a leap year. The next molad would have been at 2 hours 805 parts on Wednesday, October 23, 2327 B.C. This molad would mark a Thursday Trumpets day by today's standards. That is a 385-day year.

The year 2325-2324 B.C. works out to 383 days. It begins with a molad on September 30, a Thursday, at 20 hours 397 parts. It ends with a molad at 17 hours 986 parts on Wednesday, October 19. The year begins on a Saturday and ends on a Wednesday.

Even if it were a leap year, 2324-2323 B.C. could not work out. One glance at the Wednesday afternoon molad gives it away. One month earlier would place it on Tuesday morning. We have already learned the lesson of a Tuesday morning molad. It can never marked the beginning of a 385-day year.

Making a leap year out of 2327-2326 B.C. fails, because it begins on a Tuesday which follows a Monday afternoon molad. The October 12 molad in 2326 B.C. within a day or two of the equinox leaves no grounds for asking any questions. Questions arise the closer that Tishri 21 gets to the equinox. That is required by the reference to the feast of ingathering being at the turn of the year in Exodus 23:16.

The conclusion of the matter is this. When the modern Hebrew calendar is read into the flood story, the fall of 2328 B.C. works out to be the best way to account for Genesis 7:24 and 8:4. The use of the Hebrew calendar in the flood period would increase the likelihood of its use at the time of the exodus. A 2328-2327 B.C. year of the flood favors a 1446 exodus.

In 1446 B.C., Tishri's molad was Saturday, October 3, at 11 hours 253 parts. It was only 827 parts before noon. Trumpets day would have been on a sabbath. Forty years later, the molad was Monday October 11 at 748 parts after 2 A.M. This was 7 hours and 241 hours too early for a sabbath passover and a Tuesday Trumpets day. The closeness is interesting. What if there were a fixed calendar in ancient times with slight variations in procedures from that used presently?

Unknown modifications in the Hebrew calendar could only invite speculation concerning the year of the flood beginning on either Tuesday, September 24, 2327 B.C. or Tuesday September 29, 2324 B.C.

All of the characteristic calendars we are looking into with the Hebrew calendar could only have happened in one way that might be readily noticeable. (1.) Sabbaths could only occur in the flood account if it occurred in a leap year of 2327-26 (Fall-to-Fall) or 2324-23 B.C. (2.) The Exodus would have occurred in 1446 B.C. which rules out 2324 B.C. (3.) The Jordan crossing could only have occurred in 1406 B.C. if unknown modifications are assumed in the calendar as is assumed for this immediate speculation on the flood account. The fact is that no modification in the Hebrew calendar is necessary for the 1403 date for the Exodus.

The most certain conclusions concerning the Hebrew calendar's verdict are probably these. (1.) If (but not only if) molad calculations were used by Noah, then they were used both at the Exodus and the Jordan crossing. (2.) In both the flood account and in the account of the sabbath passover, the Hebrew calendar could not have been used. After all, we found an unaltered Hebrew calendar only for the years 2328-27 and 1404-03; each year represents a different reconstruction of the events. Conclusion, if the Hebrew calculations are ancient, the rules for the month lengths are not. Of course, this assumes that the flood occurred ⁸820 or ⁸821 years before the Exodus. (3.) Using a slightly modified Hebrew calendar, two possibilities still remain for the exodus, 1446 B.C. and 1443 B.C. The earlier possibility raises the most doubts over sabbaths in the flood account. The later possibility rules out God's raining of manna for six consecutive annitial days. The fact remains, however: astronomical grounds are insufficient for concluding that the manna was not rained on a Sunday that first week. On this ground, my conclusion is that if the Hebrew calculations were used, then the exodus occurred in 1446 B.C.

But, what if the Hebrew calendar originated after the exodus? Evidence favoring 1443 exodus favors that conclusion.

With these problems, and even with the question as to whether the flood occurred during these years, conclusions are preliminary. The fact remains that dates in the Fall-to-Fall year 2328-2327 B.C. compare more favorably than the rest if sabbaths are involved in the account. In light of the way in which new moons of 1446 and 1406 B.C. work out, again, sense can be made out of the possibility of a 1446 B.C. exodus.

The new year may be too early in the observational data for 1446 and 1406 B.C. and especially 2328 B.C. Worse yet, while the Spring new year in these 15th century dates are one month too early for the standard set by Exodus 23:16, the late summer date in 2328 B.C. is two months too early. If all three dates were one month ~~or~~ early or if all three dates were two months early, their consistency might be useful confirmation of the date given here for the flood. The Hebrew-calendar new years don't present this problem. Nevertheless, observational calendars require fewer rigid standards, and fewer conclusions can be drawn. All that stands out is the uncertainty, and the interesting way in which the week days work out in the case of 2328-2327 B.C.

6. The Exodus and the Egyptian Lunar Calendar

Esther once ordered the Jews to "neither eat nor drink for three days, night or day," (Esther 3:16). The expression "night or day" would seem more appropriate than the expression "day or night", to the extent that the day began at sunset. Surprisingly though, the idiom "days and nights" is used almost always in the Bible. Jesus was obviously entombed near sunset, and he was in the heart of the earth for three nights and days. Yet, the common expression was used: three days and three nights marked the time of Jonah's worst tribulation and of Jesus's entombment. Forty days and forty nights it took for the great flood, for Moses's lengthy fasts, and for Elijah to journey to the Sinai (Gen. 7:12, Ex. 24:18, 34:28, 1 Kings 19:8). The expression "days and nights" referred to complete days but not necessarily beginning in the morning. If the day began in the evening, where did the expression come from?

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A common idiom like the expression "days and nights" is said out of habit, and its literal meaning is often a result of something which is no longer a part of the life of the people who speak of it. Could a "day and night" appropriately refer to a complete day according to an ancient practice among God's people which had ceased? Joshua had to tell the Israelites a generation after the crossing of the Jordan, "Put away the gods which your fathers served beyond the River, and in Egypt," (Josh. 24:14). What if the day in Egypt began in the morning?

If the crossing of the Jordan occurred four days before a sabbath passover, then it could have been in 1403 B.C. It works out according to the Hebrew calendar. Not only that, it works out according to lunar observation but a month earlier. This is important. In 1406 B.C., it could have only worked out on the Hebrew calendar if some unknown alteration had allowed for it. The only problem with the year 1403 B.C. is that the Sunday new moon for a possible month of Abib occurred March 17, two and a half weeks before the equinox. But the situation involving lunar observation in 1406 was only four days to the better on March 21. The fact is that both lunar observation and the modern Hebrew calendar allow for a 1403 sabbath passover. Obviously, the origin of the feast of Purim involved a rule change in "God's" calendar, but that may not have affected the three major holy-day seasons. So, the calendar evidence for a ^{1403 CONQUEST} ~~1403~~ exodus is more favorable than that for ¹⁴⁰⁶ ~~1406~~ when only those two years are considered.

Forty years before this, in 1443 B.C., neither the Hebrew calendar nor lunar observation allows for the manna to have first been provided on a Sunday. According to lunar observation, Ziv 16 fell on Monday April 23, Tuesday May 22, or Wednesday May 23. The Hebrew calendar calls for Tuesday May 22.

What if, at the time of the exodus, the day began at sunrise, and the lunar months were based upon observation of the moon at sunrise? What if that just happened to be the way it was done by the people who had enslaved the Israelites? What if God had the Israelites begin to use a sunset-to-sunset calendar between the time of the Exodus and the time of the instructing recorded in Leviticus 23 a year later?

Why is unleavened bread to be eaten from the evening of the 14th to the evening of the 21st, according to Exodus 12:18, while the festival of unleavened bread's first day is on the 15th according to Lev. 23:6-7? What if the reference in Lev. 23:32 to an evening to evening sabbath ~~ix~~ were somewhat of a new thing in the minds of the Israelites who were hearing this instruction? What if the flesh in the evening and the bread in the morning (Ex. 16:8) a month after the exodus were a sign which was part of God's gradual revelation in making a major change in community practice? What if as Jewish tradition suggests the slaying of the passover lamb were a type of the crucifixion historically and not a type of the broken bread as the appropriate parallel has suggested?

