

## The Flood Chronicle – Research by Grace Amadon

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*“While the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease.” Genesis 8:22.*

### 1. THE FLOOD CHRONICLE

“The flood year, as depicted in the book of Genesis, is represented by a definitely outlined calendar. This is constructed in two kinds of time -- solar and lunar – and it also conforms to known positions of both sun and moon. With modern scholarship uncertainty still enters into the problem of tying the flood to a recognized chronological outline. But with reference to the flood calendar itself, it can be shown, that although different conclusions have repeatedly been drawn, yet on the contrary it would appear that we have in Genesis seven and eighth the simplest form of lunar calendar and one upon which the solar year also is planted.

Questions relating to the authorship of the book of Genesis are partly answered in the book itself. The fact that the months are numbered and not designated by name -- not even the ancient Canaanite names of the month appear in the text – speak for an early writer. Furthermore, it can be demonstrated that in the flood record the lunar numbering begins in the autumn with the month later denominated “seventh” in Biblical history. Philo, Josephus, the Talmud and scholarship in general, each supports this conclusion. And additional proof that the flood year began in the autumn is forthcoming from instances in Genesis that relate the year to agricultural operations. But after the exodus, and at least until the establishment of the monarchy, the year was reckoned from the spring. (Ex. 12:2). This answer to the question of authorship points the finger at Moses, as the early writer required, for he was an early writer. p.1.

The inference is therefore obvious that the author or redactor living in the early period of the monarchy, in outlining flood chronology, would necessarily employ the current names of the months in his own time; and, furthermore, would inevitably number the months from the spring – a Jewish calendar custom which has continued from the exodus even to the present day. But these calendaric features are contrary to Genesis chronology as will be shown in the progress of the study. Therefore, the interval between Israelite bondage in Egypt and the exodus represents about the only period that would supply a current calendar in harmony with the chronological description of the flood. p. 1a, 2.

It was centuries after the flood that the book of Genesis was written, and in it a record of our earliest Biblical calendar was placed. The decades, which Moses spent in the desert of Midian, were therefore rich in knowledge to students of chronology. Before the flood and for some time after, there had been no books; but there were teachers whose existence was measured by centuries. Methuselah knew Adam for nearly two hundred and fifty years, (*Gen. 5*) and Noah knew the family in which Abraham was reared. *And Shem was still alive at the time of Abraham and Isaac. (Gen. 10, 11).* *Italic and information supplied.* By this means knowledge was extended at a time when books had not yet been

written. And one of the earliest testimonies concerning this marvelous period comes from the hand of one who lived many centuries later. This fact alone is of outstanding importance to the genesis of ancient calendation, for it reveals the existence of an exceedingly early calendaric record that was possibly constructed by calculation of the new moon, yet not based upon more ancient tabulation, instead of by actual observation. p. 2, 2a.

It seems exceptional that a calendar of so great authority should lie recorded almost in the opening pages of Scripture, and yet its intrinsic merit go unrecognized. Doubtless one reason for this oversight is the repeated insistence that the 150-day period of prevailing flood waters represent five consecutive 30-day calendar months; that this arrangement of time was solar and that it could not therefore belong to later Jewish cycles. Then the conclusion has commonly been drawn that the Noachian age employed this length of month; that while Noah was in the ark he could not see the moon on account of rain and fog, and that consequently he calculated the whole period of the deluge on a 30-day month basis. However, this common but questionable view is not accepted at all.

And in addition, a second erroneous hypothesis has complicated the problem of ancient Jewish time, namely, the insistence that the earliest Jewish dates were entirely based upon observation of the new moon, and that not until the post-exilic period did calculation come into the reckoning. This assumption would place early calendation upon an empirical basis, in support of which there is not to be found a sufficient number of early Jewish records, such as have come down from the first dynasty of Babylon. p. 2a, 3.

There are only a few calendar dates in the Bible – less than a hundred altogether, And these are not evenly distributed, some periods being marked by a comparatively larger number than others. In the account of the flood and exodus. In the prophecy of Ezekiel, the post-exilic books, and the gospels, there is sufficient number of time divisions to each period to frame the form of calendar employed. It can be demonstrated that these various calendars are all based upon the lunar month, but that they principally differ in one respect – the time of beginning the civil year. Under the administration of Moses, current time – both of civil and religious – was reckoned from the first month. And that this month was lunar is shown from the fact that the day ended at evening, when levitical uncleanness ceased. This ancient chronicle covers a little more than two nineteen-year cycles, that is, to the conquest of Canaan. Biblical history does not note any further calendaric change until the time of the kings, under whose reigns there are very few dates, but instead, long series of king lists which, for the ministry of Judah, began the regnal year in the autumn. With the Israelite kingdom, however, another beginning for the king's reign was ordained, which may have been based upon Egyptian influence over Jeroboam, when in the tenth century BC, the Egyptian seventh month approximately coincided with the Jewish eighth. p. 4.

