

The Hebrew Calendar

The Hebrew calendar is luni-solar. The months are reckoned according to the moon and the years by the sun. A month is the period of time between one conjunction of the moon with the sun and the next – that is, when the moon is directly between the earth and the sun (but not on the same plane) and is invisible (called the *molad*). In Bible days the month began at the new moon phase, which occurred just after this “dark moon” and the moon’s first sliver became visible.

The average time from one new moon to another is 29 days, 12 hours, 44 minutes, and 46 seconds, which is approximately 29½ days to the month. Thus, the solar year (365.24219879 days) is longer than the 354 day lunar year by about 11¼ days.

The Jewish festivals (or Feasts; see Leviticus 23) are fixed according to days within the various months. As these festivals correspond to specific agricultural events which depend on the sun (i.e., the tropical solar year), the 12 month 354 day lunar year (354.367056) must be adjusted to the solar year. Otherwise, the seasons would drift by c.11¼ days-per-year and the festivals would lose their God intended agricultural significance. Without any adjustment, their dates would “wander” through the seasons and the springtime festival of Passover, for example, would eventually be celebrated in winter, and later in summer.

THE BIBLE SOLUTION:¹ As these feasts unto the Lord were to be regulated according to the harvest of the various crops (Exo. 34:22), such a departure from the actual season would cause the festivals to lose their connection to the fact that it was the Lord who had given them their crops. However, a specific biblical commandment prevented this:

Thou shalt keep the feast of unleavened bread: (thou shalt eat unleavened bread seven days, as I commanded thee, in the time appointed of the month Abib; for in it thou camest out from Egypt (Exo. 23:15).

Observe the month of Abib, and keep the passover unto the LORD thy God: for in the month of Abib the LORD thy God brought thee forth out of Egypt by night (Deut. 16:1).

Regarding the biblical Hebrew calendar, Sir Isaac Newton penned:²

All nations, before the just length of the solar year was known, reckoned months by the course of the moon; and years by the returns of winter and summer, spring and autumn: (Gen. 1:14, 8:22) and in making calendars for their festivals, they reckoned thirty days to a Lunar month, and twelve Lunar months to a year; taking the nearest round numbers: whence came the division of the ecliptic into 360 degrees. So in the time of Noah’s flood, when the Moon could not be seen, Noah reckoned thirty days to a month: but if the Moon appeared a day or two before the end of the month, they began the next month with the first day of her appearing: ...

¹ Floyd Nolen Jones, *Chronology of the Old Testament: A Return to the Basics*, 18th ed., rev. & enl., (Green Forest, AR: Master Books, 2009), pp. 106–109. Most of the material under this heading is from this work.

² Sir Isaac Newton, *The Chronology of Ancient Kingdoms Amended*, (London: 1728), p. 71.

Newton continued:³

That the Israelites used the Luni-solar year is beyond question. Their months began with their new Moons. Their first month was called Abib, from the earing of Corn in that month. Their Passover was kept upon the fourteenth day of the first month, the Moon being then in the full: and if the Corn was not then ripe enough for offering the first Fruits, the Festival was put off, by adding an intercalary month to the end of the year; and the harvest was got in before the Pentecost, and the other Fruits gathered before the Feast of the seventh month.

This venerable chronologer has, for the most part, correctly and concisely stated the case. However, several points relevant to Newton's observations still require our attention.

God does declare that one of His main intended purposes for the creation of the sun and moon was so that man could use them for the measuring of time. The sun allowed the setting of days and years; the moon was given to set the feasts or festivals and the months began at each new moon (Gen. 1:14-16; Psa. 104:19; etc.). Indeed, the Hebrew word "month" is derived from the word "moon".