6. A. Fixing Egyptian Lunar Dates

Callendars of Ancient Egypt by Richard Parker (Pages 23-26) provides a basis for associating a lunar conjunction with the beginning of the corresponding Egyptian lunar month. We are ignoring the dates given by Parker for the Egyptian fixed lunar calendar. Here we ~~ix~~ are concerned with (1.) Bickerman's recorded times for the lunar conjunctions, (2.) the time of day given by Parker, and (3.) the date calculated by Parker on which the old lunar crescent was no longer seen by the time of the sunrise. Sunrise would then mark the observed day of the beginning of the month where no fixed calendar is used. In what part of the day does the time of the lunar conjunction most certainly identify the first of the month? When is the lunar conjunction least helpful for this identification?

Conjunction Bickerman's date	Conjunction Parker	Morning of invisibility Parker
	357 B.C.	
November 20.78	8:33 A.M.	November 20
	356 B.C.	
January 19.08	4:05 P.M.	January 19
February 17.57	4:05 A.M.	February 17
April 17.28	9:07 P.M.	April 17
June 14.88	10:53 A.M.	June 15
August 12.70	6:38 A.M.	August 13

Conjunctions Bickerman's dates	Conjunctions Parker	Morning of invisibility Parker
	356 B.C.	
October 10.99	1:22 P.M.	October 11
	3:55 A.M.	December 9
	355 B.C.	
February 7.01	2:44 P.M.	February 7
April 6.96	1:22	April 7
June 4.58	3:45 A.M.	June 5
August 2.18	4:31 P.M.	August 2
September 30.14	5:20 P.M.	September 30

The extreme cases are those of November 20, 357 and June 5, 355. Notice Bickerman's G.M.T. figures compared with Parker's Egyptian time figures. The uncertain period is at least the period from .58 to .78 days after noon G.M.T. or 3:45 to 8:33 A.M. Egyptian time. Certainly, this is an insufficient sample listing and the uncertain period is much greater. Fortunately, an afternoon conjunction is involved on the all-important date of May 5, 1443 B.C.

More than the above evidence is available. Next we turn to a 1957 Journal of Near-Eastern Studies article "The Lunar Dates of Thutmose III and Ramesses II" (Pages 39-41) also by Richard Parker. In this article, the following facts concerning the Egyptian calendars at the time of Moses are noted.

Civil and lunar dates were combined together. The civil year always had 365 days, so that every four years, the Egyptian new year would move one day earlier on the Julian calendar. Each Egyptian civil month had thirty days, and five feast days fell between the 30th day of the 12th month and the first day of the new year. The new day began at sunrise.

The lunar months were separate from the civil months. Before sunrise on the 29th day of any lunar month, if the old lunar crescent was still visible before sunrise, then the coming sunrise would begin the thirtieth day. If it was no longer visible, then the first day of the new month would begin at sunrise.

In this article, Parker's purpose is to display the evidence as to when Thutmose III reigned based upon an account of a battle at Magiddo in that pharaoh's 23rd year. The battle climaxed on the first day of an Egyptian lunar month. This first day of the month is known by the transliterated consonants ""Psdntyw." Parker gave the dates of several of these.

His accuracy can easily be checked, because Parker gave the civil calendar date for each Psdntyw. The following chart compares my use of Bickerman's dating of lunar conjunctions with Parker's dates for the beginning of several Egyptian lunar months.

Bickerman's dating Lunar conjunction	My extrapolation Lunar conjunction	Parker's dating Julian calendar	Parker's date Egyptian civil
		May 17, 1493	9-20
		May 16, 1482	9-21
May 17.78, 603	May 12.79, 1479	May 13, 1479	9-19
May 16.31, 592	May 11.32, 1468	May 11, 1468	9-20
May 14.04, 581	May 9.05, 1457	May 9, 1457	9-20 (error)
May 11.42, 578	May 6.43, 1454	May 8, 1454 (error)	9-19
May 10.12, 567	May 5.13, 1443	May 5, 1443	9-20
February 18.60, 565	February 13.61, 1441	February 13, 1441	6-29

The civil calendar is so rigid and predictable that Parker's examples for ~~1457~~ and 1454 B.C. can be accounted for. The Roman leap years occurred due to the occurrence of February 29 in B.C. years 1489, 1485, . . . 1449 and 1445. The 20th day of the 9th Egyptian civil month fell on May 17, 1493, May 11, 1468, May 8 (~~not May 9~~), 1457, and May 5, 1443. May 9, 1457 B.C. seems to have marked the beginning of a lunar conjunction, and Parker must have intended this as a reference to the 21st of the 9th civil month. ^{7*} The 19th day of the 9th month fell on May 13, 1479 and May 7, 1454. Indeed, Parker's explicit writing in this interesting case was an aid to correcting the error in print. The printed date, May 8, 1454, occurred on the 20th, and Parker explicitly stated that the conjunction could not have occurred on that day. My extrapolation agrees with that observation.

A T I AM MISTAKENLY WRITTEN 9-20 IN MY NOTES ON PARKER'S ARTICLE.

6. B. The Verdict of the Egyptian Callendar

It may not be evident as to whether the Israelites used the Egyptian lunar callendar when Moses first instructed them. The fact remains, however, that of all of the possibilities examined here so far, this callendar is the only one known to have been used in the environment of the exodus itself. Before this time, the evidence which I have been presenting has been somewhat theoretical. Now, it can truly be said that the investigation is historical. Just what if Egyptian lunar dates are given in Exodus 12 and 16? People are too quick to suggest on the unfounded basis of human reasoning as to how God would have done it that it would have set a strange precedence. But what if the callendar situation for the Israelites then was unique to the time period.

All this would mean that ~~Nov~~²¹ 15 (mentioned in Exodus 16:1) would have begun for the Israelites at sunrise on Saturday May ¹⁹ 5, 1443 B.C. On the following morning, May 20, God first rained the manna. May 26 would have marked the first sabbath. The change-over to a sunset-to-sunset day would have been needed, because of the tendency toward sun worship encouraged by the attention paid to the sunrise in this Egyptian form of time keeping.

We have seen that astronomical evidence alone does not rule out God's first raining of manna on a Sunday just short of forty years before a sabbath passover. However, that astronomical evidence favored 1446 B.C. as the year of the exodus. In fact, if the Israelite calendar was based upon the traditional calculation for the molad of Tishri, the probabilities favor a 1446 exodus. But, the attempts to harmonize the Bible with Egyptian and Assyrian history favor 1443 as the year of the exodus. The roughly 109 years and six months of Israelite history from Jehu's accession to Pekah's assassination of Pekahiah is at the heart of the most telling evidence. A 1446 exodus requires these 109 and a half years to have been from the dry season of 842 B.C. to the rainy season of 733-732 B.C. This seems too late for Pekah's conspiracy told of in Isaiah 7. The 1443 exodus allows for this to have been a year earlier.

Now we can find out what possibility there really is that God first rained the manna on a Sunday morning. Presently available documentation favors a 1443 exodus rather than 1446 as the year of the exodus. The Egyptian day began at sunrise. If Exodus 12-13 and 16 rules out the day's beginning at sunrise, then the manna simply was not first rained on a Sunday. If that is the case, then the following account could not have occurred.

Probably on the morning of Thursday, April 19, Abib 14 began for the soon to be liberated Israelites. This could have been one morning earlier, but the uncertainty is of no important consequence. Between the two evenings on the 14th (Emphasized Bible Ex. 12:6), the Israelites slew the passover lambs.

Night set in on the 14th, and the Israelites were ready with the blood upon their doorposts, so that the destroying angel would pass over. The first-born of Egypt were slain at midnight on the 14th. Throughout the Old Testament, it would later be recorded repeatedly that the passover would be kept on the 14th. The Jews, however, would be remembered for eating the lamb on the commencement of the 15th sunset-to-sunset day. There would be confusion as to how to understand the expression "between the evenings." What if the sequence of events as understood by the Jews were correct, yet all of the events related to the passover lamb's being slain and eaten still originally occurred on the 14th?

