



TABLE J

JEWISH CALENDAR BASED ON POSTULATE I\*  
(Jerusalem Civil Time)  
1844

	Tebet	Jan	Adar	Mar	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov	
	23	15	23	14	23	12	23	10	23	7	23	5	
	24	16	24	15	24	13	24	11	24	8	24	6	
	25	17	25	16	25	14	25	12	25	9	25	7	
	26	18	26	17	26	15	26	13	26	10	26	8	
Translatio	27	19-20-39	27	18	27	16	27	14	27	11 IV	27	9 V	NEW
Periods	28	20	28	19-2-38	28	17-11-14	28	15-16-44	28	12-15-37	28	10-11-57	MOONS
	29	21	29	20	29	18	29	16	29	13	29	11	
S 1	22		30	21	30	19	30	17	30	14	30	12	
H 2	23		V 1	22	I 1	20	T 1	18	E 1	15	H 1	13	
E 3	24		E 2	23	Y 2	21	A 2	19	L 2	16	E 2	14	
B 4	25		A 3	24	A 3	22	M 3	20	U 3	17	S 3	15	
A 5	26		D 4	25	R 4	23	M 4	21	L 4	18	V 4	16	
T 6	27		A 5	26		24	U 5	22		19	A 5	17	
	7	28	R 6	27		25	Z 6	23		20	H 6	18	
	8	29		28		26		24		21		19	
	9	30		29		27		25		22		20	
	10	31		30		28		26		23		21	
	11	1 F	10	31	10	29	10	27	10	24	10	22	
	12	2 E	11	1	11	30	11	28	11	25	11	23	
	13	3 B	12	2	12	31	12	29-16-54	12	26-15-34	12	24	FULL
	14	4-11-3	13	3-9-18	13	1-1-8	13	30	13	27	13	25-2-3	MOONS
	15	5	14	4	14	2	14	31	14	28	14	26	
	16	6	15	5 A	15	3 J	15	1 A	15	29	15	27	
	17	7	16	6 P	16	4 U	16	2 U	16	30	16	28	
	18	8	17	7 R	17	5 N	17	3 G	17	1 O	17	29	
	19	9	18	8 I	18	6 E	18	4 U	18	2 C	18	30	
	20	10	19	9 L	19	7	19	5 S	19	3 T	19	1 D	
	21	11	20	10	20	8	20	6 T	20	4 O	20	2 E	
	22	12	21	11	21	9	21	7	21	5 B	21	3 C	
	23	13	22	12	22	10	22	8	22	6 E	22	4 E	
	24	14	23	13	23	11	23	9	23	7 R	23	5 M	
	25	15	24	14	24	12	24	10	24	8	24	6 B	
	26	16	25	15	25	13	25	11	25	9	25	7 E	
	27	17	26	16 I	26	14	26	12	26	10	26	8 R	NEW
	28	18-11-6	27	17-18-53	27	15 II	27	13 III	27	11	27	9-22-33	MOONS
	29	19	28	18	28	16-2-47	28	14-4-52	28	12-1-45	28	10	
	30	20	29	19	29	17	29	15	29	13	29	11	
A 1	21		N 1	20	S 1	18	A 1	16	T 1	14	30	12	
D 2	22		I 2	21	I 2	19	B 2	17	I 2	15	K 1	13	
A 3	23		S 3	22	V 3	20		18	S 3	16	I 2	14	
R 4	24		A 4	23	A 4	21		19	R 4	17	S 3	15	
	5	25	N 5	24	N 5	22		20	I 5	18	L 4	16	
	6	26		25		23		21		19	E 5	17	
	7	27		26		24		22		20	U 6	18	
	8	28		27		25		23		21		19	
	9	29		28		26		24		22		20	
	10	1 M	10	29	10	27	10	25	10	23	9	21	
	11	2 A	11	30	11	28	11	26	11	24	10	22	
	12	3 R	12	1	12	29	12	27	12	25	11	23	FULL
	13	4-23-23	13	2-17-37	13	30-8-37	13	28-2-54	13	26-7-25	12	24-21-49	MOONS
Paschal Moon	14	5	14	3	14	1	14	29	14	27	13	25	
	15	6	15	4 M	15	2 J	15	30	15	28	14	26	
	16	7	16	5 A	16	3 U	16	31	16	29	15	27	
	17	8	17	6 Y	17	4 L	17	1 S	17	30	16	28	
	18	9	18	7	18	5 Y	18	2 E	18	31	17	29	
	19	10	19	8	19	6	19	3 P	19	1 N	18	30	
	20	11	20	9	20	7	20	4 T	20	2 O	19	31	
	21	12	21	10	21	8	21	5	21	3 V	20	1 J	1845
	22	13	22	11	22	9	22	6	22	4 E	21	2 A	

\* POSTULATE I places the paschal full moon always on Nisan 13, Jerusalem Time.

The position of the moon seems to be such as to demand the arrangement of the Jewish calendar as given above. The full moon of May 2 is placed on Nisan 13. This is the true paschal moon for 1844. The conjunctions marked I, II, III, IV, and V bear important relation to the October conjunction, which they would appear to make immovable.



JEWISH CALENDAR BASED ON POSTULATE I  
(Jerusalem Civil Time)  
1844

	Tebet	Jan	Adar	Mar	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov
	23	15	23	14	23	12	23	10	23	7	23	5
	24	16	24	15	24	13	24	11	24	8	24	6
	25	17	25	16	25	14	25	12	25	9	25	7
	26	18	26	17	26	15	26	13	26	10	26	8
Translation	27	19-20	27	18	27	16	27	14	27	11	27	9
Periods	28	20	28	19-2	28	17-11	28	15-16	28	12-15	28	10-11
1 <sup>d</sup> 10 <sup>h</sup> 46 <sup>m</sup>	29	21	29	20	29	18	29	16	29	13	29	11
	S 1	22	30	21	30	19	30	17	30	14	30	12
	H 2	23	V 1	22	I 1	20	T 1	18	E 1	15	H 1	13
	E 3	24	E 2	23	Y 2	21	A 2	19	L 2	16	E 2	14
	B 4	25	A 3	24	A 3	22	M 3	20	U 3	17	S 3	15
	A 5	26	D 4	25	R 4	23	M 4	21	L 4	18	V 4	16
	T 6	27	A 5	26	5	24	U 5	22	5	19	A 5	17
	7	28	R 6	27	6	25	Z 6	23	6	20	N 6	18
	8	29	7	28	7	26	7	24	7	21	7	19
	9	30	8	29	8	27	8	25	8	22	8	20
	10	31	9	30	9	28	9	26	9	23	9	21
	11	1 F	10	31	10	29	10	27	10	24	10	22
	12	2 E	11	1	11	30	11	28	11	25	11	23
	13	3 B	12	2	12	31	12	29-16	12	26-15	12	24
	14	4-11	13	3-9-18	13	1-1-8	13	30	13	27	13	25-2-3
	15	5	14	4	14	2	14	31	14	28	14	26
	16	6	15	5 A	15	3 J	15	1 A	15	29	15	27
	17	7	16	6 P	16	4 U	16	2 U	16	30	16	28
	18	8	17	7 R	17	5 N	17	3 G	17	1 O	17	29
	19	9	18	8 I	18	6 E	18	4	18	2 C	18	30
	20	10	19	9 L	19	7	19	5	19	3 T	19	1 D
	21	11	20	10	20	8	20	6	20	4	20	2 E
	22	12	21	11	21	9	21	7	21	5	21	3 C
	23	13	22	12	22	10	22	8	22	6	22	4
	24	14	23	13	23	11	23	9	23	7	23	5
	25	15	24	14	24	12	24	10	24	8	24	6
	26	16	25	15	25	13	25	11	25	9	25	7
	27	17	26	16	26	14	26	12	26	10	26	8
	28	18-11-6	27	17-18	27	15	27	13	27	11	27	9-22-33
	29	19	28	18	28	16-2-4	28	14-4	28	12-1	28	10
2-6-45	30	20	29	19	29	17-7-05	29	15-6-43	29	13-5-3	29	11
	A 1	21	N 1	20	S 1	18 3	A 1	16 4	T 1	14	30	12
	D 2	22	I 2	21	I 2	19	B 2	17	I 2	15	K 1	13
	A 3	23	S 3	22	V 3	20	3	18	S 3	16	I 2	14
	R 4	24	A 4	23	A 4	21	4	19	R 4	17	S 3	15
	5	25	N 5	24	N 5	22	5	20	I 5	18	L 4	16
	6	26	6	25	6	23	6	21	6	19	E 5	17
	7	27	7	26	7	24	7	22	7	20	U 6	18
	8	28	8	27	8	25	8	23	8	21	7	19
	9	29	9	28	9	26	9	24	9	22	8	20
	10	1 M	10	29	10	27	10	25	10	23	9	21
	11	2 A	11	30	11	28	11	26	11	24	10	22
	12	3 R	12	1	12	29	12	27	12	25	11	23
	13	4-23	13	2-17	13	30-8-37	13	28-2-54	13	26-7-25	12	24-21
Paschal Moon	14	5	14	3	14	1	14	29	14	27	13	25
	15	6	15	4 M	15	2 J	15	30	15	28	14	26
	16	7	16	5 A	16	3 U	16	31	16	29	15	27
	17	8	17	6 Y	17	4 L	17	1 S	17	30	16	28
	18	9	18	7	18	5 Y	18	2 E	18	31	17	29
	19	10	19	8	19	6	19	3 P	19	1 N	18	30
	20	11	20	9	20	7	20	4 T	20	2 O	19	31
	21	12	21	10	21	8	21	5	21	3 V	20	1 J
	22	13	22	11	22	9	22	6	22	4	21	2 A

\* POSTULATE I places the paschal moon always on Nisan 13, Jerusalem civil time.

The two conjunctions in the blue circles Nos. 1 and 2 fix immovable the Tisri translation in the red circle No 5. The conjunctions in red circles Nos. 3 and 4 mark two important translation periods, which end at the second sunset on the last day of Iyar and Tamuz respectively. The position of the moon seem to be such as to demand this arrangement of the Jewish calendar. The full moon of May 2 is placed on Nisan 13--the true paschal moon for 1844.

Grace Amadon

FESTIVAL DAY ON TWO MERIDIANS IN 1844  
(Jerusalem and Boston)  
Civil Time

Table J (Jerusalem meridian) and Table K (Boston meridian) show that the same calendar relation between these two meridians existed in Nisan as in Tisri.

TISRİ 1 IN JERUSALEM--

Translation =	Conjunction	Oct. 12	1 <sup>h</sup> 45 <sup>m</sup>	
1 <sup>d</sup> 15 <sup>n</sup> 47 <sup>m</sup>	Phasis	Oct. 13		ss = 5:32; ms = 6:25 -- end of "one
	Tisri 1	Oct. 14		day and seventeen hours."

TISRİ 1 IN BOSTON --

Translation =	Conjunction	Oct. 11	18 <sup>h</sup> 40 <sup>m</sup>	
22 <sup>n</sup> 46 <sup>m</sup>	Phasis	Oct. 12		ss = 5:26
	Tisri 1	Oct. 13		

In Tisri in 1844, there is one day's difference between the calendar of Jerusalem and that of Boston. The two meridians, however, have the same length of year.

Wierts desires to place the Tisri phasis on the evening of October 12 in Jerusalem so as to agree with Boston. This cannot be done, for it would make the phasis in Jerusalem occur on the same day as conjunction. The moon's position forbids this, because, although in perigee, yet she is 14 degrees in south declination, and 3 degrees south of the sun, and she could not possibly be seen in Jerusalem on the same day as conjunction. When such an event happens, all factors must be favorable, and in this instance, two are unfavorable toward a rapid phasis.

On the other hand, Wierts now says that he agrees with the Millerites on the position of the "one day and seventeen hours," but that his cycle can begin the month of Tisri, before the moon's phasis, on the evening of October 12. In this he follows the modern Jewish calendar, which, contrary to the Mosaic rule, sometimes begins the month before the phasis. But, if one adopts the computation of the Jewish calendar, the "postponements" should be included too.

NISAN 1 IN JERUSALEM --

Translation	Conjunction	Apr. 17	16 <sup>h</sup> 55 <sup>m</sup>	
2 <sup>d</sup> 5 <sup>n</sup> 36 <sup>m</sup>		Apr. 18		
	Phasis	Apr. 19		ss = 6:29
	Nisan 1	Apr. 20		Moon in apogee 20° North Declination 2° North Latitude

NISAN 1 IN BOSTON --

Translation --	Conjunction	Apr. 17	11 <sup>h</sup> 48 <sup>m</sup>	
1 <sup>d</sup> 6 <sup>n</sup> 53 <sup>m</sup>	Phasis	Apr. 18		ss = 6:41
	Nisan 1	Apr. 19		

In Nisan, the same as in Tisri, there is a calendar day's difference between the meridians of Boston and Jerusalem. If one should ask why the phasis in Jerusalem could not occur on April 18, a day earlier, and thus agree with Boston, the answer is this:

The placing of the Nisan phasis on April 18 in Jerusalem, instead of April 19, is first of all forbidden by the position of the moon, which is in apogee; and, secondly, this change would cause the whole Jewish <sup>fixed</sup> year period in 1844 to occur one day earlier, making it necessary that the phasis of the moon at the end of Iyar, Tammuz, and Elul take place on the very day of conjunction. In each case the moon's position was such as to make this impossible.

In conclusion it should be observed that the lunar year should be laid out for three successive years, in order that the strategic points may harmonize with Nisan 1.

and therefore too slow to offer a first appearance within 24 hours after conjunction;





ERRATA IN W-----: TABLES

1. In the TABLES styled "true," there are 57 full moon and new moon dates taken from the British ephemeris, as Greenwich mean noon, and presented as Greenwich Civil Time, or from midnight to midnight. They are all 12 hours too early.
2. The year 1842-43 is made embolismic, placing the month Nisan wholly in May, in the time of wheat harvest in Palestine. The spring full moon of 1843 was on April 13, a perfectly good position for the paschal moon. To place the paschal moon a month later is out of harmony with the Mosaic law, and ~~denies~~ <sup>controversy</sup> the correctness of the Adventist reckoning, which made the <sup>slipping of the</sup> year 1844 embolismic.
3. In these same TABLES, the 10th day of the seventh month is given as October 21/22 in Greenwich, when it should be October 22/23, the same as for Jerusalem, between which meridians are only 2 hours 21 minutes. The same mistake is made in reference to the 1st day of Tisri in Greenwich, which should be October 13/14 instead of October 12/13.
4. In the Table called the 213th Cycle, the column marked "Paschal Full Moons" has only two correct dates for the paschal full moon, the years 38 and 39. The other dates vary by one and two days from the true <sup>astronomical</sup> full moon of the passover. The embolism also is misplaced, throwing away an efficient argument against the moon date, April 3, in 33 A.D.
5. In the 213th Cycle, all the so-called paschal moons are placed on Nisan 14 as the passover day.. According to the Mosaic law the passover ceremony was placed on Nisan 14. It is a matter to prove on what day of Nisan the paschal full moon should occur. In this TABLE this is taken for granted without any proof.
6. In the TABLE presenting the 308th Cycle, Nisan 14 is made to fall in a different way--it is made to coincide with the true astronomical spring <sup>full</sup> moons of the British ephemeris Mean Noon. In the years 1836 and 1844 the moon dates are not correct. It is also a matter to be proved that the astronomical spring full moons always fall on Nisan 14. In this TABLE it is not proved.
7. One noticeable error in the TABLE of the 308th Cycle is made in changing the Gregorian dates to Julian time. The days of the week are also changed. This has never been done before.
8. The embolism in this cycle is the same as in the 213th cycle. It denies the principle involved which the Adventists discovered in applying the barley-harvest regulation to the year 1844, thereby making it embolismic. If that year had not been a leap year, according to the teachings of Moses, the Millerites would have chosen the month of September as the "seventh month."
9. In this TABLE the change from Gregorian time to Julian in order to find March moons, and to their corresponding years apply an embolismic rule which could not fit the common calendar in America in 1844 is illusive. This method of intercalation also tampers with the standard principles of chronology by making the month Veadar 30 days long, instead of its usual length of 29 days.
10. If the TABLE of the 308th Cycle were corrected according to accepted principles in reference to the Jewish year, and the mistakes in addition were rectified, about fifty changes would have to made in its figures.



WAS THE YEAR 1844 AN EMBOLISMIC YEAR ?

A proposed embolismic Jewish year--1842-1843--as indicated in the TABLE representing the 308th 19-year cycle, is based upon the Julian calendar of the 19th century, to which spring full moon dates of the years 1834 to 1853 were changed by adding 12 days. The dates chosen were thus transferred from the Gregorian calendar of the 19th century to the Julian calendar of the 19th century. An attempt was then made to make the years showing March full moons embolismic by adding "30 days" for the month Veadar. If the "seventh month movement" had originated in a land where the Julian calendar was in use, then there might be some reason for changing the dates of the British ephemeris to "old style" in order to apply an embolismic rule for intercalation. But in both America and Jerusalem in 1844 the official calendar was Gregorian, and naturally the Millerites adapted their rules for the Mosaic year to this kind of time. Furthermore, there are only <sup>a little over</sup> two days difference between the Gregorian calendar of the 19th century and Julian time in the first century.<sup>1</sup> These two days, if subtracted from the paschal moon dates of 1844 and the adjacent years under discussion would make no difference at all in the application of any method of intercalation usually employed. Hence the same rule could be used for both America and Jerusalem, in harmony with the Adventist reckoning, without changing their calendar over to Julian time.

The list of full moons given in the so-called 308th 19-year cycle has no March moons. With the exception of two--<sup>in</sup> 1848 and 1851--this is a series of true paschal full moons just as it stands. Frequently tables are presented in connection with the Jewish passover that contain a mixture of equinoctial moons and April moons. The March moons are by some chronologers cast out as impossible because of the very fact that barley cannot ripen in Palestine during the March rains. In such tables, the presence of March moons, that is, equinoctial full moons, would point out the true paschal moon as coming a moon later, in April, or around the 1st of May, as the case might be. But in the TABLES here under ~~criticism~~, the full moons given are all true paschal moons with the exception of two, and need no correction. Consequently some other rule than the "March rule" for intercalation must be employed, in order to point out which moon is embolismic.

*as contended* If the year 1842-1843 were made a leap year in Jewish time, the month of Nisan would come wholly in May at the time of wheat harvest in Judea, thus throwing the passover wholly out of its proper season. The month of Tisri would also come largely in November, causing the Day of Atonement to occur too late, *for an month.*

The Millerites discovered that the <sup>year</sup> 1844 was a ~~true~~ embolismic year. They found this out by comparing the common Jewish calendar with the Mosaic law, which specified ripe barley at the passover time. They chose the full moon nearest to the season of ripe barley, as it occurs in Palestine, according to the Gregorian calendar, and to it added the number of days which intervene between Passover and the 1st day of Tisri, and arrived at the day October 13, Boston Civil Time. It was a simple method, one which did not violate known rules of chronology, and it worked.

<sup>1</sup>"The Gregorian calendar coincides with the Julian calendar during the period 200 A.D. to 300 A.D. That is to say, 10 days were taken off for the years A.D. 1100, 1000, 900, 700, 600, 500, 300, so that (in adjusting the dates of the first century found in the Gregorian style to the Julian style, two days must be subtracted for the years 200 and 100 A.D."--General Sir Charles Warren, K.C.B., F.R.S. "Dates on which Paschal Full Moons Occur." Quarterly Statement Pales. Ex. Fund, April, 1900. Page 158.

\* This article omitted the years 1300, 1400, and 1500.

Note: To be exact, there are about 13 hours' difference between the Gregorian reckoning of the 19th century, and Gregorian dates in the 1st century. According to Schram, the Julian day numbers of Julian and Gregorian Time coincide in the year 201 A.D. This would make a difference of about 2 days and 13 hours between the Gregorian calendar of the 19th century and Julian time in the 1st.



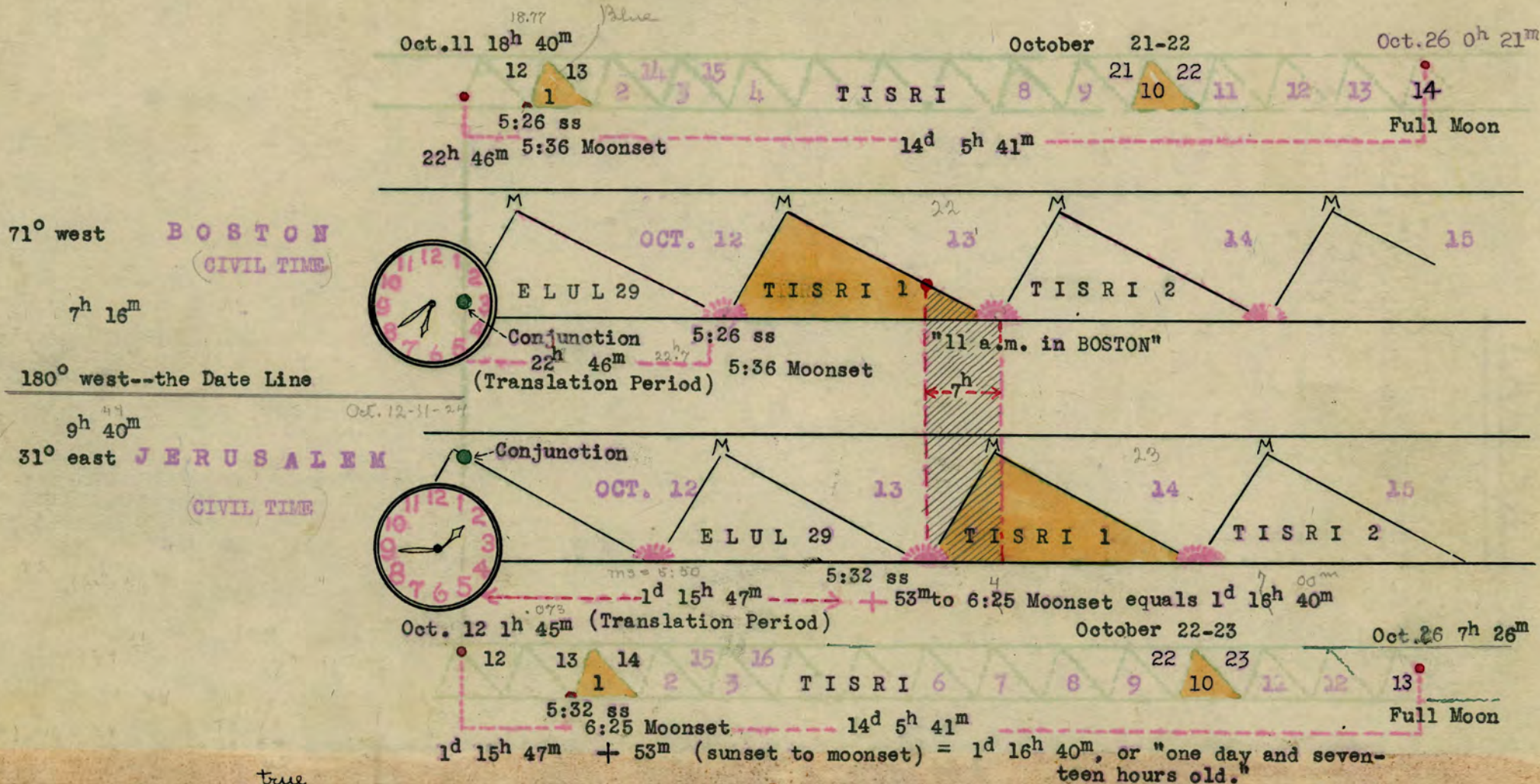
TISRI 1 ON TWO MERIDIANS

BOSTON AND JERUSALEM (Civil Time)

CIVIL TIME

1844

(Millerite Reckoning)



In 1844, the first day of Tisri came to America at sunset on October 12. The first sunset after the October conjunction marked the moon's phasis, because, 30 days later, the November phasis could be clearly seen on November 11. Tisri 1 really coincided with October 12/13, but in the calendar, it would appear simply as October 13. At the International Date Line, the civil date of Tisri 1 changed to October 14. As the day continued westward, the distance between conjunction and phasis kept widening until, at Jerusalem, after seventeen hours, Tisri 1 began one sunset later than in New England, or on the evening of October 13. In Judaea, this true Tisri 1 would have corresponded to October 13/14, but on the calendar, to October 14. After 24 hours, Tisri 1 ended in America, and was followed by the next day, Tisri 2/October 14. On the Clock Chart, we see in Jerusalem the latter part of a festival day that began in America, crossed the Date Line westward, and changed its civil date, the day in Jerusalem having seven hours in common with the one in America.



