

**THE FORTY YEARS IN THE WILDERNESS:
A Chronological Study**

An research paper submitted to the
LIVING CHURCH OF GOD

By

JOHN WHEELER

Tuesday, April 01, 2003 Version

The timing of Israel’s “forty years in the wilderness” is perplexing to many a Bible student. Not only do several biblical statements have to be reconciled, but the structure of the received lunisolar calendar.

First, we find that Moses first met with Pharaoh when Moses was 80 years old (Exodus 7:7). Just before Moses died, he turned 120 years old (Deuteronomy 31:2). This was not much more than a month before Joshua and Israel entered the land of Canaan early in the first month of the sacred year (Joshua 1-5). We know this because Israel mourned for Moses thirty days before entering the land (Deuteronomy 34:7-8; Joshua 1:1-2).

Second, we find that the Eternal punished Israel at Kadesh by imposing forty years, “a day for a year”, of wandering in the wilderness. During that time, all the generation of those who refused to go into the land of Canaan were to die, and in fact did die (Numbers 15:34; 28:63-65). Yet the punishment itself was imposed some time after the day Israel departed from Sinai, which was “in the second year, in the second month, on the twentieth day of the month” of the Exodus (Numbers 10:11).¹ After the punishment was imposed, Israel left Kadesh (i.e., Kadesh-barnea) and wandered 38 years until it crossed the brook Zered. It was during those 38 years that the rebellious generation actually died (Deuteronomy 2:14-15). After that, Israel encountered Sihon the king of Heshbon, Og the king of Bashan, Moab, Balaam and the Midianites (Numbers 21:12-25:16; 31:1-54; Deuteronomy 2:16-3:29).

The “forty years”, therefore, must have comprised the entire period of the Exodus (cf. Deuteronomy 2:7). Certainly it would have been tied to the period between Moses’ 80th and 120th birthdays. How then does one reckon the period of the Exodus?

At first glance it seems to be easy. The calendar year before Israel entered the land of Canaan was “the fortieth year” (Deuteronomy 1:3), and Moses turned 120 just before that calendar year ended. Therefore, counting backward to the year of the Exodus and correlating that year to the 80th year of Moses’ life should be a straightforward matter. Look at the abbreviated chart below:

80	81	82	83	84	85	86	87	(...)	117	118	119	120
1	2	3	4	5	6	7	8	(...)	38	39	40	41

Row 1 = The last years of Moses’ life, fall-to-fall (Exodus 7:7; Deuteronomy 31:2)

Row 2 = The forty years of the Exodus, spring-to-spring (Deuteronomy 1:3)

We know that calendar years were reckoned fall-to-fall before God’s command in Exodus 12:1-2. Even so, *civil* years continued to be reckoned fall-to-fall; it was the *sacred* year that was to be spring-to-spring.² In any case, Moses must have turned 80 not much more than a month before the first of the 40 years (spring-to-spring) alluded to in Deuteronomy 1:3 began. The civil (fall-to-fall) year in which Moses’ birthday fell may thus be called Moses’ 80th year for our present purposes.³

We know by careful comparison of biblical chronology that the first Passover (Exodus 12) was on a Wednesday and that the first Passover kept in Canaan (Joshua 5:10) was on a Saturday (Sabbath). These Passovers were 41 (not 40) years apart. The Passover at the Exodus was early in the 1st year of the 40 years mentioned in Deuteronomy 1:3; the Passover in Joshua 5 was early in the 41st year. One would expect, then, that in the received calendar the Passover may fall on a Wednesday, then on a Saturday 41 years later.

¹ *The Bible Story, Volume II*, published by the Worldwide Church of God (1983 ed., p. 73), estimates that Israel had been traveling about a year and a half by the time it arrived at the wilderness of Paran at Kadesh. This period includes the forty days’ spying out of the land (Numbers 12:16-13:26).

² We know this not only from the example of the Bible and Jewish records from the Persian period, but also from the testimony of Josephus.