Exodus 12:18 identifies the evening of the 14th as marking the beginning of the seven days (compare verse 19) when no leavened bread is to be eaten. What if the 15th did not begin until the following morning? It would mean that still on the 14th, Pharaoh rose up in the night (Ex. 12:30). Moses and Aaron were summoned still on the 14th, for sunrise had yet to occur (because according to Ex. 12:31, they were summoned by night). The Egyptians were urgent for the Israelites to leave in haste (12:33), and the Israelites had no time to leaven their dough (12:34). Any question that the command not to leaven their dough (12:18-29) would exist regardless of what calendar they were using, so Ex. 12:18-19 in light of verse 34 proves nothing either way.

Here is Numbers 33:3 quoted from the R.S.V.: "They set out from Rameses in the first month, on the fifteenth day of the first month; on the day after the passover the people of Israel went out triumphantly in the sight of all the Egyptians, (verse 4) while the Egyptians were burying all their first-born." Next from Exodus 12:40-42: The sojourning of the sons of Israel in which they sojourned in the land of Egypt was 430 years. "And at the end of 430 years, on that very day, all the hosts of the Lord went out from the land of Egypt. It was a night of watching by the Lord, to bring them out of the land of Egypt; so this same night is a night of watching kept by the Lord by all the people of Israel throughout their generations." The night of watching was Abib 15 according to Numbers 33:3 as compared with Exodus 12:40-42.

Here is where the Jewish view is a riddle. If the lambs were feasted upon as the 15th commenced, then the only way the Israelites could have left Egypt on the 15th would have been if Numbers 33:3 was referring to the daylight hours of Abib 15. If Abib 15 began at sunset, then it is reasonable to conclude that the night of watching began twelve hours after the Egyptians had begun to urgently insist that the Israelites leave the place. In this light, the church has reasonably taught that the Jews changed later on the custom of the eating of the passover lamb from the night commencing the 14th to the night commencing the 15th. This change was made in spite of the fact that even the returning exiles kept the passover on the 14th (Ezra 6:19). Undoubtedly, Jesus and his disciples last gathered shortly after the 14th had commenced. The analogy between the original slaying of the lamb between the evenings on the 14th (Ex. 12:6) and the breaking of Jesus's body (symbolized in the unleavened bread) would be the only reasonable conclusion.

What if the old-testament Jews were correct in viewing the keeping of the passover in terms of the slaying of the lamb between the evenings on the 14th? What if this slaying of the lamb historically was a type of the crucifixion? What if both the slaying and eating of the lamb were originally on the 14th, yet without the Jews totally misunderstanding the sequence of events?

Without the Egyptian lunar dating as part of the picture, a Sunday in 1443 B.C. would have been too early in that week for the first day of the manna. If the day began in the evening for God's people at the time of the exodus, and if the exodus was in 1443 B.C., then God did not first provide the manna on a Sunday. The evidence of 1 and 2 Kings as compared with Assyrian chronology favors the year 1443 as the year of the exodus. On this basis, if Exodus 12:6 and 16:8 demonstrates that the Israelite day began in the evening, then God did not first rain the manna on a Sunday. Now we need to understand what is meant by the expression "between the two evenings" as it was used in Exodus 12:6.

6. C. Between the Evenings

The Illustrated Bible Dictionary 1980 edition, Volume 3, Page 1157, Column 3, Item 5 is the source of information here. What is meant by the phrase "between the two evenings," as used in Exodus 12:6, 16:12, Leviticus 23:5, Numbers 9:3, 5, and 11? The Pharisees maintained that it was between 3 P.M. and sunset. The Samaritans and others maintained that it was between sunset and dark.

An intriguing comparison of Exodus 16:12 and Leviticus 23:5 displays the following evidence. "Between the two evenings shall ye eat flesh, and in the morning shall ye be filled with bread," (Exodus 16:12, Emphasized Bible). "In the first month on the fourteenth of the month, between the evenings is a passover unto Yahweh," (Lev. 23:5, Emphasized Bible). The period between the two evenings is obviously only a few hours (and not 24 hours) as Exodus 16:12 shows. This short period is specified as the time of Yahweh's passover in Leviticus 23:5. The full 24 hours is not specifically referred to in this passage but the period between the evenings is the time of the passover. Leviticus 23:32 does refer to evenings as separated by 24 hours, and Rotherham says "between the two evenings" in Ex. 16:12 and merely "between the evenings" in Lev. 23:5. One might use this as evidence that a 24-hour period is alluded to in Lev. 23:5, but specifics as to when to slay the lambs are more suitable to the term "between the evenings" as referring to only a few hours.

The remains of the passover were not to be left until morning (Exodus 12:10, Numbers 9:12). Leviticus 23:5 identifies the period between the evenings as the time of the passover. This means that the eating of the passover was done beyond the time period specifically associated with the passover. What if the time associated with the keeping of the passover was between the evenings as the 14th was coming to a close? The eating of it before the morning of the 15th would be done after the time referred to in Leviticus 23:5 and would be part of an event not necessarily associated with the keeping of the passover on the 14th.

On the other hand, the period between the two evenings could be at the beginning of the 14th. This is the logical conclusion if the day began at sunset and if Exodus 12:42 is referring to the flight from Egypt during the night of the 15th. On this basis, I know of no way of figuring that the Jewish interpretation of the Scriptures is the most likely one.

One uncertainty still remains. The expression "between the evenings" does not settle the matter. The period "between the two evenings" could either begin the 14th or it could end the 14th. If a sunset-to-sunset calendar was used at the time of the exodus, then it must have begun the 14th, and if the exodus was in 1443 B.C., God did not begin providing the manna on a Sunday.

6. D. The Ten Commandments and Pentecost

The Talmud is a weighty thing to read, because more than one opinion is expressed for so many matters. On one matter, all are agreed. "Remember this day," (Ex. 13:3) Moses said concerning the holy day of Abib 15. Indeed, it was talking about "this day" on which Moses spoke. Similarly, the words "Remember the sabbath day," as the commandments were being given (Ex. 20:8) were spoken on a weekly sabbath. That, in my own words, is how the rabbis reasoned. They (not the Bible) alledged that the ten commandments were first given on Pentecost

The Pharrisees have been keeping Pentecost year after year on the 6th day of the third lunar month, the month of Sivan. Leviticus 23:14-16 alongside Joshua 5:10-12 identifies the day after the weekly sabbath as the Pentecost. The rabbis could not agree as to whether the sabbath day on which the ten commandments were originally given was Sivan 6 or Sivan 7.

The scriptural argument used by the Jewish tradition to prove that the ten commandments were given on a sabbath is unsound. After all, there is a difference between "this day" on which the Israelites were told to remember the day they left Egypt and "the sabbath" that they were to remember according to the fourth commandment. "The day" that they were to remember did not have to be this very day on which the commandments were given.

The Pharrisees kept Pentecost ironously on Sivan 6 regardless as to which week day Sivan 6 fell on. They kept Pentecost on the wrong day, and their argument proving that the commandments were given on a sabbath was unsound. Who says that the ten commandments were given on Pentecost day? The only possible evidence which could even favor the conclusion would be if Pentecost just happened to fall on Sivan 6 the year of the exodus. Let's find out if that could have occurred.

Possible dates for Sivan 6 are these. In 1446 B.C. Sivan 6 could have occurred as follows: Friday May 15 (according to new-moon observation and if the manna first came on a Sunday), Sunday June 14 (if God first rained the manna on Monday and new moons were watched for), and Friday June 12 according to the modern Hebrew calendar, and a sabbath June 13 according to the most likely unknown modification. In 1443 B.C., it could have been as follows: I assume the first of Abib was after Julian February 15. Watching for new moons, if the manna first came on a Monday, it was a sabbath May 12 or Sunday May 13. Watching for new moons if the manna first came on Tuesday or Wednesday, it was Monday June 11. According to the modern Hebrew calendar it was Sunday June 10. Unknown modification may allow for a sabbath June 9. Egyptian lunar dating makes it Friday June 8 if the manna first came on a Sunday.