Part V, Sec. F, p. 49

# LUNAR TRANSLATION FOR TISRI I, 1844

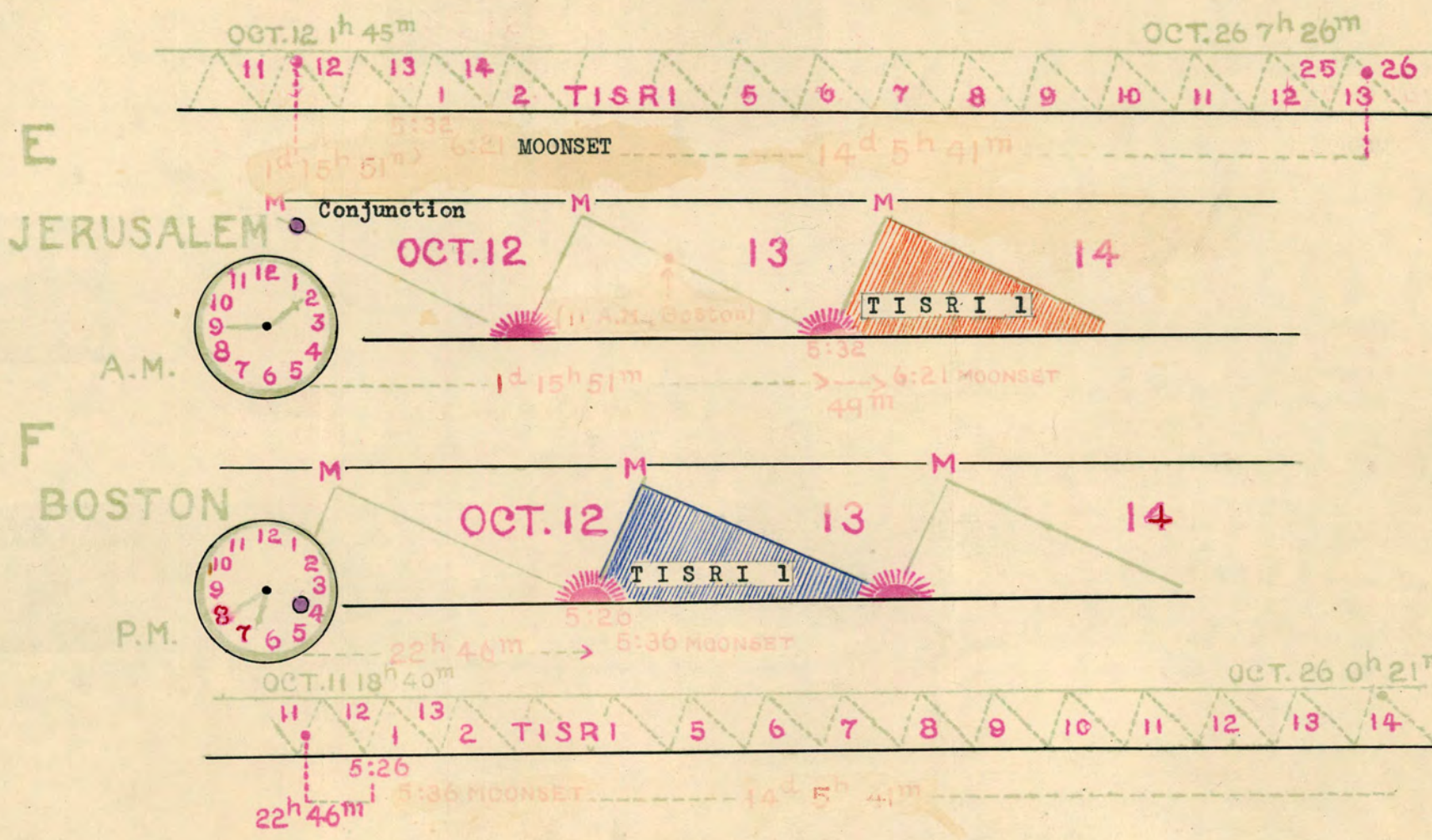


Diagram E and F



# LUNAR TRANSLATION FOR TISRI I, 1844

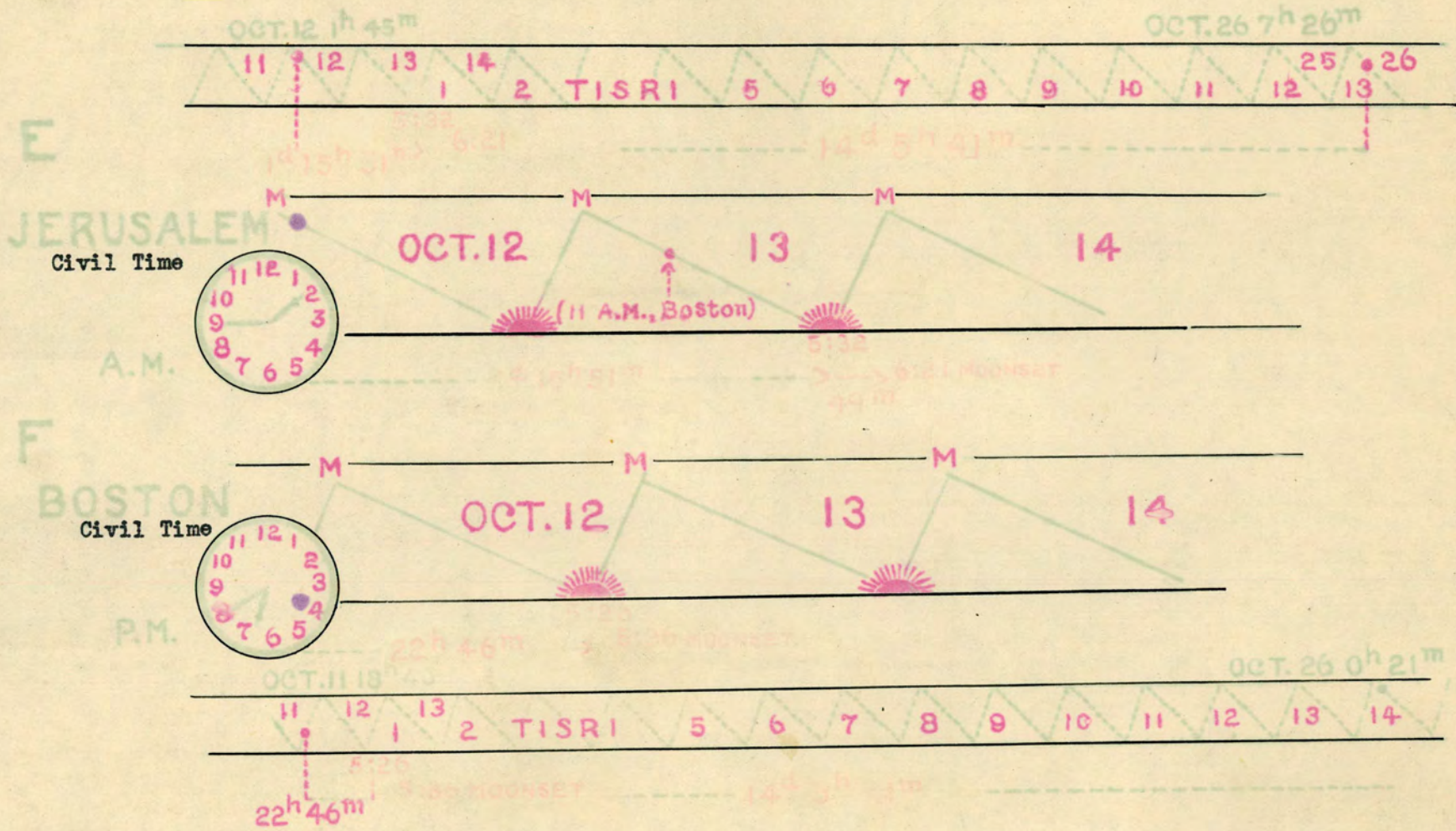




TABLE L

Variation in Year's Length  
East & West

NINETEEN-YEAR CYCLE 1838 to 1857  
(Years reckoned from paschal full moon to full moon)

Year	F.M.	Full Moon	Green. G.M.T.	Jerus. J.C.T.	Boston B.C.T.	Leap Year
1 1838 - 1839 equals	Apr. 9	Apr. 28-7-24 equals	384 days	383 days	384 days	1
2 1839 - 1840 "	Apr. 28	Apr. 16-7-55 "	354 "	354 "	354 "	
3 1840 - 1841 "	Apr. 16	May 5-2-5 "	384 "	384 "	384 "	3
4 1841 - 1842 "	May 5	Apr. 24-11-27 "	354 "	355 "	354 "	
5 1842 - 1843 "	Apr. 24	Apr. 14-2-29 "	355 "	354 "	355 "	
6 1843 - 1844 "	Apr. 14	May 2-3-16 "	384 "	384 "	384 "	6
7 1844 - 1845 "	May 2	Apr. 21-19-12 "	354 "	355 "	355 "	
8 1845 - 1846 "	Apr. 21	Apr. 11-5-54 "	355 "	354 "	354 "	
9 1846 - 1847 "	Apr. 11	Apr. 30-1-25 "	384 "	384 "	384 "	9
10 1847 - 1848 "	Apr. 30	Apr. 18-2-31 "	354 "	354 "	354 "	
11 1848 - 1849 "	Apr. 18	May 6-19-6 "	383 "	384 "	384 "	11
12 1849 - 1850 "	May 6	Apr. 25-23-20 "	354 "	354 "	354 "	
13 1850 - 1851 "	Apr. 25	Apr. 15-10-35 "	355 "	355 "	354 "	
14 1851 - 1852 "	Apr. 15	May 3-10-22 "	384 "	384 "	384 "	14
15 1852 - 1853 "	May 3	Apr. 23-8-11 "	355 "	354 "	355 "	
16 1853 - 1854 "	Apr. 23	Apr. 12-17-56 "	354 "	355 "	355 "	
17 1854 - 1855 "	Apr. 12	May 1-16-8 "	384 "	384 "	383 "	17
18 1855 - 1856 "	May 1	Apr. 19-21-13 "	354 "	354 "	355 "	
19 1856 - 1857 "	Apr. 19	Apr. 8-21-28 "	354 "	354 "	354 "	
			6939 "	6939 "	6940 "	

PASCHAL FULL MOONS  
(In red)

1838 Mar. 10 Apr. 9 May 9	1842 Mar. 26 Apr. 24 May 23	1846 Mar. 12 Apr. 11 May 10	1850 Mar. 27 Apr. 25 May 25	1854 Mar. 14 Apr. 12 May 12
1839 Mar. 29 Apr. 28 May 27	1843 Mar. 15 Apr. 14 May 13	1847 Mar. 31 Apr. 30 May 29	1851 Mar. 17 Apr. 15 May 14	1855 Mar. 3 Apr. 2 May 1
1840 Mar. 17 Apr. 16 May 15	1844 Apr. 2 May 2 May 31	1848 Mar. 19 Apr. 18 May 17	1852 Mar. 5 Apr. 4 May 3	1856 Mar. 21 Apr. 19 May 19
1841 Mar. 7 Apr. 5 May 5	1845 Mar. 23 Apr. 21 May 21	1849 Mar. 8 Apr. 7 May 6	1853 Mar. 24 Apr. 23 May 22	1857 Mar. 10 Apr. 8 May 8

The variation in the length of the year in the table given above is based on Jerusalem Civil Time--2<sup>h</sup> 21<sup>m</sup> east of Greenwich--and Boston Civil Time--4<sup>h</sup> 44<sup>m</sup> west of Greenwich. The full moon dates were taken from the British Ephemeris (mean noon).

JEWISH SACRED YEAR (April 19, 1844 to April 9, 1845)

Year = 355 days

1 8 4 4			1 8 4 5						
V 1--21 M	12--30	22-- 9	M 3--19	14--28	24-- 7	A 5--16	15--26	25-- 4 R	6--16
E 2--22 A	13-- 1 M	23--10	U 4--20	15--29	25-- 8	N 6--17	16--27	26-- 5 U	7--17
A 3--23 R	14-- 2.44	24--11	Z 5--21	16--30	26-- 9	7--18	17--28	27-- 6.57	8--18
D 4--24 C	15-- 3 Y	25--12	6--22	17--31	27--10	8--19	18--29	28-- 7 R	9--19
A 5--25 H	16-- 4	26--13	7--23	18-- 1 S	28--11.77	9--20	19--30	29-- 8 Y	10--20
R 6--26	17-- 5	27--14	8--24	19-- 2 E	29--12	10--21	20--31	S 1-- 9	11--21
7--27	18-- 6	28--15.82	9--25	20-- 3 P	T 1--13	11--22	21-- 1 J	H 2--10	12--22
8--28	19-- 7	29--16	10--26	21-- 4 T	I 2--14	12--23	22-- 2 A	E 3--11	13--23.65 F. Moon
9--29	20-- 8	S 1--17	11--27	22-- 5 E	S 3--15	13--24.79	23-- 3 N	B 4--12	14--24
10--30	21-- 9	I 2--18	12--28	23-- 6 M	R 4--16	14--25	24-- 4 U	A 5--13	15--25
11--31	22--10	V 3--19	13--29.41	24-- 7 B	I 5--17	15--26	25-- 5 A	T 6--14	16--26
12-- 1 A	23--11	A 4--20	14--30	25-- 8 E	6--18	16--27	26-- 6 R	7--15	17--27
13-- 2 P	24--12	N 5--21	15--31	26-- 9 R	7--19	17--28	27-- 7 Y	8--16	18--28
14-- 3 R	25--13	6--22	16-- 1 A	27--10	8--20	18--29	28-- 8.10	9--17	19--29
15-- 4 I	26--14	7--23	17-- 2 U	28--11	9--21	19--30	29-- 9	10--18	20--30
16-- 5 L	27--15	8--24	18-- 3 G	29--12.35	10--22	20-- 1 D	30--10	11--19	21--31
17-- 6	28--16	9--25	19-- 4 U	30--13	11--23	21-- 2 E	T 1--11	12--20	22-- 1 A
18-- 7	29--17.17	10--26	20-- 5 S	E 1--14	12--24	22-- 3 C	E 2--12	13--21	23-- 2 P
19-- 8	30--18	11--27	21-- 6 T	L 2--15	13--25	23-- 4 E	B 3--13	14--22.08	24-- 3 R
20-- 9	I 1--19	12--28	22-- 7	U 3--16	14--26.01	24-- 5 M	E 4--14	15--23	25-- 4 I
21--10	Y 2--20	13--29	23-- 8	L 4--17	15--27	25-- 6 B	T 5--15	16--24	26-- 5 L
22--11	A 3--21	14--30.06	24-- 9	5--18	16--28	26-- 7 E	6--16	17--25	27-- 6.62 Conjunction
23--12	R 4--22	15-- 1 J	25--10	6--19	17--29	27-- 8 R	7--17	18--26	28-- 7
24--13	5--23	16-- 2 U	26--11	7--20	18--30	28-- 9.64	8--18	19--27	29-- 8+
25--14	6--24	17-- 3 L	27--12	8--21	19--31	29--10	9--19	20--28	N 1-- 9.02+
26--15	7--25	18-- 4 Y	28--13.91	9--22	20-- 1 N	30--11	10--20	21-- 1 M	I 2--10
27--16	8--26	19-- 5	29--14	10--23	21-- 2 O	K 1--12	11--21	22-- 2 A	S 3--11
28--17.49	9--27	20-- 6	A 1--15	11--24	22-- 3 V	I 2--13	12--22	23-- 3 R	A 4--12
29--18	10--28	21-- 7	B 2--16	12--25	23-- 4 E	S 3--14	13--23.40	24-- 4 C	N 5--13
N 1--19	11--29	22-- 8	3--17	13--26.35	24-- 5 M	L 4--15	14--24	25-- 5 H	6--14
I 2--20	12--30	23-- 9	4--18	14--27	25-- 6 B	E 5--16	15--25	26-- 6	7--15
S 3--21	13--31.75	24--10	5--19	15--28	26-- 7 E	U 6--17	16--26	27-- 7	8--16
A 4--22	14-- 1 J	25--11	6--20	16--29	27-- 8 R	7--18	17--27	28-- 8.08	9--17
N 5--23	15-- 2 U	26--12	7--21	17--30	28-- 9	8--19	18--28	29-- 9	10--18
6--24	16-- 3 N	27--13	8--22	18-- 1 O	29--10.20	9--20	19--29	30--10	11--19
7--25	17-- 4 E	28--14	9--23	19-- 2 C	30--11	10--21	20--30	A 1--11	12--20
8--26	18-- 5	29--15.40	10--24	20-- 3 T	H 1--12	11--22	21--31	D 2--12	13--21
9--27	19-- 6	30--16	11--25	21-- 4 O	E 2--13	12--23	22-- 1 F	A 3--13	14--22.10 F. Moon
10--28	20-- 7	T 1--17	12--26	22-- 5 B	S 3--14	13--24.61	23-- 2 E	R 4--14	15--23
11--29	21-- 8	A 2--18	13--27.82	23-- 6 E	V 4--15	14--25	24-- 3 B	5--15	16--24

M

R



in the nineteen-year cycle--TABLE L--the embolismic years run as indicated in the column under Leap Year. The numbering 1-3-6-9-11-14-17 would change to 3-6-8-11-14-17-19 if the cycle should begin with the fourth line down; or to 2-5-8-10-13-16-19 if the cycle should begin with the second line, and so on. From this it may be rightly observed that a nineteen-year cycle may begin anywhere, and that its numbered formula changes to fit the position of the cycle. These various formulas, therefore, are in reality all the same if the same relationship is kept as pointed out by the astronomical moons. A more significant formula may be obtained--one based on the relation of the common years to the leap years. In the cycle here given, if we call the leap year "1" and the common year "2," the formula would run as follows from the years 1838 to 1857:

1212212212122122122

The next cycle would run on in the same relation, and so on to infinity. In whatever year the cycle should be made to start, the same order of common years and leap years would have to continue on. If for instance, the first year of the cycle should begin with the fourth year of the series above, then the formula would read--

2212212122122122121

It is necessary to run through at least two cycles in order to determine the position of the embolismic years, but their relation to the common years never changes. This fact is important in laying out the Jewish year. It is the framework needed in tying together Jewish time with civil time.

In the construction of the Hebrew calendar the following factors are necessary and important:

1. The length of the lunar year, which in the cycles here given, is figured according to the time between the Mosaic paschal full moons as given in a Standard alammao. The same length can be obtained by using the astronomical new moons.
2. The true astronomical relation between the common year and the embolismic year.
3. The length of the Jewish months as given in chronology and history, which allows a fixed period between Passover and Atonement, and 29 days to Veadar and 30 to Adar in an embolismic year.

The variable number of days in Hesvan and Kisleu is determined by the length of the year, as from paschal moon to paschal moon, and by the position of the leap year. If a luni-solar year is constructed on the basis of the rules given above, the paschal full moon will always occur on Nisan 13, Jerusalem civil time.

The paschal moon dates, as for instance, in 1849 and 1857 (Compare Table L), are determined by the embolism. This required a leap year in 1849, but not in 1857, although, in the latter year, the dates might so indicate. Scaliger's statement in reference to the passover limits in the first century is a good lead, because based on the nineteen-year cycles of Dionysius and the Jews. But every declaration of history needs also the astronomical witness.

(Runs weeks later than 1st century dates?)

LENGTH OF LUNAR YEAR ON VARIOUS MERIDIANS

(Reckoned from paschal full moon to paschal full moon)

19-Year Cycle	Jew. Year	P.F.M. Mean Moon	P.F.M. Mean Moon	G.M.T.*	J.C.T.**	B.C.T.***
1	1838-1839	May 9 4 <sup>h</sup> 57 <sup>m</sup>	to Apr. 28 7 <sup>h</sup> 24 <sup>m</sup>	= 354 days	x 354 days	354 days
2	1839-1840	Apr. 28	" Apr. 16 7 55	= 354 "	x 354 "	354 "
3	1840-1841	Apr. 16 9	" May 5 2 5	= 384 "	384 "	384 "
4	1841-1842	May 5	" Apr. 24 11 27	= 354 "	355 "	354 "
5	1842-1843	Apr. 24	" Apr. 14 2 29	= 355 "	354 "	355 "
6	1843-1844	Apr. 14 12	" May 2 3 16	= 384 "	384 "	384 "
7	1844-1845	May 2	" Apr. 21 19 12	= 354 "	355 "	355 "
8	1845-1846	Apr. 21	" Apr. 11 5 54	= 355 "	x 354 355	354 "
9	1846-1847	Apr. 11 15	" Apr. 30 1 25	= 384 "	384 383	384 "
10	1847-1848	Apr. 30	" Apr. 18 2 31	= 354 "	354 "	354 "
11	1848-1849	Apr. 18 17	" May 6 19 6	= 383 "	384 "	384 "
12	1849-1850	May 6	" Apr. 25 23 20	= 354 "	354 "	354 "
13	1850-1851	Apr. 25	" Apr. 15 10 35	= 355 "	355 "	354 "
14	1851-1852	Apr. 15 1	" May 3 10 22	= 384 "	384 "	384 "
15	1852-1853	May 3	" Apr. 23 3 11	= 355 "	354 "	355 "
16	1853-1854	Apr. 23	" Apr. 12 17 56	= 354 "	355 "	355 "
17	1854-1855	Apr. 12 4	" May 1 16 3	= 384 "	384 "	383 "
18	1855-1856	May 1	" Apr. 19 21 13	= 354 "	354 "	355 "
19	1856-1857	Apr. 19 6	" Apr. 8 21 28	= 354 "	354 "	354 "
1	1857-1858	Apr. 8	" Apr. 27 14 55	= 384 "	384 "	383 "
2	1858-1859	Apr. 27	" Apr. 16 21 5	= 354 "	354 "	355 "
3	1859-1860	Apr. 16 9	" May 4 19 1	= 384 "	384 "	384 "
4	1860-1861	May 4	" Apr. 24 10 23	= 355 "	355 "	354 "
5	1861-1862	Apr. 24	" Apr. 14 2 57	= 355 "	354 "	355 "
6	1862-1863	Apr. 14 12	" May 3 2 51	= 384 "	384 "	384 "
7	1863-1864	May 3	" Apr. 21 13 18	= 354 "	355 "	354 "
8	1864-1865	Apr. 21	" Apr. 10 16 27	= 354 "	354 "	354 "
9	1865-1866	Apr. 10 15	" Apr. 29 9 23	= 384 "	383 "	384 "
10	1866-1867	Apr. 29	" Apr. 18 11 6	= 354 "	355 "	354 "
11	1867-1868	Apr. 18 17	" May 6 6 36	= 384 "	383 "	384 "
12	1868-1869	May 6	" Apr. 25 18 21	= 354 "	355 "	355 "
13	1869-1870	Apr. 25	" Apr. 15 10 26	= 355 "	355 "	354 "
14	1870-1871	Apr. 15 1	" May 4 10 59	= 384 "	384 "	384 "
15	1871-1872	May 4	" Apr. 23 1 37	= 355 "	354 "	355 "
16	1872-1873	Apr. 23	" Apr. 12 9 51	= 354 "	355 "	354 "
17	1873-1874	Apr. 12 4	" May 1 4 9	= 384 "	383 "	384 "
18	1874-1875	May 1	" Apr. 20 4 30	= 354 "	354 "	354 "
19	1875-1876	Apr. 20 6	" Apr. 8 7 38	= 354 "	354 "	354 "

\* Greenwich Mean Noon  
 \*\* Jerusalem Civil Time  
 \*\*\* Boston Civil Time

To get J.C.T. add 14<sup>h</sup> 21<sup>m</sup> to paschal moon dates.  
 To get B.C.T. subtract 7<sup>h</sup> 5<sup>m</sup> from the J.C.T. dates. or add 7<sup>h</sup> 16<sup>m</sup> to G.M.T.

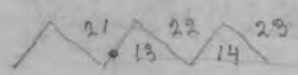
The year 1838-39 should not be embolismic!

G.M.T. J.C.T. B.C.T.  
 6939 days 6939 d 6940 d

- 1 = 1832-33
- 4 = 1835-36
- 6 = 1837-38
- 9 = 1840-41
- 12 = 1843-44
- 15 = 1846-47
- 17 = 1848-49

Werts = 1-4-7-9-12-15-18

= 1-4-6-9-12-15-17 = G.E.A.