A departure occurs in Ezechiel's chronology, which is characterized by a large number of captivity dates, planted upon a "regnal" year representing both the period of the

captivity and also that of the captive king. With possibly one exception, Ezechiel's dates all denote civil events; but contrary to the interpretation of some, must necessarily begin in Tishri, or else they do not conform to the chronological outline of the period. The civil dates of Nehemiah and Ezra are outstanding because they begin the reign of Persian king's Darius I upon the autumn beginning Jewish calendar, a fact recognized by many chronologers. On the other hand, the regnal year of Darius I is counted from Nissan by the prophets Haggai and Zechariah. An earliest of all ancient reckonings, the pentateuchal flood chronicle takes its place with the various forms of calendars just described. In actual point of time, it belongs to the most primitive period of biblical history – the patriarchal age; but the large number of dates that occur in the description of the flood at once give it an historical character. This is of untold interest and importance to chronology.

In any event, Moses must have had at his disposal the two recognized calendars of Egypt upon which to plant his series of dates pertaining to the flood year. Under the influence of the divine Spirit, he reckons back many centuries in time, and ties his record to the very simplest form of a lunar calendar. He does not employ the economic Egyptian calendar with its wandering 30-day month. Neither does he make use of the empirical observations of Babylonian months. He does instead number his months, after the manner of both Israel and Egypt in his own day, and fixes their length by a series of parallel period and weeks. And he thereby establishes both lunar and solar constants relating (1) to the length of the lunar month and year, and (2) to the length of the solar or tropical year. p. 4, 5.

## **2. SEASON FOR BEGINNING THE FLOOD**

Josephus dates the flood season in the autumn. He says: "This calamity happened in the six hundredth year of Noah's government in the second month, called the Macedonians Dius, but the Hebrews Marheshvan; and so did they order their year in Egypt."

Philo is another important witness supporting the order of months in Genesis. He himself numbers Tishri as the first month. (It is number seven in the modern Jewish calendar). But while Philo recognize that at the time of the exodus God commanded Moses that the Passover month should be designated as the first. With reference to the Paschal month, Philo writes:

*"This month, being the seventh both in number and in order, according to the revolutions of the sun is the first in power: on which account it is also called first in the sacred scriptures."*

These statements of Josephus and Philo, are further confirmed by the Talmud, and they appear to be consistent for the following reasons:

- a. If the flood months began in the autumn, they would then coalesce with the seasons as they have always been in the Near East – rain in fall and spring and drought in summer.

- b. According to the numbering of the months as given in Table A1, the astronomical tides harmonized with the events described. If the order of the months is reversed, the tides do not check.
- c. The numbering of the months as in Table A1. Is a key to the length of the months when compared with the periods; but by reversing the order of the months, and numbering from Nissan, the key thereby become useless, as will be shown later.
- d. If Noah had left the ark in Iyar as the second month, he would obviously have had to wait at least seven months before seeding the ground. But coming forth in Hesvan, he could immediately prepare for the November seeding of wheat, as is customary in the Near East, and soon after, for the January sowing of barley. That the seasons were fully established after Noah left the ark is implied in Gen. 8:22.
- e. The divine law in Ex. 12:2 that from the time of the first Passover the months were to be numbered from Abib (Deut. 16:1), indicates that previously they had been differently numbered.

The lunar calendar used by Moses, both in the case of the exodus and in that of the flood, had its new year at the nadir (opposite pole) of the Egyptian economic scheme of counting time. By divine command Israel was evidently to be loose from the idolatry of Egypt even with respect to the calendar. p. 8, 9.

### **3. DESCRIPTION OF THE FLOOD CALENDAR**

In the accompanying calendar table A1. the numbered months, dates, and periods belong to the record in Genesis 7, 8. The lunar names only have been introduced according to Josephus and Philo as previously explained. To each lunar month has been assigned a specific number of days in harmony with the lunar constant long recognized by astronomy. Because it is inconsistent to end the lunar month on the half-day, alternating months of 30 and 29 days are marked off in the table. The calendar moon is thereby made to conform sufficiently with the real moon and her position in the sky. It then remains to demonstrate that the schematic periods of this record – 40 days and 150 days – are in agreement with the assigned length to each month.