Exodus 24:4,15-16 may provide the key as to when the ten commandments were given. The passing of one night is mentioned in Ex. 24:4. This seems to refer to the night after God thundered the ten commandments. During the following daylight hours, the covenant was ratified, and Moses went up onto the cloud-covered mountain (24:15). For six days, the cloud covered the mountain, and then on the seventh day, God instructed Moses (Ex. 24:16). The reference to six days and a seventh has as its likeliest candidate the reference to God's beginning to instruct Moses on a sabbath or seventh day of the week. If the six days were counted inclusively, then Moses entered the cloud-cover on Sunday, and that was the same day the covenant was ratified. This would point to a sabbath as the day on which the ten commandments were given. Conceivably, the commandments were given on a Friday if the six days began after Moses went up on the Mountain or if the cloud covered it and Moses climbed it in the evening. In any case, the ten commandments were given on a Friday or more than likely a sabbath.

This entangled evidence suggests that the Jewish tradition concerning the sabbath is more reliable than the Jewish tradition concerning either Pentecost or Sivan 6 as the day on which the ten commandments were given. The Jewish tradition has to be questioned. After all, it not only insists that the commandments were given on a sabbath, Sivan 6 or less likely the 7th, but it also is agreed that the day began at sunset using a callendar of disputed month lengths. It was not the modern Hebrew callendar.

6. E. The Verdict of Numbers 10:11,33

A sunset-to-sunset callendar must have been used before the instructions of Leviticus 23:32 were put into effect or it was decreed in Lev. 23:32. The sabbath was being kept and no traveling would have been done on that day. The three-day journey of Numbers 10:11,33 occurred the month after the instructions of the Leviticus were given. This three-day journey was from the 20th to the 22nd of Ziv. ~~None~~ None of these three days fell on a sabbath. Let's examine all of the possibilities for Ziv 21. It could not have occurred within a day of the sabbath.

Ziv 21, 1445 B.C. occurred on one of the following days: New-moon watching calls for Tuesday April 19, Wednesday April 20, and Thursday May 19. The modern Hebrew callendar calls for Wednesday May 18. No unknown modification could have made the date as late as Friday May 20, so some form of the Hebrew callendar as well as lunar observation is possible.

Ziv 21, 1442 B.C. presents interesting problems. Lunar observation calls for these dates: After the March 26.19 conjunction is the uncertainty of Wednesday April 17 or Thursday April 18. The passover called for by these dates would have been March 12, over three weeks before the equinox. A leap-year month prior to Tishri would be necessary to being the feast of Tabernacles in line with the requirements of Exodus 23:16. Then there is Friday May 17; the week day rules that one out. A May 24.08 conjunction produces the uncertainty of a sabbath June 16 verses Sunday June 17, but both week days must be ruled out. The modern Hebrew callendar presents an intreaguing case calling for Wednesday May 15. The likeliest unknown modification would make it Thursday May 16. Lunar observation both in 1442 B.C. and (as we have earlier seen) 1403 B.C. would have required an early prestley new year with a month added before Tishri. Abraham would have been familiar with the practice of adding the extra month before the feast of Ba'U at the time of Trumpets day. Nevertheless, the only possible date for 1442 B.C. lunar observation needs the extra month to even begin Trumpets day to within 15 days of the equinox.

There is another curious factor to consider. According to the modern Hebrew callendar, Abib 1, 1442 B.C. fell on March 26. The new moon was not seen until sunset on the 27th if not a day later yet. A March 26.19 conjunction suggests that the Egyptian lunar month probably began on the morning of March 26. The Hebrew callendar would begin Abib 1 the preceeding evening. If the ten commandments were given on a sabbath in 1443 B.C., and if that was Sivan 6, why does no callendar allow for that day? Why does the Hebrew callendar oscillate between beginning its months at the time of the Egyptian lunar month's beginning and at the time of the new moon?

6. F. Comparisons of Callendars 1443-1442 B.C.

Month	Conjunction 1443 b.c.				Conjunction 1442 B.C.			
	Egyptian	Hebrew	New moon	Hebrew	Egyptian	Hebrew	New moon	Hebrew
Abib 1	Apr. 5.78	Apr. 6?	Apr. 7	Apr. 8	Mar. 26.19	Mar. 26	Mar. 26	Mar. 28?
Ziv 1	May 5.13	May 5	May 7	May 7?	Apr. 24.68	Apr. 24	Apr. 25	Apr. 27
Siv. 1	June 3.42	June 3	June 5	June 6	May 24.08	May 24	May 24	May 26?
Tam. 1	July 2.71	July 2	July 5	July 5	June 22.41	June 22	June 23	June 25
Ab 1	Aug. 1.03	Aug. 1	Aug. 3	Aug. 3?	July 21.42	July 21	July 22	July 24
Elul 1	Aug. 30.43	Aug. 30	Sept. 2	Sept. 2	Aug. 20.05	Aug. 20	Aug. 21	Aug. 22?
Tis. 1	Sept. 28.94	Sept. 29	Oct. 1	Oct. 1	Sept. 18.45	Sept. 18	Sept. 19	Sept. 21
Molad			Sept. 30, 2H434P				Sept. 19, 11H230P	

The above chart is a bit bias. The year 1442 B.C. is such an extreme case that it would take an example like that of A.D. 31 to show the true comparison.

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Month	A.D. 31			
	Conjunction	Egyptian	Hebrew	New Moon
Nis. 1	Apr. 9.99	Apr. 10	Apr. 12	Apr. 12
Iyar 1	May 9.59	May 9	May 12	May 12
Siv. 1	June 8.22	June 8	June 10	June 11
Tam. 1	July 7.86	July 8	July 10	July 10
Ab 1	Aug. 6.50	Aug. 6	Aug. 8	Aug. 9
Elul 1	Sept. 5.09	Sept. 5	Sept. 7	Sept. 7
Tis. 1	Oct. 4.64	Oct. 4	Oct. 6	Oct. 7
Molad			Oct. 4, 23H 941P.	

Even though year 31 isn't nearly the most extreme case, the fact remains that the Hebrew callendar tends to anticipate the new moon more than it precisely corresponds with it. It may have been standardized because the observation of the new moon was outlawed. ~~The~~ Nevertheless, if its origins were quite ancient, it remains a riddle as to which callendar was used when the Israelites entered Canaan. It furthermore remains a riddle as to whether the commandments were . . . sabbath and a transition from one callendar to another.

7. The Testimony of the Astronomical Evidence

How could it be concluded that God did not first rain the manna on a Sunday? The day would have to have begun at sunset at the time of the exodus. The exodus, as the historical evidence suggests, was in 1443 B.C. A slightly modified version of the Hebrew callendar could have existed from before the flood. Incredibly, a 1443 exodus might allow for the flood to have been in the fall of 2324 B.C. if not a year earlier. If the Hebrew callendar was used, sabbaths could have been marked by Noah as the times he first received instruction from God to enter the ark, the time the rains began to fall, and the times he released the birds. Evidence of the Hebrew callendar at the time of the flood is (alas) inconclusive. Furthermore, if the exodus was in 1443 B.C., then the fall of 2325 or the Spring of 2324 is most likely as the time the rains came.

A host of astronomical possibilities allow for God to have first rained the manna on a Sunday and for a sabbath passover to have been 40 years later. The possibilities are these: (1.) From new-moon observation 1446 B.C. to new-moon observation, 1406 B.C. (2.) From new moon observation 1446 B.C. to a Hebrew callendar with unknown modifications 1406 B.C. (3.) From modified Hebrew callendar 1446 B.C. to modified Hebrew callendar 1406 B.C. A study of Genesis 7-8 and Numbers 10:11,33 confirms this. However, on the observational callendar, the new year is a month early in 1446 and 1406 and perhaps two months early in 2328 B.C. The evidence of the Hebrew callendar is excellent for 2328 B.C., and the evidence for lunar observation is interesting for 2327-26 B.C.