354 = Alternate 29, 30 etc.  
 355 = 30-30-30  
 384 = Hes 29 + Kis 30 + I Adar 30  
 383 = Hes 29 + Kis 29 + II Adar 29

Embolismic is in the end year (spring)

1	1832-1833	Apr. 14 16 <sup>h</sup> 0 <sup>m</sup>	to May 3 12 <sup>h</sup> 46 <sup>m</sup>	= 384 "	384 "	384 "
2	1833-1834	May 3	" Apr. 23 2 35	= 355 "	354 "	355 "
3	1834-1835	Apr. 23	" Apr. 12 19 16	= 354 "	355 "	355 "
4	1835-1836	Apr. 12	" Apr. 30 19 57	= 384 "	384 "	384 "
5	1836-1837	Apr. 30	" Apr. 20 8 39	= 355 "	354 "	354 "
6	1837-1838	Apr. 20	" Apr. 9 14 6	= 354 "	355 "	354 "
(6)	1837-1838	Apr. 20	to May 9-4-57	384 "	384 "	384 "



LENGTH OF LUNAR YEAR ON VARIOUS MERIDIANS  
(Reckoned from paschal full moon to paschal full moon)

19-Year Cycle	Jew. Year	Paschal Full Moon	Paschal Full Moon	* G.M.T.	** J.C.T.	*** B.C.T.	Embolismic Years		
1	1838-1839	Apr. 9 14 <sup>h</sup> 6 <sup>m</sup>	to Apr. 28 7 <sup>h</sup> 24 <sup>m</sup>	= 384 days	384 days	384 days	1		
2	1839-1840	Apr. 28	" Apr. 16 7 55	= 354 "	354 "	354 "			
3	1840-1841	Apr. 16	" May 5 2 5	= 384 "	384 "	384 "	3		
4	1841-1842	May 5	" Apr. 24 11 27	= 354 "	355 "	354 "			
5	1842-1843	Apr. 24	" Apr. 14 2 29	= 355 "	354 "	355 "			
6	1843-1844	Apr. 14	" May 2 3 16	= 384 "	384 "	384 "	6	4	
7	1844-1845	May 2	" Apr. 21 19 12	= 354 "	355 "	355 "			
8	1845-1846	Apr. 21	" Apr. 11 5 54	= 355 "	354 "	354 "			
9	1846-1847	Apr. 11	" Apr. 30 1 25	= 384 "	384 "	384 "	9	7	
10	1847-1848	Apr. 30	" Apr. 18 2 31	= 354 "	354 "	354 "			
11	1848-1849	Apr. 18	" May 6 19 6	= 383 "	384 "	384 "	11	9	
12	1849-1850	May 6	" Apr. 25 23 20	= 354 "	354 "	354 "			
13	1850-1851	Apr. 25	" Apr. 15 10 35	= 355 "	355 "	354 "			
14	1851-1852	Apr. 15	" May 3 10 22	= 384 "	384 "	384 "	14	12	
15	1852-1853	May 3	" Apr. 23 3 11	= 355 "	354 "	355 "			
16	1853-1854	Apr. 23	" Apr. 12 17 56	= 354 "	355 "	355 "			
17	1854-1855	Apr. 12	" May 1 16 3	= 384 "	384 "	383 "	17	15	
18	1855-1856	May 1	apr. " <del>May</del> 19 21 13	= 354 "	354 "	355 "			
19	1856-1857	May 19 (Apr)	" Apr. 8 21 28	= 354 "	354 "	354 "			
							G.M.T. J.C.T. B.C.T. 6939 days 6939 days 6939 days		
21	1857-1858	Apr. 8	" Apr. 27 14 55	= 384 "	384 "	383 "	1	18	
2	1858-1859	Apr. 27	" Apr. 26 21 5	= 354 "	354 "	355 "			
3	1859-1860	Apr. 26	" May 4 19 1	= 384 "	384 "	384 "	3		
4	1860-1861	May 4	" Apr. 24 10 23	= 355 "	355 "	354 "			
5	1861-1862	Apr. 24	" Apr. 14 2 57	= 355 "	354 "	355 "			
6	1862-1863	Apr. 14	" May 3 2 51	= 384 "	384 "	384 "	6		
7	1863-1864	May 3	" Apr. 21 13 18	= 354 "	355 "	354 "		57	
8	1864-1865	Apr. 21	" Apr. 10 16 27	= 354 "	354 "	354 "			
9	1865-1866	Apr. 10	" Apr. 29 9 23	= 384 "	383 "	384 "	9		
10	1866-1867	Apr. 29	" Apr. 18 11 6	= 354 "	355 "	354 "			
11	1867-1868	Apr. 18	" May 6 6 36	= 384 "	383 "	384 "	11		
12	1868-1869	May 6	" Apr. 25 18 21	= 354 "	355 "	355 "			
13	1869-1870	Apr. 25	" Apr. 15 10 26	= 355 "	355 "	354 "			
14	1870-1871	Apr. 15	" May 4 10 59	= 384 "	384 "	384 "	14		
15	1871-1872	May 4	" Apr. 23 1 37	= 355 "	354 "	355 "			
16	1872-1873	Apr. 23	" Apr. 12 9 51	= 354 "	355 "	354 "			
17	1873-1874	Apr. 12	" May 1 4 9	= 384 "	383 "	384 "	17		
18	1874-1875	May 1	" Apr. 20 4 30	= 354 "	354 "	354 "			
19	1875-1876	Apr. 20	" Apr. 8 7 38	= 354 "	354 "	354 "			
							6940 days 6939 days 6939 days		

\* Greenwich Mean Noon  
\*\* Jerusalem Civil Time  
\*\*\* Boston Civil Time

To get J.C.T., add 14<sup>h</sup> 21<sup>m</sup> to paschal moon dates.

To get B.C.T., subtract 7<sup>h</sup> 5<sup>m</sup> from the J.C.T. dates.

Note: For seven years, from 1851 to 1857, the length of the <sup>lunar</sup> year is the same in both Jerusalem and Boston.

LENGTH OF LUNAR YEAR ON VARIOUS MERIDIANS

(Reckoned from paschal full moon to paschal full moon)

19-Year Cycle	Jew. Year	Paschal Full Moon	to	Paschal Full Moon	=	* G.M.T.	** J.C.T.	*** B.C.T.	Embolismic Years
1	1838-1839	Apr. 9 14 <sup>h</sup> 6 <sup>m</sup>		Apr. 28 7 <sup>h</sup> 24 <sup>m</sup>	=	384 days	384 days	384 days	1
2	1839-1840	Apr. 28	"	Apr. 16 7 55	=	354 "	354 "	354 "	
3	1840-1841	Apr. 16	"	May 5 2 5	=	384 "	384 "	384 "	3
4	1841-1842	May 5	"	Apr. 24 11 27	=	354 "	355 "	354 "	
5	1842-1843	Apr. 24	"	Apr. 14 2 29	=	355 "	354 "	355 "	
6	1843-1844	Apr. 14	"	May 2 3 16	=	384 "	384 "	384 "	6
7	1844-1845	May 2	"	Apr. 21 19 12	=	354 "	355 "	355 "	
8	1845-1846	Apr. 21	"	Apr. 11 5 54	=	355 "	354 "	354 "	
9	1846-1847	Apr. 11	"	Apr. 30 1 25	=	384 "	384 "	384 "	9
10	1847-1848	Apr. 30	"	Apr. 18 2 31	=	354 "	354 "	354 "	
11	1848-1849	Apr. 18	"	May 6 19 6	=	383 "	384 "	384 "	11
12	1849-1850	May 6	"	Apr. 25 23 20	=	354 "	354 "	354 "	
13	1850-1851	Apr. 25	"	Apr. 15 10 35	=	355 "	355 "	354 "	
14	1851-1852	Apr. 15	"	May 3 10 22	=	384 "	384 "	384 "	14
15	1852-1853	May 3	"	Apr. 23 3 11	=	355 "	354 "	355 "	
16	1853-1854	Apr. 23	"	Apr. 12 17 56	=	354 "	355 "	355 "	
17	1854-1855	Apr. 12	"	May 1 16 3	=	384 "	384 "	383 "	17
18	1855-1856	May 1	apr.	May 19 21 13	=	354 "	354 "	355 "	
19	1856-1857	May 19 (Apr)	"	Apr. 8 21 28	=	354 "	354 "	354 "	
21	1857-1858	Apr. 8	"	Apr. 27 14 55	=	384 "	384 "	383 "	1
2	1858-1859	Apr. 27	"	Apr. 26 21 5	=	354 "	354 "	355 "	
3	1859-1860	Apr. 26	"	May 4 19 1	=	384 "	384 "	384 "	3
4	1860-1861	May 4	"	Apr. 24 10 23	=	355 "	355 "	354 "	
5	1861-1862	Apr. 24	"	Apr. 14 2 57	=	355 "	354 "	355 "	
6	1862-1863	Apr. 14	"	May 3 2 51	=	384 "	384 "	384 "	6
7	1863-1864	May 3	"	Apr. 21 13 18	=	354 "	355 "	354 "	
8	1864-1865	Apr. 21	"	Apr. 10 16 27	=	354 "	354 "	354 "	
9	1865-1866	Apr. 10	"	Apr. 29 9 23	=	384 "	383 "	384 "	9
10	1866-1867	Apr. 29	"	Apr. 18 11 6	=	354 "	355 "	354 "	
11	1867-1868	Apr. 18	"	May 6 6 36	=	384 "	383 "	384 "	11
12	1868-1869	May 6	"	Apr. 25 18 21	=	354 "	355 "	355 "	
13	1869-1870	Apr. 25	"	Apr. 15 10 26	=	355 "	355 "	354 "	
14	1870-1871	Apr. 15	"	May 4 10 59	=	384 "	384 "	384 "	14
15	1871-1872	May 4	"	Apr. 23 1 37	=	355 "	354 "	355 "	
16	1872-1873	Apr. 23	"	Apr. 12 9 51	=	354 "	355 "	354 "	
17	1873-1874	Apr. 12	"	May 1 4 9	=	384 "	383 "	384 "	17
18	1874-1875	May 1	"	Apr. 20 4 30	=	354 "	354 "	354 "	
19	1875-1876	Apr. 20	"	Apr. 8 7 38	=	354 "	354 "	354 "	

\* Greenwich Mean Noon  
 \*\* Jerusalem Civil Time  
 \*\*\* Boston Civil Time

To get J.C.T., add 14<sup>h</sup> 21<sup>m</sup> to paschal moon dates.  
 To get B.C.T., subtract 7<sup>h</sup> 5<sup>m</sup> from the J.C.T. dates.

G.M.T. J.C.T. B.C.T.  
 6939 days 6939 days 6939 days

Note: For seven years, from 1851 to 1857, the length of the <sup>lunar</sup> year is the same in both Jerusalem and Boston.



The Advent movement in 1844 undertook the problem of finding the civil date corresponding to the "tenth day of the seventh month." In the solution of this calendar question the dates chosen for Tisri 1 and Tisri 10 were considered from the meridians of both Boston and Jerusalem. Such statements were made in the Adventist literature as exactly defined the position of the moon, noted from these longitudes east and west, and the difference between her coincident points of time observed. The Jewish calendar harmonizes the variations which arise in luni-solar time, by allowing double festival days in the East, especially as pertaining to the Jewish new year, or first day of Tisri, from which the civil year is ~~now~~ reckoned. The western lands observe only one day for this festival, which is known as Roshashana. In Palestine, also, double days are kept for the passover; but only one day is appointed for the West. ✓

The main cause for this double dating of lunar festivals is our round world, and the fact that the Jewish people are scattered all over it. The moon that marks out the Jewish feast period "cannot appear the same evening everywhere."-- (Kokisoff, Juhada, "Brief Information on the Karaite Calendar," Odessa, 1860.) P. ?

As the new moon travels eastward from the sun, the time of her phasis is constantly changing on various meridians. On this account the actual beginning of a Jewish festival day can occur on any meridian, in contrast to the solar, or civil, day, whose date line has been accepted as the 180th. In October, 1844, the position of the moon was such as to cause the new moon day of Tisri to begin on the meridian of Boston, which is 74° west from Greenwich. Its corresponding civil day, however, was already nearly 16 hours old, and on its way back to the 180th meridian, where it would end.

If one is inclined to date a Jewish festival day on one and the same <sup>civil</sup> date all over the world, it should be borne in mind that two different civil days are always in progress east and west. The civil day that crosses the 180th meridian, going west, is a new day, dated 24 hours later than the day that approached from the east. If the day is October 13, as it comes to the date line, westward bound, it will be October 14 when it crosses over to the other side. These 24 hours that are added to the civil date, also affect the corresponding Jewish fes-

tival date. As for instance, if Tisri 1 as October 13 comes up to the date line, going west, it will cross over as Tisri 1/October 14, not as Tisri 2. A glance at TABLE H will show why this is so. If the new day should leave the date line as Tisri 2/October 14, when it came to Jerusalem at the end of about 16 hours west from Boston, Tisri 1/October 14 would still be in progress, and the clocks and watches would not agree. On the contrary, if Tisri 1/October 14 leaves the date line as such, it will meet the same date at Jerusalem after about 16 hours, and return to Boston ready for Tisri 2/October 14 as the next day.

In comparing the festival dates at Jerusalem with those at Boston in the instance of the October conjunction in 1844, the apparent paradox is at once removed if it be noted that while the two first days of Tisri coincide for about seven hours, the one on October 13 in Boston, and the other on October 14 in Jerusalem, yet the latter date--Tisri 1/October 14--is the day ending, as it were, after crossing the day line. Furthermore, it is not succeeded by October 13, as the day reaches Boston, but by Tisri 2/October 14, as the next day. Similarly, Tisri 1/October 13 in Boston followed Elul 29/October 13 in Jerusalem. Naturally the civil day dated October 14 stays the 14th all the way west to the 180th meridian, where it ends. But the festival date, Tisri 1, was scheduled to end at the longitude of Boston.

The clock chart, therefore, shows two parts of one and the same day, Tisri 1, the day in Boston, October 13, being the first portion of the day, which has not yet come to the solar date line; while Tisri 1 in Jerusalem, as October 14, is the latter part of the day, which has crossed the 180th meridian, and is on its way back to Boston, where the festival day started, and where it will end.



T A B L E L

Variation in Year's Length  
East & West

NINETEEN - YEAR CYCLE 1838 to 1857  
(Years reckoned from paschal full moon to full moon)

Year	F.M.	Full Moon	Green. G.M.T.	Jerus. J.C.T.	Boston B.C.T.	Leap Year
1 1838 - 1839 equals	Apr. 9	Apr. 28-7-24 equals	384 days	383 days	384 days	1
2 1839 - 1840 "	Apr. 28	Apr. 16-7-55 "	354 "	354 "	354 "	
3 1840 - 1841 "	Apr. 16	May 5-2-5 "	384 "	384 "	384 "	3
4 1841 - 1842 "	May 5	Apr. 24-11-27 "	354 "	355 "	354 "	
5 1842 - 1843 "	Apr. 24	Apr. 14-2-29 "	355 "	354 "	355 "	
6 1843 - 1844 "	Apr. 14	May 2-3-16 "	384 "	384 "	384 "	6
7 1844 - 1845 "	May 2	Apr. 21-19-12 "	354 "	355 "	355 "	
8 1845 - 1846 "	Apr. 21	Apr. 11-5-54 "	355 "	354 "	354 "	
9 1846 - 1847 "	Apr. 11	Apr. 30-1-25 "	384 "	384 "	384 "	9
10 1847 - 1848 "	Apr. 30	Apr. 18-2-31 "	354 "	354 "	354 "	
11 1848 - 1849 "	Apr. 18	May 6-19-6 "	383 "	384 "	384 "	11
12 1849 - 1850 "	May 6	Apr. 25-23-20 "	354 "	354 "	354 "	
13 1850 - 1851 "	Apr. 25	Apr. 15-10-35 "	355 "	355 "	354 "	
14 1851 - 1852 "	Apr. 15	May 3-10-22 "	384 "	384 "	384 "	14
15 1852 - 1853 "	May 3	Apr. 23-3-11 "	355 "	354 "	355 "	
16 1853 - 1854 "	Apr. 23	Apr. 12-17-56 "	354 "	355 "	355 "	
17 1854 - 1855 "	Apr. 12	May 1-16-5 "	384 "	384 "	383 "	17
18 1855 - 1856 "	May 1	Apr. 19-21-13 "	354 "	354 "	355 "	
19 1856 - 1857 "	Apr. 19	Apr. 8-21-28 "	354 "	354 "	354 "	
			6939 "	6939 "	6940 "	

PASCHAL FULL MOONS  
(In red)

1838 Mar. 10 Apr. 9 May 9	1842 Mar. 26 Apr. 24 May 23	1846 Mar. 12 Apr. 11 May 10	1850 Mar. 27 Apr. 25 May 25	1854 Mar. 14 Apr. 12 May 12
1839 Mar. 29 Apr. 28 May 27	1843 Mar. 15 Apr. 14 May 13	1847 Mar. 31 Apr. 30 May 29	1851 Mar. 17 Apr. 15 May 14	1855 Mar. 3 Apr. 2 May 1
1840 Mar. 17 Apr. 16 May 15	1844 Apr. 2 May 2 May 31	1848 Mar. 19 Apr. 18 May 17	1852 Mar. 5 Apr. 4 May 3	1856 Mar. 21 Apr. 19 May 19
1841 Mar. 7 Apr. 5 May 5	1845 Mar. 23 Apr. 21 May 21	1849 Mar. 8 Apr. 7 May 6	1853 Mar. 24 Apr. 23 May 22	1857 Mar. 10 Apr. 8 May 8

The variation in the length of the year in the table given above is based on Jerusalem Civil Time--2<sup>h</sup> 21<sup>m</sup> east of Greenwich--and Boston Civil Time--4<sup>h</sup> 44<sup>m</sup> west of Greenwich. The full moon dates were taken from the British Ephemeris (mean noon).

M O S A I C F E A S T P E R I O D -- N I S A N T O T I S R I -- 1 8 4 4

(Synchronism of Calendrical and Astronomical Datings for the First Day of Each Month)

10 TISRI

14 NISAN

HEBREW MONTHS	CIVIL MONTHS	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855
17	11	18	17	18	17	18	17	18	17	18	17	18	17
18	12	19	18	19	18	19	18	19	18	19	18	19	18
19	13	20	19	20	19	20	19	20	19	20	19	20	19
20	14	21	20	21	20	21	20	21	20	21	20	21	20
21	15	22	21	22	21	22	21	22	21	22	21	22	21
22	16	23	22	23	22	23	22	23	22	23	22	23	22
23	17	24	23	24	23	24	23	24	23	24	23	24	23
24	18	25	24	25	24	25	24	25	24	25	24	25	24
25	19	26	25	26	25	26	25	26	25	26	25	26	25
26	20	27	26	27	26	27	26	27	26	27	26	27	26
27	21	28	27	28	27	28	27	28	27	28	27	28	27
28	22	29	28	29	28	29	28	29	28	29	28	29	28
29	23	30	29	30	29	30	29	30	29	30	29	30	29
30	24	1	30	1	30	1	30	1	30	1	30	1	30
31	25	2	1	2	1	2	1	2	1	2	1	2	1

From the Passover (1844) to Passover (1845) are 355 calendar days in both Jerusalem and Boston.  
 This length of the Jewish year requires that both Hesvan and Kisleu have 30 days each.



"When The Sun Is In Aries" -- Josephus

The accompanying Latin poem is taken from the Venerable Bede's "De Temporum Ratione." This heroic verse he quotes from "one of the ancients" (quidam veterum), not giving the exact reference. It shows what Josephus doubtless meant in saying "when the sun is in Aries" (Josephus, "Works," B. III, Ch. X, Sec. 5). Michaelis and Scaliger also agree that Aries is largely April.

"Singuli autem menses sua signa, in quibus solem recipiant, habent: Aprilis, Arietis: Maius, Tauri: Junius, Geminorum: Julius, Cancrī: Augustus, Leonis: September, Virginis: October, Librae: November, Scorpionis: December, Sagittarii: Januarius, Capricorni: Februarius, Aquarii: Martius, Piscium: sicut quidam veterum etiam versibus explicavit heroicis:

Respicis Aprilis Aries Phrixae Calendas.  
 Maius Agenorei miratur cornua Tauri.  
 Junius aequatos coelo videt ire Laconas.  
 Solstitio ardentis Cancrī fert Julius astrum.  
 Augustum mensem Leo fervidus igne perurit.  
 Sidere Virgo tuo Bacchum September opinat.  
 Aequat et October sementis tempore Libram.  
 Scorpius hybernum praeceps jubet ire Novembrem.  
 Terminat Arcitenens medio sua signa Decembri.  
 Principium Jani sancit tropicus Capricornus.  
 Mense Numae in medio solidi stat sidus Aquarii.  
 Procedunt duplices in Martia tempora Pisces.

Signs of  
Zodiac

Translation  
Roman Months

Jewish  
Months

Seasons in  
Palestine

Signs of Zodiac	Translation Roman Months	Jewish Months	Seasons in Palestine Latter Rain
Aries . x	O Phrixean Ram, thou lookest to the <u>April</u> Calends.	Nisan	<u>Harvest</u>
Taurus	<u>May</u> admires the horns of the Bull of Agenoreus.	Iyar	(Barley)
Gemini	<u>June</u> sees the twin Spartans running in the sky.	Sivan	
Cancer	In the summer solstice <u>July</u> carries the constellation of hot Cancer.		(Wheat)
Leo	Leo, fervid with fire, burns up the month of <u>August</u> .	Tammuz	
Virgo x	<u>September</u> enriches Bacchus by thy star, O Virgo.	Ab	
Libra	And October compares to Libra in time of sowing.	Elul	(Vintage)
Scorpio	Scorpio in haste commands November to hibernate.	Tisri	<Seedtime
Sagittarius	The Archer ends his signs in the middle of <u>December</u> .	Hesvan	<u>Early Rain</u>
Capricorn	Capricorn, turning back, sanctifies the beginning of the month of <u>January</u> . [February]	Kisleu	
Aquarius	In the month of <u>Numa</u> , the constellation of Aquarius stands <u>entire</u> in the midst. <i>immovable</i>	Tebeth	
Pisces	The two Fishes come forth in <u>March</u> times.	Shebat	

(Tr. G. Amadon)

Venerabilis Bedae, "Opuscula Scientifica, De Temporum Ratione," Edidit, J.A. Giles, London, 1843.

The "De Temporum Ratione" is found among the works of Bede in folio [B. II. 205-212. C. II. 118--124]. "That it was composed before the larger work which follows, is evident from the fact that it ["De Temporibus"] comes down only to the fifth year of the Emperor Tiberius III, i.e. A.D. 701-2, whereas the larger work descends to a period twenty-five years later."--"Opuscula," Preface.