The deluge began in the year 600 of Noah's life (Gen. 7:6), and the year changed to 601 on the first day of the subsequent first month (Gen. 8:13). This change of year on the 308<sup>th</sup> day of the flood is indisputable evidence that the calendar was intentionally based upon both the lunar and solar years. For, by adding the 46 days in Tishri and Hesvan before the rain began, to 308, we get 354 days, which represent the number in a common lunar year; while, by adding to 308 the 57 days from the change of year to the time Noah left the ark, we get 365 days, which corresponds to the solar year. Thus we have the earliest historical records for the length of the lunar and solar years, and at the same time the earliest precedent for beginning the Jewish civil year in the autumn. p. 9, 10.

If the lunar portion of the flood period had been a leap year, then it would have contained 13 months, and the 13<sup>th</sup> month would have been introduced as an additional Adar. If Adar, then Nissan in which the ark rested would necessarily have been numbered the eighth month instead of the seventh. And furthermore, in even of a lunar

leap year, Noah must have left the ark on the 27<sup>th</sup> day of the first month, instead of the second, if he were to carry out the obvious intention of the annalist to mark off the 365 days belonging to the solar year. It is therefore conclusive that the length of lunar year in Column “a” is common lunar, and not a leap year.

Hence the consistent conclusion that the lunar portion of the flood year was a common lunar year, equaling 354 days, and not 365 days. And with the understanding that Tishri is the first month, the lunar year would obviously have to begin with Tishri and end on the last day of Elul. This is in harmony with the change of year recorded in the text. Lunar calculations are the most exact of all ancient forms of calendation. And a lunar calendar, like every other form, has to give account of every day brought into existence by the revolution of the earth. In this twentieth century it is frequently argued that somewhere in the dim past (sic!) a day was lost. Astronomers deny this assumption. But in addition, the lunar reckoning in Genesis seven and eight also denies the challenge.

Another important constant is also presents in Column “b” of Table A1. By subtracting the balance of 13 days in Hesvan from the combined periods that equal 190 days, an equation can be formed as follow:

$$\begin{aligned} 6 \text{ lunar months} &= 177 \text{ days} \\ 1 \text{ mean month} &= 1/6 \text{ of } 177, \text{ or } 29.5 \text{ days.} \end{aligned}$$

These 29.5 days represent the mean calendar length of the lunar month. Therefore, on the calendar, two months = 59 days. And because the month must necessarily end on the even day at sunset, alternate months of 30 and 29 days are the best answer to the moon’s varying but exact motion. And this fact, the writer of Genesis intended to stress, and he accomplished his purpose by introducing the two periods, which absolutely fix the order of the series. For if the order of the months should be changed, as given in Column “b”, and the 30-day months replace the 29 day-months, and vice and versa, then an extra day appears for which there is no month to which it can be added, and yet be in harmony with the periods. This is a very simple, but effectual check. p. 10, 12.

And furthermore, on these basis of the mean month = 29.5 days, the length of every month in the Genesis calendar can be ascertained. For example, 8 months from Tishri to Iyar (inclusive) = 8 x 29.5 days = 236 days. Now add up on Table A1 the months for Hesvan to Iyar, and get 206 days. Subtract the two results and get 30 days for Tishri. Thus is it proved that the arrangement of the months under the 190 – days period is unchangeable, and it therefore becomes a pattern for the simplest form of the lunar year such as we find in Genesis seven and eight. It is a 354 – day year, alternating 30-- and 29 --- day months for the Genesis 7 and 8 records. *(Italic and comment added).*

In Column “b” of Table A1, the solar year is also outlined as heretofore described. A period of exactly 365 days extends from 17 Hesvan, when the rain began, to 27 Hesvan, when Noah left the ark. These two limiting dates mark out a precise solar year during which the flood prevailed. The difference of 10 days between the two limiting dates is sufficient evidence that Moses actually intended to leave on record the length of the

common solar year as a companion constant to the common lunar year. Schiaparelli is one of few who have taken note of this coincidence:

“—we cannot doubt that this writer knew the year of 365 days. In fact, he makes the flood begin in the 600<sup>th</sup> year of Noah’s life, on the seventeenth day of the second month; and the definite drying of the earth and the end of the flood he puts in the 601<sup>st</sup> year of Noah’s life, on the twenty-seventh day of the second month. These months are certainly those of the Jewish calendar, that is to say, lunar periods. The flood would therefore have lasted twelve moons and eleven extra days. It is hard not to recognize her the intention of making the flood last for an exact solar year; for if 354 days be assumed for the duration of 12 months (they amount in reality to 354 days, 9 hours) the total of the duration of the flood comes to 365 days.”