Finally, the only callendar at the time of the exodus for which there is historical documentation is the Egyptian lunar callendar. The Israelites could have used it. God would have put an end to that some time between Ziv 16, 1443 B.C. and Abib 1, 1442 B.C. An investigation into the expression "between the evenings" proved inconclusive. The Jewish traditional view is made questionable by Exodus 12:42. Finally, the analogy of the ancient and modern passovers is insufficient to settle the question. Analogies should be subordinate to history not the other way around.

8. The Integrity of the Biblical Account

When Josephus recorded his account of the fall of Jerusalem, he couldn't help but write down the some total of years from Adam to Jerusalem's fall, from the flood to Jerusalem's fall, and from the exodus to Jerusalem's fall(Ant. 10:8:5). The only Biblical reference to this sort of chronology is found in 1 Kings 6:1. There is a reason for this. The book of kings was faithfully compiled by God-inspired Jewish scribes. God did not impart to them new revelation most likely, but He led them to include in the book of kings those accounts of the now lost ancient chronicles which He wanted included in the Bible. The book of Jubilees and the book of Mormon along with Josephus bear witness to the tendency of men to write out a dogmatic account of great chronologies which ~~span~~ span centuries and which are fictional. It may very well be that the ancient compilers of the book of kings simply did not know how many years it was from the time Solomon began to build the temple until the time that they ~~were~~ were compiling the inspired book.

The curious lack of understanding of the inspired Jewish scribes now takes us to the riddle of Exodus 16. The compilers of the Talmud knew no unanimous agreement as to whether God first rained the manna on a Sunday. We have seen that occasional lunar conditions allow for the possibility. We are stuck with the fact that the Talmudic compilers did not unanimously assume the use of the fixed Hebrew callendar. We have seen that the modern Hebrew callendar is not what it was at the time of the flood if our figures from the flood to the exodus are correct.

The Jews unanimously taught that the ten commandments were given on a sabbath, yet their proof is questionable. Still, while their proof is questionable, Exodus 24:4,15-16 shows that the Jews might inadvertently be correct. However, no clear callendar evidence for the year 1443 B.C. supports the view that the ten commandments were given on a sabbath. What this demonstrates is that the Jewish traditions are curiously detached from the Biblical account.

The prospects that the Egyptian callendar may figure into the picture intensifies the possibility that the Jews a thousand years later could hardly

Jewish tradition is too detached from the time of the exodus to be used as evidence to the contrary. Genesis 1 shows God's intention that the day should begin at sunset. Nevertheless, God revealed His intentions gradually to Moses and the congregation of Israel. Joshua had to urge the Israelites to put away the gods that their fathers served in Egypt (Josh. 24:14). "Between the two evenings" could refer to a time either at the beginning or at the end of the 14th day. If the day began at sunrise for the Israelites as they left Egypt, then between the two evenings would curiously be in the middle of the 14th day of the month. Year after year, the Jews and their Israelite counterparts may have slain the lambs without knowing why and faithful to the original sequence but with a changed calendar have eaten the meal after the 15th have begun at sunset. When the Jews finally returned to God and could only read of the exodus but were too detached to have a clear understanding of what originally happened, they could easily have read into the original account a sunset-to-sunset day. The age-old habits of the masses, however, could faithfully have preserved the memory of the sequence of that day centuries earlier when God had delivered them, and the Jews may be correct in terms of the sequence of the original account in alledging that the lamb should be eaten as the 15th has commenced.

The tendency is repeated first in the Jews, and later in Archbishop Ussher and others. They have with good reason read into the Biblical account the ways of thinking of their own time period. Here I have attempted to detail the possibilities of things which may have been unique to the time of the exodus in accounting for what happened. My personal conclusion is immaterial, and I have no regard for anyone's desire to emphasize it. The Bible only says so much as to what happened. Hopefully, one of the possibilities presented in this study represents what actually took place, and that the evidence can be viewed for its own sake and not to serve what anyone sees in advance as the most desirable conclusion.

7. The Judgment of Historians Against the Hebrew Callendar

Jewish tradition dates its callendar back to 3761 B.C. The fall of 3761 B.C. begins what is called "the world era." But how long has this "world era" been a part of Jewish thinking? "The world era came into general use only during the tenth or eleventh century," (Comprehensive Hebrew Callendar by Arthur Spier; New York, Behrman House, Inc., 1952; Page 218). "According to tradition quoted in the name of Hai Gaon (who died in 1038) the present Jewish callendar was introduced by the patriarch Hillel II in 670 era of the Seleucids, 4119 era of the creation, + 358-359 C.E. (Encyclopaedia Judaica Volume 5, Page 47.

"In Hasmonean and Herodean times, the Sadduces and Boethusians each had their own callendar," (Ibid Page 50). If anything else is unknown about the ~~Saddu~~ Sadduces, at least Nisan 1, A.D. 31 fell on the same day as it did on the Babylonian callendar. Greeks, Babylonians, and Arsacids knew of the 19-year cycle at that time (History of the Jewish People In the Age of Jesus Christ by Schurer; 1973 revision, Pages 589-590). The pharisees seem only to have been aware of the less accurate eight-year cycle, but when the Pharisees were in authority later, they kent their calculations secret (Jewish Encyclopaedia Volume 3, "Callendar, History of," Page 500). The precise methods of the Sadducees must have been secret as well. Their administration was disposed of when the temple was destroyed in A.D. 70 if not earlier. So, the knowledge in the hands of the Sadducees has been lost.

The history of the Jewish callendar is a history of the experience of the Pharisees of A.D. 70-359 as they gained in their understanding of the workings of a lunar callendar. The Canon of Rabban Gamaliel (of about A.D. 100) concludes that the average lunar cycle equals 29 days, 12 and 2/3 hours, and 73 parts. This calculation is the same as the 29 days, 12 hours, and 793 parts used on the modern callendar (Encyclopaedia Judaica Page 500). The Sadducees must have had knowledge of the fact as well. Trumpets day was prevented from falling on Wednesday and Fraiday by being postponed a day. It could still fall on Sunday

This was being practiced by around A.D. 300 (Ibid Page 50).

The Jewish records give sweeping testimony of witnesses sent out by the Sanhedron to watch for the first appearance of the new moon late in the afternoon on the twenty-ninth day of the month. They picture Moses as having supervised no fixed callendar and of having administered a sunset-to-sunset day.

The rules laid down by the Sadducees have been lost. The remaining Pharisees eventually were forced under persecution to fix a callendar. The fixed callendar which they carefully worked out serves as a useful tool in estimating when the lunar month began in ancient times. However, the present Jewish callendar which they developed was not the callendar of Moses, Ezekiel, and Paul.

8. The Dilema of the Astronomical Evidence

Numbers 10:11,33 and Joshua 5:10-12 present a challenging problem! They simply cannot readily be account for based upon any traditionally known new-moon callendar.

Moses and the people broke camp on the 20th day of the second month. The new moon which marked the beginning of that second month in 1442 B.C. appeared on Friday evening, Ax Julian April 26. Their three-day journey would have concluded on the 22nd of the month. If the Friday evening new moon put the first of the month on a sabbath, then the 22nd of the month was also a sabbath. The sabbath was a rest day(Ex. 23:12). Still, the historical evidence points quite positively to 1442 as the year of this event.

Joshua 5:10-12 requires that Abib 15 fall on a Sunday. But in 1403 B.C., the new moon which marked the beginning of Abib appeared Sunday evening. If Abib 1 occurred that following night and day, then Abib 1 was a Monday, as well as Abib 15. The new moon came a day later than the time necessary for Abib 15 to have fallen on Sunday.

The historical data and the astronomical data are at odds. If the modern Hebrew callendar had been used back then, it would account for the difficulty. However, the modern Hebrew callendar was not used back then.

9. A Pattern Emerges

The flood account, the journey from the wilderness of Sinai, the Passover after the Jordan crossing, and accounts of the destruction of the first temple show signs of a common characteristic!