THE MOSAIC FEAST PERIOD -- APRIL TO OCTOBER, 1844

CONJUNCTION

PASSOVER

CONJUNCTION

ATONEMENT

Apr. 17 4<sup>h</sup> 33<sup>m</sup>

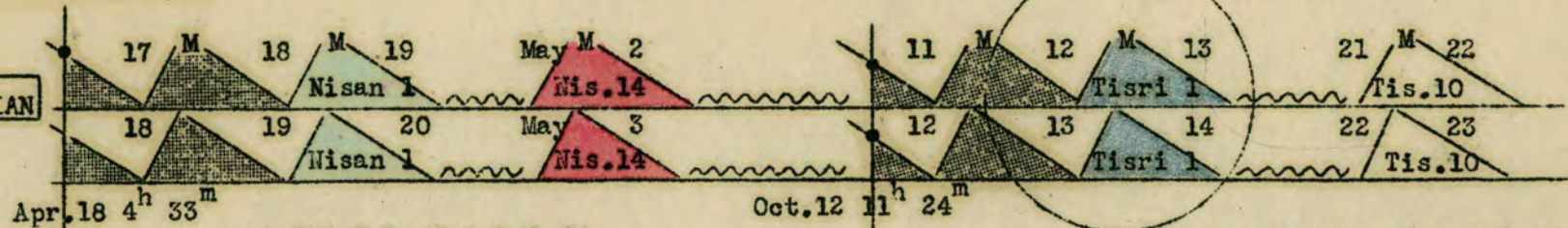
Oct. 11 11<sup>h</sup> 24<sup>m</sup>

①

OCTOBER

180<sup>th</sup> MERIDIAN

Civil Day changes



Apr. 18 4<sup>h</sup> 33<sup>m</sup>

Oct. 12 11<sup>h</sup> 24<sup>m</sup>

APRIL MOON --  
Sign = Aries  
Declination = 19° north  
April 19 = Apogee

OCTOBER MOON --  
Sign = Libra  
Declination = 18° south  
October 13 = Perigee

9<sup>h</sup> 40<sup>m</sup>

JERUSALEM -- From May 3 (Passover) to October 23 (Atonement) = 173 days

Apr. 17 18<sup>h</sup> 53<sup>m</sup>

Oct. 12 1<sup>h</sup> 44<sup>m</sup>

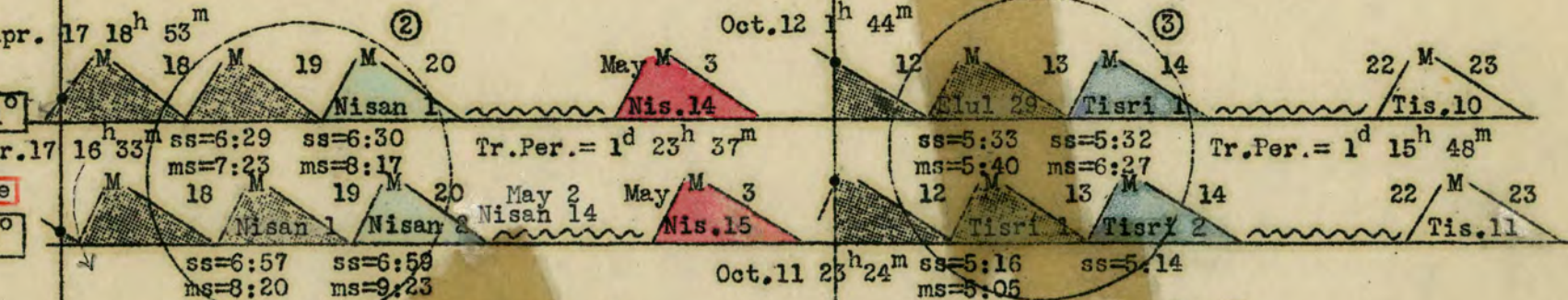
JERUSALEM 31°

2<sup>h</sup> 20<sup>m</sup> Apr. 17

Lunar Change

GREENWICH 51°

4<sup>h</sup> 44<sup>m</sup>



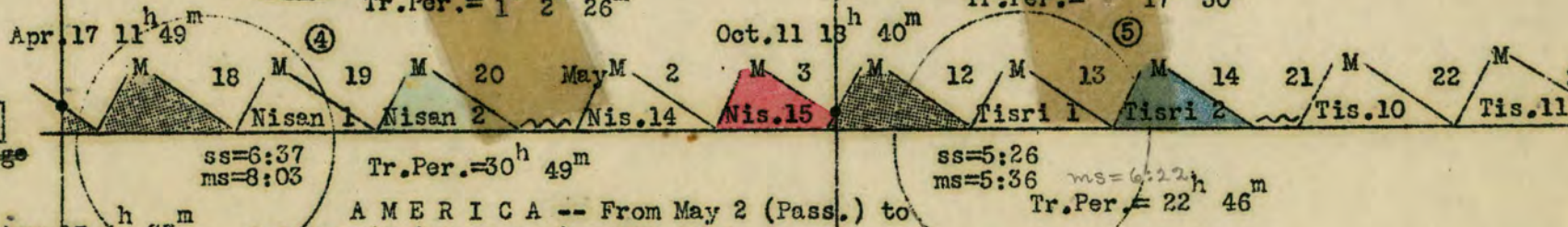
Apr. 17 11<sup>h</sup> 49<sup>m</sup>

Oct. 11 13<sup>h</sup> 40<sup>m</sup>

BOSTON 42°

Lunar Change

7<sup>h</sup> 16<sup>m</sup>



Apr. 17 4<sup>h</sup> 33<sup>m</sup>

Oct. 22 11<sup>h</sup> 24<sup>m</sup>

180<sup>th</sup> MERIDIAN



AMERICA -- From May 2 (Pass.) to October 22 (Atonement) = 173 days

Tr.Per. = 22<sup>h</sup> 46<sup>m</sup>



## EXPLANATION OF CHART "Y"

Chart "Y" demonstrates how the moon periodically changes during each lunation, and ushers in the new Jewish month. This so-called "change of the moon," or conjunction, always occurs toward the end of the old lunar month--its occurrence varying from the 26th to the 29th day. At this time, the moon's illuminated hemisphere is wholly turned toward the sun, and hence, cannot be seen on the earth. This period of invisibility lasts from "one to four days"--an interval of darkness called the "Translation Period." This period ends at the sunset soon after which the moon first appears as a slender crescent on the evening horizon. The interval from sunset to the crescent moonset varies from about 30 minutes to one hour and 30 minutes, and the longer the interval, the older the crescent. In order to be seen at all, the moon, after conjunction, must move about seven degrees east of the sun. However, the ancient Jews did not commonly employ the earliest new moons by which to begin their months. Their crescent moon ordinarily had well defined horns, and the period from sunset to moonset was sufficiently long to give ample time for discovering the "new light." Thus, the vision of the new moon became a check upon the calculated calendar months.

Although the Translation Period varies in length from one to four days, yet the interval conforms to a general trend of increase and decrease that keeps pace with the well known Waxing Period of the moon--the period between conjunction and full moon. If the Waxing Period is one of the longest, so also will be the Translation Period; but if the Waxing Period is one of the shortest, the Translation Period will also be one of the shortest. Hence the apparently uncertain "one-to-four day" definition of the period that marked the beginning of the ancient Jewish month, becomes definitely related and tied to an astronomical interval whose limits are recognized, and recorded in all standard almanacs.

In Chart "Y", the moon's change from month to month is represented throughout the Jewish sacred year 1844-45. Each lunation runs from the full moon of one month to the succeeding full moon in the next month. In the year 1844, on the Boston meridian, the conjunctions occurred on the 27th, 28th, and 29th days. In the Jewish feast period of this year, there were three unusually short Translation Periods: (1) in June, (2) in August, and (3) in October. The shortest was .88 days long, and introduced the month Ab. The longest of all the periods during the year was 2.67 days, preliminary to the month Adar. By comparing the table, it can be noted that these longest and shortest Translation Periods coincided with the longest and shortest Waxing Periods. These instances illustrate how the known limits of the Waxing Period become an important check upon the unknown Translation interval, whose length has to be ascertained.

The length of each Translation Period in Chart "Y" can be verified from the accompanying calendar "hook-up" of the Jewish and civil months. For example, the March 8.08 conjunction preliminary to Adar, lower part of column 8. Compute the interval between the conjunction point of time and the sunset beginning of 1 Adar, which was March 11 on the calendar.

Mar. 8	From conjunction to midnight =	.92 day	(1.00 - .08)
" 9	" midnight " sunset =	.75 "	(18 hours)
" 9-10	" sunset " sunset =	1.00 "	(ss at 6 o'clock)
Total		= <u>2.67 days</u>	

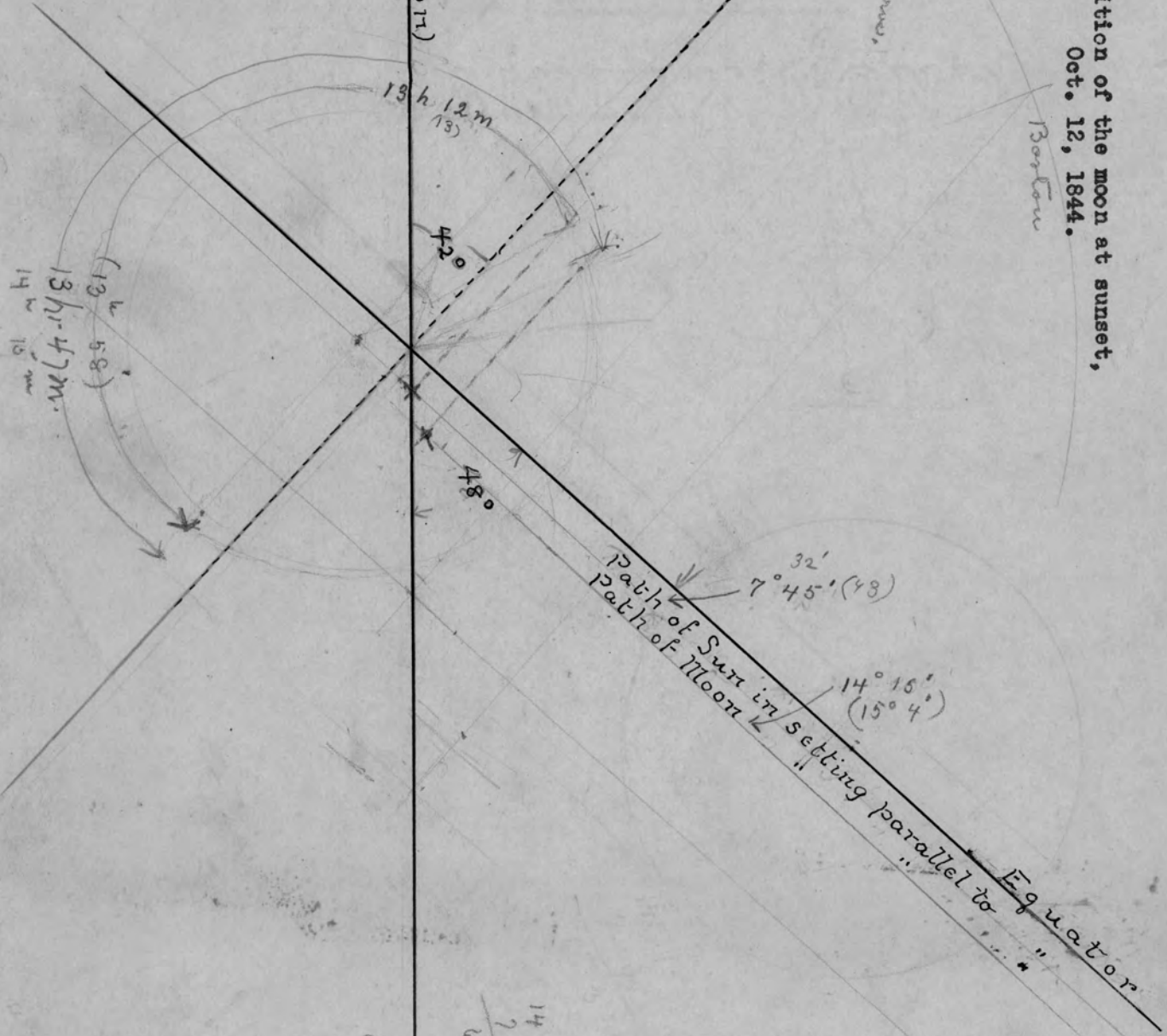
In March, there is no correction for the sunset, for it occurs at nearly six o'clock throughout the month.

Position of the moon at sunset,  
Oct. 12, 1844.

Boston

Elevation of Pole is  
latitude of observer,  
N

Horizon (Boston)



Only about  
difference in time

13 47

14 15  
7 45  
6 30

$$6\frac{1}{2}^\circ = 22$$

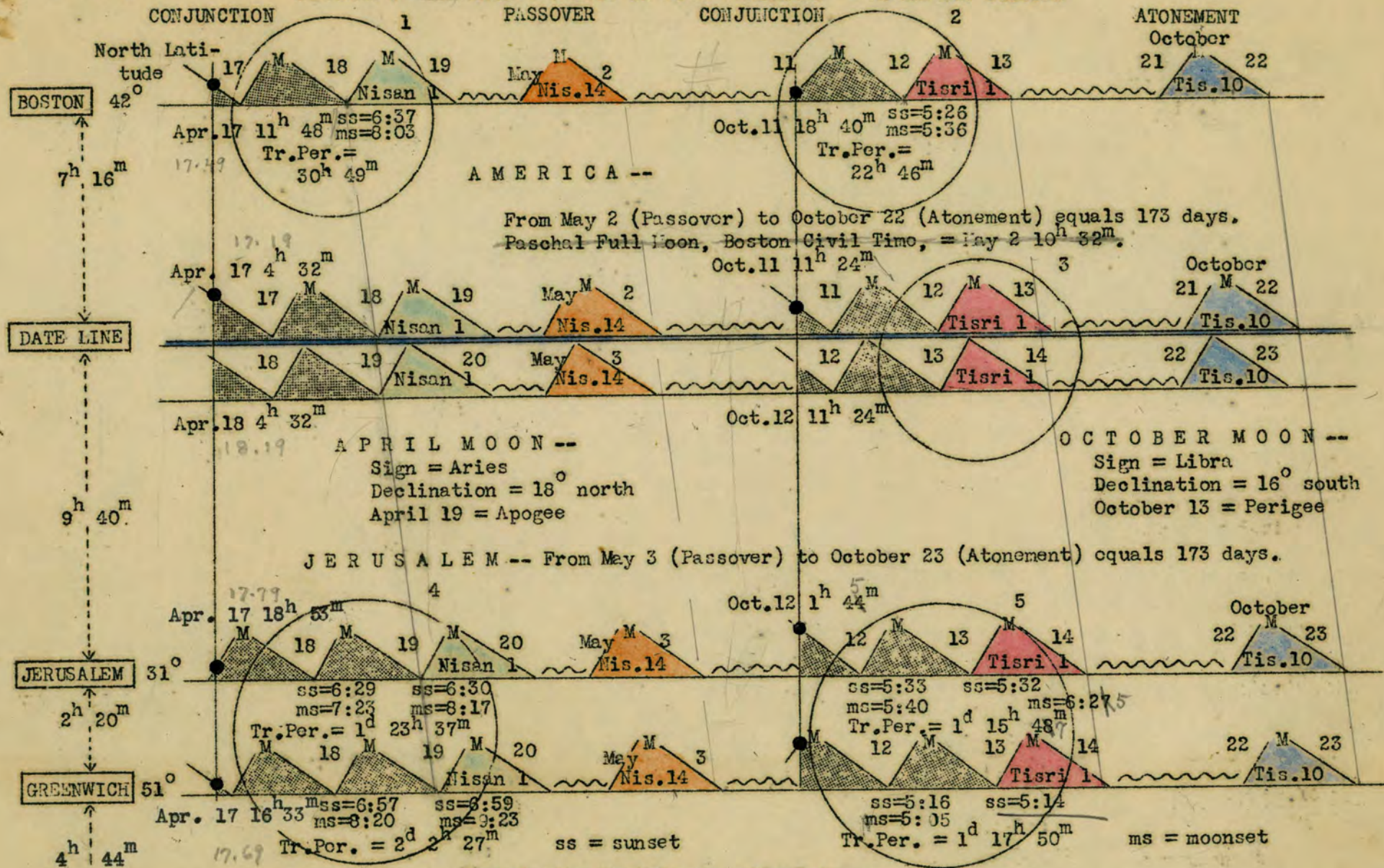
$$\frac{2}{18} \times 22 = \frac{44}{18} = 3\frac{1}{2}$$



MOSAIC FEAST PERIOD 1844

1 8 4 4

DIAGRAM OF THE MOON'S PHASIS ON FOUR MERIDIANS -- APRIL AND OCTOBER



From May 2 (Passover) to October 22 (Atonement) equals 173 days.  
 Paschal Full Moon, Boston Civil Time, = May 2 10<sup>h</sup> 32<sup>m</sup>.

APRIL MOON --  
 Sign = Aries  
 Declination = 18° north  
 April 19 = Apogee

OCTOBER MOON --  
 Sign = Libra  
 Declination = 16° south  
 October 13 = Perigee

JERUSALEM -- From May 3 (Passover) to October 23 (Atonement) equals 173 days.

ss = sunset  
 ms = moonset

Translation Periods are stippled.

To BOSTON



JEWISH FEAST PERIOD -- NISAN TO TISRI 1844

Boston Civil Time

(Synchronism of Calendrical and Astronomical Datings for First Day of Each Month)

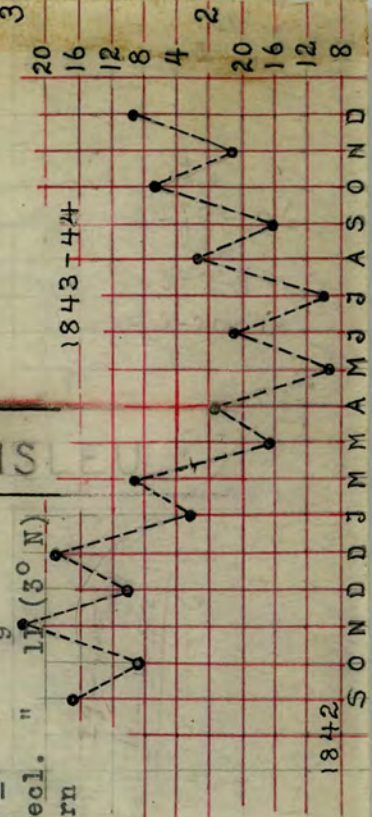
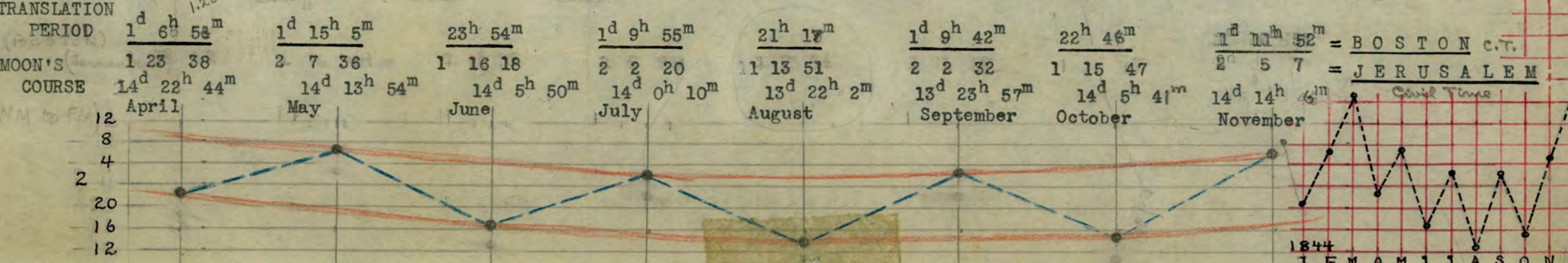
From Passover (1844) to  
Passover (1845) = 355 days  
Boston Civil Time

177 Days

173 Days

JEWISH MONTHS	NISAN	IYAR	SIVAN	TAMMUZ	AB	ELUL	TISRI	HESVAN	KIS
Veadar	1 April	1 May	1 June	1 July	1 Aug.	1 Sept.	1 Oct.	1 Nov.	1 Dec.
"	14 April	13 May	12 June	11 July	10 Aug.	9 Sept.	8 Oct.	7 Nov.	6 Dec.
"	18 April	17 May	16 June	15 July	14 Aug.	13 Sept.	12 Oct.	11 Nov.	10 Dec.
"	18 ss 6:41	18 ss 7:14	18 ss 7:36	17 (ms 7:50)	16 (4° S)	15 (ms 6:54)	14 (4° S)	13 (ms 6:13)	12 (ms 7:03)
"	ms 6:03	ms 8:39	ms 8:05	ms 7:34	ms 7:04	ms 6:34	ms 5:58	ms 4:44	ms 7:03
"	h 10 32	h 10 32	h 10 32	h 10 32	h 10 32	h 10 32	h 10 32	h 10 32	h 10 32
"	18 (3° N)	18 (3° N)	18 (0° N)	18 (1° S)	18 (1° S)	18 (4° S)	18 (3° S)	18 (0° S)	18 (3° N)
"	Taurus	Gemini	Cancer	Leo	Virgo	Libra	Scorpio	Sagittarius	Capricorn
"	Apogee = 21° N. Decl.	Apogee = 22° N. Decl.	Apogee = 21° N. Decl.	Apogee = 13° N. Decl.	Apogee = 5° N. Decl.	Perigee = 12° S. Decl.	Perigee = 15° S. Decl.	Perigee = 21° S. Decl.	Perigee = 18° S. Decl.
"	3 0	2 9	3 0	2 9	3 0	2 9	3 0	3 0	3 0

TRANSLATION PERIOD	1 <sup>d</sup> 6 <sup>h</sup> 58 <sup>m</sup>	1 <sup>d</sup> 15 <sup>h</sup> 5 <sup>m</sup>	23 <sup>h</sup> 54 <sup>m</sup>	1 <sup>d</sup> 9 <sup>h</sup> 55 <sup>m</sup>	21 <sup>h</sup> 18 <sup>m</sup>	1 <sup>d</sup> 9 <sup>h</sup> 42 <sup>m</sup>	22 <sup>h</sup> 46 <sup>m</sup>	1 <sup>d</sup> 11 <sup>h</sup> 52 <sup>m</sup>
MOON'S COURSE	1 23 38	2 7 36	1 16 18	2 2 20	1 13 51	2 2 32	1 15 47	2 5 7
MOON'S COURSE	14 <sup>d</sup> 22 <sup>h</sup> 44 <sup>m</sup>	14 <sup>d</sup> 13 <sup>h</sup> 54 <sup>m</sup>	14 <sup>d</sup> 5 <sup>h</sup> 50 <sup>m</sup>	14 <sup>d</sup> 0 <sup>h</sup> 10 <sup>m</sup>	13 <sup>d</sup> 22 <sup>h</sup> 2 <sup>m</sup>	13 <sup>d</sup> 23 <sup>h</sup> 57 <sup>m</sup>	14 <sup>d</sup> 5 <sup>h</sup> 41 <sup>m</sup>	14 <sup>d</sup> 14 <sup>h</sup> 6 <sup>m</sup>
MOON'S COURSE	April	May	June	July	August	September	October	November



Dec. = 2-18-24  
Jan. = 9-7-48  
Feb. = 2-20-46



TABLE M

1844

[NISAN]

"RECKONING FROM THIS MOON"

(Advent Shield, January, 1845, page 278)

Based on Boston Civil Time

From Nisan To Tisri

		Calendrical			Astronomical		
Translation Per. Veadar	28	Coinciding with April 17 11 <sup>h</sup> 48 <sup>m</sup>			(Conjunction)		
	" 29	" " " "			(Phasis) ss 6:42		
Moon in apogee, but north of sun, north of equator, and in Taurus.	Nisan 1	" " " "			(First day of New Year)		
	Nisan 14 16	" " May 2 10 32			(Passover on day of Full Moon in Boston)		
Translation Per. Nisan	29	" " May 17 4 9			(Conjunction)		
	" 30	" " " 18 30			(Phasis) ss 7:14		
Iyar	1	" " " 19			(New Moon Day)		
	" 13	" " " 31 18 3			(Full Moon)		
Translation Per. Iyar	28	" " June 15 19 42			(Conjunction) *		
	" 29 29	" " " 16 29			(Phasis) ss 7:36		
Sivan	1	" " " 17			(New Moon Day)		
	" 14	" " " 30 1 32			(Full Moon)		
Translation Per. Sivan	29	" " July 15 9 39			(Conjunction)		
	" 30 30	" " " 16 30			(Phasis) ss 7:34		
Tammuz	1	" " " 17			(New Moon Day)		
	" 13	" " " 29 9 49			(Full Moon)		
Translation Per. Tammuz	28	" " Aug. 13 21 47			(Conjunction) *		
	" 29 29	" " " 14 29			(Phasis) ss 7:02		
Ab	1	" " " 15			(New Moon Day)		
	" 13	" " " 27 19 49			(Full Moon)		
Translation Per. Ab	29	" " Sept. 12 8 32			(Conjunction)		
	" 30 30	" " " 13 30			(Phasis) ss 6:14		
Elul	1	" " " 14			(New Moon Day)		
	" 13	" " " 26 8 29			(Full Moon)		
Translation Per. Elul	28	" " Oct. 11 18 40			(Conjunction) *		
	" 29 29	" " " 12 29			(Phasis) ss 5:25		
Tisri	1	" " " 13			(New Moon Day)		
	" 14	" " " 26 0 21			(Full Moon)		
" 10 10	"	" " " 22			(Atonement)		
	"						
Translation Period		173			173		
Translation Per. Tisri	29	" " Nov. 10 4 52			(Conjunction)		
	" 30	" " " 11 3:44			(Phasis) ss 4:44		
Hesvan	1	" " " 12			(New Moon Day)		
	" 13	" " " 24 18 53			(Full Moon)		

\* NOTE.—On account of the difference in time between Boston and Jerusalem —ing 7 hours and 5 minutes,—the conjunctions marked with an " \* " occur on the following day in Jerusalem.

The moon of Abib, or Nisan, was the one set apart by Moses to mark the beginning of the Jewish year. "Observe" this moon, he said (Deut. 16:1). The Psalmist also states that the trumpet was to be blown at the time of the new moons, and that this was a law given in the days of Joseph (Psalm 81:3-5). The word "observe" in Deuteronomy 16 is taken from an Arabic word meaning to lift up the eyelids. Its primary meaning is to watch. That appears to be the significant instruction in this verse that the Hebrews were always to start their year by observing the moon of Nisan. This they always did, even after they had begun to reckon by computation. (And accordingly, the first step taken by the Millerites to discover the true day of Atonement was the reckoning from the moon of Nisan. The position of the moon was such as to demand a first appearance at the second sunset in Boston.)

TABLE I

C R I T I C I S M III, claiming that April 7, 30 A.D. was Nisan 14.

A N S W E R, showing that Friday, April 7, 30 A.D. was Nisan 13.