Consequently, the calendar in Genesis is also an acknowledgment of the length of the solar year. It is indeed thrilling to find these astronomical constants in the biblical text. They represent very ancient computations in calendar science. They would appear to have been introduced early in the page of Holy Writ for the express purpose of pointing to the lunar form of calendar as the one to be used in biblical chronology.... p. 12 -14.

The identical season of the flood calendar together with the recorded dates make it possible to discover both lunar and solar tidal influence in connection with the resting of the ark. It is hard not to recognize this astronomical characteristic in Genesis chronicle. Aside from the moon’s phases – new moon and full moon – upon which every lunar calendar is based, the author of Genesis seems to have introduced into this first calendar at least on tying relation to the moon’s orbit. This synchronism has reference to the resting of the ark over the peak of Ararat on the 17<sup>th</sup> day of Nissan (*Abib*). On this day the moon was nearing her last quarter when tidal influence is small. The lunar tide has the smallest range when the moon is gibbous, (*nearly full*) and also in apogee, that is, farthest from the earth. And the lunar tide is least marked by violent currents, when, in addition, the half moon is on the equator. In face of these facts, it does not seem irrelevant or absurd to reason that divine guidance, in arresting the ark, would allay the wind and choose positions for both sun and moon conducive to a quiet haven – on free from swift tides and vicious currents. The 17<sup>th</sup> day of the month of the lunar month, being in close proximity to the last quarter, is therefore a significant date. And if, at this point of time or soon after, the half moon is in apogee, and also on the celestial equator, the moon’s tide-raising force would be the least in range, and the diurnal inequality, zero. This position of the half moon in mediate subsequent summer months, would result in a lowering of all the tides until the earth reached aphelion (farthest from the sun).

Under these conditions, an even flow and ebb of the astronomical tides would prevail during the summer, thereby enabling hitherto the storm-tossed ark to move about in as small compass until finally surrounded by the mountains of Ararat. p. 14, 15.

#### 4. IMPORTANCE OF THE GENESIS CALENDAR

The Genesis calendar is seemingly an historical document of rare antiquity; for it ties together the patriarchal age and the centuries of Israelite slavery under the pharaohs, when the autumn new year of the sons of Jacob belonged to the same season as the Egyptian Toth new year. Obviously, the author of Genesis had to choose between these two forms of calendation in order to construct his record in chronology:

- a. In the Genesis chronicle the dates in themselves are of telling significance. Noah and his family went into the ark a full week before the rain began. (Gen.7: 4). It was on the 10<sup>th</sup> day of the 2<sup>nd</sup> month, and throughout the week Noah completed his preparations in the piercing clear light of the full moon. Five months later the ark rested. In the last quarter of this 7<sup>th</sup> month, the winds and tides have ceased their violence, and the ark is moving about in a quiet haven of water over Ararat. When the patriarch finally leaves the ark, it is close to the end of the 2<sup>nd</sup> month of the year, and the moon is new. Two, possibly three, days go by ere the horned moon slowly sets on the western horizon after the sun. In this series of dates in Genesis, all the phases of the moon are involved. A calendar based upon the moon reveals astronomical events that would pass wholly unnoticed by the wandering year of Egypt, or the later Julian scheme of measuring time.
- b. Of essential importance are the nature and character of the Genesis calendar. That this instrument was calculated, and not based upon new moon observation seems incontrovertible and furthermore, there is no direct evidence that any written sources were at the annalist's command. Moreover, if the months had been originally determined by consecrated and observed moons – fourteen in number – then they would most likely not have presented a regular series of alternate 30 – and 29—day periods (*for the Genesis reckoning*). And hereby, is lifted the uncertainty which has hitherto challenged the whole problem of the ancient lunar month, namely, what happened to the calendar when the moon is not seen? Every scripture date is an answer to this question, for all dates in the Bible responds to calculated new moons, as the synchronism's reveal, and is now further supported by the reckoning in Genesis. p. 16-18.
- c. Of great interest to astronomy should be this very early record of indisputable solar and lunar constants – the mean length of the lunar month and year, and mean length of the solar year. The original Jewish calendar in organized Israel was founded upon both forms of year: *luni-solar*. Its months were determined by the course of the moon, while the lunar year itself paced along with the sun's motion by means of the (*Barley*) harvest festivals. The festal season remained stabilized in Jewry until after the time of Hillel II. In the medieval controversy, between the various Jewish sects, one Yefet bon 'Ali the Karaite challenged the opposing Rabbanites that they had changed the due seasons of the calendar.
- d. Another feature of consequence pertaining to ancient chronology comes to light in the flood study, namely, that there are apparently two ways of numbering the lunar

months in the Pentateuch: one, from Tishri, as in the Genesis computation – a method followed by the Israelites slaves in Egypt; and the second, from Nisan, (the Abib of Moses), after the exodus, and continuing to this present day. (*Although Ps. 81:1-6 confirms both calendar were known by the Patriarchs*).