All this notwithstanding, the luni-solar biblical year in which the feasts and months were regulated by the revolutions of the moon was adjusted to the solar year, not by astronomical or mathematical calculation, but by *direct observation* of the state of the crops and the physical appearance of the moon.⁴ Thus the months, beginning at the new moon, were lunar but the year, which controlled the condition of the crops, was solar. It was this latter feature that kept the calendar from drifting. The resulting system was complete and self-adjusting. It required neither periodic correction nor intercalation.

The Israelites would know when each new moon would appear; for experience would have taught man from the earliest days that it would occur the second or third day after they observed the old or "dark" moon. Biblical proof of this assertion may be seen in that David and Jonathan *knew* that the following day would be a new moon (1 Sam. 20:5,18). Experience would also teach them that the new moon could only be seen around sunset, near the sun as the sun travels toward the north.⁵

Obviously, weather conditions would be a constant threat to a calendar based upon observation and could complicate its precision. The advantage of using lunar months is that the phases of the moon remain precisely fixed, and the observed calendar is self-correcting. As indicated by the account of the Deluge (Gen. 7:11,24; 8:3-4), some method was available by which Noah could still mark the months. Of course, this recorded data may have been given by revelation to Moses as he wrote of the account over eight centuries after the actual time of the Flood. However, as can be seen in the

³ Newton, *The Chronology of Ancient Kingdoms Amended*, *op. cit.*, p. 77.

⁴ Babylonian Talmud: Seder Mo'ed, Massiktoth Pesachim 3a: "New Moon was fixed by direct observation, not calculation, and communities at a distance from Jerusalem were informed by bonfires"; and Mas. Rosh HaShana 20a: "...it is a religious duty to sanctify [the new moon] on ...actual observation".

⁵ Eugene W. Faulstich, *History, Harmony and the Hebrew Kings* (Spencer, Iowa: Chronology Books, Inc., 1986), p. 42.

first quote from Newton (our page 1, and also according to Talmudic tradition) should fog, clouds or a prolonged period of overcast prevent the moon from being seen, the 30th day after the previous new moon was reckoned and the new month began on the morrow.

This may be the case but is not necessary. The correction could inherently be made as soon as visibility returned for whether one can actually see the moon on a given day or night does not alter its precise period of revolution. These revolutions remain constant over time and thus allow a precision that is unattainable in a calendar which is calculation dependent.

At the Exodus God had the Jews change the beginning of their year from Tishri (Autumn, September-October) to Abib (Spring, March-April; Exo. 12:2; 13:4; cp. 9:31 and 23:15). The resulting Hebrew new year began when the crops reached a certain degree of maturity in the spring. Again, their first month was called “Abib” meaning “first ear of ripe grain” or “green ears”. Abib was the time marked by the stage of growth of the grain at the beginning of its ripening process after the stalks had hardened.⁶ The first new moon after the full ripe ear would begin the next year. Fourteen days later they killed the Passover lamb, and shortly thereafter began the harvest.

A little-known yet equally significant factor assisting the Jews in regulating their calendar was that of the presence of the almond tree which was indigenous to the land of Israel. The Hebrew for almond is “shaked” (dqç) which means the “watcher”, “awakener”, “alerter” or “to watch”. The tree was so named because it is the first to awaken from the dormant sleep or “death” of winter,⁷ putting forth its conspicuous white or pink blossoms in profusion around February.⁸

The appearance of these early bright blooms, viewed in stark contrast to the landscape still shrouded by the drab shadow of winter, was the annual clarion announcing the impending arrival of spring. From their first sighting, the Jews would be alerted to observe closely the status of the “corn” (barley, not Indian corn) in the field with relation to the following new moons. Again, as both these occurrences were dependent upon the sun’s light and warmth as related to the tilt of the plane of the ecliptic, the year could not drift. Since plant growth and development are controlled by the sun, the biblical month “Abib” occurs at the same solar season each year.

Accordingly, it should be seen that all the other months are lunar being determined by the first appearing of the new moon, but Abib is solar as its beginning is first determined and governed by the sun. The continual connection of the historical event of the Exodus with the agrarian month Abib by means of the luni-solar year is the Lord’s way of reminding Israel that the success of the crops is dependent on the same God who brought them out of the land of Egypt.