Sabbaths may indeed be involved in the year Noah spent in the ark. Robert Young wrote of the repeated reference to "seven days," "It is worthy of remark how often this phrase occurs. It appears to show that the division of time by weeks and sabbaths was a common and well-understood thing," (Young's Concise Critical Bible Commentary Grand Rapids, Baker Bookhouse; 1977, Gen. 8:12).

Contrary to what the lunar evidence indicates, Ziv 22, 1442 B.C. could not have fallen on Saturday May 16. Contrary to similar evidence, Abib 1, 1403 B.C. did not begin on Monday April 15.

The following chart exposes the pattern of discrepancy between conclusions which have been drawn from the Bible or which do justice to the Bible account. and the week day demanded by the astronomical evidence.

Event in the Biblical account	An ideal week day	New moon callendric date
God commands Noah: Gen. 7:4 2-10-2324 B.C.	Saturday	Sunday, June 5
Rains begin: Gen. 7:11 2-17-2324 B.C.	Saturday	Sunday, June 12
Waters abate, ark rests: Gen. 8:3-4 or	Monday	Tuesday, Nov. 7
Mountains appear: Gen. 8:5 10-1-2323	Monday or Tuesday	Wednesday, Jan. 18
Leaving Sinai: Num. 10:11 2-20-1442	Wednesday	Thursday, May 16
Wave offering: Josh. 5:12 1-15-1403	Sunday	Monday April 29

The Genesis account presents a problem. It must be assumed that the seven days of Gen. 7:4 and 8:6-12 are counted excluding the day of the beginning event whereas Gen. 7:24 and the forty days of 8:6 are counted inclusively. By counting inclusively from sabbath to sabbath, Josephus referred to the period as eight days not seven (Ant. 7:14:7). Counting inclusively, 150 days from a sabbath end on a Monday, and forty days ending on a sabbath begin on a Tuesday.

In the above examples, the beginning of the month tends to be the day

before the new moon! Nebuchadnezzar's forces destroyed the temple on the 10th of Lous (Wars 6:4:5), Ab 10 (Jer. 52:12), Ab 9 according to the Talmud (Ta'anith 29A). The Talmud's credibility lies in its claim that this was on a Sunday. After all, the Babylonian Ab 9, 587 B.C. fell on Sunday July 29. So, the Talmud may be correctly following a new moon callendar while Josephus may be following a variation of it.

Why is there a one-day discrepancy in all of these examples. The new moons force the dating of Numbers 10:11,33 to be one day too late. The new moons are a day too late to account for Joshua 5:10-12. Josephus dates the destruction of the temple one day too late. New moon dates in the flood account for the second and the tenth month are one day too late for sabbaths to have occurred according to the theory of some.

That is not all. Were the ten commandments given on Pentecost? The Pharisees did not require Pentecost to be on Sunday. Instead, they counted fifty days inclusively from Nisan ~~15~~ 16. In 1443 B.C., this would have put Pentecost on a Monday, Sivan 6, June 11. What if the Jews are correct in saying that the ten commandments were given on Pentecost based upon a fragment of truth that they were given on Sivan 6? Remember, their unanimous agreement that the commandments were thundered on a Saturday is based upon slim evidence. The Pentecost connection with Sivan 6 again centers around a one-day discrepancy. In 1443 B.C., the lunar Sivan 6 fell on a Monday, but Pentecost was on a Sunday.

This one-day discrepancy disappears at the time of Christ. There's no lunar Nisan 14 on a Thursday close to the time that Jesus was crucified. It was a Friday in A.D. 30 and a Wednesday in A.D. 31. John 19:30-31 and Matthew 12:40 point to Wednesday as Nisan 14 anyway. So any conclusion drawn here concerning the callendar of Joshua's lifetime does not apply to New-Testament times.

What lunar callendar could have anticipated the new moon by one day? Could there be a traditional assumption which is incorrect?

10. A Key But Not Quite a Solution

The fall 1981 issue of Conservative Judaism includes an article entitled "The Counting of Day and Night" by Meir M. Ydit.

Some points in this article are either totally incorrect or they simply expose my ignorance. "'The Babylonians counted as one day the time from sunrise to sunrise," (Page 25). I have always assumed that the Babylonians used new moon observation and counted their days from sunset to sunset.

"That the worship of the Lord did not take place in the mysterious darkness of nocturnal obscurity no doubt had a very deep symbolic significance. It eliminated every possible association of the temple service with the worship of spirits and ghosts . . . who according to the then prevailing popular belief ruled at night and in the darkness. The service of the Lord, however, ought to be performed just to the contrary only in the bright daylight as a demonstration that the faith of Israel ~~ix~~ and the divine worship of Israel was pure and clean from all sorts of superstitions. This service thus started only from the moment of sunrise," (Pages 27-28). To my way of thinking, if the people ~~were~~ worshiped unrestrained by superstitions, then night would not have prevented worship at odd hours. Perhaps, worship during the day was pure of superstitions peculiar to the night, but ~~ix~~ restricting worship to the daylight hours could only cure the effect and not the cause. By raising this point, the bias of the writer could be clouding the issue.

When the outgoing month continued into the ~~ix~~ day following the check for the new moon, only the day after the morrow "became automatically the first day of the next month," (Page 28). The examples I have given show that the first of the new month could not totally follow the new moon.

The article includes a host of inconclusive scriptures to bolster the argument that the day began at sunrise and not at sunset. These includes (1.) Scriptures requiring that an offering or a dead body could not remain until morning (Ex. 12:10, 23:18, 34:25, Deut. 16:4).

"No doubt prior to creation there was neither night nor day but only darkness over the surface of the deep (Gen. 1:2). With the process of creation which started with the divine fiat 'Let there be light,' the first daylight began and lasted until the arrival of evening. As the darkness too ran its course the entire day ended and a new day began. This is what the Bible really expresses," (Page 25). To readers of Genesis 1 going back to antiquity, the Bible has in that passage by itself expressed no such thing. Even if that were its originally-intended meaning, it does not clearly express the conclusion asserted here that the day began at sunrise.

"Why does the Torah call the onset of the twenty-four hour fast of Yom Kippur the 9th day? The rabbis tried to solve this problem by explaining that one is bound to start fasting during the daytime, i.e. approximately fifty minutes before the onset of night," (Page 26). There is no reason why the fact that the first evening marks the transition between the 9th and the 10th doesn't account for the wording of Lev. 23:32.

As vigorously as I have exposed the bias and the vague scriptures incorrectly alledged as clear in this article, I also vigorously warn of the tendency to view the scriptures through the eyes of later writers.

"The Jews were entrusted with the oracles of God," (Romans 3:2). "This paper intends therefore in no way whatsoever to dispairage our present customs--the start of sabbaths and festivals at sunset--but we should know that this time-honored custom which we regard and accept as obligatory evalved gradually and is the result of historic changes," this article concludes (Page 29).

If the day began at sunset, then the peace offering written of in Lev. 7:15 had to be an evening offering. After all, it was to be eaten on the day it was offered, and was not to be at all left until morning. A sunrise to sunrise day might in fact underlie this command.

Compare the time sequence of Luke 23:54-56 with that of Genesis 1:3-5. Luke 23:54-56 mentions two sabbaths. According to those who say that Jesus was

crucified on a Friday, the concluding reference to the sabbath rest is more or less a reflection of events earlier in the account. At the beginning of the sabbath the women saw the tomb,, secondly, they prepared spices obviously after the sabbath, and thirdly, they indeed rested on the sabbath before they prepared the spices. Of course Matthew 12:40 makes this view of Luke 23:54-56 worth objecting to. Two sabbaths were involved, so that Luke is writing in chronological sequence. First the women saw the tomb when the sabbath was beginning. After this first sabbath, they prepared spices. Then they rested on another sabbath.

What if we were to analyze Genesis 1:3-5 in the same way we have analyzed Luke 23:54-56? Traditional Jewish reasoning has been according to the same pattern followed by most Bible scholars concerning Luke 23:54-56. The concluding sentence reflects the same time period as that of earlier events. First, God said, "Let there be light." God then responded to the light. After this response by God, it is pointed out that there was evening (back-tracking to the very beginning of the day) and there was morning, one day. That is the traditional reasoning concerning Genesis 1:3-5. It has the same pattern to it as the traditional and incorrect view of Luke 23:54-56. Yet this passage in Genesis has been repeatedly used to prove that the day began at sunset. Maybe it did, but the fact that Genesis 1:3-5 can be taken more than one way is taken for granted.