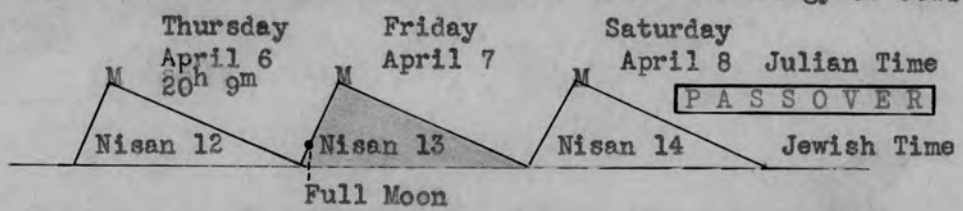
As proved in PART V, POSTULATE I,

Nisan 14 equals April 27, Friday, 31 A.D. Julian Time  
 Nisan 13 " " 26  
 (From 31 A.D. backward Therefore Nisan 12 " April 25 22<sup>h</sup> 45<sup>m</sup> (Full Moon) " "  
 to 30 A.D.) (or Jewish time, Nisan 13, because after sunset)  
 - 12 - 12

Four Successive 19-Year Cycles	Last day of 13th mo.	Veadar 29	equals	April 13	(29 days)
A.D. 9-28 = 6939 days	"	12th mo. Adar 30	"	Mar. 15	(30 " )
28-47 = 6940 "	"			- 30	
47-66 = 6941 " "	"	11th mo. Shebat 30	"	Feb. 13	(30 " )
66-85 = 6939 " "	"			- 30	
27759 " "	"	10th mo. Tebet 29	"	Jan. 14	(29 " )
(Years reckoned from full moon to full moon)	"	9th mo. Kisleu 29	"	Dec. 16	(29 " )
	"			- 29	
	"	8th mo. Hesvan 30	"	Nov. 17	(30 " )
	"			- 30	
	"	7th mo. Tisri 30	"	Oct. 18	(30 " )
	"			- 30	
Apr. 25 = Nis. 12 W	"	6th mo. Elul 29	"	Sept. 18	(29 " )
Apr. 26 = Nis. 13 T	"			- 29	
Apr. 27 = Nis. 14 F	"	5th mo. Ab 30	"	Aug. 20	(30 " )
	"			- 30	
Apr. 6 = Nis. 12 W	"	4th mo. Tammuz 29	"	July 21	(29 " )
Apr. 7 = Nis. 13 T	"			- 29	
Apr. 8 = Nis. 14 F	"	3rd mo. Sivan 30	"	June 22	(30 " )
	"			- 30	
	"	2nd mo. Iyar 29	"	May 23	(29 " )
	"			- 29	
	"	1st mo. Nisan 30	"	April 24	(30 " )
	"	- 16		- 16	

Therefore Nisan 14 equals April 8 384 days  
 By calendar reckoning Nisan 13 " April 7, Friday, 30 A.D. (Jewish)  
 " Nisan 12 " April 6 20<sup>h</sup> 9<sup>m</sup> " (Julian)

Scaliger states that, according to the 19-year cycle of Dionysius, and the 19-year cycle of the Jews, the earliest passover in the time of the Messiah was on April 8. (Scaliger, Julius, "De Emendatione Temporum," page 265.) Hence, in harmony with these cycles, an earlier passover could not have come on Friday, April 7. Aristobulos maintained that the "paschal festival began on the 14th Nisan after the evening, when the moon stands diametrically opposed to the sun, as anyone can see at the time of full moon." (Canon Paschalis of Anatolius.) So the full moon of April, 30 A.D., although occurring on Thursday, April 6 20<sup>h</sup> 9<sup>m</sup>, Julian time, yet, being after sunset, had in reality entered another Jewish day, which was Friday, April 7. This Friday was the real day of the full moon in Jewry, and must have been Nisan 13, the day before the passover, not on it. In order for Friday, April 7, 30 A.D. to coincide with Nisan 14, either the after-sunset full moon of 31 A.D. had to occur on Nisan 14 (Jewish), that is, on Nisan 13 (Julian), or the year from the paschal moon of 30 A.D. to the paschal moon of 31 A.D. had to be 385 days long. The first change would have made some of the translation periods of the cycle too short; the second would have distorted the 19-year cycle to which the year belonged, for it already had 6940 days. Sidersky says that the 385-day year did not exist in the first century--that it is the result of the "postponements" of the modern Jewish calendar. (Sidersky, David, "Chronology of Jews," p.633.)



Therefore Friday, April 7, 30 A.D. coincided with Nisan 13.



FESTIVAL DAY ON TWO MERIDIANS IN 1844  
(Jerusalem and Boston)  
Civil Time

Table J (Jerusalem meridian) and Table K (Boston meridian) show that the same calendar relation between these two meridians existed in Nisan as in Tisri.

TISRİ 1 IN JERUSALEM--

Translation =	Conjunction	Oct. 12	1 <sup>h</sup> 45 <sup>m</sup>	
1 <sup>d</sup> 15 <sup>h</sup> 47 <sup>m</sup>	Phasis	Oct. 13		ss = 5:32; ms = 6:25 -- end of "one
	Tisri 1	Oct. 14		day and seventeen hours."

TISRİ 1 IN BOSTON --

Translation =	Conjunction	Oct. 11	18 <sup>h</sup> 40 <sup>m</sup>	
22 <sup>h</sup> 46 <sup>m</sup>	Phasis	Oct. 12		ss = 5:26
	Tisri 1	Oct. 13		

In Tisri in 1844, there is one day's difference between the calendar of Jerusalem and that of Boston. The two meridians, however, have the same length of year. (*wrong*)

Wierts desires to place the Tisri phasis on the evening of October 12 in Jerusalem so as to agree with Boston. This cannot be done, for it would make the phasis in Jerusalem occur on the same day as conjunction. The moon's position forbids this, because, although in perigee, yet she is 14 degrees in south declination, and 3 degrees south of the sun, and she could not possibly be seen in Jerusalem on the same day as conjunction. When such an event happens, all factors must be favorable, and in this instance, two are unfavorable toward a rapid phasis.

On the other hand, Wierts now says that he agrees with the Millerites on the position of the "one day and seventeen hours," but that his cycle can begin the month of Tisri, before the moon's phasis, on the evening of October 12. In this he follows the modern Jewish calendar, which, contrary to the Mosaic rule, sometimes begins the month before the phasis. But, if one adopts the computation of the Jewish calendar, the "postponements" should be included too.

NISAN 1 IN JERUSALEM --

Translation	Conjunction	Apr. 17	18 <sup>h</sup> 53 <sup>m</sup>	
2 <sup>d</sup> 5 <sup>h</sup> 36 <sup>m</sup>		Apr. 18		
	Phasis	Apr. 19		ss = 6:29
	Nisan 1	Apr. 20		Moon in apogee 20° North Declination 2° North Latitude

NISAN 1 IN BOSTON --

Translation --	Conjunction	Apr. 17	11 <sup>h</sup> 48 <sup>m</sup>	
1 <sup>d</sup> 6 <sup>h</sup> 53 <sup>m</sup>	Phasis	Apr. 18		ss = 6:41
	Nisan 1	Apr. 19		

In Nisan, the same as in Tisri, there is a calendar day's difference between the meridians of Boston and Jerusalem. If one should ask why the phasis in Jerusalem could not occur on April 18, a day earlier, and thus agree with Boston, the answer is this:

The placing of the Nisan phasis on April 18 in Jerusalem, instead of April 19, is first of all forbidden by the position of the moon, which is in apogee; and, secondly, this change would cause the whole Jewish feast period in 1844 to occur one day earlier, making it necessary that the phasis of the moon at the end of Iyar, Tammuz, and Elul take place on the very day of conjunction. In each case the moon's position was such as to make this impossible.

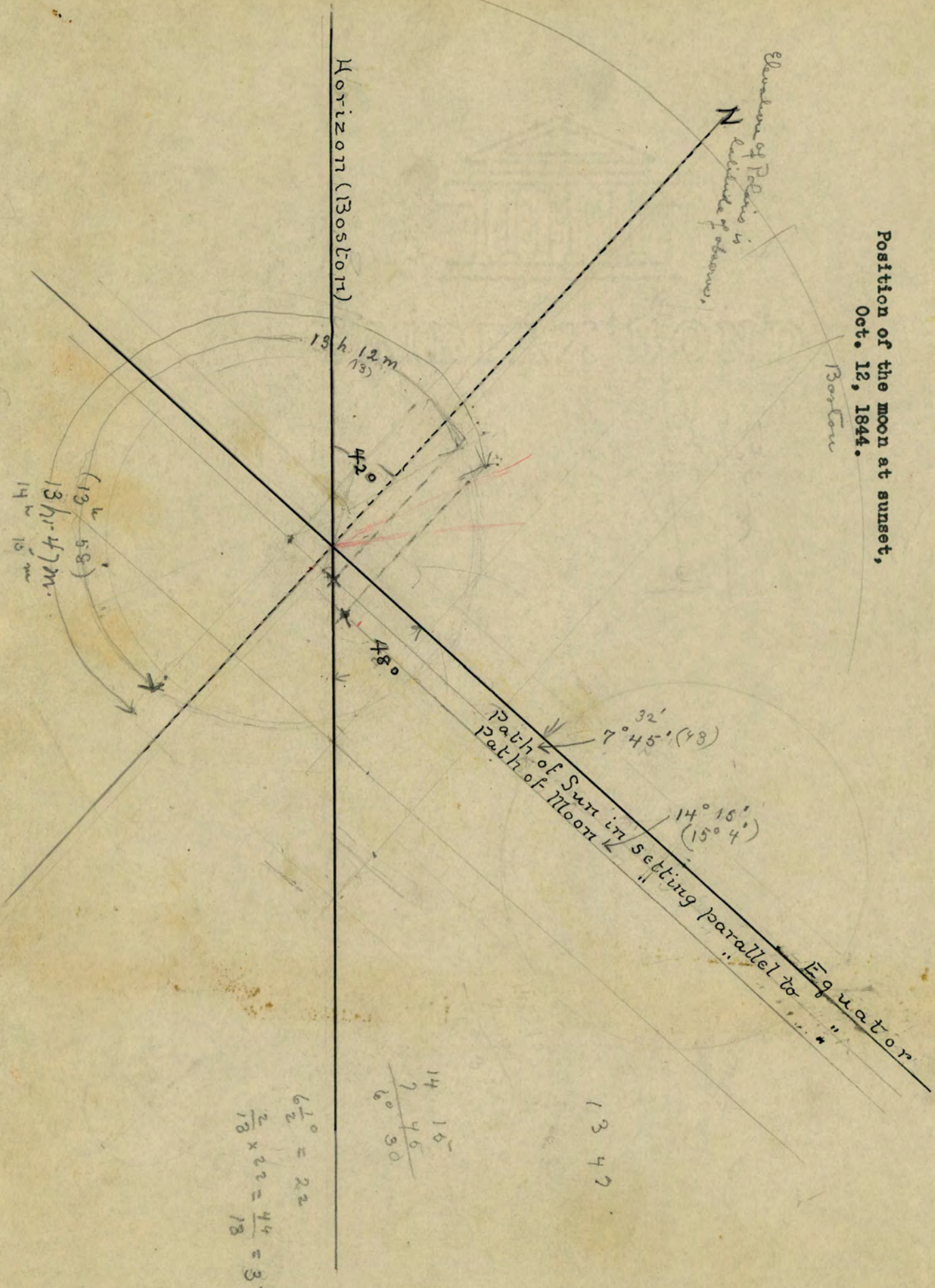
In conclusion it should be observed that the lunar year should be laid out for three successive years, in order that the strategic points may harmonize with Nisan 1.



Position of the moon at sunset,  
Oct. 12, 1844.

Boston

Longitude of Paris is  
latitude of Boston,



Only about  
difference in time

$$6\frac{1}{2} = 22$$

$$\frac{2}{18} \times 22 = \frac{44}{18} = 3\frac{1}{2}$$

$$\begin{array}{r} 14 \\ 15 \\ \hline 7 \ 45 \\ \hline 6 \ 30 \end{array}$$

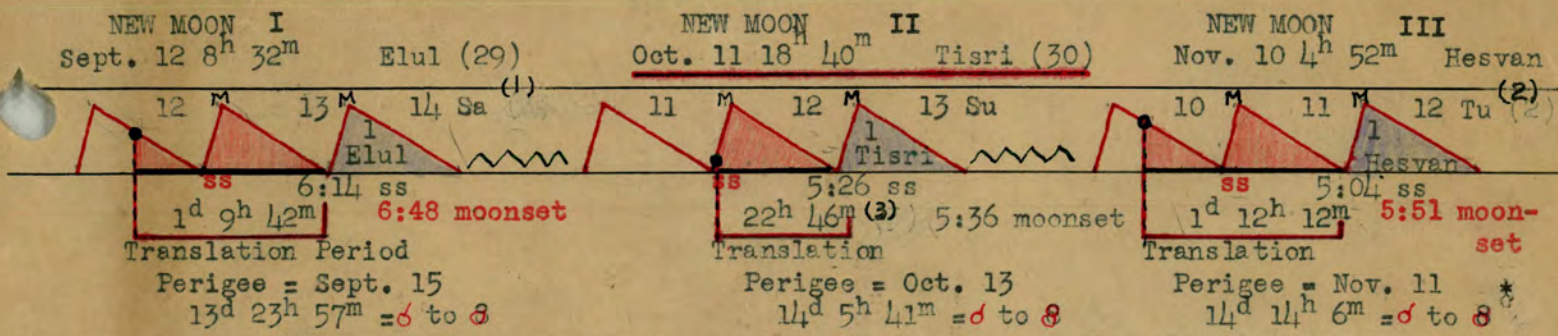


ADVENTIST RECKONING

OCTOBER, THE MOSAIC SEVENTH MONTH TISRI, 1844

(Boston Civil Time)

DIAGRAM H



(Dates are taken from British Nautical Almanac; moonsets, from the Moral Almanac, 1844.)

Karaite Reckoning --

From Elul 1 to Tisri 30, inclusive -- 59 days (4)

Rosh Hodesh	Sept. 14	Elul 1	Oct. 13	Tisri 1	Mosaic New Year
"	15	" 2	" 14	" 2	(5)
"	16	" 3	" 15	" 3	
"	17	" 4	" 16	" 4	
"	18	" 5	" 17	" 5	
"	19	" 6	" 18	" 6	
"	20	" 7	" 19	" 7	
"	21	" 8	" 20	" 8	
"	22	" 9	" 21	" 9	
"	23	" 10	" 22	" 10	(6) Atonement
"	24	" 11	" 23	" 11	
"	25	" 12	" 24	" 12	
Full Moon	" 26	" 13	" 25	" 13	
"	" 27	" 14	" 26	" 14	- Full Moon
"	" 28	" 15	" 27	" 15	
"	" 29	" 16	" 28	" 16	
"	30	" 17	" 29	" 17	
Oct.	1	" 18	" 30	" 18	
"	2	" 19	" 31	" 19	
"	3	" 20	Nov. 1	" 20	
"	4	" 21	" 2	" 21	
"	5	" 22	" 3	" 22	
"	6	" 23	" 4	" 23	
"	7	" 24	" 5	" 24	
"	8	" 25	" 6	" 25	
"	9	" 26	" 7	" 26	
"	10	" 27	" 8	" 27	
"	11	" 28	" 9	" 28	
"	12	" 29	" 10	" 29	
			" 11	" 30	(7) End of Tisri

The New Moons I, II, and III introduce a series of three Translation Periods of the moon, which mark the beginning of the three consecutive months in 1844--Elul, Tisri, and Hesvan (ancient Karaite, or Mosaic reckoning). But in this year, the whole Rabbanite feast period, from Passover to Atonement, came a month earlier than the Mosaic stipulation, which always began the Hebrew festivals with the barley harvest. In the tenth century the Karaites fought the Rabbins on this calendar question, but since 1780, there has been a gradual compromise on the part of Karaism toward the calculations of the Jewish calendar. In most Jewish centers in 1844 the Karaites observed the same day of atonement as the Rabbanites. However, it was from the original Karaite teaching that the Adventists learned the true calendrical position of the Jewish feasts, and the fact that the Jewish month began with the first "appearance" of the moon after conjunction. This they many times stated in their periodicals. They left on record sufficient technical statements in reference to the contemporary civil calendar and the moon's phases, as to fully substantiate the October 22 date of the "seventh month movement" as being in exact harmony with astronomy and the Mosaic luni-solar year.



JEWISH CALENDAR-1844-BOSTON CIVIL TIME\*

Tebet	Jan	Adar	Mar	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov
23	14	23	13	23	11	23	9	23	6	23	4
24	15	24	14	24	12	24	10	24	7	24	5
25	16	25	15	25	13	25	11	25	8	25	6
26	17	26	16	26	14	26	12	26	9	26	7
27	18	27	17	27	15	27	13	27	10	27	8
28	19-15-3428	18-19-35	28	16	28	14	28	11	II	28	9
29	20	19	29	17-4-9	29	15-9-39	29	12-8-32	III	29	10-4-52 NEW MOON
S 1	21	30	20	30	18 SS 7:14	30	16 SS 7:34	30	13 SS 6:14	30	11 SS 4:44
H 2	22	V 1	21	I 1	19	T 1	17	E 1	14	H 1	12
E 3	23	E 2	22	Y 2	20	A 2	18	L 2	15	E 2	13
B 4	24	A 3	23	A 3	21	M 3	19	U 3	16	S 3	14
A 5	25	D 4	24	R 4	22	M 4	20	L 4	17	V 4	15
6	26	A 5	25	5	23	U 5	21	5	18	A 5	16
7	27	R 6	26	6	24	Z 6	22	6	19	H 6	17
8	28	7	27	7	25	7	23	7	20	7	18
9	29	8	28	8	26	8	24	8	21	8	19
10	30	9	29	9	27	9	25	9	22	9	20
11	31	10	30	10	28	10	26	10	23	10	21
12	1 F	11	31	11	29	11	27	11	24	11	22
13	2 E	12	1	12	30	12	28	12	25	12	23
14	3 B	13	2	13	31-18-3	13	29-9-49	13	26-8-29	13	24-18-58 FULL MOON
15	4-3-58	14	3-2-13	14	1 J	14	30	14	27	14	25
16	5	15	4 A	15	2 U	15	31	15	28	15	26
17	6	16	5 P	16	3 N	16	1 A	16	29	16	27
18	7	17	6 R	17	4 E	17	2 U	17	30	17	28
19	8	18	7 I	18	5	18	3 G	18	1 O	18	29
20	9	19	8 L	19	6	19	4	19	2 G	19	30
21	10	20	9	20	7	20	5	20	3 T	20	1 D
22	11	21	10	21	8	21	6	21	4	21	2 E
23	12	22	11	22	9	22	7	22	5	22	3 C
24	13	23	12	23	10	23	8	23	6	23	4
25	14	24	13	24	11	24	9	24	7	24	5
26	15	25	14	25	12	25	10	25	8	25	6
27	16	26	15	26	13	26	11	26	9	26	7
28	17	27	16	27	14	27	12	27	10	27	8
29	18-4-1	28	17-11-48	28	15-19-42	28	13-21-47	28	11-18-49	28	9-15-28 NEW MOON
30	19	29	18 SS 6:42	29	16 SS 7:36	29	14 SS 7:02	29	12 SS 5:25	29	10
A 1	20	N 1	19	S 1	17	A 1	15	T 1	13	30	11 Translation Period
D 2	21	I 2	20	I 2	18	B 2	16	I 2	14	K 1	12
A 3	22	S 3	21	V 3	19	3	17	S 3	15	I 2	13
R 4	23	A 4	22	A 4	20	4	18	R 4	16	S 3	14
5	24	N 5	23	N 5	21	5	19	I 5	17	L 4	15
6	25	6	24	6	22	6	20	6	18	E 5	16
7	26	7	25	7	23	7	21	7	19	U 6	17
8	27	8	26	8	24	8	22	8	20	7	18
9	28	9	27	9	25	9	23	9	21	8	19
10	29	10	28	10	26	10	24	Tisri	10 22, Oct.	9	20
11	1 M	11	29	11	27	11	25	11	23	10	21
12	2 A	12	30	12	28	12	26	12	24	11	22
13	3 R	13	1	13	29	13	27-19-49	13	25	12	23
14	4-16-1814	14	2-10-32	14	30-1-32	14	28	14	26-0-21	13	24-14-44 FULL MOON
15	5	15	3 M	15	1 J	15	29	15	27	14	25
16	6	16	4 A	16	2 U	16	30	16	28	15	26
17	7	17	5 Y	17	3 L	17	31	17	29	16	27
18	8	18	6	18	4 Y	18	1 S	18	30	17	28
19	9	19	7	19	5	19	2 E	19	31	18	29
20	10	20	8	20	6	20	3 P	20	1 N	19	30
21	11	21	9	21	7	21	4 T	21	2 O	20	31
22	12	22	10	22	8	22	5	22	3 V	21	1 JANUARY, 1845

\* TABLE K is based upon POSTULATE I, which places the paschal full moon on Nisan 13, Jerusalem civil time. In New England, it was on Nisan 14 in 1844.

In the summer and fall of 1844, Boston civil time, there were at least three conjunctions of the moon that confirmed the day October 13 as the beginning of the true Jewish seventh month Tisri: (1) April 17 11<sup>h</sup> 48<sup>m</sup>; (2) Sept. 12 8<sup>h</sup> 32<sup>m</sup>; (3) Nov. 10 4<sup>h</sup> 52<sup>m</sup>. In each instance at least two factors were present that could advance the moon's first appearance, or phasis, to the evening of the next day after conjunction-- Description follows--in harmony with Adventist computation for Tisri 1.



Y E A R 1920-21 -- MOSAIC RECKONING  
(Jerusalem Civil Time)

1920 Common Year of 354 days--From May 3 (1920) to April 22 (1921)

	Vead Apr	Iyar June	Tam Aug	Elul Oct	Hes Dec	Teb Feb	Adar Mar
	26 17	25 14	24 11	23 8	22 5	21 1	20 31
	27 18	26 15	25 12	24 9	23 6	22 2	21 1 A
	28 19-0-4	27 16-16-2	26 13	25 10	24 7	23 3	22 2 P
	29 20	28 17	27 14-6-4	26 11	25 8	24 4	23 3 R
N	1 21	29 18	28 15	27 12-3-11	26 9	25 5	24 4 I
I	2 22	S 1 19	29 16	28 13	27 10-12-24	26 6	25 5 L
S	3 23	I 2 20	A 1 17	29 14	28 11	27 7	26 6
A	4 24	V 3 21	B 2 18	T 1 15	29 12	28 8-2-57	27 7
N	5 25	A 4 22	3 19	I 2 16	K 1 13	29 9	28 8-12-13
	6 26	N 5 23	4 20	S 3 17	I 2 14	S 1 10	29 9
	7 27	6 24	5 21	R 4 18	S 3 15	H 2 11	N 1 10
	8 28	7 25	6 22	I 5 19	L 4 16	E 3 12	I 2 11
	9 29	8 26	7 23	6 20	E 5 17	B 4 13	S 3 12
	10 30	9 27	8 24	7 21	U 6 18	A 5 14	A 4 13
	11 1	10 28	9 25	8 22	7 19	T 6 15	N 5 14
	12 2	11 29	10 26	9 23	8 20	7 16	6 15
	13 3-4-8	12 30	11 27	10 24	9 21	8 17	7 16
	14 4 M	13 1-11-1	12 28	11 25	10 22	9 18	8 17
	15 5 A	14 2 J	13 29-15-23	12 26	11 23	10 19	9 18
	16 6 Y	15 3 U	14 30	13 27-16-29	12 24	11 20	10 19
	17 7	16 4 L	15 31	14 28	13 25-14-24	12 21	11 20
	18 8	17 5 Y	16 1 S	15 29	14 26	13 22-11-53	12 21
	19 9	18 6	17 2 E	16 30	15 27	14 23	13 22-10-10
	20 10	19 7	18 3 P	17 31	16 28	15 24	
	21 11	20 8	19 4 T	18 1 N	17 29	16 25	
	22 12	21 9	20 5 E	19 2 O	18 30	17 26	
	23 13	22 10	21 6 M	20 3 V	19 31 1921	18 27	
	24 14	23 11	22 7 B	21 4 E	20 1 J	19 28	
	25 15	24 12	23 8 E	22 5 M	21 2 A	20 1 M	
	26 16	25 13	24 9 R	23 6 B	22 3 N	21 2 A	
	27 17	26 14	25 10	24 7 E	23 4 U	22 3 R	
	28 18-8-46	27 15-22-46	26 11	25 8 R	24 5 A	23 4 C	
	29 19	28 16	27 12-15-12	26 9	25 6 R	24 5 H	
	30 20	29 17	28 13	27 10-18-26	26 7 Y	25 6	
I	1 21	30 18	29 14	28 11	27 8	26 7	
Y	2 22	T 1 19	30 15	29 12	28 9-7-47	27 8	
A	3 23	A 2 20	E 1 16	30 13	29 10	28 9-20-30	
R	4 24	M 3 21	L 2 17	H 1 14	30 11	29 10	
	5 25	M 4 22	U 3 18	E 2 15	T 1 12	30 11	
	6 26	U 5 23	L 4 19	S 3 16	E 2 13	A 1 12	
	7 27	Z 6 24	5 20	V 4 17	B 3 14	D 2 13	
	8 28	7 25	6 21	A 5 18	E 4 15	A 3 14	
	9 29	8 26	7 22	N 6 19	T 5 16	R 4 15	
	10 30	9 27	8 23	7 20	6 17	5 16	
	11 31	10 28	9 24	8 21	7 18	6 17	
	12 1-19-39	11 29	10 25	9 22	8 19	7 18	
	13 2 J	12 30	11 26	10 23	9 20	8 19	
	14 3 U	13 31-1-40	12 27	11 24	10 21	9 20	
	15 4 N	14 1 A	13 28-4-17	12 25	11 22	10 21	
	16 5 E	15 2 U	14 29	13 26-4-3	12 23	11 22	
	17 6	16 3 G	15 30	14 27	13 24-1-28	12 23-22-39	
	18 7	17 4 U	16 1 O	15 28	14 25	13 24	
	19 8	18 5 S	17 2 C	16 29	15 26	14 25	
	20 9	19 6 T	18 3 T	17 30	16 27	15 26	
	21 10	20 7	19 4 O	18 1 D	17 28	16 27	
	22 11	21 8	20 5 B	19 2 E	18 29	17 28	
	23 12	22 9	21 6 E	20 3 C	19 30	18 29	
	24 13	23 10	22 7 R	21 4	20 31	19 30	

LENGTH OF LUNAR YEAR ON VARIOUS MERIDIANS  
(Reckoned from paschal new moon to paschal new moon)

19-Year Cycle	Jew. Year	Greenwich Mean Noon	P.N.M.	P.N.M.	G.M.N.	J.C.T.	B.C.T.	Mnemonic
1	1832-1833	Mar. 31-17-2	to	Apr. 19-13-48	=	384 days	383 days	1
2	1833-1834	Apr. 19-13-48	to	Apr. 8-16-42	=	354 "	354 "	
3	1834-1835	Apr. 8-16-42	to	Mar. 28-16-42	=	354 "	354 "	
4	1835-1836	Mar. 28-16-42	to	Apr. 15-11-3	=	384 "	384 "	4
5	1836-1837	Apr. 15-11-3	to	Apr. 4-19-20	=	354 "	355 "	
6	1837-1838	Apr. 4-19-20	to	Mar. 25-9-44	=	355 "	354 "	
7	1838-1839	Mar. 25-9-44	to	Apr. 13-11-17	=	384 "	384 "	7
8	1839-1840	Apr. 13-11-17	to	Apr. 2-3-20	=	354 "	354 "	
9	1840-1841	Apr. 2-3-20	to	Apr. 21-2-31	=	384 "	384 "	9
10	1841-1842	Apr. 21-2-31	to	Apr. 10-10-31	=	355 "	354 "	
11	1842-1843	Apr. 10-10-31	to	Mar. 30-11-48	=	354 "	354 "	
12	1843-1844	Mar. 30-11-48	to	Apr. 17-4-32	=	384 "	384 "	12
13	1844-1845	Apr. 17-4-32	to	Apr. 6-7-40	=	354 "	354 "	
14	1845-1846	Apr. 6-7-40	to	Mar. 26-17-50	=	354 "	355 "	
15	1846-1847	Mar. 26-17-50	to	Apr. 14-18-21	=	383 "	383 "	15
16	1847-1848	Apr. 14-18-21	to	Apr. 3-11-1	=	355 "	354 "	
17	1848-1849	Apr. 3-11-1	to	Apr. 22-11-54	=	384 "	383 "	17
18	1849-1850	Apr. 22-11-54	to	Apr. 12-0-46	=	355 "	355 "	
19	1850-1851	Apr. 12-0-46	to	Apr. 1-6-32	=	354 "	354 "	
1	1851-1852	Apr. 1-6-32	to	Apr. 18-23-45	=	383 "	384 "	1

\* Greenwich M.No  
\*\* Jerusalem C.T.  
\*\*\* Boston C.T.