³ This reckoning is rather different from the one we would normally use today. The period between our first and second birthday is often called our first year. On the other hand, we too may call the civil calendar year in which our first birthday falls our first year. It is the second reckoning which is analogous to the one that is being used to reckon Moses’ years.

Surprisingly, this is not what we find. An examination of the dates for Passover in this century⁴ reveals the following facts:

- Under the present calendar, Passover may fall on a Wednesday in the *1st* year and on a Sabbath in the *40th* year. 1911 and 1950 are a pair of years that illustrate this. (This phenomenon is relatively rare, however.)
- It is far more common for a Wednesday Passover in the 1st year to be followed by a Friday Passover in the 41st year. 1911 and 1951, 1918 and 1958, and 1925 and 1965 illustrate this.
- Otherwise, a Wednesday Passover in the 1st year is followed by another Wednesday Passover in the 41st year. 1929 and 1969, among many other year pairs, illustrates this.
- When Passover falls on a Sabbath, it may be preceded by a Sabbath Passover 41 years earlier. 1954 and 1994 illustrate this.
- When Passover falls on a Sabbath, it may be preceded by a Friday Passover 41 years earlier. 1968 and 2008 illustrate this.
- When Passover falls on a Sabbath, it may be preceded by a Monday Passover 41 years earlier. 1903 and 1943 illustrate this.

So in our present calendar, there seems no way to find a pattern of Passovers like that described in Moses' day – not within a span of 41 years, at least.⁵ Therefore, we have three options:

- The calendar was constructed somewhat differently in Moses' day;
- There is something wrong with our understanding of Joshua 5:10;
- The counting of the “fortieth year” in Deuteronomy 1:3 is somehow distinctive.

While we cannot yet demonstrate the point from biblical and extra-biblical records, it seems unlikely that the calendar was *fundamentally* different in Moses' day from what it is today.⁶ All the biblical principles that lie behind the intercalation of the leap month and the postponements were in place. However, there would have been some astronomical differences in the basis of the calendar. The precession of the equinoxes would have affected when the leap years fell in the 19-year Metonic cycle.⁷ The variable length of the solar day⁸ may have been a factor, as well as the *eccentricity* (degree of oblateness) of the earth's orbit and/or that of the moon. The “year types” that determine when Passover and the other Festivals may fall during the week thus may not have coordinated in quite the same way as they do today.

⁴ We don't and can't know from simple extrapolation of the received calendar when Passover would have fallen in the year of the Exodus and in the year Israel entered the Promised Land. This is chiefly because we can't take the changes in Earth's rotation into account that far back (this would require exact records of solar and lunar eclipses). However, ancient observations inform us that there has been little if any change in the length of the solar year or of the average lunar month. The information on Passover in this century comes from Arthur Spier, *The Comprehensive Hebrew Calendar*, 3rd Revised Edition (New York: Feldheim Publishers, 1986).

⁵ Shifting the leap year cycle by one year to its pre-142 AD state apparently does not solve the problem, for other months of the year (such as Shevet) may have their 14th day on a Wednesday in one year and on a Sabbath 40 years (not 41 years) later.

⁶ Ken Herrmann, in his Ambassador College thesis *Calendar and Eclipse Relationships*, addressed the claims by Immanuel Velikovsky concerning the 360-day calendar year in antiquity. At least by the Exodus, and contrary to Velikovsky, the solar year and the lunar month appear to have been the same length as today. In the days of the Flood, it seems to have been a different matter (cf. Genesis 7:11-8:14).

⁷ One may assume that the sequence of leap years in Moses' day was the same as in Jesus' day: in the 2nd, 5th, 7th, 10th, 13th, 16th and 18th years of the cycle. Since 142 AD the leap years have been in the 3rd, 6th, 8th, 11th, 14th, 17th and 19th years.

⁸ Not to forget *supernatural changes* such as those that occurred in Joshua's and Hezekiah's lifetimes!