⁶ Nogah Hareuveni, *Nature in Our Biblical Heritage*, (Israel: Neot Kedumim Ltd., 1980), p. 49.

⁷ Henry S. Gehman, (ed.), *The New Westminster Dictionary of the Bible*, (Phil., PA: The Westminster Press, 1970), page 29.

⁸ John H. Walton, *Chronological And Background Charts of The Old Testament*, (Grand Rapids, MI: Zondervan, 1978), p. 17.

Moreover, although in more recent years the Jews have referred to the intercalary 13th month as Veadar, there is no such designation or even the hint of such a concept in Scripture. It is almost certain that the early Hebrews never employed such a concept in their calendar. For example, David's assignment of the monthly captains "who came in and went out month by month throughout all the months of the year" were but 12 (1 Chron. 27:1-15). This is confirmed by Solomon's 12 monthly officers who looked over the king's food supplies "each man his month in a year" (1 Kings 4:7).

Indeed, such was totally unnecessary under the conditions as described in the preceding. After seeing the almonds blossom and waiting for the first new moon after this event in which the barley was also fully ripened, the new year would begin automatically. If by the middle or end of Adar the barley was not at the "Abib" stage of maturity (and thus ripe enough for offering the first fruits, second quote, p. 106), the following new moon would not be declared. Thus the 12th month, called Adar (Esther 3:7, 9:1), would simply become an extended long month rather than adding a 13th.

The almond tree brought forth its fruit in late February or early March⁹ before the time of the Passover on the 14th of Abib (Nisan) and the Feast of First fruits which took place on the following Sunday (the 17th, Lev. 23:9-14, cp. 1 Cor. 15:20,23). Thus, the almond blossoms and fruit became natural representations or symbols of spring's resurrection victory of life over the cold bleak death of winter.

In keeping with this symbolism, God instructed that the almond tree's nut, bud, and flower be placed on the central shaft and six branches of the golden lampstand (menorah, Exo. 25:31-40, 37:17-24) as prophetic tokens of Messiah's resurrection. As in the instance of Aaron's dead staff (or rod) which brought forth buds, blossoms, and yielded almonds, God demonstrated that authority is based on resurrection power. And as it was a resurrection which proved that Aaron was the chosen of the Lord, even so the Lord Jesus was authenticated as Messiah by His resurrection (Greek = Christ; Num. 17, cp. Rom.1:3-4).

TODAY'S HEBREW METHOD: To offset this effect, the lunar calendar is "solarized" among today's Jews by inserting a month. Having been initiated by Hillel II in 358 AD, their present day calendar is no longer an *observed* calendar. As every 19 years the solar cycle is about 209 days, or about 7 months, longer than the lunar, the Jews keep the seasons from drifting from their normal solar positions by adding an extra month of 29 days (known as either Veadar or Adar II) every 3rd, 6th, 8th, 11th, 14th, 17th, and 19th year of a 19-year cycle.¹⁰ This is done just before Nisan (Abib), the Hebrew first month. The periodic addition of this 13th or leap month 7 times in a 19-year cycle assures the linking of the lunar month with the solar year. Today, the Jews refer to the 13-month-year as a "pregnant year". It is the Jewish variant of the Gregorian leap year. The day still begins at sunset, and Nisan is taken to begin at the vernal equinox. By the tenth century AD, the Jewish calendar was exactly the same as today.

⁹ McClintock and Strong, *Cyclopedia of Biblical Theological and Ecclesiastical Literature*, Vol. I, (Grand Rapids, MI: Baker Book House, 1867), p. 170.

¹⁰ *Encyclopedia Judaica*, (Jerusalem, Israel: Keter Publishing House, Ltd., 1971), Vol. 5, "Calendar", pp. 43-50.