G.M.N. J.C.T. B.C.T.  
6939 6938 6936

Jerusalem Civil Time

1	1832-1833	Apr. 1-7-23	to	Apr. 20-4-9
2	1833-1834	Apr. 20-4-9	to	Apr. 9-7-3
3	1834-1835	Apr. 9-7-3	to	Mar. 29-7-3
4	1835-1836	Mar. 29-7-3	to	Apr. 16-1-24
5	1836-1837	Apr. 16-1-24	to	Apr. 5-9-41
6	1837-1838	Apr. 5-9-41	to	Mar. 26-0-5
7	1838-1839	Mar. 26-0-5	to	Apr. 14-1-38
8	1839-1840	Apr. 14-1-38	to	Apr. 2-17-41
9	1840-1841	Apr. 2-17-41	to	Apr. 21-16-52
10	1841-1842	Apr. 21-16-52	to	Apr. 11-0-52
11	1842-1843	Apr. 11-0-52	to	Mar. 31-2-9
12	1843-1844	Mar. 31-2-9	to	Apr. 17-18-53
13	1844-1845	Apr. 17-18-53	to	Apr. 6-22-1
14	1845-1846	Apr. 6-22-1	to	Mar. 27-8-11
15	1846-1847	Mar. 27-8-11	to	Apr. 15-8-42
16	1847-1848	Apr. 15-8-42	to	Apr. 4-1-22
17	1848-1849	Apr. 4-1-22	to	Apr. 23-2-15
18	1849-1850	Apr. 23-2-15	to	Apr. 12-15-7
19	1850-1851	Apr. 12-15-7	to	Apr. 1-20-53
1	1851-1852	Apr. 1-20-53	to	Apr. 19-14-6





Wierly

Moon in Taurus

2° N. Lat.

18° N. Decl.

FULL MOON ON NISAN 14 AND TISRI 10 ON OCTOBER 22 ?

(Jerusalem Civil Time)

Apogee -April 19

Vendar--29 days

28 = 17-18-53 April con- I  
29 = 18 junction

Nisan 1 = 19

" 14 = 2-17-57 May F. Moon

Iyar--29 days

29 = 16-21-48 June con- II  
Sivan 1 = 15 junction

Translation  
15<sup>h</sup> 16<sup>m</sup>

Tammuz--29 days

29 = 14-4-52 August con- III  
Ab 1 = 15 junction

Translation  
15<sup>h</sup> 53<sup>m</sup>

Elul--29 days

29 = 12-1-45 October con- IIIV  
Tisri 1 = 13 junction

Translation  
15<sup>h</sup> 48<sup>m</sup>

II June 16--

Moon in Cancer

2° S. Lat.

21° N. Decl. \*\*

Apogee on 13th

III August 14--

Moon in Leo

5° S. Lat.

5° N. Decl. \*\*

Apogee 7th; Perigee 21st

IV October 12--

Moon in Scorpio

3° S. Lat.

15° S. Decl.

Perigee 13th. \*\*

	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov	
	23	11	22	8	21	4	20	1	
	24	12	23	9	22	5	21	2	
	25	13	24	10	23	6	22	3	
	26	14	25	11	24	7	23	4	
	27	15	26	12	25	8	24	5	
	28	16	27	13	26	9	25	6	
	29	17-11-14	28	14	27	10	26	7	
	30	18	29	15-16-44	28	11	27	8	NEW MOONS
I 1	19		30	16	29	12-15-57	28	9	
Y 2	20		T 1	17	30	15	29	10-11-57	
A 3	21		A 2	18	E 1	14	30	11	VI
R 4	22		M 3	19	L 2	15	H 1	12	
	5	23	M 4	20	U 3	16	E 2	13	
	6	24	U 5	21	L 4	17	S 3	14	
	7	25	Z 6	22		18	V 4	15	
	8	26		23		19	A 5	16	
	9	27		24		20	H 6	17	
	10	28		25		21		18	
	11	29		26		22		19	
	12	30		27		23		20	
	13	31		28		24		21	
	14	1-1-8		29-16-54		25		22	FULL MOONS
	15	2		30		26-15-54		23	
	16	3 J		31		27		24	
	17	4 U		1 A		28		25-2-3	
	18	5 N		2 U		29		26	
	19	6 E		3 G		30		27	
	20	7		4 U		1 O		28	
	21	8		5 S		2 C		29	
	22	9		6 T		3 T		30	
	23	10		7		4 O		1 D	
	24	11		8		5 B		2 E	
	25	12		9		6 E		3 C	
	26	13		10		7 R		4 E	
	27	14	II	11		8		5 M	
	28	15	17-16-53	12		9		6 B	
	29	18	29	13-2-48		10		7 E	NEW MOONS
N 1	19		S 1	17		14-4-52		8 R	
I 2	20 A		I 2	18		A 1	15	9-22-33	
S 3	21 P		V 3	19		B 2	16		
A 4	22 R		A 4	20		T 1	13		
H 5	23 I		H 5	21		S 3	15		
	6	24 L		22		R 4	16		
	7	25		23		I 5	17		
	8	26		24			18		
	9	27		25			19		
	10	28		26			20		
	11	29		27			21		
	12	30		28			22		
	13	1		29			23		
	14	2-17-37		30-8-57			24		
	15	3		1			25		FULL MOONS
	16	4 M		2 J			26-7-25		
	17	5 A		3 U			27		14 24-21-49
	18	6 Y		4 L			28		
	19	7		5 Y			29		
	20	8		6			30		
	21	9		7			31		

\*\* In the conjunctions marked II, III, and IV, only one factor in each, relative to the position of the moon, favored a quick phasis. It would be impossible for the moon to be seen on the day of conjunction unless all factors were favorable.

Imo etiam tres jam dictae causae, naturiorem lunae apparitionem praeventes, quandoque convenient; tamen addubito, num novissima & prima luna, uno eodemque die . . . conspici possit. Hevelius, Johannis, "Selenographia," page 275.

(But although all three causes just related, which advance the earliest appearance of the moon, should somehow occur together; yet I doubt whether the newest (conjunction) and first moon can be seen on one and the same day.) [civil]

JEWISH CALENDAR BASED ON POSTULATE I\*

(Jerusalem Civil Time)

1844

	Tebet	Jan	Adar	Mar	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov	
	23	15	23	14	23	12	23	10	23	7	23	5	
	24	16	24	15	24	13	24	11	24	8	24	6	
	25	17	25	16	25	14	25	12	25	9	25	7	
	26	18	26	17	26	15	26	13	26	10	26	8	
Translatio	27	19-20-39	27	18	27	16	27	14	27	11 IV	27	9 V	NEW
Periods	28	20	28	19-2-38	28	17-11-14	28	15-16-44	28	12-15-37	28	10-11-57	MOONS
	29	21	29	20	29	18	29	16	29	13	29	11	
S	1	22	30	21	30	19	30	17	30	14	30	12	
H	2	23	V 1	22	I 1	20	T 1	18	E 1	15	H 1	13	
E	3	24	E 2	23	Y 2	21	A 2	19	L 2	16	E 2	14	
B	4	25	A 3	24	A 3	22	M 3	20	U 3	17	S 3	15	
A	5	26	D 4	25	R 4	23	M 4	21	L 4	18	V 4	16	
T	6	27	A 5	26	5	24	U 5	22	5	19	A 5	17	
	7	28	R 6	27	6	25	Z 6	23	6	20	N 6	18	
	8	29	7	28	7	26	7	24	7	21	7	19	
	9	30	8	29	8	27	8	25	8	22	8	20	
	10	31	9	30	9	28	9	26	9	23	9	21	
	11	1 F	10	31	10	29	10	27	10	24	10	22	
	12	2 E	11	1	11	30	11	28	11	25	11	23	
	13	3 B	12	2	12	31	12	29-16-54	12	26-15-34	12	24	FULL
	14	4-11-5	13	3-9-18	13	1-1-8	13	30	13	27	13	25-2-3	MOONS
	15	5	14	4	14	2	14	31	14	28	14	26	
	16	6	15	5 A	15	3 J	15	1 A	15	29	15	27	
	17	7	16	6 P	16	4 U	16	2 U	16	30	16	28	
	18	8	17	7 R	17	5 N	17	3 G	17	1 O	17	29	
	19	9	18	8 I	18	6 E	18	4 U	18	2 C	18	30	
	20	10	19	9 L	19	7	19	5 S	19	3 T	19	1 D	
	21	11	20	10	20	8	20	6 T	20	4 O	20	2 E	
	22	12	21	11	21	9	21	7	21	5 B	21	3 C	
	23	13	22	12	22	10	22	8	22	6 E	22	4 E	
	24	14	23	13	23	11	23	9	23	7 R	23	5 M	
	25	15	24	14	24	12	24	10	24	8	24	6 B	
	26	16	25	15	25	13	25	11	25	9	25	7 E	
	27	17	26	16 I	26	14	26	12	26	10	26	8 R	NEW
	28	18-11-6	27	17-18-53	27	15 II	27	13 III	27	11	27	9-22-33	MOONS
	29	19	28	18	28	16-2-47	28	14-4-52	28	12-1-45	28	10	
	30	20	29	19	29	17	29	15	29	13	29	11	
A	1	21	N 1	20	S 1	18	A 1	16	T 1	14	S 1	12	
D	2	22	I 2	21	I 2	19	B 2	17	I 2	15	K 1	13	
A	3	23	S 3	22	V 3	20	3	18	S 3	16	I 2	14	
R	4	24	A 4	23	A 4	21	4	19	R 4	17	S 3	15	
	5	25	N 5	24	N 5	22	5	20	I 5	18	L 4	16	
	6	26	6	25	6	23	6	21	6	19	E 5	17	
	7	27	7	26	7	24	7	22	7	20	U 6	18	
	8	28	8	27	8	25	8	23	8	21	7	19	
	9	29	9	28	9	26	9	24	9	22	8	20	
	10	1 M	10	29	10	27	10	25	10	23	9	21	
	11	2 A	11	30	11	28	11	26	11	24	10	22	
	12	3 R	12	1	12	29	12	27	12	25	11	23	FULL
	13	4-23-23	13	2-17-37	13	30-8-37	13	28-2-54	13	26-7-25	12	24-21-49	MOONS
Paschal Moon	14	5	14	3	14	1	14	29	14	27	13	25	
	15	6	15	4 M	15	2 J	15	30	15	28	14	26	
	16	7	16	5 A	16	3 U	16	31	16	29	15	27	
	17	8	17	6 Y	17	4 L	17	1 S	17	30	16	28	
	18	9	18	7	18	5 Y	18	2 E	18	31	17	29	
	19	10	19	8	19	6	19	3 P	19	1 N	18	30	
	20	11	20	9	20	7	20	4 T	20	2 O	19	31	
	21	12	21	10	21	8	21	5	21	3 V	20	1 J	1845
	22	13	22	11	22	9	22	6	22	4 E	21	2 A	

\* POSTULATE I places the paschal full moon always on Nisan 13, Jerusalem Time.

The position of the moon seems to be such as to demand the arrangement of the Jewish calendar as given above. The full moon of May 2 is placed on Nisan 13. This is the true paschal moon for 1844. The conjunctions marked I, II, III, IV, and V bear important relation to the October conjunction, which they would appear to make immovable.



THE DATE LINE  
(1844)

The Advent movement in 1844 undertook the problem of finding the civil date corresponding to the "tenth day of the seventh month." In the solution of this calendar question the dates chosen for Tisri 1 and Tisri 10 were considered from the meridians of both Boston and Jerusalem. Such statements were made in the Adventist literature as exactly defined the position of the moon, noted from these longitudes east and west, and the difference between the moon's coincident points of time observed. The Jewish calendar harmonizes the variations which arise in luni-solar time, by allowing double festival days in the East, especially as pertaining to the Jewish new year, or first day of Tisri, from which the civil year is reckoned. The western lands observe only one day for this festival, which is known as Roshashana. In Palestine double festival days are also kept for the pass-over; but only one day is appointed for the West.<sup>1</sup>

The main cause for this double dating of lunar festivals is our round world, and the fact that the Jewish people are scattered all over it. The moon that marks out the Jewish feast period "cannot appear the same evening everywhere."<sup>2</sup> As the moon travels eastward from the sun, the time of her phasis is constantly changing on various meridians. On this account the actual beginning of a Jewish festival day can occur on any meridian, in contrast to the solar, or civil day, whose date line has been accepted as the 180th. In October, 1844, the position of the moon was such as to cause the new moon day of Tisri to begin on the meridian of Boston, which is  $71^{\circ}$  west from Greenwich. The corresponding civil date of Tisri 1, however, was already nearly 16 hours old, and on its way back to the 180th meridian, where it would end.

If one be inclined to date a Jewish festival day on one and the same civil date all over the world, it should be borne in mind that two different civil days are always in progress east and west. The civil day that crosses the date line, going west, is a new day, dated 24 hours later than the day that approached from the east. If the day is October 13, as it comes to the date line, westward bound, it will be October 14 when it crosses to the other side. These 24 hours that are added to the civil date, also affect the corresponding Jewish festival date. As

for instance, if Tisri 1 as October 13 comes up to the date line, going west, it will cross over as Tisri 1/October 14, not as Tisri 2. A glance at TABLE H will show why this is so. If the new day should leave the date line as Tisri 2/October 14, when it came to Jerusalem at the end of about 16 hours west from Boston, Tisri 1/October 14 would still be in progress, and the clocks and watches would not agree. On the contrary, if Tisri 1/October 14 leaves the date line as such, it will meet the same date at Jerusalem after about 16 hours, and return to Boston ready for Tisri 2/October 14 as the next day.

In comparing the festival dates at Jerusalem with those at Boston in the instance of the October conjunction in 1844, the apparent paradox is at once removed if it be noted that while Tisri 1 on October 13 in Boston and Tisri 1 on October 14 in Jerusalem coincide for about seven hours, yet the latter date--Tisri 1/October 14 in Jerusalem--is the day ending, as it were, after crossing the day line. Furthermore, it is not succeeded by October 13, as the day reaches Boston, but by Tisri 2/October 14, as the next day. Similarly, Tisri 1/October 13 in Boston followed Elul 29/October 13 in Jerusalem. Naturally the civil day dated October 14 stays the 14th all the way west to the 180th meridian, where it ends. But the festival date, Tisri 1, ended at the longitude of Boston in October, 1844. It does not always end on this meridian. The position of the conjunction determines the festival date line.

The clock chart--Diagram E and F--shows two parts of one and the same day, Tisri 1, the day in Boston, October 13, being the first portion of the day, which has not yet come to the solar date line; while Tisri 1 in Jerusalem, as October 14, is the latter part of the day, which has crossed the 180th meridian, and is on its way back to Boston, where the festival day started, in this instance, and where it ended.

Grace Amadon (Oct. 26, 1939)



**QUESTION:** Are Jewish festivals on the same date in Jerusalem as in America?

**ANSWER:** The days of the week are ruled by the sun, and they start and finish at the 180th meridian. Though any sunset point of time occurs  $7^h 5^m$  earlier in Jerusalem than in Boston, yet any sunset point of time in Boston is coincident with the clock time  $7^h 5^m$  later in Jerusalem. On the contrary, the Jewish so-called new moon day, or first day of the month, is ruled by the moon, being determined by the first appearance of the moon after conjunction. The phasis of the moon, therefore, sets the first day of every Jewish month, and from this day every other day of the month is numbered. This was true in ancient times, and even the new moon days of the modern Jewish calendar, as far as possible, tend to coincide with the phasis of the moon. The variable period from conjunction to phasis is known as the translation period, and varies from one to four days.

The position of the conjunction and the position of the moon in reference to the sun, earth, and celestial equator govern the phasis, or first appearance of the moon. Very seldom, according to Hevelius, do all the astronomical factors causing a short translation period occur together. The same is not true in reference to long periods, which are the more common. The short period is the rare one.

The ancient Karaite reckoning as regards short translations of the moon was as follows:

"In case the age of the moon, as from new moon until the hour of sunset, is over 22 hours, then the first of the month is always counted the first evening--on the grounds that the moon at an age of over 22 hours from the new moon (conjunction) receives a great share of its light from the sun, so that it can be seen simultaneously with the sun on the horizon at sunset on the first evening."--Kokisoff, Juhuda, "Brief Information on the Karaite Calendar." Odessa, 1880. Translated from the Russian.

Another important statement from this same source declares: "that the moon which will show herself the first night after the new moon in the Crimea, cannot appear the same evening everywhere." Idem.

According to <sup>an</sup> authority on Jewish reckoning,<sup>1</sup> "the feast of New Year's day is, however, as in ancient times, kept two days in Palestine." It is stated that that people living a fortnight's journey from Jerusalem had no time to find out when the first day of Tisri had been appointed. And so, even in Palestine, two days were kept, in order to be in harmony with those outside. This is contrary to the modern Jewish calendar of the west, which has one New Year's day only. civil

The basis reason for this ancient custom seems to be astronomical, and was doubtless put in operation at the time the Jews were scattered from their home land. It was stated by Kokisoff when he said "that the moon cannot appear the same evening everywhere." If the conjunction date were the same for every meridian, then perhaps the moon's phasis might be the same for every place, following the progress of the solar day around the world. But at the instant of conjunction, every meridian has a different local date, which varies according to the difference in time between meridians. As one goes eastward, the later the date of conjunction is. Consequently the conjunction in Jerusalem is always  $7^h 5^m$  later than in Boston. This factor would tend to make the phasis of the moon in Jerusalem later than in America. On the other hand, sometimes the festival days are on the same dates in both places. This depends upon the position of the conjunction, and works in the following manner:

(1) If the conjunction date in Jerusalem is at such an hour that the conjunction in Boston, which is earlier by  $7^h 5^m$ , is so near the sunset point that an earlier phasis of the moon occurs, then the new moon day in Boston takes place one day earlier than in Jerusalem, that is, its civil date is one day sooner.

<sup>1</sup> Personal letter by Dr. Moses Hyamson to "The Ministry." August, 1939.

<sup>2</sup> American Jewish Year Book.

(2) If the conjunction date at Jerusalem is at such a point that the Boston clock marks the time of conjunction so far away from the sunset point that the moon cannot be seen at an earlier sunset, then the festival day in both Jerusalem and Boston will be on the same date. This can happen at other meridians west of Jerusalem, and depends upon the position of the conjunction.

In this way the phasis of the moon becomes a definite factor in fixing the time of the Jewish new moon days on various meridians of the earth. To have a festival day later in the east than in the west is seemingly an irregularity. To preserve the unity of the dispersed Jewish nation it was necessary that as much as possible the festivals should be preserved to occur on the same day all over the world, and hence the institution of the "second day of the diaspora." The double new moon day of Tisri in Palestine, a day earlier than in Europe, evidently shows an attempt to meet this paradoxical condition, which was in reality caused by the moon. It is all the more interesting because the American Jewish Year Book has no double moon days at all for the month Tisri.

There were three short translation periods during the summer of 1944--in June, August, and October, respectively. Their corresponding conjunctions in Jerusalem were as follows:

- (1) Oct. 12  $1^h 46^m$ ; perigee was October 13; moon  $14^\circ$  south of equator.
- (2) June 16  $2^h 23^m$ ; moon  $21^\circ$  north of equator; perigee June 13.
- (3) Aug. 14  $4^h 51^m$ ; moon  $7^\circ$  north of equator; perigee at August 21.

If the full moon date of May 2  $17^h 37^m$  in 1944, Jerusalem civil time, be placed on Nisan 14 the same as it occurred in Boston, then each one of the conjunction dates given above would be made to occur on the last day of their respective months--Elul, Iyar, and Tamuz; and their translation periods would thereby be reduced to, October-- $15^h 47^m$ ; June-- $16^h 41^m$ ; August-- $14^h 13^m$ . These periods are not only too short, but the placing of the full moon date on the 14th Nisan in Jerusalem means that in each instance the phasis would take place on the same day as the conjunction. Hevelius states plainly that such an astronomical event not only very seldom happens, but never at all unless the three special factors, which accelerate the moon's phasis, all conspire together. On these dates in Jerusalem such was not the case. In October the only feature that hastened the moon's phasis was the fact that the conjunction was so near the perigee, almost on it; in June, there was one active element present, the position of the moon in her most northern declination-- $21^\circ$  north of the equator; in August, the moon's position was even less favorable for a quick phasis. Under these conditions the moon could not possibly make a first appearance on the same day as conjunction in Jerusalem. This is an event which very rarely occurs, if we accept the testimony of Hevelius. It is confirmed by this most interesting relation of the Jewish festivals to the Gregorian calendar in 1944.

Therefore the placing of the May full moon on Nisan 14 in Jerusalem is not in harmony with the actual position of the moon in the heavens at the time of the three conjunctions in June, August, and October. Hence the only conclusion is that the full moon of May--the paschal moon--in Jerusalem must have occurred on Nisan 13, and on Nisan 14 in Boston. If so, then the 10th day of Tisri was on October 22/23 in Jerusalem, and October 21/22 in Boston. The two days had a little over seven hours in common.

<sup>8</sup> British Ephemeris, 1944.