Challenges by various authors notwithstanding, we are on much more solid ground when it comes to Joshua 5. The “morrow after the Passover” described in Joshua 5:11 had to be the same as the “morrow after the Sabbath” described in Leviticus 23:11.⁹ In the year Israel entered Canaan, then, Passover (Abib 14) had to fall on the weekly Sabbath. We may eliminate the possibility of error on this point from consideration.

The only other possibility is that there is something special about the “forty years” described in Deuteronomy 1:3. How this period is being reckoned no doubt relates to how the “thirty-eight years” are being reckoned in Deuteronomy 2:14. So how do we choose between the two remaining possibilities?

Suppose we take the sacred year in which Israel entered Canaan as the last year of a 40-year (rather than of a 41-year) period, and count backward from there. Let us also assume that the 1st year of the 40-year period was the actual year of the Exodus, so that Passover could theoretically fall on a Wednesday in the 1st year and on a Sabbath in the 40th year. The following abbreviated chart illustrates the results:

80	81	82	83	84	85	86	87	(...)	117	118	119	120	
	1	2	3	4	5	6	7	8	(...)	38	39	40	41
	0	1	2	3	4	5	6	7	(...)	37	38	39	40

- Row 1 = The last years of Moses’ life, fall-to-fall (Exodus 7:7; Deuteronomy 31:2)
- Row 2 = The forty years of the Exodus, spring-to-spring (Deuteronomy 1:3)
- Row 3 = The forty years of the Exodus, spring-to-spring (Exodus 12:1; Joshua 1:1)

Now if the Exodus actually began in **Year 1** and ended in **Year 40** (as a *prima facie* reading of Deuteronomy 1:3 would suggest), then Moses and Aaron would have had little more than a month to bring all ten plagues upon Pharaoh. (Remember that Moses was 80 years old when he first went before Pharaoh, and his 80th birthday was just over a month before **Year 1** had begun.¹⁰) This is certainly possible if one takes the minimum amount of time that the stated chronology of Exodus 7-11 allows.¹¹ The plagues need not have immediately succeeded each other in all cases, however. In Exodus 9:31-32 we read that the barley was in ear and the flax was in bud, but that the wheat and the spelt had not yet come up (and so were unharmed by the hail). This implies some little period of time between the plague of the hail and the plague of the locusts – long enough for the wheat and the spelt to become attractive to the locusts. Some of the other plagues may have had similar gaps of time between them.

But what if the year of the Exodus was actually **Year 1** and the year of entry into Canaan was **Year 40**? The Exodus actually would have begun in Moses’ 81st year, little more than a month after Moses’ 81st birthday. Yet Moses could easily have been 80 years old (still) when he first went before Pharaoh – *if* the plagues began several months before **Year 1** began. In effect, one may project backwards a **Year of the Nine Plagues** (a calendar year, reckoned spring-to-spring) before the **Year of the Exodus (Year 1)**. The **Year of the Nine Plagues** would have been **Year 0** of the Exodus by that reckoning – that is, the year before the Exodus actually began. But that year would also have been **Year 1** of the “forty years” described in Deuteronomy 1:3.

And what of the “thirty-eight years” described in Deuteronomy 3:14? It took about 1½ years for Israel to travel from Egypt to Kadesh and to spy out the land of Canaan. The “thirty-eight years”, then, were effectively in a fall-to-fall reckoning. Given all the preceding assumptions, this is what our chart would look like with the addition of the “thirty-eight years”:

⁹ Here is not the place for the proof of this conclusion. However, one important element of the proof concerns the food that was eaten in Joshua 5:11-12: essentially the same as that described in Leviticus 23:14.)

¹⁰ Unless Deuteronomy 31:2 is not to be taken that Moses’ birthday had arrived that very day. However, the Hebrew wording seems plain enough: *Moses had just turned 120 years old*. Compare Deuteronomy 34:8 with Joshua 1-5. Moses’ birthday, and also his day of death, appear to have been late in the 12th month.

¹¹ That is, about three weeks.