- e. The Genesis calendar presents about the earliest precedent for beginning the civil year in the autumn. There are also arguments that the creation of the world occurred in this season. When the year's harvest were over, Moses speaks of the 'going out of the year', and of the 'revolution of the year', even though the calendar had already begun numbering its months from the Passover month. With the exception of the records of Haggai and Zechariah, the civil Jewish year would appear always to have changed its date in Tishri throughout Biblical history.
- f. And still another value in the Genesis chronicle is of material consequence to the chronology of history. For in this calendaric reckoning there occurs so exact an astronomical description of the flood year, that, in the event of its approximate century being identified, the year itself can certainly be dated.

### **CONCLUSION**

Why should not the investigator have as much confidence in the chronological records of Genesis as in the monuments upon which he pins his hope and courage in the serious conquest for uncovering truth? The harmony between these two lines, representing both the most ancient events of history and the youngest science of discovery, is not fully established; and frequently they appear wide apart in their witness. But, in turn, the Bible is in reality the basis field of inquiry, and at least one grounded upon indisputable internal evidence when understood, To Job, wisdom was a mine for silver and gold; to Jesus, a field with a hidden treasure – one to which at one and the same time the simplest way of life and the highest avenue of scientific endeavor have relation. Many times one does not even see the evidence in a humble garb when seeking attestation in the skills of science. But both are indispensable to the discovery of truth. p. 18, 19.

This research was taken from:

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Retyped by: Odette Boily



## THE FLOOD CALENDAR

(Calculation of Moses)

Noah enters ark in **Full Moon**

**YEAR 600**

**LUNAR YEAR**

**SOLAR YEAR**

**PERIODS**

(40+150) days + 25 weeks

<b>a</b>	<b>b</b>	<b>c</b>
(1) Tishri (1) Rosh Hashana 30 (sept/oct)		
(2) Hesvan (2)	16 <u>13</u> <b>29</b>	(17 <sup>th</sup> ) Rain  40 days rain
(3) Kisleu (3)	27 <u>3</u> <b>30</b>	
(4) Tebet Perihelion (4)	<b>29</b>	<b>I</b>
(5) Shebat Winter (5)	<b>30</b>	
(6) Adar (6)	<b>29</b>	150 days 5 lunar months +3 days
Solar tide decreasing		
(7) Nisan (7)	16  1 <u>13</u> <b>30</b>	(28 days Kisley – 29 Iyar) (inclusive)  (17 <sup>th</sup> ) Ark rests Moon approaching third quarter, apogee, equator, and neap tide
(8) Iyar (8)	<b>29</b>	190 <sup>th</sup> day 27 w.+ 1 day
(9) Sivan (9)	<b>30</b>	30 days
(10) Tammuz Summer Aphelion (10)	1 <u>28</u> <b>29</b>  10	Tops of mountains seen  10 weeks 40 days Spring tide low

(11) Ab (11)	1 (11 <sup>th</sup> ) Raven (18 <sup>th</sup> ) Dove 1	40 <sup>th</sup> day <b>II</b> 7 <sup>th</sup> day
Solar tide Increasing	<u>19</u> (25 <sup>th</sup> ) Dove 2 <b>30</b>	7 <sup>th</sup> day 4 weeks ending on
(12) Elul (12)	1 1 (2 <sup>nd</sup> ) Dove 3 <u>27</u> <b>29</b>	7 <sup>th</sup> day 8 <sup>th</sup> of Elul
<b>Total:</b>	<u>354</u> <b>DAYS</b>	21 days = 3 weeks (9 Elul – 29 Elul Inc)
(1) Tishri Rosh Hashana (civil new year) (7)	1 601 <sup>st</sup> Year <u>29</u> <b>30</b> (1Tishri – 26Hesvan inc.)	56 days = 8 weeks
(2) Hesvan	27 Noah leaves the ark In Seed time and <b>New Moon</b> <b>175<sup>th</sup> day of II</b>	
<b>Total:</b>	<u>365</u> <b>days</b>	<b>Total: 365 days</b>