In the nineteen-year cycle--TABLE L--the embolismic years run as indicated in the column under Leap Year. The numbering 1-3-6-9-11-14-17 would change to 3-6-8-11-14-17-19 if the cycle should begin with the fourth line down; or to 2-5-8-10-13-16-19 if the cycle should begin with the second line, and so on. From this it may be rightly observed that a nineteen-year cycle may begin anywhere, and that its numbered formula changes to fit the position of the cycle. These various formulae, therefore, are in reality all the same if the same relationship is kept as pointed out by the astronomical moons. A more significant formula may be obtained--one based on the relation of the common years to the leap years. In the cycle here given, if we call the leap year "1" and the common year "2," the formula would run as follows from the years 1838 to 1857:

1212212212122122122

The next cycle would run on in the same relation, and so on to infinity. In whatever year the cycle should be made to start, the same order of common years and leap years would have to continue on. If for instance, the first year of the cycle should begin with the fourth year of the series above, then the formula would read--

2212212122122122121

It is necessary to run through at least two cycles in order to determine the position of the embolismic years, but their relation to the common years never changes. This fact is important in laying out the Jewish year. It is the framework needed in tying together Jewish time with civil time.

In the construction of the Hebrew calendar the following factors are necessary and important:

1. The length of the lunar year, which in the cycles here given, is figured according to the time between the Mosaic paschal full moons as given in a Standard almanac. The same length can be obtained by using the astronomical new moons.
2. The true astronomical relation between the common year and the embolismic year.
3. The length of the Jewish months as given in chronology and history, which allows a fixed period between Passover and Atonement, and 29 days to Veadar and 30 to Adar in an embolismic year.

The variable number of days in Hesvan and Kisleu is determined by the length of the year, as from paschal moon to paschal moon, and by the position of the leap year. If a luni-solar year is constructed on the basis of the rules given above, the paschal full moon will always occur on Nisan 13, Jerusalem civil time.

The paschal moon dates, as for instance, in 1849 and 1857 (Compare Table L), are determined by the embolism. This required a leap year in 1849, but not in 1857, although, in the latter year, the dates might so indicate. Scaliger's statement in reference to the passover limits in the first century is a good lead, because based on the nineteen-year cycles of Dionysius and the Jews. But every declaration of history needs also the astronomical witness.

JEWISH FEAST CYCLE (1843 and 1844)\*  
(Boston Civil Time)

	1	2	3	4	5	
	Jewish Month	New Moon	Full Moon	Festivals	Moon's Time	
1843	10 Tebet	Dec. 31	to Jan. 16		=15d-13h- m	
	11 Sebat	Jan. 30	" Feb. 14		=15 - 8 8	
	12 Adar	Mar. 1	" Mar. 16		=14 -23 -56	
<u>MOSAIC</u>  <u>also</u>  <u>Rabbinical</u>	1 Nisan	<u>Mar. 30</u>	" Apr. 14	Passover	-14 -14 -40	172 days between Passover 1843 and Atonement
	2 Iyar	Apr. 29	" May 13	(Apr. 15=)	-14 - 6 -15	
	3 Sivan	May 29	" June 12	(Nisan 14)	-14 - 0 -16	
	4 Tammuz	June 27	" July 11		-13 -21 -45	
	5 Ab	July 27	" Aug. 9		-13 -23 -11	
	6 Elul	Aug. 25	" Sept. 8	Tisri 10	=14 - 4 -22	
	7 Tisri	Sept. 23	" Oct. 8	=Oct. 4	=14 -12 -23	
1844	8 Heshvan	Oct. 23	" Nov. 7		=14 -21 -46	
	9 Kisleu	Nov. 21	" Dec. 6		=15 - 6 -27	
	10 Tebet	Dec. 21	" Jan. 5		=15 -12 -25	
	11 Sebat	Jan. 19	" Feb. 4	Rabbinical	=15 -14 -24	
	12 Adar I	Feb. 18	" Mar. 4	Passover	=15 -12 -16	
	13 Adar II	Mar. 18	" <u>Apr. 3</u>	April 4	=15 - 6 -40	
<u>MOSAIC</u>  <u>only</u>	1 Nisan	Apr. 17	" May 2	Passover	-14 -22 -43	172 days between Passover 1844 and Atonement
	2 Iyar	May 17	" May 31	(May 3=)	-14 -13 -53	
	3 Sivan	June 15	" June 30	(Nisan 14)	-14 - 5 -50	
	4 Tammuz	July 15	" July 29	or May 2	-14 - 0 -10	
	5 Ab	Aug. 13	" Aug. 27	B.C.T.	-13 -22 - 2	
	6 Elul	Sept. 12	" Sept. 26	Tisri 10	-13 -23 -57	
	7 Tisri	Oct. 11	" Oct. 26	=Oct. 22	=14 - 5 -41	
	8 Heshvan	Nov. 10	" Nov. 24		=14 -14 - 5	
	9 Kisleu	Dec. 9	" Dec. 24		=14 -23 -16	

\* Moon's phases computed from the British Nautical Almanac

o o o o O o o o o

The spring of 1843 offers only one date that can possibly correspond to the new moon of Nisan -- March 30. From this spring moon, the Jewish year in 1843 began, the Passover coming on April 15, and after 172 days, Tisri 10 coming on October 4. Column 2 shows that the time from March 30 (the first new moon after the vernal equinox in 1843), to March 18, inclusive, the last new moon before the vernal equinox in 1844), is exactly 13 moons. In order to coalesce with the extra moon, the Jewish year should intercalate a second Adar, whose full moon would then come on April 3, 1844. This Adar moon could not be the Mosaic paschal moon, for it is too early--the latter rain not yet being ended, and the barley corn not yet being ripe in Palestine. Hence the next new moon, whose conjunction is on April 17, must mark the month Nisan in 1844. The Passover would therefore come on May 3, the day following full moon; and the Tisri new moon would of necessity fall in October, the day of atonement coming on October 22 at the end of 172 days from Passover. The one place for the new moon of Nisan on March 30, 1843, and also of the full moon of April 3, 1844--which must belong to Adar because it is too early for Nisan--represent two fixed positions of the moon that exactly determine the date of Tisri 10 in 1844 to be the 22nd day of October.

EMBOISMIC







Lunar Cycle from 1900 to 1999 = 299 years

Golden Number	Date	Golden Number	Date	Golden Number	Date	Golden Number	Date
1919 1 W	Apr. 14 <sup>M</sup>	1924 6 T	Apr. 18 <sup>T</sup>	1929 11 T	Mar. 25 <sup>M</sup>	1934 16 M	Mar. 30 <sup>F</sup>
1920 2 T	Apr. 3 <sup>F</sup>	1925 7 T	Apr. 8 <sup>W</sup>	1930 12 W	Apr. 13 <sup>S</sup>	1935 17 T	Apr. 17 <sup>W</sup>
1921 3 S	Mar. 23 <sup>W</sup>	1926 8 F	Mar. 28 <sup>S</sup>	1931 13 T	Apr. 2 <sup>T</sup>	1936 18 W	Apr. 7 <sup>M</sup>
1922 4 2	Apr. 11 <sup>T</sup>	1927 9 S	Apr. 16 <sup>S</sup>	1932 14 F	Mar. 22 <sup>M</sup>	1937 19 F	Mar. 27 <sup>S</sup>
1923 5 M	Mar. 31 <sup>S</sup>	1928 10 2	Apr. 5 <sup>W</sup>	1933 15 2	Apr. 10 <sup>M</sup>		

World's Almanac  
Vol. 1931, p. 66

"The Paschal Full Moon is the Fourteenth Day of a Lunar month reckoned according to an ancient ecclesiastical computation and not the real or astronomical full moon."

3.58  
80.66  
228  
2045  
1061  
92

Year	Vern. Equinox	Full Moon	Boston N.Y.	Day of Week in 20 <sup>th</sup> cent.	Day of Week in 1st Century
1929	Mar. 20, 9:35	Mar. 25 - 2:46	E.S.T.	Monday	Sunday - M 29
1930	Mar. 21, 3:30	April 13 - 12:48	"	Sunday	Sabbath - T 30
1931	Mar. 21, 9:07	April 2 - 3:05	"	Thursday	Wednesday - 31
1932	Mar. 20, 2:54	Mar. 22 - 7:37		Monday	Sunday - T 32
1933	Mar. 20, 8:48	April 10 - 8:38		Monday	Sunday - S 33

The moon completes a circuit around the earth in a period whose mean or average length is 27 days, 7 hrs. 43.2 min. . . . The points of intersection with the ecliptic are called nodes, and it is only at or near them that eclipses can occur. The nodes have a retrograde motion, which causes them to make an entire revolution in 18 yrs. 21 hours, 22 min., and 46 seconds. Both sun and moon return to a node after 18 years and 11 days. . . . The moon revolves on an axis, and the time of rotation is exactly equal to the time of revolution around the earth = 27.32166 days.

When the Lunar Cycle above is applied to <sup>the Cycle 2</sup> 31 and with a correction of 8 days, the days of the week are as follows for the Full Moon: -

- 1- 19 - T 14 + 8 = Apr. 6 = M or T T
- 2- 20 - W 3 + 8 = Mar. 25 = F or S 2
- 3- 21 - F 23 + 8 = Mar. 15 = W or T T
- 4- 22 - S 11 + 8 = Apr. 3 = T or W W
- 5- 23 - 2 31 + 8 = Apr. 23 = S or 2 2
- 6- 24 - M 18 + 8 = Apr. 10 = T or F S
- 7- 25 - W 8 + 8 = Mar. 31 = W or T T
- 8- 26 - T 28 + 8 = Apr. 20 = 2 or M M
- 9- 27 - F 16 + 8 = Apr. 8 = S or 2 2
- 10- 28 - S 5 + 8 = Mar. 26 = W or T (F)
- 11- 29 - M -25 + 8 = Mar. 25 = M or T T
- 12- 30 - T -13 + 8 = Apr. 13 = 2 or M M
- 13- 31 - W -2 + 8 = Mar. 25 = T or F W F
- 14- 32 - T -22 + 8 = Mar. 14 = M or T W
- 15- 33 - S -10 + 8 = Apr. 2 = M or T T
- 16- 34 - 2 -30 + 8 = Apr. 22 = F or S S
- 17- 35 - M -17 + 8 = Apr. 9 = W or T T
- 18- 36 - T -7 + 8 = Mar. 30 = T or W W
- 19- 37 - T -27 + 8 = April 19 = S or 2 2

True New Moons	Guinness	Jan	Feb	Mar	Apr
Mar 31		1	1	1	
Mar. 20-13-48	3.05	2	2	2	2
Mar. 9-20-40		3	3	3	3
Mar. 28-15-10		4	4	4	4
Mar. 17-14-55	20	5	5	5	5
Apr. 4-9-14		6	6	6	6
Mar. 24-16-18		7	7	7	7
Mar. 14-5-53		8	8	8	8
Apr. 1-15-41		9	9	9	9
Mar. 21-23-29		10	10	10	10
Mar. 11-11-24		11	11	11	11
Mar. 30-8-18		12	12	12	12
Mar. 19-10-4		13	13	13	13
Mar. 22-15-24		14	14	14	14
Mar. 26-5-26		15	15	15	15
Mar. 15-14-31		16	16	16	16
		17	17	17	17
		18	18	18	18
		19	19	19	19
		20	20	20	20
		21	21	21	21
		22	22	22	22
		23	23	23	23
		24	24	24	24
		25	25	25	25
		26	26	26	26
		27	27	27	27
		28	28	28	28
		29	29	29	29
		30	30	30	30
		31	31	31	31



LENGTH OF LUNAR YEAR ON VARIOUS MERIDIANS

(Reckoned from paschal full moon to paschal full moon)

19-Year Cycle	Jew. Year	Paschal Full Moon		G.M.T. 384 days	J.C.T. 383 days	B.C.T. 384 days	Embolismic Years
		Apr. 9 14 <sup>h</sup> 6 <sup>m</sup>	Apr. 28 7 <sup>h</sup> 21 <sup>m</sup>				
1	1838-1839	Apr. 28	Apr. 28	384	383	384	1
2	1839-1840	Apr. 16	Apr. 16	354	354	354	3
3	1840-1841	Apr. 5	Apr. 5	384	384	384	3
4	1841-1842	May 5	Apr. 24	354	355	354	3
5	1842-1843	Apr. 24	Apr. 14	355	354	355	3
6	1843-1844	Apr. 14	May 2	384	384	384	6
7	1844-1845	May 2	Apr. 21	354	355	355	6
8	1845-1846	Apr. 21	Apr. 11	355	354	354	9
9	1846-1847	Apr. 11	Apr. 30	384	384	384	9
10	1847-1848	Apr. 30	Apr. 18	354	354	354	11
11	1848-1849	Apr. 18	May 6	383	384	384	11
12	1849-1850	May 6	Apr. 25	354	354	354	11
13	1850-1851	Apr. 25	Apr. 15	355	355	354	14
14	1851-1852	Apr. 15	May 3	384	384	384	14
15	1852-1853	May 3	Apr. 23	355	354	355	17
16	1853-1854	Apr. 23	Apr. 12	354	355	355	17
17	1854-1855	Apr. 12	May 1	384	384	383	17
18	1855-1856	May 1	Apr. 19	354	354	355	17
19	1856-1857	Apr. 19	May 8	354	354	354	17
21	1857-1858	Apr. 8	Apr. 27	384	384	383	1
2	1858-1859	Apr. 27	Apr. 16	354	354	355	3
3	1859-1860	Apr. 16	May 4	384	384	384	3
4	1860-1861	May 4	Apr. 24	355	355	354	6
5	1861-1862	Apr. 24	Apr. 14	355	354	355	6
6	1862-1863	Apr. 14	May 3	384	384	384	9
7	1863-1864	May 3	Apr. 21	354	355	354	9
8	1864-1865	Apr. 21	Apr. 10	354	354	354	11
9	1865-1866	Apr. 10	Apr. 29	384	383	384	11
10	1866-1867	Apr. 29	Apr. 18	354	355	354	14
11	1867-1868	Apr. 18	May 6	384	383	384	14
12	1868-1869	May 6	Apr. 25	354	355	355	17
13	1869-1870	Apr. 25	Apr. 15	355	355	354	17
14	1870-1871	Apr. 15	May 4	384	384	384	17
15	1871-1872	May 4	Apr. 23	355	354	355	17
16	1872-1873	Apr. 23	Apr. 12	354	355	354	17
17	1873-1874	Apr. 12	May 1	384	383	384	17
18	1874-1875	May 1	Apr. 20	354	354	354	17
19	1875-1876	Apr. 20	Apr. 8	354	354	354	17

\* Greenwich Mean Noon  
 \*\* Jerusalem Civil Time  
 \*\*\* Boston Civil Time

To get J.C.T., add 14<sup>h</sup> 21<sup>m</sup> to paschal moon dates.  
 To get B.C.T., subtract 7<sup>h</sup> 5<sup>m</sup> from the J.C.T. dates.

G.M.T. J.C.T. B.C.T.  
 6939 days 6939 days 6939 days

6940 days 6939 days 6939 days

Note: For seven years, from 1851 to 1857, the length of the year is the same in both Jerusalem and Boston.

From Moses to John 1600 B.C. Introduction Intra.  
P. V = 1500 B.C.  
to 100 A.D.

Abraham's vision of oppression to Exodus 400 yrs.  
pp. 267; D.A. 31, 32 Vol. 8. p. 207

Wachizetah to Coronation of David, 800 yrs  
p.p. 703

Punishment of Amalekites postponed  
400 yrs. (or Exodus to Saul) pp. 628

Tabernacle at Shiloh 300 yrs. (Joshua  
to Death of Eli) pp. 574,

Worked out by  
Chale



- 466 13 "D" 6<sup>th</sup> or 5<sup>th</sup> Artaxerxes 21 Heaven = 1 Messore 1 Thoth = Dec/16/17
- 621 Ptolemy Lunar Eclipse in 5<sup>th</sup> Napolassar = 1 Thoth = Jan<sup>25</sup>/<sub>26</sub>  
 27<sup>th</sup> Atyr at end of 11<sup>th</sup> hour  
 = Apr 21 Astronomical
- 721 Ptolemy Lunar Eclipse in 2<sup>nd</sup> year of Mardocemrad 1 Thoth =  
 on 18 to 19 Thoth. Feb 19/20
- 523 Cambyses Lunar Eclipse in 7<sup>th</sup> year Egyptian Phenomenon 17 to 18 1 Thoth =  
 Jan 1/2

THE MOSAIC FEAST PERIOD -- APRIL TO OCTOBER, 1844

CONJUNCTION

PASSOVER

CONJUNCTION

ATONEMENT

Apr. 17 4<sup>h</sup> 33<sup>m</sup>

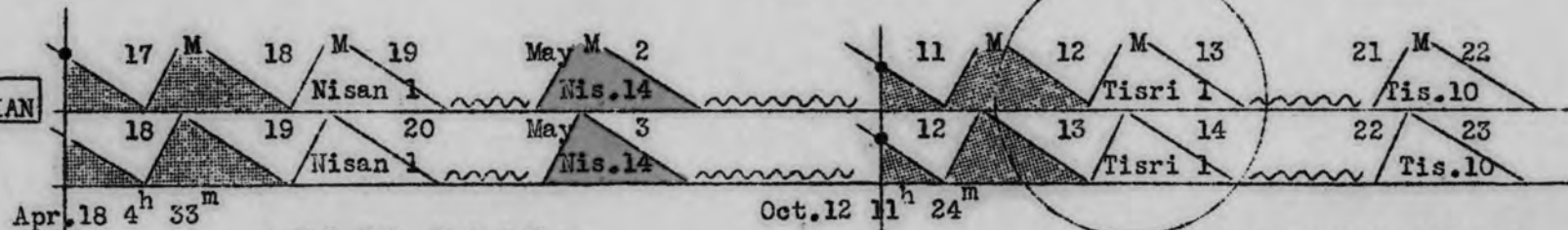
Oct. 11 11<sup>h</sup> 24<sup>m</sup>

①

OCTOBER

180<sup>th</sup> MERIDIAN

Civil Day changes



Apr. 18 4<sup>h</sup> 33<sup>m</sup>

Oct. 12 11<sup>h</sup> 24<sup>m</sup>

APRIL MOON --  
Sign = Aries  
Declination = 16° north  
April 19 = Apogee

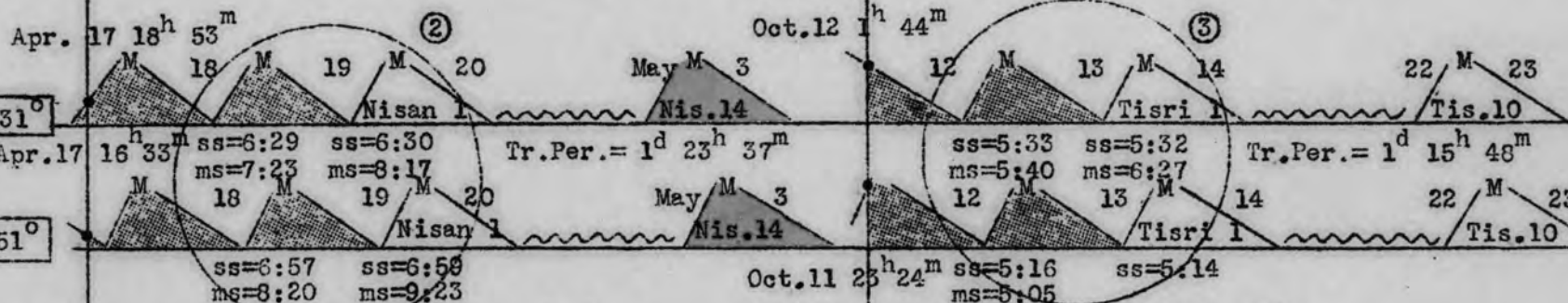
OCTOBER MOON --  
Sign = Libra  
Declination = 18° south  
October 13 = Perigee

9<sup>h</sup> 40<sup>m</sup>

JERUSALEM -- From May 3 (Passover) to October 23 (Atonement) = 173 days

JERUSALEM 31°

2<sup>h</sup> 20<sup>m</sup> Apr. 17



Tr.Per. = 1<sup>d</sup> 23<sup>h</sup> 37<sup>m</sup>

Tr.Per. = 1<sup>d</sup> 15<sup>h</sup> 48<sup>m</sup>

GREENWICH 51°

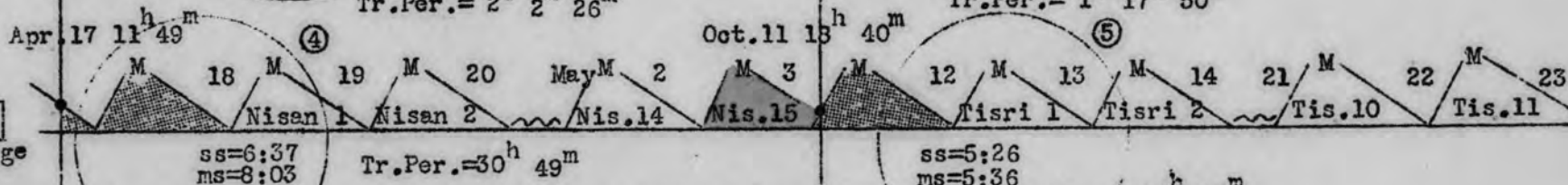
4<sup>h</sup> 44<sup>m</sup>

Tr.Per. = 2<sup>d</sup> 2<sup>h</sup> 26<sup>m</sup>

Tr.Per. = 1<sup>d</sup> 17<sup>h</sup> 50<sup>m</sup>

BOSTON 42°

7<sup>h</sup> 16<sup>m</sup>



Tr.Per. = 30<sup>h</sup> 49<sup>m</sup>

Tr.Per. = 22<sup>h</sup> 46<sup>m</sup>

AMERICA -- From May 2 (Pass.) to October 22 (Atonement) = 173 days

180<sup>th</sup> MERIDIAN

Apr. 17 4<sup>h</sup> 33<sup>m</sup>

Oct. 11 11<sup>h</sup> 24<sup>m</sup>





The people whom God had called to be the pillar and ground of the truth, had become representatives of Satan. They were doing the works that he desired them to do, taking a course to misrepresent the character of God, and cause the world to look upon Him as a tyrant. The very priests who ministered in the temple had lost sight of the significance of the service they performed. They had ceased to look beyond the symbol to the thing signified. In presenting the sacrificial offerings, they were as actors in a play. The ordinances which God Himself had appointed were made the means of blinding the mind and hardening the heart. God could do no more for man through these channels. The whole system must be swept away. *Revue of Ages, p. 36.*

Never before in His earthly life had Jesus permitted such a demonstration. He clearly foresaw the result. It would bring Him to the cross. But it was His purpose thus publicly to present Himself as the Redeemer. He desired to call attention to the sacrifice that was to crown His mission to a fallen world. While the people were assembling at Jerusalem to celebrate the Passover, He, the antitypical Lamb, by a voluntary act set Himself apart as an oblation. It would be needful for His church in all succeeding ages to make His death for the sins of the world a subject of deep thought and study. Every fact connected with it should be verified beyond a doubt. It was necessary, then, that the eyes of all people should now be directed to Him; the events which preceded His great sacrifice must be such as to call attention to the sacrifice itself. *Id., p. 571.*

And the Jews' Passover was at hand, and Jesus went up to Jerusalem. In this journey, Jesus joined one of the large companies that were making their way to the capital. He had not yet publicly announced His mission, and He mingled unnoticed with the throng. *Id., p. 157.*

See also  
Sightfoot  
and Smith

The Jewish Encyclopedia (Funks and Wagners)  
Mar Samuel: He says himself; page 30 Vol. XI

"Although I am as familiar with the courses of the stars as with the streets of Nehardea, I cannot explain the nature or the movement of the comets."

Samuel devoted himself especially to that branch of applied astronomy that deals with calendric science, which he taught to his colleagues and pupils. His astronomical studies of the revolutions of the moon enabled him to predict the beginning of the month ("rook hodesh") as it was determined in Palestine, and he claimed to be able to remove the necessity of celebrating double holy days in the Diaspora. He also compiled a calendar for sixty years, which he subsequently sent to R. Johanan, the head of the Talmudical teachers, as a proof of his knowledge (H. <sup>l</sup> 90b). He was called "Yarhina'ah" ("gerah" = "month") because of this familiarity with calendric science and this ability to determine independently the beginning of the month (B. M. 85b)

*Baba mezia* - Here called Samuel Yarhina'ah the Lunar Expert or Astronomer. The word is an epithet of Samuel, the Babylonian amora, on account of his great astronomical skill. (B. M. 85b note)

Mar-Samuel born about 165 at Nehardea  
in Babylonia



by M. Friedlander

Dispute between Saadia and Ben Meir concerning the traditional calculation of the Calendar. The Jewish Calendar is based on the following principles;—

1. The time between two consecutive conjunctions of sun and moon is 29 days  $\frac{793}{1080}$  hrs. 2. If the conjunction (molad) of Tishri happens to take place before noon, that day is counted the 1st. of Tishri; if later, the next day, or the day after that, is declared to be the 1st of Tishri. 3. Sunday, Wednesday and Friday are disqualified for the 1st of Tishri. 4. The duration of an ordinary year cannot be less than 353 days, or more than 355 days; of a leap-year not less than 383, nor more than 385. 5. If the conjunction takes place on Monday at 9  $\frac{589}{1080}$  a.m., or later, the preceding year having been a leap-year, the 1st of Tishri is to be on Tuesday. 6. If in an ordinary year, the conjunction of Tishri takes place on Tuesday at 3  $\frac{204}{1080}$  a.m., the 1st of Tishri is on Thursday.