It is strange that the statement "there was evening and there was morning," is not written concerning the sabbath (Genesis 2:1-3). The phrase is stated concerning each of the six work days (Genesis 1:5,8,13,19,23,31). This declaration might have been more meaningful or less meaningful depending upon whether the day originally began at sunrise or sunset. Obviously the day began at sunset when Jesus walked the earth. What if God left some administrative flexibility by allowing that six-times recorded statement not to apply to the sabbath? What if the day began at sunrise?

Meir Ydit suggested that the Levites originally used the first late-afternoon appearance of the new moon as the sign that the new month was to begin. He further suggests that the day began the following sunrise if the new moon was made official. His solution does not fit the astronomical and historical evidence. But he may have found the key. What if the standard practice of the Israelites at the time of the conquest was to greet the new moon using a sunrise to sunrise day?

11. Ex A Theory Which Fits the Data Presented

Most if not all months had a thirtieth day. At about the time Moses died, the 30th of the month occurred on Friday March 15, 1403 B.C. The priest looked for the new moon that afternoon and did not see it. If he had seen it, he would have declared that Friday as the first of the new month retroactive to Friday morning. Instead, he automatically designated the following dawn as the first of the month.

Saturday morning March 16 marked the beginning of the new month and the new moon predictably appeared the following evening.

On the thirtieth of this ~~new~~ next month, Sunday April 14, the priest looked for the new moon and saw it this time. He declared this as the first of Abib retroactive to the preceding dawn. So, Sunday morning marked the beginning of Abib and the new moon appeared that evening.

The evening of Abib 14 was late Saturday afternoon, April 27. The Israelites kept the passover (Joshua 5:10). The days of unleavened bread began with the eating of the passover meal. This was still the 14th of Abib because the night belonged to the preceding day, so this was not the night to be much observed. It only became that when the sunset-to-sunset day was later made a universal norm. Abib 15 began at dawn and the wave offering was carried out by the priest. The manna ceased and they ate of the harvest of the land (Joshua 5:12).

The dawn-to-dawn day was familiar to the Israelites from the days of their sojourning in Egypt. Both the Egyptian day and the Egyptian lunar observance was tied in with the sunrise.

If anything suggests that God immediately ordered a sunset to sunset day, it is in Exodus 12:13,34. (1.) The feast of unleavened bread began and ended in the evening. (2.) "The people took their dough before it was leavened." The fact that the leavening of the dough is even mentioned in verse 34 may hint that the days of unleavened bread had not yet started. This would suggest that the passover lamb was eaten 24 hours before all leaven was to be totally disposed of. Scrupulous Jewish scholars ought to be consulted on this matter.

What if God first rained the manna on a Sunday and then the ten commandments were given on a Pentecost? That very thing happened if the Hebrew priest followed the Egyptian practice of dawn-lunar observance for the last time two weeks after the exodus. After that, the day still began at sunrise, but the Levites were commanded to watch for the moon at sunset. If the Talmud ~~is correct, they entered~~ Talmud is correct, they entered the wilderness of Sinai on the day of the new moon's appearance six weeks after the exodus. Of course, the Talmud pictures the daylight hours of the first of the month as following the new moon, whereas I am asking whether it did not actually precede it.

Every month had a thirtieth day. On that thirtieth day, if the new moon was seen, then that thirtieth day was immediately declared as the first of the new month retroactive to the dawn. If not, the thirtieth became a 24-hour day and the new month automatically began the following morning.

One loose end remains? What happened when a holy day was to fall on the first of the month? What did they do to prepare for Trumpets day? Genesis 7:24 and 8:3-4 may provide a key to this problem. The flood might have begun on Saturday June 11, 2324 B.C. The month began on a Thursday with the new moon having been visible on Thursday late afternoon May 26. From the seventeenth day of that month we count inclusively 150 days to a Monday which Genesis 8:3-4 identifies as the

seventeenth day of the seventh month. If Monday was the ~~xx~~ Seventeenth day, then the first day was a Saturday. This day was the feast of Ba'U on various ancient Mesopotamian callendars. All of the most ancient callendars allowed only for a Fall new year until Sargon initiated a Spring new year^{*}. After that callendars had double new years like that of the Hebrews. In this case, the new moon was visible Friday evening. The first of the month followed the new moon. It was a religious festival.

If the flood occurred in 2324 B.C., and if sabbaths were involved, then the seventh lunar month only had 28 days. It began Saturday morning October 22.

The all-important tenth month (Gen. 8:5) began on a Tuesday so that counting inclusively, a sabbath occurred forty days later. January 17, 2323 B.C. fell on a Tuesday, but the new moon was not visible until that evening. At the end of forty days on Saturday February 25, Noah sent out the raven (Gen. 8:6-7).

Then he sent out the dove. The dove returned ~~xx~~ (Gen. 8:8-9). Verse 10 makes it unclear as to whether this next seven days ~~xx~~ is the week immediately following the time Noah sent forth the raven or whether this is another week later. Assuming that Noah sent the dove initially the same day that he sent the raven forth, two subsequent seven days are identified (Gen. 8:10,12).

The new moon alluded to in Genesis 8:13 was first seen either on a Sunday or ^(LESS 21K) Monday as evening drew near. Verse 14 alludes to a month marked by a new moon which was seen on a ~~Tuesday~~ ^{Monday} evening late on May 15, 2323 B.C. If ~~Tuesday~~ ^{Monday} marked the first of that month, then Noah left the ark on a ~~Sunday~~ ^{SATURDAY}, one solar year ~~to the~~ ^{LESS A} day after the great flood had begun ~~axx~~ on June 11.

Sabbaths in the flood account, manna first rained on Sunday, commandments thundered on Sivan 6 Pentecost, Israelites leaving the wilderness of Sinai without being rushed by a coming sabbath, a sabbath passover after crossing the Jordan, the discrepancy over the date of Jerusalem's first destruction, and the Jewish passover at the close of Nisan 14 all can be resolved if a dawn-to-dawn day was eventually replaced by an evening-to-evening day in the exile or shortly after.

* ENCY. OF RELIGION & ETHICS BY HASTINGS VOL. 3 P. 73

The fast of Atonement day began in the evening. Does this prove that the day began at sunset? Perhaps it was intended to, and I am being needlessly inquisitive. If the fast had begun at sunrise, its intent would easily have been violated by people who ate a final meal before daybreak. We repeatedly experience the tendency of the brethren to eat shortly before the onset of the fast and then to eat shortly after the fast day has ended. Still, we always assemble before God well over twelve hours after the fast has begun. Regardless as to when the day would have begun, a sunset-to-sunset fast is far more advantageous than a dawn-to-dawn fast.

As far as I know presently, if any one dogmatically insists that the day simply could not have begun at any time other than in the evening, then such an individual can reasonably use Exodus 12:18-19, 34 as evidence. The feast of unleavened bread has always begun and ended in the evening. If the feast began in the evening, then why not the common day as well? It should be a matter of faith that the fixed Hebrew calendar known today has roots in instructions given to Moses.

Why is there such limited evidence for the antiquity of the Hebrew calendar? "God has seen to that, . . . so critics would have their chance to invent their own calendars and think themselves wiser than God for having invented a calendar more accurate than what God committed to Israel as ~~his~~ His own. . . . By faith we know that the leadership in the Jewish courts did preserve the rules of the calendar God committed to them," (The April 1981 Good News "The Hebrew Calendar, Authoritative For God's Church Today"). After all, God entrusted His oracles and His calendar to the same people. Those people have preserved the letter of His oracles so well, that they have been saved from cultural distinction by rallying around those oracles. It makes sense that some element of faith on this matter should apart from historical proof testify to the existence of the calendar of God's people in some substantial form to the early years of this age.