80	81	82	83	84	85	86	87	(...)	117	118	119	120	
	1	2	3	4	5	6	7	8	(...)	38	39	40	41
	0	1	2	3	4	5	6	7	(...)	37	38	39	40
-2	-1	0	1	2	3	4	5	(...)	35	36	37	38	

- Row 1 = The last years of Moses’ life, fall-to-fall (Exodus 7:7; Deuteronomy 31:2)
- Row 2 = The forty years of the Exodus, spring-to-spring (Exodus 12:1; Joshua 1:1)
- Row 3 = The forty years of the Exodus, spring-to-spring (Deuteronomy 1:3)
- Row 4 = The thirty-eight years from Kadesh to Brook Zered, fall-to-fall (Deuteronomy 2:14-15)

Note that the “thirty-eight years” would be reckoned from the beginning of the *first* year of the period to the beginning of the *last* year of the period. The “forty years” from Exodus 12:1 to Joshua 1:1 would by the above scheme have been reckoned in the same manner.¹² After the beginning of the 38th year had arrived, there were still several months left over for Israel to fight and defeat Sihon, Og and the Midianites, make arrangements for Reuben, Gad and half of Manasseh to inherit their lands, and to receive Moses’ last additions to the Torah.¹³ But this would leave the reckoning in Deuteronomy 1:3 to begin in the Year of the Nine Plagues (with only logical inference from the present calendar as proof that it must).

Here is where our hypothesis is reduced to absurdity. We are told in Deuteronomy 2:7: “For the LORD your God has blessed you in all the work of your hands; he knows your going through this great wilderness; these forty years the LORD your God has been with you; you have lacked nothing” (RSV). And again: “And you shall remember all the way which the Lord your God has led you *these forty years in the wilderness...* Your clothing did not wear out upon you, and your foot did not swell, *these forty years*” (Deuteronomy 8:2, 4). The “forty years” evidently are being reckoned here to the nearest whole year, and spring-to-spring. So the “forty years” could not have begun in the **Year of the Nine Plagues**, but only in the **Year of the Tenth Plague** – that is, the **Year of the Exodus** itself.

80	81	82	83	84	85	86	87	(...)	117	118	119	120	
	1	2	3	4	5	6	7	8	(...)	38	39	40	41
-1	0	1	2	3	4	5	6	(...)	36	37	38	39	

- Row 1 = The last years of Moses’ life, fall-to-fall (Exodus 7:7; Deuteronomy 31:2)
- Row 2 = The forty years of the Exodus, spring-to-spring (Exodus 12:1; Joshua 1:1; Deuteronomy 1:3)
- Row 3 = The thirty-eight years from Kadesh to Brook Zered, fall-to-fall (Deuteronomy 2:14-15)

This would give thirty-eight full years for the rebellious generation to perish, forty full years for the Exodus, a little more than a month for the Ten Plagues,¹⁴ and six full months for the events between the crossing of the brook Zered and the entry into the Promised Land. In such a case Exodus 12:1, Joshua 12:1, Deuteronomy 1:3, 2:7, 8:2-4, and any related passages would all refer to the same forty-year period.

The conclusion seems inescapable. From the mere simplicity of the biblical chronology (once properly assembled), it appears that the lunisolar calendar was constructed somewhat differently in Moses’ day than it is today. Evidently it was possible then, as it is *not* possible now, for Passover to fall on a Wednesday in one year and on a Sabbath 41 years later. Why this difference existed is something for the future to determine. ###

¹² This is a logical consequence of assuming that the Wednesday Passover of Exodus 12 and the Sabbath Passover of Joshua 5 must fall 40 – not 41 – years apart, by this very style of reckoning.

¹³ It is not commonly realized that the six months or so between the crossing of the brook Zered and the crossing of the Jordan was the rainy season – not the usual season for armies to go to war.

¹⁴ Unless (as noted above) Moses’ statement in Deuteronomy 31:2 is not to be taken to mean that his birthday had arrived that very day.