In the years 4682, '83, and '84, the conjunction of Tishri took place on Wednesday, at 5  $\frac{932}{1080}$  a.m.; Tuesday, at 3  $\frac{441}{1080}$  a.m.; Saturday, 12  $\frac{237}{1080}$  p.m. The first being a leap-year, the 1st of Tishri in the next year, according to Rule 5, must not be on Tuesday but on Thursday, and in the third year the 1st of Tishri cannot be on Saturday on account of Rule 2, but on Monday. Ben Meir objected to this arrangement, assuming that Rule 2 was incorrect, that instead of noon the limit should be 12  $\frac{642}{1080}$  p.m., and that Rules 5 and 6 must be modified accordingly. He would, therefore, fix the 1st of Tishri, 4684, on Saturday, and 4683 on Tuesday. Ben Meir asserted that he based his theory on tradition, and he may have derived some support for it from the opinion of Rabban Gamaliel, who held that the interval between the conjunction and the visibility of the moon was variable, and was sometimes less than half a day. He insisted that his theory should have the preference to that of the Babylonian schools, as he was in Palestine, whence the Babylonians had always had to seek information and authority,

M. Friedlander.

Furthermore it is to be known when I say that Tisri begins from the 10<sup>th</sup> of October, I mean from the night which followed the sunset of the ninth day, from which sunset the Jews reckon the beginning of the tenth. Thus the evening of the sixth day itself is the beginning of the Sabbath. When therefore I speak of the beginning of the Sabbath, think of the sunset of the day of Venus. And so concerning the others. In the epilogue of the new moons ~~1080~~ hours are to be corrected because of the excess of 1080 scruples; days, from the excess of 24 hours; a festival day, because of the excess of seventh days. Another cause, which varies the new-moon Canon is the Translation of the week-day to the new moon Tisri or Nisan. The Translation of the week day is three fold, either Lunar, or civil or mixed. Lunar, when the epilogue involves 18 hours. For all the oriental nations, Indians, Chinese, "Chatti," ancient Assyrians, Syrians, Chaldeans, Arabs, Damascenes, determine the calculation of the moon from the meridian: but the night from sunset. By this method the Lunar month never varies at all. You hold it by the inclination of the sky. For your meridian is always the same, since the various risings and settings establish various beginnings and endings of the civil day, and make unequal civil hours. For in summer the days are longer, the nights are shorter; in winter, the opposite. But the point of your meridian is the same in your habitation: since the meridian of every day is half way, even six hours after the old. Wherefore the astronomical epilogue is led on from a constant and fixed instant, but the civil day from an inconstant. Thus between the beginnings of the astronomical calculation and that of the civil day are always six unequal interjected hours, and in the end of the sixth hour from the meridian you think of - or reckon - the beginning of the first civil day, since from the astronomical calculation of the moon are now six exact hours.

De Emendatione Temporum.  
Page 85.

But the Jews of today, however many they are, indeed however many have existed since the fall of the Temple under Vespasian, are deeply ignorant of this, and think that this period which was accomplished for the kind and length of the annual Computation by the very learned Hebrew designers so many centuries ago is to be deduced from the beginning of creation; and that these are the true years of the World, since the beginning of the Jewish period lacks ten whole cycles from the true years of creation, which are 390 years.



Mischna. Pesachim 4.1 Where the custom is to do work until midday on the day before Passover, they may do so; where the custom is not to do work, they may not work. If a man went from a place where they do so to a place where they do not, or from a place where they do not to a place where they do, to him is applied the more stringent use of the place which he has left and the more stringent use of the place to which he has gone; but let no man behave differently (from local use) lest it lead to conflict.

Pesachim 4.5 Moreover the Sages say: In Judaea they used to work until midday on the eve of Passover, but in Galilee they used to do nothing at all. In what concerns the night [between the 13th and 14th of Nisan], the School of Shammai forbid [any work], but the School of Hillel permit it until sunrise.

Pesachim 5:1 If the eve of a Passover fell on the eve of a Sabbath, it <sup>(the daily whole-offering)</sup> was slaughtered at a half after the sixth hour and offered up at a half after the seventh hour. And, after this, the Passover-offering [was slaughtered].

Pesachim 5:3. If it was slaughtered before midday it is invalid, for it is written, Between the evenings. If it was slaughtered before the Daily Whole-offering it is valid provided that someone stir up its blood until the blood of the Daily Whole-offering has been tossed; but if it was tossed before, it is valid.

Pesachim 4.10 After nightfall they went out and roasted their Passover-offerings.

SYNCHRONOLOGY OF NEW MOON DATES OF  
THE GREGORIAN CALENDAR AND THE  
CHINESE CIVIL (LUNAR) CALENDAR  
OF THE YEAR 1942

MONTH	DAY (75° Meridian)	HOUR	MIN.	CHINESE DATE	DAYS IN MONTH	CHINESE DATE After adding 12 hrs. for 105° Meridian
Jan.	16	16	32	11/30	30	12/1
Feb.	15	5	2	1/1	30	1/1
Mar.	16	18	50	1/30	30	2/1
Apr.	15	9	33	3/1	30	3/1
May	15	0	45	4/1	30	4/1
Jun.	13	16	2	4/30	30	5/1
Jul.	13	7	3	6/1	30	6/1
Aug.	11	21	28	6/30	30	7/1
Sep.	10	10	53	8/1	30	8/1
Oct.	9	23	6	8/30	30	9/1
Nov.	8	10	19	10/10	30	10/1
Dec.	7	20	59	10/30	30	11/1

Figures taken from

Uncle Sam's Almanac, Compiled by F.J. Haskin (Washington, 1942).

Peerless 100-year Chinese-English Calendar, (1849-1948), Compiled by J. E. Gardner (San Francisco, 1924).

The 105° Meridian crosses the province of Szechuan, China. China proper, the cradle of Chinese civilization, stretches over less than 30° (2 hrs) of time.

Every Chinese month commenced with the day of conjunction, called in Chinese "Shuo" (朔). This character is synonymous with the first day of the month, and is the modern Chinese scientific term for "conjunction."



" RECKONING FROM THIS MOON "  
Boston Civil Time

Calendrical				Astronomical			
Translation Period	Veadar	28	Coinciding with	April 17	11 <sup>h</sup> 48 <sup>m</sup> 1		(Conjunction)
1 <sup>d</sup> 6 <sup>h</sup> 54 <sup>m</sup>	"	29	"	"	18		(Phasis) ss 6:42
Moon in apogee	Nisan	1	"	"	19		(First day of New Year)
North of sun	Nisan	14 (16)	"	May	2 10 32		(Passover on day of full moon in Boston)
North of equator In Taurus							
Translation Period	Nisan	29	"	May	17 4 9		(Conjunction)
1 <sup>d</sup> 15 <sup>h</sup> 5 <sup>m</sup>	"	30	"	"	18		(Phasis) ss 7:14
	Iyar	1	"	"	19		(New Moon Day)
	"	13	"	"	31 18 3		(Full Moon)
Translation Period	Iyar	28	"	June	15 19 42		(Conjunction) *
23 <sup>h</sup> 54 <sup>m</sup>	"	29 (29)	"	"	16		(Phasis) ss 7:36
	Sivan	1	"	"	17		(New Moon Day)
	"	14	"	"	30 1 32		(Full Moon)
Translation Period	Sivan	29	"	July	15 9 39		(Conjunction)
1 <sup>d</sup> 9 <sup>h</sup> 55 <sup>m</sup>	"	30 (30)	"	"	16		(Phasis) ss 7:34
	Tammuz	1	"	"	17		(New Moon Day)
	"	13	"	"	29 9 49		(Full Moon)
Translation Period	Tammuz	28	"	Aug.	13 21 47		(Conjunction) *
21 <sup>h</sup> 15 <sup>m</sup>	"	29 (29)	"	"	14		(Phasis) ss 7:02
	Ab	1	"	"	15		(New Moon Day)
	"	13	"	"	27 19 49		(Full Moon)
Translation Period	Ab	29	"	Sept.	12 8 32		(Conjunction)
1 <sup>d</sup> 9 <sup>h</sup> 42 <sup>m</sup>	"	30 (30)	"	"	13		(Phasis) ss 6:14
	Elul	1	"	"	14		(New Moon Day)
	"	13	"	"	26 8 29		(Full Moon)
Translation Period	Elul	28	"	Oct.	11 18 40		(Conjunction) *
22 <sup>h</sup> 47 <sup>m</sup>	"	29 (29)	"	"	12		(Phasis) ss 5:25
	Tisri	1	"	"	13		(New Moon Day)
	"	10 (10)	"	Oct.	22		(Day of Atonement)
	"	14	"	"	26 0 21		(Full Moon)

173 days

173 days

Translation Period	Tisri	29	"	Nov.	10 4 52		(Conjunction)
1 <sup>d</sup> 11 <sup>h</sup> 52 <sup>m</sup>	"	30	"	Nov.	11	2	(Phasis) ss 4:44
Moon in perigee	Hesvan	1	"	"	12		(New Moon Day)
South of sun	"	13	"	"	24 18 58		(Full Moon)
South of equator							

NOTE--On account of the difference in time between Boston and Jerusalem--7 hours and 5 minutes--the conjunctions marked with an "\*" occur on the day following in Jerusalem.

<sup>1</sup> Almost the first step taken by the Millerites to discover the true Day of Atonement was the reckoning from the new moon of Nisan, counting October to be the seventh month inclusive from the April conjunction.

<sup>2</sup> The Millerites pointed out November 11 as the last day of Tisri. The conjunction on November 10 was too late to allow the phasis on that day, but with one favorable factor, and two unfavorable, the moon could be seen at the second sunset on the evening of November 11. This position of the moon in November fixed immovable the New Moon Day of the October conjunction as October 13, which began at the first sunset after conjunction in New England, but at the second in Jerusalem, when the moon was "one day and seventeen hours old."

Y E A R 1920-21 -- MOSAIC RECKONING  
(Jerusalem Civil Time)

1920 Common Year of 354 days--From May 3 (1920) to April 22 (1921)

	Vead	Apr	Iyar	June	Tam	Aug	Elul	Oct	Hes	Dec	Teb	Feb	Adar	Mar
	26	17	25	14	24	11	23	8	22	5	21	1	20	31
	27	18	26	15	25	12	24	9	23	6	22	2	21	1 A
	28	19-0-4	27	16-16-2	26	13	25	10	24	7	23	3	22	2 P
	29	20	28	17	27	14-6-4	26	11	25	8	24	4	23	3 R
N	1	21	29	18	28	15	27	12-3-11	26	9	25	5	24	4 I
I	2	22	S 1	19	29	16	28	13	27	10-12-24	26	6	25	5 L
S	3	23	I 2	20	A 1	17	29	14	28	11	27	7	26	6
A	4	24	V 3	21	B 2	18	T 1	15	29	12	28	8-2-57	27	7
N	5	25	A 4	22	3	19	I 2	16	K 1	13	29	9	28	8-12-13
	6	26	N 5	23	4	20	S 3	17	I 2	14	S 1	10	29	9
	7	27	6	24	5	21	R 4	18	S 3	15	H 2	11	N 1	10
	8	28	7	25	6	22	I 5	19	L 4	16	E 3	12	I 2	11
	9	29	8	26	7	23	6	20	E 5	17	B 4	13	S 3	12
	10	30	9	27	8	24	7	21	U 6	18	A 5	14	A 4	13
	11	1	10	28	9	25	8	22	7	19	T 6	15	N 5	14
	12	2	11	29	10	26	9	23	8	20	7	16	6	15
	13	3-4-8	12	30	11	27	10	24	9	21	8	17	7	16
	14	4 M	13	1-11-1	12	28	11	25	10	22	9	18	8	17
	15	5 A	14	2 J	13	29-15-23	12	26	11	23	10	19	9	18
	16	6 Y	15	3 U	14	30	13	27-16-29	12	24	11	20	10	19
	17	7	16	4 L	15	31	14	28	13	25-14-24	12	21	11	20
	18	8	17	5 Y	16	1 S	15	29	14	26	13	22-11-53	12	21
	19	9	18	6	17	2 E	16	30	15	27	14	23	13	22-10-10
	20	10	19	7	18	3 P	17	31	16	28	15	24		
	21	11	20	8	19	4 T	18	1 N	17	29	16	25		
	22	12	21	9	20	5 E	19	2 O	18	30	17	26		
	23	13	22	10	21	6 M	20	3 V	19	31 1921	18	27		
	24	14	23	11	22	7 B	21	4 E	20	1 J	19	28		
	25	15	24	12	23	8 E	22	5 M	21	2 A	20	1 M		
	26	16	25	13	24	9 R	23	6 B	22	3 N	21	2 A		
	27	17	26	14	25	10	24	7 E	23	4 U	22	3 R		
	28	18-8-46	27	15-22-46	26	11	25	8 R	24	5 A	23	4 C		
	29	19	28	16	27	12-15-12	26	9	25	6 R	24	5 H		
	30	20	29	17	28	13	27	10-18-26	26	7 Y	25	6		
I	1	21	30	18	29	14	28	11	27	8	26	7		
Y	2	22	T 1	19	30	15	29	12	28	9-7-47	27	8		
A	3	23	A 2	20	E 1	16	30	13	29	10	28	9-20-30		
R	4	24	M 3	21	L 2	17	H 1	14	30	11	29	10		
	5	25	M 4	22	U 3	18	E 2	15	T 1	12	30	11		
	6	26	U 5	23	L 4	19	S 3	16	E 2	13	A 1	12		
	7	27	Z 6	24	5	20	V 4	17	B 3	14	D 2	13		
	8	28	7	25	6	21	A 5	18	E 4	15	A 3	14		
	9	29	8	26	7	22	N 6	19	T 5	16	R 4	15		
	10	30	9	27	8	23	7	20	6	17	5	16		
	11	31	10	28	9	24	8	21	7	18	6	17		
	12	1-19-39	11	29	10	25	9	22	8	19	7	18		
	13	2 J	12	30	11	26	10	23	9	20	8	19		
	14	3 U	13	31-1-40	12	27	11	24	10	21	9	20		
	15	4 N	14	1 A	13	28-4-17	12	25	11	22	10	21		
	16	5 E	15	2 U	14	29	13	26-4-3	12	23	11	22		
	17	6	16	3 G	15	30	14	27	13	24-1-28	12	23-22-39		
	18	7	17	4 U	16	1 O	15	28	14	25	13	24		
	19	8	18	5 S	17	2 C	16	29	15	26	14	25		
	20	9	19	6 T	18	3 T	17	30	16	27	15	26		
	21	10	20	7	19	4 O	18	1 D	17	28	16	27		
	22	11	21	8	20	5 B	19	2 E	18	29	17	28		
	23	12	22	9	21	6 E	20	3 C	19	30	18	29		
	24	13	23	10	22	7 R	21	4	20	31	19	30		



False  
Wientz

JERUSALEM 1844

Moon in Taurus  
2° N. Lat.  
18° N. Decl.  
Apogee

FULL MOON ON NISAN 14 AND TISRI 10 ON OCTOBER 22 ?  
(Jerusalem Civil Time)

		Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov	
Veadar--29 days										
28 = 17-18-53	April con-	23	11	22	8	21	4	20	1	
29 = 18	junction	24	12	23	9	22	5	21	2	
Nisan 1 = 19		25	13	24	10	23	6	22	3	
" 14 = 2-17-37	May F. Moon	26	14	25	11	24	7	23	4	
		27	15	26	12	25	8	24	5	
Iyar--29 days		28	16	27	13	26	9	25	6	
29 = 16-21-48	June con-	29	17-11-14	28	14	27	10	26	7	
Sivan 1 = 15	junction	30	15	29	15-16-44	28	11	27	8	NEW
	Translation	I 1	19	30	16	29	12-15-37	28	9	MOONS
	16 <sup>h</sup> 16 <sup>m</sup>	Y 2	20	T 1	17	30	13	29	10-11-57	
Tammuz--29 days		A 3	21	A 2	18	E 1	14	30	11	
29 = 14-4-52	August con-	R 4	22	M 3	19	L 2	15	H 1	12	
Ab 1 = 15	junction		5 23	M 4	20	U 3	16	E 2	13	
	Translation		6 24	U 5	21	L 4	17	S 3	14	
	15 <sup>h</sup> 55 <sup>m</sup>		7 25	Z 6	22		18	V 4	15	
			8 26		7 23		19	A 5	16	
Elul--29 days			9 27		8 24		20	N 6	17	
29 = 12-1-45	October con-		10 28		9 25		21		18	
Tisri 1 = 13	junction		11 29		10 26		22		19	
	Translation		12 30		11 27		23		20	
	15 <sup>h</sup> 48 <sup>m</sup>		13 31		12 28		24		21	
I June 16--			14 1-1-8		13 29-16-54		25		22	FULL
Moon in Cancer			15 2		14 30		26-15-54		23	MOONS
2° S. Lat.			16 3 J		15 31		27		24	
21° N. Decl. **			17 4 U		16 1 A		28		25-2-3	
Apogee on 15th			18 5 N		17 2 U		29		26	
			19 6 E		18 3 G		30		27	
II August 14--			20 7		19 4 U		1 0		28	
Moon in Leo			21 8		20 5 S		2 0		29	
5° S. Lat.			22 9		21 6 T		3 0		30	
5° N. Decl. **			23 10		22 7		4 0		1 D	
Apogee 7th; Perigee 21st			24 11		23 8		5 0		2 E	
			25 12		24 9		6 0		3 C	
			26 13		25 10		7 0		4 E	
III October 12--			27 14		26 11		8 0		5 M	
Moon in Scorpio			28 15 I		27 12 II		9 0		6 B	
3° S. Lat.			29 16-2-48		28 13		10 III		7 E	NEW
15° S. Decl. **			N 1 19		29 14-4-52		11		8 R	MOONS
Perigee 15th. **			I 2 20 A		30 15-1-45		12		9-22-33	
			S 3 21 P		A 1 16		13		10	
			A 4 22 R		B 2 17		14		11	
			N 5 23 I		S 3 18		15		12	
			6 24 L		S 4 19		16		13	
			7 25		S 5 20		17		14	
			8 26		6 21		18		15	
			9 27		7 22		19		16	
			10 28		8 23		20		17	
			11 29		9 24		21		18	
			12 30		10 25		22		19	
			13 1		11 26		23		20	
			14 2-17-37		12 27		24		21	
			15 3		13 28-2-54		25		22	FULL
			16 4 M		14 26-7-25		26		23	MOONS
			17 5 A		15 27		27		24-21-49	
			18 6 Y		16 28		28		25	
			19 7		17 29		29		26	
			20 8		18 30		30		27	
			21 9		19 31				28	

\*\* In the conjunctions marked I, II, and III, only one factor in each, relative to the position of the moon, favored a quick phasis. It would be impossible for the moon to be seen on the day of conjunction unless all factors were favorable.

Imo etiamsi omnes tres jun dietas causas, maturiorem lunae apparitionem praeventes, quandoque convenient; tamen adubito, non novissima & prima luna, uno eodemque die . . . conspici possit. Hevelius, Johannis, "Selunographia," page 275.

(But although all three causes just related, which advance the earliest appearance of the moon, should somehow occur together; yet I doubt whether the newest (conjunction) and first moon can be seen on one and the same day.)

TABLE J

JEWISH CALENDAR BASED ON POSTULATE I\*

(Jerusalem Civil Time)

1844

	Tebet	Jan	Adar	Mar	Nisan	May	Sivan	July	Ab	Sept	Tisri	Nov	
	23	15	23	14	23	12	23	10	23	7	23	5	
	24	16	24	15	24	13	24	11	24	8	24	6	
	25	17	25	16	25	14	25	12	25	9	25	7	
	26	18	26	17	26	15	26	13	26	10	26	8	
Translatic	27n	19-20-39	27	18	27	16	27	14	27	11 IV	27	9 V	NEW
Periods	28	20	28	19-2-38	28	17-11-14	28	15-16-44	28	12-15-37	28	10-11-57	MOONS
	29	21	29	20	29	18	29	16	29	13	29	11	
S	1	22	30	21	30	19	30	17	30	14	30	12	
H	2	23	V	1 22	I	1 20	T	1 18	E	1 15	H	1 13	
E	3	24	E	2 23	Y	2 21	A	2 19	L	2 16	E	2 14	
B	4	25	A	3 24	A	3 22	M	3 20	U	3 17	S	3 15	
A	5	26	D	4 25	R	4 23	M	4 21	L	4 18	V	4 16	
T	6	27	A	5 26	5	24	U	5 22	5	19	A	5 17	
	7	28	R	6 27	6	25	Z	6 23	6	20	N	6 18	
	8	29	7	28	7	26	7	24	7	21	7	19	
	9	30	8	29	8	27	8	25	8	22	8	20	
	10	31	9	30	9	28	9	26	9	23	9	21	
	11	1 F	10	31	10	29	10	27	10	24	10	22	
	12	2 E	11	1	11	30	11	28	11	25	11	23	
	13	3 B	12	2	12	31	12	29-16-54	12	26-15-34	12	24	FULL
	14	4-11-3	13	3-9-18	13	1-1-8	13	30	13	27	13	25-2-3	MOONS
	15	5	14	4	14	2	14	31	14	28	14	26	
	16	6	15	5 A	15	3 J	15	1 A	15	29	15	27	
	17	7	16	6 P	16	4 U	16	2 U	16	30	16	28	
	18	8	17	7 R	17	5 N	17	3 G	17	1 O	17	29	
	19	9	18	8 I	18	6 E	18	4 U	18	2 C	18	30	
	20	10	19	9 L	19	7	19	5 S	19	3 T	19	1 D	
	21	11	20	10	20	8	20	6 T	20	4 O	20	2 E	
	22	12	21	11	21	9	21	7	21	5 B	21	3 C	
	23	13	22	12	22	10	22	8	22	6 E	22	4 E	
	24	14	23	13	23	11	23	9	23	7 R	23	5 M	
	25	15	24	14	24	12	24	10	24	8	24	6 B	
	26	16	25	15	25	13	25	11	25	9	25	7 E	
	27	17	26	16 I	26	14	26	12 III	26	10	26	8 R	NEW
	28	18-11-6	27	17-18-53	27	15 II	27	13 III	27	11	27	9-22-33	MOONS
	29	19	28	18	28	16-2-47	28	14-4-52	28	12-1-45	28	10	
	30	20	29	19	29	17	29	15	29	13	29	11	
A	1	21	N	1 20	S	1 18	A	1 16	T	1 14	30	12	
D	2	22	I	2 21	I	2 19	B	2 17	I	2 15	K	1 13	
A	3	23	S	3 22	V	3 20	3	18	S	3 16	I	2 14	
R	4	24	A	4 23	A	4 21	4	19	R	4 17	S	3 15	
	5	25	N	5 24	N	5 22	5	20	I	5 18	L	4 16	
	6	26	6	25	6	23	6	21	6	19	E	5 17	
	7	27	7	26	7	24	7	22	7	20	U	6 18	
	8	28	8	27	8	25	8	23	8	21	7	19	
	9	29	9	28	9	26	9	24	9	22	8	20	
	10	1 M	10	29	10	27	10	25	10	23	9	21	
	11	2 A	11	30	11	28	11	26	11	24	10	22	
	12	3 R	12	1	12	29	12	27	12	25	11	23	FULL
	13	4-23-23	13	2-17-37	13	30-8-37	13	28-2-54	13	26-7-25	12	24-21-49	MOONS
Paschal Moon	14	5	14	3	14	1	14	29	14	27	13	25	
	15	6	15	4 M	15	2 J	15	30	15	28	14	26	
	16	7	16	5 A	16	3 U	16	31	16	29	15	27	
	17	8	17	6 Y	17	4 L	17	1 S	17	30	16	28	
	18	9	18	7	18	5 Y	18	2 E	18	31	17	29	
	19	10	19	8	19	6	19	3 P	19	1 N	18	30	
	20	11	20	9	20	7	20	4 T	20	2 O	19	31	
	21	12	21	10	21	8	21	5	21	3 V	20	1 J 1845	
	22	13	22	11	22	9	22	6	22	4 E	21	2 A	

\* POSTULATE I places the paschal full moon always on Nisan 13, Jerusalem Time.

The position of the moon seems to be such as to demand the arrangement of the Jewish calendar as given above. The full moon of May 2 is placed on Nisan 13. This is the true paschal moon for 1844. The conjunctions marked I, II, III, IV, and V bear important relation to the October conjunction, which they would appear to make immovable.