12. Gains Made Through This Study

Too often, questions are raised for the purpose of defying God's government. Questions have been raised here for the purpose of shedding further light upon God's roll in history.

Too often, studies of Bible chronology have been based upon insufficient evidence as to what the Bible record says. This study has exposed the environment in which the flood, the Exodus, and the Jordan crossing took place in order to understand more thoroughly what happened.

Robert Young, the Companion-Bible compilers and Mr. Dean Blackwell have asked, "Was Noah aware of the Sabbath?" The Hebrew Union College study and callendar evidence presented in this study hints that he may have.

Does the account of the Israelites' first weekly sabbath contain callendric evidence of its accuracy? An omer of manna was saved as proof of the occasion! Here evidence has been presented in order to study the matter in an informed way.

Were the ten commandments given on Pentecost day? Perhaps, if Sivan 6 fell on a Sunday seven weeks after the exodus. The evidence compiled here does not rule it out.

What can be learned about the time the Israelites first broke ~~xxxxx~~ camp in the wilderness of Sinai? This study has brought out the evidence related to this account in Numbers 10.

What results from the fact that the Israelites kept a sabbath passover after crossing the Jordan? What happens when this account in Joshua 5:10-12 is woven in with other evidence? This study has gathered evidence which can serve as a tool for investigating the matter.

The new moons are consistently too late by one day for every one of the following prospects. Presumably, the lunar month began in the evening that the new moon was first officially observed. (1.) A vare of sabbaths occured the year the flood may have occured. (2.) S series of sabbaths occured the following winter when Noah sent forth the birds. (3.) The Ten commandments may have been

thundered on a Sivan 6 Pentecost, a Sunday. (4.) (4.) From Ziv 20 to the 22nd, a year after the Exodus, the Israelites journeyed but found a resting place in time to avoid traveling on a sabbath. (5.) The Israelites kept the passover on the weekly sabbath following the Jordan crossing forty years after the exodus. (6.) As Josephus alleges, the first temple was destroyed on Ab 10 which the Talmud says was on a Sunday. The fact that the new moons are the same number of days too late in every case is significant.

Perhaps all of these events took place in years in which the new moons took place a day earlier so that everything works out. Still, what all of this shows is that 321 years occurred between the flood and the exodus. Thirteen lunar months and five days after the exodus, the Israelites left the Sinai encampment. Forty years to the day after the exodus, the manna ceased. Then 856 years and nearly four months after the exodus, the first temple was destroyed by the Babylonians. The B.C. dates are not important here. After all, the new moons are always a day too late to make the B.C. years uncertain. But they are repeatedly late by one day. True, the evidence related to the destruction of the temple or the giving of the ten commandments may make these examples only co-incidental. Still, Numbers 10:11,33 and Joshua 5:10-12 simply cannot be ignored. Perhaps even the seven-day periods in the flood account are debatable beyond proving anything.

The theory which I laid out here in part 11 attempts to account for how the new moon could have fallen after the beginning of the first month time after time. Any bold statement contending that the day then normally began at sunrise is uncalled for. The evidence which instigated that theory is far more important than the theory itself.

Historians have too often treated Bible chronology as the patch-work job of Jewish priests. In this paper, I have laid out the chronological details in order to display what they are literally telling us. More ancient evidence is available today than Archbishop Ussher was able to use when he addressed some of these matters

Ussher was part of a parade of those who were forced to apply then current definitions for what the Bible was allegedly saying. This study has attempted to overcome that difficulty. After all, the Jewish writer of the book of Jubilees viewed the customs of Adam, Noah, and others through the eyes of customs current in his day (about 130 B.C.). Later Jews were continuing to accumulate arguments to prove that the "Halakhah is of divine origin and dates back to Moses on mount Sinai," (Conservative Judaism Fall 1981, Page 29).

Present day church members have always been encouraged by the fact that God changes not (Mal. 3:6, Heb. 13:8). From Moses onward, obviously God's written Word has preserved God's law enforced by Moses, Josiah, Ezra, Jesus and His apostles. Why? "It is all a question of government, whether God is capable of ruling," wrote Dr. Hoeh in the April 1981 Good News already quoted.

In light of this consistency in God's way of doing things, no speculation that the day ever began at sunrise is profitable. Did God specifically intend for the common day to begin at sunset? The Spring festivals and the day of Atonement each began and ended around evening time. Any hint that the tenth of Tishri (before it was called Tishri by God's people) ever began twelve hours after the fast cannot be investigated without ignoring Paul's instruction in 1 Timothy 1:3-4. "Charge certain persons not to teach any different doctrine, nor to occupy themselves with myths and endless genealogies which promote speculations rather than the divine training that is in faith."

How can speculation about something which arouses people's curiosity be supplanted? A determined extraction of historical and astronomical information is necessary in matters concerning the events related to the exodus. This ~~xx~~ study has called attention to that evidence.

When the sanctity of the evening-to-evening feast days indicate that all days began at sunset, what about the command not to teach different doctrines? As M. M. Ydit earlier quoted pointed out, "This paper intends . . . in no way whatsoever to dispairage our present customs." "By faith we know that

the leadership in the Jewish courts did preserve the rules of the callendar God committed to them," (G.N. April 1981). This study has raised questions without allowing for any excuse for defying God's government.

Where ever God is firm as to physical details, He sets an example for us to be likewise firm on physical details. Where ever God has laid down flexible rules with very strict long-term objectives, then we are being taught to look at the big picture; we may still be very scrupulous over short-term details. The callendar now used by the church has a number of details in it which Noah did not follow if he kept sabbaths when the seven-day periods of Genesis 7 and 8 began and ended. If Noah did use to the letter our present callendar, then those seven-day periods ~~xx~~ were not begun and ended by weekly sabbaths. Either Noah did not use the present God-ordained callendar or there is no hard evidence that Noah kept sabbaths every seven days. It has to be either one or the other.

We keep sabbaths and we use the callendar which God has authorized. There is no proof that Noah did likewise. He may have, but what Noah may have done is a matter of unnecessary speculation. This study has broken new ground in fighting against speculation.

This study has attempted to extract evidence as to whether or not the Bible is accurate on certain points. Is this opposed to the divine training which is in faith (1 Timothy 1:4)? Secular-historical studies often attack faith in God's written Word. This study may be inconclusive. However, it points to evidence which may serve to demonstrate the Bible's accuracy and cannot be used to disprove the Bible's accuracy. Paganism confuses faith with ignorant trust. Secularism uses education to attack the faithfulness of God's Word. This study has attempted to expose more fully the faithfulness of that written Word.

My study aught to encourage faithful study and not make others feel guilty for not grasping the kind of details presented here. As Paul told the Corinthian church, "Just as xxxxx the body the body is one and has many members, . . . so it is with Christ," (1 Cor. 12:12). We could not complement one another if we were all alike (1 Cor. 14:19). This study will aid other studies.

November 3 1982 5

Dear Garth Wardrop,

The sacrificial day, as any work day, is traditional from morning to evening (the day time); but a natural day is properly from sunset to sunset.

There is nothing that I know of that would preclude the following: In 1443 the 14th of Abib occurred on Thursday, April 19 - the very day it was expected to be on ~~the~~ according to the normal calculation of the conjunction from 3760 B.C. In other words, the pre-Hebrew calendar was continued with Abib = month. In 1443 it is untrue that Abib 14 could have been Wednesday. But if Abib in 1443 was 29 days by observation then Igar ~~is~~ 15 would have been Sabbath though it is not absolutely stated that they gathered 6 days. All that is said is they gathered double on the 6th day (of the week).

In 1403 the 14th of Abib was Sabbath April 27, and Abib 1 was Sunday April 14th by the fixed calendar.

I do not use involved astronomical tables, but simple calculation of the molad (conjunction) that always used for the fixed Hebrew calendar today. Israel was unified in the wilderness as to location, they might have observed the individual month by first crescent. But certainly with Israel on both sides of the Jordan in 1403 a fixed calendar then & thereafter was to be expected. If crescent was later by a day than required, it is not that is not of fixed used conjunction, not a day begins.